

DEPARTMENT OF
ECOLOGY
State of Washington

Response to Comments

Draft Air Quality Permit for
Microsoft Oxford Data Center

Public Comment Period:

June 19, 2014 – July 29, 2014

Public Hearing:

July 24, 2014

*Summary of a public comment period and responses to comments
on a new air permit*

August 15, 2014

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Publication and Contact Information

This publication is available on Ecology's web site at:

<http://www.ecy.wa.gov/programs/air/quincydatacenter/index.html>.

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Response to Public Comments

Draft Air Quality Permit for Microsoft Oxford Data Center

Public Comment Period: June 19, 2014 – July 29, 2014
Public Hearing: July 24, 2014

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Introduction

Any new air pollutant source must meet emissions standards set by EPA and meet the requirements of the Washington State Clean Air Act. Ecology Air Quality Program manages air pollution within the state and is responsible for ensuring that those federal and state standards are met. The Air Quality Program does this by writing permits to regulate emissions from various sources. The program's goal is to safeguard public health and the environment by preventing and reducing air pollution.

Before construction can begin on a new air pollution source project or before changes can be made to an existing air pollution source, the applicant must apply to Ecology for an air quality permit. This permit is called a Notice of Construction approval order (NOC). The application for the NOC requires the applicant describe all air contaminant emissions from the project, identify the federal air regulations that apply, describe the project's emission control technology, and prove that air quality standards won't be violated. If emissions of toxic air pollutants exceed levels set in state regulations, a Health Impact Assessment must also be conducted to prove that there is minimal health risk to the community. Ecology reviews applications for projects and develops conditions of approval to ensure that the project will comply with the Washington Clean Air Act, Revised Code of Washington (RCW) 70-94 and the Washington Administrative Codes (WAC) developed to implement RCW 70-94.

If the project meets these requirements, Ecology must approve the Notice of Construction application.

This Response to Comments is prepared for:

Proposed permit: Microsoft Oxford Data Center
 Quincy, Grant County, WA

Comment period: June 19, 2014 – July 29, 2014

Public hearing date: July 24, 2014

Date final permit issued: August 15, 2014

This document and other documents related to Ecology's final action on this draft permit can be viewed online at: <http://www.ecy.wa.gov/programs/air/quincydatacenter/index.html>.

To see more information related to air quality in Washington, please visit the air program's web site: <http://www.ecy.wa.gov/programs/air/airhome.html>.

Reasons for Issuing the Permit

An air permit (notice of construction approval order or NOC) is required for this project because the proposed data center includes backup generators and cooling towers. Backup generators emit air pollution when they burn diesel fuel.

Ecology requires the applicant, Microsoft in this case, to apply for a permit to comply with federal and state air quality standards. These standards are intended to limit the amount of emissions released into the air and maintain air quality at or below the health based standards. The applicant must use “Best Available Control Technology” (BACT) to ensure that their emissions are controlled to the best degree they can be, in a cost-effective manner.

Microsoft proposes to build and operate the Microsoft Oxford Data Center in Quincy, to install 37 diesel generators, capable of producing 88.75 megawatts of emergency backup electrical power and construct 32 cooling towers. To protect the public from air pollution, the proposed NOC includes the following conditions:

- limit the amount of fuel that can be burned;
- limit the total hours per year the diesel engines can operate;
- test generator engines to make sure air pollution control equipment works;
- coordinate engine maintenance and testing schedules with the closest data centers (Dell and Microsoft Columbia Data Centers).

The Microsoft Oxford Data Center location is about ¾ mile west of the existing Microsoft Columbia Data Center.

Ecology reviewed the application from Microsoft, conducted a second tier review to assess risk to human health and considered the comments from the public given during the comment period June 19, 2014 – July 29, 2014 and also at the public hearing on July 24, 2014. Ecology has determined that Microsoft has met the necessary state and federal standards and is issuing the permit to allow the build out of the Microsoft Oxford Data Center.

Public Involvement Actions

Ecology's Air Quality Program has been criticized over outreach efforts for the previous six data center air permit applications. With each application, Ecology tried to incorporate suggestions from the community as well as identify innovative ways to connect with the Quincy community and in particular the Spanish speaking members. The outreach effort for this public comment period and hearing focused on broadening the number of possible ways that Quincy citizens could stay up to date and participate in commenting on this project. Below is a list of the various advertisements, media reports and outreach options that were implemented. Many community members helped to spread the word about this project and assist in directing the outreach in a more meaningful way. Thank you.

See Appendix A for copies of public involvement documents and outreach materials mentioned below and Appendix C for the transcripts and agenda from the public hearing.

June 19 – July 29, 2014 public comment period outreach for Microsoft Oxford Data Center draft air permit

Press Release

06/13/14 - Air permits for data centers in Quincy under review: Microsoft plans new data center and upgrades for existing center

Legal Advertisements

06/19/14 – Quincy Valley Post Register (QVPR) – English and Spanish

Display Advertisements

06/19/14 – QVPR – English and Spanish

06/19/14 – Columbia Basin Herald – English

06/19/14 – Wenatchee World – English

06/19/14 – El Mundo – Spanish

07/17/14 – QVPR, Public Hearing reminder – English and Spanish

07/21/14 – Columbia Basin Herald, Public Hearing reminder – English

07/18-07/24/14 – Advertisement on Quincy Community Reader Board – English and Spanish

Public Involvement Calendar

06/19/14 – Posted comment period to Ecology's web site

06/19/14 – Posted public hearing information to Ecology's web site

Locations documents for review were available to the public

Quincy City Hall

Quincy Library

Radio show mentions

Commission on Hispanic Affairs 06/05/14 radio show

Outreach materials distributed in Quincy

Information sheet and project location map handed out at 05/17/14 Women's Day Quincy event

Microsoft Oxford Data Center Draft Air Permit Fact Sheet (publication 14-02-014); Spanish version of Fact Sheet “Borrador del Permiso para Emisiones al Aire del Centro de Datos “Oxford” de Microsoft” (publication 14-02-014ES)

Spanish and English versions of Ecology’s publication “Focus on Exhaust Health Risks” & “Generadores de Reserva con Motor Diesel para los Centros de Datos en el Condado Grant” (publication number: 11-02-005; 11-02-005-ES)

Interested Parties Emails + QUINCY-DATA-CENTERS Listserv

02/06/14 – Microsoft Oxford Data Center Notice of Construction Application

02/18/14 – Began process of creating Listserv

04/23/14 – Interested Parties Emails now on QUINCY-DATA-CENTERS ListServ (first email sent through listserv service)

05/16/14 - Women's Day Event in Quincy

06/12/14 - Comment periods just around the corner

06/19/14 - Comment Periods are OPEN!

06/25/14 – Documents are up on web!

07/14/14 - Reminder! Public Hearing on 7/24!!! Recuerda! Reunión Pública el 27 de julio!!!

07/23/14 - Reminder! Public Hearing on 7/24!!! Recuerda! Reunión Pública el 27 de julio!!!

Twitter & Text Alerts

English and Spanish information was also made available through Twitter and text alerts.

Flyers Posted in Quincy

Flyers advertising the Public Hearing were posted at the Quincy Library, Atkins Market, Quincy Valley Medical, and Tacos Jalisco.

Public Hearing for Microsoft Oxford Data Center: July 24, 2014

A public hearing was held at the Quincy Community Center at 115 F Street SW in Quincy, WA. From 5:00pm-5:30pm, a meet and greet provided an opportunity for attendees to view posters of various aspects of the project and ask questions of Ecology and Microsoft staff. From 5:30pm-6:30pm, Ecology and Microsoft staff gave presentations followed by a question and answer session. The formal portion of the hearing started at 6:30pm. Of the 33 people who attended this hearing, 4 people gave recorded testimony.

See Appendix C for the transcript of this hearing.

Response to Comments

Ecology accepted comments between June 19 and July 29, 2014. In this section, Ecology staff respond to questions received. Some of what was received was provided as a statement on the topic and did not generate a response.

The response to comments is split into three sections. Section 1 addresses comments received in written format either by email, handed in at the public hearing or received by mail. All original comments, in full, and any documents or additional information provided by commenters as received by Ecology, are available for reference in Appendix B. Section 2 addresses comments given at the public hearing. The original transcript of the July 24, 2014 hearing is available in Appendix C. Section 3 are email threads between commenters and Ecology asking for clarity on the draft permit.

7 people submitted comments on the draft permit either in written format or at the public hearing. Of the total submitted comments, 46 generated responses. Table 1 below lists the commenter, any organization they may represent, the format of their comments, the reference number(s) for each person's comments, and the pages where those comments can be found. Thank you to everyone who provided comment for the public record on this topic.

List of Commenters

The table below lists the names of individuals, and any organizations they may represent, who submitted a comment on the proposed Microsoft Oxford Data Center Air Quality Permit. The comment number and page number are listed where you can find the comment(s) and Ecology's response.

Table 1. Comment Identifier Table

COMMENTS	COMMENTER	ORGANIZATION	COMMENT FORMAT	COMMENT NUMBER	PAGE NUMBER
	Danna Dal Porto	MYTAPN (Microsoft Yes, Toxic Air Pollution No)	Written	1-6	6-10
	William Collier	Citizen	Written	7-8	11-12
	John RADICK	Microsoft	Written	9-19	12-19
	Patty Martin	MYTAPN	Written	20-32	19-24
	Debbie & Mark Koehnen	Citizens	Written	33-36	25-26
	Danna Dal Porto	MYTAPN	Public Hearing	37-39	27
	Debbie Koehnen	Citizen	Public Hearing	40-41	27-28
	Patty Martin	MYTAPN	Public Hearing	42-46	29-30
	Alex Ybarra	Citizen	Public Hearing	no response generated	Hearing transcript Appendix C
	William Riley	Columbia Basin Environmental Council	Written	no response generated	See Appendix B

Comments and Responses

Section 1. This section address comments received in written format either by email, handed in at the public hearing or received by mail. All original comments, in full, are available for reference in Appendix B.

Danna Dal Porto, MYTAPN, comments 1-6

COMMENT 1, DANNA DAL PORTO:

The focus of my concern is the lack of clarity in the permitting documents regarding the construction of the diesel engines with emission controls. The public should expect clarity and brevity from Ecology regarding the specific requirements and limits imposed on a developer to protect human health and the environment. It should not be this hard find clear language in the document or this hard to understand. I want the Ecology Approval Order (Permit) to say clearly that Oxford is required to use specific emission controls on the diesel engines to comply with the legal operation of the data center. I want the emission controls to be listed and clearly named and identified. Anyone looking at the permit should see the restrictions placed on the operation of the facility.

Ecology Response:

On page 3 of the June 16, 2014 Preliminary Determination, Section 1 of the Project Summary, (which was available for public comment) the specific engine models to be used at Oxford are listed. Microsoft's application, which was also available for public comment listed the specific emission controls to be used on every engine at Oxford. This information was listed in multiple places in the application, including Section 1.1.1, and Section 2.2.3. In addition, the specification sheets indicating the emission controls for each of the three types of engine models to be used at Oxford were provided in Appendix A of the application. Regardless, Ecology agrees that additional clarification of the emission controls in the permit is warranted. The final permit specifies that each engine must be equipped with selective catalyst reduction (SCR) and catalyzed diesel particulate filters (DPF) emission controls, and clearly states that the engines are required to meet EPA Tier 4 emission standards. Please see the Approval Order in Appendix E.

