September 22, 2021

Submitted via Email: EGLE-AQD-PTIPublicComments@michigan.gov

Re: Ajax Materials Corporation Permit to Install Application No. APP-2021-0019

To Whom It May Concern:

The following comment is in regard to a Permit to Install (PTI) application submitted by Ajax Materials Corporation. The corporation seeks to construct a hot mix asphalt plant on a proposed site located at 5088 Energy Drive, Flint, Michigan. Before the Department of Environment, Great Lakes, and Energy (EGLE) grants a PTI request, members of the public must have the opportunity to submit written comments on the application. EGLE must consider all public comments received in determining whether to grant a PTI.

The Great Lakes Environmental Law Center and Earthjustice submit this comment on behalf of their clients: Flint Rising, the Environmental Transformation Movement of Flint, and the St. Francis Prayer Center. We urge EGLE to deny the permit for the reasons explained in the attached comment.

Sincerely,

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I. INTRODUCTION

Nowhere in the state are cumulative risk assessments more necessary for protecting the health of residents than for proposed actions in our largest, poorest, and most segregated cities. Simultaneously, more so than any other city, the name of one has become a universal synonym for "environmental injustice." Flint.

Renowned biologist Eugene Odum once succinctly described environmental degradation from cumulative effects as "the tyranny of small decisions."[1] Seemingly independent small decisions, when viewed in their totality, create large-scale ill effects over time. Forty years after Odum's observations were published, evidence that some of the most egregious health effects of air pollution result not merely from the direct effects of one large action continues to mount. Instead, it is often the combination of a multitude of comparatively minor actions, further inflamed by societal inequalities, that pose significant risks to vulnerable communities.[2] The United States Environmental Protection Agency (EPA) calls these "combined risks from aggregate exposures to multiple agents or stressors" *cumulative risks*.[3]

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[1] William E. Odum, Environmental Degradation and the Tyranny of Small Decisions, *BioScience*, Volume 32, Issue 9, October 1982, Pages 728–729, https://doi.org/10.2307/1308718

[2] *E.g.* Chen, Edith et al. "Chronic traffic-related air pollution and stress interact to predict biologic and clinical outcomes in asthma." *Environmental health perspectives* vol. 116,7 (2008): 970-5. doi:10.1289/ehp.11076; Morello-Frosch, Rachel et al. "Understanding the cumulative impacts of inequalities in environmental health: implications for policy." *Health affairs (Project Hope)* vol. 30,5 (2011): 879-87. doi:10.1377/hlthaff.2011.0153; Solomon, Gina M et al. "Cumulative Environmental Impacts: Science and Policy to Protect Communities." *Annual review of public health* vol. 37 (2016): 83-96. doi:10.1146/annurev-publhealth-032315-021807; Briggs, David. "Environmental pollution and the global burden of disease." *British medical bulletin* vol. 68 (2003): 1-24. doi:10.1093/bmb/ldg019; Clougherty, Jane E et al. "Synergistic effects of traffic-related air pollution and exposure to violence on urban asthma etiology." *Environmental health perspectives* vol. 115,8 (2007): 1140-6. doi:10.1289/ehp.9863

[3] U.S. EPA. Framework for Cumulative Risk Assessment. U.S. Environmental Protection Agency, Office of Research and Development, Center for Public Health and Environmental Assessment (CPHEA), formerly known as the National Center for Environmental Assessment (NCEA), Washington Office, Washington, DC, EPA/600/P-02/001F, 2003, *available at* https://www.epa.gov/risk/framework-cumulative-risk-assessment.

Traditional assessments of human health risks associated with air pollution are extraordinarily narrow in scope, "focus[ing] on single cause-effect pathways that involve a single chemical and single identified adverse effect," and "limiting their applicability to the 'real world.'"[4] Where air pollution standards are based solely on the adverse health effects of one pollutant and monitoring often focuses on the emissions of one pollutant from a single source, they ignore the reality that combined emissions often work to amplify deleterious effects.[5] This methodology allows areas to exist where air quality is technically in compliance with each pollutant's respective standards even though their impact, when taken cumulatively, results in overall low air quality.[6]

The EPA, in its risk characterization policy and guidance, suggests that risk assessments should instead "address or provide descriptions of [risk to]... important subgroups of the population, such as highly exposed or highly susceptible groups."[7] The EPA's guidance on planning and scoping for cumulative risk assessments recognizes the potential importance of other social, economic, behavioral, or psychological stressors that may contribute to adverse health effects, stressing the importance of "defining the characteristics of the population at risk, which include individuals or sensitive subgroups...."[8] It is this more holistic and accurate approach to risk assessment that has made cumulative effects analysis critical to the attainment of environmental justice.

The EPA's comment letter regarding EGLE's draft permit for the Ajax Asphalt Plant highlights "the environmental conditions already facing this community, and the

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[4] National Research Council. Science and Decisions: Advancing Risk Assessment. National Academy Press; Washington, DC, USA: 2009.

[5] Dominici, Francesca et al. "Protecting human health from air pollution: shifting from a single-pollutant to a multipollutant approach." *Epidemiology (Cambridge, Mass.)* vol. 21,2 (2010): 187-94. doi:10.1097/EDE.0b013e3181cc86e8

[6] *Id*.

[7] U.S. EPA. Framework for Cumulative Risk Assessment, *supra note 3.*

[8] *Id*.

potential for disproportionate impacts."[9] As such, EPA "recommends a cumulative analysis of the projected emissions from all emission units at the proposed facility, fugitive emissions from the proposed facility, and emissions from nearby industrial facilities, to provide a more complete assessment of the ambient air impacts of the proposed facility on this community."[10] At the same time, EPA made clear that "the siting of this facility may raise civil rights concerns," necessitating an assessment by EGLE of "its obligations under civil rights laws and policies."[11]

As is demonstrated in the coming pages, the rules governing Michigan's Department of Environment, Great Lakes, and Energy (EGLE) and its air permitting programs allow for a cumulative impact analysis on a case-by-case basis. Simultaneously, federal civil rights laws demand it. Nowhere in the state are cumulative risk assessments more necessary for protecting the health of residents than for proposed actions in our largest, poorest, and most segregated cities.

EGLE's failure to utilize its power to conduct a cumulative effects analysis perpetuates a long history of societal disenfranchisement, disinvestment, and disregard for communities of color. The confluence of environmental and social impacts, when combined, must trigger this heightened level of scrutiny applied to permit decisions for facilities near these large historically marginalized communities.

II. BACKGROUND

A. The Proposed Site

The subject of this comment is a proposed permit prepared by EGLE and made available to the public for comment. In December 2020, Ajax submitted an application

[9] U.S. EPA, Detailed Permit Comments Ajax Materials Corporation PTI APP-2021-0019. Exhibit 1.
[10] *Id*.
[11] *Id*.

for a permit to install (PTI), which would authorize the construction of a hot mixed asphalt plant at 5088 Energy Drive in Flint.[12]

Plant construction would include installation of:

- 500 ton per hour counter-flow drum mixer
- baghouse rated to 100,000 Cubic Feet per Minute
- recycled asphalt product feed bins
- eight storage silos
- truck load out area
- six asphalt cement tanks
- hydrocarbon gas fueled heater.

The proposed site is located on a large wooded parcel that is home to Riskin Drain, an Impaired Stream covered by the statewide Polychlorinated Biphenyls (PCBs) TMDL.[13] Water from Riskin flows into the Flint River until it combines with the Shiawassee River, which then empties into Lake Huron.[14] The DEQ, in its communications to the EPA regarding the statewide PCB TMDL, determined that "atmospheric gas phase concentration is the primary pathway for PCBs into the Michigan water bodies covered by the TMDL," waterways that include Riskin Drain.[15]

As is outlined further in II.B, the site of the proposed facility is close in proximity to large residential housing developments and numerous community gathering centers. At the same time, the area is heavily populated with heavy industrial facilities, including Universal Coating Inc, Genesee Power Station, Ace-Saginaw Paving Company, Buckeye Terminals, Superior Materials, RJ Industrial Recycling, Genesee

[12] Ajax's Permit to Install Application. Exhibit 2.
[13] https://www.michigan.gov/documents/deq/wrd-swas-pcbtmdl-appA_415364_7.pdf, 040802040409-01
[14] https://www.canr.msu.edu/michiganlakes/uploads/files/Leonardi%20and%20Gruhn%202001.pdf, 118
[15] https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=80424, 14

Recycling, Environmental Rubber Recycling, Emterra Environmental USA, and Lake State Railway Company.

B. The Community

Surrounding these facilities are a slew of communities and the respective neighborhoods to which they belong; 2,970 people live within a 1-mile radius of the proposed site.[16] Two low-income public housing buildings, River Park and Ridgecrest Village, are located directly to the south and southwest of the proposed site. Four mobile home parks are located within a 1-mile radius of the site along with three children's parks, a public beach, a county recreation area, a community garden, five churches, and an assisted living center.

The proposed plant will be located in an environmental justice community. Of the 2,970 people living within 1-mile of the proposed plant, 86% of the population identify as people of color, including 77% of the population identifying as Black and 10% of the population identifying as Hispanic.[17] Forty-three percent of households have incomes of less than $15,000 a year. The area's per capita income in 2018 was $14,991.[18]

Data compiled by the EPA and accessed through its EJSCREEN tool confirms a stark contrast between the characteristics of the area around the proposed site compared to the rest of the state. The EJSCREEN report below combines demographic and environmental indicators in the area encompassed within a 1-mile radius of the proposed site to provide EJ Indexes. Each EJ Index combines demographic factors with a single environmental factor.

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[16] United States Environmental Protection Agency. 2020 version. EJSCREEN. Retrieved September 20, 2021, from https://ejscreen.epa.gov/mapper/demogreportpdf.aspx?report=acs2018. U.S. Census Bureau, American Community Survey (ACS) 2013-2017.

[17] *Id*.

[18] *Id*.

EJSCREEN Report (Version 2020)
1 mile Ring Centered at 43.078570,-83.668652
MICHIGAN, EPA Region 5
Approximate Population: 2,970
Input Area (sq. miles): 3.14

Selected Variables	Percentile in State
EJ Indexes	
EJ Index for Particulate Matter (PM 2.5)	94
EJ Index for Ozone	96
EJ Index for NATA* Diesel PM	89
EJ Index for NATA* Air Toxics Cancer Risk	94
EJ Index for NATA* Respiratory Hazard Index	94
EJ Index for Traffic Proximity and Volume	85
EJ Index for Lead Paint Indicator	94
EJ Index for Superfund Proximity	92
EJ Index for RMP Proximity	87
EJ Index for Hazardous Waste Proximity	94
EJ Index for Wastewater Discharge Indicator	91

An EJ Index is highest in areas with high environmental indicator values combined with large numbers of mainly low-income and minority residents. Higher percentiles indicate a confluence of a high concentration of people of color as well as a high percentile of environmental risks compared to state averages. When an area has a high EJ Index, it is a warning sign that there is likely an environmental justice community that is disproportionately subjected to elevated levels of environmental risks. The communities around the proposed site for this facility are among the highest percentiles in the state for every index, ranging from the 85th percentile to the 96th percentile compared to Michigan as a whole.

III. LEGAL BACKGROUND

The primary air pollution regulations setting the standards that must be met in emitting facility licensing actions taken by EGLE include:

- At the federal level, the Clean Air Act (CAA), as amended, and its rules. [19]

[19] *Clean Air Act (CAA),* 42 U.S.C. 7401 et seq.

- At the state level, Part 55 Air Pollution Control of the Michigan Natural Resources and Environmental Protection Act (NREPA), as amended, and its rules.[20]

First passed by the United States Congress in 1970, the CAA serves as the foundation for regulating air pollution throughout the country. Under the CAA, the EPA is required to regulate the emission of pollutants that "endanger public health and welfare."

A primary means of regulating air pollution sources through the CAA has historically been through state enforcement of emission limits in State Implementation Plans (SIPs). Each SIP is an enforceable collection of environmental regulations approved by the EPA and used by the respective state to administer air pollution control programs fulfilling the requirements of the CAA. States are not allowed to have weaker air pollution controls than those outlined in the CAA. States are, however, allowed to have pollution controls stronger than those outlined by the CAA.

In Michigan, the authority to implement the CAA is granted to EGLE's Air Quality Division (AQD) through Part 55 (Air Pollution Control) of Michigan's NREPA, as amended. EGLE's Part 55 Air Rules, approved by the EPA, regulate air emissions, and require permits for major sources of pollutants. Specifically, Rule 201 of the Michigan Air Pollution Control Rules requires a person to obtain an approved Permit to Install for any potential source of air pollution unless the source is exempt from the permitting process.[21]

A. Michigan's Air Toxic Rules

To receive a permit to install, a permit applicant must submit data demonstrating that the emissions from the process will not have an unacceptable air quality impact in

[20] *Natural Resources and Environmental Protection Act (NREPA)*, 1994 PA 451.
[21] Mich. Admin. Code, R 336.1201.

relation to all federal, state, and local air quality standards.[22] State air quality standards include Michigan's Air Toxic Rules. These rules require two main things of permit applicants. First, permit applicants may not allow the emission of a toxic air contaminant from the proposed new or modified emission unit over the maximum allowable emission rate based on the best available control technology for toxics.[23] Second, the permit applicant must demonstrate that it will not cause or allow the emission of any toxic air contaminant from the proposed new or modified emission unit above the maximum allowable emission rate that will result in a predicted maximum ambient impact that is more than an initial threshold screening level or an initial risk screening level.[24]

Importantly, EGLE is granted latitude to require even lower emission rates on a *case-by-case basis* for specific toxic air contaminants. Specifically, Rule 228 grants EGLE the authority to do so where the Department determines that the requirements specified by Best Available Control Technology for Toxics (T-BACT) or the health-based screening level may not provide adequate protection of human health or the environment in a particular instance.[25] "In this case, the department shall establish a maximum allowable emission rate considering relevant scientific information, such as exposure from routes other than direct inhalation, synergistic or additive effects from other toxic air contaminants, and effects on the environment."[26]

B. Review of Permit Decisions

Article VI, Sec 28 of the Michigan Constitution requires administrative decisions to be, at a minimum, "authorized by law; and… supported by competent, material and

[22] Mich. Admin. Code, R. 336.1203(1)(h).
[23] Mich. Admin. Code, R. 336.1224(1).
[24] Mich. Admin. Code, R. 336.1225(1).
[25] Mich. Admin. Code, R 336.1228
[26] *Id*.

substantial evidence."[27] Similarly, the Michigan Administrative Procedure Act reiterates that decisions must not be "in violation of the constitution or a statute" and must be "supported by competent, material and substantial evidence on the whole record."[28] It provides further specificity by also barring administrative decisions deemed "arbitrary, capricious, or clearly an abuse or unwarranted exercise of discretion."[29]

C. Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (Title VI) is a federal law that prohibits any federally funded program or activity from discriminating on the basis of race, color, or national origin, and provides a statutory basis for relief for victims. Section 602 of Title VI requires agencies distributing federal funds to issue regulations implementing the prohibition of discrimination.[30] It also requires these agencies to create mechanisms for processing complaints of discrimination based on race, color, and national origin.

Agency regulations implementing Title VI, as well as agency authority under other laws, are subject to the environmental justice goals of Presidential Executive Order 12898, which requires each Federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."[31] Federal agencies may implement policies that affect their funding activity to accomplish the goals of EO 12898.[32] Agencies can use their Title VI authority, when appropriate, as well as their authority under various laws to achieve the

[27] Const. 1963, Art. VI, § 28, Eff. Jan. 1, 1964.
[28] Administrative Procedures Act of 1969, 24.306, Sec. 106.
[29] *Id*.
[30] 42 U.S.C. 2000d-1
[31] Executive Order 12898, https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf.
[32] U.S. EPA, "Title VI EJ Comparison" accessed July 10, 2020, https://www.epa.gov/sites/production/files/2015-02/documents/title-vi-ej-comparison.pdf.

Executive Order.[33] "Agency Title VI enforcement and compliance authority *includes* the authority to ensure that the activities they fund that affect human health and the environment do not discriminate based on race, color, or national origin."[34]

D. Title VI Implementation in the Environmental Context

For the EPA, Title VI is implemented by 40 CFR Part 7, "Nondiscrimination in Programs or Activities Receiving Federal Assistance from EPA."[35] "Every EPA grant recipient, including each state environmental agency receiving financial assistance from EPA, is subject to the terms of 40 CFR Part 7."[36] As a recipient of EPA financial assistance, EGLE submitted assurance that it would comply with EPA's Title VI implementing regulations along with its funding applications.[37] Accepting EPA funds also served as EGLE's acceptance of the obligation to comply with the agency's Title VI implementing regulations. [38]

Under EPA's Title VI implementing regulations, EGLE is prohibited from using *''criteria or methods of administering its program which have the effect of subjecting individuals to discrimination because of their race, color, [or] national origin.''* Central to the EPA's Title VI implementing regulations is the *consequence* of agency policies and decisions, not their *intent*. As such, they include prohibitions against both intentional and unintentional discrimination by EGLE and other EPA funded agencies.[39]

Unintentional discrimination includes those actions that have a disproportionate adverse effect on individuals of a certain race, color, or national origin. Despite not

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[33] *Id*.
[34] *Id*. emphasis in original.
[35] "40 CFR § 7.35 - Specific Prohibitions.," LII / Legal Information Institute, accessed July 2, 2020, https://www.law.cornell.edu/cfr/text/40/7.35.
[36] U.S. EPA, "Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs", https://19january2017snapshot.epa.gov/sites/production/files/2013-09/documents/frn_t6_pub06272000.pdf
[37] *Id*.
[38] *Id*.
[39] "40 CFR § 7.35 - Specific Prohibitions."

being formalized in writing, a neutral policy or decision understood as a "standard operating procedure," a failure to act, or a failure to proactively adopt an important policy can also constitute a violation of Title VI.[40] Recipients of federal financial assistance are prohibited from utilizing criteria or methods of administration that have the effect, ***even if unintentional***, of subjecting individuals to discrimination because of their race, color, or national origin, or have the effect of defeating or substantially impairing accomplishment of the program's objectives.[41]

While neutral on their face, environmental laws, policies, public participation practices, and decisions can still produce unintentional discriminatory effects that violate Title VI.[42] For this reason, EGLE's "Title VI obligation is layered upon its separate, but related obligations under the Federal or state environmental laws governing its environmental permitting program."[43] Therefore, the mere fact that a state agency such as EGLE can demonstrate their actions comply with relevant federal and state environmental laws "does not constitute per se compliance with Title VI." [44]

Similarly, the "question of whether or not individual facility operators are in violation of [environmental laws] is distinct from whether the permitting agencies' decision to grant permits to the operators had a discriminatory impact on the affected communities."[45]

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[40] See, e.g., Maricopa Cty., 915 F. Supp. 2d at 1079 (disparate impact violation based on national origin properly alleged where recipient "failed to develop and implement policies and practices to ensure [limited English proficient] Latino inmates have equal access to jail services" and discriminatory conduct of detention officers was facilitated by " broad, unfettered discretion and lack of training and oversight" resulting in denial of access to important services).

[41] "40 CFR § 7.35 - Specific Prohibitions."

[42] https://www.govinfo.gov/content/pkg/FR-2000-06-27/pdf/00-15673.pdf, 39690

[43] Draft Title VI Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs.

[44] *Id*.

[45] *Californians v. United States EPA*, 2018 U.S. Dist. LEXIS 56105, *35

E. Permitting Decisions Under Title VI

Per 40 CFR 7.35(b), EGLE and other recipients of EPA funding are responsible for ensuring that the activities authorized by their environmental permitting decisions do not have discriminatory effects, regardless of whether the agency selects the site or location of permitted sources. The fact that the recipient, EGLE, does not select the site in a permit application does not relieve the recipient of the responsibility of ensuring that its actions in issuing permits for such facilities do not have a discriminatory effect.[46] Within the context of Title VI, the issuance of a permit by EGLE or any other recipient of EPA funding is the "necessary act that allows the operation of a source. that could give rise to adverse disparate effects on individuals." To operate, the owners of a facility must both: 1) "comply with local zoning requirements," and 2) "obtain the appropriate environmental permit." An EPA funding recipient's operation of a permitting program is independent of local government zoning activities.

IV. COMMENTS

A. EGLE Can And Must Use Its Authority To Assess Cumulative Impacts Regarding Air Emissions From The Proposed Plant As Well As Other Nearby Sources Of Air Pollution

EPA has stated that a cumulative impact analysis is relevant for considering whether a Title VI violation may be present. Yet, EGLE has neither required the Permit Applicant to perform any such analysis, nor has it performed such an analysis itself, despite the fact that Title VI demands a cumulative impact study in this case and multiple regulatory provisions support the use of this requirement.

The demographic data for the communities living in close proximity to the proposed site immediately gives rise to concerns regarding Title VI compliance: 86% of

[46] 40 CFR § 7.35(c).

individuals living in the communities within a 1-mile radius of the facility are minorities. These concerns are heightened given the results of the EJ Screen analysis discussed in section II.B above, which showed that the community within a 1-mile radius of the proposed plant were not only people of color and lower income but were also subject to disproportionately high levels of a wide variety of environmental risks when compared to state averages. Adding another source of air pollution to this community may contribute to a disproportionate adverse impact in violation of Title VI, particularly when cumulative impacts on the community are considered.

EGLE has the authority to require a cumulative impact assessment regarding any toxic air contaminant pursuant to Mich. Admin. Code R. 336.1228 (Rule 228) and Mich. Admin. Code R. 336.1901 In addition, the Michigan Environmental Policy Act, MCL 324.1705(2), requires that EGLE consider the effect of the proposed permit on the environment and should not authorize conduct that will pollute, impair or destroy the air, water or other natural resources if "there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare. (Rule 901). Rule 228 specifically allows the Department to "determine, on a case-by-case basis, that the maximum allowable emission rate… does not provide adequate protection of human health or the environment."[47] Rule 228 compels EGLE to require a lower emissions rate than specified in the administrative code wherever this determination is made, stating that it "shall establish a maximum allowable emission rate considering relevant scientific information."[48] It goes on to explicitly include examples of a wide array of scientific information considered relevant to the determination of the maximum allowable emission rate. They include, but are not limited to, "exposure from routes other than direct inhalation, synergistic or additive

[47] Mich. Admin. Code R. 336.1228 (Rule 228) (emphasis added)
[48] *Id*.

effects from other toxic air contaminants, and effects on the environment."[49] In short, Rule 228 permits EGLE to conduct what the EPA defines as a cumulative risk assessment for toxic air contaminants: "An analysis, characterization, and possible quantification of the combined risks to health or the environment from multiple agents or stressors."[50] As such, Rule 228 provides EGLE with a tool to address Title VI-related cumulative impact concerns in the context of permitting.

