United States Environmental Protection Agency
Region 10, Office of Air, Waste and Toxics
AWT-107
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

Permit Number: R10NT501400
Issued: August 10, 2010
AFS Plant ID Number: 16-777-00225

Non-Title V Air Quality Operating Permit

Is issued in accordance with the provisions of the Federal Air Rules for Reservations (FARR), 40 CFR § 49.139, and applicable rules and regulations to

CPM Development Corporation
Interstate Concrete and Asphalt Company
Portable Hot Mix Asphalt Plant No. 25

For operations in accordance with the conditions in this permit at locations listed in Section 1.3.

Vice-President of Parent Company:	Mark Murphy CPM Development Corporation 5111 East Broadway Spokane, Washington 99212
General Manager of Wholly Owned Subsidiary:	Paul Franz Interstate Concrete and Asphalt Company 845 West Kathleen Avenue Coeur d'Alene, Idaho 83814
Local Individual Responsible for Compliance:	Jana McDonald CPM Development Corporation 5111 East Broadway Spokane, Washington 99212 Phone: 509.534.6221, Fax: 509.534.3839 Email: jana.mcdonald@oldcastlematerials.com

A technical support document that describes the bases for conditions contained in this permit is also available.

Nancy Helm, Manager
Federal and Delegated Air Programs Unit
Office of Air, Waste and Toxics
U.S. EPA, Region 10

8/11/10
Date

1. General Conditions

1.1. For purposes of this permit, the permittee is CPM Development Corporation and the permitted source includes the Interstate Concrete and Asphalt Company Plant No. 25 hot mix asphalt drum dryer (Cedarapids 8830-ADM) and a combination of rock extraction and crushing (when required to be aggregated with this asphalt plant), handling and storage equipment used to produce hot mix asphalt.

1.2. The permittee shall comply with all conditions of this permit and any site-specific approval conditions. Any permit noncompliance constitutes a violation of the Clean Air Act.

1.3. Compliance with all conditions in this permit and any site-specific approval conditions allows the permitted source to operate at any location on the following Indian reservations that have been specifically approved for the purpose of this permit in a letter from EPA to the permittee:

1.3.1. Coeur d'Alene Reservation (Idaho);

1.3.2. Nez Perce Reservation (Idaho);

1.3.3. Kootenai Reservation (Idaho);

1.3.4. Umatilla Reservation (Oregon);

1.3.5. Colville Reservation (Washington);

1.3.6. Kalispel Reservation (Washington);

1.3.7. Spokane Reservation (Washington);

1.3.8. Yakama Reservation (Washington).

1.4. Compliance with the terms of this permit does not relieve or exempt the permittee from compliance with other applicable federal, tribal, state or local laws or regulations.

2. Emission Limits and Work Practice Requirements

2.1. Permitted Source Carbon Monoxide (CO) Emission Limit. Source-wide CO emissions shall not exceed 80 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly CO emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.2. Permitted Source Nitrogen Oxides (NOx) Emission Limit. Source-wide NOx emissions shall not exceed 80 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly NOx emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.3. Permitted Source Particulate Matter (PM) Emission Limit. Source-wide PM emissions shall not exceed 200 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly PM emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.4. Permitted Source Fine Particulate Matter (PM10) Emission Limit. Source-wide PM10 emissions shall not exceed 80 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly PM10 emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.5. Permitted Source Sulfur Dioxide (SO2) Emission Limit. Source-wide SO2 emissions shall not exceed 80 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly SO2 emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.6. Permitted Source Volatile Organic Compound (VOC) Emission Limit. Source-wide VOC emissions shall not exceed 80 tons per year as determined on a rolling 12-month basis by calculating the emissions (tons) for each month and adding the emissions (tons) calculated for the previous 11 months. Monthly VOC emissions shall be determined by multiplying appropriate emission factors (lb/unit) by the actual monthly operation/production rates (units/month) and dividing by 2000 lb/ton.

2.7. Good Operation. All fuel burning equipment and the drum dryer baghouse control device shall be maintained in good operating condition. The drum dryer exhaust shall be routed to the baghouse control device at all times. The drum dryer baghouse control device shall be operated at all times that the drum dryer operates.

3. Monitoring and Recordkeeping Requirements

3.1. Visible Emission Monitoring and Recordkeeping. The permittee shall monitor and record visible emissions of particulate matter as described in Conditions 3.2 through 3.5.

3.2. Once each day, the permittee shall visually survey the drum dryer baghouse stack for the presence of visible emissions of particulate matter.

3.2.1. The observer conducting the visual survey must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting and wind, and the presence of uncombined water on the visibility of emissions (see 40 CFR part 60, Appendix A, Test Method 22).

3.2.2. For the surveys, the observer shall select a position that enables a clear view of the emission point to be surveyed, that is at least 15 feet from the emission point, and where the sunlight is not shining directly in the observer's eyes.

3.2.3. The observer shall observe emissions from the emission point for at least 15 seconds.

3.2.4. Any visible emissions of particulate matter other than uncombined water shall be recorded as a positive reading associated with the emission unit.

3.2.5. Surveys shall be conducted while the drum dryer is operating and during daylight hours.

3.3. If the survey conducted under Condition 3.2 identifies any visible emissions of particulate matter, the permittee shall:

3.3.1. Immediately upon conclusion of the visual observation in Condition 3.2, investigate the source and reason for the presence of visible emissions; and

3.3.2. As soon as practicable, take appropriate corrective action.

3.4. If the corrective actions undertaken pursuant to Condition 3.3.2 do not eliminate the visible emissions, the permittee shall within 24 hours of the initial survey conduct a visible emissions observation of the emission source in question for thirty minutes using EPA Test Method 9 (see 40 CFR part 60, Appendix A).

3.5. The permittee shall maintain records of the following:

3.5.1. Details of each visual survey and visible emissions observation, including date, time, observer and results;

3.5.2. Date, time and type of any investigation conducted pursuant to Condition 3.3.1;

3.5.3. Findings of the investigation, including the reasons for the presence of visible emissions;

3.5.4. Date, time and type of corrective actions taken pursuant to Condition 3.3.2;

3.5.5. Complete documentation of any Method 9 visible emissions observations conducted pursuant to Condition 3.4.

3.6. Baghouse Inspection and Recordkeeping. At least once each year during which the permitted source operates on an Indian reservation, the permittee shall inspect and keep records of the physical condition of the baghouse internals.

3.7. Operation and Production Records. The permittee shall track and record the operation and production such that source-wide emissions can be calculated on a daily, monthly and 12-month rolling basis. Records shall include, but not be limited to:

3.7.1. Daily hot mix asphalt, extracted rock and crushed rock (when required to be aggregated with this asphalt plant) production (tons) and type fuel used for drum dryer;

3.7.2. Daily fuel type(s) and amount (gallons) combusted by generator;

3.7.3. Daily fuel type(s) and amount (gallons or cubic feet) combusted by asphalt tank heater;

3.7.4. Ash and sulfur content (%) of any reprocessed fuel oil combusted;

3.7.5. Sulfur content (%) of any diesel combusted;

3.7.6. Pressure drop (inches) across the baghouse, recorded at least once per day while operating;

3.7.7. Documentation of any time periods when the drum dryer is producing hot mix asphalt and the baghouse is not fully operational, the baghouse is not in good operating condition, or the drum dryer exhaust is not being routed to the baghouse; and

3.7.8. Daily water and dust suppressant usage for roads, rock crushing (when required to be aggregated with this asphalt plant) and material handling including type and application technique, amount and frequency.

3.8. Equipment Installation. The permittee shall install, calibrate, maintain and operate equipment or systems for recording the operation and production records required by this permit. Equipment must be installed and calibrated before operating the asphalt plant on an Indian reservation.

3.9. Emissions Calculations. Within 20 days after each month (beginning with the first month of operating the permitted source at a location on an Indian reservation and continuing until eleven months after moving the permitted source to a location off an Indian reservation), the permittee shall calculate and record the source-wide monthly emissions (tons/month) and the rolling 12-month total emissions (tons/year) for CO, NOx, PM, PM10, SO2 and VOC using the calculation techniques required in Condition 2.

3.10. Records Retention. Copies of all required monitoring records, notifications and reports required by this permit and location approval letters from EPA shall be kept with the asphalt plant for a period of five years and shall be made available to EPA upon request.

4. Reporting Requirements

4.1. Notification before Relocation. The permittee shall notify EPA in writing at least 40 days before relocating the permitted source to or from a location on an Indian reservation. The notification shall include:

4.1.1. Complete descriptions of the existing and new locations including state, county, physical address and longitude and latitude coordinates;

4.1.2. Whether the new location(s) is on an Indian reservation;

4.1.3. If the new location(s) is not on an Indian reservation, the name of the Title V permitting authority at the new location(s); and

4.1.4. If the new location(s) is on an Indian reservation, the following information;

4.1.4.1. The source of crushed rock used by the hot mix asphalt plant including the owner name, operator name, contact information and location of the rock extraction and rock crushing operation and whether either or both is under contract to the owner or operator of the hot mix asphalt plant;

4.1.4.2. The expected existence of any other air pollution emitting operations located at the same site(s) as the permitted source;

4.1.4.3. The expected equipment list and operating configuration of the permitted source including a flow diagram;

4.1.4.4. The expected operating hours and production rates of the permitted source at the new location(s);

4.1.4.5. The expected duration (days) of operation of the permitted source at the new location(s);

4.1.4.6. An inventory of emissions actually emitted by the permitted source during the most recent previous 12 months for CO, NOx, PM, PM10, SO2 and VOC;

4.1.4.7. If the new location(s) has not previously been approved pursuant to Condition 1.3, a plot plan and a map showing locations of any water bodies or wetlands within 5 miles of the new location(s);

4.1.4.8. If the new location has not previously been approved pursuant to Condition 1.3, a list of endangered/threatened species in the new county and any adjacent counties that are within 5 miles of the new location(s) and any available site-specific assessments or approvals related to the Endangered Species Act; and

4.1.4.9. If the new location has not previously been approved pursuant to Condition 1.3, a list of any historical/cultural preservation sites in the county of the new location(s) and any available archeological surveys.

4.2. Notification after Relocation. The permittee shall notify EPA in writing within 15 days after relocating the permitted source to a location on an Indian reservation. The notification shall include:

4.2.1. Actual dates of relocation (last date of operation at previous location, date physically moved from previous location, date of physical arrival at new location, and date operation began at new location); and

4.2.2. Any corrections or adjustments to the information required to be previously submitted in Condition 4.1.

4.3. Notification of Deviations. The permittee shall notify EPA:

4.3.1. By telephone (describing the situation) within 24 hours and in writing within 10 days of determining that the drum dryer is producing hot mix asphalt and the baghouse is not fully operational, the baghouse is not in good operating condition, or the drum dryer exhaust is not being routed to the baghouse; and

4.3.2. In writing (describing the exceedance) within 10 days of determining that the rolling 12-month total emissions, calculated pursuant to Condition 3.9, exceed an emission limit in Condition 2.

4.4. Annual and Final Emission Report. Annually, within 45 days after the end of any calendar year in which the permitted source operated on an Indian reservation and (as a final report) within 13½ months after relocating from a location on an Indian reservation to a location off an Indian reservation, the permittee shall submit to EPA a report that includes:

4.4.1. The locations on an Indian reservation at which the permitted source operated during the time period being reported and the dates of operation at each location; and

4.4.2. The monthly and rolling 12-month total emissions required by Condition 3.9 for the reporting period including all assumptions and calculations used. The final report shall only include monthly and rolling 12-month total emissions, including all assumptions and calculations, not previously reported in an annual report.

4.5. Mailing Addresses and Telephone Numbers. All original notifications and reports shall be sent to EPA at the address below and all telephone notifications shall be made to the telephone number below. A copy of each notification required in Conditions 4.1, 4.2 and 4.3 and each emission report required in Condition 4.4 that does not contain confidential business information shall be sent to the Tribal Environmental Contact at the addresses below if the notification or report applies to that Tribe's reservation.

Original Documents go to EPA at:

Non-Title V Coordinator, AWT-107
U.S. EPA Region 10
Suite 900
1200 Sixth Avenue
Seattle, WA 98101

For telephone notifications:
Call: 1-800-424-4372
(mention the "FARR")

Copies go to Tribal Contacts at:

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Coeur d'Alene Indian Tribe
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Technical Support Document
Non-Title V Air Quality Operating Permit

Permit Writer: Dan Meyer

CPM Development Corporation
Interstate Concrete and Asphalt Company
Portable Hot Mix Asphalt Plant No. 25

Purpose of Owner-Requested Non-Title V Operating Permit And Technical Support Document

Title 40 Code of Federal Regulations Section 49.139 establishes a permitting program to provide for the establishment of Federally-enforceable requirements for air pollution sources located within Indian reservations in Idaho, Oregon and Washington. The owner or operator of an air pollution source who wishes to obtain a Federally-enforceable limitation on the source's actual emissions or potential to emit must submit an application to the Regional Administrator requesting such limitation. The United States Environmental Protection Agency (EPA) then develops the permit via a public process. The permit remains in effect until it is modified, revoked or terminated by EPA in writing.

This document, the technical support document, fulfils the requirement of 40 CFR § 49.139(c)(3) by describing the proposed limitation and its effect on the actual emissions and/or potential to emit of the air pollution source. Unlike the Operating Permit, this Technical Support Document is not legally enforceable. The permittee is obligated to follow the terms of the permit. Any errors or omissions in the summaries provided here do not excuse the permittee from the requirements of the permit.

Table of Contents

1. EPA Authority to Issue Non-Title V Permits

On April 8, 2005 the United States Environmental Protection Agency (EPA) adopted regulations (70 FR 18074) codified at 40 CFR Parts 9 and 49, establishing Federal Implementation Plans under the Clean Air Act for Indian reservations in Idaho, Oregon and Washington. One Federal Implementation Plan, commonly referred to as the Federal Air Rules for Reservations (FARR), put in place basic air quality regulations to protect health and welfare on Indian reservations located in the Pacific Northwest. This permit has been developed pursuant to 40 CFR § 49.139 which creates a non-Title V permitting program for establishing Federally-enforceable requirements for air pollution sources on Indian reservations.

2. Project Description

2.1 Background

Three federal air quality programs exist that apply to primarily major sources of air pollution: Prevention of Significant Deterioration (PSD) construction permits; Title V operating permits; and Maximum Achievable Control Technology (MACT) standards. The definition of "major source" is slightly different in each program, but is generally based on the amount of pollutants emitted by a source. A source that would otherwise be major can avoid these programs by voluntarily limiting emissions of the regulated pollutants to less than the thresholds for applicability in each program. EPA's non-Title V permit program, created in the FARR, can be used by sources to establish limits for avoiding PSD permitting, Title V permitting and MACT standards. To avoid Title V and PSD permitting obligations and MACT requirements, however, CPM Development Corporation (CPM) is requesting additional limits.

2.2 Request Description

On December 24, 2009, EPA Region 10 received an application from CPM requesting emission limits be established that allow CPM to operate Interstate Concrete and Asphalt Company (Interstate) portable hot mix asphalt (HMA) plant no. 25 on the Coeur d'Alene, Kootenai, Nez Perce, Umatilla, Colville, Kalispel, Spokane and Yakama Indian Reservations without being subject to PSD and Title V permitting.[1] Although additional information in support of the non-Title V application has been submitted to EPA through subsequent email and phone conversations, CPM has not yet identified any specific locations for which it intends to operate. As a source that normally operates seasonally, CPM believes its actual annual emissions will be well below the Title V, PSD and MACT major source applicability thresholds.

3. Facility Information

3.1 Ownership & Location

The portable HMA plant is owned by CPM which is part of CRH plc, a publicly traded company headquartered in Ireland. The plant is considered a portable source because the equipment can be easily dismantled, transported to different locations and reassembled for operation. As such, CPM must comply with the requirements of each jurisdiction in which it operates. CPM currently has a permit to construct from the State of Idaho (Permit Number P-040105 issued on June 28, 2004) that authorizes it to operate within that jurisdiction. This non-Title V permit authorizes CPM to operate Interstate portable HMA plant no. 25 on eight Indian reservations in Idaho, Oregon and Washington provided CPM complies with the permit conditions and receives approval from EPA for each specific location through the mechanism described in the permit. At the time of initial permit issuance, no specific locations have been approved.

[1] Interstate is a wholly owned subsidiary of CPM.

3.2 Facility Description

This facility is a portable parallel-flow HMA plant which uses a mixture of sized aggregate and liquid asphalt cement to make HMA paving material. Stockpiled aggregate, which may consist of recycled asphalt pavement (RAP), is transferred to feed bins. Virgin aggregate is dispensed from a set of bins onto feeder conveyors, which transfer the aggregate to the drum mix dryer. Virgin aggregate travels the entire length of the rotating drum dryer where it is heated and dried. RAP is dispensed through a separate set of bins and is introduced nearer the exit of the drum mix dryer. A measured amount of heated asphalt cement is added and mixed with the hot aggregate and RAP just prior to the resultant HMA exiting the dryer. The HMA is then conveyed to a hot storage silo until it can be loaded into trucks for transport off site

The dryer is heated by burners fueled by natural gas, propane, #2 diesel or reprocessed fuel oil (RFO) sometimes referred to as used oil or waste oil. Asphalt cement is stored in an above-ground storage tank, kept in a liquid state using a 0.77 MMBtu-per-hour heater. All fuels are stored in above-ground tanks. Electrical power is provided by a connection to the local grid (when available) or by a 750 kW portable generator that is fueled by #2 diesel. A 75 kW portable generator is employed to provide electricity to the asphalt cement tank heater and for lighting when the larger generator is offline. The facility Standard Industrial Classification code is 2951, Asphalt Paving Mixtures and Blocks. The drum dryer emissions are controlled by a baghouse (fabric filter). Water may be applied to traffic areas to control fugitive dust.

