UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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APR 2 8 2016

REPLY TO THE ATTENTION OF

Ms. Kristin Hart
Chief
Permits and Stationary Source Modeling Section
Bureau of Air Management
Wisconsin Department of Natural Resources
PO Box 7921
Madison, Wisconsin 53707-7921

Dear Ms. Hart:

The U.S. Environmental Protection Agency has the following comments on the Wisconsin Department of Natural Resources' (WDNR) draft Title V renewal for Expera Specialty Solutions – Thilmany Mill, permit number 445031180-P20 (Expera). In order to ensure that the project meets federal Clean Air Act (CAA) requirements, that the permit will provide necessary information so that the basis for the permit decision is transparent and readily accessible to the public, and that the permit record provides adequate support for the decision, EPA recommends that the following points be addressed:

1) **The permitting record is deficient and does not address Part 70 requirements.**

   40 CFR 70.5(c)(3) requires the source to provide emission-related information as part of the permit application, including all emissions of pollutants for which the source is major and emissions of all regulated air pollutants. Pursuant to 40 CFR 70.2, "regulated air pollutant" includes "Any pollutant for which a national ambient air quality standard (NAAQS) has been promulgated" and thus includes particulate matter of less than 2.5 micrometers ($PM_{2.5}$). Further, 40 CFR 70.3(d) requires that fugitive emissions from a Part 70 source must "be included in the permit application and Part 70 permit in the same way as stack emissions, regardless of whether the source category in question is included in the list of sources contained in the definition of major source." WDNR's February 2016 report entitled "Air Quality Review of Industrial $PM_{2.5}$ from Stationary Sources in Wisconsin" (henceforth referred to as the TSD), states that mechanical units are not likely to "cause or contribute to a violation of the NAAQS". A determination that an emission unit does not cause or contribute to a violation of the NAAQS does not necessarily equate to no emissions from the unit. As frequently seen in ambient air impact analyses, an emission unit can emit significant quantities of a pollutant and still not cause, by itself, a violation of the NAAQS. WDNR's statement that mechanical units are unlikely to "cause or contribute to a violation of the NAAQS" does not address the explicit Part 70 requirements to quantify emissions rates. WDNR's failure to consider $PM_{2.5}$ emissions from mechanical sources, including fugitive emissions, is not allowable under Title V of

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the CAA and the permit record is currently deficient. Compliance with Title V requires WDNR to quantify the $PM_{2.5}$ emissions from the mechanical sources at the facility.

2) **The failure to calculate $PM_{2.5}$ emissions from mechanical units contradicts WDNR guidance and could adversely impact implementation of major federal permitting programs.**

Wisconsin's February 2016 "Guidance for Including $PM_{2.5}$ in Air Pollution Control Permit Applications"[1] indicates that WDNR will calculate emissions of $PM_{2.5}$ from mechanical sources only in cases where the $PM_{2.5}$ emissions from high temperature units are greater than 80% of the major permitting program threshold. EPA understands that the 80% threshold ensures that there is an adequate buffer between the source's emissions and the major source threshold, so that applicability determinations are performed in a manner consistent with federal requirements. In this instance, the Expera kraft pulp mill emits 702 tons per year of $PM_{2.5}$ excluding several mechanical sources, and thus is clearly over 80% of the major source threshold. In opposition to its own guidance, WDNR has still assumed a $PM_{2.5}$ emissions rate of zero for several of the source's mechanical units. Excluding the $PM_{2.5}$ contributions of sources is contrary to the language of Title V. The definition of "major source" in 40 CFR 70.2 is based on the total potential emissions of the source, regardless if an individual unit emits a pollutant in quantities smaller than one would expect to cause or contribute to a violation of the NAAQS. Rather than looking at an individual unit, the Title V program looks at the aggregate emissions of all units at the source. Since Expera is a kraft pulp mill, Title V explicitly requires that fugitive emissions from all emission units, including mechanical sources, be included in applicability determination. EPA requests that WDNR calculate $PM_{2.5}$ emissions from the mechanical sources, as required by Part 70 and the CAA.

