U.S. Department of Energy
Hanford Field Office
P.O. Box 550
Richland, Washington 99352

August 5, 2025

25-ECD-0058

Dr. Karl Pepple, Acting Manager
Air and Radiation Branch
U. S. Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 155, M/S 15-H13
Seattle, Washington 98101

Ms. Stephanie Schleif
Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Addressees:

U.S. DEPARTMENT OF ENERGY, HANFORD FIELD OFFICE SUBMITTAL OF NON-RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPLICATION TO MODIFY AIR PERMIT DE02NWP-002, REVISION 3

The U.S. Department of Energy, Hanford Field Office hereby submits, and is requesting approval, to Washington State Department of Ecology (Ecology) the Notice of Construction (NOC) application for 24590-WTP-RPT-ENV-25-001, "Nonradioactive Air Emissions Notice of Construction Application to Modify Air Permit DE02NWP-002, Rev 3." The modification is to increase the total number of samples processed at the Waste Treatment and Immobilization Plant Analytical Laboratory. Other Emission Units permitted under DE02NWP-002, Rev 3, remain unchanged.

The Notification of Administrative Permit Amendment is being submitted to Ecology for its administration of the Hanford Air Operating Permit (AOP), as well as to the U.S. Environmental Protection Agency, Region 10, as part of the notification process for off-permit changes outlined in the Hanford AOP.

If you have any questions, please contact me, or you may contact Corey A. Low, Assistant Manager for Safety and Environment, at (509) 376-4820.

Sincerely,

Brian A. Harkins

Digitally signed by Brian A. Harkins
Date: 2025.08.05 06:02:23 -07'00'

Brian A. Harkins
Acting Manager

ECD:BRT

Attachments:
1. NOC Application
2. Nonradioactive Air Emissions NOC DE02NWP-002, Rev. 3
3. Notification of Administrative Permit

cc w/attachs:
J. McAuley, EPA (Region 10, Seattle)
C. R. Ramos, HMIS
M. F. Williams, Ecology
Administrative Record
BNI Correspondence
Environmental Portal, G3-36

cc w/o attachs:
L. Contreras, YN
S. L. Dahl-Crumpler, Ecology
R. D. Haggard, BNI
M. Jones, BNI
M. Murphy, CTUIR
A. Smith, NPT
B. A. Walker, BNI

Attachment 1
25-ECD-0058

Notice of Construction Application
ECY 070-410

(6 pages including cover sheet)

Notice of Construction Application

A notice of construction permit is required before installing a new source of air pollution or modifying an existing source of air pollution. This application applies to facilities in Ecology's jurisdiction. Submit this application for review of your project. For general information about completing the application, refer to Ecology Forms ECY 070-410a-g, "Instructions for Ecology's Notice of Construction Application."

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

Department of Ecology
Cashiering Unit
PO Box 47611
Olympia, WA 98504-7611

For Fiscal Office Use Only: 0299-3030404-B00-216--001--000404

Check the box for the location of your proposal. For assistance, call the appropriate office listed below:

Check box	Ecology Permitting Office	Contact
☐	**Chelan, Douglas, Kittitas, Klickitat, or Okanogan County** Ecology Central Regional Office (509) 575-2490	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
☐	**Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla, or Whitman County** Ecology Eastern Regional Office (509) 329-3400	Karin Baldwin (509) 329-3452 karin.baldwin@ecy.wa.gov
☐	**San Juan County** Ecology Northwest Regional Office (206) 594-0000	David Adler (425) 649-7267 david.adler@ecy.wa.gov
☐	**For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Only** Ecology Industrial Section (360) 407-6900	James DeMay (360) 407-6868 james.demay@ecy.wa.gov
☑	**For actions taken on the US Department of Energy Hanford Reservation Only** Ecology Nuclear Waste Program (509) 372-7950	Lilyann Murphy (509) 372-7951 lilyann.murphy@ecy.wa.gov

Check the box below for the fee that applies to your application.

New project or equipment:

- ☐ **$1,904: Basic project** initial fee covers up to 16 hours of review.
- ☐ **$12,614: Complex project** initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

- ☐ **$357: Administrative or simple change** initial fee covers up to 3 hours of review. Ecology may determine your change is complex during the completeness review of your application. If you project is complex, you must pay the additional xxx before we will continue working on your application
- ☑ **$1,190: Complex** change initial fee covers up to 10 hours of review
- ☐ **$350flat fee**: Replace or alter control technology equipment under WAC 173-400-114. Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement below, then check the box next to it to acknowledge that you agree.

- ☑ The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you $119 per hour for the extra time.
- ☑ You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
- ☑ Submittal of this application allows Ecology staff to visit and inspect your facility.

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name: Handford Tank Waste Treatment and Immobilization Plant
2. Facility Name: Department of Energy, Hanford Field Office
3. Facility Street Address:

   2440 Stevens Center Place, H520, Richland, WA 99354

4. Facility Legal Description: Treatment and storage of radioactive and dangerous mixed waste from Hanford Site Double Shell Tank System
5. Company Legal Name (if different from Facility Name):

   _____

6. Company Mailing Address (street, city, state, zip)

   P.O. Box 550, Richland, WA 99352

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite): Bryan Trimberger
2. Facility Contact Mailing Address (if different than Company Mailing Address:

   _____

3. Facility Contact Phone Number: (509) 376-2674
4. Facility Contact E-mail: bryan.trimberger@hanford.gov
5. Billing Contact Name (who should receive billing information):
   Bryan Trimberger
6. Billing Contact Mailing Address (if different Company Mailing Address):
7. Billing contact Phone Number: (509) 376-2674
8. Billing Contact E-mail: bryan.trimberger@hanford.gov
9. Consultant Name (optional – if 3rd party hired to complete application elements):
   N/A
10. Consultant Organization/Company: N/A
11. Consultant Mailing Address (street, city, state, zip):
12. Consultant Phone Number: N/A
13. Consultant E-mail: N/A
14. Responsible Official Name and Title (who is responsible for project policy or decision making):
    Brian Harkins, Acting Manager
15. Responsible Official Phone: (509) 376-7395
16. Responsible Official E-mail: brian.harkins@hanford.gov
17. Responsible Official Certification and Signature:

    I certify that the information on this application is accurate and complete.

    Signature: _____ Date: 8/5/25

Part 2: Technical Information

The Technical Information may be sent with this application form to the Cashiering Unit, or may be sent directly to the Ecology regional office with jurisdiction along with a copy of this application form.

For all sections, check the box next to each item as you complete it.

III. Project Description

- [x] Written narrative describing your proposed project.
- [x] Projected construction start and completion dates.
- [x] Operating schedule and production rates.
- [x] List of all major process equipment and manufacturer and maximum rated capacity.
- [x] Process flow diagram with all emission points identified.
- [x] Plan view site map.
- [x] Manufacturer specification sheets for major process equipment components
- [x] Manufacturer specification sheets for pollution control equipment.
- [ ] Fuel specifications, including type, consumption (per hour and per year) and percent sulfur.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

- [x] SEPA review is complete. Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, and EIS) with your application.
- [ ] SEPA review has not been conducted:
  - [ ] If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit. Agency reviewing SEPA: _____
  - [ ] If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at https://ecology.wa.gov/Regulations-Permits/SEPA/Environmental-review/SEPA-document-templates

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please proved the following information regarding your criteria emissions in the application.

- [x] The names of the criteria air pollutants emitted (i.e., NO_X, SO_2, CO, $PM_{2.5}$, PM_{10}, TSP, VOC, and Pb)
- [x] Potential emissions of criteria air pollutants in tons per hour, tons per day, and tons per year (include calculations)
- [ ] If there will be any fugitive criteria pollutant emissions, clearly identify the pollutant and quantity

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? [x] **Yes** [ ] **No**

If yes, please provide the following information regarding your toxic air pollutant emissions in your application.

- [x] The names of the toxic air pollutants emitted (specified in WAC 173-460-150[1])
- [x] Potential emissions of toxic air pollutants in pounds per hour, pounds per day, and pounds per year (include calculations)
- [ ] If there will be any fugitive toxic air pollutant emissions, clearly identify the pollutant and quantity

VII. Emission Standard Compliance

- [x] Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70A.15 RCW.

Does your project comply with all applicable standards identified? [x] **Yes** [ ] **No**

VIII. Best Available Control Technology

- [x] Provide a complete evaluation of Best Available Control Technology (BACT) for your proposal.

IX. Ambient Air Impacts Analyses

Please provide the following:

- [x] Ambient air impacts analyses for Criteria Air Pollutants (including fugitive emissions)
- [x] Ambient air impacts analyses for Toxic Air Pollutants (including fugitive emissions)
- [ ] Discharge point data for each point included in air impacts analyses (include only if modeling is required)
  - [ ] Exhaust height
  - [ ] Exhaust inside dimensions (ex. diameter or length and width)
  - [ ] Exhaust gas velocity or volumetric flow rate
  - [ ] Exhaust gas exit temperature
  - [ ] The volumetric flow rate
  - [ ] Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap)
  - [ ] Identification of the emission unit(s) discharging from the point
  - [ ] The distance from the stack to the nearest property line
  - [ ] Emission unit building height, width, and length
  - [ ] Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust
  - [ ] Whether the facility is in an urban or rural location

Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? [ ] **Yes** [x] **No**

To request ADA accommodation, call Ecology at (360) 407-6800, 711 (relay service), or (877) 833-6341 (TTY)

[1] http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150

Attachment 2
25-ECD-0058

Nonradioactive Air Emissions Notice of Construction
Application To Modify Air Permit
DE02NWP-002, Revision 3
24590-ETP-RPT-ENV-25-001

(36 pages including cover sheet)

Nonradioactive Air Emissions Notice of Construction Application to Modify Air Permit DE02NWP-002, Revision 3

Document title:

Document number: 24590-WTP-RPT-ENV-25-001, Rev 1

Contract number: DE-AC27-01RV14136

Department: WTP Environmental Protection

Author(s): Koassi Noagbe

Checked by: Brian Walker

Issue status: Approved

Approved by: Robert Haggard

Approver's position: Environmental Protection Manager

Approver's signature: Robert Haggard *Signature* 7/25/2025 *Date*

Hanford Tank Waste Treatment
and Immobilization Plant
450 Hills Street
Richland, WA 99354
United States of America
Tel: 509 371 2000

History Sheet

Rev	Reason for revision	Revised by
0	Initial issue	K. Noagbe
1	Incorporate Steam Plant Boiler burner replacement	K. Noagbe

Contents

Appendices

Tables

Figures

Acronyms

AOP	Air Operating Permit
APPS	Aspen Process Performance Simulation
ARL	Analytical Radiological Laboratory
ASIL	Acceptable Source Impact Level
BACT	Best Available Control Technology
CAS	Chemical Abstract Service
CCN	Correspondence Control Number
DFLAW	Direct Feed Low-Activity Waste
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EMF	Effluent Management Facility
EPA	U.S. Environmental Protection Agency
ERP	Equipment Replacement Program
HEPA	High-efficiency Particulate Air (filter)
HLW	High-Level Waste (Facility)
LAB	Analytical Laboratory
LAW	Low-Activity Waste (Facility)
LB-S1	Analytical Laboratory C3 ventilation emission unit
LB-S2	Analytical Laboratory C5 ventilation emission unit
NAAQS	National Ambient Air Quality Standards
NLD	Nonradioactive Liquid waste Disposal System
NOC	Notice of Construction
NO_x	Nitrogen Oxides
NSR	New Source Review
ODS	Ozone Depleting Substance
PIC	Product of Incomplete Combustion
PM_{10}	Particulate matter with diameter 10 microns or less
PSD	Prevention of Significant Deterioration
PT	Pretreatment (Facility)
RCW	Revised Code of Washington
RLD	Radioactive Liquid waste Disposal System
RMRR	Routine Maintenance, Repair and Replacement
SCR	Selective Catalytic Reduction
SEPA	State Environmental Policy Act
SPF	Steam Plant Facility
SQER	Small Quantity Emission Rate
TAP	Toxic Air Pollutant
tBACT	Toxics Best Available Control

TCO	Thermal Catalytic Oxidizer
TEDF	Treated Effluent Disposal Facility
WAC	Washington Administrative Code
WDOH	Washington State Department of Health
WESP	Wet Electrostatic Precipitator
WTP	Hanford Tank Waste Treatment and Immobilization Plant

1 Introduction

The Washington Department of Ecology (Ecology) issued Air Permit DE02NWP-002, Revision 3 to the United States Department of Energy (DOE) for the operation of facilities at the Hanford Tank Waste Treatment and Immobilization Plant (WTP). This nonradioactive air emissions Notice of Construction (NOC) permit application pursues modification to Air Permit DE02NWP-002, Revision 3, to increase the total number of samples processed at the Analytical Laboratory (LAB). An increase in the number of samples processed will lead to an increase in emissions from two LAB emission units LB-S1 and LB-S2. This NOC also provides information on the replacement of components on three (3) of the six (6) WTP Steam Plant boilers. The burner assemblies on boilers HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C are being replaced with functionally equivalent components that will result in no increase in boiler potential to emit (PTE) or emission rates.

Other WTP emission units permitted under DE02NWP-002, Revision 3, including the Pretreatment (PT) Facility, Low-Activity Waste (LAW) Facility, High-Level Waste (HLW) Facility, Type I standby emergency diesel generator, emergency turbine generators, emergency diesel fire pumps, and Nondangerous and Nonradioactive Liquid Effluent Discharge Facility remain unchanged. Per the requirements of Washington Administrative Code (WAC) 173-400-110(1)(d), *New source review (NSR) for sources and portable sources*, and WAC 173-460-040(2), *New source review*, new source review of this modification is limited to the two LAB emission units with increased toxic air pollutant (TAP) emissions.

The original DE02NWP-002 permit was approved by Ecology on July 8, 2002, which allowed start of construction of the WTP with a design consisting of a PT Facility, three LAW Facility melters, one HLW Facility melter, and the LAB. Revision 1 of DE02NWP-002 was issued on November 24, 2003, to incorporate a redesigned WTP that included two LAW melters and two HLW melters. On August 17, 2004, Ecology approved Amendment 1 to allow operation of an air stripper to reduce trihalomethane concentrations in WTP effluent discharged from the WTP Nonradioactive Liquid Waste Disposal (NLD) to the 200 Area Treated Effluent Disposal Facility (TEDF). On November 10, 2005, Amendment 2 was issued to approve an alternative compliance demonstration method for the steam boilers. On May 11, 2006, Ecology issued Amendment 3 to clarify Condition 3.4 associated with access to performance test ports. On November 13, 2006, Ecology issued Amendment 4 as a response to a public comment during the first renewal of the Draft Hanford Air Operating Permit. It added the 1100 Area Material Handling Facility (formerly known as the Marshalling Yard) fugitive dust control to the permit. On August 3, 2010, Ecology approved a change in the Best Available Control Technology for toxic air pollutants (tBACT) for the PT Facility vessel vent emission unit. On April 24, 2013, Ecology issued Revision 2 of DE02NWP-002, approving a permit change to eliminate the Type II emergency diesel generators from design and replace them with two emergency turbine generators. Revision 2 also permitted an increase of the annual operating hour restriction for each of the emergency diesel engine fire pumps from 110 hours per year to 230 hours per year, to support maintenance and testing of WTP fire water systems. On January 28, 2022, Ecology issued Revision 3 to update potential TAP emissions from the LAW and LAB facilities for an updated LAW feed vector and Direct Feed Low Activity Waste (DFLAW) operating configuration. Revision 3 authorized estimated emissions for LAW Environmental Performance Demonstration Test (EPDT) simulant and updated control devices credited for acid gas removal to meet tBACT requirements at the LAW Facility.

This application is prepared consistent with the requirements in WAC 173-400, *General regulations for*

air pollution sources, and WAC 173-460, *Controls for new sources of toxic air pollutants*. This NOC supplements existing documents 24590-WTP-RPT-ENV-01-009, *Nonradioactive Air Emissions Notice of Construction Permit Application for the River Protection Project – Waste Treatment Plant*, 24590-WTP-RPT-ENV-12-002, *Nonradioactive Air Emissions Notice of Construction Permit Application Supplement to DE02NWP-002*, and 24590-WTP-RPT-ENV-20-001, *Nonradioactive Air Permit Notice of Construction Permit Application Modification to Air Permit DE02NWP-002, Revision 2*.

The WTP Project is also permitted under Prevention of Significant Deterioration (PSD) permit, PSD-02-01. However, LAB does not emit nitrogen oxides (NOx) or particulate matter with diameter 10 microns or less (PM_{10}) and does not emit any criteria pollutant above NSR exemption levels. Moreover, the proposed change to the three boilers will not increase the boiler PTE or emission rates; therefore, a PSD action is not required.

This NOC proposes emission rate increases for the LAB LB-S1 and LB-S2 emission units. LAB emissions are based on the total annual volume of sample material for each type of sample, multiplied by the mass fraction of each constituent from a corresponding or representative bounding Aspen Process Performance Simulation (APPS) process stream to derive a sample concentration. This update in emissions is necessitated by an anticipated increase in the total annual volume of sample materials for the LAW 6 sample point. The anticipated increase in total annual volume of samples corresponds to an increase from 411 samples per year to 1,643 samples per year from the LAW 6 sample point to be analyzed at LAB. The LAW 6 sample is one of eight sample types in the DFLAW operating configuration. All other sample types are unchanged.

This NOC does not pursue any permit modification for the aforementioned WTP Steam Plant boilers.

2 Scope

Per the requirements WAC 173-400-110(1)(d) and WAC 173-460-040(2), this NSR is limited to LB-S1 and LB-S2 – LAB emission units with updated air emissions in the DFLAW configuration. Unmodified WTP emission units that continue under construction, startup, or operation will be summarized where appropriate; however, emissions estimates and Best Available Control Technology (BACT)/tBACT for such units remain as permitted under DE02NWP-002, Revision 3.

To support Ecology's review of the proposed modification, this NOC application is prepared consistent with Ecology guidance in Form ECY 070-410, *Notice of Construction Application*, and includes the following applicable sections:

- Project description
- Review of applicable regulatory requirements
- State Environmental Policy Act (SEPA)
- Emissions estimations of criteria and toxic air pollutants

3 Facility Location

The LAB Facility is located at the WTP site on the eastern part of the 200 East Area within the DOE Hanford Site (refer to Figure 1 and Figure 2). The WTP site is northwest of Richland, Washington; on the 7.5-minute quadrangle topographic map of Gable Butte, it is in Section 3, T12N, R26E, Willamette Meridian. The latitude and longitude coordinates corresponding to the general WTP site are approximately N 46°33'4", W 119°30'9".

