

**Technical Support Document for
Notice of Construction Approval Order No. Preliminary Determination
Intergate-Quincy Sabey Data Center Properties
AQPID No. A0250302**

Quincy, WA

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Preparation date: Month XX, 2025

1. Project Summary

Intergate Quincy – Sabey Data Center Properties (the Permittee and source) is a data center classified as a Synthetic Minor 80 source with 96 previously permitted emergency generators and 280 previously permitted evaporative cooling emissions units. This review is for a project to add 13 new emergency generators.

An initial Notice of Construction (NOC) application, dated April 7, 2025, was submitted by Intergate Quincy – Sabey Data Center Properties for additional generators for Building E. The Washington State Department of Ecology (Ecology) reviewed the initial application and found it incomplete per WAC 173-400-111 on April 25, 2025. Supplemental information was received by Ecology on June 18, 2025, and the application was found to be complete on July 1, 2025. The application moved onto Tier 2 review with a Health Impact Assessment (HIA) report submitted. The HIA report was found to be incomplete on July 28, 2025. Supplemental information was received by Ecology on September 25, 2025, and the Tier 2 application was found to be complete on September 25, 2025. The source has accepted a limit of 25 hours of operation per generator on average for Building E. Emission calculations in this technical support document reflect the change in generator operations.

2. Application Processing

a. Public Notice

This project is subject to a mandatory 30-day public comment period per WAC 173-400-171(3)(b) and (k) for a project that exceeds an acceptable source impact level and an order issued under WAC 173-400-091 that establishes limitations on a source's potential to emit. The comment period was held November 3 through December 14, 2025.

b. State Environmental Policy Act

City of Quincy issued a determination of nonsignificance (DNS) on July 1, 2019.

3. Applicable Regulations

a. State Regulations

i. Minor New Source Review Applicability

Per WAC 173-400-110, an NOC application and an order of approval must be issued by the permitting authority prior to the establishment of a new source or modification.

As stated in the NOC application and consistent with Ecology's review, the new generators are being constructed for this project and therefore are subject to minor new source review (NSR).

ii. Potential to Emit (Potential Emissions)

The potential emissions from the project are greater than the exemption levels listed under WAC 173-400-110(5) and the de minimis levels listed under WAC 173-460-150, as shown below in Tables 1 and 2. Potential emissions for pollutants with an annual averaging period are based on the generators running uncontrolled for 500 hours per year.

Table 1. Potential emissions for pollutants listed under WAC 173-400-110(5), NSR Exemption Levels

Pollutant	New Generators (tons/year)	Minor NSR Exemption (tons/year)
Carbon Monoxide (CO)	21.37	5.0
Lead (Pb)	0.000	0.005
Nitrogen Oxides (NOx)	201.73	2.0
Particulate Matter, PM10	10.99	0.75
PM2.5	10.99	0.50
Total Suspended Particulates (TSP)	4.22	1.25
Sulfur Dioxide (SO2)	0.14	2.0
Volatile Organic Compounds (VOC), total	6.77	2.0

Table 2. Potential TAP emissions and de minimis emission values

Pollutant	Potential Emissions from Project (lb/Averaging Period)	De Minimis Emission Values	Averaging Period
Nitrogen Dioxide, (NO2)	80.95	0.46	1-hour
Carbon Monoxide (CO)	96.25	1.10	1-hour
Sulfur Dioxide (SO2)	0.57	0.46	1-hour

Pollutant	Potential Emissions from Project (lb/Averaging Period)	De Minimis Emission Values	Averaging Period
Diesel Engine Exhaust	8,439.50	0.027	Year
Acetaldehyde	901.19	3.00	Year
Acrolein	1.87	0.0013	24-hour
Arsenic	1.84	0.0025	Year
Benzene	214.34	1.00	Year
Benz(a)anthracene	0.10	0.045	Year
Benzo(a)pyrene	0.04	0.0082	Year
Benzo(b)fluoranthene	0.17	0.045	Year
Benzo(k)fluoranthene	0.03	0.045	Year
1,3-Butadiene	250.12	0.27	Year
Cadmium	1.73	0.0019	Year
Chlorobenzene	0.011	3.70	24-hour
Chromium	0.03	0.00037	24-hour
Chromium (VI)	0.12	0.000033	Year
Chrysene	0.24	0.45	Year
Copper	9.43E-03	0.0093	1-hour
Dibenz(a,h)anthracene	0.05	0.0041	Year
Ethyl benzene	12.54	3.20	Year
Formaldehyde	1,985.88	1.40	Year
Hexane	1.49	2.60	24-hour
Hydrogen chloride	10.29	0.033	24-hour
Indeno(1,2,3-cd)pyrene	0.07	0.045	Year
Lead	9.55	10.0	Year
Manganese	0.17	0.0011	24-hour
Mercury	0.11	0.00011	24-hour
Naphthalene	22.66	0.24	Year
Nickel	4.49	0.031	Year
Propylene	25.79	11.00	24-hour
Selenium	0.12	0.074	24-hour
Toluene	5.82	19.00	24-hour
Xylenes	2.34	0.82	24-hour

iii. Prevention of Significant Deterioration

PSD does not apply to this project, based on approval order limited PTE or allowable emissions.