3) **AP-42 is one resource of many available to estimate emissions**

EPA finds WDNR's line of reasoning in addressing $PM_{2.5}$ emissions on a case-by-case basis from processes P45, P49, and P50 to be problematic. WDNR disagrees with the methodologies used in the Cowherd-Donaldson study, from which the AP-42 emission factor was largely based. As a result of WDNR's perceived weaknesses of the study, WDNR does not use the AP-42 emission factor to calculate $PM_{2.5}$ emissions, and instead does not calculate emissions at all, effectively treating the emission factor as zero. While EPA acknowledges WDNR's concerns that AP-42 may be high, assuming zero is not supported or appropriate. As the introduction to AP-42 states, AP-42 is only one tool available to estimate emissions, and in fact should often be used only if no other information is available. If WDNR takes issue with AP-42, WDNR may use other available resources to determine a more reliable emission factor, including site-specific emission factors, other scientific literature, or emission testing from similar sources must be used to determine the $PM_{2.5}$ emissions. Even if the studies used to develop AP-42 are excluded, as discussed below, several scientific studies give EPA reason to believe that

[1] http://dnr.wi.gov/topic/AirPermits/documents/EmissionsApplicantsGuidanceFinal.pdf

mechanical sources such as haul roads do emit some level $PM_{2.5}$. EPA requests that WDNR rely on existing studies, which suggest that mechanical sources do indeed emit $PM_{2.5}$, to determine $PM_{2.5}$ emissions, rather than assuming that there are zero emissions from the units.

4) **The TSD does not sufficiently address $PM_{2.5}$ emissions at an emission unit level and cannot be used as justification for assuming zero emissions of $PM_{2.5}$ from mechanical emission units.**

The TSD does not include $PM_{2.5}$ emissions rates from mechanical sources, but relies on an analysis of *regional ambient air monitors* in conjunction with critiques of studies performed at the source level to justify assuming zero $PM_{2.5}$ emissions. WDNR's analysis fails to account for what is happening at the source. The TSD provides a brief analysis on direct emissions of $PM_{2.5}$ concluding that EPA emission factors may be overstated.[2] WDNR references a study which finds that the AP-42 emission factor for a natural gas boiler may overstate the actual emissions by as much as 9 times, but this study still finds that $PM_{2.5}$ is emitted in measurable quantities[3]. The study WDNR references only addresses $PM_{2.5}$ emissions from boilers, a high temperature source, which does emit measurable amounts of $PM_{2.5}$ according to WDNR's Guidance for Including $PM_{2.5}$ in Air Pollution Control Permit Applications. The TSD does not provide any analysis of $PM_{2.5}$ emissions from mechanical sources.

On page 20 of the TSD, WDNR states that "elemental carbon is correlated to directly emitted $PM_{2.5}$ from fuel combustion". Figure 16 of the TSD provides $PM_{2.5}$ species trends as measured by Wisconsin speciation monitors. In this figure, it appears that the concentration of elemental carbon is approximately the same as the concentration of soil material, which could be associated with $PM_{2.5}$ from mechanical activities like haul roads. If the ambient elemental carbon concentration represents measurable amounts of $PM_{2.5}$ emissions from combustion units, it follows that the ambient soil material concentration could represent measurable $PM_{2.5}$ emissions from mechanical sources. The permitting record should not rely on the TSD to support the conclusion that emissions from mechanical sources are zero as the TSD relies only on the broader scope of ambient air monitors without providing any analysis of the specific unit. Therefore, EPA requests that WDNR provide justification beyond citing to the TSD for each unit assumed to have zero $PM_{2.5}$ emissions. If such justification is not available, EPA expects WNDR to calculate $PM_{2.5}$ emissions using the best available information.

[2] "Air Quality Review of Industrial PM2.5 Emissions from Stationary Sources in Wisconsin, pg 9

[3] NCASI report titled, "Evaluation of the Performance of EPA Methods 201A and 202 on a Natural Gas-Fired Package Boiler"

5) **Scientific studies suggests that there are $PM_{2.5}$ emissions from mechanical units such as haul roads and landfills.**

EPA has reviewed a number of recent peer reviewed scientific studies regarding direct $PM_{2.5}$ emissions from mechanical sources such as haul roads and landfills. These studies indicate that such source types do emit a positive, non-zero quantity of $PM_{2.5}$, based on a variety of measurement techniques. While EPA understands WDNR considers the federal reference method or equivalent test method to be the preferred measurement technique, such test methodologies are not well suited for fugitive emission sources such as landfills and haul roads. In the absence of studies using such test methods, EPA expects WDNR to consider results from other reasonable testing techniques, which provide a large body of evidence suggesting that there are some emissions of $PM_{2.5}$ from these source categories. EPA has provided a listing of such studies for WDNR's review in Attachment A to this letter.