The address for the WTP site is as follows:

U.S. Department of Energy, Hanford Field Office
Hanford Site
200 East Area, Waste Treatment Plant
Richland, WA 99352

Figure 1 Location of the WTP on the Hanford Site

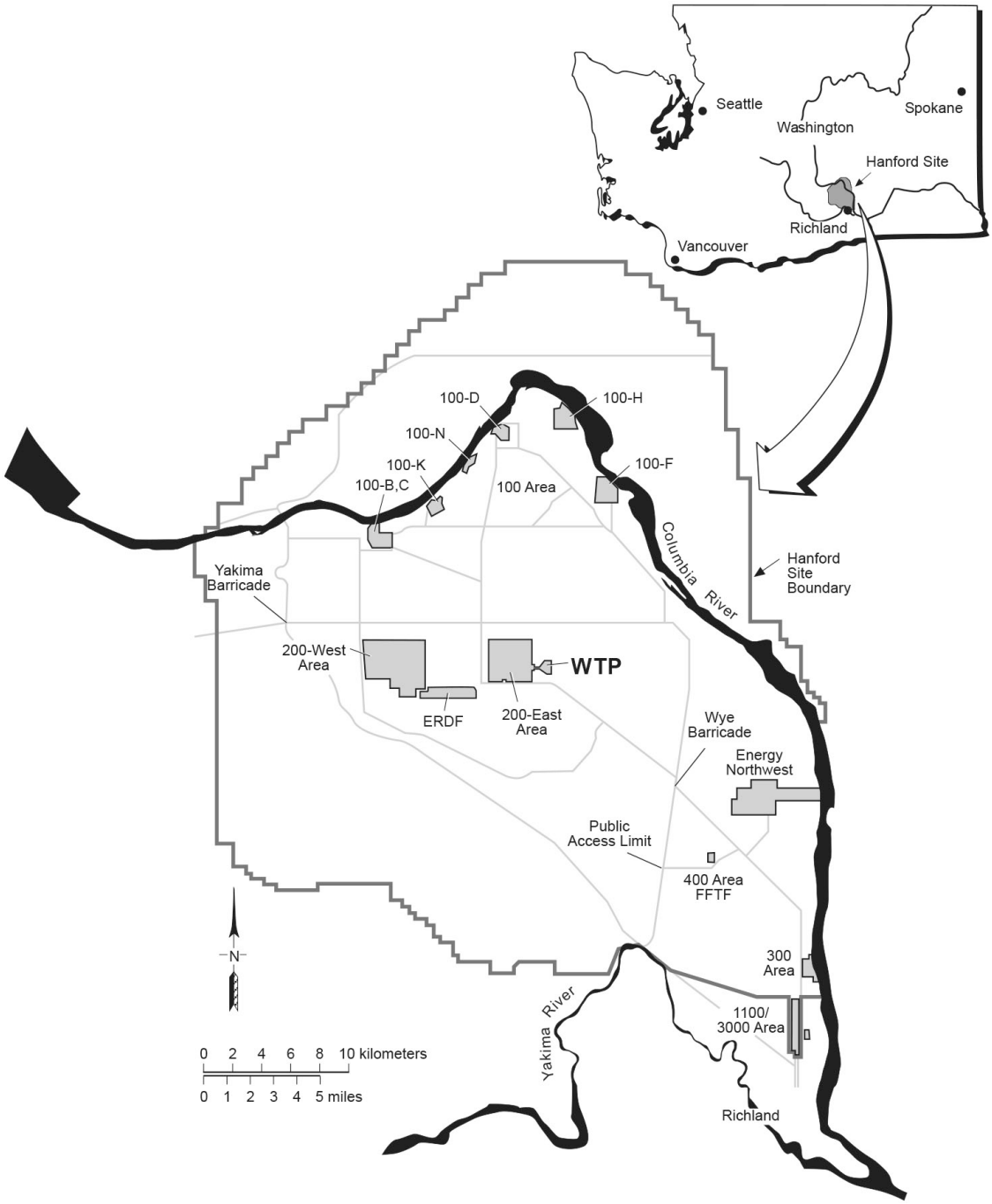


Figure 2 WTP Facility Schematic

4 Responsible Manager

Mr. Brian Harkins, Acting Manager
U.S. Department of Energy, Hanford Field Office
2440 Stevens Center Place
P.O. Box 550
Richland, WA 99354
(509) 376-7395

5 Review of Applicable Regulatory Requirements

In Washington State, Ecology is responsible for establishing and maintaining air quality standards to protect public health [Revised Code of Washington (RCW) 70.94.011, *Washington Clean Air Act, Declarations of Public Policies and Purpose*]. Facilities with new sources of air emissions are required to

comply with NSR requirements in WAC 173-400 and WAC 173-460. Three reports (24590-WTP-RPT-ENV-01-009, 24590-WTP-RPT-ENV-12-002, and 24590-WTP-RPT-ENV-20-001) were prepared to fulfill these requirements and supported Ecology issuance of the DE02NWP-002 permit and subsequent revisions.

This NOC provides updated air emissions for the LB-S1 (Lab C3 Area Exhaust) and LB-S2 (Lab C5 Area Exhaust) emission units, resulting from an anticipated increase in the total annual volume of sample materials for the LAW 6 sample point to be analyzed at LAB. This NOC also provides information on the replacement of burner assembly components on three (3) of the six (6) WTP Steam Plant boilers. The burner assemblies on boilers HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C are being replaced with functionally equivalent components that will result in no change in boiler PTE or emission rates.

5.1 Review of WAC 173-400 and WAC 173-460

As demonstrated in Table 1 below, the proposed modification to the two LAB emission units does not increase any criteria pollutants or ozone depleting substance (ODS) listed in WAC 173-400-110(5) above the threshold exemption levels. Tables A-1 and A-2 in Appendix A show the proposed emissions increases from LB-S1 and LB-S2, respectively. Compared to emissions previously permitted in NOC application 24590-WTP-RPT-ENV-20-001, all proposed new emission increases from LB-S1 and LB-S2, except for chromium (vi), will be below the de minimis thresholds established in WAC 173-460-150. The proposed increase in chromium (vi), Chemical Abstract Service (CAS) Number 18540-29-9, exceeds its de minimis threshold. Chromium (vi) is abated by the existing High Efficiency Particulate Air (HEPA) filtration system, which has been established as tBACT for LAB TAP emissions. The cost of additional abatement for each ton of the 8.91E-08 lb/yr of chromium (vi) that is not removed by the HEPA filters is estimated at more than twenty-two billion dollars times the annual abatement cost. Since HEPA filtration is still a highly efficient control method for particulate matter emissions (99.97% removal efficiency), no additional control system is proposed for LB-S1 and LB-S2 emission units. Figure 3 in Section 7 shows a block flow diagram of the LAB emissions abatement system.

The burner assembly replacement on boilers HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C will not result in an increase in boiler PTE or emission rates. Therefore, per WAC 173-400-030(51), this activity does not constitute a “modification” of the boilers. Per WAC 173-400-030(56), none of the boilers, after burner assembly replacement, would qualify as a “new source”. Consequently, each boiler will retain its current permit status as an “existing source” and no NSR applicability changes are required. Specification information provided in Appendix B establishes technical equivalence of the existing and replacement burner assemblies.

Table 1: Comparison of Proposed New Emission Increases to NSR Exemption Levels

Pollutant	Increase in LAB Emissions (ton/yr)	Proposed Total Emissions Increase (ton/yr)	WAC 173-400-110(5) Exemption Level (ton/yr)	Exceeds Exemption Threshold? (Yes/No)
Carbon Monoxide (CO)	0	0	5.0	No
Nitrogen Oxides (NO_x)	0	0	2.0	No
Sulfur Oxides (SO_x)	0	0	2.0	No
Particulate Matter (PM_{10})	0	0	0.75	No
Particulate Matter ($PM_{2.5}$)	0	0	0.5	No
Volatile Organic Compounds (VOC)	8.50E-10	8.50E-10	2.0	No
Lead (Pb)	4.24E-08	4.24E-08	0.005	No
Ozone Depleting Substances (ODS)	1.39E-15	1.39E-15	1.0	No
Toxic Air Pollutants (TAP)	See Appendix A		See WAC 173-460-150 de minimis levels	Yes*

* For chromium (vi), both proposed new unabated emissions increase and total unabated emissions from LAB C3 and C5 Exhaust areas exceed de minimis. However, both new abated emission increase and total abated emissions are below the small quantity emission rate (SQER).

5.2 Other Clean Air Act Regulations

5.2.1 Prevention of Significant Deterioration (PSD)

The existing WTP Project is permitted under PSD-02-01, Amendment 3 because the WTP site-wide total NO_x and PM_{10} emissions exceed the PSD significance levels. The two LAB emission units being modified by this NOC do not emit NOx or PM_{10}. The burner assembly replacement on the boilers does not constitute a "modification" as the activity does not result in an increase in PTE or emission rates for NOx or PM_{10}. Therefore, this NOC does not involve an increase in NO_x or PM_{10} emissions. Furthermore, a cost analysis conducted in April 2021, as part of a regulatory impact evaluation for the boiler burner assembly replacement (CCN 324780), shows that the estimated cost for replacing the burner assembly for each boiler represents approximately fourteen percent (14%) of the estimated cost for replacing the boiler with a new unit. Per 40 CFR 52.21(b)(2)(iii)(A) the change is considered routine maintenance, repair and replacement (RMRR) under the EPA's equipment replacement provision (ERP) program (68 FR 61248 and 70 FR 33838). Also, Tables A-1, A-2, and A-3 show that the proposed emission rate increases from the LAB – for pollutants other than NOx and PM_{10} – associated with this NOC are below the PSD significance levels. Therefore, this modification does not initiate any further PSD requirements.

5.2.2 Significant Impact Level and National Ambient Air Quality Standard Modeling

As part of a previous permit modification application (24590-WTP-RPT-ENV-20-001), the WTP Project assessed NO_x as nitrogen dioxide (NO_2) and particulate matter (PM) impacts using the new Hanford Site ambient air boundary. The modeling plan and preliminary results are summarized in an email from DOE to Ecology (CCN 321171), dated September 11, 2020. This NOC application does not involve an increase in NO_x or PM_{10} emissions. Also, Tables A-1, A-2 and A-3 show that the proposed increases in emission rates for all other pollutants associated with this NOC are below the SQER thresholds and PSD significance levels. Therefore, per WAC 173-460-080(2)(b), the requirements for an acceptable source impact level (ASIL) analysis in WAC 173-460-070 and 173-460-080(1) are satisfied.

5.2.3 Operating Permit Regulations

The permitting requirements for major sources, including the Hanford Site, are specified in WAC 173-401, *Operating permit regulation*. The DE02NWP-002 permit is included in the Hanford Site Air Operating Permit (AOP) 00-05-006. This NOC will be incorporated into the AOP via issuance of a revised DE02NWP-002 permit.

5.2.4 New Source Performance Standards

The Clean Air Act requires certain categories of emission sources to meet standards established under 40 CFR 60, *Standards of Performance for New Stationary Sources*. There are no specific source categories of 40 CFR 60 that are applicable to the LB-S1 and LB-S2 emission units.

WTP Steam Plant boilers HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C are subject to the requirements of 40 CFR 60, Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.* Per 40 CFR 60.14(a) and (e)(1), the proposed change to the boilers does not constitute a "modification", since there will be no increase in PTE or emission rates. In addition, since the estimated cost for replacing each burner assembly is less than fifty percent (50%) of the estimated cost for replacing the boiler with a new unit, the proposed change does not qualify as "reconstruction", per 40 CFR 60.15(b). Therefore, no changes in NSPS applicability are required.

5.2.5 National Emissions Standards for Hazardous Air Pollutants

The Clean Air Act of 1970 requires certain categories of emissions sources to meet standards established under 40 CFR 63, *National Emission Standards for Hazardous Air Pollutants for Source Categories*. There are no specific source categories of 40 CFR 63 that are applicable to the LB-S1 and LB-S2 emission units.

Steam Plant boilers HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C are subject to the requirements of 40 CFR 63, Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.* The boilers are classified as "existing" in the liquid/light liquid fuel category since each boiler commenced construction prior to June 4, 2010, and burns only ultra-low sulfur diesel (ULSD) fuel. Each boiler will retain its status as an existing boiler, since the proposed change does not constitute a "reconstruction", as defined in 40 CFR 63.2. Therefore, no changes in NESHAP applicability are required.

5.2.6 Review of WAC 246-247, Radiation Protection – Air Emissions

The Washington State Department of Health (WDOH) oversees permitting of radioactive air emissions sources under regulations in WAC 246-247, *Radiation protection – Air Emissions*. The LB-S1 and LB-S2 emission units have the potential to emit radioactive air emissions; therefore, a separate NOC application (24590-WTP-RPT-ENV-24-002, *Radioactive Air Emissions Notice of Construction Modification Request to the WTP Analytical Laboratory LB-S1 and LB-S2 Emission Units*) will be submitted to the WDOH for proposed radionuclide emission increases associated with the increase in the total annual volume of sample materials for the LAW 6 sample point.

The WTP Steam Plant boilers do not emit radioactive air emissions; therefore, they are not subject to the requirements of WAC 246-247.

6 State Environmental Policy Act

This Project fulfills the requirements of WAC 197-11, *SEPA Rules*, and RCW 43.21C.030(2)(c), *State Environmental Policy, Guidelines for State Agencies: Local Governments – Statements – Reports – Advice – Information*, per RCW 43.21C.150, *RCW 43.21C.030(2)(c) Inapplicable When Statement Previously Prepared Pursuant to National Environmental Policy Act*, which states the following:

> "The requirements of RCW 43.21C.030(2)(c) pertaining to the preparation of a detailed statement by branches of government shall not apply when an adequate detailed statement has been previously prepared pursuant to the national environmental policy act of 1969, in which event said prepared statement may be utilized in lieu of a separately prepared statement under RCW 43.21C.030(2)(c)."

Environmental impact statement DOE/EIS-0391, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*, meets the agencies' review needs for the current proposal. The lead reviewing agency is the DOE Hanford Field Office; point of contact is Bryan Trimberger, Environmental Engineer, Regulatory Compliance.

7 Facility Description

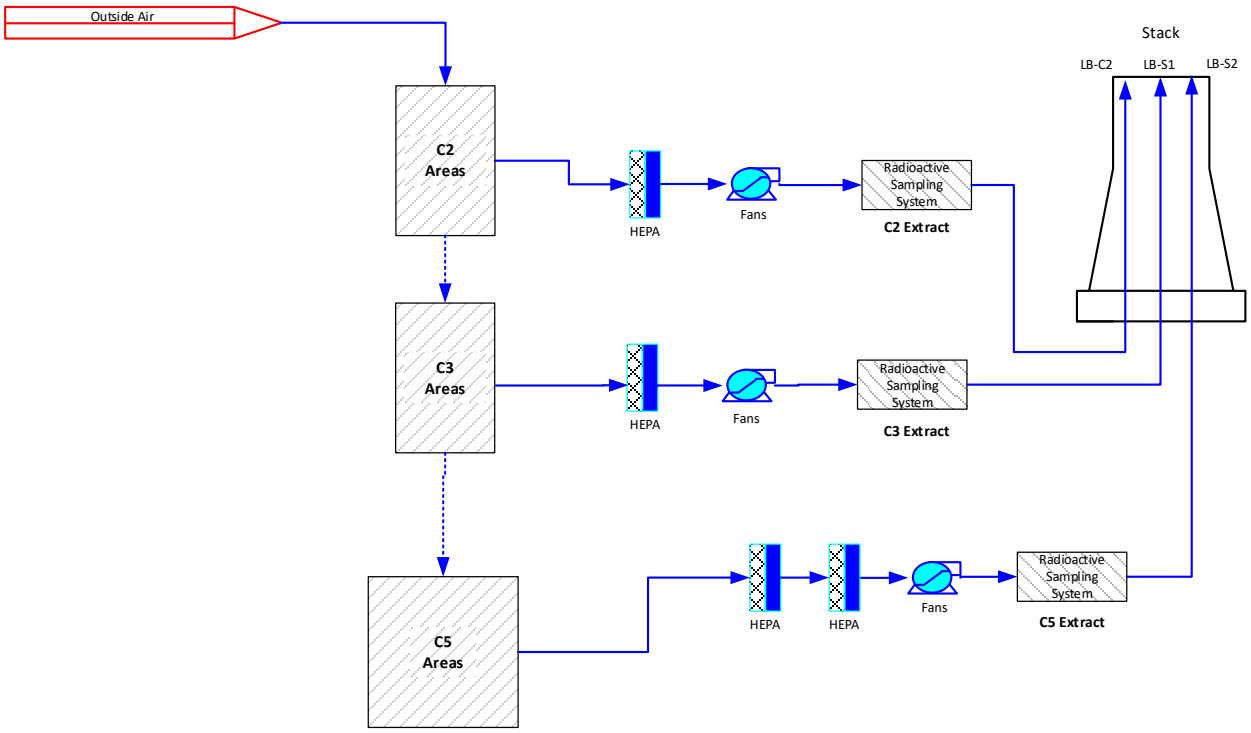
The LAB is designed to incorporate the features and capabilities necessary to ensure efficient WTP operations and meet appropriate requirements. The LAB contains low-activity waste and high-level waste laboratories. High-level waste samples are not managed during the DFLAW configuration of WTP because the analytical hot cell laboratory equipment are not operational. Low-activity waste samples are managed and analyzed in the Analytical Radiological Laboratory (ARL) during the DFLAW configuration. Methods and equipment selected for laboratory analyses are conducted and used in accordance with applicable requirements.

The LAB has three emission units: LB-C2, LB-S1, and LB-S2, which correspond to the C2, C3, and C5 ventilation systems respectively (See Figure 3). The C2 building ventilation air associated with general laboratory work areas or offices are vented through the LB-C2 emission unit. Under normal operations,

nonradioactive air emissions from the C2 ventilation area are less than WAC 173-400-110(5) and WAC 173-460-150 de minimis levels. Emissions from various ARL fume hoods are vented through the C3 ventilation system. Emissions from vessel RLD-VSL-164 are vented through the C5 ventilation system. The hot cell and RLD-VSL-00165 are not operational during DFLAW, so there are no potential emissions from these sources.

The WTP Steam Plant is located in Building 85 in the 200-East Area. The plant consists of six identical firetube steam boilers, three of which are operational. Each boiler is equipped with low-NOx burners with steam atomization and combust solely ultra-low sulfur diesel fuel. The burner assemblies are being replaced with functionally equivalent components to enhance turndown capability during low steam demand months and reduce sky valve use with the goal of reducing fuel consumption. There will be no increase in the PTE or emission rates for the boilers.

Figure 3 LAB Ventilation Controls



Note: The LB-C2 emission unit is not a source of TAP emissions.

8 Emissions Estimates for Toxic Air Pollutants

Per the requirements of WAC 173-400-110(1)(d) and WAC 173-460-040(2), the new source review for this NOC application is limited to the LB-S1 (LAB C3 Area Exhaust) and LB-S2 (LAB C5 Area Exhaust) emission units. All other emission units associated with the DFLAW configuration, and their

corresponding emissions estimates discussed in 24590-WTP-RPT-ENV-01-009, 24590-WTP-RPT-ENV-12-002, and 24590-WTP-ENV-20-001 remain unchanged. Below is a description of the emission estimation methodology for the LB-S1 and LB-S2 emission units.

8.1 LAB LB-S1 and LB-S2 Emissions Estimates

The emission rates corresponding to the DFLAW configuration for the LB-S1 (LAB C3 Area Exhaust) and LB-S2 (LAB C5 Area Exhaust) emission units are based on 24590-LAB-RPT-ENV-18-001, *WTP Analytical Laboratory Emissions Estimate*. The proposed emissions increase for this NOC permit application follow the same approach described in 24590-LAB-RPT-ENV-18-001. Following is an excerpt.