Plant configurations from project to project can vary somewhat. Typically, the plant configuration will include the HMA plant drum dryer, a diesel generator, an asphalt tank, fuel storage tanks, HMA storage silo, along with some combination of conveyors, trucks, and loaders. Table 1 lists and describes the emission units and emission controls that typically exist.

CPM owns and operates businesses that mine, crush and screen rock to produce aggregate that is used as a raw material. Typically, rock is extracted from the earth and crushed at a different location or before the portable HMA plant is moved to the work site. EPA's source aggregation policy requires two sources to be considered one source for permit applicability purposes if their operations are: (1) located on one or more contiguous or adjacent properties, (2) are under common control (e.g. CPM owns both or the rock crusher is a subcontractor to CPM), and (3) belong to the same industrial grouping (two-digit Standard Industrial Classification code) or one operation supports the other operation with most of its output. HMA manufacturing (29) and nonmetallic mineral extraction & crushing (14) have different Standard Industrial Classification codes but while rock is extracted and crushed for an HMA plant, it is clearly a support operation to the HMA plant even if the rock is extracted and crushed before the HMA plant is moved to a contiguous or adjacent site. If a combination of HMA manufacturing and rock extraction and rock crushing meet all three of EPA's criteria for aggregation and consideration as one source, then it is necessary to count the emissions from the HMA plant and rock extraction and rock crushing (while the upstream activities support the HMA plant) to determine compliance with emission limits in this non-Title V permit. Source aggregation decisions can be very complicated. EPA should be consulted for regulatory advice about aggregation.

Table 1: Emission Units (EU)

EU #	Source Description	Emission Controls
1	**HMA Drum Dryer**: Cedarapids 8830-ADM; manufactured 1988; portable, parallel-flow design drum; 350 ton/hr rated capacity; RAP capability; 75 mmBtu/hr burner, fueled with natural gas, propane, #2 diesel or RFO	Cedarapids Model 11060-P baghouse*

EU #	Source Description	Emission Controls
2	**Generators** **(1) Primary Generator:** Caterpillar Model C3412 CDITA (compression ignition); manufactured 2001; fueled with #2 diesel; 750 kW output (6.806 mmBtu/hr heat input) **(2) Backup Generator:** Perkins Model 75 (compression ignition); manufactured 1991; fueled with #2 diesel; 75 kW output (0.704 mmBtu/hr heat input)	None
3	**Storage Tanks** **(1) Liquid Asphalt Cement Storage Tank:** 27,588 gallon capacity; heated (see tank heater) **(2) RFO Tank:** 15,000 gallon capacity portable tank trailer to supply drum dryer **(3) #2 Diesel Storage Tank:** 500 gallon capacity portable tank trailer to supply asphalt heater **(4) #2 Diesel Storage Tank:** 624 gallon capacity portable tank trailer to supply Caterpillar generator **(5) #2 Diesel Storage Tank:** 189 gallon capacity portable tank trailer to supply Perkins generator	None
4	**Asphalt Tank Heater**: make, model, date of manufacture, 0.77 mmBtu/hr (indirect heat); fueled with #2 diesel	None
5	**Aggregate Handling**: via trucks, loader and conveyors; to and from piles and to drum dryer; includes RAP	None
6	**Silo Filling**: via conveyor from drum dryer	None
7	**Truck Loading and Fumes**: HMA truck load-out from silos and fumes from loaded truck bed while in plant	None
8	**Traffic**: HMA trucks, aggregate and RAP trucks, asphalt trucks, loader for aggregate and RAP	Water application
9	**Wind Erosion**: open areas and aggregate storage piles	None

* All known emission controls are listed – required controls are noted with an asterisk

3.3 Local Air Quality

CPM has requested this permit to allow operation on eight Indian reservations. All of the reservations are currently unclassifiable or attain the national ambient air quality standards for all criteria pollutants. An area is unclassifiable when there is insufficient monitoring data. Areas of the country where air pollution levels exceed the national ambient air quality standards are designated "nonattainment." Note that PSD applies only in attainment and unclassifiable areas. Ambient air quality designations are presented in 40 CFR Part 81.

4. Regulatory Analysis and Permit Content

4.1 Evaluation of Request

The Clean Air Act requires all major sources to obtain a PSD permit to construct and a Title V permit to operate. Major sources of hazardous air pollutants (HAP) are also subject to the MACT program. The definition of "major" and the criteria for qualifying as a major source are slightly different for each of the three programs. HMA plants that have the potential to emit (PTE) 250 tons per year or more are subject to PSD. Sources that have the potential to emit 10 tons per year or more of any individual HAP or 25 tons

per year or more of all HAPs emitted (including fugitive emissions) are subject to the MACT program. Sources that have the potential to emit 100 tons per year or more or that are major for PSD or MACT purposes, are subject to Title V. PTE is based on the source's maximum capacity operating 8760 hours per year and only considers emission controls or limits that are enforceable (see the federal requirements discussions in Section 4.2). Source categories subject to a New Source Performance Standard (NSPS) that was promulgated as of August 7, 1980, must count fugitive as well as non-fugitive criteria pollutants when determining major source status. NSPS Subpart I, originally promulgated in 1973, applies to HMA plants, so fugitive emissions must be counted when determining major source status for HMA plants.

As shown is Table 2, CPM's Interstate portable HMA plant no. 25 has the potential to emit more than 250 tpy of PM and SO2 and more than 100 tpy of CO and NOx. PM10 and VOC emissions are each predicted to be around 80% of the Title V applicability threshold of 100 tpy. HAP (total and individual) and lead emissions are predicted to be well below the Title V and MACT applicability thresholds. See Appendix A for emission inventory details. Without enforceable emission limits in all jurisdictions in which they operate, the portable HMA plant is subject to PSD and Title V.

Table 2: Potential to Emit (PTE)

#	Emission Unit	Annual Potential Emissions (tons per year)[1]								
		CO	Pb	NOx	PM	PM10	SO2	VOC	HCOH	HAP
1	Drum dryer	199	<1	84	28	6	321	49	4.8	16.4
2	Generators	28	<1	109	4	4	17	4	<0.1	0.1
3	Storage tanks	<1						<1	0.1	0.2
4	Asphalt Tank Heater	<1	<1	<1	1	<1	2	<1	<0.1	<0.1
5	Aggregate handling				13	6				
6	Silo filling	2			1	1		19	0.1	0.3
7	Truck loading/fumes	3			<1	<1		8	<0.1	0.2
8	Traffic				241	62				
9	Wind erosion				1	<1				
	Calculated PTE	232	<1	194	289	79	339	79	5.0	17.1
	New PTE Limits[2]	80	N/A	80	200	80	80	80	N/A	N/A

[1] Carbon monoxide; lead; nitrogen oxides; particulate matter; particulate matter less than 10 microns; sulfur dioxide; volatile organic compounds; formaldehyde (highest plant wide single HAP); total hazardous air pollutants.
[2] Emissions from any rock excavation and crushing (when required to be aggregated with this asphalt plant) count towards the new PTE limits created by this permit.
[3] The PTE is capped by new limits created in this non-Title V permit.

The emission estimates considered each applicable emission limit paired with each fuel type that can be used by the equipment to determine the worst-case emissions that are allowed, assuming full-time operation at full capacity, which would produce approximately 3.1 million tons of HMA per year. Note that individual HAP PTE estimates were based on the worst-case fuel for each individual HAP, while the emission unit HAP PTE was based on a summation of the worst-case fuel for the emission unit. Source-wide HAP PTE was a summation of the emission units' HAP PTE. PTE was also limited by applicable NSPS and FARR emission limits when the limits resulted in lower emissions than available emission estimation techniques predicted. Emission testing performed in 2009 demonstrated that actual PM emissions were well below the NSPS limit. The permittee can use the site-specific PM data to develop an emission factor for use when reporting actual emissions.

As explained in Section 2.2 above and in Table 2, to avoid being subject to Title V, PSD and MACT, CPM has requested PTE limits (called synthetic minor limits) be created in a non-Title V permit. Our analysis indicates that limits are not necessary to avoid MACT. CPM anticipates only seasonal operations, resulting in production of less than 27% (822,500 tpy) of the potential production (3.1 million tpy) used in the emission estimates. At the lower production rate and using fuels with much lower sulfur content than required, CPM is confident that its actual emissions will be well below the emission limits requested. Actual emissions will be determined using actual production rates, fuels and control efficiencies. If better emission factors (e.g. developed by testing the emissions from this source) are available that better reflect actual emissions, then those factors should be used. As described in more detail in Section 4.3, the permit will limit emissions on a rolling 12-month basis to:

- Not more than 200 tpy for PM (avoids PSD);
- Not more than 80 tpy for CO, NOx, PM10, SO2, VOC (avoids PSD and Title V).

Over 80 percent of the PM and PM10 emissions from this plant are expected to be fugitive emissions. Emission estimates do not take into account any unenforceable emission reductions techniques that the permittee might use (e.g. road watering) to comply with the fugitive dust or visible emission requirements that may apply. Techniques exist for quantifying emission reductions due to road watering. If the permittee relies upon controls to lower actual emissions, EPA will require adequate documentation of the emission reduction techniques and applicable operational parameters that the quantification techniques employ. The permittee should discuss the use of such techniques with EPA before using them for calculation, compliance and reporting purposes.

For portable sources such as HMA plants that move around frequently, it is questionable whether the generators would be considered to be a stationary source or a non-road engine (see the generator discussion in the NSPS discussion in section 4.2). If a generator qualifies as a non-road engine it does not need to be included in the PTE analysis. Even though CPM does not intend to operate the generators in the same location for more than 12 months, since we are considering worst-case scenarios, the PTE analysis assumes the emissions from the generators count towards applicability. Note that even if the generators were not counted, the source would still be major for CO, PM, and SO2 emissions and limits (and this permit) would be necessary to avoid PSD and Title V.

The emission inventory in Appendix A does not include any rock extraction or crushing emission units because CPM has not indicated to EPA any specific and certain intention of performing either activity in support of the HMA plant. As explained in TSD Section 3.2, if a rock extraction and crushing operation ever meets EPA's source aggregation criteria and must be considered part of the portable HMA plant, then CPM will be required to account for the emissions from the rock extraction and crushing operation to document compliance with the emission limits in this permit. In that case, only the actual emissions (including fugitives) emitted by the rock extraction and crushing activities while they support the HMA plant must be added to the HMA plant's rolling 12-month emissions (including fugitives) to determine compliance with the 12-month rolling emission limits in this permit. CPM's request is reasonable and approvable.

4.2 Other Federal Requirements

Endangered Species Act (ESA) – EPA is obligated under ESA, Section 7, 16 U.S.C. §1531, to consider the impact that a federal project may have on listed species or critical habitats. EPA considers ESA issues in the context of permitting decisions on a case-by-case basis.

Although this permit creates emission limits that allow the permittee to operate on eight Indian reservations in Idaho, Oregon and Washington without being subject to PSD or Title V permitting, CPM

cannot actually erect and operate the portable HMA plant until after EPA approves of the specific location. To gain approval for a specific location, the permittee must notify EPA 40 days prior to moving there and supply location-specific information. EPA will post a notice on EPA Region 10's web site describing the new location and stating that EPA is assessing potential ESA impacts as a part of EPA's approval of a new location. EPA will within 40 days assess the potential for effects on listed species and critical habitat. EPA may refer to the ESA decision in any storm water permits issued to the permittee. If EPA determines, for that requested location, that there will be "no effect" regarding ESA impacts, EPA will send the permittee a letter approving the permittee's move to and operation at the new location and post the decision on EPA Region 10's web site. If EPA cannot conclude that there will be no effect, EPA will notify the permittee of the need for consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service and proceed with that process. Consultation can be expected to delay the permittee's planned move.

Given that CPM has identified no specific location upon which to erect and operate Interstate portable HMA plant no. 25, EPA is not seeking input at this time regarding possible ESA concerns.

Environmental Justice (EJ) – Pursuant to Executive Order 12898 issued on February 11, 1994 and entitled, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," EPA is required to identify and address disproportionately high and adverse human health or environmental effects of regulatory programs, policies, and activities on minority populations and low-income populations. Consistent with a December 1, 2000, EPA memorandum entitled, "EPA Statutory and Regulatory Authorities under Which Environmental Justice Issues May Be Addressed in Permitting," EPA considers environmental justice issues in the context of permitting decisions on a case-by-case basis.

Although this permit creates emission limits that allow the permittee to operate on eight Indian reservations in Idaho, Oregon and Washington without being subject to PSD or Title V permitting, CPM cannot actually erect and operate the portable HMA plant until after EPA approves of the specific location. To gain approval for a specific location, the permittee must notify EPA 40 days prior to moving there and supply location-specific information. EPA will post a notice on EPA Region 10's web site describing the new location and stating that EPA is assessing potential EJ issues as a part of EPA's approval of a new location. EPA will within 40 days assess the potential for disproportionately high and adverse effects on an EJ community utilizing, in part, maps that show environmental justice indicators for poverty and people of color living on Indian Reservations in the Pacific Northwest. These maps are available on EPA's air permits website at this address: http://yosemite.epa.gov/R10/ocrej.nsf/environmental+justice/maps. If EPA determines, for the requested location, that there will be no disproportionate or adverse impacts regarding EJ, EPA will send the permittee a letter approving the permittee's move to and operation at the new location and post the decision on EPA Region 10's web site. If EPA concludes that there will be a disproportionate or adverse effect, EPA will notify the permittee of the need for additional consideration and begin to address those concerns. If EJ issues are identified, the permittee's planned relocation may be delayed.

Given that CPM has identified no specific location upon which to erect and operate Interstate portable HMA plant no. 25, EPA is not seeking input at this time regarding possible EJ concerns and whether the permittee's operation might cause a disproportionately high environmental or public health impact on an EJ community.

National Historic Preservation Act (NHPA) – Under Section 106 of NHPA (16 U.S.C. 470f), federal agencies are required to take into account the effect a permitted project may have on any sites that are listed or eligible for listing in the National Register of historic properties as well as sites that are considered tribal cultural resources.

Although this permit creates emission limits that allow the permittee to operate on eight Indian reservations in Idaho, Oregon and Washington without being subject to PSD or Title V permitting, CPM cannot actually erect and operate the portable HMA plant until after EPA approves of the specific location. To gain approval for a specific location, the permittee must notify EPA 40 days prior to moving there and supply location-specific information. EPA will within 40 days assess the potential for effects on historic or cultural resources. EPA will contact the State and/or Tribal Historic Preservation Officer (SHPO/THPO) to confirm whether there is a concern about the permittee's proposed new location. Based on that input, if EPA determines, for that specific location that there are no concerns, EPA will send the permittee a letter approving the permittee's move to and operation at the new location. If historic or cultural issues are identified, EPA will work with the permittee and the preservation officer(s) to address the concerns before approving the permittee's relocation.

Given that CPM has identified no specific location upon which to erect and operate Interstate portable HMA plant no. 25, EPA is not seeking input at this time regarding possible NHPA concerns.

National Environmental Policy Act (NEPA) Review – Under Section 793(c) of the Energy Supply and Environmental Coordination Act of 1974, no action taken under the Clean Air Act shall be deemed a major federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. This permit is an action taken under regulations implementing the Clean Air Act and is therefore exempt from NEPA.

New Source Performance Standards (NSPS) – Applicable NSPS requirements, found in 40 CFR 60, can be considered in determining a source's PTE because they are enforceable limits on emissions. Five NSPS subparts may apply to portable asphalt plants: 40 CFR 60, subparts I (asphalt plants), K (tanks), Ka (tanks), Kb (tanks) and IIII (internal combustion engines). The permittee should be aware that newly promulgated NSPS not discussed here may also be applicable.

Subpart I (HMA Plants) applies to the permittee because the asphalt plant was constructed in 1988, well after the June 11, 1973, cutoff for applicability. The standard includes a particulate matter emission limit of 0.04 grains per dry standard cubic foot of exhaust and an opacity limit of 20% or greater. The standard also requires a source test upon startup. The permittee accomplished testing most recently in September 2009, results indicate compliance with the NSPS limit. The NSPS requirements are not included in the permit; however, the permittee is still subject to the standard and responsible for complying with the limit. The particulate matter emission limit was also used to evaluate worst-case "allowable" potential to emit estimates in the emission inventory.