Rule 901(a) also provides EGLE with the authority to require a cumulative impacts analysis. Rule 901 provides—

> [A] person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other contaminants, either of the following:
>
> a. injurious effects to human health or safety, animal life, plant life of significant economic value or property, or
>
> b. unreasonable interference with the comfortable enjoyment of life and property.[51]

In order to determine whether the proposed asphalt plant will comply with Rule 901(a), a permit term, EGLE must have a better understanding of how the permit will contribute to the injurious effects to human health or safety.

Residents in this community already experience disproportionately high rates of asthma and other health conditions that reflect the known high rates of exposure to air pollution. According to the Michigan Inpatient Database, the asthma hospitalization rate in the area in zip code 48505—where the proposed Plant is to be located—is 43.04

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[49] *Id.*

[50] U.S. EPA. Framework for Cumulative Risk Assessment. U.S. Environmental Protection Agency, Office of Research and Development, Center for Public Health and Environmental Assessment (CPHEA), formerly known as the National Center for Environmental Assessment (NCEA), Washington Office, Washington, DC, EPA/600/P-02/001F, 2003.

[51] Mich. Admin. Code R336.1901 (Rule 901).

per 10,000 people, which is over three times the state average of 12.54 per 10,000 people.[52] A cumulative impact study is a needed step to understand how this proposed permit will contribute to the overall health effects.

As noted above, EPA's Title VI regulations prohibit both intentional and unintentional acts of discrimination. An unintentional act of discrimination can include a failure to act. In cases such as this when a Title VI issue may be present based on the demographics of the residents living nearby the proposed Plant, a cumulative impact analysis is *required* in order for EGLE to determine whether or not its decision to issue the permit will violate the EPA's Title VI regulations.

Even if the department did not have existing authority in its air quality rules for conducting a cumulative impact analysis, EGLE's Title VI obligation "exists *in addition to* the Federal or state environmental laws governing its permitting program."[53] However, in this case EGLE *does* have the authority to address cumulative impacts regarding toxic air contaminant emissions.

The Commenters are not the only parties concerned about cumulative impacts and a potential Title VI violation. The risk of this occurring was highlighted by the EPA itself in a recent letter to EGLE regarding the Ajax permit application. The Agency states that:

> because the proposed site for the Ajax facility is in an area with identified air quality concerns in EJSCREEN, EPA recommends a cumulative analysis of the projected emissions from all emission units at the proposed facility, fugitive emissions from the proposed facility, and emissions from nearby industrial facilities, to provide a more complete assessment of the ambient air impacts of the proposed facility on this community.[54]

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[52] Michigan Inpatient Data Base, 2012-2014, available at https://www.michigan.gov/documents/mdch/Michigan-and-Detroit-Asthma-Hosp-Rates_498682_7.pdf

[53] U.S. EPA Title VI Guidance, at 39,680. Emphasis added.

[54] U.S. EPA, Detailed Permit Comments Ajax Materials Corporation PTI APP-2021-0019

Yet, while EGLE's existing rules allow it to conduct a cumulative impact analysis via Rule 228, Rule 901, and the EPA's Title VI guidance, and while the EPA has explicitly encouraged EGLE to perform such an analysis regarding this proposed permit, it has thus far failed to do so. The permit will contribute to emissions in communities made up of some of the highest percentages of minorities in the state. The large number of minorities living within the vicinity of the proposed site immediately raises the prospect of a Title VI complaint based on disparate impact. A violation will occur if this decision, combined with cumulative impacts of the entirety of this and other facilities, results in a significant adverse effect. By abdicating its responsibility to conduct a cumulative impact assessment, EGLE is left with no means of knowing whether the cumulative impacts that include those arising from this permit will have a significant adverse effect. The agency cannot then know whether it is complying with its Title VI obligations in the process of issuing these permits.

B. EGLE's Draft Permit Fails To Prevent Violations Of Rule 901

EGLE's draft permit expressly incorporates Rule 901 of the Michigan Air Pollution Rules but fails to require sufficient measures designed to prevent the violation of Rule 901(b). Rule 901(b) requires EGLE and Ajax to ensure that emissions do not cause "unreasonable interference with the comfortable enjoyment of life and property."[55] As explained in EGLE's guidance, "Application of Rule 901(b) in the Permit to Install Review Process" ("Rule 901(b) Guidance"), the Air Quality Divisions staff and the source of pollution have the responsibility to proactively reduce the likelihood that the facility will generate a nuisance. The incorporation of Rule 901(b) in permits aims to prevent odors and fugitive dust from becoming a nuisance to the surrounding community. The Rule 901(b) Guidance expressly includes asphalt plants in the list of

[55] Mich. Admin. Code R 336.1901(b) (Rule 901).

odorous sources.[56] EGLE directs its permitting staff to identify methods that can be used to help minimize nuisance situations.

1. Odors

Despite the fact that odors are a very common complaint from residents living near asphalt plants,[57] including at Ajax's other asphalt plants,[58] EGLE's draft permit pays scant attention to the importance of odor prevention. As a preliminary matter, Ajax's permit application passingly mentions nuisance odors and dust, but fails to explain how the asphalt plant's design or operations will prevent the release of odors that will cause an unreasonable interference with comfort and enjoyment of life and property for its neighboring community. EGLE's draft permit also includes no requirement that Ajax take proactive measures to manage odors, but rather indicates that EGLE may require odor testing upon request.[59]

The siting of the Ajax asphalt plant in this environmental justice community is inappropriate considering the harms that can be caused by the odor and other harmful emissions. As drafted, EGLE's draft Permit fails to proactively address the high likelihood of odor issues. This is especially problematic considering that EGLE has previously received odor complaints for Ajax's other asphalt plants in Michigan. It has also issued multiple notices of violations for odor for at least three of Ajax's Michigan plants. In response to a notice of violation for its Auburn Hills asphalt plant, Ajax indicates that it has increased its stack height from 60' to 100' and then to 120' feet as a

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[56] *Id.*

[57] http://chej.org/wp-content/uploads/Asphalt-Plants-PUB-131.pdf look at p. 64/182

[58] *See* EGLE Violation Notices:
https://www.deq.state.mi.us/aps/downloads/SRN/B4138/B4138_VN_20160615.pdf.
https://www.deq.state.mi.us/aps/downloads/SRN/B1956/B1956_VN_20151207.pdf
https://www.deq.state.mi.us/aps/downloads/SRN/B1956/B1956_VN_20191202.pdf

[59] See EGLE Draft Permit, 10 (The verification and quantification of odor emissions from EUHMAPLANT, by testing at owner's expense, in accordance with Department requirements may be required for continued operation.)

proactive way to prevent odor issues.[60] Yet, in Flint, Ajax is only proposing to build a stack at a height of 80'. Nothing in the permit suggests why the 80' stack height is appropriate or will prevent odors.

EGLE has the authority to deny a permit based on Rule 901. For instance, in the predominantly white community of Rochester Hills, Michigan, the Department of Natural Resources ("DNR") refused to issue a permit to construct a landfill based on its proximity to residential homes and the inadequacy of the proposal to control odors on the site; in upholding the DNR's permit denial, the Court deemed consideration of "the broad concerns regarding air quality enunciated under Rule 901" an appropriate exercise of regulatory discretion.[61]

We urge EGLE to deny Ajax's permit application because the very nature of the asphalt plant operations make it likely to cause a nuisance for the surrounding community, considering its close proximity to the nearby homes. At the very minimum, EGLE should require Ajax to take significant steps to reduce the potential odor issues: (1) require Ajax to raise the stack height; (2) require Ajax to install systems that will reduce the likelihood that emissions will escape the facility; and (3) require Ajax to prepare an odor mitigation plan that will detail operations and maintenance systems designed to prevent odors.

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[60] *See* Letter from Mark Boden, Vice President, Ajax to Robert Joseph, Environmental Engineer, Air Quality Division, EGLE (December 20, 2019), http://www.deq.state.mi.us/Aps/downloads/SRN/B1956/B1956_RVN_20191220.pdf

[61] *See Southeastern Oakland County Incinerator Authority v. Department of Natural Resources*, 440 N.W.2d 649, 653-654 (Michigan Ct. of Appeals 1989); *see also Subject: Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 Pa 451, As Amended Petition of Air Quality Division To Revoke the Permit To Install Issued To Tobian Metals, Inc., 2005 WL 996013* (upholding DEQ's decision to withdraw an air permit, based in part on Rule 901, where residents could not run air conditioning or open their windows due to odors from the nearby industrial facility).

2. Fugitive Dust Emissions Control

Ajax's Asphalt Plant and Yard will generate fugitive dust from the plant roadways, plant yard, material storage piles, silos, and material handling operations. As acknowledged by EGLE's Rule 901(b) Guidance, permits to install should include provisions designed to prevent fugitive dust from creating a nuisance. Further, under the Michigan SIP, the permit must include a fugitive dust plan.[62]

Nothing in the draft permit demonstrates that EGLE or Ajax took adequate measures to prevent fugitive dust emissions. EGLE's draft permit's Appendix A is a very high level, one-page document that does not provide details appropriate for a fugitive dust plan. Control measures should be in place for all transfer points, transport by truck, roadways, and outdoor storage piles.[63] EGLE should require the following:

Transfer Points:

- Require total enclosure of materials during transfer, including for truck loading and unloading.
- For transfers of materials that cannot be enclosed, as determined by EGLE, require a water spray system either through direct application, mobile misters (appropriate for materials that should get too wet), or dry foggers (which are appropriate during freezing temperatures).
- For transfer of materials that cannot be enclosed, minimize material drop heights.
- Consider wind speeds and plan ahead and do not conduct transfer operations during wind speeds over 12 miles per hour.

Truck Transport:

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[62] MCL 324.5524; Mich. Admin. Code, R 336.1901.

[63] *See* Chicago, Control of Emissions from Handling and Storing Bulk Materials (January 2019) as a guide to some measures that can be taken to control fugitive dust. https://www.chicago.gov/content/dam/city/depts/cdph/InspectionsandPermitting/Control_EmissionsfromHandling&StoringBulkMaterials_January2019.pdf

- All vehicles should be subject to 10 mph or less speed limit and signage should be posted.
- All outgoing material transport trucks are cleaned so no loose material is on the exterior tire surface and the removed material is collected.
- All outgoing material transport trucks go through a wheel wash station and pass over rumble strips.
- Transport trucks should not be able to access unpaved areas.
- Trucks carrying materials out of the facility should be covered.

Roadways:

- All internal roads sued for transporting or moving material shall be paved or maintained so that they are not susceptible to become windborne.
- All internal roads should be swept with a street sweeper with a water spray and vacuum system multiple times per day and records of this work should be maintained.
- External truck routes within one mile of the facility should be cleaned with a street sweeper with a water spray and vacuum system at least once per day.

Outdoor storage piles:

- For any piles that EGLE determines cannot be covered or enclosed, pile heights must be limited to no more than 10 feet.
- Disturbance of outdoor storage piles must be suspended during wind conditions that exceed 12 miles per hour.
- Dust suppressant systems—including water sprayers, misters, or water trucks, or chemical stabilizers--should be in place and operable throughout the entire year.

Runoff management:

- Prevent runoff from piles onto public ways, neighboring parcels, or waterways.

- Obtain discharge permits for any runoff that will enter any stormwater collection systems.
- Grade site so that proper drainage occurs.
- Develop written plan for spills and/or migration of pollutants onsite or offsite.

C. Risk of Further PCB Contamination to Imperiled Waterway Must Be Assessed to Satisfy Rule 901

The proposed site for this permit to install is home to an Impaired Stream covered by the statewide Polychlorinated Biphenyls (PCBs) TMDL. Riskin Drain is a tributary of the Flint River, which carries waters and contaminants from Riskin to Lake Huron. Furthermore, the site is in close proximity to bodies of water with substantial surface area, including the 684-acre C.S. Mott Lake.

In its 2017 review of an MDEQ report on PCB TMDLs, the EPA assessed and agreed with the MDEQ's assertion that "atmospheric gas phase concentration is the primary pathway for PCBs into the Michigan waterbodies covered by the TMDL." Asphalt products are widely recognized as common sources of PCB contamination.[64] As such, EGLE must review the injurious effects or unreasonable interferences siting a hot mix asphalt plant near already impaired waterways may exacerbate.

EGLE should ensure that Ajax obtains whatever stormwater permits are needed as well as prepares the appropriate stormwater management plans.

D. The Material Limits Described in EUHMAPLANT, Condition II.5,6 Conflict with Limits Used in the Permit Application

The proposed permit limits the amount of hot mix asphalt that may be processed to 600 tons per hour. As noted below, these limits do not reflect those utilized by the Permit Applicant in its application.

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[64] Hoag, George. Polychlorinated Biphenyls in Bituminous Materials. American Society of Civil Engineers., U.S. EPA. PCBs in Building Materials. May 2021 https://www.epa.gov/sites/default/files/2021-05/documents/final_pcb_buildings_fact_sheet_05-10-2021_to_upload.pdf. Daniel Cargil. PCBs from Building Materials and Other Sources in the Urban Environment. 2014.

Table 3 of the Applicant's permit application describes the estimated maximum short-term emissions and annual emissions for toxic air contaminants from the Plant's hot mix asphalt counter-flow drum dryer. These estimates were calculated using a material usage limit of 500 tons of hot mix asphalt processed per hour.[65] Likewise, the Permit Applicant determined the proposed Plant will have the potential to emit 16.2 tons per year of particulate matter.[66] In calculating the Plant's potential to emit particulate matter, the Permit Applicant assumed the Plant would be limited to processing 500 tons of HMA paving materials per hour.[67]

As a result of this disconnect, the maximum short-term emissions estimates, and annual emissions estimates provided in the permit application, do not accurately reflect the proposed permit's conditions. This is particularly problematic for the maximum short-term emissions provided in the permit application. By utilizing a lower material limit of 500 tons of HMA processed per hour—as opposed to the limit of 600 tons of HMA processed per hour which is described in the proposed permit—the Permit Applicant has underestimated the maximum short-term emissions of toxic air contaminants and particulate matter from its HMA counter-flow drum dryer.

As a result of underestimating the Plant's short term toxic air contaminant emissions, the Permit Applicant has failed to comply with Rule 225. That rule requires the permit applicant to demonstrate that the toxic air contaminant emissions from its proposed Plant will not exceed health-based screening levels. The short-term emissions described in Table 3 were utilized to demonstrate compliance with the health-based screening levels in Table 12. Since Permit Condition EUHMAPLANT, II.5,6 does not reflect the assumptions relied on to calculate the estimated amount of short term and long-term toxic air contaminant emissions described in Table 3 of the permit

[65] Permit Application, Table 3, page 27.
[66] *Id.*
[67] *Id.*

application, the Permit Applicant has failed to demonstrate how its Plant will comply with Rule 225.

Similarly, by utilizing lower material usage limits in its permit application compared to the proposed permit, the Permit Applicant has failed to provide an accurate description of the proposed Plant's potential to emit particulate matter. As a result, EGLE cannot accurately determine whether the proposed Plant will interfere with the attainment or maintenance of the particulate matter national ambient air quality standard.

The Permit Applicant should be required to calculate the short term and long-term toxic air contaminant emissions and particulate matter emissions based on the actual conditions in the proposed permit and to perform a new air quality modeling analysis for toxic air contaminants based on the new short term and long-term emissions estimates. If such an analysis is performed, the Commenters request that EGLE make this information publicly available and provide at least 60 days for an additional public notice and comment period. Alternatively, the proposed permit could be amended to lower the material usage limit from 600 tons of HMA processed by hour to 500 tons of HMA processed per hour.

E. An Emissions Limit for Cobalt Should Be Required

As described in Table 12 of the permit application, the proposed Plant will emit a significant amount of cobalt which will consume 83.1% of the Initial Risk Screening Level. The Initial Risk Screening Level is the concentration of a possible, probable, or known human carcinogen in ambient air which has been calculated to produce an estimated upper-bound lifetime cancer risk of 1 in 1,000,000.[68] Cobalt has shown to cause cancer in animals who were exposed to it through the air.[69] As such, the

[68] Mich. Admin. Code, R 336.1109(c).
[69] https://www.atsdr.cdc.gov/ToxProfiles/tp33-c1-b.pdf

International Agency for Research on Cancer has determined that cobalt is possibly carcinogenic to humans.[70]

Given that the Permit Applicant's own modeling analysis has predicted that the maximum ambient concentration of cobalt emissions from the Plant will be close to the Initial Risk Screening Level, the Commenters request that the permit include an emissions limit for cobalt as well as a requirement for the owner of the facility to regularly conduct emissions testing for cobalt at the Plant.

F. An Emission Limit for Volatile Organic Compounds Should Be Required in the EUHMAPLANT Emission Unit Conditions

The permit application states that the HMA dryer will have the potential to emit 28.4 tons of volatile organic compounds per year.[71] Rule 702 requires a person who is responsible for any new source of volatile organic compound emissions shall not cause emissions in excess of the lowest maximum emissions rate established by the Rule. Here, the permit applicant determined its maximum allowable emissions rate based on the application of the best available control technology. Ajax determined that the best available control technology was "good combustion controls."[72] The use of "good combustion practices" is inadequate here and an VOC emission limit must be imposed.

1. The Selection of Good Combustion Practices as the Best Available Control Technology for VOC Emissions has not been Adequately Supported by the Permit Applicant

EGLE's policy regarding permit to install applications states that a "Rule 702 BACT analysis is very similar to a top-down BACT analysis," which is required for permits subject to the Prevention of Significant Deterioration program.[73] A "top-down" approach consists of a permit applicant providing all available control technologies

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[70] *Id*.
[71] Permit Application, Table 1, pdf page 23.
[72] Permit Application, pdf page 15.
[73] https://www.michigan.gov/documents/deq/DEQ-AQD-PTI-Admin_Comp_Inst_356118_7.pdf at 6.

ranked in order of descending control effectiveness.[74] EGLE's PSD Workbook specifies what must be included in a top-down BACT analysis. It consists of a five-step analytical methodology to identify and analyze all available options for reducing emissions.[75]

The five steps in the top-down BACT analysis are as follows:[76]

Step 1: Identify all available control technologies;

Step 2: Eliminate technically infeasible options;

Step 3: Rank the remaining control technologies by control effectiveness;

Step 4: Evaluate the most effective controls and document the results;

Step 5: Select the best available control technology.

A top-down BACT analysis is commonly at least a few pages long and specifically documents the permit applicant's analysis for each of the five steps described above.[77] Here, the Permit Applicant's BACT analysis consisted of a short paragraph, and it did not follow the top-down BACT analysis methodology as described in EGLE's PSD Workbook. Most significantly, it did not provide any evaluation of the most effective controls and document the results, as required by Step 4. Instead, it merely stated that there "has been significant discussion between the HMA industry and regulators regarding whether newer plant designs, such as counter-flow or dual drum, represent BACT for HMA plants," and that "[d]ata supporting such conclusions is generally subjective rather than objective and quantifiable."[78] It then went to select good combustion practices as the BACT. As noted by EGLE in its PSD

[74] PSD Workbook page 85.
[75] http://www.deq.state.mi.us/aps/downloads/permits/PSD%20Workbook.pdf at 85.
[76] *Id*.
[77] *See,* DTE permit application, Blue Water Energy Center
[78] Permit Application, pdf page 15.

Workbook, the evaluation of the available control technologies must include an analysis of "all energy, environmental and economic impacts associated with the list of available control technologies." No such analysis was provided by the Permit Applicant. Since the Permit Applicant has provided an insufficient BACT analysis regarding its VOC emissions, the Commenters believe that the permit does not comply with Rule 702 and must be denied.

2. The Permit Must Contain a VOC Emissions Limit

While the Permit Applicant has failed to provide an adequate BACT analysis, the Permit also fails to provide a VOC emissions limit, which is plainly required. EGLE's PSD Workbook defines "BACT" as "an emission limit that is determined from a case by case review of all appropriate control options."[79] It goes on to state that while the BACT analysis is primarily about the evaluation of applicable control options, BACT "is an emission limit for each emissions unit."[80] Indeed, the plain language of Rule 702 clarifies that a person shall not cause the emission of volatile organic compounds in excess of the "lowest maximum emission rate" determined based on the application of the best available control technology. The proposed permit contains no volatile organic compound emissions limit as plainly required by EGLE guidance and Rule 702.

G. Particulate Matter Modeling Demonstrations, Emissions Limits, and Monitoring Requirements Must Account for Condensable Particulate Matter

Rule 116 defines particulate matter as "any air contaminant existing as a finely divided liquid or solid…"[81] As such, it includes both filterable and condensable particulate matter. It's unclear from the permit application whether the applicant included condensable particulate matter in its potential to emit calculations and

[79] EGLE PSD Workbook, pdf page 90.
[80] *Id*.
[81] Mich. Admin. Code R. 336.1116(c).

ambient impact modeling analysis. The Commenters believe the permit application must account for condensable particulate matter emissions from the plant in these two respects. Further, the permit's emission limits, and monitoring requirements do not clearly account for condensable particulate matter emissions. The Commenters believe this is required.

H. The Permit Applicant Has Failed to Demonstrate That the Permit Will Not Interfere with Attainment or Maintenance of any National Ambient Air Quality Standards

One of the most basic requirements of a permit to install is to ensure that emissions from a proposed facility will not interfere with the attainment or maintenance of any national ambient air quality standard. If a permit is unable to comply with this requirement, then EGLE must deny the permit.[82]

In its permit application, the applicant notes that the predicted ambient impacts that will result from the Plant's emissions will be above the applicable significant impact levels for NO2, SO2, and PM2.5. As such, it performed additional analyses to assess whether or not the proposed Plant will interfere with the attainment or maintenance of any NAAQS.

This additional analysis is deficient in two respects. First, the additional analysis only considered one additional source's sulfur dioxide emissions. It is unclear from the permit application and proposed permit why the Permit Applicant and EGLE decided to limit the additional analysis to only include sulfur dioxide emissions from the Genesee Power Station. There are a number of emitting sources located in the area that also contribute to local air pollution. Even the Genesee Power Station emits a significant amount of nitrogen oxides, which were not accounted for in the additional analysis conducted by the Permit Applicant. Second, the additional analysis relied on air quality data to establish background concentrations of air pollution to be used in the air quality

[82] Mich. Admin. Code R. 336.1207(1)(b).

modeling analysis. While the PM2.5 data was collected by an air quality monitor in Flint, PM10 and NO2 data was collected from air quality monitors in Lansing and Grand Rapids. It is improper to utilize air quality data collected in Lansing and Grand Rapids to establish the background concentrations of air quality in the area where the proposed Plant is to be located given the far distance these monitors are from the proposed Plant and given that the proposed Plant is to be located in a multisource area. Further, ambient air quality data regarding sulfur dioxide concentrations should have been collected in the area where the proposed Plant is to be located to ensure the Plant's emissions won't interfere with maintenance of the sulfur dioxide NAAQS. In accordance with EPA guidance, since the proposed Plant is in a multisource area, air quality data used to establish background concentrations for determining whether a proposed source will interfere with the maintenance or attainment of a national ambient air quality standard must be collected within 10 kilometers of the proposed Plant or within or not farther than 1 kilometer from either the area of maximum air pollutant concentration from existing sources or the area of the combined maximum impact from existing and proposed sources.[83] If monitors meeting these requirements do not already exist, then the Permit Applicant must install additional monitors to gather such air quality data to establish background concentrations.