This administrative clarification to the preliminary determination does not require an additional public comment period.

COMMENT 2, DANNA DAL PORTO:

On another point, the TSD has a comment on page 21 (Exhibit 13) regarding the application of the "community-wide" evaluation of emission releases. The Oxford "community-wide" conversation only concerns DEEP. The "community-wide" approach has been interesting to me for several years. I am asking now, as I have in the past, for the documents and regulatory steps that created the "community-wide" approach. Show me that "community-wide" is a procedural step in air permitting and that it is legitimate as a regulatory step. As best I can tell, an Ecology employee, Gary Palcisko, developed this analysis procedure in response to the large number of data centers being built and proposed for Quincy. It appears that the "community-wide" numbers are arbitrary and without scientific basis. Was this Palcisko analysis peer reviewed? Was this analysis

method proposed to the department management and was it adopted as policy? How does this analysis method fit together with Tier 2 and Tier 3 permitting? In reading a document by Ecology employee Richard B. Hibbard, Quincy Data Center Issues, May 20, 2010, (Exhibit 14), the higher number of “community-wide” affected residents applies to the maximum risk for a Third Tier analysis of 100 per million. In other words, does the “community-wide” analysis only apply to Tier 3? If so, Oxford is not Tier 3 and “community-wide” does not apply.

Ecology Response:

This comment requests public disclosure of documents pertaining to the development of the community-wide approach. These documents have been and will continue to be made available through the public disclosure process from the Lacey office.

Washington’s air toxics rule allows an increased cancer risk of up to 10 cases of cancer per million people for each new source or project. The community-wide approach was conceived by the data center project team and approved by Air Quality Program management as a result of concerns about the possibility of rapid development of data centers in Quincy. Gary Palcisko was a part of the data center project team. Ecology was concerned that multiple data centers could be closely located and cause incremental risks that would be allowable by rule, but yet result in cumulative impacts of concern.

The community-wide approach does not exist in current Washington regulations. It was an Air Quality Program management decision intended to minimize the impact of individual and collective sources of pollution on any single person or on the community of Quincy. The goals of the community-wide approach consist of:

- Enhanced communication between the city, schools, data centers, local health department, and Ecology
- Establish a cumulative risk level that considers the impact of numerous sources of diesel particulate (not just the new source). Note that a cumulative risk level does not exist in current Washington State air regulations. There is no change to the risk level allowed by an individual new source subject to WAC 173-460 (Controls for new sources of toxic air pollutants). The cumulative risk level is based partly on a range of risks generally considered acceptable by several United States Environmental Protection Agency (EPA) programs.
- Evaluation of short-term impacts caused by emissions from all data centers’ emergency engines during a system-wide power outage.
- Takes into account existing sources of diesel particulate to calculate cumulative risk.

Washington’s air toxics rule still applies to the community-wide approach, but it is applied in addition to the air toxic rules. Ecology determined that even if a project resulted in an incremental cancer risk of less than 10 cases of cancer per million people, that a cumulative cancer risk of more than 100 cases of cancer per million people would not be permitted in Quincy. This approach was intended to limit the total amount of new emissions that could affect Quincy residents. The community-wide approach is intended to apply to all new data center projects proposed in Quincy regardless of whether they are subject to 2nd tier or 3rd tier review. The cancer cap supports new source to take measures in addition to tBACT to minimize both air emissions and impacts to the community.

COMMENT 3, DANNA DAL PORTO:

This is a specific question. Oxford had a Second Tier Review. Why didn't it have a Third Tier Review? The original DNS (SEPA) lists the build out to be 69 engines. Did Ecology/Microsoft model all 69 engines or only 37 (or 36 depending on the document you read)? Is Microsoft engineering a different permitting outcome by developing this facility in phases? The net effect is that in final build out this data center will have 69 engines. Shouldn't the emissions be calculated based on the total number of generators when the facility is complete?

Ecology Response:

As noted in the June 13, 2014 Ecology "Second Tier Review Letter" available for public comment, "Ecology's review indicates that the proposed project could result in an increased cancer risk of up to **four in one million** (4×10^{-6}) at the maximally impacted residential location, which occurs to the north of Oxford." Consistent with Washington Administrative Code (WAC) 173-460-090(7), the Microsoft Oxford project is Second Tier applicable since cancer risk from the project did not exceed 10 per million. For this reason, the Microsoft Oxford project did not require a Third Tier Review.

The June 16, 2014 Preliminary Determination available for public comment clearly states that 37 diesel generators are permitted for the Microsoft Oxford facility. Based on the application provided by Microsoft for phases 1 and 2, these phases include a total of 37 generators. Ecology's Preliminary Determination addresses those 37 engines. According to Section 1.1 of Microsoft's application: "Future phases of construction at the Project Oxford Data Center will be permitted, if appropriate, when actual plans and specifications are developed and when those phases are funded for construction."

When evaluating whether or not to include future phases of development in an air permit, Ecology looks at two competing factors. First, including future phases of construction in one permit evaluation allows Ecology to evaluate compliance with the NAAQS and ASILs for all phases at the same time. On the other hand, it can be advantageous for the environment to evaluate phases of construction separately, in order to take advantage of new emission control technology for BACT determinations. That is, including future phases of construction in one permit evaluation means that BACT for those future phases is evaluated at the time of the original permit analysis potentially ignoring advances in technology that evolve before the future phases are actually constructed. Ecology requires future phases of a project that are to be constructed in less than 18 months in the future to be evaluated as part of the initial project. Future phases planned for more than three years in the future are generally evaluated in separate future permit applications. Future phases planned for some time between 18 months and 3 years in the future are looked at on a case-by-case basis. In such cases, Ecology looks at the types and amounts of emissions to determine whether the emissions should be evaluated all at once and evaluated whether tBACT for the source is evolving.

The possible future expansion of the Microsoft Oxford Data Center was too speculative to provide Ecology with the definitive information required to process a permit application. Evaluating any expansion in a separate permit application will also allow Ecology to examine

and require applicable technological advances in the BACT determination. This comment does not result in a change in the proposed permit.

COMMENT 4, DANNA DAL PORTO:

Another specific question: With one exception I believe that all the modeling for Quincy data centers has been done by one person, Jim Wilder. Is he the only person in Washington State that is qualified to provide modeling of emissions? Ecology has excellent personnel and I think I would like to see modeling done by other people rather than just one person.

Ecology Response:

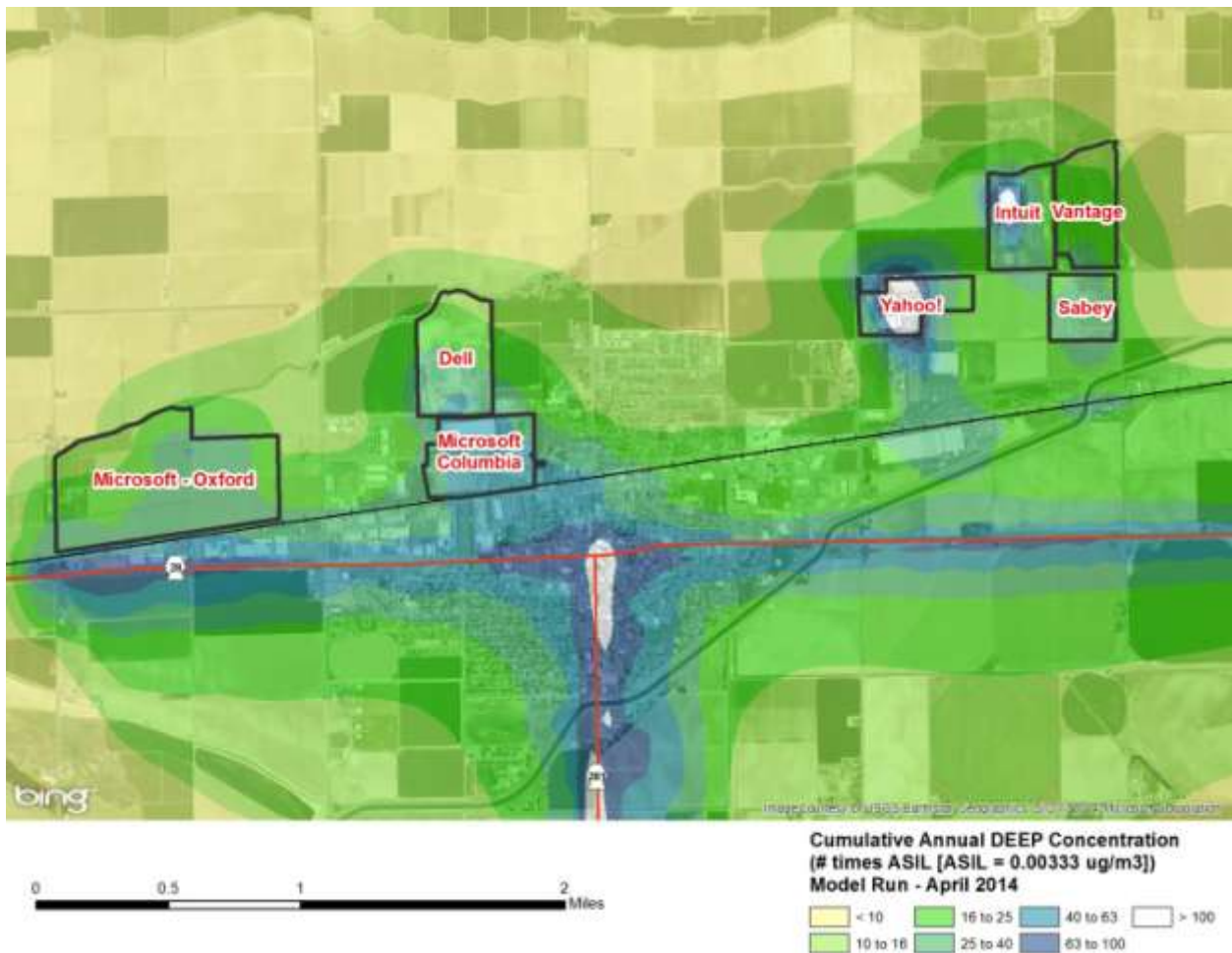
Jim Wilder has been part of a team of consultants that have worked on some of the NOC applications for the Quincy data centers. Mr. Wilder's role in those teams has been, and is currently, lead engineer and project manager. The companies that Mr. Wilder has worked for during these projects have had staff responsible for running the models. Those modeling staff have not always been the same for all projects.

COMMENT 5, DANNA DAL PORTO:

Ecology has prepared emission maps from other data centers. This is a specific request from the public hearing: I would like an over-view map showing the emissions from Oxford in combination with all the other emissions from town. In response to Vantage public comments, Ecology sent out a close up map showing cumulative diesel particulate and it focused on the core of town. (Exhibit 16) Other maps from Ecology included in this document show much larger impacted areas. (Exhibits 17,18). Please provide me a current map showing the effects of emissions on the larger Quincy community.

Ecology Response:

The figure below represents estimated cumulative diesel engine particulate concentrations based on the latest model run in April 2014. It includes permitted emissions from each of the Quincy data centers, and estimated emissions from rail and roadway sources based on 2011 annual emissions estimates.