The permittee has five liquid storage tanks. Three NSPS subparts may apply to the storage tanks: 40 CFR 60, Subparts K (Storage Vessels "Commenced" from 6/12/73 to 5/18/78), Ka (Storage Vessels "Commenced" from 5/19/78 to 7/22/84) and Kb (Storage Vessels "Commenced" after 7/23/84). Subparts K and Ka apply to tanks larger than 40,000 gallons and subpart Kb applies to tanks greater than or equal to 75 cubic meters (19,813 gallons). The permittee's tank capacities are as follows: Tank #1 - 27,588 gallon heated liquid asphalt cement storage tank; Tank #2 - 15,000 gallon RFO; Tank #3 - 500 gallon #2 diesel storage tank, Tank #4 - 624 gallon #2 diesel storage tank and Tank #5 - 189 gallon #2 diesel storage tank. Just one of the five tanks is larger than 75 cubic meters and presumably was manufactured after 1984. Storage tanks that are greater than 75 cubic meters but less than 151 cubic meters storing a liquid with a maximum true vapor pressure less than 15.0 kilopascals are exempt from subpart Kb [see 60.110b(b)]. The predicted maximum vapor pressure, based on the daily liquid surface temperature, for liquid asphalt cement in a heated tank can be expected to be less than 1 kPa. Based on the size of the tanks and the maximum true vapor pressure of the stored liquids, none of the tanks are subject to NSPS.

Subpart IIII (Stationary Compression Ignition Internal Combustion Engines) applies to generators manufactured, modified or reconstructed after July 11, 2005. The permittee has two generators. NSPS does not apply to a generator that qualifies as a non-road engine. If a generator operates in the same location for more than 12 months (can be shorter for seasonal sources), it will not be considered a non-road engine and could be subject to this subpart. 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. If the generator does not qualify as a non-road engine, then NSPS applicability must be considered. CPM's two generators associated with Interstate portable HMA plant no. 25 were manufactured in 1991 and 2001 and so, based on the criteria in 60.4200, both are not subject to subpart IIII (see the applicability discussion for MACT subpart ZZZZ below) unless either is modified or reconstructed (as defined in NSPS) after July 11, 2005. The permittee should maintain records that document the manufacture date of the generators, whether the generators are ever modified or "reconstructed" (see NSPS for definitions) and how long the generators operate in the same location (to confirm non-road engines status).

National Emission Standards for Hazardous Air Pollutants (NESHAP) – Applicable NESHAP requirements, found in 40 CFR 61 and 63 can be considered in determining a source's PTE because they are enforceable limits on emissions. There are no NESHAP requirements in 40 CFR part 61 that apply to HMA plants. The emission inventory created for this permit indicate that the permittee's portable HMA plant is a true minor source of hazardous air pollutants; as such, the permittee is not subject to any "major source" MACT standards in 40 CFR part 63. One "area source" MACT standard could apply to generators at portable asphalt plants: 40 CFR 63, subpart ZZZZ (internal combustion engines). The permittee should be aware that newly promulgated NESHAP not discussed here may also be applicable.

Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines) applies to stationary compression ignition engines including generators constructed after June 12, 2006. Generators constructed before that date and located at a non-major source are considered existing area sources and are exempted from subpart ZZZZ in 63.6590(b)(3) at this time. Like NSPS, NESHAP do not apply to generators that qualify as non-road engines (see the NSPS discussion about non-road engines above). If the generators do not qualify as non-road engines, then NESHAP applicability must be considered. Both of CPM's generators associated with Interstate portable HMA plant no. 25 were manufactured before 2006 so, per 63.6590(c), each is not subject to subpart ZZZZ or NSPS subpart IIII. The permittee also should maintain records to document the manufacture date of each generator, as well as any modification or reconstruction, of the generators and how long each generator operates in the same location (to confirm non-road engines status).

Federal Air Rules for Reservations (FARR) – Applicable FARR requirements can be considered in determining a source's PTE. There are five FARR requirements that apply to portable asphalt plants and that could contain enforceable limits for PTE purposes: 49.124 (visible emissions); 49.125 (particulate matter emissions); 49.126 (fugitive particulate matter emissions); 49.129 (sulfur dioxide emissions); and 49.130 (sulfur in fuels). The PTE emissions inventory in Appendix A considered these requirements where appropriate when estimating emissions.

4.3 Permit Conditions

The permit establishes PTE limits as well as monitoring, recordkeeping and reporting requirements necessary to assure compliance with the limits. The permit is organized into 4 sections as follow:

1. General Conditions
2. Emission Limits and Work Practice Requirements

3. Monitoring and Recordkeeping Requirements
4. Reporting Requirements

An explanation of each condition in the permit follows.

Permit Section 1, General Conditions

Permit Condition 1.1 clarifies who the permittee is and that the permitted source is Interstate Plant No. 25 HMA drum dryer (Cedarapids 8830-ADM) and any combination of rock extraction and crushing (when required to be aggregated with this asphalt plant), handling and storage equipment used to produce hot mix asphalt.

Permit Condition 1.2 requires the permittee to comply with the conditions in the permit and any conditions that are created when EPA approves new locations. Those new conditions will be communicated in the letter approval referred to in Permit Condition 1.3.

Permit Condition 1.3 states that compliance with the permit (and site-specific conditions) allows the permittee to operate at future locations approved in writing by EPA. This helps assure that historical or cultural areas will not be disturbed. Permit Condition 1.3 allows EPA to approve locations on eight Indian reservations. To gain approval for locations, the permittee is required in Permit Section 4 to notify EPA of its plans to relocate and to supply EPA with information about the location. Before approving a location, EPA will verify that there will be no effect on listed species or critical habitat (per ESA), no disproportionate impacts upon minority populations and low-income populations (per EPA's EJ policy), and no adverse effects on historic properties (per NHPA). EPA will also confirm that the permittee is still in compliance with the limits that allow them to avoid PSD and Title V. If EPA believes that adverse effects may occur, additional analysis and approval steps (e.g. biological assessments, consultations and etc) may be necessary before a final approval decision can be reached. Approval letters will be posted on EPA's web site and the permit may be periodically revised to incorporate any approved locations to this condition. Compliance with the permit means that the permittee will not be subject to PSD or Title V permits.

Permit Condition 1.4 states that the permit does not relieve the permittee from complying with any other federal, tribal, state, or local laws or requirements that apply. This permit only creates owner requested limits for the purposes explained above. The permit does not contain other Clean Air Act requirements to which the permitted facility is or may be subject, such as the FARR; New Source Performance Standards, 40 CFR Part 60; and National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 61, and 63. If in the future, the permittee chooses to relax the limits in Permit Section 2 such that the facility becomes a major source, permitting requirements may apply.

Permit Section 2, Emission Limits and Work Practice Standards

Permit Conditions 2.1 to 2.6 limit the PTE of the facility to 80% of the major source thresholds for PSD (PM) and Title V (CO, NOx, PM10, SO2 and VOC). The thresholds for each program are 250 tpy (PSD) and 100 tpy (Title V). The Title V limits effectively limit emissions for PSD purposes with the exception of PM which is no longer considered a regulated pollutant for Title V applicability purposes (which is the reason the limit is 200 tpy). These synthetic minor limits allow the permittee to be treated as a minor source for permitting purposes. Each limit is written as a rolling 12-month total where each month, actual emissions must be totaled for the last 12 months to determine compliance with the ton per year limit. Emission factors are relied upon for calculating actual emissions. If a co-located rock crusher is determined to meet the criteria for aggregation (common control; contiguous and adjacent location; and a support relationship) with the asphalt plant, the emissions from the rock crusher must be added to the

emission from the asphalt plant's emissions to determine compliance with these emission limits. EPA should be consulted if there is any question about EPA's aggregation policies and specific aggregation determinations.

Limiting emissions to a value equal to 80% of the major source threshold levels is necessary to account for the unknown uncertainty in the calculations employed when determining actual emissions generated by this source. Limiting these "calculated emissions" to a fraction of the threshold level helps assure that actual emissions remain below the major source threshold level. According to the Clean Air Act Stationary Source Compliance Monitoring Strategy, synthetic minor sources with PTE limits at 80 to 100% of the major source thresholds will be inspected on a once every five year frequency. Setting the limits within that range will help to ensure adequate compliance assurance.

Permit Condition 2.7 requires good operation of the fuel burning equipment (drum dryer, generators and tank heater) and the drum dryer baghouse. Good operation generally implies proper operation and good maintenance of equipment - burner tuning and baghouse bag inspection and replacement as needed. The emission factors relied upon in this permit are assumed to reflect good operation, so good maintenance and operation of the equipment is necessary to ensure the factors are representative of actual operations. This permit condition also requires the baghouse be operated at all times the drum dryer is operated and receives any emissions generated by the drum dryer, again, to assure a level of emission control that reflects good operation and the emission factors relied upon.

Permit Section 3, Monitoring and Recordkeeping Requirements

Permit Conditions 3.1 to 3.5 Visible Emission Monitoring and Recordkeeping - These conditions require a daily survey (a plant walkthrough) for visible emissions, from the drum dryer baghouse stack, as well as specific follow-up steps (investigation, corrective action, RM9 observation and additional recordkeeping and reporting) if visible emissions are observed. If observed visible emissions can not be eliminated within 24 hours, a RM9 opacity observation must be performed. Records of all surveys and observations are required to be kept. This requirement will help ensure that emissions do not exceed the limits created by this permit.

Permit Condition 3.6 Baghouse Inspection and Recordkeeping - This permit condition requires an annual internal inspection of the baghouse to check for wear, corrosion and bag degradation, blinding or channeling that could impair the performance of the unit. Again, the requirement to inspect and appropriately maintain the baghouse is believed to be necessary to ensure the emission factors used in the monthly compliance evaluation represent actual operations.

Permit Condition 3.7 Operations and Production Records - The permittee must track and record the operations and production of the plant (including rock extraction and crushing equipment when required to be aggregated with this asphalt plant) such that facility-wide emissions can be reliably calculated on a monthly and 12-month basis and for troubleshooting compliance concerns. Records shall include all information necessary to perform emission calculations as required by Permit Condition 3.9. Emission estimation techniques, and the data needed, are described in detail in Appendix A to this TSD. Most of the data (production, fuel usage, baghouse pressure drop and fugitive dust controls) must be recorded each day. Other data, such as fuel sulfur and ash content, must be documented for each fuel load or through actual measurements to represent what is being burned at any time. Pursuant to Permit Condition 2.7, the drum dryer is required to be vented to the baghouse at all times and the baghouse must be kept in good operational condition. Permit Condition 3.6 requires the baghouse internals to be inspected annually. The permittee must document any period of operation when (1) the drum dryer is not vented to the baghouse and (2) the baghouse is not in good operation to assure compliance with Permit Condition 2.7.

Permit Condition 3.8 Equipment Installation – Some monitoring requirements will require the permittee to have equipment to indicate the operational parameters that must be recorded. The permittee can also automate some recordkeeping systems to assure data is recorded. For instance, baghouse pressure drop requires pressure reading instrumentation and can be linked to recording equipment. Some combustion devices can also be equipped with fuel usage measurement and recording instrumentation. All records can be manually recorded by plant personnel using the technique (or "system") the permittee determines is appropriate to comply with the permit. If monitoring equipment will be installed and used, this condition requires it to be appropriately calibrated and maintained before the source operates on an Indian reservation.

Permit Condition 3.9 Emissions Calculations – Because compliance with the synthetic minor emission limits created in this permit must be determined on a rolling 12-month basis, this condition requires the permittee to confirm compliance with the emission limits in the permit every month that the source operates on an Indian reservation and continuing for an additional 11 months after leaving an Indian reservation, no matter which jurisdiction the source moves to. Consistent with that, it also requires the permittee to include the emissions the plant emitted during the 11 months prior to moving to an Indian reservation, again, no matter which jurisdiction the plant operated in. Obviously, it would be unrealistic to expect the permittee to anticipate when they will have a project on an Indian reservation such that they will have collected 11 months of data to calculate its emissions in advance of moving an Indian reservation; therefore, permittees with EPA-issued permits that contain synthetic minor limits should always collect the necessary data to calculate emissions from its plant, no matter where they operate. This will allow them to be able to produce accurate emissions calculations for any period of time necessary. If the recordkeeping is routine for the plant personnel, it is also less likely that the source will make recordkeeping errors during the time it needs to report to EPA.

Here is an example to demonstrate how the rolling 12-month limits work:

> The permittee moves its plant to an Indian reservation and begins operating in June 2011. While the plant is operated, the permittee records all of the production records required in Permit Condition 3.7. By July 20, 2011 (20 days after the month of June), the permittee must use the production records for June 2011 and emission calculation techniques in Appendix A to this TSD to calculate its emissions (in tons) for six pollutants. If they haven't yet, the permittee must also use previously recorded production records and the same emission calculation techniques to calculate its emissions (in tons) for the 11 months prior to June 2011 (July 2010 to May 2011), no matter where they had been operating during that time period. They must add the calculated June 2011 emissions to the calculated July 2010 - May 2011 emissions to determine whether they are in compliance with the ton per year emission limits in the permit. If the calculated emissions exceed a permit limit, the permittee must notify EPA pursuant to Permit Condition 4.3.2 in writing no later than 10 days after identifying the exceedance (in this example by July 30, 2011). If the plant continues to operate, the calculation routine is repeated within 20 days after the next month of operation. If the plant moves to a location off an Indian reservation before the end of June 2011, the permittee must continue to repeat the calculation routine by tracking production and calculating emissions for the months July 2011 thru May 2012 no matter where it is located, notifying EPA if the calculated emissions ever exceed the permit limits.
>
> By February 15, 2012, the permittee must send to EPA the emission report required in Permit Condition 4.4 including the calculated monthly emissions and 12-month rolling total emissions for the time period time period July 2010 thru December 2011. By June 30, 2012, the permittee must send EPA the emission report required in Permit Condition 4.4 including the calculated monthly emissions and 12-month rolling total emissions for the time period January 2012 to May 2012. The two reports will include a total of 23 months (July 2010 thru May 2012) of calculated

emissions and twelve 12-month rolling emission totals (first 12-month period ending June 2011 and last 12-month period ending May 2012). Note that during this time frame, the plant would have been required (by the FARR registration rule, not by this permit) to submit an annual registration report of emissions emitted during the time they operated on an Indian reservation - this is a separate requirement from the permit requirement to demonstrate compliance with the permit limits.

The emission calculations should be based on the best emission factors available and actual operational and production data. Calculations should be performed as they are described in Appendix A; however, assumptions in Appendix A should be verified as needed and when better information is available, it should be used. For instance, emission factors from site-specific emission testing would likely be more representative than basing emission on NSPS limits or AP-42. Techniques used for the calculations, including any new assumptions, must be clearly documented and acceptable to EPA. The permit does not require the permittee to calculate emissions for operations off an Indian reservation unless those operations fall within the reporting period captured by the permit (11 months before operating on an Indian reservation and 11 months after leaving an Indian reservation); but obviously, the permittee must ensure the information necessary is available when needed.

Permit Condition 3.10 Records Retention – This requirement, to keep all of the required records on site for a period of five years, makes the permit consistent with other EPA recordkeeping requirements.

Permit Section 4, Reporting Requirements

Permit Condition 4.1 Notification before Relocation – The permittee must be able to anticipate relocations of the permitted source (including rock extraction and rock crushing equipment when required to be aggregated with this asphalt plant) well enough to be able to provide EPA information about the new location and its plans for operation at least 40 days before moving; earlier notification would be even better. Information about the permittee's plans to operate will allow EPA to anticipate possible changes to the permittee's emissions when at the new location. Emissions data allows EPA to confirm past compliance with the limits that allow the permittee to avoid PSD and Title V. Location information helps EPA determine agency permitting jurisdictions. If co-located with other operations, EPA can assess whether the operations should be aggregated for program applicability purposes. Other location information allows EPA to assess possible impacts under ESA, EJ and NHPA before approving the new location. If ESA assessments or approvals (even through other permitting programs) or past archeological surveys are available, the permittee should submit them to facilitate EPA's review. The permittee cannot operate at any new locations until they are approved in writing by EPA. Once a specific location has been approved, the permittee still must notify EPA before going there, but no longer needs to submit certain location information already reviewed for that location.

Permit Condition 4.2 Notification after Relocation – When notifying EPA of the actual date of relocation, the permittee can make adjustments/corrections to what was previously reported under Permit Condition 4.1 prior to relocation to ensure EPA has accurate information. The permittee also will be expected to confirm actual dates of its physical move and operation.

Permit Condition 4.3 Notification of Deviations – To expedite the time it takes for EPA to learn that the permittee is having compliance problems, this condition lists the information and timing for notifying EPA about potential deviations from permit conditions. Operating circumstances that are of greatest concern (baghouse not operating or functioning properly) must be reported by telephone within 24 hours of discovery with written follow-up within 10 days. Calculated exceedences of the permit emission limits are expected to be reported in writing within 10 days of discovery. Notifications should include a clear,

complete explanation of the exceedance or situation that warrants the notification so EPA understands the severity of the situation.