The basic approach in 24590-LAB-RPT-ENV-18-001 to estimating LAB emissions includes summing the annual sample volume from each of the Analytical Radiological Laboratory (ARL) fume hoods, then multiplying by the mass fraction of each constituent from a representative bounding process stream identified in 24590-WTP-M4C-V20T-00001, *Emissions Estimate for DFLAW and Integrated WTP Configurations* to derive a sample concentration. Emissions of each constituent are then estimated by applying a release fraction derived in accordance with WAC 246-247-030(21)(a). Although WAC 246-247-030 is specific to radionuclides, the same release fraction was applied to non-radionuclides for consistency. A release fraction of 0.001 was applied to particle bound constituents, while volatile constituents and laser ablation coupled plasma spectroscopy analysis utilized a release fraction of 1.

Particle bound constituents are abated with one stage of HEPA filtration in the LB-S1 emission units. In the LB-S2 emission unit, particle bound constituents are abated with two stages of HEPA filtration.

Estimated emissions for approximately 400 organic and inorganic compounds from LB-S1 and LB-S2 emission sources are documented in 24590-LAB-RPT-ENV-18-001. Screening analysis determined that 144 of these compounds are identified in WAC 173-460-150 as TAPs (Appendix A). These 144 TAPs were further analyzed to determine if their potential emissions exceeded corresponding de minimis levels.

For this NOC application, analysis shows that both proposed unabated emission rate increase and new total unabated emission rate for one TAP (chromium vi) exceed its corresponding de minimis level. However, both proposed abated emission rate increase and new total abated emission rate for chromium (vi) are below its corresponding SQER level.

8.2 Total Emissions Estimates

Non-radioactive air emissions estimates from the DFLAW configuration include emissions from the LAB emission units (LB-S1 and LB-S2). This NOC proposes emissions increases for LB-S1 and LB-S2 emissions units only. Table A-3, in Appendix A, shows proposed new total emissions from LB-S1 and LB-S2 emission units, resulting from changes in total annual volume of sample materials from the LAW 6 sample point. The increases in total emission rates are compared with the WAC 173-460-150 de minimis and SQER thresholds. Chromium (vi) is the only TAP with emission rate increase and new total emission rate that exceed de minimis. The increases in abated emission rates for all TAPs, including chromium (vi), are below their corresponding SQER.

The existing Steam Plant boilers are each rated at a maximum heat input of 50 million British thermal units per hour (50 MMBtu/hr) and are permitted to combust ULSD fuel. The replacement burners for the three operational boilers (HPS-BLR-00003A, HPS-BLR-00003B, and HPS-BLR-00003C) are rated at 50

MMBtu/hr heat input and will combust USLD fuel solely. The boilers will continue to operate under the current permit fuel consumption limit of 13,400,000 gallons per year. Therefore, this activity will not result in an increase in emission rates for the boilers; consequently, there are no required changes to the applicable regulatory requirements, as discussed in the preceding sections.

9 References

9.1 Project Documents

24590-WTP-RPT-ENV-01-009, *Nonradioactive Air Emissions Notice of Construction Permit Application for the Hanford Tank Waste Treatment and Immobilization Plant*.

24590-WTP-RPT-ENV-12-002, *Nonradioactive Air Emissions Notice of Construction Permit Application Supplement to DE02NWP-002*.

24590-WTP-RPT-ENV-20-001, *Nonradioactive Air Permit Notice of Construction Permit Application Modification to Air Permit DE02NWP-002, Revision 2.*

24590-LAB-RPT-ENV-18-001, *WTP Analytical Laboratory Emissions Estimate*.

24590-WTP-M4C-V20T-00001, *Emissions Estimate for DFLAW and Integrated WTP Configurations.*

CCN 324780, *Impact Evaluation for Replacement of the WTP Steam Plant Boiler Burner Assemblies.*

CCN 321171, Email, B Trimberger (DOE) to R Dhammapala (Ecology), *Hanford Site WTP – PSD Permit Modeling Preliminary Results*, 11 September 2020.

9.2 Codes and Standards

40 CFR 60, *Standards of Performance for New Stationary Sources*, Code of Federal Regulations.

40 CFR 63, *National Emission Standards for Hazardous Air Pollutants for Source Categories*, Code of Federal Regulations.

68 FR 61248, *Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair and Replacement Exclusion.*

70 FR 33838, *Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair and Replacement Exclusion: Reconsideration.*

RCW 43.21C.030, *State Environmental Policy, Guidelines for State Agencies, Local Governments—Statements—Reports—Advice—Information*, Revised Code of Washington, Olympia, WA.

RCW 43.21C.150, *State Environmental Policy, RCW 43.21C.030(2)(c) Inapplicable When Statement Previously Prepared Pursuant to National Environmental Policy Act*, Revised Code of Washington, Olympia, WA.

RCW 70.94.011, *Washington Clean Air Act, Declarations of Public Policies and Purpose*, Revised Code of Washington, Olympia, WA.

WAC 173-400, *General Regulations for Air Pollution Sources*, Washington Administrative Code, Olympia, WA.

WAC 173-400-110, *New Source Review (NSR) for Sources and Portable Sources*, Washington Administrative Code, Olympia, WA.

WAC 173-401, *Operating Permit Regulation*, Washington Administrative Code, Olympia, WA.

WAC 173-460, *Controls for New Sources of Toxic Air Pollutants*, Washington Administrative Code, Olympia, WA.

WAC 173-460-040, *New Source Review*, Washington Administrative Code, Olympia, WA.

WAC 173-460-150, *Table of ASIL, SQER and de minimis emission values*, Washington Administrative Code, Olympia, WA.

WAC 197-11, *SEPA Rules*, Washington Administrative Code, Olympia, WA.

WAC 246-247, *Radiation Protection—Air Emissions*, Washington Administrative Code, Olympia, WA.

WAC 246-247-030, *Definitions, Abbreviations, and Acronyms*, Washington Administrative Code, Olympia, WA.

Appendix A
Nonradioactive Air Emissions Estimates

Table A-1: Toxic Air Pollutant Emissions from LAB LB-S1
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second) [a]	New Abated Emissions (gram/second) [b]	Averaging Period [c]	Current Unabated Emissions (lbs/averaging period) [d]	New Unabated Emissions (lbs/averaging period) [d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No) [e]	Current Abated Emissions (lbs/averaging period) [f]	New Abated Emissions (lbs/averaging period) [f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No) [g]
100-41-4	Ethylbenzene	7.05E-17	7.05E-17	year	4.15E-12	4.90E-12	7.50E-13	3.20E+00	No	4.15E-12	4.90E-12	7.50E-13	6.50E+01	No
100-42-5	Styrene	3.73E-14	3.73E-14	24-hr	7.10E-12	7.10E-12	2.07E-15	3.20E+00	No	7.10E-12	7.10E-12	2.07E-15	6.50E+01	No
10595-95-6	N-Nitrosomethylethylamine	1.31E-11	1.31E-11	year	6.97E-07	9.11E-07	2.15E-07	1.30E-03	No	6.97E-07	9.11E-07	2.15E-07	2.60E-02	No
106-46-7	1,4-Dichlorobenzene	4.50E-14	4.50E-14	year	2.62E-09	3.12E-09	5.03E-10	7.40E-01	No	2.62E-09	3.12E-09	5.03E-10	1.50E+01	No
106-88-7	1,2-Epoxybutane	5.93E-12	5.93E-12	24-hr	7.97E-10	1.13E-09	3.31E-10	7.40E-02	No	7.97E-10	1.13E-09	3.31E-10	1.50E+00	No
106-93-4	Ethylene dibromide	5.45E-17	5.45E-17	year	2.72E-12	3.79E-12	1.06E-12	1.40E-02	No	2.72E-12	3.79E-12	1.06E-12	2.70E-01	No
106-99-0	1,3-Butadiene	3.15E-16	3.15E-16	year	2.16E-11	2.19E-11	2.50E-13	2.70E-01	No	2.16E-11	2.19E-11	2.50E-13	5.40E+00	No
107-02-8	Acrolein	3.19E-15	3.19E-15	24-hr	4.30E-13	6.07E-13	1.78E-13	1.30E-03	No	4.30E-13	6.07E-13	1.78E-13	2.60E-02	No
107-05-1	3-Chloropropene	1.09E-16	1.09E-16	year	6.63E-12	7.54E-12	9.14E-13	1.40E+00	No	6.63E-12	7.54E-12	9.14E-13	2.70E+01	No
107-06-2	1,2-Dichloroethane	1.05E-13	1.05E-13	year	1.04E-09	7.30E-09	6.26E-09	3.10E-01	No	1.04E-09	7.30E-09	6.26E-09	6.20E+00	No
107-13-1	Acrylonitrile	1.48E-12	1.48E-12	year	1.03E-07	1.03E-07	7.85E-11	2.80E-02	No	1.03E-07	1.03E-07	7.85E-11	5.60E-01	No
108-05-4	vinyl acetate	6.79E-12	6.79E-12	24-hr	9.22E-10	1.29E-09	3.71E-10	7.40E-01	No	9.22E-10	1.29E-09	3.71E-10	1.50E+01	No
108-10-1	Hexone	7.62E-16	7.62E-16	24-hr	1.03E-13	1.45E-13	4.25E-14	1.10E+01	No	1.03E-13	1.45E-13	4.25E-14	2.20E+02	No
108-39-4	m-Cresol	2.24E-11	2.24E-11	24-hr	3.28E-09	4.26E-09	9.86E-10	2.20E+00	No	3.28E-09	4.26E-09	9.86E-10	4.40E+01	No
108-88-3	Toluene	1.54E-14	1.54E-14	24-hr	2.93E-12	2.93E-12	6.05E-15	1.90E+01	No	2.93E-12	2.93E-12	6.05E-15	3.70E+02	No
108-90-7	Chlorobenzene	2.72E-14	2.72E-14	24-hr	5.18E-12	5.18E-12	2.12E-15	3.70E+00	No	5.18E-12	5.18E-12	2.12E-15	7.40E+01	No
108-95-2	Phenol	1.10E-11	1.10E-11	24-hr	1.89E-09	2.09E-09	2.03E-10	7.40E-01	No	1.89E-09	2.09E-09	2.03E-10	1.50E+01	No
110-54-3	Hexane	9.95E-17	9.95E-17	24-hr	1.89E-14	1.89E-14	7.14E-17	2.60E+00	No	1.89E-14	1.89E-14	7.14E-17	5.20E+01	No
110-80-5	2-Ethoxyethanol	6.49E-11	6.49E-11	24-hr	9.56E-09	1.24E-08	2.79E-09	2.60E-01	No	9.56E-09	1.24E-08	2.79E-09	5.20E+00	No
110-82-7	Cyclohexane	1.94E-17	1.94E-17	24-hr	3.70E-15	3.70E-15	2.36E-18	2.20E+01	No	3.70E-15	3.70E-15	2.36E-18	4.40E+02	No
111-44-4	Bis(2-chloroethyl)ether	1.64E-12	1.64E-12	year	1.13E-07	1.14E-07	4.61E-10	1.10E-02	No	1.13E-07	1.14E-07	4.61E-10	2.30E-01	No
111-76-2	2-Butoxyethanol	8.70E-12	8.70E-12	24-hr	1.26E-09	1.66E-09	3.92E-10	3.00E-01	No	1.26E-09	1.66E-09	3.92E-10	6.10E+00	No
117-81-7	Bis(2-ethylhexyl)phthalate	1.21E-10	1.21E-10	year	6.99E-06	8.39E-06	1.40E-06	3.40E+00	No	6.99E-06	8.39E-06	1.40E-06	6.80E+01	No
118-74-1	Hexachlorobenzene	2.48E-14	2.48E-14	year	1.72E-09	1.72E-09	2.02E-12	1.80E-02	No	1.72E-09	1.72E-09	2.02E-12	3.50E-01	No
121-14-2	2,4-Dinitrotoluene	8.59E-11	8.59E-11	year	4.80E-06	5.97E-06	1.16E-06	9.10E-02	No	4.80E-06	5.97E-06	1.16E-06	1.80E+00	No
123-91-1	1,4-Dioxane	2.63E-15	2.63E-15	year	1.83E-10	1.83E-10	3.19E-13	1.60E+00	No	1.83E-10	1.83E-10	3.19E-13	3.20E+01	No
127-18-4	Tetrachloroethene	2.82E-17	2.82E-17	year	1.81E-12	1.96E-12	1.52E-13	1.30E+00	No	1.81E-12	1.96E-12	1.52E-13	2.70E+01	No
1336-36-3	Aroclors (Total PCB)	9.41E-12	9.41E-12	year	6.53E-07	6.54E-07	2.83E-10	1.40E-02	No	6.53E-07	6.54E-07	2.83E-10	2.80E-01	No
156-60-5	1,2-trans-Dichloroethene	8.65E-12	8.65E-12	24-hr	1.42E-09	1.65E-09	2.26E-10	3.00E+00	No	1.42E-09	1.65E-09	2.26E-10	6.00E+01	No
1634-04-4	tert-Butyl methyl ether	5.52E-12	5.52E-12	year	2.74E-07	3.83E-07	1.09E-07	3.10E+01	No	2.74E-07	3.83E-07	1.09E-07	6.20E+02	No
1746-01-6	2,3,7,8-Tetrachlorodibenzo(p)dioxin (TCDD)	3.43E-21	3.43E-21	year	2.38E-16	2.38E-16	5.99E-19	2.10E-07	No	2.38E-16	2.38E-16	5.99E-19	4.30E-06	No
189-55-9	Dibenzo[a,i]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
189-64-0	Dibenzo[a,h]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
191-30-0	Dibenzo(a,l)pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
192-65-4	Dibenzo[a,e]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-03	No	1.46E-06	1.82E-06	3.61E-07	8.90E-02	No
193-39-5	Indeno(1,2,3-cd)pyrene	1.58E-11	1.58E-11	year	9.58E-07	1.10E-06	1.41E-07	4.50E-02	No	9.58E-07	1.10E-06	1.41E-07	8.90E-01	No
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	6.04E-21	6.04E-21	year	4.15E-16	4.20E-16	4.81E-18	2.10E-06	No	4.15E-16	4.20E-16	4.81E-18	4.30E-05	No
205-99-2	Benzo(b)fluoranthene	6.94E-13	6.94E-13	year	4.82E-08	4.82E-08	2.67E-11	4.50E-02	No	4.82E-08	4.82E-08	2.67E-11	8.90E-01	No
207-08-9	Benzo(k)fluoranthene	1.77E-11	1.77E-11	year	1.11E-06	1.23E-06	1.16E-07	4.50E-02	No	1.11E-06	1.23E-06	1.16E-07	8.90E-01	No
218-01-9	Chrysene	4.32E-13	4.32E-13	year	3.00E-08	3.00E-08	1.97E-11	4.50E-01	No	3.00E-08	3.00E-08	1.97E-11	8.90E+00	No

Table A-1: Toxic Air Pollutant Emissions from LAB LB-S1
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
224-42-0	Dibenz[a,j]acridine	3.65E-11	3.65E-11	year	2.04E-06	2.53E-06	4.96E-07	4.50E-02	No	2.04E-06	2.53E-06	4.96E-07	8.90E-01	No
226-36-8	Dibenz[a,h]acridine	3.65E-11	3.65E-11	year	2.04E-06	2.54E-06	4.97E-07	4.50E-02	No	2.04E-06	2.54E-06	4.97E-07	8.90E-01	No
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	8.51E-20	8.51E-20	year	5.91E-15	5.91E-15	5.36E-19	7.40E-03	No	5.91E-15	5.91E-15	5.36E-19	1.50E-01	No
319-84-6	alpha-BHC	2.76E-16	2.76E-16	year	1.41E-11	1.92E-11	5.07E-12	1.10E-02	No	1.41E-11	1.92E-11	5.07E-12	2.10E-01	No
319-85-7	beta-BHC	5.05E-16	5.05E-16	year	2.71E-11	3.51E-11	8.00E-12	1.90E-02	No	2.71E-11	3.51E-11	8.00E-12	3.80E-01	No
32598-13-3	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	3.98E-19	3.98E-19	year	2.73E-14	2.77E-14	3.24E-16	2.10E-03	No	2.73E-14	2.77E-14	3.24E-16	4.30E-02	No
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	9.07E-21	9.07E-21	year	6.30E-16	6.30E-16	6.23E-21	7.40E-03	No	6.30E-16	6.30E-16	6.23E-21	1.50E-01	No
3268-87-9	Octachlorodibenzo(p)dioxin	1.74E-19	1.74E-19	year	1.19E-14	1.21E-14	2.30E-16	7.40E-04	No	1.19E-14	1.21E-14	2.30E-16	1.50E-02	No
32774-16-6	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	4.81E-20	4.81E-20	year	3.34E-15	3.34E-15	3.18E-18	7.40E-06	No	3.34E-15	3.34E-15	3.18E-18	1.50E-04	No
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	2.80E-20	2.80E-20	year	1.93E-15	1.94E-15	1.75E-17	2.10E-05	No	1.93E-15	1.94E-15	1.75E-17	4.30E-04	No
3697-24-3	5-Methylchrysene	5.12E-12	5.12E-12	year	2.66E-07	3.56E-07	8.96E-08	4.50E-03	No	2.66E-07	3.56E-07	8.96E-08	8.90E-02	No
38380-08-4	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	2.90E-20	2.90E-20	year	2.01E-15	2.01E-15	5.48E-19	7.40E-03	No	2.01E-15	2.01E-15	5.48E-19	1.50E-01	No
39001-02-0	Octachlorodibenzofuran	5.83E-20	5.83E-20	year	3.82E-15	4.05E-15	2.31E-16	7.40E-04	No	3.82E-15	4.05E-15	2.31E-16	1.50E-02	No
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	4.23E-21	4.23E-21	year	2.91E-16	2.94E-16	3.00E-18	2.10E-06	No	2.91E-16	2.94E-16	3.00E-18	4.30E-05	No
39635-31-9	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	2.38E-20	2.38E-20	year	1.65E-15	1.65E-15	2.46E-18	7.40E-03	No	1.65E-15	1.65E-15	2.46E-18	1.50E-01	No
40321-76-4	1,2,3,7,8-Pentachlorodibenzo(p)dioxin	1.65E-20	1.65E-20	year	1.11E-15	1.15E-15	3.36E-17	2.10E-07	No	1.11E-15	1.15E-15	3.36E-17	4.30E-06	No
50-00-0	Formaldehyde	1.65E-11	1.65E-11	year	8.91E-07	1.15E-06	2.56E-07	1.40E+00	No	8.91E-07	1.15E-06	2.56E-07	2.70E+01	No
50-32-8	Benzo(a)pyrene	4.62E-12	4.62E-12	year	3.09E-07	3.21E-07	1.21E-08	8.20E-03	No	3.09E-07	3.21E-07	1.21E-08	1.60E-01	No
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	2.38E-20	2.38E-20	year	1.64E-15	1.65E-15	1.15E-17	2.10E-06	No	1.64E-15	1.65E-15	1.15E-17	4.30E-05	No
52663-72-6	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	4.56E-20	4.56E-20	year	3.16E-15	3.17E-15	3.20E-18	7.40E-03	No	3.16E-15	3.17E-15	3.20E-18	1.50E-01	No
53-70-3	Dibenz[a,h]anthracene	4.29E-11	4.29E-11	year	2.43E-06	2.98E-06	5.54E-07	4.10E-03	No	2.43E-06	2.98E-06	5.54E-07	8.20E-02	No
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	4.91E-21	4.91E-21	year	3.39E-16	3.41E-16	2.45E-18	2.10E-05	No	3.39E-16	3.41E-16	2.45E-18	4.30E-04	No
56-23-5	Carbon tetrachloride	3.39E-15	3.39E-15	year	2.35E-10	2.35E-10	9.76E-14	1.40E+00	No	2.35E-10	2.35E-10	9.76E-14	2.70E+01	No
56-49-5	3-Methylcholanthrene	5.16E-12	5.16E-12	year	2.68E-07	3.58E-07	8.99E-08	7.80E-04	No	2.68E-07	3.58E-07	8.99E-08	1.60E-02	No
56-55-3	Benzo(a)anthracene	4.36E-12	4.36E-12	year	2.92E-07	3.03E-07	1.08E-08	4.50E-02	No	2.92E-07	3.03E-07	1.08E-08	8.90E-01	No
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	2.17E-20	2.17E-20	year	1.46E-15	1.51E-15	4.14E-17	7.40E-07	No	1.46E-15	1.51E-15	4.14E-17	1.50E-05	No
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	1.46E-20	1.46E-20	year	9.89E-16	1.02E-15	2.75E-17	7.40E-06	No	9.89E-16	1.02E-15	2.75E-17	1.50E-04	No
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	8.60E-21	8.60E-21	year	5.88E-16	5.97E-16	9.43E-18	2.10E-06	No	5.88E-16	5.97E-16	9.43E-18	4.30E-05	No
57465-28-8	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	1.49E-19	1.49E-19	year	1.02E-14	1.04E-14	1.23E-16	2.10E-06	No	1.02E-14	1.04E-14	1.23E-16	4.30E-05	No
57653-85-7	1,2,3,6,7,8,-Hexachlorodibenzo(p)dioxin	7.39E-21	7.39E-21	year	5.08E-16	5.13E-16	5.08E-18	2.10E-06	No	5.08E-16	5.13E-16	5.08E-18	4.30E-05	No
58-89-9	gamma-BHC (Lindane)	3.98E-16	3.98E-16	year	2.07E-11	2.77E-11	6.95E-12	2.60E-02	No	2.07E-11	2.77E-11	6.95E-12	5.20E-01	No
59-89-2	Dimethyl aminoazobenzene	1.26E-10	1.26E-10	year	6.93E-06	8.74E-06	1.81E-06	4.30E-03	No	6.93E-06	8.74E-06	1.81E-06	8.50E-02	No
60-11-7	Morpholine, 4-Nitroso-	2.33E-33	2.33E-33	year	1.27E-28	1.62E-28	3.50E-29	6.20E-03	No	1.27E-28	1.62E-28	3.50E-29	1.20E-01	No
602-87-9	5-Nitroacenaphthene	7.93E-12	7.93E-12	year	4.23E-07	5.51E-07	1.28E-07	1.30E-01	No	4.23E-07	5.51E-07	1.28E-07	2.60E+00	No
60-35-5	Acetamide	3.41E-11	3.41E-11	year	1.88E-06	2.37E-06	4.85E-07	4.10E-01	No	1.88E-06	2.37E-06	4.85E-07	8.10E+00	No
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	3.98E-21	3.98E-21	year	2.74E-16	2.77E-16	2.73E-18	2.10E-06	No	2.74E-16	2.77E-16	2.73E-18	4.30E-05	No