I. Opacity Testing Requirements Lack Adequate Specificity

EGLE's draft permit should be strengthened with regard to the opacity requirements. EGLE should add continuous opacity testing, including the implementation of the digital camera opacity technique to ensure frequent and more accurate testing of opacity. EPA's comment letter recommends the use of digital cameras to measure opacity, and EPA has increasingly recognized the value of digital

[83] U.S. EPA, Ambient Monitoring Guidelines for Prevention of Significant Deterioration, at 6-7, May 1987, available at https://www.epa.gov/sites/default/files/2015-07/documents/monguide.pdf

monitors.[84] While EPA regs and EGLE regs currently only require the use of Method 9 opacity testing, as set forth in 40 CFR 60.93, Method 9 is often poorly performed and is essentially an "eyeball" test.

At a minimum, the permit should prescribe a schedule—at least quarterly—and plan for opacity testing and the testing must be conducted by a trained and certified professional under a range of weather conditions to ensure coverage of representative conditions.[85] The results of this opacity testing should be made publicly available on an accessible website. In addition, the draft permit should be edited for clarity; currently, the opacity requirements are only included in the general conditions for EHUMAPLANT, in contrast to the way that the EUYARD opacity provisions are treated as part of the permit terms.

J. EGLE's Public Participation Process Continues To Be Problematic And Raises Civil Rights Issues

EGLE has continued its history of failing to provide adequate public participation opportunities in its permitting processes. The need for EGLE to provide a more robust and accessible public participation process in the permitting of the Ajax Materials air permit is particularly concerning when the agency's record of EPA issued Title VI violations are brought to bear. One such violation was due to EGLE's inadequate and discriminatory public participation practices when issuing a permit for the Genesee Power Station, located on the same street, less than 700 meters from the proposed Ajax site. In a January 19, 2017, letter from EPA to EGLE's precursor, MDEQ,

[84] *See*, e.g., EPA, Federal Register Vol. 80, No. 125, June 30, 2015, available at http://www.gpo.gov/fdsys/pkg/FR-2015-06-30/pdf/2015-15038.pdf; see also Air Force Research Laboratory, An Alternative to EPA Method 9 – Field Validation of the Digital Opacity Compliance System (DOCS), available at https://www.serdp-estcp.org/Program-Areas/Weapons-Systems-andPlatforms/Noise-and-Emissions/Air-Emissions/WP-200119

[85] EPA Method 9 ("The opacity of emissions from stationary sources is determined visually by a qualified observer."), available at https://www.epa.gov/sites/production/files/2016-06/documents/m-09.pdf

the agency determined that EGLE violated Title VI of the Civil Rights Act through "[a] finding of discriminatory treatment of African-Americans by [EGLE] in the public participation process for the GPS (Genesee Power Station) permit considered and issued from 1992 to 1994.[86]

In the same civil rights enforcement letter, EPA provided clear actions required of EGLE to resolve the civil rights violation. These included:

> (1) improving MDEQ's public participation program to reduce the risk of future disparate treatment; (2) improving MDEQ's development and implementation of a foundational non-discrimination program that establishes appropriate procedural safeguards while addressing civil rights con1plaints as well as policies and procedures for ensuring access for persons with disabilities and limited-English proficiency to MDEQ programs and activities; and (3) ensuring that MDEQ has an appropriate process in place for addressing environmental complaints. In addition, in this letter EPA makes specific recommendations to MDEQ regarding the GPS facility.[87]

In 2019, the resolution process for two additional Title VI complaints alleging discrimination during the public participation processes of facilities permitted in Genesee County permitting polluting facilities resulted in the EPA entering into two resolution agreements—one with EGLE and one with Genesee County—to resolve the complaints.[88] In the resolution agreements, EPA called on EGLE and Genesee County to improve their respective public participation processes. The agreement between EPA and EGLE provides that, from that point forward:

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[86] January 19, 2017, MDEQ Closure Letter for Administrative Complaint No. 01R-94-R5, https://www.epa.gov/sites/default/files/2017-01/documents/final-genesee-complaint-letter-to-director-grether-1-19-2017.pdf.

[87] *Id.* at 2.

[88] December 4, 2019 Resolution Agreement Letter for Complaint No. l 7RD-I 6-R5, https://www.epa.gov/sites/default/files/2019-12/documents/resolution_letter_and_agreement_for_complaint_17rd-1-6-r5.pdf

[88] *See* EGLE LEP Plan, https://www.michigan.gov/documents/egle/Limited_English_Proficiency_Plan_710255_7.pdf.

> EGLE will ensure its public involvement process is available to all persons regardless of race, color, national origin (including limited-English proficiency), age, disability, and sex. In addition, EGLE will ensure that the factors used to determine the appropriate time, place, location, duration, and security at public meetings are developed and applied in a nondiscriminatory manner.[89]

The public participation process in the Ajax permitting process has not safeguarded against discriminatory practices. EGLE's own internal policy recognizes that their decision-making process should be "transparent, occur in steps, and in a time frame that is understood and predictable by involved parties."[90] In this case, however, EGLE did not engage the public early in the process, while also failing to identify the methods of engagement most likely to meet the needs of the community and afford them the opportunity for meaningful participation.

A community needs assessment, as stated in EGLE policy, begins with the identification of needs and services for those that are with LEP and/or disabled.[91] Whether EGLE took steps to identify the needs of the community beyond listing an email address to request language interpretation or other accommodations on in a letter that not every community member received is unclear.

Flint is one of the nation's most stark examples of the growing digital divide. Roughly 40% of city residents lack access to broadband internet, double the percentage

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[89] December 4, 2019 Resolution Agreement Letter for Complaint (EGLE) No. l 7RD-I 6-R5, https://www.epa.gov/sites/default/files/2019-12/documents/resolution_letter_and_agreement_for_complaint_17rd-1-6-r5.pdf; December 19, 2019 Resolution Agreement Letter for Complaint (Genesee County) https://www.epa.gov/sites/default/files/2019-12/documents/19-12-19_final_resolution_letter_and_agreement_recipient_-_genesee_county_18rd-16-r5.pdf. *See* EGLE LEP Plan, https://www.michigan.gov/documents/egle/Limited_English_Proficiency_Plan_710255_7.pdf. In the aftermath of the EPA Title VI letters, EGLE has committed on paper to an improved public participation process and has developed a Limited English Proficiency ("LEP") plan. Note that St. Francis Prayer Center was one of the groups that signed on to collective comments on the draft LEP plan.

[90] EGLE Public Participation Policy, https://www.michigan.gov/documents/egle/EGLE_Policy_09-007_679780_7.pdf

[91] *Id.*

of households lacking access statewide.[92] Nearly 25% live in households without access to a computer.[93] Given the specific characteristics of the population within one mile of the proposed site, the aforementioned lack of access is likely underestimated.

This lack of access means impacted residents also lack the ability to receive electronic notification of meetings. Even where notice is achieved, virtual meetings place an unreasonably high burden on the substantial numbers of residents lacking broadband or computer access entirely. Community elders often lack the technical literacy to determine meeting locations and times or to successfully join an online meeting. At the same time, while the printed notices that successfully arrived at the mailboxes of some community members were dated July 1, 2021, they were not actually received until weeks later. In addition, EGLE did not directly send public notice information (e.g. the Project Summary) to nearly 400 River Park Apartments and Ridgecrest Townhouses families. Instead, they sent two notices – to the management of each low-income housing complex. Several community members reported learning of their right to provide comment only through concerned neighbors or by word of mouth at community demonstrations. Many other impacted residents received no notice at all. Each of these factors reduced the ability of residents to participate in a decision-making process that could impact the health of their community substantially.

EGLE's initial failure to assess the community's needs later led to conflicting messages, confusing residents attempting to understand how best to participate in public meetings and through written comments. In response to pressure from a coalition of environmental justice activists, EGLE extended the comment period and provided additional hearings to account for communication problems. However, inconsistent information was posted in the various public documents visible on the

[92] U.S. Census Bureau, American Community Survey (ACS) and Puerto Rico Community Survey (PRCS), 5-Year Estimates.
[93] *Id.*

website. Documents were not updated, potentially leading some residents to see only the original August comment period deadline. Not realizing the comment period was extended, residents may have been led to believe their opportunity to provide public comment had been foreclosed.

Community members have been made to feel unheard and ignored, particularly upon the observation that some construction related activities have already begun taking place at the proposed site. One community member stated that activity around the plant site made it feel like "[EGLE and Ajax] are ready to continue no matter what we say here today."[94] These many factors have resulted in a palatable sense of futility and uncertainty regarding the meaningfulness of their participation in the permitting process.

Ultimately, the lack of clarity within the public participation process for this site did not meet the EPA or EGLE's own expectations that the process "promotes and seeks active participation by the public in EGLE activities."[95]

V. CONCLUSION

The Genesee Power Station, which sits just to the north of the proposed facility, was the subject of a Title VI complaint. In its investigation, the EPA concluded that African-Americans were treated less favorably in the permitting process than non-African-Americans. Decades later, EGLE faces a similar test to its DEQ predecessor. As detailed in this comment, EGLE's decision to allow the proposed Plant to locate in an environmental justice community already heavily burdened by high levels of environmental risks and asthma hospitalizations presents serious environmental justice

[94] Dylan Goetz, "Flint Residents Unhappy With Proposed Asphalt Plant Near City's Border", *MLive*, August 12, 2021, https://www.mlive.com/news/flint/2021/08/flint-residents-unhappy-with-proposed-asphalt-plant-near-citys-border.html

[95] https://www.michigan.gov/egle/0,9429,7-135-3306_70585-381847--,00.html

and Title VI issues. For the reasons described above, we believe EGLE must deny the Permit as it currently drafted and must require a cumulative impact analysis to ensure compliance with its Title VI obligations.

ADDITIONAL SIGN-ONS TO THE FLINT RISING, ENVIRONMENTAL TRANSFORMATION MOVEMENT OF FLINT AND ST. FRANCIS PRAYER CENTER COMMENT LETTER

- Bishop Bernadel Jefferson, Citizens Advocating United Together Inform Organize for New Direction (CAUTION)
- Sandra S. Jones, Executive Director, R L Jones Community Outreach Center Campus, Greater Holy Temple Church
- Geraldine Redmond, President, Flint Housing Commission
- Arthur Woodson, Concerned Resident
- Laura M. Sager, Co-Founder, National Network for Justice
- Benjamin Pauli, Associate Professor of Social Sciences, Kettering University
- Patrick Levine Rose, Esq. (acting a public citizen), former Appointed Special Genesee County Prosecutor for the Flint Water Investigation
- Judy Alexander, Tri-Chair, Michigan Poor People Campaign
- Elena LB Hawkins, Flint resident
- Pastor Roshanda Womack, Flint Central Church of the Nazarene and The Underground
- Carma Lewis, President, Flint Neighborhoods United
- Sonyita & Dwayne Clemons, Total Life Prosperity LLC
- Mark Richardson, Esq., Former Appointed Genesee County Special Prosecutor on the Flint Water Investigation Team
- Antony Paciorek, Michigan United
- Michigan United

EXHIBIT 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Mary Ann Dolehanty
Air Quality Division
Michigan Department of
Environment, Great Lakes and Energy
535 West Allegan Street
P.O. Box 30473
Lansing, Michigan 48909-7973

Dear Ms. Dolehanty:

This letter is in regard to Michigan Department of Environment, Great Lakes and Energy's (EGLE's) draft Permit to Install (PTI) for Ajax Materials Corporation (Ajax) – PTI Application No. 2021-0019. The PTI would allow Ajax to install and operate a new hot mix asphalt plant at 5088 Energy Drive in Genesee Township, near the Flint border. Ajax intends to accept permit limits to ensure that emissions from the proposed facility would not exceed the major source threshold. The U.S. Environmental Protection Agency (EPA) has reviewed the draft PTI and associated permit files.

EPA is committed to advancing environmental justice and incorporating equity considerations into all aspects of our work. This commitment includes improving our assessment and consideration of the impacts of permits on communities already overburdened by pollution. As described below in more detail, we appreciate that EGLE shares this commitment and has taken steps to mitigate potential impacts from the proposed facility.

The neighborhood around the proposed asphalt plant has some of the highest levels in the State of Michigan for many pollution indicators used by EPA's environmental justice screening tool, EJSCREEN. EJSCREEN is a mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. It is a useful first step in understanding or highlighting locations that may have environmental justice concerns.

Like EPA, EGLE recognizes the challenges faced by this community. The Environmental Justice Index for eight of the eleven EJSCREEN indicators in the one-mile area around the proposed Ajax site exceeds the 90th percentile in the State of Michigan, including indices for

particulate matter of less than 2.5 microns in diameter, ozone, air toxics cancer risk, respiratory hazard, lead paint, Superfund proximity, hazardous waste, and wastewater discharge. The population of the people who live in the area around the proposed asphalt plant is disproportionately low income, people of color, and includes persons with limited English proficiency. The proposed Ajax site is in an area that is already heavily populated by industrial facilities along Dort highway and is in close proximity to residential housing and community centers.

EPA acknowledges the work EGLE has already undertaken on this permitting action, work that may go beyond what is usually required in Michigan for issuing a minor source air pollution control construction permit. EGLE required the applicant to conduct dispersion modeling for multiple air pollutants, including toxic cancer-causing compounds, to assess the potential impacts of this air pollution permit. EGLE has provided an extended opportunity for public comment, held both a virtual information session and hearings, and an in-person comment session, as part of its enhanced public outreach efforts to the community. EGLE also accepted comments via regular mail, voicemail, email, and in-person.

Our concerns, comments, and recommendations are included in the attachment to this letter. We highlight a few key comments here. First, because the proposed site for the Ajax facility is in an area with identified air quality concerns in EJSCREEN, EPA recommends a cumulative analysis of the projected emissions from all emission units at the proposed facility, fugitive emissions from the proposed facility, and emissions from nearby industrial facilities, to provide a more complete assessment of the ambient air impacts of the proposed facility on this community. Next we strongly encourage EGLE to assess the use of opacity cameras and other practically enforceable continuous compliance measures to assure that Ajax is meeting its permitted limits and following industry best practices. We also recommend that if the proposed asphalt plant is permitted, data regularly generated by Ajax to comply with the permit be made publicly available on an easily accessible website. The transparency of such data will promote public engagement and help build trust among all stakeholders.

Finally, because of the environmental conditions already facing this community, and the potential for disproportionate impacts, the siting of this facility may raise civil rights concerns, so it is important that EGLE assess its obligations under civil rights laws and policies. We understand that EGLE requested Ajax to consider alternative sites for this asphalt plant, but that the company declined to do so. Any of the additional analyses EPA is recommending may provide additional information in support of EGLE's evaluation of whether the proposed construction will cause adverse and disproportionate impacts for nearby residents. If so, we encourage the company, EGLE, and local authorities to consider again whether construction at an alternative site would avoid the potential for such impacts. We further encourage Ajax and EGLE to engage with the local community to address community concerns that may not be within the scope of the air permit.

Thank you again for the opportunity to work with you on this draft permit. EPA remains committed to working together with EGLE to address our shared environmental priorities,

advance equity, and reduce potential environmental and health impacts on communities such as this one.

Sincerely,

Cheryl L. Newton
Acting Regional Administrator

Enclosures

Detailed Permit Comments
Ajax Materials Corporation
PTI APP-2021-0019

EPA has reviewed the draft PTI and associated permit files, including the technical fact sheet and permit application materials made available by EGLE during the public comment period, and has the following comments and recommendations:

1. We recommend that you evaluate whether additional nearby stationary sources and fugitive sources from the proposed facility should be included as part of the air quality modeling EGLE has required for this permit. The cumulative impacts analysis only considered the impacts associated with the proposed project. Neither nearby sources nor fugitives from the proposed facility were included in the modeling. We observe that Ajax is proposing to construct in an area where other stationary sources are already located and may be impacting the local community. Additionally, the toxic air contaminant (TAC) modeling does not consider all sources of stack and fugitive emissions. We recommend this analysis include an assessment of whether the source-wide TAC emissions from both fugitive and non-fugitive sources exceed EGLE's initial threshold screening level (ITSL) or initial risk screening level (IRSL).

2. 40 CFR 60.92(a)(2) establishes an opacity requirement applicable to each hot mix asphalt facility. This opacity requirement does not appear within the draft permit. EGLE should include the necessary opacity limit in the permit and incorporate opacity testing requirements consistent with 40 CFR 60.93. To ensure ongoing compliance and practical enforceability of this limit, EGLE should also establish a periodic (at least quarterly) opacity testing requirement applicable to the affected facility.

3. EUHMAPLANT Special Condition (SC) V.2 – V.4 lists the general test methods Ajax is to use to ensure compliance with the applicable permit conditions. The current draft permit only contains general citations to the appendices containing relevant test methods for Parts 60, 61, and 63. We recommend that EGLE specify in the permit the particular test method protocols for each pollutant that Ajax will be using to ensure compliance once the facility is constructed and operating. The permit can include a provision that requires EGLE approval of the test plan submitted by the permittee prior to testing, but approval of modifications to EPA test methods, as found in the appendices to Parts 60, 61, and 63, can only be done by EPA. EPA is available to assist EGLE in determining the appropriate test methods for each pollutant in order for Ajax to ensure compliance with the permit limit conditions.

4. EUHMAPLANT SC V.5 requires particulate matter testing pursuant to 40 CFR Part 60 Subparts A and I. Although this condition incorporates the testing required by the federal requirement, permit condition SC V.5 does not require periodic testing to determine compliance with the particulate matter emission limit in 40 CFR 60.92. To ensure ongoing compliance with the emission limit and improve enforceability of the NSPS Subpart I PM limit, we request that the permit include periodic PM testing performed according to the procedures included within 40 CFR 60.93.

5. FGFACILITY SC I.3 and I.4 contains facility-wide general limits on hazardous air pollutants (HAPs) for individual and aggregate HAPs of less than 8.9 and 22.5 tons per year, respectively, on a 12-month rolling average. The monitoring and recordkeeping requirements for these conditions (FGFACILITY SC VI.2) only state that the permittee is required to use emission calculation records to ensure compliance with the limits. We request the permit specify the methodology Ajax will use to demonstrate compliance with the HAP limits, and that the permit record include an explanation of how this methodology will ensure that HAP emissions remain below the major source threshold.

6. EUHMAPLANT SC V.1 and V.2 requires the permittee to verify via stack testing carbon monoxide (CO) and toxic air pollutant emissions upon EGLE's request. This condition does not require periodic testing to determine compliance with the hourly CO emission limit established in SC I.8, nor does it require periodic testing to determine compliance with the air toxics emission limits established in SCs I.14 through I.25. We request that you require periodic testing to determine compliance with the emission limits in SCs I.8 and I.15 through I.25. Periodic testing would help ensure that the source is complying with its CO and air toxics emission limits, which improves the practical enforceability of each limit and further ensures that the local community is not subjected to emissions exceeding the corresponding limit.

7. EUHMAPLANT SC V.3 requires a one-time test to verify PM_{10}, $PM_{2.5}$, NOx, and lead emissions from the plant. EUHMAPLANT SC V.4 is a similar requirement that applies when the source combusts recycled used oil (RUO) and includes testing for SO_2 emissions. It is not clear whether a one-time test ensures that each emission limit is enforceable as a practical matter, however, as it is unclear whether emissions vary over time or with the type of asphalt being produced or fuel being combusted, suggesting that periodic testing may be appropriate to ensure ongoing compliance with each limit. We request that you revise SC V.3 and V.4 to require periodic testing to better ensure that the PM_{10}, $PM_{2.5}$, NOx, lead, and SO_2 emission limits are enforceable as a practical matter. For any pollutant where EGLE determines one-time testing is sufficient, we request that EGLE provide justification as part of the permit record.

8. EUYARD SC I.2 restricts all visible emissions from the pile when winds are below 12 miles per hour (mph) and limits opacity to 20% when winds exceed 12 mph. Since the modeling analysis relies on a windspeed threshold that exceeds approximately 11.50 mph,[1] we recommend that you revise this condition to apply to winds that are below 11.50 mph. Also, the draft permit does not require the permittee to perform periodic visible emissions monitoring when winds are below 12 mph nor to quantify opacity when winds are at least 12 mph. To ensure ongoing compliance with the visible emissions requirements and to ensure practical enforceability of the opacity limit, we request that you incorporate periodic visible emissions monitoring and periodic opacity monitoring to evaluate and quantify fugitive dust emissions.

9. The fugitive dust control plan in Appendix A requires the permittee to maintain piles to prevent fugitive dust consistent with EUYARD SC I.1 (see Appendix A, condition 7.b). As

[1] 5.14 m/s ≈ 11.50 mph.

written, it is unclear what fugitive dust control measures will be implemented to prevent fugitive dust emissions from the pile. EUYARD SC I.1 appears to apply to all roads and unpaved travel surfaces, not the piles. To ensure the enforceability of the fugitive dust control plan and SC III.1, we request that you specify the measures that will be employed to control fugitive dust from the mineral aggregate piles. We request that you require each material storage pile to be covered or enclosed to mitigate potential fugitive dust emissions. In addition to reducing fugitive particulate emissions, covered piles may also require less water to control fugitives, potentially reducing the amount of fuel required to dry aggregate and other materials to specification. For any uncovered piles, we request that you specify the conditions which require the application of water or other chemical wetting agents or other methods that may be required to control fugitive emissions. For active piles, we request that the fugitive dust control plan specify the measures the permittee will employ to minimize fugitive dust emissions. Once these control measures have been identified, the fugitive dust control plan should be updated to require recordkeeping to ensure any fugitive dust control measures have been implemented.