Permit Condition 4.4 Annual Report – If the permittee operated on an Indian reservation during a given calendar year, the permittee must submit an emission report to EPA that provides a summary of the operations (dates and locations) and each calculated monthly and 12-month rolling emission total required in Permit Condition 3.9, including any 12-month totals exceeding the permit limits that were previously sent to EPA under the deviation notification requirement in Permit Condition 4.3. The emission report is due annually by February 15 following any year in which the source operated on an Indian reservation. If a source operates on an Indian reservation every year, the source is required to report every year by February 15.

In the case where a source does not operate on an Indian reservation in a given calendar year, but operated on an Indian reservation the previous year, the 12-month rolling totals from the previous year of operation that extend into the new year (recall that 12-month rolling totals extend 11 months after operation ends) will not be captured in the last annual report; a final report that will capture those missing 12-month rolling totals will then be due within 13½ months after leaving the reservation the previous year. If the last month of operation on an Indian reservation happens to be January, the last annual report and final report will be due at the same time; EPA will expect only one report in that case.

The annual report ensures that EPA will receive periodic reports from plants that operate on Indian reservations continually or at least every year. While monthly emissions data might show up in more than one report, each 12-month rolling total should only be reported once. For instance, 12-month rolling totals reported in an annual report due February 15 should not be repeated in a final report later than year; the final report would only include a partial year of 12-month totals that were not reported in the previous annual report. Note that the emission report required by this permit is different than the annual registration report required by 40 CFR 49.138 in the FARR.

Permit Condition 4.5 Mailing Addresses and Telephone Numbers – The telephone number for telephone notifications has been included here. Copies of all notifications and reports must be sent to the Tribal environmental contacts listed that represent the reservation(s) on which the source operated and about which the source is reporting.

5. Permit Procedures

5.1 Permit Revisions, Termination and Reissuance

The permittee may request EPA to revise the conditions of this permit by submitting an application that contains the information specified in 40 C.F.R. 49.139(d). EPA will revise the permit using the same procedures that apply to initial permit issuance.

If the permittee wishes to terminate the permit, a written request must be submitted to EPA explaining the reasons for the request and, if necessary for continued operation, submitting applications for any Clean Air Act permits or approvals that the permittee avoided by establishment of the limits contained in this permit.

This permit may be terminated, revised, or revoked and reissued by EPA for cause. Cause exists to terminate, revise, or revoke and reissue this permit under the following circumstances:

1. This permit contains a material mistake;
2. Inaccurate statements were made in establishing the terms or conditions of this permit;

3. The permittee fails to comply with any condition of this permit; or
4. This permit must be terminated, revised, or reopened and reissued to assure compliance with Clean Air Act requirements.

EPA will use the same proceedings to terminate, revise, or revoke and reissue a permit for cause as for initial permit issuance. Before initiating proceedings to terminate, revise, or revoke and reissue a permit, EPA will provide the permittee at least 30 days' advance written notice of EPA's intent to terminate, revise, or revoke and reissue the permit, except that EPA may provide a shorter notice period in the case of an emergency.

5.2 Public Notice and Comment

As required under 40 CFR § 49.139(c), the draft operating permit was publicly noticed and made available for public comment as follows:

1. Made available for public inspection a copy of the draft operating permit prepared by EPA, the technical support document for the draft permit, the application, and all supporting materials in twelve locations (see the public notice in the administrative record for a list) including at least one location on each of the eight reservations (see 40 CFR 49.139(c)(5)(i));
2. Published the public notice for this draft permit of the availability of the draft permit and supporting materials and of the opportunity to comment in six newspapers of general circulation in each reservation: Clearwater Progress, Coeur d'Alene Press, Lewiston Tribune, East Oregonian, Spokesman Review and Yakima Herald (see 40 CFR 49.139(c)(5)(ii));
3. Provided copies of the notice to the owner or operator of the air pollution source and each Tribal governing body and Tribal environmental organizations for each of the eight reservations as well as the Idaho Department of Environmental Quality, Oregon Department of Environmental Quality, Benton Clean Air Agency, Southwest Clean Air Agency, Spokane Regional Clean Air Agency, Yakima Regional Clean Air Agency and Washington Department of Ecology (see 40 CFR 49.139(c)(5)(iii)); and
4. Provided for a 30-day period for submittal of public comments, starting upon the date of publication of the notice - note that no public hearing or public comment period extension were requested or held (see 40 CFR 49.139(c)(5)(iv)).

The public comment period for this permit ran from June 17, 2010 to July 19, 2010. EPA received comments from three organizations: CPM Development Corporation (via email from Mark Peterson of Aspen Consulting and Engineering, Inc), Kalispel Tribe of Indians Natural Resources Department (via email from Ken Merrill, Water Resources Manager), and Yakama Nation Environmental Management Program (via letter from Elizabeth Sanchey, Program Manager). As required in 40 CFR § 49.139(c)(5)(iv) and (c)(6), EPA has considered the comments in preparing a final permit and technical support document and has documented a response to each comment below explaining whether any changes to the permit resulted and the reason the change was or was not made. As required in 40 CFR 49.139(c)(7), EPA will send the final permit and technical support document to each person who provided comments on the draft permit to operate and EPA will make available the final permit and technical support document at all of the locations where the draft permit was made available.

Response to Comments from CPM Development Corporation

Drum Dryer Visible Emissions Monitoring is Unnecessary – Permit Conditions 3.1 through 3.5 require the permittee to conduct a daily visual observation of the exhaust exiting the drum dryer baghouse stack

to check for opacity. If any opacity is observed, the permittee is required to perform a corrective action followed by EPA Reference Method 9 (RM9) testing to confirm that the control equipment is functioning properly. CPM maintains that a 0 percent opacity threshold and subsequent RM9 testing is too restrictive and does not necessarily accomplish what EPA is trying to confirm.

Aspen Consulting & Engineering, Inc. (Aspen) has provided CPM with stack test observations for several asphalt plant drum dryers employing a baghouse. The data presented below reflects Aspen's observations recorded over the last 5 years, and CPM believes the information supports its position stated above. The data confirms two things. First, a strong correlation does not exist for particulate matter emissions and any of the parameters recorded during stack testing. Of the parameters monitored, drum dryer exhaust stack opacity is far from providing the best correlation to particulate matter emissions. Baghouse pressure drop provides a stronger correlation than opacity by a 2-to-1 margin. Second, relatively low opacity readings were recorded during all stack tests in which the drum dryer failed to demonstrate compliance with the NSPS Subpart I particulate matter standard of 0.04 grains per dry standard cubic foot. (See observations for Source ID 19, 23 and 29.) Higher opacity readings were recorded during tests in which compliance with the standard was achieved.

Asphalt Plant Stack Test Data

Source ID	FH-PM gr/dscf	Opacity %	Stack Temp Deg F	Ambient Temp Deg F	Fuel Type	BH Press Drop in H2O	Production TPH	RAP %
1	0.016	5	308	80	ND	3.0	251	0
2	0.0121	0	267	80	ND	3.3	306	0
3	0.0023	0	253	55	Gas	1.8	163	0
4	0.0293	0	275	75	Oil	4.8	150	ND
5	0.0075	7.5	204	95	ND	1.4	80	ND
6	0.0031	0	254	40	Gas	1.6	153	ND
7	0.0107	0	261	52	Oil	8.9	300	15
8	0.0138	0	485	68	ND	4.0	485	15
9	0.0163	0	267	80	Oil	6.0	165	ND
10	0.0078	0	275	75	Oil	8.7	408	18.4
11	0.033	7.5	253	80	Oil	3.5	383	0
12	0.0093	0	252	80	Oil	4.2	369	15.7
13	0.0092	0	266	94	Gas	4.2	385	15.9
14	0.0097	0	228	75	Gas	4.2	304	25.7
15	0.0066	0	260	75	ND	3.2	157	ND
16	0.0367	0	177	60	ND	5.5	150	ND
17	0.0023	5.4	218	65	Gas	1.3	226	10
18	0.0064	0.4	208	90	Oil	3.0	280	5
19	0.0992	2.3	200	78	Oil	6.4	240	25
20	0.0163	0	275	80	Gas	4.5	271	15
21	0.0005	0	190	75	Oil	3.3	399	25
22	0.0069	0	285	62	Oil	2.2	265	15
23	0.1269	3.8	250	65	Oil	7.0	227	25
24	0.0023	1	307	75	ND	6.2	230	ND
25	0.0037	0	235	60	Oil	3.2	208	15
26	0.0098	0	274	60	Oil	3.9	308	13.9
27	0.0155	0	210	75	Oil	6.8	275	0
28	0.0131	0.42	246	80	ND	6.3	327	0
29	0.0433	0.27	225	75	ND	4.4	157	ND
30	0.0019	0	180	63	ND	1.4	330	0
31	0.0095	3.1	264	75	Oil	4.5	323	0
32	0.0099	0	285	65	Oil	3.6	243	25
33	0.0024	3.1	130	48	ND	1.3	180	ND
Correlation factor:		**0.236**	**-0.072**	**0.060**		**0.408**	**-0.130**	**0.351**

EPA Response – First, it is important to clarify that while corrective action is required by Permit Condition 3.3 if the daily survey required by Permit Condition 3.2 identifies any visible emissions, the 30-minute Reference Method 9 observation is required by Permit Condition 3.4 only if visible emissions persist after having performed corrective action. It is also important to note that if only one 15-second reading of 0% opacity is documented during each daily survey, then the permittee is not required to perform corrective action.

EPA expects baghouse performance to be fairly consistent, varying only as the fabric filter deteriorates over time. As baghouse performance deteriorates, visible emissions tend to increase and persist. EPA generally expects no visible emissions from a properly operated baghouse; however, test data shows that for asphalt plants some short-term variations in particulate and visible emissions can be expected. The variations can be attributed to a variety of reasons including source operational changes, baghouse cleaning cycles or the presence of organics that more readily condense during cool, humid weather conditions. EPA assumes that, for asphalt plants, if a baghouse is able to operate for some period of time each day with no visible emissions, the baghouse is likely operating correctly and does not require maintenance.

This concept forms the basis for the monitoring approach in the permit. The emission factor used to determine compliance with the particulate emission limit in the permit was originally based on the NSPS emission limit. EPA expects an individual plant's particulate emissions to increase as the plant's visible emissions increase. If visible emissions increase substantially over the level at which the plant demonstrated (in a source test) compliance with the NSPS, then there is reason to be concerned about whether the emission factor adequately represents current emissions and the permittee should confirm that the baghouse is still operating correctly. EPA assumes that if the baghouse never has a clear exhaust on any given day, then the unit probably requires attention.

Sophisticated, but expensive, techniques exist to monitor baghouse performance including continuous emission monitoring systems, continuous opacity monitoring systems and baghouse leak detectors. The monitoring technique required in the permit is an attempt by EPA to make particulate monitoring more practical while providing a reasonable assurance that the plant is in compliance.

During the public comment period, CPM provided EPA with test data for a large number of other, unidentified asphalt plants, claiming that there is a poor correlation between opacity and particulate emissions. Given the likely differences between the plants, the baghouses, their fuels and their operating conditions, EPA does not expect to see a good correlation in the data set. In fact, the only trend that can be concluded from the data set is that only asphalt plants with greater than 0% opacity exceeded the NSPS emission limit. Compliance monitoring strategies need to be based on source-specific data.

Source test data, including visible emission data, for each plant was also submitted by CPM as part of their permit application. That data demonstrated that two of the three CPM-owned plants had no visible emissions during their source test that demonstrated compliance with the NSPS emission limit upon which the particulate emission factor was based. The third plant recorded 0% opacity during two of the three test runs. For the other test run, the plant emitted 5% opacity for 15 of 24 observations and 0% for the rest of the observations (each observation represents a 15-second period). While all three runs demonstrated compliance with the NSPS emission limit, the particulate emissions were considerably higher during the test run where visible emissions were observed, supporting EPA's theory of increased opacity means increased particulate emissions. Furthermore, the permittee has not demonstrated compliance when the baghouse continuously operates with visible emissions greater than 0%.

EPA believes that the visible emissions monitoring requirement is necessary to assure compliance. EPA remains confident that a 0% opacity threshold for corrective action is neither too burdensome nor too stringent given that the permittee has all day to identify a single 15-second 0% opacity observation and the permittee has demonstrated the ability to reach this threshold. The monitoring assures that recorded emissions are indeed what the permittee reports them to be. No change will be made to the permit as a result of this comment.

Request to Amend Drum Dryer Visible Emissions Monitoring Requirement – If EPA continues to believe that daily visible emissions monitoring is necessary to provide assurance that particulate matter emissions are below the NSPS Subpart I particulate matter limit, CPM respectfully requests that Permit Condition 3.2.4 be amended to require RM9 testing only if the initial survey indicates drum dryer baghouse stack plume opacity greater than 10 percent.

> EPA Response – The permittee has not demonstrated that the plant can comply with the NSPS (the basis for the emission factor used to demonstrate compliance) while emitting 10% opacity for the duration of a source test. The data provided by CPM also does not support its request to amend Permit Condition 3.2.4. No opacity readings greater than 5 percent were observed during stack tests conducted by the permittee for the plants being permitted. In fact, the submitted test data suggests that particulate emissions can increase dramatically with relatively small increases in opacity. EPA believes that a properly-operated baghouse should have no visible emissions for at least some period of time on every day of operation. No change will be made to the permit as a result of this comment.

Response to Comments from Kalispel Tribe of Indians Natural Resources Department

Appropriateness of EPA Permitting Action – While EPA may have the jurisdiction to issue non-Title V operating permits to portable asphalt plants, the Kalispel Tribe of Indians (Kalispel Tribe) retains the right to deny and/or condition use of these permits on the Kalispel Reservation. The quality of life our membership and community enjoys on its lands is very important to us. Thus unsightly and otherwise burdensome impositions by third parties will be critically reviewed and assessed as to their benefit to the Kalispel Tribe.

The Kalispel Tribe Natural Resources Department has no intent of allowing an asphalt batch plant to be sited on the Kalispel Reservation. It does not seem appropriate for EPA to continue to process a blanket application and issue a permit to a paving company for an air pollutant emissions permit on Kalispel land where it will not be operating. Please reconsider the appropriateness of EPA continuing to pursue this permitting action.

> EPA Response – As stated in Permit Condition 1.4, compliance with this permit does not relieve the permittee from compliance with tribal laws or regulations. EPA's issuance of the permit and subsequent approval of specific plant locations does not prevent the Kalispel Tribe from creating or applying tribal rules that limit or prevent the operation of the asphalt plant on the Kalispel Reservation. EPA's decision to approve or disapprove this permit, however, must be and is consistent with federal laws, regulations and policy.
>
> The permit generally creates emission limits for the asphalt plant as well as an approval process for specific future locations. After the permit is issued, the permittee may or may not seek approval to operate at a specific location on the Kalispel Reservation. In the event that the permittee notifies EPA of its plans to operate on the Kalispel Reservation, EPA will notify the Tribe and seek the Tribe's input regarding compliance with the permit and federal requirements.
>
> We believe this permit action is consistent with federal laws, regulations and policy. No change will be made to the permit as a result of this comment.

Response to Comments from Yakama Nation Environmental Management Program

EPA Trust Responsibility – The mission of the Yakama Nation Environmental Management Program (EMP) is to protect the land, air, water, and other natural resources of the Yakama Nation for future

generations. Your Agency has a trust responsibility to assist us in protecting and improving human health while adhering to governing resolutions and the Treaty of 1855. Because you have the technical expertise to evaluate and balance environmental harms with the benefits of sound development, we trust that you have used sound science to ensure that no detrimental health effects will be placed on our population. You may know that the Yakima Valley has been identified by EPA as an Environmental Justice Showcase Community. At this time, we are not aware of the long-term health or environmental consequences these sources will have on our Reservation. Please keep us informed of any changes to these permits, enforcement actions concerning these plants, or scientific findings you may have to assist our tribal Nation.

EPA Response – EPA will keep the Yakama Nation informed as requested. No change will be made to the permit as a result of this comment.

