STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT BOARD

IN THE MATTER OF THE PETITION FOR HEARING ON AIR QUALITY PERMIT NO. 8585 **No. EIB 21-48**

EARTH CARE NEW MEXICO, BY MIGUEL ACOSTA MUNOZ
and
LINDA MARIANIELLO, AS AN INDIVIDUAL
Petitioners

v.

NEW MEXICO ENVIRONMENT DEPARTMENT

v.

ASSOCIATED ASPHALT AND MATERIALS, LLC.
Applicant

NEW MEXICO ENVIRONMENT DEPARTMENT'S ANSWER TO APPEAL PETITION

COMES NOW, the New Mexico Environment Department ("Department"), and respectfully submits this Answer to the Appeal Petition filed by the Petitioners in the above captioned matter on August 30, 2021. Petitioners raise no grounds on which the Environmental Improvement Board ("EIB") could reasonably reverse the Department's decision to issue Permit 8585. The Administrative Record and Record Proper show that the Applicant and the Department adhered to all the legal and regulatory requirements for issuing Permit 8585. The Administrative Record and Record Proper also show that the Department undertook a robust public outreach effort, which resulted in an exhaustive, three-day public hearing beginning on March 22, 2021 ("March Hearing"), in which all parties submitted evidence and the members of the public shared their views.

The grounds for the objections raised in the Petition are without legal merit and are rooted in an aspirational interpretation of the law and flawed data. Petitioners provide no legal authority to support their objections – not even a legal citation. The objections are little more than a string of unsupported allegations that do not present any genuine issue of law or fact on which the EIB could reverse the Department. All of the relevant legal and factual issues were presented and considered by the Hearing Officer at the March Hearing. After the March Hearing, Petitioners, the Applicant, and the Department submitted their respective proposed findings of fact and conclusions of law. Upon receiving the Hearing Officer's draft report on June 28, 2021, Petitioners submitted an 18-page comment on the draft report. It cannot be plausibly argued that the Department's decision was arbitrary or capricious. With regard to Petitioners' unsupported claims that the March Hearing violated federal civil rights law, the EIB does not have jurisdiction to adjudicate allegations based solely on federal law.

It is unlikely that Petitioner would prevail at an appeal hearing. Petitioners are using this permitting action as a proxy for a rulemaking. The crux of Petitioners' objections in this matter is not that the Department's actions were objectionable, but rather that the regulations and federal guidance should be stricter. An appeal to the EIB is an improper forum for rulemaking by proxy, and would create a negative precedent. This Petition, taken strictly as an appeal of the issuing of Permit 8585 is without legal merit. The Petition should therefore be denied.

I. THE DEPARTMENT'S DEFINITION OF "AMBIENT AIR" IS REASONABLE AND IN ACCORDANCE WITH EPA REGULATIONS AND GUIDANCE

Petitioners mistakenly claim that "[t]he Department's decision approves a definition of ambient air that is contrary to law." [Petition at 3]. Petitioners offer no legal authority to support their claim. Instead, Petitioners argue that the Department "was inappropriately expanding that

definition to allow the Applicant to exclude National Ambient Air Quality Standards ("NAAQS") exceedances found at nearby properties." [Id.]. Rather than cite and use the actual federal definition of *ambient air*, Petitioners choose to describe the federal definition, without a legal citation, as follows:

> The United States Environmental Protection Agency ("EPA") defines ambient air in such a way that allows the Applicant to exclude emissions coming from within the property boundary of the Applicant's operation, within the Applicant's control, from the overall emissions expected to be released into the ambient air.

[Id.].

In fact, the EPA defines *ambient air* as "that portion of the atmosphere, external to buildings, *to which the general public has access*." 40 C.F.R. § 50.1 (emphasis added). The EIB's Air Quality Construction Permit rules ("Rules") define *ambient air* as "the outdoor atmosphere, but does not include the area entirely within the boundaries of the industrial or manufacturing property within which the air contaminants are or may be emitted and public access is restricted within such boundaries." 20.2.72.7(D) NMAC. The Department's "Air Modeling Guidelines" mirrors the EPA and EIB definitions as "any location at or beyond the fence line of the facility." [AR No. 7, Bates 493]. The Guidelines state that "[t]he fence line must restrict public access by a continuous physical barrier, such as a fence or wall." [Id.]. The Department's definition is also consistent with EPA's standing guidance for Region VI (NM, TX, LA, AR, and LA), which states that air modeling "can discount the contribution of a background source" provided that any source does not "excessively pollute their neighbors."[1] [NMED Exhibit 13]. Federal courts interpret the

[1] The guidance document referenced here as NMED Exhibit 13 comes from the United States Environmental Protection Agency's, *New Source Review Policy and Guidance Document Index.* The preamble to the *Index* states that "[s]ince 1976, EPA has provided guidance to Regions, States and Permittees to assist in the implementation of the New Source Review (NSR) preconstruction permit program under Part C (Prevention of Significant Deterioration (PSD) NSR permits) and Part D (Nonattainment NSR permits) of the Clean Air Act. This compilation contains over

definition at 40 C.F.R. § 50.1 in the same way as the Department. See *Resisting Envtl. Destruction on Indigenous Lands v. United States EPA*, 704 F.3d 743, 753 (9th Cir. 2012) (recognizing the federal definition ambient air in 40 C.F.R. § 50.1); and *First United Methodist Church v. United States Gypsum Co*., No. JH-88-2030 (D.MD, Oct. 1988) (holding that the 40 C.F.R. § 50.1 definition of ambient air did not apply within the property of a church that was having asbestos removed).

Petitioners' characterization of the definition of *ambient air* appears to imply that facility emissions can only be excluded from within the property boundary of Applicant's operation. However, the EPA's and EIB's definitions and EPA guidance include all *non-public areas* – in other words, there is no *ambient air* within non-public areas inside the property boundaries of the other operations in the vicinity. Because of this, contributions from within each of those operations are excluded from the Department's modeling within that operation's own non-ambient air for Permit 8585.

Petitioners' interpretation of the federal definition of *ambient air* is incorrect and unsupported by any legal authority or EPA guidance documents. Petitioners' claim that the Department has expanded the definition of *ambient air* is misguided. The Department's interpretation of the federal definition is reasonable and in accordance with 40 C.F.R. § 50.1, 20.2.72.7(D) NMAC, as well as EPA guidance that has been in place since 1989. [NMED Exhibit 13].

600 EPA-issued policy and guidance documents." https://www.epa.gov/nsr/new-source-review-policy-and-guidance-document-index (accessed 9/21/21 at 12:35 pm).

II. THE AIR DISPERSION MODELING IS APPROPRIATE AND IN ACCORDANCE WITH STATE AND FEDERAL STATUTES AND REGULATIONS

Petitioners mistakenly argue that "[t]he air dispersion modeling is deficient, violating of the [Air Quality] Bureau's Modeling Guidelines, and applicable law." [Petition at 3]. Petitioners, without offering legal or factual support, raise three separate objections to the air dispersion modeling in this matter. In each case, Petitioners' arguments are rooted in an aspirational interpretation of the law and the flawed data of their expert witnesses.

a. The air modeling for Permit 8585 is not deficient, and does not violate the Air Quality Bureau's Modeling Guidelines, EPA guidance, or applicable law

Petitioners express concern regarding whether Applicant's operation "will comply with the NAAQS because the Applicant's air dispersion modeling relies on the use of AP-42 emissions factors to determine expected emissions from the proposed source instead of actual, source-specific and real time emission data coming from [Applicant's] already-existing operations." [Id.]. Petitioners, without support of any legal authority, appear to imply that the Department's use of AP-42 is not permitted, and that "actual, source-specific and real-time emissions data coming from AAM's already-existing operations" is somehow a requirement when it is in fact *simply their preference*. [Petition at 3]. Petitioners do not like AP-42, and would *prefer* that the Department had collected data from facilities with older permits that are less stringent that Permit 8585.

However, the EPA's "Guideline on Air Quality Models" indicates that the use of AP-42 is an acceptable option for calculating emissions for modeling inputs. The Guideline describes three acceptable approaches to determining emission factors, and states that "emission factors for a variety of source types in an EPA publication commonly known as AP-42 . . . provides an indication of the quality and amount of data on which many of the factors are based." 82 Fed. Reg.

5218 (January 17, 2017). Hot Mix Asphalt plants have a dedicated section in AP-42 that was used by the Department's Air Quality Bureau ("Bureau") in setting limits for Permit 8585. See *AP-12: Compilation of Air Emission Factors* at § 11.1.[2]

At the March Hearing, Bureau staff testified that "New Mexico . . . do[es] not have the resources to conduct the extensive scientific reviews the EPA conducts to determine the state of the science on what doses of pollution cause unwanted health effects." [3/22/21 1 Tr. 224:9-13]. Bureau staff also testified that AP-42 emission factors are widely accepted by many agencies [in the United States], including the [D]epartment." [Id. at 247:13-14]. In fact, the use of AP-42 is widespread. Bureau staff has confirmed that, along with New Mexico, the City of Albuquerque and the states of Arizona, Hawaii, Idaho, Iowa, Minnesota, Nevada, Oklahoma, Oregon, Texas, Utah, Washington, and Wyoming – at least 25 percent of the United States - use AP-42 as a source for calculating emissions for modeling inputs. [NMED Attachment 1].[3]

The Department's modeling is not deficient, and it not in violation of the Bureau's Modeling Guidelines, EPA guidance, or any applicable law. Petitioners' claims to the contrary are in conflict with widespread practice in the United States and merely reflect Petitioners' preference. Petitioners' preferences are not legal requirements and are not sufficient grounds to reverse the Department's decision to issue Permit 8585. The EIB should decline to do so.

[2] United States Environmental Protection Agency, *AP-42: Compilation of Air Emission Factors*, https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors (accessed September 22, 2021 at 2:19 pm).

[3] Based on research, the percentage of states that use AP-42 is probably closer to 100 percent. Time constraints made confirmation from all 50 states impossible. But, every state that was researched did use AP-42.

b. The Department's air dispersion modeling demonstrates that Applicant's facility will not cause $PM_{2.5}$ NAAQS exceedances

Petitioners argue that use of AP-42 emission factors "demonstrates that the proposed operation will operate within less than 1% of the $PM_{2.5}$ NAAQS and, even in using these emission factors, the operation creates $PM_{2.5}$ NAAQS exceedances in *at least* 11 locations."[4] [Petition at 3] (emphasis in original). It is important to note that Petitioners are *not* arguing that the modeling shows that Applicant's facility will create $PM_{2.5}$ exceedances in ambient air. Rather, what Petitioners are *actually* arguing is that there is a hypothetical, future possibility that $PM_{2.5}$ exceedances could occur. In reality, the modeling submitted by Associated Asphalt demonstrates that there *will not be future possible exceedances* if the facility complies with the permit. [NMED Exhibit 3 at 2]. That is the purpose of the modeling, and that demonstration allows the Permit to be issued. If the EIB accepts Petitioners' logic on this point, then no air quality permits could ever be lawfully issued on the grounds that there was a hypothetical, future possibility of exceedances. Petitioners also claim, without offering any supporting evidence, that "the operation creates $PM_{2.5}$ NAAQS exceedances in *at least* 11 locations." [Id.]. Presumably, this is another version of the argument (discussed above) regarding the definition of *ambient air*.

The EIB's Rules mandate that the Department must deny a construction permit application if "[t]he construction . . . will cause or contribute to air contaminant levels in excess of any National Ambient Air Quality Standard." 20.2.72.208(D) NMAC. The contaminant level for $PM_{2.5}$ is set by the EPA at an annual average of 12.0 $\mu g/m^3$ (averaged over three years), and at a 24-hour average

[4] *$PM_{2.5}$* is defined by the EPA as "fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller . . . [t]he average human hair is about 70 micrometers in diameter – making it 30 times larger than the largest fine particle." United States Environmental Protection Agency, *Particulate Matter (PM) Basics*, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics (accessed September 23, 2021 at 4:03 pm).

of 35 µg/m^3 (averaged over three years).[5] The Department's Modeling Summary for Permit 8585 concluded that that annual ambient impact from $PM_{2.5}$ was 11.912 µg/m^3, a maximum concentration that is 99.3% of the 12.0 µg/m^3 standard set by the EPA. [AR No. 6 at 438]. The Modeling Summary concluded that the 24-hour ambient impact from $PM_{2.5}$ was 34.020 µg/m^3, a maximum concentration that is 97.2% of the 35 µg/m^3 standard set by the EPA. [Id.]. Both the annual and 24-hour $PM_{2.5}$ levels are below the EPA standard. The Department cannot deny the permit on these grounds. See 20.2.72.207(D) NMAC and 20.2.72.208 NMAC (setting forth the grounds for issuing or denying an air quality construction permit).

Petitioners' argument that the EIB should reverse the Department's decision based on a hypothetical future exceedance of $PM_{2.5}$ is without merit. Petitioners' objection that the Applicant's operation will operate within less than 1% of the $PM_{2.5}$ NAAQS is an attempt to persuade the EIB to change air quality standards outside of the rulemaking process. Petitioners' arguments on this point, if accepted, would create an absurd outcome in which any permit could be overturned on appeal based on mere speculation about a hypothetical future exceedance. The EIB should decline to create this type of precedent.

c. The Department's use of a two-year average of $PM_{2.5}$ emissions concentration data was reasonable and meets regulatory standards

Petitioners argue that the Applicant "likely did not have an accurate expected emissions calculation because the background $PM_{2.5}$ emissions concentration data provided by the Department was based on an incomplete three-year average." [Petition at 3]. Petitioners make the allegation that "the Department arbitrarily allowed for the use of a $PM_{2.5}$ average concentration

[5] United States Environmental Protection Agency, *NAAQS Table*, https://www.epa.gov/criteria-air-pollutants/naaqs-table (accessed September 23, 2021 at 10:46 am).

based on incomplete data that does not represent air quality conditions in the area." [Id. at 4]. Petitioners offer no legal authority or EPA guidance to support their claims. Contrary to what Respondent's argue, the Department's background $PM_{2.5}$ emissions concentration data was *more* robust than what is required by the EPA guidelines.

The EPA's "Guideline on Air Quality Models" requires that the methods used for developing background concentrations are "expected to conform to the same quality assurance and other requirements as those [methods] established for PSD [Prevention of Significant Deterioration] purposes." 82 Fed. Reg. 5220 (January 17, 2017). Under the EPA's own interpretation, "PSD applies to *new major sources* or major modifications at existing sources for pollutants where the area the source is located is in attainment or unclassifiable with the [NAAQS]."[6] (emphasis added). Applicant's facility is not a *major source*. It is a *minor source*. In plain language, before construction can begin for a new *major source*, an ambient air quality analysis must be completed.[7] If the area in which a *major source* is located is an attainment area (as is the case in with Permit 8585), then the monitoring for background concentrations is required to be "conducted for at least 1 year prior to submission of the application to construct."[8] Because the $PM_{2.5}$ contributions of a *minor source* are less than that of a *major source*, the use of at least one-years monitoring data is in accordance with the EPA's guideline.

In this case, the Department used a two-year average of monitoring data for the years 2013 and 2014, which is more than is required under the EPA monitoring guidelines. [3/22/31 1 Tr.

[6] United States Environmental Protection Agency, *Prevention of Significant Deterioration Basic Information*, https://www.epa.gov/nsr/prevention-significant-deterioration-basic-information (accessed September 23, 2021, 4:31 pm).
[7] United States Environmental Protection Agency, *Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)* at 15, https://www.epa.gov/sites/default/files/2015-07/documents/monguide.pdf
[8] Id. at 23.

250:20]. The reason why the Department relied on a two-year average is because the EPA shut down the Runnels Building monitor in June 2014 due to historically low pollutant levels, leaving only the years 2013 and 2014 to create an average. [Id. at 250:15-16; NMED Exhibit 11 at 10-11]. At the March Hearing, the Bureau's modeler, Eric Peters explained that the use of a two-year average was not necessarily less informative than a three-year average, because "a three-year average could reduce peaks in concentrations. So you can't say that it would be better to have three years." [Id. at 250:24-251:1].

Part of Petitioners' misguidance on this issue seems to stem from Petitioners' reliance on the flawed data obtained by their witness Dr. James Clark. At the hearing, Mr. Peters testified that Dr. Clark appeared to "not use the $PM_{2.5}$ National Ambient Air Quality Standard correctly." [3/23/21 2 Tr 478:12-13]. Mr. Peters further explained that

> [i]t is important to clarify that the model uses maximum emission rates combined with worst case meteorology and other assumptions that tend to maximize predicted concentrations. This means that the output of the model is the maximum possible exposure, not the expected exposure. The [A]pplicant is required to show that it will not produce concentrations above the air quality standards, but a model that fails to show that cannot be said to show the facility will produce concentrations above standards. The actual concentrations that people are exposed to would be expected to be significantly less than the values predicted by the model.

[Id. at 479:4-16].

Mr. Peters explained that one of the reasons why Dr. Clark's conclusions were inaccurate was that Dr. Clark's modeling inputs were based on receptor spacing and meteorological data that was inconsistent with EPA guidance. [Id. at 479:20-21]. Mr. Peters testified that Dr. Clark "used 10-meter receptor spacing instead of the 50-meter spacing recommended by the Department." [Id. at 479:24-480:2; Community Exhibit 28 at 23]. According to Mr. Peters

> Dr. Clark used receptor spacing that was one-fifth of the value that the Department recommends and accepts. [Dr. Clark's] refinement of receptor spacing beyond practices appears to be an abuse of the model and the Department does not accept this practice . . . the suggestion that ultrafine receptor spacing should be used is inconsistent with the reality of how and where people actually live. There is no justification beyond its limits to analyze an area [where] people will not be found.

[3/23/21 2 Tr. 480:25-481:5; 481:25-482:4].

The Department's use of a two-year average of background concentration data was reasonable. The two-year average is more than is required by EPA guidelines. Petitioners' arguments are based on the flawed, inaccurate data provided by their witness Dr. Clark, and have no legal merit.

III. INDIVIDUALS WITH LIMITED ENGLISH PROFICIENCY WERE AFFORDED ADEQUATE NOTICE AND OPPORTUNITY TO MEANINGFULLY PARTICIPATE IN THE PUBLIC HEARING

A. The March 22 Hearing complied with Department policy on LEP Community Members

Petitioners claim that "the Department's hearing process violated limited English proficient ('LEP') community members' right to participate in the hearing." [Petition at 4]. In support of their claim, Petitioners misleadingly state that the Department "decided that members of the public could 'speak English well enough,' moving forward with the hearing and discouraging members from commenting at the hearing." [Id.]. Petitioners offer no legal authority to support their claim, nor do Petitioners cite to the Record for factual support. However, a review of the both the Administrative Record and the Record Proper shows that the Department specifically designed this hearing to facilitate the full participation by LEP community members, and to ensure that the hearing was conducted in compliance with Title VI of the federal Civil Rights Act of 1964, 40 U.S.C. §§ 2000d-2000d-7, and the Environmental Protection Agency's regulations prohibiting discrimination in any program receiving federal funding, 40 C.F.R. Parts 5 and 7.

The Department's *Limited English Proficiency ("LEP") Accessibility and Outreach Policy* ("Policy 07-11" attached hereto as NMED Attachment 2) explicitly prohibits "unlawful discriminatory practices regarding its decisions that directly relate to or impact its programs." [NMED Attachment 2 at 2]. The Department's Policy 07-11 asserts that Department does not "condone, tolerate, practice or engage in unlawful discrimination against any external party . . ." [Id.]. Every permitting action taken by the Department requires an individual assessment "in order to determine the extent to which LEP services are necessary." [Id. at 6.] If the Department determines that LEP services are necessary, then adequate services must be provided by a certified interpreter. [Id. at 8.] Public notice documents must be translated by a certified translator and issued, at a minimum, in the same manner as English notices. [Id. at 9]. The Department's *LEP Accessibility and Outreach Policy* is designed to ensure that all Department actions are in compliance with Title VI of the federal Civil Rights Act of 1964, 40 U.S.C. §§ 2000d-2000d-7, and the Environmental Protection Agency's regulations prohibiting discrimination in any program receiving federal funding at 40 C.F.R. Parts 5 and 7. The Department not only complied with Policy 07-11, but provided far more notice and opportunity than either the policy or the permitting rules require.

i. The Notice of Hearing complies with Policy 07-11

In order to better inform the public about proposed Permit 8585, the Department created a "Frequently Asked Questions" ("FAQ") sheet and a Fact Sheet, in both English and Spanish, that explained the proposed permit and the permitting process. [AR Nos. 525-542; Bates 2675-2694; 3/22/21 1 Tr. 210:19-25]. The FAQs and the Fact sheet were sent to interested persons, in both English and Spanish, and posted on the Bureau's permitting website, also in English and Spanish.

[Id.]. All Spanish translations were done by the Department's translator. [NMED Exhibit 1 at 14-15].

The Notice of Hearing was published in English and Spanish in the *Albuquerque Journal* and the *Santa Fe New Mexican* on February 5, 2021. [AR No. 515-524, Bates 2625-2635]. The Notice contained the following instructions in both English and Spanish:

> The hearing will be held as a virtual meeting on the Zoom platform to begin at 4:00 p.m. MST on March 22, 2021. If necessary, the hearing will continue on subsequent days as needed. *Spanish interpretation will be available in real time by clicking on "Interpretation" and selecting "Spanish" to listen to the interpreter and participate . . .*
>
> The Zoom link above will also be posted at the Air Quality Bureau's website with basic instructions on March 22, 2021: https://www.env.nm.gov/air-quality/permit-applications-with-public-interest-public-meeting-or-public-hearing/. The Hearing Officer will accept oral non-technical public comment at the beginning of the hearing and at 7:00 p.m., and at other times as appropriate between and at the end of the technical presentations, until the Hearing Officer has determined that all persons have been given a reasonable opportunity to be heard. Oral non-technical public comments shall be received under oath. The Hearing Officer may set reasonable limits on oral non-technical public comments. The hearing will be conducted in accordance with the Environment Department Permitting Procedures, 20.1.4 NMAC, the procedures in Air Quality Construction Permits, 20.2.72 NMAC, and other applicable hearing procedures . . .
>
> *A Spanish interpreter will be present for the virtual hearing*. If any person requires assistance, another type of interpreter, or auxiliary aid to participate in the hearing, please contact . . . the New Mexico Environment Department Air Quality Bureau . . . by February 25, 2021 . . . TDD or TDY users may access this number via the New Mexico Relay Network at 1-800-659-8331 . . .
>
> NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: [the Department's] Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502 . . .

> You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

[Id.] (Zoom link omitted; emphasis added).

On February 4, 2021. the Bureau posted the Notice of Hearing, the FAQs, and the Fact Sheet in both English and Spanish on the Bureau's website on the webpage for permit applications that have significant public interest on February 4, 2021. [AR No. 512, 2595-2596; NMED Exhibit 1 at 23]. On February 5, 2021, the Department sent out by email the Notice of Hearing in English and in Spanish to citizens who had expressed interest in Permit 8585 [AR Nos. 478-491, Bates 2541 – 2554; AR No. 476, Bates 2533-2536; AR No. 477, Bates 2537-2540; NMED Exhibit 1 at 23]. The emails also contained information on where citizens could find more information on the Bureau's permitting webpage, which included the FAQs and the Fact Sheet in both English and Spanish. [Id.]. The Department printed hard copies of the Notice of Hearing in English and in Spanish on February 2, 2021, and prepared envelopes with labels to be mailed by postal service to citizens who submitted only written comments by postal service or walk-ins. Department staff delivered these envelopes, each containing both Notices of Hearing, to the Runnels Building on February 2, 2021, so they could be mailed out. [NMED Exhibit 1 at 23].

On February 5, 2021, the Department sent e-mails to Rudy Acosta, Promotions Director at Entravision Albuquerque, where KRZY La Suavecita 105.9 FM is produced for broadcast in Santa Fe, and to Mr. Brasher at KANW-FM radio, following their PSA Policy. The e-mails included an attached PSA in Spanish. The body of the e-mails was a request to run the attached PSA in its entirety as a public service message during Spanish broadcasts and provide a quote for running 30 paid ads during primetime Spanish broadcasts between February 5, 2021 and March 22, 2021. [AR Nos. 496-497, Bates 2563-2566; NMED Exhibit 1 at 24; 3/22/21 1 Tr. 210:7-9]. Mr. Acosta and

Mr. Brasher did not respond to the Department's requests, so it is not known whether the PSAs were broadcast. [NMED Exhibit 1 at 24].

The Department's efforts to provide notice to LEP community members were robust, and went far beyond what is required by Policy 07-11 and the rules.

ii. The March 22 hearing complied with Policy 07-11

At the hearing two certified Spanish-language interpreters were available, one to interpret for the Zoom platform, and one available to interpret for participants who wanted or needed to participate telephonically. [3/22/21 Tr. 1 3:14-16]. The Zoom virtual platform that was used to conduct the hearing featured a separate Spanish-language "channel" in which LEP community members could attend the virtual hearing and have real-time Spanish-language interpretation of the hearing, as well as their comments and cross-examination. [Id. at 47:22-25].

The March 22 Hearing was the first time the Department had used the Zoom language-channel feature, so use of the Zoom platform was not without hiccups. For example, there was some confusion on the first day with regard to how the language-channel feature worked. [Id. at 49:24-25]. In every instance where there was a question on how the language-channel feature worked, the issues were resolved in a matter of minutes, and no person, LEP or otherwise, was denied an opportunity to participate.

Petitioners mistakenly claim that the Department "decided that members of the public could 'speak English well enough,'" implying that the Hearing Officer forced an LEP community member to speak in English. [Petition at 4]. That is not the case. On the first day of the hearing there were a few minutes where the Hearing Officer and the interpreters were working out how the language-channel feature would work when an LEP community member was unclear on how

the feature worked. [3/22/21 1 Tr. 46:12-50:13; 54:9-12]. As the Hearing Officer and the interpreters were working out how the language-channel feature worked for comments and cross-examination, the LEP community member, unprompted, said, "Okay. It's fine. Let's do it, then, in English. Let's do it in English. So, this is okay." [Id. at 50:14-16]. Contrary to what Petitioners claim, it was the LEP community member who decided to give comment in English. [Id. at 50:17-52:20].

On the second day of the hearing, the same LEP community member again had difficulty with the language-channel feature when the member began cross-examining a witness. [3/23/21 2 Tr. 286:14-288:8]. A brief discussion followed between the Hearing Officer, the LEP community member, and a Spanish-language interpreter on how the language-channel worked. [Id.]. During this discussion, the LEP community member was speaking in English voluntarily, but did express a preference to cross-examine in Spanish. [Id. at 286:14-16]. During this discussion, the Hearing Officer and the LEP community member engaged in the following exchange:

> [Hearing Officer]: . . . I think you speak English well enough that you can understand at least some instructions here. At the bottom of your screen there is a little globe. It says interpretation. Do you see that?
>
> [LEP Comm. Member]: . . . I saw it, and I have been using it for me to understand . . .
>
> [Hearing Officer]: Great.
>
> [LEP Comm. Member]: . . . everything that was said yesterday in English. The problems that I see here is that when I'm talking in Spanish you should be the one changing the language for you to hear what I'm saying in the language.
>
> [Hearing Officer]: Okay.
>
> [LEP Comm. Member]: So, in that place, I guess that . . . I mean, I . . . and I'm not the technician here about this. I just . . .
>
> [Hearing Officer]: Okay. Well, let's give it . . . let's give it a try . . . So, I'm going to switch over to my English button at the bottom. And why don't you say something in Spanish, and let's see if I understand you.

[LEP Comm. Member]: (in Spanish, through the interpreter). Perfect.
[Id. at 287:11-288:10].

Following the exchange, the LEP community member successfully cross-examined an English-speaking witness in Spanish through an interpreter. [Id. at 289:19-293:25]. Contrary to what Petitioners claim, at no time did the Hearing Officer deny the community member an opportunity to participate, nor did the Hearing Officer deny any participant an interpreter or force anyone to speak in English. Rather, the Hearing Officer took the time to work out any technical issues in order to ensure that the community members could fully participate in the language they preferred.

Petitioners' claims that the Department violated its own policies and did not meet its obligations to accommodate LEP hearing participants is without merit. The Administrative Record and Record Proper show that LEP hearing participants were given sufficient notice and opportunity to meaningfully participate in the March 22 hearing.

B. The EIB does not have jurisdiction to enforce the 1964 Civil Rights Act

Petitioners allege that "the Department's hearing process violated Title VI of the 1964 Civil Rights Act." [Petition at 4]. Petitioners offer no legal authority – not even a citation – in support of the claim. Nor do Petitioners explain the legal basis for asking the EIB to enforce federal civil rights law. Essentially, the Petitioners are asking the EIB to preempt federal agencies and courts by overturning the Department's decision to issue Permit 8585 on the grounds that the hearing process violated Title VI. There is no legal basis for the EIB to do so, and there is no reason to do so. As stated above, Policy 07-11 was created to ensure that the Department adheres to both the

spirit and the letter of Title VI; and the hearing in this matter was specifically designed to ensure that LEP community members had access to meaningfully participate in the hearing.

The Civil Rights Act of 1964, 42 U.S.C. §§ 1981-2000h-6 (2019), asserts that '[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Id. at § 2000-d. However, enforcement of the Civil Rights Act of 1964 is under federal jurisdiction. See Id. at §§ 2000d-1, 2000d-2 (stating that enforcement of Title VI is under the jurisdiction of federal agencies and courts).

The Environmental Improvement Act limits the subject matter jurisdiction of the EIB to "environmental management and consumer protection." NMSA 1978 § 74-1-8(A); See also 20.1.2.109(A) NMAC (stating that "[t]he board shall exercise all powers and duties as prescribed under the act"). In the context of air quality, the EIB's duty is to "prevent or abate air pollution." NMSA 1978, 74-2-5(A). In addition, the EIB's adjudicatory procedures limit the scope of the EIB's authority in this matter to "proceedings . . . for the appeal from permitting actions, pursuant to the Air Quality Control Act." 20.1.2.2(A)(1) NMAC. Nothing in the Air Quality Control Act grants the EIB the authority to adjudicate federal civil rights claims or to reverse the Department's decision to issue Permit 8585 on those grounds. The New Mexico Court of Appeals has definitively addressed the issue of the EIB's authority in the context of the Air Quality Control Act:

> Administrative bodies are the creatures of statutes. As such they have no common law or inherent powers and can act only as to those matters which are within the scope of the authority delegated to them. The legislative mandate in this instance is expressed in simple and direct language: *The board shall prevent or abate air pollution* . . . [the EIB] cannot adopt regulations . . . except to "prevent or abate air pollution."

Public Serv. Co. v. N.M. Envtl. Improvement Bd., 1976-NMCA-039, ¶¶ 7, 19; 89 N.M. 223, 226-227, 230 (internal citations omitted; emphasis added).

Petitioners are asking the EIB to sit as a district court to enforce federal civil rights law. This is contrary to state and federal law. Petitioners have made no showing that any participant in the March Hearing was denied access to the hearing on the ground of race, color, or national origin, or subjected to any type discrimination on those grounds. Petitioners offer no legal authority to support their extraordinary attempt to have the EIB adjudicate the Civil Rights Act of 1964 and the EIB should decline to do so.

IV. CONCLUSION

The Department's decision to issue Permit 8585 was made after a robust public outreach process and an exhaustive three-day public hearing. As the Administrative Record and the Record Proper will show, both the Applicant and the Department met all of the legal and regulatory requirements at every point in this proceeding. Petitioners' allegation that the Department's decision was arbitrary, capricious, or otherwise not in accordance with the law is without merit. Petitioners' claims that the March Hearing violated federal civil rights law is misguided and is not subject to EIB jurisdiction. Petitioners have failed to raise any grounds on which the EIB could reasonably reverse the Departments decision to issue Permit 8585. The Petition should be denied.

Respectfully submitted,
/s/ Chris Vigil
Assistant General Counsel
New Mexico Environment Department
121 Tijeras Ave. NE, Ste. 1000
Albuquerque, NM 87102
Phone: (505) 469-4696
Fax: (505) 383-2064
Email: christopherj.vigil@state.nm.us

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing New Mexico Environment Department's Answer to Appeal Petition was served via electronic mail on the following parties of record on September 24, 2021:

Travis G. Jackson
Meghan D. Stanford
Jackson Loman Stanford Downey, P.C.
201 3 ST. SW# 1500
Albuquerque, NM 87102
travis@jacksonlomanlaw.com
meghan@jacksonlomanlaw.com
Counsel for Applicant

Maslyn Locke
Eric Jantz
New Mexico Environmental Law Center
1405 Luisa Street Suite 5
Santa Fe, NM 87505
mlocke@nmelc.org
ejantz@nmelc.org
Counsel for Petitioners

Karla Soloria
New Mexico Office of the Attorney General
P.O. Box 1508
Santa Fe, New Mexico 87504
ksoloria@nmag.gov
Counsel for the Environmental Improvement Board

Pamela Jones
Hearing Administrator
Environmental Improvement Board
1190 Saint Francis Drive, Suite S2102
Santa Fe, New Mexico 87505
pamela.jones@state.nm.us
Administrator for the EIB

/s/Chris Vigil
Chris Vigil
Assistant General Counsel

City of Albuquerque

Environmental Health Department
Air Quality Division

Permit Application Checklist

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. Prior to ruling a submitted application complete each application submitted shall contain the required items listed below. **This checklist must be returned with the application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

All applications shall:

1. be made on a form provided by the Department. Additional text, tables, calculations or clarifying information may also be attached to the form.

2. at the time of application, include documentary proof that all applicable permit application review fees have been paid as required by 20 NMAC 11.02. Please refer to the attached permit application worksheet.

3. contain the applicant's name, address, and the names and addresses of all other owners or operators of the emission sources.

4. contain the name, address, and phone number of a person to contact regarding questions about the facility.

5. indicate the date the application was completed and submitted

6. contain the company name, which identifies this particular site.

7. contain a written description of the facility and/or modification including all operations affecting air emissions.

8. contain the maximum and standard operating schedules for the source after completion of construction or modification in terms of hours per day, days per week, and weeks per year.

9. provide sufficient information to describe the quantities and nature of any regulated air contaminant (including any amount of a hazardous air pollutant) that the source will emit during:
   - Normal operation
   - Maximum operation
   - Abnormal emissions from malfunction, start-up and shutdown

10. include anticipated operational needs to allow for reasonable operational scenarios to avoid delays from needing additional permitting in the future.

11. contain a map, such as a 7.5-minute USGS topographic quadrangle, showing the exact location of the source; and include physical address of the proposed source.

12. contain the UTM zone and UTM coordinates.

13. include the four digit Standard Industrialized Code (SIC) and the North American Industrial Classification System (NAICS).

14. contain the types and **potential uncontrolled** amounts of any regulated air contaminants the new source or modification will emit. Complete appropriate sections of the application; attachments can be used to supplement the application, but not replace it.

15. contain the types and **controlled** amounts of any regulated air contaminants the new source or modification will emit. Complete appropriate sections of the application; attachments can be used to supplement the application, but not replace it.

16. contain the basis or source for each emission rate (include the manufacturer's specification sheets, AP-42 Section sheets, test data, or other data when used as the source).

17. contain all calculations used to estimate **potential uncontrolled** and **controlled** emissions.

18. contain the basis for the estimated control efficiencies and sufficient engineering data for verification of the control equipment operation, including if necessary, design drawings, test reports, and factors which affect the normal operation (e.g. limits to normal operation).

19. contain fuel data for each existing and/or proposed piece of fuel burning equipment.

20. contain the anticipated maximum production capacity of the entire facility and the requested production capacity after construction and/or modification.

21. contain the stack and exhaust gas parameters for all existing and proposed emission stacks.

22. provide an ambient impact analysis using a atmospheric dispersion model approved by the US Environmental Protection Agency (EPA), and the Department to demonstrate compliance with the ambient air quality standards for the City of Albuquerque and Bernalillo County (See 20.11.01 NMAC). If you are modifying an existing source, the modeling must include the emissions of the entire source to demonstrate the impact the new or modified source(s) will have on existing plant emissions.

23. contain a preliminary operational plan defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown.

24. contain a process flow sheet, including a material balance, of all components of the facility that would be involved in routine operations. Indicate all emission points, including fugitive points.

25. contain a full description, including all calculations and the basis for all control efficiencies presented, of the equipment to be used for air pollution control. This shall include a process flow sheet or, if the Department so requires, layout and assembly drawings, design plans, test reports and factors which affect the normal equipment operation, including control and/or process equipment operating limitations.

26. contain description of the equipment or methods proposed by the applicant to be used for emission measurement.

27. be signed under oath or affirmation by a corporate officer, authorized to bind the company into legal agreements, certifying to the best of his or her knowledge the truth of all information submitted.

ADEQ Arizona Department of Environmental Quality

APPLICATION COMPLETENESS CHECKLIST

GENERAL PERMIT – HOT MIX ASPHALT PLANTS

Before submitting this application to ADEQ, please ensure that you have completed the following: (PLEASE CHECK THE BOXES AND ATTACH THE COMPLETED FORM TO THE APPLICATION)

☐ The Application Form (Form B- page 9) has been completed and signed by the Responsible Official (see page 6 for definition of "Responsible Official")

☐ Verified that the business name identified in Item #1 of the Standard Permit Application Form is registered with the Arizona Corporation Commission (Form B- page 9)

☐ The General Permit Application Fee of $500 has been included in your submittal

☐ The Responsible Official has signed the Compliance Certification and Certification of Truth, Accuracy, and Completeness (Form H- page 36)

☐ The General Permit Applicability Checklist is completed (Form A- page 8)

☐ Emission calculations have been completed for all applicable equipment using the maximum rated capacity for each piece of equipment. If you have used the HMAP Application Emission Calculation Spreadsheet for emission calculations, the completed spreadsheet must be attached to the application.

☐ The Equipment List has been completed and identifies all equipment which will be covered by the General Permit. This includes type of equipment, maximum rated capacity, make, model, serial number, date or year of manufacture, and equipment identification number (Form G- page 32, and pages 33 & 34, if applicable)

APPLICATION PACKET

FOR

HOT MIX ASPHALT PLANT

GENERAL PERMIT

Arizona Department of Environmental Quality

Air Quality Division

April 30, 2012

NMED Attachment 1

This page was left blank intentionally

TABLE OF CONTENTS

This page was left blank intentionally

I. INTRODUCTION

This application has been developed specifically for applicants pursuing coverage under the hot mix asphalt plant general permit in lieu of an individual permit. To expedite the processing of an air quality control permit application, the Arizona Department of Environmental Quality (ADEQ) has created a general permit for hot mix asphalt plants (HMAP). Facilities, which meet the criteria in this general permit application, will be permitted under the HMAP general permit and will pay lower annual air quality fees than HMAP covered under individual air quality permits. This application packet assists the applicant in the submittal of information required to process their application for an air quality control permit.

II. APPLICABILITY

A. This general permit allows collocation of crushing & screening plant (C & S) and/or concrete batch plant (CBP) in attainment areas. However, in non-attainment areas, only stand-alone HMAP are permitted. The following table provides the maximum daily production limits permitted, based on modeling analysis, for various operating scenarios. **If the daily production is likely to exceed any of the specified limits, the facility does not qualify for general permit and must apply for an individual permit.**

MODELING BASED THROUGHPUT LIMITATIONS

Facility	Maximum Daily Throughput	
	PM_{10} Attainment Areas	PM_{10} Non-attainment Areas
Stand-alone HMAP	5,280 tons	3,150 tons
HMAP collocated with C&S and CBP plants	HMAP: 4,200 tons C&S: 3,780 tons CBP: 1,275 yd^3	Not authorized

Please note that the particulate matter below 10 micron size (PM_{10}) non-attainment areas in the State are identified in Appendices A through F.

B. In addition to the above throughput limitations, the operating hours for all equipment covered under the permit will be restricted such that the emission limits for the pollutants do not exceed limits identified in the following table. Such limits are intended to keep the facility-wide emissions below the major source thresholds and while in Maricopa County, to stay below Rule 241 Best Available Control Technology (BACT) thresholds. The operating hours will be specified on the specific Authorizations to Operate.

EMISSION LIMITS FOR STATEWIDE AND MARICOPA COUNTY

Pollutant	Maricopa County		State wide except Maricopa County
	Emission limit		Emission Limit
	Pounds per day	Tons per year	Tons per year
Particulate matter (PM)	135	22.5	Not Applicable
Particulate matter less than 10 microns (PM_{10})	76.5	13.5	90
Carbon monoxide (CO)	495	90	90
Nitrogen oxides (NO_x)	135	22.5	90
Sulfur dioxide (SO_2)	135	22.5	90
Volatile organic compounds (VOC)	135	22.5	90

III. AUTHORIZATIONS TO OPERATE

A. Any source which is qualified to be covered by this general permit may apply to the Arizona Department of Environmental Quality (the Department) for authority to operate under this general permit. Applicants shall submit the application forms and necessary information included in Appendix 1 of the Arizona Administrative Code (A.A.C.) Title 18, Chapter 2.

B. If the applicant meets the criteria for coverage under this general permit, an Authorization to Operate (ATO) will be issued for each drum dryer, asphalt heater, pug mill, concrete batch plant, water heater, silo, crusher, screen and internal combustion engine (except those which are integrated into other process equipment). The ATOs attest to the parties' formal agreement to abide by all conditions contained in the general permit. Other associated pieces of equipment do not require an individual ATO but are subject to the provisions of this general permit.

IV. JURISDICTION

Maricopa County AQD and Pima and Pinal County AQCDs or Indian Reservations may administer and enforce this general permit and issue ATOs for sources under their jurisdiction.

A. Stationary Sources

Stationary sources wishing to obtain coverage under this general permit and associated ATOs will be required to apply to ADEQ, except for stationary sources which are located on an Indian Reservation or in Maricopa, Pima or Pinal Counties. These stationary sources will be required to obtain a permit from the respective AQD or AQCD.

B. Portable Sources

1. A portable source is any stationary source which is capable of being transported and operated in more than one county of Arizona.

2. According to Arizona Revised Statutes (A.R.S.) §49-402, portable sources wishing to obtain coverage under this general permit will be required to apply to ADEQ. However, if the portable source will operate for the remaining term of this general permit on an Indian Reservation or in Maricopa, Pima or Pinal Counties, then the respective AQD or AQCD will process the application for a permit.

3. A portable source which has received coverage under this general permit from an Indian Reservation or Maricopa County AQD or Pima or Pinal County AQCDs is not allowed to operate in any other county, unless one of the following occurs:

   a. If a portable source is proposing to operate in a county without an AQCD, then the portable source will be required to apply to ADEQ and obtain coverage under this general permit before beginning operations in that county; or

   b. If a portable source is proposing to operate for the remaining term of this general permit on an Indian Reservation or in another county with an AQD or AQCD, then the portable source will be required to apply to the respective AQD or AQCD and obtain a permit before beginning operations in that county.

   If the applicant has any questions regarding jurisdictional issues, please contact the appropriate agency at the phone number below:

ADEQ:	1-800-234-5677 ext 771-2338
Maricopa County:	(602) 506-6010
Pima County:	(520) 243-7400
Pinal County:	(520) 866-6929

V. PERMIT ISSUANCE TIME FRAME

According to Arizona Administrative Code (A.A.C.) R18-1-525, ADEQ has 21 business days to determine if the submitted general permit application is complete. Once the application is determined to be complete, the Department has 103 business days to make a licensing decision on the application. The Department, upon the determination that additional information is needed, can suspend the counting of the days. In such a case, a letter will be sent to the applicant informing them that the counting of days has been suspended, and will also specify what additional information is necessary to continue processing the application.

.

VI. DISCLAIMER

This application packet does not waive the rights of the Director as provided under Arizona Administrative Code (A.A.C.) R18-2-304 to request that additional information be submitted by the applicant to assist in the processing of the application for an air quality permit. Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the source after the date it filed a complete application but prior to release of a proposed permit. If there is any difference between this application packet and Title 18, Chapter 2 of the A.A.C, the A.A.C shall take precedence.

APPLICATION INSTRUCTIONS

This section of the application packet helps the applicant assemble a complete application, make the appropriate calculations, complete a compliance plan/certification, and submit all information in a manner that will expedite the application review.

ADEQ recognizes that HMAP, in general, move and change equipment configuration frequently. The information provided in the application should reflect the current configuration.

Please read all sections of this application packet very carefully. Provide all information requested. The final application submitted should include all the forms in the application packet. Make additional copies of the forms as necessary to be sure that all information is included.

Form A: General Permit Applicability Checklist

Form A of this application packet has been developed to determine if your facility qualifies for coverage. Those facilities which do not qualify must obtain an individual air quality permit.

Form B: General Permit Application Form

Please complete all lines.

Note: The "Responsible Official" is the owner or partner of the company in most cases. It may also be the president or vice-president of larger companies. If there is a question as to who the responsible official is, please contact ADEQ for more information at 602-771-2338.

Forms C: Emission Calculations

An Excel spreadsheet was developed to assist applicants in completing their emission calculations. The emissions calculation spreadsheet is available at the following address:

http://www.azdeq.gov/environ/air/permits/download/hmap_eca.xls

If the above calculation spreadsheet is submitted, the applicant is not required to complete Tables 1 through 25 of Form C of this application. Otherwise, the applicant must complete Tables 1 through 25 of Form C. These tables provide worksheets to assist the applicant in calculating emission rates. Emissions factors are based on AP-42, Compilation of Air Pollutant Emission Factors by Environmental Protection Agency.

The applicant may, however, choose to use emission factors provided by manufacturer data or test results. In such an event, supporting documents (manufacturer's data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors.

Form D: Table 22 should be used to calculate the facility wide annual emissions, and the annual synthetic minor operating hour limitation for statewide operations in **attainment areas.**

Form E: Table 23 should be used to calculate the facility wide annual emissions, and the annual synthetic minor operating hour limitation for statewide operations in **non-attainment areas outside of Maricopa County.**

Form F: Table 24 should be used to calculate the daily and annual emissions, and daily and annual synthetic minor operating hour limitation for operations **inside Maricopa County**.

Form G: Equipment List

ADEQ needs to be able to identify all pieces of equipment covered under the general permit. Use Form G to provide a list of all equipment including boilers, engines, and pollution control devices to be permitted.

Separate forms must be used for equipment associated with HMAP, C&S and CBP plants. Please make additional copies of Form G, if required.

Form H: Compliance Certification / Certification of Truth, Accuracy, and Completeness

A "Certification of Compliance with all Applicable Requirements" and "Certification of Truth, Accuracy, and Completeness" must be signed by the Responsible Official. Form H can be used to satisfy this requirement.

Form I: Fee Summary

Form I is a summary of fees associated with this General Permit.

ADDITIONAL INFORMATION

Dust Control Plan

If the initial location of the facility is in Maricopa County, the facility must submit a Dust Control Plan as described under Maricopa County Rule 316. The applicant may use the form available at Maricopa County Air Quality Department's website by clicking the following link. This form must be filled in and submitted to ADEQ along with the application.

http://www.maricopa.gov/aq/divisions/compliance/dust/docs/pdf/DustControlPlan.pdf

FILING INSTRUCTIONS

1. An application fee of $500 must be submitted by all applicants requesting a new or renewal permit, and by applicants requesting an equipment change. Please make your check or money order payable to ADEQ. The application fee must accompany each application submittal.

2. Please mail the completed application packet and the $500.00 application fee to the following address:

Arizona Department of Environmental Quality
Air Quality Division
Permits Section
1110 West Washington Street, 3415A-3
Phoenix, Arizona 85007-2935

FORM A: GENERAL PERMIT APPLICABILITY CHECKLIST

The following questions have been developed to determine if your facility qualifies for coverage under the Hot Mix Asphalt Plant (HMAP) general permit or is required to obtain an individual air quality permit pursuant to A.A.C. R18-2-302.

This general permit allows collocation of crushing & screening plant and/or concrete batch plant in attainment areas. However, in non-attainment areas, only stand-alone hot mix asphalt plant is permitted. The following table lists the maximum daily production limits permitted, based on modeling analysis, for various operating scenarios. **If the daily production is likely to exceed any of the specified limits, the facility does not qualify for general permit and must apply for an individual permit.**

MAXIMUM PRODUCTION LIMITS

Facility	Maximum Daily Production	
	PM_{10} Attainment Areas	PM_{10} Non-attainment Areas
Stand-alone HMAP	5,280 tons	3,150 tons
HMAP collocated with C&S and CBP plants	HMAP: 4,200 tons C&S: 3,780 tons CBP: 1,275 yd^3	Not authorized

1. Can the facility comply with the throughput limitations in the table above?

☐ YES ☐ NO **If the answer is NO**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is YES, complete **Forms C, D and E** and then proceed to Question 2.

2. Will the facility be able to limit its operating hours to the number of hours calculated in Form D (Table 22) while operating in **attainment areas**?

☐ YES ☐ NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

3. Will the facility be able to limit its operating hours to the number of hours calculated in Form E (Table 23) while operating in **non-attainment areas outside of Maricopa County**?

☐ YES ☐ NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

4. Will the facility be operating in Maricopa County?

☐ YES ☐ NO **If the answer is YES**, complete **Form F** and then proceed to Question 5.

5. Will the facility be able to limit its operating hours to the number of daily and annual hours calculated in Form F (Table 24) while **operating in Maricopa County**?

☐ YES ☐ NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

FORM B

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Division

1110 West Washington St ♦ Phoenix, AZ 85007 ♦ Phone: (602) 771-2338

APPLICATION FORM FOR HOT MIX ASPHALT PLANT GENERAL PERMIT

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit) _____

_____

2. Mailing Address: _____

City: _____ State: _____ ZIP: _____

3. Name (or names) of Owners/Principals: _____

Phone: _____ Fax: _____ Email: _____

4. Name of Owner's Agent: _____

Phone: _____ Fax: _____ Email: _____

5. Plant/Site Manager/Contact People and Title: _____

Phone: _____ Fax: _____ Email: _____

6. Facility Name: _____

Facility Location/Address: _____

City: _____ County: _____ ZIP: _____

Indian Reservation (if applicable, which one): _____

Latitude/Longitude, Elevation: _____

7. Type of Organization:

☐ Corporation ☐ Individual Owner ☐ Partnership

☐ Government Entity ☐ Other _____

8. Permit Application Basis: *(Check only one box)* ☐ New Source

☐ Renewal of Existing Permit

☐ Revision of Existing Permit

For renewal or modification, include existing permit number and expiration date: _____

Date of Commencement of Construction or Modification: _____

9. Signature of Responsible Official of Organization: _____

Official Title of Signer: _____

10. Typed or Printed Name of Signer: _____

Date: _____ Telephone Number: _____

This page was left blank intentionally.

FORM C: EMISSION CALCULATIONS

I. HOT MIX ASPHALT PLANT (HMAP) EMISSIONS

A. Particulate Matter emissions from Drum Dryer

Table 1 is provided to calculate potential to emit (PTE) for particulate matter emissions for rotary drum dryer. The factors are taken from Section 11.1, AP-42. The applicant may, instead, choose to use emission factors provided by the manufacturer or test results. In such an event, supporting documents (manufacturer's data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements for the use of any site-specific stack test data as emission factors.

Rated capacity of the HMAP: _____ (a) tons per hour

Table 1 – Particulate Matter Emissions

Pollution Control Device	AP-42 Emission Factor		Emission factor (other)		Emissions	
	PM	PM_{10}	PM	PM_{10}	PM	PM_{10}
	Pound per ton of asphalt		Pound per ton of asphalt		Pounds per hour	
	b	c	d	e	A = a x (b or d)	B = a x (c or e)
Baghouse	0.033	0.023				
Venturi Scrubber	0.045	0.019				

Emissions from Table 1 (Columns A and B) must be transferred to HMAP, Total Emissions, Table 9.

B. Other Criteria Pollutant Emissions from Drum Dryer

Table 2 is provided to calculate PTE for other criteria pollutants for rotary drum dryer. The factors are taken from Section 11.1, AP-42. The applicant may, instead, choose to use emission factors provided by the manufacturer or test results. In such an event, supporting documents (manufacturer's data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements for the use of any site-specific stack test data as emission factors.

Rated capacity of the HMAP: _____ (a) tons per hour
Type of fuel used: _____

Table 2 – Other criteria Pollutants from Dryer

Pollutant	Emission Factor (pound per ton of asphalt)				Emissions (lb/hr)
	Natural Gas	Fuel Oil #2 / Diesel	Waste Oil / Fuel oil #6	Other	
	b				A = a x b
CO	0.13	0.13	0.13		
NO_x	0.026	0.055	0.055		
SO_2	0.0034	0.011	0.058		
VOCs	0.032	0.032	0.032		

Emissions from Table 2 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

C: Particulate Matter Emissions from Material Handling Operations in HMAP

(Do not use this table for emissions from collocated C&S or CBP)

Table 3 – HMAP Material handling Operations Emissions

Rated capacity of the hot mix asphalt plant: _____ (a) tons per hour

Pollutant	Emission Factor	Emissions
	Pounds per ton of asphalt	Pounds per hour
	b	A= a x b
PM	0.00818	
PM_{10}	0.00357	

Emissions from Table 3 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

D. Silo Filling and Plant Load-out Emissions in HMAP

Rated capacity of the HMAP: _____ (a) tons per hour

Table 4: Emissions from Silo Filling and Plant Load out

Pollutant	Emission Factor	Emissions
	Pounds per ton of asphalt	Pounds per hour
	b	A=a x b
PM	0.00092	
PM_{10}	0.00092	
CO	0.0017	
VOC	0.011	

Emissions from Table 4 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

E. Asphalt Heater Emissions

Table 5 is provided to determine emissions from asphalt heater. The factors are taken from AP-42.

Type of fuel used: _____

Fuel consumption in asphalt heater: _____ (a) in gallons per hour for fuel oil no. 2, diesel, & LPG; and natural gas in cubic foot per hour.

Table 5: Emissions from Asphalt Heater

Pollutant	Emission Factor			Emissions
	Diesel / Fuel oil # 2	LPG	Natural Gas	
	Pounds per gallon	Pounds per gallon	Pound per cubic foot	Pounds per hr
	b			A = a x b
PM	0.002	0.0005	0.0000076	
PM_{10}	0.002	0.0005	0.0000076	
CO	0.0012	0.002	0.0000089	
NO_x	0.02	0.0145	0.0001	
SO_x	0.0002	0.000076	0.0000006	
VOC	0.00056	0.00055	0.0000055	

Emissions from Table 5 (Column A) must be transferred to HMAP, Total Emissions, Table 9.

F. Internal Combustion Engines (ICEs) associated with HMAP

This form must be completed in order to calculate the emissions from the internal combustion engines (ICE) associated with HMA plant. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of 'non road engines'.

Table 6 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 7**.

Table 6: Emissions from ICEs associated with HMAP

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	
	Pounds per hp-hr			Pounds per hour			Pounds per hour
	d	e	f	A = a x d	B = b x e	C = c x f	E1 = A + B + C
PM	0.0022	0.0007	0.0000694				
PM_{10}	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO_x	0.031	0.024	0.0286				
SO_2	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.000705	0.000826				

Emissions from column E1 of Table 6 must be transferred to Table 8.

If the facility wishes to use **manufacturer's data or test results** in place of ADEQ emission factors for any/all of ICEs associated with HMAP, Table 7 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 7: Emissions from ICEs associated with HMAP

ICE 1: _____ (a) HP Fuel used: _____
ICE 2: _____ (b) HP Fuel used: _____
ICE 3: _____ (c) HP Fuel used: _____
ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	A = a x e	B = b x f	C = c x g	D = d x h	E2 = A + B + C + D
PM									
PM_{10}									
CO									
NO_x									
SO_2									
VOCs									

Emissions from columns E2 of Table 7 must be transferred to Table 8.

Table 8: Total Emissions from ICEs associated with HMAP

Pollutant	Total Emissions from Table 6 (E1)	Total Emissions from Table 7 (E2)	Total Emissions from all ICEs in HMAP (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM_{10}			
CO			
NO_x			
SO_2			
VOCs			

Total Emissions from all ICEs in HMAP (Table 8) must be transferred to HMAP, Total Emissions, Table 9.

F. Total Emissions from Hot Mix Asphalt Plant

Table 9: HMAP -Total Emissions

Pollutant	Drum Dryer	Material Handling	Silo fill out and loading	Asphalt Heater	HMAP Generators	Total Emissions
	Tables 1 and 2	Table 3	Table 4	Table 5	Table 8	A
	Pounds per hour					Pounds per hour
PM						
PM_{10}						
CO						
NO_x						
SO_2						
VOC						

Emissions from column A of Table 9 must be transferred to Tables 22, 23, and 24 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

II. EMISSIONS FROM THE CRUSHING & SCREENING (C&S) PLANT

A. Particulate Matter Emissions from the C&S Plant

The form is designed to calculate the emissions for more than one equipment in each category. Provide equipment's rated capacity in column 'a'. If there is more than one equipment for the same capacity, enter the number in column 'b'. If additional equipment in same category has different capacity, use additional line provided.

Table 10: Emissions from C&S Plant

Emission Source	Rated Capacity	Number of operations	Emission Factor		Emissions	
			PM	PM_{10}	PM	PM_{10}
	Tons per hour	Number	Pounds per ton		Pounds per hour	
	a	b	c	d	A = a x b x c	B = a x b x d
Batch Drop Operation			0.0011	0.000526		
Batch Drop Operation			0.0011	0.000526		
Feed Hopper			0.0011	0.000526		
Feed Hopper			0.0011	0.000526		
Crusher			0.0012	0.00054		
Crusher			0.0012	0.00054		
Crusher			0.0012	0.00054		
Screen			0.0022	0.00074		
Screen			0.0022	0.00074		
Fine Screen			0.0036	0.0022		
Stackers			0.0011	0.000526		
Stackers			0.0011	0.000526		
Transfer points			0.00014	0.000046		
Transfer points			0.00014	0.000046		
Transfer points			0.00014	0.000046		
Total Emissions						

Total Emissions from columns A and B of Table 10 must be transferred to C&S Plant, Total Emissions, Table 14.

B. Internal Combustion Engines (ICEs) associated with C&S Plant

This form must be completed in order to calculate the emissions from the internal combustion engines (ICE) associated with C & S operations. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of 'non road engines'.

Table 11 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 12**. .

Table 11: Emissions from ICEs associated with C&S Plant

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	
	(Pounds per hp-hr)			Pounds per hour			Pounds per hour
	d	e	f	A = a x d	B = b x e	C = c x f	E1 = A + B + C
PM	0.0022	0.0007	0.0000694				
PM_{10}	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO_x	0.031	0.024	0.0286				
SO_2	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.0007050	0.000826				

Emissions from column E1 of Table 11 must be transferred to Table 13.

If the facility wishes to use **manufacturers' data or test results** in place of ADEQ emission factors for any/all of ICEs associated with the C&S plant, Table 12 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 12: Emissions from ICEs associated with C&S Plant

ICE 1: _____ (a) HP Fuel used: _____
ICE 2: _____ (b) HP Fuel used: _____
ICE 3: _____ (c) HP Fuel used: _____
ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	A = a x e	B = b x f	C = c x g	D = d x h	E2 = A + B + C + D
PM									
PM_{10}									
CO									
NO_x									
SO_2									
VOCs									

Emissions from columns E2 of Table 12 must be transferred to Table 13.

Table 13: Total Emissions from ICEs associated with C&S Plant

Pollutant	Total Emissions from Table 11 (E1)	Total Emissions from Table 12 (E2)	Emissions from all ICEs in C&S Plant (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM_{10}			
CO			
NO_x			
SO_2			
VOCs			

Total emissions from all ICEs in C&S Plant in Table 13 must be transferred to must be transferred to C & S Plant, Total Emissions, Table 14.

C. Total Emissions from C&S Plant

Table 14: Total Emissions from C&S Plant

Pollutant	C&S Emissions	C&S Plant Generators	Total C&S Plant Emissions
	Table 10	Table 13	A
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM_{10}			
CO			
NO_x			
SO_x			
VOC			

Total C&S Plant emissions from Column A of table 14 must be transferred to Table 22 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

III. CONCRETE BATCH PLANT (CBP) EMISSIONS

A. Particulate Matter Emissions

Maximum Rated Capacity of CBP: _____ (a) Cubic yards per hour

Table 15: Emissions from Concrete Batch Plant

Pollutant	Emission factor	Emissions
	Pounds per cubic yd	Pounds per hour
	b	A= a x b
PM	0.01204	
PM_{10}	0.00481	

Emissions from columns A of Table 15 must be transferred to must be transferred to CBP, Total Emissions, Table 20.

B. Emissions from Boilers/Heaters in CBP

Table 9 is provided to determine emissions from boiler/heater in the CBP. The factors are taken from AP-42.

Fuel used: _____

Capacity of boilers/heaters: _____ (a) MMBtu/hr

Table 16: Emissions from boiler/heater in CBP

Pollutant	Emission Factors			Emissions
	Fuel Oil #2 /Diesel	Natural gas/LPG	Propane	
	lb/MMBtu			lb/hr
	b			A= a x b
PM	0.024	0.00724	0.00663	
PM_{10}	0.024	0.00724	0.00663	
CO	0.0365	0.08	0.0354	
NO_x	0.146	0.0952	0.21	
SO_2	0.00152	0.00057	-	
VOCs	0.0025	0.00524	0.00331	

Emissions from columns A of Table 16 must be transferred to must be transferred to CBP, Total Emissions, Table 20.

C. Internal Combustion Engines (ICEs) associated with CBP

This form must be completed in order to calculate the emissions from the ICEs associated with CBP. Emissions need not be calculated for mobile sources and engines that meet the regulatory definition of 'non road engines'.

Table 17 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs.

The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 18**. .

Table 17: Emissions from ICEs associated with CBP

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ (a) HP
Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ (b) HP
Total HP of all natural gas / LPG fired ICEs: _____ (c) HP

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Lesser than 600 HP)	Diesel Engines (Greater than or equal to 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Smaller than 600 HP)	Diesel Engines (larger than 600 HP)	Natural gas/ LPG-fired Engines	
	(Pounds per hp-hr)			Pounds per hour			Pounds per hour
	d	e	f	A = a x d	B = b x e	C = c x f	E1 = A + B + C
PM	0.0022	0.0007	0.0000694				
PM_{10}	0.0022	0.0007	0.0000005				
CO	0.00668	0.0055	0.00222				
NO_x	0.031	0.024	0.0286				
SO_2	0.0000121	0.0000121	0.0000041				
VOCs	0.00247	0.0007050	0.000826				

Emissions from column E1 of Table 17 must be transferred to Table 19.

If the facility wishes to use **manufacturers' data or test results** in place of ADEQ emission factors for any/all of ICEs associated with CBP, Table 18 must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. The Permittee will be subject to annual testing requirements if site-specific stack test data is used as emission factors. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 18: Emissions from ICEs associated with CBP

ICE 1: _____ (a) HP Fuel used: _____
ICE 2: _____ (b) HP Fuel used: _____
ICE 3: _____ (c) HP Fuel used: _____
ICE 4: _____ (d) HP Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	A = a x e	B = b x f	C = c x g	D = d x h	E2 = A + B + C + D
PM									
PM_{10}									
CO									
NO_x									
SO_2									
VOCs									

Emissions from columns E2 of Table 18 must be transferred to Table 19.

Table 19: Total Emissions from all ICEs associated with CBP

Pollutant	Total Emissions from Table 17 (E1)	Total Emissions from Table 18 (E2)	Total Emissions from all ICEs in CBP (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM_{10}			
CO			
NO_x			
SO_2			
VOCs			

Total emissions from all ICEs in CBP (Table 19) must be transferred to must be transferred to CBP, Total Emissions, Table 20.

C. Total Emissions from Concrete Batch Plant

Table 20: Total Emissions from CBP

Pollutant	CBP	Boiler/Heater	CBP Generators	Total CBP Emissions
	Table 15	Table 16	Table 19	A
	Pounds per hour			Pounds per hour
PM				
PM_{10}				
CO				
NO_x				
SO_x				
VOC				

Total CBP emissions from Column 'A' of Table 20 must be transferred to Table 22 for calculation of facility-wide emissions and synthetic minor operating hour limitations.

IV. FUGITIVE EMISSIONS

Total vehicle miles traveled: _____ VMT (a)

No. of storage piles: _____ (b)

Table 21: Total Fugitive Emissions

Pollutant	Vehicular traffic emissions		Storage Piles emissions		Total Fugitive emissions
	Emission factor	Emissions	Emission factor	Emissions	
	Pounds per VMT-hr	Pounds per hour	Pounds per pile-hr	Pounds per hour	Pounds per hour
	c	e= a x c	d	f= b x d	A= e + f
PM	0.66		0.0001		
PM_{10}	0.17		0.00005		

Emissions from columns A of Table 21 must be transferred to Tables 22, 23, and 24 for calculation of facility-wide emissions and synthetic minor operating hour limitation.

FORM D: STATEWIDE SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN ATTAINMENT AREAS

Table 22 is to be used for calculating synthetic minor limitations for the facility that will be operating in the attainment areas. Calculated emissions from Tables 9, 14, 20 and 21 are utilized to calculate annual emissions and annual synthetic minor operating hour limitation for operations in attainment areas.

Table 22: Synthetic Minor Limitation – Attainment Areas

Pollutants	Hot Mix Asphalt Plant	C&S	CBP	Fugitives	Total Potential Emissions		Emission limit	Hours of operation
	From Table 9	From Table 14	From Table 20	From Table 21				
	Pounds per hour				Pounds per hour	Tons per year	Tons per year	Hours
	a	b	c	d	e=a+b+c+d	f=e*4.38	g	A=g/f*8760 (not to exceed 8760 hours)
PM_{10}							90	
CO							90	
NO_x							90	
SO_2							90	
VOCs							90	

The **lowest number** in column A is the synthetic minor limitation for annual operating hours for the operations in attainment areas, and should be indicated below.