Table A-1: Toxic Air Pollutant Emissions from LAB LB-S1
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
621-64-7	N-Nitroso-di-n-propylamine	2.38E-11	2.38E-11	year	1.26E-06	1.66E-06	3.98E-07	4.10E-03	No	1.26E-06	1.66E-06	3.98E-07	8.10E-02	No
62-75-9	N-Nitrosodimethylamine	1.29E-13	1.29E-13	year	6.83E-09	8.96E-09	2.13E-09	1.10E-03	No	6.83E-09	8.96E-09	2.13E-09	2.10E-02	No
630-20-6	1,1,1,2-Tetrachloroethane	2.24E-11	2.24E-11	year	1.18E-06	1.56E-06	3.76E-07	1.10E+00	No	1.18E-06	1.56E-06	3.76E-07	2.20E+01	No
65510-44-3	2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	9.22E-20	9.22E-20	year	6.38E-15	6.40E-15	2.75E-17	7.40E-03	No	6.38E-15	6.40E-15	2.75E-17	1.50E-01	No
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.50E-20	1.50E-20	year	1.04E-15	1.04E-15	8.07E-18	2.10E-05	No	1.04E-15	1.04E-15	8.07E-18	4.30E-04	No
67-63-0	Isopropyl alcohol	7.04E-15	7.04E-15	1-hr	4.14E-14	5.59E-14	1.45E-14	3.00E-01	No	4.14E-14	5.59E-14	1.45E-14	5.90E+00	No
67-66-3	Chloroform	2.72E-14	2.72E-14	year	1.88E-09	1.89E-09	9.95E-12	3.50E-01	No	1.88E-09	1.89E-09	9.95E-12	7.10E+00	No
67-72-1	Hexachloroethane	6.27E-13	6.27E-13	year	3.43E-08	4.35E-08	9.23E-09	7.40E-01	No	3.43E-08	4.35E-08	9.23E-09	1.50E+01	No
69782-90-7	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	7.87E-20	7.87E-20	year	5.46E-15	5.47E-15	8.54E-18	7.40E-03	No	5.46E-15	5.47E-15	8.54E-18	1.50E-01	No
70362-50-4	3,4,4',5-Tetrachlorobiphenyl (PCB 81)	6.02E-20	6.02E-20	year	4.16E-15	4.18E-15	1.90E-17	7.40E-04	No	4.16E-15	4.18E-15	1.90E-17	1.50E-02	No
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	9.27E-21	9.27E-21	year	6.41E-16	6.44E-16	3.43E-18	2.10E-06	No	6.41E-16	6.44E-16	3.43E-18	4.30E-05	No
71-43-2	Benzene	1.81E-14	1.81E-14	year	1.25E-09	1.26E-09	1.54E-12	1.00E+00	No	1.25E-09	1.26E-09	1.54E-12	2.10E+01	No
71-55-6	1,1,1-Trichloroethane	2.95E-17	2.95E-17	24-hr	5.15E-15	5.61E-15	4.62E-16	1.90E+01	No	5.15E-15	5.61E-15	4.62E-16	3.70E+02	No
72-55-9	4,4-DDE	8.20E-12	8.20E-12	year	4.13E-07	5.70E-07	1.57E-07	8.40E-02	No	4.13E-07	5.70E-07	1.57E-07	1.70E+00	No
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	2.41E-21	2.41E-21	year	1.65E-16	1.67E-16	1.73E-18	2.10E-06	No	1.65E-16	1.67E-16	1.73E-18	4.30E-05	No
74472-37-0	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	1.86E-20	1.86E-20	year	1.29E-15	1.29E-15	9.12E-19	7.40E-03	No	1.29E-15	1.29E-15	9.12E-19	1.50E-01	No
74-83-9	Bromomethane	1.62E-14	1.62E-14	24-hr	3.08E-12	3.08E-12	3.04E-15	1.90E-02	No	3.08E-12	3.08E-12	3.04E-15	3.70E-01	No
74-87-3	Chloromethane	1.16E-14	1.16E-14	24-hr	2.20E-12	2.20E-12	4.35E-15	3.30E-01	No	2.20E-12	2.20E-12	4.35E-15	6.70E+00	No
75-00-3	Chloroethane	8.08E-17	8.08E-17	24-hr	1.32E-14	1.54E-14	2.20E-15	1.10E+02	No	1.32E-14	1.54E-14	2.20E-15	2.20E+03	No
75-01-4	Vinyl chloride	4.68E-17	4.68E-17	year	3.09E-12	3.25E-12	1.58E-13	9.20E-01	No	3.09E-12	3.25E-12	1.58E-13	1.80E+01	No
75-05-8	Acetonitrile	6.50E-11	6.50E-11	year	4.50E-06	4.51E-06	8.64E-09	2.20E-01	No	4.50E-06	4.51E-06	8.64E-09	4.40E+00	No
75-07-0	Acetaldehyde	7.44E-12	7.44E-12	year	3.66E-07	5.17E-07	1.50E-07	3.00E+00	No	3.66E-07	5.17E-07	1.50E-07	6.00E+01	No
75-09-2	Methylenechloride	1.23E-12	1.23E-12	year	8.48E-08	8.54E-08	6.08E-10	4.90E+02	No	8.48E-08	8.54E-08	6.08E-10	9.80E+03	No
75-21-8	Ethylene oxide (Oxirane)	1.26E-14	1.26E-14	year	6.17E-10	8.73E-10	2.56E-10	1.60E-03	No	6.17E-10	8.73E-10	2.56E-10	3.30E-02	No
75-25-2	Bromoform	1.56E-17	1.56E-17	year	1.08E-12	1.08E-12	0.00E+00	7.40E+00	No	1.08E-12	1.08E-12	0.00E+00	1.50E+02	No
75-27-4	Bromodichloromethane	4.68E-11	4.68E-11	year	2.40E-06	3.25E-06	8.44E-07	2.20E-01	No	2.40E-06	3.25E-06	8.44E-07	4.40E+00	No
75-34-3	1,1-Dichloroethane	3.82E-17	3.82E-17	year	2.16E-12	2.65E-12	4.88E-13	5.10E+00	No	2.16E-12	2.65E-12	4.88E-13	1.00E+02	No
75-35-4	1,1-Dichloroethene	2.97E-17	2.97E-17	24-hr	5.37E-15	5.65E-15	2.88E-16	7.40E-01	No	5.37E-15	5.65E-15	2.88E-16	1.50E+01	No
75-45-6	Chlorodifluoromethane	5.30E-17	5.30E-17	24-hr	9.79E-15	1.01E-14	2.85E-16	1.90E+02	No	9.79E-15	1.01E-14	2.85E-16	3.70E+03	No
76-44-8	Heptachlor	1.76E-18	1.76E-18	year	1.22E-13	1.22E-13	3.99E-16	6.20E-03	No	1.22E-13	1.22E-13	3.99E-16	1.20E-01	No
77-47-4	Hexachlorocyclopentadiene	1.30E-14	1.30E-14	24-hr	2.47E-12	2.47E-12	1.07E-22	7.40E-04	No	2.47E-12	2.47E-12	1.07E-22	1.50E-02	No
78-87-5	1,2-Dichloropropane	4.59E-17	4.59E-17	year	2.44E-12	3.19E-12	7.44E-13	8.10E-01	No	2.44E-12	3.19E-12	7.44E-13	1.60E+01	No
78-93-3	2-Butanone	2.18E-12	2.18E-12	24-hr	4.13E-10	4.15E-10	1.68E-12	1.90E+01	No	4.13E-10	4.15E-10	1.68E-12	3.70E+02	No
79-00-5	1,1,2-Trichloroethane	6.29E-17	6.29E-17	year	3.16E-12	4.37E-12	1.21E-12	5.10E-01	No	3.16E-12	4.37E-12	1.21E-12	1.00E+01	No
79-01-6	Trichloroethene	1.01E-14	1.01E-14	year	7.01E-10	7.02E-10	3.70E-13	1.70E+00	No	7.01E-10	7.02E-10	3.70E-13	3.40E+01	No
79-10-7	2-Propenoic acid	2.50E-11	2.50E-11	24-hr	3.69E-09	4.76E-09	1.07E-09	3.70E-03	No	3.69E-09	4.76E-09	1.07E-09	7.40E-02	No
79-34-5	1,1,2,2-Tetrachloroethane	6.66E-17	6.66E-17	year	3.28E-12	4.63E-12	1.35E-12	1.40E-01	No	3.28E-12	4.63E-12	1.35E-12	2.80E+00	No

Table A-1: Toxic Air Pollutant Emissions from LAB LB-S1
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
79-46-9	2-Nitropropane	1.45E-14	1.45E-14	24-hr	1.96E-12	2.77E-12	8.10E-13	7.40E-02	No	1.96E-12	2.77E-12	8.10E-13	1.50E+00	No
87-68-3	Hexachlorobutadiene	2.12E-14	2.12E-14	year	1.25E-09	1.47E-09	2.21E-10	3.70E-01	No	1.25E-09	1.47E-09	2.21E-10	7.40E+00	No
87-86-5	Pentachlorophenol	1.90E-13	1.90E-13	year	1.06E-08	1.32E-08	2.63E-09	1.80E+00	No	1.06E-08	1.32E-08	2.63E-09	3.50E+01	No
88-06-2	2,4,6-Trichlorophenol	2.14E-11	2.14E-11	year	1.10E-06	1.48E-06	3.83E-07	2.60E+00	No	1.10E-06	1.48E-06	3.83E-07	5.20E+01	No
91-20-3	Naphthalene	2.65E-11	2.65E-11	year	1.47E-06	1.84E-06	3.70E-07	2.40E-01	No	1.47E-06	1.84E-06	3.70E-07	4.80E+00	No
91-94-1	3,3'-Dichlorobenzidine	1.36E-10	1.36E-10	year	7.74E-06	9.44E-06	1.70E-06	2.40E-02	No	7.74E-06	9.44E-06	1.70E-06	4.80E-01	No
95-48-7	2-Methylphenol	2.99E-11	2.99E-11	24-hr	4.35E-09	5.68E-09	1.33E-09	2.20E+00	No	4.35E-09	5.68E-09	1.33E-09	4.40E+01	No
98-82-8	Isopropylbenzene	5.78E-14	5.78E-14	24-hr	1.10E-11	1.10E-11	3.04E-14	1.50E+00	No	1.10E-11	1.10E-11	3.04E-14	3.00E+01	No
18540-29-9	Chromium VI	4.58E-09	2.29E-12	year	1.42E-04	3.18E-04	1.77E-04	3.30E-05	Yes	7.09E-08	1.59E-07	8.82E-08	6.50E-04	No
593-74-8	Dimethyl Mercury	2.94E-15	2.94E-15	24-hr	3.80E-13	5.60E-13	1.80E-13	5.20E-04	No	3.80E-13	5.60E-13	1.80E-13	1.00E-02	No
7440-43-9	Cadmium	3.47E-11	1.73E-14	year	9.82E-07	2.41E-06	1.43E-06	1.90E-03	No	4.91E-10	1.20E-09	7.14E-10	3.90E-02	No
7440-48-4	Cobalt	1.21E-15	6.05E-19	24-hr	1.20E-13	2.30E-13	1.10E-13	3.70E-04	No	6.00E-17	1.15E-16	5.50E-17	7.40E-03	No
7440-62-2	Vanadium	1.53E-10	7.67E-14	24-hr	7.50E-09	2.92E-08	2.17E-08	3.70E-04	No	3.75E-12	1.46E-11	1.08E-11	7.40E-03	No
7664-41-7	Ammonia	2.01E-10	2.01E-10	24-hr	3.51E-08	3.83E-08	3.21E-09	1.90E+00	No	3.51E-08	3.83E-08	3.21E-09	3.70E+01	No
7723-14-0	Phosphorus	4.70E-09	2.35E-12	24-hr	6.21E-07	8.94E-07	2.72E-07	7.40E-02	No	3.11E-10	4.47E-10	1.36E-10	1.50E+00	No
7439-92-1	Lead	1.10E-09	5.50E-13	year	3.40E-05	7.63E-05	4.24E-05	1.00E+01	No	1.69E-08	3.82E-08	2.12E-08	1.40E+01	No
109-99-9	Tetrahydrofuran	2.41E-15	2.41E-15	24-hr	3.25E-13	4.58E-13	1.33E-13	7.40E+00	No	3.25E-13	4.58E-13	1.33E-13	1.50E+02	No
123-38-6	Propionaldehyde	7.36E-15	7.36E-15	24-hr	9.93E-13	1.40E-12	4.07E-13	3.00E-02	No	9.93E-13	1.40E-12	4.07E-13	5.90E-01	No
1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	3.35E-14	3.35E-14	24-hr	5.86E-12	6.37E-12	5.06E-13	8.20E-01	No	5.86E-12	6.37E-12	5.06E-13	1.60E+01	No
591-78-6	2-Hexanone	9.47E-15	9.47E-15	24-hr	1.28E-12	1.80E-12	5.25E-13	1.10E-01	No	1.28E-12	1.80E-12	5.25E-13	2.20E+00	No
7439-96-5	Manganese & compounds	4.46E-10	2.23E-13	24-hr	2.21E-08	8.48E-08	6.27E-08	1.10E-03	No	1.10E-11	4.24E-11	3.14E-11	2.20E-02	No
7440-02-0	Nickel & compounds, NOS	3.90E-10	1.95E-13	year	7.02E-06	2.71E-05	2.01E-05	3.10E-02	No	3.50E-09	1.35E-08	1.00E-08	6.20E-01	No
7440-38-2	Arsenic & inorganic arsenic compounds, NOS	1.51E-10	7.53E-14	year	4.88E-06	1.05E-05	5.57E-06	2.50E-03	No	2.44E-09	5.23E-09	2.79E-09	4.90E-02	No
7440-41-7	Beryllium & compounds, NOS	6.58E-12	3.29E-15	year	2.03E-07	4.57E-07	2.54E-07	3.40E-03	No	1.01E-10	2.29E-10	1.27E-10	6.80E-02	No
7440-47-3	Chromium(III), insoluble particulates, NOS	1.97E-09	9.87E-13	24-hr	2.65E-07	3.76E-07	1.11E-07	1.90E-02	No	1.32E-10	1.88E-10	5.58E-11	3.70E-01	No
7440-50-8	Copper & compounds	8.50E-12	4.25E-15	1-hr	3.05E-11	6.74E-11	3.69E-11	9.30E-03	No	1.52E-14	3.37E-14	1.85E-14	1.90E-01	No
7440-61-1	Uranium, insoluble compounds, NOS	1.42E-10	7.09E-14	24-hr	1.20E-08	2.70E-08	1.50E-08	3.00E-03	No	5.99E-12	1.35E-11	7.50E-12	5.90E-02	No
75-15-0	Carbon disulfide	3.42E-15	3.42E-15	24-hr	6.51E-13	6.51E-13	1.00E-16	3.00E+00	No	6.51E-13	6.51E-13	1.00E-16	5.90E+01	No
7782-49-2	Selenium & selenium compounds (other than hydrogen selenide)	1.95E-10	9.77E-14	24-hr	1.77E-08	3.72E-08	1.95E-08	7.40E-02	No	8.83E-12	1.86E-11	9.77E-12	1.50E+00	No
98-95-3	Nitrobenzene	1.35E-12	1.35E-12	year	9.24E-08	9.34E-08	1.06E-09	2.00E-01	No	9.24E-08	9.34E-08	1.06E-09	4.10E+00	No

[a] Unabated emissions rates (gram/second) are scaled from 24590-LAB-RPT-ENV-18-001, *WTP Analytical Laboratory Emission Estimate* based on the updated number of samples.
[b] Abated emissions rates (gram/second) are scaled from 24590-LAB-RPT-ENV-18-001 based on the updated number of samples.
[c] Averaging period is provided in WAC 173-460-150, *Controls for New Sources of Toxic Air Pollutants.*
[d] Unabated emissions rate (lbs/averaging period) is calculated by taking the unabated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[e] Compares the de minimis in WAC 173-460-150 to the "Proposed Increase in Unabated Emissions (lbs/averaging period)".
[f] Abated emissions rate (lbs/averaging period) is calculated by taking the abated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[g] Compares the SQER in WAC 173-460-150 to the "Proposed Increase in Abated Emissions (lbs/averaging period)".