iv. Other Applicable Requirements

In accordance with WAC 173-400-113, the proposed new sources must comply with all applicable emission standards adopted under Chapter 70A.15 RCW. The following applicable emission standards are associated with the proposed project:

- A. WAC 173-400-040, General standards for maximum emissions: limits visible emissions from all sources to no more than three minutes of 20 percent opacity, in any hour, of an air contaminant from any emission unit.
- B. WAC 173-400-050 and WAC 173-400-060, Emission standards for combustion and incineration units: limits emissions of particulate matter from combustion and general process units to 0.23 gram per dry cubic meter at standard conditions (0.10 grains per dry standard cubic foot) of exhaust gas.
- C. WAC 173-400-115, Standards of performance for new sources: adopts by reference 40 C.F.R. Part 60, Subpart IIII. See more below.

b. Federal Regulations

In accordance with WAC 173-400-113, the proposed new source must comply with all applicable New Source Performance Standards (NSPS) included in 40 C.F.R. Part 60, National Emission Standards for Hazardous Air Pollutants (NESHAPs) included in 40 C.F.R. Part 61, and NESHAPs for source categories included in 40 C.F.R. Part 63. The following applicable emission standards are associated with the proposed project:

i. Standards of Performance for New Stationary Sources

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each emergency generator. The regulation specifies: criteria for classification as emergency engines, Tier-2 emission standards for the engines; and fuel, monitoring, compliance, and notification requirements for the Permittee.

ii. National Emission Standards for Hazardous Air Pollutants for Source Categories

The RICE NESHAP applies to each engine. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.

4. Emissions

a. Emission Factors

Emission factors for the emergency generator engines were provided as Not-to-Exceed-Limits by the manufacturer Caterpillar, Cummins and Kohler/Rehiko for NO_x, CO, PM, and hydrocarbons (HC). The following was assumed for the emergency generators:

- i. DEEP is assumed to be manufacturer-measured PM
- ii. HCs were assumed to be equivalent to VOC and non-methane HC
- iii. The sum of PM and HC (assumed to all condense) and be equivalent PM₁₀ and PM_{2.5} for the engines.

The emission factor for SO₂ was calculated based on sulfur content of the ultra-low sulfur fuel and an average heating value of diesel fuel. All sulfur was assumed to convert to SO₂.

An additional factor was included for cold-start emissions (PM, CO, total VOC, and volatile TAPs). These factors are based on short-term concentration trends for VOC and CO emission observed immediately after startup of a large diesel backup generator. These observations were documented in the California Energy Commission's report "Air Quality Implications of Backup Generators in California" (Lents et al. 2005).

All the remaining emission rates for toxic air pollutants from the generators were calculated using emission factors from EPA's AP-42, Volume 1, and Chapter 3.4, which provides emission factors for HAPs from large internal combustion diesel engines (EPA 1995).

Potential to Emit calculations were based on uncontrolled generators running 500 hours per year. **Allowable emissions** are based on the Building E generators with order-limited hours of operation.

b. Best Available Control Technology | Best Available Control Technology for Toxics

In the analysis, the consultant proposed and successfully demonstrated that Tier-4 engines are cost prohibitive. Therefore, the consultant proposed uncontrolled Tier-2 engines as BACT and tBACT. I agree that the proposal meets or exceeds: BACT for emissions of NO_x, CO, VOC and PM; and tBACT for emissions listed in Table 2.

c. Allowable Emissions

The allowable emissions from the project, considering all emission and operational limits contained in the approval order, are shown in the tables below.