10. EUYARD SC IV.1 requires the applicant to monitor wind speeds to determine compliance with the applicable visible emissions requirement in SC I.2. However, neither the fugitive dust control plan in Appendix A nor the draft permit section EUYARD require the permittee to implement fugitive dust control measures when winds are measured at or above 12 mph. To ensure fugitive dust is minimized when winds are above 12 mph and to better ensure compliance with the opacity limit in SC I.2, we request that you require the implementation of fugitive dust control measures when measured winds exceed 12 mph. We further recommend implementing fugitive dust control measures when measured winds are near, but do not exceed, 12 mph to mitigate potential fugitive dust emissions and further ensure compliance with the opacity limit.

11. The PM_{10} and $PM_{2.5}$ modeling analyses consider one year of meteorological data instead of five years and considers emissions from the larger pile when winds for a particular hour exceed 5.14 m/s (approximately 11.50 mph). We are concerned that the applicant's modeling analysis may underestimate ambient particulate impacts associated with this project. We recommend reevaluating the modeling analysis to ensure that the project's ambient PM_{10} and $PM_{2.5}$ impacts are not underestimated.

12. EUHMAPLANT SC V.1 requires the permittee to verify and quantify odor emissions upon EGLE's request. We recommend that EGLE evaluate whether recurring odor emission testing is appropriate pursuant to R 336.2001(1)(c). Recurring odor emission testing would allow EGLE to better determine compliance with R 336.1901 and more readily address the local community's potential odor concerns.

13. We recommend that EGLE consider whether it has the authority or discretion to include in the permit a requirement that the results of recurring compliance testing be made available to the public on an easily accessible website. The public posting of, e.g., the results of odor and opacity testing, virgin aggregate/RAP continuous monitoring (required by EU HMAPLANT SC VI.2), particulate and HAP emission testing, and wind speed measurements (required by EU HMAPLANT SC VI.1), would ensure transparency for the affected community.

14. Additional justification should be provided in the permit record to support the air quality analysis and the applicant's use of wind speed thresholds as it applies to the storage pile. Although the applicant cites Wisconsin's Air Dispersion Modeling Guideline as support, we note that Wisconsin's guideline does not provide justification for the approach and is nonbinding on other air permitting authorities. EGLE, as the air permitting authority for this action, has the discretion and authority to request certain air quality analyses for minor NSR permit applications. Michigan's R 336.1241, a requirement approved into Michigan's state implementation plan, requires EGLE to follow procedures and measures listed in the *Guideline on Air Quality Models* at 40 CFR Part 51 Appendix W (Appendix W). In addition to establishing certain requirements and recommendations applicable to NAAQS compliance demonstrations, Appendix W Section 1.0 encourages the use of sound scientific judgment in an air quality analysis and considers the judgment of meteorologists, scientists, and analysts essential. For this permit action, the analysis EGLE conducted and the judgment it exercised as part of the decision-making process should be fully documented within the permit record. Should EGLE choose to allow this approach for any proposed pile, the approach should be evaluated on a case-specific basis that is well documented within the permit record.

15. For all pollutants, the dispersion modeling conducted for this permit relies on one year of National Weather Service (NWS) meteorology collected from Bishop International Airport. Appendix W Section 8.4.2(e) recommends acquiring enough meteorological data to ensure that worst case meteorological conditions are adequately represented in the model results and requires the use of 5 years of representative NWS data. We request that you conduct the criteria pollutant and TAC analysis using 5 years of meteorological data. We recognize that R 336.1241 provides EGLE discretion to allow the use of only 1 year of NWS data for nonmajor PTIs.[2] The PM_{10} and $PM_{2.5}$ analyses restrict the hours that the pile may emit fugitives based on hourly wind speeds, suggesting that a larger meteorological database may be necessary to capture worst case meteorological conditions. The TAC analysis may also be improved to capture worst case meteorological conditions that may not be present in one year of NWS data. Modeling based on 5 years of meteorological data increases the likelihood that the worst-case meteorological conditions are considered as part of this analysis and would be consistent with NAAQS analyses conducted for other regulatory purposes.

16. Dispersion modeling for particulate emissions relies on a critical wind speed threshold of approximately 11.50 mph for the purpose of considering fugitive emissions from the pile. From information included in the permit record, it appears that the applicant analyzed the daily fastest mile and daily surface friction velocity. However, it is unclear whether the analysis considers hourly wind speeds and sub-hourly gusts. It is not clear whether the modeling excludes emissions from the pile during hours where gusts exceed the critical wind speed threshold. AP-42 Section 13.2.5.2, a document cited by the applicant, suggests that "estimated emissions should be related to the gusts of the highest magnitude" and that "peak

[2] R 336.1241 states in relevant part that "[…] the demonstration may be based on the maximum ambient predicted concentration using the most recent calendar year of meteorological data from a representative national weather service […] station."

winds can significantly exceed the daily fastest mile."[3] This suggests that gusts play a large role in fugitive dust emissions and should be evaluated as part of this analysis. The meteorology used in the modeling analysis is based on 1-minute National Weather Service (NWS) data, enabling an analysis of sub-hourly winds. We recommend that the applicant analyze the 1-minute data to determine whether certain hours contain sub-hourly gusts exceeding the critical wind threshold to further ensure that the analysis does not underestimate ambient PM_{10} and $PM_{2.5}$ impacts.

17. The applicant cites several documents suggesting that the critical wind speed threshold for the pile is 12 mph. However, it is unclear whether and to what extent the stockpiles analyzed in each document are representative of the applicant's proposed pile. Although the information provided in each document may be helpful to estimate emissions for applicability purposes, it is less clear whether this information is sufficient to determine the critical wind threshold for the proposed stockpile. None of the documents appear to analyze asphalt plants in particular. Would the applicant's proposed pile contain material with the same particle size distribution as that analyzed within each cited document? Are there other asphalt plant pile parameters that may affect the critical wind speed threshold that are not reflected in the cited documents, such as moisture content or how well each pile is mixed? We recommend that the applicant evaluate the composition of the proposed pile to further justify whether the comparison is adequate. Lack of a case-specific analysis of the composition of the proposed pile at the source may understate fugitive particulate emissions from the pile, potentially underestimating the modeled impacts attributed to the pile.

18. It is not clear whether the modeling considered other activities that may generate fugitive emissions from the pile. The analysis offered by the applicant appears to focus solely on wind-blown emissions without considering how working the pile may affect the generation of fugitive particulate emissions. We recommend that the applicant address potential fugitive emissions that may be generated while the source works the pile and evaluate whether the current analysis adequately evaluates emissions generated at these times. The permit does not otherwise restrict the applicant from working the pile, suggesting that fugitive emissions associated with working the pile should be included as part of the analysis.

19. The modeling analysis excludes receptors within the proposed property line. Section 6.1.3.1 of the December 21, 2020 application states that the applicant will "prevent access to the property by the general public through a combination of fencing, berms, trees, and shrubs" around the property line. Given the lack of further detail in the application, it is unclear whether this combination of measures as stated within the application would be effective in precluding access to the land by the general public. Appendix W section 9.2.2 recommends the placement of receptors throughout the modeling domain. The December 2, 2019 Revised Policy on Exclusions from Ambient Air[4] states that receptors may be excluded over land owned or controlled by the stationary source "where the source employs measures, which may include physical barriers, that are effective in precluding access to the land by the

[3] AP-42 Chapter 13.2.5 – Industrial Wind Erosion is available online at https://www.epa.gov/sites/default/files/2020-10/documents/13.2.5_industrial_wind_erosion.pdf.
[4] The Revised Policy on Ambient Air is available online at https://www.epa.gov/sites/default/files/2019-12/documents/revised_policy_on_exclusions_from_ambient_air.pdf.

general public." We recommend that the applicant identify where each proposed measure will be employed so that EGLE can evaluate whether the proposed measures effectively preclude the general public's access to land owned or controlled by the proposed source.

20. The proposed fugitive dust controls described by the applicant include "the presence of berms (approximately 7 feet tall), trees on top of those berms (approximately an additional 7 feet tall when planted), and the fence next to the berm." We support the implementation of berms and windbreaks to mitigate fugitive dust emissions from the source. However, neither the draft permit nor fugitive dust control plan requires the applicant to install and maintain berms, windbreaks, and covered piles to control fugitive dust emissions. We recommend that EGLE include enforceable permit conditions requiring the source to implement and maintain the selected fugitive dust control measures such as berms, windbreaks, and covered piles.

21. The TAC analysis uses the results of generic TAC modeling to estimate the TAC impacts in relation to the appropriate ITSL or IRSL. The generic TAC modeling result is based on modeled impacts from the drum dryer stack. Although most TAC emissions are emitted from the drum dryer stack, TACs are also emitted from the silo heater, silo filling and loadout processes, and the asphalt cement storage tank. We recommend that you consider modeling each process or emission unit that does not exhaust to the drum dryer stack to avoid underestimating TAC impacts. Dispersion characteristics may differ depending upon the process, potentially resulting in underestimated TAC impacts where a given process has worse dispersion characteristics than the drum dryer stack.

22. Although the NAAQS and PSD increment analysis considers the impact of fugitive emissions from several sources, it is unclear whether the TAC analysis considers fugitive emissions from similar sources. Are there any fugitive TAC emissions that should be considered as part of the TAC analysis? We suggest that you either revise the TAC analysis to include fugitive TACs not already considered or provide justification explaining why fugitive emissions do not need to be included in the analysis.

23. EUHMAPLANT SC II.4 limits recycled asphalt pavement (RAP) to a maximum of 50 percent on a monthly average. We recommend EGLE require compliance with this limit on a shorter-term basis than monthly (such as daily). We note that the draft permit requires the source to continuously monitor the RAP feed rate (see EUHMAPLANT SC VI.2), suggesting that the permittee would already collect data that can be used to determine compliance with the limit on a shorter-term basis. AP-42 section 11.1.1.3 suggests that RAP can be processed at ratios up to 50 percent with little or no observed effect upon emissions. AP-42 is silent with respect to emissions above the 50 percent ratio and does not differentiate between averaging times.

24. EUHMAPLANT SC I.4 through I.7 include a reference to footnote c. However, footnote c does not appear to be included within the emission limit table. We request that you specify footnote c or revise each special condition to remove the reference to this footnote.

25. EUHMAPLANT SC I.4 and I.6 each cite 40 CFR 52.21 (c) and (d) as an underlying applicable requirement. We recommend that you verify whether each special condition cites

the appropriate underlying authority. We note that Michigan has a SIP-approved version of each requirement at R 336.2803 and R 336.2804, respectively.

26. EUHMAPLANT SC II.1 allows the permittee to burn recycled used oil (RUO). We recommend that the permittee consider not using RUO as a fuel for the proposed source. Although EGLE has established requirements that apply when combusting RUO,[5] eliminating the use of RUO as a fuel could reduce air toxics and sulfur impacts on the local community. Should the permittee choose to combust RUO as part of this process, we recommend that the permittee or EGLE analyze the additional impact combusting RUO could have on the local community over the impact of using other fuels such as natural gas.

27. EUHMAPLANT SC IV.1 requires continuous pressure drop monitoring for the proposed baghouse. We request that EGLE consider the use of a bag leak detection system (BLDS). BLDS would help verify that the fabric filters are not leaking or developing a leak. A BLDS, combined with the requirement to operate the baghouse in a satisfactory manner, would help ensure that the baghouse is operating properly, enable the permittee to react promptly to leaking bags, and further ensure compliance with the particulate matter special conditions.

[5] See EUHMAPLANT SC II.2, SC III.4, SC V.4, and the RUO compliance monitoring plan in Appendix D.

EXHIBIT 2

EGLE

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY

PERMIT TO INSTALL APPLICATION

For authority to install, construct, reconstruct, relocate, or modify process, fuel-burning or refuse burning equipment and/or control equipment. Permits to install are required by administrative rules pursuant to Section 5505 of 1994

FOR EGLE USE
APPLICATION NUMBER

Please type or print clearly. The "Application Instructions" and "Information Required for an Administratively Complete Permit to Install Application" are available on the Air Quality Division (AQD) Permit Web Page at www.deq.state.mi.us/aps/nsr_information.shtml. Please call the AQD at 517-284-6804 if you have not been contacted within 15 days of your application submittal.

RECEIVED

DEC 28 2020

AIR QUALITY DIVISION

1. FACILITY CODES: State Registration Number (SRN) and North American Industry Classification System (NAICS)

SRN: | | | | | | | NAICS: | 3 | 2 | 4 | 1 | 2 | 1 |

2. APPLICANT NAME: (Business License Name of Corporation, Partnership, Individual Owner, Government Agency)
Ajax Materials Corporation

3. APPLICANT ADDRESS: (Number and Street)
1957 Crooks Road, Suite A

MAIL CODE:

CITY: (City, Village or Township)
Troy

STATE:
MI

ZIP CODE:
48084

COUNTY:
Oakland

4. EQUIPMENT OR PROCESS LOCATION: (Number and Street – If different than Item 3)
Northeast Corner of Carpenter Road and Energy Drive

CITY: (City, Village or Township)
Genesee Charter Township

ZIP CODE:
48505

COUNTY:
Genesee

5. GENERAL NATURE OF BUSINESS:
Hot mix asphalt manufacturer

6. EQUIPMENT OR PROCESS DESCRIPTION: (A Description MUST Be Provided Here. Include Emission Unit IDs. Attach additional sheets if necessary; number and date each page of the submittal.)
Ajax is proposing to install a new Hot Mix Asphalt Plant to include a 500 tph counter-flow drum mix plant, 100,000 cfm baghouse, six asphalt cement tanks with a small natural gas heater, eight HMA storage silos, RAP and aggregate feed bins.

7. REASON FOR APPLICATION: (Check all that apply.)
- ☒ INSTALLATION / CONSTRUCTION OF NEW EQUIPMENT OR PROCESS
- ☐ RECONSTRUCTION / MODIFICATION / RELOCATION OF EXISTING EQUIPMENT OR PROCESS – **DATE INSTALLED:**
- ☐ OTHER – DESCRIBE

8. IF THE EQUIPMENT OR PROCESS THAT WILL BE COVERED BY THIS PERMIT TO INSTALL (PTI) IS CURRENTLY COVERED BY ANY ACTIVE PERMITS, LIST THE PTI NUMBER(S): N/A

9. DOES THIS FACILITY HAVE AN EXISTING RENEWABLE OPERATING PERMIT (ROP)? ☒ NOT APPLICABLE ☐ PENDING APPLICATION ☐ YES
PENDING APPLICATION OR ROP NUMBER:

10. AUTHORIZED EMPLOYEE:
Mark E. Boden

TITLE:
Vice President

PHONE NUMBER: (Include Area Code)
248.244.3300

SIGNATURE:
Mark E Boden

DATE:
12/22//2020

E-MAIL ADDRESS:
mboden@ajaxpaving.com

11. CONTACT: (If different than Authorized Employee. The person to contact with questions regarding this application)
Stephanie A. Jarrett
Kathleen T. Anderson

PHONE NUMBER: (Include Area Code)
248.324.2146
810.845.3925

CONTACT AFFILIATION:
Fishbeck
Ajax Materials Corporation, In House Consultant

E-MAIL ADDRESS:
sajarrett@fishbeck.com
kanderson@ajaxpaving.com

12. IS THE CONTACT PERSON AUTHORIZED TO NEGOTIATE THE TERMS AND CONDITIONS OF THE PERMIT TO INSTALL? ☒ YES ☐ NO

FOR EGLE USE ONLY - DO NOT WRITE BELOW

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

DATE PERMIT TO INSTALL APPROVED:	SIGNATURE:
DATE APPLICATION / PTI VOIDED:	SIGNATURE:
DATE APPLICATION DENIED:	SIGNATURE:

A PERMIT CERTIFICATE WILL BE ISSUED UPON APPROVAL OF A PERMIT TO INSTALL

fishbeck
Engineers | Architects | Scientists | Constructors

39500 MacKenzie Drive, Suite 100
Novi, Michigan 48377

248.324.2090 | fishbeck.com

Permit to Install Application
Hot Mix Asphalt Plant

Ajax Materials Corporation – Genesee Township Plant
Energy Drive
Genesee Charter Township, Michigan

December 21, 2020
Project No. 201405

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List of Abbreviations/Acronyms

acfm	actual cubic feet per minute
AER	allowable emission rates
AERMET	AERMOD Meteorological Preprocessor
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AQD	Air Quality Division
AQD-22	Dispersion Modeling Guidance for Federally Regulated Pollutants
ARM	Ambient Ratio Method
BACT	Best Available Control Technology
BPIP Prime	Building Profile Input Program Prime
Btu	British thermal units
CAA	Clean Air Act
CAIR	Clean Air Interstate Rules
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
°F	degrees Fahrenheit

EGLE	Michigan Department of Environment, Great Lakes, and Energy
GEP	good engineering practice
gr/dscf	grains per dry standard cubic foot
HAP	hazardous air pollutant
HCl	hydrochloric acid
HMA	hot mix asphalt
hr/day	hours per day
hr/yr	hours per year
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
km	kilometer(s)
LAER	lowest achievable emission rate
lb	pound(s)
lb/hr	pounds per hour
lb/MMBtu	pounds per million Btus
MACT	Maximum Achievable Control Technology
µg/m³	micrograms per cubic meter
MDEQ	Michigan Department of Environmental Quality (became EGLE April 22, 2019)
MMBtu/hr	million Btus per hour
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAD83	North American Datum of 1983
NED	National Elevation Dataset
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	ozone
PAI	Predicted Ambient Impact
PAC	polynuclear aromatic compounds
Pb	lead
PM	particulate matter
$PM_{2.5}$	fine particulate matter less than 2.5 microns
PM_{10}	fine particulate matter less than 10 microns
ppm	parts per million
PSD	prevention of significant deterioration
PTE	potential to emit
PTI	Permit to Install
RAP	recycled asphalt product
RUO	recycled used oil
ROP	Renewable Operating Permit
SCC	Source Classification Code
sf	square foot/feet
SDS	Safety Data Sheet
SER	significant emission rate
SIL	significant impact levels
SO_2	sulfur dioxide

TAC	toxic air contaminant
T-BACT	Best Available Control Technology for Toxics
tph	tons per hour
tpy	tons per year
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1.0 Executive Summary

Fishbeck has been retained by Ajax Materials Corporation (Ajax) to submit a request for a PTI for their proposed new HMA process to be located on Energy Drive in Genesee Charter Township, Michigan. This document contains the information required to evaluate the application for the permit, including a description of the plant, equipment, operating schedule, projected emissions characteristics, a BACT Analysis, and an air toxics demonstration.

The Ajax facility will manufacture HMA, primarily for the road construction industry. As part of this project, Ajax is proposing to install a 500 tph counter-flow drum mixer and associated 100,000 cfm baghouse, RAP and aggregate feed bins, six new asphalt cement tanks with a small natural gas heater, and eight 300 ton HMA storage silos.

The proposed project is not subject to PSD review for any criteria pollutants. The following NSPS has been determined to apply to this project: *Subpart I – Standards for Performance of Hot Mix Asphalt Facilities*.

Federal NESHAPs have been evaluated; no NESHAPs apply to this project.

A dispersion modeling analysis is provided for NO_X, SO_2, PM_{10} and $PM_{2.5}$. Impacts have been demonstrated to be compliant with applicable NAAQS and PSD Increments.

EGLE Rule 225 requires that the predicted maximum ambient impact from the emission of TACs from new and modified sources not exceed health-based screening levels. Compliance with these health-based screening levels have been demonstrated as the PAIs for all TACs are below the applicable air quality screening levels utilizing air dispersion modeling.

2.0 Process Overview

2.1 Process Description

Ajax will manufacture HMA paving materials, primarily for the road construction industry, using a counter-flow drum mixer/dryer process. HMA paving materials are a mixture of aggregates and asphalt cement, which is heated and mixed at metered proportions; RAP is often used to reduce the quantity of virgin aggregates required in the mix. This practice reuses a waste material and reduces the amount of new natural resources needed. As RAP also contains hardened asphalt cement, the quantity of liquid asphalt cement that must be added to the mix is also reduced. The HMA manufacturing process involves combustion of a fuel to dry and heat the aggregates. These actions are carried out in a rotating, direct-fired drum dryer/mixer. Natural gas will be used as the primary fuel at the plant; propane and fuel oils, including RUO, may also be used at the plant.

In a counter-flow drum mixer, the aggregates are moved through a rotating drum in the opposite direction as the fuel combustion products. The drum is inclined with the aggregate feed chute located at the top and the dryer burner located at the bottom. RAP is added at the approximate midpoint of the dryer drum. Asphalt cement is introduced in the lower end of the drum, usually in the last 10 to 12 feet, where rotation of the drum coats the aggregate with the asphalt cement. The asphalt cement mixing zone is located behind the burner flame zone to prevent direct contact with the flame zone.

A discharge chute for the finished product is located at the lower end of the inclined drum. HMA is conveyed to a surge bin and then to the HMA storage silos, where it is loaded into transport trucks. Exhaust gases from the dryer/mixer, including the products of combustion, exit the end of the drum and are controlled by a fabric filter collector.

The plant configuration will include eight HMA silos and a truck load out area with sides that extend toward the ground. Exhaust gases from the load out area will be routed back to the burning zone of the HMA plant or to a standalone collection system for blue smoke control.

A location map is provided as Figure 1 and a proposed site plan is presented as Figure 2.

2.2 Description of Proposed Modification

Ajax is proposing to build a new HMA plant. This plant will include installing a 500 tph counterflow drum, 100,000 cfm baghouse, RAP and feed bins, eight 300-ton HMA silos, six asphalt cement tanks with a small natural gas heater. If RUO is used in the future, an RUO tank will also be installed.

The proposed maximum operating schedule is 24 hours per day, 7 days per week, 52 weeks per year. To limit the plant's potential to emit, Ajax will agree to limit the total annual HMA production to 887,560 tpy of HMA.

3.0 Regulatory Review

3.1 Michigan Air Pollution Control Regulations

3.1.1 Rule 201 – PTI Requirements

Any process or process equipment installed after August 15, 1967, which may emit an air contaminant requires a PTI prior to installation, construction, reconstruction, relocation, alteration, or modification unless specifically exempt. The proposed plant construction will require a PTI.

3.1.2 Rules 224 to 230 – Air Toxics Requirements

Rules 224 to 230, effective November 10, 1998, apply to any proposed, new, or modified process or process equipment for which an application for a PTI is required and which emits a TAC. A **TAC** is defined in Michigan rules as:

> *... any air contaminant for which there is no National Ambient Air Quality Standard (NAAQS) and which is or may become harmful to public health or the environment when present in the outdoor atmosphere in sufficient quantities and duration.*

A new or modified source of TACs is required to comply both with T-BACT and with health-based screening level requirements.

3.1.2.1 Rule 224 – T-BACT Requirement for New and Modified Sources of Air Toxics

Rule 224 requires that emissions of TACs from a new or modified source not exceed the maximum allowable emission rate that results from the application of the T-BACT.