COMMENT 6, DANNA DAL PORTO:

I repeat myself in requesting air quality monitoring in Quincy. Our community is adding many industrial facilities, many more trains on the Intermodal, many more trucks and traffic that all raise the background emissions, especially DEEP. Modeling can only go so far in assessing accurate particulates in the air. We need to know and stop guessing about the reality of air quality. Air monitoring is necessary and once again I am requesting permanent air monitoring equipment be installed at Mountain View School and at Lazy Acres, east of town, to provide accurate information on 24/7 air quality levels. I want the emission records to be kept on file with Ecology, validated, reported to the EPA and available to the public in a format that can be reviewed and easily understood.

Ecology Response:

Ecology is aware of Ms. Dal Porto's interest in monitoring and cause and effect studies for the Quincy area ambient air. At Ecology's March 2014 Monitoring Advisory Committee {MAC} this issue was discussed. It was determined during the March meeting that due to limited staffing and fiscal resources as well as the low impacts to the community, air quality monitoring studies cannot be conducted in the area at this time.

William Collier, Citizen, comments 7-8

COMMENT 7, WILLIAM COLLIER:

They're proposing to build a data center using older concepts of construction, that being diesel generators and chilled water cooling systems. Both have have [sic] significant downsides for the environment. After all if there weren't hazards, and risks associated with both products why would they have needed to prepare a costly 182 page report to defend them.

Furthermore, all the data provided in the reports seems to be based on optimum conditions and assumes that Microsoft will be adhering to a very strict and costly on-going maintenance program. Who's going to monitor those programs and at what cost?

Ecology Response:

Microsoft is responsible for operating and maintaining the engines in a manner consistent with engine manufacturer's specifications and permit requirements. Ecology has placed restrictions on scheduled engine maintenance and operational runtime, and requires Microsoft to follow all of the manufacturer's operating and maintenance requirements. We also monitor annual engine operations, including engine runtime hours, electrical loads during operation, and fuel usage to determine compliance with permit operating limitations. The actual cost to Microsoft of operating and maintaining the engines is unknown to Ecology and not relevant to Ecology's decision on the permit application, with the limited exception when conducting the BACT determination. Ecology's cost is largely covered by annual air pollution source registration fees allowed under Revised Code of Washington 70.94.151.

COMMENT 8, WILLIAM COLLIER:

Here's my take, Quincy has had on-going problems with Microsoft's generators, both off-gassing and noise. You only have so many natural resources that you'd presumably like to protect, therefore why should either of these environmentally unfriendly products even be taken under consideration.

Here's an alternative recommendation:

1.) Generators, instead of using diesel as a primary fuel source, why not use dual burner generators, which are readily available, using Natural Gas as the primary fuel source, and diesel ONLY used in the rare instance where Ngas fails. This provides them a redundant fuel source, which will make for a more reliable data center. This dramatically reduce the emissions associated with diesel only equipment. I believe these are available from the same vendor.

2.) Cooling towers, As you may or may not be aware chilled water systems such as this, that depend on the use of cooling towers evaporate an enormous amount of water. By their own admission (p. 132 of the report) shows a Make Up water requirement of 300 gals/min., you realize that's 157,680,000 gallons of water annually, or 238 olympic swimming pools. Seems to me that's a lot of water to unnecessarily be evaporating, along with tons of associated pollutants. There are other means of well proven and equally efficient cooling methods available that should not cost them a premium. Air cooled direct expansion system, which have been successfully cooling data centers for decades. Leading data center manufacturers are, Liebert/Emerson, Stuls, DataAire, other manufactures providing a similar but more costly and less energy efficient means of the same thing are Multistack, and Motiveair. These can be had for similar if not a lower cost than chilled water systems, and don't use cooling towers to evaporate water, they are a closed loop system.

Ecology Response:

This comment questions the use of diesel engines to run the generators for emergency power and the use of chilled water cooling towers for temperature control inside the buildings. The role of the AQP is to review projects to ensure that air contaminate emissions meet applicable state and federal requirements. Ecology cannot dictate engine fuel outside of federal standards or require any specific air cooling technology. Revised Code of Washington 70.94.152(6) does not allow Ecology to require the use of equipment of any particular type or manufacturer. The AQP is authorized to protect the environment and public health by minimizing air contaminate emissions from the equipment that is being proposed for installation. If the equipment does not meet state and federal air quality standards, Ecology can either require changes to the project or deny the project.

John Radick, Microsoft, comments 9-19

COMMENT 9, JOHN RADICK:

1. Determinations, Paragraph 2

The Proposed Order includes information about the number and size of the diesel engines that Ecology is permitting, and Table 2a.1 on page 5 describes those engines as "EPA Tier 2 certified engines." These statements create the misleading impression that the engines installed at the Oxford Data Center will feature no emission controls beyond those required by EPA for Tier 2 engines. Microsoft recently received a letter from a Quincy resident who noted that the Proposed Order does not mention emission controls. She wanted to know whether Microsoft plans to equip the engines with controls. See attached email, Attachment A to these comments.

The Oxford engines will be equipped with SCR for NOx and with catalyzed diesel particulate filters to control particulate matter, VOCs and CO. Further, the emission limits that Ecology has included in Table 4 are EPA Tier 4 limits. In Table 4 of the Proposed Order Ecology will require Microsoft to source test the engines to demonstrate compliance with EPA Tier 4 limits.

The Proposed Order should include findings that Microsoft voluntarily proposed to equip all of the diesel engines at the Oxford Data Center with control devices that can achieve EPA's Tier 4 standards, and that those engines will exceed the Best Availability Control Technology ("BACT") determinations in Table 2a.1. Microsoft believes it is important that the permit contain findings on these key details of the project. Our proposed edits to Paragraph 2 on page 5 incorporate a short version of these findings into the permit.

Microsoft's comments on the TSD for the Proposed Order provide more detail on the controls specified for the engines, and the basis for the conclusion that they exceed BACT requirements. See attached red line of the draft TSD at 2, 8, 10, etc.

Ecology Response:

The installation of Tier 4 controls on the Microsoft Oxford engines is not voluntary, and the word "voluntarily" will not be inserted into the final permit. It is recognized that the Tier 4 air pollution control equipment required on the Microsoft Oxford emergency engines will reduce emissions to below BACT. The AQP will reword this section to avoid any confusion about the

BACT determination which is based on cost per ton of pollutant and the requirement that the Microsoft Oxford Data Center engines must meet EPA Tier 4 emission standards. This administrative clarification to the preliminary determination does not require an additional public comment period. Any attachments referred to in Mr. Radick's comments are available in Appendix B.

COMMENT 10, JOHN RADICK:

2. Load ranges, Condition 3.2

Microsoft recommends that the approval order allocate engine hours to load ranges (e.g. 0 to 10 percent electrical load), rather than to specific load levels. The main reason for this recommendation is that certain operations, e.g. load bank testing, require operation at load levels other than 0, 80 and 100 percent. In addition, it is useful to specify that "load" means electrical load (as opposed to mechanical load). We included in the proposed brackets an allowance for the fact that engines may operate within 2 percent of the targeted 80 percent load level.

Ecology Response:

Microsoft would like the AQP to replace loads with load ranges in Condition 3.2. Microsoft should have identified this request during the NOC application review process and not during the public comment period. While the AQP understands Microsoft's concerns regarding load ranges, the AQP did not receive sufficient information in the application to fully evaluate impacts due to load ranges in the current modeling. The AQP cannot make these changes without additional information and further NOC application review.

COMMENT 11, JOHN RADICK:

3. Engine hour limits for load levels, Conditions 3.2.2.1 and 3.2.3

These two conditions limit the engine runtime hours for specific loads: no more than 40 hours per year at 80% load (or 11% to 82% load per Comment 2 above) and 17.5 hours per year at 100% load (or in excess of 82% load per Comment 2). In the aggregate, the Proposed Order authorizes each engine to operate a total of 57.5 hours per year at these two load ranges.

Microsoft recommends modifying Condition 3.2.2.1 to authorize up to 57.5 hours per year at 80% load (or 11%-82% load). Condition 3.2.3 will still limit the runtime at 100% load (or in excess of 82% load) to 17.5 hours per year, but the engine hours operated at this load level will count towards the 57.5 hours per year authorized in Condition 3.2.2.1. Monthly, semi-annual and corrective testing required in the Proposed Order will be done at a wide range of loads (0%-100%). This proposed change provides Microsoft with the flexibility to operate at either the 80% load (11 %-82%) or 100% load (greater than 82%) level, while still limiting the overall engine runtime hours to 57.5 hours per year and maintaining the 17.5 hour per year limit at the highest load level.

Ecology Response:

Microsoft would like Ecology to aggregate hours of operation for 80% and 100% load. The AQP has not fully evaluated whether aggregation was considered in the modeling. Because of the unknown implications to modeling and emission impacts, the AQP cannot make this change to the permit.

COMMENT 12, JOHN RADICK:

4. Daily Energy Generation, Condition 3.2.2.2

This condition sets a daily cap on electric power generated in a day. It includes an exception for emergency power outages. The condition should be clarified to state that the exception applies during up to four days *per year* of emergency power outage, and that the limit applies to each calendar day. The latter edit minimizes what could otherwise be a major recordkeeping burden.

Ecology Response:

Microsoft would like to clarify how the daily cap is applied in the proposed permit. Ecology can make this change to the permit since it does not increase emissions and is not considered substantive. This administrative clarification to the preliminary determination does not require an additional public comment period.

COMMENT 13, JOHN RADICK:

5. Power outage exception for high load range limit, Condition 3.2.3

This condition limits the number of engines that can simultaneously operate at 100% load. In Comment 10 above, Microsoft proposed to change the specific load of 100% to a load range of 82% to 100%. During an emergency power outage, it is possible that an engine could operate at a load level slightly higher than 82% (e.g. 83% or 84%). Accordingly, Microsoft proposes to include "emergency power outages" in the description of operational scenarios for this load range. If an emergency power outage occurs, more than three engines may need to be run at a load range of between 82%-100% to power the data center. Microsoft recommends adding language to Condition 3.2.3 to clarify that more than three engines may run simultaneously during an emergency power outage.

Ecology Response:

Ecology does not object to MSN's requested option of borrowing engine runtime hours at 100% load from those allocated for 80% load. However, because the AQP has not fully evaluated how load ranges and aggregation were addressed in the modeling, Ecology does not approve of redefining the 80% load range and aggregating the 80% and 100% loads as explained in Response to Comment No. 3. Similarly, operation of more than three engines at 100% load for power outages was not evaluated by the AQP because the applicant's modeling considered power outages at the 80% load but not at the 100% load. If Ecology approved the option to subtract hours from the 80% load for use at the 100% load, but denied the other requests, MSN would be subtracting from the currently approved 40 hours at 80% load instead of from their requested 57.5 hours. Because Ecology does not believe this is MSN's intent, and because these requests hinge on previous requests which were denied, Ecology will not make these changes.

COMMENT 14, JOHN RADICK:

6. Engine hours for source testing, Condition 3.3.2

Table 4 and Condition 4.4 of the Proposed Order demand that Microsoft source test engines at periodic intervals using a protocol that mandates source testing at six different engine loads, with a minimum of three one hour test runs at each load, and two different test methods for particulate matter. Condition 4.4 defines all of this testing on one engine as a "single testing event." Condition 3.3 .2 of the Proposed Order proposes to allow only 30 hours of engine run time per testing event.

