



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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September 27, 2016

Ms. Karen Wood
Department of Ecology
Eastern Regional Office
4601 N. Monroe Street
Spokane, WA 99205-1295

Re: Revised Second Tier Toxics Review Petition by Microsoft Corporation Incorporating Emissions from Eight Additional Engines and Modifications to Engine Stack Parameters, MWH Data Center, Quincy, WA

Dear Ms. Wood:

The Washington State Department of Ecology's Air Quality Program (Ecology) has completed their review of health risks from diesel engine exhaust particulate (DEEP) emissions from the proposed Microsoft Corporation (Microsoft) MWH Data Center (MWH) in Quincy, WA.

Microsoft requested a revised permit for the MWH Data Center (formerly Microsoft Oxford) to cover operation of existing and new emissions units.

The primary air contaminant sources at the facility consist of a total of:

- Thirty-seven (37) previously approved electric generators powered by diesel engines to provide emergency backup power to the facility.
- Eight (8) additional new engines to serve as reserve to the primary backup engines.
- Thirty-two (32) previously approved cooling towers.

Ecology's review indicates that the proposed project could result in an increased cancer risk of up to **six in one million** (6×10^{-6}) at the maximally impacted residential location, which occurs to the north of MWH. This risk was quantified assuming that both filterable and condensable particulate emitted from MWH's engines constitutes DEEP. It is important to note that California's airborne toxics control measure for stationary compression engines only requires the filterable fraction to be quantified. This is because the health studies that form the basis for quantifying the health risk from diesel exposure used measurements of respirable particulate from "fresh" diesel exhaust and elemental carbon as a surrogate for diesel emissions. Therefore, the increased risk estimated in the HIA submitted by Landau Associates on behalf of Microsoft represents a conservatively high estimate. A lower risk of about **one in one million** was estimated at the same location based on filterable emissions only.



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Ecology's review of noncancer hazards indicates that the hazard quotient attributable to MWH's DEEP emissions is much lower than unity (one) meaning that chronic noncancer adverse health effects are unlikely.

As part of the community-wide approach in Quincy, Ecology also considered the cumulative impacts of DEEP emissions in the area. Emissions from MWH and other local sources of DEEP could result in lifetime increased cancer risk of up to approximately 41 in one million (41×10^{-6}) at a location to the southeast of MWH and just south of State Route 28. The cumulative noncancer hazard quotient at this location is much lower than unity (one) meaning that noncancer adverse health effects are unlikely.

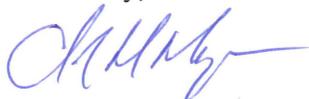
Ecology also considered short-term impacts of nitrogen dioxide (NO_2) emitted from numerous emergency engines in the event of a simultaneous power outage affecting west-side Quincy data centers. This evaluation indicated that elevated NO_2 levels could occur, but the combined probability of an outage coinciding with unfavorable meteorology is very low.

Ecology recommends approval of the proposed project because project-related health risks are permissible under WAC 173-460-090 and the cumulative risk from DEEP emissions in Quincy is less than the cumulative maximum risk threshold established by Ecology for permitting data centers in Quincy (100 per million or 100×10^{-6}).

The applicant has satisfied all requirements of a second tier analysis. Ecology recommends that you incorporate our findings as part of your ambient air impacts analysis and you may begin the public comment period when you are ready to do so. Ecology also recommends that outages at Quincy data centers be tracked and re-evaluated periodically to determine if the assumptions used in the outage scenario analysis remain plausible.

If you would like to discuss this project further, please contact Gary Palcisko at (360) 407-7338 or gary.palcisko@ecy.wa.gov.

Sincerely,



Chris Hanlon-Meyer
Science and Engineering Section Manager
Air Quality Program

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Enclosure

cc: Jolaine Johnson, Ecology
Brett Muhlestein, Microsoft
Jim Wilder, Landau Associates