Table A-2: Toxic Air Pollutant Emissions from LAB LB-S2
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
100-41-4	Ethylbenzene	7.05E-17	7.05E-17	year	4.15E-12	4.90E-12	7.50E-13	3.20E+00	No	4.15E-12	4.90E-12	7.50E-13	6.50E+01	No
100-42-5	Styrene	3.73E-14	3.73E-14	24-hr	7.10E-12	7.10E-12	2.07E-15	3.20E+00	No	7.10E-12	7.10E-12	2.07E-15	6.50E+01	No
10595-95-6	N-Nitrosomethylethylamine	1.31E-11	1.31E-11	year	6.97E-07	9.11E-07	2.15E-07	1.30E-03	No	6.97E-07	9.11E-07	2.15E-07	2.60E-02	No
106-46-7	1,4-Dichlorobenzene	4.50E-14	4.50E-14	year	2.62E-09	3.12E-09	5.03E-10	7.40E-01	No	2.62E-09	3.12E-09	5.03E-10	1.50E+01	No
106-88-7	1,2-Epoxybutane	5.93E-12	5.93E-12	24-hr	7.97E-10	1.13E-09	3.31E-10	7.40E-02	No	7.97E-10	1.13E-09	3.31E-10	1.50E+00	No
106-93-4	Ethylene dibromide	5.45E-17	5.45E-17	year	2.72E-12	3.79E-12	1.06E-12	1.40E-02	No	2.72E-12	3.79E-12	1.06E-12	2.70E-01	No
106-99-0	1,3-Butadiene	3.15E-16	3.15E-16	year	2.16E-11	2.19E-11	2.50E-13	2.70E-01	No	2.16E-11	2.19E-11	2.50E-13	5.40E+00	No
107-02-8	Acrolein	3.19E-15	3.19E-15	24-hr	4.30E-13	6.07E-13	1.78E-13	1.30E-03	No	4.30E-13	6.07E-13	1.78E-13	2.60E-02	No
107-05-1	3-Chloropropene	1.09E-16	1.09E-16	year	6.63E-12	7.54E-12	9.14E-13	1.40E+00	No	6.63E-12	7.54E-12	9.14E-13	2.70E+01	No
107-06-2	1,2-Dichloroethane	1.05E-13	1.05E-13	year	1.04E-09	7.30E-09	6.26E-09	3.10E-01	No	1.04E-09	7.30E-09	6.26E-09	6.20E+00	No
107-13-1	Acrylonitrile	1.48E-12	1.48E-12	year	1.03E-07	1.03E-07	7.85E-11	2.80E-02	No	1.03E-07	1.03E-07	7.85E-11	5.60E-01	No
108-05-4	vinyl acetate	6.79E-12	6.79E-12	24-hr	9.22E-10	1.29E-09	3.71E-10	7.40E-01	No	9.22E-10	1.29E-09	3.71E-10	1.50E+01	No
108-10-1	Hexone	7.62E-16	7.62E-16	24-hr	1.03E-13	1.45E-13	4.25E-14	1.10E+01	No	1.03E-13	1.45E-13	4.25E-14	2.20E+02	No
108-39-4	m-Cresol	2.24E-11	2.24E-11	24-hr	3.28E-09	4.26E-09	9.86E-10	2.20E+00	No	3.28E-09	4.26E-09	9.86E-10	4.40E+01	No
108-88-3	Toluene	1.54E-14	1.54E-14	24-hr	2.93E-12	2.93E-12	6.05E-15	1.90E+01	No	2.93E-12	2.93E-12	6.05E-15	3.70E+02	No
108-90-7	Chlorobenzene	2.72E-14	2.72E-14	24-hr	5.18E-12	5.18E-12	2.12E-15	3.70E+00	No	5.18E-12	5.18E-12	2.12E-15	7.40E+01	No
108-95-2	Phenol	1.10E-11	1.10E-11	24-hr	1.89E-09	2.09E-09	2.03E-10	7.40E-01	No	1.89E-09	2.09E-09	2.03E-10	1.50E+01	No
110-54-3	Hexane	9.95E-17	9.95E-17	24-hr	1.89E-14	1.89E-14	7.14E-17	2.60E+00	No	1.89E-14	1.89E-14	7.14E-17	5.20E+01	No
110-80-5	2-Ethoxyethanol	6.49E-11	6.49E-11	24-hr	9.56E-09	1.24E-08	2.79E-09	2.60E-01	No	9.56E-09	1.24E-08	2.79E-09	5.20E+00	No
110-82-7	Cyclohexane	1.94E-17	1.94E-17	24-hr	3.70E-15	3.70E-15	2.36E-18	2.20E+01	No	3.70E-15	3.70E-15	2.36E-18	4.40E+02	No
111-44-4	Bis(2-chloroethyl)ether	1.64E-12	1.64E-12	year	1.13E-07	1.14E-07	4.61E-10	1.10E-02	No	1.13E-07	1.14E-07	4.61E-10	2.30E-01	No
111-76-2	2-Butoxyethanol	8.70E-12	8.70E-12	24-hr	1.26E-09	1.66E-09	3.92E-10	3.00E-01	No	1.26E-09	1.66E-09	3.92E-10	6.10E+00	No
117-81-7	Bis(2-ethylhexyl)phthalate	1.21E-10	1.21E-10	year	6.99E-06	8.39E-06	1.40E-06	3.40E+00	No	6.99E-06	8.39E-06	1.40E-06	6.80E+01	No
118-74-1	Hexachlorobenzene	2.48E-14	2.48E-14	year	1.72E-09	1.72E-09	2.02E-12	1.80E-02	No	1.72E-09	1.72E-09	2.02E-12	3.50E-01	No
121-14-2	2,4-Dinitrotoluene	8.59E-11	8.59E-11	year	4.80E-06	5.97E-06	1.16E-06	9.10E-02	No	4.80E-06	5.97E-06	1.16E-06	1.80E+00	No
123-91-1	1,4-Dioxane	2.63E-15	2.63E-15	year	1.83E-10	1.83E-10	3.19E-13	1.60E+00	No	1.83E-10	1.83E-10	3.19E-13	3.20E+01	No
127-18-4	Tetrachloroethene	2.82E-17	2.82E-17	year	1.81E-12	1.96E-12	1.52E-13	1.30E+00	No	1.81E-12	1.96E-12	1.52E-13	2.70E+01	No
1336-36-3	Aroclors (Total PCB)	9.41E-12	9.41E-12	year	6.53E-07	6.54E-07	2.83E-10	1.40E-02	No	6.53E-07	6.54E-07	2.83E-10	2.80E-01	No
156-60-5	1,2-trans-Dichloroethene	8.65E-12	8.65E-12	24-hr	1.42E-09	1.65E-09	2.26E-10	3.00E+00	No	1.42E-09	1.65E-09	2.26E-10	6.00E+01	No
1634-04-4	tert-Butyl methyl ether	5.52E-12	5.52E-12	year	2.74E-07	3.83E-07	1.09E-07	3.10E+01	No	2.74E-07	3.83E-07	1.09E-07	6.20E+02	No
1746-01-6	2,3,7,8-Tetrachlorodibenzo(p)dioxin (TCDD)	3.43E-21	3.43E-21	year	2.38E-16	2.38E-16	5.99E-19	2.10E-07	No	2.38E-16	2.38E-16	5.99E-19	4.30E-06	No
189-55-9	Dibenzo[a,i]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
189-64-0	Dibenzo[a,h]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
191-30-0	Dibenzo(a,l)pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-04	No	1.46E-06	1.82E-06	3.61E-07	8.90E-03	No
192-65-4	Dibenzo[a,e]pyrene	2.63E-11	2.63E-11	year	1.46E-06	1.82E-06	3.61E-07	4.50E-03	No	1.46E-06	1.82E-06	3.61E-07	8.90E-02	No
193-39-5	Indeno(1,2,3-cd)pyrene	1.58E-11	1.58E-11	year	9.58E-07	1.10E-06	1.41E-07	4.50E-02	No	9.58E-07	1.10E-06	1.41E-07	8.90E-01	No
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	6.04E-21	6.04E-21	year	4.15E-16	4.20E-16	4.81E-18	2.10E-06	No	4.15E-16	4.20E-16	4.81E-18	4.30E-05	No
205-99-2	Benzo(b)fluoranthene	6.94E-13	6.94E-13	year	4.82E-08	4.82E-08	2.67E-11	4.50E-02	No	4.82E-08	4.82E-08	2.67E-11	8.90E-01	No
207-08-9	Benzo(k)fluoranthene	1.77E-11	1.77E-11	year	1.11E-06	1.23E-06	1.16E-07	4.50E-02	No	1.11E-06	1.23E-06	1.16E-07	8.90E-01	No
218-01-9	Chrysene	4.32E-13	4.32E-13	year	3.00E-08	3.00E-08	1.97E-11	4.50E-01	No	3.00E-08	3.00E-08	1.97E-11	8.90E+00	No

Table A-2: Toxic Air Pollutant Emissions from LAB LB-S2
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
224-42-0	Dibenz[a,j]acridine	3.65E-11	3.65E-11	year	2.04E-06	2.53E-06	4.96E-07	4.50E-02	No	2.04E-06	2.53E-06	4.96E-07	8.90E-01	No
226-36-8	Dibenz[a,h]acridine	3.65E-11	3.65E-11	year	2.04E-06	2.54E-06	4.97E-07	4.50E-02	No	2.04E-06	2.54E-06	4.97E-07	8.90E-01	No
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	8.51E-20	8.51E-20	year	5.91E-15	5.91E-15	5.36E-19	7.40E-03	No	5.91E-15	5.91E-15	5.36E-19	1.50E-01	No
319-84-6	alpha-BHC	2.76E-16	2.76E-16	year	1.41E-11	1.92E-11	5.07E-12	1.10E-02	No	1.41E-11	1.92E-11	5.07E-12	2.10E-01	No
319-85-7	beta-BHC	5.05E-16	5.05E-16	year	2.71E-11	3.51E-11	8.00E-12	1.90E-02	No	2.71E-11	3.51E-11	8.00E-12	3.80E-01	No
32598-13-3	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	3.98E-19	3.98E-19	year	2.73E-14	2.77E-14	3.24E-16	2.10E-03	No	2.73E-14	2.77E-14	3.24E-16	4.30E-02	No
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	9.07E-21	9.07E-21	year	6.30E-16	6.30E-16	6.23E-21	7.40E-03	No	6.30E-16	6.30E-16	6.23E-21	1.50E-01	No
3268-87-9	Octachlorodibenzo(p)dioxin	1.74E-19	1.74E-19	year	1.19E-14	1.21E-14	2.30E-16	7.40E-04	No	1.19E-14	1.21E-14	2.30E-16	1.50E-02	No
32774-16-6	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	4.81E-20	4.81E-20	year	3.34E-15	3.34E-15	3.18E-18	7.40E-06	No	3.34E-15	3.34E-15	3.18E-18	1.50E-04	No
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	2.80E-20	2.80E-20	year	1.93E-15	1.94E-15	1.75E-17	2.10E-05	No	1.93E-15	1.94E-15	1.75E-17	4.30E-04	No
3697-24-3	5-Methylchrysene	5.12E-12	5.12E-12	year	2.66E-07	3.56E-07	8.96E-08	4.50E-03	No	2.66E-07	3.56E-07	8.96E-08	8.90E-02	No
38380-08-4	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	2.90E-20	2.90E-20	year	2.01E-15	2.01E-15	5.48E-19	7.40E-03	No	2.01E-15	2.01E-15	5.48E-19	1.50E-01	No
39001-02-0	Octachlorodibenzofuran	5.83E-20	5.83E-20	year	3.82E-15	4.05E-15	2.31E-16	7.40E-04	No	3.82E-15	4.05E-15	2.31E-16	1.50E-02	No
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	4.23E-21	4.23E-21	year	2.91E-16	2.94E-16	3.00E-18	2.10E-06	No	2.91E-16	2.94E-16	3.00E-18	4.30E-05	No
39635-31-9	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	2.38E-20	2.38E-20	year	1.65E-15	1.65E-15	2.46E-18	7.40E-03	No	1.65E-15	1.65E-15	2.46E-18	1.50E-01	No
40321-76-4	1,2,3,7,8-Pentachlorodibenzo(p)dioxin	1.65E-20	1.65E-20	year	1.11E-15	1.15E-15	3.36E-17	2.10E-07	No	1.11E-15	1.15E-15	3.36E-17	4.30E-06	No
50-00-0	Formaldehyde	1.65E-11	1.65E-11	year	8.91E-07	1.15E-06	2.56E-07	1.40E+00	No	8.91E-07	1.15E-06	2.56E-07	2.70E+01	No
50-32-8	Benzo(a)pyrene	4.62E-12	4.62E-12	year	3.09E-07	3.21E-07	1.21E-08	8.20E-03	No	3.09E-07	3.21E-07	1.21E-08	1.60E-01	No
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	2.38E-20	2.38E-20	year	1.64E-15	1.65E-15	1.15E-17	2.10E-06	No	1.64E-15	1.65E-15	1.15E-17	4.30E-05	No
52663-72-6	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	4.56E-20	4.56E-20	year	3.16E-15	3.17E-15	3.20E-18	7.40E-03	No	3.16E-15	3.17E-15	3.20E-18	1.50E-01	No
53-70-3	Dibenz[a,h]anthracene	4.29E-11	4.29E-11	year	2.43E-06	2.98E-06	5.54E-07	4.10E-03	No	2.43E-06	2.98E-06	5.54E-07	8.20E-02	No
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	4.91E-21	4.91E-21	year	3.39E-16	3.41E-16	2.45E-18	2.10E-05	No	3.39E-16	3.41E-16	2.45E-18	4.30E-04	No
56-23-5	Carbon tetrachloride	3.39E-15	3.39E-15	year	2.35E-10	2.35E-10	9.76E-14	1.40E+00	No	2.35E-10	2.35E-10	9.76E-14	2.70E+01	No
56-49-5	3-Methylcholanthrene	5.16E-12	5.16E-12	year	2.68E-07	3.58E-07	8.99E-08	7.80E-04	No	2.68E-07	3.58E-07	8.99E-08	1.60E-02	No
56-55-3	Benzo(a)anthracene	4.36E-12	4.36E-12	year	2.92E-07	3.03E-07	1.08E-08	4.50E-02	No	2.92E-07	3.03E-07	1.08E-08	8.90E-01	No
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	2.17E-20	2.17E-20	year	1.46E-15	1.51E-15	4.14E-17	7.40E-07	No	1.46E-15	1.51E-15	4.14E-17	1.50E-05	No
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	1.46E-20	1.46E-20	year	9.89E-16	1.02E-15	2.75E-17	7.40E-06	No	9.89E-16	1.02E-15	2.75E-17	1.50E-04	No
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	8.60E-21	8.60E-21	year	5.88E-16	5.97E-16	9.43E-18	2.10E-06	No	5.88E-16	5.97E-16	9.43E-18	4.30E-05	No
57465-28-8	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	1.49E-19	1.49E-19	year	1.02E-14	1.04E-14	1.23E-16	2.10E-06	No	1.02E-14	1.04E-14	1.23E-16	4.30E-05	No
57653-85-7	1,2,3,6,7,8,-Hexachlorodibenzo(p)dioxin	7.39E-21	7.39E-21	year	5.08E-16	5.13E-16	5.08E-18	2.10E-06	No	5.08E-16	5.13E-16	5.08E-18	4.30E-05	No
58-89-9	gamma-BHC (Lindane)	3.98E-16	3.98E-16	year	2.07E-11	2.77E-11	6.95E-12	2.60E-02	No	2.07E-11	2.77E-11	6.95E-12	5.20E-01	No
59-89-2	Dimethyl aminoazobenzene	1.26E-10	1.26E-10	year	6.93E-06	8.74E-06	1.81E-06	4.30E-03	No	6.93E-06	8.74E-06	1.81E-06	8.50E-02	No
60-11-7	Morpholine, 4-Nitroso-	2.33E-33	2.33E-33	year	1.27E-28	1.62E-28	3.50E-29	6.20E-03	No	1.27E-28	1.62E-28	3.50E-29	1.20E-01	No
602-87-9	5-Nitroacenaphthene	7.93E-12	7.93E-12	year	4.23E-07	5.51E-07	1.28E-07	1.30E-01	No	4.23E-07	5.51E-07	1.28E-07	2.60E+00	No
60-35-5	Acetamide	3.41E-11	3.41E-11	year	1.88E-06	2.37E-06	4.85E-07	4.10E-01	No	1.88E-06	2.37E-06	4.85E-07	8.10E+00	No
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	3.98E-21	3.98E-21	year	2.74E-16	2.77E-16	2.73E-18	2.10E-06	No	2.74E-16	2.77E-16	2.73E-18	4.30E-05	No