Annual Operating hours for the operations in attainment areas: _____ hours

FORM E: STATEWIDE SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN NON-ATTAINMENT AREAS OUTSIDE MARICOPA COUNTY

This table is to be used for calculating synthetic minor limitations for the facility that will be operating in non-attainment areas outside Maricopa County. Calculated emissions from Tables 9 and 21 are utilized to calculate annual emissions and annual synthetic minor operating hour limitation for operations in non-attainment areas outside Maricopa County.

Table 23: Synthetic Minor Limitation – Non-Attainment Areas Outside Maricopa County

Pollutants	Hot Mix Asphalt Plant	Fugitives	Total Emissions		Emission limit	Hours of operation (Max.)
	From Table 9	From Table 21				
	Pounds per hour		Pounds per hour	Tons per year	Tons per year	Hrs
	a	b	c=a+b	d=c*4.38	e	A=e/d*8760 (not to exceed 8760 hrs)
PM_{10}					90	
CO					90	
NO_x					90	
SO_2					90	
VOCs					90	

The **lowest number** in column A is the synthetic minor limitation for annual operating hours for the operations in non-attainment areas outside Maricopa County, and should be indicated below.

Annual Operating hours in non-attainment areas outside Maricopa County: _____ hours

FORM F: SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN MARICOPA COUNTY

NOTE: This form is to be filled only if the facility intends to operate in Maricopa County. If you have answered NO to Question No. 5 in FORM A, do not fill this form.

This table is to be used for calculating synthetic minor limitations for the facility that will be operating inside Maricopa County. Calculated emissions from Tables 9 and 21 are utilized to calculate daily & annual emissions, and daily & annual synthetic minor operating hour limitations for operations in Maricopa County.

Table 24: Synthetic Minor Limitation – Maricopa County

Pollutants	HMAP	Fugitives	Total Emissions			Rule 241 emission thresholds		Hours of operation	
	From Table 9	From Table 21							
	Pounds per hour		Pounds per hour	Pounds per day	Tons per year	Pounds per day	Tons per year	Per Day	Per Yr
	a	b	c=a+b	d=c*24	e=c*4.38	f	g	A=f/d*24 (not to exceed 24 hours)	B=g/e*8760 (not to exceed 8760 hours)
PM						135	22.5		
PM_{10}						76	13.5		
CO						495	90		
NO_x						135	22.5		
SO_2						135	22.5		
VOCs						135	22.5		

The lowest numbers in Columns 'A' and 'B' are the daily & annual synthetic minor operating hour limitations for operations in Maricopa County. These should be filled in Table 25 below:

Table 25: Operating Hours Limitation in Maricopa County

Daily Hours of Operation (Maximum)	Annual Hours of Operation (Maximum)

FORM G

EQUIPMENT LIST-HOT MIX ASPHALT PLANT

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Equipment I.D. Number	Date of Manufacture

FORM G

EQUIPMENT LIST-CRUSHING AND SCREENING PLANT

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Equipment I.D. Number	Date of Manufacture

FORM G

EQUIPMENT LIST-CONCRETE BATCH PLANT

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Equipment I.D. Number	Date of Manufacture

This page was left blank intentionally.

FORM H: COMPLIANCE CERTIFICATION AND CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

This certification must be signed by the Responsible Official. Applications without a signed certification will be deemed incomplete.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the general permit and will continue to comply with such requirements and any future requirements that become effective during the life of the general permit. I will present a certification of compliance to ADEQ no less than semiannually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Typed or Printed Company Name: _____

Official Title of Signer: _____

Typed or Printed Name of Signer: _____

Signature of Responsible Official: _____ Date: _____

This page was left blank intentionally.

FORM I: Fee Rule Summary for Hot Mix Asphalt Plant General Permits

SOURCE			
GENERAL PERMIT			
CLASS II			
TITLE V		**NON - TITLE V**	
APPLICATION FEE $500	**ANNUAL ADMINISTRATIVE FEE** $4,520	APPLICATION FEE $500	**ANNUAL INSPECTION FEE** $3,020

There is a $500 fee for facility changes that require the issuance of new Authorizations to Operate. There is no fee for transfers, administrative amendments, or facility change notices that do not require a permit revision.

Administrative and Inspection fees are due no later than February 1st of each year.

This page was left blank intentionally.

III. NON-ATTAINMENT AREAS - SUMMARY AND CLASSIFICATION

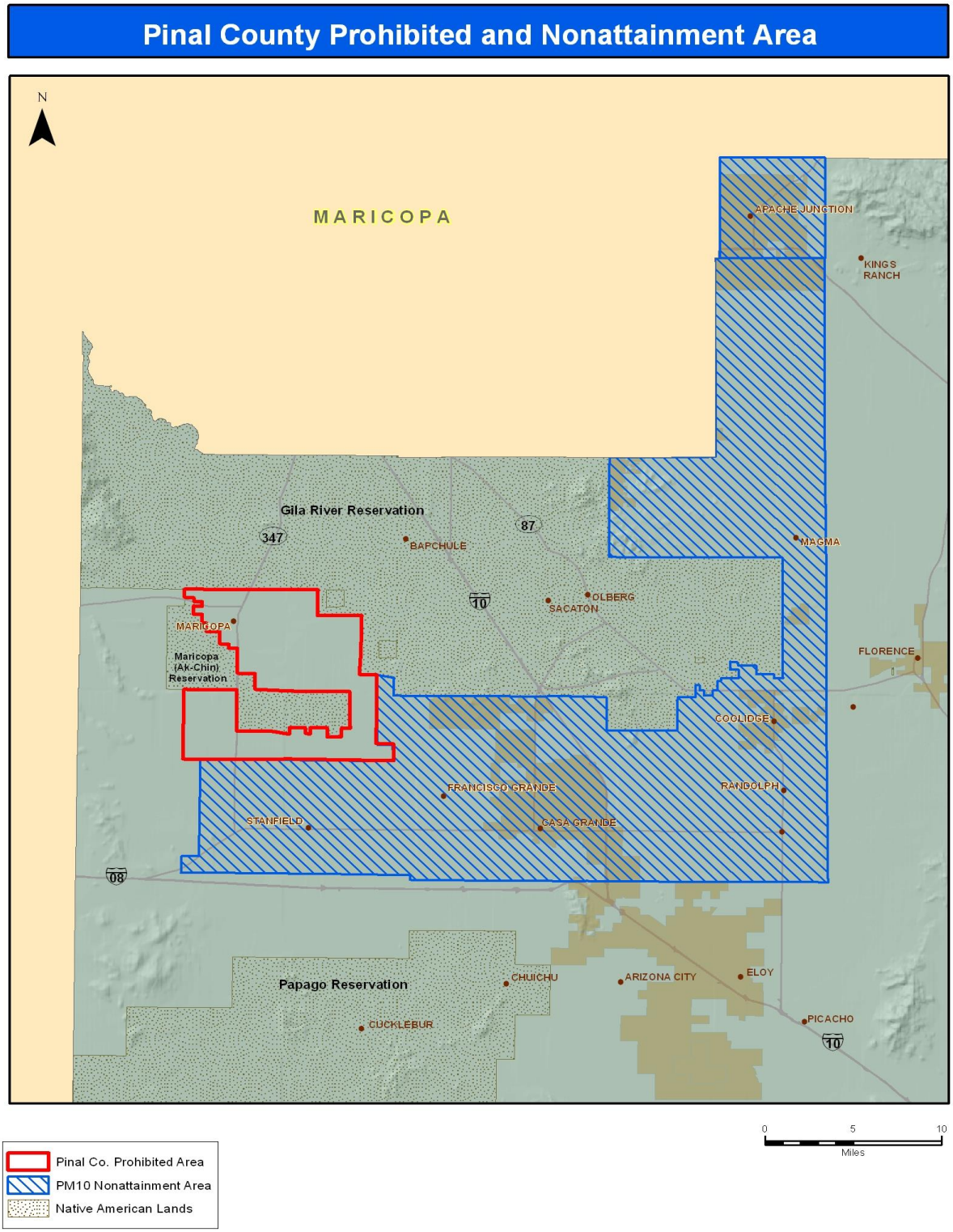
County	Townships	Section Where Visual Representation Is Shown
Maricopa	All	N/A
Pinal County and the Phoenix Planning Area	T1S, R8E; T2S, R8E; T3S, R7E; T3S, R8E; T4S, R8E (excluding all lands within the Gila River Indian Community); T5S, R4E (Only sections 12, 13, 24 and 25); T5S, R5E – R8E (excluding all lands within the Gila River Indian Community); T6S, R3E – R8E; T7S, R3E – R8E Sections 1-6. Phoenix Planning Area: T1N, R8E.	Appendix A
Santa Cruz	The Nogales area located in the southern part of Santa Cruz County. The portions of the following Townships which are within the State of Arizona and lie east of 111 degrees longitude: T23S, R13E, T23S, R14E, T24S, R13E, T24S, R14E.	Appendix B
Gila and Pinal	T1S, R13E (sections 7–36); T1S, R14E (sections 25–36);T2S, R13E; T2S, R14E; T2S, R15E; T3S, R13E; T3S, R14E; T3S, R15E; T3S, R16E (except that portion in the San Carlos Apache Indian Reservation); T4S, R13E; T4S, R14E; T4S, R15E; T4S, R16E; T5S, R13E; T5S, R14E; T5S, R15E; T5S, R16E; T6S, R13E; T6S, R14E; T6S, R15E; and T6S, R16E. Miami planning area T1N, R13E; T1N, R14E; T1N, R15E; T1S, R13E (sections 1–6); T1S, R14E (sections 1-24); T1S, R14 1/2E; and T1S, R15E.	Appendix C
Pima	The Rillito planning area which is located in the southern part of Pima County. The following townships are located in non-attainment areas: T11S-R9E, T11S-R10E, T11S-R11E, T11S-R12E, T12S-R8E, T12S-R9E, T12S-R10E, T12S-R11E and T12S-R12E. The Ajo planning area Township T12S, R6W, T12S, R5W (sections 6–8, 17-20, and 29-32).	Appendix D
Yuma	The Lower Colorado River Valley, in the southwestern part of Yuma County. The following townships are located in non-attainment areas: T7S-R21W, T7S-R22W, T8S-R21W, T8S-R22W, T8S-R23W, T8S-R24W, T9S-R21W, T9S-R22W, T9S-R23W, T9S-R24W, T9S-R25W, T10S-R21W, T10S-R22W, T10S-R23W, T10S-R24W, and T10S-R25W.	Appendix E
Cochise	The Douglas and Paul Spur areas; the following townships are located in non-attainment areas: T23S-R25E: T23S-R26E, T23S-R27E, T23S-R28E, T24S-R25E, T24S-R26E, T24S-R27E, and T24S-R28E.	Appendix F

Notes 1. No operations are permitted within the portion of Pinal County: T4S, R3E – R4E, T5S, R3E – R4E (excluding sections 12, 13, 24, and 25) identified as "Prohibited Area" in Appendix "A" of the general permit.

2. No operations are permitted in the portions of Santa Cruz County, identified as a non-attainment area in Appendix "B", on any day that the Nogales particle pollution risk forecast at http://www.azdeq.gov/environ/air/ozone/nogales.pdf shows the risk of unhealthy particulate matter concentration to be High or if the Air Quality Index (AQI) for $PM_{2.5}$ is forecast as Unhealthy for Sensitive Groups.

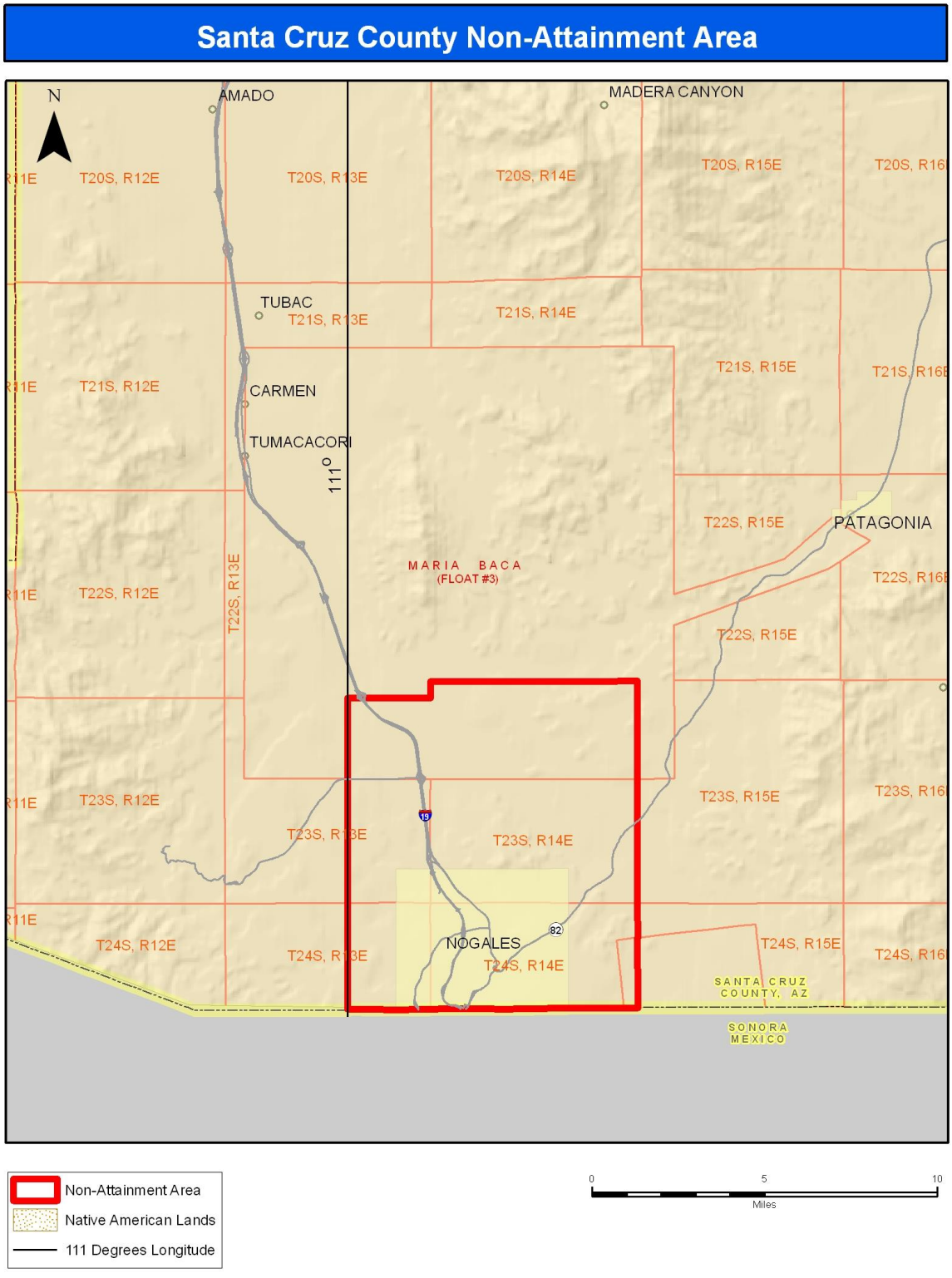
APPENDIX "A"

GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PINAL COUNTY PROHIBITED AND NON-ATTAINMENT AREAS

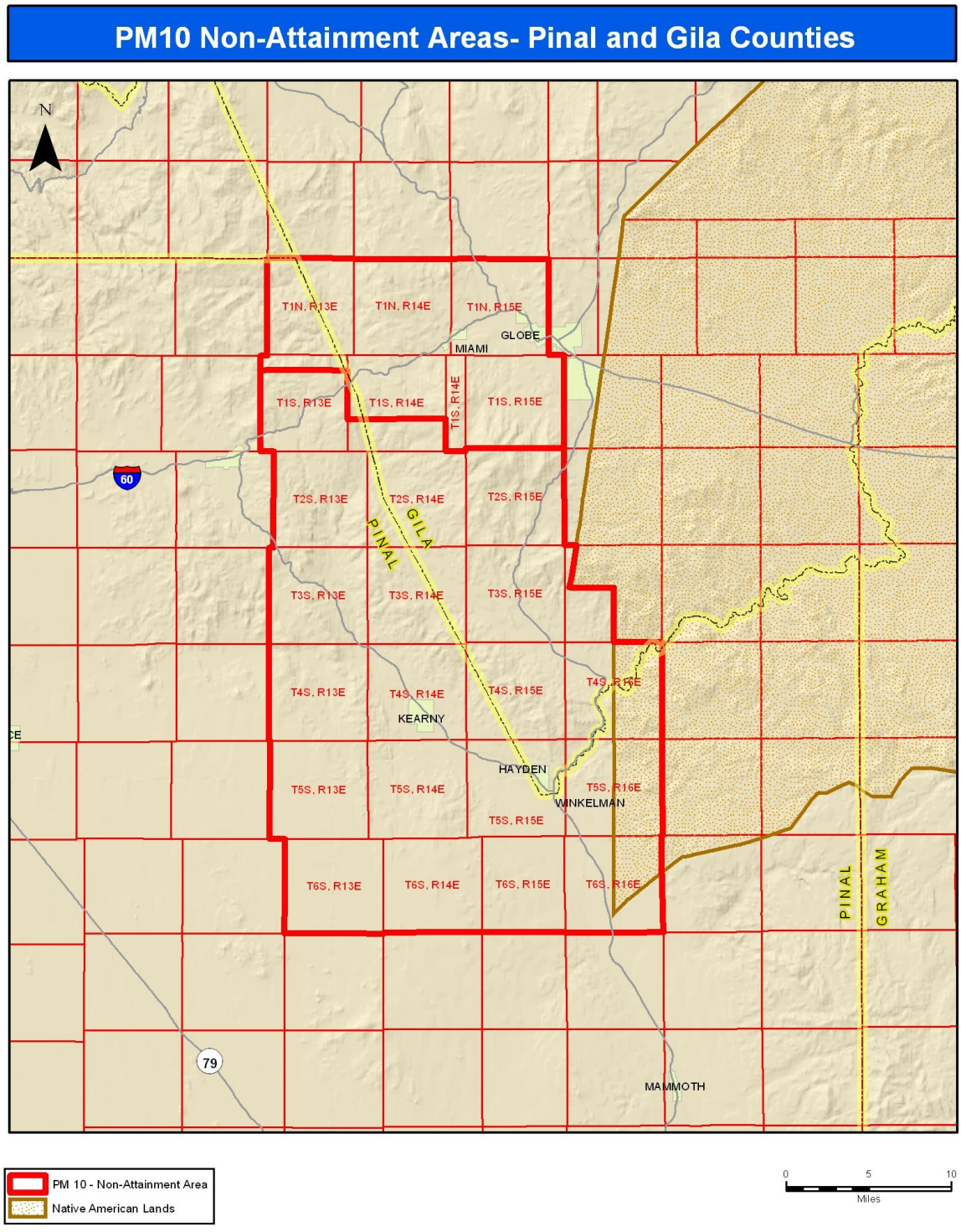


APPENDIX "B"

GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE SANTA CRUZ COUNTY NON-ATTAINMENT AREAS

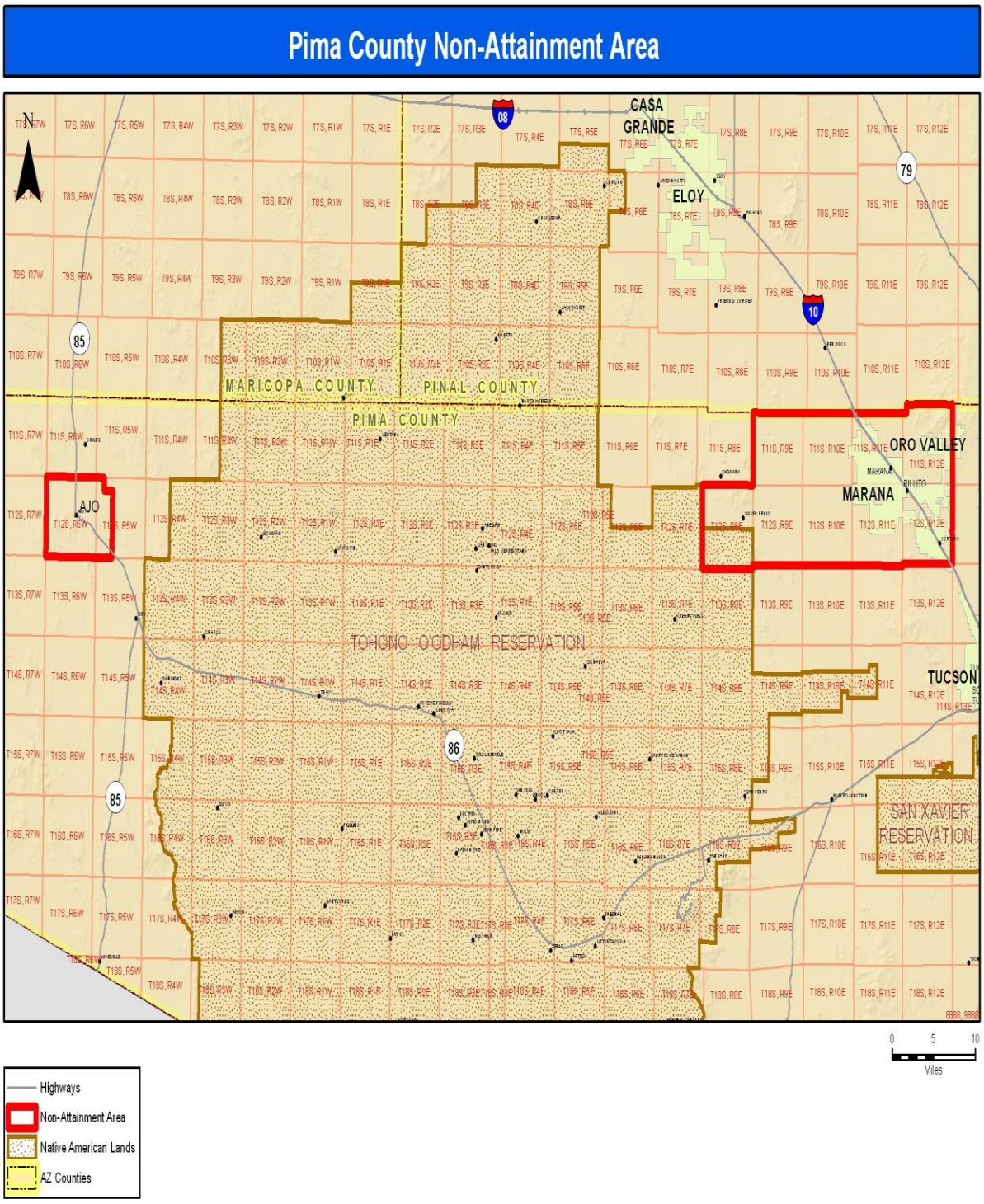


APPENDIX "C"
GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PINAL AND GILA COUNTY PM_{10} NON-ATTAINMENT AREAS

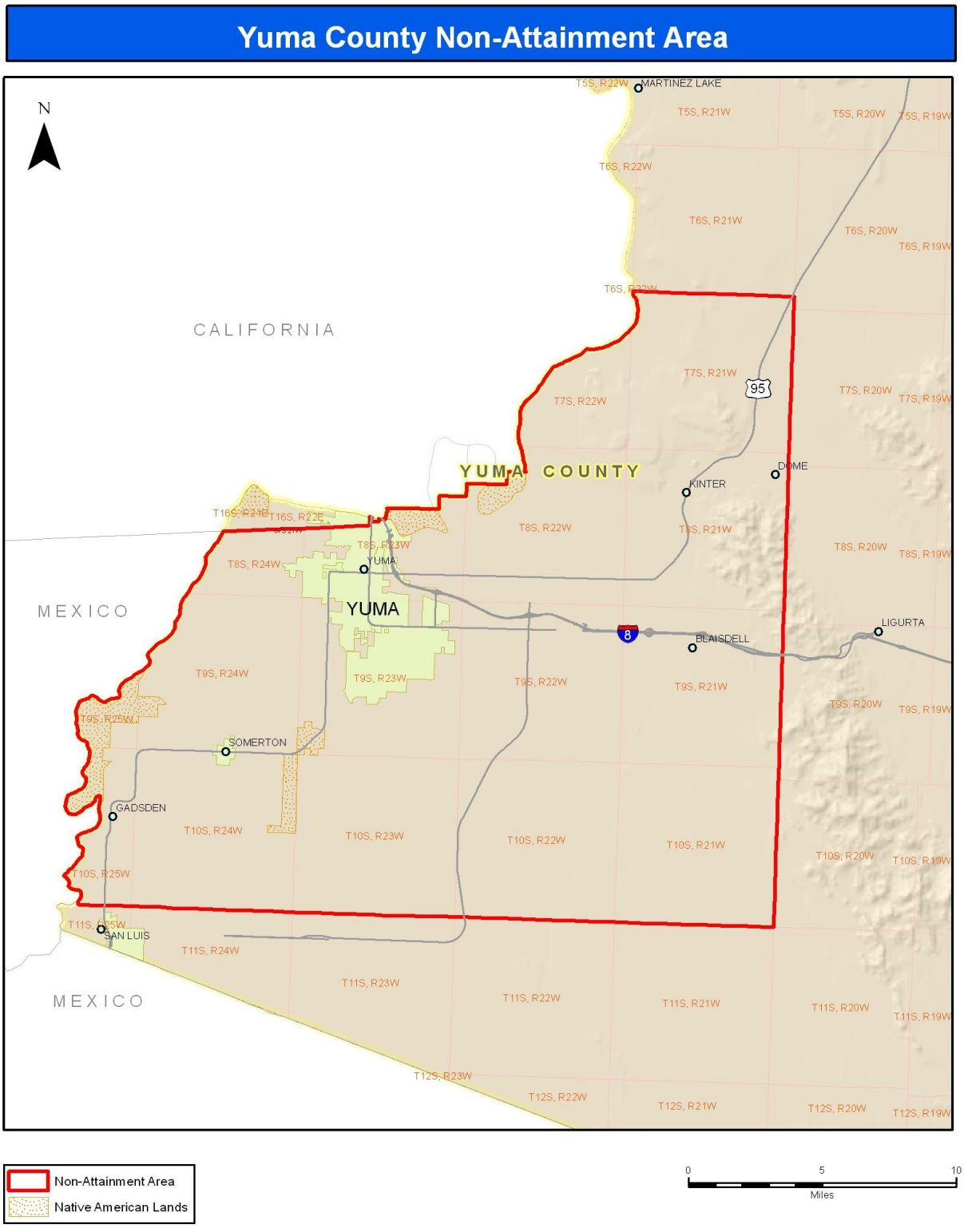


APPENDIX "D"

GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE PIMA COUNTY NON-ATTAINMENT AREAS

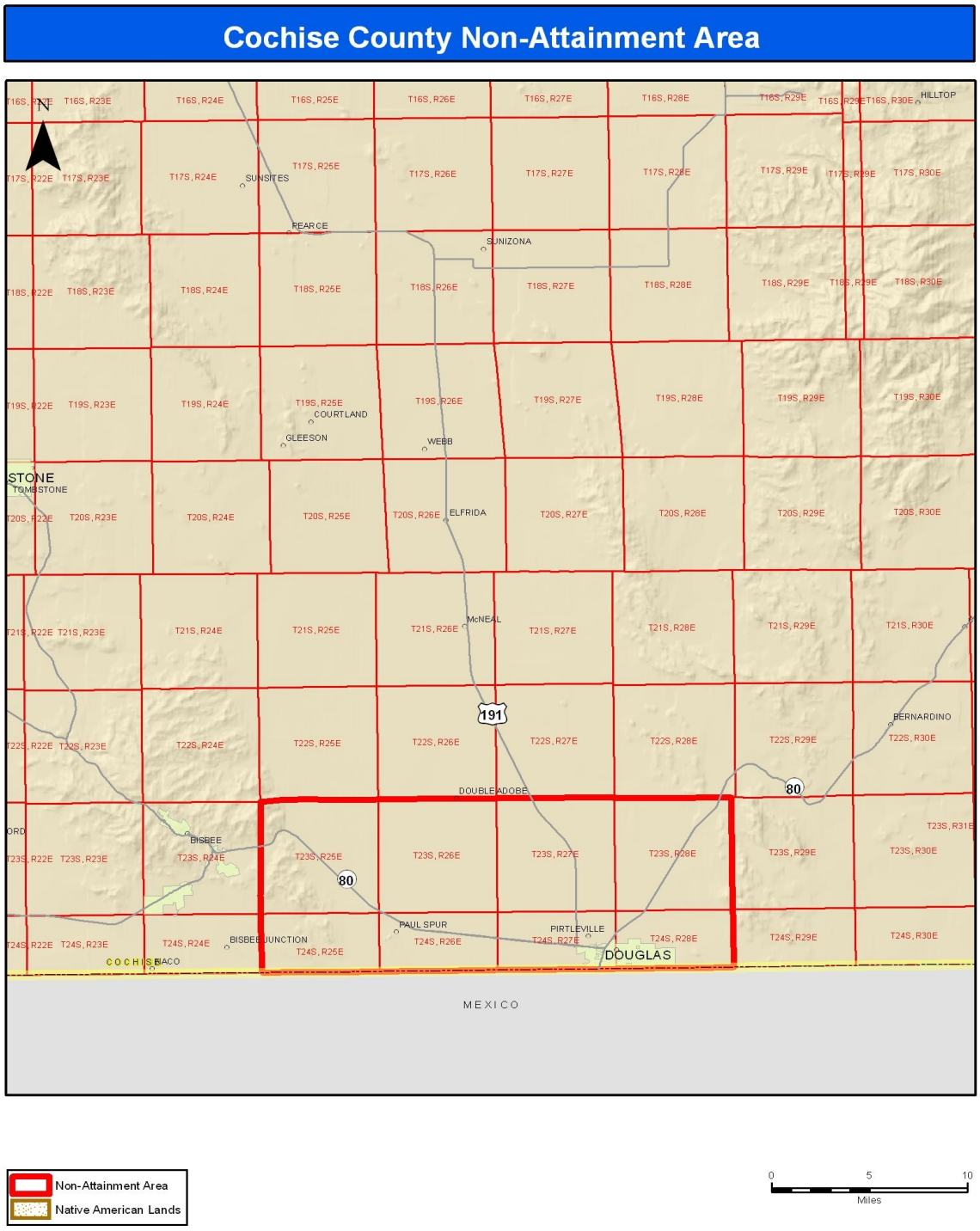


APPENDIX "E"
GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE YUMA COUNTY NON-ATTAINMENT AREAS



APPENDIX "F"

GENERAL AIR QUALITY CONTROL PERMIT FOR HOT MIX ASPHALT PLANTS
MAP OF THE COCHISE COUNTY NON-ATTAINMENT AREAS



COVERED SOURCE PERMIT REVIEW
COVERED SOURCE PERMIT NO. 0794-01-C
Permit Application for Significant Modification No. 0794-03 and Renewal No. 0794-04

Applicant: Ala Imua, LLC

Facility: 225 TPH Hot Mix Asphalt (HMA) Plant

Initial Location: Malakole Street, Kapolei, Oahu
UTM: 593,785 m East, 2,357,385 m North (Zone 4, NAD-83)

SIC Code: 2951 (Asphalt Paving Mixtures & Blocks)

Mailing Address: 2836 Awaawaloa Street
Honolulu, HI 96819

Contact	Name	Title	Phone
Responsible Official	Jade Richardson	Managing Member	(808) 833-5400

1. BACKGROUND

Ala Imua, LLC, submitted an application for significant modification on April 4, 2017, and renewal on May 31, 2018, for the CSP No. 0794-01-C issued on April 4, 2014, for its existing 160 tons per hour (TPH) HMA plant.

The plant consists of a drum mixer with burner, cold feed bins with scalping screen, asphalt (bitumen) tanks with heaters, baghouse, drag conveyor, storage silos with loadout, weight scales, control room, and assorted conveyor belts. The plant produces HMA from virgin aggregate, reclaimed asphalt pavement (RAP) and liquid asphalt cement. Virgin aggregate and RAP are hauled from storage piles to cold feed bins or RAP bins and then transported to a scalping screen and then to the drum mixer. Liquid asphalt cement is added to the aggregate and RAP blends in the drum mixer. The final product is conveyed from the drum mixer to the storage silos. A Caterpillar 546 HP diesel engine generator (DEG) serves as the primary generator, powering the asphalt plant. A smaller exempt DESSCO DEG provides power during the night hours.

The permit issued in 2014 limited HMA plant operations, as represented by the operating hour limit of 3,500 hours in any rolling twelve (12) month period for the primary DEG. The drum mixer was permitted to burn ultra-low sulfur diesel (ULSD) fuel or specification oil with a maximum sulfur content not to exceed 0.0015% by weight. The DEG and the hot oil heater were allowed to fire ULSD fuel with a maximum sulfur content of 0.0015% by weight and a minimum cetane index of forty (40) or a maximum aromatic content of thirty-five (35) volume percent.

Proposed Changes:

Ala Imua will replace the current rated 160 TPH drum mixer/burner with a new rated 225 TPH drum mixer/burner (drum diameter 88"). A 563 HP Caterpillar DEG will be added to power the asphalt plant. The HMA plant, as represented by the total combined operating hours of the existing primary DEG and the to-be added DEG, will be limited to operating no more than 5,000 hours in any rolling twelve (12) month period. The 2014 permit condition allowing the burning of specification oil in the drum mixer will be removed. In addition, the baghouse servicing the drum mixer/dryer will be replaced and a third silo will be added to the plant. The proposed changes will trigger a signification modification of the current permit.

2. EQUIPMENT DESCRIPTION

Unit	Equipment Description
Drum Mixer	225 TPH ADM drum mixer, 88" drum diameter, Model No. EX8842, Serial No. DM134701-17, with 76 MMBTU/hr Hauck burner, Model No. Hauck Starjet 360, Serial No. DM134701-17;
Baghouse	ADM baghouse, Model No. BHS 585-10, Serial No. BHT134701-17 top and BHB 134701-17 bottom; servicing the drum mixer/dryer;
DEG-1	546 HP / 365 kw Caterpillar DEG, 2005, Model No. 3456 DITA, Serial No. 3PG00312;
DEG-2	563 HP Caterpillar DEG, 2008, Model No. C15, Serial No. FSE01554;
Rap Recycle Bin	One (1) 15-ton Capacity Rap Recycle Bin;
Scalping Screen	One (1) scalping screen;
Feed Bins	Five (5) ADM cold feeders, 2005, Model No. CFB20, Serial No. CFB 713-05;
Storage Silo	Three (3) asphalt concrete storage silos; and
Conveyor	Various conveyor belts.

3. AIR POLLUTION CONTROLS

The drum mixer/dryer is equipped with a baghouse to control particulate matter (PM) emissions. Typically, the PM collected in the baghouse is recycled back into the mix.

4. APPLICABLE REQUIREMENTS

4.1. Hawaii Administrative Rules (HAR)

Chapter 11-59, Ambient Air Quality Standards
Chapter 11-60.1, Air Pollution Control
- Subchapter 1, General Requirements
- Subchapter 2, General Prohibitions
  - 11-60.1-31, Applicability
  - 11-60.1-32, Visible Emissions
  - 11.60.1-33, Fugitive Dust
  - 11-60.1-38, Sulfur Oxides from Fuel Combustion
- Subchapter 5, Covered Sources
- Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning
  - 11-60.1-111 Definitions
  - 11-60.1-112 General Fee Provisions for Covered Sources
  - 11-60.1-113 Application Fees for Covered Sources
  - 11-60.1-114 Annual Fees for Covered Sources
  - 11-60.1-115 Basis of Annual Fees for Covered Sources
- Subchapter 8, Standards of Performance for Stationary Sources
  - 11-60.1-161 New Source Performance Standards
- Subchapter 9, Hazardous Air Pollutant (HAP) Sources
- Subchapter 10, Field Citations

4.2. Department of Health (DOH) In-house Annual Emissions Reporting

DOH requests annual emissions reporting from noncovered source facilities that have facility- wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting is required because this facility is a covered source.

Pollutant	Total Emissions (TPY)[1] [5,000 hr/yr]	DOH Reporting Levels (TPY)
CO	**82.4**	250
NO_X	**45.4**	25
SO_2	**0.16**	25
PM	**107.8**	25
PM_{10}	**59.2**	25
$PM_{2.5}$	**33.4**	-
VOC	**41.2**	25
HAP	**5.1**	5

[1]See Project Emissions section.

4.3. New Source Performance Standards (NSPS), 40 Code of Federal Regulations (CFR) Part 60

Subpart I — Standards of Performance for Hot Mix Asphalt Facilities

40 CFR Part 60, Subpart I is applicable to the 225 TPH HMA facility because the plant commenced construction or modification after June 11, 1973.

Subpart IIII — Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR Part 60, Subpart IIII is applicable to the 563 HP DEG because its construction commenced after July 11, 2005, and the engine was manufactured after April 1, 2006. For purposes of Subpart IIII, the date that construction commences is the date the engine is ordered. The engines must meet the emissions standards and certification requirements of this subpart. According to the manufacturer, this DEG it is an Environmental Protection Agency (EPA) certified Tier 3 engine. The 546 HP DEG is exempted from this subpart because the engine was manufactured prior to April 1, 2006, and is non-emergency engine.

4.4. National Emission Standards for Hazardous Air Pollutants for Source Categories (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63

Subpart ZZZZ — National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE)

Both DEGs are subject to this standard. The 546 HP DEG was constructed before June 12, 2006, and is a non-emergency stationary DEG of greater than 500 HP, hence is considered existing stationary RICE located at an area source of HAP emissions. It must comply with the emissions and operating limitations, fuel requirements, and monitoring and maintenance requirements of this subpart. The 563 HP DEG was manufactured after June 12, 2006, and is therefore considered a new engine under ZZZZ. As a new, non-emergency stationary RICE located at an area source of HAP, this DEG will automatically comply with subpart by complying with 40 CFR Part 60, Subpart IIII.

4.5. Best Available Control Technology (BACT)

A BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR, Section 11-60.1-1. The facility is subject to a BACT analysis for PM, PM_{10}, and $PM_{2.5}$ since the proposed modification will cause increase emissions above significant levels for these pollutants as shown in the table below.

Emissions (TPY)	Pollutant								
	CO	NO_X	SO_2	PM	PM_{10}	$PM_{2.5}$	VOC	Lead (Pb)	GHG
Increase	42.8	20.9	0.08	55.1	29.7	16.4	25.30	0	11,915
Sig. Level	100	40	40	25	15	10/40/40	40	0.6	40,000
BACT	N	N	N	Y	Y	Y	N	N	N

The net increase emissions of PM, PM_{10}, and $PM_{2.5}$ are calculated based on the following facts:

1. The increase in production capacity from 160 TPY to 250 TPY and the increase in operating hours from 3,500 hr/yr to 5,000 hr/yr for the drum mix asphalt plant;
2. The increase in operating hours from 3,500 hr/yr to 5,000 hr/yr for the 563 HP DEG and the addition of the new 546 HP DEG operating for 5,000 hr/yr.

The table below lists the contributing sources for emissions increases of PM, PM_{10} and $PM_{2.5}$:

Pollutant	Drum Mixer (TPY)	546 HP DEG (TPY)	563 HP DEG (TPY)	Fugitive Dust from Aggregate Bins and Plant (TPY)	Total (TPY)
PM	14.6	0.90	0.13	39.6	**55.1**
PM_{10}	10.2	0.90	0.13	18.6	**29.7**
$PM_{2.5}$	9.9	0.90	0.13	5.6	**16.4**

For the asphalt drum mixer, a bag house (fabric filter) and a venturi scrubber can be used for particulate materials control. According to the Journal of the Air Pollution Control Association article *'Performance and Cost Comparison between Fabric Filters and Alternate Participate Control Techniques'* (J.D. McKenna, J.C. Mycock & W.O. Lipscomb) baghouses show an efficiency of 96.88 to 99.84 percent for PM control. The Air Pollution Control Technology Fact Sheet (EPA-452/F-03-017) notes that Venturi scrubber PM collections range from seventy (70) to greater than ninety-nine (99) percent, depending on the application. For PM controls, wet scrubbers generate waste in the form of a slurry or wet sludge. This creates the need for both wastewater treatment and solid waste disposal. A baghouse at an asphalt plant returns the collected dust back into the drum to be mixed in with the asphalt, eliminating the need for wastewater treatment or solid waste disposal. Therefore, since Venturi scrubbers are not a better control technology than bag houses, the use of baghouse is considered BACT.

For DEGs, the only additional alternative emission control would be diesel engine particulate filters. For two (2) stationary engines the product cost would be from a low of about $20,000 to a high of about $100,000 (according to EPA Tech Bulletin DPF General Information), not including labor and downtime costs. In addition, maintenance costs can run from $1,000 to $2,000 (low estimate) for both engines per cleaning or filter replacement. This would increase the asphalt production cost by ten (10) cents per ton. Since the DEGs only contributes combined 1.8%, 3.4%, and 6.1% of increases on PM, PM_{10}, and $PM_{2.5}$ emissions, respectively, it will be not cost-effective to install the filters on the DEGs and would be a market disadvantage in a competitive field for the company.

Control techniques for fugitive dust sources generally involve watering, chemical stabilization, or reduction of surface wind speed with windbreaks or source enclosures. Watering is the most common and, generally, least expensive method. The use of chemicals to treat exposed surfaces provides longer dust suppression, but will be costly, have adverse effects on plant and animal life, or contaminate the treated material. Windbreaks and source enclosures are often impractical because of the size of fugitive dust sources.

Therefore, the following technologies for $PM/PM_{10}/PM_{2.5}$ control are installed/used for the following emission points:

1. Asphalt Drum Plant

    a) Fugitive dust from aggregate bins and plant: Watersprays and/or Water Truck
    b) Asphalt Drum: Counter-Flow Drum, Baghouse

2. Diesel Engines

    a) The 563 HP DEG: a Tier 3 engine, conforming to the Tier 3 requirements.
    b) The 546 HP DEG: a Tier 2 engine, equipped with oxidation catalysts, open crankcase filtration system, and continuous monitoring system (CMS).

4.6. Synthetic Minor Source

A synthetic minor source is a facility that is potentially major as defined in HAR 11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility is a synthetic minor source because potential CO and PM_{10} emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year. This facility is a SM-80 source since potential emission of CO is over eighty (80) percent of the threshold (100 TPY) defined for major source. See Project Emissions section.

5. NON-APPLICABLE REQUIREMENTS

5.1. Air Emission Reporting Requirements (AERR)

AERR determines the annual emissions reporting frequency based on the potential emissions (with the exception of lead, which is based on actual emissions) of each pollutant from the facility that emits at or above the triggering levels. As shown in the table below, potential emissions from the facility is less than the trigger levels and thus, the facility is not subject to annual emission reporting under AERR.

Pollutant	Total Emissions (TPY)[1] [5,000 hr/yr]	AERR Triggering Levels (TPY)	
		1 Year Cycle (Type A Sources)	3 Year Cycle (Type B Sources)
CO	**82.4**	2500	1000
NO_X	**45.4**	2500	100
SO_2	**0.16**	2500	100
PM	**107.8**	-	-
PM_{10}	**59.2**	250	100
$PM_{2.5}$	**33.4**	250	100
VOC	**41.2**	250	100

[1]See Project Emissions section.

5.2. Prevention of Significant Deterioration (PSD), 40 CFR 52.21

PSD review applies to new major stationary sources and major modifications to these types of sources. This facility is not subject to a PSD review because it is not a major stationary source as defined and listed in HAR Title 11, Chapter 60.1, Subchapter 7 and 40 CFR Part 52, §52.21.

5.3. National Emission Standards for Hazardous Air Pollutants (NESHAPS), 40 CFR Part 61

The facility is not a major stationary source of HAP and is not subject to any NESHAPS requirements under 40 CFR Part 61.

6. INSIGNIFICANT ACTIVITIES/EXEMPTIONS

Insignificant activities identified by the applicant that meet the criteria specified in HAR §11-60.1-82(f) are listed as follows:

Basis for Exemption	Description
§11-60.1-82(f)(1)	1. 25,000 gallon CEI asphalt tank 1, 2005, Serial No. T 648 96; 2. 20,000 gallon ADM asphalt tank 2, 2005, Serial No. ACT 713-05.
§11-60.1-82(f)(2)	1. 0.45 MMBtu ADM hot oil heater, 2005.
§11-60.1-82(f)(7)	1. 2.82 MMBtu CEI hot oil heater, 2005, Model No. CEI 2400, Serial No. H 116096; 2. 13.2 kw Yanmar DEG, 2005, Model No. 3TNV82A, Serial No. 42666; 3. 30 HP Saylor Bell compressor, 2005, Serial No. 1077879; and 4. 15 HP Saylor Bell compressor, 2005, Serial No. 527963.

Combined emissions from the insignificant activities and equipment listed in the permit are less than major source levels.

7. ALTERNATE OPERATING SCENARIOS

The permittee may replace the DEG with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the DEG from operation (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

8. PROJECT EMISSIONS

Emissions from the drum mixer, the DEGs, silo filling, truck load-out, aggregate handling, and paved roads were calculated. The results are summarized in this section. Emissions from equipment qualifying as insignificant activities pursuant to HAR §11-60.1-82 (f) are not included.

8.1. Emissions from the Drum Mixer through Baghouse

Emissions are based on the maximum capacity of the drum mixer to process 225 TPH of HMA with a limited annual operation time of 5,000 hours. Emission factors (lbs/ton) of carbon monoxide (CO), nitrogen oxide (NO_X), PM, PM_{10}, $PM_{2.5}$, volatile organic compounds (VOC), and HAP for No. 2 fuel oil are from AP-42 Section 11.1 (3/04) – *Hot Mix Asphalt Plants*. SO_2 emission factor is calculated from AP-42 Section 1.3 (5/10) - *Fuel Oil Combustion* for fuel oil No. 2 with the permitted sulfur content limit (0.0015% weight percentage) and footnote c of AP-42 Section 11.1 (3/04), Table 11.1-7. Emission factors (lbs/ton) of CO, NOx, sulfur dioxide (SO_2), PM, and VOC for liquid propane gas (LPG, propane) are from manufacturer's data sheet. Emission factors of PM_{10} and $PM_{2.5}$ for LPG are calculated by the percentage based on their percentage of PM derived from Section 11.1 (3/04), Tables 11.1-4 and Table 11.1-3. Emissions are determined by the emission factors for each fuel. The table below summarizes the worst-case emissions from these fuels. Detailed calculations are included in Enclosure 1a and 1b.

Drum Mixer		
Pollutant	Emissions (TPY)	
	5,000 hr/yr	8,760 hr/yr
CO	73.13	128.12
NO_X	30.94	59.62
SO_2	0.14	0.25
PM	28.95	50.72
PM_{10}	20.27	35.50
$PM_{2.5}$	19.69	34.49
VOC	28.69	50.26
Lead (Pb)	0.008	0.015
HAP	4.95	8.68

8.2. Emissions from 546 HP and 563 HP DEGs

The DEGs are fired on fuel oil No. 2 with a maximum sulfur content of 0.0015% by weight. The total combined operating hour limit for both DEGs is 5,000 hours in any rolling twelve (12) month period. For 546 HP DEG, the emissions for CO and NO_X were calculated based on emission factor from manufacturer exhaust emission data sheet and emissions from other pollutants are based on fuel oil No. 2 emission factors from AP-42 Sections 3.3 (10/96) - *Gasoline and Diesel Industrial Engines*. For 563 HP DEG, the emissions were calculated based on emission factor from manufacturer exhaust emission data sheet except for SO_2. SO_2 emissions for both DEGs are based on emission factor from 3.4 (10/96) - *Large Stationary Diesel & All Stationary Dual-fuel Engines*, Table 3.4-1. Detailed emission calculations are included in Enclosures 2a and 2b. The emissions for each DEG are summarized in the table below:

Pollutant	546 HP DEG Emissions (TPY)		563 HP DEG Emissions (TPY)	
	5,000 hr/yr	8,760 hr/yr	5,000 hr/yr	8,760 hr/yr
CO	7.85	13.75	10.85	19.01
NO_X	14.50	27.94	15.53	27.20
SO_2	0.01	0.02	0.02	0.03
PM	3.00	5.48	0.25	0.44
PM_{10}	3.00	5.26	0.25	0.44
$PM_{2.5}$	3.00	4.93	0.25	0.44
VOC	3.43	6.01	0.55	0.96
Lead (Pb)	-	-	-	-
HAP	0.03	0.058	0.04	0.07

8.3. Emissions from HMA Silo Filling and Truck Load-Out

Emissions from HMA silo filling and truck load-out operations are estimated using emission factors from AP-42, Section 11.1 (3/04) – *Hot Mix Asphalt Plants*. Emissions are summarized in the table on the next page. Detailed calculations are included in Enclosures 3 and 4.

Pollutant	Silo Filling Emissions (TPY)		Truck Load-out Emissions (TPY)	
	5,000 hr/yr	8,760 hr/yr	5,000 hr/yr	8,760 hr/yr
CO	0.66	1.16	0.76	1.33
NO_X	-	-	-	-
SO_2	-	-	-	-
PM	0.33	0.577	0.294	0.514
PM_{10}	0.33	0.577	0.294	0.514
$PM_{2.5}$	0.33	0.577	0.294	0.514
VOC	6.86	12.01	2.20	3.853
Lead (Pb)	-	-	-	-
HAP	0.105	0.185	0.049	0.085

8.4. Fugitive Emissions

Emissions due to aggregate handling, wind erosion from aggregate stockpiles, transferring to cold-feed bins and truck travelling on unpaved roads are summarized in the table below. A seventy (70) percent control efficiency is assumed for water suppression.

Aggregate handling includes truck unloading to storage piles, RAP scalping screens, and conveyor transfer points. Particulate emissions are estimated using AP-42,

Section 11.19.2 (8/04) – *Crushed Stone Processing and Pulverized Mineral Processing*. Detailed calculations are included in Enclosure 5.

Windblown fugitive dust emissions from aggregate stockpiles are determined using EF from Table 4-1 in AP-42 Section 11.19.1 Background Document – *Emission Factor Documentation for AP-42 Section 11.19.1 Sand and Gravel Processing Final Report*. Detailed calculations are shown in Enclosure 6.

Emissions from transferring to cold-feed bins are determined using AP-42 Section 13.2.4 (11/06) – *Aggregate Handling and Storage Piles*. Detailed calculations are included in Enclosure 7. Particulate emissions from vehicle travelling on paved roads are estimated using AP-42, Section 13.2.2 (11/06) – Unpaved Roads. Detailed calculations are included in Enclosure 8.

Pollutant	Emissions (TPY)							
	Aggregate Handling		Wind Erosion		Transferring to Cold-Feed Bins		Truck Travelling on Unpaved Roads	
	5,000 hr/yr	8,760 hr/yr	5,000 hr/yr	8,760 hr/yr	5,000 hr/yr	8,760 hr/yr	5,000 hr/yr	8,760 hr/yr
PM	7.77	13.61	55.69	97.56	5.07	8.89	6.70	11.74
PM_{10}	2.77	4.85	28.40	49.76	2.40	4.20	1.71	2.99
$PM_{2.5}$	1.17	2.04	8.35	14.63	0.36	0.64	0.17	0.30

8.5. Total Emissions

The total potential emissions from this facility are based on annual operation of 5,000 hours, as represented by the total combination of operating hours for both 546 HP and 563 HP DEGs. The greater emissions of these two (2) DEGs are included in the total emissions, which are summarized in Enclosure 9.

1. Green House Gas

GHG	GWP	GHG CO_2e Based Emissions (metric TPY)	
		Limited	8,780 hr/yr
Carbon Dioxide (CO_2)	1	22,752	38,698
Methane (CH_4)	25	159	279
Nitrous Oxide (N_2O)	298	105	180
Total Emissions:		**23,017**	**39,157**

2. Criteria Pollutant and Hazardous Air Pollutant Emissions

Emissions (TPY)	Pollutant								
	CO	NO_X	SO_2	PM	PM_{10}	$PM_{2.5}$	VOC	Lead (Pb)	HAP
Limited (Proposed)	85.40	46.46	0.16	107.80	59.17	33.36	41.17	0.01	5.14
Limited (Current)	42.60	25.55	0.08	52.76	29.51	16.99	15.87	0.01	3.57
Limited (Change)	42.8	20.91	0.08	55.04	29.66	16.37	25.30	0	1.57
Sig. Mod. Threshold	25	10	10	6.25	3.75	2.5	10	0.15	-
8,780 hr/yr	144.36	87.57	0.28	188.87	103.66	58.45	72.14	0.01	9.01

9. AIR QUALITY ASSESSMENT

Since the proposed change triggers a significant modification for all the criteria pollutants except SO_2, an ambient air quality analysis (AAQA) is required to confirm the facility, with the new emission sources and operation changes, will continue to comply National Ambient Air Quality Standards (NAQQS). To be conservative, an ambient air quality impact analysis (AAQIA) was performed for the 225 TPH replacement drum mixer/burner and the to-be-added 563 HP DEG and the existing 546 HP operating simultaneously under the proposed 5,000 hours of annual operating limits.

9.1 AAQIA Background

The Lakes Environmental AERMOD View (v.9.5.0) program was used by the Department to verify/determine maximum pollutant impacts. Model assumptions are listed below:

1. Elevated terrain was used for the model. The USGS digital elevation map (DEM) in GeoTIFF format that covers the modeling domain were downloaded from WebGIS for executing the AERMOD model.
2. Rural dispersion parameters were applied to run the model.

3. A total of 1,565 receptors were used for the modeling analysis. Receptors were placed along the site boundary (the fence line around the plant) at 25m intervals. For offsite locations, a first layer of receptor grid with receptor spacing of 25m extended approximately 200m away from the fence line, a second layer of receptor grid with receptor spacing of 50m extended approximately 300m away from the perimeter of the first receptor grid layer, and the third layer of receptor grid with receptor spacing of 100m extended approximately 500m away from perimeter of the second receptor grid layer.
4. Buildings at the facility were incorporated into the model to evaluate downwash effects of nearby structures.
5. Five (5) years of meteorological surface data from the nearest National Weather Service Station (NWS) was used for the modeling analysis. The NWS data was obtained from the Honolulu International Airport on Oahu for years 2014-2018.
6. Full Conversion method, i.e., "Tier 1" option was selected in the model to determine one (1) hour NO_2 impacts.

9.2 AAQIA Parameters

The table below shows the pollutant emission rates and exhaust pipe parameters for each DEG:

Source		Emission Rates (g/s)				Exhaust Pipe Parameters			
		NO_X	PM_{10}	$PM_{2.5}$	CO	Height (m)	Diameter (m)	Flow Rate (m^3/s)	Temp (°K)
546 HP DEG-1	Short-term	0.7308	0.1514	0.1514	0.3956		0.2032	1.608	792
	Annual	0.4171	0.0864	0.0864	0.2258				
563 HP DEG-2	Short-term	0.7825	0.0126	0.0126	0.5468		0.2032	1.55	736
	Annual	0.4466	0.0072	0.0072	0.3121				

The two (2) DEGs share a common stack. Therefore, the pollutant emission rates and stack parameters are calculated based on data in the table above for each DEG. Pollutant emission rates for the DEGs are calculated by adding the two (2) together. The calculation of the stack parameters is shown in Enclosure 10. The table below shows the modeling parameters for drum mixer and combined DEG stack:

Source		Emission Rates (g/s)				Source Parameters			
		NO_X	PM_{10}	$PM_{2.5}$	CO	Height (m)	Diameter (m)	Flow Rate (m^3/s)	Temp (°K)
Drum Mixer[1]	Short-term[2]	1.5593	1.0214	0.9922	3.6855	12.19	1.24	29.2	408.2
	Annual	0.8900	0.5830	0.5663	2.1036				
DEG Stack	Short-term[2]	1.5205	0.1640	0.1640	0.9424	12.24	0.6096	3.158	764.6
	Annual	0.8637	0.0936	0.0936	0.5379				

[1]The calculations of input short term emission rates (g/s) are shown in Enclosures 1a, 2a, and 2b. The emission rates of criteria pollutants for drum mixer are calculated based on burning No. 2 fuel oil, the worst scenario.
[2]Short term emission rates are used for the 1-hr, 8-hr and 24-hr modeling averaging periods.

9.3 AAQIA Results

The modeled results were added to the background concentrations. The table below shows that the predicted ambient air quality impacts with the proposed change should comply with SAAQS and NAAQS.

Predicted Ambient Air Quality Impacts							
Air Pollutant	Averaging Period	Modeled Impact ($\mu g/m^3$)	Background[a] ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	SAAQS ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Compared to SAAQS / NAAQS
CO	1-hr	159.4	1832	1991.4	10000	40000	19.9%
	8-hr	147.6	1374	1521.6	5000	10000	30.4%
NO_2	1-hr	107.7	47	154.7	-	188	82.3%
	Annual	10.6	7.5	18.1	70	100	25.9%
PM-10	24-hr	42.1	41	83.1	150	150	55.4%
	Annual	3.1	19.9	23	50	-	46%
PM-2.5	24-hr	12.2	12.0	24.2	-	35	69.1%
	Annual	3.0	4.7	7.7	-	12	64.2%

[a]Background concentrations (State of Hawaii Annual Summary 2016 Air Quality Data) are taken from the highest of Honolulu, Kapolei, Sand Island, and Pearl City stations NO_2 (1-hr) and $PM_{2.5}$ (24-hr) are the 98th percentile averaged over 3 years. $PM_{2.5}$ (annual) is the annual mean averaged over 3 years.

10. SIGNIFICANT PERMIT CONDITIONS

1. Operating Hours:
   The total operating hours of the HMA concrete batch plant, as represented by the total combined operating hours of both 546 HP and 563 HP DEGs, shall not exceed 5,000 hours in any rolling twelve (12) month period.

   Reason: Proposed by the permittee and to limit CO and PM_{10} emissions below the major source thresholds.

2. Fuel Limits:
   a. The drum mixer/dryer shall be fired only on the following fuels:

      i. ULSD fuel with a maximum sulfur content not to exceed 0.0015% by weight; or
      ii. Liquefied petroleum gas (propane);

   b. Both 546 HP and 563 HP DEGs and the hot oil heater shall be fired only on ULSD fuel with the following specifications:

      i. Maximum sulfur content not to exceed 0.0015% by weight; and
      ii. Minimum cetane index of forty (40) or maximum aromatic content of thirty-five (35) volume percent.

   Reason: To demonstrate compliance with 40 CFR Part 63, Subpart ZZZZ for the 563 HP DEG and 40 CFR Part 60, Subpart IIII for the 546 HP DEG.

3. Stack Heights:
   a. The minimum stack height for the baghouse servicing the drum-mixer/dryer shall be forty (40) feet above base elevation.
   b. The minimum height for the common shared stack by both 546 HP and 563 HP DEGs shall be forty (40) feet and two (2) inches above base elevation.

   Reason: To ensure the facility comply with NAQQS and SAQQS.

The other conditions remain the same.

11. CONCLUSION AND RECOMMENDATION

The calculations of emissions have shown the proposed changes are significant modification and this facility will continue to be in compliance with NAQQS and SAQQS with the proposed changes.

Recommend issuance of the modified CSP subject to the incorporation of the significant permit conditions, thirty (30) day public comment period and forty-five (45) day EPA review.

Review by: Chenyan Song
Date: August 7, 2019 Initial
December 13, 2019 Second
January 24, 2020 Final

Enclosure 1a: 225 TPH Drum Mixer through Baghouse, Oil #2

AP-42 Section 11.1 (3/04) - Hot Mix Asphalt Plants

Emission (lb/hr) = Drum Mixer Capacity (ton/hr) x Emission Factor (lb/ton)
Emission (g/s) = Emission (lb/hr) x 453.6 (g/lb) / 3600 (s) for 1, 8, & 24 hr AAQIA input
Emission (g/s) = Emission (lb/hr) x Operation Hour (1616.8 hr/yr) / 8760 hr/yr x 453.6 (g/lb) / 3600 (s) for annual AAQIA input

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on operating hour limit
Drum Mixer Capacity	225	TPH	
Burner Heat Input Capacity	76	MMBtu/hr	
Oil #2 Heating Value	140	MMBtu/10^3 gal	
Fuel Oil Sulfur Content	0.0015	%	Permit Limit
Fuel Consumption Rate Capacity	2.41	gal/ton	
Fuel Consumption	337.50	gal/hr	Manufacturer's info
Operation Hour	5,000	hour	Proposed by permitee
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on operating hour limit
Drum Mixer Capacity	160	TPH	
Burner Heat Input Capacity	49.3	MMBtu/hr	
Oil #2 Heating Value	140	MMBtu/10^3 gal	
Fuel Oil Sulfur Content	0.0015	%	Permit Limit
Fuel Consumption Rate Capacity		gal/ton	
Fuel Consumption		gal/hr	Manufacturer's info
Operation Hour	3,500	hour	Proposed by permitee

Pollutant	EF (lb/ton)	Proposed Emissions			Current Emissions		AAQIA Input Emissions (g/s)	
		lb/hr	TPY		lb/hr	TPY	1, 8, & 24 hr	annual
			5,000 hr/yr	8,760 hr/yr		3,500 hr/yr		
CO[1]	0.13	29.25	73.13	128.12	20.80	36.40	3.6855	2.1036
NO_X[1]	0.055	12.38	30.94	54.20	8.80	15.40	1.5593	0.8900
NO_X (Biodisel)[2]	0.061	13.613	34.03	59.62	9.68	16.94	1.7152	0.9790
SO_2[1,3]	0.0003	0.06	0.14	0.25	0.04	0.07	0.0073	0.0042
PM[4]	0.051	11.58	28.95	50.72	8.23	14.41	1.4591	0.8328
PM-10[5]	0.036	8.11	20.27	35.50	5.76	10.09	1.0214	0.5830
PM-2.5[5]	0.035	7.87	19.69	34.49	5.60	9.80	0.9922	0.5663
VOC[6]	0.032	7.20	18.00	31.54	5.12	8.96		
CO_2[1]	33	7,425.00	18,562.50	32,521.50	5,280.00	9,240.00		
CH_4[6]	0.012	2.70	6.75	11.83	1.92	3.36		
N_2O[7]	6.27E-04	0.14	0.35	0.62	0.10	0.18		

1. EFs are based on no. 2 fuel oil- fired dryer with fabric filter from AP-42 Table 11.1-3, 11.1-4, 11.1-7, and 11.1-8.
2. NO_x emissions from biodiesel was increased by 10% over fuel oil no. 2 based on EPA's report,
AComprehensive Analysis of Biodiesel Impacts on Exhaust Emissions, October 2002.
3. SO_2 EF can be estimated using EF from AP-42 Table 1.3-1 (5/10). SO_2 (lb/10^3 gal) = 142S, where S = % sulfur in fuel oil.
According to footnote c of Table 11.1-7, EF should take the bigger one of the following:
SO2 (lb/ton) = SO2 (lb/103 gal) x 0.5 x Fuel Consumption (gal/ton)/1000 and
SO2 (lb/ton) = SO2 (lb/103 gal) x Fuel Consumption (gal/ton)/1000 - 0.1 lb/ton.
4. EFs of total PM are based on prmit limit of 0.04 gr/dscf which is converted to 11.58/hr and 0.051 lb/ton according to manufacturer's spec sheet.
5. EFs of PM-10 and PM-2.5 are calculated by the percentage based on the data from Tables 11.1-4 and Table 11.1-3.
Percentage of Condensable PM to Total PM = (0.0074 lb/ton (Inorganic condensable PM) + 0.012 lb/ton (Organic condensable PM))/0.033 lb/ton (total PM) = 59%
Percentage of Filterable PM to Total PM = 1-59% = 41%
Percentage of Total PM-2.5 to Total PM = Percentage of Filterable PM to Total PM x Percentage of Filterable PM-2.5 to Filterable PM + Percentage of Condensable PM to Total PM
Percentage of Total PM-2.5 to Total PM = 41% x 21% + 59% = 68%
Percentage of Total PM-10 to Total PM = 0.023 lb/ton / 0.033 lb/ton = 70%
6. EFs are based on no. 2 fuel oil- or waste oil-fired dryer with fabric filter from AP-42 Table 11.1-8.
7. N_2O EF (0.26 lb/10^3 gal) is from AP-42 Table 1.3-8 (5/10). N_2O (lb/ton) = N_2O (lb/10^3 gal) x Fuel Consumption (gal/ton)/1000.

