

Illinois Environmental Protection Agency  
Bureau of Air, Permit Section  
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Project Summary for a  
Construction Permit Application from  
Fairmont Minerals, Ltd. for Changes to Its  
Sand Coating Plant  
at Wedron, Illinois

Site Identification No.: 099804AAB  
Application No.: 06030039

Illinois EPA Contacts:

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Important Dates:

Application Received: September 28, 2008  
Public Comment Period Begins: August 12, 2009  
Public Comment Period Closes: September 11, 2009

**I. INTRODUCTION**

Fairmount Minerals has applied for a revised construction permit that would allow it to expand its sand coating plant in Wedron, Illinois. This project requires an air pollution control construction permit because the plant is a source of emissions. The Illinois EPA has prepared a draft of the revised construction permit that it would propose to issue for the plant. However, before granting a revised construction permit, the Illinois EPA is holding a public comment period to receive comments on this proposed action and the terms and conditions of the draft permit.

**II. PROJECT DESCRIPTION**

Fairmount Mineral operates two plants in Wedron, Illinois, an industrial sand plant operating as Wedron Silica Company, which has operated for many years, and a new sand coating plant, operating as Technisand, Inc. which only began operation in late 2007. The subject of the proposed project is the sand coating plant, which was constructed pursuant to Construction Permit 06030039, date issued June 5, 2006. The sand coating plant and the industrial sand plant are considered a single source for purposes of air pollution control permitting programs. This is because they are adjacent to each other, one plant supplies the raw material for the other, and one entity, Fairmount Minerals, has oversight of both plants.

The sand coating plant is a source of emissions because the resin coatings applied to the sand contain volatile organic material (VOM), which is released during the coating process as emissions. These VOM emissions also contain components, like phenol, that are considered hazardous air pollutants (HAPs). The emissions of VOM and HAPs from the coating process are minimized by use of a natural gas fired thermal oxidizer. This device destroys organic compounds in the exhaust stream of the coating units by combusting them. Testing of the oxidizer has demonstrated that it has a destruction efficiency of over 98 percent for emissions of organic compounds.

The sand coating plant is also a source of emissions of particulate matter (PM). These emissions accompany the handling of sand and are generally controlled by enclosure and filtration with baghouses.

The proposed increase in the capacity of the sand coating plant is fifty percent. Several pieces of equipment would be installed, including a second deagglomerator and recycle hoppers. No changes would be made to the two existing mixers. However, the exhaust from a third continuous mixer will be directed to the existing thermal oxidizer.

**III. EMISSIONS**

The increase in the capacity of the sand coating plant would be accompanied by increases in the potential emissions of the plant. The future potential emissions of the plant, as would be allowed by the revised construction permit, would be 16.4 and 25.2 tons per year of VOM and PM, respectively. This plant would still not be a major source pursuant to the federal rules for Prevention of Significant

Deterioration (PSD), 40 CFR 52.21. In particular, source-wide emissions of VOM and PM would each still be much less than 250 tons per year.

The sand coating plant is currently permitted as a minor source for emissions of HAPs. With the proposed changes, the plant would become a major source for emissions of HAPs.<sup>1</sup> The plant would become a major source for emissions of HAPs because most of the VOM emitted by the plant would be phenol, so the plant would have the potential to emit more than 10 tons per year of a single HAP. This will trigger certain requirements for control of emissions of HAPs from the sand coating operations as discussed below. In addition, the source will have to obtain an operating permit for the plant under Illinois' Clean Air Act Permit Program (CAAPP).

**IV. APPLICABLE EMISSION STANDARDS**

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The Board has standards for various emission units that that emit VOM and PM. This plant readily complies with all applicable Board standards.

**V. MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (MACT)**

As discussed, with the proposed project, the sand coating plant would become a major source for emissions of HAPs. The potential HAP emissions from the sand coating operations at the plant would be greater than 10 tons per year of an individual HAP, i.e., phenol. Therefore, the coating operations are subject to a case-by-case review under Section 112(g) of the Clean Air Act to determine and set Maximum Achievable Control Technology (MACT) for control of emissions of HAPs. This case-by-case determination of MACT as part of permitting is needed because USEPA has not adopted federal emission standards that apply to the emissions of HAPs from coating of sand. In addition, the sand coating operations constitute a single process or production unit as defined by 40 CFR 63.41.

The Illinois EPA has determined that the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Organic Chemical Manufacturing, 40 CFR Part 63, Subpart FFFF are appropriately applied to this coating operations at the plant as a case-by-case determination of the MACT for emissions of HAPs. This NESHAP requires that significant sources of organic HAPs be controlled with a control device that achieves at least 98 percent efficiency or that the outlet concentration of organic HAPs or total organic compounds in the exhaust be no more than 20 parts per million by volume. Fairmount would comply with these requirements using the existing thermal oxidizer installed on the sand coating operations, which will control organic HAP emissions by at least 98 percent by

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<sup>1</sup> Under the Clean Air Act, the emissions-based criteria for a source to be considered a major source for emissions of hazardous air pollutants (HAPs) are the potential to emit 10 tons per year or more of a single HAP or 25 tons per year or more of any combination of HAPs (i.e., total emissions of HAPs).

weight. While the sand coating process is not an organic chemical manufacturing process, the approach to control of organic HAP emissions from the process should be similar to that in 40 CFR Part 63 Subpart FFFF and that approach is transferable to the sand coating process. 40 CFR Part 63 Subpart FFFF also include appropriate compliance procedure to accompany the control requirements for emissions of organic HAPs.

As the plant would be a major source of HAPs, it is also necessary to set MACT to address HAPs that could potentially be emitted from coating operations as particulate matter (PM). For this purpose, MACT for particulate HAPs is set as 0 percent opacity for stack emissions and the absence of any visible fugitive emissions.

**VI. DRAFT PERMIT**

The revised construction permit would identify applicable regulations that govern emissions from the expanded plant. In particular, the conditions of the permit would contain limitations and requirements to address this plant as a major source of HAPs. The permit would also set limitations on VOM usage and VOM emissions. Emissions and operation of the plant would also be limited to ensure that the plant is not a major source of emissions for purposes of the federal PSD rules. Compared to the current permit, the revised permit would also clarify and improve practical enforceability of applicable requirements, including restructuring the limits on the plant's emissions of PM.

The conditions of the revised permit would also establish appropriate compliance procedures, including recordkeeping requirements and reporting requirements. The Permittee would have to carry out these procedures on an on-going basis to demonstrate that the plant is operating within the limitations set by the permit and is properly controlling emissions.

**VII. REQUEST FOR COMMENTS**

It is the Illinois EPA's preliminary determination that this project meets all applicable state and federal air pollution control requirements, subject to the conditions proposed in the draft of the revised construction permit. The Illinois EPA is therefore proposing to issue a revised construction permit that addresses this project.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft revised permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.