Microsoft requests that Ecology revise Condition 3.3.2 to allow 45 hours per testing event. Source testing experience at other data centers demonstrates that Ecology's requested six load test will require more than 30 hours per generator. A six-load test requires 18 test runs, three runs per load. Each test run is required to be an hour long, which equates to an actual sampling duration of 18 hours per testing event. The 60 minute duration of each run is necessary to ensure that the particulate test captures enough material to accurately represent the emission rate from the engine.

In addition to the actual sampling time, generators require additional runtime during testing for pre-test velocity traversing to create cyclonic flow (2-3 hours), start-up and warm-up of the generator to reach the necessary temperature and stabilization between loads, changing out the Method 5 sampling train between each run, stabilization of the NOx, VOC and CO monitors, recalibration of the monitors when switching loads and cool-down of the generator at the end of the day. If small glitches occur during testing, which is always a possibility, additional unplanned runtime may be needed to adjust and calibrate the gaseous monitors, to fine tune the generator to achieve the load required for each test or to adjust the load bank, among other potential problems.

Actual source test experience documents the truth of these observations. The T-Mobile data center conducted a five-load test in October 2013 which required 35 hours of actual generator runtime. 1 Landau Associates estimates that a six-load test at T-Mobile would have required 42 runtime hours per generator. The Columbia Data Center conducted a five-load source test on one of its generators in May 2013 which lasted 5 days and required 44.2 hours of run time. Some of these hours may be attributable to learning curve delays, but a six-load test requires more hours than a five-load test. Given that the Proposed Order mandates source testing and prescribes a detailed protocol for the performance of these tests it must allow enough engine operating time per testing event to perform the operations required by the permit.

The NOC application for the Oxford Data Center modeled ambient DEEP impacts from engine source testing on the conservative assumption that Microsoft would run each of the 36 2.5 MW generators for 1.25 hours each year for source testing. See Microsoft's NOC Supporting Information Report for Project Oxford at Table 1 (Mar. 13, 2014). This equates to 68 hours per engine per triennial testing event.² Over the 70 year interval studied in the Health Impact Assessment Microsoft modeled roughly 500 more hours of source testing than the proposed 45 hour per test event limit would allow.

To model compliance with the annual NAAQS for NOx and PM2.5 Appendix C of Microsoft's NOC Supporting Information Report calculated the "worst-case 12 month emissions" by assuming that the maximum annual source testing event would consist of testing two generators in any given year with an allocated fuel consumption of 14,299 gallons/year for stack testing; that fuel usage corresponds to 74 hours per testing event for each of the two generators. See Microsoft's NOC Supporting Information Report for Project Oxford at App. C, Table 7 (Mar. 13, 2014). The requested source testing allowance of 45 hours pr testing event is considerably less than the conservatively high runtime Microsoft's consultant modeled.

Microsoft also requests that Ecology delete from Condition 3.3.2 the phrase "no more than two generators shall be tested per year, every three years..." This phrase duplicates the source test frequency provisions from Table 4, and it conflicts with Condition 4.4, which requires testing of three generators in the event that a source test shows non-compliance with any emission limit.

Ecology Response:

Microsoft would like to increase engine runtime during testing from 30 hours/year to 45 hours/year. Microsoft requested 30 hours of testing runtime for each engine in the NOC application. The amount of testing runtime for Tier 4 engines may have been underestimated. It is unknown if any Tier 4 engines in the northwest have been tested in a way consistent with the requirements in the Preliminary Determination, so it is not clear whether the Microsoft runtime estimates are reasonable. It is also unclear in the NOC application whether modeling has completely evaluated 45 hours/year for engine testing runtime. The AQP cannot make this change at this time.

COMMENT 15, JOHN RADICK:

7. Purpose of Source Testing, Condition 4.3

Condition 4.3 is confusing, because it suggests that the emission limits in Table 4 are Tier 2 limits. In fact the limits in Table 4 are EPA Tier 4 limits, and the main purpose of the testing is to show that the engines meet the stringent limits in Table 4, not the more lenient Tier 2 limits. The condition would be simpler and provide more valuable information if Ecology deletes the reference to "applicable emission standards for the Tier 2 certified engines" in the first sentence of Condition 4.3. Microsoft requests that Ecology revise the Proposed Order as indicated in the attached red line to clarify the purpose of the testing.

Ecology Response:

Microsoft would like Ecology to clarify the engine emission limits in the permit. The engines at the Microsoft Oxford Data Center are required to meet EPA Tier 4 emission limits. Ecology has revised the Preliminary Determination in several sections to make it clear that the engines must meet Tier 4 limits. This administrative clarification to the preliminary determination does not require an additional public comment period.

COMMENT 16, JOHN RADICK:

8. General Testing and Maintenance Requirements, Condition 4.4

Microsoft requests that Ecology clarify that any re-testing required in the event that a source test shows non-compliance with an emission standard is a *separate* testing event for that engine. Comment 6 above documents that the test runs specified for a single testing event require more than 30 hours of engine run time to perform. Designating the re-test as a second testing event would enable Microsoft to run two tests on the same engine, as required by Condition 4.4, without violating the operating hour limit in Condition 3.3.2.

Ecology Response:

Microsoft would like to consider any repeat test on the same engine as a second testing event. Additional testing runtime was not included in the modeling, and engine testing runtime will not be added by this change. Condition 3.3.2 provides a path for Microsoft to pursue if they find

the need to retest engines and request additional testing runtime hours. Ecology cannot make this change to the permit without further application review.

COMMENT 17, JOHN RADICK:

9. Source Test Intensity, Condition 4.4 and Table 4

Microsoft requests that Ecology reduce the intensity of the source testing requirements in Condition 4.4. Ecology's proposed Condition 4.4 requires Microsoft to test each of the Oxford Data Center engines using two different load methods, a single-load method and a five-load weighted average method to demonstrate compliance with the emission limits in Table 4 of the Proposed Order. These tests are to be performed on two engines within 12 months of startup and then two engines every three years thereafter. Microsoft requests that Ecology reduce the intensity of the testing requirements to test one engine within 12 months of startup and then one engine every three years thereafter.

First, the testing proposed by Ecology is expensive and time-consuming. Six-load testing requires 18 test runs per generator. As indicated in Comment 6 above, the Columbia Data Center underwent five days of testing on one generator in 2013. That was for a five load test, using test methods that do not require recovery of back half particulate emissions. The May 20 13 test cost \$84,800.3 A six load test that requires capture of back half particulate will be more costly. Testing two engines at a time obviously would increase the total cost, although there would be savings from shared mobilization costs.

Second, all of the engines of a given capacity are identical. There is no reason to expect that emission rates will vary between two identical off the shelf Caterpillar engines. That is why EPA does not require owners of Subpart 1111 engines to test them at all. The Proposed Order, however, requires Microsoft to test *two* engines in year one and every three years thereafter. The number of EPA five load tests demanded by the Proposed Order is unprecedented. Microsoft has data centers in seven states and the territory of Puerto Rico. None other than Washington require owners of NSPS Subpart IIII engines to source test their engines to show compliance with Subpart IIII emission standards. Ecology has only intermittently required such testing for Washington data centers. Table 1 summarizes the generator testing requirements in other Washington data center permits. Only two other Washington data centers, T-Mobile and Microsoft's Columbia Data Center, are required to perform any five-load weighted average testing. The T -Mobile data center approval order requires two five-load EPA source tests in the first ten years of operation. The Columbia Data Center approval order demands four five load EPA tests in the first ten years of operation. The Proposed Order demands *eight* EPA five load source tests in the first ten years of operation.

Third, the five-load weighted average testing is not necessary to monitor compliance with BACT. Ecology determined BACT for the Oxford Data Center engines to be installation of Tier 2 certified engines. (See Proposed Order No. 14AQ-E537 at Table 2a.1). Because Microsoft voluntarily equipped the engines with Tier 4 controls, there is an enormous compliance margin between BACT and the control efficiency of the engines.

Microsoft is not requesting that Ecology delete all five-load weighted average testing from the Oxford Data Center approval order. We do ask that Ecology reconsider the intensity of the

proposed testing based on the factors noted above. The red line of the Proposed Order attached to these comments requests no reduction in the frequency of source testing, but that Ecology specify one (rather than two) engines to be tested during each source test event. One test per event, coupled with the requirement in Condition 4.4 to source test three engines in the event of a source test failure, will give Ecology ample assurance that the Oxford engines meet the applicable emission limits.

Ecology Response:

Microsoft is requesting that the AQP change the number of engines to be tested every three years from two to one. Ecology was made aware of this request earlier in the public comment period and the request appears reasonable. It has been proposed that a reduction in the number of engines to be tested every three years would not relax the permit if the total number of engines to be tested was increased and the length of time testing takes place is extended from 10 to 26 years. The Microsoft request does include an emissions increase above what was allowed in the Preliminary Determination. However, it is unclear whether the modeling has adequately addressed this testing runtime operating scenario, and this request should have been addressed during NOC application review. Ecology will not make this change at this time.

COMMENT 18, JOHN RADICK:

10. Recordkeeping and Reporting, Conditions 8 and 9

At the public hearing on July 24, 2014 citizens requested that the permit include recordkeeping and reporting requirements for the operating limits in Section 3. Microsoft supports this request. We propose to add subsections to Conditions 8 and 9 to require Microsoft to document compliance with the operating hour and maximum electrical generation limits in Section 3.

Ecology Response:

Microsoft has requested that the recordkeeping and reporting requirements in the permit be changed consistent with public comment, and has recommended changes to Conditions 8 and 9. The AQP will further evaluate the public comments, and will determine how best to respond to the concerns raised by the public. The AQP agrees that changes to Conditions 8 and 9 should be made, and will consider the Microsoft changes. However, the AQP will revise the Preliminary Determination in a way that will best address public concerns. Changes to include engine operating load rates will be made to Conditions 8 and 9. This administrative clarification to the preliminary determination does not require an additional public comment period.

COMMENT 19, JOHN RADICK:

11. NSPS Recordkeeping Requirements, Condition 8.6

Condition 8.6 lists "Applicable recordkeeping for emergency engines required by 40 CFR Part 60, Subpart IIII." This language poses compliance challenges for data center managers who must interpret and comply with it. Like other EPA regulations Subpart 1111 is dense and full of cross references. It imposes recordkeeping requirements that vary with the age, size and function of the engines. The requirements of the Proposed Order will remain in effect for decades, potentially outlasting the consultants and regulators who worked on the language of the Proposed Order.

Microsoft requests that Ecology provide more transparent guidance to current and future data center managers by specifying in the approval order the applicable Subpart IIII recordkeeping requirements with which the data center must comply. Fortunately the list is not long. Subpart IIII recordkeeping and reporting requirements appear in 40 CFR 60.4214. Because the Oxford engines are all emergency engines, Subsection (a) does not apply. Subsection (b) potentially applies, and Subsection (c) applies because the engines are equipped with diesel particulate filters. Subsection (d) imposes a reporting requirement that Ecology has already incorporated into Condition 9.6. Microsoft requests that Ecology reference 40 CFR 60.4214(b) and (c) in Condition 8.6 as the applicable Subpart IIII recordkeeping requirements. This addition, presented in the attached redline of the Proposed Order, will guide facility managers in designing recordkeeping systems for the data center.