Enclosure 1a: 225 TPH Drum Mixer through Baghouse (continued)

Hazardous Air Pollutant (HAP)	EF (lb/ton)	Proposed Emissions			Current Emissions	
		lb/hr	TPY		lb/hr	TPY
			5,000 hr/yr	8,760 hr/yr		3,500 hr/yr
Total non-PAH HAPs	7.80E-03	1.76E+00	4.39E+00	7.69E+00	1.25E+00	3.07E+00
Total PAH HAPs	8.80E-04	1.98E-01	4.95E-01	8.67E-01	1.41E-01	3.47E-01
Total PCDD/PCDF	1.20E-10	2.70E-08	6.75E-08	1.18E-07	1.92E-08	4.73E-08
Arsenic	5.60E-07	1.26E-04	3.15E-04	5.52E-04	8.96E-05	2.21E-04
Beryllium	0	0	0	0	0	0
Cadmium	4.10E-07	9.23E-05	2.31E-04	4.04E-04	6.56E-05	1.61E-04
Chromium	5.50E-06	1.24E-03	3.09E-03	5.42E-03	8.80E-04	2.17E-03
Cobalt	2.60E-08	5.85E-06	1.46E-05	2.56E-05	4.16E-06	1.02E-05
Hexavalent chromium	4.50E-07	1.01E-04	2.53E-04	4.43E-04	7.20E-05	1.77E-04
Lead	1.50E-05	3.38E-03	8.44E-03	1.48E-02	2.40E-03	5.91E-03
Manganese	7.70E-06	1.73E-03	4.33E-03	7.59E-03	1.23E-03	3.03E-03
Mercury	2.60E-06	5.85E-04	1.46E-03	2.56E-03	4.16E-04	1.02E-03
Nickel	6.30E-05	1.42E-02	3.54E-02	6.21E-02	1.01E-02	2.48E-02
Phosphorus	2.80E-05	6.30E-03	1.58E-02	2.76E-02	4.48E-03	1.10E-02
Selenium	3.50E-07	7.88E-05	1.97E-04	3.45E-04	5.60E-05	1.38E-04
Total HAPs		1.98	4.95	8.68	1.41	3.47

1. EFs are based on no. 2 fuel oil- fired dryer with fabric filter from AP-42 Table 11.1-10 and 11.1-12.

Green House Gas (GHG)	GWP	Proposed Emissions (metric TPY)		Unlimited Emissions (metricTPY)		Current Emissions (metricTPY)	
		Mass-Based	CO_2e Based	Mass-Based	CO_2e Based	Mass-Based	CO_2e Based
CO_2	1	16,836.19	16,836.19	29,497.00	29,497.00	8,380.68	8,380.68
CH_4	25	6.12	153.06	10.73	268.15	3.05	76.19
N_2O	298	0.32	95.37	0.56	167.09	0.16	47.47
Total			**17,084.62**		**29,932.25**		**8,504.34**

Enclosure 2b: 563 hp Diesel Engine Generator, Caterpillar C15 DITA (New)

AP-42 Section 3.4 (10/96) - Large Stationary Diesel & All Stationary Dual-fuel Engines

Emission (lb/hr) = DEG Heat Input Rate (MMBtu/hr) x Emission Factor (lb/MMBtu)
Emission (lb/hr) = DEG Power (hp) x Emission Factor (g/hp-hr)(1 lb/453.6 g)

	Value	Unit	Notes
Fuel Limit	145,150	gal/yr	
Operating Hour Limit	5,000	hr/yr	Proposed limit
Max. Fuel Consumption	29.03	gal/hr	Manufacturer's data
DEG Horsepower	563	bhp	Manufacturer's data
DEG rated output power	365	kW	Manufacturer's data
Fuel Oil No. 2 Sulfur Content	0.0015	%	Permit limit
Fuel Oil No. 2 Heating Value	140	MMBtu/10^3 gal	
DEG Heat Input Rate	4.06	MMBtu/hr	Fuel Consumption x Heating Value

Pollutant	EF (g/kW-hr)	EF (lb/MMBtu)	Emissions (lb/hr)	Emissions (TPY)		AAQIA Input Emissions (g/s)	
				5,000 hr/yr	8,760 hr/yr	1, 8, & 24 hr	annual
CO[1]			4.34	10.85	19.01	0.5468	0.3121
NO_X[1]			6.21	15.53	27.20	0.7825	0.4466
NO_X (Biodiesel)[2]			6.83	17.08	29.92	0.8607	0.4913
SO_2[3]		0.0015	0.01	0.02	0.027	0.0008	0.0004
PM[1]			0.100	0.25	0.438	0.0126	0.0072
PM-10[1,4]			0.100	0.25	0.438	0.0126	0.0072
PM-2.5[1,4]			0.100	0.25	0.438	0.0126	0.0072
VOC/TOC[1]			0.22	0.55	0.96		
CO_2[1]			630.70	1,576.75	2,762.47		

1. CO, NO_x, PM, VOC and CO_2 (lb/hr) are from manufacturer's specifications: Rated Speed " Potential Site Variation"
2. NO_X EF is increased by 10% for biodiesel based on EPA report.
3. SO_2 EF is from AP-42 Table 3.4-1. SO_2 (lb/MMBtu) = 1.01S, where S = % sulfur in fuel oil.
4. PM=PM-10=PM-2.5 according to AP-42 Table 3.3-1 footnote b

Hazardous Air Pollutant (HAP)	EF[1] (lb/MMBtu)	Emissions (lb/hr)	Emissions (TPY)	
			5,000 hr/yr	8,760 hr/yr
Benzene	9.33E-04	3.79E-03	9.48E-03	1.66E-02
Toluene	4.09E-04	1.66E-03	4.16E-03	7.28E-03
Xylenes	2.85E-04	1.16E-03	2.90E-03	5.07E-03
1,3-Butadiene	3.91E-05	1.59E-04	3.97E-04	6.96E-04
Formaldehyde	1.18E-03	4.80E-03	1.20E-02	2.10E-02
Acetaldehyde	7.67E-04	3.12E-03	7.79E-03	1.37E-02
Acrolein	9.25E-05	3.76E-04	9.40E-04	1.65E-03
Naphthalene	8.48E-05	3.45E-04	8.62E-04	1.51E-03
PAH	1.68E-04	6.83E-04	1.71E-03	2.99E-03
Total HAPs		0.015	0.038	0.066

1. EFs are from AP-42 Table 3.3-2

Green Hourse Gas (GHG)	GWP	Apllied EF[1] (kg/MMBtu)	Mass-Based Emissions (kg/hr)	Emissions (metric TPY)			
				Mass-Based	CO2e Based	Mass-Based	CO2e Based
				5,000 hr/yr		8,760 hr/yr	
CO_2	1	75.10	305.22	1,430.40	1,430.4	2,673.74	2,673.7
CH_4	25	3.00E-03	0.01	0.06	1.5	0.11	2.7
N_2O	298	6.00E-04	0.00	0.01	3.6	0.02	6.4
Total					**1,435.6**		**2,682.8**

1. EF from the Mandatory Greenhouse Gas Reporting rule (40 CFR §98, Tables C-1 and C-2).

Enclosure 3: HMA Silo Filling Operation

AP-42 Section 11.1 (03/04) - Hot Mix Asphalt Plants

Emission (lb/hr) = Drum Mixer Capacity (ton/hr) x Emission Factor (lb/ton)

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on HMAoperating hour limit
Drum Mixer Capacity	225	TPH	
Asphalt Volatility (V)	-0.5	-	AP-42 Table 11.1-14 default value
HMA Mix Temperature (T)	325	°F	AP-42 Table 11.1-14 default value
Operation Hour Limit	5,000	hr	Calculated
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on HMAoperating hour limit
Drum Mixer Capacity	160	TPH	
Asphalt Volatility (V)	-0.5	-	AP-42 Table 11.1-14 default value
HMA Mix Temperature (T)	325	°F	AP-42 Table 11.1-14 default value
Operation Hour Limit	3,500	hr	Calculated

Pollutant	Emission Factor Equations (Silo Filling)[1]
Total PM	EF = 0.000332 + 0.00105(-V)e^((0.0251)(T + 460) - 20.43)
Organic PM	EF = 0.00105(-V)e^((0.0251)(T + 460) - 20.43)
TOC	EF = 0.0504(-V)e^((0.0251)(T + 460) - 20.43)
CO	EF = 0.00488(-V)e^((0.0251)(T + 460) - 20.43)

Notes:
1. EF equations are from AP-42 Table 11.1-14.

Pollutant	EF[1] (lb/ton)	Control Efficiency	Proposed Emissions			Current Emissions	
			lb/hr	TPY		lb/hr	TPY
				5,000 hr/yr	8,760 hr/yr		3,500 hr/yr
Total PM[2]	5.86E-04	0%	0.132	0.3296	0.577	9.37E-02	0.164
Organic PM[2]	2.54E-04	0%	0.057	0.143	0.25	4.06E-02	0.071
TOC	1.22E-02	0%	2.742	6.86	12.01	1.95E+00	3.412
CO	1.18E-03	-	0.27	0.66	1.16	1.89E-01	0.330
VOC[3]	1.22E-02	0%	2.742	6.86	12.01	1.95E+00	3.412
PM-10[2,4]	5.86E-04	0%	0.132	0.3296	0.577	9.37E-02	0.164
PM-2.5[2,4]	5.86E-04	0%	0.132	0.3296	0.577	9.37E-02	0.164
CH_4[5]	3.17E-05	-	0.007	0.0178	0.031	5.07E-03	0.009

1. EFs are from Tables 11.1-14 and 11.1-16.
2. As per manufacturer's specs, the blue smoke mist eliminator has 0% control efficiency, except for CO.
3. VOC = 100% of TOC (Table 11.1-16).
4. Total PM is assumed to be predominately PM-2.5 (AP-42 Table 11.1-14, footnote b).
5. CH_4 = 0.26% of TOC (Table 11.1-16).

Hazardous Air Pollutant (HAP)	Speciation[1] (%)	Proposed Emissions			Current Emissions	
		lb/hr	TPY		lb/hr	TPY
			5,000 hr/yr	8,760 hr/yr		3,500 hr/yr
Total PAH HAPs	11.40%	6.51E-03	1.63E-02	2.85E-02	4.63E-03	0.008
Total Volatile Organic HAPs	1.30%	3.56E-02	8.91E-02	1.56E-01	2.53E-02	0.044
Total HAPs		0.042	0.105	0.185	0.030	0.052

1. Speciation profiles (%) are from AP-42 Table 11.1-15 and 11.1-16.

Green House Gas (GHG)	GWP	Limited Emissions (metricTPY) (1,125,000 TPY)		Unlimited Emissions (metric TPY) (8,760 hr/yr)		Current Emissions (metric TPY) (3,500 hr/yr, 560,500 TPY)	
		Mass-Based	CO_2e Based	Mass-Based	CO_2e Based	Mass-Based	CO_2e Based
CO_2	1						
CH_4	25	0.0162	0.40	0.028	0.71	0.008	0.20
N_2O	298						
Total			**0.40**		**0.71**		**0.20**

Enclosure 4: HMA Truck Load-out Operation

AP-42 Section 11.1 (03/04) - Hot Mix Asphalt Plants

Emission (lb/hr) = Drum Mixer Capacity (ton/hr) x Emission Factor (lb/ton)

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on HMAoperating hour limit
Drum Mixer Capacity	225	TPH	
Asphalt Volatility (V)	-0.5	-	AP-42 Table 11.1-14 default value
HMA Mix Temperature (T)	325	°F	AP-42 Table 11.1-14 default value
Operation Hour Limit	5,000	hr	Calculated
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on HMAoperating hour limit
Drum Mixer Capacity	160	TPH	
Asphalt Volatility (V)	-0.5	-	AP-42 Table 11.1-14 default value
HMA Mix Temperature (T)	325	°F	AP-42 Table 11.1-14 default value
Operation Hour Limit	3,500	hr	Calculated

Pollutant	Emission Factor Equations (Load-out)[1]
Total PM	EF = 0.000181 + 0.00141(-V)e^((0.0251)(T + 460) - 20.43)
Organic PM	EF = 0.00141(-V)e^((0.0251)(T + 460) - 20.43)
TOC	EF = 0.0172(-V)e^((0.0251)(T + 460) - 20.43)
CO	EF = 0.00558(-V)e^((0.0251)(T + 460) - 20.43)

Note:
1. EF equations are from AP-42 Table 11.1-14.

Pollutant	EF[1] (lb/ton)	Control Efficiency	Proposed Emissions			Current Emissions (TPY)
			lb/hr	TPY		3,500 hr/yr
				5,000 hr/yr	8,760 hr/yr	560,000 TPY
Total PM[2]	5.22E-04	0%	0.117	0.2936	0.514	0.146
Organic PM[2]	3.41E-04	0%	0.077	0.192	0.34	0.095
TOC	4.16E-03	0%	0.936	2.34	4.10	1.165
CO	1.35E-03	-	0.30	0.76	1.33	0.378
VOC[3]	3.91E-03	0%	0.880	2.20	3.85	1.095
PM-10[2,4]	5.22E-04	0%	0.117	0.2936	0.514	0.146
PM-2.5[2,4]	5.22E-04	0%	0.117	0.2936	0.514	0.146
CH_4[5]	2.70E-04	-	0.061	0.1521	0.266	0.076

1. EFs are from Tables 11.1-14 and 11.1-16.
2. As per manufacturer's specs, the blue smoke mist eliminator has 0% control efficiency, except for CO.
3. VOC = 94% of TOC (Table 11.1-16).
4. Total PM is assumed to be predominately PM-2.5 (AP-42 Table 11.1-14, footnote b).
5. CH_4 = 6.5% of TOC (Table 11.1-16).

Hazardous Air Pollutant (HAP)	Speciation [1] (%)	Proposed Emissions			Current Emissions (TPY)
		lb/hr	TPY		3,500 hr/yr
			5,000 hr/yr	8,760 hr/yr	560,000 TPY
Total PAH HAPs	5.93%	4.55E-03	1.14E-02	1.99E-02	0.006
Phenol	1.18%	9.05E-04	2.26E-03	3.96E-03	0.014
Total Volatile Organic HAPs	1.50%	1.40E-02	3.51E-02	6.15E-02	0.006
Total HAPs		0.019	0.049	0.085	0.025

1. Speciation profiles (%) are from AP-42 Table 11.1-15 and 11.1-16.

Green House Gas (GHG)	GWP	Limited Emissions (metricTPY) (1,125,000 TPY)		Unlimited Emissions (metric TPY) (8,760 hr/yr)		Current Emissions (metric TPY) (3,500 hr/yr, 560,500	
		Mass-Based	CO_2e Based	Mass-Based	CO_2e Based	Mass-Based	CO_2e Based
CO_2	1						
CH_4	25	0.1521	3.80	0.266	6.66	0.069	1.72
N_2O	298						
Total			**3.80**		**6.66**		**1.72**

Enclosure 5: Aggregate Handling - Scalping Screens & Conveyors

AP-42 Section 11.19.2 (08/04) - Crushed Stone Processing and Pulverized Mineral Processing

Emission (lb/hr) = Drum Mixer Capacity (ton/hr) x Emission Factor (lb/ton)

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	225	TPH	
# of Conveyor Transfer Points	7		
Operation Hour Limit	5,000	hr	Calculated
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	160	TPH	
# of Conveyor Transfer Points	7		
Operation Hour Limit	3,500	hr	Calculated

PM-10	EF[1] (lb/ton)	Control Efficiency[3]	Proposed Emissions			Current Emissions (TPY)
			lb/hr	TPY		3,500 hr/yr
				5,000 hr/yr	8,760 hr/yr	560,000 TPY
Truck Unload to Storage Piles	1.60E-05	70%	0.0011	0.0027	0.0047	0.001
Scalping Screen	0.0087	70%	0.59	1.47	2.57	0.731
Conveyor Transfer Points	0.0011	70%	0.52	1.30	2.28	0.092
Total PM-10			1.11	2.77	4.85	0.82

PM	EF (lb/ton)	Control Efficiency[3]	Proposed Emissions			Current Emissions (TPY)
			lb/hr	TPY		3,500 hr/yr
				5,000 hr/yr	8,760 hr/yr	560,000 TPY
Truck Unload to Storage Piles[2]	3.14E-05	70%	0.0021	0.0053	0.01	0.003
RAP Scalping Screen[1]	0.025	70%	1.69	4.22	7.39	2.100
Conveyor Transfer Points[1]	0.0030	70%	1.42	3.54	6.21	0.252
Total PM			3.11	7.77	13.61	2.35

PM-2.5	EF[2] (lb/ton)	Control Efficiency[3]	Proposed Emissions			Current Emissions (TPY)
			lb/hr	TPY		3,500 hr/yr
				5,000 hr/yr	8,760 hr/yr	560,000 TPY
Truck Unload to Storage Piles	4.71E-06	70%	0.00032	0.00079	0.0014	0.0004
RAP Scalping Screen	0.00375	70%	0.25	0.63	1.11	0.315
Conveyor Transfer Points	0.00045	70%	0.21	0.53	0.93	0.038
Total PM-2.5			0.47	1.17	2.04	0.35

1. EFs (uncontrolled) are from AP-42 Table 11.19.2-2
2. Assume PM-10 = 51% of PM and PM-2.5 = 15% of PM when data is not available (AP-42 Appendix B.2 (01/95), Figure B.2-1).
3. 70% control efficiency is assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95)).

Enclosure 6: Aggregate Storage Piles - Wind Erosion

Pollutant	EF[1] (lb/ton)	Control Efficiency[2]	Propsed Emissions (TPY)		Current Emissions (TPY)
			1,125,000 TPY	8,760 hr/yr	560,000 TPY
PM	0.33	70%	55.688	97.56	27.72
PM-10[3]	0.1683	70%	28.401	49.76	14.14
PM-2.5[3]	0.0495	70%	8.353	14.63	4.16

1. AP-42, Section 11.19.1, Background, Final report, Table 4-1

2. 70% control efficiency is assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95)).

3. Assume PM-10 = 51% of PM and PM-2.5 = 15% of PM when data is not available (AP-42 Appendix B.2 (01/95)).

Enclosure 7: Emissions from Transfering to Cold-Feed Bins

AP-42 Section 13.2.4 (11/06) - Aggregate Handling and Storage Piles

Emission (lb/hr) = Drum Mixer Capacity (ton/hr) x Emission Factor (lb/ton)

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	225	TPH	
Operating Hour Limit	5,000	hr/yr	Production Limit ÷ Mixer Capacity
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	160	TPH	
Operating Hour Limit	3,500	hr/yr	Production Limit ÷ Mixer Capacity

Emission Factors

$EF = k*0.0032*(U/5)^{1.3}/(M/2)^{1.4}$

where: EF = particulate emission factor (lb/ton),
k = particle size multiplier for particle size range (lb/ton),
U = mean wind speed (mph), and
M =moisture conten (%) .

	Value			Unit	Notes
	PM-2.5	PM-10	PM		
k	0.053	0.35	0.74	lb/ton	AP-42 Section 13.2.4
U	11.4			mph	AP-42 Table 7.1-9 (11/06) for Honolulu
M	0.7			%	AP-42 Table 13.2.4-1 (11/06) for crushed lime

Pollutant	EF (lb/ton)	Control Efficiency[1]	Proposed Emissions			Current Emissions (TPY)
			lb/hr	TPY		3,500 hr/yr
				1,125,000 TPY	8,760 hr/yr	560,000 TPY
PM	0.0301	70%	2.03	5.07	8.89	2.525
PM-10	0.0142	70%	0.96	2.40	4.20	1.194
PM-2.5	0.0022	70%	0.15	0.36	0.64	0.181

1. 70% control efficiency is assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95)).

Enclosure 8 Truck Travelling on Unpaved Road

AP-42 Section 13.2.2 (11/06) - Unpaved Roads

Emissions (lb/hr) = Vehicle Miles Traveled (VMT/hr) x Emission Factor (lb/VMT)

Vehicle Miles Traveled (VMT)

Proposed Operation	Value	Unit	Notes
HMA Production Limit	1,125,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	225	TPH	
Operating Hour Limit	5,000	hr/yr	Production Limit ÷ Mixer Capacity
Truck Load Capacity	21	ton	Estimate
Travel Distance Roundtrip	0.25	mile	Estimate based on site plan
Total Miles Travelled per hour	2.68	VMT/hr	Mixer Capacity ÷ Truck Load x Distance
Total Miles Travelled per year	13,393	VMT/year	VMT/hr x Hour Limit
Current Operation	**Value**	**Unit**	**Notes**
HMA Production Limit	560,000	TPY	Based on HMA operating hour limit
Drum Mixer Capacity	160	TPH	
Operating Hour Limit	3,500	hr/yr	Production Limit ÷ Mixer Capacity
Truck Load Capacity	21	ton	Estimate
Travel Distance Roundtrip	0.25	mile	Estimate based on site plan
Total Miles Travelled per hour	1.90	VMT/hr	Mixer Capacity ÷ Truck Load x Distance
Total Miles Travelled per year	6,667	VMT/year	VMT/hr x Hour Limit

Mean Vehicle Weight

	Value	Unit	Notes
Mean Vehicle Weight[1]	26.5	tons	

1. Mean vehicle weight assumed average tare weight of 16 tons and average gross weight of 37 tons.

Emission Factors

For vehicles traveling on unpaved road at industry sites

$EF = k(s/12)^a \times (W/3)^b$

where: EF = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range (lb/VMT),
s = surface material silt conten (%)), and
W = average weight of the vehicles traveling the road (tons).

$EF_{ext} = EF \times [(365-P)/365]$

where: EF_{ext} = annual or other long-term average emission factor (lb/VMT),
P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period. And
N = number of days in the averaging period.

	Value			Unit	Notes
	PM-2.5	PM-10	PM		
k	0.15	1.5	4.9	lb/VMT	AP-42 Table 13.2.2-2
s	4.8			%	AP-42 Table 13.2.2-3
a	0.9	0.9	0.7		AP-42 Table 13.2.2-2
b	0.45	0.45	0.45		AP-42 Table 13.2.2-2
P	188			day	Kainaliu Station (www.wrcc.dri.edu/htmlfiles/hi/hi

Pollutant	EF (lb/VMT)	EFext (lb/VMT)	Control Efficiency	Proposed Emissions			Current Emissions (TPY)
				lb/hr	TPY		3,500 hr/yr
					1,125,000 TPY	8,760 hr/yr	560,000 TPY
PM	6.88	3.33	70%	2.68	6.70	11.74	3.335
PM-10	1.75	0.85	70%	0.68	1.71	2.99	0.850
PM-2.5	0.18	0.08	70%	0.07	0.17	0.30	0.085

1. 70% control efficiency is assumed for water suppression (AP-42 Sec. 11.19.1.2 (11/95)).
2. Assume s=4.8% per guidance from South Coast Air Quality Management District

Enclosure 9: Total Facility Emissions

1. Limited Emissions without insignificant activities (Proposed)

Pollutant	Drum Mixer (5,000 hr/yr 1,125,000 TPY)	546 hp DEG (5,000 hr/yr)	563 hp DEG (5,000 hr/yr)	HMA Silo Filling (1,125,000 TPY)	HMA Load-out (1,125,000 TPY)	Aggregate Handling (1,125,000 TPY)	Wind Erosion	Transfer to Cold-Feed Bins (1,125,000 TPY)	Unpaved Roads (1,125,000 TPY)	Limited Emissions (TPY)	Net Increase (TPY)
CO	73.13	7.85	10.85	0.66	0.76	-	-	-	-	**85.40**	**42.79**
NO_X	30.94	14.50	15.53	-	-	-	-	-	-	**46.46**	**20.91**
SO_2	0.14	0.01	0.02	-	-	-	-	-	-	**0.16**	**0.08**
PM	28.95	3.00	0.25	0.330	0.294	7.77	55.69	5.073	6.70	**107.80**	**55.05**
PM-10	20.27	3.00	0.25	0.330	0.294	2.77	28.40	2.399	1.71	**59.17**	**29.66**
PM-2.5	19.69	3.00	0.25	0.330	0.294	1.17	8.35	0.363	0.17	**33.36**	**16.38**
VOC	28.69	3.43	0.55	6.86	2.199	-	-	-	-	**41.17**	**25.30**
Pb	0.008	-	-	-	-	-	-	-	-	**0.01**	**0.00**
HAPs	4.95	0.03	0.04	0.105	0.049	-	-	-	-	**5.14**	**1.58**

2. Limited Emissions without insignificant activities (Current)

Pollutant	Drum Mixer (3,500 hr/yr 560,000 TPY)	546 hp DEG (3,500 hr/yr)	563 hp DEG (no operation)	HMA Silo Filling (560,000 TPY)	HMA Load-out (560,000 TPY)	Aggregate Handling (560,000 TPY)	Wind Erosion	Transfer to Cold-Feed Bins (560,000 TPY)	Unpaved Roads (560,000 TPY)	Limited Emissions (TPY)
CO	36.40	5.50		0.33	0.38	-	-	-	-	**42.60**
NO_X	15.40	10.15		-	-	-	-	-	-	**25.55**
SO_2	0.07	0.01		-	-	-	-	-	-	**0.08**
PM	14.41	2.10		0.164	0.146	2.35	27.72	2.525	3.33	**52.76**
PM-10	10.09	2.10		0.164	0.146	0.82	14.14	1.194	0.85	**29.51**
PM-2.5	9.80	2.10		0.164	0.146	0.35	4.16	0.181	0.08	**16.99**
VOC	8.96	2.40		3.41	1.095	-	-	-	-	**15.87**
Pb	0.006	-		-	-	-	-	-	-	**0.01**
HAPs	3.466	0.02		0.052	0.025	-	-	-	-	**3.57**

2. Unlimited Emissions without insignificant activities

Pollutant	Drum Mixer (8,760 hr/yr)	546 hp DEG (8,760 hr/yr)	563 hp DEG (8,760 hr/yr)	HMA Silo Filling (8,760 hr/yr)	HMA Load-out (8,760 hr/yr)	Aggregate Handling (8,760 hr/yr)	Wind Erosion	Transfer to Cold-Feed Bins (8,760 hr/yr)	Unpaved Roads (8,760 hr/yr)	Unlimited Emissions (TPY)
CO	128.12	13.75	19.01	1.16	1.33	-	-	-	-	**149.62**
NO_X	59.62	27.94	27.20	-	-	-	-	-	-	**87.57**
SO_2	0.25	0.02	0.03	-	-	-	-	-	-	**0.28**
PM	50.72	5.26	0.44	0.577	0.514	13.61	97.56	8.89	11.74	**188.87**
PM-10	35.50	5.26	0.44	0.577	0.514	4.85	49.76	4.20	2.99	**103.66**
PM-2.5	34.49	5.26	0.44	0.577	0.514	2.04	14.63	0.64	0.30	**58.45**
VOC	50.26	6.01	0.96	12.01	3.853	-	-	-	-	**72.14**
Pb	0.015	-	-	-	-	-	-	-	-	**0.01**
HAPs	8.68	0.058	0.07	0.185	0.085	-	-	-	-	**9.01**

Greenhouse Gas Emissions

GHG	GWP	Limited Emissions (metric TPY)		Unlimited Emissions (metric TPY)		Curremt Emissions (metric TPY)		Net Increase (metric TPY)
		GHG Mass-Based Emissions	CO_2e Based Emissions	GHG Mass-Based Emissions	CO_2e Based Emissions	GHG Mass-Based Emissions	CO_2e Based Emissions	CO_2e Based Emissions
CO_2	1	22,752.43	22,752.43	38,697.53	38,697.53	11,098.22	11,098.22	11,654.21
CH_4	25	6.37	159.22	11.14	278.62	3.10	3.10	156.11
N_2O	298	0.35	105.16	0.60	179.61	0.19	0.19	104.97
Total			**23,016.80**		**39,155.76**		**11,101.51**	**11,915.29**

Emission Increase Contributing Sources

Pollutant	Drum Mixer (TPY)	546 hp DEG (TPY)	563 hp DEG (TPY)	Fugitive Dust form Aggregate Bins and Plant (TPY)							Total (TPY)
				Silo Filling	Load-out	Aggregate Handling	Wind Erosion	Transfer to Cold-Feed Bins	Unpaved Roads	Total Fugitive Dust	
PM	14.54	0.90	0.25	0.17	0.15	5.41	27.97	2.55	3.36	39.61	**55.05**
PM-10	10.18	0.90	0.25	0.17	0.15	1.95	14.26	1.20	0.86	18.58	**29.66**
PM-2.5	9.89	0.90	0.25	0.17	0.15	0.81	4.20	0.18	0.09	5.59	**16.38**

Enclosure 9 2.82 MMBtu/hr Hot Oil Heater (No Change, exempted)

AP-42 Section 1.3 (5/10) - Fuel Oil Combustion
AP-42 Section 1.4 (07/98) - Natural Gas Combustion
AP-42 Section 1.5 (07/08) - Liquified Petroleum Gas Combustion

Emission (lb/hr) = Fuel Consumption (gal/hr) x Emission Factor (lb/10^3 gal)
Emission (lb/hr) = Heat Input Rate (MMBtu/hr) x Emission Factor (lb/MMBtu)

	Value	Unit	Notes
Hour Limit	8,760	hr/yr	
Heat Input Rate	2.8	MMBtu/hr	Heating Value x Max. Fuel No. 2 Consumption
Fuel Oil No. 2 Sulfur Content	0.0015	%	
Fuel Oil No. 2 Heating Value	0.14	MMBtu/gal	
Max. Fuel Oil No. 2 Consumption	20.0	gal/hour	Permittee's info
LPG Sulfur Content	0.18	gr/100scf	AP-42 Table 1.5-1
LPG Heating Value	0.0915	MMBtu/gal	
Max. LPG Consumption	30.6	gal/hour	Heat Input Rate ÷ Heating Value
Nature Gas Sulfur Content	2,000	gr/10^6scf	AP-42 Table 1.4-2
Nature Gas Heating Value	1,020	Btu/scf	
Max. Nature Gas Consumption	2.7E-03	10^6 scf/hr	Heat Input Rate ÷ Heating Value

Pollutant	Oil No. 2 EF[1] (lb/10^3 gal)	LPG EF[2] (lb/10^3 gal)	Nature Gas EF[3] (lb/10^6 scf)	Proposed Emissions (8,760 hr/yr)		Current Emissions (8,760 hr/yr)	
				lb/hr	TPY	lb/hr	TPY
CO	5	7.5	84	0.10	0.44	0.10	0.44
NO_X	20	13	100	0.40	1.75	0.40	1.75
SO_2[4]	0.213	0.018	0.6	0.004	0.02	0.004	0.02
PM[5]	3.3	0.7	7.6	0.07	0.289	0.07	0.289
PM-10[6]	1.08	0.7	7.6	0.02	0.095	0.02	0.095
PM-2.5[6]	0.83	0.7	7.6	0.02	0.073	0.02	0.073
VOC (NMTOC)[7]	0.34	0.8	5.5	0.01	0.030	0.01	0.030
Lead (Pb)[8]	9		5.00E-04	2.52E-05	1.10E-04	2.52E-05	1.10E-04
CO_2	22,300	12,500	120,000	446.00	1,953.48	446.00	1,953.48
CH_4	0.216	0.2	2.3	4.32E-03	0.019	4.32E-03	0.019
N_2O	0.26	0.9	2.2	0.01	0.023	0.01	0.023

1. EFs are from AP-42 Tables 1.3-1, 1.3-2, 1.3-3, 1.3-7, 1.3-8, and 1.3-12.
2. EFs are from AP-42 Tables 1.5-1.
3. EFs are from AP-42 Tables 1.4-1 and 1.4-2.
4. SO_2 EF for oil no. 2= 142S, where S = sulfur content (%) and SO2 EF for LPG= 0.1xS, where S = sulfur content (g/100scf).
5. Total PM=Filterable PM + Condensible PM
6. PM-10 and PM-2.5 Efs for LPG and NG = PM
7. Non-methane TOC.
8. EF for Oil No.2 Lead is in lb/10^12 Btu.

Hazardous Air Pollutant (HAP)	Oil No. 2 EF[1] (lb/10^{12}Btu)	Oil No. 2 EF[1] (lb/10^3 gal)	Nature Gas EF[2] (lb/10^6 scf)	Proposed Emissions (8760 hr/yr)		Curremt Emissions (8760 hr/yr)	
				lb/hr	TPY	lb/hr	TPY
Polycyclic Organic Matter (POM)		0.0033	0.0000882	6.60E-05	2.89E-04	6.60E-05	2.89E-04
Formaldehyde (HCOH)		0.061	7.50E-02	1.22E-03	5.34E-03	1.22E-03	5.34E-03
Arsenic (As)	4			1.12E-05	4.91E-05	1.12E-05	4.91E-05
Beryllium (Be)	3			8.40E-06	3.68E-05	8.40E-06	3.68E-05
Cadmium (Cd)	3			8.40E-06	3.68E-05	8.40E-06	3.68E-05
Chromium (Cr)	3			8.40E-06	3.68E-05	8.40E-06	3.68E-05
Lead (Pb)	9			2.52E-05	1.10E-04	2.52E-05	1.10E-04
Mercury (Hg)	3			8.40E-06	3.68E-05	8.40E-06	3.68E-05
Manganese (Mn)	6			1.68E-05	7.36E-05	1.68E-05	7.36E-05
Nickel (Ni)	3			8.40E-06	3.68E-05	8.40E-06	3.68E-05
Selenium (Se)	15			4.20E-05	1.84E-04	4.20E-05	1.84E-04
Benzene		2.14E-04	2.10E-03	4.28E-06	1.87E-05	4.28E-06	1.87E-05
Ethylbenzene		6.36E-05		1.27E-06	5.57E-06	1.27E-06	5.57E-06
Hexane			1.8				
Naphthalene		1.13E-03	6.10E-04	2.26E-05	9.90E-05	2.26E-05	9.90E-05
1,1,1-Trichloroethane		2.36E-04		4.72E-06	2.07E-05	4.72E-06	2.07E-05
Toluene		6.20E-03	3.40E-03	1.24E-04	5.43E-04	1.24E-04	5.43E-04
o-Xylene		1.09E-04		2.18E-06	9.55E-06	2.18E-06	9.55E-06
Total HAPs				1.58E-03	6.93E-03	1.58E-03	6.93E-03

1. EFs are from AP-42 Table 1.3-8 and 1.3-10.

Green House Gas (GHG)	GWP	Emissions (metric TPY)	
		Mass-Based	CO_2e Based
CO_2	1	1,771.81	1,771.81
CH_4	25	0.02	0.43
N_2O	298	0.02	6.16
Total			**1,778.39**

Enclosure 10: ALA IMUA NEW STACK PARAMETERS FOR TWO(2) DIESEL ENGINE GENERATORS

The exhaust pipes of the CAT 3456 and the CAT C15 (both 8" Diam.) are now connected to a 24" Diam. vertical stack with a height of 40' 2".

Calculation of stack parameters:

Assuming exhausted gas from the two (2) DEGs are same with same density and same specific heat capacity

	CAT 3456	CAT C15
Flow Rate	3407.9 cfm / 1.608 m3/s	3284.27 cfm / 1.55 m3/s
Exh. Temp	966 °F / 792 °K / 518.9 °C	865.04 °F / 736 °K / 462.8°C

Flow calculation: 3407.9 cfm + 3284.27 cfm = 6692.17 cfm = **3.158 m3/s**

Exhaust Temperature calculation: 966 °F + 865 °F = 1831 °F / 2 = 915.5 °F = **764 K**

After the exhausts from two (2) DEGs mix together, the heat released by the exhaust from CAT 3456 is equal to the heat absorbed by the exhaust from CAT C15. Therefore,

$c_1 \times m_1 \times (t_1\text{-}t) = c_2 \times m_2 \times (t_2\text{-}t)$, where $m = \rho V$, the mass of the exhaust

Since both the density and specific heat capacity are same (c_1 = c2) for the exhausts from the two DEGs, the equation above can be written as:

$V_1 \times (t_1\text{-}t) = V_2 \times (t_2\text{-}t)$

The final temperature after mixing of two (2) exhausts will be:

$t = (V_2\, t_2 + V_1\, t_1) / (V_2 + V_1)$

= (1.55*462.8 + 1.608*518.9) / (1.55 + 1.608) = 491.4 °C = **764.6 °K**

Stack Height: 40' 2" = 40.17' = **12.24 m**

Stack Diameter: 24" = **0.6096 m**

Air Quality Permitting
Technical Memorandum

Permit to Construct No. 777-00297

GRANITE CONSTRUCTION CO.

Portable Hot-mix Asphalt Plant

Prepared By:

Dustin Holloway
Permit Writer

Project No. P-020304

Date Prepared:

April 22, 2002

Permit Status:

FINAL

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, *Rules for the Control of Air Pollution in Idaho,* for issuing permits to construct (PTC).

PROJECT DESCRIPTION

Granite Construction Co. (Granite Construction) is proposing to commence construction of a portable hot-mix asphalt (HMA) plant to be operated in both attainment and nonattainment areas within the state of Idaho. Note that the standard PTC for a portable HMA plant also includes provisions for collocated operations in attainment areas with one other portable source (i.e., rock crusher, HMA, or concrete batch plant). The HMA plant's maximum hourly throughput is 400 tons per hour (T/hr) and the facility includes a 1600 hp electrical generator set. The HMA facility will be initially located near Juniper Pit, Idaho.

SUMMARY OF EVENTS

February 11, 2002	The Idaho Department of Environmental Quality (DEQ) received an application from Granite Construction Co. for a portable HMA plant.
March 7, 2002	The application was determined complete.
April 12, 2002	An opportunity to request a public comment period was held. No request was received.

DISCUSSION

1. Process Description

   The facility is a portable, drum-mix, HMA plant used for the production of asphaltic concrete. The dryer burner is permitted to be fired on fuel oil, natural gas, or propane gas.

   The standard PTC requested will allow this HMA facility to collocate and simultaneously operate with one other portable plant (i.e., rock crusher, HMA plant, and/or concrete batch plant) in attainment areas. It is important to note that during collocated operations, this HMA plant is then part of a single, larger source engaged in the production of either asphalt, concrete, and/or aggregate, depending on the type of portable plant the HMA plant is collocated with. While collocated, the two portable plants are now considered to be one source, and the emissions of this single source is the sum of the emissions from the two portable plants. This single, larger source must comply with all applicable federal, state, and local requirements. To maintain compliance, specific requirements and limitations have been included in the standard PTC for this HMA plant for collocated operations. As described in the following sections of this technical memorandum, specific conservative assumptions and calculations were made to determine these standard PTC collocation requirements. For this reason, the permit for the other portable plant, with which this HMA plant will collocate, must also contain specific collocation requirements based on the same conservative assumptions and calculations used in this standard PTC.

2. Equipment Listing

   This standard permit analysis includes the following equipment as submitted in the application:

2.1 Portable HMA Plant

Manufacturer/model:	Barber Green
Type:	Drum-mix
Throughput capacity:	400 T/hr
Burner fuel type:	Waste oil
Dryer heat input:	92.00 million British thermal units

2.2 Air Pollution Control Device

Type:	Baghouse
Model:	BH 182-88411-00-3A

2.3 HMA Stack Information

Stack height:	40 ft
Stack diameter:	4 ft
Exhaust gas flowrate:	67,000 acfm
Stack exhaust temperature:	190°F

2.4 Generator

Manufacturer/Model:	CAT 3512
Rated power output:	1600 hp
Fuel type:	diesel
Fuel usage:	60 gallons per hour
Stack height:	12 ft
Stack diameter:	0.75 ft
Exhaust gas flowrate:	7,000 acfm
Stack exhaust temperature:	879°F

When collocated, this HMA plant is then part of a single, larger source that produces either HMA, concrete, and/or aggregate, depending on which type of portable plant the HMA plant is collocated with. The equipment used by this single, larger source would include the HMA plant equipment listed above, plus the equipment of the other portable plant. To see an equipment description for the other portable plant, see the corresponding permitting files for that plant.

3. Area Classification

The HMA facility is a portable source and may operate in both attainment and nonattainment areas throughout the state of Idaho.

4. Emission Estimates

Emission estimates for this HMA facility were calculated using an Excel spreadsheet and emission factors obtained from AP-42, Sections 11.1 and 1.3. For purposes of maximum flexibility, the spreadsheet calculates the potential to emit (PTE) based on the worst-case emission factor of all possible fuels to be used at the HMA plant (diesel fuel oils, propane, and natural gas). The following air pollutant emissions are calculated by the spreadsheet: PM (particulate matter), PM_{10} (particulate matter with an aerodynamic diameter less than or equal to 10 micrometers), NO_X (oxides of nitrogen), SO_2 (sulfur dioxide), and CO (carbon monoxide).

In calculating the PTE for each pollutant, the spreadsheet solves for the most-limiting pollutant, which will give the facility a PTE of less than 100 tons per any consecutive 12-month period (i.e., 99 T/yr). In addition, allowable operational limits for the facility, which corresponds to the PTE less than 100 T/yr, are given as part of the spreadsheet output. A copy of the spreadsheet showing all calculations and results is presented as Appendix A of this memo.

For collocated operations, a conservative approach is taken by limiting the emissions of each of the collocated units to half of the levels allowed when operating alone. Then the combined emissions of the two collocated sources will be within the allowable levels. See the information below for a more detailed description. This approach is designed to result in acceptable throughput limits for most collocation situations. In cases where the throughput limits are too restrictive, a site-specific analysis and permit amendment may be completed.

In summary, the emission estimates for this facility assume 400 T/hr throughput to a drum-mix HMA plant, one waste oil-fired dryer, one diesel-fired electrical generator set rated at 1600 hp, and fugitive dust emissions from specified sources (see the spreadsheet). The most-limiting pollutants, which give the facility a PTE of 99 T/hr, are NO_x and SO_2. The emissions factor for SO_2 is calculated from AP-42, Section 1.3. The emissions factors for SO_2 in Section 1.3 are based on sulfur content in the fuel and the assumption that half of the SO_2 emissions or 0.1lb/ton of asphalt, whichever is smaller, remains in the product. In order to remain within 99 T/yr for SO_2 emissions a fuel sulfur content of .95% or less is required.

4.1 Collocated Operations in Attainment Areas

Standard PTCs will only allow collocation with one other portable source (i.e., rock-crushing plant, HMA plant, or concrete batch plant) which has also received a standard PTC that specifically allows collocation. When a combination of one portable HMA unit and one other portable plant are operated at a single location, the emissions of both units must be added together when determining PTE. Consistent with the approach taken for attainment area operations, the spreadsheet inherently limits the combined emissions of the two portable units to below certain triggering levels (i.e., Prevention of Serious Deterioration (PSD) and Title V thresholds) by limiting the maximum throughput of each. For collocated operations, half of the attainment area triggering levels are used as limits for calculating throughput for each source. The HMA plant throughput is then established based on the most-limiting pollutant or pollutants (i.e., the pollutant whose emission rate is closest to 49.5 T/yr). For collocated attainment area operations, the most-limiting pollutants, which give the HMA facility a PTE of 49.5 T/yr, are NO_x and SO_2.

5. Modeling

Modeling of the asphalt plant stack emissions was conducted using an EPA-approved SCREEN 3 computer-run model. The maximum one-hour impact from the dryer stack was calculated to be 1.82 $\mu g/m^3$ using a 1 lb/hr unity emission rate input to the model. The maximum one-hour impact from the electrical generator set was calculated to be 13.46 $\mu g/m^3$, also using a 1 lb/hr unity input. The spreadsheet calculates the ambient impact for each air pollutant (PM, PM_{10}, NO_x, SO_2, and CO) based on the calculated pound-per-hour emission rate, averaging periods, and background concentrations. The spreadsheet solves for the most-limiting pollutant in attainment areas and gives appropriate operational limits, which protects the applicable National Ambient Air Quality Standard (NAAQS) as defined in IDAPA 58.01.01.577. In addition, the spreadsheet also calculates the most-limiting pollutant in nonattainment areas and gives operational limits to protect applicable significant contribution requirements, as defined in IDAPA 58.01.01.006.89. All SCREEN modeling output files are presented as Appendix B of this memo. Spreadsheet impact calculations and results are presented as Appendix A.

For collocated operations in attainment areas, operation of the HMA plant and its generator (if used) are limited as needed so that the modeled impacts will be half of the available allowable ambient impact. Likewise for collocated operations, the modeled impacts of the other portable facility will also be limited to half of the available allowable ambient impact so that the combined emissions of the two collocated sources will remain within the NAAQS. Using the 24-hour NAAQS standard for PM_{10} (attainment area) as an example, one half of the allowable available impact would be equal to 32 $\mu g/m^3$, as follows:

$$32\ \mu g/m^3 = 0.5 \times [150\ \mu g/m^3 - 86\ \mu g/m^3],$$

where 150 $\mu g/m^3$ is the 24-hour average standard and 86 $\mu g/m^3$ is the conservative statewide 24-hour average background value. Then operation of the HMA plant and its generator (if used) would be limited as needed, based on the specific ambient impact modeling, so that the modeled 24-hour concentration does not exceed 32 $\mu g/m^3$ at or beyond the facility's property boundary. This approach is designed to result in acceptable operational limits for most collocation situations. In cases where these limits are too restrictive, a site-specific analysis and permit amendment may be completed. If a generator is used, the modeling estimates are included as Appendix B.

6. Facility Classification

HMA plants (including collocated operations producing asphalt, concrete, and aggregate) are not designated facilities, as defined in IDAPA 58.01.01.006.27. This facility is not a major facility as defined in IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. The Standard Industrial Classification code for this HMA facility is 2951. The AIRS facility classification for this facility is "SM" because allowable emissions are less than all thresholds for Tier I permits. The spreadsheet included as Appendix A automatically determines the facility classification.

7. Regulatory Review

The following rules and regulations were reviewed for this permit analysis:

a.	IDAPA 58.01.01.201	Permit to Construct
b.	IDAPA 58.01.01.202	Application Procedures
c.	IDAPA 58.01.01.203	Permit Requirements for New and Modified Stationary Sources
d.	IDAPA 58.01.01.209	Procedures for Issuing Permits
e.	IDAPA 58.01.01.211	Conditions for Permits to Construct
f.	IDAPA 58.01.01.212	Obligation to Comply
g.	IDAPA 58.01.01.577	Ambient Air Quality Standards
h.	IDAPA 58.01.01.625	Visible Emissions
i.	IDAPA 58.01.01.650	Rules for Control of Fugitive Dust
j.	IDAPA 58.01.01.725	Rules for Sulfur Content of Fuels
k.	IDAPA 58.01.01.805	Rules for the Control of Hot-mix Asphalt Plants
l.	40 CFR 60, Subpart I	Standards and Performance for Hot-mix Asphalt Facilities

This facility is an affected facility and is subject to regulation in accordance with 40 CFR Part 60, Subpart I, "Standards of Performance for Hot-mix Asphalt Facilities."

8. Permit Coordination

This HMA facility is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. However, the applicant has indicated that it is a New Source Performance Standard (NSPS)-affected facility (40 CFR Part 60, Subpart I), and as such, it is a Tier I source as defined by IDAPA 58.01.01.006.104(b). In accordance with IDAPA 58.01.01.313.01.e.ii, facilities that become Tier I sources after January 1, 2000, but *before January 1, 2005 must either*:

1) Submit a Tier I application within 12 months after commencing construction, or
2. Register the source with DEQ by submitting the information in Subsection 313.01.f within 12 months after commencing operation.

9. Permit Requirements

Since this facility is using a short-term source factor for carcinogenic pollutants it must not remain in one location for more than five consecutive years.

10. AIRS Information

AIRS/AFS[a] FACILITY-WIDE CLASSIFICATION[b] DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP [c]	PSD [d]	NSPS [e] (Part 60)	NESHAP [f] (Part 61)	MACT [g] (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2 [h]	SM						Portable
NO_x [i]	SM						Portable
CO [j]	B						Portable
PM_{10} [k]	SM						Portable
PT (Particulate) [l]	SM		SM				
VOC [m]	B						Portable
THAP (Total HAPs) [n]	B						
			APPLICABLE SUBPART				
			I				

[a] Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

[b] AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

[c] *State Implementation Plan*
[d] Prevention of Significant Deterioration
[e] *New Source Performance Standards*
[f] National Emission Standards for Hazardous Air Pollutants
[g] *Maximum Achievable Control Technology*
[h] sulfur dioxide
[i] nitrogen oxides
[j] carbon monoxide
[k] particulate matter with an aerodynamic diameter less than or equal to *a nominal 10 micrometers*
[l] particulate matter
[m] volatile organic compounds
[n] hazardous air pollutants

PUBLIC COMMENT

After the application was determined complete a 30-day opportunity for public comment was provided beginning on April 12, 2002. No request for a comment period was received.

FEES

This facility is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration and registration fees in accordance with IDAPA 58.01.01.526 are not applicable.

RECOMMENDATION

Based on review of application materials and state and federal rules and regulations, staff recommends Granite Construction Co. be issued a PTC for a portable HMA facility. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD PTC requirements.

DH/DS/bh G:\Air Permits\P T C\Granite Construction\P-020304 Tech Memo.docs

cc: Tiffany Floyd, Pocatello Regional Office
Sherry Davis, Technical Services
Joan Lechtenberg, Air Quality Division

APPENDIX A
Emissions Calculations

INPUT SECTION - enter info in highlighted areas only

Company:	Granite Construction Company	
Permit Engineer:	Dustin Holloway	
Date:	3/8/02	
Filename:	HMA Emissions Estimate	
Enter the HMA Plant Type:	B	(A = Batch Mix Hot Mix Asphalt Plant) (B = Drum Mix Hot Mix Asphalt Plant)
Dryer Fuel Type:	B	(A = Natural Gas-Fired Dryer) (B = Oil-Fired Dryer)
Enter Dryer Stack Flow Rate:	67,000	actual cubic feet per minute (acfm)
Enter Dryer Stack Temperature:	190	temperature (°F)
Enter Dryer Stack Moisture:	18.00	moisture wt % (Default 18 wt%)
Enter Dryer Stack Pressure:	29.92	stack pressure (Default 29.92 "Hg)
Calculated Corrected Flow Rate:	44,623	dry standard cubic feet per minute (dscfm)
Enter HMA Maximum Capacity:	400	Ton/hr (Asphalt Throughput)
Enter HMA Modeled Concentration:	1.82	$\mu g/m^3$, (1-hr concentration @ 1 lb/hr)
Is a PM performance test required for this HMA plant?	Y	Y or N (based on 40 CFR 60.90 Requirements)
Does Plant Require a Generator?	Y	Y or N
Enter Generator Size:	1600	hp
Enter Units:	A	(A = Horsepower or B = Kilowatts)
Calculated Generator Size:	1600.00	Horsepower
Enter Generator Fuel Type:	A	(A = Diesel-Fired Generator) (B = Gasoline-Fired or Dual-Fired Generator)
Enter Generator Fuel Useage:	60	gal/hr
Calculated Generator Heat Output:	8.16	MMBtu/hr
Enter gen. modeled concentration:	13.46	$\mu g/m3$, (1-hr concentration @ 1 lb/hr)

SPREADSHEET DATA - information used by spreadsheet

State Wide Background Concentrations for Criteria Air Pollutants

	1-hr	3-hr	8-hr	24-hr	Annual
PM-10				86	32.7
CO	11400		5130		
NO_x					40
SO_x		543		144	23.5

Parameters used in the Fugitive Emission Calculations

Mean Wind Speed (U)	10	mph
Material Moisture Content (M)	2.5	%
Particle Size Multiplier (k)		
PM-10 (<10 µm)	0.35	dimensionless
Emission Factor[1]		
PM-10 (<10 µm)	0.0020	lb/T
PM[2]	0.0053	lb/T

Notes: [1] $EF = k*0.0032*(U/5)^1.3/(M/2)^1.4$

Drop-Point Equation, Rating "A," AP-42, 5th Ed. p.13.2.4-3.

Assumptions: Wind Speed = 10 mph; Moisture = 2.5%; and Aggregate = 94% of product.

FACILITY CLASSIFICATION INPUT

Enter Annual Emission Limit:	100	T/yr

Note: Use 100 T/yr for Title V Limitation
Use 250 T/yr for PSD Limitation
For the standard HMA permit, use 100 T/yr.

NMED Attachment 1

PERMIT REQUIREMENTS SECTION - enforceable permit limits
AIRS Facility Classification: A2

Non-attainment Area	Allowable Emission Limits	
HMA Dryer Stack:	15.3 lb/hr of PM	NA T/yr
Generator:	8.8 hr/day 3,204.40 hr/year	NA T/yr
HMA Plant Throughput Limits:	3,512 T/day	1,281,759 T/yr

Attainment Area	Allowable Emission Limits	
HMA Dryer Stack:	15.3 lb/hr of PM	53.7 T/yr of NOx
Generator:	24.0 hr/day 3,579.95 hr/year	45.3 T/yr of NOx
HMA Plant Throughput Limits:	NA T/day	1,431,979 T/yr

Collocated Attainment Areas	Allowable Emission Limits	
HMA Dryer Stack:	15.3 lb/hr of PM	26.8 T/yr of NOx
Generator:	24.0 hr/day 1,789.97 hr/year	22.7 T/yr of NOx
HMA Plant Throughput Limits:	NA T/day	715,989 T/yr

	CO 1-hr Standard	SO2 3-hr standard	CO 8-hr Standard
	minutes/1-hr	hr/3-hr	hr/8-hr
	60.0	3.0	8.0

INPUTS TO PERMIT TO CONSTRUCT (PTC)		Value	Units
Section B "Attainment Area When Not Collocated"			
Section B.1.1 Facility Throughput Limits:	Annual Throughput Limit	1,431,979	T/yr
	<<OR>>		
	Daily Throughput Limit	NA	T/day
	Annual Throughput Limit	1,431,979	T/yr
tion B.1.3 Generator Hours of Operation:	Annual Hours of Operation	3,580	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	24	hr/day
Section C "Attainment Area When Collocated"			
Section C.1.3 Facility Throughput Limits:	*Annual Throughput Limit*	715,989	T/yr
	<<OR>>		
	Daily Throughput Limit	NA	T/day
	Annual Throughput Limit	715,989	T/yr
tion C.1.4 Generator Hours of Operation:	Annual Hours of Operation	1,790	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	24.0	hr/day
Section D "Nonattainment Area"			
Section D.1.1 Facility Throughput Limits:	Annual Throughput Limit	1,281,759	T/yr
	<<OR>>		
	Daily Throughput Limit	3,512	T/day
	Annual Throughput Limit	1,281,759	T/yr
tion D.1.3 Generator Hours of Operation:	Annual Hours of Operation	3,204	hr/year
	<<AND/OR>>		
	Daily Hours of Operation	8.8	hr/day

NMED Attachment 1

DRYER EMISSION RATE CALCULATIONS

Pollutant	DRYER STACK Emission Factor lb/ton	Emission Rate (Uncontrolled) lb/hr	Emission Rate (Controlled) lb/hr
Total PM	19.00	7,600.00	15.30
Total PM-10	gr/dscf 0.84	1,720.80	15.30
CO	lb/ton 0.036	14.40	14.40
NO_x	0.075	30.00	30.00
SO_2	0.119	47.73	47.73

0.12 % sulfur

0.95

HMA emission factors for CO, NO_x, SO_2 and uncontrolled PM & PM-10 are from AP-42 Section 11.1. Controlled PM & PM-10 is from the NSPS 0.04 gr/dscf.

GENERATOR EMISSION RATE CALCULATIONS

Pollutant	GENERATOR STACK Emission Factor lb/MMBtu	Emission Rate (Uncontrolled) lb/hr	Emission Rate (Controlled) lb/hr
Total PM	0.07	0.57	0.57
Total PM-10	0.06	0.47	0.47
CO	0.81	6.61	6.61
NO_x	3.10	25.31	25.31
SO_2	0.51	4.12	4.12

Generator emission factors are from AP-42 Section 3.3 and 3.4.

MODELING ANALYSIS CALCULATIONS FOR ATTAINMENT AREAS

Pollutant	Allowable Impacts NAAQS Hours of Operation hr/day	NAAQS Hours of Operation hr/year	NAAQS Other [a,b,c]	< 100 TPY Hours of Operation hr/year	Hours of Operation hr/day	Hours of Operation hr/year	Permitted Impacts NAAQS Calculated 24-hr Impact µg/m3	NAAQS Calculated Annual Impact µg/m3	NAAQS Other [a,b,c]	< 100 TPY Calculated Emissions ton/year
PM	N/S	N/S			24.0	3,580				
PM-10	24.0	8,760		8,760	Based on:	Based on:	13.67	1.12		32.30
CO	N/S	N/S		8,760	None	NOx	46.10	3.77		37.61
CO [a]			1.0				—	—	115.24	
CO [b]			8.0		Limited to 99.0 T/yr.		—	—	80.67	
NO_x	N/S	8,760		3,580			—	12.92		99.00
SO_2	24.0	8,760		3,819			56.98	4.66		92.81
SO_2 [c]			3.0				—	—	128.21	

MODELING ANALYSIS CALCULATIONS FOR NONATTAINMENT AREAS

Pollutant	Allowable Impacts NAAQS Hours of Operation hr/day	NAAQS Hours of Operation hr/year	NAAQS Other [a,b,c]	< 100 TPY Hours of Operation hr/year	Hours of Operation hr/day	Hours of Operation hr/year	Permitted Impacts NAAQS Calculated 24-hr Impact µg/m3	NAAQS Calculated Annual Impact µg/m3	NAAQS Other [a,b,c]	< 100 TPY Calculated Emissions ton/year
PM	N/S	N/S			8.8	3,204				
PM-10	8.8	3,204		8,760	Based on:	Based on:	5.00	1.00		28.91
CO	N/S	N/S		8,760	PM-10	PM-10	16.86	3.37		33.67
CO [a]			1.0				—	—	115.24	
CO [b]			8.0		Limited by Significant Cont..		—	—	80.67	
NO_x	N/S	8,760		3,580			—	11.57		88.61
SO_2	24.0	8,760		3,819			15.30	4.17		83.08
SO_2 [c]			3.0				—	—	128.21	

NMED Attachment 1

FUGITIVE EMISSION CALCULATIONS FOR ATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions (lb/hr)		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre-Dryer Source Emissions	6.02	2.28
Post-Dryer Source Emissions		
Screening Process	#N/A	#N/A
Screen -> Hot Bins	#N/A	#N/A
Hot Bins -> Weigh Hopper	#N/A	#N/A
Weigh Hopper -> Pug Mill	#N/A	#N/A
Total Post-Dryer Source Emissions	#N/A	#N/A
Scavenger Control Efficiency	#N/A	#N/A
Total Uncontrolled Emissions (lb/hr)	6.02	2.28
Total Uncontrolled Emissions (T/yr)	10.77	4.07
Total Controlled Emissions (lb/hr)	6.02	2.28
Total Controlled Emissions (T/yr)	10.77	4.07

FUGITIVE EMISSION CALCULATIONS FOR NONATTAINMENT AREAS

	PM	PM-10
Pre-Dryer Source Emissions (lb/hr)		
Loader -> Cold Aggregate Bin	2.01	0.76
Cold Aggregate Bin -> Conveyor	2.01	0.76
Conveyor -> Drum Dryer	2.01	0.76
Total Pre-Dryer Source Emissions	6.02	2.28
Post-Dryer Source Emissions 1		
Screening Process	#N/A	#N/A
Screen -> Hot Bins	#N/A	#N/A
Hot Bins -> Weigh Hopper	#N/A	#N/A
Weigh Hopper -> Pug Mill	#N/A	#N/A
Total Post-Dryer Source Emissions	#N/A	#N/A
Scavenger Control Efficiency	#N/A	#N/A
Total Uncontrolled Emissions (lb/hr)	6.02	2.28
Total Uncontrolled Emissions (T/yr)	9.64	3.65
Total Controlled Emissions (lb/hr)	6.02	2.28
Total Controlled Emissions (T/yr)	9.64	3.65

Source: National Asphalt Pavement Association

[a] CO 1-hr Averaging Period

[b] CO 8-hr Averaging Period

[c] SO_2 3-hr Averaging Period

NMED Attachment 1

SPREADSHEET SUMMARY - results of emission and modeling calcs for all pollutants

ATTAINMENT & UNCLASSIFIABLE AREAS			NONATTAINMENT AREAS		
Uncontrolled	Controlled	Dryer	Uncontrolled	Controlled	
13603.8 T/yr	27.4 T/yr	PM	12176.7 T/yr	24.5 T/yr	
3078.8 T/yr	27.4 T/yr	PM-10	2755.8 T/yr	24.5 T/yr	
25.8 T/yr	25.8 T/yr	CO	23.1 T/yr	23.1 T/yr	
53.7 T/yr	53.7 T/yr	NOx	48.1 T/yr	48.1 T/yr	
85.4 T/yr	85.4 T/yr	SO_2	76.5 T/yr	76.5 T/yr	
		Generator			
1.0 T/yr	1.0 T/yr	PM	0.9 T/yr	0.9 T/yr	
0.8 T/yr	0.8 T/yr	PM-10	0.7 T/yr	0.7 T/yr	
11.8 T/yr	11.8 T/yr	CO	10.6 T/yr	10.6 T/yr	
45.3 T/yr	45.3 T/yr	NOx	40.5 T/yr	40.5 T/yr	
7.4 T/yr	7.4 T/yr	SO_2	6.6 T/yr	6.6 T/yr	
		Fugitives			
10.8 T/yr	10.8 T/yr	PM	9.6 T/yr	9.6 T/yr	
4.1 T/yr	4.1 T/yr	PM-10	3.6 T/yr	3.6 T/yr	
		Total[1]			
13615.6 T/yr	39.2 T/yr	PM	12187.3 T/yr	35.1 T/yr	
3083.7 T/yr	32.3 T/yr	PM-10	2760.2 T/yr	28.9 T/yr	
37.6 T/yr	37.6 T/yr	CO	33.7 T/yr	33.7 T/yr	
99.0 T/yr	99.0 T/yr	NOx	88.6 T/yr	88.6 T/yr	
92.8 T/yr	92.8 T/yr	SO_2	83.1 T/yr	83.1 T/yr	
3083.7 [=] T/yr	99.0 T/yr	Title V PTE	2760.2 T/yr	88.6 T/yr	
of PM-10	of NOx	Summary[2]	of PM-10	of NOx	
13615.6 [=] T/yr	99.0 T/yr	Facility PTE	12187.3 T/yr	88.6 T/yr	
of PM	of NOx	Summary	of PM	of NOx	
Enforceable Limits -- Attainment Areas			Enforceable Limits -- Non-Attainment Areas		
24.0 hr/day	3,580 hr/yr		8.0 hr/day	3,204 hr/yr	
Dryer Controlled Emission Rates		Emission Limits	Dryer Controlled Emission Rates		
15.3 lb/hr	27.4 T/yr	PM/PM-10	15.3 lb/hr	24.5 T/yr	
14.4 lb/hr	25.8 T/yr	CO	14.4 lb/hr	23.1 T/yr	
30.0 lb/hr	53.7 T/yr	NOx	30.0 lb/hr	48.1 T/yr	
47.7 lb/hr	85.4 T/yr	SO_2	47.7 lb/hr	76.5 T/yr	
Generator Controlled Emission Rates		Emission Limits	Generator Controlled Emission Rates		
0.5 lb/hr	0.8 T/yr	PM-10	0.5 lb/hr	0.7 T/yr	
6.6 lb/hr	11.8 T/yr	CO	6.6 lb/hr	10.6 T/yr	
25.3 lb/hr	45.3 T/yr	NOx	25.3 lb/hr	40.5 T/yr	
4.1 lb/hr	7.4 T/yr	SO_2	4.1 lb/hr	6.6 T/yr	

[1] Total is the dryer, generator and fugitives added together for total PTE.
[2] Title V PTE summary does not account for PM, only PM-10.

NMED Attachment 1

Attainment Area - Collocated Units - Calculations

Collocation Ambient Air Quality Standards - Calculations

Pollutant	(1-hr,3-hr,8-hr,& 24-hr standards are cut in half for collocation) 1-hr	3-hr	8-hr	24-hr	Annual (50% Attainment Hours)
PM					
PM-10				18.33128379	8.091401005
CO	14184.75546		2354.328825		
NO_x					23.53800229
SO_2		250.2923959		53.51884261	25.92135284
TOC					

Background Concentrations -- Attainment/Non-Classifiable Areas (ug/m3)

Pollutant	1-hr	3-hr	8-hr	24-hr	Annual
PM					
PM-10				86	32.7
CO	11400		5130		
NO_x					40
SO_2		543		144	23.5
TOC					

NMED Attachment 1

alysis for Non-Carcinogenic Pollutants

Pollutant	Emission Factor, lb/ton	Generator Emission Factor, lb/MMBtu	Actual, lb/hr	EL Standard, lb/hr	Modeled 1 hr concentration at 1 lb/hr	Actual 24 hr. Ambient Conc., ug/m^3	AAC, ug/m^3 (24 Hour average)	Allowable Hours Per Day
Phosphorous	2.80E-05		1.12E-02	0.007	1.82	1.66E-02	5	24
Silver	4.80E-07		1.92E-04	0.007		2.85E-04	5	24
Zinc	6.10E-05		2.44E-02	0.667		3.62E-02	500	24
Chromium	5.50E-06		2.20E-03	0.033		3.26E-03	25	24
Copper	3.10E-06		1.24E-03	0.013		1.84E-03	10	24
Manganese	7.7E-06		3.08E-03	0.067		4.57E-03	50	24
Mercury	2.6E-06		1.04E-03	0.0001		1.54E-03	1	24
Acrolein	2.6E-05	7.9E-06	1.04E-02	0.017		1.54E-02	13	24
Methyl Ethyl Ketone	2E-05		8.00E-03	0.007		1.19E-02	6	24
Propionaldehyde	0.00013		5.20E-02	0.0267		7.72E-02	22	24
Quinone	0.00016		6.40E-02	0.027		9.50E-02	20	24
Toluene	0.0029	2.81E-04	1.16E+00	25		1.72E+00	18,750	24
Acetone	0.00083		3.32E-01	1.33		4.93E-01	1,000	24
Crotonaldehyde	8.6E-05		3.44E-02	0.36		5.10E-02	285	24
Valeraldehyde	6.7E-05		2.68E-02	11.7		3.98E-02	8,750	24
Ethylbenzene	0.00024		9.60E-02	29		1.42E-01	21,750	24
Methyl chloroform	4.8E-05		1.92E-02	127		2.85E-02	95,500	24
Xylene	0.0002	1.93E-04	8.00E-02	29		1.19E-01	21,750	24
Naphthalene	0.00065	1.30E-04	2.60E-01	3.33		3.86E-01	2,500	24
Selenium	3.50E-07		1.40E-04	1.30E-02		2.08E-04	10	24
Thallium	4.10E-09		1.64E-06	0.007		2.43E-06	5	24
Antimony	1.80E-07		7.20E-05	0.033		1.07E-04	25	24
Barium	5.80E-06		2.32E-03	0.033		3.44E-03	25	24
Hexane	0.00092		3.68E-01	12		5.46E-01	9,000	24
Heptane	9.40E-03		3.76E+00	109		5.58E+00	82,000	24
Pentane	2.10E-04		8.40E-02	0.033		1.25E-01	25	24

Source: AP-42, 12/00, Tables 11.1-10 and 11.1-12.