6. Abbreviations and Acronyms

AFS	Aerometric Information Retrieval System Facility Subset
CFR	Code of Federal Regulations
CO	Carbon monoxide
EJ	Environmental Justice
EPA	United States Environmental Protection Agency (also U.S. EPA)
ESA	Endangered Species Act
FARR	Federal Air Rules for Reservations
FR	Federal Register
HAP	Hazardous air pollutant (plural: HAPs)
HMA	Hot mix asphalt
MACT	Maximum Achievable Control Technology (Title 40 CFR Part 63)
NESHAP	National Emission Standards for Hazardous Air Pollutants (Title 40 CFR Parts 61 and 63)
NHPA	National Historical Preservation Act
NOx	Nitrogen oxides
NSPS	New Source Performance Standards (40 CFR Part 60)
PM	Particulate matter
PM10	Fine particulate matter (≤ 10 microns)
PSD	Prevention of Significant Deterioration (40 CFR Part 52)
PTE	Potential to emit
RAP	Recycled asphalt pavement
SO2	Sulfur dioxide
Title V	Title V of the Clean Air Act
TPY	Tons per year
VOC	Volatile organic compound

Appendix A

Emission Inventory

CPM Development Corporation
Interstate Concrete and Asphalt Company
Portable Hot Mix Asphalt Plant No. 25

Technical Support Document
Non-Title V Air Quality Operating Permit
R10NT501400

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Summary of Facility Potential Criteria Air Pollutant Emissions

Potential to Emit, (tons per year)

Point Sources

	EU 1	EU 2	EU 3	EU 4	EU 5	EU 6	EU 7	EU 8	EU 9	
	Drum Dryer	Diesel Generators	Storage Tanks	Asphalt Tank Heater	Aggregate Handling	Silo Filling	Truck Loading & Fumes	Traffic	Wind Erosion	**Point Source Subtotals**
Carbon Monoxide (CO)	199.29	28.27	0.02	0.03		1.81				229.41
Lead (Pb)	0.0230	0.00	0.00	0.00		0.00				0.0233
Nitrogen Oxides (Nox)	84.32	108.99	0.00	0.48		0.00				193.79
Particulates (PM)	28.09	3.94	0.00	0.66		0.51				33.20
Fine Particulates (PM10)	5.98	3.94	0.00	0.02		0.51				10.45
Sulfur Dioxide (SO2)	320.59	17.04	0.00	1.71		0.00				339.34
Volatile Organic Compounds (VOC)	49.06	3.76	0.17	0.00		18.68				71.68

Fugitive Sources

	EU 1	EU 2	EU 3	EU 4	EU 5	EU 6	EU 7	EU 8	EU 9	
	Drum Dryer	Diesel Generator	Storage Tanks	Asphalt Tank Heater	Aggregate Handling	Silo Filling	Truck Loading & Fumes	Traffic	Wind Erosion	**Fugitive Source Subtotals**
Carbon Monoxide (CO)					0.00		2.61	0.00	0.00	2.61
Lead (Pb)					0.00		0.00	0.00	0.00	0.0000
Nitrogen Oxides (Nox)					0.00		0.00	0.00	0.00	0.00
Particulates (PM)					13.06		0.28	241.09	0.96	255.39
Fine Particulates (PM10)					6.18		0.28	62.10	0.45	69.01
Sulfur Dioxide (SO2)					0.00		0.00	0.00	0.00	0.00
Volatile Organic Compounds (VOC)					0.00		7.58	0.00	0.00	7.58

All Sources

	EU 1	EU 2	EU 3	EU 4	EU 5	EU 6	EU 7	EU 8	EU 9	
	Drum Dryer	Diesel Generators	Storage Tanks	Asphalt Tank Heater	Aggregate Handling	Silo Filling	Truck Loading & Fumes	Traffic	Wind Erosion	**Plantwide Totals**
Carbon Monoxide (CO)	199.29	28.27	0.02	0.03	0.00	1.81	2.61	0.00	0.00	232.02
Lead (Pb)	0.0230	0.0003	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.0233
Nitrogen Oxides (Nox)	84.32	108.99	0.00	0.48	0.00	0.00	0.00	0.00	0.00	193.79
Particulates (PM)	28.09	3.94	0.00	0.66	13.06	0.51	0.28	241.09	0.96	288.59
Fine Particulates (PM10)	5.98	3.94	0.00	0.02	6.18	0.51	0.28	62.10	0.45	79.46
Sulfur Dioxide (SO2)	320.59	17.04	0.00	1.71	0.00	0.00	0.00	0.00	0.00	339.34
Volatile Organic Compounds (VOC)	49.06	3.76	0.17	0.00	0.00	18.68	7.58	0.00	0.00	79.26

Plantwide PTE Limits

Carbon Monoxide (CO)	80	tpy, based on emission limit in FARR Non-Title V permit
Lead (Pb)	N/A	
Nitrogen Oxides (Nox)	80	tpy, based on emission limit in FARR Non-Title V permit
Particulates (PM)	200	tpy, based on emission limit in FARR Non-Title V permit
Fine Particulates (PM10)	80	tpy, based on emission limit in FARR Non-Title V permit
Sulfur Dioxide (SO2)	80	tpy, based on emission limit in FARR Non-Title V permit
Volatile Organic Compounds (VOC)	80	tpy, based on emission limit in FARR Non-Title V permit

Notes:

1. The "All Sources" table sums the values in the "Point Sources" and "Fugitive Sources" tables above
2. PM2.5 is assumed to be 0-100% of PM10; because this project is limiting emissions below PSD and Title V applicability thresholds, PM2.5 emission have not been estimated
3. Condensible particulate matter has not been included in PM10 emissions based on EPA's transition period for PM2.5 - see 73FR28321

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Summary of Facility Potential Hazardous Air Pollutant (HAP) Emissions

Potential to Emit, (tons per year)

Inorganics	EU 1 Drum Dryer	EU 2 Diesel Generators	EU 3 Storage Tanks	EU 4 Asphalt Tank Heater	EU 6 Silo Filling	EU 7 Truck Loading & Fumes	Single HAP Plantwide Totals (tpy)
Antimony Compounds	2.76E-04	0.00E+00		0.00E+00			2.76E-04
Arsenic Compounds (incl arsine)	8.58E-04	1.32E-04		1.35E-05			1.00E-03
Beryllium Compounds	0.00E+00	9.87E-05		1.01E-05			1.09E-04
Cadmium Compounds	6.29E-04	9.87E-05		1.01E-05			7.37E-04
Chromium Compounds (incl hexavalent)	8.43E-03	9.87E-05		1.01E-05			8.54E-03
Cobalt Compounds	3.99E-05	0.00E+00		0.00E+00			3.99E-05
Lead Compounds (not elemental lead)	2.30E-02	2.96E-04		3.04E-05			2.33E-02
Manganese Compounds	1.18E-02	1.97E-04		2.02E-05			1.20E-02
Mercury Compounds	3.99E-03	9.87E-05		1.01E-05			4.09E-03
Nickel Compounds	9.66E-02	9.87E-05		1.01E-05			9.67E-02
Phophorus Compounds	4.29E-02	0.00E+00		0.00E+00			4.29E-02
Selenium Compounds	5.37E-04	4.93E-04		5.06E-05			1.08E-03
Organics							
Acetaldehyde	1.99E+00	3.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E+00
Acrolein	3.99E-02	5.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.04E-02
Benzene	5.98E-01	2.60E-02	5.02E-03	0.00E+00	5.98E-03	4.19E-03	6.39E-01
Bromomethane (methyl bromide)	0.00E+00	0.00E+00	7.69E-04	0.00E+00	9.15E-04	7.74E-04	2.46E-03
1,3-Butadiene	0.00E+00	1.21E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.21E-04
Carbon Disulfide	0.00E+00	0.00E+00	2.51E-03	0.00E+00	2.99E-03	1.05E-03	6.55E-03
Chloroethane (ethyl chloride)	0.00E+00	0.00E+00	6.28E-04	0.00E+00	7.47E-04	1.69E-05	1.39E-03
Chloromethane (methyl chloride)	0.00E+00	0.00E+00	3.61E-03	0.00E+00	4.30E-03	1.21E-03	9.11E-03
Cumene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Dichlorobenzene	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.87E-03	8.87E-03
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)	3.22E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-10
Ethyl Benzene	3.68E-01	0.00E+00	5.96E-03	0.00E+00	7.10E-03	2.26E-02	4.04E-01
Formaldehyde	4.75E+00	5.99E-03	1.08E-01	1.47E-03	1.29E-01	7.09E-03	5.00E+00
Furans (all PCDF)	6.13E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.13E-08
Hexane (incl n-Hexane)	1.41E+00	0.00E+00	1.57E-02	0.00E+00	1.87E-02	1.21E-02	1.46E+00
Hydrogen Chloride	3.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.22E-01
Isooctane (2,2,4-trimethylpentane)	6.13E-02	0.00E+00	4.86E-05	0.00E+00	5.79E-05	1.45E-04	6.16E-02
Methyl Chloride (chloromethane)	0.00E+00	0.00E+00	4.24E-05	0.00E+00	5.04E-05	0.00E+00	9.28E-05
Methyl Chloroform (1,1,1-trichloroethane)	7.36E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.36E-02
Methyl tert-Butyl Ether (MTBE)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene[1] (also a POM)	9.96E-01	4.14E-03	0.00E+00	0.00E+00	7.08E-03	2.76E-02	1.04E+00
Phenol	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.59E-03	2.61E-02	3.07E-02
Polycyclic Organic Matter* (incl naphthalene)	1.36E+00	6.82E-03	0.00E+00	7.95E-05	4.44E-02	5.21E-02	1.46E+00
Propionaldehyde	1.99E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.99E-01
Quinone	2.45E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.45E-01
Styrene	0.00E+00	0.00E+00	8.47E-04	0.00E+00	1.01E-03	5.90E-04	2.45E-03
Tetrachloroethane	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.21E-04	6.21E-04
Toluene	4.45E+00	9.64E-03	9.73E-03	0.00E+00	1.16E-02	1.69E-02	4.49E+00
Xylene (incl isomers and mixtures)	3.07E+00	6.63E-03	4.03E-02	0.00E+00	4.80E-02	3.95E-02	3.20E+00

	EU 1 Drum Dryer	EU 2 Diesel Generators	EU 3 Storage Tanks	EU 4 Asphalt Tank Heater	EU 6 Silo Filling	EU 7 Truck Loading & Fumes
Emission Unit HAP Totals	16.360	0.060	0.193	0.002	0.279	0.194

Plantwide HAP Total	17.089	tons per year	
Highest Plantwide Single HAP	5.004	tons per year	(formaldehyde)

Notes:

1. Emission-Unit HAP Totals will not equal the sum of individual pollutants
2. Isomers of xylene (m-, p-, o-) are grouped as Xylenes for applicability even though the individual isomers are each listed HAPs in the Clean Air Act
3. Emission units #5, 8 and 9 are not known to emit HAPs

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#1 Drum Dryer**
Description: Hot Mix Asphalt Plant Drum Dryer - parallel drum mix design, Cedarapids 8830-ADM, manufactured 1988
Control: Cedarapids Model 11060-P Baghouse
Fuel: RF0, #2 diesel, propane or natural gas (RF0, reprocessed fuel oil is called waste oil by AP-42)
Capacity: 350 tph hot mix asphalt Burner: 75 mmBtu/hr capacity
Operation: 8760 hours/year

Potential to Emit, (tons per year)

	RF0		#2 Diesel		Natural Gas		Max
	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	PTE TPY
CO	0.13	199.3	0.13	199.3	0.13	199.3	199.3
Lead	1.5E-05	0.023	1.5E-05	0.023	6.2E-07	0.001	0.02
NOx	0.055	84.3	0.055	84.3	0.026	39.9	84.3
PM	0.018	28.1	0.018	28.1	0.018	28.1	28.1
PM10	0.004	6.0	0.004	6.0	0.004	6.0	6.0
SO2	0.209	320.6	0.054	82.7	0.007	10.7	320.6
VOC	0.032	49.1	0.032	49.1	0.032	49.1	49.1

Estimation Explanations
Emission factor (EF) units are lb/ton HMA product
Worst-case PTE is the higher emitting of the fuel options taking into consideration the most stringent emission limits that exist

CO factor: For RFO, diesel, natural gas: AP-42 3/04, Hot Mix Asphalt Plants, Table 11.1-7, uncontrolled (factor can vary greatly)

Lead factor: For RFO, diesel, natural gas: AP-42 3/04, Table 11.1-12, fabric filter controlled (note: assumes fabric filter is necessary to meet NSPS PM limit)

NOx factor: For RFO, diesel, natural gas: AP-42 3/04, Table 11.1-7 RF0, uncontrolled

PM factor: Option 1: EF based on NSPS limit (40 CFR 60.92, Subpart I) and actual test data as follows (RF0, diesel, natural gas):
EF = (gr/dscf) / (7000 gr/lb) * (dscf/min) * (60 min/hr) / (tph HMA)
NSPS PM Limit = 0.04 gr/dscf (tested at 0.026 gr/dscf counting front and back half)
stack flow during test = 17263 dscf/min measured during September 2009 test
production during test = 323 ton/hr HMA measured during September 2009 test
NSPS-based emission factor = 0.018 lb/ton HMA
Note: NSPS limit is more strict than FARR PM limit of 0.1 gr/dscf, so NSPS will be used for PTE
Option 2: EF Based on AP42, 3/04, Table 11.1-3, PM=0.014 lb/ton for RF0, diesel and natural gas
Note: NSPS based factor is very close to controlled EF from AP-42, so will assume fabric filter is necessary to meet NSPS for all particulates

PM10 factor: AP-42 3/04, Table 11.1-3 -- fabric filter controlled filterable PM10 for RF0, diesel, natural gas (does not include condensible particulate)
filterable = 0.0039 organic = 0.0074 inorganic = 0.012 PM10 EF = 0.0039
Note: assumes fabric filter control is required for NSPS, so will use controlled factors for PM10
Emission factor does not include condensible PM pursuant to EPA's May 16, 2008 final rulemaking.

SO2 factor: Option 1: EF based on FARR combustion stack SO2 limit (40 CFR 49.129(d)(1)) = 500 ppm (dry volume basis at 7% O2) for RF0 oil, diesel, natural gas
EF = (ppm limit) * (1.66E-7 lb/dscf / ppm) * (21-O2test) / (21-O2limit) * (dscf test/min) * (60 min/hr) / (tph HMA)
SO2 limit = 500 ppm @ 7%O2
measured flow rate = 17263 dscf/min measured during September 2009 test
O2 during test = 10 % assumed value
FARR limit O2 = 7 %
production during test = 323 ton/hr HMA
emission factor = 0.209 lb/ton HMA
Note: FARR process SO2 500 ppm limit is not corrected for O2, so in this case is less strict than the combustion limit
Note: For RFO: AP-42 3/04, Table 11.1-7 (0.058 lb/ton) results in lower emissions, but assumed fuel S content is not listed
Note: For #2 diesel: AP-42 3/04, Table 11.1-7 (0.011 lb/ton) results in lower emissions
Note: For natural gas: AP-42 3/04, Table 11.1-7 (0.0034 lb/ton) results in lower emissions
Option 2: EF based on FARR fuel % sulfur limit (40 CFR 49.130(d)(4)) used oil and #2 diesel are %S by wt
For used oil: EF = (%Slimit / 100)*(max BTU/hr)/(140000 Btu/gal fuel)*(gal fuel/7.88 lb)*(2 lb SO2 per lb S)/(max tph HMA)-(SO2 staying in HMA)
For #2 diesel: EF = (%Slimit / 100)*(max BTU/hr)/(140000 Btu/gal fuel)(gal fuel/7.05 lb)*(2 lb SO2 per lb S)/(max tph HMA)*(SO2 fraction not in HMA)
For nat gas: EF = (ppmSlimit * 32 / 385.1E6)*(max mmBTU/hr)/(1020 Btu/cf fuel)*(2 lb SO2 per lb S)/(max tph HMA)*(1 - SO2 staying in HMA)
nat gas conversion: (ppm S) * (MW) / (385.1E6) = lb S / cf nat gas

	used oil	diesel	nat gas	
FARR S limit =	2	0.5	400	% by weight (nat gas is standard ppmv)
max burner firing rate =	7.50E+07	7.50E+07	7.50E+07	BTU/hr
fuel heating value =	1.40E+05	1.40E+05	1020	BTU/gal (nat gas is BTU/cf)
fuel weight =	7.88	7.05		lb/gal
max HMA production rate =	350	350	350	ton/hr HMA
SO2 staying in HMA =	0.1	50	50	% not to exceed 0.1 lb/ton (per AP-42 3/2004, Table 11.1-7)
emission factor =	0.382	0.054	0.007	lb/ton HMA

Option 3: EF Based on AP42, 3/04, Table 11.1-7 for RF0, diesel and natural gas
For RFO: SO2 = 0.058 lb/ton - so actual emission should be lower, but assumed fuel S content is not listed
For #2 diesel: SO2 = 0.011 lb/ton - so actual emissions should be lower
For natural gas: SO2 = 0.0034 lb/ton - so actual emissions should be lower
RFO SO2 PTE EF will be based on FARR 500 ppm SO2 combustion stack limit because it is more strict than FARR 2% fuel sulfur limit.
#2 diesel SO2 PTE EF will be based on FARR 0.5% sulfur limit because it is more strict than FARR 500 ppm SO2 combustion stack limit.
Natural gas SO2 PTE EF will be based on FARR 400 ppmv sulfur limit because it is more strict than FARR 500 ppm SO2 combustion stack limit.

VOC factor: For RFO, diesel, natural gas: AP-42 3/04, Table 11.1-8, uncontrolled

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#2 Diesel Generators**

Description: Caterpillar brand, model C3412, 725 kW (6.806 mmBtu/hr - calculated based upon 7,000 Btu/hp-hr), manufactured in 2001
Perkins brand, model 75, 75 kW (0.704 mmBtu/hr - calculated based upon 7,000 Btu/hp-hr), manufactured in 1991

Control: none

Fuel: #2 diesel

	Caterpillar	Perkins	
Capacity:	6.806	0.704	mmbtu/hr
Operation:	8760	8760	hours/year

Potential to Emit, (tons per year)

	Caterpillar Generator		Perkins Generator		Total
	EF	PTE TPY	EF	PTE TPY	PTE TPY
CO	0.85	25.3	0.95	2.9	28.27
Lead	9.0E-06	0.0	9.0E-06	0.0	0.00
NOx	3.2	95.4	4.41	13.6	108.99
PM	0.100	3.0	0.310	1.0	3.94
PM10	0.100	3.0	0.310	1.0	3.94
SO2	0.518	15.4	0.518	1.6	17.04
VOC	0.09	2.7	0.35	1.1	3.76

Estimation Explanations

Note that EU#2 PTE only counts in PSD and Title V applicability if the plant stays in one location for more than one year; otherwise it is considered a non-road engine
Emission factor (EF) units are lb/mmbtu of fuel fired
AP-42 Section 3.3 applies to stationary diesel engines with power output less than 450 kW while Section 3.4 applies to engines with power output greater than 450 kW.