Ecology Response:

Microsoft would like to clarify what recordkeeping and reporting requirements in Subpart IIII apply to the Microsoft Oxford Data Center. Subpart IIII has been adopted by Ecology in Washington Administrative Code 173-400-115. It is also clear that the requirements in Subpart IIII are applicable under federal law. The AQP has looked at this issue in the past and has determined that Sections 60.4214(b), (c), and (d) apply. Ecology may clarify in the permit what Subpart IIII requirements are applicable as appropriate under the recordkeeping and reporting sections in Subpart IIII. Any changes as a result of this comment would be administrative clarification to the preliminary determination and will not require an additional public comment period.

Patty Martin, MYTAPN, comments 20-32

COMMENT 20, PATTY MARTIN:

Please accept my comments regarding the Oxford data center air quality permit. As mentioned during the public hearing I believe that the Oxford and Columbia data centers are under common control of Microsoft and that the Oxford facility represents an increase in emissions subjecting both facilities – and all its sources of pollutants -- to New Source Review (NSR). This will in effect open both permits to appeal.

Additionally, the combined emissions from both facilities exceeds 100 ton per year of NSR pollutants as defined under 40 CFR 51.165 making them/it a major source¹ of pollution under the FCAA, and subject to the Prevention of Significant Deterioration (PSD) permitting and Title V requirements.

As a facility subject to PSD, the combined emissions from Oxford and Columbia must be reviewed for compliance with the increments established under the FCAA and those adopted into Washington State's Implementation Plan (SIP). Washington's increment levels are more stringent than the federal levels, i.e., 5.0 ug/m³ 24-hr average for PM₁₀ vs. 10 ug/m³. Microsoft's Columbia data center exceeds this standard in Table 5 of *Notice of Construction Columbia Data Center Cooling Tower Feed Water Modification*. Modeling of Oxford's cooling towers combined with a 24 hours outage also exceeds this standard.

Ecology Response:

The commenter refers to “combined emissions” which are also known as aggregated emissions. Ecology does not believe emissions from the Microsoft Oxford Data Center and the Microsoft Columbia Data Center should be aggregated. Whether or not two sources are under common control is not the sole criterion requiring aggregating emissions. The other criterion are (1) whether the facilities belong to the same industrial grouping and (2) are located on one or more contiguous or adjacent properties. 40 C.F.R. 71.2, 52.21(b)(5)-(6). EPA had long followed a general policy of determining whether two facilities are adjacent based on a common sense notion of a source and the functional interrelationship of the facilities, rather than simply on the physical distance between the facilities. Under the contiguous or adjacent properties requirement, the Sixth Circuit Court of Appeals held that functionally interrelated facilities must share a physical border to be considered adjacent. The court determined that the EPA policy of “functionally interrelated” violated the plain meaning for the regulation. In other words, for two sources to be considered for aggregation, the sources need to be physically adjacent, regardless of any functional interdependence between the sources. Because the Microsoft Columbia and Microsoft Oxford Data Centers are not adjacent, emissions from these two data centers do not need to be aggregated. Accordingly, Ecology has not looked at whether their combined emissions trigger PSD. Individually they do not. As a result, the rest of this comment which addresses PSD applicable projects, are not applicable to the Microsoft Oxford project. This comment does not result in a change in the proposed permit.

COMMENT 21, PATTY MARTIN:

There has been no mention of PSD or Title V permitting during the Public Comment period or at the Public Hearing. The public has been denied an opportunity to question and/or comment on these facilities regulated as PSD and Title V. Both permits should be consolidated into one and the public provided an opportunity to comment on the combined permit.

Ecology Response:

Please see response to Comment 20.

COMMENT 22, PATTY MARTIN:

There have been other misrepresentations in the Oxford permitting process, including, but not limited to the following:

- That the Oxford facility is using the same controls as Vantage, or that Tier 4 emissions are satisfied by the use of SCRs and DPFs alone. See email from Greg Flibbert submitted at the Public Hearing stating that (Vantage’s) Tier 4 engines use DOCs, DPFs and SCRs.
- That Columbia and Oxford are not subject to common control as stated by Greg Flibbert at the Public Hearing.
- Reviewing NAAQS and TAPs/HAPs at the fence line. Ambient air is defined as the surrounding outside air, which means that compliance should also be measured inside the fence line. Microsoft should not be able to buy a large parcel of land as a means of satisfying NAAQS.
- That the GACT requirement under 40 CFR 63 ZZZZ satisfies the statutory requirement that BACT be applied to all pollutants. RCW 70.94.152(10) GACT is not as stringent as BACT.

- That there is a CEMS on the engines or retrofits, as stated by Jim Wilder. There is no mention of CEMS in Oxford's permit.

Ecology Response:

In response to your comments:

1. Both the Vantage Data Center and the Microsoft Oxford Data Center use emergency engines that are required to meet EPA Tier 4 emission standards.
2. The Microsoft Columbia and Microsoft Oxford Data Centers have not been consolidated under one permit, and are considered under state air quality regulations as two separate and distinct facilities. Please see response to Comment 20
3. Ambient air is defined as "the portion of the atmosphere, external to buildings, to which the general public has access. Emissions that exceed air quality standards on company property to which the public does not have access are not an impediment to permit issuance. EPA policy has allowed exclusion if public access is barred by fence or other physical barrier. Microsoft is required to create such a barrier at the Microsoft Oxford Data Center, as described in its application. Accordingly, the size of the parcel of land purchased for development of an air contaminant source is not a necessary consideration when determining whether the Microsoft Oxford Data Center can be permitted and Microsoft has demonstrated compliance with both the NAAQS and state Toxic Air Pollutant requirements.
4. Title 40 Code of Federal Regulations Part 63, Subpart ZZZZ is a federal Clean Air Act directive aimed at the EPA, not Ecology. It provides parameters for EPA to use when setting national emission standards for hazardous air pollutants. Using those parameters, EPA has set national emission standards for hazardous air pollutants for engines like Microsoft's.
5. Ecology did not require continuous emissions monitor systems (CEMS) for each engine in the Microsoft Oxford Data Center Preliminary Determination and therefore whether or not the engines have such systems are not relevant to the permit.

COMMENT 23, PATTY MARTIN:

I did not see any information on ground level ozone or modeling for it in either of the NOCs, nor did I see any information on other sources of PM10, PM2.5, NOx, CO, O3 or other air contaminants in the modeling data. Ecology has impermissibly limited its review, when the agency is aware of a variety of sources that contribute to ambient air quality:

Washington State Base Year 2005 County Inventories (June 8, 2007)

Washington State Base Year 2011 County Inventories

Ecology Response:

An ozone analysis was not conducted because it is not required for a minor facility such as Microsoft Oxford that emits only approximately 8.6 tons per year of NOx. With regard to other pollutants mentioned in this comment, regional background emissions (as noted in the application and TSD) were considered and are sufficient for analyzing ambient air quality for minor new source review sources such as Microsoft Oxford. In addition, a community-wide analysis was performed as described in the Second Tier Review Recommendation (6/13/14), which considered background emissions from local sources. This comment does not result in a change in the proposed permit.

COMMENT 24, PATTY MARTIN:

How many of the sources listed in the County Inventory did Microsoft include in NAAQS compliance modeling? Under what authority did Ecology limit its review of PM2.5 to diesel particulate matter only, when there are other sources of PM2.5 in the area?

Ecology Response:

Regional and local background concentrations used for NAAQS compliance modeling are noted in Section 5 of the Microsoft Oxford Technical Support Document (TSD). The regional background concentrations were obtained from the Washington State University (WSU) NorthWest (NW) Airquest web site: <http://lar.wsu.edu/nw-airquest/lookup.html>. Local background concentrations were derived from AERMOD modeling. Sources in the area which were considered by Microsoft include: Con Agra Foods, Microsoft Columbia Data Center, and the Dell Data Center. Review was not limited to DEEP only, but included PM_{2.5} emissions from the Microsoft Oxford cooling towers in addition to the three facilities previously mentioned. Furthermore, Ecology performed their own community-wide modeling approach that considered additional local sources. For a minor source such as Microsoft Oxford, this approach more than satisfies minimum ambient impact analysis requirements which Ecology is subject to per Washington Administrative Code (WAC) 173-400-113(3). This comment does not result in a change in the proposed permit.

COMMENT 25, PATTY MARTIN:

Ecology is required to send a copy of the public notice for both of these permits to the EPA Regional Administrator. I am requesting evidence that the regional office sent a copy of the public notice regarding Columbia's and Oxford's permit to the Regional EPA Administrator as required under 40 CFR 51.161(d).

Ecology Response:

Ecology has determined that all of the Quincy data center projects will have public comment periods due to significant public interest. The public notices for Microsoft Columbia and Microsoft Oxford Data Centers were sent to the EPA on August 12, 2014 as required under Washington Administrative Code 173-400-171(11). A copy of the message to EPA transmitting two public notices is included in Appendix H.

COMMENT 26, PATTY MARTIN:

The community is being led to believe that achieving the NAAQS is protective of human health. Please explain the level of protectiveness provided by the various NAAQS. Are the standards protective of all people, including sensitive individuals, elderly and people with heart, respiratory disease or diabetes?

Ecology Response:

The primary NAAQS are intended to "provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly." Phrase in quotes can be found at EPA's web site <http://www.epa.gov/air/criteria.html>. That said, EPA acknowledges that there is often no certain threshold below which there is no possibility of adverse health effects.

For this reason, EPA is required to review the NAAQS every five years and revise them if the latest science indicates that the existing standard does not provide requisite public health and environmental protection. The PM_{2.5} NAAQS was last updated in 2012. Ecology recommends the commenter participate in the public comment period in 2017 when EPA updates the NAAQS for PM_{2.5}.

COMMENT 27, PATTY MARTIN:

Microsoft's Oxford data center is already under construction. Is starting construction in advance of an air quality permit allowed under the FCAA and State CAA?

Ecology Response:

The Notice of Construction Approval Order is a pre-construction permit, and construction is not allowed under the Washington Clean Air Act. Ecology will not approve pre-construction activities, but it uses enforcement discretion to determine the correct response to pre-construction activities that may occur. The primary criteria used to determine the correct response to pre-construction activities is whether there is any construction or operation of the air contaminant sources.

COMMENT 28, PATTY MARTIN:

Microsoft modeled the manganese emissions from the cooling towers at Columbia, but not at Oxford. These emissions must be combined and the total manganese emitted modeled for compliance with the ASIL under WAC 173-460-150.

Ecology Response:

Manganese emissions from the Microsoft Oxford Data Center were estimated to be below the small quantity emission rates (SQERs) listed in Washington Administrative Code (WAC) 173-460-150, and therefore did not require modeling. For the reasons explained in the response to Comment 20, the emissions of manganese from the Microsoft Oxford project do not need to be aggregated with manganese emissions from the Microsoft Columbia Data Center. This comment does not result in a change in the proposed permit.

COMMENT 29, PATTY MARTIN:

The city's water supply contains nitrates, but Microsoft provides no PTE for nitrates from the cooling towers in either permit, nor considers its presence when modeling compliance for NO_x. Please correct this omission and provide the updated PTE.

Ecology Response:

Nitrates are defined as having one nitrogen and three oxygen molecules or NO₃. With regard to NO_x listed as an EPA Criteria Pollutant, "NO_x by definition is the sum of nitric oxide (NO) and nitrogen dioxide (NO₂).¹" NO₃ is therefore excluded from NO_x considerations. With regard to Toxic Air Pollutants (TAPs), Nitrogen dioxide (NO₂) is listed in Washington Administrative Code 173-460-150 as a TAP but NO₃ is not listed as a TAP. Therefore the omission of Nitrates (NO₃) from PTE estimates and modeling is appropriate.