	Ton/yr Throughput	400

NMED Attachment 1

Emissions Analysis for Carcinogenic Pollutants

Pollutant	HMA Emission Factor, lb/ton	Generator Emission Factor, lb/MMBtu	Actual, lb/hr	EL Standard, lb/hr	Modeled 1 hr concentration at 1 lb/hr	Actual Annual Ambient Conc., ug/m^3	AACC, ug/m^3 (annual average)	Annual Hours of Operation to Meet AACC or EL	Annual Tonnage Limit to Meet AACC
Arsenic	5.60E-07		2.24E-04	1.56E-06	1.82	5.10E-05	2.30E-03		
Nickel									
AP-42	6.30E-05		2.52E-02	2.70E-05		5.73E-03	4.20E-02		
Lab analysis	1.23E-05		4.92E-03	2.70E-05		1.12E-03			
Cadmium	4.10E-07		1.64E-04	0.0000037		3.73E-05	5.6E-03		
Hexavalent Chromium*	4.5E-07		1.80E-04	5.6E-07		4.10E-05	8.30E-04		
Acetaldehyde	0.0013	2.52E-05	5.20E-01	3E-03		1.18E-01	9.5E+00		
Benzene*	0.00039	7.76E-04	1.56E-01	8.0E-04		3.55E-02	1.2E+00		
Formaldehyde*	3.1E-03	7.9E-05	1.24E+00	5.1E-04		2.82E-01	7.7E-01		
Benzo(a)pyrene	9.8E-09	2.6E-07	3.92E-06	2E-06		8.92E-07	3E-03		
Beryllium	0.00E+00			2.80E-05			0.042		
	Ton/Hr Throughput	400							

* Note: Hexavalent chromium, nickel, formaldehyde and benzene emission factors are identical to that analyzed for #2 fuel oil in standard PTC review.

Source: AP-42, 12/00, Tables 11.1-10 and 11.1-12, and 3.4-3 and 3.4-4.

NMED Attachment 1

Lead Emissions

Emission Factor, lb/ton	Actual Emission Rate, tons/year	Significant Level	Modeled Concentration at 1 lb/hr	Actual Ambient Concentration, hourly, ug/m3	Actual Ambient Concentration, quarterly, ug/m3	Ambient Concentration Standard, Quarterly
1.50E-05 lb/ton	0.03 tons/yr	0.6 ton/yr	1.82	0.01092 ug/m3	0.002457 ug/m3	1.5 ug/m3

Source: AP-42, 12/00, Tables 11.1-10 and 11.1-12.

Tons per Hour Throughput	400

APPENDIX B
Modeling Output

03/07/02
13:58:24

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

No Title

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	3.6576
STK INSIDE DIAM (M)	=	0.2286
STK EXIT VELOCITY (M/S)	=	80.4906
STK GAS EXIT TEMP (K)	=	743.7056
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 6.247 M**4/S**3; MOM. FLUX = 33.363 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	88.32	2.72	2.70	NO
100.	12.82	4	20.0	20.0	6400.0	7.89	8.25	4.74	NO
200.	11.24	4	10.0	10.0	3200.0	12.12	15.75	8.84	NO
300.	9.181	4	8.0	8.0	2560.0	14.24	22.81	12.47	NO
400.	7.344	4	5.0	5.0	1600.0	20.59	29.85	16.02	NO
500.	6.431	4	5.0	5.0	1600.0	20.59	36.47	18.93	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
118.	13.46	4	20.0	20.0	6400.0	7.89	9.69	5.51	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	13.46	118.	0.

03/20/02
15:39:52

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Granite HMA

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	12.1920
STK INSIDE DIAM (M)	=	1.2192
STK EXIT VELOCITY (M/S)	=	27.0850
STK GAS EXIT TEMP (K)	=	360.9278
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 18.535 M**4/S**3; MOM. FLUX = 221.420 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	1	1.0	1.0	320.0	200.94	4.80	4.79	NO
100.	0.2439E-01	5	1.0	1.1	10000.0	89.07	22.80	22.25	NO
200.	1.188	3	10.0	10.2	3200.0	30.95	23.97	14.60	NO
300.	1.822	3	10.0	10.2	3200.0	30.95	34.70	21.01	NO
400.	1.699	3	8.0	8.2	2560.0	35.65	45.15	27.28	NO
500.	1.607	4	15.0	15.5	4800.0	24.58	36.32	18.64	NO
MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:									
310.	1.826	3	10.0	10.2	3200.0	30.95	35.85	21.68	NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** INVERSION BREAK-UP FUMIGATION CALC. ***
CONC (UG/M**3) = 1.953
DIST TO MAX (M) = 2551.56

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.826	310.	0.
INV BREAKUP FUMI	1.953	2552.	--

APPENDIX C
AIRS INFORMATION

ABBREVIATED AIRS DATA ENTRY SHEET - HOT MIX ASPHALT PLANTS

Name of Facility: Granite Construction Company

AIRS/Permit #: P-010305

Permit Issue Date:

Source/Emissions Unit Name (25 spaces) (Please use name as indicated in permit)	SCC # (8 digit #)	Air Program (SIP/NESHAP/NSPS/PSD)
HMA Drum Dryer	30500201	NSPS
Diesel Generator	20200401	SIP
Agg Handling/Piles	30500204	SIP
Haul Roads	30500290	SIP
Property Boundary	30588801	SIP

RETURN TO PAT RAYNE
AIRS-PT.LST (9/95)

Description of Process	SCC Number	Pollutant
Rotary Drum Dryer & Mixer (Natural Gas, #2 Fuel Oil, Waste Oil)	30500255 or 30500258 or 30500261	PM-2.5
		PM-10
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	SO2
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	NOx
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	VOC
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	CO
Rotary Drum Dryer & Mixer (Waste Oil)	30500261	HCl
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Benzene
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Ethylbenzene
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Formaldehyde
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Hexane
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Isooctane (2,2,4-Trimethylepentane)
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Methyl Chloroform
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Toluene
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Xylene
Rotary Drum Dryer & Mixer (Nat Gas) Rotary Drum Dryer & Mixer (#2 FO) Rotary Drum Dryer & Mixer (Waste Oil)	30500255 30500258 30500261	Naphthalene
Rotary Drum Dryer & Mixer (Waste Oil)	30500261	Acetaldehyde
Rotary Drum Dryer & Mixer (Waste Oil)	30500261	Acrolein
Rotary Drum Dryer & Mixer (Waste Oil)	30500261	2,2,4-Trimethylpentane

Rotary Drum Dryer & Mixer (Waste Oil)	30500261	Propionaldehyde
Rotary Drum Dryer & Mixer (Waste Oil)	30500261	Quinone
Rotary Drum Dryer & Mixer (#2 FO)	30500258	Chromium Compounds
Rotary Drum Dryer & Mixer (#2 FO)	30500258	Lead Compounds
Rotary Drum Dryer & Mixer (#2 FO)	30500258	Manganese Compounds
Rotary Drum Dryer & Mixer (Nat Gas)	30500255	Nickel Compounds
Hot Oil System (Nat Gas)	30500206	CO
Hot Oil System (Nat Gas)	30500206	Formaldehyde
Hot Oil System (#2 FO)	30500208	CO
Drum Mix Plant Load Out	30500214	PM-2.5 PM-10
		VOC
		CO
Silo Filling	30500213	PM-2.5 PM-10
		VOC
		CO
Hauling on Paved/Unpaved Road	30500290	PM-2.5 and PM-10

Emission Factor	Emission Factor Source
1.54 lbs/ton (uncontrolled) .0070 lbs/ton (controlled)	AP-42, Tables 11.1-3 and 11.1-4
6.5 lbs/ton (uncontrolled) .023 lbs/ton (controlled)	AP-42, Table 11.1-3
.0034 lbs/ton .011 lbs/ton .058 lbs/ton	AP-42, Table 11.1-7
.026 lbs/ton .055 lbs/ton	AP-42, Table 11.1-7
.032 lbs/ton	AP-42, Table 11.1-8
.13 lbs/ton	AP-42, Table 11.1-7
.00021 lbs/ton	AP-42, Table 11.1-8
.00039 lbs/ton	AP-42, Table 11.1-10
.00024 lbs/ton	AP-42, Table 11.1-10
.0031 lbs/ton	AP-42, Table 11.1-10
.00092 lbs/ton	AP-42, Table 11.1-10
.00004 lbs/ton	AP-42, Table 11.1-10
.000048 lbs/ton	AP-42, Table 11.1-10
.00015 lbs/ton	AP-42, Table 11.1-10
.0029 lbs/ton	AP-42, Table 11.1-10
.0002 lbs/ton	AP-42, Table 11.1-10
.00009 lbs/ton	AP-42, Table 11.1-10
.00065 lbs/ton	AP-42, Table 11.1-10
.0013 lbs/ton	AP-42, Table 11.1-10
.000026 lbs/ton	AP-42, Table 11.1-10
.00004 lbs/ton	AP-42, Table 11.1-10

.00013 lbs/ton	AP-42, Table 11.1-10
.00016 lbs/ton	AP-42, Table 11.1-10
.000024 lbs/ton (uncontrolled)	AP-42, Table 11.1-12
.00054 lbs/ton (uncontrolled) .000015 lbs/ton (controlled)	AP-42, Table 11.1-12
.00065 lbs/ton (uncontrolled)	AP-42, Table 11.1-12
.000063 lbs/ton (controlled)	AP-42, Table 11.1-12
8.9 lbs/MMcf	AP-42, Table 11.1-13
.026 lbs/MMcf	AP-42, Table 11.1-13
.0012 lbs/gal	AP-42, Table 11.1-13
.000522 lbs/ton	AP-42, Table 11.1-14
.00416 lbs/ton	AP-42, Table 11.1-14
.00135 lbs/ton	
.000586 lbs/ton	AP-42, Table 11.1-14
.0122 lbs/ton	AP-42, Table 11.1-14
.00118 lbs/ton	AP-42, Table 11.1-14
Varies--see AP-42, Chapter 13.2.1 and AP-42, Chapter 13.2.2	AP-42, Chapters 13.2.1 and 13.2.2

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Hot mix asphalt air emissions calculator

p-sbap5-20 • 8/31/21

Instructions

1) Begin with the first blue tab.
2) Use the blue tabs across the bottom to enter information for your business.
3) The green tabs total all potential and actual emissions from the information entered on the blue tabs.
4) The yellow 'Permits & requirements' tab will help you decide which permit to apply for.
5) You can use the blue tabs to calculate your actual emissions for the air emission inventory, a report due annually if you have an air permit.

Color key

Blue	Enter information for your facility in the blue boxes.
White	Do not change the values/formulas in white boxes. White boxes contain intermediate calculations for determining emissions.
Orange	Orange boxes are filled with standard values. You may change them if you have test results that provide data specific to your site.
Green	Your emission totals are in green boxes. These are automatically calculated based on information entered in blue boxes.
Yellow	Permit and insignificant activity thresholds.
Blue Text	Key information and tips.

Assistance

This calculator was created by the Minnesota Pollution Control Agency's (MPCA) Small Business Environmental Assistance Program (SBEAP).
We provide free, confidential, environmental assistance to small businesses. For more information:

Call: 651/282-6143
800/657-3938
Email: smallbizhelp.pca@state.mn.us

Online at the MPCA website at: https://www.pca.state.mn.us/smallbizhelp

More Information: https://www.pca.state.mn.us/regulations/hot-mix-asphalt

DEQ
Montana Department
of Environmental Quality

October 21, 2016

Susan Lasher
Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

Dear Ms. Lasher

Montana Air Quality Permit #3320-04 is deemed final as of October 18, 2016, by the Department of Environmental Quality (Department). This permit is for a portable asphalt plant. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Rhonda Payne
Environmental Science Specialist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

Montana Department of Environmental Quality
Air, Energy, and Mining Division

Montana Air Quality Permit #3320-04

Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

October 18, 2016

MONTANA AIR QUALITY PERMIT

Issued To: Hollow Contracting, Inc.
404 Greenwood Ave,
Butte, MT 59701

MAQP: #3320-04
Administrative Amendment (AA)
Request Received: 09/01/2016
Department's Decision on AA: 09/30/2016
Permit Final: 10/18/2016
State ID#: 777-3320

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Hollow Contracting, Inc. (Hollow) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

Hollow operates a portable drum mix asphalt plant at various locations throughout Montana. MAQP #3320-04 applies while operating at any location within Montana, except within those areas having a Department of Environmental Quality (Department) approved permitting program, those areas considered to be tribal lands, or those areas in or within 10 kilometers (km) of certain particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) nonattainment areas. Addendum #5 applies to those areas in or within 10 km of certain PM_{10} nonattainment areas. *A Missoula County air quality permit will be required for locations within Missoula County, Montana.*

B. Current Permit Action

On September 1, 2016, the Department received a request to administratively amend MAQP #3320-03 to transfer ownership from Asphalt LLC to Hollow Contracting, Inc. The contact information, including address, remains unchanged. This permitting action amends MAQP #3320-03 to reflect the name change and updates the permit format and language to reflect current Department practices. **MAQP #3320-04** replaces MAQP #3320-03 and **Addendum #5** replaces Addendum #4.

Section II: Conditions and Limitations

A. Emission Limitations

1. Hollow plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

2. Hollow shall not cause or authorize to be discharged into the atmosphere from the asphalt plant, stack emissions that exhibit 20% opacity or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

3. Hollow shall not cause or authorize to be discharged into the atmosphere from systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, any visible emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.340, ARM 17.8.752, and 40 CFR 60, Subpart I).

4. Hollow shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).

5. Hollow shall treat all unpaved portions of the haul roads, access roads, parking lots, or the general plant area with water and/or chemical dust suppressant, as necessary, to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.752).

6. A baghouse for air pollution control, with a device to measure the pressure drop (magnehelic gauge, manometer, etc.), must be installed and maintained on the asphalt drum and lime silo. Pressure drop must be measured in inches of water. Temperature indicators at the control device inlet and outlet must be installed and maintained (ARM 17.8.752).

7. Once a stack test is performed, the asphalt production rate shall be limited to the average production rate during the last source test demonstrating compliance (ARM 17.8.749).

8. Hollow shall only use natural gas, propane, or fuel oil to fire the hot mix dryer (ARM 17.8.749).

9. Hollow plant production shall not exceed 675,000 tons during any rolling 12-month time period (ARM 17.8.749 and ARM 17.8.1204).

10. The hours of operation for each of the diesel generators shall not exceed 4,500 hours during any rolling 12-month time period (ARM 17.8.1204).

11. The two diesel generators used with this facility shall not have a combined capacity greater than 875 horsepower (ARM 17.8.749).

12. If the permitted equipment is used in conjunction with any other equipment owned or operated by Hollow, at the same site, production shall be limited to correspond with an emission level that does not exceed 250 tons during any rolling 12-month period. Any calculation used to establish production levels shall be approved by the Department (ARM 17.8.749).

13. Hollow shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements contained in 40 CFR Part 60, Subpart I, *Standards of Performance for Hot Mix Asphalt Facilities* as it applies to this asphalt operation (ARM 17.8.340 and 40 CFR 60, Subpart I).

14. Hollow shall comply with all applicable standards and limitation, and the reporting, recordkeeping, testing and notification requirements contained in 40 CFR 60, Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* and 40 CFR 63, Subpart ZZZZ, *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines,* for any applicable diesel engine (ARM 17.8.340; 40 CFR 60, Subpart IIII; ARM 17.8.342 and 40 CFR 63, Subpart ZZZZ).

B. Testing Requirements

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial start-up, an Environmental Protection Agency (EPA) Methods 1-5 and 9 source test shall be performed on the asphalt plant to demonstrate compliance with Section II.A.1, Section II.A.2 and Section II.A.3, respectively. Testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

2. Pressure drop on the control device and temperature must be recorded daily and kept on site according to Section II.C.2 (ARM 17.8.749).

3. Pressure drop on the control device and temperatures must be recorded during the compliance source test and reported as part of the test results (ARM 17.8.749).

4. All compliance source tests must be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

5. Since asphalt production will be limited to the average production rate during the compliance source test, it is suggested the test be performed at the highest production rate practical (ARM 17.8.749).

6. Hollow may retest at any time in order to test at a higher production rate (ARM 17.8.749).

7. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. If this asphalt plant is moved to another location, an Intent to Transfer Form must be sent to the Department. In addition, a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area where the transfer is to be made, at least 15 days prior to the move. The Intent to Transfer Form and the proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department upon request (ARM 17.8.765).

2. Hollow shall maintain on-site records showing daily hours of operation, daily production rates, and daily pressure drop and temperature readings for the last 12 months. The records compiled in accordance with this permit shall be maintained by Hollow as a permanent business record for at least 5 years following the date of the measurement, must be submitted to the Department upon request, and must be available at the plant for inspection by the Department (ARM 17.8.749).

3. Hollow shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in Section I.A of the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

4. Hollow shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. This notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

5. Hollow shall document, by month, the asphalt production of the facility. By the 25th day of each month, Hollow shall calculate the total asphalt production for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation contained in Section II.A.9. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

6. Hollow shall document, by month, the combined hours of operation of the two diesel generators. By the 25th day of each month, Hollow shall calculate the total combined hours of operation of the diesel generators for the previous month. The monthly information will be used to verify compliance with the rolling 12-month limitation contained in Section II.A.10. A written report of the compliance verification shall be submitted along with the annual emissions inventory (ARM 17.8.749).

7. Hollow shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit as required by ARM 17.8.1204(3)(b). The annual certification shall comply with the certification requirements of ARM 17.8.1207. The annual certification shall be submitted with the annual emissions inventory information (ARM 17.8.1204).

Section III: General Conditions

A. Inspection - Hollow shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Hollow fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Hollow of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq.* (ARM 17.8.756).

D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement, as specified in Section 75-2-401, *et seq.*, MCA.

E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.

G. Permit Fee - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Hollow may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement - Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

I. The Department may modify the conditions of this permit based on local conditions of any future site. These factors may include, but are not limited to, local terrain, meteorological conditions, proximity to residences, etc.

J. Hollow shall comply with the conditions contained in this permit while operating in any location in Montana, except within those areas having a Department-approved permitting program.

Montana Air Quality Permit Analysis
Hollow Contracting, Inc.
MAQP #3320-04

I. Introduction/Process Description

A. Permitted Equipment

Hollow, LLC (Hollow) owns and operates a portable 1997 Gencor counterflow drum mix asphalt plant (maximum capacity 150-tons per hour (TPH)). Equipment used at the facility includes, but is not limited to the following:

- 1997 Gencor counterflow drum mix asphalt plant (up to 150 TPH) with baghouse (fired on natural gas, propane, or fuel oil)
- (1) Diesel Generator (up to 75 horsepower) used to fire the asphalt heater
  (1) Diesel Generator (up to 800 horsepower) used to fire the asphalt plant
- Associated equipment (lime silo, elevator, screens, bins, mixer, conveyors, etc.)
- Fuel Oil Storage Tank (up to 10,000 gallons)

B. Source Description

For a typical operational set-up, stockpiled aggregate is loaded into the cold feeder. The aggregate is dispensed from the bins, and dumped onto feeder conveyors that transfer the aggregate to the drum mix dryer. The aggregate travels through the rotating drum where asphalt oil and lime is added to the dryer. The dryer drum mixes the asphalt oil, lime, and the aggregate. The resulting hot-mix asphalt is loaded into a hot mix asphalt storage silo where it is stored until the asphalt is dumped into trucks for transport to the project site.

C. Home Pit

When not in use elsewhere, the equipment for Hollow will be located at 404 Greenwood Avenue, Butte, MT. The approximate township range section location is Township 3 North, Range 8 West Section 23.

D. Permit History

On August 5, 2004, AggQuip, LLC (AggQuip) was issued **MAQP #3320-00** to operate a portable drum mix asphalt plant (maximum capacity up to 150 TPH), two generators (combined maximum capacity 650 kW), and associated equipment.

On August 18, 2006, the Department of Environmental Quality (Department) received a notification that AggQuip had transferred ownership to Asphalt LLC (Asphalt). This permitting action transferred ownership of MAQP #3320-01 from AggQuip to Asphalt and updated the permit to reflect current permit language and format. **MAQP #3320-01** replaced MAQP #3320-00 and **Addendum #2** replaced Addendum #1.

On March 12, 2007, the Department received a request from Asphalt for a modification to MAQP #3320-01 for the addition of a diesel fuel storage tank and to include an option to use alternative fuels to fire the drum-mix asphalt plant. The Department modified MAQP #3320-01 as requested. **MAQP #3320-02** replaced MAQP #3320-01 and **Addendum #3** replaced Addendum #2.

On January 7, 2012, the Department received a request to administratively amend MAQP #3320-02 to change existing federally enforceable limits. Asphalt's request was made as part of a project undertaken by the Department to address those sources with existing federally enforceable permit limits that were established to keep potential emissions below the 100 ton per year major source Title V Operating Permit thresholds. The Department encouraged synthetic minor sources to take new permit limits to further reduce emissions from just below 100 tons per year to just below 80 tons per year. The permit limit change consequently altered the oversight category for this facility to a level that is only subject to the State Compliance Monitoring Strategy. This permitting action amended MAQP #3320-02 to further limit hours of operation to maintain potential emissions below 80 tpy. In addition, this permit action updated rule references, permit format, and the emissions inventory. **MAQP #3320-03** replaced MAQP #3320-02 and **Addendum #4** replaced Addendum #3.

E. Current Permit

On September 1, 2016, the Department received a request to administratively amend MAQP #3320-03 to transfer ownership from Asphalt LLC to Hollow Contracting, Inc. The contact information, including address, remains unchanged. This permitting action amends MAQP #3320-03 to reflect the name change and updates the permit format and language to reflect current Department practices. **MAQP #3320-04** replaces MAQP #3320-03 and **Addendum #5** replaces Addendum #4.

F. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Hollow shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
5. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

Hollow must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter (PM). (2) Under this rule, Hollow shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause or authorize to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this section.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emissions Guidelines for Existing Sources. This rule incorporates, by reference, 40 Code of Federal Regulations (CFR) Part 60, Standards of Performance for New Stationary Sources (NSPS). Hollow is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

    a. 40 CFR 60 Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

    b. 40 CFR 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities) In order for an asphalt plant to be subject to this subpart, the facility must meet the definition of an affected facility and, the affected equipment must have been constructed, reconstructed, or modified after August 31, 1983. Based on the information submitted by Hollow, the asphalt plant equipment to be used under MAQP #3320-04 is subject to this subpart because the facility is a hot mix asphalt facility.

    c. 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI CIE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. The CI ICE equipment to be used at Hollow under MAQP #3320-04 is potentially subject to this Subpart if it stays in a location for twelve consecutive months. Hollow may substitute compression ignition internal combustion engine(s), therefore applicability to this subpart may apply to engines in the future and shall be dependent upon the date of construction and/or manufacture of the diesel-fired engine utilized.

7. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. Hollow is potentially considered a NESHAP-affected facility under 40 CFR Part 63 and is subject to the requirements of the following subparts.

   a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

   b. 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. An area source of HAP emissions is a source that is not a major source. As the Hollow is considered an area source of HAP emissions and operates RICE equipment, the engine is potentially subject to this subpart depending upon the location, nature, and duration of operation. Since the RICE to be used under MAQP 3320-04 is intended to be portable, Hollow may not be required to comply with the applicable requirements of 40 CFR 63, Subpart ZZZZ. However, this subpart would become applicable if Hollow constructed and operated a RICE that remains in a location for more than 12 months.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that Hollow submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. A permit fee is not required for the current permit action because the permit action is considered an administrative permit change.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction, and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a facility to obtain an air quality permit or permit alteration to construct, modify, or use any asphalt plant, crusher or screen that has the Potential to Emit (PTE) greater than 15 tons per year of any pollutant. Hollow has a PTE greater than 15 tons per year of PM, particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), nitrogen oxides (NO_X), carbon monoxide (CO), oxides of sulfur (SO_2) and volatile organic compounds (VOC); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permit--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that are not subject to the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. A permit application was not required for the current permit action because the permit change is considered an administrative permit change. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. A permit application was not required for the current permit action because the permit change is considered an administrative permit change.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Hollow of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. (1) This rule states that an air quality permit may be transferred from one location to another if the Department receives a complete notice of Intent to Transfer location, the facility will operate in the new location for less than 1 year, the facility will comply with the FCAA and the Clean Air Act of Montana, and the facility complies with other applicable rules. (2) This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modification--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source because it is not a listed source and the facility's PTE is less than 250 tons per year (excluding fugitive emissions) of any air pollutant.

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any stationary source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one hazardous air pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #3320-04 for Hollow, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to current NSPS (40 CFR 60, Subpart I and potentially Subpart IIII) standards.

   e. This facility is potentially subject to a current National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR 63, Subpart ZZZZ).

   f. This source is not a Title IV affected source

   g. This source is not a solid waste combustion unit.

   h. This source is not an EPA designated Title V source.

Hollow has accepted federally-enforceable permit limitations to remain a minor source of emissions with respect to Title V. Based on these limitations, the Department determined that this facility is not subject to the Title V Operating Permit Program. However, in the event that the EPA makes minor sources that are subject to NSPS obtain a Title V Operating Permit, this source will be subject to the Title V Operating Permit Program.

a. ARM 17.8.1204(3). The Department may exempt a source from the requirement to obtain an air quality operating permit by establishing federally enforceable limitations which limit that source's PTE.

i. In applying for an exemption under this section the owner or operator of the facility shall certify to the Department that the source's PTE does not require the source to obtain an air quality operating permit.

ii. Any source that obtains a federally enforceable limit on PTE shall annually certify that its actual emissions are less than those that would require the source to obtain an air quality operating permit.

The Department has determined that the annual reporting requirements contained in the permit are sufficient to satisfy this requirement.

3. ARM 17.8.1207 Certification of Truth, Accuracy, and Completeness. The compliance certification submittal required by ARM 17.8.1204(3)(a) shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this subchapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

III. BACT Determination

A BACT determination is required for each new or altered source. Hollow shall install on the new or altered source the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT determination was not required for the current permit action because the permit change is considered an administrative permit change.

IV. Emission Inventory

Emission Source	Emissions Tons/Year [PTE] PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
1997 Gencor Asphalt Plant with Baghouse	12.36	8.39	8.39	43.88	18.56	18.83	10.80
Aggregate Handling & Storage Piles	1.68	0.79	0.12	--	--	--	--
Aggregate Conveying	0.09	0.03	0.01	--	--	--	--
Lime Silo transfer & Conveying	0.03	0.01	0.01	--	--	--	--
Asphalt Storage & Handling	0.20	0.20	0.20	0.40	--	--	4.11
Asphalt Load-Out	0.18	0.18	0.18	0.46	--	--	1.40
Generator Totals 875 hp	4.33	4.33	0.77	13.15	61.03	4.04	4.95
Unpaved Roadways	10.98	3.03	0.30	--	--	--	--
Diesel Fuel Storage Tank	--	--	--	--	--	--	negl.
TOTAL EMISSIONS >	29.85	16.96	9.97	57.88	79.59	22.87	21.27

a. Emission Inventory reflects enforceable limits on hours of operation and production output to keep allowable emissions below the Title V threshold as well as below 80 tpy level.

CO, carbon monoxide

NO_X, oxides of nitrogen

PM, particulate matter

PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less

$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less

SO_2, oxides of sulfur

TPY, tons per year

VOC, volatile organic compounds

1997 Gencor Asphalt Plant with Baghouse

Production Rate:	150	Tons/Hour (Maximum)	1314000	tons/year (Maximum)
			675000	tons/year (Restricted Maximum)
Operating Schedule:	4500	Hours/Year (Restricted Maximum)		
Power Plant:	800	hp Diesel Generator (Asphalt Plant)		
	75	hp Diesel Generator (Supplemental Power)		
		Note: Asphalt plant may operate on utility/commercial power		

Air Flow[Volume]	16,026.00	dscfm [corrected]
Stack Test Results		gr/dscf
Test Throughput Demonstrated	N/A	tons/hour

Particulate Emissions: Dryer Stack NSPS Based

PM Emissions (controlled):

Emission Rate	0.04 gr/dscf	[40 CFR NSPS, Subpart I Limit]		
Calculations	(0.04 gr/dscf) * (16026 dscfm) * (60 min/hr) * (0.000143 lb/gr) =		5.49	lbs/hr
	(5.49 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		12.36	TPY

Particulate Emissions: Emission Factor Determination

PM Emissions (controlled):

Emission Factor	0.045 lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]		
Calculations	(0.045 lbs/ton) * (150 tons/hour) =		6.75	lbs/hr
	(6.75 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		15.19	TPY

PM_{10} Emissions (controlled):

Emission Factor	0.023	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04 Used PM10 for Fabric Filter]	
Calculations	(0.023 lbs/ton) * (150 tons/hour) =		3.45	lbs/hr
	(3.45 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		7.76	TPY
		8.39	(Corrected to match $PM_{2.5}$ calculation)	
Filterable PM (Controlled)			(Since $PM_{2.5}$ cannot exceed PM_{10})	

Emission Factor	0.026	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.026 lbs/ton) * (150 tons/hour) =		3.90	lbs/hr
	(3.90 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		8.78	TPY

Condensable PM (Controlled)

Emission Factor	0.0194	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.0194 lbs/ton) * (150 tons/hour) =		2.91	lbs/hr
	(2.91 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		6.55	TPY

$PM_{2.5}$ Emissions (controlled): = (21 Percent of Filterable Plus Condensables) 21% From Fabric Filter Table 11.1-4

Emission Factor	0.02486	lbs/ton Processed	[AP-42 Table 11.1-3, 3/04]	
Calculations	(0.02486 lbs/ton) * (150 tons/hour) =		3.73	lbs/hr
	(3.73 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =		8.39	TPY

CO Emissions:

Emission Factor	0.13	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on fuel oil]	
Calculations	(0.13 lbs/ton) * (150 tons/hr) =		19.50	lbs/hr
	(19.50 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		43.88	TPY

NO_X Emissions:

Emission Factor	0.055	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on fuel oil]	
Calculations	(0.055 lbs/ton) * (150 tons/hr) =		8.25	lbs/hr
	(8.25 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.56	TPY

SO_2 Emissions:

Emission Factor	0.0558	lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on waste oil]	
Calculations	(0.0558 lbs/ton) * (150 tons/hr) =		8.37	lbs/hr
	(8.37 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.83	TPY

VOC Emissions:

Emission Factor	0.032	lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on fuel oil]	
Calculations	(0.032 lbs/ton) * (150 tons/hr) =		4.80	lbs/hr
	(4.80 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		10.80	TPY

Aggregate Handling & Storage Piles

Process Rate:	150	tons/hour
Number of Piles:	1	pile Transfers [Pile formation Load-in & Pile Load-out to bins]
Operating Hours:	4500	hour/year

Particulate Emissions:

Emission Factor: $EF = k\ (0.0032) * (U/5)^{1.3} / (M / 2)^{1.4}$ [AP-42 13.2.4, 11/06]

where: EF, Emission Factor = lbs Emitted / ton Processed

k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
U, Mean Wind Speed (mph) =	9.3	[estimate]
M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor Calculations	$EF = 0.74 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0050	lbs/ton
	(0.0050 lbs/ton) * (150 tons/hr) * (1 pile) =	0.75	lbs/hr
	(0.75 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	1.68	TPY

PM_{10} Emissions:

Emission Factor Calculations	$EF = 0.35 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0024	lbs/ton
	(0.0024 lbs/ton) * (150 tons/hr) * (1 pile) =	0.35	lbs/hr
	(0.35 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.79	TPY

$PM_{2.5}$ Emissions:

Emission Factor Calculations	$EF = 0.053 * (0.0032) * (9.3/5)^{1.3} / (2.1 / 2)^{1.4}$ =	0.0004	lbs/ton
	(0.0004 lbs/ton) * (150 tons/hr) * (1 pile) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.12	TPY

Aggregate Conveying [SCC 3-05-020-06]

Process Rate:	150	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	4500	hours/year

PM Emissions (controlled):

Emission Factor	0.00014 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.00014 lbs/ton) * (150 tons/hr) * (2 Transfers) =	0.04	lbs/hr
	(0.04 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.09	TPY

PM_{10} Emissions (controlled):

Emission Factor	0.00005 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000046 lbs/ton) * (150 tons/hr) * (2 Transfers) =	0.01	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.03	TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]	
Calculations	(0.000013 lbs/ton) * (150 tons/hr) * (2 Transfers) =	0.00	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

Lime Silo Product transfer & Conveying [SCC 3-05-016-24]

Process Rate: 150 tons/hour
Operating Hours: 4500 hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98]	
Calculations	(0.000088 lbs/ton) * (150 tons/hr) =	0.013	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.03	TPY

PM_{10} Emissions (controlled):

Emission Factor	0.000044 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 50% of PM	
Calculations	(0.000044 lbs/ton) * (150 tons/hr) =	0.007	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000026 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 30% of PM	
Calculations	(0.000026 lbs/ton) * (150 tons/hr) =	0.00	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =	0.01	TPY

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate: 150 tons/hour
Operating Schedule: 4500 tons/year

Particulate Emissions:

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA	
Calculations	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

PM_{10} Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA	
Calculations	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA	
Calculations	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr	
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY	

CO Emissions:

Emission Factor EF = $0.00488(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor Calculations	EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) =	0.0012	lbs/ton HMA
	(0.0012 lbs/ton) * (150 tons/hr) =	0.18	lbs/hr
	(0.18 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.40	TPY

VOC Emissions:

Emission Factor EF = $0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor Calculations	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
	(0.0122 lbs/ton) * (150 tons/hr) =	1.83	lbs/hr
	(1.83 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	4.11	TPY

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate:	150	tons/hour
Operating Schedule:	4500	hours/year

Particulate Emissions:

Emission Factor EF = $0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor Calculations	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

PM_{10} Emissions:

Emission Factor Calculations	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43)=	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

$PM_{2.5}$ Emissions:

Emission Factor Calculations	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43)=	0.00052	lbs/ton HMA
	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY

CO Emissions:

Emission Factor EF = $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]

T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00135	lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (150 tons/hr) =	0.20	lbs/hr
	(0.20 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.46	TPY

VOC Emissions:

Emission Factor EF = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00416	lbs/ton HMA produced
Calculations	(0.00416 lbs/ton) * (150 tons/hr) =	0.62	lbs/hr
	(0.62 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	1.40	TPY

Diesel Engines:

Primary Diesel Engine Generator

Engine Rating Total	875	hp
Hours of Operation:	4500	hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =	0.29	lbs/hr
	(0.29 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.66	TPY

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0077 lb/MMBtu) * (6.125 MMBtu/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.11	TPY

CO Emissions:

Emission Factor 0.00668 lb/hp-hr [AP-42 3.3-1, 10/96]

Calculations	(0.00668 lb/hp-hr) * (875 hp) =	5.85	lbs/hr
	(5.85 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	13.15	TPY

NOx Emissions:

Emission Factor	0.031 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.031 lb/hp-hr) * (875 hp) =	27.13	lbs/hr
	(27.13 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	61.03	TPY

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0021 lb/hp-hr) * (875 hp) =	1.79	lbs/hr
	(1.79 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.04	TPY

VOC Emissions:

Emission Factor	0.00251 lb/hp-hr [AP-42 3.3-1, 10/96]		
	4		
Calculations	(0.0025 lb/hp-hr) * (875 hp) =	2.20	lbs/hr
	(2.20 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.95	TPY

Unpaved Roadways (Haul Roads)

Miles Travelled: 5 Miles/Day [Estimate]
Vehicle Weight: < 50 Tons

Emission Factor EF = k(s/12)^a * (W/3)^b [AP-42 13.2.2.2, 11/06]
where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)

k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]
s, Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
W, Mean Vehicle Weight (tons) =	50	[Provided Data]
a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]
a, Empirical Constant PM_{10} /$PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
b, Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.04	lbs/VMT	
Calculations	(12.04 lbs/VMT) * (5 miles/day) =			60.18 lbs/day
	(60.18 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			10.98 TPY

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.32	lbs/VMT	
Calculations	(3.32 lbs/VMT) * (5 miles/day) =			16.59 lbs/day
	(16.59 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			3.03 TPY

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.33	lbs/VMT		
Calculations	(0.33 lbs/VMT) * (5 miles/day) =			1.66	lbs/day
	(1.66 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =			0.30	TPY

Diesel Fuel Storage Tank

VOC Emissions
(Taken from previous emission inventory)

190875	BTU
1.003E+11	MM BTU/yr
771722.3	Gallons Diesel Fuel

EPA Tanks Model Negligible

V. Existing Air Quality

MAQP #3320-04 is issued for the operation of a portable drum mix asphalt plant to be initially located in Section 31, Township 28 North, Range 21 West, in Yellowstone County, Montana. MAQP #3320-04 will also cover the plant while operating at any location within Montana, excluding those counties that have a Department-approved permitting program, those areas considered tribal lands, or those areas in or within 10 kilometers (km) of certain PM_{10} nonattainment areas (where Addendum #5 will apply). In the view of the Department, the amount of controlled emissions generated by this facility will not exceed any set ambient standard. In addition, this source is portable and any air quality impacts will be minimal.

VI. Air Quality Impacts

MAQP #3320-04 will cover the operations of this portable drum mix asphalt plant while operating in those areas within Montana, classified as being in attainment with federal ambient air quality standards, and those areas still undefined (not yet classified). Additionally, Addendum #5 will cover the asphalt plant operations during the summer months (April 1-September 30) at, in or within 10 km of certain PM_{10} nonattainment areas. Based on the information provided, the amount of controlled emissions generated by this facility will not exceed any set ambient air quality standard for operations in these areas. In addition, this source is portable and any air quality impacts will be minor and short-lived.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

VIII. Environmental Assessment

This permitting action will not result in an increase of emissions from the facility and is considered an administrative action; therefore, an environmental assessment is not required.

Addendum #5
Hollow Contracting, Inc.
Montana Air Quality Permit (MAQP) #3320-04

An addendum to MAQP #3320-04 is hereby granted to Hollow Contracting, Inc. (Hollow) pursuant to Sections 75-2-204 and 75-2-211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.765, as amended, for the following:

I. Permitted Equipment:

Hollow operates a portable drum mix asphalt plant at various locations throughout Montana. Equipment includes a 1997 Gencor asphalt plant with baghouse, two diesel generators, a diesel fuel storage tank and associated equipment including lime silo, screens, bins, mixer, conveyors, etc.

II. Seasonal and Site Restrictions

Addendum #5 applies to the Hollow facility while operating at any location in or within 10 km of certain PM_{10} nonattainment areas (Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte). Additionally, seasonal and site restrictions apply to the facility as follows:

A. During the winter season (October 1-March 31), Hollow would not be allowed to operate in or within 10 km of the listed PM_{10} nonattainment areas.

B. During the summer season (April 1-September 30), Hollow may operate at any location in or within 10 km of the Libby, Thompson Falls, Kalispell, Whitefish, Columbia Falls, and Butte PM_{10} nonattainment areas.

C. Hollow shall comply with the limitations and conditions contained in Addendum #5 to MAQP #3320-04 while operating in or within 10 km of any of the previously listed PM_{10} nonattainment areas. Addendum #5 shall be valid until revoked or modified. The Department of Environmental Quality (Department) reserves the authority to modify Addendum #5 at any time based on local conditions of any future site. These conditions may include, but are not limited to, local terrain, meteorological conditions, proximity to residences or other businesses, etc.

III. Limitations and Conditions

A. Operational Limitations and Conditions – Summer Season Conditions

1. Hollow plant particulate matter emissions shall be limited to 0.04 grains per dry standard cubic feet (gr/dscf) (ARM 17.8.752 and 40 Code of Federal Regulations (CFR) 60, Subpart I).

2. All visible emissions from the asphalt plant stack shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

3. Hollow shall not cause or authorize to be discharged into the atmosphere from any equipment, such as systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

4. Hollow shall not cause or authorize to be discharged into the atmosphere from haul roads, access roads, parking lots, or the general plant area, any visible emissions that exhibit an opacity of 10% or greater averaged over 6 consecutive minutes (ARM 17.8.749).

5. Hollow shall treat all unpaved portions of the haul roads, access roads, parking lots, and general plant area with water and/or chemical dust suppressant, as necessary to maintain compliance with the 10% opacity limitation contained in Section III.A.4 (ARM 17.8.749).

6. Hollow plant production shall not exceed 3,600 tons during any rolling 24-hour time period (ARM 17.8.1204).

B. Operational Reporting Requirements

1. Hollow shall provide the Department with written notification of job completion within 10 working days of job completion (ARM 17.8.749).

2. If the asphalt plant is moved to another nonattainment location, an Intent to Transfer form must be sent to the Department and a Public Notice Form for Change of Location must be published in a newspaper of general circulation in the area to which the transfer is to be made, at least 15 days prior to the move. The proof of publication (affidavit) of the Public Notice Form for Change of Location must be submitted to the Department prior to the move. These forms are available from the Department (ARM 17.8.749 and ARM 17.8.765).

3. Production information for the sites covered by this addendum must be submitted to the Department within 30 days of completion of the project. The information shall include (ARM 17.8.749):

   a. Tons of asphalt produced

   b. Daily hours of operation

   c. Type and amount of fuel used for the asphalt plant (hot mix dryer)

   d. Gallons of diesel fuel used for each of the two diesel generators (including the asphalt heater)

   e. Fugitive dust information consisting of a listing of all plant vehicles, including the following for each vehicle type:

i. Number of vehicles
ii. Vehicle type
iii. Vehicle weight, loaded
iv. Vehicle weight, unloaded
v. Number of tires on vehicle
vi. Average trip length
vii. Number of trips per day per vehicle
viii. Average vehicle speed
ix. Area of activity
x. Vehicle fuel usage (gasoline and diesel) annual total

f. Fugitive dust control for haul roads and general plant area:

i. Hours of operation of water trucks
ii. Application schedule for chemical dust suppressant, if applicable

4. Hollow shall document, by day, the total asphalt production. Hollow shall sum the total asphalt production during the previous 24 hours to verify compliance with the limitation in Section III.A.6. A written report of compliance and the emissions inventory shall be submitted to the Department annually. The report for the previous calendar year shall be submitted and may be submitted along with the annual emissions inventory (ARM 17.8.752).

Addendum #5 Analysis
Hollow, LLC
Montana Air Quality Permit (MAQP) #3320-04

I. Permitted Equipment

Hollow, LLC (Hollow) owns and operates a portable asphalt plant (maximum capacity 150 tons per hour (TPH)). Equipment used at the facility includes, but is not limited to the following:

- 1997 Gencor counterflow drum mix asphalt plant (up to 150 TPH) with baghouse (fired on natural gas, propane, or fuel oil)
- (1) Diesel Generator (up to 75 horsepower) used to fire the asphalt heater
- (1) Diesel Generator (up to 800 horsepower) used to fire the asphalt plant
- Associated equipment (lime silo, elevator, screens, bins, mixer, conveyors, etc.)
- Fuel Oil Storage Tank (up to 10,000 gallons)

II. Source Description

For a typical operational set-up, stockpiled aggregate is loaded into the cold feeder. The aggregate is dispensed from the bins, and dumped onto feeder conveyors that transfer the aggregate to the drum mix dryer. The aggregate travels through the rotating drum where asphalt oil and lime is added to the dryer. The dryer drum mixes the asphalt oil, lime, and the aggregate. The resulting hot-mix asphalt is loaded into a hot mix asphalt storage silo where it is stored until the asphalt is dumped into trucks for transport to the project site.

III. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department of Environmental Quality (Department). Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

A. ARM 17.8.749 Conditions for Issuance of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

B. ARM 17.8.764 Administrative Amendment of Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase in emissions because of the changed conditions. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

C. ARM 17.8.765 Transfer of Permit. An air quality permit may be transferred from one location to another if:

1. Written notice of Intent to Transfer location and public notice is sent to the Department

2. The source will operate in the new location for a period of less than 1 year

3. The source will not have any significant impact on any nonattainment area or any Class I area.

IV. Emission Inventory

	Emissions Lbs/Day [PTE]						
Emission Source	PM	PM_{10}	$PM_{2.5}$	CO	NOx	SO_2	VOC
1997 Gencor Asphalt Plant with Baghouse	131.87	89.50	89.50	468.00	198.00	200.88	115.20
Aggregate Handling & Storage Piles	17.91	5.30	1.28	--	--	--	--
Aggregate Conveying	1.01	0.33	0.09	--	--	--	--
Lime Silo transfer & Conveying	0.32	0.16	0.10	--	--	--	--
Asphalt Storage & Handling	2.11	2.11	2.11	4.25	--	--	43.87
Asphalt Load-Out	1.88	1.88	1.88	4.86	--	--	14.97
Generator Totals 875 hp	28.88	46.20	8.17	140.28	651.00	43.05	52.80
Unpaved Roadways	60.18	16.59	1.66	--	--	--	--
Diesel Fuel Storage Tank	--	--	--	--	--	--	Negl.
TOTAL EMISSIONS >	244.15	162.06	104.79	617.39	849.00	243.93	226.84

a. Emission Inventory reflects enforceable limits on hours of operation and production output to keep allowable emissions below the Title V threshold as well as below 80 tpy level.

CO, carbon monoxide
NO_x, oxides of nitrogen
PM, particulate matter
PM_{10}, particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$, particulate matter with an aerodynamic diameter of 2.5 microns or less
SO_2, oxides of sulfur
TPY, tons per year
VOC, volatile organic compounds

1997 Gencor Asphalt Plant with Baghouse

Production Rate: 150 Tons/Hour (Maximum) 1314000 tons/year (Maximum)
675000 tons/year (Restricted Maximum)

Operating Schedule: 4500 Hours/Year (Restricted Maximum)
Power Plant: 800 hp Diesel Generator (Asphalt Plant)
75 hp Diesel Generator (Supplemental Power)
Note: Asphalt Plant May Operate On Utility/commercial Power

Air Flow[Volume] 16,026.00 dscfm [corrected]
Stack Test Results gr/dscf
Test Throughput Demonstrated N/A tons/hour

Particulate Emissions: Dryer Stack NSPS Based

PM Emissions (controlled):

Emission Rate 0.04 gr/dscf [40 CFR NSPS, Subpart I Limit]
Calculations (0.04 gr/dscf) * (16026 dscfm) * (60 min/hr) * (0.000143 lb/gr) = 5.49 lbs/hr

	(5.49 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	12.36	TPY
	Daily Calculations (5.49 lbs/hr) * (24 hrs/day) =	131.9	lb/day

Particulate Emissions: Emission Factor Determination

PM Emissions (controlled):

Emission Factor	0.045 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.045 lbs/ton) * (150 tons/hour) =	6.75	lbs/hr
	(6.75 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	15.19	TPY
	Daily Calculations (6.75 lbs/hr) * (24 hrs/day) =	162.0	lbs/day

PM_{10} Emissions (controlled):

Emission Factor	0.023 lbs/ton Processed [AP-42 Table 11.1-3, 3/04 Used PM10 for Fabric Filter]		
Calculations	(0.023 lbs/ton) * (150 tons/hour) =	3.45	lbs/hr
	(3.45 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	7.76	TPY
	Daily Calculations (3.45 lbs/hr) * (24 hrs/day) =	89.5	lb/day
		(Since $PM_{2.5}$ cannot exceed PM_{10})	

Filterable PM (Controlled)

Emission Factor	0.026 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.026 lbs/ton) * (150 tons/hour) =	3.90	lbs/hr
	(3.90 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	8.78	TPY
	Daily Calculations (3.90 lbs/hr) * (24 hrs/day) =	93.6	lb/day

Condensable PM (Controlled)

Emission Factor	0.0194 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.0194 lbs/ton) * (150 tons/hour) =	2.91	lbs/hr
	(2.91 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	6.55	TPY
	Daily Calculations (2.91 lbs/hr) * (24 hrs/day) =	69.8	lb/day

$PM_{2.5}$ Emissions (controlled): = (21 Percent of Filterable Plus Condensables) 21% From Fabric Filter Table 11.1-4

Emission Factor	0.02486 lbs/ton Processed [AP-42 Table 11.1-3, 3/04]		
Calculations	(0.02486 lbs/ton) * (150 tons/hour) =	3.73	lbs/hr
	(3.73 lbs/hr) * (4500 hours/year) * (0.0005 tons/lbs) =	8.39	TPY
	Daily Calculations (3.73 lbs/hr) * (24 hrs/day) =	89.5	lb/day

CO Emissions:

Emission Factor	0.13 lbs/ton processed [AP-42 Table 11.1-7, 3/04; EF based on fuel oil]		
Calculations	(0.13 lbs/ton) * (150 tons/hr) =	19.50	lbs/hr
	(19.50 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	43.88	TPY
	Daily Calculations (19.50 lbs/hr) * (24 hrs/day) =	468.0	lb/day

NO_X Emissions:

Emission Factor	0.055 lbs/ton processed [AP-42 Table 11.1-7, 3/04; EF based on fuel oil]		
	(0.055 lbs/ton) * (150 tons/hr) =	8.25	lbs/hr
Calculations			
	(8.25 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	18.56	TPY
	Daily Calculations (8.25 lbs/hr) * (24 hrs/day) =	198.0	lb/day

SO_2 Emissions:

Emission Factor	0.0558 lbs/ton processed	[AP-42 Table 11.1-7, 3/04; EF based on waste oil]		
Calculations	(0.0558 lbs/ton) * (150 tons/hr) =		8.37	lbs/hr
	(8.37 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		18.83	TPY
	Daily Calculations (8.37 lbs/hr) * (24 hrs/day) =		200.9	lb/day

VOC Emissions:

Emission Factor	0.032 lbs/ton processed	[AP-42 Table 11.1-8, 3/04; EF based on fuel oil]		
Calculations	(0.032 lbs/ton) * (150 tons/hr) =		4.80	lbs/hr
	(4.80 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		10.80	TPY
	Daily Calculations (4.80 lbs/hr) * (24 hrs/day) =		115.2	lb/day

Aggregate Handling & Storage Piles

Process Rate:	150	tons/hour
Number of Piles:	1	pile
		Transfer
Operating Hours:	4500	hour/year

Particulate Emissions:

Emission Factor EF = k (0.0032) * (U/5)^1.3 / (M / 2)^1.4 [AP-42 13.2.4, 11/06]

where:	EF, Emission Factor = lbs Emitted / ton Processed		
	k, Dimensionless Particle Size Multiplier PM =	0.74	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier PM_{10} =	0.35	[AP-42 13.2.4, 11/06]
	k, Dimensionless Particle Size Multiplier $PM_{2.5}$ =	0.053	[AP-42 13.2.4, 11/06]
	U, Mean Wind Speed (mph) =	9.3	[estimate]
	M, Material Moisture Content (%) =	2.1	[AP-42 13.2.4-1, 11/06]

PM Emissions:

Emission Factor	EF = 0.74 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0050	lbs/ton	
Calculations	(0.0050 lbs/ton) * (150 tons/hr) * (1 pile) =		0.75	lbs/hr
	(0.75 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		1.68	TPY
	Daily Calculations (0.75 lbs/hr) * (24 hrs/day) =		17.9	lb/day

PM_{10} Emissions:

Emission Factor	EF = 0.35 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0024	lbs/ton	
Calculations	(0.0024 lbs/ton) * (150 tons/hr) * (1 pile) =		0.35	lbs/hr
	(0.35 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.79	TPY
	Daily Calculations (0.35 lbs/hr) * (24 hrs/day) =		8.5	lb/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.053 * (0.0032) * (9.3/5)^1.3 / (2.1 / 2)^1.4 =	0.0004	lbs/ton	
Calculations	(0.0004 lbs/ton) * (150 tons/hr) * (1 pile) =		0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.12	TPY
	Daily Calculations (0.05 lbs/hr) * (24 hrs/day) =		1.3	lb/day

Aggregate Conveying [SCC 3-05-020-06]

Process Rate:	150	tons/hour
Number of Transfers:	2	Conveyor Transfers [Based on process flow diagram]
Operating Hours:	4500	hours/year

PM Emissions (controlled):

Emission Factor	0.00014 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.00014 lbs/ton) * (150 tons/hr) * (2 Transfers) =		0.04	lbs/hr
	(0.04 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.09	TPY
	Daily Calculations (0.04 lbs/hr) * (24 hrs/day) =		1.0	lb/day

PM_{10} Emissions (controlled):

Emission Factor	0.00005 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000046 lbs/ton) * (150 tons/hr) * (2 Transfers) =		0.01	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.03	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.3	lb/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.00001 lbs/ton transferred	[AP-42 Table 11.19.2-2, 8/04]		
Calculations	(0.000013 lbs/ton) * (150 tons/hr) * (2 Transfers) =		0.0039	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.00 lbs/hr) * (24 hrs/day) =		0.1	lb/day

Lime Silo Product transfer & Conveying [SCC 3-05-016-24]

Process Rate:	150	tons/hour
Operating Hours:	4500	hours/year

Particulate Emissions:

PM Emissions (controlled):

Emission Factor	0.000088 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98]		
Calculations	(0.000088 lbs/ton) * (150 tons/hr) =		0.013	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.03	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.3	lb/day

PM_{10} Emissions (controlled):

Emission Factor	0.000044 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 50% of PM		
Calculations	(0.000044 lbs/ton) * (150 tons/hr) =		0.007	lbs/hr
	(0.01 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.01 lbs/hr) * (24 hrs/day) =		0.2	lb/day

$PM_{2.5}$ Emissions (controlled):

Emission Factor	0.000026 lbs/ton material transferred	[AP-42 Table 11.17-4, 2/98] 30% of PM		
Calculations	(0.000026 lbs/ton) * (150 tons/hr) =		0.004	lbs/hr
	(0.00 lbs/hr) * (4500 hrs/year) * (0.0005 lbs/ton) =		0.01	TPY
	Daily Calculations (0.00 lbs/hr) * (24 hrs/day) =		0.1	lb/day

Asphalt Storage & Silo Filling [SCC 3-05-002-13]

Process Rate: 150 tons/hour
Operating Schedule: 4500 tons/year

Particulate Emissions:

Emission Factor $EF = 0.000332+0.00105(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor Calculations	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/day

PM_{10} Emissions:

Emission Factor Calculations	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/day

$PM_{2.5}$ Emissions:

Emission Factor Calculations	EF = 0.000332 + 0.00105 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00059	lbs/ton HMA
	(0.00059 lbs/ton) * (150 tons/hr) =	0.09	lbs/hr
	(0.09 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.20	TPY
	Daily Calculations (0.09 lbs/hr) * (24 hrs/day) =	2.1	lb/day

CO Emissions:

Emission Factor $EF = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

EF = 0.00488 * (0.05)*e((0.0251) * (325 + 460) - 20.43) = 0.0012 lbs/ton HMA

Calculations	(0.0012 lbs/ton) * (150 tons/hr) =	0.18	lbs/hr
	(0.18 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.40	TPY
	Daily Calculations (0.18 lbs/hr) * (24 hrs/day) =	4.2	lb/day

VOC Emissions:

Emission Factor $EF = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

Emission Factor	EF = 0.0504 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.0122	lbs/ton HMA
Calculations	(0.0122 lbs/ton) * (150 tons/hr) =	1.83	lbs/hr
	(1.83 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	4.11	TPY
	Daily Calculations (1.83 lbs/hr) * (24 hrs/day) =	43.9	lb/day

Asphalt Plant Load-Out [SCC 3-05-002-14]

Process Rate: 150 tons/hour
Operating Schedule: 4500 hours/year

Particulate Emissions:

Emission Factor EF = $0.000181+0.00141(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs emitted / ton HMA produced
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

PM Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) *e((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/day

PM_{10} Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.000181 + 0.00141 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00052	lbs/ton HMA
Calculations	(0.00052 lbs/ton) * (150 tons/hr) =	0.08	lbs/hr
	(0.08 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.18	TPY
	Daily Calculations (0.08 lbs/hr) * (24 hrs/day) =	1.9	lb/day

CO Emissions:

Emission Factor EF = $0.00558(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]
where: EF, Emission Factor = lbs Emitted / ton Processed
V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]
T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

CO Emissions:

Emission Factor	EF = 0.00558 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00135	lbs/ton HMA
Calculations	(0.00135 lbs/ton) * (150 tons/hr) =	0.20	lbs/hr
	(0.20 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	0.46	TPY
	Daily Calculations (0.20 lbs/hr) * (24 hrs/day) =	4.9	lb/day

VOC Emissions:

Emission Factor EF = $0.0172(-V)e^{((0.0251)(T+460)-20.43)}$ [AP-42 Table 11.1-14, 3/04]

where: EF, Emission Factor = lbs Emitted / ton Processed

V, Asphalt Volatility = -0.05 [Default value AP-42 Table 11.1-14, 3/04]

T, HMA temperature = 325°F [Default value AP-42 Table 11.1-14, 3/04]

VOC Emissions:

Emission Factor	EF = 0.0172 * (0.05) * e ((0.0251) * (325 + 460) - 20.43) =	0.00416	lbs/ton HMA produced
Calculations	(0.00416 lbs/ton) * (150 tons/hr) =	0.62	lbs/hr
	(0.62 lbs/hr) * (4500 tons/year) * (0.0005 lbs/ton) =	1.40	TPY
	Daily Calculations (0.62 lbs/hr) * (24 hrs/day) =	15.0	lb/day

Diesel Engines:

Primary Diesel Engine Generator

Engine Rating Total	875	hp
Hours of Operation:	4500	hours/year

Particulate Emissions:

PM Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY
	Daily Calculations (1.93 lbs/hr) * (15 hrs/day) =	28.9	lb/day

PM_{10} Emissions:

Emission Factor	0.0022 lb/hp-hr [AP-42 3.3-1, 10/96]		
Calculations	(0.0022 lb/hp-hr) * (875 hp) =	1.93	lbs/hr
	(1.93 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	4.33	TPY
	Daily Calculations (1.93 lbs/hr) * (24 hrs/day) =	46.2	lb/day

$PM_{2.5}$ Emissions (filterable):

Emission Factor	0.0479 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0479 lb/MMBtu) * (0.00 MMBtu/hr) =	0.29	lbs/hr
	(0.29 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.66	TPY
	Daily Calculations (0.29 lbs/hr) * (24 hrs/day) =	7.0	lb/day

$PM_{2.5}$ Emissions (condensable):

Emission Factor	0.0077 lb/MMBtu [AP-42 3.4-2, 10/96]		
Calculations	(0.0077 lb/MMBtu) * (6.125 MMBtu/hr) =	0.05	lbs/hr
	(0.05 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =	0.11	TPY
	Daily Calculations (0.05 lbs/hr) * (24 hrs/day) =	1.1	lb/day

CO Emissions:

Emission Factor	0.00668 lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.00668 lb/hp-hr) * (875 hp) =		5.85	lbs/hr
	(5.85 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		13.15	TPY
	Daily Calculations (5.85 lbs/hr) * (24 hrs/day) =		140.3	lb/day

NOx Emissions:

Emission Factor	0.031 lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.031 lb/hp-hr) * (875 hp) =		27.13	lbs/hr
	(27.13 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		61.03	TPY
	Daily Calculations (27.13 lbs/hr) * (24 hrs/day) =		651.0	lb/day

SO_2 Emissions:

Emission Factor	0.00205 lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.0021 lb/hp-hr) * (875 hp) =		1.79	lbs/hr
	(1.79 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		4.04	TPY
	Daily Calculations (1.79 lbs/hr) * (24 hrs/day) =		43.1	lb/day

VOC Emissions:

Emission Factor	0.002514 lb/hp-hr	[AP-42 3.3-1, 10/96]		
Calculations	(0.0025 lb/hp-hr) * (875 hp) =		2.20	lbs/hr
	(2.20 lbs/hr) * (4500 hrs/yr) * (0.0005 tons/lb) =		4.95	TPY
	Daily Calculations (2.20 lbs/hr) * (24 hrs/day) =		52.8	lb/day

Unpaved Roadways (Haul Roads)

Miles Travelled: 5 Miles/Day [Estimate]
Vehicle Weight: < 50 Tons

Emission Factor $EF = k(s/12)^{a} * (W/3)^{b}$ [AP-42 13.2.2.2, 11/06]
where: EF, Emission Factor = lbs Emitted Per Vehicle Mile Traveled (VMT)

k, Empirical Constant PM =	4.9	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant PM_{10} =	1.5	[AP-42 Table 13.2.2-2, 11/06]
k, Empirical Constant $PM_{2.5}$ =	0.15	[AP-42 Table 13.2.2-2, 11/06]
s, Surface Material Silt Content (%) =	7.1	[AP-42 Table 13.2.2-1, 11/06]
W, Mean Vehicle Weight (tons) =	50	[Provided Data]
a, Empirical Constant PM =	0.7	[AP-42 Table 13.2.2-2, 11/06]
a, Empirical Constant PM_{10} /$PM_{2.5}$ =	0.9	[AP-42 Table 13.2.2-2, 11/06]
b, Empirical Constant PM - $PM_{2.5}$ =	0.45	[AP-42 Table 13.2.2-2, 11/06]

PM Emissions:

Emission Factor	EF = 4.9 * (7.1/12)^0.7 * (50/3)^0.45 =	12.04 lbs/VMT		
Calculations	(12.04 lbs/VMT) * (5 miles/day) =		60.18	lbs/day
	(60.18 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =		10.98	TPY
	Daily Calculations (60.18 lbs/day) * (1 day) =		60.2	lb/day

PM_{10} Emissions:

Emission Factor	EF = 1.5 * (7.1/12)^0.9 * (50/3)^0.45 =	3.32 lbs/VMT

Calculations	(3.32 lbs/VMT) * (5 miles/day) =	16.59	lbs/day
	(16.59 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	3.03	TPY
	Daily Calculations (16.59 lbs/day) * (1 day) =	16.6	lb/day

$PM_{2.5}$ Emissions:

Emission Factor	EF = 0.15 * (7.1/12)^0.9 * (50/3)^0.45 =	0.33	lbs/VMT
Calculations	(0.33 lbs/VMT) * (5 miles/day) =	1.66	lbs/day
	(1.66 lbs/day) * (365 days/yr) * (0.0005 tons/lb) =	0.30	TPY
	Daily Calculations (1.66 lbs/day) * (1 day) =	1.7	lb/day

Diesel Fuel Storage Tank

VOC Emissions
(Taken from previous emission inventory = EPA Tanks Model Negligible

V. Existing Air Quality

On July 1, 1987, the Environmental Protection Agency (EPA) promulgated new National Ambient Air Quality Standards (NAAQS) for PM_{10}. Due to exceedances of the NAAQS for PM_{10}, the cities of Kalispell (and the nearby Evergreen area), Columbia Falls, Butte, Whitefish, Libby, Missoula, and Thompson Falls were designated by EPA as nonattainment for PM_{10}. As a result of this designation, EPA required the Department and the City-County Health Departments to submit PM_{10} State Implementation Plans (SIP). The SIPs consisted of emission control plans that controlled fugitive dust emissions from roads, parking lots, construction, and demolition, since technical studies determined these sources to be the major contributors to PM_{10} emissions.

Addendum #5 to MAQP #3320-04 is for a portable asphalt plant to be located in or within 10 km of certain PM_{10} nonattainment areas during the summer season (April 1 through September 30). Summertime operations may include areas in or within 10 km of certain PM_{10} nonattainment areas, including, but not limited to Libby, Kalispell, Columbia Falls, Whitefish, Thompson Falls, and Butte.

VI. Air Quality Impacts

The amount of controlled emissions generated by the operation will not exceed any set ambient standard. In addition, Addendum #5 to MAQP #3320-04 contains operational limitations and conditions that will be protective of the PM_{10} nonattainment areas.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined that there are no taking or damaging implications.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

VIII. Environmental Assessment

This permitting action will result in a decrease in potential emissions from the facility and is considered an administrative action; therefore, an environmental assessment is not required.

Addendum Analysis Prepared by: Rhonda Payne
Date: September 26, 2016

Guidance Document

for the

Class II Air Quality Operating Permit Application

Nevada Division of Environmental Protection
Bureau of Air Pollution Control, Permitting Branch
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249
Phone (775) 687-9349

August 2017

The goal of the Bureau of Air Pollution Control is to achieve and maintain levels of air quality that will protect human health, prevent injury to plant and animal life, prevent damage to property, and preserve the scenic, historical, and aesthetic treasures of the state.

Table of Contents

Table of Contents Continued

Acronyms and Abbreviations

The acronyms and abbreviations identified below are used throughout this document. This list is intended for reference use.

Administrator	Administrator of EPA as defined in NAC 445B.004
ACFM	Actual Cubic Feet per Minute
AQOP	Air Quality Operating Permit
BAPC	Bureau of Air Pollution Control
BAQP	Bureau of Air Quality Planning
BPM	Best Practical Methods
CFR	Code of Federal Regulations
CH_4	Methane
CO_2	Carbon Dioxide
CO	Carbon Monoxide
CO2e	Greenhouse Gases (Carbon Dioxide Equivalent)
Director	Director of Nevada State Department of Conservation and Natural Resources as defined in NAC 445B.053
DSCFM	Dry Standard Cubic Feet per Minute
EF	Emission Factor
EPA	Environmental Protection Agency
FIN	Facility Identification Number
HA	Hydrographic Area (Basin)
HAPs	Hazardous Air Pollutants
hp	Horsepower
hr	Hour
H_2S	Hydrogen Sulfide
H_2SO_4	Sulfuric Acid Mist
IA	Insignificant Activities
ID	Identification Number
kW	Kilowatt
L x W x H	Length x Width x Height
lb	Pound
MMBtu	Million British Thermal Units
N/A	Not Applicable
NAC	Nevada Administrative Code
NAD 83	North American Datum of 1983
NDEP	Nevada Division of Environmental Protection
NO_2	Nitrogen Dioxide
N_2O	Nitrous Oxide
NO_X	Oxides of Nitrogen
NRS	Nevada Revised Statutes
ODS	Official Date of Submittal
O_3	Ozone
OP	Other Pollutant
Pb	Lead
PM	Particulate Matter
PM_{10}	Particulate Matter with an Aerodynamic Diameter Less Than or Equal to 10 Micrometers
$PM_{2.5}$	Particulate Matter with an Aerodynamic Diameter Less Than or Equal to 2.5 Micrometers
PSI(A)	Pounds per Square Inch (Absolute)
PTE	Potential to Emit
RICE	Reciprocating Internal Combustion Engine
RO	Responsible Official
SCC	Source Classification Code
SCF	Standard Cubic Feet
SIC	Standard Industrial Classification
SF_6	Sulphur Hexafluoride
SO_2	Sulfur Dioxide
TBD	To Be Determined
USC	United States Code
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

The purpose of this document is to provide guidance to permit applicants intending to complete a Class II Air Quality Operating Permit (AQOP) Application (application). The regulations governing a Class II AQOP application and the applicable processing fee(s) may be found under the Nevada Administrative Code (NAC) 445B.3453 and NAC 445B.327, respectively. The Guidance Document and associated application forms are posted on the Nevada Division of Environmental Protection - Bureau of Air Pollution Control (BAPC) website:
https://ndep.nv.gov/air/permitting/download-permit-forms

The information requested in the application is based on the regulatory requirements in accordance with the Nevada Revised Statutes (NRS) 445B.100 through 445B.640, inclusive, and the NAC 445B.001 through 445B.3689, inclusive. It is important to read and understand NAC 445B.22097 which lists Nevada's Standards of Quality for Ambient Air and the allowable emission concentrations for all regulated air pollutants.

