



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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May 14, 2013

Ms. Susan Billings
Central Regional Office, Air Quality Program
Washington State Department of Ecology
15 West Yakima Avenue
Yakima, WA 98902

Re: Second Tier Petition by VMware Inc. (East Wenatchee)

Dear Ms. Billings:

The Washington State Department of Ecology's Air Quality Program (Ecology) has completed our review of health risks from diesel engine exhaust particulate (DEEP) emissions from four new diesel-powered generators proposed by VMware Inc. (VMware) Data Center in East Wenatchee, Washington.

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 about 100 meters to the southeast of the VMware property. Ecology's review of non-cancer hazards indicates that the chronic non-cancer hazard quotient attributable to VMware's DEEP emissions is much lower than unity (1) meaning that chronic non-cancer adverse health effects are unlikely. Because the increase in cancer risk attributable to the new data center alone is less than the maximum risk allowed by a second tier review of 10 in one million, and the non-cancer hazard is acceptable, the project is approvable under WAC 173-460-090.

Ecology also considered the cumulative impacts of DEEP emissions in the area. Emissions from VMware's four new engines and other local and regional sources of DEEP could result in lifetime increased cancer risk of up to approximately 45 in one million (45×10^{-6}) at residential locations in the vicinity of VMware. The cumulative non-cancer hazard quotients at these locations are much lower than unity (1) meaning that non-cancer adverse health effects are unlikely.

Although VMware was not required to evaluate short-term impacts of nitrogen dioxide (NO₂) and other pollutants, the HIA provided a brief evaluation of acute non-cancer hazards attributable to VMware's four new engines. Generally, the VMware project's emissions by themselves are not expected to result in acute non-cancer hazards. However, cumulative emissions of multiple

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emergency engines at the Intergate Columbia data center complex were not evaluated as part of this review. Based on Ecology's experience permitting data centers in Quincy, WA, NO₂ levels could rise to a level of concern during a system-wide outage coinciding with unfavorable dispersion conditions. If such an event were to occur, people with asthma who might be cumulatively exposed to NO₂ and DEEP from emergency engines and other sources may experience respiratory symptoms such as wheezing, shortness of breath, and reduced pulmonary function with airway constriction.

In Quincy, Ecology determined that there was a low probability of both a system-wide power outage and unfavorable dispersion conditions happening at the same time. Given the infrequent occurrence of power outages (none reported by VMware since the facility was built in 2009) at the Intergate Columbia data center complex in East Wenatchee, and based on Ecology's evaluation of simultaneous emergency engine emissions at data centers in Quincy, WA, the likelihood of a system-wide outage coinciding with unfavorable meteorology is probably very low.

Based on the review of VMware's second tier petition, Ecology recommends approval of the proposed project because project related health risks are permissible under WAC 173-460-090 and the project 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.

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

Sincerely,



Jeff Johnston, Ph.D.
Science and Engineering Section Manager
Air Quality Program

jj/te

Enclosure

cc: Lynnette Haller, Ecology
Steve Rossetta, Alfa Tech
Jim Wilder, Landau Associates