- Quote from Section 1.2 of "NO_x Emissions Control from Stationary Sources (APTI Course 418).

This comment does not result in a change in the proposed permit.

COMMENT 30, PATTY MARTIN:

As citizens of Washington State participating in a public process that is intended to give us a voice in the air permitting process, I was appalled at the Public Hearing when Deborah Koehnen and her two daughters were rudely directed to sit down at the start of Deborah’s testimony. When public servants become the master, and rules take precedent over respect, then it is time for a lesson in Civics. The power emanates from the people, and “The people of this state do not yield their sovereignty to the agencies that serve them.” RCW 42.56.030 I am again asking for a written apology from the Public Hearings officer – Karin Baldwin – to Deborah Koehnen and her daughters Ellie and Fiona.

Ecology Response:

It was not the Hearings Officer intent to be rude. However, Hearings Officers must abide by the Administrative Procedure Act (RCW 34.05.325) and the Open Public Meetings Act (RCW 42.30.050). These laws give interested persons the opportunity to comment individually, and give Hearings Officers the duty to ensure orderly conduct of meetings. The Hearings Officer provided ground rules at the beginning of the hearing so that these laws would be understood. People providing testimony at public hearings must address the Hearings Officer for several reasons such as obtaining a clear recording of the testimony, giving everyone the same opportunity to provide testimony, and maintaining a safe, intimidation-free environment. When Ms. Koehnen and her daughters stood up and began addressing the audience, the Hearings Officer’s intent was to maintain the ground rules, and not to be disrespectful. The Hearings Officer has committed to handling such situations more sensitively in the future.

COMMENT 31, PATTY MARTIN:

The citizens of Quincy need access to the operational logs of both the Oxford and Columbia data centers to assure compliance with the terms of the permit. The requirement that this information be available upon request must be a specific term of the permit. Additionally, because of the lack of transparency and the excessive use of the generators at Columbia in 2010 (154 hrs each), we request that Tier 4 engines – not retrofits – be installed at Oxford. This ensures that a CEMS is an integral part of the engine, not an add-on.

Ecology Response:

Both Ecology and Microsoft agree that information from the Microsoft Oxford Data Center that is used to determine compliance with permit conditions should be available to the public. The final Oxford Data Center permit will contain a recordkeeping and reporting requirement that will include operational load rates of each engine during each period of operation. The operational load rate information for each engine will be accessed from the engine control systems used to operate the engines. As stated previously, the engines at the Microsoft Oxford Data Center are required to meet Tier 4 emission standards.

COMMENT 32, PATTY MARTIN:

Please combine my comments from the Public Hearing, Oxford permit and Columbia permit. Because these facilities are under common control, subject to PSD and Title V, the permits should be combined and the public process begun anew.

Ecology Response:

Ecology is only responding to comments on the Microsoft Oxford Data Center in this Response to Comments. Ecology has determined that the Microsoft Oxford Data Center is not subject to federal major source requirements, and should not be combined with the Microsoft Columbia Data Center. Please refer to Comment 20. Your comments on the Microsoft Columbia Data Center will be addressed in a separate document.

Debbie and Mark Koehnen, Citizens of Quincy, comments 33-36

COMMENT 33, DEBBIE AND MARK KOEHNEN:

I am concerned about the Microsoft permits. I understood that we had a community approach with a maximum pollution number, as well as a maximum level for each company. I do not understand why Microsoft is being allowed to add Oxford to their expansion without having it included in their previous numbers. It seems like a loophole is being provided for Microsoft to keep the particulate numbers lower than they actually are. Microsoft is the parent company. They should retrofit the older Tier 2 generators to reduce emissions if their entire number is too high. This fact wasn't apparent until the end of the question period, so we weren't able to question this point further.

Ecology Response:

Please see the response to Comments 20 and 41.

COMMENT 34, DEBBIE AND MARK KOEHNEN:

The change to the cooling tower emissions was never discussed. Why are we having to go backwards with emissions? Water in a desert is always a problem. Microsoft should have known that when they chose to build here. Poor planning on their part shouldn't mean we should have to accept worse air quality. I commend them for trying to find water solutions but please don't accept less for air solutions. Again, how about adding filters?

Ecology Response:

Ecology addresses the air-related portions of the comment as follows: Section 4.4 of the Microsoft Oxford Technical Support Document (TSD) explains how the cooling tower emission control devices called "drift eliminators" to be used at Microsoft Oxford are considered to be the most efficient drift eliminators that are commercially available. Thus, Ecology disagrees that we are going "backwards with emissions." Of the cooling towers in Quincy, none will have higher efficiency drift eliminators than those that will be used at Microsoft Oxford. With regard to adding filters to address air concerns, drift eliminators can be thought of as such, because they filter out entrained droplets that contain particulate matter. As noted above, Microsoft Oxford will use the most efficient drift eliminator control devices that are commercially available for the induced-draft mechanical cooling towers to be used at Microsoft Oxford. This comment does not result in a change in the proposed permit.

COMMENT 35, DEBBIE AND MARK KOEHNEN:

We don't deserve to have our air quality compromised even more than it already is. We are still suffering from smoke in the valley due to the fires. Was this considered in the community air quality reports?

Ecology Response:

Background concentrations of air pollutants are considered as part of the notice of construction process. Washington's rules cannot allow a new source of air pollutants if new emissions added to existing levels of pollutants are projected to cause an exceedance of air quality standards.

Wildfires were not included in the analysis to determine background concentrations. It is important to note that wildfire impacts are not typically included in determining compliance with air quality standards as they are considered "exceptional events".

COMMENT 36, DEBBIE AND MARK KOEHNEN:

I did ask about our community data numbers & do not feel I was given an answer to my question. I double checked with other people who were at the meeting and the 'community' number of 0.15 for particulates was given as 'the area around the Oxford center with the highway numbers added in'. When I questioned this, I was told it was for the entire community. It can't be both. Which is it? I was surprised when much of the meeting discussed East & West data instead of the whole community approach. It makes me suspicious that our community numbers are getting too high to present them possibly?

Ecology Response:

The estimated concentration of diesel particulate in Quincy varies depending in part on proximity to emission sources such as heavy duty trucks (highways), locomotives (railroads), and emergency engines (data centers). Therefore, a single number (or concentration) was not applied to the entire community.

The 0.15 mg/m³ concentration referred to in the comment relates to the highest estimated cumulative concentration at a residential location in the area surrounding Microsoft Oxford. This concentration is specific to that location and represents the cumulative concentration attributed to all diesel particulate sources in Quincy. This residential location was specifically identified because exposure can potentially occur over a long period of time (e.g., an entire lifetime).

The primary purpose of the public meeting was to discuss the ambient impacts related to the proposed Microsoft Oxford project. To describe cumulative impacts from multiple sources in addition to Microsoft Oxford's emissions, Ecology chose to present the information relevant to the part of town where Microsoft Oxford's emissions could potentially cause an impact greater than the Acceptable Source Impact Level (ASIL).

Also see the response to Comment 5, which shows a map of the broader Quincy community.

Comments and Responses

Section 2. This section address comments received during the July 24, 2014 Public Hearing on the Microsoft Oxford Data Center. The original transcript, in full, is available for reference in Appendix C.

Danna Dal Porto, MYTAPN, comments 37-39

COMMENT 37, DANNA DAL PORTO:

So, I want the Ecology approval order, the permit, to say clearly that Oxford is required to use specific emission controls on their diesel engines to comply with a legal operation of their data center. I want these emission controls to be listed, clearly named and identified. Anybody who looks at the permit should see the restrictions placed on the operation of that facility.

Ecology Response:

Please see response to Comments 1 and 9.

COMMENT 38, DANNA DAL PORTO:

My written comments that I will turn in also include some grumbling about the community-wide evaluation of emissions. I think this has been an arbitrary number that was developed by the toxicologist Gary Palcisco and refuses to really -- it hasn't been adopted by Ecology, it's not gone through peer review. And so when they talk about community-wide, I have an issue with it. I'm also kind of confused about why this was a second tier review and not a third tier review.

Ecology Response:

Please see response to Comment 2.

COMMENT 39, DANNA DAL PORTO:

I also have some other questions about -- I would like to have a better map that shows the whole valley and where the extension of these emission plumes go, and how much of our community is covered by emissions from the different diesel generators.

Ecology Response:

Please see response to Comment 5.

Debbie Koehnen, Citizen of Quincy, comments 40-41

COMMENT 40, DEBBIE KOEHNEN:

The other problem I see is the catastrophic predicament. In 2007, there was a catastrophic event. The west side was out of power, the east side was out of power. A catastrophic event. When you look at that map up there, my home is in the purple plume by Intuit. That's the worst. And it happened already. It's going to happen again. We had fires. We've had horrible air the last two or three weeks because of the fire. That's added into this problem with the community-wide air quality. That needs to be fixed, reduced so that we don't have people in respiratory self like myself -- respiratory distress.

Ecology Response:

Ecology did not assume that a catastrophic event, or a city-wide power outage, is impossible. Instead, we assumed many events could occur where the entire town is without power for eight hours every year for the life of the data centers. Generally, the analysis led us to conclude that extremely infrequent occurrences of elevated pollutant levels can occur. The frequency of these occurrences is highest on actual data center properties.

The primary pollutant of concern in the case of a system-wide outage is nitrogen dioxide, though other pollutants would be present. Higher levels of these pollutants would be of most concern for people with asthma or other existing respiratory problems. It is possible for these people to experience acute breathing impairment during these episodes.

The “purple” plume mentioned in the comment refers to an image and poster that was presented at the public meeting. This purple color indicates that if there were eight hours of simultaneous outage every year after year, then a level of pollution could rise to a level of concern for about a one hour period every 50 to 100 years.

The analysis, conducted as part of the community-wide approach, was not part of a regulatory process. Instead, it was meant to inform the public, the city, and others about the likelihood of acute respiratory hazards occurring as a result of a system-wide power outage in Quincy. Please refer to Comment 2.

Ecology recognizes that several communities in Washington have experienced or continue to experience exposure to wildfire smoke. Ecology has collaborated with various agencies to inform the public of poor air quality days and health impacts when communities are affected by wildfire smoke. During wildfire season, information is posted on the collaborative Washington Smoke Blogspot (<http://wasmoke.blogspot.com>). The Department of Health (DOH) also developed messages to provide to the public in times of poor air quality. You can get DOH information here:

<http://www.doh.wa.gov/CommunityandEnvironment/AirQuality/OutdoorAir/SmokeFromFires/WildfireSmoke>.

COMMENT 41, DEBBIE KOEHNEN:

The other request I would have, I loved hearing that the new 37 generators are going to have the tier 4 filters on them. I would ask Microsoft, now that they've been here for a long time, and technology's getting better and we can now do the tier 4 under the BACT, to start updating those old generators that they have and put the filters on them, and the scrubbers and whatever they need, so that our air quality is better.

Ecology Response:

Ecology acknowledges the commenter's appreciation for the emission controls that will be used on every engine at Microsoft Oxford. The other Quincy “old generator” referred to in the comment have their own permits and regulatory requirements allowing the facility to use specific generators. Ecology has specific authority to require updating generators at facilities only if a facility has been modified and subject to new source review pursuant to WAC 173-400-110. This comment does not result in a change in the proposed permit.