Rule 224(2) provides exemptions from the T-BACT requirements for:

- Emission unit(s) subject to a standard for HAPs promulgated under 112(d) of the CAA, or for which a control technology determination has been made under Section 112(g) or 112(j). Section 112(d)(6) of the CAA requires the USEPA to review and revise the MACT standards, as necessary, taking into account developments in practices, processes, and control technologies. This exemption applies to both regulated HAPs and other VOCs or PM which are controlled by the same technology. [Rule 224(2)(a)].
- TACs that are carcinogens which have emission rates less than 0.1 lb/hr and an IRSL greater than 0.1 $\mu g/m^3$, or TACs that are not carcinogens which have emission rates less than 1.0 lb/hr and ITSLs greater than 200 $\mu g/m^3$. [Rule 224(2)(b)].
- Emission units(s) which only emit VOCs or PM that comply with BACT or LAER. [Rule 224(2)(c)].
- Engines, turbines, boilers, and process heaters with heat input capacities up to 100 MMBtu/hr which fire natural gas, diesel, or biodiesel, provided that the effective stack is vertical, unobstructed, and is at least 1.5 times the building height and the building setback is at least 100 feet from the property line. [Rule 224(2)(d)].

A T-BACT analysis is provided in Section 5.0.

3.1.2.2 Rules 225 To 230 – Health-Based Screening Level Requirement for New or Modified Sources of Air Toxics

Rule 225 requires that emissions of TACs not exceed the maximum allowable emission rate that results in a predicted maximum ambient impact above the ITSL, the IRSL, or both.

Rule 227 indicates that compliance with the health-based screening level provisions of Rule 225 can be determined by any of the following:

- Pursuant to Rule 227(1)(a), the emission rate of each TAC is not greater than the rates determined from the algorithms in Table 21 [of Rule 227].
- Pursuant to Rule 227(1)(b), the emission rate of each TAC is not greater than the rate determined from the Ambient Impact Ratio matrix screening methodology in Table 22 [of Rule 227] or determined by any other screening method approved by EGLE.
- The maximum ambient impact of each TAC is less than the applicable screening level determined using the maximum hourly emission rate in accordance with the air quality modeling provisions of Rule 240, 241, or both.

A dispersion modeling analysis for TACs is provided in Section 6.0.

3.1.3 Rule 301 – Standards for Density of Emissions

Rule 301 establishes limitations for the density of particulate emissions. The proposed plant is not expected to have any effect on the ability to comply with the visible emission limitations of Rule 301. Rule 301 limits visible emissions as follows:

- A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
- A limit specified by an applicable federal Standard for the Performance of NSPS. HMA plants are subject to NSPS-Subpart I, which limits opacity to 20%.
- A limit specified as a condition of a PTI or Permit to Operate.

Ajax is confident the new HMA plant will be able to comply with the opacity limitations specified in Rule 301 and NSPS-Subpart I.

3.1.4 Rule 331 – Emission of PM

Rule 331 (Table 31, F) stipulates that asphalt paving plants located outside of Priority I and II areas shall not exceed an emission rate of 0.30 lb of particulate per 1,000 lb of exhaust gas. The proposed HMA plant is subject to the NSPS Subpart I, which limits emissions to 0.04 gr/dscf, which is equivalent to approximately 0.076 lb particulate per 1,000 lb of exhaust gas; therefore, Ajax is confident the drum mixer/dryer will continue to comply with the PM limitations specified in Rule 331.

3.1.5 Rule 702 – VOC BACT

New sources of VOC are subject to Rule 702 which requires an emission limitation based upon the application of BACT. New sources are defined in Rule 701 as:

> *... any process or process equipment which is either placed into operation on or after July 1, 1979, or for which an application for a Permit to Install, pursuant to the provision of Part 2 of these rules, is made to the department on or after July 1, 1979, or both, except for any process or process equipment which is defined as an existing source pursuant to R336.1601 (Rule 601).*

BACT for VOCs is discussed in Section 5.0, BACT Analysis, of this document.

3.1.6 Rule 901 – Nuisance Odors and Dust

Rule 901 prohibits the emissions of air contaminants in quantities that cause either:

- Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.
- Unreasonable interference with the comfortable enjoyment of life and property.

The HMA plant will includes eight HMA silos and a truck load enclosure with sides that extend toward ground. Exhaust gases from the load out area will be routed back to the burning zone of the HMA plant or to a standalone collection system.

3.1.7 Part 18 – Prevention of Significant Deterioration

The primary provisions of the PSD Program require that new major stationary sources and major modifications at existing major stationary sources be carefully reviewed prior to onsite construction to ensure compliance with the NAAQS, the applicable PSD Increment provisions, and the requirement to apply BACT on the project's significant emission increases of NSR regulated pollutants. The PSD Program also requires evaluation of potential visibility impacts to federally designated Class I areas, evaluation of air quality impacts as a result of secondary growth associated with the project, and a minimum 30-day public comment process.

The Ajax facility will be located in Genesee County, which is currently in attainment with all NAAQS, which includes: PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, O_3, and Pb. Both NO_X and VOCs are regulated for controlling O_3 formation in the ambient air because they both participate in ambient photochemical reactions that result in O_3.

A determination must be made as to whether the PSD Program is applicable to the proposed construction. This determination is based on whether emissions at the stationary source will be greater than 250 tpy for the pollutants in attainment. As demonstrated in this application, the Ajax facility will accept enforceable emission limits and a production limit of 887,560 tpy, which will limit emissions of attainment air pollutants to less than 250 tpy. As a result, the proposed HMA plant is not subject to the PSD Program.

3.1.8 EGLE Dispersion Modeling Guidance

Policy and Procedure AQD 22, *Dispersion Modeling Guidance for Federally Regulated Pollutants*, was issued to address when dispersion modeling is required as part of the PTI Application. The intent of AQD-22 was to ensure that projects do not interfere with the NAAQS or PSD Increment. Pursuant to EGLE guidelines, this determination must be made for both *major source* and *minor source* applications.

The project emissions exceed the SER for SO_2, NO_X, $PM_{2.5}$, and PM_{10}; therefore, a dispersion modeling analysis for these pollutants is provided in Section 6. Pursuant to Table 2 of AQD-22, an analysis is not required for CO, as project emissions are below 100% of the SER.

3.2 Federal Regulations

3.2.1 40 CFR 60 Subpart I– NSPS

The NSPS require that new emission sources emit less pollutants than existing sources. 40 CFR 60, Subpart I, promulgated July 25, 1977, requires performance standards for HMA. The standards are in effect for equipment constructed, modified, or reconstructed after June 11, 1973. Ajax is subject to an NSPS emission limit for PM of 0.04 gr/dscf of exhaust gas specified in 40 CFR §60.92(a)(1) (the Standard). The NSPS also sets a visible emission limitation, found in 40 CFR §60.92(a)(2), of less than 20% opacity. Compliance testing will be performed following construction and commissioning of the new drum mixer/dryer using the federal reference methods specified in the Standard.

Ajax is confident the plant will comply with the PM and opacity limitations specified in NSPS, Subpart I.

3.2.2 40 CFR 61 and 63 – NESHAPS

Projects of this nature may also be subject to federal requirements for the control of HAP emissions. The first step to determining applicability is to review the pollutant- and source-specific regulations promulgated in 40 CFR §61 and §63; these regulations are collectively known as NESHAPs. The second step for determining applicability is to evaluate whether the modification will be a major source of HAPs and, therefore, subject to the case-by-case MACT requirements pursuant to Section 112(g) of the federal CAA.

NESHAPs apply to both major and area sources of HAPs. A **major source of HAPs** is defined in Section 112 of the CAA, in part as *a stationary source that has a PTE 10 tpy or more of any HAP, or 25 tpy of any combination of HAPs subject to regulation under the CAA*. The design capacity of the drum mixer/dryer, operating 24 hours per day and 365 days per year would result in a total annual production of 4,380,000 tons HMA. Based on this operational capacity, emissions of combined HAPs would be greater than 25 tpy and the facility would meet the definition of a major source of HAPs. However, Ajax will agree to an enforceable operational restriction (annual production limit) to limit the emissions of HAPs to below the major threshold levels.

The facility will be an *area source* of HAP emissions. No area source NESHAP requirements currently apply to this type of source.

3.2.3 40 CFR 70 – Title V

The Ajax HMA plant will not be subject to the Title V (Michigan's ROP) program; issuance of this PTI will not affect the status with respect to Title V.

4.0 Emission Calculations Summary

Emissions were estimated using AP-42, EGLE emission factors, and other standard industry calculations. Tables 1, 2, and 3 summarize the short-term and annual emissions of the HMA plant. The footnotes contained in these tables describe the methods used to calculate emissions.

4.1 PM Emissions

For the counter-flow HMA plant, PM emissions are calculated based on the NSPS emission limit of 0.04 gr/dscf of exhaust gas. This calculation involves the rated capacity of the exhaust fan and the amount of moisture in exhaust gases. HMA plant capacities are rated based on a specific percentage of moisture in the incoming aggregates; the average aggregate moisture content for similar sources is approximately 5%. As the moisture content of the incoming aggregates increases, the capacity of the HMA plant decreases; therefore, PM emissions are calculated based on the plant running at its rated capacity and aggregates' moisture content. The air flow must be converted from actual cubic feet per minute to dry standard cubic feet per minute, using the ideal gas law (PV = nRT). See Appendix 1 for the PM calculation methodology.

4.2 SO_2 Emissions

The proposed emission factor, in pounds of SO_2 per ton of HMA produced, is based on RUO sulfur content of 1% and a 43% control for SO_2 from RAP. As the plant will typically run on natural gas, the SO_2 emissions provided in Table 2 are extremely conservative.

4.3 NO_X Emissions

The proposed emission factor, in pounds of NO_X per ton of HMA produced, was based on EGLE Fact Sheet No. 9842 for HMA Plants. The emission factor for SCC 3-05-002-46 (HMA Batch Plants) was used as a conservative approach to calculate the maximum emission rate of NO_X.

4.4 CO Emissions

The proposed emission factor, in pounds of CO per ton of HMA produced, was based on the on EGLE Fact Sheet No. 9842 for HMA Plants, which is the EGLE default CO factor for HMA plants. The emission factor for SCC 3-05-002-10 (Waste Oil Heaters for HMA plants) was used as a conservative approach to calculate the maximum emission rate of CO.

4.5 VOC Emissions

The proposed emission factor, in pounds of VOC per ton of HMA produced, was taken from AP-42, Section 11.1, Table 11.1-8 for a waste oil-fired counter-flow drum mix plant. This emission factor, along with a 100% safety factor, was used to estimate the maximum emission rate of VOC.

4.6 Lead

The proposed emission factor, in pounds of Pb per ton of HMA produced, was based on maximum parts per million allowed in RUO (100 ppm) and 98% control for baghouse. The proposed emission factor was used for the calculation of the maximum emission rate of Pb.

4.7 HAPs and TACs

Emissions of sulfuric acid, nickel, manganese, benzene, formaldehyde, isomers of xylene, toluene, acrolein, and ethylbenzene are based on the current emission limits and the default allowable emission rates from a paper titled *Eliminating the Mandatory Testing Requirement for Toxic Air Contaminants for Hot Mix Asphalt Plants in Michigan* (MDEQ-AQD, June 1, 2012). All other HAP and TAC emissions were estimated using the maximum USEPA Web-fire emission factor for drum mix plants for each fuel used at the plant with a safety factor.

The proposed HCl emission factor, in pounds of HCl per ton of HMA produced, was based on maximum halogen content of RUO (1,000 ppm) and a 61% expected reduction in the HCl emissions based on the nature of an HMA drum mix plant. The proposed emission factor was used for the calculation of the maximum emission rate of HCl. See Appendix 2 for the HCl calculation methodology.

4.8 Miscellaneous Combustion Equipment

The emissions for the small natural gas asphalt cement tank heater are provided in Tables 4 and 5, and were estimated using Web-fire emission factors for SCC 1-02-006-03 (Boiler with a Heat Input Capacity of Less Than 10 MMBtu/hr). In instances where appropriate emission factors do not exist in SCC 1-02-006-03, emission factors for SCC 1-02-006-02 were used (Boiler with a Heat Input Capacity of Greater Than 10 MMBtu/hr).

5.0 BACT Analysis

5.1 Description

Emissions from the HMA dryer/mixer will be controlled by a two-part system designed primarily to control particulate emissions. The exhaust gases from the proposed counter-flow HMA plant will be controlled by a primary collector followed by a fabric filter collector (baghouse) before being exhausted to the atmosphere through a stack. All particulate matter collected by the primary collector and baghouse are returned to the mixing zone of the drum where the asphalt cement is added. This ensures the particulates adhere to the asphalt cement and are not re-entrained in the exhaust gases. The baghouse is currently the most commonly used control device for HMA facilities and is considered to represent T-BACT for new HMA facilities.

Rule 702 requires BACT for VOCs for new and modified sources. There has been significant discussion between the HMA industry and regulators regarding whether newer plant designs, such as counter-flow or dual drum, represent BACT for HMA plants. Data supporting such conclusions is generally subjective rather than objective and quantifiable. VOC emissions from all of the fuels currently used are minimized by using good combustion controls. Good combustion controls will be ensured by regular burner inspections and routine monitoring of CO using a hand-held monitor. Maintaining good combustion control is in Ajax's best interest, as good combustion control is directly related to fuel efficiency and fuel is one of the HMA industry's highest operating costs.

6.0 Air Quality Modeling and Air Toxic Evaluation

As presented in Table 1, the project emissions from the proposed project exceed the SER thresholds for NO_X, SO_2, $PM_{2.5}$, and PM_{10} established pursuant to 40 CFR 52.21 and Michigan Rule 1802 (R 336.1802). Therefore, a detailed dispersion modeling analysis for the PSD Increments and compliance with the NAAQS is required as a part of the application. Federal ambient standards have been developed for criteria pollutants consisting of PSD Increments and NAAQS. Compliance with the federal ambient standards for criteria pollutants has been demonstrated through air dispersion modeling as discussed in Section 6.2.

As stated in Rule 225 (R 336.1225), EGLE requires that the ambient impact of the TACs released from a rule subject source be estimated and compared to established air quality standards. An air toxics demonstration is presented in Section 6.3.

Secondary formation analyses for $PM_{2.5}$ and O_3 have not been included as part of the application. Pursuant to current guidance, secondary formation analyses are not required when a project is not subject to PSD regulations.

Model selection and input parameters, used for both criteria pollutant and TAC modeling analyses, are presented in Section 6.1.

6.1 Model Parameters

6.1.1 Model Selection

The model selected for the air dispersion analysis was the AERMOD, Version 19191. Effective December 9, 2005, this model was established as the USEPA-preferred air dispersion model for steady state operations. AERMOD is a modeling system that incorporates air dispersion based on planetary boundary layer turbulence, structure, and scaling concepts, including treatment of both surface and elevated sources and both simple and complex terrain.

BEE line software, which incorporates the USEPA algorithm for the AERMOD program, was used. The software, referred to as BEEST, Version 12.01, was developed by Providence Engineering and Environmental Group, LLC.

6.1.2 GEP Stack Height Analysis

Prior to running the air dispersion model, the potential for building downwash to affect the plume must be evaluated. Building downwash represents the effect that nearby structures have on the air flow near the stack. If the stack is within the area of influence of the building, the swirls and eddies caused by obstruction of the air flow near buildings can affect the plume dispersion.

A GEP analysis was performed using software developed by Providence Engineering and Environmental Group, LLC. The software includes the USEPA BPIP-Prime code for calculating projected building widths. This analysis was run for all buildings depicted in Figure 2. The highest calculated formula GEP stack height of any structure was 97.9 feet (29.84 meters). GEP stack height is the greater of GEP formula stack height or 65 meters (213.3 feet). The structure heights and stack height are listed in Tables 6 and 7, respectively. The stack height is less than the GEP stack height; therefore, direction-specific building effects calculated for each wind direction were entered into the dispersion model as described in the next section.

6.1.3 Model Input Parameters

The direction specific building dimensions calculated during the GEP stack height analysis were entered into the model.

Figure 1 illustrates the site topography. As demonstrated in the figure, the modeling area is relatively flat; however, actual terrain data was used in the model. Figure 2 identifies the stack location.

Land use in the area is predominantly rural; therefore, default rural dispersion coefficients were selected for the model.

The emission source included in this analysis is a point source, with a vertically unobstructed discharge. Model input parameters for this source are provided in Table 7.

6.1.3.1 Receptor Grids

Ajax will prevent access to the property by the general public through a combination of fencing, berms, trees, and shrubs. Therefore, receptors were placed at 25-meter intervals around the inaccessible property line. Dense grids of 25-meter and 50-meter intervals surround the property, and grids of 100 meters, 250 meters, and 500 meters cover the outlying areas to a distance of 10 kilometers. All coordinates are provided in the UTM NAD83 coordinate system. [1]

Terrain elevations at receptors were obtained using the BEEST program and USGS NED 1/3 arc-second data. BEEST implements the AERMAP model (Version 18081), which includes processing routines that extract NED data to determine receptor terrain elevations for air quality model input. The NED data used in the modeling had a resolution of 10 meters (1/3 arc-second) and NAD83 datum.

6.1.3.2 Meteorological Data

The meteorological data used in the model was 1-minute data from Bishop International Airport, Flint (FNT) 2019 (Surface Station No. 14826) and White Lake, 2019 (Upper Air Station No. 4830). The meteorological data was provided by EGLE and was processed using the ADJ_U* option in AERMET (Version 18081). All criteria pollutant and TAC modeling was conducted utilizing one year of meteorological data (2019).

6.1.3.3 NO_X Transformation

Tier 1 default modeling was utilized, where 100% of NO_X is conservatively assumed to be NO_2.

6.2 Criteria Pollutant Modeling

A dispersion modeling analysis has been conducted for the criteria pollutants for which emissions are above the SER criteria. As presented in Table 1, these include NO_X, SO_2, $PM_{2.5}$, and PM_{10}. CO emissions are below 100% of the SER and, pursuant to AQD-22, do not require modeling.

If emissions of the modeled pollutants result in impacts that exceed the SILs, a detailed dispersion modeling impact analysis to demonstrate compliance with the federal PSD Increments and NAAQS is required as a part of the application. If impacts are less than the SILs, no additional modeling is necessary.

Emission rates for the baghouse were conservatively determined for use in the modeling demonstration and are presented in Table 7.

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[1] UTM NAD83 Universal Transverse Mercator North American Datum of 1983

6.2.1 *Significant Impact Analysis*

A significant impact analysis is typically the first step in criteria pollutant modeling. The SIL analysis included impacts from the baghouse.

As presented in Table 8, predicted impacts from the baghouse for NO_2, SO_2, $PM_{2.5}$, and PM_{10} were above the applicable SILs, except for annual PM_{10} impacts. Therefore, additional analyses have been conducted, as discussed in Section 6.2.2.

The USEPA has revoked the previously promulgated SILs for $PM_{2.5}$. However, USEPA guidance (April 17, 2018)[2] provides SILs, which the USEPA has documented should be appropriate for all Class II Areas, as well as alternative SILs that can be selected on a case-by-case basis. The SILs recommended in this USEPA guidance have been used in the analysis. Specifically, the following SILs were utilized for the Class II analysis:

- NAAQS SIL
  - 0.2 µg/m³ for Annual $PM_{2.5}$
  - 1.2 µg/m³ for 24-hr $PM_{2.5}$
- Increment SIL
  - 0.2 µg/m³ for Annual $PM_{2.5}$
  - 1.2 µg/m³ for 24-hr $PM_{2.5}$

6.2.2 *NAAQS and Increment Analyses*

Because impacts from the proposed project exceed the applicable SILs (except annual PM_{10}), additional analyses have been performed for the pollutants and averaging times as follows:

- 1-hour NO_2 (NAAQS modeling; no Increment established)
- Annual NO_2 (NAAQS and Increment modeling)
- 24-hour and annual $PM_{2.5}$ (NAAQS and Increment modeling)
- 24-hour PM_{10} (NAAQS and Increment modeling)
- 1-hour SO_2 (NAAQS modeling; no Increment established)
- 3-hour, 24-hour, and Annual SO_2 (NAAQS and Increment modeling)

The first step in the additional analysis is typically to define the significant impact receptors for the project. These are the receptors from the SIL analysis at which the impacts from the project were determined to exceed the SIL. Although there is an SO_2 additional source to consider for NAAQS modeling, the entire SIL grid was used for all Increment and NAAQS modeling for all pollutants to simplify review.

EGLE was contacted to determine which additional sources should be considered in the Increment and NAAQS analyses, as well as appropriate background concentrations to be used in the model. EGLE determined that there was one additional SO_2 source that needed to be included for the analysis. The additional source determination and background data provided by EGLE are presented in Appendix 3.

The model was run for the proposed maximum emission rate for each pollutant from the baghouse; therefore, the model PAI is equal to the actual PAI in µg/m³. The results of the Increment and NAAQS analyses are presented in Tables 9 and 10, respectively. Compliance with Increment and NAAQS are demonstrated. The electronic model input/output files are provided in Appendix 4 (of the original EGLE application only).

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[2] https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf

6.3 Air Toxics Modeling Demonstration

In Rule 225 (R 336.1225) of the Air Pollution Control Commission General Rules, EGLE requires that the ambient impact of the TACs released from a rule-subject source be estimated and compared to established air quality standards. To estimate the ambient air concentrations, each contaminant concentration is calculated at the stack, assuming peak loading conditions. The contaminant loading from the stack is then subjected to air dispersion modeling to simulate the effect of local meteorological conditions. The ambient concentration at hypothetical ground level receptors is then calculated and compared to the air quality screening levels as developed by EGLE.

6.3.1 Model Input Parameters

Model input is addressed in Section 6.1.3.

6.3.2 Results of TAC Modeling Analysis

The input parameter emission rate was 1 lb/hr; therefore, the model output is in units of µg/m³ per lb/hr. To estimate the actual PAI, the model PAI was multiplied by the maximum emission rate in lb/hr. The unitized model results are included as Table 11. A flash drive containing the electronic model input/output files is provided in Appendix 4 (of the original EGLE version only).