Table A-2: Toxic Air Pollutant Emissions from LAB LB-S2
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[c]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
621-64-7	N-Nitroso-di-n-propylamine	2.38E-11	2.38E-11	year	1.26E-06	1.66E-06	3.98E-07	4.10E-03	No	1.26E-06	1.66E-06	3.98E-07	8.10E-02	No
62-75-9	N-Nitrosodimethylamine	1.29E-13	1.29E-13	year	6.83E-09	8.96E-09	2.13E-09	1.10E-03	No	6.83E-09	8.96E-09	2.13E-09	2.10E-02	No
630-20-6	1,1,1,2-Tetrachloroethane	2.24E-11	2.24E-11	year	1.18E-06	1.56E-06	3.76E-07	1.10E+00	No	1.18E-06	1.56E-06	3.76E-07	2.20E+01	No
65510-44-3	2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	9.22E-20	9.22E-20	year	6.38E-15	6.40E-15	2.75E-17	7.40E-03	No	6.38E-15	6.40E-15	2.75E-17	1.50E-01	No
67-56-1	Methyl alcohol	1.30E-11	1.30E-11	24-hr	1.86E-09	2.47E-09	6.16E-10	7.40E+01	No	1.86E-09	2.47E-09	6.16E-10	1.50E+03	No
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.50E-20	1.50E-20	year	1.04E-15	1.04E-15	8.07E-18	2.10E-05	No	1.04E-15	1.04E-15	8.07E-18	4.30E-04	No
67-63-0	Isopropyl alcohol	7.04E-15	7.04E-15	1-hr	4.14E-14	5.59E-14	1.45E-14	3.00E-01	No	4.14E-14	5.59E-14	1.45E-14	5.90E+00	No
67-66-3	Chloroform	2.72E-14	2.72E-14	year	1.88E-09	1.89E-09	9.95E-12	3.50E-01	No	1.88E-09	1.89E-09	9.95E-12	7.10E+00	No
67-72-1	Hexachloroethane	6.27E-13	6.27E-13	year	3.43E-08	4.35E-08	9.23E-09	7.40E-01	No	3.43E-08	4.35E-08	9.23E-09	1.50E+01	No
69782-90-7	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	7.87E-20	7.87E-20	year	5.46E-15	5.47E-15	8.54E-18	7.40E-03	No	5.46E-15	5.47E-15	8.54E-18	1.50E-01	No
70362-50-4	3,4,4',5-Tetrachlorobiphenyl (PCB 81)	6.02E-20	6.02E-20	year	4.16E-15	4.18E-15	1.90E-17	7.40E-04	No	4.16E-15	4.18E-15	1.90E-17	1.50E-02	No
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	9.27E-21	9.27E-21	year	6.41E-16	6.44E-16	3.43E-18	2.10E-06	No	6.41E-16	6.44E-16	3.43E-18	4.30E-05	No
71-43-2	Benzene	1.81E-14	1.81E-14	year	1.25E-09	1.26E-09	1.54E-12	1.00E+00	No	1.25E-09	1.26E-09	1.54E-12	2.10E+01	No
71-55-6	1,1,1-Trichloroethane	2.95E-17	2.95E-17	24-hr	5.15E-15	5.61E-15	4.62E-16	1.90E+01	No	5.15E-15	5.61E-15	4.62E-16	3.70E+02	No
72-55-9	4,4-DDE	8.20E-12	8.20E-12	year	4.13E-07	5.70E-07	1.57E-07	8.40E-02	No	4.13E-07	5.70E-07	1.57E-07	1.70E+00	No
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	2.41E-21	2.41E-21	year	1.65E-16	1.67E-16	1.73E-18	2.10E-06	No	1.65E-16	1.67E-16	1.73E-18	4.30E-05	No
74472-37-0	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	1.86E-20	1.86E-20	year	1.29E-15	1.29E-15	9.12E-19	7.40E-03	No	1.29E-15	1.29E-15	9.12E-19	1.50E-01	No
74-83-9	Bromomethane	1.62E-14	1.62E-14	24-hr	3.08E-12	3.08E-12	3.04E-15	1.90E-02	No	3.08E-12	3.08E-12	3.04E-15	3.70E-01	No
74-87-3	Chloromethane	1.16E-14	1.16E-14	24-hr	2.20E-12	2.20E-12	4.35E-15	3.30E-01	No	2.20E-12	2.20E-12	4.35E-15	6.70E+00	No
75-00-3	Chloroethane	8.08E-17	8.08E-17	24-hr	1.32E-14	1.54E-14	2.20E-15	1.10E+02	No	1.32E-14	1.54E-14	2.20E-15	2.20E+03	No
75-01-4	Vinyl chloride	4.68E-17	4.68E-17	year	3.09E-12	3.25E-12	1.58E-13	9.20E-01	No	3.09E-12	3.25E-12	1.58E-13	1.80E+01	No
75-05-8	Acetonitrile	6.50E-11	6.50E-11	year	4.50E-06	4.51E-06	8.64E-09	2.20E-01	No	4.50E-06	4.51E-06	8.64E-09	4.40E+00	No
75-07-0	Acetaldehyde	7.44E-12	7.44E-12	year	3.66E-07	5.17E-07	1.50E-07	3.00E+00	No	3.66E-07	5.17E-07	1.50E-07	6.00E+01	No
75-09-2	Methylenechloride	1.23E-12	1.23E-12	year	8.48E-08	8.54E-08	6.08E-10	4.90E+02	No	8.48E-08	8.54E-08	6.08E-10	9.80E+03	No
75-21-8	Ethylene oxide (Oxirane)	1.26E-14	1.26E-14	year	6.17E-10	8.73E-10	2.56E-10	1.60E-03	No	6.17E-10	8.73E-10	2.56E-10	3.30E-02	No
75-25-2	Bromoform	1.56E-17	1.56E-17	year	1.08E-12	1.08E-12	0.00E+00	7.40E+00	No	1.08E-12	1.08E-12	0.00E+00	1.50E+02	No
75-27-4	Bromodichloromethane	4.68E-11	4.68E-11	year	2.40E-06	3.25E-06	8.44E-07	2.20E-01	No	2.40E-06	3.25E-06	8.44E-07	4.40E+00	No
75-34-3	1,1-Dichloroethane	3.82E-17	3.82E-17	year	2.16E-12	2.65E-12	4.88E-13	5.10E+00	No	2.16E-12	2.65E-12	4.88E-13	1.00E+02	No
75-35-4	1,1-Dichloroethene	2.97E-17	2.97E-17	24-hr	5.37E-15	5.65E-15	2.88E-16	7.40E-01	No	5.37E-15	5.65E-15	2.88E-16	1.50E+01	No
75-45-6	Chlorodifluoromethane	5.30E-17	5.30E-17	24-hr	9.79E-15	1.01E-14	2.85E-16	1.90E+02	No	9.79E-15	1.01E-14	2.85E-16	3.70E+03	No
76-44-8	Heptachlor	1.76E-18	1.76E-18	year	1.22E-13	1.22E-13	3.99E-16	6.20E-03	No	1.22E-13	1.22E-13	3.99E-16	1.20E-01	No
77-47-4	Hexachlorocyclopentadiene	1.30E-14	1.30E-14	24-hr	2.47E-12	2.47E-12	1.07E-22	7.40E-04	No	2.47E-12	2.47E-12	1.07E-22	1.50E-02	No
78-87-5	1,2-Dichloropropane	4.59E-17	4.59E-17	year	2.44E-12	3.19E-12	7.44E-13	8.10E-01	No	2.44E-12	3.19E-12	7.44E-13	1.60E+01	No
78-93-3	2-Butanone	2.18E-12	2.18E-12	24-hr	4.13E-10	4.15E-10	1.68E-12	1.90E+01	No	4.13E-10	4.15E-10	1.68E-12	3.70E+02	No
79-00-5	1,1,2-Trichloroethane	6.29E-17	6.29E-17	year	3.16E-12	4.37E-12	1.21E-12	5.10E-01	No	3.16E-12	4.37E-12	1.21E-12	1.00E+01	No
79-01-6	Trichloroethene	1.01E-14	1.01E-14	year	7.01E-10	7.02E-10	3.70E-13	1.70E+00	No	7.01E-10	7.02E-10	3.70E-13	3.40E+01	No
79-10-7	2-Propenoic acid	2.50E-11	2.50E-11	24-hr	3.69E-09	4.76E-09	1.07E-09	3.70E-03	No	3.69E-09	4.76E-09	1.07E-09	7.40E-02	No
79-34-5	1,1,2,2-Tetrachloroethane	6.66E-17	6.66E-17	year	3.28E-12	4.63E-12	1.35E-12	1.40E-01	No	3.28E-12	4.63E-12	1.35E-12	2.80E+00	No

Table A-2: Toxic Air Pollutant Emissions from LAB LB-S2
(Current emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new emission rate increases)

CAS Number	Constituents of Potential Concern	New Unabated Emissions (gram/second)[a]	New Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Unabated Emissions (lbs/averaging period)[d]	New Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Abated Emissions (lbs/averaging period)[f]	New Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
79-46-9	2-Nitropropane	1.45E-14	1.45E-14	24-hr	1.96E-12	2.77E-12	8.10E-13	7.40E-02	No	1.96E-12	2.77E-12	8.10E-13	1.50E+00	No
87-68-3	Hexachlorobutadiene	2.12E-14	2.12E-14	year	1.25E-09	1.47E-09	2.21E-10	3.70E-01	No	1.25E-09	1.47E-09	2.21E-10	7.40E+00	No
87-86-5	Pentachlorophenol	1.90E-13	1.90E-13	year	1.06E-08	1.32E-08	2.63E-09	1.80E+00	No	1.06E-08	1.32E-08	2.63E-09	3.50E+01	No
88-06-2	2,4,6-Trichlorophenol	2.14E-11	2.14E-11	year	1.10E-06	1.48E-06	3.83E-07	2.60E+00	No	1.10E-06	1.48E-06	3.83E-07	5.20E+01	No
91-20-3	Naphthalene	2.65E-11	2.65E-11	year	1.47E-06	1.84E-06	3.70E-07	2.40E-01	No	1.47E-06	1.84E-06	3.70E-07	4.80E+00	No
91-94-1	3,3'-Dichlorobenzidine	1.36E-10	1.36E-10	year	7.74E-06	9.44E-06	1.70E-06	2.40E-02	No	7.74E-06	9.44E-06	1.70E-06	4.80E-01	No
95-48-7	2-Methylphenol	2.99E-11	2.99E-11	24-hr	4.35E-09	5.68E-09	1.33E-09	2.20E+00	No	4.35E-09	5.68E-09	1.33E-09	4.40E+01	No
98-82-8	Isopropylbenzene	5.78E-14	5.78E-14	24-hr	1.10E-11	1.10E-11	3.04E-14	1.50E+00	No	1.10E-11	1.10E-11	3.04E-14	3.00E+01	No
18540-29-9	Chromium VI	4.58E-09	2.29E-14	year	1.42E-04	3.18E-04	1.77E-04	3.30E-05	Yes	7.09E-10	1.59E-09	8.82E-10	6.50E-04	No
593-74-8	Dimethyl Mercury	2.94E-15	2.94E-15	24-hr	3.80E-13	5.60E-13	1.80E-13	5.20E-04	No	3.80E-13	5.60E-13	1.80E-13	1.00E-02	No
7440-43-9	Cadmium	3.47E-11	1.73E-16	year	9.82E-07	2.41E-06	1.43E-06	1.90E-03	No	4.91E-12	1.20E-11	7.14E-12	3.90E-02	No
7440-48-4	Cobalt	1.21E-15	6.05E-21	24-hr	1.20E-13	2.30E-13	1.10E-13	3.70E-04	No	6.00E-19	1.15E-18	5.50E-19	7.40E-03	No
7440-62-2	Vanadium	1.53E-10	7.67E-16	24-hr	7.50E-09	2.92E-08	2.17E-08	3.70E-04	No	3.75E-14	1.46E-13	1.08E-13	7.40E-03	No
7664-41-7	Ammonia	2.01E-10	2.01E-10	24-hr	3.51E-08	3.83E-08	3.21E-09	1.90E+00	No	3.51E-08	3.83E-08	3.21E-09	3.70E+01	No
7723-14-0	Phosphorus	4.70E-09	2.35E-14	24-hr	6.21E-07	8.94E-07	2.72E-07	7.40E-02	No	3.11E-12	4.47E-12	1.36E-12	1.50E+00	No
7439-92-1	Lead	1.10E-09	5.50E-15	year	3.40E-05	7.63E-05	4.24E-05	1.00E+01	No	1.69E-08	3.82E-10	-1.66E-08	1.40E+01	No
109-99-9	Tetrahydrofuran	2.41E-15	2.41E-15	24-hr	3.25E-13	4.58E-13	1.33E-13	7.40E+00	No	3.25E-13	4.58E-13	1.33E-13	1.50E+02	No
123-38-6	Propionaldehyde	7.36E-15	7.36E-15	24-hr	9.93E-13	1.40E-12	4.07E-13	3.00E-02	No	9.93E-13	1.40E-12	4.07E-13	5.90E-01	No
1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	3.35E-14	3.35E-14	24-hr	5.86E-12	6.37E-12	5.06E-13	8.20E-01	No	5.86E-12	6.37E-12	5.06E-13	1.60E+01	No
591-78-6	2-Hexanone	9.47E-15	9.47E-15	24-hr	1.28E-12	1.80E-12	5.25E-13	1.10E-01	No	1.28E-12	1.80E-12	5.25E-13	2.20E+00	No
7439-96-5	Manganese & compounds	4.46E-10	2.23E-15	24-hr	2.21E-08	8.48E-08	6.27E-08	1.10E-03	No	1.10E-11	4.24E-13	-1.06E-11	2.20E-02	No
7440-02-0	Nickel & compounds, NOS	3.90E-10	1.95E-15	year	7.02E-06	2.71E-05	2.01E-05	3.10E-02	No	3.50E-11	1.35E-10	1.00E-10	6.20E-01	No
7440-38-2	Arsenic & inorganic arsenic compounds, NOS	1.51E-10	7.53E-16	year	4.88E-06	1.05E-05	5.57E-06	2.50E-03	No	2.44E-11	5.23E-11	2.79E-11	4.90E-02	No
7440-41-7	Beryllium & compounds, NOS	6.58E-12	3.29E-17	year	2.03E-07	4.57E-07	2.54E-07	3.40E-03	No	1.01E-12	2.29E-12	1.27E-12	6.80E-02	No
7440-47-3	Chromium(III), insoluble particulates, NOS	1.97E-09	9.87E-15	24-hr	2.65E-07	3.76E-07	1.11E-07	1.90E-02	No	1.32E-12	1.88E-12	5.58E-13	3.70E-01	No
7440-50-8	Copper & compounds	8.50E-12	4.25E-17	1-hr	3.05E-11	6.74E-11	3.69E-11	9.30E-03	No	1.52E-16	3.37E-16	1.85E-16	1.90E-01	No
7440-61-1	Uranium, insoluble compounds, NOS	1.42E-10	7.09E-16	24-hr	1.20E-08	2.70E-08	1.50E-08	3.00E-03	No	5.99E-14	1.35E-13	7.50E-14	5.90E-02	No
75-15-0	Carbon disulfide	3.42E-15	3.42E-15	24-hr	6.51E-13	6.51E-13	1.00E-16	3.00E+00	No	6.51E-13	6.51E-13	1.00E-16	5.90E+01	No
7782-49-2	Selenium & selenium compounds (other than hydrogen selenide)	1.95E-10	9.77E-16	24-hr	1.77E-08	3.72E-08	1.95E-08	7.40E-02	No	8.83E-14	1.86E-13	9.77E-14	1.50E+00	No
98-95-3	Nitrobenzene	1.35E-12	1.35E-12	year	9.24E-08	9.34E-08	1.06E-09	2.00E-01	No	9.24E-08	9.34E-08	1.06E-09	4.10E+00	No

[a] Unabated emission rates (gram/second) are scaled from 24590-LAB-RPT-ENV-18-001, *WTP Analytical Laboratory Emission Estimate* based on the updated number of samples.
[b] Abated emission rates (gram/second) are scaled from 24590-LAB-RPT-ENV-18-001 based on the updated number of samples.
[c] Averaging period is provided in WAC 173-460-150, *Controls for New Sources of Toxic Air Pollutants.*
[d] Unabated emission rates (lbs/averaging period) are calculated by taking the unabated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[e] Compares the de minimis in WAC 173-460-150 to the "Proposed Increase in Unabated Emissions (lbs/averaging period)".
[f] Abated emissions rates (lbs/averaging period) are calculated by taking the abated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[g] Compares the SQER in WAC 173-460-150 to the "Proposed Increase in Abated Emissions (lbs/averaging period)".

Table A-3: Toxic Air Pollutant – Total Emission Estimates from LAB LB-S1 and LB-S2
(Current total emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new total emission rate increases)