Patty Martin, MYTAPN, comments 42-46

COMMENT 42, PATTY MARTIN:

First, I bring with me an email from Matt Kadlec, who is a toxicologist with the State of Washington, because I remember once reading that the state air quality program uses a standard of 20 $\mu\text{g}/\text{m}^3$ for a health viewpoint for particulate, $\text{PM}_{2.5}$. And I noticed in the technical support document for the Oxford Data Center that the background value for the region is 21 $\mu\text{g}/\text{m}^3$. That means that for sensitive individuals such as Deborah Koehnen or myself, who is very sensitive sinus-wise for sinusitis and other issues, that these numbers are elevated over the air quality program's recommendation of 20 $\mu\text{g}/\text{m}^3$. So our baseline in Quincy already exceeds a level of safety for sensitive populations.

Ecology Response:

The background value of 21 $\mu\text{g}/\text{m}^3$ referenced in the comment represents the estimated 98th percentile daily $\text{PM}_{2.5}$ concentration. This means that 98% of the time, the daily $\text{PM}_{2.5}$ concentration is less than 21 $\mu\text{g}/\text{m}^3$.

Ecology's air quality program developed a $\text{PM}_{2.5}$ goal of 20 $\mu\text{g}/\text{m}^3$. This goal is not a regulatory standard, but was established because Ecology recognized that there was potential for sensitive individuals to be impacted by fine particles at levels below the current NAAQS 24-hr $\text{PM}_{2.5}$ standard (this current standard is 35 $\mu\text{g}/\text{m}^3$). Washington's Air Quality Advisory (WAQA) incorporates this $\text{PM}_{2.5}$ goal as the break point between "moderate" air quality and that which is considered "unhealthy for sensitive groups".

For more information on WAQA, go to

<https://fortress.wa.gov/ecy/publications/publications/0802022.pdf>

COMMENT 43, PATTY MARTIN:

I believe that despite the assurances from Ecology, that Microsoft's two facilities are under common control, and because they are under common control and on adjacent properties, that Ecology and Microsoft had an obligation to model the increased emissions, and all emissions from both facilities should have been modeled.

Ecology Response:

Please see response to Comments 20 & 21.

COMMENT 44, PATTY MARTIN:

The 2010 permit of Microsoft, again, as I recall, requires that any engines that are installed past January 1, 2011, must be tier 4 engines, not tier 2 retrofitted to tier 4 emissions. And I believe that there are differences between a tier 2 engine retrofitted and a tier 4 engine that has those controls that are intimately a part of that engine.

Ecology Response:

The October 26, 2010 Microsoft Columbia Data Center Permit (Order No. 10AQ-E374) was specific to that facility and does not affect the Microsoft Oxford facility. It should be noted that the 2010 permit was been rescinded by a more recent permit for that facility (Order No. 13AQ-E497). Furthermore, Section 2.1 of the 2010 permit stated the following: "Any generator engine

manufactured after January 1, 2011 shall meet 40 CFR 89 Tier IV Transitional emission levels or other specifications as required by the EPA at the time the engines are installed.” They key word in this condition is “or”. As of 2014, emergency engines are still not required to have Tier IV Transitional or Tier IV final emission limits. This is outlined in Section 2.1 of the Microsoft Oxford Preliminary Determination and detailed in Section 3.4.1., of the Microsoft Oxford Technical Support Document (TSD). Consequently, the rest of the comment is not applicable to the Microsoft Oxford permit. This comment does not result in a change in the proposed permit.

COMMENT 45, PATTY MARTIN:

I want to reiterate that we citizens who have a right to this information to assure that the data centers, all data centers in Quincy, are in compliance with their permits, have been denied on repeated occasions access to the... to the reports that are made by the engines themselves and recorded. Handwritten logs of engine operations does not suffice in this digital age where engines themselves make their own recordings.

Ecology Response:

Please see response to Comments 18 & 31.

COMMENT 46, PATTY MARTIN:

I'd also like to add that I don't believe the Washington State statutes provides an exemption from BACT for the hazardous and toxic air pollutants that's allowed under the 100 hour emergency engine rule found at 40 CFR 63 quadruple Z, ZZZZ. That uses a standard called the general achievable -- it's GACT, general achievable control technology, versus the best available control technology, which is required under Washington statute for all sources of air pollution. And that citation is RCW 70.94.152(10).

I have a concern that all of the ambient air measurements are done at the fence line. These are large pieces of property. The fence line is very removed. The definition of ambient air is outside, the surrounding outside air. And I am concerned about the safety of workers on all of these data sites for hazardous and toxic air pollutants as well as the ambient air quality criteria pollutants.

Ecology Response:

Please see response to Comment 22.

Comments and Responses

Section 3. This section contains email threads between commenters and Ecology asking for clarity on the draft permit.

From: William Riley [mailto:1724liberty@gmail.com]
Sent: Monday, June 23, 2014 2:30 PM
To: Mort, Beth (ECY)
Subject: Fwd: Support of Microsoft Expansion in Quincy

I am President of the Columbia Basin Environmental Council. Founded in 1996 and continually registered with WA Sect of State as a Non-profit UBI# 601703876. We comment on events impacting the environment. CBEC will comment favorably on the expansion of the Microsoft facility in Quincy, WA.

1. The history of the existing facility.
2. The past history of diesel use being only 20% of the permitted use.
3. Electrical service having extremely (less than 143 minutes/year) little downtime resulting in low diesel backup use
4. Current low sulfur diesel fuel available reducing emissions
5. Favorable winds from the Columbia River Gorge causing rapid air replacement
6. Number of jobs created vs extremely low environmental impact

If you can provide me with a mailing address I will provide you with a copy of the CBEC statement of support.

We as environmentalists support bringing jobs to Grant County.

Sincerely,
Wm Riley CBEC President
POB 1285
Soap Lake, WA 98851
1724liberty@gmail.com
PH 509-246-0946

Email thread between Patty Martin and Ecology

-----Original Message-----

From: Hibbard, Richard (ECY)
Sent: Tuesday, July 15, 2014 9:25 AM
To: Flibbert, Gregory S. (ECY); Mort, Beth (ECY)
Cc: Kadlec, Matthew (ECY)
Subject: FW: Microsoft's latest lie

Forwarded Email from Ms Martin.

-----Original Message-----

From: Patty Martin [mailto:martin@nwi.net]
Sent: Tuesday, July 15, 2014 9:16 AM
To: Hibbard, Richard (ECY); Kadlec, Matthew (ECY)
Subject: Microsoft's latest lie

Richard and Matt,

Just to let you know that Microsoft courted Danna and me about the new facility and assured us that they were using SCRs and DPFs. Now I see the permit doesn't include either control. In fact, Microsoft is buying engines that were manufactured in 2006 and 2010 to avoid using Tier IV engines.

http://www.ecy.wa.gov/programs/air/quincydatacenter/docs/MSN_Preliminary_Determination_14AQ-E553.pdf

I have been told that Microsoft is creating a more concentrated emission from their existing plant by recirculating the water through the cooling towers by 100x.

Patty

--

Patricia Martin
Safe Food and Fertilizer
617 H St. SW
Quincy, WA 98848

A project of Earth Island Institute.

On 7/15/2014 10:21 AM, Mort, Beth (ECY) wrote:
Hello Patty,

Rich Hibbard forwarded us your email below. The link that you provided was for Microsoft's existing Columbia Data Center. The comment period for Columbia Data Center is for modifications to cooling tower operations.

Microsoft's new facility is the Oxford Data Center. The link for that preliminary determination is: http://www.ecy.wa.gov/programs/air/quincydatacenter/docs/MSN_Project_Oxford_PD_June_16_2014.pdf. The link for the Technical Support Document is: http://www.ecy.wa.gov/programs/air/quincydatacenter/docs/MSN_Project_Oxford_TSD_June_16_2014.pdf. Both are on the [web site](#) under Microsoft Oxford Data Center heading along with other relevant documents. The engines for Oxford will be Tier IV equivalents with SCR and PDF. Microsoft can't meet the emission conditions in the permit unless they use these controls for each engine. Please see sections in the TSD, 3.4.1 on page 7, and the Catalyst Delay Cold Start Adjustments Table on page 5.

The comment periods for both Columbia and Oxford run through July 29th. The public hearing on July 24th at the Quincy Community Center is just for the Oxford Data Center – which is the new facility.

Thank you,

Beth
509.329.3502

From: Patty Martin [<mailto:martin@nwi.net>]
Sent: Tuesday, July 15, 2014 11:39 AM
To: Mort, Beth (ECY); Hibbard, Richard (ECY); Kadlec, Matthew (ECY)
Subject: Re: Microsoft's latest lie

Beth,

You are right that I sent the wrong draft permit. Here is the Oxford draft:

http://www.ecy.wa.gov/programs/air/quincycdatacenter/docs/MSN_Project_Oxford_PD_June_16_2014.pdf

Please cite to the section of this draft permit where there is any requirement for controls. I do not see that they are required nor being voluntarily installed as eluded to in the TSD section 3.4.1.

Thank you.

Patty

On 7/15/2014 3:25 PM, Mort, Beth (ECY) wrote:
Hello Patty,

Thank you for the comment regarding the requirements for SCR and DPF on each engine. We agree that the requirement for SCR and DPF should be clearly stated in the permit conditions. We will include this in the Response to Comments document.

Thank you,

Beth
509.329.3502

From: Patty Martin [<mailto:martin@nwi.net>]
Sent: Tuesday, July 15, 2014 4:03 PM
To: Mort, Beth (ECY)
Cc: Flibbert, Gregory S. (ECY)
Subject: Re: Microsoft's latest lie

That's a none answer. I will interpret that to mean they are not putting on controls.

Patty

From: Mort, Beth (ECY)
Sent: Wednesday, July 16, 2014 9:24 AM
To: 'Patty Martin'
Cc: Flibbert, Gregory S. (ECY)
Subject: RE: Microsoft's latest lie

Hello Patty,

Microsoft is putting controls on their engines.



Email thread between William Collier and Ecology

-----Original Message-----

From: William Collier [mailto:isi.wc@me.com]

Sent: Tuesday, July 29, 2014 1:47 PM

To: Mort, Beth (ECY)

Subject: Microsoft Columbia Data Center

> Dear Ms. Mort,

>

> In the last 24 hours I was made aware of today's deadline for comments on this project, and unfortunately that's simply not enough time to provide a thorough review and analysis. That's no fault of yours, but the state of my situation. However, I did a cursory review of the document "Final Notice of Construction Supporting Information Report Microsoft Project Oxford Data Center Quincy, Washington."

>

> They're proposing to build a data center using older concepts of construction, that being diesel generators and chilled water cooling systems. Both have have significant downsides for the environment. After all if there weren't hazards, and risks associated with both products why would they have needed to prepare a costly 182 page report to defend them. Furthermore, all the data provided in the reports seems to be based on optimum conditions and assumes that Microsoft will be adhering to a very strict and costly on-going maintenance program. Who's going to monitor those programs and at what cost?

>

> Here's my take, Quincy has had on-going problems with Microsoft's generators, both off-gassing and noise. You only have so many natural resources that you'd presumably like to protect, therefore why should either of these environmentally unfriendly products even be taken under consideration.

>

> Here's an alternative recommendation:

>

> 1.) Generators, instead of using diesel as a primary fuel source, why not use dual burner generators, which are readily available, using Natural Gas as the primary fuel source, and diesel ONLY used in the rare instance where Ngas fails. This provides them a redundant fuel source, which will make for a more reliable data center.. This dramatically reduce the emissions associated with diesel only equipment. I believe these are available from the same vendor.