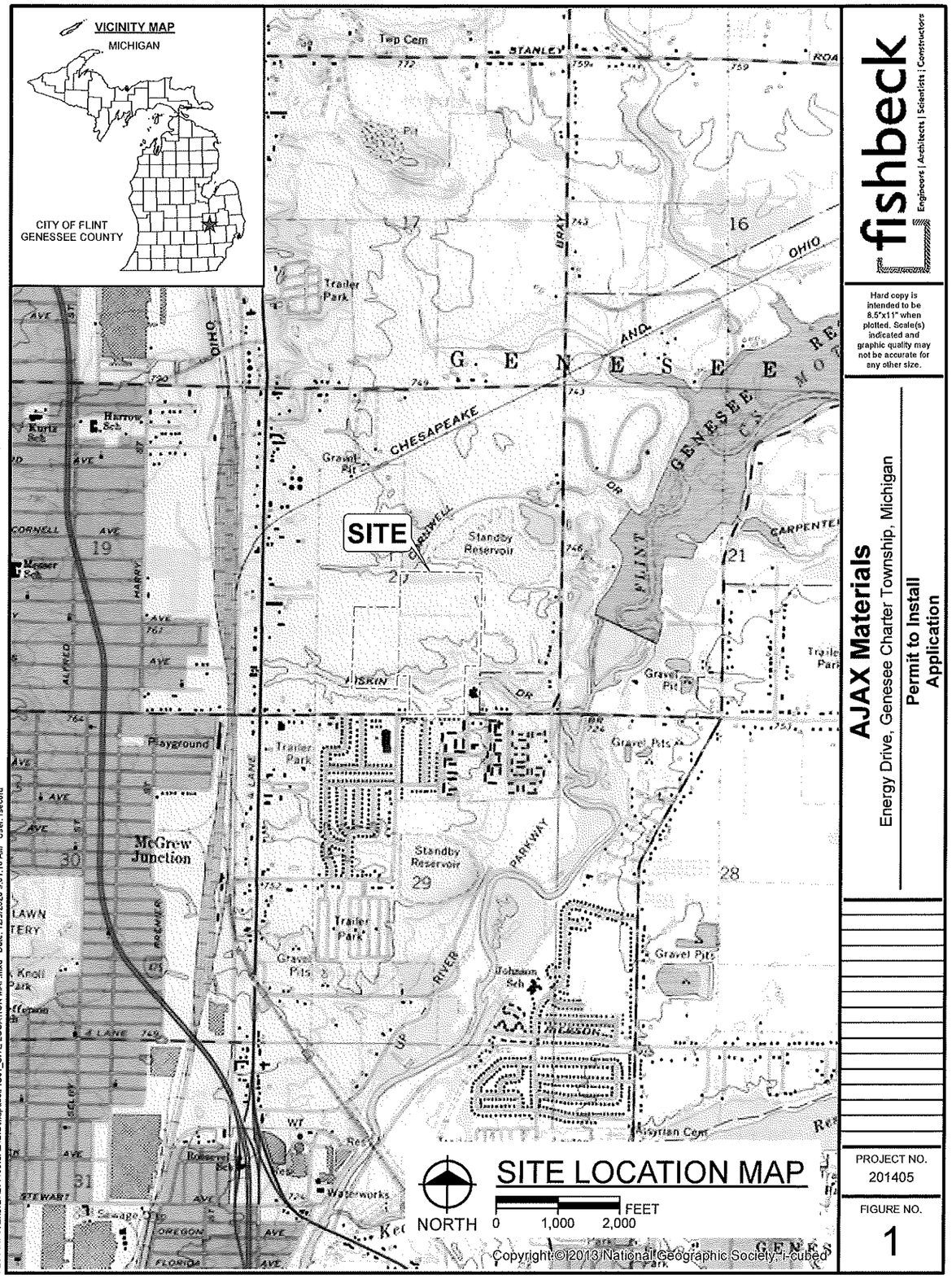
The actual PAI in µg/m³ is then compared to the screening level. For the polycyclic aromatic hydrocarbons designated by Footnote 5 on the screening level list, the emission rate was multiplied by the relative potency factors as described in an MDEQ memorandum dated February 7, 2017. As indicated in Table 12 the PAIs for all TACs are below the applicable air quality screening levels obtained from the EGLE-AQD *List of Screening Levels*.

7.0 Summary and Conclusion

Ajax manufactures HMA. The proposed plant identified in this permit will be located on Energy Drive, in Genesee Charter Township, Michigan. Ajax is requesting to construct a new HMA plant including the installation of a 500 tph counter-flow drum mixer, a 100,000 cfm rated baghouse, RAP and feed bins, eight storage silos, and six asphalt cement tanks with a small natural gas heater. To support the proposed construction, this application incudes an analysis of state and federal air regulatory requirements applicable to the requested installations as well as the demonstration of how the plant will comply with those applicable requirements.

Michigan Rule 702 requires the application of BACT for new sources of VOCs. BACT was demonstrated for the Ajax facility.

Air toxic dispersion modeling estimated the ambient impact of a variety of HAPs and TACs predicted to be emitted from an HMA plant. The calculated maximum concentrations were compared to the ITSLs provided by EGLE-AQD. A comparison indicated that Ajax's proposed HMA plant complies with the current Michigan air toxic regulations.



fishbeck
Engineers | Architects | Scientists | Constructors

Hard copy is intended to be 8.5"x11" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

AJAX Materials

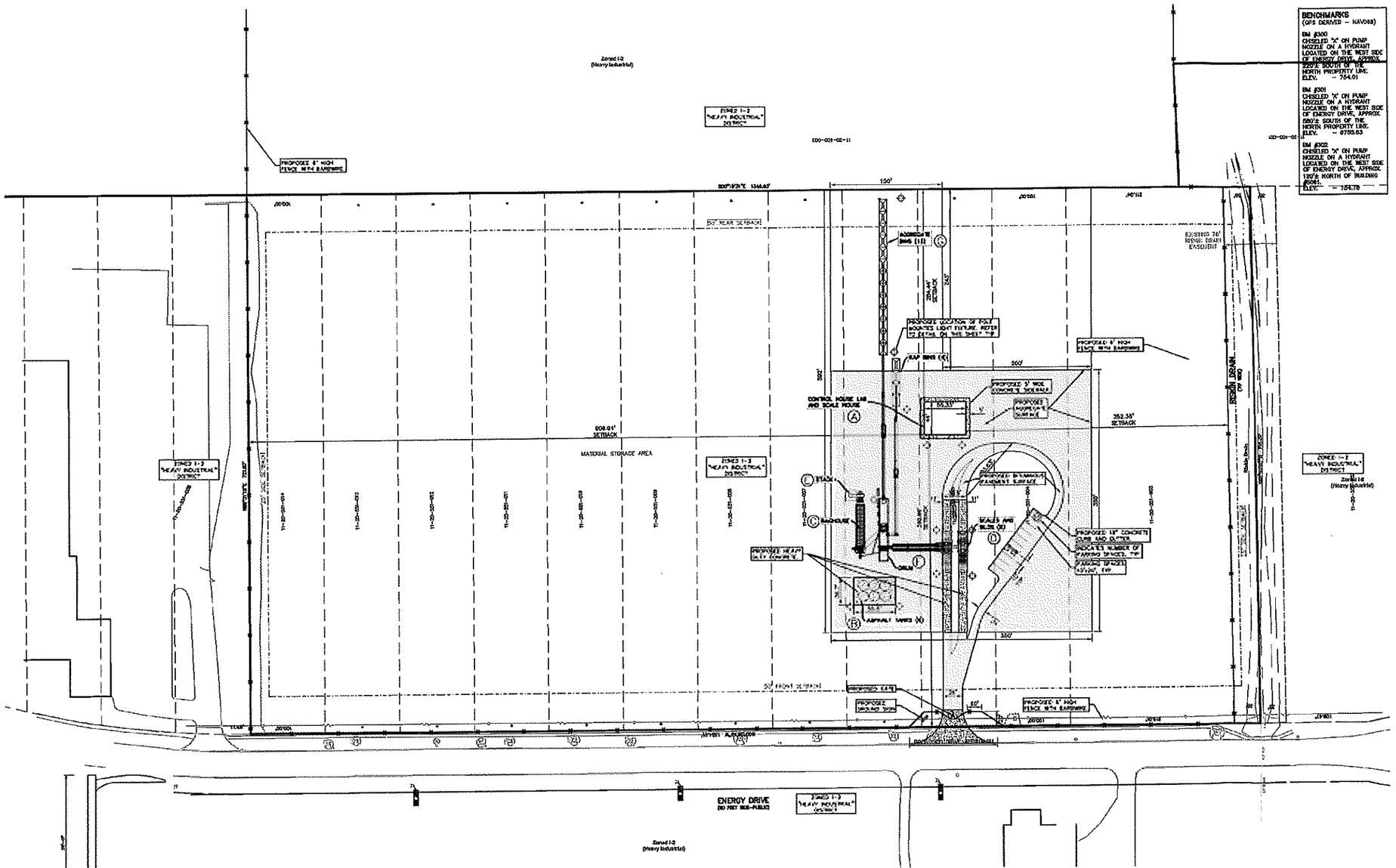
Energy Drive, Genesee Charter Township, Michigan

Permit to Install Application

PROJECT NO.
201405

FIGURE NO.
1

PLOT INFO: Z:\2020\201405\CAD\GIS\mapdocFIG01_SITE LOCATION MAP.mxd Date: 12/9/2020 9:01:10 AM User: rsecord



STRUCTURE HEIGHT TABLE:		
LABEL	STRUCTURE	HEIGHT
A	CONTROL HOUSE LAB AND SCALE HOUSE	24'
B	ASPHALT TANKS	40'
C	BAGHOUSE	31'
D	SCALES AND SILOS	69' ±
E	STACK	80' ±
F	DRUM	23'
G	AGGREGATE BINS	18'

* VARIANCE REQUIRED

GENERAL NOTES:

1. ALL STORM WATER GENERATED FROM SITE DEVELOPMENT WILL BE CONTROLLED, TREATED AND DETAINED ON-SITE.
2. SITE IS SERVED BY EXISTING 10" DIAMETER SANITARY SEWER LOCATED ALONG ENERGY DRIVE.
3. SITE IS SERVED BY EXISTING 12" DIAMETER PUBLIC WATER MAIN LOCATED ALONG ENERGY DRIVE.
4. PROPERTY OWNER IS PROPOSING TO INSTALL A NON-POTABLE WATER WELL FOR ON-SITE DUST SUPPRESSION AND TO FILL WATER TRUCKS FOR PAVING CREWS.

SITE DATA TABLE:

SITE AREA: 86.4 ACRES (3,765,338 SF)
DEVELOPMENT AREA = 29.72 ACRES (1,294,140 SF)

CURRENT ZONING: I-2 (HEAVY INDUSTRIAL)

BUILDING INFORMATION:
MAXIMUM ALLOWABLE BUILDING HEIGHT = 40' (3 STORIES)
PROPOSED BUILDING HEIGHT = SEE "BUILDING HEIGHTS" TABLE (THIS SHEET)

BUILDING FOOTPRINT AREA = 2,435 SF.

BUILDING LOT COVERAGE = 0.094% (2,435/SF)

SETBACK REQUIREMENTS:	REQUIRED:	PROPOSED:
FRONT (WEST)	50'	350.58'
SIDE (NORTH)	25'	867.83'
SIDE (SOUTH)	25'	334.48'
REAR (EAST)	50'	254.44'

PARKING REQUIREMENTS:
I-2 (HEAVY INDUSTRIAL)

1 SPACE PER 1.5 EMPLOYEES = 6 EMPLOYEES = 9 SPACES
1 SPACE PER 550 SF OF USEABLE BUILDING SPACE = 3061 SF/550 SF = 6 SPACES

TOTAL PROPOSED PARKING SPACES = 10 SPACES

OPEN SPACE: (BASED UPON DEVELOPMENT AREA)

MINIMUM OPEN SPACE REQUIRED = 20%
REQUIRED OPEN SPACE = 1,294,140 SF X 0.20 = 258,828 SF
PROVIDED OPEN SPACE = 755,661 SF

A MINIMUM OF 33% OF REQUIRED OPEN SPACE SHALL BE LOCATED BETWEEN THE FRONT BUILDING LINE AND R.O.W.

33% OF 258,828 SF. = 85,413 SF. (NEEDS TO BE LOCATED IN FRONT YARD ALONG ENERGY DRIVE); PROVIDED 86,680 SF

NOT FOR CONSTRUCTION

DRAWING ADAPTED FROM FIGURE PROVIDED BY PEA GROUP
DECEMBER 2, 2020

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Engineers | Architects | Scientists | Constructors

AJAX Materials

Energy Drive, Genesee Charter Township, Michigan

Permit to Install
Application

REVISIONS

NOT FOR CONSTRUCTION

Drawn By
Designer
Reviewer
Manager

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.
201405

SHEET NO.

Table 1 – Project Emission Summary
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Pollutant	HMA Dryer Emissions (tpy)	AC Tank Heater Emissions (tpy)	Significant Emission Rate	% of SER	Exceeds SER?	PSD Major Source Threshold	Exceeds Major Source Threshold
CO	89.2	0.7	*100*	89.9%	No	*250*	No
NO_X	53.3	0.9	*40*	135%	Yes	*250*	No
PM	16.2	0.0	*25*	65%	No	*250*	No
PM_{10}	29.5	0.1	*15*	197%	Yes	*250*	No
$PM_{2.5}$	29.5	0.1	*10*	295%	Yes	*250*	No
SO_2	79.0	0.0	*40*	198%	Yes	*250*	No
VOC	28.4	0.0	*40*	71%	No	*250*	No
CO_2	21,967	1,024.7	*See CO2e*				
CH_4	8.0	0.0					
N_2O	--	0.0					
CO_2e	22,167	1,025.8	*75,000*	31%	No	NA	NA
Lead	0.01	0.0	*0.6*	2%	No	NA	NA
Fluorides	--	--	*3.0*	0.0	Yes	NA	NA
H_2S	--	--	*10.0*	0.0	Yes	NA	NA
H_2SO_4	1.4	--	*7*	20%	No	NA	NA
Highest Single HAP (HCl)	3.3	0.0	*NA*	NA	NA	NA	No
Aggregate HAPs*	22.5	0.0	*NA*	NA	NA	NA	No

*Will limit single HAPs to 8.9 tpy, and aggregate HAPs to 22.5 tpy.

Table 2 - HMA Counter-flow Drum Dryer NSR Regulated Pollutant Estimated Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Maximum Short Term Production	tons HMA/hr	500
Annual Production Limit	tons HMA/yr	887,562
Types of Fuel Permitted	Natural Gas, Propane , Fuel Oil 2-6, RUO	
Density of Fuel Oil (avg)	lb/gal	7.4
Fuel Oil/RUO Sulfur Content	% by weight	1.0

NSR Regulated Pollutant	Emission Factor (see notes)	Notes	Maximum Short Term Emissions (lb/hr)	Annual Emissions (tpy)
CO	0.201 lb/ton HMA	1	100.5	89.2
NO_X	0.12 lb/ton HMA	1	60.0	53.3
PM	0.04 lb/ton HMA	3	18.2	16.2
PM_{10}	0.07 lb/ton HMA	3	33.2	29.5
$PM_{2.5}$	0.07 lb/ton HMA	3	33.2	29.5
SO_2	0.18 lb/ton HMA	2	89.1	79.0
VOC	6.4E-02 lb/ton HMA	4	32.0	28.4
CO_2	49.5 lb/ton HMA	5	24,750	21,967
CH_4	1.8E-02 lb/ton HMA	5	9.0	8.0
N_2O	-- --		--	--
CO_2e	49.95 lb/ton HMA	6	24,975	22,167
Lead	3.0E-05 lb/ton HMA	7	0.02	0.01
Fluorides	-- --		--	--
H_2S	-- --		--	--
H_2SO_4	3.2E-03 lb/ton HMA	8	1.6	1.4

[1] Emission factor is from the MDEQ Emission Factor Calculation Fact Sheet for HMA Plants waste oil asphalt heaters (3-05-002-10) for CO; and batch plant factor (3-05-002-46) for NOX.
[2]Emission factor is based on RUO sulfur content of 1% and a 43% control for SO2 from RAP - See SO2/RAP calculation methodology below
[3] PM emissions are based on NSPS emission limit of 0.4 grains/DSCF. See Appendix 2 for particulate emission calculation data. PM10 and PM2.5 emissions are based on PM emissions plus AP-42 condensible emissions, plus H2SO4 and HCL emissions, which are assumed to form condensible PM.
[4]VOC emission factor from AP-42, Section 11.1, Table 11.1-8 for waste oil fired dryer, plus a 100% safety factor.
[5]Emission factor is from EPA Webfire emission factor for #6 oil-fired counterflow drum mix plant (3-05-002-63); plus a 50% safety factor
[6] CO_2e emision factor based on global warming potentials for CO2 (1), CH4 (25) and N2O (298) obtained from 40 CFR 98 Subparts A and C, respectively.
[7]Lead emission factor is based on maximum ppm allowed in RUO (100 ppm) and 98% control for baghouse, as follows:
7.4 lb/gal * 100 ppm/1e6 X 2 gal oil/ton HMA X (1-.98)
[8]AQD Default Allowable Emission Rate from June 2012 "Eliminating the Mandatory Testing Requirement for Toxic Air Contaminants for Hot Mix Asphalt Plants in Michigan"

Table 2 - HMA Counter-flow Drum Dryer NSR Regulated Pollutant Estimated Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Emission Calculation Methods

PM

See particulate emission calculation methodology. Particulate is assumed to be less than 10 microns in diameter.

SO_2 (RAP)

Design Capacity Emissions (lb/hr) = [Design Material Usage (ton of HMA/hr) x Unit Fuel Consumption (gal/ton) x Fuel Density (lb/gal) x (Sulfur Content (% by Weight)/100) x 64 (lb SO_2)/32 (lb S)] x (1 - (43 (% SO_2 control for RAP)/100))
Potential Emissions (lb/hr) = [Permit Limit Material Usage (ton of HMA/hr) x Unit Fuel Consumption (gal/ton) x Fuel Density (lb/gal) x (Sulfur Content (% by Weight)/100) x 64 (lb SO_2)/32 (lb S)/((1/2000) (lb/ton))] x (1 - (43 (% SO_2 control for RAP)/100))
Expected Emissions (lb/hr) = [Expected Material Usage (ton of HMA/hr) x Unit Fuel Consumption (gal/ton) x Fuel Density (lb/gal) x (Sulfur Content (% by Weight)/100) x 64 (lb SO_2)/32 (lb S)/((1/2000) (lb/ton))] x (1 - (43 (% SO_2 control for RAP)/100))

NO_x, CO, VOC

Design Capacity Emissions (lb/hr) = Design Material Usage (ton of HMA/hr) x Emission Factor (lb/ton)
Potential Emissions (ton/yr) = Permit Limit Material Usage (ton of HMA/yr) x Emission Factor (lb/ton) x 1/2000 (ton/lb)
Expected Emissions (ton/yr) = Expected Material Usage (ton of HMA/yr) x Emission Factor (lb/ton) x 1/2000 (ton/lb)

CO_2e

CO_2e (lb/hr) = CO_2 (lb/hr) x 1 + CH_4 (lb/hr) x 25 + N_2O (lb/hr) x 298

E_{ST} = *Maximum Short Term HMA Production (ton HMA/hr) X EF*
$E_A = E_F$ *X Annual Production Limit (ton HMA/yr) / 2,000 lb/ton*
where:

E_{ST} = *Short Term Emissions (lb/hr);*
E_A = *Annual Emissions (tpy);*
EF = emission factor (lb/ton HMA)

Table 3 - HMA Counter-flow Drum Dryer TAC Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Material Usage	tons/hr	500
Annual Production Limit	tons HMA/yr	887,562

Toxic Air Contaminant	CAS No.	Emission Factor (see notes)	Note	Maximum Short Term Emissions (lb/hr)	Annual Emissions (tpy)	HAP?
Ethylbenzene	100-41-4	1.0E-03 lb/ton HMA	1	5.00E-01	0.44	Yes
Benzaldehyde	100-52-7	2.2E-04 lb/ton HMA	5	1.10E-01	0.10	No
Quinone	106-51-4	3.5E-04 lb/ton HMA	3	1.76E-01	0.16	Yes
n-Butane	106-97-8	1.3E-03 lb/ton HMA	5	6.70E-01	0.59	No
Acrolein	107-02-8	1.0E-03 lb/ton HMA	1	5.00E-01	0.44	Yes
Toluene	108-88-3	6.0E-03 lb/ton HMA	1	3.00E+00	2.66	Yes
N-Pentane	109-66-0	4.2E-04 lb/ton HMA	5	2.10E-01	0.19	No
1-Pentene	109-67-1	4.4E-03 lb/ton HMA	5	2.20E+00	1.95	No
N-Hexane	110-54-3	2.0E-03 lb/ton HMA	3	1.01E+00	0.90	Yes
Valeraldehyde	110-62-3	1.3E-04 lb/ton HMA	5	6.70E-02	0.06	No
Anthracene	120-12-7	6.8E-06 lb/ton HMA	3	3.41E-03	3.03E-03	Yes
Propionaldehyde	123-38-6	2.9E-04 lb/ton HMA	3	1.43E-01	0.13	Yes
Butyraldehyde	123-72-8	3.2E-04 lb/ton HMA	5	1.60E-01	0.14	No
Pyrene	129-00-0	6.6E-06 lb/ton HMA	3	3.30E-03	0.00	Yes
Isomers of xylene	1330-20-7	1.0E-03 lb/ton HMA	1	5.00E-01	0.44	Yes
Heptane	142-82-5	1.9E-02 lb/ton HMA	5	9.40E+00	8.34	No
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	4.6E-13 lb/ton HMA	3	2.31E-10	2.05E-10	Yes
Chromium (VI)	18540-29-9	3.0E-06 lb/ton HMA	2	1.50E-03	1.33E-03	Yes
Benzo (g,h,i) perylene	191-24-2	8.8E-08 lb/ton HMA	3	4.40E-05	3.91E-05	Yes
Benzo (e) pyrene	192-97-2	2.4E-07 lb/ton HMA	3	1.21E-04	1.07E-04	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	1.5E-08 lb/ton HMA	3	7.70E-06	6.83E-06	Yes
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	2.2E-12 lb/ton HMA	3	1.08E-09	9.57E-10	Yes
Perylene	198-55-0	1.9E-08 lb/ton HMA	3	9.68E-06	8.59E-06	Yes
Benzo (b) fluoranthene	205-99-2	2.2E-07 lb/ton HMA	3	1.10E-04	9.76E-05	Yes
Fluoranthene	206-44-0	1.3E-06 lb/ton HMA	3	6.71E-04	0.00	Yes
Benzo (k) fluoranthene	207-08-9	9.0E-08 lb/ton HMA	3	4.51E-05	4.00E-05	Yes
Acenaphthylene	208-96-8	4.8E-05 lb/ton HMA	3	2.42E-02	0.02	Yes
Chrysene	218-01-9	4.0E-07 lb/ton HMA	3	1.98E-04	1.76E-04	Yes