Renewal applications are treated as new applications by the BAPC. All pages must be submitted, as well as required attachments.

Applications for **revisions** require all pages of the application and attachments to be submitted, but only emission unit forms for added or revised units need to be included.

When completing the application, complete each item or explain in the space provided why no information is supplied. Specify "N/A" (Not Applicable) if necessary. Any field left blank may cause the application to be deemed incomplete. If the application is deemed incomplete, the application and processing fee will be returned to the applicant along with a completeness checklist detailing the items missing from the application.

1.1 Application Submittal and Processing Timeline

The application and fee(s) may be mailed or hand delivered to the BAPC. In addition, fees can be submitted either by check or online using ePayment, https://epayments.ndep.nv.gov/. In order for the BAPC to start processing an application, both the application packet and fee must be received in accordance with NAC 445B.327.

Make sure the application contains the original signature of the Responsible Official (RO) on the Certification Document page in the application packet. When submitting an electronic payment, please make sure to include facility name and if applicable, existing permit number and/or Facility Identification Number. If you have any questions, you may contact the BAPC at (775) 687-9349.

The BAPC mailing address is:

Nevada Division of Environmental Protection
Bureau of Air Pollution Control, Class II Permitting Branch
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701-5249

The application and fee are date stamped when they are received by the BAPC. In accordance with NAC 445B.3457, the BAPC has 10 working days to determine if the application is complete or incomplete. The day the application is deemed complete is the Official Date of Submittal (ODS). After the ODS, the regulatory timeline for BAPC to issue a Class II AQOP is 60 calendar days in accordance with NAC 445B.3457.3.

2.0 COVER PAGE

The Cover Page is the first page of the application where basic information is identified as to if the facility is new or existing and what type of application is being submitted.

2.1 Facility Name

Many companies have several facilities; please include the facility name that houses the equipment. If you do not have a facility name, please put the company name here. The company name will also be requested on page 3 of the application.

2.2 Existing Facility ID

Existing Facility ID is the Facility Identification Number (FIN) for facilities that currently have a permit. On existing operating permits the FIN is located in the header section as Facility ID No. AXXXX for example: A1234. If you do not currently have a permit, specify "N/A".

2.3 Existing Class II AQOP

Existing Class II AQOP refers to the existing permit number located in the header section, for example Permit No. AP1499-3576. If you do not currently have a permit, specify "N/A".

2.4 Application Type

The application can be submitted for a new permit, a revision to an existing permit, or for the renewal of an existing permit. Check the box for all that apply for the permitting action. Check all boxes that apply for the permitting action.

3.0 IMPORTANT INFORMATION

The application contains a section entitled Important Information. The applicant should be familiar with this information provided in this section prior to completing the application. The Important Information section contains the list of application forms, submittal due dates, regulations, and fee(s) for a permit.

4.0 GENERAL COMPANY INFORMATION FORM

The General Company Information Form requests a brief description of the facility's specific work, the contact and mailing information of the company, RO, plant manager or other appropriate contact, as well as the location of and driving directions to the facility.

Section 1: Facility's Process

In Section 1, provide an overview of the facility's operations, such as, "The facility mines and processes iron ore." A more detailed description of the facility should be included in the Process Narrative which is discussed further in Chapter 8.2 of this document. A list of Standard Industrial Classification (SIC) numbers can be found here: https://www.osha.gov/pls/imis/sic_manual.html

Section 2: Company Name and Address

Provide the company name and address as you want it to appear on the permit. If a company applying for a permit is owned by another company, be sure to insert the information you want on the permit.

Section 3: Owner's Name and Address

Provide the name and address of the owner of the company. Owner means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

Section 4: Facility Name and Address

Provide the facility name and address if it is different than the company name and address in Section 2 or write in "same as above".

Section 5: Records Location

Provide the location where all records required by the permit will be stored. If they will be on site, insert the information from Section 4. If they will be stored at another location, insert the information for the location.

Section 6: Responsible Official

Provide the name, title, and mailing address for the RO. If the facility already has an AQOP, this person should be the same as what the BAPC already has on file. If a change needs to be made, please attach a letter stating who the new RO will be, signed by the appropriate individual. In accordance with NAC 445B.156 the RO can be:

1. For a corporation:
   (a) A president;
   (b) A vice president in charge of a principal business function;
   (c) A secretary;
   (d) A treasurer; or
   (e) An authorized representative of such a person who is responsible for the overall operation of the facility and who is designated in writing by an officer of the corporation and approved in advance by the Director.
2. For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
3. For a municipality or a state, federal or other public agency, a ranking elected official or a principal executive officer, including, for a federal agency, a chief executive officer who has responsibility for the overall operations of a principal geographic unit of the agency.
4. For an affected source, the designated representative or his or her alternate, as defined in 42 U.S.C. § 7651a(26).

Section 7: Plant Manager or Other Appropriate Contact

Provide the name, title, and contact information for a plant manager or other appropriate contact from the facility if it will not be the RO. This is the person the BAPC will communicate with when on site, if the RO is not available. For example, if the company president is the RO but is not physically at the facility, provide an appropriate contact that is physically located at the facility.

Section 8: Location and Driving Directions to the Facility

Provide the Township(s), Range(s) and Section(s) of the facility, as well as the Universal Transverse Mercator (UTM) coordinates of the front gate of the facility. The UTM coordinates must be in metric units using North American Datum of 1983 (NAD 83), Zone 11. Describe the location of the facility with respect to the nearest road and city (such as 8th Street, Wells, Nevada), the County the facility is located in, and driving directions from Carson City, Nevada to the facility.

Section 9: Emission Cap

"Federally enforceable emissions cap" means a condition of an operating permit containing an emission limitation that the holder of the operating permit requested and the Director approved and which is independent of any applicable requirement or requirements (NAC 445B.070). Before requesting an emission cap it is recommended to contact the BAPC. Check the appropriate box if you are requesting an emission cap. If you are requesting an emission cap, at a minimum, detail each of the following in accordance with NAC 445B.296.2 in the Process Narrative described in Chapter 8.2 of this guidance document:

1. State each applicable requirement which the applicant seeks to avoid;
2. Demonstrate that any applicable requirements not avoided by the cap will be met;
3. Contain proposed conditions, including monitoring and recordkeeping conditions for each proposed federally enforceable emissions cap, of the operating permit which will ensure compliance with any applicable requirement;
4. Contain any additional information that the director determines necessary to process the application.

Section 11: Location

If the facility is located within 1,000 feet of a school, hospital or residential area, check the appropriate box. The 1,000 feet will begin at the fence line of the facility.

Section 12: Controls and Limit Restrictions

Check the appropriate box if the facility/source requires controls or emission limit restrictions (for example limits on hours of operation) to be considered a Class II facility in accordance with NAC 445B.037.

The EPA describes a "synthetic minor" source as a source that otherwise has the potential to emit regulated NSR pollutants in amounts that are at or above those for major sources in 40 CFR 49.167, 40 CFR 52.21 or 40 CFR 71.2, as applicable, but has taken a restriction so that its potential to emit is less than such amounts for major sources. Such restrictions must be enforceable as a practical matter (as defined in 40 CFR 49.152).

5.0 EMISSION UNIT FORMS

An emission unit is part of a stationary source which emits or has the potential to emit any regulated air pollutant, as defined in NAC 445B.059. There are four emission unit forms: Industrial Process Application Form, Combustion Equipment Application Form, Storage Silo Application Form, and Liquid Storage Tank Application Form. When each of these forms should be utilized is described below:

- **Industrial Process Application Form:** The Industrial Process Application Form is used for equipment emitting PM/PM_{10}/$PM_{2.5}$, such as hoppers, crushers, screens, and conveyor drop points. The equipment may be controlled by baghouses, water sprays, enclosures or other methods. An example of a completed Industrial Process Application Form can be found in Appendix 2.
- **Combustion Equipment Application Form:** The Combustion Equipment Application Form is for heaters, engines, generators, emergency generators, and different control equipment such as thermal oxidizers. The equipment can be fueled with diesel oil, natural gas, propane, etc. An example of a Combustion Equipment Application Form can be found in Appendix 3.
- **Storage Silo Application Form**: The Storage Silo Application Form is used for storage silo loading and unloading. The emissions commonly exit through a silo stack, chimney, or vent during these processes.
- **Liquid Storage Tank Application Form:** The Liquid Storage Tank Application Form is for tanks storing different liquid materials such as fuel, asphalt, waste oil, etc. If the tank is attached to a unit, such as a belly tank (or day tank), you do not need to provide a liquid storage tank application form for that tank.

Each emission unit and transfer point needs to have a completed form. If you have more than one emission unit of a given type, include as many additional forms as needed. Multiple emission units/transfer points may be included on one form provided they are identical in every aspect, including; throughput, controls, emission factors, etc. A listing or table must be included with UTMs for each unit.

Provide the appropriate emission unit form for all presumptive IA emission units pursuant to NAC 445B.288.1 and NAC 445B.288.2. Even though IAs will not be permitted, their emissions contribute to the overall PTE of the facility and must be included in the air dispersion model (see Section 5.1 for more information).

Proposed insignificant activities not listed under NAC 445B.288.1 and NAC 445B.288.2 must be submitted, under separate cover, to the Director for approval. The submittal must include a sufficient description of the emission unit(s), all emissions calculations (not considering controls or limits on production, hours of operation, or type of materials processed, combusted or stored), and emission factor references (NAC 445B.288.4). If the IA has been previously approved by the director, provide BAPC a copy of the original approval letter. Engines and generators subject to Federal Regulations cannot be considered IAs.

The Detailed Emission Calculations will include the emission calculations for all emission units (including IAs- not considering controls or limits on production, hours of operation, or type of materials processed, combusted or stored). The Detailed Emission Calculations are discussed further in Chapter 8.1 of this document.

For a **revision** application, the emission unit forms need only be provided for the revised and/or added emission unit(s). The proposed revisions should be detailed in the Process Narrative.

5.1 General Process Application Form Information

This chapter details the information that is identical on all four of the application forms discussed above.

Form Header

Each of the four emission unit application forms requires the same information on the top of the page. That information is described in the sections below.

Equipment Unit Description

Emission units can be grouped in systems. A system contains emission units that are part of the same process (for example: a screening process and associated conveyors), or are controlled by the same air pollution control equipment (for example: all stacks lead to one baghouse). Provide a name for each emission unit and a system number for units in the same system such as Conveyor 1, System 1; Screen 1, System 1; etc. (If an emission unit is part of an existing permit, this description should match the permit.)

Alternative Operating Scenario

If the emission unit is part of an alternative process, or can operate in multiple variations check Yes. Checking Yes signifies that you have an alternative operating scenario, and the forms are filled out the same as for any other permitted unit. An example of an alternative operating scenario is a heater that can operate on natural gas or propane.

Insignificant Activity

Check Yes or No whether the emission unit application form is considered an insignificant activity (IA).

Subject to a Federal Regulation (40 CFR Part 60, 61, or 63)

Check the appropriate box indicating an emission unit is or is not subject to regulation under any of these Federal Regulations.

- 40 CFR Part 60 is the Standards for Performance for New Stationary Sources
- 40 CFR Part 61 is the National Emission Standards for Hazardous Air Pollutants
- 40 CFR Part 63 is the National Emission Standards for Hazardous Air Pollutants for Source Categories

5.1.1 Equipment Description

Each of the four Emission Unit Application Forms have an equipment description section. Much of this information is the same for each of the process forms, but there is some unique information. If the information is unique to a certain form this has been indicated underneath each parameter description. All parameters included in the Equipment Description section of the forms are discussed below.

BAPC Emission Unit ID and System Number

If the facility currently has a permit please refer to it and fill in the Unit ID and System Number that is on the current permit for the appropriate emission unit. If the emission unit currently isn't in the permit or this is an application for a new permit, please write "N/A".

Source Classification Code (SCC)

EPA uses Source Classification Codes (SCCs) to categorize sources of air pollution. There are four levels of source description, associated with the first 1, 3, 6, and 8 digits of the codes. The first level (and digit) describes the most general information on the category of the emissions. The second level (and first 3 digits) subdivides the five major categories into major industry groups, for example: 1-02 indicates External Combustion in Industrial Boilers. The third level (and first 6 digits) specifies the industry or emission source category; for example: 1-02-010-02 indicates it is for Electric Generation and uses Liquefied Petroleum Gas (LPG). The fourth level (all 8 digits) specifies the particular emitting process within the third-level source category; for example: 1-02-010-02 specifies it is propane. A list of frequently used SCC codes is provided in Appendix 11.

The Microsoft Access Database that contains SCCs can be found here:
https://ofmpub.epa.gov/sccsearch/

Manufacturer

Provide the name of the manufacturer of the equipment. If you do not know the manufacturer of the equipment, please write "unknown".

Date Manufactured

Provide the year and, if possible, the month when the equipment was manufactured. If you do not know the date the equipment was manufactured, please write "unknown".

Model Number

(For Industrial Process, Storage Silo, and Liquid Storage Tank Application Forms Only)
Provide the model number of the equipment. If you do not know the model number of the equipment, please write "unknown".

Model and Serial Number

(For Combustion Equipment Application Forms Only)
Provide the model and the serial number of the equipment. If you do not know the model or serial number of the equipment, please write "unknown".

Equipment Dimensions

(For Industrial Process, Storage Silo, and Liquid Storage Tank Application Forms Only)
Provide the length (L), width (W), and height (H) of the equipment in feet.

Drop Dimensions
(For Industrial Process Application and Storage Silo Forms Only)
The drop length is the distance the material falls at a transfer point. The drop height is the drop distance relative to the ground. The drop height can be measured from the top of the drop length, the middle of the drop length, or the bottom of the drop length. The width refers to the width of the transfer point. Refer to Figure 1 below.

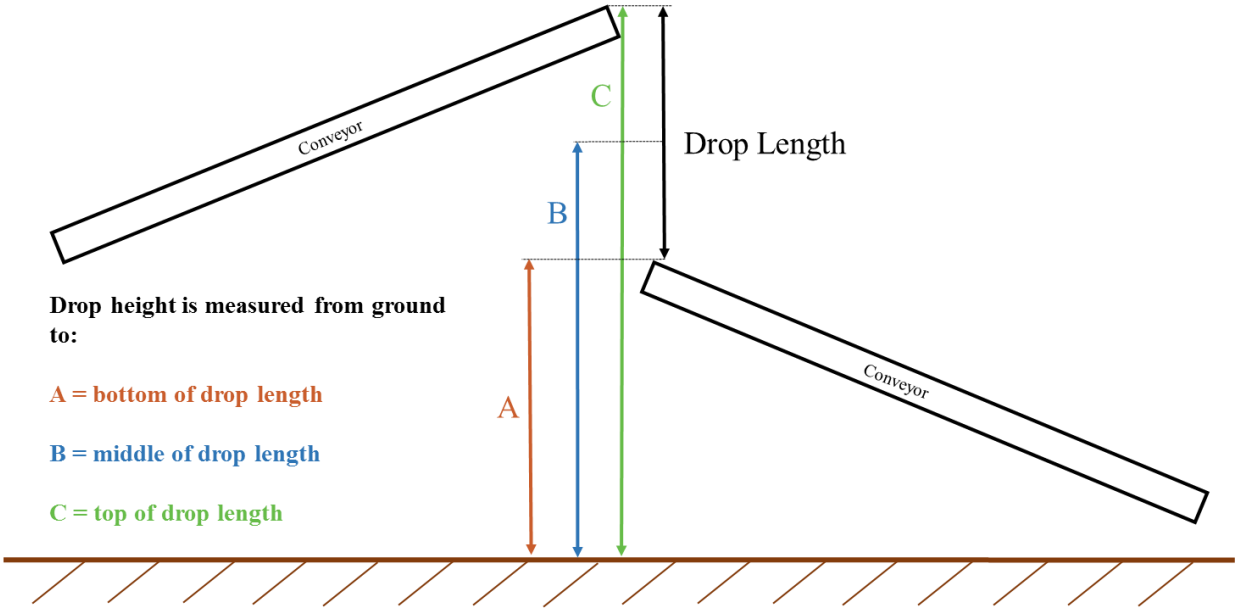


Figure 1: Drop Dimensions Diagram

Max. Design Heat Input
(For Combustion Equipment Application Forms Only)
For heaters, boilers, kilns, etc., provide the designed heat input in million British thermal units per hour (MMBtu/hr). The maximum heat input of the equipment, not the heat input value the equipment runs on, is required in accordance with NAC 445B.3135.

Emissions Released Inside Building?
(For Industrial Process, Combustion Equipment, and Storage Silo Application Forms Only)
Specify "Yes" if emissions are released inside a building. If not, specify "No".

Heated or Non-Heated Tank
(For Liquid Storage Tank Application Forms Only)
Specify if the emission unit is a heated or non-heated storage tank.

Shell Height
(For Liquid Storage Tank Application Forms Only)
Provide the shell height of the storage tank in feet.

Shell Diameter
(For Liquid Storage Tank Application Forms Only)
Provide the shell diameter of the storage tank in feet.

Maximum Liquid Height
(For Liquid Storage Tank Application Forms Only)
Provide the maximum liquid height of the stored material in feet.

Average Liquid Height
(For Liquid Storage Tank Application Forms Only)
Provide the average liquid height of the stored material in feet.

Capacity of Tank
(For Liquid Storage Tank Application Forms Only)
Provide the capacity of the storage tank in gallons.

Shell Color
(For Liquid Storage Tank Application Forms Only)
Provide the color of the shell (white, gray, aluminum, red primer, etc.).

Roof Condition
(For Liquid Storage Tank Application Forms Only)
Provide a description of the condition of the roof (bad, good, excellent, etc.).

Roof Type (Cone, Dome, External, or Internal Floating Roof)
(For Liquid Storage Tank Application Forms Only)
Indicate what type of roof is on the tank. Roof types include cone, dome, external, or internal floating.

Roof Height
(For Liquid Storage Tank Application Forms Only)
For a cone or dome roof, specify the roof height in feet.

Cone Roof Slope
(For Liquid Storage Tank Application Forms Only)
For a cone roof, specify the roof slope in feet per feet (ft/ft).

Dome Roof Radius
(For Liquid Storage Tank Application Forms Only)
For a dome roof, specify the radius of the roof in feet.

True Vapor Pressure of Liquid
(For Liquid Storage Tank Application Forms Only)
Provide the true vapor pressure of the liquid stored in pounds per square inch absolute (psia). The true vapor pressure is a measure of the volatility of petroleum distillate fuels.

Reid Vapor Pressure Liquid
(For Liquid Storage Tank Application Forms Only)
Provide the Reid vapor pressure of the liquid stored in pounds per square inch (psi). The Reid vapor pressure is a measure of the volatility of gasoline. It is defined as the absolute vapor pressure exerted by a liquid at 100 °F.

Orientation of Tank (Horizontal or Vertical)
(For Liquid Storage Tank Application Forms Only)
Specify the orientation of the tank, i.e. horizontal or vertical.

Submerged Fill
(For Liquid Storage Tank Application Forms Only)
Provide the information on the method of filling the storage tank in accordance with NAC 445B.22093.3.

5.1.2 For Reciprocating Internal Combustion Engines (RICE) Only

This section is only relevant to Internal Combustion Engines and appears on the Combustion Equipment Application Form.

Max Design Horsepower Output
For generators, provide the design output also in horsepower (hp) and in kilowatts (kW).

Type of Engine Code
Provide the Type of Engine Code (from the table below) corresponding to the emission unit. For example, if you have an emergency spark ignition 4-stroke rich burn engine the code would be E-SI4SRB.

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Compression Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Compression Ignition	SI2SLB	Spark Ignition 2-Stroke Lean Burn

Date Constructed
The Date Constructed is the date the unit was originally installed or the date any modifications were conducted.

Cylinder Displacement
Provide the cylinder displacement of the RICE in liters per cylinder.

EPA Tier #
The EPA Tier Number refers to applicable 40 CFR Subpart regulations. For example, Table 1 of 40 CFR Part 89.112 has standards for Oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter exhaust. Typical subparts for RICEs include 40 CFR Part 60 Subparts IIII and JJJJ and 40 CFR Part 63 Subpart ZZZZ.

5.1.3 Location of Emission Source

Each of the four Emission Unit Application Forms require the exact UTM coordinates for the emission unit. The Northing and Easting UTM coordinates must be in metric units NAD 83 / UTM Zone 11N. The BAPC needs each emission unit's unique UTM coordinates for air dispersion modeling (even when modeling is not required by the applicant).

5.1.4 Operating Parameters or Operating Parameters/Fuel Usage

Each of the four Emission Unit Application Forms has an Operating Parameters section or an Operating Parameters/Fuel Usage section. Much of this information is the same for each of the process forms but there is some unique information. If the information is unique to a certain form this has been indicated underneath each parameter description. All parameters included in the Operating Parameters section of the forms are discussed below.

Material Type Processed

(For Industrial Process and Storage Silo Application Forms Only)

Provide the type of material processed such as aggregate, gold ore, gypsum, limestone, lime, prill, etc.

Material Type

(For Liquid Storage Tanks Application Forms Only)

Provide the material type processed or stored in the storage tank, for example: asphalt, recycled fuel oil, water, etc. If the stored material is a combination of multiple materials, list each material and the percentage of total material it represents.

Fuel Type

(For Combustion Equipment Application Forms Only)

Provide the fuel type the combustion unit will operate on. If more than one type of fuel is combusted under the same operating scenario, specify the primary fuel and the percentage. If fuel blending is the primary fuel, identify the percentage of each fuel in the blend.

Hourly Usage Rate

(For Combustion Equipment Application Forms Only)

Provide the hourly amount of fuel used per hour. Fuel usage is measured in gallons, written in gallons per hour (gal/hr). This should be the maximum usage rate. If the applicant chooses not to use the maximum, a fuel flow meter will need to be installed. Please attach the Equipment Specification Sheet for the emission unit.

Annual Usage Rate

(For Combustion Equipment Application Forms Only)

Provide the annual amount of fuel used. Fuel usage is measured in gallons, written in gallons per year (gal/year).

Sulfur Content

(For Combustion Equipment Application Forms Only)

Sulfur content refers to the nominal percent content, by weight, of sulfur contained in the fuel supply. Provide the sulfur content, which can be obtained from the fuel supplier.

Heat Content

(For Combustion Equipment Application Forms Only)

Provide the heat content of the fuel being used. This value should be listed in the amount of heat (BTU) per unit of fuel combusted (pound, gallon, scf). The default heat content values from AP-42 are listed below. If a heat content value other than the default value is listed, provide documentation from the fuel supplier showing the nominal heat content of the fuel.

Coal (BTU/lb)	Diesel #2 (BTU/gal)	Gasoline (BTU/gal)	Natural Gas (BTU/scf)	Propane (BTU/gallon)
13,000	140,000	125,251	1,020	91,500

Operating Time Per Day

(For Industrial Process, Combustion Equipment, and Storage Silo Application Forms Only)

Provide how many hours a day the equipment will be operating.

Operating Time Per Year

If the unit will operate 24 hours per day, 365 days per year, the Operating Time per Year is 8,760 hours/year. If the unit will operate less, multiply the hours per day and the days per year of operation to obtain the Operating Time per Year.

For Liquid Storage Tanks provide the annual hours when material is stored in the tank. If the tank(s) store material all year long it will be 8,760 hours. If at any point during the year the tank(s) are empty, you may subtract these hours from 8,760 hours.

Hourly Throughput Rate

(For Industrial Process and Storage Silo Application Forms Only)

The Hourly Throughput Rate is the weight of material, in pounds, processed in one hour by the listed equipment.

Annual Throughput Rate

(For Industrial Process and Storage Silo Application Forms Only)

For the Annual Throughput Rate multiply the Hourly Throughput Rate by the Operating Time per Year and convert to tons per year.

Maximum Throughput

(For Liquid Storage Tanks Application Forms Only)

Provide the maximum throughput of the stored material in gallons per hour and gallons per year.

Batch Process

(For Industrial Process and Storage Silo Application Forms Only)

Batch processes measure material in batches instead of a continual hourly basis. Provide the amount of material used for each batch and the unit.

Start Time

(For Industrial Process, Combustion Equipment, and Storage Silo Application Forms Only)

If you don't request a piece of equipment to operate 24 hours per day, you must list the exact hours of operation that the equipment will operate, such as 6:00 AM – 10:00 PM or 0600 – 2200. Provide your start time in this section.

End Time

(For Industrial Process, Combustion Equipment, and Storage Silo Application Forms Only)

If you don't request a piece of equipment to operate 24 hours per day, you must list the exact hours of operation that the equipment will operate, such as 6:00 AM – 10:00 PM or 0600 – 2200. Provide your end time in this section.

5.1.5 Control Equipment

Each of the four Emission Unit Application Forms has a section for control equipment. Many emission units can be equipped with control equipment to help minimize emissions from the emission unit. The information requested in this section is described in the sections below.

Type of Control

Provide the type of control equipment used (baghouse, bin vent, enclosure, water spray, wet scrubber, thermal oxidizer, carbon vessel etc.) and add a label and number (Baghouse BH-1). If an emission unit is not equipped with control equipment write "no control" in this section.

Control Efficiency

Control efficiencies may be utilized for various types of controls including water sprays, enclosures, bin vents, etc. For baghouses, a manufacturer's guarantee or source test is required if using an efficiency better than the default control efficiency. The BAPC will accept the following default control efficiencies:

Emission Control Technology	Control Efficiency Rating
Water Sprays	75%
Enclosure	50%
Baghouse	0.02 grains/dscf

If you have any questions concerning what control efficiency you should be using for a control please contact the BAPC.

Pollutant(s) Controlled

List the regulated air pollutants controlled by the control equipment. For example: PM, PM_{10} and $PM_{2.5}$.

Manufacturer

Provide the name of the manufacturer of the control equipment. If you do not know the manufacturer write "unknown".

Manufacturer's Guarantee Included?

If you are using a control efficiency from a manufacturer's guarantee please provide a copy of the guarantee. The BAPC will not accept a control efficiency from a manufacturer's guarantee without a copy of this information. (Renewal applications are **not** exempt from this requirement.)

5.1.6 Stack Parameters

This section appears on the Industrial Process, Combustion Equipment, and Storage Silo Process Application Forms only.

Stack Height
Provide the height of the stack in feet.

Stack Inside Diameter
Provide the inside diameter of the stack in feet. If the diameter is non-cylindrical, provide the actual dimensions (LxW).

Stack Temperature
Provide the temperature of the pollutant exiting the stack in degrees Fahrenheit. Write "ambient" if the stack temperature is the same as the ambient air temperature.

Stack Exit Velocity
Provide the exit velocity of the pollutant exiting the stack measured in feet per second (ft/sec).

Gas Volume Flow Rate (acfm and dscfm)
Provide the gas volume flow rate through the stack measured in actual cubic feet per minute (acfm) and in dry standard cubic feet per minute (dscfm).

Stack Release Type
A vertical stack release type is the typical release type and is the default value when BAPC completes modeling. If the stack is capped, indicate if it is fixed or a flapper type. Use caution when using non-default options (capped, horizontal) on the application form or when modeling the facility. Contact the BAPC with any questions.

5.2 Regulated Air Pollutants, Emission Factors and Limits

Emission factors are used to calculate the requested emission limits, in pounds per hour (lb/hr) and tons per year (tons/year), for all applicable regulated pollutants and other non-regulated pollutants such as carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), Volatile Organic Compounds (VOCs) and Greenhouse Gases (Carbon Dioxide Equivalent - CO_2e). Emission limits of applicable regulated air pollutants are required for each emission unit.

Particulate Matter (PM) is defined as any material except uncombined water that exists in a finely divided form as a liquid or solid at reference conditions (NAC 445B.129).

PM_{10} is defined as any particulate matter in the atmosphere with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by an approved reference method or equivalent method based on 40 CFR Part 50, Appendix J and designated in accordance with 40 CFR Part 53 (NAC 445B.135).

$PM_{2.5}$ is defined as any particulate matter in the atmosphere with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers as measured by an approved reference method or equivalent method based on 40 CFR Part 50, Appendix L, and designated in accordance with 40 CFR Part 53 (NAC 445B.1348).

Nitrogen oxides is defined as all oxides of nitrogen except nitrous oxide, as measured by test methods approved by the EPA (NAC 445B.109).

VOCs are any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions (40 CFR § 51.100(s)).

Greenhouse Gas is defined as any of the following gases, either alone or in combination (NRS 445B.137):

1. Carbon dioxide (CO_2);
2. Hydrofluorocarbons;
3. Methane (CH_4);
4. Nitrous oxide (N_2O);
5. Perfluorocarbons; and
6. Sulphur hexafluoride (SF_6).

The throughput rate or fuel usage rate combined with the emission factor typically gives the emission limit of a pollutant. The applicant may apply a safety factor to increase the emission limit if desired. The emission limits must be calculated in pounds per hour (lb/hr) and tons per year (tons/year).

5.2.1 Emission Factor

The Industrial Process Application Form, the Combustion Equipment Application Form, and the Storage Silo Application Form all require emission factors. An emission factor is a representative value that attempts to relate the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. They are commonly expressed as a weight divided by a unit, volume, distance or duration such as lb/MMBtu, lb/ton, or lb/1000 gallons. These facilitate estimation of emissions from various sources of air pollution and are assumed to be representative of long-term averages for source categories. Insert the appropriate units for the emission factor on the form.

5.2.2 Emission Factor Reference

A reference must be provided for the emission factor being used to calculate the emission limit. Emission factors should be chosen in accordance with NAC 445B.239. For example: AP-42 Ch. 11.19.2, Table 11.19.2-2.

If a manufacturer guarantee is used as a reference, the guarantee should be attached to the application.

5.2.3 Emission Limit (lb/hr)

The emission limit should be the calculated pounds per hour (lb/hr) for each air pollutant for the emission unit. It is important that the values listed on the emission unit forms match what has been provided in the Detailed Emission calculations discussed further in Chapter 8.1 of this document. Example calculations have been provided in Appendices 4 through 10.

5.2.4 Emission Limit (tons/year)

The emission limit should be the calculated tons per year (tons/year) for each air pollutant for the emission unit. It is important that the values listed on the emission unit forms match what has been provided in the Detailed Emission calculations discussed further in Chapter 8.1 of this document. Example calculations have been provided in Appendices 4 through 10.

5.2.5 Greenhouse Gases, HAPs and Other Pollutant(s)

There is only one row provided on the Combustion Equipment Application form for emissions associated with Greenhouse Gases (CO_2e) and there are multiple CO_2e pollutants. You may write "see detailed calculations" and list each pollutant and their emissions on the calculation sheet.

The Combustion Equipment Application form also has a section for Hazardous Air Pollutants (HAPs). There will typically be more than one HAP emitted from a combustion source and there is only one row provided on the form. You may write "see detailed calculations" and list each HAP and their emissions on the calculation sheet.

All the emission unit application forms have a section for other pollutants. Some equipment may have additional regulated air pollutants than what have been listed on the forms. When an emission unit has the potential to emit an air pollutant not listed on the form, the name of the air pollutant should be listed in this box. This section of the form can be copied if more than one is needed.

6.0 FACILITY-WIDE POTENTIAL TO EMIT TABLE

The Facility-Wide Potential to Emit (PTE) Table summarizes the total emissions per pollutant of the facility. In this table, include the sum of the emissions from both the permitted and IA emission units. Detailed calculations must be submitted with the application, but only the totals need to be transferred to the PTE Table provided in the application. If you have air pollutants other than those listed in the PTE Table list those pollutants under Other Regulated Pollutants.

In the case of a revision, also complete the second table on the Facility-Wide Potential to Emit Form. The emission limit change is the mathematical difference between the permitted PTE and the proposed PTE. Also note in the table if these changes will increase or decrease the permitted PTE per regulated air pollutant. Add more columns if needed for other regulated air pollutants.

7.0 SURFACE AREA DISTURBANCE FORM

All activities, which have the potential to adversely affect the local air quality, must implement all appropriate measures to limit controllable emissions in accordance with NAC 445B.22037. Appropriate measures for dust control may consist of multiple approaches together or separately. Dust suppression application methods such as water trucks or water sprays systems to control wind-blown dust, the application of soil binding agents or chemical surfactants to roadways and areas of disturbed soil, and wind-breaks or wind-limiting fences that are designed to limit wind erosion of soils are all appropriate applications to help reduce airborne dust. Fill this form out even if the surface area disturbance will be less than 5 acres. The Surface Area Disturbance Form requests the following information:

Total Acres of the Facility Site
Provide the total size of the site in acres. Specify the undisturbed areas, the facility area, and any asphalted areas in acres.

Total Acres Disturbed
Provide the information of the total acres disturbed. When calculating the total acreage, all ground being disturbed, and all ground previously disturbed but not stabilized, must be measured.

Surface Area Disturbance Location
Provide the surface area disturbance location as Township(s), Range(s), and Section(s).

8.0 ADDITIONAL REQUIRED ATTACHMENTS

There are additional required attachments that are important supporting documents to the application. This information is used by the BAPC to process the application and write permit conditions, inform the public if a new facility requires an operating permit, and prepare the technical review supporting the permit. Provide the required attachments in a readable format, with both appropriate font type and size. The application may be rejected if the required attachments are not completed or legible.

8.1 Detailed Emission Calculations

Choose the appropriate emission factors for each emission unit and insignificant activity for each regulated pollutant and provide the calculations for the requested emission limits in both lb/hr and tons/year. Chapter 5.0 contains detailed descriptions of the accepted emission factors and emission limits. Example calculations have been provided in Appendices 4 through 10.

For liquid storage tanks, the emission limit calculations and emission factor back-calculations are based on the EPA TANKs 4.0.9d software. The VOCs from all tanks is estimated through the TANKs 4.0.9d modeling software. The results from TANKs are reported in lb/year. These results are used to calculate the lb/hr and tons/year emission limits for VOC. Include the TANKs report with the application. This software is available from the EPA's website: https://www3.epa.gov/ttnchie1/software/tanks/index.html.

If you do not want to use TANKS to estimate VOC emissions from your storage tank you may also use the methodology outlined in AP-42.

Provide the facility-wide PTE totals in the Facility-Wide Potential to Emit Table, as discussed in Chapter 6.0. For any specific emission calculation questions, contact the BAPC.

8.2 Process Narrative

Provide a detailed description of all processes in the application and any renewal or revision specifics. A basic outline of what to include in the Process Narrative is as follows:

- Specify the location of the facility, and if it is part of a company, specify which company. For example: Arturo Mine is located 45 miles Northwest of Elko in Elko County, Nevada, Hydrographic Area 61 – Boulder Flat, and the mine is part of the Barrick Dee Venture Mining Company.
- Describe what the facility does, such as mining gold ore, crushing and screening aggregates, etc.
- Describe the emission units (equipment) used at the facility. Describe both the permitted units and the IA units. Describe how the emission units work together in the process flow, and provide any information to describe or that helps describe what the facility does and how it functions.
- The narrative must include descriptions of all emissions of regulated air pollutants from all emission units.
- Include Emissions Cap discussion, if applicable.
- If a revision is being requested, describe the revision's scope and state the requested changes and modifications.
- The narrative should match the Process Flow Diagram.

8.3 Process Flow Diagram(s)

The Process Flow Diagram is the drawing showing how all processes are interconnected. In the detailed process flow diagram, along with each emission unit, indicate emission control application points, throughput rates, and emission unit identification numbers and system notations for clarification purposes (for example: In System 2, the Conveyor C-5 (PF1.006) transfers aggregate to Crusher CR-2 (PF1.007)).

8.4 Site Plans

Provide the site plan of the entire source, drawn to scale, and include the scale and North arrow. The site plan should include the UTM coordinates (NAD 83 / UTM Zone 11N) as well as the dimensions and heights of buildings. The applicant can also provide an excel table for UTM coordinates (NAD 83 / UTM Zone 11) as well as the dimensions and heights of buildings.

8.5 Maps: Facility Location and Area Map of the Facility

Provide all required maps as visible and readable printouts. The maps may be in color. Submit the following maps:

1. A vicinity map that shows the facility location with respect to the nearest known city, town, and major road, all labeled. Outline the facility.
2. An area map of the facility that shows a closer aerial view of the entire area of the facility that includes (with UTM coordinates) all emission unit locations (clearly labeled), location of front gate, and fence line.

8.6 Descriptive Surface Area Disturbance Plan

If the facility has a surface area disturbance greater than 20 acres or if located in the Pahrump Valley (HA 162) and the surface area disturbance is 5 acres or more, a Descriptive Surface Area Disturbance Plan should be included. This Descriptive Surface Area Disturbance Plan should include an introduction, site description, a description of where specific dust control measures will be utilized, and a certification by the RO.

8.7 Environmental Evaluation (AERMOD Air Dispersion Modeling)

The BAPC uses the USEPA's AERMOD modeling system to perform air dispersion modeling for the regulated air pollutants. Other modeling platforms may be used with approval by the BAPC Director. The air dispersion modeling is part of the environmental evaluation to ensure that the facility meets the NAC 445B.22097 Standards of Quality for Ambient Air. The environmental evaluation is defined in NAC 445B.310 and NAC 445B.311. If the facility is subject to NAC 445B.310 and an environmental evaluation must be submitted, contact the Bureau of Air Quality Planning (BAQP) Modeling Branch at (775) 687-9349 and ask for the modeling supervisor if you have any questions.

8.7.1 Air Dispersion Modeling

Air dispersion modeling is a tool used to assess the air quality impacts from operations at a stationary source. The model shows if a facility complies with applicable ambient air quality standards as defined in NAC 445B.22097. The air dispersion modeling analysis is an integral part of the environmental evaluation requirement in NAC 445B.308. The modeling impact assessment provides the technical basis for BAPC issuance of a Class II AQOP. The air dispersion model is based on the requirements specified in NAC 445B.311.4.

A summary of NAC 445B.22097, as shown below, lists the minimum standards of quality for ambient air:

		NEVADA STANDARDS[A]		NATIONAL STANDARDS[B]		
POLLUTANT	AVERAGING TIME	CONCENTRATION[C]	METHOD[D]	PRIMARY[C, E]	SECONDARY[C, F]	METHOD[D]
Ozone	8 hours	0.075 ppm	Chemiluminescence	0.075 ppm	Same as primary	Chemiluminescence
Ozone-Lake Tahoe Basin, #90	1 hour	0.10 ppm (195 µg/m^3)	Ultraviolet absorption	--	--	--
Carbon monoxide less than 5,000′ above mean sea level	8 hours	9 ppm (10,500 µg/m^3)	Nondispersive infrared photometry	9 ppm (10 mg/m^3)	None	Nondispersive infrared photometry
At or greater than 5,000′ above mean sea level		6 ppm (7,000 µg/m^3)				
Carbon monoxide at any elevation	1 hour	35 ppm (40,500 µg/m^3)		35 ppm (40 mg/m^3)		
Nitrogen dioxide	Annual arithmetic mean	0.053 ppm (100 µg/m^3)	Gas phase chemiluminescence	53 ppb[G]	Same as primary	Gas phase chemiluminescence
	1 hour	100 ppb	--	100 ppb	None	
Sulfur dioxide	Annual arithmetic mean	0.030 ppm (80 µg/m^3)	Ultraviolet fluorescence	0.03 ppm[H] (1971 standard)	None	

		NEVADA STANDARDS[A]		NATIONAL STANDARDS[B]		
POLLUTANT	AVERAGING TIME	CONCENTRATION[C]	METHOD[D]	PRIMARY[C, E]	SECONDARY[C, F]	METHOD[D]
	24 hours	0.14 ppm (365 µg/m^3)		0.14 ppm[H] (1971 standard)		Spectrophotometry (Pararosaniline method)
	3 hours	0.5 ppm (1,300 µg/m^3)		None	0.5 ppm	
	1 hour	75 ppb	--	75 ppb	None	
Particulate matter as PM_{10}	Annual arithmetic mean	None	High volume PM_{10} sampling	None	None	--
	24 hours	150 µg/m^3		150 µg/m^3	Same as primary	High or low volume PM_{10} sampling
Particulate matter as $PM_{2.5}$	Annual arithmetic mean	12.0 µg/m^3	--	12.0 µg/m^3	Same as primary	Low volume $PM_{2.5}$ sampling
	24 hours	35 µg/m^3	--	35 µg/m^3	Same as primary	
Lead (Pb)	Rolling 3 mo. average	0.15 µg/m^3	High volume sampling, acid extraction and atomic absorption spectrometry	0.15 µg/m^3	Same as primary	High volume sampling, acid extraction and atomic absorption spectrometry
Hydrogen sulfide	1 hour	0.08 ppm (112 µg/m^3)[I]	Ultraviolet fluorescence	--	--	--

8.7.2 Information Required by BAPC for Modeling Purposes

Provide the following information as an attachment for both permitted and IA emission units (unless the requested information is already given in another section of the application):

- Emission limit calculations, in spreadsheet form, of all regulated air pollutants (in pounds per hours (lb/hr)) for all the permitted and IA emission units.
- UTM coordinates (in meters, NAD 83 / UTM Zone 11N) of the locations of all the permitted and insignificant activities emission units.
- Stack parameters (height, diameter (or stack dimensions if non-circular), flow rate, temperature, location, etc.)
- Release dimensions for process fugitive (transfer release height, drop distance, width of transfer)
- Tank dimensions and their UTM coordinates
- Building height in feet and the NAD 83 UTM coordinates of each corner of each building.
- For tanks with a capacity greater than 10,000 gallons: tank height in feet and the NAD 83 UTM coordinates of each corner of the tank if the tank is rectangular or the tank height and radius along with the UTM coordinates of the center if the tank is cylindrical.
- Facility plot plan with fence line boundary and UTM coordinates as requested in Chapter 13.4 Plot Plans.
- Topographic Map (with scale and North arrow) as requested in Chapter 8.5 Maps.

8.7.3 Air Dispersion Modeling Submitted by Applicant

Provide all model input files required to perform the air dispersion modeling performed with the latest version of AERMOD. Provide a digital copy and a written report containing all the information above in Information Required by BAPC for Modeling Purposes, as well as the meteorological data, terrain, receptors and grid spacing, the pollutants the model was run for, and the results table showing either passing or failing the Standards of Quality for Ambient Air in accordance with NAC 445B.22097.

8.8 Manufacturer's Guarantee Certifications and Equipment Specification Sheets

If the control efficiency is based on a manufacturer's guarantee BAPC requires that guarantee be provided to support the control efficiency being applied to the respective emission unit. If there is no manufacturer's guarantee attached, the BAPC may be required to apply the uncontrolled emission factor to calculate the emission limit(s). Engines, generators, heaters, and other equipment may have a manufacturer's guarantee containing specific emission factors or limits. If the units have a manufacturer's guaranteed emission factor, it must be provided to apply the specific emission factors and limits to the equipment.

8.9 Source (Stack) Testing Data

Attach any source testing data that emission estimates are based on.

8.10 TANKs Modeling

Perform TANKs modeling in order to estimate emission limits from liquid storage tanks storing petroleum or VOCs. TANKs 4.0.9d modeling software can be found on EPA's website. The TANKs report will show the VOC emission limit in pounds. Use this value to calculate the VOC emission limit in pounds per hour (lb/hr) and tons per year (ton/year), and also to back-calculate the emission factor for the storage tank. Include the TANKs report for all permitted and IA storage tanks within the application. If you do not want to use TANKS to estimate VOC emissions from your storage tank you may also use the methodology outlined in AP-42.

9.0 APPLICATION CERTIFICATION DOCUMENT

The last page of the Class II AQOP application packet is the Application Certification Document, which is a summary of the required documents in the application. It must be signed with an original "wet" signature by the RO of the company or facility.

10.0 BEFORE SUBMITTING

Check the boxes next to the submitted documents, and make sure the Application Certification Document is signed by the RO. Create a digital copy of the application, including all requested documents, and submit a digital and hard copy of the application with the application processing fee. The complete application package can be mailed or hand delivered to the BAPC office.

11.0 Maintenance/Annual Fees

Class II Permit Fees				
New	**Renewal**	**Revision**	**Administrative Amendment**	**Maintenance / Annual Fee Schedule**
$3,000	$2,000	$2,000	$200	Potential to emit ≥ 80 TPY but < 100 TPY of any 1 regulated air pollutant except CO. $5,000 Potential to emit ≥ 8 TPY but < 10 TPY of any 1 hazardous air pollutant. $5,000 Potential to emit ≥ 20 TPY but < 25 TPY of any combination of hazardous air pollutants. $5,000 Potential to emit ≥ 50 TPY but < 80 TPY of any 1 regulated air pollutant except CO. $3,000 Potential to emit ≥ 25 TPY, but < 50 TPY of any 1 regulated air pollutant except CO. $1,000 Potential to emit < 25 TPY of any 1 regulated air pollutant except CO. $500

Appendix 1: Class II NAC Regulations

NAC 445B.037

"Class II source" means any stationary source which is not subject to the requirements of 42 U.S.C. §§ 7661 to 7661f, inclusive, but which is otherwise subject to the requirements of NAC 445B.001 to 445B.390, inclusive. The term does not include a stationary source that is operating under a Class III operating permit issued pursuant to NAC 445B.001 to 445B.390, inclusive.

NAC 445B.044

Constructed is defined as any physical change or change in the method of operation of an emission unit, including, without limitation, the fabrication, erection, installation or modification of an emission unit

NAC 445B.153

"Regulated air pollutant" means:

1. Nitrogen oxides or any volatile organic compounds;
2. Any pollutant subject to:
   (a) A national ambient air quality standard and any constituents or precursors for such pollutants identified by the Administrator;
   (b) A standard or requirement adopted pursuant to 42 U.S.C. § 7411; or
   (c) A standard established pursuant to NAC 445B.22097;
3. Any Class I or Class II substance subject to a standard adopted pursuant to 42 U.S.C. §§ 7671 to 7671q, inclusive; or
4. Any pollutant that otherwise is subject to regulation under the Act, except that any hazardous air pollutant regulated under 42 U.S.C. § 7412 is not a regulated air pollutant unless the hazardous air pollutant is also regulated as a constituent or precursor of an air pollutant listed pursuant to 42 U.S.C. § 7408.

NAC 445B.239

1. The rate of emission must be expressed in pounds per hour of any regulated air pollutant discharged into the atmosphere for which a standard is applicable. The Director shall use the following to determine the rate of emission:
   (a) Factors of emission as specified in the latest issue of *Compilation of Air Pollutant Emission Factors*, EPA Publication No. AP-42, or other factors of emission determined by the Director to be superior to those in that publication, in cases where the use of factors of emission demonstrates that the level of emission resulting from the physical or operational change will either clearly increase or clearly not increase; and
   (b) Material balances, data from continuous monitors, or manual tests for emission in cases where the use of factors of emission does not demonstrate to the Director's satisfaction whether the level of emission resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Director's satisfaction that there are reasonable grounds to dispute the result obtained by the Director using factors of emission.

NAC 445B.239 (continued)

2. When the rate of emission is based on results from manual tests for emission or systems for continuous observation, the procedures specified in Appendix C of 40 C.F.R. § 60 must be used to determine whether an increase in the rate of emission has occurred. Tests must be conducted under such conditions as the Director specifies to the owner or operator based on the representative performance of the facility. At least three valid tests must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for each running of a test.

NAC 445B.288

1. The following categories of sources are not required to obtain an operating permit:
   (a) A source that would otherwise be required to obtain an operating permit solely because it is subject to 40 C.F.R. Part 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters.
   (b) A source that would otherwise be required to obtain an operating permit solely because it is subject to 40 C.F.R. Part 61, Subpart M, National Emission Standard for Asbestos, section 61.145.
   (c) Agricultural equipment used in the normal operation of a farm, other than agricultural equipment which is classified as, or located at, a source for which a permit is required under Title V of the Act or which is subject to any standard set forth in 40 C.F.R. Part 60 or 61.
2. The following emission units are considered to be insignificant activities unless the emission unit is otherwise subject to another specific applicable requirement, including, without limitation, any requirement or standard set forth in 40 C.F.R. Part 60, 61 or 63:
   (a) Any equipment or other contrivance used exclusively for the processing of food for human consumption.
   (b) An incinerator which has a rated burning capacity that is less than 25 pounds per hour.
   (c) An emission unit that has a maximum allowable throughput or batch load rate of less than 50 pounds per hour, unless the emission unit directly emits, or has the potential to emit, a hazardous air pollutant.
   (d) A storage container for petroleum liquid, or a storage facility for volatile organic liquid, that has a capacity of less than 40,000 gallons.
   (e) Except as otherwise provided in paragraphs (f), (g) and (h), air-conditioning equipment or fuel-burning equipment that, individually, has a rating which is:
      (1) Less than 4,000,000 Btu's per hour; or
      (2) Equal to or greater than 4,000,000 Btu's per hour if the equipment operates less than 100 hours per calendar year.
   (f) A portable internal combustion engine that has a rating for output which is:
      (1) Less than 500 horsepower; or
      (2) Equal to or greater than 500 horsepower if the engine operates less than 100 hours per calendar year.
   (g) A stationary internal combustion engine that has a rating for output which is:
      (1) Less than 250 horsepower; or
      (2) Equal to or greater than 250 horsepower if the engine operates less than 100 hours per calendar year.

NAC 445B.288.2 (continued)

(h) An emergency generator. Except as otherwise provided in this paragraph, an emergency generator qualifies as an insignificant activity pursuant to this paragraph only if the emergency generator is an internal combustion engine that is used to generate electrical power to maintain essential operations during unplanned electrical power outages. An emergency generator that is owned or operated by a stationary source and whose potential to emit is calculated on the basis of less than 500 hours of operation does not qualify as an insignificant activity.

3. If an emission unit is considered an insignificant activity and is subject to a limitation on its hours of operation pursuant to subsection 2, the owner or operator of the emission unit shall maintain an operating log of the hours of operation of the emission unit. The operating log must be maintained at the site of the emission unit and made available to the Director upon his or her request. The owner or operator shall retain the operating log for not less than 5 years.
4. The Director may, upon written request and a satisfactory demonstration by an applicant, approve an emission unit as an insignificant activity if the emission unit is not otherwise subject to another specific applicable requirement, including, without limitation, any requirement or standard set forth in 40 C.F.R. Part 60, 61 or 63. To be approved as an insignificant activity, an emission unit must meet the following criteria:
   (a) The operation of the emission unit, not considering controls or limits on production, type of materials processed, combusted or stored, or hours of operation, will not result in:
      (1) Emissions of a hazardous air pollutant that exceed 1 pound per hour or 1,000 pounds per year, as appropriate;
      (2) Emissions of regulated air pollutants that exceed 4,000 pounds per year;
      (3) Emissions of regulated air pollutants that exceed any other limitation on emissions pursuant to any other applicable requirement; or
      (4) Emissions of regulated air pollutants that adversely impact public health or safety, or exceed any ambient air quality standards; and
   (b) The emissions from the emission unit are not relied on to avoid any other applicable requirements.

➥ If there are multiple emission units, the Director may, after considering the impact of the combined emissions of multiple emission units, determine whether to approve one or more of the specific emission units as an insignificant activity.

5. Except as otherwise provided in NAC 445B.094, emissions from insignificant activities, as determined pursuant to this section, must be included in any determination of whether a stationary source is a major source.
6. A stationary source is not required to obtain an operating permit pursuant to NAC 445B.001 to 445B.390, inclusive, for any emission unit determined to be an insignificant activity in accordance with this section, as long as the stationary source is not otherwise subject to any other requirement to obtain an operating permit under Title V of the Act. Such an exclusion from the requirements relating to permitting is not an exclusion or exemption from any other requirement set forth in NAC 445B.001 to 445B.390, inclusive, relating to the operation of the emission unit determined to be an insignificant activity.

NAC 445B.288 (continued)

7. A stationary source which consists solely of insignificant activities as determined pursuant to this section and which is not otherwise subject to any other requirement to obtain an operating permit under Title V of the Act is not required to obtain an operating permit to operate as a stationary source. Such an exclusion from the requirements relating to permitting is not an exclusion or exemption from any other requirement set forth in NAC 445B.001 to 445B.390, inclusive, relating to the operation of the stationary source or any insignificant activity that is a part of the stationary source.
8. The provisions of this section do not apply to a thermal unit that emits mercury.
9. As used in this section, "thermal unit that emits mercury" has the meaning ascribed to it in NAC 445B.3643.

NAC 445B.310

1. An applicant for an operating permit, a revision to an operating permit or a request for a change of location, which is not subject to the provisions of 40 C.F.R. § 52.21, as adopted by reference in NAC 445B.221, must submit with the application an environmental evaluation for:
   (a) A new stationary source which emits, or has the potential to emit, greater than 25 tons of a regulated air pollutant per year;
   (b) A modification to an existing stationary source that meets the following criteria:
      (1) The existing stationary source has the potential to emit greater than 25 tons of a regulated air pollutant per year; and
      (2) The proposed modification has the potential to emit greater than 10 tons of a regulated air pollutant per year;
   (c) The approval of a plantwide applicability limitation or the approval to allow a plantwide applicability limitation to expire and not be renewed; or
   (d) Upon written notice from the Director, any other source or combination of sources.
2. An owner or operator of a Class II source may request an exemption from the requirement to submit an environmental evaluation with the application. Within 30 days after receipt of a written request for an exemption, the Director shall grant or deny the request and notify the owner or operator in writing of his or her determination. If such an exemption is granted, the Director shall perform the environmental evaluation.

NAC 445B.3135

For the purposes of determining the effects of a Class II source on the quality of ambient air pursuant to NAC 445B.308, 445B.310 and 445B.311, the heat input is the aggregate heat content of all combusted fuels, or the guaranteed maximum input of the manufacturer or designer of the equipment, whichever is greater. The total heat input of all fuel-burning units in a plant or on the premises must be used to determine the maximum amount of a regulated air pollutant which may be emitted.

NAC 445B.3457.3

If notice to the public is not required pursuant to subsection 5, the Director shall issue or deny a Class II operating permit or the revision of a Class II operating permit within 60 days after the official date of submittal of the application for the Class II operating permit or for the revision of the Class II operating permit.

Appendix 2: Example
INDUSTRIAL PROCESS APPLICATION FORM
CLASS II OPERATING PERMIT

Emission Unit Description: **System 4 – Crusher Feed Conveyor C-3**

Alternative Operating Scenario: ☐ **Yes** ☒ **No**
Insignificant Activity: ☐ **Yes** ☒ **No** If yes, identify exemption regulation: _____
Subject to a Federal Regulation (40 CFR Part 60, 61, or 63): ☐ **Yes** ☒ **No** If yes, identify in attached Process Narrative.

Description			Data
Equipment Description	BAPC Emission Unit ID and System Number *Applicable for Renewal or Revision*	eg. Unit ID: S2.001, PF1.001 System Number: 5	S2.001 (System 4)
	Source Classification Code (SCC)	e.g. *3-03-024-04 for Conveyors*	3-05-002-17
	Manufacturer		Industrial Products, Inc.
	Date Manufactured		2006
	Model Number		HF938271-d
	Equipment Dimensions (LxWxH)	feet	2’ x 2’ x 9’
	Drop Dimensions (LxWxH) *if applicable*	feet	N/A
	The drop height is measured from the ☐ top of the drop length ☐ middle of the drop length ☐ bottom of the drop length, in reference to the ground. *Choose one, if applicable*		
	Emissions Released Inside building?	yes/no	No
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	4,410,203
	UTM Easting (NAD 83, Zone 11)	m	331,732
Operating Parameters	Material Type Processed		Aggregate
	Operating Time per Day	hour/day	24
	Operating Time per Year	hour/year	8,400
	Hourly Throughput Rate	*unit*/hour	80,000
	Annual Throughput Rate	*unit*/year	336,000
	Batch Process *if applicable*	*unit*/batch	N/A
	Start Time *if operating less than 24 hours/day*	hour:minute	N/A
	End Time *if operating less than 24 hours/day*	hour:minute	N/A
Control Equipment	Type of Control		Baghouse BH-1
	Control Efficiency	%	N/A
	Pollutant(s) Controlled		PM, PM_{10}, $PM_{2.5}$
	Manufacturer		Flex Kleen
	Manufacturer’s Guarantee Included?	yes/N/A	N/A
Stack Parameters	Stack Height	feet	24
	Stack Inside Diameter	feet	1.03
	Stack Temperature	ºF	Ambient
	Stack Exit Velocity	feet/second	41.7
	Actual Gas Volume Flow Rate	acfm	2,084.7
	Actual Gas Volume Flow Rate	dscfm	2,500
	Stack Release Type		☐ vertical ☐ capped ☐ horizontal

Appendix 2: Example
INDUSTRIAL PROCESS APPLICATION FORM
CLASS II OPERATING PERMIT (continued)

Emission Unit Description: **System 4 – Crusher Feed Conveyor C-3**

Description			Data
Particulate Matter (PM) Emissions	Emission Factor (with units)	*(insert units)*	0.02 gr/dscf
	Emission Factor Reference		BAPC Default EF
	Emission Limit	pound/hour	0.43
	Emission Limit	ton/year	1.88
Particulate Matter as PM_{10} Emissions	Emission Factor (with units)	*(insert units)*	0.02 gr/dscf
	Emission Factor Reference		BAPC Default EF
	Emission Limit	pound/hour	0.43
	Emission Limit	ton/year	1.88
Particulate Matter as $PM_{2.5}$ Emissions	Emission Factor (with units)	*(insert units)*	0.02 gr/dscf
	Emission Factor Reference		BAPC Default EF
	Emission Limit	pound/hour	0.43
	Emission Limit	ton/year	1.88
Other Pollutants	Pollutant Name		N/A
	Emission Factor (with units)	*(insert units)*	N/A
	Emission Factor Reference		N/A
	Emission Limit	pound/hour	N/A
	Emission Limit	ton/year	N/A

Appendix 3: Example
COMBUSTION EQUIPMENT APPLICATION FORM
CLASS II OPERATING PERMIT

Emission Unit Description: **System 2 – Emergency Diesel Generator**

Alternative Operating Scenario: ☐ **Yes** ☒ **No**
Insignificant Activity: ☐ **Yes** ☒ **No** If yes, identify exemption regulation: _____
Subject to a Federal Regulation (40 CFR Part 60, 61, or 63): ☒ **Yes** ☐ **No** If yes, identify in process narrative.

Description			Data
Equipment Description	BAPC Emission Unit ID and System Number *Applicable for Renewal or Revision*	eg. Unit ID: S2.001 Sys Number: 5	S2.008 (System 08)
	Source Classification Code (SCC)	e.g. *3-03-024-04 for Conveyors*	2-01-001-02
	Manufacturer		Cummins
	Date Manufactured		2007
	Model and Serial Number		SD048 / 159df6
	Max Design Heat Input [NAC 445B.3135]	MMBtu/hour	21.14
	Emissions Released Inside building?	yes/no	No
For Reciprocating Internal Combustion Engines (RICE) Only	Max Design Horsepower Output	hp (kW)	2922 (2179)
	Type of Engine Code (See Notes*)		ECI
	Date Constructed	month/day/yr	2007
	Cylinder Displacement	liter/cylinder	<10
	EPA Tier #		2
Location of Emission Source	UTM Northing (NAD 83, Zone 11)	m	4,493,382
	UTM Easting (NAD 83, Zone 11)	m	588,574
Operating Parameters /Fuel Usage	Fuel Type		Diesel #2
	Operating Time per Day	hour/day	24
	Operating Time per Year	hour/year	100
	Hourly Usage Rate *Maximum* Provide Equipment Specifications	*unit*/hour	151 gallons/hour
	Annual Usage Rate *Maximum*	*unit*/year	15,100 gallons/year
	Sulfur Content	%	0.0015%
	Heat Content	Btu/*unit*	140,000 BTU/gallon
	Start Time *if operating less than 24 hours/day*	hour:minute	N/A
	End Time *if operating less than 24 hours/day*	hour:minute	N/A

***Notes:**

Code	Description	Code	Description
LU	Limited Use	E-SI	Emergency Spark Ignition
LDG	Landfill/Digester Gas	SI4SRB	Spark Ignition 4-Stroke Rich Burn
NECI	Non-Emergency Combustion Ignition	SI4SLB	Spark Ignition 4-Stroke Lean Burn
ECI	Emergency Combustion Ignition	S12SLB	Spark Ignition 2-Stroke Lean Burn

Appendix 3: Example Cont'd
COMBUSTION EQUIPMENT APPLICATION FORM
CLASS II OPERATING PERMIT (continued)

Emission Unit Description: System 2 - Emergency Diesel Generator

Description			Data
Control Equipment	Type of Control		N/A
	Control Efficiency	%	N/A
	Pollutant(s) Controlled		N/A
	Manufacturer		Cummins
	Manufacturer's Guarantee Included?	yes/N/A	N/A
Stack Parameters	Stack Height	feet	7.1
	Stack Inside Diameter	feet	0.83
	Stack Temperature	ºF	893
	Stack Exit Velocity	feet/second	74
	Actual Gas Volume Flow Rate	acfm	14,920
	Dry Gas Volume Flow Rate	dscfm	4,770
	Stack Release Type		☐ vertical ☐ capped ☐ horizontal
Particulate Matter (PM) Emissions	Emission Factor (with units)	*(insert units)*	0.00033 lbs/hp-hr (=0.15 gm/hp-hr / 453.6)
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	0.966 lbs/hour
	Emission Limit	ton/year	0.048 ton/year
Particulate Matter as PM_{10} Emissions	Emission Factor (with units)	*(insert units)*	0.00033 lbs/hp-hr (=0.15gm/hp-hr / 453.6)
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	0.966 lbs/hour
	Emission Limit	ton/year	0.048 ton/year
Particulate Matter as $PM_{2.5}$ Emissions	Emission Factor (with units)	*(insert units)*	0.00033 lbs/hp-hr (=0.15 gm/hp-hr / 453.6
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	0.966 lbs/hour
	Emission Limit	ton/year	0.048 ton/year
Sulfur Dioxide (SO_2) Emissions	Emission Factor (with units)	*(insert units)*	0.001515 lbs/MMBtu (=0.0015 wt%S x 1.01)
	Emission Factor Reference		EPA AP-42, Section 3.4, S=15ppm = 0.0015%
	Emission Limit	pound/hour	0.032 lbs/hour
	Emission Limit	ton/year	0.0016 ton/year
Oxides of Nitrogen (NO_X) Emissions	Emission Factor (with units)	*(insert units)*	0.00992 lbs/hp-hr (=4.5 gm/hp-hr / 453.6)
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	28.99 lbs/hour
	Emission Limit	ton/year	0.0016 ton/year
Carbon Monoxide (CO) Emissions	Emission Factor (with units)	*(insert units)*	0.005732lbs/hp-hr (=2.6 gm/hp-hr / 453.6)
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	16.75 lbs/hr
	Emission Limit	ton/year	0.84 ton/year

Appendix 3: Example Cont'd
COMBUSTION EQUIPMENT APPLICATION FORM
CLASS II OPERATING PERMIT (continued)

Emission Unit Description: **System 2 - Emergency Diesel Generator**

Description			Data
Volatile Organic Compounds (VOC) Emissions	Emission Factor (with units)	*(insert units)*	0.00066 lbs/hp-hr (=0.3 gm/hp-hr / 453.6)
	Emission Factor Reference		EPA Tier 2 Standards
	Emission Limit	pound/hour	1.93 lbs/hour
	Emission Limit	ton/year	0.10 ton/year
Hazardous Air Pollutants (HAPs) Emissions *Specify Each*	Emission Factor (with units)	*(insert units)*	See Spreadsheet; Multiple HAPs
	Emission Factor Reference		AP-42, Section 3.4
	Emission Limit	pound/hour	0.0783 lbs/hour
	Emission Limit	ton/year	0.0039 ton/year
Greenhouse Gases (CO_{2e}) Emissions	Emission Factor (with units)	*(insert units)*	See Spreadsheet; Multiple GHG's
	Emission Factor Reference		EPA GHG Factors, 40 CFR Part 98, Subpart C
	Emission Limit	pound/hour	3,451.5 lbs/hour
	Emission Limit	ton/year	172.6 ton/year
Other Pollutants	Pollutant Name		N/A
	Emission Factor (with units)	*(insert units)*	N/A
	Emission Factor Reference		N/A
	Emission Limit	pound/hour	N/A
	Emission Limit	ton/year	N/A

Appendix 4: Example of Emission Limit Calculations for Conveyor Transfer Points

Unit Description		Location UTM (Zone 11, NAD 83)		Operating Hours		Throughput			Uncontrolled Emission Factors			Controls		Permit Emission Limit		References	Notes
		North (m)	East (m)	Daily	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lb/hr)	Yearly (ton/yr)		
System 01 - Conveyor Transfer and Loading																	
PF1.001	Loader Transfer to Feed Hopper	4,361,351	361,118	10	2,600	350	100,000	Tons of Rocks	PM	0.0030	lb/ton	Water Sprays	75.0%	0.27	0.038	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing	For each source
PF1.002	Feed Hopper and Transfer to Feed Hopper Conveyor	4,361,351	361,118						PM_{10}	0.0011	lb/ton	Water Sprays	75.0%	0.096	0.014	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing	For each source
PF1.003	Feed Hopper Conveyor and Transfer to Main Conveyor	4,361,351	361,119						$PM_{2.5}$	0.00017	lb/ton	Water Sprays	75.0%	0.015	0.002	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing $PM_{2.5}=(PM_{10})/6.6$	For each source

Formulas Used for Calculating Emission Limits

$$EL_{\frac{lb}{hr}} = (Th_{hour} * EF) * (1 - C_{eff})$$

$$EL_{\frac{ton}{year}} = \frac{(Th_{year} * EF) * (1 - C_{eff})}{2{,}000\,\frac{lb}{ton}}$$

Where:

C_{eff} = *The listed Control Efficiency for a given control and pollutant.*

EF = *The listed Uncontrolled Emission Factor for a given pollutant.*

$EL_{\frac{lb}{hr}}$ = *The requested Permit Emission Limit for a given pollutant in pounds per hour.*

$EL_{\frac{ton}{year}}$ = *The requested Permit Emission Limit for a given pollutant in tons per year.*

Th_{hour} = *The Throughput of Material through the system in tons per hour.*

Th_{year} = *The Throughput of Material through the system in tons per year.*

Example Calculation:

$$EL_{\frac{lb}{hr}} of\ PM = \left(350\ \frac{tons}{hour} * 0.0030\ \frac{lb}{ton}\right) * (1 - 0.750) = 0.263\,\frac{lb}{hour}$$

$$EL_{\frac{ton}{year}} of\ PM = \frac{100{,}000\,\frac{tons}{year} * 0.0030\,\frac{lb}{ton} * (1 - 0.750)}{2{,}000\,\frac{lb}{ton}} = 0.0375\ \frac{ton}{year}$$

Notes: The end result emission limits were intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this example $C_{eff} = 75.0\% = 0.750$.

