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MEMORANDUM

To:	Stephen Taylor, McLucas & Associates, Inc.	Date:	September 15, 2016
From:	Kyle K. Roslund, LG and Kathy Lombardi, PE	Project:	1268.02.01

RE: Lake Erie Pit air quality best management practices recommendations

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This memorandum was prepared to support the special use permit application (prepared by McLucas & Associates, Inc.) for the mine expansion at the Lake Erie Pit located near Anacortes, Washington (the site). Best management practices (BMPs) for fugitive dust control at the 53.5-acre sand and gravel quarry are recommended below.

All rock processing and handling at the site should be completed in a way that minimizes dust generation. The suggested BMPs assume that rock and dust generated at the site contains no heavy metals or other environmental contaminants. Should environmental contaminants such as metals be present in significant amounts in materials generated at the site, then additional dust controls and monitoring may be needed. Fugitive dust may be generated through one or more of the following quarry activities:

- Excavator and front end loader area(s)
- Aggregate screening area(s)
- Crushing operations (twice a year in spring and fall)
- Ingress and egress of trucks
- Aggregate, subsoil, and topsoil stockpiling
- Wind erosion from stockpiles
- Material spills or accidents

Should fugitive dust be observed, appropriate corrective actions and BMPs should be implemented to reduce emissions. Visible dust generation should be used as the action level for BMP implementation. Daily production logs should be maintained during crushing and processing activities. These logs should include written observations about the weather and visibly observable dust generation. Notation of BMP use and effectiveness should also be identified in the log.

During rock crushing and processing, adequate wetting and misting should be employed to prevent visible dust emissions. Most rock crushing equipment is equipped with misters, and this system should

be used and maintained during use. If rock crushing equipment is used that does not have a misting system, dust suppression by adequate wetting using the site water supply (or by water trucks) should be employed. Precipitation and weather should be considered, as rainfall may be an adequate method for dust suppression. Stormwater BMPs should be used to minimize overland flow of sediment-laden water during precipitation events.

Onsite traffic on unpaved roadways should be limited to a speed of 5 miles per hour to minimize dust generation. All truck loads should be covered when leaving the site. Tracking of fine particulate off the site and onto paved surfaces should be monitored and cleaned as appropriate. Cleaning may consist of water washing tracked surfaces, wheel washing prior to exiting the facility, or the use of a vacuum truck. Wetting of unpaved roadways may be needed during dry weather conditions to minimize dust generation. Use of appropriate stormwater BMPs should be employed during wet weather conditions.

When actively excavating or loading or unloading trucks, drop height should be minimized for limiting fugitive dust generation.

Any aggregate, subsoil, and/or topsoil that will be temporarily stored in stockpiles should be managed in a manner that minimizes erosion, contact with stormwater, and fugitive dust generation. Stockpile areas should be monitored for visible dust. If dust is observed, it should be managed by wetting the stockpiles, stabilizing the surface with temporary vegetation, or covering the stockpiles with 10-millimeter plastic sheeting (or similar material) kept in place by sand bags.

A review of BMPs and their adequacy should be completed annually. Should the above BMPs not be adequate to prevent dust from entering nearby and adjacent residential properties, additional BMPs like chemical dust suppression, and the regular use of a vacuum truck or water truck should be investigated. If needed, dust suppression measurements could be made with a real-time dust monitor to quantify particulate concentrations.