Table 3. Allowable emissions for pollutants listed under WAC 173-400-110(5)

Pollutant	New Generators
CO	1.22
NOx	9.67
PM10	2.04
PM2.5	2.04
TSP	0.78
SO2	0.01
VOC	1.27

Table 4. Allowable TAP emissions

Pollutant	New Generators (lbs/Averaging Period)	Averaging Period
NO2	80.95	1-hour
CO	96.25	1-hour
SO2	0.57	1-hour
DEEP	1,554.5	Year
Acetaldehyde	45.91	Year
Acrolein	1.87	24-hour
Arsenic	0.09	Year
Benzene	10.92	Year
Benz(a)anthracene	4.99E-03	Year
Benzo(a)pyrene	2.06E-03	Year
Benzo(b)fluoranthene	8.91E-03	Year
Benzo(k)fluoranthene	1.75E-03	Year
1,3-Butadiene	12.74	Year
Cadmium	0.09	Year
Chlorobenzene	1.10E-02	24-hour
Chromium	0.03	24-hour
Chromium (VI)	5.86E-03	Year
Chrysene	1.23E-02	Year
Copper	9.43E-03	1-hour
Dibenz(a,h)anthracene	2.78E-03	Year
Ethyl benzene	0.64	Year
Formaldehyde	101.17	Year
Hexane	1.49	24-hour

Pollutant	New Generators (lbs/Averaging Period)	Averaging Period
Hydrogen chloride	10.29	24-hour
Indeno(1,2,3-cd)pyrene	3.32E-03	Year
Lead	0.49	Year
Manganese	0.17	24-hour
Mercury	0.11	24-hour
Naphthalene	1.15	Year
Nickel	0.23	Year
Propylene	25.79	24-hour
Selenium	0.12	24-hour
Toluene	5.82	24-hour
Xylenes	2.34	24-hour

Table 5 presents the potential emissions and allowable emissions for Intergate Quincy – Sabey Data Center Properties with the emissions from the project included. The facility is considered a Synthetic Minor 80 as it has taken limits to stay under Title V thresholds.

Table 5. Potential and Allowable Emissions for Total Source

Pollutant	Total Source Potential Emissions (tons/year)	Total Source Allowable Emissions (tons/year)
CO	231.5	12.50
NOx	1,444.4	95.10
PM10	47.0	12.16
PM2.5	47.0	12.16
TSP	16.8	5.82
SO2	1.9	0.16
VOC	42.3	8.36

5. Ambient Air Quality Standards

As specified in WAC 173-400-113, the proposed new or modified source(s) must not cause or contribute to a violation of any ambient air quality standard. This includes the ambient air quality standards for both criteria and toxic air pollutants.

a. Pollutants Listed Under WAC 173-400-110 (Except TAPs)

For NO₂, CO, PM₁₀, PM_{2.5}, modeling was performed to satisfy the requirements of Chapter 173-476 WAC. The modeling demonstrates that the emissions increases as a result of the project will not exceed the ambient air quality standards. The modeling results are included in the table below.

Table 6. Criteria Pollutant Modeling Results.

Criteria Pollutant	Averaging Period	Modeled Concentration (µg/m³)	Significant Impact Level (SIL) (µg/m³)	Modeled Concentration with Background (µg/m³)	National Ambient Air Quality Standard (NAAQS) (µg/m³)
*NO ₂	1-hr	--	1	175.73	188
NO ₂	Annual	0.64	7.5	6.28	100
*PM ₁₀	24-hr	--	5	128.16	150
*PM _{2.5}	24-hr	--	1.2	22.53	35
PM _{2.5}	Annual	0.04	0.13	5.73	9
CO	1-hr	766	2,000	2,060	40,000
CO	8-hr	378	500	1,282	10,000
SO ₂	1-hr	2.26	7.8	10.25	196
SO ₂	3-hr	1.88	25	16.54	--

*Monte Carlo analysis used for comparison to these standards.

b. Toxic Air Pollutants

In accordance with WAC 173-460-040, new TAP sources must meet the requirements of Chapter 173-460 WAC, unless they are exempt by WAC 173-400-110(5).

As shown in Table 2, minor NSR is required for the new generators. As such, the new emission units must comply with WAC 173-460-070 (ambient impact requirement). The facility may demonstrate compliance with the ambient impact requirement by either showing that the emissions increase is less than the Small Quantity Emissions Rates (SQER) or through dispersion modeling. The table below includes the estimated emissions increases associated with the project and the applicable SQER.

Table 7. TAP Analysis

TAP	Allowable Emissions - Increase	SQER	Modeling Required?
NO₂	80.95	0.87	Yes
CO	96.25	43.00	Yes
SO ₂	0.57	1.20	No
DEEP	1,554.5	0.54	Yes
Acetaldehyde	45.91	60	No
Acrolein	1.87	0.026	Yes