Caterpillar Generator

CO factor: AP-42 10/96, Table 3.4-1 Diesel fuel
Lead factor: AP-42 9/98, Table 1.3-10 - this assumes the lead emissions from internal and external combustion will be similar
NOx factor: AP-42 10/96, Table 3.4-1 Diesel fuel
PM factor: AP-42 10/96, Table 3.4-1 Diesel fuel
PM10 factor: All PM assumed to be PM10
SO2 factor: Option 1: EF based on FARR fuel % sulfur limit

EF = S / 100 / (heat content) x ($1x10^6$) x (2 lb SO2) / (1 lb S)

fuel oil heat content =	19,300	btu/lb, AP-42 10/96, Table 3.3-1, footnote c
S =	0.5	% sulfur from FARR 40 CFR 49.130(d)(4)
EF =	0.518	lb/mmBTU fuel oil

Option 2: EF based on FARR 500 ppm stack limit

EF = (ppm) * (1.66E-7 lb/dscf / ppm) * (21-O2RM19) / (21-O2limit) * (dscf/mmbtu)

SO2 limit =	500	ppm @ 7%O2 from FARR 40 CFR 49.129(d)(1)
fuel oil f-factor from RM19 =	9190.0	dscf/mmBtu from 40 CFR 60 App A, Table 19-2 at 0% O2
O2 assumed in RM19 =	0	%
FARR limit O2 =	7	%
EF =	1.14	lb/mmBTU fuel oil

SO2 EF will be based on the FARR fuel sulfur limit because it is more strict than FARR stack SO2 limit
VOC factor: AP-42 10/96, Table 3.4-1 Diesel fuel as TOC

Perkins Generator

CO factor: AP-42 10/96, Table 3.3-1 Diesel fuel
Lead factor: AP-42 9/98, Table 1.3-10 - this assumes the lead emissions from internal and external combustion will be similar
NOx factor: AP-42 10/96, Table 3.3-1 Diesel fuel
PM factor: All PM assumed to be PM10
PM10 factor: AP-42 10/96, Table 3.3-1 Diesel fuel
SO2 factor: Option 1: EF based on FARR fuel % sulfur limit

EF = S / 100 / (heat content) x ($1x10^6$) x (2 lb SO2) / (1 lb S)

fuel oil heat content =	19,300	btu/lb, AP-42 10/96, Table 3.3-1, footnote c
S =	0.5	% sulfur from FARR 40 CFR 49.130(d)(4)
EF =	0.518	lb/mmBTU fuel oil

Option 2: EF based on FARR 500 ppm stack limit

EF = (ppm) * (1.66E-7 lb/dscf / ppm) * (21-O2RM19) / (21-O2limit) * (dscf/mmbtu)

SO2 limit =	500	ppm @ 7%O2 from FARR 40 CFR 49.129(d)(1)
fuel oil f-factor from RM19 =	9190.0	dscf/mmBtu from 40 CFR 60 App A, Table 19-2 at 0% O2
O2 assumed in RM19 =	0	%
FARR limit O2 =	7	%
EF =	1.14	lb/mmBTU fuel oil

SO2 EF will be based on the FARR fuel sulfur limit because it is more strict than FARR stack SO2 limit
VOC factor: AP-42 10/96, Table 3.3-1 Diesel fuel as TOC

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#3 Storage Tanks**

Description: Three tanks are used to store petroleum liquids
(Tank 1) Storage of liquid asphalt
(Tank 2) Storage of RFO fuel in a portable tank trailer; RFO is used in the drum dryer
(Tank 3) Storage of #2 diesel in portable tank trailer which supplies asphalt tank heater
(Tank 4) Storage of #2 diesel in portable tank trailer which supplies the 725 kW Caterpillar generator
(Tank 5) Storage of #2 diesel in portable tank trailer which supplies the 75 kW Perkins generator

Parameter	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Units
Liquid:	Asphalt	RFO	#2 Diesel	#2 Diesel	#2 Diesel	
Control:	none	none	none	none	none	
Capacity:	27,588	15,000	500	624	189	gallons
Operation:	41,221,468	4,692,857	48,180	210,240	43,800	gallons per year throughput
TOC Emissions	313.79	28.35	0.76	1.58	0.37	lbs/yr TOC

Potential to Emit, (tons per year)

	Tank 1 - Asphalt		Tank 2 - RFO		Tank 3 - #2 diesel		Tank 4 - #2 diesel		Tank 5 - #2 diesel		Total
	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	PTE TPY
CO	0.097	1.5E-02									0.015
Lead											
NOx											
PM											
PM10											
SO2											
VOC	1	1.57E-01	1	1.42E-02	1	3.8E-04	1	7.9E-04	1	1.9E-04	0.172

Estimation Explanations

Emission factors (EF) units in table are fraction (%/100) of Total Organic Compound (TOC) emissions from computer program
Actual computer program run performed by applicant assumed tank throughputs representative of maximum hourly HMA production for each hour of the year.

TOC factor: Tanks Computer Program (see AP-42, 7.1 (11/06)), lbs/yr; see application for computer program input details

VOC factor: For tank 1, EF from AP-42, 3/04, table 11.1-16
For tanks 2, 3, 4 and 5, VOC = TOC

CO factor: AP-42, 3/04, Page 11.1-9; multiply factor by TOC emissions

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#4 Asphalt Storage Tank Heater**
Description: Asphalt heater, _____brand, model _____
Control: none
Fuel: #2 diesel
Capacity: 0.770 MMBtu/hr
Operation: 8760 hours/year

Potential to Emit, (tons per year)

	#2 Diesel	
	EF	PTE TPY
CO	1.2	0.03
Lead	9.00E-06	2.17E-07
NOx	20	0.48
PM	27.570	0.66
PM10	1.0	0.02
SO2	71	1.71
VOC	0.2	0.005

Estimation Explanations

Emission factor (EF) units are lb/1000 gallon oil
Worst-case PTE takes into consideration the most stringent emission limits that exist
Liquid Fuel conversion factor = 140 mmBTU/1000 gal from AP42, App A
CO factor: For disel: AP-42, 3/04, Table 11.1-13, hot oil system fired with #2 diesel
Lead factor: For diesel: AP-42, 9/98, Table 1.3-10, distillate oil fired boilers <100mmbtu
NOx factor: For diesel: AP-42, 9/98, Table 1.3-1, boilers <100mmbtu

PM factor: Option 1: EF based on PM emission limits in FARR (40 CFR 49.125) = 0.1 grains/dscf at 7% O2
EF = (emission limit) / (7000 gr/lb) * (dscf-out/mmBtu-in) * (mmBtu/mgal fuel oil) = lb/mgal fuel oil
FARR PM Limit = 0.1 gr/dscf
Stack flow conversion factor 9190 dscf/mmBtu from 40 CFR 60 App A, Table 19-2 at 0% O2
O2 assumed in RM19 = 0 %
FARR limit O2 = 7 %
FARR-based EF = 27.57 lb/1000gal fuel oil
Option 2: AP-42, 9/98, Table 1.3-1, boilers <100mmbtu
EF = 9.19(S)+3.22
S= 0.5 % sulfur from FARR 40 CFR 49.130(d)(4)
EF = 7.815 lb/1000gal
PM factor will be based on FARR limit, even though actual emissions are predicted to be much less

PM10 factor: For diesel: AP-42, 9/98, Table 1.3-2 #2 fuel oil combustion
EF= PM10 = filterable PM10 (does not include condensible particulate matter)
CPM= 1.3 lb/1000gal fuel oil
PM10= 1 lb/1000gal fuel oil
EF= 1 lb/1000gal fuel oil

SO2 factor: Option 1: EF based on FARR fuel % sulfur limit and AP-42
EF = 142S AP-42 10/96, Table 1.3-1, boilers<100mmbtu
S = 0.5 % sulfur from FARR 40 CFR 49.130(d)(4)
EF = 71 lb/1000 gal fuel oil
Option 2: EF based on FARR 500 ppm stack SO2 limit
EF = (ppm) * (1.66E-7 lb/dscf / ppm) * (21-O2RM19) / (21-O2limit) * (dscf/mmbtu) * 140 mmBTU/1000gal
SO2 limit = 500 ppm @ 7%O2 from FARR 40 CFR 49.129(d)(1)
fuel oil f-factor from RM19 = 9190.0 dscf/mmBtu from 40 CFR 60 App A, Table 19-2 at 0% O2
O2 assumed in RM19 = 0 %
FARR limit O2 = 7 %
EF = 160.18 lb/1000gal fuel oil
SO2 EF will be based on AP-42 and FARR fuel sulfur limit because it is more strict than FARR stack SO2 limit

VOC factor: AP-42, 9/98, Table 1.3-3, industrial boilers, NMTOC

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#5 Aggregate Handling & Screening**

Description: Three transfers of aggregate and three transfers of recycled asphlat paving (RAP) material from storage pile to drum dryer
a. Aggregate transfer to aggregate bins
b. Aggregate transfer from bins to conveyor belt
c. Aggregate transfer from conveyor to drum mixer
d. RAP transfer to RAP bin
e. RAP transfer from RAP bin to conveyor
f. RAP transfer from conveyor to drum mixer

Control: none

Capacity: 350 tons/hour HMA (worst case assumes all material runs through 3 transfers)
tph RAP

Operation: 8760 hours/year

Potential to Emit, (tons per year)

	3 Aggregate transfers		3 RAP transfers		Total
	EF	PTE TPY	EF	PTE TPY	PTE, TPY
CO					0.0
Lead					0.0
NOx					0.0
PM	0.0028	13.1			13.1
PM10	0.0013	6.2			6.2
SO2					0.0
VOC					0.0

Estimation Explanations

Emission factor (EF) units are lb/ton of aggregate handled/screened

PM factor: For transfers, AP-42, 11/06, Section 13.2.4, Equation 1 for each drop operation (worst case assumes all material is aggregate passing through 3 transfers)
Emission factor=k(0.0032)(U/5)^1.3/(M/2)^1.4
U, mean wind speed: 8.9 mph, NOAA data for Spokane found at http://www.ncdc.noaa.gov/oa/climate/online/ccd/wndspd.txt
M, material moisture content: 3 %, Emission Inventory Improvement Program, Vol II, Chapter 3, page 3.2-3, July 1996 (range = 3-7%)
k, particle size multiplier: 0.74 for <30 microns particle size

PM10 factor: For transfers, same as for PM emission factor, except that
k, particle size multiplier: 0.35 for <10 microns particle size

Emissions are multiplied by 3 to account for all three transfers

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#6 Silo Filling**
Description: Loading of hot-mix asphalt mix (HMA mix) into Silo
Control: none
Capacity: 350 tons/hour HMA
Operation: 8760 hours/year

Potential to Emit, (tons per year)

	Silo filling	
	EF	PTE TPY
CO	1.18E-03	1.81
Lead		0
NOx		0
PM	3.32E-04	0.51
PM10	3.32E-04	0.51
SO2		0
VOC	1.22E-02	18.68

Estimation Explanations
Emission factor (EF) units are lb/ton of HMA handled
Predictive Emission Equations used to calculate Emission Factors from AP-42 3/04, Table 11.1-14

CO factor: $CO\ EF = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$
PM factor: PM EF = 0.000332 lb/ton HMA (assumes only fraction captured by RM5 counts as PM)
PM10 factor: $PM10\ EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ (assumes all of Total PM is PM10)
PM10 EF = only the PM fraction because condensables are not counted
VOC factor: $VOC\ EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ (100% of TOC measured as propane, per AP42, Table 11.1-16)
V = asphalt volatility = -0.5 AP-42 default value
T = HMA mix temperature = 325 ^{O}F, AP-42 default value

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#7 Truck Loading & Fumes**

Description: a Load-out of hot-mix asphalt mix (HMA mix) from silo to asphalt trucks
b Fumes from HMA in loaded asphalt trucks while in plant

Control: none

Capacity: 350 tons/hour HMA

Operation: 8760 hours/year

Potential to Emit, (tons per year)

	Silo loadout		Truck fumes		Total
	EF	PTE TPY	EF	PTE TPY	PTE TPY
CO	1.35E-03	2.07	3.52E-04	0.54	2.61
Lead					
NOx					
PM	1.81E-04	0.28			0.28
PM10	1.81E-04	0.28			0.28
SO2					
VOC	3.91E-03	5.99	1.03E-03	1.59	7.58

Estimation Explanations

Emission factor (EF) units are lb/ton of HMA handled

a Silo Loadout

Predictive Emission Equations used to calculate Emission Factors from AP-42 3/04, Table 11.1-14

CO factor: $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$

PM factor: PM EF = 0.000181 lb/ton HMA (assumes only fraction captured by RM5 counts as PM)

PM10 factor: $0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ (assumes all of PM is PM10)
PM10 EF = only the PM fraction because condensables are not counted

VOC factor: $0.94[0.0172(-V)e^{((0.0251)(T+460)-20.43)}]$ (94% of TOC measured as propane, per AP42, Table 11.1-16)

TOC = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ AP42, Table 11.1-16

V = asphalt volatility = -0.5 AP-42 default value

T = HMA mix temperature = 325 ^{O}F, AP-42 default value

b Truck-load emissions (while in plant for approximately 8 minutes)

Emission factors from AP42, 11.1.2.5

TOC = 0.0011 lb/ton

CO factor: (32% of TOC measured as propane)

VOC factor: (94% of TOC measured as propane per AP42, Table 11.1-16)

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#8 Vehicle Traffic**

Description: Road dust caused by vehicle traffic
a. Truck for loading and delivery of HMA product:
b. Loader for delivering aggregate and RAP to drum dryer loading bins:
c. Truck for delivering gravel and RAP to plant
d. Asphalt truck delivering asphalt to plant

Control: none

Capacity: 350 tons per hour HMA (plant)
41,221,468 gal/yr liquid asphalt
4,692,857 gal/yr RFO
302,220 gal/yr diesel
46,216,545 gal/yr total liquid deliveries

Operation: 8760 hours/year

Potential to Emit, (tons per year)

	HMA Truck PTE TPY	Loaders PTE TPY	Gravel/RAP Truck PTE TPY	Liquid Truck PTE TPY	Total PTE TPY
CO					
Lead					
NOx					
PM	101.77	31.77	101.77	5.79	241.1
PM10	25.94	8.76	25.94	1.47	62.1
SO2					
VOC					

Estimation Explanations

Emission factor (EF) units are lb/vehicle mile traveled
Assumes that 100% of trip distance is on unpaved surface for all vehicles
Liquid asphalt/fuel delivery truck size = 8168 gallons
Spokane data from: http://www.nrcc.cornell.edu/ccd/prge0198.html
Predictive Emission Equations used to calculate Emission Factors from AP-42 12/03, Section 13.2.2, Equation 1a and 2
E = EF x VMT / 2000
PM EF: k*(s/12)^a*(W/3)^b*(1-P/N), from 11/06 AP-42 13.2.2, Equation 1a and 2, see below for parameters
PM10 factor: Same equation as for PM emission factor except some different parameters, see below

Road Data:

	PM	PM10	
empirical constant (k) =	4.9	1.5	PM data for particles <30 microns
material handling silt content (s), % =	7.1	7.1	silt from AP-42 Table 13.2.2-1 (sand and gravel - for loader)
road surface silt content (s), % =	4.8	4.8	silt from AP-42 Table 13.2.2-1 (sand and gravel - for roads)
empirical constant (a) =	0.7	0.9	PM data for particles <30 microns
empirical constant (b) =	0.45	0.45	PM data for particles <30 microns

Vehicle Data: (from company except asphalt delivery truck wt from EPA experience)

	HMA Truck	Loader	Gravel/RAP Truck	Liquid Truck
empty weight, tons =	20.00	15	20	18
loaded weight, tons =	51.00	20	51	52
mean vehicle weight (W), tons =	35.50	17.50	35.50	35.00
tons per trip, tons =	31.00	5.00	31.00	34.00
trips per day =	270.97	1680.00	270.97	15.50
round trip distance, miles =	0.38	0.020	0.38	0.38
unpaved VMT, miles/year =	37583	12264	37583	2150

Weather Data:

# of days with > 0.01 inch of precipitation (P) =	113	For Spokane, WA: http://www.nrcc.cornell.edu/ccd/prge0198.html
# of days in averaging period (N) =	365	based on need for annual PTE

Emission factors:

	HMA Truck	Loader	Gravel/RAP Truck	Liquid Truck
PM EF, lb/VMT =	5.42	5.18	5.42	5.38
PM10 EF, lb/VMT =	1.38	1.43	1.38	1.37

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Criteria Air Pollutant Emission Inventory

Emission Unit: **#9 Wind Erosion**

Description:	Wind erosion of all exposed areas including piles	
Control:	none	
Capacity:	350	tons/hour HMA
Operation:	8760	hours/year
	3066000	tons/yr (tons/hr x hours/yr)
	58961.5385	tons/pile (assumes a 1 week supply is available on site so divide total yearly amount by 52)
		ft3 per pile, assumes aggregate density is 105 lb/cu ft (Weights of
	1123076.92	Materials, page 393)
Pile height:	50	feet, assumed
Pile width:	200	feet, assumed
Pile length:	112.3	feet
Pile Footprint:	22,462	ft2
	0.52	acres, assumes 43560 ft2/acre
Open Area:	2.00	acres, assumed conservative sized (disturbed) site - unvegetated area

Potential to Emit, (tons per year)

	Pile Wind Erosion		Open Area Wind Erosion		Total
	EF	PTE TPY	EF	PTE TPY	PTE TPY
CO					
Lead					
NOx					
PM	0.38	0.20	0.38	0.76	0.96
PM10	0.18	0.09	0.18	0.36	0.45
SO2					
VOC					

Estimation Explanations

Emission factor (EF) units are tons/acre per year

Stockpile size calculated based on maximum capacity, operating 8760 hr/yr

PM factor: AP-42, 10/98, Section 11.9, Table 11.9-4 for wind erosion of exposed areas

PM10 factor: Engineering estimate - 47% of PM factor from ratio of transfer particle size multipliers (0.35/0.74) in AP-42 1/95 13.2.4

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#1 Drum Dryer**

Description: Hot Mix Asphalt Plant Drum Dryer - parallel drum mix design, Cedarapids 8830-ADM

Control: Cedarapids Model 11060-P Baghouse

Fuel: RF0, #2 diesel, propane or natural gas (RF0, reprocessed fuel oil is called waste oil by AP-42)

Capacity: 350 tph hot mix asphalt Burner: 75 mmBtu/hr capacity

Operation: 8760 hours/year

Potential to Emit, (tons per year)

	RF0		#2 diesel		Natural Gas		Max
Inorganics	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	PTE TPY
Antimony Compounds	1.80E-07	2.76E-04	1.80E-07	2.76E-04	1.80E-07	2.76E-04	2.76E-04
Arsenic Compounds (incl arsine)	5.60E-07	8.58E-04	5.60E-07	8.58E-04	5.60E-07	8.58E-04	8.58E-04
Beryllium Compounds	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium Compounds	4.10E-07	6.29E-04	4.10E-07	6.29E-04	4.10E-07	6.29E-04	6.29E-04
Chromium Compounds (incl hexavalent)	5.50E-06	8.43E-03	5.50E-06	8.43E-03	5.50E-06	8.43E-03	8.43E-03
Cobalt Compounds	2.60E-08	3.99E-05	2.60E-08	3.99E-05	2.60E-08	3.99E-05	3.99E-05
Lead Compounds (not elemental lead)	1.50E-05	2.30E-02	1.50E-05	2.30E-02	6.20E-07	9.50E-04	2.30E-02
Manganese Compounds	7.70E-06	1.18E-02	7.70E-06	1.18E-02	7.70E-06	1.18E-02	1.18E-02
Mercury Compounds	2.60E-06	3.99E-03	2.60E-06	3.99E-03	2.40E-07	3.68E-04	3.99E-03
Nickel Compounds	6.30E-05	9.66E-02	6.30E-05	9.66E-02	6.30E-05	9.66E-02	9.66E-02
Phophorus Compounds	2.80E-05	4.29E-02	2.80E-05	4.29E-02	2.80E-05	4.29E-02	4.29E-02
Selenium Compounds	3.50E-07	5.37E-04	3.50E-07	5.37E-04	3.50E-07	5.37E-04	5.37E-04
Organics							
Acetaldehyde	1.30E-03	1.99E+00	-		-		1.99E+00
Acrolein	2.60E-05	3.99E-02	-		-		3.99E-02
Benzene	3.90E-04	5.98E-01	3.90E-04	5.98E-01	3.90E-04	5.98E-01	5.98E-01
Bromomethane (methyl bromide)	-		-		-		
1,3-Butadiene	-		-		-		
Carbon Disulfide	-		-		-		
Chloroethane (ethyl chloride)	-		-		-		
Chloromethane (methyl chloride)	-		-		-		
Dichlorobenzene	-		-		-		
Cumene	-		-		-		
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)	2.10E-13	3.22E-10	2.10E-13	3.22E-10		0.00E+00	3.22E-10
Ethyl Benzene	2.40E-04	3.68E-01	2.40E-04	3.68E-01	2.40E-04	3.68E-01	3.68E-01
Formaldehyde	3.10E-03	4.75E+00	3.10E-03	4.75E+00	3.10E-03	4.75E+00	4.75E+00
Furans (all PCDF)	4.00E-11	6.13E-08	4.00E-11	6.13E-08		0.00E+00	6.13E-08
Hexane (includes n-Hexane)	9.20E-04	1.41E+00	9.20E-04	1.41E+00	9.20E-04	1.41E+00	1.41E+00
Hydrochloric Acid (hydrogen chloride)	2.10E-04	3.22E-01	-		-		3.22E-01
Isooctane (2,2,4-trimethylpentane)	4.00E-05	6.13E-02	4.00E-05	6.13E-02	4.00E-05	6.13E-02	6.13E-02
Methyl Chloride (chloromethane)	-		-		-		
Methyl Chloroform (1,1,1-trichloroethane)	4.80E-05	7.36E-02	4.80E-05	7.36E-02	4.80E-05	7.36E-02	7.36E-02
Methyl tert-Butyl Ether (MTBE)	-		-		-		
Naphthalene (also a POM)	6.50E-04	9.96E-01	8.80E-09	1.35E-05	9.00E-05	1.38E-01	9.96E-01
Phenol	-		-		-		
Polycyclic Organic Matter* (incl naphthalene)	8.85E-04	1.36E+00	8.85E-04	1.36E+00	1.87E-04	2.87E-01	1.36E+00
Propionaldehyde	1.30E-04	1.99E-01	-		-		1.99E-01
Quinone	1.60E-04	2.45E-01	-		-		2.45E-01
Styrene	-		-		-		
Tetrachloroethane	-		-		-		
Toluene	2.90E-03	4.45E+00	2.90E-03	4.45E+00	1.50E-04	2.30E-01	4.45E+00
Xylenes (inlc isomers and mixtures)	2.00E-04	3.07E-01	2.00E-03	3.07E+00	2.00E-04	3.07E-01	3.07E+00
HAP Total		1.64E+01		1.63E+01		8.25E+00	1.64E+01

	RF0		#2 diesel		Natural Gas	
***Polycyclic Organic Matter**	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY
Acenaphthene	1.40E-06	2.15E-03	1.40E-06	2.15E-03	1.40E-06	2.15E-03
Acenaphthylene	2.20E-05	3.37E-02	2.20E-05	3.37E-02	8.60E-06	1.32E-02
Anthracene	3.10E-06	4.75E-03	3.10E-06	4.75E-03	2.20E-07	3.37E-04
Benzo(a)anthracene	2.10E-07	3.22E-04	2.10E-07	3.22E-04	2.10E-07	3.22E-04
Benzo(b)fluoranthene	1.00E-07	1.53E-04	1.00E-07	1.53E-04	1.00E-07	1.53E-04
Benzo(k)fluoranthene	4.10E-08	6.29E-05	4.10E-08	6.29E-05	4.10E-08	6.29E-05
Benzo(g,h,i)perylene	4.00E-08	6.13E-05	4.00E-08	6.13E-05	4.00E-08	6.13E-05
Benzo(a)pyrene	9.80E-09	1.50E-05	9.80E-09	1.50E-05	9.80E-09	1.50E-05
Benzo(e)pyrene	1.10E-07	1.69E-04	1.10E-07	1.69E-04	1.10E-07	1.69E-04
Chrysene	1.80E-07	2.76E-04	1.80E-07	2.76E-04	1.80E-07	2.76E-04
Dioxins (Total PCDD; incl 2,3,7,8 TCDD)	7.90E-11	1.21E-07	2.10E-13	3.22E-10	-	
Fluoranthene	6.10E-07	9.35E-04	6.10E-07	9.35E-04	6.10E-07	9.35E-04
Fluorene	1.10E-05	1.69E-02	1.10E-05	1.69E-02	3.80E-06	5.83E-03
Furans (all PCDF)	4.00E-11	6.13E-08	4.00E-11	6.13E-08	-	
Indeno(1,2,3-cd)pyrene	7.00E-09	1.07E-05	7.00E-09	1.07E-05	7.00E-09	1.07E-05
2-Methylnaphthalene	1.70E-04	2.61E-01	1.70E-04	2.61E-01	7.40E-05	1.13E-01
Naphthalene (also individual HAP)	6.50E-04	9.96E-01	6.50E-04	9.96E-01	9.00E-05	1.38E-01
Perylene	8.80E-09	1.35E-05	8.80E-09	1.35E-05	8.80E-09	1.35E-05
Phenanthrene	2.30E-05	3.53E-02	2.30E-05	3.53E-02	7.60E-06	1.17E-02
Pyrene	3.00E-06	4.60E-03	3.00E-06	4.60E-03	5.40E-07	8.28E-04
POM Subtotal	8.85E-04	1.36E+00	8.85E-04	1.36E+00	1.87E-04	2.87E-01

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Estimation Explanations

Emission factor (EF) units are lb/ton HMA

Worst-case PTE is the higher emitting of the fuel options taking into consideration the most stringent emission limits that exist

To avoid double-counting, "HAP Total" does not count naphthalene, dioxin (HAP) or furans separately because they are accounted for in "POM Subtotal"

Chromium EF:	Chromium EF is assumed to included separately reported hexavalent chromium EF in AP-42
Hydrogen chloride EF:	AP-42, Table 11.1-8 for RF0
All other inorganics EF:	AP-42, 3/04, Table 11.1-12 for fuel oil and RF0 with fabric filter
Dioxin EF:	AP-42, 3/04, Table 11.1-10 for fuel oil & RF0 with fabric filter - all dioxins are POM; only 2,3,7,8 TCDD is a HAP
Furans EF:	AP-42, 3/04, Table 11.1-10 for fuel oil & RF0 with fabric filter - total of all furans (is a HAP & POM)
Naphthalene EF:	AP-42, 3/04, Table 11.1-10 for fuel oil & RF0 with fabric filter (is a HAP & POM)
POM EF:	AP-42, 3/04, Table 11.1-10 for fuel oil & RF0 with fabric filter (includes naphthalene, dioxin & furans)
All other organics EF:	AP-42, 3/04, Table 11.1-10 for fuel oil & RF0 with fabric filter

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#2 Diesel Generators**
Description: Caterpillar brand, model C3412, 725 kW (6.806 mmBtu/hr - calculated based upon 7,000 Btu/hp-hr), manufactured in 2001
Perkins brand, model 75, 75 kW (0.704 mmBtu/hr - calculated based upon 7,000 Btu/hp-hr), manufactured in 1991
Control: none
Fuel: #2 diesel

	Caterpillar	Perkins	
Capacity:	6.806	0.704	mmbtu/hr
Operation:	8760	8760	hours/year

Potential to Emit, (tons per year)

	Caterpillar Generator		Perkins Generator		Total
Inorganics	EF	PTE TPY	EF	PTE TPY	PTE TPY
Antimony Compounds	-		-		
Arsenic Compounds (incl arsine)	4.00E-06	1.19E-04	4.00E-06	1.23E-05	1.32E-04
Beryllium Compounds	3.00E-06	8.94E-05	3.00E-06	9.25E-06	9.87E-05
Cadmium Compounds	3.00E-06	8.94E-05	3.00E-06	9.25E-06	9.87E-05
Chromium Compounds (incl hexavalent)	3.00E-06	8.94E-05	3.00E-06	9.25E-06	9.87E-05
Cobalt Compounds	-		-		
Lead Compounds (not elemental lead)	9.00E-06	2.68E-04	9.00E-06	2.78E-05	2.96E-04
Manganese Compounds	6.00E-06	1.79E-04	6.00E-06	1.85E-05	1.97E-04
Mercury Compounds	3.00E-06	8.94E-05	3.00E-06	9.25E-06	9.87E-05
Nickel Compounds	3.00E-06	8.94E-05	3.00E-06	9.25E-06	9.87E-05
Phophorus Compounds	-		-		
Selenium Compounds	1.50E-05	4.47E-04	1.50E-05	4.63E-05	4.93E-04
Organics					
Acetaldehyde	2.52E-05	7.51E-04	7.67E-04	2.37E-03	3.12E-03
Acrolein	7.88E-06	2.35E-04	9.25E-05	2.85E-04	5.20E-04
Benzene	7.76E-04	2.31E-02	9.33E-04	2.88E-03	2.60E-02
Bromomethane (methyl bromide)	-		-		
1,3-Butadiene	-		3.91E-05	1.21E-04	1.21E-04
Carbon Disulfide	-		-		
Chloroethane (ethyl chloride)	-		-		
Chloromethane (methyl chloride)	-		-		
Dichlorobenzene	-		-		
Cumene	-		-		
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)	-		-		
Ethyl Benzene	-		-		
Formaldehyde	7.89E-05	2.35E-03	1.18E-03	3.64E-03	5.99E-03
Furans (all PCDF)	-		-		
Hexane (incl n-Hexane)	-		-		
Hydrochloric Acid (hydrogen chloride)	-		-		
Isooctane (2,2,4-trimethylpentane)	-		-		
Methyl Chloride (chloromethane)	-		-		
Methyl Chloroform (1,1,1-trichloroethane)	-		-		
Methyl tert-Butyl Ether (MTBE)	-		-		
Naphthalene[1] (also a POM)	1.30E-04	3.88E-03	8.48E-05	2.61E-04	4.14E-03
Phenol			-		
Polycyclic Organic Matter* (incl naphthalene)	2.12E-04	6.31E-03	1.68E-04	5.18E-04	6.82E-03
Propionaldehyde	-		-		
Quinone	-		-		
Styrene	-		-		
Tetrachloroethane	-		-		
Toluene	2.81E-04	8.38E-03	4.09E-04	1.26E-03	9.64E-03
Xylene (incl isomers and mixtures)	1.93E-04	5.75E-03	2.85E-04	8.79E-04	6.63E-03
HAP Total		4.84E-02		1.21E-02	6.05E-02

	Caterpillar Generator		Perkins Generator		Total
***Polycyclic Organic Matter**	EF	PTE TPY	EF	PTE TPY	PTE TPY
Acenaphthylene	9.23E-06	2.75E-04	5.06E-06	1.56E-05	2.91E-04
Acenaphthene	4.68E-06	1.40E-04	1.42E-06	4.38E-06	1.44E-04
Anthracene	1.23E-06	3.67E-05	1.87E-06	5.77E-06	4.24E-05
Benzo(a)athracene	6.22E-07	1.85E-05	1.68E-06	5.18E-06	2.37E-05
Benzo(b)fluoranthene	1.11E-06	3.31E-05	9.91E-08	3.06E-07	3.34E-05
Benzo(k)fluoranthene	2.18E-07	6.50E-06	1.55E-07	4.78E-07	6.98E-06
Benzo(g,h,l)perylene	5.56E-07	1.66E-05	4.89E-07	1.51E-06	1.81E-05
Benzo(a)pyrene	2.57E-07	7.66E-06	1.88E-07	5.80E-07	8.24E-06
Chrysene	1.53E-06	4.56E-05	3.53E-07	1.09E-06	4.67E-05
Dibenz(a,h)anthracene	3.46E-07	1.03E-05	5.83E-07	1.80E-06	1.21E-05
Fluoranthene	4.03E-06	1.20E-04	7.61E-06	2.35E-05	1.44E-04
Fluorene	1.28E-05	3.82E-04	2.92E-05	9.00E-05	4.72E-04
Indeno(1,2,3-cd)pyrene	4.14E-07	1.23E-05	3.75E-07	1.16E-06	1.35E-05
Napthalene (also individual HAP)	1.30E-04	3.88E-03	8.48E-05	2.61E-04	4.14E-03
Phenanthrene	4.08E-05	1.22E-03	2.94E-05	9.07E-05	1.31E-03
Pyrene	3.71E-06	1.11E-04	4.78E-06	1.47E-05	1.25E-04
POM Subtotal	2.12E-04	6.31E-03	1.68E-04	5.18E-04	6.82E-03

Estimation Explanations
Emission factor (EF) units are lb/mmbtu

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Note that EU#2 PTE only counts in MACT applicability if the plant stays in one location for more than one year; otherwise it is considered a non-road engine
To avoid double-counting, "HAP Total" does not count naphthalene separately because naphthalene is accounted for in "POM Subtotal"
AP-42 Section 3.3 applies to stationary diesel engines with power output less than 450 kW while Section 3.4 applies to engines with power output greater than 450 kW.