>

> 2.) Cooling towers, As you may or may not be aware chilled water systems such as this, that depend on the use of cooling towers evaporate an enormous amount of water. By their own admission (p. 132 of the report) shows a Make Up water requirement of 300 gals/min., you realize that's 157,680,000 gallons of water annually, or 238 olympic swimming pools. Seems to me that's a lot of water to unnecessarily be evaporating, along with tons of associated pollutants. There

are other means of well proven and equally efficient cooling methods available that should not cost them a premium. Air cooled direct expansion system, which have been successfully cooling data centers for decades. Leading data center manufacturers are, Liebert/Emerson, Stuls, DataAire, other manufactures providing a similar but more costly and less energy efficient means of the same thing are Multistack, and Motiveair. These can be had for similar if not a lower cost than chilled water systems, and don't use cooling towers to evaporate water, they are a closed loop system.

>
> Just as a matter of record, I'm not a part of, or represent any of the organizations mentioned, but have worked in and around the data center for a long time. My interest here is in helping all of us to protect the planet one day and project at a time--using a bit of common sense.

>
> Regards,
>
> W
>
>

From: Mort, Beth (ECY)
Sent: Wednesday, July 30, 2014 9:29 AM
To: 'William Collier'
Subject: RE: Microsoft Columbia Data Center

Hello William,

Thank you for your comments. I wanted to double check with you on which comment period you want these comments connected with. We do have separate comment periods for the new Oxford Data Center and the changes to Columbia Data Center. Your subject line specifies Columbia but in your email it looks like your comments are specific to Oxford. If you would like any of your comments to be associated for both data centers that is also perfectly fine but let me know so that I can ensure they are responded to appropriately by Ecology staff.

I am in the office all day today and tomorrow too if a phone call is easier to discuss.
Thank you for your time and submission of comments.

Beth Mort | Community Outreach & Environmental Education
Air Quality Program | Dept of Ecology Eastern Office
beth.mort@ecy.wa.gov | 509.329.3502
Office Hours: M-Th 7am-4pm

This communication is public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

From: William Collier [mailto:isi.wc@me.com]
Sent: Wednesday, July 30, 2014 2:18 PM
To: Mort, Beth (ECY)
Subject: Re: Microsoft Columbia Data Center

Hi Beth

The subject line was Columbia because when I clicked on the link for your email when it opened with your address the subject line was already filled in.

My comments were directed towards Oxford.

After I sent the email I learned that they've already begun construction on this site and I find that disturbing because what I know about CAT, the generator manufacturer, their lead times are often a year in advance of delivery. This makes me suspect about their entire process because they may have already ordered the generators. If that's the case I would be disappointed that this entire exercise is in vain.

In my experience it can be difficult to change large corporation ideas because they tend to be set in their ways. I know there's been on-going concerns over the generators at Columbia for a long time now. It seems to me that a compromise would be for you to have them follow my recommendations for the Oxford facility, which would eliminate any and all environmental issues for you and at a lower Cost for them. Once this site is up and operating they will have proof of the operating efficiencies and then you can go after them to eventually change Columbia which they would be encouraged to do because of the operational savings.

If the state could negotiate such an arrangement it would avoid all the adversarial goings-on and everyone wins. Furthermore the state will be known as providing state-of-the-art solutions to welcome more data centers.

Hope this helps...if there's anything else's please let me know.

William

Sent from my iPhone

Email thread between Danna Dal Porto and Ecology

-----Original Message-----

From: Danna Dal Porto [<mailto:ddalporto@smwireless.net>]

Sent: Wednesday, July 16, 2014 10:08 AM

To: Flibbert, Gregory S. (ECY)

Subject: Oxford data center questions

July 16, 2014

Greg,

Some questions on the Oxford permit and public hearing.

The SEPA documents on file with the City of Quincy have statements I want to use in my public comments. Do I have to include the entire document or can I just pull the pages I need for support? Or should I have the page with information along with the cover sheet and signature page? Thanks for clarifying that.

I am sort of confused. The SEPA I refer to states that Oxford will have emission controls. Those controls are clearly listed by name and type. In the permitting documents on file, there is nothing about controls. The BACT is listed as Tier 2 engines. Can you sort out this difference in information? I really did think that this huge data center would have controls. I had a meeting in February with Kevin Williams and was presented a slide show and told that controls would be place on the engines. This month when I looked at the permit document I felt really sandbagged. I was really sad to think that I had been totally misled and deceived. I need you to tell me what is the truth and, if controls are to be installed, that information needs to be part of the written permit. Without the actual listing of controls in the permit, the public has no way to know what is happening. The public has only the permit as the standard that will be in place for operation of the facility.

I appreciate all the efforts Beth has taken to advertise this hearing. I appreciate the listing of the public notice in the Quincy paper, I appreciate the 40 day comment period and I really appreciate having the documents at the library. In the past when we needed to read the paperwork, Stephanie in the City office had to find us a table (move it into the small office) or give up her desk and we had to read the stuff during City Hall hours. The library is much better. I am afraid that not many people will show up but having the Community Center as a meeting space will be better. Especially if it stays as hot as it is today.

Thanks for sorting this out for me.

Danna Dal Porto
Quincy, WA

From: Mort, Beth (ECY)
Sent: Wednesday, July 16, 2014 1:58 PM
To: 'ddalporto@smwireless.net'
Cc: Flibbert, Gregory S. (ECY)
Subject: Oxford data center questions

Hello Danna,

Greg asked me to respond to your questions. I have included your original email below. Regarding your first question, you can simply reference the SEPA and indicate which statements came from that document in your public comments and do not need to submit the SEPA document in its entirety.

Regarding your second question, Microsoft is putting controls on its Oxford engines. The engines will be Tier IV equivalents with SCR and oxidizing DPF. Microsoft can't meet the emission conditions in the permit unless they use these controls for each engine. References to the controls are currently located in the TSD in section 3.4.1 on page 7, and the Catalyst Delay Cold Start Adjustments Table on page 5. Patty Martin also sent us an email and brought to our attention that this is not clearly spelled out in the PD. We agree that the requirement for SCR and DPF should be clearly stated in the permit conditions not just the TSD. This comment as well as Patty's will be included in the Response to Comments document where we can address this addition to the PD.

It sounds like the library has been a good place for you to review the documents but just in case, here is the link for the Oxford preliminary determination:

http://www.ecy.wa.gov/programs/air/quincydatacenter/docs/MSN_Project_Oxford_PD_June_16_2014.pdf and the link for the Technical Support Document: http://www.ecy.wa.gov/programs/air/quincydatacenter/docs/MSN_Project_Oxford_TSD_June_16_2014.pdf. Both are on the [web site](#) under Microsoft Oxford Data Center heading along with other relevant documents.

Thank you for your questions,

Beth Mort | Community Outreach & Environmental Education
Air Quality Program | Dept of Ecology Eastern Office
beth.mort@ecy.wa.gov | 509.329.3502
Office Hours: M-Th 7am-4pm

This communication is public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

-----Original Message-----

From: Danna Dal Porto [<mailto:ddalporto@smwireless.net>]
Sent: Tuesday, July 22, 2014 9:52 AM
To: Mort, Beth (ECY)
Subject: Confusion over closing dates on published information

Beth,

The Quincy paper public notice of June 19, 2014, lists the closing of the comment period for the Columbia water discharge proposal as July 29, 2014.

An Ecology News Release of June 13, 2014, lists the comments closing on Columbia on July 19, 2014.

Please clarify. I do understand that the Columbia posting is asking for comments as well as a request for a public hearing. Comments on Columbia are not to be heard at the July 24, 2014 Oxford hearing. Correct?

Danna

On Jul 22, 2014, at 10:38 AM, Mort, Beth (ECY) wrote:
Hello Danna,

The original press release announcing both the Oxford and Columbia Data Center comment periods went out on Friday, June 13. That press release listed the comment period for Columbia as June 19-July 19. On Monday June 16, Ecology decided to extend the comment period to 40-days to match Oxford's so that both would run from June 19-July 29. The press release was updated to reflect this and sent out on Monday June 16. You can view that press release and note the red text at top of release mentioning the update on our web site <http://www.ecy.wa.gov/news/2014/088.html>.

At opening of the comment period (June 19), the legal notice and display ads run in the Quincy Valley Post Register, as well as display ads run in El Mundo, Columbia Basin Herald and Wenatchee World all listed the correct, updated comment period for Columbia as June 19-July 29.

An email was also sent to the interested parties through the Quincy Data Center listserv on June 19 with the correct, updated comment period dates.

You are correct that the public hearing on July 24, this Thursday, is only for the new Oxford Data Center not for the changes to the existing Columbia Data Center.
Thank you for your questions. I hope this helps to clarify.

Beth Mort | Community Outreach & Environmental Education
Air Quality Program | Dept of Ecology Eastern Office
beth.mort@ecy.wa.gov | 509.329.3502
Office Hours: M-Th 7am-4pm

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From: Danna Dal Porto [<mailto:ddalporto@smwireless.net>]
Sent: Tuesday, July 22, 2014 11:46 AM
To: Mort, Beth (ECY)
Subject: Re: Confusion over closing dates on published information

Beth,

Thank you for this quick reply.

I think I understand. The email that got me all upset was the June 13, 2014, email. I compared that to the Quincy newspaper public notice and found them different regarding Columbia closing. My email records do not include the June 19, 2014, message so I did not get that change of date. If that change was made only on the web site I can understand my not getting the information.

I did go back and look for June 19 and it is not there.

Thanks for clarifying.

Danna

From: Mort, Beth (ECY)
Sent: Tuesday, July 22, 2014 11:52 AM
To: 'Danna Dal Porto'
Cc: Flibbert, Gregory S. (ECY)
Subject: RE: Confusion over closing dates on published information

Danna,

You should also be able to go to the listserv here: <http://listserv.wa.gov/cgi-bin/wa?A0=QUINCY-DATA-CENTERS> and see the previous messages sent. It is a nice function because it allows a person to see all messages sent out through this service even if they signed up later on. Maybe you will find it there in the archives. I have also attached the listserv email that was sent out.

List of Commenters

The table below lists the names of individuals, and any organizations they may represent, who submitted a comment on the proposed Oxford Data Center Air Quality Permit. The comment number and page number are listed where you can find the comment(s) and Ecology’s response.

Table 1. Comment Identifier Table

COMMENTER	ORGANIZATION	COMMENT FORMAT	COMMENT NUMBER	PAGE NUMBER
Danna Dal Porto	MYTAPN (Microsoft Yes, Toxic Air Pollution No)	Written	1-6	6-10
William Collier	Citizen	Written	7-8	11-12
John RADICK	Microsoft	Written	9-19	12-19
Patty Martin	MYTAPN	Written	20-32	19-24
Debbie & Mark Koehnen	Citizens	Written	33-36	25-26
Danna Dal Porto	MYTAPN	Public Hearing	37-39	27
Debbie Koehnen	Citizen	Public Hearing	40-41	27-28
Patty Martin	MYTAPN	Public Hearing	42-46	29-30
Alex Ybarra	Citizen	Public Hearing	no response	Hearing transcript Appendix C
William Riley	Columbia Basin Environmental Council	Written	no response	See Appendix B