Table 3 - HMA Counter-flow Drum Dryer TAC Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Material Usage	tons/hr	500
Annual Production Limit	tons HMA/yr	887,562

Toxic Air Contaminant	CAS No.	Emission Factor (see notes)	Note	Maximum Short Term Emissions (lb/hr)	Annual Emissions (tpy)	HAP?
Octachlorodibenzo-p-dioxins, total	3268-87-9	5.9E-09 lb/ton HMA	3	2.97E-06	2.64E-06	Yes
Hexachlorodibenzo-p-dioxins, total	34465-46-8	1.2E-11 lb/ton HMA	3	5.94E-09	5.27E-09	Yes
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	7.5E-11 lb/ton HMA	3	3.74E-08	3.32E-08	Yes
Octachlorodibenzofurans, total	39001-02-0	1.1E-11 lb/ton HMA	3	5.28E-09	4.69E-09	Yes
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	9.2E-13 lb/ton HMA	3	4.62E-10	4.10E-10	Yes
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	6.8E-13 lb/ton HMA	3	3.41E-10	3.03E-10	Yes
2-Butenal	4170-30-3	1.7E-04 lb/ton HMA	5	8.60E-02	0.08	No
Formaldehyde	50-00-0	1.0E-02 lb/ton HMA	1	5.00E+00	4.44	Yes
Benzo (a) pyrene	50-32-8	2.2E-08 lb/ton HMA	3	1.08E-05	9.57E-06	Yes
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	2.1E-12 lb/ton HMA	3	1.07E-09	9.47E-10	Yes
2-Methyl-2-butene	513-35-9	1.2E-03 lb/ton HMA	5	5.80E-01	0.51	No
2,2,4-Trimethylpentane	540-84-1	8.8E-05 lb/ton HMA	3	4.40E-02	0.04	Yes
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	5.9E-12 lb/ton HMA	3	2.97E-09	2.64E-09	Yes
Benzo (a) anthracene	56-55-3	4.6E-07 lb/ton HMA	3	2.31E-04	2.05E-04	Yes
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	1.8E-12 lb/ton HMA	3	9.24E-10	8.20E-10	Yes
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	9.5E-12 lb/ton HMA	3	4.73E-09	4.20E-09	Yes
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	2.6E-12 lb/ton HMA	3	1.32E-09	1.17E-09	Yes
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	2.9E-12 lb/ton HMA	3	1.43E-09	1.27E-09	Yes
Isovaleraldehyde	590-86-3	6.4E-05 lb/ton HMA	5	3.20E-02	0.03	No
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	3.5E-12 lb/ton HMA	3	1.76E-09	1.56E-09	Yes
Hexanal	66-25-1	2.2E-04 lb/ton HMA	5	1.10E-01	0.10	No
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	2.4E-11 lb/ton HMA	3	1.21E-08	1.07E-08	Yes
Acetone	67-64-1	1.7E-03 lb/ton HMA	5	8.30E-01	0.74	No
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	1.2E-11 lb/ton HMA	3	5.94E-09	5.27E-09	Yes
Benzene	71-43-2	1.0E-03 lb/ton HMA	1	5.00E-01	0.44	Yes
1,1,1-Trichloroethane	71-55-6	1.1E-04 lb/ton HMA	3	5.28E-02	0.05	Yes
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	1.8E-11 lb/ton HMA	3	9.24E-09	8.20E-09	Yes
Manganese	7439-96-5	5.0E-05 lb/ton HMA	1	2.50E-02	0.02	Yes

Table 3 - HMA Counter-flow Drum Dryer TAC Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Material Usage	tons/hr	500
Annual Production Limit	tons HMA/yr	887,562

Toxic Air Contaminant	CAS No.	Emission Factor (see notes)	Note	Maximum Short Term Emissions (lb/hr)	Annual Emissions (tpy)	HAP?
Mercury	7439-97-6	1.0E-06 lb/ton HMA	8	5.20E-04	4.62E-04	Yes
Nickel	7440-02-0	1.0E-04 lb/ton HMA	1	5.00E-02	0.04	Yes
Silver	7440-22-4	1.9E-06 lb/ton HMA	9	9.60E-04	8.52E-04	No
Thallium	7440-28-0	8.8E-06 lb/ton HMA	6	4.40E-03	3.91E-03	No
Antimony	7440-36-0	7.2E-07 lb/ton HMA	8	3.60E-04	3.20E-04	Yes
Arsenic	7440-38-2	3.0E-06 lb/ton HMA	2	1.50E-03	0.00	Yes
Barium	7440-39-3	1.0E-03 lb/ton HMA	6	5.00E-01	0.44	No
Beryllium	7440-41-7	0.0E+00 lb/ton HMA	8	0.00E+00	0.00	Yes
Cadmium	7440-43-9	1.0E-06 lb/ton HMA	2	5.00E-04	0.00	Yes
Chromium	7440-47-3	3.0E-06 lb/ton HMA	2	1.50E-03	0.00	Yes
Cobalt	7440-48-4	6.0E-05 lb/ton HMA	7	3.00E-02	0.03	Yes
Copper	7440-50-8	6.8E-04 lb/ton HMA	6	3.40E-01	0.30	No
Zinc	7440-66-6	7.2E-04 lb/ton HMA	6	3.60E-01	0.32	No
Ethylene	74-85-1	1.4E-02 lb/ton HMA	5	7.00E+00	6.21	No
Acetaldehyde	75-07-0	2.9E-03 lb/ton HMA	3	1.43E+00	1.27	Yes
2-Methyl-1-pentene	763-29-1	8.0E-03 lb/ton HMA	5	4.00E+00	3.55	No
Hydrogen chloride	7647-01-0	7.4E-03 lb/ton HMA	10	3.71E+00	3.29	Yes
Phosphorus (yellow or white)	7723-14-0	4.8E-03 lb/ton HMA	7	2.40E+00	2.13	Yes
Selenium	7782-49-2	9.6E-06 lb/ton HMA	7	4.80E-03	0.00	Yes
Methyl ethyl ketone	78-93-3	4.0E-05 lb/ton HMA	5	2.00E-02	0.02	No
Acenaphthene	83-32-9	3.1E-06 lb/ton HMA	3	1.54E-03	0.00	Yes
Phenanthrene	85-01-8	5.1E-05 lb/ton HMA	3	2.53E-02	0.02	Yes
Fluorene	86-73-7	2.4E-05 lb/ton HMA	3	1.21E-02	0.01	Yes
Naphthalene	91-20-3	1.0E-03 lb/ton HMA	1	5.00E-01	0.44	Yes
2-Methyl Naphthalene	91-57-6	3.7E-04 lb/ton HMA	3	1.87E-01	0.17	Yes
3-Methylpentane	96-14-0	4.2E-04 lb/ton HMA	5	2.09E-01	0.19	No
Heptachlorodibenzofurans, total		8.4E-11 lb/ton HMA	5	4.18E-08	3.71E-08	Yes
Heptachlorodibenzo-p-dioxins, total		1.6E-10 lb/ton HMA	5	7.81E-08	6.93E-08	Yes

Table 3 - HMA Counter-flow Drum Dryer TAC Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Material Usage	tons/hr	500
Annual Production Limit	tons HMA/yr	887,562

Toxic Air Contaminant	CAS No.	Emission Factor (see notes)	Note	Maximum Short Term Emissions (lb/hr)	Annual Emissions (tpy)	HAP?
Hexachlorodibenzofurans, total		1.8E-11 lb/ton HMA	5	8.91E-09	7.91E-09	Yes
Pentachlorodibenzofurans, total		1.6E-10 lb/ton HMA	5	8.14E-08	7.22E-08	Yes
Pentachlorodibenzo-p-dioxins, total		4.8E-11 lb/ton HMA	5	2.42E-08	2.15E-08	Yes
Polychlorinated dibenzofurans, total		3.3E-10 lb/ton HMA	5	1.65E-07	1.46E-07	Yes
Polychlorinated dibenzo-p-dioxins and furans, total		6.6E-09 lb/ton HMA	5	3.30E-06	2.93E-06	Yes
Polychlorinated dibenzo-p-dioxins, total		6.2E-09 lb/ton HMA	5	3.08E-06	2.73E-06	Yes
Tetrachlorodibenzofurans, total		7.3E-11 lb/ton HMA	5	3.63E-08	3.22E-08	Yes
Tetrachlorodibenzo-p-dioxins, total		2.0E-12 lb/ton HMA	5	1.02E-09	9.08E-10	Yes

[1]Emission factor is AQD Default Allowable Emission Rate from June 2012 *Eliminating the Mandatory Testing Requirement for Toxic Air Contaminants for Hot Mix Asphalt Plants in*
[2] Emission factor is based on maximum ppm allowed in RUO and 98% control for baghouse, as follows: 7.4 lb/gal * 100 ppm/1e6 X 2 gal oil/ton HMA X (1-.98). Max ppm allowed for Arsenic is 5 ppm. Max ppm allowed for Cr is 10 ppm. Max ppm allowed for Cd is 2 ppm.
[3]Emission factor is based on #6 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-63); plus a Gaseous HAP safety factor of 2.2
[4]Emission factor is based on #2 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-60); plus a Gaseous HAP safety factor of 2.2
[5]Emission factor is based on #6 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-63); plus a Gaseous TAC safety factor of 2.0
[6]Emission factor is based on #2 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-60); plus a Metal TAC safety factor of 4
[7]Emission factor is based on #2 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-60); plus a Metal HAP safety factor of 4
[8]Emission factor is based on #6 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-63); plus a Metal HAP safety factor of 4
[9]Emission factor is based on #6 Oil-Fired Counterflow Drum Mix HMA Plant (3-05-002-63); plus a Metal TAC safety factor of 4
[10]Hydrochloric Acid pph emissions based on 1000 ppm Halogen RUO. Assumes all Halogens are Cl and are converted to HCl with a 61% capture in process. See emission factor calculations.

Emission Calculation Methods

E_{ST} = Maximum Short Term HMA Production (ton HMA/hr) X EF
$E_A = E_F$ X Annual Production Limit (ton HMA/yr) / 2,000 lb/ton
where:

E_{ST} = Short Term Emissions (lb/hr);
E_A = Annual Emissions (tpy);
EF = emission factor (lb/ton HMA)

Table 4 - Miscellaneous Combustion Equipment - NSR Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

		AC Tank Heater
Heat Input Capacity	MMBtu/hr	2.0
Heat Input Capacity	MMcf/hr	1.96E-03
Annual Operating Hours	hr/yr	8,760
Annual Heat Input Limit or Capacity	MMBtu/yr	17,520
Fuel Heat Value	MMBtu/MMcf	1,020

NSR Regulated Pollutant	Emission Factor (See Notes)	Notes	Maximum Short Term Emissions per Unit (lb/hr)	Annual Emissions (tpy)
CO	84 lb/MMCF	1	0.2	0.72
NO_X	100 lb/MMCF	1	0.2	0.86
PM	1.9 lb/MMCF	1	0.0	0.02
PM_{10}	7.6 lb/MMCF	1	0.0	0.07
$PM_{2.5}$	7.6 lb/MMCF	1	0.0	0.07
SO_2	0.6 lb/MMCF	1	0.0	0.01
VOC	5.5 lb/MMCF	1	0.0	0.05
CO_2	53.1 kg/MMBtu	2	234	1024.72
CH_4	1.0E-03 kg/MMBtu	2	0.0	0.02
N_2O	1.0E-04 kg/MMBtu	2	0.0	0.00
CO_2e	53.1 kg/MMBtu	2	234	1025.78
Lead	5.0E-04 lb/MMCF	3	9.80E-07	4.29E-06

[1] Emission factors are from Web-fire for SCC 1-02-006-03 for a Boiler with a heat input capacity of less than 10 MMBtu/hr.

[2] CO_2e global warming potential and emission factors obtained from 40 CFR 98 Subparts A and C, respectively. The global warming potential for CH_4 (25) and N_2O (298) are consistent with the USEPA published changes on November 29, 2013.

[3] Emission factors are from Web-fire for SCC 1-02-006-02 for a Boiler with a heat input capacity of greater than 10

Emission Calculation Methods

Using lb/MMCF Emission Factors

$E_{ST} = C_{MMCF} \times EF_{MMCF}$

Using kg/MMBtu Emission Factors

$E_{ST} = C_{HI} \times 2.20462\ lb/kg \times EF_{kg}$

$E_A = E_{ST} \times$ Annual Operating Hours / 2,000 lb/ton

where:

E_{ST} = Short Term Emissions (lb/hr);
E_A = Annual Maximum Emissions (tpy);
C_{MMCF} = Max Fuel Usage (MMCF/hr); and
EF_{MMCF} = emission factor (lb/MMCF)
C_{HI} = Heat Input Capacity (MMBtu/hr); and
EF_{kg} = emission factor (kg/MMBtu)

Table 5 - Miscellaneous Combustion Equipment - TAC Emissions

Air Permit to Install

Ajax Materials, Genesee Twp, Michigan

		AC Tank Heater
Heat Input Capacity	MMBtu/hr	2.0
Heat Input Capacity	MMcf/hr	1.96E-03
Annual Operating Hours	hr/yr	8,760
Annual Heat Input Limit or Capacity	MMBtu/yr	17,520
Fuel Heat Value	MMBtu/MMcf	1,020

Toxic Air Contaminant	CAS No.	Emission Factor (See Notes)		Notes	Maximum Short Term Emissions per Unit (lb/hr)	Annual Emissions (tpy)	HAP?
Formaldehyde	50-00-0	7.50E-02	lb/MMCF	1	1.47E-04	6.44E-04	Yes
Benzo (a) pyrene	50-32-8	1.20E-06	lb/MMCF	1	2.35E-09	1.03E-08	Yes
Dibenzo(a,h) anthracene	53-70-3	1.20E-06	lb/MMCF	1	2.35E-09	1.03E-08	Yes
3-Methylcholanthrene	56-49-5	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Benzo (a) anthracene	56-55-3	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Dimethylbenz(a)anthracene	57-97-6	1.60E-05	lb/MMCF	1	3.14E-08	1.37E-07	Yes
Benzene	71-43-2	2.10E-03	lb/MMCF	1	4.12E-06	1.80E-05	Yes
Acenaphthene	83-32-9	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Phenanthrene	85-01-8	1.70E-05	lb/MMCF	1	3.33E-08	1.46E-07	Yes
Fluorene	86-73-7	2.80E-06	lb/MMCF	1	5.49E-09	2.40E-08	Yes
Naphthalene	91-20-3	6.10E-04	lb/MMCF	1	1.20E-06	5.24E-06	Yes
2-Methyl Naphthalene	91-57-6	2.40E-05	lb/MMCF	1	4.71E-08	2.06E-07	Yes
Toluene	108-88-3	3.40E-03	lb/MMCF	1	6.67E-06	2.92E-05	Yes
N-Hexane	110-54-3	1.80E+00	lb/MMCF	1	3.53E-03	1.55E-02	Yes
Anthracene	120-12-7	2.40E-06	lb/MMCF	1	4.71E-09	2.06E-08	Yes
Pyrene	129-00-0	5.00E-06	lb/MMCF	1	9.80E-09	4.29E-08	Yes
Benzo (g,h,i) perylene	191-24-2	1.20E-06	lb/MMCF	1	2.35E-09	1.03E-08	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Benzo (b) fluoranthene	205-99-2	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Fluoranthene	206-44-0	3.00E-06	lb/MMCF	1	5.88E-09	2.58E-08	Yes
Benzo (k) fluoranthene	207-08-9	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Acenaphthylene	208-96-8	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Chrysene	218-01-9	1.80E-06	lb/MMCF	1	3.53E-09	1.55E-08	Yes
Manganese	7439-96-5	3.80E-04	lb/MMCF	1	7.45E-07	3.26E-06	Yes
Mercury	7439-97-6	2.60E-04	lb/MMCF	1	5.10E-07	2.23E-06	Yes
Molybdenum	7439-98-7	1.10E-03	lb/MMCF	1	2.16E-06	9.45E-06	No
Nickel	7440-02-0	2.10E-03	lb/MMCF	1	4.12E-06	1.80E-05	Yes
Arsenic	7440-38-2	2.00E-04	lb/MMCF	1	3.92E-07	1.72E-06	Yes
Barium	7440-39-3	4.40E-03	lb/MMCF	1	8.63E-06	3.78E-05	No

Table 5 - Miscellaneous Combustion Equipment - TAC Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

		AC Tank Heater
Heat Input Capacity	MMBtu/hr	2.0
Heat Input Capacity	MMcf/hr	1.96E-03
Annual Operating Hours	hr/yr	8,760
Annual Heat Input Limit or Capacity	MMBtu/yr	17,520
Fuel Heat Value	MMBtu/MMcf	1,020

Toxic Air Contaminant	CAS No.	Emission Factor (See Notes)		Notes	Maximum Short Term Emissions per Unit (lb/hr)	Annual Emissions (tpy)	HAP?
Beryllium	7440-41-7	1.20E-05	lb/MMCF	1	2.35E-08	1.03E-07	Yes
Cadmium	7440-43-9	1.10E-03	lb/MMCF	1	2.16E-06	9.45E-06	Yes
Chromium	7440-47-3	1.40E-03	lb/MMCF	1	2.75E-06	1.20E-05	Yes
Cobalt	7440-48-4	8.40E-05	lb/MMCF	1	1.65E-07	7.21E-07	Yes
Copper	7440-50-8	8.50E-04	lb/MMCF	1	1.67E-06	7.30E-06	No
Vanadium	7440-62-2	2.30E-03	lb/MMCF	1	4.51E-06	1.98E-05	No
Zinc	7440-66-6	2.90E-02	lb/MMCF	1	5.69E-05	2.49E-04	No
Ammonia	7664-41-7	3.20E+00	lb/MMCF	1	6.27E-03	2.75E-02	No
Selenium	7782-49-2	2.40E-05	lb/MMCF	1	4.71E-08	2.06E-07	Yes
Dichlorobenzene, mixed isomers	25321-22-6	1.20E-03	lb/MMCF	1	2.35E-06	1.03E-05	No
			Aggregate HAPs		3.70E-03	1.62E-02	

[1] Emission factors are from Web-fire for SCC 1-02-006-02 because no TAC factors are available for SCC 1-02-006-03.

Emission Calculation Methods
Using lb/MMCF Emission Factors
$E_{ST} = C_{MMCF} \times EF_{MMCF}$
$E_A = E_{ST} \times$ Annual Operating Hours / 2,000 lb/ton

where:
E_{ST} = Short Term Emissions (lb/hr);
E_A = Annual Maximum Emissions (tpy);
C_{MMCF} = Max Fuel Usage (MMCF/hr); and
EF_{MMCF} = emission factor (lb/MMCF)

Table 6 – Structure Heights

Air Permit to Install

Ajax Materials, Genesee Twp, Michigan

Structure ID in Model	Height (ft)
CTRL_BLD	24
AC_Tank1	40
AC_Tank2	40
AC_Tank3	40
AC_Tank4	40
AC_Tank5	40
AC_Tank6	40
RUO_Tank	40

Note: This table represents the structures for which the stack is located within the downwash area of the structure ("5L"). Other equipment onsite is elevated and does not obstruct air flow; elevated equipment was not included in the model.

Refer to the model for identification of each structure.

Table 7 – Model Input Parameters
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Source	Model Name	Discharge Type	NAD 83 UTM Coordinates (m)		Base Elevation (feet)	Stack Height (feet)	Exhaust Temperature (°F)	Exhaust Flow Rate (acfm)	Exit Velocity (fps)	Stack Diameter (inches)	NO_x Emission Rate (lbs/hr)	PM_{10} Emission Rate (lbs/hr)	$PM_{2.5}$ Emission Rate (lbs/hr)	SO_2 Emission Rate (lbs/hr)
			Easting	Northing										
HMA Counterflow Drum Dryer	STACK	DEFAULT	282,851	4,772,991	752.1	80	300	100,000	66.1	68	60.0	33.2	33.2	89.1

NA Not Applicable

Table 8 – SIL Model Results Summary
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Pollutant	Maximum Predicted Impacts (2019) ($\mu g/m^3$)	SIL ($\mu g/m^3$)	SIL Averaging Period	Exceeds SIL
NO_2	42.66	7.5	1-hr	Yes
NO_2	1.07	1	Annual	Yes
PM_{10}	7.30	5	24-hr	Yes
PM_{10}	0.59	1	Annual	No
PM_{25}	7.30	1.2	24-hr	Yes
PM_{25}	0.59	0.2	Annual	Yes
SO_2	84.40	7.8	1-hr	Yes
SO_2	68.54	25	3-hr	Yes
SO_2	26.11	5	24-hr	Yes
SO_2	2.11	1	Annual	Yes

Note: The impact for 1-hour NO_2 represents Tier 1, where 100% of NO_x is conservatively assumed to be NO_2.

Table 9 – Increment Model Results Summary

Air Permit to Install

Ajax Materials, Genesee Twp, Michigan

Pollutant	Maximum Predicted Impacts (2019) ($\mu g/m^3$)	Increment ($\mu g/m^3$)	Increment Averaging Period	Exceeds Increment
NO_2	1.07	25	Annual	No
PM_{10}	7.30	30	24-hr	No
PM_{25}	7.30	9	24-hr	No
PM_{25}	0.59	4	Annual	No
SO_2	68.54	512	3-hr	No
SO_2	26.11	91	24-hr	No
SO_2	2.11	20	Annual	No

Note: The impact for 1-hour NO_2 represents Tier 1, where 100% of NO_x is conservatively assumed to be NO_2.

Table 10 – NAAQS Model Results Summary
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Pollutant	Maximum Predicted Impacts (2019) ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Combined Impact ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	NAAQS Averaging Period	Exceeds NAAQS
NO_2	42.66	69.2	111.84	188	1-hr	No
NO_2	1.07	12.2	13.27	100	Annual	No
PM_{10}	7.30	35.0	42.30	150	24-hr	No
PM_{25}	7.30	17.1	24.37	35	24-hr	No
PM_{25}	0.59	7.1	7.67	12	Annual	No
SO_2	84.40	10.7	95.14	196	1-hr	No
SO_2	68.55	10.2	78.76	1300	3-hr	No

Note: The impact for 1-hour NO_2 represents Tier 1, where 100% of NO_x is conservatively assumed to be NO_2.

Table 11 – Unitized Model Results

Air Permit to Install

Ajax Materials, Genesee Twp, Michigan

Averaging Period	Model PAI ($\mu g/m^3$)(lb/hr)
Annual	0.01777
1-HR	0.71101
8-HR	0.46745
24-HR	0.21994

The impacts presented in this table represent the unitized impact from each TAC emission source modeled at 1 lb/hr.