Appendix 5: Example of Emission Limit Calculations for Non-Metallic Crushing

Unit Description		Location UTM (Zone 11, NAD 83)		Operating Hours		Throughput			Uncontrolled Emission Factors			Controls		Permit Emission Limit		References
		North (m)	East (m)	Daily	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lb/hr)	Yearly (ton/yr)	
System 02 - Cone Crusher																
PF1.004	Cone Crusher Including Transfer in from Conveyor Main Conveyor and Discharge to Conveyor C-1	4,361,342	361,127	10	2,600	350	100,000	Tons of Aggregate	PM	0.0054	lb/ton	Water Sprays	75.0%	0.48	0.068	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing
									PM_{10}	0.0024	lb/ton	Water Sprays	75.0%	0.21	0.030	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing
									$PM_{2.5}$	0.00036	lb/ton	Water Sprays	75.0%	0.032	0.005	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing $PM_{2.5}=(PM_{10})/6.6$

Formulas for calculating Emission Limits

$$EL_{\frac{lb}{hr}} = (Th_{hour} * EF) * (1 - C_{eff})$$

$$EL_{\frac{ton}{year}} = \frac{(Th_{year} * EF) * (1 - C_{eff})}{2{,}000\ \frac{lb}{ton}}$$

Where:

C_{eff} = *The listed Control Efficiency for a given control and pollutant.*

EF = *The listed Uncontrolled Emission Factor for a given pollutant.*

$EL_{\frac{lb}{hr}}$ = *The requested Permit Emission Limit for a given pollutant in pounds per hour.*

$EL_{\frac{ton}{year}}$ = *The requested Permit Emission Limit for a given pollutant in tons per year.*

Th_{hour} = *The Throughput of Material through the crusher in tons per hour.*

Th_{year} = *The Throughput of Material through the crusher in tons per year.*

Example Calculation:

$$EL_{\frac{lb}{hr}} of\ PM = \left(350\ \frac{tons}{hour} * 0.0054\ \frac{lb}{ton}\right) * (1 - 0.750) = 0.473\ \frac{lb}{hour}$$

$$EL_{\frac{ton}{year}} of\ PM = \frac{100{,}000\ \frac{tons}{year} * 0.0054\ \frac{lb}{ton} * (1 - 0.750)}{2{,}000\ \frac{lb}{ton}} = 0.068\ \frac{ton}{year}$$

Notes: The end result emission limits were intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this example $C_{eff} = 75.0\% = 0.750$

Appendix 6: Example of Emission Limit Calculations for Non-Metallic Screening

Unit Description		Location UTM (Zone 11, NAD 83)		Operating Hours		Throughput			Uncontrolled Emission Factors			Controls		Permit Emission Limit		References
		North (m)	East (m)	Daily	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lb/hr)	Yearly (ton/yr)	
System 03 - Screen																
PF1.005	Screen Including Transfer in from Conveyor C-1 and Discharge to Conveyor C-2 and Crusher Feed Conveyor C-3	4,361,351	361,128	10	2,600	350	100,000	Tons of Aggregate	PM	0.025	lb/ton	Water Sprays	75.0%	2.19	0.32	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing
									PM_{10}	0.0087	lb/ton	Water Sprays	75.0%	0.76	0.11	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing
									$PM_{2.5}$	0.00132	lb/ton	Water Sprays	75.0%	0.12	0.017	AP-42, Ch. 11.19.2 Crushed Stone and Pulverized Mineral Processing $PM_{2.5}=(PM_{10})/6.6$

Formulas Used for Calculating Emission Limits

$$EL_{\frac{lb}{hr}} = (Th_{hour} * EF) * (1 - C_{eff})$$

$$EL_{\frac{ton}{year}} = \frac{(Th_{year} * EF) * (1 - C_{eff})}{2{,}000\,\frac{lb}{ton}}$$

Where:

C_{eff} = *The listed Control Efficiency for a given control and pollutant .*

EF = *The listed Uncontrolled Emission Factor for a given pollutant.*

$EL_{\frac{lb}{hr}}$ = *The requested Permit Emission Limit for a given pollutant in pounds per hour.*

$EL_{\frac{ton}{year}}$ = *The requested Permit Emission Limit for a given pollutant in tons per year.*

Th_{hour} = *The Throughput of Material through the screen in tons per hour.*

Th_{year} = *The Throughput of Material through the screen in tons per year.*

Example Calculation:

$$EL_{\frac{lb}{hr}} of\ PM = \left(350\ \frac{tons}{hour} * 0.025\ \frac{lb}{ton}\right) * (1 - 0.750) = 2.188\,\frac{lb}{hour}$$

$$EL_{\frac{ton}{year}} of\ PM = \frac{100{,}000\,\frac{tons}{year} * 0.025\,\frac{lb}{ton} * (1 - 0.750)}{2{,}000\,\frac{lb}{ton}} = 0.313\ \frac{ton}{year}$$

Notes: The end result emission limits were intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this example $C_{eff} = 75.0\% = 0.750$.

Appendix 7: Example of Emission Limit Calculations for Baghouse Controlled System

Unit Description		Location UTM (Zone 11, NAD 83)		Stack Parameters		Operating Hours		Throughput			Emission Factors			Controls	Permit Emission Limit		References	Notes
		North (m)	East (m)			Daily	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Type	Hourly (lb/hr)	Yearly (ton/yr)		
System 04 - Three Roll Crusher																		
S2.001	Crusher Feed Conveyor C-3	4,410,203	331,732	Height (ft):	24	24	8,400	40	336,000	Tons of Agg.	PM	0.02	gr/dscf	Baghouse BH-1	0.43	1.80	BAPC Default Value: Baghouse Grain Loading	Emissions are Combined
S2.002	Three Roll Crusher Including Transfer in from Crusher Feed Conveyor C-3 and Discharge to Crusher Discharge Conveyor C-4	4,410,203	331,732	Diameter (ft):	1.03						PM_{10}	0.02	gr/dscf	Baghouse BH-1	0.43	1.80	BAPC Default Value: Baghouse Grain Loading	Emissions are Combined
S2.003	Crusher Discharge Conveyor C-4 and Discharge to Crusher Transfer Conveyor C-5	4,410,203	331,732	Temp (°F):	Ambient						$PM_{2.5}$	0.02	gr/dscf	Baghouse BH-1	0.43	1.80	PM 2.5 is assumed to be equal to PM 10	Emissions are Combined
S2.004	Crusher Transfer Conveyor C-5 and Discharge to Kiln Hopper Feed Conveyor C-6	4,410,203	331,732	Exit Vel (fps):	41.7													
				Vol (ACFM):	2084.7													
				Vol (DSCFM):	2500.0													

Formulas Used for Calculating Emission Limits

$$EL_{\frac{lb}{hr}} = \left(FR\frac{DSCF}{min} * EF\frac{gr}{DSCF}\right) * 60\frac{min}{hour} * \frac{1\ lb}{7{,}000\ gr}$$

$$EL_{\frac{ton}{year}} = \left(FR\frac{DSCF}{min} * EF\frac{gr}{DSCF}\right) * 60\frac{min}{hour} * \frac{1\ lb}{7{,}000\ gr} * t_{year} * \frac{1\ ton}{2{,}000\ lb}$$

Where:

$EF = The\ listed\ Emission\ Factor\ for\ a\ given\ pollutant\ in\ grains\ per\ dry\ standard\ cubic\ feet.$

$EL_{\frac{lb}{hr}} = The\ requested\ Permit\ Emission\ Limit\ for\ a\ given\ pollutant\ in\ pounds\ per\ hour.$

$EL_{\frac{ton}{year}} = The\ requested\ Permit\ \ Emission\ Limit\ for\ a\ given\ pollutant\ in\ tons\ per\ year.$

$FR_{\frac{DSCF}{min}} = The\ requested\ Baghouse\ Stack\ Exit\ Flow\ Rate\ in\ dry\ standard\ cubic\ feet\ per\ minute.$

$t_{year} = The\ requested\ operating\ hours\ per\ year.$

Example Calculation:

$$EL_{\frac{lb}{hr}} = \left(2,500\frac{DSCF}{min} * 0.02\frac{gr}{DSCF}\right) * 60\frac{min}{hour} * \frac{1\ lb}{7,000\ gr} = 0.429\frac{lb}{hr}$$

$$EL_{\frac{ton}{year}} = \left(2,500\frac{DSCF}{min} * 0.02\frac{gr}{DSCF}\right) * 60\frac{min}{hour} * \frac{1\ lb}{7,000\ gr} * 8,400\frac{hr}{year} * \frac{1\ ton}{2,000\ lb} = 1.80\frac{ton}{year}$$

Notes: The end result emission limits may be intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this calculation, the ratio $\frac{1\ lb}{7,000\ gr}$ is a conversion factor of 7,000 grains in one pound of material.

gr = grain

Appendix 8: Example of Emission Limit Calculations for Cooling Towers

Unit Description		Location UTM (Zone 11, NAD 83)		Operating Hours		Throughput			Uncontrolled Emission Factors			Controls		Permit Emission Limit		References
		North (m)	East (m)	Daily	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Type	Efficiency	Hourly (lb/hr)	Yearly (ton/yr)	
System 05 - Cooling Tower																
S2.005	Cooling Tower #2	4,380,808	281,830	24	8,760	630,000	5,518,800,000	Gallon of Water	PM	0.00459	lb/1000 gallon	Drift Eliminator	75.0%	0.73	3.17	AP-42 Ch. 13.4 (See attached calculations)
									PM_{10}	0.00459	lb/1000 gallon	Drift Eliminator	75.0%	0.73	3.17	AP-42 Ch. 13.4 (See attached calculations)
				Maximum Throughput Rate (gal/min)	10,500				$PM_{2.5}$	0.00459	lb/1000 gallon	Drift Eliminator	75.0%	0.73	3.17	AP-42 Ch. 13.4 (See attached calculations)
				Drift Loss (%)	0.005%											
				Total Dissolved Solids (ppmw)	2,750											

Data given by Applicant for the Cooling Tower (as shown in Table A5):

Drift Loss $= D_{loss} = 0.005\% = 0.00005$

Maximum Water Throughput Rate (or Maximum Water recirculation Rate) $= WTR = 10{,}500 \frac{gal}{min} = 630{,}000 \frac{gal}{hour} = 5{,}518{,}800{,}000 \frac{gal}{year}$

Total Dissolved Solids $= TDS = 2{,}750$ ppmw

Formulas Used for Calculating Emission Limits

$$EF_{PM10} = \frac{TLDL}{100\%} * \frac{lb\ TDS}{10^6\ lb\ drift} * \frac{8.34\ lb\ water}{gallon\ water}$$

$$D_{uncontrolled} = \frac{D_{loss}}{TLDL}$$

$$EL_{PM10\ \frac{lb}{hr}} = EF_{PM10} * WTR * \frac{60\ min}{hour} * D_{uncontrolled}$$

$$EL_{PM10\ \frac{ton}{year}} = \frac{EL_{PM10\ \frac{lb}{hr}} * t_{year}}{2{,}000\ \frac{lb}{ton}}$$

$$EL_{PM10\ \frac{lb}{year}} = EL_{PM10\ \frac{lb}{hr}} * t_{year}$$

Where:

$D_{uncontrolled} = Tower\ Uncontrolled\ Drift.$

$D_{loss} = Drift\ Loss\ expressed\ as\ a\ percent, is\ provided\ by\ Permittee.$

$EF_{PM10} = The\ Total\ Uncontrolled\ Emission\ Factor\ for\ PM_{10}\ in\ pounds\ per\ 1{,}000\ gallons\ of\ water\ recirculated.$

$EL_{PM10\ \frac{lb}{hr}} = The\ Requested\ Permit\ Emission\ Limit\ for\ PM_{10}\ in\ pounds\ per\ hour.$

$EL_{PM10\ \frac{lb}{year}} = The\ Requested\ Permit\ Emission\ Limit\ for\ PM_{10}\ in\ pounds\ per\ year.$

$EL_{PM10\ \frac{ton}{year}} = The\ Requested\ Permit\ Emission\ Limit\ for\ PM_{10}\ in\ tons\ per\ year.$

$t_{year} = The\ requested\ operating\ hours\ in\ hours\ per\ year.$

$TDS = Total\ Disolved\ Solids\ in\ parts\ per\ million\ by\ weight.$

$TLDL = The\ Total\ Liquid\ Drift\ Loss\ expressed\ as\ a\ percent\ (from\ AP\ 42\ Ch.\ 13.4\ Wet\ Cooling\ Towers, Table\ 13.4-1).$

$WTR = The\ Maximum\ Water\ Throughput\ Rate\ in\ gallon\ per\ minute, gallon\ per\ hour, or\ gallon\ per\ year.$

Example Calculation:

$$EF_{PM10} = 0.00020 * \frac{2,750\ lb\ TDS}{10^6\ lb\ drift} * \frac{8.34\ lb\ water}{gal\ water} = 0.00459 \frac{lb\ TDS}{1000\ gal} = 0.00459 \frac{lb\ PM_{10}}{1000\ gal}$$

$$D_{uncontrolled} = \frac{0.005\%}{0.020\%} = 0.25$$

$$EL_{PM10\ \frac{lb}{hr}} = 0.00459 \frac{lb\ PM_{10}}{1000\ gal} * 10,500 \frac{gal}{min} * \frac{60\ min}{hour} * 0.25 = 0.723 \frac{lb}{hour}$$

$$EL_{PM10\ \frac{ton}{year}} = \frac{0.723 \frac{lb}{hour} * 8,760 \frac{hour}{year}}{2,000 \frac{lb}{ton}} = 3.167 \frac{ton}{year}$$

$$EL_{PM10\ \frac{ton}{year}} = 0.724\ \frac{lb}{hour} * 8,760 \frac{hours}{year} = 6,340\ \frac{lb}{year}$$

Notes: The end result emission limits may be intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this calculation TLDL = 0.020% = 0.00020.

With cooling towers, all particulate matter is assumed to be equal to PM_{10}, thus PM = PM_{10} = $PM_{2.5}$.

If the Applicant does not provide the Drift Loss percentage (D_{loss}), then D_{loss} defaults to an assumed value of 0.020% and $D_{uncontrolled} = \frac{0.020\%}{0.020\%} = 1$.

If $EL_{PM10\ \frac{lb}{year}}$ is less than4,000 $\frac{lb}{year}$, then the Applicant may request a determination by the BAPC that the unit be considered an Insignificant Activity.

If $EL_{PM10\ \frac{lb}{year}}$ is greater than4,000 $\frac{lb}{year}$, then the cooling tower may not be considered an Insignificant Activity and must be a permitted system.

Appendix 9: Example of Emission Limit Calculations for Drying Oven Combined Emissions

Unit Description		Location UTM (Zone 11, NAD 83)		Stack Parameters		Operating Hours		Heat Input (MMBtu)		Fuel Usage/Throughput			Uncontrolled Emission Factors			Emission Rate		References
		North (m)	East (m)			Daily	Annual	Hour	Annual	Hour	Annual	Units	Pollutant	Factor	Unit	Hourly (lb/hr)	Yearly (ton/yr)	
System 06 - Industrial Drying Oven (Throughput of Metallic Ore)																		
S2.006	1.5 MMBtu/hr Drying Oven and Discharge to Supersacks	4,380,808	281,830	Height (ft):	54	24	6,000			5	30,000	Tons of Metallic Ore	PM	0.12	lb/ton	0.600	1.800	AP-42, Ch. 11.24, Table 11.24-2
				Diameter (ft):	2								PM_{10}	0.06	lb/ton	0.300	0.900	AP-42, Ch. 11.24, Table 11.24-2
				Temp (°F):	150								$PM_{2.5}$	0.009	lb/ton	0.045	.135	AP-42, Ch. 11.24, Table 11.24-2
				Vol (DSCFM):	24500													
System 06 - Industrial Drying Oven (Combustion)																		
S2.006	1.5 MMBtu/hr Drying Oven and Discharge to Supersacks	4,380,808	281,830	Height (ft):	54	24	6,000	1.50	8,996.4	1,470	8,820,000	Cubic Feet of Natural Gas	PM	7.60	lb/10^6 scf	0.011	0.034	AP-42 Ch. 1.4 Table 1.4-2
				Diameter (ft):	2								PM_{10}	7.60	lb/10^6 scf	0.011	0.034	Assume $PM=PM_{10}$
				Temp (°F):	150								$PM_{2.5}$	7.60	lb/10^6 scf	0.011	0.034	Assume $PM=PM_{2.5}$
				Vol (DSCFM):	24500								SO2	0.60	lb/10^6 scf	0.001	0.003	AP-42 Ch. 1.4 Table 1.4-2
													NOX	100.00	lb/10^6 scf	0.147	0.441	AP-42 Ch. 1.4 Table 1.4-1
													CO	84.00	lb/10^6 scf	0.123	0.370	AP-42 Ch. 1.4 Table 1.4-1
													VOC	5.50	lb/10^6 scf	0.008	0.024	AP-42 Ch. 1.4 Table 1.4-2
													HAPS			0.00000007	0.00000022	AP-42 Ch. 1.4 Table 1.4-3
													CO2e			175.53	526.39	AP-42 Ch. 1.4 Table 1.4-2

Total Permitted Emission Limits for System 06 - Industrial Drying Oven

Pollutant	PM	PM10	PM2.5	SO2	NOX	CO	VOC	HAPS	CO2e
Hourly (lb/hr)	**0.611**	**0.311**	**0.461**	**0.001**	**0.147**	**0.123**	**0.008**	**0.000**	**175.533**
Yearly (ton/year)	**1.834**	**0.934**	**1.384**	**0.003**	**0.441**	**0.370**	**0.024**	**0.000**	**526.389**

Formulas Used for Calculating Emission Limits

$$ER_{Th\frac{lb}{hr}} = (Th_{hour} * EF_{Th}) * (1 - C_{eff}) \qquad ER_{Th\frac{ton}{year}} = \frac{(Th_{year} * EF_{Th}) * (1 - C_{eff})}{2{,}000\frac{lb}{ton}}$$

$$ER_{C\frac{lb}{hr}} = (FC_{Hour} * EF_{C}) * (1 - C_{eff}) \qquad ER_{C\frac{ton}{year}} = \frac{(FC_{year} * EF_{C}) * (1 - C_{eff})}{2{,}000\frac{lb}{ton}}$$

$$EL_{\frac{lb}{hr}} = ER_{Th\frac{lb}{hr}} + ER_{C\frac{lb}{hr}} \qquad EL_{\frac{ton}{year}} = ER_{Th\frac{ton}{year}} + ER_{C\frac{ton}{year}}$$

Where:

C_{eff} = The listed Control Efficiency for a given control and pollutant.

$EL_{\frac{lb}{hr}}$ = The requested Permit Emission Limit for a given pollutant in pounds per hour.

$EL_{\frac{ton}{year}}$ = The requested Permit Emission Limit for a given pollutant in tons per year.

EF_{Th} = The listed Uncontrolled Emission Factor for a given pollutant for the throughput of material through the Drying Oven.

EF_{C} = The listed Uncontrolled Emission Factor for a given pollutant for the combustion within Drying Oven.

$ER_{Th\frac{lb}{hr}}$ = The calculated Emission Rate for a given pollutant from the throughput of material through the Drying Oven, in pounds per hour.

$ER_{Th\frac{ton}{year}}$ = The calculated Permit Emission Rate for a given pollutant from the throughput of material through the Drying Oven, in tons per year.

$ER_{C\frac{lb}{hr}}$ = The calculated Emission Rate for a given pollutant from combustion within Drying Oven, in pounds per hour.

$ER_{C\frac{ton}{year}}$ = The calculated Emission Rate for a given pollutant from combustion within Drying Oven, in tons per year.

FC_{hour} = The Fuel Combustion rate in units of volume per hour. The units for FC will vary depending on the type of fuel being combusted.

FC_{year} = The Fuel Combustion rate in units of volume per year.

Th_{hour} = The throughput of ore through the drying oven in tons per hour.

Th_{year} = The throughput of ore through the drying oven in tons per year.

Note: For default Heat Content Values see Chapter 5.1.3 For Reciprocating Internal Combustion Engines (RICE) Only.

Example Calculation:

$$ER_{Th\,\frac{lb}{hr}}\ for\ PM = \left(5\,\frac{ton}{hour} * 0.12\,\frac{lb}{ton}\right) * (1-0) = 0.600\,\frac{lb}{hour}$$

$$ER_{Th\,\frac{ton}{year}}\ for\ PM = \frac{(30{,}000\,\frac{ton}{year} * 0.12\,\frac{lb}{ton}) * (1-0)}{2{,}000\,\frac{lb}{ton}} = 1.800\,\frac{ton}{year}$$

$$ER_{C\,\frac{lb}{hr}}\ for\ PM = (1{,}470\,\frac{cubic\ feet}{hour} * \frac{7.6\ lb}{10^6\ cubic\ feet}) * (1-0) = 0.011\,\frac{lb}{hour}$$

$$ER_{C\,\frac{ton}{year}}\ for\ PM = \frac{(8{,}820{,}000\,\frac{cubic\ feet}{year} * \frac{7.6\ lb}{10^6\ cubic\ feet}) * (1-0)}{2{,}000\,\frac{lb}{ton}} = 0.034\,\frac{ton}{year}$$

$$EL_{\frac{lb}{hr}}\ for\ PM = 0.011\,\frac{lb}{hour} + 0.60\,\frac{lb}{hour} = 0.611\,\frac{lb}{hour}$$

$$EL_{\frac{ton}{year}}\ for\ PM = 1.800\,\frac{ton}{year} + 0.034\,\frac{ton}{year} = 1.834\,\frac{ton}{year}$$

Notes: The end result emission limits may be intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this example the system is uncontrolled so $C_{eff} = 0$.

Appendix 10: Example of Emission Limit Calculations for Reciprocating Internal Combustion Engines (RICE)

Unit Description		Location UTM (Zone 11, NAD 83)		Stack Parameters		Operating Hours		Fuel Usage			Heat Input (MMBtu)		Power Output		Uncontrolled Emission Factors			Permit Emission Limit		References
		North (m)	East (m)			Daily	Annual	Hour	Annual	Units	Hour	Annual	Amount	Units	Pollutant	Factor	Unit	Hourly (lb/hr)	Yearly (ton/yr)	
System 07 - Diesel Generator																				
S2.007	2.944 HP Caterpillar Diesel Generator, Model #3516C, Mfd. in 2014	4,424,999	399,999	Height (ft):	12	24	8,760	139.5	1,222,020	Gallon of Diesel	19.53	171082.8	2,944	HP	PM	0.000027	lb/hp-hr	0.080	0.35	Manufacturer's Guarantee
				Diameter (ft):	1										PM10	0.000027	lb/hp-hr	0.080	0.35	Manufacturer's Guarantee
				Temp (°F):	920.6										PM2.5	0.000027	lb/hp-hr	0.080	0.35	Assume PM10 = PM2.5
				Exit Vel (fps):	345.9										SO2	0.000012	lb/hp-hr	0.036	0.16	AP-42 Table 3.4-1. Sulfur content 0.0015%
				Vol (ACFM):	16,301										NOX	0.00086	lb/hp-hr	2.54	11.13	Manufacturer's Guarantee
															CO	0.000054	lb/hp-hr	0.16	0.70	Manufacturer's Guarantee
															VOC	0.000017	lb/hp-hr	0.050	0.22	Manufacturer's Guarantee
															HAPS			0.085	0.373	
															CO2e			3,222.79	14115.83	

Appendix 10 - Page 2 of 2

Formulas Used for Calculating Emission Limits

$$EL_{\frac{lb}{hr}} = (HP * EF) * (1 - C_{eff}) \qquad EL_{\frac{ton}{year}} = \frac{(HP*EF)*(1-C_{eff})*t_{year}}{2{,}000\,\frac{lb}{ton}}$$

Where:

C_{eff} = *The listed Control Efficiency for a given control and pollutant .*

EF = *The listed Uncontrolled Emission Factor for a given pollutant in pounds per horsepower hour.*

$EL_{\frac{lb}{hr}}$ = *The requested Permit Emission Limit for a given pollutant in pounds per hour.*

$EL_{\frac{ton}{year}}$ = *The requested Permit Emission limit for a given pollutant in tons per year.*

HP = *The power output for the system in horsepower.*

t_{year} = *The requested operating hours in hours per year.*

Example Calculation:

$$EL_{\frac{lb}{hr}} = \left(2{,}944\ hp * 0.0000272\,\frac{lb}{hp-hr}\right) * (1-0) = 0.080\ \frac{lb}{hr}$$

$$EL_{\frac{ton}{year}} = \frac{\left(2{,}944\ hp * 0.0000272\,\frac{lb}{hp-hr}\right) * (1-0) * 8{,}760\ \frac{hr}{year}}{2{,}000\ \frac{lb}{ton}} = 0.350\ \frac{ton}{year}$$

Notes: The end result emission limits may be intentionally rounded up in the table so that all emissions were included, even when the answer is held to two significant figures.

In this example the system is uncontrolled so $C_{eff} = 0$.

The SO_2 emission limit of an engine is dependent on the sulfur content of the fuel. The fuel distribute should provide the sulfur content of the fuel.

Appendix 11: Frequently Used SCC Codes

Activity	Source Classification Code Description	Source Classification Code Numbers
Truck Unloading to Hopper with Vibrating or Non-Vibrating Grizzly and Rock Breaker	Miscellaneous Operations: Screen/Convey/Handling	3-05-020-06
	Material Handling: Low Moisture Ore	3-03-024-04
	Material Handling: High Moisture Ore	3-03-024-08
Primary Crushing and Associated Transfers In or Out (Outlet Material ≥ 4 inches diameter)	Tertiary Crushing/Screening	3-05-020-03
	Primary Crushing: Low Moisture Ore	3-03-024-01
	Primary Crushing: High Moisture Ore	3-03-024-05
Screening and Associated Transfers In or Out	Secondary Crushing/Screening	3-05-020-02
	Tertiary Crushing/Screening	3-05-020-03
Secondary Crushing and Associated Transfer In or Out (Outlet Material 1 inch ≤ x < 4 inches diameter)	Tertiary Crushing/Screening	3-05-020-03
	Secondary Crushing: Low Moisture Ore	3-03-024-02
	Tertiary Crushing: Low Moisture Ore	3-03-024-03
	Secondary Crushing: High Moisture Ore	3-03-024-06
Tertiary Crushing and Associated Transfer In or Out (Outlet Material < 1 inch diameter)	Tertiary Crushing/Screening	3-05-020-03
	Tertiary Crushing: Low Moisture Ore	3-03-024-03
	Tertiary Crushing: High Moisture Ore	3-03-024-07
Conveyor to Conveyor Transfer	Miscellaneous Operations: Screen/Convey/Handling	3-05-020-06
	Material Handling: Low Moisture Ore	3-03-024-04
	Material Handling: High Moisture Ore	3-03-024-08
Conveyor to Storage Pile or Other Pile	Miscellaneous Operations: Screen/Convey/Handling	3-05-020-06
	Material Handling: Low Moisture Ore	3-03-024-04
	Material Handling: High Moisture Ore	3-03-024-08
	Miscellaneous Operations: Screen/Convey/Handling	3-05-020-06
Lime Silo Loading	Lime Silos	3-05-016-13
	Lime Silos	3-05-016-13
Lime Silo Unloading	Product Transfer and Conveying	3-05-016-15
	Product Transfer and Conveying	3-05-016-15
Prill Silo Loading	Ammonium Nitrate Production Bulk Loading (General)	3-01-027-09

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Prill Silo Unloading	Ammonium Nitrate Production Bulk Loading (General)	3-01-027-09
General Silo Loading (Excluding Lime and Prill)	Cement Unloading to Elevated Storage Silo	3-05-011-07
	Cement Unloading to Elevated Storage Silo	3-05-011-07
	Cement Supplement Unloading to Elevated Storage Silo	3-05-011-17
	Cement Supplement Unloading to Elevated Storage Silo	3-05-011-17
General Silo Unloading (Excluding Lime and Prill)	Weight Hopper Loading of Sand and Aggregate	3-05-011-08
	Weight Hopper Loading of Sand and Aggregate	3-05-011-08
Batch Plants - Mixer Truck Loading	Loading of Transit Mix Truck	3-05-011-10
	Loading of Transit Mix Truck	3-05-011-10
Batch Plants - Central Mixer Loading	Mixer Loading of Cement/Sand/Aggregate	3-05-011-09
	Mixer Loading of Cement/Sand/Aggregate	3-05-011-09
Cooling Towers	Mechanical Draft	3-85-001-01
	Natural Draft	3-85-001-02
Coal Handling	Coal Mining, Cleaning, and Material Handling Truck Unloading: End Dump - Coal	3-05-010-40
	Coal Mining, Cleaning, and Material Handling Coal Transfer	3-05-010-11
	Coal Mining, Cleaning, and Material Handling Continuous Carrier/Conveyor	3-05-010-06
Fuel Oil Combustion Boilers > 100 Million Btu/hr	External Combustion Boilers Electric Generation Residual Oil Grade 6 Oil: Normal Firing	1-01-004-01
	External Combustion Boilers Industrial Residual Oil Grade 6 Oil	1-02-004-01
	External Combustion Boiler Commercial/Institutional Residual Oil Grade 6 Oil	1-03-004-01
	External Combustion Boilers Electric Generation Residual Oil Grade 6 Oil: Tangential Firing	1-01-004-04
	External Combustion Boilers Electric Generation Residual Oil Grade 5 Oil: Normal Firing	1-01-004-05

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Fuel Oil Combustion Boilers > 100 Million Btu/hr	External Combustion Boilers Industrial Residual Oil Grade 5 Oil	1-02-004-04
	External Combustion Boilers Electric Generation Residual Oil Grade 5 Oil: Tangential Firing	1-01-004-06
	External Combustion Boilers Electric Generation Distillate Oil Grade 4 Oil: Normal Firing	1-01-005-04
	External Combustion Boilers Industrial Distillate Oil Grade 4 Oil	1-02-005-04
	External Combustion Boilers Electric Generation Distillate Oil Grade 4 Oil: Tangential Firing	1-01-005-05
	External Combustion Boilers Electric Generation Distillate Oil Grade 1 and 2 Oil	1-01-005-01
	External Combustion Boiler Industrial Distillate Oil Grade 1 and 2 Oil	1-02-005-01
	External Combustion Boiler Commercial/Institutional Distillate Oil Grade 1 and 2 Oil	1-03-005-01
Fuel Oil Combustion Boilers < 100 Million Btu/hr	External Combustion Boiler Industrial Residual Oil 10-100 Million Btu/hr	1-02-004-02
	External Combustion Boiler Industrial Residual Oil < 10 Million Btu/hr	1-02-004-03
	External Combustion Boiler Commercial/Institutional Residual Oil 10-100 Million Btu/hr	1-03-004-02
	External Combustion Boiler Commercial/Institutional Residual Oil < 10 Million Btu/hr	1-03-004-03
	External Combustion Boiler Commercial/Institutional Residual Oil Grade 5 Oil	1-03-004-04
	External Combustion Boiler Commercial/Institutional Distillate Oil Grade 4 Oil	1-03-005-04
	External Combustion Boiler Industrial Distillate Oil 10-100 Million Btu/hr	1-02-005-02

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Fuel Oil Combustion Boilers < 100 Million Btu/hr	External Combustion Boiler Industrial Distillate Oil < 10 Million Btu/hr	1-02-005-03
	External Combustion Boiler Commercial/Institutional Distillate Oil 10-100 Million Btu/hr	1-03-005-02
	External Combustion Boiler Commercial/Institutional Distillate Oil < 10 Million Btu/hr	1-03-005-03
	Residential Furnace Distillate Oil	2-10-400-40
	Residential Furnace Kerosene	2-10-401-10
Natural Gas Combustion Large Wall-Fired Boilers > 100 Million Btu/hr	External Combustion Boiler Electric Generation Natural Gas > 100 Million BTU/hr except Tangential	1-01-006-01
	External Combustion Boiler Industrial Natural Gas > 100 Million BTU/hr	1-02-006-01
	External Combustion Boiler Commercial/Institutional Natural Gas > 100 Million BTU/hr	1-03-006-01
Natural Gas Combustion Small Boilers < 100 Million Btu/hr	External Combustion Boiler Electric Generation Natural Gas < 100 Million BTU/hr except Tangential	1-01-006-02
	External Combustion Boiler Industrial Natural Gas 10-100 Million BTU/hr	1-02-006-02
	External Combustion Boiler Commercial/Institutional Natural Gas 10-100 Million BTU/hr	1-03-006-02
	External Combustion Boiler Commercial/Institutional Natural Gas < 10 Million BTU/hr	1-03-006-03
Natural Gas Combustion Tangential-Fired Boilers (All Sizes)	External Combustion Boiler Electric Generation Natural Gas Tangentially Fired Units	1-01-006-04
Butane Gas Combustion Boilers	External Combustion Boiler Industrial Liquefied Petroleum Gas (LPG) Butane	1-02-010-01
	External Combustion Boiler Commercial/Institutional Liquefied Petroleum Gas (LPG) Butane	1-03-010-01

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Propane Gas Combustion Boilers	External Combustion Boiler Industrial Liquefied Petroleum Gas (LPG) Propane	1-02-010-02
	External Combustion Boiler Commercial/Institutional Liquefied Petroleum Gas (LPG) Propane	1-03-010-02
Stationary Gas Turbines	Internal Combustion Engines Electric Generation Natural Gas Turbine	2-01-002-01
	Internal Combustion Engines Industrial Natural Gas Turbine	2-02-002-01
	Internal Combustion Engines Industrial Natural Gas Turbine: Cogeneration	2-02-002-03
	Internal Combustion Engines Commercial/Institutional Natural Gas Turbine	2-03-002-02
	Internal Combustion Engines Commercial/Institutional Natural Gas Turbine: Cogeneration	2-03-002-03
	Internal Combustion Engines Electric Generation Distillate Oil (Diesel)Turbine	2-01-001-01
	Internal Combustion Engines Industrial Distillate Oil (Diesel) Turbine	2-02-001-01
	Internal Combustion Engines Industrial Distillate Oil (Diesel) Turbine: Cogeneration	2-02-001-03
	Internal Combustion Engines Commercial/Institutional Distillate Oil (Diesel) Turbine	2-03-001-02
	Internal Combustion Engines Commercial/Institutional Landfill Gas Turbine	2-03-008-01
	Internal Combustion Engines Commercial/Institutional Digester Gas Turbine	2-03-007-01
Natural Gas-Fired Reciprocating Engines	Internal Combustion Engines Industrial Natural Gas 2-cycle Lean Burn	2-02-002-52

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Natural Gas-Fired Reciprocating Engines	Internal Combustion Engines Industrial Natural Gas 4-cycle Rich Burn	2-02-002-53
	Internal Combustion Engines Industrial Natural Gas 4-cycle Lean Burn	2-02-002-54
Gasoline and Diesel Industrial Engines	Internal Combustion Engines Industrial Gasoline Reciprocating	2-02-003-01
	Internal Combustion Engines commercial/Institutional Gasoline Reciprocating	2-03-003-01
	Internal Combustion Engines Industrial Distillate Oil (Diesel) Reciprocating	2-02-001-02
	Internal Combustion Engines Commercial/Institutional Distillate Oil (Diesel) Reciprocating	2-03-001-01
Large Stationary Diesel And All Stationary Dual-fuel Engines	Internal Combustion Engines Industrial Large Bore Engine Diesel	2-02-004-01
	Internal Combustion Engines Industrial Large Bore Engine Dual Fuel (Oil/Gas)	2-02-004-02
Surface Coating Operations	Topcoat Application: Dip	4-02-025-23
	Topcoat Application: Spray, High Solids	4-02-025-21
	Prime Coat Application: Spray, High Solids	4-02-025-11
Welding Operations	General	3-09-005-00
	Arc Welding: General	3-09-005-01
	Oxyfuel Welding: Genera	3-09-005-02
Gold Processing	General Processes	3-03-013-01
	Fines Crushing	3-03-013-02
	Autoclave	3-03-013-03
	Cyanide Leaching Process	3-03-013-04
	Carbon Kiln	3-03-013-05
	Pregnant Solution Tank	3-03-013-06
	Electrowinning Cell	3-03-013-07

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Gold Processing	Mercury Retort	3-03-013-08
	Melt Furnace	3-03-013-09
	Quenching	3-03-013-10
	Roasting	3-03-013-11
	Ore Dry Grinding	3-03-013-12
	Ore Preheating	3-03-013-13
	Non-carbon Concentrate Process (Merrill-Crowe)	3-03-013-14
Tanks	Gasoline RVP 13: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	4-04-001-01
	Gasoline RVP 10: Breathing Loss (67000 Bbl Capacity) - Fixed Roof Tank	4-04-001-02
	Gasoline RVP 7: Breathing Loss (67000 Bbl. Capacity) - Fixed Roof Tank	4-04-001-03
	Gasoline RVP 13: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	4-04-001-04
	Gasoline RVP 10: Breathing Loss (250000 Bbl Capacity)-Fixed Roof Tank	4-04-001-05
	Gasoline RVP 7: Breathing Loss (250000 Bbl Capacity) - Fixed Roof Tank	4-04-001-06
	Gasoline RVP 13: Working Loss (Diam. Independent) - Fixed Roof Tank	4-04-001-07
	Gasoline RVP 10: Working Loss (Diameter Independent) - Fixed Roof Tank	4-04-001-08
	Gasoline RVP 7: Working Loss (Diameter Independent) - Fixed Roof Tank	4-04-001-09
	Gasoline RVP 13: Standing Loss (67000 Bbl Capacity)-Floating Roof Tank	4-04-001-10

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Tanks	Gasoline RVP 10: Standing Loss (67000 Bbl Capacity)-Floating Roof Tank	4-04-001-11
	Gasoline RVP 7: Standing Loss (67000 Bbl Capacity)- Floating Roof Tank	4-04-001-12
	Gasoline RVP 13: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	4-04-001-13
	Gasoline RVP 10: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	4-04-001-14
	Gasoline RVP 7: Standing Loss (250000 Bbl Cap.) - Floating Roof Tank	4-04-001-15
	Gasoline RVP 13/10/7: Withdrawal Loss (67000 Bbl Cap.) - Float Rf Tnk	4-04-001-16
	Gasoline RVP 13/10/7: Withdrawal Loss (250000 Bbl Cap.) - Float Rf Tnk	4-04-001-17
	Gasoline RVP 13: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	4-04-001-18
	Gasoline RVP 10: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	4-04-001-19
	Gasoline RVP 7: Filling Loss (10500 Bbl Cap.) - Variable Vapor Space	4-04-001-20
	Diesel Fuel: Standing Loss (Diameter Independent) - Fixed Roof Tank	4-04-001-21
	Diesel Fuel: Working Loss (Diameter Independent) - Fixed Roof Tank	4-04-001-22
	Specify Liquid: Standing Loss - External Floating Roof w/ Primary Seal	4-04-001-30
	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Primary Seal	4-04-001-31

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Tanks	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Primary Seal	4-04-001-32
	Gasoline RVP 7: Standing Loss - External Floating Roof w/ Primary Seal	4-04-001-33
	Specify Liquid: Standing Loss - Ext. Float Roof Tank w/ Second'y Seal	4-04-001-40
	Gasoline RVP 13: Standing Loss - Ext. Floating Roof w/ Secondary Seal	4-04-001-41
	Gasoline RVP 10: Standing Loss - Ext. Floating Roof w/ Secondary Seal	4-04-001-42
	Gasoline RVP 7: Standing Loss - Ext. Floating Roof w/ Secondary Seal	4-04-001-43
	Gasoline RVP 13/10/7: Withdrawal Loss - Ext. Float Roof (Pri/Sec Seal)	4-04-001-48
	Specify Liquid: External Floating Roof (Primary/Secondary Seal)	4-04-001-49
	Miscellaneous Losses/Leaks: Loading Racks	4-04-001-50
	Valves, Flanges, and Pumps	4-04-001-51
	Vapor Collection Losses	4-04-001-52
	Vapor Control Unit Losses	4-04-001-53
	Tank Truck Vapor Leaks	4-04-001-54
	Specify Liquid: Standing Loss - Internal Floating Roof w/ Primary Seal	4-04-001-60
	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Primary Seal	4-04-001-61
	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Primary Seal	4-04-001-62
	Gasoline RVP 7: Standing Loss - Internal Floating Roof w/ Primary Seal	4-04-001-63

Appendix 11: Frequently Used SCC Codes (continued)

Activity	Source Classification Code Description	Source Classification Code Numbers
Tanks	Specify Liquid: Standing Loss - Int. Floating Roof w/ Secondary Seal	4-04-001-70
	Gasoline RVP 13: Standing Loss - Int. Floating Roof w/ Secondary Seal	4-04-001-71
	Gasoline RVP 10: Standing Loss - Int. Floating Roof w/ Secondary Seal	4-04-001-72
	Gasoline RVP 7: Standing Loss - Int. Floating Roof w/ Secondary Seal	4-04-001-73
	Gasoline RVP 13/10/7: Withdrawal Loss - Int. Float Roof (Pri/Sec Seal)	4-04-001-78
	Specify Liquid: Internal Floating Roof (Primary/Secondary Seal)	4-04-001-79

AIR QUALITY
GENERAL PERMIT TO CONSTRUCT/OPERATE
HOT MIX ASPHALT FACILITIES
(For Minor Facilities)

OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
707 NORTH ROBINSON, P. O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

In compliance with the provisions of the Oklahoma Clean Air Act, as amended (Oklahoma Statutes title 27A, §§ 2-5-101 to -118 (Supp. 1998)), and rules promulgated thereunder, operators of hot mix asphalt facilities, as described under Part 1, Section II, are hereby granted permission to construct/operate such facilities as specified in an Authorization to Construct/Operate (hereinafter referred to as an "Authorization") issued under this general permit by the Department of Environmental Quality (DEQ). Parts 1 through 4 and Appendix A and B of this permit specify emissions limitations and standards that constitute applicable air pollution rules, including state-only requirements, and include operational requirements and limitations necessary to assure compliance with all applicable air pollution rules.

The owner or operator of a hot mix asphalt facility may request that the facility be granted an Authorization to Construct/Operate in accordance with this general permit by submitting to the Air Quality Division (AQD) a complete set of General Permit Application Forms for a Hot Mix Asphalt Facility. Eligible facilities may apply for coverage under this permit at any time during the permit term. No source, or part thereof, is authorized to construct/operate pursuant to the terms of this general permit unless an application for an Authorization to Construct using a Notice of Intent form has been received by the AQD, or an Authorization to Construct or Operate has been issued for that source.

This permit shall become effective on December 12, 2002.

Signed and issued this 12th day of December, 2002.

Eddie Terrill, Director, Air Quality Division

NMED Attachment 1

NMED Attachment 1

TABLE OF CONTENTS

NMED Attachment 1

PART 1 - REQUIREMENTS FOR GENERAL PERMITS

This permit is issued for the hot mix asphalt facility source category to establish (A) terms and conditions to implement applicable air pollution rules, (B) terms and conditions to implement applicable air pollution rules for specified categories of changes to those permitted sources, (C) terms and conditions for new requirements that apply to sources with existing permits, and (D) federally-enforceable caps on emissions. The permit is issued after finding that there are several permittees, permit applicants, or potential permit applicants who have the same or substantially similar operations, emissions, activities, or facilities; the permittees, permit applicants, or potential permit applicants emit the same types of regulated air pollutants; the operations, emissions, activities, or facilities are subject to the same or similar standards, limitations, and operating requirements; and the operations, emissions, activities, or facilities are subject to the same or similar monitoring requirements.

SECTION I. AUTHORITY

This permit is developed in accordance with the provisions of OAC 252:100-7-15 and 100-7-18.

SECTION II. ELIGIBILITY

A. This permit is limited to air pollutant emitting sources located at facilities that are designed and operated for the primary purpose of producing hot mix asphalt (HMA). Hot mix asphalt includes mixtures of aggregate (including reclaimed asphalt pavement or other recycled materials), and liquid asphalt cement. In conjunction with production of HMA the facility may also operate nonmetallic mineral processing equipment, including crushers, screens, conveyors and other processing equipment.

B. The following types of facilities are generally eligible for coverage under this permit:
   1. New facilities.
   2. Existing facilities, including both those with previously issued individual state construction and/or operating permits or those previously exempted from the requirement to obtain a permit.
   3. Facilities existing prior to the effective date of any applicable standard that would have created specific quantifiable and enforceable emission rates.

C. The following facilities are not eligible for this permit:
   1. Facilities for which material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.
   2. Facilities with emissions units, unless qualified as a de minimis activity under OAC 252:100, Appendix H, that are affected sources subject to:
      a. OAC 252:100-8 (Permits for Part 70 Sources)
      b. OAC 252:100-15 (Motor Vehicle Pollution Control Devices).
      c. OAC 252:100-17 (Incinerators).
      d. OAC 252:100-21 (Wood Burning Equipment).
      e. OAC 252:100-23 (Cotton Gins).

f. OAC 252:100-24 (Grain, Feed, or Seed Operations).
g. OAC 252:100-35 (Control of Emissions of Carbon Monoxide).
h. 40 CFR Part 59 (National VOC Standards)
i. 40 CFR Part 82, Subpart A, B, & C (Stratospheric Ozone).

3. Facilities with emission units subject to 40 CFR Part 264 emission standards (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities).
4. Any major source (as defined in OAC 252:100-8-2).

D. The following facilities, unless qualified as a de minimis activity under OAC 252:100, Appendix H, are not eligible to obtain an Authorization to Construct under this permit, but may be eligible for coverage under an Authorization to Operate if they obtain an individual construction permit and all relevant requirements and limitations in that permit are incorporated into the Authorization to Operate:

1. Facilities with a design process rate greater than 1,000 tons HMA/hour or utilizing a particulate control device on the mixer with an overall (control and capture) efficiency of less than 99.8%.
2. Facilities with fuel-burning equipment fired with fuels other than: natural gas, liquid petroleum gas (LPG), diesel with a sulfur content less than 0.8% by weight, or #2 through #6 fuel oil with a maximum of 0.8 wt% sulfur.
3. Facilities with heaters with a rated heat input of 50 MMBTUH or more.
4. Facilities that store VOCs with a vapor pressure greater than 1.5 psia in storage tanks built after December 28, 1974, with a capacity greater than 151 m^3 (40,000 gallons), or with a capacity greater than 400 gallons that are not equipped with a submerged fill.
5. Facilities located in Tulsa County which store gasoline or other VOCs (with vapor pressure greater than 1.5 psia) in storage tanks with a capacity greater than 2,000 gallons.
6. Facilities that store organic liquids other than liquid fuels (i.e., residual oil, distillate oil, or gasoline) unless qualified as a de minimis activity under OAC 252:100, Appendix H.
7. Facilities that use combustion devices (such as flares, incinerators or thermal oxidizers) to control emissions of VOCs.
8. Facilities with equipment subject to the existing equipment standards for sulfur dioxides at OAC 252:100-31-7(a).
9. Facilities with emission units that are not exempted from Part 5 ("Toxic Air Contaminants") of OAC 252:100-41, as specified in OAC 252:100-41-43.
10. Facilities with emissions units subject to:
    a. NSPS requirements under 40 CFR Part 60, other than those addressed by Subpart A, Subpart Kb, Subpart GG, Subpart OOO, and/or Subpart I, or
    b. NESHAP requirements under 40 CFR Part 61 or 63.

    unless such requirements are specifically incorporated into the Authorization to Construct/Operate issued under this permit as provided for under Part 4, Section V of this permit.
11. Facilities located in an area that is federally designated as non-attainment.

PART 1 - REQUIREMENTS FOR GENERAL PERMITS

This permit is issued for the hot mix asphalt facility source category to establish (A) terms and conditions to implement applicable air pollution rules, (B) terms and conditions to implement applicable air pollution rules for specified categories of changes to those permitted sources, (C) terms and conditions for new requirements that apply to sources with existing permits, and (D) federally-enforceable caps on emissions. The permit is issued after finding that there are several permittees, permit applicants, or potential permit applicants who have the same or substantially similar operations, emissions, activities, or facilities; the permittees, permit applicants, or potential permit applicants emit the same types of regulated air pollutants; the operations, emissions, activities, or facilities are subject to the same or similar standards, limitations, and operating requirements; and the operations, emissions, activities, or facilities are subject to the same or similar monitoring requirements.

SECTION I. AUTHORITY

This permit is developed in accordance with the provisions of OAC 252:100-7-15 and 100-7-18.

SECTION II. ELIGIBILITY

A. This permit is limited to air pollutant emitting sources located at facilities that are designed and operated for the primary purpose of producing hot mix asphalt (HMA). Hot mix asphalt includes mixtures of aggregate (including reclaimed asphalt pavement or other recycled materials), and liquid asphalt cement. In conjunction with production of HMA the facility may also operate nonmetallic mineral processing equipment, including crushers, screens, conveyors and other processing equipment.

B. The following types of facilities are generally eligible for coverage under this permit:
   1. New facilities.
   2. Existing facilities, including both those with previously issued individual state construction and/or operating permits or those previously exempted from the requirement to obtain a permit.
   3. Facilities existing prior to the effective date of any applicable standard that would have created specific quantifiable and enforceable emission rates.

C. The following facilities are not eligible for this permit:
   1. Facilities for which material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.
   2. Facilities with emissions units, unless qualified as a de minimis activity under OAC 252:100, Appendix H, that are affected sources subject to:
      a. OAC 252:100-8 (Permits for Part 70 Sources)
      b. OAC 252:100-15 (Motor Vehicle Pollution Control Devices).
      c. OAC 252:100-17 (Incinerators).
      d. OAC 252:100-21 (Wood Burning Equipment).

e. OAC 252:100-23 (Cotton Gins).
f. OAC 252:100-24 (Grain, Feed, or Seed Operations).
g. OAC 252:100-35 (Control of Emissions of Carbon Monoxide).
h. 40 CFR Part 59 (National VOC Standards)
i. 40 CFR Part 82, Subpart A, B, & C (Stratospheric Ozone).

3. Facilities with emission units subject to 40 CFR Part 264 emission standards (Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities).
4. Any major source (as defined in OAC 252:100-8-2).

D. The following facilities, unless qualified as a de minimis activity under OAC 252:100, Appendix H, are not eligible to obtain an Authorization to Construct under this permit, but may be eligible for coverage under an Authorization to Operate if they obtain an individual construction permit and all relevant requirements and limitations in that permit are incorporated into the Authorization to Operate:

1. Facilities with a design process rate greater than 1,000 tons HMA/hour or utilizing a particulate control device on the mixer with an overall (control and capture) efficiency of less than 99.8%.
2. Facilities with fuel-burning equipment fired with fuels other than: natural gas, liquid petroleum gas (LPG), diesel with a sulfur content less than 0.8% by weight, or #2 through #6 fuel oil with a maximum of 0.8 wt% sulfur.
3. Facilities with heaters with a rated heat input of 50 MMBTUH or more.
4. Facilities that store VOCs with a vapor pressure greater than 1.5 psia in storage tanks built after December 28, 1974, with a capacity greater than 151 m^3 (40,000 gallons), or with a capacity greater than 400 gallons that are not equipped with a submerged fill.
5. Facilities located in Tulsa County which store gasoline or other VOCs (with vapor pressure greater than 1.5 psia) in storage tanks with a capacity greater than 2,000 gallons.
6. Facilities that store organic liquids other than liquid fuels (i.e., residual oil, distillate oil, or gasoline) unless qualified as a de minimis activity under OAC 252:100, Appendix H.
7. Facilities that use combustion devices (such as flares, incinerators or thermal oxidizers) to control emissions of VOCs.
8. Facilities with equipment subject to the existing equipment standards for sulfur dioxides at OAC 252:100-31-7(a).
9. Facilities with emission units that are not exempted from Part 5 ("Toxic Air Contaminants") of OAC 252:100-41, as specified in OAC 252:100-41-43.
10. Facilities with emissions units subject to:
    a. NSPS requirements under 40 CFR Part 60, other than those addressed by Subpart A, Subpart Kb, Subpart GG, Subpart OOO, and/or Subpart I, or
    b. NESHAP requirements under 40 CFR Part 61 or 63.

    unless such requirements are specifically incorporated into the Authorization to Construct/Operate issued under this permit as provided for under Part 4, Section V of this permit.

11. Facilities located in an area that is federally designated as non-attainment.
12. Facilities that request an Alternative Emissions Reduction Authorization under OAC 252:100-11.

E. The DEQ may not issue a permit authorization sought by an applicant that has not paid all monies owed to the DEQ or is not in substantial compliance with the Environmental Quality Code, rules of the Board and the terms of any existing DEQ permits and orders. The DEQ may impose specific conditions on the applicant to assure compliance and/or a separate schedule that the DEQ considers necessary to achieve required compliance.
[OAC 252:4-7-15(b)(1)]

Facilities that are not in compliance with all applicable State and Federal air requirements may become eligible for coverage under this permit through submission of a compliance plan meeting the requirements of Part 3 of this Permit.

F. The DEQ may refuse issuance of an authorization to an applicant even though the facility meets the above eligibility criteria. In such a case, DEQ will provide in writing to the facility an explanation providing the reason(s) for the decision.

SECTION III. AUTHORIZATION TO CONSTRUCT/OPERATE

An applicant for an Authorization to Construct/Operate under this General Permit may obtain coverage under this permit in one of the following ways:

A. An applicant proposing to construct a new facility that meets all of the eligibility requirements including those listed in Part 1, Section II.D may apply for an Authorization to Construct using the DEQ Notice of Intent (NOI) Form. Coverage under this permit is effective upon receipt of the NOI. The Authorization to Construct is issued by the DEQ after confirming that the application is administratively complete, the proper fee has been received, and that the facility is eligible for coverage under the permit.

B. An applicant proposing to construct a new facility that meets all of the eligibility requirements except those listed in Part 1, Section II.D must apply for an individual permit for the facility since a case-by-case determination is most likely required to establish enforceable limitations for some particular emissions unit.

C. An applicant proposing to obtain coverage under this permit for an existing, previously permitted facility, need only submit an application for an Authorization to Operate if the facility meets all of the eligibility requirements.

D. An applicant proposing to obtain coverage under this permit for an existing facility, not previously permitted, need only submit an application for an Authorization to Operate if the facility meets all of the eligibility requirements including those listed in Part 1, Section II.D. If the facility meets all of the eligibility requirements except those listed in Part 1, Section II.D the applicant may apply for an Authorization to Operate for the facility, and include fees for both an individual construction permit, and the Authorization to Operate. The AQD will make any necessary Section II.D determinations for incorporation in the Authorization to Operate.

E. An applicant proposing to modify an existing facility (e.g., add/replace equipment or increase emissions) already covered by an Authorization to Operate under this general permit must meet the requirements specified in Part 4, Section II of this permit. Note that an applicant proposing to modify an existing facility need not obtain a new Authorization to Operate, unless an individual construction permit is required to make a modification as described under Part 1, Section II.D of this permit.

SECTION IV. PERMIT TERM

This general permit shall remain valid and in effect unless it is modified or revoked in accordance with DEQ rules.

The DEQ shall establish, at the time this permit is modified, the terms and conditions under which existing Authorizations under this permit will be eligible for reauthorization under a modified general permit.

PART 2 - SPECIFIC CONDITIONS

Facilities shall be designed, constructed, and operated to meet the following terms and conditions, and any other applicable air pollution rules specified in this permit, the facility's Authorization to Construct and/or Authorization to Operate, and any other requirements specified by rule or statute.

SECTION I. Points of Emissions and Limitations for Each Point [OAC 252:100-7-15 and 7-18]:

A. Facility-Wide Emissions Cap and Emissions Limitations

Emissions limitations shall be established in each Authorization issued under this permit as a facility-wide emissions cap. Such limitations shall be established, in tons per year (TPY), for any pollutant subject to regulation, as the sum of the actual emissions from all authorized emissions units.

In no case shall such emissions limitations exceed that level which would cause the facility to be classified as a major source. Nor shall the permittee cause or allow the emission of any regulated air pollutant in such a concentration as to cause or contribute to a violation of ambient air quality standards or other applicable air pollution rules.

Compliance with these emissions limitations shall be determined, on a monthly basis for any regulated air pollutant with actual emissions greater than or equal to 80% of a major source threshold; and annually for any other regulated air pollutant.

The facility throughput shall be maintained at such a level so as to not exceed the annual facility-wide emissions limitations. In no case shall the daily average production rate of HMA exceed 1,000 TPH.

B. Hot Mix Asphalt Facility Subject to NSPS Subpart I

In addition to the facility-wide emissions cap established in Section I.A, the permittee shall comply with all applicable emissions limitations set forth in 40 CFR Part 60 Subpart I - Standards of Performance for Hot Mix Asphalt Facilities, for all hot mix asphalt facilities constructed or operated under this permit that commenced construction or modification after June 11, 1973.

C. Nonmetallic Mineral Processing Equipment Subject to NSPS Subpart OOO

In addition to the facility-wide emissions cap established in Section I.A, the permittee shall comply with all applicable emissions limitations set forth in 40 CFR Part 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants, for all nonmetallic mineral processing equipment constructed or operated under this permit that commenced construction or modification after August 31, 1983.

D. Nonmetallic Mineral Processing Equipment Subject to Hourly PM Limits

In addition to the facility-wide emissions cap established in Section I.A, the permittee shall comply with any applicable emissions limitations set forth in the Authorization to assure compliance with OAC 252:100-19-12 for all emission points associated with each nonmetallic mineral processing equipment emissions unit constructed or operated under this permit. Such emissions limitations shall be established for any emission point if actual emissions exceed 80% of the allowable rate given in Appendix G of OAC 252:100. For each emission point subject to such emissions limitations the permittee shall calculate and keep records of the hourly rate of emissions, in lbs/hr. The hourly rate of emissions shall be calculated as the daily throughput divided by the hours of operation for that day.

SECTION II. HMA Dryers

The following specific conditions apply to hot mix asphalt dryers unless qualified as a de minimis activity under OAC 252:100, Appendix H,:

A. The permittee shall keep the following records of operation for any HMA dryer operated under this permit. [OAC 252:100-27-2 (c)].
   1. HMA production (daily and cumulative annual). The cumulative annual production shall be calculated each month as the sum of each daily production and added to the total production for the previous 11 months.
   2. Type of control device used to control emissions from the HMA dryer, and the overall particulate (capture and control) efficiency of the control device.

B. Emissions estimates used to demonstrate compliance with Part 2, Section I.A. of this permit shall be calculated, for each reporting period, utilizing production-based emissions factors shown in the latest version of AP-42, unless factors have been derived from emission tests conducted on the reporting facility, in which case the emission test factors will be used, times the actual recorded production during the reporting period.

C. The permittee shall maintain a record of the manufacturer's specifications on the burner showing the rated heat input and NO_x emissions rate (in lb/MMBTU). No burner with a rated heat input of 50 MMBTUH or more shall be installed, or modified, so that NO_x emissions exceed 0.20 lb/MMBTU, two-hour maximum, when fired with natural gas or 0.30 lb/MMBTU, two-hour maximum, when fired with liquid fuels.

D. The permittee shall perform a biennial burner combustion optimization (tune-up) on any HMA dryer burner with a rated heat input of 50 MMBTUH or more (unless the burner is equipped with a "continuous automated combustion control system"). The tune-up shall be performed as specified in Appendix B of this permit. The Permittee shall maintain records of all tune-ups, maintenance, and adjustments made to the burner. All documents and calculations used to determine reduced NO_x emission settings should be kept as part of the tune-up, maintenance and adjustments records. These records shall include burner

settings that affect NOx emissions and how the settings were determined. In lieu of a biennial tune-up, the permittee may establish the range of operating parameters, e.g., fuel usage per ton of HMA produced, necessary to assure optimum combustion, and perform a tune-up every five years. The operating range shall include a 20% safety factor. The first (biennial or five-year) tune-up shall be conducted within the calendar year of issuance for any Authorization issued prior to March 31, or during the following calendar for all other Authorizations.

E. The permittee shall comply with all applicable requirements set forth in 40 CFR Part 60 Subpart I - Standards of Performance for Hot Mix Asphalt Facilities for all hot mix asphalt facilities constructed or operated under this permit. Subpart I applies to certain affected facilities in hot mix asphalt plants that commenced construction or modification after June 11, 1973.

SECTION III. Heaters

The following specific conditions apply to heaters unless qualified as a de minimis activity under OAC 252:100, Appendix H,:

A. The permittee shall keep the following records of operation for any heater operated under this permit. [OAC 252:100-27-2 (c)].
   1. Hours of operation (daily and cumulative annual), or
   2. Fuel usage (monthly and cumulative annual).

B. Calculation of emissions from heaters and boilers shall be based on the maximum design heat input using the lower heating value of the fuel, the hours of operation, and appropriate emission factor, or amount of fuel burned in the reporting period.

C. The permittee shall maintain a record of the manufacturer's specifications on the heater showing the rated heat input and NO_x emissions rate (in lb/MMBTU).

SECTION IV. Storage Tanks

The following specific conditions apply to storage tanks unless qualified as a de minimis activity under OAC 252:100, Appendix H.

A. The permittee shall maintain an operational record for all storage tanks with a capacity of 400 gallons or more. The record shall include the tank identification number, type of tank, date of manufacture, tank capacity in gallons, NSPS or NESHAP applicability, name of the material stored, purchase records, and vapor pressure (in psia) at the maximum storage temperature.

[OAC 252:100-7-15 and 252:100-7-18]

B. The permittee shall estimate the emissions of VOCs from storage tanks to demonstrate compliance with Part 2, Section I.A. of this permit. The estimates of emissions shall be calculated using the latest approved version of AP-42 "Compilation of Air Pollution

Emission Factors," or as implemented in approved EPA emissions estimation software, e.g., TANKS. Annual emissions estimates determined monthly shall be calculated on a rolling average basis.

C. Volatile Organic Compound (VOC) storage tanks built after December 28, 1974 and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill. The permittee shall perform a visual inspection of such system annually to confirm its integrity and keep maintenance records. Such records shall at a minimum include the work performed, the date on which it was performed, and the increase, if any, in emissions as a result.

[OAC 252:100-37-15(b) and 252:100-39-41(b)]

D. The permittee shall comply with all applicable requirements set forth in 40 CFR Part 60, Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Tank(s) constructed or operated under this permit. Subpart Kb applies to certain VOC storage vessels for which construction, reconstruction, or modification commenced after July 23, 1984.

SECTION V. Internal Combustion (IC) Engines and Gas Turbines

The following specific conditions apply to IC engines/turbines unless qualified as a de minimis activity under OAC 252:100, Appendix H,

A. Engine/turbine make, model and serial numbers or other acceptable form of permanent (non-removable) identification shall be on each engine/turbine.

B. The permittee shall monitor and record start and stop times, measured to the nearest hourly period, of any engine/turbine operated under this permit. In addition, the permittee shall record the monthly hours of operation.

C. Calculation of emissions from engines and turbines (NOx and CO) shall be based on the engine's full load (100% of design horsepower) emission rates in g/hp-hr as given by the manufacturer or derived from source testing as described in condition F of this Section, except VOC and PM10 emissions can also be based on rates provided in the latest edition of AP-42 times the hours of operation in the reporting period. If emissions must be determined each month, the annual emissions shall be calculated on a rolling basis.

D. Calculation of emissions of SO_2 from engines and turbines shall be based on the sulfur content in the fuel using the appropriate emission factor from the latest edition of AP-42.

E. The permittee shall conduct a quarterly test of NO_x and CO from all engines/turbines constructed or operated under this permit if actual emissions of the entire facility equals or exceeds 80% of the major source thresholds for NO_x or CO. Quarterly NO_x and CO testing is also required for any engine with a catalytic converter (or other controls necessary to meet emissions limitations). A 24-hour average hourly emissions rate shall be calculated as the mean

of all such tests conducted in any consecutive 24-hour period. The hourly average emissions rate for the reporting period shall be calculated as the mean of all such 24-hour average tests conducted in any reporting period i.e., monthly, quarterly, or annually. Testing is required for any engine/turbine that runs for more than 220 hours during that calendar quarter. Quarterly tests shall be at least 45 days apart. Testing shall be conducted when operating under representative conditions for that period using portable engine analyzers or an equivalent method approved by Air Quality. When four consecutive quarterly tests show an engine to be in compliance with the emissions limitations shown in the Authorization, then the testing frequency may be reduced to semi-annual testing. Semi-annual tests shall be at least five months apart. Likewise, when the following two consecutive semi-annual tests show compliance, the testing frequency may be reduced to annual testing. Annual tests shall be at least eleven months apart. Upon any showing of non-compliance with emissions limitations, the testing frequency shall revert to quarterly. Reduced engine testing does not apply to engines with catalytic converters (or other controls necessary to meet emissions limitations). For each test, the following engine operating parameters shall be clearly described in the sampling report: air/fuel ratio, exhaust O_2 content, percent water in the exhaust, stack temperature, engine speed, and horsepower.