6) Additional Comments

EPA also requests that WDNR consider the additional comments on the draft permit found in Attachment B of to this letter.

We look forward to working with you to address all of our comments. If you have any further questions, please feel free to contact Andrea Morgan, of my staff, at (312) 353-6058.

Sincerely,

Genevieve Damico

Genevieve Damico
Chief
Air Permits Section

Attachment A
Scientific Studies

Ferm, M. and K. Sjoberg (2015). "***Concentrations and emission factors for PM2.5 and PM10 from road traffic in Sweden.***" Atmospheric Environment 119: 211-219. DOI: http://dx.doi.org/10.1016/j.atmosenv.2015.08.037

Kundu, Shuvashish, and Elizabeth. A. Stone. ***"Composition and Sources of Fine Particulate Matter across Urban and Rural Sites in the Midwestern United States."*** Environmental science. Processes & impacts 16.6 (2014): 1360–1370. *PMC*. Web. 20 Apr. 2016.

Piras, L., V. Dentoni, G. Massacci and I. S. Lowndes (2014). "***Dust dispersion from haul roads in complex terrain: the case of a mineral reclamation site located in Sardinia (Italy).***" International Journal of Mining Reclamation and Environment 28(5): 323-341. DOI: http://dx.doi.org/10.1080/17480930.2014.884269

Solomon, P. A., P. K. Hopke, J. Froines and R. Scheffe (2008). "***Key Scientific Findings and Policy- and Health-Relevant Insights from the US Environmental Protection Agency's Particulate Matter Supersites Program and Related Studies: An Integration and Synthesis of Results.***" Journal of the Air & Waste Management Association 58(13): S3-S92. DOI: http://dx.doi.org/10.3155/1047-3289.58.13.s-3

Yuen, W., K. Du, S. Koloutsou-Vakakis, M. J. Rood, B. J. Kim, M. R. Kemme, R. A. Hashmonay and C. Meister (2015). "***Fugitive Particulate Matter Emissions to the Atmosphere from Tracked and Wheeled Vehicles in a Desert Region by Hybrid-Optical Remote Sensing.***" Aerosol and Air Quality Research 15(4): 1613-1626. DOI: http://dx.doi.org/10.4209/aaqr.2014.12.0310

Attachment B
Additional Comments

1) Please note that EPA expects the court to issue a mandate effectuating the vacatur of provisions of the reciprocal internal combustion engine rules including 40 CFR 63.6640(f)(2)(ii)-(iii), 40 CFR 60.4322(f)(2)(ii)-(iii) and 40 CFR 60.4243(d)(2)(ii)-(iii) on May 2, 2016.[4] EPA identified that several of the provisions that will be vacated are incorporated into the draft permit. Specifically, on page 73 of the draft permit conditions I.M.3.a.(5)(f)(2)(ii) and (iii) incorporates conditions of 40 CFR 63.6640(f)(2)(ii)-(iii), on page 77 of the draft permit conditions I.N.3.b.(b)(ii)-(iii) incorporate 40 CFR 60.4243(d)(2)(ii)-(iii), and conditions I.N.4.b.(2)(b)(ii)-(iii) on page 79 incorporate 40 CFR 60.4322(f)(2)(ii)-(iii). As the permit will not be issued until after May 2, 2016, EPA requests that WDNR remove the vacated provisions from the permit.

2) The permit contains over 25 footnotes. In some cases where the footnote is purely informational, the use of a footnote may be appropriate. However, many of the footnotes included in the permit seem to contain language that is intended to be federally enforceable and should be contained in the body of the permit as an applicable requirement. For example, footnote 13 on page 36 states, "This condition applies to Boiler B11 when burning NCG". Similarly, footnotes 10 and 21 seem more appropriate to include in the body of the permit. Please review all the footnotes in the permit and ensure that any footnote that contains requirements that are intended to be enforceable are included in the permit as permit conditions.