Table 12 - Predicted Ambient Impacts
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Toxic Air Contaminant	CAS No.	Emissions (lb/hr)	Model Results ($\mu g/m^3$)/(lb/hr)	PAI ($\mu g/m^3$)	Screening Level ($\mu g/m^3$)	Averaging Period ($\mu g/m^3$)	Basis	Percent of Screening Level	Pass/Fail	FootNote
Ethylbenzene	100-41-4	0.50	0.220	1.10E-01	1000	24 hr	ITSL	0.0%	PASS	-
			0.018	8.89E-03	0.4	annual	IRSL	2.2%	PASS	
Benzaldehyde	100-52-7	0.11	0.018	1.95E-03	0.4	annual	IRSL	0.5%	PASS	-
Quinone	106-51-4	0.18	0.467	8.23E-02	4.4	8 hr	ITSL	1.9%	PASS	-
n-Butane	106-97-8	0.67	0.467	3.13E-01	23800	8 hr	ITSL	0.0%	PASS	22
Acrolein	107-02-8	0.50	0.018	8.89E-03	0.16	annual	ITSL	5.6%	PASS	13
			0.711	3.56E-01	5	1 hr	2nd ITSL	7.1%	PASS	
Toluene	108-88-3	3.00	0.220	6.60E-01	5000	24 hr	ITSL	0.0%	PASS	-
N-Pentane	109-66-0	0.21	0.467	9.82E-02	17700	8 hr	ITSL	0.0%	PASS	-
N-Hexane	110-54-3	1.01	0.018	1.80E-02	700	annual	ITSL	0.0%	PASS	-
Valeraldehyde	110-62-3	0.07	0.467	3.13E-02	1760	8 hr	ITSL	0.0%	PASS	-
Anthracene	120-12-7	3.41E-03	0.018	6.06E-05	1000	annual	ITSL	0.0%	PASS	-
Propionaldehyde	123-38-6	0.14	0.018	2.54E-03	8	annual	ITSL	0.0%	PASS	-
Butyraldehyde	123-72-8	0.16	0.018	2.84E-03	7	annual	ITSL	0.0%	PASS	-
Pyrene	129-00-0	3.30E-03	0.018	5.86E-05	100	annual	ITSL	0.0%	PASS	-
Isomers of xylene	1330-20-7	0.50	0.018	8.89E-03	390	annual	ITSL	0.0%	PASS	2
Heptane	142-82-5	9.40	0.467	4.39E+00	3500	8 hr	ITSL	0.1%	PASS	-
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	3.30E-06	0.018	5.86E-08	0.000002	annual	ITSL	2.9%	PASS	33, D
		6.69E-07	0.018	1.19E-08	0.000000023	annual	IRSL	51.7%	PASS	
Chromium (VI)	18540-29-9	1.50E-03	0.018	2.67E-05	0.1	annual	ITSL	0.0%	PASS	-
			0.018	2.67E-05	0.000083	annual	IRSL	32.1%	PASS	
Benzo (g,h,i) perylene	191-24-2	4.40E-05	0.018	7.82E-07	13	annual	ITSL	0.0%	PASS	-
Benzo (e) pyrene	192-97-2	1.21E-04	0.220	2.66E-05	0.002	24 hr	ITSL	1.3%		A
Perylene	198-55-0	9.68E-06	0.018	1.72E-07	13	annual	ITSL	0.0%	PASS	B
Fluoranthene	206-44-0	6.71E-04	0.018	1.19E-05	140	annual	ITSL	0.0%	PASS	-
Acenaphthylene	208-96-8	0.02	0.018	4.30E-04	35	annual	ITSL	0.0%	PASS	-
2-Butenal	4170-30-3	0.09	0.711	6.11E-02	9	1 hr	ITSL	0.7%	PASS	-
Formaldehyde	50-00-0	5.00	0.220	1.10E+00	30	24 hr	ITSL	3.7%	PASS	E
		1.02	0.018	1.82E-02	0.08	annual	IRSL	22.7%	PASS	
Benzo (a) pyrene	50-32-8	1.08E-05	0.220	2.37E-06	0.002	24 hr	ITSL	0.1%	PASS	5
			0.018	1.92E-07	0.001	annual	IRSL	0.0%	PASS	
2-Methyl-2-butene	513-35-9	0.58	0.018	1.03E-02	106	annual	ITSL	0.0%	PASS	-
2,2,4-Trimethylpentane	540-84-1	0.04	0.467	2.06E-02	3500	8 hr	ITSL	0.0%	PASS	1
Isovaleraldehyde	590-86-3	0.03	0.018	5.69E-04	800	annual	ITSL	0.0%	PASS	-
Hexanal	66-25-1	0.11	0.018	1.95E-03	2	annual	ITSL	0.1%	PASS	-
Acetone	67-64-1	0.83	0.467	3.88E-01	5900	8 hr	ITSL	0.0%	PASS	-
Benzene	71-43-2	0.50	0.018	8.89E-03	30	annual	ITSL	0.0%	PASS	-
			0.220	1.10E-01	30	24 hr	2nd ITSL	0.4%	PASS	
			0.018	8.89E-03	0.1	annual	IRSL	8.9%	PASS	
1,1,1-Trichloroethane	71-55-6	0.05	0.220	1.16E-02	6000	24 hr	ITSL	0.0%	PASS	-
Manganese	7439-96-5	0.03	0.018	4.44E-04	0.3	annual	ITSL	0.1%	PASS	29
Mercury	7439-97-6	5.20E-04	0.018	9.24E-06	0.3	annual	ITSL	0.0%	PASS	7
			0.220	1.14E-04	1	24 hr	2nd ITSL	0.0%	PASS	

Table 12 - Predicted Ambient Impacts
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Toxic Air Contaminant	CAS No.	Emissions (lb/hr)	Model Results ($\mu g/m^3$)/(lb/hr)	PAI ($\mu g/m^3$)	Screening Level ($\mu g/m^3$)	Averaging Period ($\mu g/m^3$)	Basis	Percent of Screening Level	Pass/Fail	FootNote
Nickel	7440-02-0	0.05	0.018	8.89E-04	0.006	annual	IRSL	14.8%	PASS	-
Silver	7440-22-4	9.60E-04	0.467	4.49E-04	0.1	8 hr	ITSL	0.4%	PASS	-
Thallium	7440-28-0	4.40E-03	0.018	7.82E-05	0.1	annual	ITSL	0.1%	PASS	-
			0.467	2.06E-03	0.2	8 hr	2nd ITSL	1.0%	PASS	
Antimony	7440-36-0	3.60E-04	0.018	6.40E-06	0.2	annual	ITSL	0.0%	PASS	-
Arsenic	7440-38-2	1.50E-03	0.018	2.67E-05	0.0002	annual	IRSL	13.3%	PASS	-
Barium	7440-39-3	0.50	0.467	2.34E-01	5	8 hr	ITSL	4.7%	PASS	35
Beryllium	7440-41-7	-	0.220	0.00E+00	0.02	24 hr	ITSL	0.0%	PASS	-
			0.018	0.00E+00	0.0004	annual	IRSL	0.0%	PASS	
Cadmium	7440-43-9	5.00E-04	0.018	8.89E-06	0.0006	annual	IRSL	1.5%	PASS	-
Chromium	7440-47-3	1.50E-03	0.018	2.67E-05	0.5	annual	ITSL	0.0%	PASS	-
Cobalt	7440-48-4	0.03	0.467	1.40E-02	0.2	8 hr	ITSL	7.0%	PASS	42
		6.08E-03	0.018	1.08E-04	0.00013	annual	IRSL	83.1%	PASS	
Copper	7440-50-8	0.34	0.467	1.59E-01	2	8 hr	ITSL	7.9%	PASS	-
Zinc	7440-66-6	0.36	0.467	1.68E-01	20	8 hr	ITSL	0.8%	PASS	C
Ethylene	74-85-1	7.00	0.018	1.24E-01	6240	annual	ITSL	0.0%	PASS	-
Acetaldehyde	75-07-0	1.43	0.018	2.54E-02	9	annual	ITSL	0.3%	PASS	-
			0.018	2.54E-02	0.5	annual	IRSL	5.1%	PASS	
Hydrogen chloride	7647-01-0	3.71	0.018	6.59E-02	20	annual	ITSL	0.3%	PASS	13
			0.711	2.64E+00	2100	1 hr	2nd ITSL	0.1%	PASS	
Phosphorus (yellow or white)	7723-14-0	2.40	0.220	5.28E-01	20	24 hr	ITSL	2.6%	PASS	32
Selenium	7782-49-2	4.80E-03	0.467	2.24E-03	2	8 hr	ITSL	0.1%	PASS	34
Methyl ethyl ketone	78-93-3	0.02	0.220	4.40E-03	5000	24 hr	ITSL	0.0%	PASS	-
Acenaphthene	83-32-9	1.54E-03	0.018	2.74E-05	210	annual	ITSL	0.0%	PASS	-
Phenanthrene	85-01-8	0.03	0.018	4.50E-04	0.1	annual	ITSL	0.4%	PASS	-
Fluorene	86-73-7	0.01	0.018	2.15E-04	140	annual	ITSL	0.0%	PASS	-
Naphthalene	91-20-3	0.50	0.018	8.89E-03	3	annual	ITSL	0.3%	PASS	-
			0.467	2.34E-01	520	8 hr	2nd ITSL	0.0%	PASS	
			0.018	8.89E-03	0.08	annual	IRSL	11.1%	PASS	
2-Methyl Naphthalene	91-57-6	0.19	0.018	3.32E-03	10	annual	ITSL	0.0%	PASS	-
3-Methylpentane	96-14-0	0.21	0.467	9.77E-02	3500	8 hr	ITSL	0.0%	PASS	-
H2SO4	7664-93-9	1.60	0.018	2.84E-02	1	annual	ITSL	2.8%	PASS	9,13
			0.711	1.14E+00	120	1 hr	2nd ITSL	0.9%	PASS	

Table 12 - Predicted Ambient Impacts

Air Permit to Install

Ajax Materials, Genesee Twp, Michigan

Toxic Air Contaminant	CAS No.	Emissions (lb/hr)	Model Results (µg/m³)/(lb/hr)	PAI (µg/m³)	Screening Level (µg/m³)	Averaging Period (µg/m³)	Basis	Percent of Screening Level	Pass/Fail	FootNote	
Polynuclear Aromatic Compounds with a Footnote of 5											PEF
benzo(a)pyrene	50-32-8	1.08E-05	0.22	2.37E-06	0.002	24 hr	ITSL	0.1%	PASS	5	1
dibenz(a,h)anthracene	53-70-3	-								5	1.1
3-methylcholanthrene	56-49-5	-								5	5.7
benz(a)anthracene	56-55-3	2.31E-04								5	0.1
7,12-dimethylbenz(a)anthracene	57-97-6	-								5	65
dibenzo(a,i)pyrene	189-55-9	-								5	10
dibenzo(a,h)pyrene	189-64-0	-								5	10
dibenzo(a,l)pyrene	191-30-0	-								5	10
dibenzo(a,e)pyrene	192-65-4	-								5	1
Indeno(1,2,3-cd)pyrene	193-39-5	7.70E-06								5	0.1
benzo(j)fluoranthene	205-82-3	-								5	0.1
Benzo(b)fluoranthene	205-99-2	1.10E-04								5	0.1
Benzo(k)fluoranthene	207-08-9	4.51E-05								5	0.1
chrysene	218-01-9	1.98E-04								5	0.01
5-methylchrysene	3697-24-3	-								5	1
PAH TOTAL	50-32-8	0.00	0.22	1.15E-05	0.002	24 hr	ITSL	0.6%	PASS	5	
			0.02	9.27E-07	0.001	annual	IRSL	0.1%	PASS		

A-compared to SL for Benzo(a)pyrene, which is conservative as Benzo(e)pyrene is not carcinogenic

B-compared to SL for benzo(g,h,i)perylene

C-compared to SL for zinc oxide

D-sum of all dioxins and furans, including totals, which is conservative. Used annual average emission rate for annual SL.

E-Used annual average emission rate for annual SL.

EGLE Referenced Footnotes

1. The combined ambient impact of all petroleum hydrocarbon materials with Note #1 cannot exceed the ITSL of 3500 µg/m3 (8-hour average). If a chemical with this footnote has an ITSL other than 3,500 µg/m3, the ambient impact for that chemical also cannot exceed the chemical specific ITSL.

2. The combined ambient impact of all forms of xylene with Note #2 cannot exceed the initial threshold screening level (ITSL) of 390 µg/m3 (annual average).

5. The polycyclic aromatic hydrocarbons (PAHs) with this footnote are carcinogenic and have potency equivalency factors (PEFs) that quantitate their potency relative to that of benzo(a)pyrene (CAS# 50-32-8). Air emission mixtures of carcinogenic PAHs, including asphalt fumes, should be evaluated additively using these PEFs and the benzo(a)pyrene IRSL and SRSL. The ITSL for benzo(a)pyrene applies only to benzo(a)pyrene and none of the other PAHs.

7. Besides the assessment of mercury ambient air impacts in comparison to the ITSLs, larger individual sources of mercury emissions undergoing permit review (e.g., greater than 5 to 10 lbs/yr) may be evaluated on a case-by-case basis

13. This chemical has two ITSLs with different averaging times. Ambient air impacts cannot exceed either ITSL. Both ITSLs also apply for determinations of permit to install exemptions under R 336.1290 (Rule 290).

22. The combined ambient impact of butane (CAS# 106-97-8) and isobutane (CAS# 75-28-5) should be evaluated together so that the combined impact does not exceed a hazard index value of one.

29. The ITSL for manganese is 0.3 µg/m3 with an annual averaging time. This ITSL is most appropriately applied to PM10-Mn or PM2.5-Mn data rather than TSP-Mn data. This ITSL applies to "manganese and manganese compounds," therefore emissions of multiple forms of manganese must be accounted for additively to ensure that the combined ambient air impact does not exceed the manganese ITSL. This ITSL applies to ambient air impacts of the manganese atom, therefore the emissions and modeled impacts of various manganese compounds may be molecular weight-adjusted to the equivalent emission rate and ambient air impact of the manganese alone. Please note that potassium permanganate (CAS# 7722-64-7) also has a short-term ITSL = 0.6 µg/m3 (8 hour averaging time).

32. The Chemical Abstract Service number (CAS#) has been changed to 12185-10-3. Since the original number 7723-14-0, is still used by many organizations, it is listed as the primary CAS#.

33. With regards to the health-based screening levels for tetrachlorodibenzo(p)dioxin (CAS# 1746-01-6), Rule 336.1225(6)(a) states that all polychlorinated dibenzodioxins and dibenzofurans shall be considered as one toxic air contaminant, expressed as an equivalent concentration of 2,3,7,8-tetrachlorodibenzo(p)dioxin based on the relative potency of the isomers emitted from the emission unit or units. The current toxic equivalency factors (TEFs) for use are those recommended by the World Health Organization (WHO, 2005), as provided in: Van den Berg, M. et al., 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds. Toxicological Sciences 93(2): 223-241.

34. The combined ambient impact of all selenium and inorganic selenium compounds with the CAS# 7446-08-4, 7446-34-6, 7488-56-4, 7783-00-8, 10102-18-8, and 13410-01-0 cannot exceed 2 µg/m3 (8-hour averaging time).

35. The combined ambient impact of all barium and soluble barium compounds with the CAS# 543-80-6, 1304-28-5, 10022-31-8, 10361-37-2, 10553-31-8, 13477-00-4, 13718-50-8, 17194-00-2, and 21109-95-5 cannot exceed 5 µg/m3 (8-hour averaging time).

Appendix 1

Appendix 1 - Particulate Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Plant Capacity Rating	=	500	TPH	
Amount of Aggregate	=	473	TPH	
Amount of Asphalt Cement	=	27	TPH	Average AC Content 5.35%
Yearly Production Limitation	=	887,562	TPY	
Density of Oil	=	7.40	Lbs/gal	
Oil Fuel Use	=	2.5	Gals/ton HMA Produced (#2 ruonded up)	
Specific Volume of H_2O	=	26.799	ft^3/lb @ 212 °F	
Moisture Content	=	5.00	%	Manufacturer's maximum moisture content
Baghouse Temperature	=	300	°F	
Baghouse Fan Rating	=	100,000	ACFM	
NSPS PM Limit	=	0.04	Grain/DSCF	

Specific Volume of H_2O = [(Specific Volume of H_2O) x (Baghouse Temperature + 460)]/(212 +460)
= [26.80 x (300 + 460)]/(212 + 460)
= 30.31 ft3/lb @ 249 °F

Amount of H_2O in Exhaust Gas = (Moisture Content/100) x (Amount of Aggregate - TPH) x (2000 Lbs/Ton)
= (5.00 /100) x (473 TPH) x (2000 lbs/ton)
= 47,300 PPH
= 788.33 Lbs./Min.

Total Volume of H_2O in Exhaust Gases = (Amount of Aggregate) x (Specific Volume of H_2O)
= (788.33 lbs/min) x (30.31 ft^3/lb)
= 23,893 ft^3/min

Exhaust Gas Flow Rate (ACFM -dry) = (Fan Rating) - (Volume of H_2O)
= (100,000 ACFM) - (23,893 ACFM)
= 76,107 ACFM

Exhaust Gas Flow Rate (DSCFM) = [(Exhaust Gas Flow Rate ACFM dry) x (70 °F + 460)]/(300 °F + 460)
= [76,107 ACFM x (70 oF + 460)/(300 oF + 460)
= 53,075 DSCFM

Allowed Hourly Particulate Emissions = (NSPS PM Limit) x (Exhaust Gas Flow Rate DSCFM) x (1 lb/7000 grains) x (60 mins/hr)
= (0.04 grain/DSCFM) x (53,075 DSCFM) x (1 lb/7,000 grains) x (60 mins/hr)
= 18.20 Lbs/Hr

*Emission factor for H2SO4 is based on prior permitting modeling results

Particulate Emission Factor (Lbs/Ton HMA) ılfur

$$\frac{\text{(Allowed Hourly Particulate Emissions)}}{\text{Plant Capacity Rating}}$$

= 18.20 Lbs/Hr / 500 Tons HMA/Hr
= 0.04 Lbs/Ton HMA

Requested Allowed Annual Particulate Emissions = Particulate Emission Factor (Lbs/Ton HMA) x Yearly Production Limitation
= 0.036 Lbs/Ton HMA x 887,562 Tons HMA/Yr
= 32,302 Lbs/Yr
= 16.2 Tons/Yr

Appendix 2

Appendix 2 - Hydrogen Chloride Emissions
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

Rated Dryer Capacity	=	500	TPH
Yearly Production Limitation	=	887,562	TPY
Density of Oil	=	7.40	Lbs/gal
Maximum Halogen Content	=	1.00E-03	Lb/lb
Annual Average Halogen Content	=	1.00E-03	Lb/lb
Oil Fuel Use	=	2.5	Gals/ton HMA Produced (#2 rounded up)
Maximum Potential Oil Usage	=	1,250	Gal/hr
Molecular Weight of Chlorine	=	35.45	Moles
Molecular Weight of Hydrogen	=	1.01	Moles

Hydrogen Chloride Emission Calculations

Total Chlorine Emissions = Oil Usage (Gal/hr) x Density of Oil (Lb/gal) x Halogen Content (lb/lb)
= 1,250 gal/hr x 7.4 lb/gal x 0.0010 lb halogen/lb oil
= 9.25 lb/hr (based on 4000 ppm oil)
= 1,250 gal/hr x 7.4 lb/gal x 0.00100 lb halogen/lb oil
= 9.25 lb/hr (based on 3450 ppm oil)

$$\text{HCl Emission Factor} = \frac{\text{(Molecular Weight of Chlorine + Molecular Weight of Hydrogen)}}{\text{Molecular Weight of Chlorine}}$$

$$= \frac{(\ 35.5 + 1.01\ )}{35.5}$$

= 1.03 lb HCl/lb Cl

Maximum Potential HCl Emissions = Total Chlorine Emissions (lbs/hr) x HCl Emission Factor
= 9.25 lbs Cl/hr x 1.03 lb HCl/lb Cl
= 9.51 lbs/hr (based on 1000 ppm oil)

$$\text{HCl Emission Factor} = \frac{\text{Maximum Potential HCl Emissions (lbs/hr)}}{\text{Rated Dryer Capacity (tons/hr)}}$$

$$= \frac{9.51\ \text{lbs/hr}}{500\ \text{tons HMA/hr}}$$

= 0.0190 lb HCl/ton HMA Produced (based on 1000 ppm oil)

Expected reduction in the theoretical HCl emission rate of 61%.

Expected HCl Emission Factor = HCl Emission Factor x (1 - stack test reduction)
= 0.019 x (1 - 0.61)
= 0.0074 lb HCl/ton HMA Produced (based on 1000 ppm oil)

Appendix 3

Appendix 3 - EGLE Additional Source and Background Concentration Data
Air Permit to Install
Ajax Materials, Genesee Twp, Michigan

	NO2 Lansing		PM-10 Grand Rapids	PM-2.5 Flint		SO2 Grand Rapids			
	1-hr	Annual	24-hr	24-hr	Annual	1-hr	3-hr	24-hr	Annual
Year	98th pctl	Avg	Max	98th pctl	Avg	99th pctl	Max	Max	Avg
2017	36.4	6.5	34.0	16.8	7.10	4.0	3.0	1.5	0.38
2018	29.9	6.5	31.0	16.9	7.33	4.4	3.9	1.1	0.12
2019	44.1	6.4	104.0	17.5	6.81	3.9	3.1	0.9	0.39
	36.8	**6.5**		**17.1**	**7.1**	**4.1**	**3.9**	**1.5**	**0.39**
	ppb	ppb		ug/m3	ug/m3	ppb	ppb	ppb	ppb

NAAQS MODELING BACKGROUND SUMMARY

NO2		PM-10	PM-2.5		SO2			
69.2	12.2	35.0	17.1	7.1	10.7	10.2	3.9	1.0
ug/m3	ug/m3	ug/m3 (3-yr 4th High)	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3

SRN	COMPANY	POL	Facility Emissions (lb/hr)	Facility Emissions (tpy)	SOURCE	UTM EAST	UTM NORTH	Local X Coord (meters)	Local Y Coord (meters)	Source Dist. (km)	Stack Information Hgt. (ft)	Dia (inches)	Temp (deg F)	Flow (ACFM)	Velocity (m/s)	Discharge Type
N3570	GENESEE POWER STATION LIMITED PARTNERSHIP	SO2	4.80	21.00	NAAQS	~~282,650~~ 282,670	~~4,773,500~~ 4,773,725	-578	405	0.7	220.0	94.0	337.0	199833	21.08	Vertical

Appendix 4

Appendix 4 is provided on the enclosed flash drive in the *original* EGLE copy only.