F. The permittee shall conduct an emissions test of NO_x and CO to establish g/hp-hr emissions rates for any engine/turbine added under this permit for which manufacturer's data is not available (e.g., AP-42 factors are proposed to be used), or confirm compliance with the manufacturer's g/hp-hr emissions rates for any engine/turbine added under this permit that causes or contributes to actual facility-wide emissions of greater than 80 tpy for either pollutant. Testing shall be conducted when operating under representative conditions using a portable engine analyzer or other equivalent method approved by Air Quality. Three test runs shall be conducted for a minimum of 15 minutes each at 90% or greater of the full load, if possible, and the g/hp-hr results of each test shall be averaged to calculate the final emissions rates. The exhaust flow calculated from the Gross Caloric Value (BTU content) of the fuel shall be based on the lower heating value. Fuel data, ambient conditions, and engine operational data shall be recorded once during each run. The final emissions rates shall be expressed at the International Organization for Standardization (ISO) power and ISO specific fuel consumption levels, consistent with ISO 3046-1, or an equivalent method. Testing shall establish the maximum and minimum operating parameters, e.g., timing, manifold vacuum pressure, exhaust stream oxygen concentration, air/fuel ratio controller (AFRC) ranges, etc., while maintaining stable engine operation. A copy of the test results shall be submitted to the AQD within 60 days of commencing operation of the engine.

G. Source testing described in condition F of this Section shall be conducted to confirm engine/turbine NO_x, CO and VOC emissions rates if adjustments to the engine/turbine are made so that it operates outside of the parameter ranges established in a previous source test.

H. The permittee shall at all times operate and maintain all IC engines and associated emissions control systems in a manner that will minimize emissions of VOCs and will achieve compliance with the conditions of this permit and any Authorization issued to the permittee hereunder. Among other things, such operation shall assure that the equipment is not

overloaded, that it is properly cleaned and maintained, and that temperature and available air are sufficient to provide essentially complete combustion.

The permittee shall keep operation and maintenance records for each engine subject to emissions limitations in Section I.D. of this permit. Such records shall at a minimum include the work performed, the date on which it was performed, and the increase, if any, in emissions as a result.

[OAC 252:100-37-36]

I. The permittee shall comply with all applicable requirements set forth in 40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines for Which Construction, Reconstruction, or Modification Commenced After October 3, 1977.

SECTION VI. Nonmetallic Mineral/Aggregate Processing/Handling Equipment

The following specific conditions apply to nonmetallic mineral/aggregate processing/handling equipment unless qualified as a de minimis activity under OAC 252:100, Appendix H,

A. The permittee shall keep the following records of operations for any nonmetallic mineral processing equipment operated under this permit. [OAC 252:100-19-12].
   1. Hours of operation (daily and cumulative annual) of each piece of processing equipment, or the operation as a whole. If hours of operation are kept for the whole operation, the hours shall be based on whenever any piece of mineral processing equipment is operating at the site, i.e., startup and shutdown of the facility.
   2. Throughput (daily and cumulative annual). The daily throughput shall be calculated by measuring or estimating either the weight or volume of the average size truckload or loader bucket and counting the number of truckloads or bucket loads per day. The cumulative annual throughput shall be calculated as the sum of the daily throughputs over the last 12-months.
   3. Type of control technology used, if any.

B. The permittee shall comply with all applicable requirements set forth in 40 CFR Part 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. Subpart OOO applies to affected facilities that commenced construction or modification after August 31, 1983.

SECTION VII Facility-wide Requirements

The following specific conditions apply facility-wide unless qualified as a de minimis activity, emitting other than particulate matter, under OAC 252:100, Appendix H,

A. The permittee shall maintain an equipment inventory. Such inventory shall be updated each time there is any change to facility equipment (i.e., addition, removal, or replacement) subject to this permit. The inventory shall include the equipment description, equipment serial or identification number, date of the change, description of the change, NSPS

applicability, annualized actual emissions for each emission source, and the annualized actual emissions for the facility. A copy of this record shall be provided with the notification required by Part 4, Section II.C. of this permit. If equipment is being added subject to NSPS which has not undergone the initial compliance demonstration as required by 40 CFR 60.8, the notification shall include a date and time for such required demonstration.

B. Fuel-burning equipment operated under this permit shall be fueled only with commercial grade natural gas, liquid petroleum gas (LPG), diesel, or #2 through #6 fuel oil. Liquid fuels must evidence a maximum of 0.8 wt% sulfur. Certification by an applicant in the application for an Authorization that commercial grade natural gas is used at the facility to fuel such equipment shall be sufficient to document compliance with this requirement. For equipment fueled by diesel, or #2 through #6 fuel oil, the permittee shall provide with the application a fuel composition analysis that shows total sulfur content. Thereafter, the permittee shall perform a fuel composition analysis that shows total sulfur content once per load received and shall maintain records of the required fuel composition analysis. A one-time certification of sulfur content of a grade of fuel, with subsequent receipts stating the fuel grade delivered from the supplier, is sufficient to document compliance with this requirement. A new certification shall be obtained from each new supplier.
[OAC 252:100-31]

C. Estimates of fugitive emissions of particulate matter shall be calculated using the latest approved version of AP-42 "Compilation of Air Pollution Emission Factors." TPY emissions estimates used to demonstrate compliance with Part 2, Section I.A. of this permit shall be calculated, for each reporting period, as the annual average divided by the number of reporting periods per year.

D. The permittee shall maintain records of emissions and any compliance demonstrations required by this permit. An emissions record shall describe calculated emissions of regulated air pollutants from all emissions units. This record shall include the emissions unit identification number, control method used, and other operating parameters as specified in specific conditions for each particular emissions unit. A copy of the records or a summary including sample calculations shall be submitted with the application for an Authorization to Operate under this permit.

E. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in OAC 252:100-13, Prohibition of Open Burning. [OAC 252:100-13]

F. The permittee shall conduct quarterly visual observations of emissions by a Certified Visible Emission Evaluator using Test Method 9 (40 CFR Part 60, Appendix A) from all emissions units not subject to an opacity limit promulgated under NSPS Subpart OOO or Subpart I, or as follows: The permittee shall conduct quarterly visual observations to determine the presence or absence of visible emissions using Method 22 (40 CFR Part 60, Appendix A) for all emissions units not subject to an opacity limit promulgated under

NSPS Subpart OOO or Subpart I. The term "Fugitive emissions" as used in Method 22 shall be deemed to include all units subject to Subchapter 25 requirements. In no case shall the observation period for Method 22 be less than one minute in duration. If visible emissions exceed one minute in duration for any observation period and such emissions are not the result of a malfunction, then the permittee shall take immediate corrective action to reduce the opacity. Following implementation of corrective actions, a Method 22 test will be conducted to determine if the corrective actions were successful. If visible emissions are still observed following implementation of corrective action, then the permittee shall conduct, within 24 hours, a visual observation of emissions in accordance with 40 CFR Part 60, Appendix A, Method 9. When four consecutive quarterly Method 22 or Method 9 observations show no visible emissions or no emissions of a shade or density greater than twenty (20) percent equivalent opacity, respectively, the frequency may be reduced to semi-annual visual observations using Method 22 testing, as above. Likewise, when the following two consecutive semi-annual tests show compliance, the testing frequency may be reduced to annual testing. Upon any showing of non-compliance, the testing frequency shall revert to quarterly.

If a Method 9 observation exceeds 20% opacity, the permittee shall conduct a minimum of seven additional observations continuing through the next operational day, not to exceed 24-hours. The Method 9 observations shall be conducted at a frequency of at least two per any one-hour period, performed at least once every quarter of the operational day. If any additional Method 9 observation exceeds twenty (20) percent opacity and such emissions are not the result of a malfunction, then the permittee shall conduct monthly visual observations of emissions in accordance with 40 CFR Part 60, Appendix A, Method 9. When four consecutive quarterly Method 9 observations show no emissions of a shade or density greater than twenty (20) percent equivalent opacity, the permittee may revert to quarterly visual observations using Method 22 testing as above.

If more than one six-minute Method 9 observation exceeds 20% opacity in any consecutive 60 minutes, or more than three six-minute Method 9 observations in any consecutive 24 hours exceed 20% opacity, or any six-minute Method 9 observation exceeds 60% opacity, the permittee shall report such observation(s) as a deviation, in accordance with Part 4, Section III of this permit.

G. The permittee shall implement reasonable precautions or measures to minimize fugitive dust emissions from the handling, transporting or storage of any substance or material in a way that may enable fugitive dust to become wind-borne and result in air pollution. In addition, the permittee shall not cause or permit the discharge of any visible fugitive dust emissions beyond the property line in such a manner as to damage or to interfere with the use of adjacent properties, or to cause or contribute to the violation of ambient air quality standards. [OAC 252:100-29]

The permittee shall either respond, within 48 hours, to any written or oral concern expressed by a citizen (complaint) that alleges release of fugitive dust from the facility, or refer the complaint to DEQ for response and investigation within one working day. Such response

shall include conducting an investigation to determine the cause and action necessary to resolve the complaint, including any needed corrective action. Any referral to DEQ shall be made orally, and in writing to the DEQ central office with a written copy to the appropriate DEQ district office. The permittee shall keep the following records to document resolution of complaints.

1. Date, time, name, address, and phone number of person reporting complaint.
2. Date, time, and nature of incident/discovery.
3. Date, time, and DEQ contact person.
4. Person assigned to investigate complaint.
5. Results of investigations to determine the cause of the complaint.
6. Date and nature of action taken (including corrective action taken, if any) to resolve the complaint. [OAC 252:100-29]

H. Emissions units, and control devices associated with any emission units constructed under this permit, shall comply with all applicable requirements of OAC 252:100-45 - Monitoring of Emissions, and Appendix A of this permit.

The permittee shall install, use, and maintain such monitoring equipment as specified in Appendix A of this permit, except as otherwise specified elsewhere in this permit or the facility's Authorization to Construct/Operate, or applicable rules or statutes.

The permittee shall document that all testing is conducted using methods specified in 40 CFR Parts 51, 60, 61, 63, or 75, as applicable, or as otherwise specified in this permit or the Authorization to Construct/Operate. A copy of these records shall be retained with the records containing the facility's test results.

PART 3 – SCHEDULE OF COMPLIANCE

Any facility reporting non-compliance in an application for Authorization under this permit must submit with such application a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable air pollution rules.

A. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable air pollution rules for which the emissions unit or stationary source is not in compliance.

B. This compliance schedule shall correspond to and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject.

D. Any such schedule of compliance shall be supplemental to, and shall not sanction non-compliance with, the applicable air pollution rules on which it is based.

E. The approvable schedule of compliance may be incorporated into an Authorization if such is issued to the facility.

F. The permittee of a facility that is operating subject to a schedule of compliance shall submit to AQD progress reports at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

PART 4 – STANDARD CONDITIONS

SECTION I. DUTY TO COMPLY

The permittee shall comply with all conditions of this permit and any Authorizations issued hereunder. This permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. Any permit non-compliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, for revocation of the approval to operate under the terms of this general permit or for denial of an application to operate under the terms of this general permit.

[OAC 252:100-7-15(e) and 7-18]

SECTION II. FACILITY MODIFICATIONS AND MODIFICATION OF AUTHORIZATIONS TO CONSTRUCT/OPERATE UNDER THE TERMS OF THE GENERAL PERMIT

A. An Authorization shall be corrected if any applicable emission limitation or standard is found to be absent or is found to be in error. Correction of an Authorization shall not change the Effective Date of the Authorization.

B. The permittee shall obtain an individual construction permit for any modification that would cause an existing facility to no longer be classified as a minor facility.

C. The permittee shall obtain an individual construction permit for any modification described under Part 1, Section II.D. of this permit. All other facility modifications may be constructed without an Authorization to Construct, or individual construction permit, provided that the permittee notifies the DEQ in writing of the modification within 7 days following the start of operation.

D. The permittee shall apply for a new Authorization to Operate within 60 days of commencing operation of any modified facility authorized under an individual construction permit, or Authorization to Construct issued under this permit, except for a de minimis facility.

[OAC 252:100-7-18(a)]

E. The permittee shall apply for either a new Authorization to Operate or a relocation permit to relocate any portable source authorized under this permit. [OAC 252:100-7-17]

F. An Authorization to Construct issued under this permit will terminate and become null and void if the construction is not commenced within 18 months of the issuance date, or if work is suspended for more than 18 months after it has commenced. [OAC 252:100-7-15(f)]

SECTION III. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day following the malfunction or release. Within ten (10) working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility.

B. Notification may be made by fax (1-405-702-4101), or by telephone (1-877-277-6236). Written notifications shall be made within 10 working days after the immediate notice is given to the DEQ central office, with a copy to the appropriate DEQ district office.

SECTION IV. MONITORING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit and any authorization issued under this permit. These records, including monitoring data and support information, shall be retained on site or at a nearby field office for a period of at least five years unless a longer period is specified by an applicable rule or statute. Support information includes all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit or the Authorization. Where appropriate and if requested by the applicant, the Authorization will specify which records may be maintained in computerized form.
[OAC 252:100-5-2.1(c) and 7-15 and 7-18]

B. Any owner or operator subject to the provisions of NSPS shall maintain records of the occurrence and duration of any start-up or shutdown of the process containing such affected facilities, and shall record malfunctions in the operation of an affected facility or any malfunction of the air pollution control equipment.
[40 CFR §60.7 (b)]

C. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by this subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least two years following the date of such measurements, maintenance, and records. [40 CFR §60.7 (d)]

D. All testing must be conducted by methods approved by the Executive Director under the direction of qualified personnel. All tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality. [OAC 252:100-43]

E. The permittee shall document that all testing is conducted using methods specified in 40 CFR Parts 51 (SIP), 60 (NSPS), 61 (NESHAP), 63 (MACT), or 75 (CEM), as applicable, or as

otherwise specified in this permit or the Authorization to Construct/Operate. A copy of these records shall be retained with facility's testing records. [OAC 252:100-45]

F. If the permittee monitors any pollutant more frequently than required by this permit, the results of this monitoring shall be included in the calculations used for determining compliance with the conditions of this permit.

G. The permittee shall submit to AQD a copy of all reports submitted to EPA as required by 40 CFR Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-41-15]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

Any Authorization issued after the effective date of a new or modified requirement or standard applicable to a unit located at the facility, may incorporate such requirement or standard, which shall supersede any corresponding permit requirement that is less stringent than the newer requirement or standard. [OAC 252:100-7-15(a) and 7-18]

SECTION VI. ANNUAL EMISSIONS INVENTORY AND FEE PAYMENT

A. The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories or allowable emissions. [OAC 252:100-5]

B. The permittee shall use best available data to calculate emissions for inventory purposes. If available, emission test results conducted on an emission source at the permitted facility shall be used. If test results are unavailable for an emission source, emission shall be determined using the latest edition of AP-42, unless other methods are approved by DEQ. However, if emission testing is performed following permit issuance, the emission factors derived from the emission test results shall be used to calculate the actual emissions for the inventory. [OAC 252:100-5-2.1(d)]

SECTION VII. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

SECTION VIII. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort or any exclusive privilege.

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued.

SECTION IX. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ upon receipt of a written request and within sixty (60) days of the request, unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, or revoking and reissuing or terminating the permit or to determine compliance with the permit or the Authorization. [27A O.S. Supp. 1999, § 2-5-105(18)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. Supp. 1999, § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within 10 days after such date.

[OAC 252:100-7-2(e)]

SECTION X. DUTY TO SUPPLEMENT

The permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in any information submittal, shall promptly submit such supplementary facts or corrected information. [OAC 252:4-7-8]

SECTION XI. REOPENING, MODIFICATION AND REVOCATION

A. This permit may be modified, revoked, reopened and reissued, or terminated for cause. The filing of a request by the permittee for a permit or an Authorization modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [27A O.S. Supp. 1999, § 2-5-112(B)(1)]

B. The permitting authority will reopen and revise or revoke this permit as necessary to remedy deficiencies if the DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable air pollution rules. [27A O.S. Supp. 1999, § 2-5-112(B)(3)]

SECTION XII. INSPECTION AND ENTRY

Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized officials of the DEQ to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1999, § 2-5-105 (18) for confidential information submitted to or obtained by the DEQ under this section):

A. enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit or the Authorization;

B. have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit or the Authorization;

C. inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit or the Authorization; and

D. sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or the Authorization.

[27A O.S. Supp. 1999, § 2-5-105]

SECTION XIII. DE MINIMIS FACILITIES

The permittee is hereby authorized to operate emissions sources and/or conduct activities that are listed on the "De Minimis Facilities" list in OAC 252:100, Appendix H.

SECTION XIV. GENERAL PROVISIONS UNDER NSPS AND NESHAPS

The permittee shall comply with all applicable requirements of the corresponding General Provisions, as set forth in 40 CFR Part 60 Subpart A, 40 CFR Part 61 Subpart A, and 40 CFR Part 63 Subpart A, for all equipment constructed or operated under this permit subject to NSPS or NESHAPs.

[OAC 252:100-4 & 41-15]

APPENDIX A

CONSTRUCTION, OPERATION, MAINTENANCE AND MONITORING REQUIREMENTS FOR CONTROL DEVICES

A. All control devices shall be constructed, operated, and maintained according to manufacturers' specifications, except as otherwise required by this permit, the facility's Authorization to Construct/Operate, or applicable rules or statutes.

B. If parametric monitoring is conducted in lieu of direct emissions monitoring, the permittee shall demonstrate in the application for an Authorization to Operate that the operating range for such parameters, as recommended by manufacturers' specifications, assures compliance with applicable emissions limitations and other applicable air pollution rules.

C. Fugitive road dust shall be controlled as needed to maintain compliance with Part II – Section V.G. standards by applying water and/or chemical spray to the road.

D. Authorizations issued under this permit may specify that water/chemical spray dust suppression systems on non-metallic minerals processing equipment and transfer points be operated on either a continuous or intermittent basis, depending on whether processed materials contain sufficient moisture such that operation of the plant does not cause a violation of applicable limitations.

If water/chemical spray dust suppression systems are necessary to comply with emissions limitations, the permittee shall maintain the water spray system in good operating condition. At a minimum, the water pump, pipe system, spray nozzles, and any gauges (e.g., water pressure) shall be inspected daily. The permittee must maintain records of the description and the date of repairs on the water spray system.

E. Authorizations issued under this permit may specify that baghouses shall be operated continuously, or periodically as necessary to meet emissions limitations, when processing equipment is in operation and maintained according to manufacturer's specifications. At least once per month, the permittee shall inspect the baghouse cleaning system, dust removal system, and fan, and perform maintenance as needed. At least annually, or during each outage period that is longer in duration than 1 week, the permittee shall conduct a thorough baghouse inspection, including the filter bags, baghouse structure, expansion joints, turning vanes, and dampers, and conduct a review of all inspection and maintenance logs. Maintenance shall be performed as needed. The permittee shall monitor the pressure drop weekly, and any other operational parameters specified by the manufacturer as necessary to assure adequate operation of the baghouse. The permittee shall maintain logs of all visible emissions observations, baghouse inspections, operational parameters measured, and maintenance performed.

NMED Attachment 1

F. Authorizations issued under this permit may specify that wet scrubbers shall be operated continuously, or periodically as necessary to meet emissions limitations, when processing equipment is in operation. At least once per day, the permittee shall monitor and record the pressure drop across the scrubber on a differential pressure gauge. At least once per day the permittee shall monitor the flow rate of the scrubbing solution using a continuous flow meter, and record the flow rate of the scrubbing solution and make-up water. Maintenance shall be performed as needed, e.g., a significant increase or decrease in pressure drop or scrubbing solution flowrate indicates a problem. The permittee shall maintain a log of all pressure drop and flow rate measurements and maintenance performed.

G. Authorizations issued under this permit may specify that cyclones shall be operated continuously, or periodically as necessary to meet emissions limitations, when processing equipment is in operation. At least once per day, the permittee shall monitor and record the pressure drop across the cyclone on a differential pressure gauge. In lieu of measuring the pressure drop across the cyclone, the permittee may measure the pressure drop across a wet scrubber located immediately upstream of the cyclone to determine that both the scrubber and cyclone are properly operated. Maintenance shall be performed as needed, e.g., visible emissions or a significant increase or decrease in pressure drop. The permittee shall maintain a log of the pressure drop and maintenance performed.

H. Nonselective catalytic reduction (NSCR) systems shall be constructed with an Air-to-Fuel Ratio Controller using sensors to measure the exhaust oxygen concentration and temperature across the catalyst necessary to assure compliance with the hourly emissions rates established in Part 2, Section V.F of this permit. The temperature across the catalyst shall be monitored and recorded once per week.

I. All records shall be maintained in accordance with Part 4 of this permit, except as otherwise required by this permit, the facility's Authorization to Construct/Operate, or applicable rules or statutes.

APPENDIX B
Burner Combustion Optimization (Tune-up) Requirements

A. All combustion optimizations conducted shall be performed according to methods approved in writing by the DEQ. The purpose of the Tune-up is to optimize combustion (minimize VOC emissions) while maintaining NO_x emissions.

B. The DEQ may require written notification to be submitted at least 15 days in advance of a combustion optimization to provide the DEQ an opportunity to evaluate the plan and to have a representative present to witness the combustion optimization procedures. The notice shall provide a combustion optimization plan that includes, but need not be limited to, the following information:

1. The results of an analysis of the process to be optimized. The analysis shall identify and evaluate the options available for modifications to the process that would optimize combustion while minimizing NO_x emissions.
2. A description of the process or operation variables that affect the air contaminant source's emissions.
3. A description of the process to be optimized.
4. A description of the sampling equipment and the combustion optimization methods and procedures to be used.
5. The date and starting time of the combustion optimization.
6. A description of the number and location of any sampling ports and sampling points and an identification of the combustion gases to be sampled.
7. A statement indicating the production rate and the operating conditions at which the combustion optimization will be conducted.

C. In evaluating any requested combustion optimization plan, the DEQ shall respond to the permittee within 15 business days of receipt of the plan and may require one or more of the following activities:

1. A pre-combustion optimization conference which includes the permittee, the person conducting the combustion optimization and the DEQ to discuss any deficiencies in the plan or settle any combustion optimization procedure questions the DEQ, the person conducting the combustion optimization or the permittee might have.
2. Any change to the sampling method that is deemed necessary by the DEQ to conduct a proper combustion optimization.
3. A rescheduling of the combustion optimization to accommodate witnessing or source production schedules.

D. The permittee shall notify the DEQ of any modifications to a combustion optimization plan for which DEQ has previously requested notification at least 5 business days prior to the combustion optimization, unless waived by the DEQ. In the event the permittee is unable to conduct the combustion optimization on the date specified in the plan, due to unforeseeable circumstances beyond the permittees' control, the permittee shall notify the DEQ at least 5 business days prior to the scheduled combustion optimization date and specify the date when the combustion optimization is to be rescheduled.

NMED Attachment 1

E. The DEQ may require the permittee to provide proper facilities for conducting combustion optimization tests that may include:
1. The installation of sampling ports and safe sampling platforms.
2. A safe work area for the test crew or any witnessing personnel.
3. Safe access to the work area or sampling platform.
4. Utilities for the sampling equipment.
5. Instrumentation to monitor and record emissions data, i.e., a strip chart recorder, computer or digital recorder.

F. The DEQ may require that a DEQ representative be present at any combustion optimization. The DEQ may require the following activities:
1. The DEQ may require the person conducting the combustion optimization to provide the DEQ a copy of all test data and equipment calibration data prepared or collected for the combustion optimization.
2. The DEQ may require the permittee and person conducting the combustion optimization to correct any deficiency in the performance of the combustion optimization provided that the DEQ notifies the permittee and person conducting the combustion optimization of the deficiency as soon as it is discovered. The failure of the permittee and person conducting the combustion optimization to correct any deficiency may result in the DEQ refusing to accept the results of the combustion optimization.

G. The components of any emission sampling train or associated sampling equipment shall be calibrated not more than 60 days before the test. This includes the following:
1. Any equipment used to measure gas velocity.
2. Any equipment used to meter sample gas volume.
3. Any equipment used to regulate sample gas flow.
4. Any equipment used to measure temperature.
5. Any gas-sampling nozzle used during the emission test.
6. Any equipment used to determine gas molecular weight.
7. Any other sampling equipment that requires periodic calibration.

H. Any emissions testing conducted in conjunction with combustion optimization shall be conducted in accordance with OAC 252:100-43. The combustion optimization shall include the following procedures:
1. An analysis to identify the optimized combustion profile or equipment modifications needed to optimize combustion. The study shall address, but is not limited to, the modification of the following systems: fuel delivery, burner, primary and secondary combustion monitoring, combustion-air delivery and burner management.
2. The combustion optimization shall be based on burner tune-up procedures that result in maximum combustion efficiency and a low NO_x operating curve. This curve shall determine the operating range of combustion variables such as CO and O_2 at set points within the following ranges: 20-30% load, 45-55% load, 70-80% load and 95-

100% load, for those set points that represent at least 10% of operating hours in a typical year.

3. A continuous combustion analyzer shall be used to monitor the operation of the combustion unit in accordance with the combustion efficiency and low NO_x operating curve required under this section. The analyzer shall monitor the combustion parameters CO and O_2 or monitor NO_x directly. The fuel flow rate shall also be monitored.

I. The permittee shall retain a copy of the report of the combustion optimization at the facility within 60 days after its completion. The failure to include the following information in a combustion optimization report may result in rejection of the combustion optimization. The combustion optimization report shall include, but need not be limited to, the following information:

1. A detailed description of the process optimized and the procedures employed.
2. A log of the operating conditions of the process optimized and of any associated air pollution control device.
3. A summary of results, expressed in terms of the concentrations of NO_x, O_2 and CO, prior to and following the combustion optimization.
4. Sample calculations employing all the formulas used to calculate the results.
5. The field and laboratory data for the optimization.
6. The optimization analysis and combustion efficiency and low NO_x operating curve.
7. A report of any visible emission evaluations performed during the combustion optimization.
8. A copy of any steam, opacity or airflow charts made during the optimization.
9. A report of any fuel analysis performed on the fuel burned during the optimization.
10. Documentation of any process upset occurring during the optimization.
11. If the combustion optimization being conducted is one required under J, the changes made to the process or control device since the last test.

J. The DEQ may require a permittee to conduct an additional combustion optimization under the following conditions.

1. If the DEQ determines that a permittee has not satisfied the requirements of H or I.
2. If combustion units are modified sources with respect to NO_x due to a change in the method of operation.

NMED Attachment 1

Hot Mix Asphalt Plants – Particulate Matter:

Type	Particulate Matter Controls	Pounds of pollutant per ton of product[1]		
		PM	PM_{10}	$PM_{2.5}$
Batch Mix	Uncontrolled	32	4.5	0.29
	Venturi or wet scrubber	0.14	0.034	0.018
	Baghouse	0.042	0.027	0.025
Drum Mix	Uncontrolled	28	6.5	1.6
	Venturi or wet scrubber	0.045	0.025	0.021
	Baghouse	0.033	0.023	0.022

Hot Mix Asphalt Plants – Gaseous Pollutants:

Type	Fuel	Pounds of pollutant per ton of product[2]			
		SO_2	NO_x	CO	VOC
Batch Mix	Natural Gas	0.0046	0.025	0.40/0.1[3]	0.0082
	No. 2 fuel oil	0.088	0.12/0.08[3]	0.40/0.1[3]	0.0082
	No. 6 fuel oil	0.088	0.12	0.40	0.036
Drum Mix	Natural Gas	0.0034	0.026	0.13/0.1[3]	0.032
	No. 2 fuel oil	0.011	0.055	0.13/0.1[3]	0.032
	Waste oil	0.058	0.055	0.13/0.1[3]	0.032

Rock crushers

Type of control	Pounds of pollutant per ton of rock crushed[4]		
	PM	PM_{10}	$PM_{2.5}$
Uncontrolled	0.25	0.0125	0.00075
Water Spray	0.04	0.02	0.0012[5]

Ready-mix concrete plants

Type of control	Pounds of pollutant per cubic yard of concrete[5]		
	PM	PM_{10}	$PM_{2.5}$
Uncontrolled	0.2	0.102	0.03
Baghouse	0.02	0.02	0.0059[5]

[1] These factors are from AP-42 Tables 11.1-1 and 11.1-2. These factors should not be used if there is source specific emissions data available.
[2] These factors are from AP-42 Tables 11.1-3 through 11.1-4. These factors should not be used if there is source specific emissions data available.
[3] The first value represents emissions from sources without routine tuning of the burner. The second value can be used for sources that have a routine burner tuning schedule.
[4] These are DEQ factors.
[5] EPA PM calculator applying percentage of $PM_{2.5}$ to PM_{10} emission factor
[6] The uncontrolled emission factor is from AP-42 Table 11.12-2. The controlled factors are DEQ factors.

Instructions and References

Hot Mix Asphalt Plant (HMAP) Emissions Calculation Spreadsheet

HMAP Worksheet Version No.: Version 1.0 APDG6491v1
Last Revision Date: February 19, 2019

Developed by: TCEQ Air Permits Division, Mechanical Coatings Section - Mechanical Team
This spreadsheet calculates emissions from asphalt plants, including the dryer, cold mix processes, the lime silo(s), loadout and heater, material handling, and stockpiles. From this data the Maximum Allowable Emission Rates Table can be developed. A summary of sources and emissions can be found in the Summary Table. References can be found below. Enter data into the tan cells.

References:

Hotmix Asphalt Plant Emissions

EPA AP-42, Fifth Edition, Volume I, Chapter 11.1 Hot Mix Asphalt Plants
EPA AP-42, Fifth Edition, Volume I, Chapter 11.1 Hot Mix Asphalt Plants, Background Document

The particulate emission factors for the dryer, when using natural gas or LPG, and a fabric filter, are based on the highest value of organic and in-organic particulate matter recorded while operating under these parameters. Refer to Table 4-14 in the Chapter 11.1 Background Document.

Hot Oil Heater Emissions

EPA AP-42, Fifth Edition, Volume I, Chapter 1.3 Fuel Oil Combustion
EPA AP-42, Fifth Edition, Volume I, Chapter 1.4 Natural Gas Combustion
EPA AP-42, Fifth Edition, Volume I, Chapter 1.5 Liquefied Petroleum Gas Combustion
EPA AP-42, Fifth Edition, Volume I, Chapter 1.11 Waste Oil Combustion
EPA AP-42, Fifth Edition, Volume I, Chapter 11.1 Hot Mix Asphalt Plants

Lime Silo Emission Factors

US EPA AP-42, Fifth Edition, Volume I, Chapter 11.12 Concrete Batching Table 11.12-2

Raw Material Handling and Processing Emissions

US EPA AP-42, Fifth Edition, Volume I, Chapter 11.19.2 Crushed Stone Processing and Pulverized Mineral Processing

Raw Material Stockpile Emissions

Emission Factors for the stockpiles have the following units: lb of pollutant per acre per day

The PM active and inactive emission factors are from "Cowherd, Jr., C. *Development of Emission Factors For Fugitive Dust Sources* . EPA document Number. EPA-450/3-74-037. Research Triangle Park: U. S. Environmental Protection, 1974"

PM10 and PM2.5 is estimated based on the aerodynamic particle size multiplier factors listed in EPA AP-42 Chapter 13.2.4 Aggregate Handling and Storage Piles.

US EPA AP-42 Chapter 13.2.4 Aggregate Handling and Storage Piles

Applicant: Puget Paving	**NOC Number**: 11613
Project Location: 5625 189th St E, Puyallup, WA 98373	**Registration Number**: 10130
Applicant Name and Phone: Josh Nobles, (253) 240-1306	**NAICS:** 324121
Engineer: Courtney O'Gorman	**Inspector**: Wellington Troncosco

A. DESCRIPTION

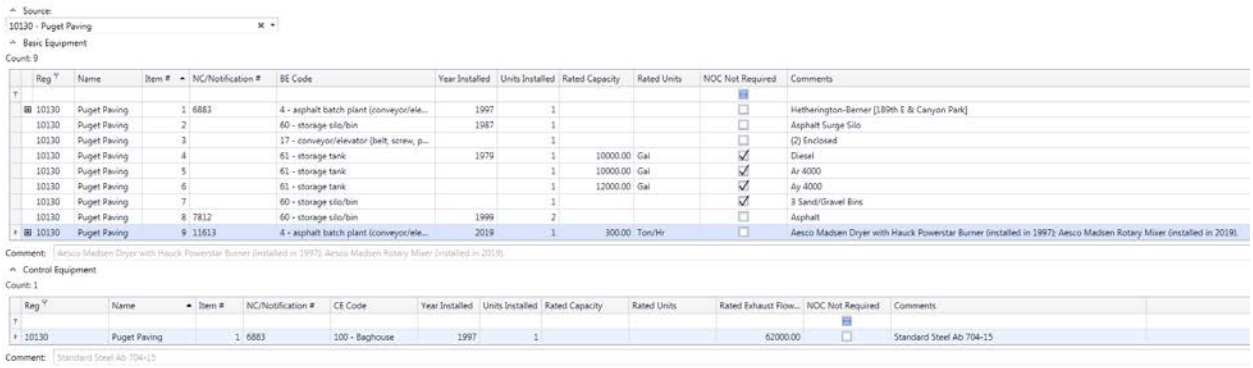
For the Order of Approval:
Replacement of equipment at an existing Asphalt Plant consisting of: one (1) existing Aesco Madsen rotary aggregate dryer rated at 55,000 cfm (300 tons/hr; 96.8 MMBtu/hr); one (1) new Aesco Madsen rotary drum mixer rated at up to 300 tons/hr connected to an existing Standard Steel AB-704-15 baghouse rated at 62,000 cfm; and new recycled asphalt pavement (RAP) feeder bin (120 tons/hr).

Additional Information (if needed):

Project: At the existing facility, virgin aggregate is fed to a rotary dryer and heated. From the dryer, the aggregate is transferred to a batch tower via a bucket elevator and is mixed with RAP. The aggregate/RAP mixture is dropped into a pug mill mixer, and liquid asphalt is also added to the pug mill mixer. The hot mix asphalt from the mixer is either transferred directly to a truck or to a storage silo. This project consists of removing the existing batch tower and pug mill mixer and replacing them with a continuous rotary drum mixer. Upon completion of the project, all aspects of the plant operation will remain the same, except the rotary mixer will be directly fed by the bucket elevator and will continuously mix aggregate, RAP, and liquid asphalt. Additional parts of the project include replacing the shell of the rotary dryer with a new shell (including trunnions) and replacing the existing RAP feeder bin with a larger feeder bin. The shell replacement does not trigger NSR. This Order of Approval cancels and supersedes Order of Approval No. 6883, dated April 30, 1997.

Facility: It was determined that the existing facility's potential emissions were greater than the major source threshold (100 tpy of a criteria pollutant, in this case CO). The AP-42 Chapter 11.1 emission factor for CO emissions from batch mix hot mix asphalt plants has been updated since Order of Approval No. 6883 was issued for the dryer. The emission factor for CO emissions from natural gas combustion increased from 0.056 lb/ton to 0.40 lb/ton, resulting in potential CO emissions for the existing facility greater than the major source threshold. Because of this, a federally enforceable synthetic minor limit was requested by the facility. The synthetic minor limit for CO is unrelated to the dryer shell replacement, which does not trigger NSR. The federally enforceable synthetic minor limit requires a Public Notice.

B. DATABASE INFORMATION



Source:
10130 - Puget Paving
Basic Equipment
Count: 9

Reg	Name	Item #	NC/Notification #	BE Code	Year Installed	Units Installed	Rated Capacity	Rated Units	NOC Not Required	Comments
10130	Puget Paving	1	6883	4 - asphalt batch plant (conveyor/ele...	1997	1			☐	Hetherington-Berner [189th E & Canyon Park]
10130	Puget Paving	2		60 - storage silo/bin	1987	1			☐	Asphalt Surge Silo
10130	Puget Paving	3		17 - conveyor/elevator (belt, screw, p...		1			☐	(2) Enclosed
10130	Puget Paving	4		61 - storage tank	1979	1	10000.00	Gal	☑	Diesel
10130	Puget Paving	5		61 - storage tank		1	10000.00	Gal	☑	Ar 4000
10130	Puget Paving	6		61 - storage tank		1	12000.00	Gal	☑	Ay 4000
10130	Puget Paving	7		60 - storage silo/bin		1			☑	3 Sand/Gravel Bins
10130	Puget Paving	8	7812	60 - storage silo/bin	1999	2			☐	Asphalt
10130	Puget Paving	9	11613	4 - asphalt batch plant (conveyor/ele...	2019	1	300.00	Ton/Hr	☐	Aesco Madsen Dryer with Hauck Powerstar Burner (installed in 1997); Aesco Madsen Rotary Mixer (installed in 2019).

Comment: Aesco Madsen Dryer with Hauck Powerstar Burner (installed in 1997); Aesco Madsen Rotary Mixer (installed in 2019).

Control Equipment
Count: 1

Reg	Name	Item #	NC/Notification #	CE Code	Year Installed	Units Installed	Rated Capacity	Rated Units	Rated Exhaust Flow...	NOC Not Required	Comments
10130	Puget Paving	1	6883	100 - Baghouse	1997	1			62000.00	☐	Standard Steel Ab 704-15

Comment: Standard Steel Ab 704-15

New NSPS due to this NOCOA?	**No**	**Applicable NSPS: None**	**Delegated? N/A**
New NESHAP due to this NOCOA?	**No**	**Applicable NESHAP: None**	**Delegated? N/A**
New Synthetic Minor due to this NOCOA?	**Yes**		

Note: The source was already subject to NSPS Subpart I prior to this Order.

C. NOC FEES AND ANNUAL REGISTRATION FEES

NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04. All fees must be paid prior to issuance of the final Order of Approval.

Fee Description	Cost	Amount Received (Date)
Filing Fee	$ 1,150	
Equipment (drum mixer, RAP feeder bin)	$ 1,200	
NSPS	$ 1,000	
Public Notice	$ 700 (plus publication costs to be invoiced separately)	
Federally Enforceable Emission Limit	$ 2,000	
SEPA (DNS)	$ 800	
Filing received		$ 1,150 (6/6/2018)
Additional fee received		$ 5,700 (8/1/2018)
Total Remaining	$ 0	

Registration Fees:

Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07.

Applicability		
Regulation I	Description	Note
5.03(a)(1)	Facilities subject to federal emission standards (Title 40 CFR)	
5.03(a)(2)	Federally enforceable emission limit	
5.03(a)(6)	Facilities with particulate control equipment (>= 2,000 cfm)	
5.03(a)(8)(A)	Facilities with asphalt batch operations	
Annual Registration Fee		
Regulation I	Description	Fee
5.07(c)	Base Registration Fee	$ 1,150
5.07(c)(1)	40 CFR 60 Subpart I	$ 2,100
5.07(c)(2)	Federally Enforceable Emission Limit	$ 2,300
	Total =	$ 5,550

D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

The applicant submitted a completed Environmental checklist that is included below.

11613 Puget Paving SEPA Checklist.pdf

I requested input from Kathleen Larrabee with Pierce County. Kathleen responded on 7/9/18 and indicated that there are no pending permits with Pierce County and agreed that the Agency would take the lead. Kathleen did not provide any comments on the project.

RE Request for Input on SEPA - Puge

I recommend the issuance of a Determination of Nonsignificance with no public comment.

E. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REVIEW

Best Available Control Technology (BACT)

New stationary sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, "an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under Chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant."

An emissions standard or emissions limitation means "a requirement established under the Federal Clean Air Act or Chapter 70.94 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the Federal Clean Air Act or Chapter 70.94 RCW."

Best Available Control Technology for Toxics (tBACT)

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP."

Project Review

The new drum mixer requires a BACT determination for particulate matter, opacity, and volatile organic compounds (VOC). The new RAP feeder bin requires a BACT determination for particulate matter.

Mixer Particulate Matter:

Similar Permits or Other Regulatory Agencies BACT for PM:

Source	Description	PM BACT
PSCAA Order No. 10462 (December 2012)	New hot mix asphalt plant including: Astec Counter Flow, Double Barrel Dryer (400 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 10852 (April 2015)	New hot mix asphalt (HMA) plant (325 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11175 (November 2016)	New hot mix asphalt (HMA) plant (300 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11274 (May 2017)	Replacement of an existing pug mill with a rotary mixer (350 TPH)	0.02 gr/dscf (total)
PSCAA Order No. 11328 (January 2018)	Replacement of the drum dryer at an existing continuous/batch Asphalt Plant.	0.027 gr/dscf (total), corrected to 7% O_2 0.014 gr/dscf (filterable), corrected to 7% O_2
Southwest Clean Air Agency 11-2982ADP	Hot Mix Asphalt Plant – dryer and mixer (CMI-325 TPH)	0.010 gr/dscf (filterable), corrected to 15% O_2
Southwest Clean Air Agency 16-3199ADP	Replacement of parallel flow dryer/mixer with counterflow dryer/mixer (400 TPH)	0.010 gr/dscf (filterable), corrected to 15% O_2
Bay Area Air Quality Management District BACT/TBACT Workbook	Hot Mix Asphalt, Drum and Batch Mix Facilities	0.01 gr/dscf (filterable)

Analysis:

The Agency historically established a total particulate BACT limit of 0.02 gr/dscf for asphalt plants, until Order No. 11328 was issued in January 2018. The Agency's historic 0.02 gr/dscf limit did not include an oxygen correction, nor, apparently, does the BAAQMD limit shown in the table above. However, there is some concern that adding dilution air during an emission test could be used to demonstrate compliance with a limit; therefore, the Agency is setting future particulate limits using an oxygen correction factor, as first established in Order No. 11328. For consistency with Agency Regulation I, Section 9.09, the standard for correction chosen is seven percent oxygen.

The same approach that was used for Order No. 11328 is being used for this analysis. The Agency reviewed thirty-two asphalt plant particulate test results to determine what current BACT for particulate should be. This data was available from the Agency, SWCAA, and Northwest Clean Air Agency (NWCAA).

Corrected to seven percent oxygen, the SWCAA 0.010 gr/dscf at 15 percent oxygen filterable limit is 0.024 gr/dscf. Reviewing asphalt plant burner manufacturer recommendations, it appears that ten to twelve percent oxygen is expected to be exiting the drum. Picking the middle of this range (eleven percent oxygen), the Agency's 0.02 gr/dscf limit is 0.028 gr/dscf corrected to seven percent oxygen.

To determine a new demonstrated BACT limit for particulate, the following tests were eliminated from the sample.

- Test results that were greater than 0.0240 gr/dscf filterable particulate corrected to seven percent oxygen.
- Test results that were greater than 0.028 gr/dscf total particulate corrected to seven percent oxygen.
- Test results greater than the AP-42 Chapter 11.1 emission factor of 0.025 lb/ton.
- Tests with missing data such that it wasn't possible to determine if the emissions met the other criteria.

The basis for choosing the first two criteria for elimination was to narrow the sample to those tests that would show compliance with the limits being set on facilities today (SWCAA 0.010 gr/dscf @15% O2, and PSCAA 0.020 gr/dscf). The AP-42 criterion was chosen because this is the maximum expected basis that a plant absent any other data could use to estimate emissions. The remaining tests were then averaged, and the mean plus two standard deviations was calculated to determine a value 95 percent of the plants could pass for filterable and total particulate.

After eliminating the tests that did not meet the criteria set, there was a sample of eighteen test results. As can be seen from Table 1, all the data sets included in the sample pass the mean plus two standard deviations for the filterable and total particulate. The calculated value and recommended BACT limit for filterable particulate matches the maximum test result in the sample: 0.014 gr/dscf corrected to 7% oxygen. The calculated value and recommended BACT limit for total particulate is roughly eight percent greater than the maximum test result in the sample: 0.027 gr/dscf corrected to 7% oxygen.

Table 1 -- Particulate Test Result Data

Facility	Test Date	O2	CO2	Filterable PM	Filterable PM Corrected to 7 percent Oxygen	Condensable PM	Condensable PM Corrected to 7 percent Oxygen	Total PM	Total PM Corrected to 7 Percent Oxygen	Flow	Production	PM
		%	%	gr/dscf	gr/dscf	gr/dscf	gr/dscf	gr/dscf	gr/dscf	dcfm	TPH	lb/ton
Associated Asphalt, Ferndale	3/24/2009	17.45	2.03	0.0029	0.012	0.0014	0.006	0.0042	0.017	19,006	125	0.0055
Cemex, Woodinville	10/1/2014	12.1	5	0.003	0.005	0.012	0.019	0.016	0.025	21,500	383	0.0077
Granite, Everett	8/30/2016	13.3	4.3	0.001	0.002	0.004	0.007	0.0055	0.010	27,990	300	0.0044
Granite, Everett	8/2/2005	11.7	5.1	0.0039	0.006	0.0087	0.013	0.0126	0.019	25,280	313	0.0087
Granite, Everett	6/10/2003	9.5	6.3	0.002	0.002	0.002	0.002	0.004	0.005	18,255	300	0.0021
Granite, Vancouver	10/13/2011	13.64	4.118	0.004	0.008	0.008	0.015	0.011	0.021	27,017	275	0.0093
Granite, Vancouver	8/1/2006	16.441	2.43	0.0043	0.013	0.0020	0.006	0.0063	0.020	36,383	275	0.0071
Icon, Seattle	5/22/2014	13.7	4.3	0.001	0.002	0.007	0.014	0.008	0.015	35,700	298	0.0082
Lakeside, Burlington	8/16/2011	9.3	7.9	0.0016	0.002	0.0016	0.002	0.0031	0.004	13,758	283	0.0013
Lakeside, Centralia	9/9/2014	12.3	4.7	0.0032	0.005	0.0041	0.007	0.0073	0.012	23,600	464	0.0032
Lakeside, Longview	5/15/1997	13.8	3.7	0.003	0.006	0.002	0.004	0.005	0.010	43,469	320	0.0058
Lakeside, Maple Valley	8/4/2004	17	2.3	0.003	0.011	0.001	0.004	0.004	0.014	37,207	165	0.0077
Lakeside, Maple Valley	4/8/1996	14.0	3.5	0.0015	0.003	0.0051	0.010	0.0066	0.013	26,861	180	0.0084
Lakeside, Monroe	7/30/2014	12.5	4.6	0.002	0.003	0.000	0.000	0.002	0.003	20,700	290	0.0012
Lakeside, Monroe	5/13/2009	12.4	4.9	0.0021	0.003	0.012	0.020	0.0141	0.023	32,721	325	0.0122
Lakeside, Vancouver	7/16/2015	13.4	4.1	0.0016	0.003	0.0017	0.003	0.0033	0.006	22,200	250	0.0025
Lakeside, Vancouver	7/14/2010	12.6	4.7	0.00018	0.0003	0.0022	0.004	0.0024	0.004	27,500	267	0.0021
Miles Resources, Sumner	6/10/2003	13.2	4.3	0.008	0.014	0.002	0.004	0.009	0.016	25,041	300	0.0064
Average:		13.2	4.3	0.003	0.006	0.004	0.008	0.007	0.013	26,899	284	0.006
Standard Deviation:		2.2	1.4	0.002	0.004	0.004	0.006	0.004	0.007	7,670	76	0.003
Average plus two Standard Deviations:		17.6	7.1	0.006	0.014	0.012	0.020	0.015	0.027	42,239	437	0.012

As on operational practice the Agency has also routinely set limits on the use of recycled asphalt pavement (RAP) and the use of recycled asphalt shingles (RAS) to the percentage of recycled material used for passing tests of particulate matter and visible emissions. The reason for this is that use of recycled materials has contributed to increased visible emissions and elevated particulate matter emissions when the recycled materials have impinged upon the burner flame. The design of the proposed plant is intended to keep materials separate from the burner flame, so this effect is expected to be minimized.

Mixer Opacity:

Every new asphalt mixer reviewed by the Agency since 2008 has had a 5 percent opacity limit, including most recently, Order No. 11328 (issued January 23, 2018). SWCAA has also issued a permit with a 5% opacity limit for asphalt plants. BACT for visible emissions from the mixer baghouse is emissions no greater than 5% opacity for three minutes in an hour per a Washington Department of Ecology Method 9A visual emissions test.

Mixer VOC:

Similar Permits or Other Regulatory Agencies BACT for VOC:

SWCAA issued 16-3199ADP in 2016 for the replacement of an existing parallel flow aggregate drum dryer/mixer with a counterflow drum dryer/mixer. The BACT determination for the dryer/mixer includes a maximum product temperature of 315°F (mixing drum outlet) and establishes a numerical limit for VOC equal to the potential to emit for the dryer/mixer. The BAAQMD BACT Guideline lists a numerical VOC emission limit of 0.03 lb/ton for batch mix hot mix asphalt plants, and TCEQ's BACT guideline for hot mix asphalt plants lists a limit of 0.032 lb/ton.

Analysis:

The Agency first set a limit on emissions of VOC from asphalt plant mixers with Order No. 11328. Order No. 11328 includes a VOC limit of 0.032 lb/ton, which is based on the AP-42 Chapter 11.1 VOC emission factor for drum mix hot mix asphalt plants, found in Table 11.1-8. As described in Section F of this worksheet, the rotary drum mixer being installed at the Puget Paving facility is not the same design as the drum mix plants described in AP-42 Chapter 11.1. The drum mix plants described in AP-42 Chapter 11.1 have an aggregate dryer integrated with mixing of the aggregate with the asphalt cement that has a burner, rather than a standalone mixer which is merely mixing hot ingredients, but does not have a burner. The asphalt plant permitted under Order No. 11328 has a dryer integrated with mixing, and I would expect the VOC emissions from this type of dryer/mixer to be higher than the emissions from a standalone mixer, since in the integrated dryer/mixer, the mixing of asphalt cement occurs in the drum that is also drying the aggregate and has a burner, presumably creating a hotter environment that could generate more VOC. The AP-42 Chapter 11.1, Table 11.1-6, VOC emission factor for combined VOC emissions from a natural gas-fired dryer, hot screens, and mixer at a batch mix plant is 0.0082 lb/ton, which is substantially lower than the 0.032 lb/ton emission factor for drum mix plants, as expected. However, since other agencies have established a numerical limit for VOC emissions from hot mix asphalt plants (including both batch and drum mix plants), the Agency is setting 0.032 lb/ton as the BACT emission rate.

In addition, Order No. 11328 and SWCAA establish maximum mix temperature operating conditions, since mix temperature has been tied to VOC emissions. The issue with limiting the maximum product temperature to 315°F, as used by SWCAA, is that this restricts the type of products able to be produced by the plant, which limits the market the plant could serve. Not only does a temperature limit reduce the number of products available, it also limits the area able to be served by the plant due to cooling of the asphaltic concrete while transporting it to the site of application. Consistent with Order No. 11328, maximum mix temperature will be limited to the maximum recommended temperature for the mix as set by the manufacturer of the asphaltic cement used in the mix specification produced plus a 25°F buffer. Mix temperature will be required to be monitored hourly in a manner similar to that specified in the State of Washington Department of Ecology General Order for Portable and Stationary Hot Mix Asphalt Plants No. 10AQ-GO-01.

RAP Feeder Bin Particulate Matter:

Since RAP is coated with asphalt cement, PM emissions from handling RAP are expected to be negligible. Crushed RAP material is actually used as a technique for controlling fugitive dust emissions at hot mix asphalt plants.[1] Therefore, I am proposing a BACT limit of no visible emissions from the RAP feeder bin.

F. EMISSION ESTIMATES

Because the emissions from both batch plants (with pug mill mixers) and drum mixers combine the emissions from mixing dried aggregate with the combustion emissions used for drying the aggregate, emissions tests conducted at baghouse stacks do not differentiate these two subsets of emissions. Because of this, it is not possible to quantify the emissions due solely to the act of mixing hot aggregate with hot asphaltic cement. However, given that the only difference in this project is the method of mixing and not the types of materials being mixed, it is reasonable to assume that emissions from mixing in a pug mill mixer are similar to emissions from mixing in a continuous, standalone drum mixer.

AP-42 Chapter 11.1 establishes two emission factors sets: one for batch mix hot mix asphalt plants and one for drum mix hot mix asphalt plants, where mixing takes places in the dryer drum. With the proposed mixer replacement, the process at Puget Paving will be considered a “continuous mix (mix outside dryer drum) plant”. This type of plant does not have emission factors established in AP-42 Chapter 11.1. I determined that the batch mix emission factors are more representative than the drum mix factors, since the asphalt cement is still being added directly to a standalone mixer rather than the dryer, and the dryer operation is not being changed as part of this project.

The emission estimates in the tables below are made using EPA’s AP-42 Chapter 11.1 emission factors for batch mix asphalt plants and include drying of aggregate and mixing asphaltic cement with the aggregate to make asphaltic concrete.

I also estimated potential emissions from the new RAP feeder bin. Since RAP is coated with asphalt cement, PM emissions from handling RAP are expected to be negligible. I conservatively calculated PM

[1] “Preferred and Alternative Methods for Estimating Air Emissions from Hot-Mix Asphalt Plants”, EPA Emission Inventory Improvement Program, July 1996.

emissions from transferring material to the new RAP feeder bin using the drop equation in AP-42 Chapter 13.2.4. The RAP feeder bin emission calculations are included in the workbook below.

Puget Paving Asphalt Emissions.xlsx

Actual Emissions

Actual emissions are calculated assuming 150,000 tons of asphalt produced per year and 1,250 hours of operation per year (5 hours per day, 5 days per week, 50 weeks per year).

Emissions Source: AP-42 Chapter 11.1: Dryer, Hot Screens, Mixer-Batch Plant Configuration

Plant Throughput:	300	tph
	150,000	tons/year
	1,250	hrs/year (5 hrs/day, 5 days/week, 50 weeks/yr)
	62,000	cfm at 250F
	34,875	dscfm
% RAP	40%	
Fuel:	Natural Gas	

Criteria Pollutant	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
PM	0.027	gr/dscf	BACT	8.07	5.04
PM-10	0.027	gr/dscf	BACT	8.07	5.04
PM-2.5	0.027	gr/dscf	BACT	8.07	5.04
CO	0.40	lb/ton	Table 11.1-5	120.00	30.00
NOx	0.025	lb/ton	Table 11.1-5	7.50	1.88
SO_2	0.0046	lb/ton	Table 11.1-5	1.38	0.35
VOC	0.032	lb/ton	BACT	9.60	2.40
CO2	37	lb/ton	Table 11.1-5	11,100	2,775

Hazardous Air Pollutants, Metals, Toxic Materials	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
NOx	2.50E-02	lb/ton	Table 11.1-5	7.5	2
CO	4.00E-01	lb/ton	Table 11.1-5	120	30
SO_2	4.60E-03	lb/ton	Table 11.1-5	1.38	3.45E-01
2-Methylnaphthalene	7.10E-05	lb/ton	Table 11.1-9	2.13E-02	5.33E-03
Acenaphthene	9.00E-07	lb/ton	Table 11.1-9	2.70E-04	6.75E-05
Acenaphthylene	5.80E-07	lb/ton	Table 11.1-9	1.74E-04	4.35E-05
Anthracene	2.10E-07	lb/ton	Table 11.1-9	6.30E-05	1.58E-05
Benzo(a)anthracene	4.60E-09	lb/ton	Table 11.1-9	1.38E-06	3.45E-07
Benzo(a)pyrene	3.10E-10	lb/ton	Table 11.1-9	9.30E-08	2.33E-08
Benzo(b)fluoranthene	9.40E-09	lb/ton	Table 11.1-9	2.82E-06	7.05E-07
Benzo(g,h,i)perylene	5.00E-10	lb/ton	Table 11.1-9	1.50E-07	3.75E-08
Benzo(k)fluoranthene	1.30E-08	lb/ton	Table 11.1-9	3.90E-06	9.75E-07
Chrysene	3.80E-09	lb/ton	Table 11.1-9	1.14E-06	2.85E-07
Fluoranthene	1.60E-07	lb/ton	Table 11.1-9	4.80E-05	1.20E-05
Fluorene	1.60E-06	lb/ton	Table 11.1-9	4.80E-04	1.20E-04
Indeno(1,2,3-cd)pyrene	3.00E-10	lb/ton	Table 11.1-9	9.00E-08	2.25E-08
Naphthalene	3.60E-05	lb/ton	Table 11.1-9	1.08E-02	2.70E-03
Phenanthrene	2.60E-06	lb/ton	Table 11.1-9	7.80E-04	1.95E-04
Pyrene	6.20E-08	lb/ton	Table 11.1-9	1.86E-05	4.65E-06
Lead	8.90E-07	lb/ton	Table 11.1-11	2.67E-04	6.68E-05
Acetaldehyde	3.20E-04	lb/ton	Table 11.1-9	9.60E-02	2.40E-02
Benzene	2.80E-04	lb/ton	Table 11.1-9	8.40E-02	2.10E-02

Hazardous Air Pollutants, Metals, Toxic Materials	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
Ethylbenzene	2.20E-03	lb/ton	Table 11.1-9	6.60E-01	1.65E-01
Formaldehyde	7.40E-04	lb/ton	Table 11.1-9	2.22E-01	5.55E-02
Quinone	2.70E-04	lb/ton	Table 11.1-9	8.10E-02	2.03E-02
Toluene	1.00E-03	lb/ton	Table 11.1-9	3.00E-01	7.50E-02
m-Xylene	2.70E-03	lb/ton	Table 11.1-9	8.10E-01	2.03E-01
Arsenic	4.60E-07	lb/ton	Table 11.1-11	1.38E-04	3.45E-05
Cadmium	6.10E-07	lb/ton	Table 11.1-11	1.83E-04	4.58E-05
Beryllium	1.50E-07	lb/ton	Table 11.1-11	4.50E-05	1.13E-05
Copper	2.80E-06	lb/ton	Table 11.1-11	8.40E-04	2.10E-04
Hexavalent Chromium	4.80E-08	lb/ton	Table 11.1-11	1.44E-05	3.60E-06
Manganese	6.90E-06	lb/ton	Table 11.1-11	2.07E-03	5.18E-04
Mercury	4.10E-07	lb/ton	Table 11.1-11	1.23E-04	3.08E-05
Nickel	3.00E-06	lb/ton	Table 11.1-11	9.00E-04	2.25E-04
Selenium	4.90E-07	lb/ton	Table 11.1-11	1.47E-04	3.68E-05

Potential Emissions

The permitted potential to emit calculations are based on operating 1,650 hours per year (producing up to 495,000 tons per year). This federally enforceable limit is established by this Order.

Emissions Source: AP-42 Chapter 11.1: Dryer, Hot Screens, Mixer-Batch Plant Configuration

Plant Throughput:	300	tph
	495,000	tons/year
	1,650	hrs/year
	62,000	cfm at 250F
	34,875	dscfm
% RAP	40%	
Fuel:	Natural Gas	

Criteria Pollutant	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
PM	0.027	gr/dscf	BACT	8.07	6.66
PM-10	0.027	gr/dscf	BACT	8.07	6.66
PM-2.5	0.027	gr/dscf	BACT	8.07	6.66
CO	0.40	lb/ton	Table 11.1-5	120.00	99.00
NOx	0.025	lb/ton	Table 11.1-5	7.50	6.19
SO_2	0.0046	lb/ton	Table 11.1-5	1.38	1.14
VOC	0.032	lb/ton	BACT	9.60	7.92
CO2	37	lb/ton	Table 11.1-5	11,100	9,158

Hazardous Air Pollutants, Metals, Toxic Materials	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
NOx	2.50E-02	lb/ton	Table 11.1-5	7.5	6
CO	4.00E-01	lb/ton	Table 11.1-5	120	99.00
SO_2	4.60E-03	lb/ton	Table 11.1-5	1.38	1.14
2-Methylnaphthalene	7.10E-05	lb/ton	Table 11.1-9	2.13E-02	1.76E-02
Acenaphthene	9.00E-07	lb/ton	Table 11.1-9	2.70E-04	2.23E-04
Acenaphthylene	5.80E-07	lb/ton	Table 11.1-9	1.74E-04	1.44E-04
Anthracene	2.10E-07	lb/ton	Table 11.1-9	6.30E-05	5.20E-05
Benzo(a)anthracene	4.60E-09	lb/ton	Table 11.1-9	1.38E-06	1.14E-06
Benzo(a)pyrene	3.10E-10	lb/ton	Table 11.1-9	9.30E-08	7.67E-08
Benzo(b)fluoranthene	9.40E-09	lb/ton	Table 11.1-9	2.82E-06	2.33E-06
Benzo(g,h,i)perylene	5.00E-10	lb/ton	Table 11.1-9	1.50E-07	1.24E-07
Benzo(k)fluoranthene	1.30E-08	lb/ton	Table 11.1-9	3.90E-06	3.22E-06
Chrysene	3.80E-09	lb/ton	Table 11.1-9	1.14E-06	9.41E-07
Fluoranthene	1.60E-07	lb/ton	Table 11.1-9	4.80E-05	3.96E-05
Fluorene	1.60E-06	lb/ton	Table 11.1-9	4.80E-04	3.96E-04
Indeno(1,2,3-cd)pyrene	3.00E-10	lb/ton	Table 11.1-9	9.00E-08	7.43E-08
Naphthalene	3.60E-05	lb/ton	Table 11.1-9	1.08E-02	8.91E-03
Phenanthrene	2.60E-06	lb/ton	Table 11.1-9	7.80E-04	6.44E-04
Pyrene	6.20E-08	lb/ton	Table 11.1-9	1.86E-05	1.53E-05
Lead	8.90E-07	lb/ton	Table 11.1-11	2.67E-04	2.20E-04
Acetaldehyde	3.20E-04	lb/ton	Table 11.1-9	9.60E-02	7.92E-02

Hazardous Air Pollutants, Metals, Toxic Materials	Emission Factor	Unit	References	Emissions (lb/hr)	Emissions (tons/yr)
Benzene	2.80E-04	lb/ton	Table 11.1-9	8.40E-02	6.93E-02
Ethylbenzene	2.20E-03	lb/ton	Table 11.1-9	6.60E-01	5.45E-01
Formaldehyde	7.40E-04	lb/ton	Table 11.1-9	2.22E-01	1.83E-01
Quinone	2.70E-04	lb/ton	Table 11.1-9	8.10E-02	6.68E-02
Toluene	1.00E-03	lb/ton	Table 11.1-9	3.00E-01	2.48E-01
m-Xylene	2.70E-03	lb/ton	Table 11.1-9	8.10E-01	6.68E-01
Arsenic	4.60E-07	lb/ton	Table 11.1-11	1.38E-04	1.14E-04
Cadmium	6.10E-07	lb/ton	Table 11.1-11	1.83E-04	1.51E-04
Beryllium	1.50E-07	lb/ton	Table 11.1-11	4.50E-05	3.71E-05
Copper	2.80E-06	lb/ton	Table 11.1-11	8.40E-04	6.93E-04
Hexavalent Chromium	4.80E-08	lb/ton	Table 11.1-11	1.44E-05	1.19E-05
Manganese	6.90E-06	lb/ton	Table 11.1-11	2.07E-03	1.71E-03
Mercury	4.10E-07	lb/ton	Table 11.1-11	1.23E-04	1.01E-04
Nickel	3.00E-06	lb/ton	Table 11.1-11	9.00E-04	7.43E-04
Selenium	4.90E-07	lb/ton	Table 11.1-11	1.47E-04	1.21E-04

Facility-wide Emissions

Reporting Source? This source has not reported emissions in the past. However, it appears the actual emissions of CO could likely be above the reporting threshold, they will likely need to report emissions in the future.

G. OPERATING PERMIT or PSD

As limited, the facility emissions are both less than the 100 tons-per-year threshold to be an Air Operating Permit facility and less than the 250 tons-per-year threshold to be a Prevention of Significant Deterioration (PSD) facility. For carbon monoxide, there will be established a 99 tons per year emission limit to avoid major source status.

H. AMBIENT TOXICS IMPACT ANALYSIS

As discussed in Section F, the emissions of toxic air pollutants (TAPs) from operation of the drum mixer, while difficult to quantify, are not expected to be any different from the TAP emissions due to operating the pug mill. Since the pug mill is to be removed and not operated, the emission reduction from removing the pug mill offsets the increase of TAPs from operating the drum mixer resulting in no increase of TAPs greater than the Small Quantity Emission Rates (SQERs) and no requirement to model ambient concentrations of TAPs. This Order will require the removal of the existing pug mill mixer prior to the first operation of the new drum mixer.

I. APPLICABLE RULES & REGULATIONS

1. PUGET SOUND CLEAN AIR AGENCY REGULATIONS

SECTION 5.05 (c): The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:
(1) Periodic inspection of all equipment and control equipment;
(2) Monitoring and recording of equipment and control equipment performance;
(3) Prompt repair of any defective equipment or control equipment;
(4) Procedures for startup, shut down, and normal operation;
(5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and
(6) A record of all actions required by the plan.
The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

SECTION 6.09: Within 30 days of completion of the installation or modification of a stationary source subject to the provisions of Article 6 of this regulation, the owner or operator or applicant shall file a Notice of Completion with the Agency. Each Notice of Completion shall be submitted on a form provided by the Agency, and shall specify the date upon which operation of the stationary source has commenced or will commence.

SECTION 9.03: (a) It shall be unlawful for any person to cause or allow the emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, which is:
(1) Darker in shade than that designated as No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or
(2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section 9.03(a)(1).
(b) The density or opacity of an air contaminant shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point of the plume nearest the point of emission.
(c) This section shall not apply when the presence of uncombined water is the only reason for the failure of the emission to meet the requirements of this section.