3) On November 20, 2015, EPA published revisions to 40 CFR 63 Subpart DDDDD, the maximum achievable control technology (MACT) standard for boilers[5]. These revisions became effective upon the date of publication. It appears that the language in permit section I.AAA may not reflect the revisions made in the November 2015 rulemaking. As appropriate, please revise the draft permit to incorporate the revisions. Information on the recent rulemakings can be found at the following website: https://www3.epa.gov/airtoxics/boiler/boilerpg.html

4) Condition I.A.1.b.(3)(a) on page 12 includes parametric monitoring for the scrubber C02, but there does not appear to be any associated recordkeeping requirements for the scrubber. Please add the requirement to maintain records of the pressure drop across the scrubber.

5) Conditions I.A.1.c.(5)(a) and (b) on page 13 require the facility to monitor and maintain records of the pressure drop across the multi-cyclone, however no appropriate range in which to maintain the pressure drop is specified. Please provide a range or explain why it is not necessary.

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[4] https://www3.epa.gov/ttn/atw/icengines/docs/RICEVacaturGuidance041516.pdf
[5] 80 FR 72789

6) EPA noted multiple instances in the draft permit where the facility is required to keep a record of an emission factor, but the emission factor itself is not included in the permit. EPA identified this language in the following conditions: I.A.2.c(3) on page 14; I.B'.5.c(3) on page 36, and I.D.3.c.(2)(a) on page 43. In order to provide transparency and make the information accessible to the public, EPA believes that the emission factor should be publically available.[6] In each case where an emission factor is relied upon to demonstrate compliance, please revise the permit to include either the emission factor or include an explicit method for determining the emission factor.

7) EPA identified several instances where the draft permit requires the permittee to "sample fuels using methods approved by the department in writing". Specifically, EPA noted this language in condition I.A.5.(c)(2) on page 15, condition I.A'5.c.(3) on page 21, condition I.B.5.c.(4) on page 30, and condition I.B'.6.c.(3) on page 37. To improve clarity and enforceability of this condition, EPA suggests adding the required frequency of the sampling and specifying the sampling methodology.

8) Condition I.A'.3.c(3)(d) on page 20 requires the facility to calculate the daily total emissions of sulfur dioxide (SO_2) from all fuels burned but does not provide additional information on the calculation methodology. EPA suggests that to improve clarity of the condition, WDNR include additional information on how to calculate daily SO_2 emissions, including if any assumptions are made regarding SO_2 removal efficiency of the dry sorbent injection system or if 100% of the sulfur content of the fuel is assumed to be emitted to the atmosphere.

9) Condition I.A'.5.b.(1) on page 21 states that tire derived fuel (TDF) may not supply more than 10 percent of the heat input to the boiler or the highest heat input that demonstrates compliance with the particulate matter (PM) limitations of conditions A'.1.a.(1) and (2). However, it is unclear what heat input of TDF demonstrates compliance with the PM limits, and how that is determined. EPA suggests clarifying the permit language to include whether an emission factor is used or testing will be performed to determine the maximum allowable heat input from TDF to not cause a violation of the PM limits.

10) Condition I.B'.1.(6) on page 32 of the permit prohibits the facility from injecting sorbent into the boiler flue gas unless the emissions from the boiler are controlled by the baghouse. However, it does not appear that there is associated recordkeeping requirements. EPA suggests that WDNR require the facility to maintain records of all times that the sorbent was injected into boiler flue gas when the baghouse was not operational.

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[6] *See* In the Matter of United States Steel Corporation – Granite City, Permit No. 96030056 (Order on Petition) at 9-12 (December 3, 2012) http://www.epa.gov/region7/air/title5/petitiondb/petitions/uss_2nd_response2009.pdf

11) Several conditions require the facility to keep monthly records of the "amount" of fuel fired in each boiler. The boilers referenced each burn a variety of fuel types. EPA identified this language in Condition I.A.1.c(3)(b) on page 12, condition I.A'.1.c.(3) on page 18, condition I.B.1.c.(8)(b) on page 25 and condition I.B'.1.c.(3) on page 32. To improve enforceability and clarity of the condition, EPA suggests specifying what metric should be used to quantify the amount of fuel burned, for example tons, gallons, or cubic feet, similar to the language in condition I.A'.3.c.(3)(a) on page 20.