Inorganic EF for both generators:	AP-42 9/98, Table 1.3-10 - this assumes that metal emissions from internal and external combustion are similar
Organics EF for Caterpillar generator:	AP42, 10/96, Tbl 3.4-3 EF for Organic Compounds from Uncontrolled Diesel Engines; assumes PAH = POM
Organics EF for Perkins generator:	AP42, 10/96, Tbl 3.3-2 EF for Organic Compounds from Uncontrolled Diesel Engines; assumes PAH = POM

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#3 Storage Tanks**

Description: Three tanks are used to store petroleum liquids
(Tank 1) Storage of liquid asphalt
(Tank 2) Storage of RFO fuel in a portable tank trailer; RFO is used in the drum dryer
(Tank 3) Storage of #2 diesel in portable tank trailer which supplies asphalt tank heater
(Tank 4) Storage of #2 diesel in portable tank trailer which supplies the 725 kW Caterpillar generator
(Tank 5) Storage of #2 diesel in portable tank trailer which supplies the 75 kW Perkins generator

Parameter	Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Units
Liquid:	Asphalt	RFO	#2 Diesel	#2 Diesel	#2 Diesel	
Control:	none	none	none	none	none	
Capacity:	27,588	15,000	500	624	189	gallons
Operation:	41,221,468	4,692,857	48,180	210,240	43,800	gallons per year throughput
TOC Emissions	313.79	28.35	0.76	1.58	0.37	lbs/yr TOC

Potential to Emit, (tons per year)

	(Tank 1) Asphalt		(Tank 2) RFO		(Tank 3) #2 diesel		(Tank 4) #2 diesel		(Tank 5) #2 diesel		Total
Organics	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	EF	PTE TPY	PTE TPY
Acetaldehyde											
Acrolein											
Benzene	0.032	5.02E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00	5.02E-03
Bromomethane (methyl bromide)	0.0049	7.69E-04		0.00E+00		0.00E+00		0.00E+00		0.00E+00	7.69E-04
1,3-Butadiene											
Carbon Disulfide	0.016	2.51E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00	2.51E-03
Chloroethane (ethyl chloride)	0.004	6.28E-04		0.00E+00		0.00E+00		0.00E+00		0.00E+00	6.28E-04
Chloromethane (methyl chloride)	0.023	3.61E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00	3.61E-03
Cumene											
Dichlorobenzene											
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)											
Ethyl Benzene	0.038	5.96E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00	5.96E-03
Formaldehyde	0.69	1.08E-01		0.00E+00		0.00E+00		0.00E+00		0.00E+00	1.08E-01
Furans (all PCDF)											
Hexane (incl n-Hexane)	0.1	1.57E-02		0.00E+00		0.00E+00		0.00E+00		0.00E+00	1.57E-02
Hydrochloric Acid (hydrogen chloride)											
Isooctane (2,2,4-trimethylpentane)	0.00031	4.86E-05		0.00E+00		0.00E+00		0.00E+00		0.00E+00	4.86E-05
Methyl Chloride (chloromethane)	0.00027	4.24E-05		0.00E+00		0.00E+00		0.00E+00		0.00E+00	4.24E-05
Methyl Chloroform (1,1,1-trichloroethane)											
Methyl tert-Butyl Ether (MTBE)											
Naphthalene[1] (also a POM)											
Phenol											
Polycyclic Organic Matter* (incl naphthalene)											
Propionaldehyde											
Quinone											
Styrene	0.0054	8.47E-04		0.00E+00		0.00E+00		0.00E+00		0.00E+00	8.47E-04
Tetrachloroethane											
Toluene	0.062	9.73E-03		0.00E+00		0.00E+00		0.00E+00		0.00E+00	9.73E-03
Xylene (incl isomers and mixtures)	0.257	4.03E-02		0.00E+00		0.00E+00		0.00E+00		0.00E+00	4.03E-02
HAP Total		1.93E-01		0.00E+00		0.00E+00		0.00E+00		0.00E+00	1.93E-01

Estimation Explanations

Emission factor (EF) units are % of organic PM for POM and phenol and fraction (%/100) of TOC for all other organics
Actual computer program run performed by applicant assumed tank throughputs representative of maximum hourly HMA production for each hour of the year.
To avoid double-counting, "HAP Total" does not count naphthalene separately because naphthalene is accounted for in "POM Subtotal"
Xylenes EF: m-, o- and p- isomers are individually listed as HAPs but for applicability purposes, are grouped as Xylenes
All other organics EF: AP-42, 3/04, Table 11.1-16 - (TOC) organic volatile-based speciation percentages
TOC = VOC/100% (AP-42, 3/04, Table 11.1-16)
For diesel and RFO, HAP data is not presented, because HAP emissions are expected to be very low

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#4 Asphalt Tank Heater**
Description: Asphalt heater, _____brand, model _____
Control: none
Fuel: #2 diesel
Capacity: 0.770 MMBtu/hr
Operation: 8760 hours/year

Potential to Emit, (tons per year)

	#2 Diesel	
Inorganics	EF	PTE TPY
Antimony Compounds	-	
Arsenic Compounds (incl arsine)	4.00E-06	1.35E-05
Beryllium Compounds	3.00E-06	1.01E-05
Cadmium Compounds	3.00E-06	1.01E-05
Chromium Compounds (incl hexavalent)	3.00E-06	1.01E-05
Cobalt Compounds	-	
Lead Compounds (not elemental lead)	9.00E-06	3.04E-05
Manganese Compounds	6.00E-06	2.02E-05
Mercury Compounds	3.00E-06	1.01E-05
Nickel Compounds	3.00E-06	1.01E-05
Phophorus Compounds	-	
Selenium Compounds	1.50E-05	5.06E-05
Organics		
Acetaldehyde	-	
Acrolein	-	
Benzene	-	
Bromomethane (methyl bromide)	-	
1,3-Butadiene	-	
Carbon Disulfide	-	
Chloroethane (ethyl chloride)	-	
Chloromethane (methyl chloride)	-	
Cumene	-	
Dichlorobenzene	-	
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)	-	
Ethyl Benzene	-	
Formaldehyde	6.10E-02	1.47E-03
Furans (all PCDF)	-	
Hexane (incl n-Hexane)	-	
Hydrochloric Acid (hydrogen chloride)	-	
Isooctane (2,2,4-trimethylpentane)	-	
Methyl Chloride (chloromethane)	-	
Methyl Chloroform (1,1,1-trichloroethane)	-	
Methyl tert-Butyl Ether (MTBE)	-	
Naphthalene (also a POM)	-	
Phenol	-	
Polycyclic Organic Matter* (incl naphthalene)	3.30E-03	7.95E-05
Propionaldehyde	-	
Quinone	-	
Styrene	-	
Tetrachloroethane	-	
Toluene	-	
Xylene (incl isomers and mixtures)	-	
HAP Total		1.71E-03

	#2 Diesel	
***Polycyclic Organic Matter**	EF	PTE TPY
Acenaphthene	-	
Acenaphthylene	-	
Anthracene	-	
Benzo(a)anthracene	-	
Benzo(b)fluoranthene	-	
Benzo(k)fluoranthene	-	
Benzo(g,h,i)perylene	-	
Benzo(a)pyrene	-	
Benzo(e)pyrene	-	
Chrysene	-	
Dibenzo(a,h)anthracene	-	
7,12-Dimethylbenz(a)anthracene	-	
Dioxins (Total PCDD; incl 2,3,7,8 TCDD)	-	
Fluoranthene	-	
Fluorene	-	
Furans (all PCDF)	-	
Indeno(1,2,3-cd)pyrene	-	
3-Methylcloranthrene	-	
2-Methylnaphthalene	-	
Naphthalene (also individual HAP)	-	
Perylene	-	

Phenanthrene	-	
Pyrene	-	
POM Subtotal	0.00E+00	0.00E+00

Estimation Explanations

Emission factor (EF) units are lb/1000 gallon oil and lb/mmscf natural gas
Worst-case PTE is the higher emitting of the fuel options

Liquid fuel conversion factor = 140 mmBTU/1000 gal from AP42, App A
Inorganics EF: AP-42 9/98, Table 1.3-10 for diesel, distillate oil, lb/mmbtu
Organics and POM: AP-42 9/98, Table 1.3-8 for diesel, distillate oil, lb/mgal

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#6 Silo Filling**
Description: Loading of hot-mix asphalt mix (HMA mix) into silo
Control: none
Capacity: 350 tons/hr HMA (from applicant)
Operation: 8,760 hours/yr

Potential to Emit, (tons per year)

Organics	EF	PTE TPY
Acetaldehyde		
Acrolein		
Benzene	0.032	5.98E-03
Bromomethane (methyl bromide)	0.0049	9.15E-04
1,3-Butadiene		
Carbon Disulfide	0.016	2.99E-03
Chloroethane (ethyl chloride)	0.004	7.47E-04
Chloromethane (methyl chloride)	0.023	4.30E-03
Cumene		
Dichlorobenzene		
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)		
Ethyl Benzene	0.038	7.10E-03
Formaldehyde	0.69	1.29E-01
Furans (all PCDF)		
Hexane (incl n-Hexane)	0.1	1.87E-02
Hydrochloric Acid (hydrogen chloride)		
Isooctane (2,2,4-trimethylpentane)	0.00031	5.79E-05
Methyl Chloride (chloromethane)	0.00027	5.04E-05
Methyl Chloroform (1,1,1-trichloroethane)		
Methyl tert-Butyl Ether (MTBE)		
Naphthalene[1] (also a POM)	1.82	7.08E-03
Phenol	1.18	4.59E-03
Polycyclic Organic Matter* (incl naphthalene)	11.41	4.44E-02
Propionaldehyde		
Quinone		
Styrene	0.0054	1.01E-03
Tetrachloroethane		
Toluene	0.062	1.16E-02
Xylene (incl isomers and mixtures)	0.257	4.80E-02
HAP Total		2.79E-01

***Polycyclic Organic Matter**	EF	PTE TPY
Acenaphthene	0.47	1.83E-03
Acenaphthylene	0.014	5.45E-05
Anthracene	0.13	5.06E-04
Benzo(a)athracene	0.056	2.18E-04
Benzo(e)pyrene	0.0095	3.70E-05
Chrysene	0.21	8.17E-04
Fluoranthene	0.15	5.84E-04
Fluorene	1.01	3.93E-03
2-Methylnaphthalene	5.27	2.05E-02
Naphthalene (also individual HAP)	1.82	7.08E-03
Perylene	0.03	1.17E-04
Phenanthrene	1.8	7.01E-03
Pyrene	0.44	1.71E-03
POM Subtotal	11.41	4.44E-02

Estimation Explanations

Emission factor (EF) units are % of organic PM for POM and phenol and % of TOC for all other organics
To avoid double-counting, "HAP Total" does not count naphthalene separately because naphthalene is accounted for in "POM Subtotal"
Predictive emission factors from AP-42 Tbl 11.1-14 for silo filling
Xylenes EF: m-, o- and p- isomers are individually listed as HAPs but for applicability purposes, are grouped as Xylenes
POM, naphthalene and phenol EF: AP-42, 3/04, Table 11.1-15 - organic particulate-based speciation percentages (%/100 x PM)
All other organics EF: AP-42, 3/04, Table 11.1-16 - (TOC) organic volatile-based speciation percentages (%/100 x TOC)

TOC EF: $0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ lb/ton HMA loaded into silo

Organic PM EF: $0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ lb/ton HMA loaded into silo

V = asphalt volatility =	-0.5	AP-42 default value
T = HMA mix temperature =	325	^{O}F, AP-42 default value
TOC EF =	1.22E-02	lb/ton
TOC emissions =	1.87E+01	tons/year (TOC EF x annual capacity)
Organic PM EF =	2.54E-04	lb/ton
Organic PM emissions =	3.89E-01	tons/year (Organic PM EF x annual capacity)

Emission Inventory
CPM Development Corporation, Interstate Plant No. 25

Hazardous Air Pollutant Emission Inventory

Emission Unit: **#7 Truck Loading & Fumes**
Description: a Load-out of hot-mix asphalt mix (HMA mix) from silo to asphalt trucks
b Fumes from loaded asphalt trucks while in plant
Control: none
Capacity: 350 tons/hr HMA (from applicant)
Operation: 8,760 hours/yr

Potential to Emit, (tons per year)

	Truck loading		Truck-load fumes		Total
Organics	EF	PTE TPY	EF	PTE TPY	PTE TPY
Acetaldehyde					
Acrolein					
Benzene	0.052	3.32E-03	0.052	8.77E-04	0.004
Bromomethane (methyl bromide)	0.0096	6.12E-04	0.0096	1.62E-04	0.001
1,3-Butadiene					
Carbon Disulfide	0.013	8.29E-04	0.013	2.19E-04	0.001
Chloroethane (ethyl chloride)	0.00021	1.34E-05	0.00021	3.54E-06	0.000
Chloromethane (methyl chloride)	0.015	9.56E-04	0.015	2.53E-04	0.001
Dichlorobenzene					
Cumene	0.11	7.01E-03	0.11	1.85E-03	0.009
Dioxin (2,3,7,8 tetrachlorodibenzo-p-dioxin)					
Ethyl Benzene	0.28	1.79E-02	0.28	4.72E-03	0.023
Formaldehyde	0.088	5.61E-03	0.088	1.48E-03	0.007
Furans (all PCDF)					
Hexane (incl n-Hexane)	0.15	9.56E-03	0.15	2.53E-03	0.012
Hydrochloric Acid (hydrogen chloride)					
Isooctane (2,2,4-trimethylpentane)	0.0018	1.15E-04	0.0018	3.04E-05	0.000
Methyl Chloride (chloromethane)					
Methyl Chloroform (1,1,1-trichloroethane)					
Methyl tert-Butyl Ether (MTBE)					
Naphthalene[1] (also a POM)	1.25	6.53E-03	1.25	2.11E-02	0.028
Phenol	1.18	6.17E-03	1.18	1.99E-02	0.026
Polycyclic Organic Matter* (incl naphthalene)	5.93	3.10E-02	1.25	2.11E-02	0.052
Propionaldehyde					
Quinone					
Styrene	0.00732	4.67E-04	0.00732	1.23E-04	0.001
Tetrachloroethane	0.0077	4.91E-04	0.0077	1.30E-04	0.001
Toluene	0.21	1.34E-02	0.21	3.54E-03	0.017
Xylene (incl isomers and mixtures)	0.49	3.12E-02	0.49	8.26E-03	0.040
HAP Total		1.29E-01		6.52E-02	1.94E-01

***Polycyclic Organic Matter**	EF	PTE TPY	EF	PTE TPY
Acenaphthene	0.26	1.36E-03		
Acenaphthylene	0.028	1.46E-04		
Anthracene	0.07	3.66E-04		
Benzo(a)athracene	0.019	9.93E-05		
Benzo(b)fluoranthene	0.0076	3.97E-05		
Benzo(k)fluoranthene	0.0022	1.15E-05		
Benzo(g,h,l)perylene	0.0019	9.93E-06		
Benzo(a)pyrene	0.0023	1.20E-05		
Benzo(e)pyrene	0.0078	4.08E-05		
Chrysene	0.103	5.38E-04		
Dibenzo(a,h)anthracene	0.00037	1.93E-06		
Fluoranthene	0.05	2.61E-04		
Fluorene	0.77	4.02E-03		
Indeno(1,2,3-cd)pyrene	0.00047	2.46E-06		
2-Methylnaphthalene	2.38	1.24E-02		
Naphthalene (also individual HAP)	1.25	6.53E-03	1.25	2.11E-02
Perylene	0.022	1.15E-04		
Phenanthrene	0.81	4.23E-03		
Pyrene	0.15	7.84E-04		
POM Subtotal	5.93	3.10E-02	1.25	2.11E-02

Estimation Explanations
Emission factor (EF) units are % of organic PM for POM and phenol and % of TOC for all other organics
To avoid double-counting, "HAP Total" does not count naphthalene separately because naphthalene is accounted for in "POM Subtotal"
POM, naphthalene and phenol EF: AP-42, 3/04, Table 11.1-15 - organic particulate-based speciation percentages
All other organics EF: AP-42, 3/04, Table 11.1-16 - (TOC) organic volatile-based speciation percentages
Xylenes EF: m-, o- and p- isomers are individually listed as HAPs but for applicability purposes, are grouped as Xylenes
a. Truck loading predictive emission factors from AP-42 Tbl 11.1-14

TOC EF: $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ lb/ton HMA loaded out
Organic PM EF: $0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ lb/ton HMA loaded out

V = asphalt volatility = -0.5 AP-42 default value
T = HMA mix temperature = 325 ^{O}F, AP-42 default value
TOC EF = 4.16E-03 lb/ton
TOC emissions = 6.38E+00 tons/year (TOC EF x annual capacity)

Organic PM EF =	3.41E-04	lb/ton
Organic PM emissions =	5.23E-01	tons/year (Organic PM EF x annual capacity)

b. Truck-load emission factors from AP42, 11.1.2.5

TOC EF:	1.10E-03	lb/ton HMA hauled by trucks
TOC emissions =	1.69	tons/year (TCO EF x annual capacity)