CAS Number	Constituents of Potential Concern	New Total Unabated Emissions (gram/second)[a]	New Total Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Total Unabated Emissions (lbs/averaging period)[d]	New Total Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Total Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Total Abated Emissions (lbs/averaging period)[f]	New Total Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Total Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
100-41-4	Ethylbenzene	1.41E-16	1.41E-16	year	8.30E-12	9.79E-12	1.50E-12	3.20E+00	No	8.30E-12	9.79E-12	1.50E-12	6.50E+01	No
100-42-5	Styrene	7.46E-14	7.46E-14	24-hr	1.42E-11	1.42E-11	4.14E-15	3.20E+00	No	1.42E-11	1.42E-11	4.14E-15	6.50E+01	No
10595-95-6	N-Nitrosomethylethylamine	2.62E-11	2.62E-11	year	1.39E-06	1.82E-06	4.29E-07	1.30E-03	No	1.39E-06	1.82E-06	4.29E-07	2.60E-02	No
106-46-7	1,4-Dichlorobenzene	9.00E-14	9.00E-14	year	5.24E-09	6.25E-09	1.01E-09	7.40E-01	No	5.24E-09	6.25E-09	1.01E-09	1.50E+01	No
106-88-7	1,2-Epoxybutane	1.19E-11	1.19E-11	24-hr	1.59E-09	2.26E-09	6.61E-10	7.40E-02	No	1.59E-09	2.26E-09	6.61E-10	1.50E+00	No
106-93-4	Ethylene dibromide	1.09E-16	1.09E-16	year	5.44E-12	7.57E-12	2.13E-12	1.40E-02	No	5.44E-12	7.57E-12	2.13E-12	2.70E-01	No
106-99-0	1,3-Butadiene	6.29E-16	6.29E-16	year	4.32E-11	4.37E-11	5.00E-13	2.70E-01	No	4.32E-11	4.37E-11	5.00E-13	5.40E+00	No
107-02-8	Acrolein	6.38E-15	6.38E-15	24-hr	8.59E-13	1.21E-12	3.56E-13	1.30E-03	No	8.59E-13	1.21E-12	3.56E-13	2.60E-02	No
107-05-1	3-Chloropropene	2.17E-16	2.17E-16	year	1.33E-11	1.51E-11	1.83E-12	1.40E+00	No	1.33E-11	1.51E-11	1.83E-12	2.70E+01	No
107-06-2	1,2-Dichloroethane	2.10E-13	2.10E-13	year	2.08E-09	1.46E-08	1.25E-08	3.10E-01	No	2.08E-09	1.46E-08	1.25E-08	6.20E+00	No
107-13-1	Acrylonitrile	2.96E-12	2.96E-12	year	2.05E-07	2.06E-07	1.57E-10	2.80E-02	No	2.05E-07	2.06E-07	1.57E-10	5.60E-01	No
108-05-4	vinyl acetate	1.36E-11	1.36E-11	24-hr	1.84E-09	2.59E-09	7.41E-10	7.40E-01	No	1.84E-09	2.59E-09	7.41E-10	1.50E+01	No
108-10-1	Hexone	1.52E-15	1.52E-15	24-hr	2.05E-13	2.90E-13	8.50E-14	1.10E+01	No	2.05E-13	2.90E-13	8.50E-14	2.20E+02	No
108-39-4	m-Cresol	4.48E-11	4.48E-11	24-hr	6.56E-09	8.53E-09	1.97E-09	2.20E+00	No	6.56E-09	8.53E-09	1.97E-09	4.40E+01	No
108-88-3	Toluene	3.08E-14	3.08E-14	24-hr	5.86E-12	5.87E-12	1.21E-14	1.90E+01	No	5.86E-12	5.87E-12	1.21E-14	3.70E+02	No
108-90-7	Chlorobenzene	5.44E-14	5.44E-14	24-hr	1.04E-11	1.04E-11	4.25E-15	3.70E+00	No	1.04E-11	1.04E-11	4.25E-15	7.40E+01	No
108-95-2	Phenol	2.20E-11	2.20E-11	24-hr	3.78E-09	4.19E-09	4.06E-10	7.40E-01	No	3.78E-09	4.19E-09	4.06E-10	1.50E+01	No
110-54-3	Hexane	1.99E-16	1.99E-16	24-hr	3.77E-14	3.79E-14	1.43E-16	2.60E+00	No	3.77E-14	3.79E-14	1.43E-16	5.20E+01	No
110-80-5	2-Ethoxyethanol	1.30E-10	1.30E-10	24-hr	1.91E-08	2.47E-08	5.58E-09	2.60E-01	No	1.91E-08	2.47E-08	5.58E-09	5.20E+00	No
110-82-7	Cyclohexane	3.89E-17	3.89E-17	24-hr	7.40E-15	7.40E-15	4.72E-18	2.20E+01	No	7.40E-15	7.40E-15	4.72E-18	4.40E+02	No
111-44-4	Bis(2-chloroethyl)ether	3.28E-12	3.28E-12	year	2.27E-07	2.28E-07	9.23E-10	1.10E-02	No	2.27E-07	2.28E-07	9.23E-10	2.30E-01	No
111-76-2	2-Butoxyethanol	1.74E-11	1.74E-11	24-hr	2.53E-09	3.31E-09	7.84E-10	3.00E-01	No	2.53E-09	3.31E-09	7.84E-10	6.10E+00	No
117-81-7	Bis(2-ethylhexyl)phthalate	2.42E-10	2.42E-10	year	1.40E-05	1.68E-05	2.79E-06	3.40E+00	No	1.40E-05	1.68E-05	2.79E-06	6.80E+01	No
118-74-1	Hexachlorobenzene	4.96E-14	4.96E-14	year	3.44E-09	3.45E-09	4.04E-12	1.80E-02	No	3.44E-09	3.45E-09	4.04E-12	3.50E-01	No
121-14-2	2,4-Dinitrotoluene	1.72E-10	1.72E-10	year	9.61E-06	1.19E-05	2.33E-06	9.10E-02	No	9.61E-06	1.19E-05	2.33E-06	1.80E+00	No
123-91-1	1,4-Dioxane	5.27E-15	5.27E-15	year	3.65E-10	3.66E-10	6.38E-13	1.60E+00	No	3.65E-10	3.66E-10	6.38E-13	3.20E+01	No
127-18-4	Tetrachloroethene	5.64E-17	5.64E-17	year	3.61E-12	3.92E-12	3.04E-13	1.30E+00	No	3.61E-12	3.92E-12	3.04E-13	2.70E+01	No
1336-36-3	Aroclors (Total PCB)	1.88E-11	1.88E-11	year	1.31E-06	1.31E-06	5.65E-10	1.40E-02	No	1.31E-06	1.31E-06	5.65E-10	2.80E-01	No
156-60-5	1,2-trans-Dichloroethene	1.73E-11	1.73E-11	24-hr	2.84E-09	3.29E-09	4.51E-10	3.00E+00	No	2.84E-09	3.29E-09	4.51E-10	6.00E+01	No
1634-04-4	tert-Butyl methyl ether	1.10E-11	1.10E-11	year	5.48E-07	7.66E-07	2.18E-07	3.10E+01	No	5.48E-07	7.66E-07	2.18E-07	6.20E+02	No
1746-01-6	2,3,7,8-Tetrachlorodibenzo(p)dioxin (TCDD)	6.86E-21	6.86E-21	year	4.75E-16	4.77E-16	1.20E-18	2.10E-07	No	4.75E-16	4.77E-16	1.20E-18	4.30E-06	No
189-55-9	Dibenzo[a,i]pyrene	5.25E-11	5.25E-11	year	2.93E-06	3.65E-06	7.22E-07	4.50E-04	No	2.93E-06	3.65E-06	7.22E-07	8.90E-03	No
189-64-0	Dibenzo[a,h]pyrene	5.25E-11	5.25E-11	year	2.93E-06	3.65E-06	7.22E-07	4.50E-04	No	2.93E-06	3.65E-06	7.22E-07	8.90E-03	No
191-30-0	Dibenzo(a,l)pyrene	5.25E-11	5.25E-11	year	2.93E-06	3.65E-06	7.22E-07	4.50E-04	No	2.93E-06	3.65E-06	7.22E-07	8.90E-03	No
192-65-4	Dibenzo[a,e]pyrene	5.25E-11	5.25E-11	year	2.93E-06	3.65E-06	7.22E-07	4.50E-03	No	2.93E-06	3.65E-06	7.22E-07	8.90E-02	No
193-39-5	Indeno(1,2,3-cd)pyrene	3.16E-11	3.16E-11	year	1.92E-06	2.20E-06	2.81E-07	4.50E-02	No	1.92E-06	2.20E-06	2.81E-07	8.90E-01	No
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo(p)dioxin	1.21E-20	1.21E-20	year	8.30E-16	8.39E-16	9.61E-18	2.10E-06	No	8.30E-16	8.39E-16	9.61E-18	4.30E-05	No
205-99-2	Benzo(b)fluoranthene	1.39E-12	1.39E-12	year	9.64E-08	9.65E-08	5.35E-11	4.50E-02	No	9.64E-08	9.65E-08	5.35E-11	8.90E-01	No
207-08-9	Benzo(k)fluoranthene	3.53E-11	3.53E-11	year	2.22E-06	2.45E-06	2.31E-07	4.50E-02	No	2.22E-06	2.45E-06	2.31E-07	8.90E-01	No
218-01-9	Chrysene	8.64E-13	8.64E-13	year	6.00E-08	6.00E-08	3.94E-11	4.50E-01	No	6.00E-08	6.00E-08	3.94E-11	8.90E+00	No
224-42-0	Dibenz[a,j]acridine	7.29E-11	7.29E-11	year	4.07E-06	5.06E-06	9.91E-07	4.50E-02	No	4.07E-06	5.06E-06	9.91E-07	8.90E-01	No
226-36-8	Dibenz[a,h]acridine	7.31E-11	7.31E-11	year	4.08E-06	5.08E-06	9.94E-07	4.50E-02	No	4.08E-06	5.08E-06	9.94E-07	8.90E-01	No
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	1.70E-19	1.70E-19	year	1.18E-14	1.18E-14	1.07E-18	7.40E-03	No	1.18E-14	1.18E-14	1.07E-18	1.50E-01	No
319-84-6	alpha-BHC	5.53E-16	5.53E-16	year	2.83E-11	3.84E-11	1.01E-11	1.10E-02	No	2.83E-11	3.84E-11	1.01E-11	2.10E-01	No

Table A-3: Toxic Air Pollutant – Total Emission Estimates from LAB LB-S1 and LB-S2
(Current total emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new total emission rate increases)

CAS Number	Constituents of Potential Concern	New Total Unabated Emissions (gram/second)[a]	New Total Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Total Unabated Emissions (lbs/averaging period)[d]	New Total Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Total Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Total Abated Emissions (lbs/averaging period)[f]	New Total Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Total Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
319-85-7	beta-BHC	1.01E-15	1.01E-15	year	5.42E-11	7.02E-11	1.60E-11	1.90E-02	No	5.42E-11	7.02E-11	1.60E-11	3.80E-01	No
32598-13-3	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	7.96E-19	7.96E-19	year	5.47E-14	5.53E-14	6.49E-16	2.10E-03	No	5.47E-14	5.53E-14	6.49E-16	4.30E-02	No
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	1.81E-20	1.81E-20	year	1.26E-15	1.26E-15	1.25E-20	7.40E-03	No	1.26E-15	1.26E-15	1.25E-20	1.50E-01	No
3268-87-9	Octachlorodibenzo(p)dioxin	3.49E-19	3.49E-19	year	2.38E-14	2.42E-14	4.59E-16	7.40E-04	No	2.38E-14	2.42E-14	4.59E-16	1.50E-02	No
32774-16-6	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	9.62E-20	9.62E-20	year	6.67E-15	6.68E-15	6.36E-18	7.40E-06	No	6.67E-15	6.68E-15	6.36E-18	1.50E-04	No
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	5.59E-20	5.59E-20	year	3.85E-15	3.89E-15	3.50E-17	2.10E-05	No	3.85E-15	3.89E-15	3.50E-17	4.30E-04	No
3697-24-3	5-Methylchrysene	1.02E-11	1.02E-11	year	5.32E-07	7.11E-07	1.79E-07	4.50E-03	No	5.32E-07	7.11E-07	1.79E-07	8.90E-02	No
38380-08-4	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	5.79E-20	5.79E-20	year	4.02E-15	4.02E-15	1.10E-18	7.40E-03	No	4.02E-15	4.02E-15	1.10E-18	1.50E-01	No
39001-02-0	Octachlorodibenzofuran	1.17E-19	1.17E-19	year	7.63E-15	8.10E-15	4.61E-16	7.40E-04	No	7.63E-15	8.10E-15	4.61E-16	1.50E-02	No
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	8.47E-21	8.47E-21	year	5.82E-16	5.88E-16	5.99E-18	2.10E-06	No	5.82E-16	5.88E-16	5.99E-18	4.30E-05	No
39635-31-9	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	4.76E-20	4.76E-20	year	3.30E-15	3.30E-15	4.92E-18	7.40E-03	No	3.30E-15	3.30E-15	4.92E-18	1.50E-01	No
40321-76-4	1,2,3,7,8-Pentachlorodibenzo(p)dioxin	3.30E-20	3.30E-20	year	2.23E-15	2.29E-15	6.72E-17	2.10E-07	No	2.23E-15	2.29E-15	6.72E-17	4.30E-06	No
50-00-0	Formaldehyde	3.30E-11	3.30E-11	year	1.78E-06	2.29E-06	5.13E-07	1.40E+00	No	1.78E-06	2.29E-06	5.13E-07	2.70E+01	No
50-32-8	Benzo(a)pyrene	9.24E-12	9.24E-12	year	6.18E-07	6.42E-07	2.42E-08	8.20E-03	No	6.18E-07	6.42E-07	2.42E-08	1.60E-01	No
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	4.76E-20	4.76E-20	year	3.28E-15	3.31E-15	2.30E-17	2.10E-06	No	3.28E-15	3.31E-15	2.30E-17	4.30E-05	No
52663-72-6	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	9.11E-20	9.11E-20	year	6.32E-15	6.33E-15	6.40E-18	7.40E-03	No	6.32E-15	6.33E-15	6.40E-18	1.50E-01	No
53-70-3	Dibenz[a,h]anthracene	8.59E-11	8.59E-11	year	4.86E-06	5.96E-06	1.11E-06	4.10E-03	No	4.86E-06	5.96E-06	1.11E-06	8.20E-02	No
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	9.82E-21	9.82E-21	year	6.77E-16	6.82E-16	4.89E-18	2.10E-05	No	6.77E-16	6.82E-16	4.89E-18	4.30E-04	No
224-42-0	Dibenz[a,j]acridine	7.29E-11	7.29E-11	year	4.07E-06	5.06E-06	9.91E-07	4.50E-02	No	4.07E-06	5.06E-06	9.91E-07	8.90E-01	No
226-36-8	Dibenz[a,h]acridine	7.31E-11	7.31E-11	year	4.08E-06	5.08E-06	9.94E-07	4.50E-02	No	4.08E-06	5.08E-06	9.94E-07	8.90E-01	No
31508-00-6	2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	1.70E-19	1.70E-19	year	1.18E-14	1.18E-14	1.07E-18	7.40E-03	No	1.18E-14	1.18E-14	1.07E-18	1.50E-01	No
319-84-6	alpha-BHC	5.53E-16	5.53E-16	year	2.83E-11	3.84E-11	1.01E-11	1.10E-02	No	2.83E-11	3.84E-11	1.01E-11	2.10E-01	No
319-85-7	beta-BHC	1.01E-15	1.01E-15	year	5.42E-11	7.02E-11	1.60E-11	1.90E-02	No	5.42E-11	7.02E-11	1.60E-11	3.80E-01	No
32598-13-3	3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	7.96E-19	7.96E-19	year	5.47E-14	5.53E-14	6.49E-16	2.10E-03	No	5.47E-14	5.53E-14	6.49E-16	4.30E-02	No
32598-14-4	2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)	1.81E-20	1.81E-20	year	1.26E-15	1.26E-15	1.25E-20	7.40E-03	No	1.26E-15	1.26E-15	1.25E-20	1.50E-01	No
3268-87-9	Octachlorodibenzo(p)dioxin	3.49E-19	3.49E-19	year	2.38E-14	2.42E-14	4.59E-16	7.40E-04	No	2.38E-14	2.42E-14	4.59E-16	1.50E-02	No
32774-16-6	3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	9.62E-20	9.62E-20	year	6.67E-15	6.68E-15	6.36E-18	7.40E-06	No	6.67E-15	6.68E-15	6.36E-18	1.50E-04	No
35822-46-9	1,2,3,4,6,7,8-Heptachlorodibenzo(p)dioxin	5.59E-20	5.59E-20	year	3.85E-15	3.89E-15	3.50E-17	2.10E-05	No	3.85E-15	3.89E-15	3.50E-17	4.30E-04	No
3697-24-3	5-Methylchrysene	1.02E-11	1.02E-11	year	5.32E-07	7.11E-07	1.79E-07	4.50E-03	No	5.32E-07	7.11E-07	1.79E-07	8.90E-02	No
38380-08-4	2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	5.79E-20	5.79E-20	year	4.02E-15	4.02E-15	1.10E-18	7.40E-03	No	4.02E-15	4.02E-15	1.10E-18	1.50E-01	No
39001-02-0	Octachlorodibenzofuran	1.17E-19	1.17E-19	year	7.63E-15	8.10E-15	4.61E-16	7.40E-04	No	7.63E-15	8.10E-15	4.61E-16	1.50E-02	No
39227-28-6	1,2,3,4,7,8-Hexachlorodibenzo(p)dioxin	8.47E-21	8.47E-21	year	5.82E-16	5.88E-16	5.99E-18	2.10E-06	No	5.82E-16	5.88E-16	5.99E-18	4.30E-05	No
39635-31-9	2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	4.76E-20	4.76E-20	year	3.30E-15	3.30E-15	4.92E-18	7.40E-03	No	3.30E-15	3.30E-15	4.92E-18	1.50E-01	No
40321-76-4	1,2,3,7,8-Pentachlorodibenzo(p)dioxin	3.30E-20	3.30E-20	year	2.23E-15	2.29E-15	6.72E-17	2.10E-07	No	2.23E-15	2.29E-15	6.72E-17	4.30E-06	No
50-00-0	Formaldehyde	3.30E-11	3.30E-11	year	1.78E-06	2.29E-06	5.13E-07	1.40E+00	No	1.78E-06	2.29E-06	5.13E-07	2.70E+01	No
50-32-8	Benzo(a)pyrene	9.24E-12	9.24E-12	year	6.18E-07	6.42E-07	2.42E-08	8.20E-03	No	6.18E-07	6.42E-07	2.42E-08	1.60E-01	No
51207-31-9	2,3,7,8-Tetrachlorodibenzofuran	4.76E-20	4.76E-20	year	3.28E-15	3.31E-15	2.30E-17	2.10E-06	No	3.28E-15	3.31E-15	2.30E-17	4.30E-05	No
52663-72-6	2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	9.11E-20	9.11E-20	year	6.32E-15	6.33E-15	6.40E-18	7.40E-03	No	6.32E-15	6.33E-15	6.40E-18	1.50E-01	No
53-70-3	Dibenz[a,h]anthracene	8.59E-11	8.59E-11	year	4.86E-06	5.96E-06	1.11E-06	4.10E-03	No	4.86E-06	5.96E-06	1.11E-06	8.20E-02	No
55673-89-7	1,2,3,4,7,8,9-Heptachlorodibenzofuran	9.82E-21	9.82E-21	year	6.77E-16	6.82E-16	4.89E-18	2.10E-05	No	6.77E-16	6.82E-16	4.89E-18	4.30E-04	No
56-23-5	Carbon tetrachloride	6.77E-15	6.77E-15	year	4.70E-10	4.70E-10	1.95E-13	1.40E+00	No	4.70E-10	4.70E-10	1.95E-13	2.70E+01	No
56-49-5	3-Methylcholanthrene	1.03E-11	1.03E-11	year	5.37E-07	7.17E-07	1.80E-07	7.80E-04	No	5.37E-07	7.17E-07	1.80E-07	1.60E-02	No
56-55-3	Benzo(a)anthracene	8.73E-12	8.73E-12	year	5.84E-07	6.06E-07	2.16E-08	4.50E-02	No	5.84E-07	6.06E-07	2.16E-08	8.90E-01	No
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	4.34E-20	4.34E-20	year	2.93E-15	3.01E-15	8.28E-17	7.40E-07	No	2.93E-15	3.01E-15	8.28E-17	1.50E-05	No

Table A-3: Toxic Air Pollutant – Total Emission Estimates from LAB LB-S1 and LB-S2
(Current total emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new total emission rate increases)