12) Condition I.K.3.b.(2) on page 67 of the draft permit requires the facility to calculate on a monthly basis, the volatile organic compounds (VOC) emissions from the paper machines 11, 12, 13, 14 and 15 collectively. However, the emission limitation of I.K.3.a.(3) limits the VOC emissions from P11, P13, and P15 in pounds per month individually. EPA requests that WDNR revise the monitoring and record keeping requirements to ensure that records and emissions are calculated for individual paper machines. Additionally, EPA suggests clarifying the emission calculation methodology to ensure that the permit is both clear and practically enforceable.

13) Condition I.K.3.c.(2) requires that the permittee keep "documents" that show the VOC content of each raw material used by each paper machine. To improve clarity of the condition, EPA suggests that WDNR specify what type of documentation is acceptable-for example, material safety data sheets or manufacturer specifications.

14) Permit Condition I.M.1.b.(1) requires that generator G3 only burn diesel fuel oil and that generators G11 and G14 only burn natural gas, and the only associated recordkeeping is that the permittee keep records of the fuels the generator is designed to use. However, it is unclear from the permit record if the generators are capable of burning an additional fuel type. If so, it may be appropriate to require the facility to maintain records of the fuel burned in the generators. If appropriate, please consider revising the permit condition or confirm that generator G3 is only capable of burning diesel fuel and generators G11 and G14 are only capable of burning natural gas.

15) When an applicable requirement provides independent compliance options or includes decision trees that must be followed to determine an applicable requirement, EPA believes that to ensure clarity, only the options selected by the source and final results of following the decision tree for the specific source should be included in the Part 70 permit.[7] It appears that that the boiler MACT provisions incorporated in permit section I.AAA include all the provisions of the MACT, including conditions that do not apply to boilers B07, B09, and B11. For example, on page 103 of the draft permit it appears that

[7] See page 39 of White Paper Number 2, https://www3.epa.gov/ttn/caaa/t5/memoranda/wtppr-2.pdf

Condition I.(3) could be removed as none of the boilers are considered to be new or reconstructed units. To improve clarity and practical enforceability of the permit, EPA requests that WDNR revise the permit to incorporate only the applicable boiler MACT requirements and identify the compliance options selected by the facility.

16) Condition I.ZZZ.2(a)(1) requires the facility to conduct emissions testing for boiler B07-B11 and Lime Kiln 12. All of the boilers have the capability and are permitted to burn multiple types of fuel, but it is unclear from the testing requirements which fuels the boilers are required to burn during emission tests. Please consider revising the emission testing requirements to specify which fuel should be burned during testing.

17) While EPA understands that Condition I.R.3.a.(b)(1) on page 86 is a state only requirement, for clarity and practical enforceability of these conditions EPA suggests that WDNR consider adding the date by which this plan must be developed, whether updates are required, and if the plan should be submitted to WDNR.

18) Additionally EPA has identified the following typographical errors:
    a. On page 21 it appears that the limitation section of I.A'.5 was erroneously labeled 'b.' instead of 'a.'.
    b. On page 108 of the draft permit it appears that condition I.AAA.10.(b).(4)(iii) may have inadvertently been included in the paragraph for I.AAA.10.(b).(4)(ii)(F), causing the rest of the conditions to be misnumbered. If appropriate please consider revising.
    c. It appears that condition I.AAA.13.(d) on page 117 of the draft permit may have inadvertently only cited to the work practice standards according to <u>item 5</u> of Table 3 of 40 CFR 63 Subpart DDDDD, whereas the language of 40 CFR 63.7540(d) cites to item 5 <u>and 6</u>. EPA also suggests that it may be appropriate to change the phrase "of this subpart" to "of 40 CFR 63 Subpart DDDDD" to improve clarity.
    d. It appears that 40 CFR 63.7550(c)(5)(xviii) may have inadvertently been left out of the permit requirements on page 121 of the draft permit. If appropriate please add the missing provision.
    e. It appears that condition I.AAA.17.(d)(3) on page 123 of the draft permit may not be consistent with 40 CFR 63.7555(d)(3). Please consider revising if appropriate.
    f. It appears that the origin and authority to condition I.ZZZ.8.b(6) should read 40 CFR 63.867(b)<u>(4)</u> rather than 40 CFR 63.867(b)<u>(3)</u>. If appropriate please consider revising.