TAP	Allowable Emissions - Increase	SQER	Modeling Required?
Arsenic	0.09	0.049	Yes
Benzene	10.92	21.00	No
Benz(a)anthracene	0.00499	0.89	No
Benzo(a)pyrene	0.00206	0.16	No
Benzo(b)fluoranthene	0.00891	0.89	No
Benzo(k)fluoranthene	0.00175	0.89	No
1,3-Butadiene	12.74	5.4	Yes
Cadmium	0.09	0.039	Yes
Chlorobenzene	0.011	74.0	No
Chromium	0.03	0.0074	Yes
Chromium (VI)	0.00586	0.00065	Yes
Chrysene	0.0123	8.90	No
Copper	0.00943	0.19	No
Dibenz(a,h)anthracene	0.00278	0.082	No
Ethyl benzene	0.64	65.0	No
Formaldehyde	101.17	27.0	Yes
Hexane	1.49	52.0	No
Hydrogen chloride	10.29	0.67	Yes
Indeno(1,2,3-cd)pyrene	0.00332	0.89	No
Lead	0.49	14.0	No
Manganese	0.17	0.022	Yes
Mercury	0.11	0.0022	Yes
Naphthalene	1.15	4.80	No
Nickel	0.23	0.62	No
Propylene	25.79	220	No
Selenium	0.12	1.50	No
Toluene	5.82	370	No
Xylenes	2.34	16.0	No

For NO₂, CO, DEEP, acrolein, arsenic, 1,3-butadiene, cadmium, chromium (chromium(III), soluble particulates), chromium(VI), formaldehyde, hydrogen chloride, manganese, and mercury that require modeling, modeling was performed to satisfy the requirements of Washington's state toxics rule in Chapter 173-460 WAC. The modeling demonstrates that the emissions increases as a result of the project will not exceed the Acceptable Source Impact Level (ASIL) screening thresholds, except for NO₂ and DEEP. The modeling results are included in the table below.

Table 8. TAP Modeling Results.

TAP	Averaging Period	Maximum Modeled Concentration	ASIL (µg/m3)	Percent of ASIL
NO2	1-hour	658	470	140%
CO	1-hour	393	23,000	2%
DEEP	Year	0.0138	0.0033	417%
Acrolein	24-hour	0.14	0.35	40%
Arsenic	Year	2.86E-06	3.00E-04	1%
1,3-Butadiene	Year	3.90E-04	3.30E-02	1%
Cadmium	Year	2.67E-06	2.40E-04	1%
Chromium	24-hour	0.00248	0.10	2%
Chromium (VI)	Year	1.80E-07	4.00E-06	5%
Formaldehyde	Year	0.00308	0.17	2%
Hydrogen chloride	24-hour	0.768	9.0	9%
Manganese	24-hour	0.0128	0.30	4%
Mercury	24-hour	8.26E-03	3.00E-02	28%

As shown in Table 8, all TAPs except NO2 and DEEP are below the associated ASIL. A Second Tier Health Impact Assessment (HIA) was conducted for NO2 and DEEP and submitted separately from the NOC application, per WAC 173-460-090. Ecology reviewed the assessment and recommended approval of the project with reduction of operating hours from 29 hours per generator to 25 hours per generator for Building E. With this change, “the health hazards are considered to be acceptable.” Ecology’s analysis and recommendations are included in the document titled, Second Tier Recommendation for Sabey Intergate Quincy Data Center - Building E Expansion: 13 New Diesel-Powered Generators, October 2025

Appendix A – Federal Rule Applicability

1. 40 C.F.R. Part 60, Subpart IIII

The ICE NSPS (40 C.F.R. Part 60, Subpart IIII) applies to each engine. The applicable portions the rule appear to be:

Citation	Subject	Notes
60.4202(a)(2)	Manufacturer emission standards	Specifies that 2007 model year and later emergency stationary CI ICE with a maximum engine power ≥ 37 kW and $\leq 2,237$ kW be certified to the emission standards specified in 40 C.F.R. 1039, Appendix I.
60.4205(b)	Owner/Operator emission standards	Directs owners and operators of 2007 model year and later emergency stationary CI ICE to comply with the emission standards for new nonroad CI engines in §60.4202.
60.4209(a)	Owner/Operator monitoring requirements	Requires installation install a non-resettable hour meter prior to startup of each engine, since the engines do not meet the standards applicable to non-emergency engines.
Table 8 to Subpart IIII of Part 60	Applicability of General Provisions to Subpart IIII	The table lists what portions of 40 C.F.R. 60 Subpart I are applicable, including notification and recordkeeping requirements.

2. 40 C.F.R. Part 63, Subpart ZZZZ

The RICE NESHAP applies to each engine. Condition 2 of the Order requires general compliance with this regulation. However, each engine is also subject to the ICE NSPS (see above). At 40 C.F.R. 63.6590(c), the NESHAP specifies that compliance must be met by meeting the requirements of the NSPS; therefore, no further requirements apply to the engines.