SECTION 9.09: General Particulate Matter (PM) Standard. It shall be unlawful for any person to cause or allow the emission of particulate matter in excess of the following concentrations:
Equipment Used in a Manufacturing Process: 0.05 gr/dscf

SECTION 9.11: It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

SECTION 9.13: It shall be unlawful for any person to cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant which causes detriment to health, safety or welfare of any person.

SECTION 9.15: It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:
(1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
(2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
(3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
(4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

REGULATION I, SECTION 9.20(a): It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

2. WASHINGTON STATE ADMINISTRATIVE CODE

WAC 173-400-040(3): Fallout. No person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

WAC 173-400-040(4): Fugitive emissions. The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

(a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC173-400-111(7): Construction limitations.
(a) Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time. The permitting authority may extend the eighteen-month period upon a satisfactory showing by the permittee that an extension is justified.

3. FEDERAL

40 CFR 60 Subpart A and Subpart I apply to this facility.

Subpart A:

60.4(b) Delegation of authority to PSCAA to enforce NSPS.

60.7(a)(1, 3, 4) Notification & Record keeping.

60.7(b) Maintain records including malfunctions.

60.8 Requirements for source testing. (Stack test has already been completed for the affected facility.)

60.11(a, b, c, e) Compliance requirements for PM10 & opacity. Note: requires that Method 9 tests include three one-hour observations conducted concurrently with the Method 5 test runs.

60.11(d) Operate consistent with good engineering control practices.

Subpart I:

60.90 Defines the applicable sources

60.91 Contains definitions

60.92 Has the PM emissions standard of 0.04 gr/dscf measured by EPA method 5 which is only the "Front-Half". 20 percent opacity limit.

60.93 Test methods include collecting a min of 31.8 dscf of sample for PM, and EPA Method 9 for opacity. (Stack test has already been completed for the affected facility.)

J. PUBLIC NOTICE

A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. A copy of the website posting is below:

Puget Paving	5625 189th St E, Puyallup, WA 98373	New application submitted to replace batch tower and pugmill mixer with a mini-drum rotary mixer, as well as replace dryer shell.	6/12/18	Courtney O'Gorman

This project meets the criteria for mandatory public notice under WAC 173-400-171(3)(k) for establishing a voluntary limit on emissions as well as WAC 173-460-071(2). This is due to requesting a voluntary limit on emissions for carbon monoxide and taking a limit on emissions for the existing pug mill mixer (i.e. removing the existing mixer from operation) to offset emissions of toxic air pollutants from the new mixer. A 30-day public comment period was held from August XX, 2018 through September XX, 2018. Notices that the draft materials were open to comment were published in the Tacoma News Tribune and the Daily Journal of Commerce on August XX, 2018. The Agency posted the application and the draft worksheet on the Agency's website during the comment period. No comments were received during the comment period.

K. RECOMMENDED APPROVAL CONDITIONS

Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.

2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

Specific Conditions:

NSPS

3. Puget Paving shall comply with the requirements of 40 CFR Part 60, Subparts I and A.

BACT

4. Puget Paving shall vent the rotary drum mixer and storage silos to the Standard Steel Baghouse.

5. The Aesco Madsen Rotary Dryer shall be fired only on natural gas.

6. The existing H&B Pug Mill Mixer shall be removed from service prior to the first operation of the Aesco Madsen Rotary Mixer. A record of the date of the last operation of the existing H&B Pug Mill Mixer and the date of the first operation of the new Aesco Madsen Rotary Mixer shall be kept on file for Agency inspection.

7. The following emission limitations are set on the mixer stack:
   a) Total particulate matter emissions shall not exceed 0.027 gr/dscf (corrected to 7% O_2) as measured by U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.
   b) Filterable particulate matter emissions shall not exceed 0.014 gr/dscf (corrected to 7% O_2) as measured by U.S. EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.
   c) Opacity shall not exceed 5% opacity for a period or periods aggregating more than 3 minutes during any one hour as measured by WDOE Method 9A.
   d) Emissions of Non-Methane/Non-Ethane VOC (NMNEVOC) shall not exceed 0.032 lb NMNEVOC per ton of hot mixed asphaltic concrete produced as determined in accordance with Section 3.07 of PSCAA Regulation 1 using EPA reference methods 1, 3A, 4, and 25A (using either an FID with a methane “cutter”, OR using EPA Method 320 or EPA Method 18 to analyze for methane and ethane, and subtracting the methane and ethane results from the total VOC measured by the FID analyzer) from Appendix A of 40 CFR Part 60 by the average of three 60-minute test

runs. NMNEVOC shall be expressed as propane. Other equivalent test methods may be used with the approval of the Agency. If other test methods are desired, the owner or operator must submit a test plan for Agency approval at least 30 days prior to the test which describes the test methods proposed for use

e) There shall be no visible emissions from the recycled asphalt pavement (RAP) feeder bin.

8. The temperature of the asphaltic concrete mix exiting the mixer shall not exceed the optimum mix temperature +25°F for each product specification as set out in the product's current WSDOT Mix Design Evaluation Report. Documentation of each product's WSDOT Mix Design Evaluation Report including optimum mix temperature shall be kept on file and incorporated into the Operations and Maintenance plan required by Agency Regulation I, Section 5.05(c).

9. The combined total recycled asphalt (RA), consisting of recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS), added to the mixer shall not exceed on a 3-hour average hourly basis the greatest total RA percentage by weight used in a passing source test of Conditions 7.a, 7.b., 7.c, and 7.d until a new test is conducted.

10. Puget Paving shall not use RAS that contains asbestos, as defined in Agency Regulation III, Section 4.01(c). Puget Paving shall collect samples for every load of RAS received and have the samples analyzed using polarized light microscopy by an independent third party in accordance with 40 CFR 763, Subpart E, Appendix E, Section 1, to demonstrate that RAS is asbestos-free. The delivery log and all bulk sample analysis results shall be maintained on-site and available for inspection for a period of two years.

11. Records of every delivery of RAS shall be maintained confirming the origin, supplier, and amount (mass) of RAS.

SOURCE TESTING

12. Puget Paving shall have emissions tested for compliance with Conditions 7.a, 7.b, 7.c, and 7.d of this Order within 60 days after achieving the maximum production rate, but no later than 180 days after initial startup of this plant. The emission tests listed in this requirement shall be repeated at an interval no less than once every five years. Puget Paving shall submit a compliance test plan with the test notification submitted under Regulation I, Section 3.07(b) at least 21 days prior to the compliance test. The test plan shall detail the test methods used for each pollutant, the operational data that will be collected during the test, and any other relevant information about the test.

13. Puget Paving may conduct an emission test as set out in Condition 12 at any time (given notification as required in Regulation I, Section 3.07(b)) for the purposes of setting the RA limit in Condition 8. Puget Paving shall submit a compliance test plan with the test notification submitted under Regulation I, Section 3.07(b) at least 21 days prior to the compliance test.

14. During the emission tests required by Conditions 12 and 13, the following operation data shall be collected during each test run and reported in the source test report:

a) Hourly weight of RAP and RAS used, plus the hourly weight of asphalt produced;

b) hourly and 3-hour average RA (RAP plus RAS) total percent by weight usage

c) standard cubic feet of fuel combusted;

d) aggregate moisture percentage (as measured by the Quality Control lab for a representative sample taken the day of the test);

e) asphalt cement content percentage;

f) baghouse pressure drop;

g) baghouse fan speed (as a percentage of full speed);

h) baghouse pulse cycle time;

i) burner water injection nozzle pressure (psig);

j) flue gas damper setting (as a percentage of maximum opening);

k) maximum temperature of mix as it exits the mixer; and

l) product specification produced during the run, a copy of the specification, and maximum temperature allowed by the specification.

PLANT MAINTENANCE

15. The baghouse shall be equipped with a gauge measuring the pressure drop across the baghouse. The pressure gauge shall be in operation whenever the baghouse is in operation. The pressure gauge shall be marked with the acceptable pressure drop range. The maximum acceptable pressure drop shall be determined from manufacturer specifications for the bags used in the baghouse. The minimum acceptable pressure drop shall be determined from manufacturer specifications for the bags used in the baghouse. The pressure drop observed during the most recent compliance source test shall fall within the defined acceptable range of pressure drop. The acceptable range and the basis for the range shall be included in the facility Operations and Maintenance plan required by Agency Regulation I, Section 5.05(c).

OPERATION AND MAINTENANCE PLAN

16. When operating, Puget Paving shall monitor and record the following information:

a) one daily pressure drop across the baghouse;

b) one daily inspection for visible emissions and particulate fallout for the baghouse and RAP feeder;

c) hourly weight of RA (RAP plus RAS) used, plus the hourly weight of asphalt produced;

d) calculated 3-hour average RA (RAP plus RAS) total percent by weight usage;

e) annual (12 consecutive months rolling total) asphalt production;

f) monthly fuel use;

g) one mix temperature reading recorded for each hour in which the mixer operates;

h) the product specification produced and the hour it was produced; and

i) the time (in hours) the mixer operated.

ANNUAL PRODUCTION LIMITATION

17. Puget Paving shall record and limit the total production of asphalt to no more than 495,000 tons for any 12 consecutive months.

18. A notification of a violation of Condition 17 shall be sent to Puget Sound Clean Air Agency within 30 days following any month when the 12 consecutive months rolling total exceeds 495,000 tons per year of asphalt production.

EMISSION LIMITATION

19. Facility-wide emissions of carbon monoxide shall not exceed 99.0 tons during any during any 12 consecutive months after the date of this Order.

20. Within 30 days of the end of each month, Puget Paving shall calculate the facility-wide carbon monoxide emissions for the previous 12 months using the monthly production and the emission factor of 0.40 lbs/ton produced or the most recent carbon monoxide emission test result. If the most recent carbon monoxide test result is greater than 0.40 lbs per ton, then it must be used. If Puget Paving chooses to test CO, they shall submit a compliance test plan with the test notification submitted under Regulation I, Section 3.07(b).

21. Puget Paving shall notify the Puget Sound Clean Air Agency in writing, within 30 days after the end of each 12-month period if, during that period, emissions of CO exceed 90 tons. The report shall include emissions data for the time period for which these thresholds were exceeded.

COMPLAINTS

22. Puget Paving shall establish a complaint response program as part of the O&M Plan. The program shall include a complaint phone line, criteria and methods for establishing whether Puget Paving may be the source of emissions related to the complaint, and a format for communicating results of investigation and advising complainants of Puget Paving corrective actions.

    a) Puget Paving shall record and investigate complaints received regarding air quality as soon as possible, but no later than one working day after receipt.

    b) Puget Paving shall correct any problems identified by these complaint investigations within 24 hours of identification or cease operation of the equipment until the problem is resolved;

c) Records of all complaints received regarding air quality issues shall include information regarding date and time of complaint; name and address of complainant (if known); nature of the complaint; investigation efforts completed and basis for conclusion reached; and date, time, and nature of any corrective action taken.

RECORDS

22. Puget Paving shall maintain records required by this Order of Approval, as well as the records identified in the Operation and Maintenance Plan required by Regulation I, Section 5.05, for two years and make them available to Puget Sound Clean Air Agency personnel upon request.

23. Upon startup of the equipment reviewed under this Order of Approval, this Order supersedes and cancels Order of Approval No. 6883 dated April 30, 1997.

L. CORRESPONDENCE AND SUPPORTING DOCUMENTS

Email from Courtney O'Gorman, 6/20/2018:

From: Courtney O'Gorman
To: 'Josh Nobles'
Cc:
Subject: Puget Paving - NOC 11613 Incomplete
Sent: Wed 6/20/2018 11:26 AM

Hi Josh,

I have reviewed the Notice of Construction application you submitted for changes to your existing asphalt plant and have determined that the application is incomplete. Could you please provide the following information?

- Provide the maximum percent RAP in the feed to the mixer. Is the percent RAP changing as part of the project?
- Does the plant process reclaimed asphalt shingles (RAS) or plan to in the future?
- Provide the maximum hourly throughput of the new RAP feeder.
- Confirm that the facility is physically capable of firing No. 2 fuel oil in the dryer.
- Provide facility-wide potential-to-emit calculations in Excel format. Please note that the emissions provided in the application (from the NOC #6883 worksheet) are based on AP-42 emission factors that have since been updated. Please update the calculations to use the current AP-42 emission factors.
- Provide potential toxic air pollutant (TAP) and hazardous air pollutant (HAP) emission calculations for the new mini drum rotary mixer. If the emission increase of any TAP is greater than the Small Quantity Emission Rate (SQER) in WAC 173-460-150, then dispersion modeling showing whether estimated ambient concentrations of TAPs will be less than the Acceptable Source Impact Levels (ASILs) is required. You may take credit for the decrease in TAP from the removal of the existing mixer; however, this would require the permit to undergo public notice.
- Clarify that the dryer shell replacement does not replace the other parts of the dryer (supports, drives, internal elements such as conveyors, motors, etc.).
- Our understanding is that the existing baghouse will be unchanged. Please note that we will need to do a Best Available Control Technology (BACT) review for the new mixer, which may result in a more stringent emission limit than what is currently in the permit.

Thank you,

Courtney O'Gorman
Engineer II
CourtneyO@pscleanair.org
206.689.4022
Puget Sound Clean Air Agency
1904 3rd Ave – Suite 105
Seattle, WA 98101

"Working together for clean air"

Email from Josh Nobles, 6/25/2018:

From: Josh Nobles <josh@pugetpaving.com> Sent: Mon 6/25/2018 5:07 PM
To: Courtney O'Gorman
Cc:
Subject: Puget Paving - NOC 11613 Incomplete

Sent: Monday, June 25, 2018 4:37 PM
To: 'Josh Nobles'
Subject: RE: Puget Paving - NOC 11613 Incomplete

Good Afternoon,

I have been talking with our manufacturer (AESCO Madsen), There was some confusion when I asked them for the TAP/ HAP emissions calculations for the new mixer. It is not something that they have ever been asked for. The mixer they are selling us is just a mixing drum, our process is still the exact same as with a pugmill mixer. The only difference between them is the pugmill mixes the rock and oil in 3.5 ton batches at a time and the mini drum rotary mixer is just a continuous flow of rock and oil. Still the same quantities of each.

I did some of the calculations as per the link you sent me, but I was troubled with the options to choose from. We wouldn't be a Batch Plant or a Drum Plant. In the drum plant the aggregate is dried in the same drum that the oil and RAP are injected to and would have different emissions than what we would be doing. In our application, aggregate is blended at the cold feeders (no hot screens) then dried and heated in the dryer, the heated agg., RAP and baghouse fines are deposited together in the hot stone elevator then sent to the pugmill mixer (or mini drum in the new design) to be combined with oil. I am afraid that if I pick one or the other (drum or batch) it may be more favorable in some areas but more detrimental in other areas.

My intentions are to get this right but I am having trouble getting our project to fit in properly. There are a couple other asphalt plants that have done the same conversion as we are hoping to do, so hopefully information exists that will help.

Josh Nobles
Puget Paving & Construction, Inc.
10910 26th Ave. S.
Lakewood, WA 98499
(253) 240-1306 P
(253) 474-5677 F
josh@pugetpaving.com

Email from Courtney O'Gorman, 6/27/2018:

From: Courtney O'Gorman Sent: Tue 6/26/2018 8:34 AM
To: 'Josh Nobles'
Cc:
Subject: RE: Puget Paving - NOC 11613 Incomplete

Hi Josh,

Thank you very much for your detailed email. I completely agree that estimating emissions from your type of plant is a challenge with the limited AP-42 emission data that are available. Based on your description below, it sounds like the batch plant emission factors are more representative than the drum plant emission factors, since the oil is still being added directly to the mixer rather than the dryer, and the dryer operation is not being changed from how you have historically operated as a batch plant. Would you agree?

If you agree, you can use the emission factors specific to batch plants in AP-42 Chapter 11.1 to calculate your facility-wide emissions. HAP/TAP emission factors for batch plants are provided in Tables 11.1-9 and 11.1-11. The list of Washington TAPs is provided here: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150. The TAP review poses another challenge, because TAP emissions only need to be quantified for the project (i.e., the new drum mixer), and the emission factors do not distinguish between the dryer and the mixer. If you are fine with having a public comment period for the Order of Approval, we can take a "netting" approach that takes credit for the decrease in TAP emissions from the replaced pugmill mixer, which would offset the TAP emissions from the new drum mixer. Otherwise, we will need to compare the TAP emission increase from the new drum mixer to the Small Quantity Emission Rates (SQERs) listed at the link above to determine if any TAPs require air dispersion modeling.

In the supporting document for the Order of Approval, I will be sure to document why the emission factors in AP-42 Chapter 11.1 are not completely representative of your facility configuration.

I hope this helps! Please let me know if you have any questions.

Thank you!
Courtney

Email from Josh Nobles, 6/27/2018:

From: Josh Nobles <Josh@pugetpaving.com> Sent: Wed 6/27/2018 3:19 PM
To: Courtney O'Gorman
Cc:
Subject: RE: Follow Up Items - Puget Paving
Message | PTE Existing.xlsx (81 KB) | PTE Proposed.xlsx (81 KB)

Courtney,

Thank You very much for your time and assistance. I have attached some excel files. One is our current installation, the second is our new mixer, all I was able to do was to basically calculate double everything, since there is only one category to pick from. In AP-42 I see an SCC code for just a mixer but when you search that code it will not appear and therefor no emissions factor. How frustrating..
Here are some answers to your previously asked questions:

- Provide the maximum percent RAP in the feed to the mixer. Is the percent RAP changing as part of the project?

40% is the maximum recommended rap and that is as high as we have tried. The rap percentages will not be changing as part of the project.

- Does the plant process reclaimed asphalt shingles (RAS) or plan to in the future?

We are not currently using RAS, although we have tested the idea. Our old RAP feeder will be left in place and modified for that purpose. Although we are not planning to incorporate RAS at this time just leaving the option to do so.

- Provide the maximum hourly throughput of the new RAP feeder.

The new RAP feeder is maxed out at 120 tons/hr

- Confirm that the facility is physically capable of firing No. 2 fuel oil in the dryer.

The burner is physically capable of burning no. 2 fuel oil but is not currently hooked up, It is missing a few components. We have no intentions of reconnecting the burner to no. 2 fuel oil.

- Clarify that the dryer shell replacement does not replace the other parts of the dryer (supports, drives, internal elements such as conveyors, motors, etc.).

The dryer shell replacement is an exact copy just remove and replace. The 4 trunions (bearings) that it rides on will be replaced as well. The drive system motor / gearbox and chains or supports will not be changed.

Thank You again for your time!
Please let me know if anything else is needed

Josh Nobles
Puget Paving & Construction, Inc.
10910 26th Ave. S.
Lakewood, WA 98499
(253) 240-1306 P
(253) 474-5677 F
josh@pugetpaving.com

PUGET PAVING & CONSTRUCTION, INC.

Email from Courtney O'Gorman, 7/9/2018:

From: Courtney O'Gorman Sent: Mon 7/9/2018 10:25 AM
To: 'Josh Nobles'
Cc:
Subject: RE: Follow Up Items - Puget Paving

Hi Josh,

Thank you for sending this information. I wanted to let you know that with the current operating limit in the permit (3,019 hrs/yr firing natural gas), the facility's potential carbon monoxide (CO) emissions are greater than the Air Operating Permit major source threshold (100 tons per year). Therefore, I am planning to establish a "synthetic minor" limit in this permit, which will limit the facility-wide CO emissions to 99 tons per year. I will also update the limits on the operating hours per year and total annual production to correspond to 99 tons per year of CO. The synthetic minor limit will require an additional fee and will require the permit to go through public notice. Alternatively, you can choose to conduct a source test for CO emissions to demonstrate that the facility does not exceed the major source threshold at the current permitted limit (i.e., the facility is a "natural" minor source). Please let me know if this is your preferred approach or if I can move forward with the synthetic minor limit.

Also, could you describe what specific components are missing to hook up the dryer burner to No. 2 fuel oil? Are these components readily available at the facility or were they never purchased?

Thanks!
Courtney

Email from Josh Nobles, 7/17/2018:

From: Josh Nobles <josh@pugetpaving.com> Sent: Tue 7/17/2018 2:09 PM
To: Courtney O'Gorman
Cc:
Subject: RE: Follow Up Items - Puget Paving

Good Afternoon,

We would like to establish the synthetic minor limit and we are aware that that means a public comment period.. Let me know what you need from me to proceed.
Thank You!

Josh Nobles
Puget Paving & Construction, Inc.
10910 26th Ave. S.
Lakewood, WA 98499
(253) 240-1306 P
(253) 474-5677 F
josh@pugetpaving.com

PUGET PAVING & CONSTRUCTION, INC.

M. REVIEWS

Reviews	Name	Date
Engineer	Courtney O'Gorman	7/31/18
Inspector	Rick Hess	8/1/18
Second Review:	Carole Cenci	8/1/18
Applicant Name:	Josh Nobles	8/6/18

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

Permit Application Analysis
A0001215

July 8, 2015

NAME OF FIRM:	Croell Redi-Mix, Inc.
NAME OF MINE:	McGuire Pit
LOCATION OF MINE:	NE¼NE¼ & E½SE¼NE¼ of Section 25, T24N, R69W Platte County, Wyoming
TYPE OF OPERATION:	Sand and Gravel Pit
RESPONSIBLE OFFICIAL:	Kristi Chamley, Environmental Coordinator
MAILING ADDRESS:	P.O. Box 1352 Sundance, WY 82729
TELEPHONE:	(307) 283-2221
REVIEWING ENGINEER:	Nick Meeker, Air Quality Engineer

1. PURPOSE OF APPLICATION

On June 24, 2015, the Division of Air Quality received an application from Croell Redi-Mix, Incorporated to modify the McGuire Pit by increasing the maximum annual production from 30,000 tons to 200,000 tons. The McGuire Pit will include sand and gravel crushing, screening, exposed acreage, stockpiling, haul activity, a hot mix asphalt plant and a concrete batch plant, located in the NE¼NE¼ and E½SE¼NE¼ of Section 25, T24N, R69W, approximately six (6) miles west-southwest of Wheatland, in Platte County, Wyoming. The applicant estimates a maximum annual production rate of 200,000 tons.

A facility location map is included in Appendix A.

2. REPORTED MINE INFORMATION

Annual Production Rate:	200,000 tons
Material Mined:	Sand and Gravel
Size of Mine:	60 acres
# of Blasts per Year:	0
Crushing and Screening Proposed:	Yes
Distance to Nearest Residence:	1/8 mile
Number of Residences within 1 miles radius:	15
Distance Material Hauled Until Reaching Pavement:	0.1 miles
Proper Land Use Documentation Submitted:	Yes

3. PERMIT HISTORY

On April 15, 2015, Croell Redi-Mix, Inc. was issued Air Quality Permit P0011368 to modify the McGuire Pit by adding the authorization for a hot mix asphalt plant. The McGuire Pit included sand and gravel crushing, screening, exposed acreage, stockpiling, haul activity, a hot mix asphalt plant and a concrete batch plant.

4. ESTIMATED EMISSIONS

As stated previously in the analysis, Croell Redi-Mix, Inc. plans to locate and operate crushing/screening equipment, a hot mix asphalt plant and a concrete batch plant at the McGuire Pit. The Division issues separate valid air quality permits for any crushing/screening equipment, hot mix asphalt plants or concrete batch plants prior to locating/operating at the site. The estimated emissions of the following sources are listed below.

Pit Emissions – McGuire Pit
The pollutant of main concern at the McGuire Pit will be fugitive particulate matter emitted primarily from crushing, screening, exposed acreage, stockpiling and haul truck activity. The Division estimated emissions based on EPA document, AP-42, Compilation of Emission Factors. Application of water during stockpiling operations is credited for fifty percent (50%) control efficiency. Table 1 lists the estimated emissions for crushing, screening, exposed acreage and stockpiling based on a maximum production rate of 200,000 tpy of mined material, 60,000 tpy of stockpiled material, 10,000 tpy of overburden and 4,500 tpy of topsoil. Exposed acreage is based on ten (10) acres. Table 2 lists emissions from haul road activities based on a haul road length of 0.2 miles (total miles to and from the pit). Emission calculations are detailed in Appendix B.

Table 1: Estimated Emissions, tpy [1]		
Source	TSP	PM_{10}
Exposed Acreage	1.9	0.6
Truck Loading & Stockpiling	4.3	2.0
Total Emissions	**6.2**	**2.6**

[1] Emissions estimated to nearest 0.1.

Table 2: Haul Road Emissions, tpy [1]		
Source	TSP	PM_{10}
Haul Road	5.2	1.5

[1] Emissions estimated to nearest 0.1.

Crushing/Screening Emissions

The pollutant of main concern during crushing/screening operations will be fugitive particulate matter. The Division estimated emissions based on EPA document, AP-42, Compilation of Emission Factors. Application of water during portable crushing/screening operations is credited for fifty percent (50%) control efficiency. Table 3 lists the estimated emissions for crushing/screening operations based on a maximum production rate of 200,000 tpy of mined material. Emission calculations are detailed in Appendix B.

Table 3: Crushing/Screening Emissions, tpy [1]		
Source	TSP	PM_{10}
Crushing	0.3	0.1
Screening	1.3	0.4
Total Emissions	**1.6**	**0.5**

[1] Emissions estimated to nearest 0.1.

Hot Mix Asphalt Plant Emissions

The pollutants of main concern during hot mix asphalt plant operations will be fugitive particulate matter, nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC) and sulfur dioxide (SO_2). The Division averaged the emissions of hot mix asphalt plants from previous air quality permits issued from January 1, 2010 until July 1, 2011. Table 4 lists the average estimated emissions for a hot mix asphalt plant. Estimated emissions from a hot mix asphalt plant that may relocate to this site are listed in the associated air quality permit.

Table 4: Hot Mix Asphalt Plant Emissions, tpy [1]						
Source	TSP	PM_{10}	NO_x	CO	VOC	SO_2
Hot Mix Asphalt Plant	12.8	9.2	18.5	45.2	16.4	19.3

[1] Emissions estimated to nearest 0.1.

Concrete Batch Plant Emissions

The pollutants of main concern during concrete batch plant operations will be fugitive particulate matter. The Division averaged the emissions of concrete batch plants from previous air quality permits issued from January 1, 2010 until July 1, 2011. Table 5 lists the average estimated emissions for a concrete batch plant. Estimated emissions from a concrete batch plant that may relocate to this site are listed in the associated air quality permit.

Table 5: Concrete Batch Plant Emissions, tpy [1]		
Source	TSP	PM_{10}
Concrete Batch Plant	5.9	1.7

[1] Emissions estimated to nearest 0.1.

Generator Emissions

The power source for the crushing/screening equipment, hot mix asphalt plant and concrete batch plant may include line power or generator power. Not all crushing/screening equipment, hot mix asphalt plants or concrete batch plants require the use of generator power. The major pollutants emitted from the generator include NO_x with some CO from incomplete combustion. The Division averaged the emissions of generators used in conjunction with crushing/screening equipment, hot mix asphalt plants and concrete batch plants from previous air quality permits issued from January 1, 2010 until July 1, 2011. Many different generators were used in determining the average estimated emissions. Table 6 lists the average estimated emissions for generators used in conjunction with crushing/screening equipment, hot mix asphalt plants and concrete batch plants. Estimated emissions from generator(s) that may relocate to this site are listed in the associated air quality permit.

Table 6: Generator Emissions, tpy [1]

Source	NO_x	CO	VOC	SO_2	PM_{10}
Generator(s)	17.5	5.5	0.8	0.6	0.8

[1] Emissions estimated to nearest 0.1.

5. BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

The Division considers the use of two (2) applications of chemical dust suppressant to be applied annually in accordance with the manufacturer's recommendations on the work areas, disturbed areas, stockpiles, access roads and haul roads to represent BACT for this type of operation.

The Division considers limiting the maximum production rate at the pit as BACT for this type of operation since it is the basis for the emission estimates in the Division's analysis and it will limit the potential-to-emit (PTE) emissions at the pit. Therefore, any crushing/screening equipment operating at this pit will be limited to the maximum production rate. If multiple crushers/screens operate at this pit during a calendar year, the total amount of material crushed/screened shall not exceed this limit.

The Division considers areas within the pit boundary that are subject to wind erosion as disturbed areas and reclamation areas. BACT for the treatment and stabilization practices of the disturbed areas and reclamation areas may consist of ripping or chiseling to create a roughened surface, seeding with a temporary vegetative cover or other practices which effectively stabilize against wind erosion. Localized areas identified for equipment storage/staging, work areas and required buffers for haul roads and reclamation are not required to be stabilized. These practices are also required BACT for coal mines.

6. CHAPTER 6, SECTION 3 APPLICABILITY

The McGuire Pit is not a "major source" as defined by Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations (WAQSR). Therefore, further analysis is not required under this section.

7. PREVENTION OF SIGNIFICANT DETERIORATION (PSD)

The McGuire Pit is not a "major emitting facility" as defined by Chapter 6, Section 4 of the Wyoming Air Quality Standards and Regulations. Therefore, further analysis is not required under this section.

8. AMBIENT AIR QUALITY

The Division generally does not require modeling or monitoring for rock pits or multiple pits in an area. In previous permitting actions, the Division has modeled large surface coal pits with production rates in the millions of tons per year and the results have demonstrated compliance with particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2) annual ambient standards, which are health based standards. Primary ambient air quality standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.

Emission estimates for pits range from 10 tpy to 200 tpy particulate matter depending on the operational activity at the pit. In comparison, a coal pit that produces 40 million tpy (MM tpy) of coal annually has estimated particulate emissions in the range of 1,500 tpy. The large surface coal pits in the Powder River Basin (PRB) are adjacent and the emissions from all pits in the modeling domain are considered in the modeling analysis, which can total 7,000 tpy particulate matter and 5,000 tpy NO_x. As discussed, large surface coal pits in the PRB have demonstrated compliance with Wyoming Air Quality Standards and Regulations health-based standards through modeling and/or monitoring.

Based on this experience, the Division concludes the cumulative impact from properly controlled pits, as required through the application of BACT, will not result in an exceedance of air quality standards.

9. GOVERNOR'S SAGE GROUSE EXECUTIVE ORDER 2011-5

The Division determined that the proposed McGuire Pit is located outside of any sage grouse core areas, and greater than two (2) miles from any known occupied leks.

10. COUNTY ZONING

Croell Redi-Mix, Inc. received a letter from Platte County dated November 19, 2014, stating that the Platte County Commissioners modified the Special Permit to allow a commercial gravel pit with a crushing operation and temporary hot mix asphalt plant in an Agricultural Zoning District.

11. PROPOSED PERMIT CONDITIONS

The Division is proposing to issue an Air Quality Permit to Croell Redi-Mix, Inc. to modify the McGuire Pit subject to the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That all notifications, reports and correspondence required by this permit shall be submitted to the Stationary Source Compliance Program Manager, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 122 West 25th Street, Cheyenne, WY 82002. Submissions may also be done electronically through https://airimpact.wyo.gov to satisfy requirements of this permit.

4. The owner or operator shall furnish the Administrator written notification of: (i) the anticipated date of initial startup not more than sixty (60) days or less than thirty (30) days prior to such date, and; (ii) the actual date of initial start-up within fifteen (15) days after such date in accordance with Chapter 6, Section 2(i) of the WAQSR.

5. That the date of commencement of construction shall be reported to the Administrator within thirty (30) days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within twenty-four (24) months after receipt of such approval or if construction is discontinued for a period of twenty-four (24) months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

6. Any crushing/screening equipment, hot mix asphalt plants or concrete batch plants shall have separate valid air quality permit(s) prior to locating/operating at this site.

7. The amount of material crushed or hauled from the quarry shall not exceed 200,000 tons per year. Records shall be kept for a period of five (5) years to demonstrate compliance with this condition and shall be made available to the Division upon request.

8. Croell Redi-Mix, Inc. shall stabilize the exposed areas against wind erosion at the mine. Newly disturbed areas shall be treated within sixty (60) days of completion of stripping unless otherwise approved by the Division. Reclamation areas shall be stabilized against wind erosion within sixty (60) days of reaching the approved post mining topography, unless otherwise approved by the Division. Stabilization practices may consist of ripping or chiseling to create a roughened surface, seeding with a temporary vegetative cover or other practices which effectively stabilize against wind erosion. Localized areas identified for equipment storage/staging, work areas and required buffers for haul roads and reclamation are not required to be stabilized.

9. That all work areas and stockpiles shall be treated with water and/or chemical dust suppressants on a schedule sufficient to control fugitive dust. At a minimum, two (2) applications of chemical dust suppressant shall be applied annually to all work areas in accordance with the manufacturer's recommendations. The chemical dust suppressant shall be maintained continuously to the extent that it remains a viable control measure, which may require additional applications. All work areas shall receive an initial treatment of chemical dust suppressant prior to any activities at the beginning of each construction season.

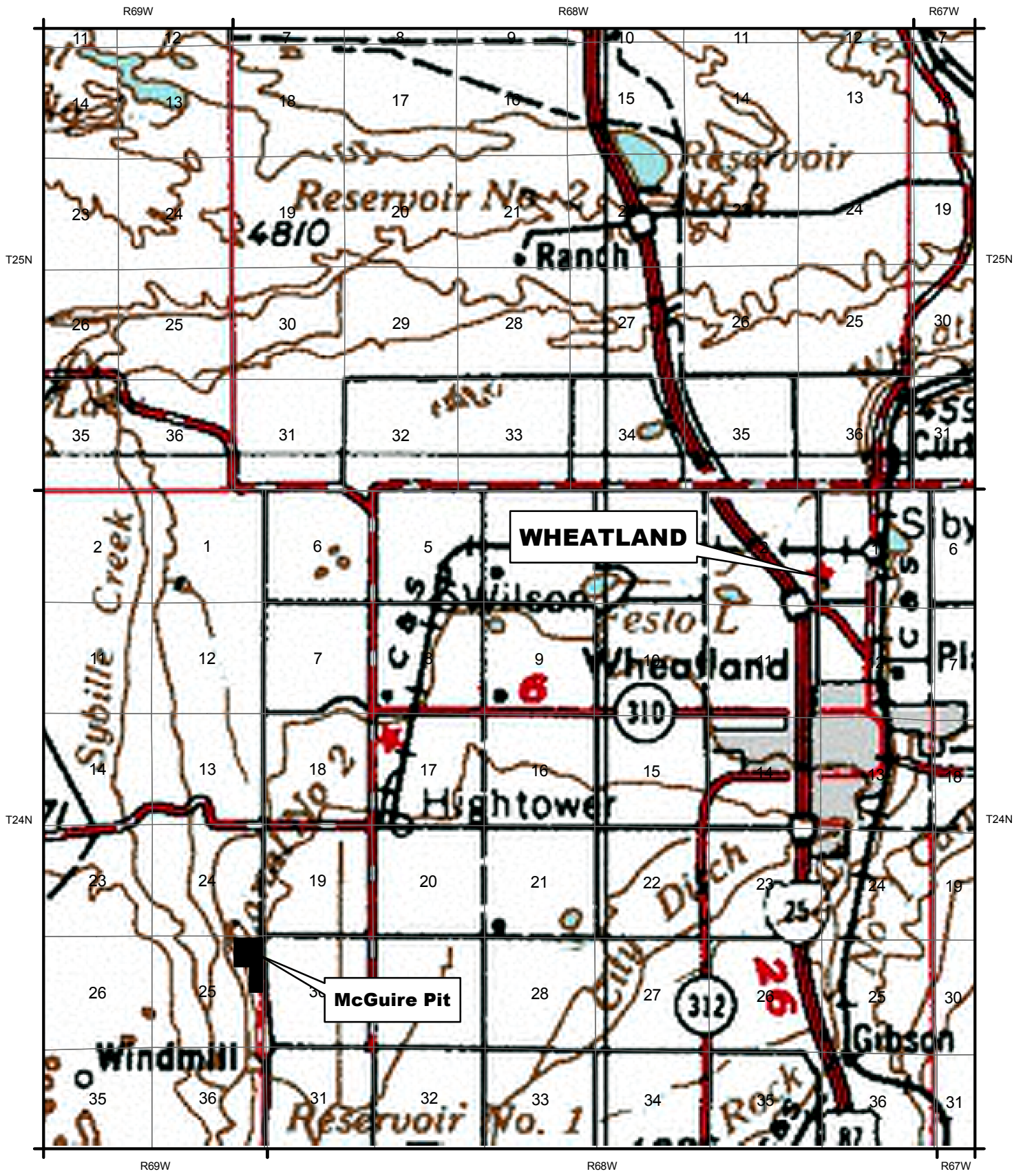
10. All unpaved haul roads shall be treated with water and/or chemical dust suppressants on a schedule sufficient to control fugitive dust from vehicular traffic and wind erosion. At a minimum, two (2) applications of chemical dust suppressant shall be applied annually in accordance with the manufacturer's recommendations. The chemical dust suppressant shall be maintained continuously to the extent that it remains a viable control measure, which may require additional applications. All unpaved portions of haul roads shall receive an initial treatment of chemical dust suppressant prior to any hauling activities at the beginning of each construction season.

11. Croell Redi-Mix, Inc. shall maintain a log book listing the dates, amount of dust suppressant applied, areas treated, water usage and operating hours of the water truck. The log shall be maintained on site for a period of at least five (5) years and shall be made available to the Division upon request.

12. Effective upon permit issuance, this permit shall supersede Air Quality Permit P0011368 for the McGuire Pit.

APPENDIX A

Facility Location Map



N
W E
S

0 0.5 1 2 Miles

Croell Redi-Mix, Inc.

McGuire Pit

NE¼NE¼ & E½SE¼NE¼ of Section 25, T24N, R69W

Platte County, Wyoming

DEQ
WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

NMED Attachment 1

APPENDIX B

Emission Estimates

CRUSHING EMISSIONS:

Based on 200,000 tpy production rate, TSP and PM_{10} emissions associated with crushing operations were estimated as follows:

Crushing: 0.0054 lb/ton TSP, 0.0024 lb/ton PM_{10}
AP-42 Table 11.19.2-2 8/04

$$\text{TSP Emissions} = \frac{200{,}000\frac{ton}{year}\, x 0.0054\frac{lb}{ton}\, x(1-0.50)}{2{,}000\frac{lb}{ton}} = 0.27\frac{ton}{year} \text{ (50\% control)}$$

$$PM_{10}\text{ Emissions} = \frac{200{,}000\frac{ton}{year}\, x 0.0024\frac{lb}{ton}\, x(1-0.50)}{2{,}000\frac{lb}{ton}} = 0.12\frac{ton}{year} \text{ (50\% control)}$$

SCREENING EMISSIONS:

Based on 200,000 tpy maximum production rate, TSP and PM_{10} emissions associated with screening operations were estimated as follows:

Screening: 0.025 lb/ton TSP, 0.0087 lb/ton PM_{10}
AP-42 Table 11.19.2-2 8/04

$$\text{TSP Emissions} = \frac{200{,}000\frac{ton}{year}\, x 0.025\frac{lb}{ton}\, x(1-0.50)}{2{,}000\frac{lb}{ton}} = 1.25\frac{ton}{year} \text{ (50\% control)}$$

$$PM_{10}\text{ Emissions} = \frac{200{,}000\frac{ton}{year}\, x 0.0087\frac{lb}{ton}\, x(1-0.50)}{2{,}000\frac{lb}{ton}} = 0.44\frac{ton}{year} \text{ (50\% control)}$$

EXPOSED ACREAGE:

Based on 10 acres exposed to wind erosion annually, TSP and PM_{10} emissions were estimated as follows:

Exposed Acreage: TSP: 0.38 tons/acre/year, PM_{10}: 0.11 tons/acre/year
AP-42 Table 11.9-4, PM_{10} = TSP x 0.3

TSP Emissions = 10 acres x 0.38 tons/acre/year x (1-0.50) = 1.90 tpy (50% control)

PM_{10} Emissions = 10 acres x 0.11 tons/acre/year x (1-0.50) = 0.55 tpy (50% control)

TRUCK LOADING AND STOCKPILING EMISSIONS:

Based on 200,000 tpy of mined material, 60,000 tpy of stockpiled material, 10,000 tpy of overburden and 4,500 tpy of topsoil, TSP and PM_{10} emissions associated with stockpiling operations were estimated as follows, using AP-42 13.2.4 Equation 1:

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

Where:
k=particle size multiplier
U=average wind speed, mph
M=material moisture content, %

TSP:

k=0.74
U= 11.7 mph (average wind speed for Wheatland, WY)
M=0.7%

$$E = 0.74(0.0032)\frac{\left(\frac{11.7}{5}\right)^{1.3}}{\left(\frac{0.7}{2}\right)^{1.4}} = 0.0311\frac{lb}{ton}$$

$$\text{TSP Emissions} = \frac{274{,}500\frac{ton}{year}\,x0.0311\frac{lb}{ton}\,x(1-0.50)}{2{,}000\frac{lb}{ton}} = 2.13\frac{ton}{year}\,x2\frac{drops}{trip} = 4.26\frac{ton}{year}\ (50\%\ \text{control})$$

PM_{10}:

k=0.35
U= 11.7 mph (average wind speed for Wheatland, WY)
M=0.7%

$$E = 0.35(0.0032)\frac{\left(\frac{11.7}{5}\right)^{1.3}}{\left(\frac{0.7}{2}\right)^{1.4}} = 0.0147\frac{lb}{ton}$$

$$PM_{10}\ \text{Emissions} = \frac{274{,}500\frac{ton}{year}\,x0.0147\frac{lb}{ton}\,x(1-0.50)}{2{,}000\frac{lb}{ton}} = 1.01\frac{ton}{year}\,x2\frac{drops}{trip} = 2.02\frac{ton}{year}\ (50\%\text{control})$$

HAUL ROAD ACTIVITY EMISSIONS:

Fugitive TSP and PM_{10} emissions per Vehicle Mile Traveled (VMT) associated with haul roads are estimated using AP-42 Chapter 13.2.2, equation (1a) as follows:

$$E = k\left(\frac{s}{12}\right)^{a}\left(\frac{W}{3}\right)^{b}$$

Where:

k=empirical constant
s=surface material silt content, %
a=empirical constant
W=mean vehicular weight
b=empirical constant

TSP:

k=4.9
s=8.3
a=0.7
W=28.5 tons
b=0.45

$$E = 4.9\left(\frac{8.3}{12}\right)^{0.7}\left(\frac{28.5}{3}\right)^{0.45} = 10.43\frac{lb}{VMT}$$

$$\text{Amount of trips per year} = 200{,}000\frac{ton}{year}\,x\,\frac{1}{20}\frac{trip}{ton} = 10{,}000\frac{trip}{year}$$

$$\text{TSP Emissions} = 10{,}000\frac{trip}{year}\,x0.2\frac{mile}{trip}\,x10.43\frac{lb}{VMT}\,x\,\frac{ton}{2{,}000lb}\,x(1-0.50) = 5.22\frac{ton}{year}\ \text{(50\% control)}$$

PM_{10}:

k=1.5
s=8.3
a=0.9
W=28.5 tons
b=0.45

$$E = 1.5\left(\frac{8.3}{12}\right)^{0.9}\left(\frac{28.5}{3}\right)^{0.45} = 2.96\frac{lb}{VMT}$$

$$\text{Amount of trips per year} = 200{,}000\frac{ton}{year}\,x\,\frac{1}{20}\frac{trip}{ton} = 10{,}000\frac{trip}{year}$$

$$PM_{10}\ \text{Emissions} = 10{,}000\frac{trip}{year}\,x0.2\frac{mile}{trip}\,x2.96\frac{lb}{VMT}\,x\,\frac{ton}{2{,}000lb}\,x(1-0.50) = 1.48\frac{ton}{year}\ \text{(50\% control)}$$

NEW MEXICO ENVIRONMENT DEPARTMENT

Office of the Secretary

POLICY AND PROCEDURE 07-11

SUBJECT: Limited English Proficiency ("LEP") Accessibility and Outreach Policy.

PURPOSE: To provide guidance and direction for the New Mexico Environment Department ("NMED" or the "Department") regarding providing meaningful access for persons and populations in New Mexico who are or who may be identified as being LEP to ensure that adequate public participation opportunities are being offered.

POLICY: NMED shall provide LEP persons and populations meaningful access to NMED's actions and proceedings.

REVISIONS: New Policy.

APPLICABILITY: All NMED programs and employees shall comply with this policy.

REFERENCES: 40 C.F.R. Parts 5 and 7; Title VI of the Civil Rights Act of 1964; Guidance to Environmental Protection Agency Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons, https://www.federalregister.gov/documents/2004/06/25/04-14464/guidance-to-environmental-protection-agency-financial-assistance-recipients-regarding-title-vi; Assisting People with Limited English Proficiency, https://www.epa.gov/ocr/assisting-people-limited-english-proficiency.

PROCEDURES:

APPROVAL: Butch Tongate DATE: 2/6/18

Butch Tongate
Cabinet Secretary

NMED Attachment 2

1.0 SCOPE

1.1 In accordance with 40 C.F.R. Parts 5 and 7, NMED prohibits unlawful discriminatory practices regarding its decisions that directly relate to or impact its programs. NMED does not condone, tolerate, practice or engage in unlawful discrimination against any external party or parties, nor does it condone retaliation against or intimidation of those alleging discrimination by NMED employees.

1.2 NMED shall include in its consideration and decisions regarding public notice, vital documents,[1] community outreach, and community involvement, the degree to which it may need to modify its communications and public notice practices so that LEP persons and populations will have substantially equal opportunities to learn about and participate in NMED's exchange and interaction with the public.

1.3 New Mexico is a diverse state, and therefore, language needs may vary from region to region. New Mexico's population estimate for 2016 was 2,081,015. Approximately 19.8% of the population lives in poverty. For 35.7% of New Mexico's population, a language other than English is spoken at home. State-wide, 48.5% of the population is Hispanic or Latino, 38.1% are non-Hispanic white, 10.6% are American Indian, and 2.5% are African American. [2]

1.4 The following regional evaluations, which include data for a 25-mile radius around each listed town or city[3], are provided for general reference and exhibit the diversity of New Mexico and the importance of evaluating language needs:

Abiquiu, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 44,296)
    - Speak Only English- 21,023 (47%)
    - Non-English at Home- 23,273 (53%)
        - 7% of the 53% speak English "less than very well."
- Total Households- 17,340
    - Linguistically Isolated Households- 676 (3.8%)
        - 90% of Linguistically Isolated Households speak Spanish, while 8% speak Asian-Pacific Island languages.

Alamogordo, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 50,492)
    - Speak Only English- 40,269 (80%)
    - Non-English at Home- 10,223 (20%)
        - 6% of the 20% speak English "less than very well."
- Total Households- 21,244
    - Linguistically Isolated Households- 1,014 (4.7%)
        - 65% of Linguistically Isolated Households speak Spanish, while 27% of Linguistically Isolated Households speak other Indo-European Languages (the majority of which speak German).

Albuquerque, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 787,987)

---

[1] Whether or not a document (or the information it disseminates or solicits) is "vital" may depend upon the importance of the program, information, encounter, or service involved, and the consequence to the LEP person if the information in question is not provided accurately or in a timely manner. Classifying a document as vital or non-vital is sometimes difficult, especially in the case of outreach materials like brochures or other information on rights and services. "Vital documents" may include fact sheets, departmental warnings or advisories, public notices, and handouts created for public meetings.

[2] Statistical information from: https://www.census.gov/quickfacts/NM in December 2017.

[3] Data extracted from EJScreen: https://ejscreen.epa.gov/mapper/ in December 2017.

- Speak Only English- 552,950 (70%)
- Non-English at Home- 235,038 (30%)
    - 8% of the 30% speak English "less than very well."
- Total Households- 322,968
- Linguistically Isolated Households- 13,958 (4.3%)
    - 84% of Linguistically Isolated Households speak Spanish, while the remainder is distributed between other Indo-European languages, Asian-Pacific Island languages, and "other languages."

Belen, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 94,862)
- Speak Only English- 58,389 (62%)
- Non-English at Home- 36,473 (38%)
    - 11% of the 38% speak English "less than very well."
- Total Households- 34,800
- Linguistically Isolated Households- 2,199 (6.3%)
    - 93% of Linguistically Isolated Households speak Spanish.

Carlsbad, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 38,228)
- Speak Only English- 27,851 (73%)
- Non-English at Home- 10,377 (27%)
    - 6% of the 27% speak English "less than very well."
- Total Households- 15,279
- Linguistically Isolated Households- 625 (4.1%)
    - 97% of Linguistically Isolated Households speak Spanish.

Chama, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 7,793)
- Speak Only English- 4,772 (61%)
- Non-English at Home- 3,021 (39%)
    - 3% of the 39% speak English "less than very well."
- Total Households- 3,527
- Linguistically Isolated Households- 53 (1.5%)
    - 69% of Linguistically Isolated Households speak Spanish, while 30% speak "other languages" (predominantly Native American languages).

Clayton, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 4,859)
- Speak Only English- 3,504 (72%)
- Non-English at Home- 1,355 (28%)
    - 10% of the 28% speak English "less than very well."
- Total Households- 1,801
- Linguistically Isolated Households- 137 (7.6%)
    - 91% of Linguistically Isolated Households speak Spanish.

Clovis, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 67,019)
- Speak Only English- 48,344 (72%)
- Non-English at Home- 18,676 (28%)
    - 9% of the 28% speak English "less than very well."
- Total Households- 26,079
- Linguistically Isolated Households- 1,465 (5.6%)
    - 97% of Linguistically Isolated Households speak Spanish.

Deming, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 20,509)
- Speak Only English- 9,865 (48%)
- Non-English at Home- 10,644 (52%)
    - 19% of the 52% speak English "less than very well."
- Total Households- 8,015
- Linguistically Isolated Households- 1,057 (13.1%)
    - 98% of Linguistically Isolated Households speak Spanish.

Farmington, NM area

- Population Age 5+ Years by Ability to Speak English (Total = 97,566)
- Speak Only English- 70,545 (72%)
- Non-English at Home- 27,020 (28%)
    - 6% of the 28% speak English "less than very well."
- Total Households- 34,656
- Linguistically Isolated Households- 1,095 (3.1%)
    - 56% of Linguistically Isolated Households speak Spanish, while 39% speak "other languages" (predominantly Navajo).

Limited English Proficiency

Gallup, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 49,016)
  - Speak Only English- 24,851 (51%)
  - Non-English at Home- 24,165 (49%)
    - 9% of the 49% speak English "less than very well".
- Total Households- 14,021
  - Linguistically Isolated Households- 1,175 (8.3%)
    - 24% of Linguistically Isolated Households speak Spanish, while 73% speak "other languages" predominantly Navajo).

Grants, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 22,040)
  - Speak Only English- 13,007 (59%)
  - Non-English at Home- 9,033 (41%)
    - 9% of the 41% speak English "less than very well".
- Total Households- 7,175
  - Linguistically Isolated Households- 482 (6.7%)
    - 50% of Linguistically Isolated Households speak Spanish, while 28% speak "other languages" (predominantly Navajo and other Native American languages).

Hobbs, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 64,021)
  - Speak Only English- 35,369 (55%)
  - Non-English at Home- 28,653 (45%)
    - 15% of the 45% speak English "less than very well."
- Total Households- 21,713
  - Linguistically Isolated Households- 1,873 (8.6%)
    - 92% of Linguistically Isolated Households speak Spanish.

Las Cruces, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 170,123)
  - Speak Only English- 89,731 (53%)
  - Non-English at Home- 80,392 (47%)
    - 13% of the 47% speak English "less than very well."
- Total Households- 65,571
  - Linguistically Isolated Households- 5,160 (7.8%)
    - 94% of Linguistically Isolated Households speak Spanish.

Las Vegas, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 23,204)
  - Speak Only English- 10,131 (44%)
  - Non-English at Home- 13,073 (56%)
    - 16% of the 56% speak English "less than very well."
- Total Households- 8,944
  - Linguistically Isolated Households- 1,046 (11.6%)
    - 96% of Linguistically Isolated Households speak Spanish.

Lordsburg, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 4,471)
  - Speak Only English- 2,660 (59%)
  - Non-English at Home- 1,811 (41%)
    - 8% of the 41% speak English "less than very well."
- Total Households- 1,907
  - Linguistically Isolated Households- 95 (4.9%)
    - 100% of Linguistically Isolated Households speak Spanish.

Quemado, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 1,811)
  - Speak Only English- 1,365 (75%)
  - Non-English at Home- 446 (25%)
    - 2% of the 25% speak English "less than very well."
- Total Households- 790
  - Linguistically Isolated Households- 1 (0.1%)
    - 100% of Linguistically Isolated Households speak Spanish.

Raton, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 14,769)
  - Speak Only English- 12,027 (81%)
  - Non-English at Home- 2,741 (19%)
    - 4% of the 19% speak English "less than very well."
- Total Households- 6,501

- Linguistically Isolated Households- 260 (3.9%)
    - 86% of Linguistically Isolated Households speak Spanish, while 12% speak other Indo-European languages (predominantly French, German, and Italian).

Reserve, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 1,697)
    - Speak Only English- 1,279 (75%)
    - Non-English at Home- 418 (25%)
        - 2% of the 25% speak English "less than very well."
- Total Households- 597
    - Linguistically Isolated Households- 1 (0.1%)
        - 100% of Linguistically Isolated Households speak Spanish.

Roswell, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 58,263)
    - Speak Only English- 36,504 (63%)
    - Non-English at Home- 21,760 (37%)
        - 11% of the 37% speak English "less than very well."
- Total Households- 22,395
    - Linguistically Isolated Households- 1,468 (6.5%)
        - 93% of Linguistically Isolated Households speak Spanish.

Ruidoso, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 20,207)
    - Speak Only English- 15,737 (78%)
    - Non-English at Home- 4,470 (22%)
        - 7% of the 22% speak English "less than very well."
- Total Households- 8,567
    - Linguistically Isolated Households- 396 (4.6%)
        - 87% of Linguistically Isolated Households speak Spanish.

Santa Fe, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 158,700)
    - Speak Only English- 98,811 (62%)
    - Non-English at Home- 59,889 (38%)
        - 10% of the 38% speak English "less than very well".
- Total Households- 69,029
    - Linguistically Isolated Households- 3,292 (4.7%)
        - 92% of Linguistically Isolated Households speak Spanish.

Santa Rosa, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 4,305)
    - Speak Only English- 2,044 (47%)
    - Non-English at Home- 2,261 (53%)
        - 6% of the 53% speak English "less than very well."
- Total Households- 1,192
    - Linguistically Isolated Households- 97 (8.1%)
        - 100% of Linguistically Isolated Households speak Spanish.

Silver City, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 25,446)
    - Speak Only English- 18,177 (71%)
    - Non-English at Home- 7,268 (29%)
        - 5% of the 29% speak English "less than very well."
- Total Households- 11,080
    - Linguistically Isolated Households- 383 (3.4%)
        - 100% of Linguistically Isolated Households speak Spanish.

Socorro, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 13,329)
    - Speak Only English- 8,053 (60%)
    - Non-English at Home- 5,275 (40%)
    11% of the 40% speak English "less than very well."
- Total Households- 4,008
    - Linguistically Isolated Households- 430 (10.7%)
        - 76% of Linguistically Isolated Households speak Spanish, while 19% speak "other languages" (predominantly Navajo).

Springer, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 2,870)
    - Speak Only English- 2,212 (77%)
    - Non-English at Home- 659 (23%)

- 5% of the 23% speak English "less than very well."
- Total Households- 654
  - Linguistically Isolated Households- 18 (2.7%)
    - 82% of Linguistically Isolated Households speak Spanish, while 18% speak Asian-Pacific Island languages (predominantly Chinese).

Taos, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 32,582)
  - Speak Only English- 19,052 (58%)
  - Non-English at Home- 13,530 (42%)
    - 6% of the 42% speak English "less than very well."
- Total Households- 14,173
  - Linguistically Isolated Households- 520 (3.6%)
    - 94% of Linguistically Isolated Households speak Spanish.

Truth or Consequences, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 9,759)
  - Speak Only English- 7,828 (80%)
  - Non-English at Home- 1,931 (20%)
    - 3% of the 22% speak English "less than very well."
- Total Households- 4,583
  - Linguistically Isolated Households- 88 (1.9%)
    - 94 % of Linguistically Isolated Households speak Spanish.

Tucumcari, NM area
- Population Age 5+ Years by Ability to Speak English (Total = 7,605)
  - Speak Only English- 5,721 (75%)
  - Non-English at Home- 1,883 (25%)
    - 5% of the 25% speak English "less than very well."
- Total Households- 3,149
  - Linguistically Isolated Households- 100 (3.1%)
    - 100% of Linguistically Isolated Households speak Spanish.

2.0 DEFINITIONS

2.1 ***Limited-English Proficient ("LEP") Individual*** means an individual who does not speak English as their primary language and who has a limited ability to read, speak, write, or understand English and may be entitled to language assistance with respect to a particular type of service, benefit, or encounter.

2.2 ***Linguistically Isolated Household*** means a household in which no one 14 and over speaks English "very well" or speaks English only.

3.0 DETERMINATION OF THE EXTENT OF OBLIGATION TO PROVIDE LEP SERVICES

3.1 An individualized assessment should be done for each event, activity or proceeding (e.g., a permitting proceeding) by the specific NMED Bureau employees or contractors tasked with implementing NMED Policy 07-13 ("Public Participation") in order to determine the extent to which LEP services are necessary. The individualized assessments shall evaluate and balance the following four factors: 1) the number or proportion of LEP persons estimated to be served or encountered in the community of concern; 2) the frequency with which LEP individuals might come in contact with the program; 3) the nature and importance of the activity or service provided by the subject material of the program; and 4) the resources available to NMED and the associated costs. All assessment activities shall be documented in writing.

3.2 Factor 1: The Number and Proportion of LEP Individuals Eligible to be Served or Likely to be Encountered in the Community of Concern.

A. In order to assess the number and proportion of LEP individuals in a particular community of concern, employees shall use the data accumulated in the preliminary screening results in the Public Involvement Plan (PIP) created under Public Participation Policy 07-13 for the NMED activity, issue, facility, or event in question. If no PIP plan is required, or is impractical,[4] for the NMED activity, issue, facility, or event in question, statistical language data shall be accumulated in the manner specified in NMED Public Participation Policy 07-13, Section 3.

B. Employees shall also assess historical participation regarding the issue, facility, or event in question to evaluate whether there was participation by LEP individuals in the past.

3.3 Factor 2: The Frequency with Which LEP Individuals Come in Contact with the Program.

A. Employees shall assess how frequently the program under which the issue or event is occurring, or the facility is regulated, and comes into contact with LEP individuals. The assessment should include programmatic contact generally, and specifically in relation to the matter for which an LEP evaluation is occurring.

B. Employees shall assign an identifier of "frequent," "occasional," or "not frequent" based on situational context combined with professional judgment, and provide a narrative supporting the classification.

3.4 Factor 3: The Nature and Importance of the Activity or Service Provided by the Program.

A. The specific activity, proceeding or service that is necessitating the LEP evaluation should be assessed for both the nature and importance of the activity, proceeding or service.

B. The nature of an activity, proceeding or service and the basic features or characteristics of the activity, proceeding or service. A descriptive paragraph should be provided.

C. The importance of the activity, proceeding or service should be evaluated in relation to the importance to the Department, the importance to the state as a whole, and the importance to the impacted community, with an identifier of "moderately important," "important," or "very important.".

3.5 Factor 4: The Resources Available to NMED and the Associated Costs.

A. Employees shall assess the NMED program's or Bureau's level of resources available in the applicable fiscal year(s) and the costs associated with executing the steps necessary to provide services to LEP individuals in relation to the issue, facility, or event in question. Evaluating available resources should also take into consideration whether

[4] In such instances where a PIP for an activity is not required by statute, rule or regulation, or is impractical, the four factor LEP assessment should be completed, and documented in writing, to determine the extent to which LEP services are necessary for the activity.

resources can be pulled from another NMED Bureau or Division. NMED Bureau financial staff should assist with the assessment.

B. When evaluating the cost of services, employees should evaluate cost saving measures such as the incorporation of technology, or resources available either within the Department or within another executive agency that can be provided at low or no cost.

3.6 Using the results of the four-factor evaluation, a plan for LEP services to be provided for a particular activity, proceeding, or service will be created. Plans will include, but will not be limited to, outreach efforts, interpretation services to be provided, and translation of vital documents and public notices.

3.7 All evaluation results must be reviewed and approved by the Bureau Chief of the NMED Bureau or Program executing the evaluation. An electronic copy of the final approved evaluation shall be provided to NMED's Non-Discrimination Coordinator.

4.0 IDENTIFYING LEP INDIVIDUALS WHO REQUIRE LANGUAGE ASSISTANCE

4.1 In addition to providing general public notice and outreach to LEP individuals, every effort should be made to identify specific participants who may need LEP language services. It is suggested that NMED employees bring an "I Speak" card (see prototype attached) to every public meeting or hearing so that LEP individuals can inform NMED what language services are needed. Additionally, if correspondence in a language other than English is sent to the Department regarding a specific activity, proceeding or service, NMED employees should determine what language the information has been transmitted in, and include the language in the related LEP service evaluation. Finally, it is recommended that the municipality or county in which the community is located be contacted to determine if either has any specific information or recommendations for specific LEP services.

5.0 LANGUAGE ASSISTANCE MEASURES

5.1 Interpretation.

A. Interpretation services will be acquired from a certified interpreter using the proper procedures mandated by the New Mexico Procurement Code, NMSA 1978, §§ 13-1-1 to -199 and correlated regulations, 1.4.1 NMAC. If interpretive services are needed on short notice, for example if an LEP individual approaches NMED employees during a meeting or gathering in which there is not a certified interpreter, an employee who is fluent in the particular language may be utilized.

B. Upon an assessment of need, as found in Section 3.0 of this Policy, interpretation services shall be acquired for all public meetings and hearings associated with a particular activity, proceeding, or service. Such interpretation services should be adequate for the expected participating audience. It is important that interpeters are comfortable translating scientific and technical terminology, so that LEP individuals receive the most accurate interpretation possible.

C. All NMED Bureaus or other organizational units must have written procedures in place for addressing phone calls and in-person inquiries received from LEP individuals. This is especially necessary when an NMED Bureau contact is provided in a public notice, and

the public notice has been issued in both English and other relevant languages. NMED Bureaus may arrange for on-call telephone interpretation services, or if there are budgetary constraints, an NMED Bureau may utilize a Department employee who is fluent in a particular language. The written procedures must specifically list employees who may be used to field phone calls or in-person inetractions from LEP individuals. The written procedures must be specific enough so that they may be easily followed as they are being utilized. The written procedures must be reviewed and approved by each NMED Bureau's Bureau Chief and Division Director, or in the case of other organizational units, the highest supervisory level.

5.2 Translation.

A. Translation services for the translation of public notices and other vital documents[5] will be acquired from a certified translator using the proper procedures mandated by the New Mexico Procurement Code, NMSA 1978, §§ 13-1-1 to -199 and its correlated regulations, 1.4.1 NMAC.

B. Google Translate or other similar programs shall not be used to translate NMED vital documents, or documents produced by a regulated entity that were mandated by NMED that may also be classified as vital.

C. When or if e-mails are received by NMED from LEP individuals, if time allows translation services will be used in responding to the e-mail. If the e-mail is time sensitive and must be responded to immediately, an NMED Bureau employee who is fluent in the written form of the particular language in question may be used. Alternatively, if the individual has provided a phone number, interpretation services pursuant to Section 5.1 of this policy can be used to contact the person. If interpretation services are used to respond to an e-mail in lieu of translation services, please make a note of the date and time the communication occurred, and who interpreted on behalf of NMED.

6.0 PROVIDING NOTICE TO LEP PERSONS

6.1 As appropriate based upon the LEP services evaluation contained in Section 3.0 of this Policy, public notice should, at a minimum, be provided to LEP individuals in the same manner in which it is required by statute or regulation for non-LEP individuals. However, it is possible that the normal means of notice contemplated by NMED's controlling statutes are not sufficient in every circumstance to reach the desired population. Extra outreach may include, but is not limited to, publication in alternate newspapers with a proven high LEP readership, public announcement on radio stations with high LEP listenership, posting of public notice in appropriate locations, and in-person notice announcements. Such expanded public notice should be included in any PIP formulated pursuant to NMED policy 07-13, and in the LEP plan found in Section 3.6 of this Policy.

7.0 TRAINING

[5] Whether or not a document (or the information it disseminates or solicits) is "vital" may depend upon the importance of the program, information, encounter, or service involved, and the consequence to the LEP person if the information in question is not provided accurately or in a timely manner. Classifying a document as vital or non-vital is sometimes difficult, especially in the case of outreach materials like brochures or other information on rights and services. "Vital documents" may include fact sheets, departmental warnings or advisories, public notices, and handouts created for public meetings.

7.1 All NMED employees shall be required to attend training on this policy. Such training shall occur no later than 120 days after the first signing of this policy. Subsequent trainings will occur at regular intervals, as determined by the NMED's Non-Discrimination Coordinator, including:

A. When substantive changes are made to the policy;
B. When new employees begin employment with NMED; and
C. At three year intervals for all NMED employees.

Such training shall be provided by the Non-Discrimination Coordinator and the Office of General Counsel.

8.0 MONITORING AND UPDATING THE LEP ACCESSIBILITY AND OUTREACH POLICY

8.1 On an annual basis, the NMED Non-Discrimination Coordinator will review the LEP Accessibility and Outreach Policy, which shall include contacting the Bureaus to determine if they have any suggested edits based upon experiences from the past year. The Non-Discrimination Coordinator, with assistance from the Office of General Counsel, will make any necessary updates to the LEP Policy, and provide to the Secretary of Environment or designee for signature. Any revised issuance of this policy shall be disseminated to the entire Department on the date the Secretary or designee signs the revised policy.

9.0 DISCIPLINE

9.1 Any employee who fails to comply in good faith with the terms and provisions of this policy may face disciplinary consequences up to and including dismissal (Please see NMED Policy 02-71, Disciplinary Action).