CAS Number	Constituents of Potential Concern	New Total Unabated Emissions (gram/second)[a]	New Total Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Total Unabated Emissions (lbs/averaging period)[d]	New Total Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Total Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Total Abated Emissions (lbs/averaging period)[f]	New Total Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Total Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
57117-41-6	1,2,3,7,8-Pentachlorodibenzofuran	2.93E-20	2.93E-20	year	1.98E-15	2.03E-15	5.50E-17	7.40E-06	No	1.98E-15	2.03E-15	5.50E-17	1.50E-04	No
57117-44-9	1,2,3,6,7,8-Hexachlorodibenzofuran	1.72E-20	1.72E-20	year	1.18E-15	1.19E-15	1.89E-17	2.10E-06	No	1.18E-15	1.19E-15	1.89E-17	4.30E-05	No
57465-28-8	3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	2.99E-19	2.99E-19	year	2.05E-14	2.07E-14	2.47E-16	2.10E-06	No	2.05E-14	2.07E-14	2.47E-16	4.30E-05	No
57653-85-7	1,2,3,6,7,8,-Hexachlorodibenzo(p)dioxin	1.48E-20	1.48E-20	year	1.02E-15	1.03E-15	1.02E-17	2.10E-06	No	1.02E-15	1.03E-15	1.02E-17	4.30E-05	No
58-89-9	gamma-BHC (Lindane)	7.97E-16	7.97E-16	year	4.15E-11	5.54E-11	1.39E-11	2.60E-02	No	4.15E-11	5.54E-11	1.39E-11	5.20E-01	No
59-89-2	Dimethyl aminoazobenzene	2.52E-10	2.52E-10	year	1.39E-05	1.75E-05	3.62E-06	4.30E-03	No	1.39E-05	1.75E-05	3.62E-06	8.50E-02	No
60-11-7	Morpholine, 4-Nitroso-	4.65E-33	4.65E-33	year	2.53E-28	3.23E-28	7.01E-29	6.20E-03	No	2.53E-28	3.23E-28	7.01E-29	1.20E-01	No
602-87-9	5-Nitroacenaphthene	1.59E-11	1.59E-11	year	8.47E-07	1.10E-06	2.55E-07	1.30E-01	No	8.47E-07	1.10E-06	2.55E-07	2.60E+00	No
60-35-5	Acetamide	6.81E-11	6.81E-11	year	3.76E-06	4.73E-06	9.69E-07	4.10E-01	No	3.76E-06	4.73E-06	9.69E-07	8.10E+00	No
60851-34-5	2,3,4,6,7,8-Hexachlorodibenzofuran	7.97E-21	7.97E-21	year	5.48E-16	5.53E-16	5.47E-18	2.10E-06	No	5.48E-16	5.53E-16	5.47E-18	4.30E-05	No
621-64-7	N-Nitroso-di-n-propylamine	4.77E-11	4.77E-11	year	2.52E-06	3.31E-06	7.95E-07	4.10E-03	No	2.52E-06	3.31E-06	7.95E-07	8.10E-02	No
62-75-9	N-Nitrosodimethylamine	2.58E-13	2.58E-13	year	1.37E-08	1.79E-08	4.26E-09	1.10E-03	No	1.37E-08	1.79E-08	4.26E-09	2.10E-02	No
630-20-6	1,1,1,2-Tetrachloroethane	4.48E-11	4.48E-11	year	2.36E-06	3.11E-06	7.51E-07	1.10E+00	No	2.36E-06	3.11E-06	7.51E-07	2.20E+01	No
65510-44-3	2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	1.84E-19	1.84E-19	year	1.28E-14	1.28E-14	5.50E-17	7.40E-03	No	1.28E-14	1.28E-14	5.50E-17	1.50E-01	No
67-56-1	Methyl alcohol	2.60E-11	2.60E-11	24-hr	3.71E-09	4.94E-09	1.23E-09	7.40E+01	No	3.71E-09	4.94E-09	1.23E-09	1.50E+03	No
67562-39-4	1,2,3,4,6,7,8-Heptachlorodibenzofuran	3.01E-20	3.01E-20	year	2.07E-15	2.09E-15	1.61E-17	2.10E-05	No	2.07E-15	2.09E-15	1.61E-17	4.30E-04	No
67-63-0	Isopropyl alcohol	1.41E-14	1.41E-14	1-hr	8.28E-14	1.12E-13	2.89E-14	3.00E-01	No	8.28E-14	1.12E-13	2.89E-14	5.90E+00	No
67-66-3	Chloroform	5.44E-14	5.44E-14	year	3.76E-09	3.78E-09	1.99E-11	3.50E-01	No	3.76E-09	3.78E-09	1.99E-11	7.10E+00	No
67-72-1	Hexachloroethane	1.25E-12	1.25E-12	year	6.86E-08	8.70E-08	1.85E-08	7.40E-01	No	6.86E-08	8.70E-08	1.85E-08	1.50E+01	No
69782-90-7	2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	1.57E-19	1.57E-19	year	1.09E-14	1.09E-14	1.71E-17	7.40E-03	No	1.09E-14	1.09E-14	1.71E-17	1.50E-01	No
70362-50-4	3,4,4',5-Tetrachlorobiphenyl (PCB 81)	1.20E-19	1.20E-19	year	8.32E-15	8.36E-15	3.80E-17	7.40E-04	No	8.32E-15	8.36E-15	3.80E-17	1.50E-02	No
70648-26-9	1,2,3,4,7,8-Hexachlorodibenzofuran	1.85E-20	1.85E-20	year	1.28E-15	1.29E-15	6.85E-18	2.10E-06	No	1.28E-15	1.29E-15	6.85E-18	4.30E-05	No
71-43-2	Benzene	3.61E-14	3.61E-14	year	2.51E-09	2.51E-09	3.07E-12	1.00E+00	No	2.51E-09	2.51E-09	3.07E-12	2.10E+01	No
71-55-6	1,1,1-Trichloroethane	5.90E-17	5.90E-17	24-hr	1.03E-14	1.12E-14	9.23E-16	1.90E+01	No	1.03E-14	1.12E-14	9.23E-16	3.70E+02	No
72-55-9	4,4-DDE	1.64E-11	1.64E-11	year	8.26E-07	1.14E-06	3.14E-07	8.40E-02	No	8.26E-07	1.14E-06	3.14E-07	1.70E+00	No
72918-21-9	1,2,3,7,8,9-Hexachlorodibenzofuran	4.81E-21	4.81E-21	year	3.31E-16	3.34E-16	3.45E-18	2.10E-06	No	3.31E-16	3.34E-16	3.45E-18	4.30E-05	No
74472-37-0	2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	3.72E-20	3.72E-20	year	2.58E-15	2.58E-15	1.82E-18	7.40E-03	No	2.58E-15	2.58E-15	1.82E-18	1.50E-01	No
74-83-9	Bromomethane	3.24E-14	3.24E-14	24-hr	6.16E-12	6.17E-12	6.08E-15	1.90E-02	No	6.16E-12	6.17E-12	6.08E-15	3.70E-01	No
74-87-3	Chloromethane	2.31E-14	2.31E-14	24-hr	4.39E-12	4.40E-12	8.70E-15	3.30E-01	No	4.39E-12	4.40E-12	8.70E-15	6.70E+00	No
75-00-3	Chloroethane	1.62E-16	1.62E-16	24-hr	2.64E-14	3.07E-14	4.39E-15	1.10E+02	No	2.64E-14	3.07E-14	4.39E-15	2.20E+03	No
75-01-4	Vinyl chloride	9.36E-17	9.36E-17	year	6.19E-12	6.50E-12	3.16E-13	9.20E-01	No	6.19E-12	6.50E-12	3.16E-13	1.80E+01	No
75-05-8	Acetonitrile	1.30E-10	1.30E-10	year	9.01E-06	9.03E-06	1.73E-08	2.20E-01	No	9.01E-06	9.03E-06	1.73E-08	4.40E+00	No
75-07-0	Acetaldehyde	1.49E-11	1.49E-11	year	7.33E-07	1.03E-06	3.01E-07	3.00E+00	No	7.33E-07	1.03E-06	3.01E-07	6.00E+01	No
75-09-2	Methylenechloride	2.46E-12	2.46E-12	year	1.70E-07	1.71E-07	1.22E-09	4.90E+02	No	1.70E-07	1.71E-07	1.22E-09	9.80E+03	No
75-21-8	Ethylene oxide (Oxirane)	2.51E-14	2.51E-14	year	1.23E-09	1.75E-09	5.12E-10	1.60E-03	No	1.23E-09	1.75E-09	5.12E-10	3.30E-02	No
75-25-2	Bromoform	3.12E-17	3.12E-17	year	2.17E-12	2.17E-12	0.00E+00	7.40E+00	No	2.17E-12	2.17E-12	0.00E+00	1.50E+02	No
75-27-4	Bromodichloromethane	9.35E-11	9.35E-11	year	4.81E-06	6.50E-06	1.69E-06	2.20E-01	No	4.81E-06	6.50E-06	1.69E-06	4.40E+00	No
75-34-3	1,1-Dichloroethane	7.64E-17	7.64E-17	year	4.33E-12	5.31E-12	9.77E-13	5.10E+00	No	4.33E-12	5.31E-12	9.77E-13	1.00E+02	No
75-35-4	1,1-Dichloroethene	5.94E-17	5.94E-17	24-hr	1.07E-14	1.13E-14	5.76E-16	7.40E-01	No	1.07E-14	1.13E-14	5.76E-16	1.50E+01	No
75-45-6	Chlorodifluoromethane	1.06E-16	1.06E-16	24-hr	1.96E-14	2.02E-14	5.69E-16	1.90E+02	No	1.96E-14	2.02E-14	5.69E-16	3.70E+03	No
76-44-8	Heptachlor	3.52E-18	3.52E-18	year	2.44E-13	2.44E-13	7.99E-16	6.20E-03	No	2.44E-13	2.44E-13	7.99E-16	1.20E-01	No
77-47-4	Hexachlorocyclopentadiene	2.59E-14	2.59E-14	24-hr	4.93E-12	4.93E-12	2.14E-22	7.40E-04	No	4.93E-12	4.93E-12	2.14E-22	1.50E-02	No
78-87-5	1,2-Dichloropropane	9.18E-17	9.18E-17	year	4.89E-12	6.37E-12	1.49E-12	8.10E-01	No	4.89E-12	6.37E-12	1.49E-12	1.60E+01	No
78-93-3	2-Butanone	4.36E-12	4.36E-12	24-hr	8.26E-10	8.29E-10	3.35E-12	1.90E+01	No	8.26E-10	8.29E-10	3.35E-12	3.70E+02	No

Table A-3: Toxic Air Pollutant – Total Emission Estimates from LAB LB-S1 and LB-S2
(Current total emission rates permitted in 24590-WTP-RPT-ENV-20-001 and proposed new total emission rate increases)

CAS Number	Constituents of Potential Concern	New Total Unabated Emissions (gram/second)[a]	New Total Abated Emissions (gram/second)[b]	Averaging Period[c]	Current Total Unabated Emissions (lbs/averaging period)[d]	New Total Unabated Emissions (lbs/averaging period)[d]	Proposed Increase in Total Unabated Emissions (lbs/averaging period)	De Minimis (lbs / averaging period)	Above De Minimis? (Yes/No)[e]	Current Total Abated Emissions (lbs/averaging period)[f]	New Total Abated Emissions (lbs/averaging period)[f]	Proposed Increase in Total Abated Emissions (lbs/averaging period)	SQER (lbs/ averaging period)	Above SQER? (Yes/No)[g]
79-00-5	1,1,2-Trichloroethane	1.26E-16	1.26E-16	year	6.31E-12	8.73E-12	2.42E-12	5.10E-01	No	6.31E-12	8.73E-12	2.42E-12	1.00E+01	No
79-01-6	Trichloroethene	2.02E-14	2.02E-14	year	1.40E-09	1.40E-09	7.40E-13	1.70E+00	No	1.40E-09	1.40E-09	7.40E-13	3.40E+01	No
79-10-7	2-Propenoic acid	5.00E-11	5.00E-11	24-hr	7.39E-09	9.52E-09	2.13E-09	3.70E-03	No	7.39E-09	9.52E-09	2.13E-09	7.40E-02	No
79-34-5	1,1,2,2-Tetrachloroethane	1.33E-16	1.33E-16	year	6.56E-12	9.25E-12	2.69E-12	1.40E-01	No	6.56E-12	9.25E-12	2.69E-12	2.80E+00	No
79-46-9	2-Nitropropane	2.91E-14	2.91E-14	24-hr	3.91E-12	5.53E-12	1.62E-12	7.40E-02	No	3.91E-12	5.53E-12	1.62E-12	1.50E+00	No
87-68-3	Hexachlorobutadiene	4.24E-14	4.24E-14	year	2.50E-09	2.94E-09	4.42E-10	3.70E-01	No	2.50E-09	2.94E-09	4.42E-10	7.40E+00	No
87-86-5	Pentachlorophenol	3.80E-13	3.80E-13	year	2.11E-08	2.64E-08	5.27E-09	1.80E+00	No	2.11E-08	2.64E-08	5.27E-09	3.50E+01	No
88-06-2	2,4,6-Trichlorophenol	4.27E-11	4.27E-11	year	2.20E-06	2.97E-06	7.67E-07	2.60E+00	No	2.20E-06	2.97E-06	7.67E-07	5.20E+01	No
91-20-3	Naphthalene	5.31E-11	5.31E-11	year	2.95E-06	3.69E-06	7.39E-07	2.40E-01	No	2.95E-06	3.69E-06	7.39E-07	4.80E+00	No
91-94-1	3,3'-Dichlorobenzidine	2.72E-10	2.72E-10	year	1.55E-05	1.89E-05	3.41E-06	2.40E-02	No	1.55E-05	1.89E-05	3.41E-06	4.80E-01	No
95-48-7	2-Methylphenol	5.97E-11	5.97E-11	24-hr	8.71E-09	1.14E-08	2.66E-09	2.20E+00	No	8.71E-09	1.14E-08	2.66E-09	4.40E+01	No
98-82-8	Isopropylbenzene	1.16E-13	1.16E-13	24-hr	2.19E-11	2.20E-11	6.09E-14	1.50E+00	No	2.19E-11	2.20E-11	6.09E-14	3.00E+01	No
18540-29-9	Chromium VI	9.16E-09	2.31E-12	year	2.83E-04	6.36E-04	3.53E-04	3.30E-05	Yes	7.16E-08	1.61E-07	8.91E-08	6.50E-04	No
593-74-8	Dimethyl Mercury	5.89E-15	5.89E-15	24-hr	7.61E-13	1.12E-12	3.60E-13	5.20E-04	No	7.61E-13	1.12E-12	3.60E-13	1.00E-02	No
7440-43-9	Cadmium	6.94E-11	1.75E-14	year	1.96E-06	4.82E-06	2.85E-06	1.90E-03	No	4.96E-10	1.22E-09	7.21E-10	3.90E-02	No
7440-48-4	Cobalt	2.42E-15	6.11E-19	24-hr	2.40E-13	4.60E-13	2.20E-13	3.70E-04	No	6.06E-17	1.16E-16	5.56E-17	7.40E-03	No
7440-62-2	Vanadium	3.07E-10	7.74E-14	24-hr	1.50E-08	5.83E-08	4.33E-08	3.70E-04	No	3.79E-12	1.47E-11	1.09E-11	7.40E-03	No
7664-41-7	Ammonia	4.02E-10	4.02E-10	24-hr	7.02E-08	7.66E-08	6.43E-09	1.90E+00	No	7.02E-08	7.66E-08	6.43E-09	3.70E+01	No
7723-14-0	Phosphorus	9.39E-09	2.37E-12	24-hr	1.24E-06	1.79E-06	5.45E-07	7.40E-02	No	3.14E-10	4.51E-10	1.38E-10	1.50E+00	No
7439-92-1	Lead	2.20E-09	5.55E-13	year	6.79E-05	1.53E-04	8.48E-05	1.00E+01	No	3.39E-08	3.86E-08	4.66E-09	1.40E+01	No
109-99-9	Tetrahydrofuran	4.82E-15	4.82E-15	24-hr	6.51E-13	9.17E-13	2.66E-13	7.40E+00	No	6.51E-13	9.17E-13	2.66E-13	1.50E+02	No
123-38-6	Propionaldehyde	1.47E-14	1.47E-14	24-hr	1.99E-12	2.80E-12	8.15E-13	3.00E-02	No	1.99E-12	2.80E-12	8.15E-13	5.90E-01	No
1330-20-7	Xylene (mixture), including m-xylene, o-xylene, p-xylene	6.69E-14	6.69E-14	24-hr	1.17E-11	1.27E-11	1.01E-12	8.20E-01	No	1.17E-11	1.27E-11	1.01E-12	1.60E+01	No
591-78-6	2-Hexanone	1.89E-14	1.89E-14	24-hr	2.55E-12	3.60E-12	1.05E-12	1.10E-01	No	2.55E-12	3.60E-12	1.05E-12	2.20E+00	No
7439-96-5	Manganese & compounds	8.91E-10	2.25E-13	24-hr	4.42E-08	1.70E-07	1.25E-07	1.10E-03	No	2.20E-11	4.28E-11	2.08E-11	2.20E-02	No
7440-02-0	Nickel & compounds, NOS	7.80E-10	1.97E-13	year	1.40E-05	5.42E-05	4.01E-05	3.10E-02	No	3.54E-09	1.37E-08	1.01E-08	6.20E-01	No
7440-38-2	Arsenic & inorganic arsenic compounds, NOS	3.01E-10	7.60E-14	year	9.77E-06	2.09E-05	1.11E-05	2.50E-03	No	2.46E-09	5.28E-09	2.82E-09	4.90E-02	No
7440-41-7	Beryllium & compounds, NOS	1.32E-11	3.32E-15	year	4.06E-07	9.14E-07	5.08E-07	3.40E-03	No	1.02E-10	2.31E-10	1.28E-10	6.80E-02	No
7440-47-3	Chromium(III), insoluble particulates, NOS	3.95E-09	9.97E-13	24-hr	5.29E-07	7.51E-07	2.22E-07	1.90E-02	No	1.33E-10	1.90E-10	5.63E-11	3.70E-01	No
7440-50-8	Copper & compounds	1.70E-11	4.29E-15	1-hr	6.11E-11	1.35E-10	7.38E-11	9.30E-03	No	1.54E-14	3.41E-14	1.87E-14	1.90E-01	No
7440-61-1	Uranium, insoluble compounds, NOS	2.84E-10	7.16E-14	24-hr	2.39E-08	5.40E-08	3.00E-08	3.00E-03	No	6.05E-12	1.36E-11	7.57E-12	5.90E-02	No
75-15-0	Carbon disulfide	6.84E-15	6.84E-15	24-hr	1.30E-12	1.30E-12	2.00E-16	3.00E+00	No	1.30E-12	1.30E-12	2.00E-16	5.90E+01	No
7782-49-2	Selenium & selenium compounds (other than hydrogen selenide)	3.91E-10	9.87E-14	24-hr	3.53E-08	7.44E-08	3.91E-08	7.40E-02	No	8.92E-12	1.88E-11	9.86E-12	1.50E+00	No
98-95-3	Nitrobenzene	2.69E-12	2.69E-12	year	1.85E-07	1.87E-07	2.13E-09	2.00E-01	No	1.85E-07	1.87E-07	2.13E-09	4.10E+00	No

[a] Unabated emission rates are summed for the two emission units (LB-S1 + LB-S2).
[b] Abated emission rates are summed for the two emission units (LB-S1 + LB-S2).
[c] Averaging period is provided in WAC 173-460-150, *Controls for New Sources of Toxic Air Pollutants.*
[d] Unabated emission rates (lbs/averaging period) are calculated by taking the unabated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[e] Compares the de minimis in WAC 173-460-150 to the "Proposed Increase in Total Unabated Emissions (lbs/averaging period)".
[f] Abated emission rates (lbs/averaging period) are calculated by taking the abated emissions and converting the units: (gram/second) × (lb/454 grams) × (60 seconds/minute) × (60 minutes/hour) × (averaging period).
[g] Compares the SQER in WAC 173-460-150 to "Proposed Increase in Total Abated Emissions (lbs/averaging period)".

Appendix B
Technical Specification Information for WTP Steam Plant Boiler Burner Assemblies

— MECHANICAL CONTRACTORS —

Irene Milanez
Subcontract Administrator
Bechtel National Inc
WTP Hanford

July 15, 2025

Contract: 24590-CM-FC4-HX00-00014
Title: HPS/SCW Burner Retrofit
Letter Number: V227-25-009

Subject: Emissions Letter

Dear Nena,

At the request of this subcontract's Technical Representative and the WTP Environmental Protection Manager, Apollo has obtained a letter from sub-tier Cole Industrial confirming that the supplied burners meet the Technical Performance Requirements outlined in Exhibit D, Section 4.6.

Please see Attachment 1 for the requested letter.

Thank you,

Ryan Rakoz
Project Manager
Apollo Mechanical Contractors

Attachment 1

COLE INDUSTRIAL, INC.

Lifetime Value / Expert Support

July 15th, 2025

RE: Emissions Performance, Hanford VIT Steam Plant

Cole Industrial, an authorized dealer of Cleaver Brooks, has provided three (3) **LNXLL-504– Low NOx burner with Flue Gas Recirculation boilers**; serial numbers 66621-1, 66621-2, and 66621-3. These burners are intended to be installed in three (3) CBL-100-1200-200 model boilers; serial numbers OL103015, OL103016, OL103017 replacing the existing NTS504LOSL-W70-R burners; serial numbers T369170-1, T369170-2, T369170-3. These burners use steam as the primary fuel atomization method.

Cole Industrial affirms that the LNXLL-504 ~50MMBtu/HR replacement burners are designed, engineered, and configured to comply with the emissions performance criteria outlined in **Exhibit D, Section 4.6 – Technical Performance Requirements**:

Parameter	lb/MMBtu or ppm	lb/hr
PM-10	0.02	1
NOx	0.09	4.52
CO	130	3.51
VOC		1.51
SO2		0.15
Opacity		10%

Technical Assumptions:

1. *Fuel bound nitrogen content in the #2 fuel oil to be < 0.002% by weight.*
2. *CO emission rates of 130 ppm and 3.51 lb/hr are not equivalent values. The burners are designed and configured to meet a CO emission limit of 3.51 lb/hr (89 ppm), which also meets the 40 CFR 63, Subpart DDDDD CO emission rate of 130 ppm for light fuel combusting engines.*
3. *For SO2, the burners cannot increase or decrease SO2, it is dependent on the sulfur content in the fuel. Therefore, the sulfur content in the fuel to be < 0.0015% by weight*

Sincerely,

Jason Herbst
Executive Vice President
Cole Industrial

This document has been digitally signed using the Electrosign process.

Document for Signature

Document Number: 24590-WTP-RPT-ENV-25-001 **Rev:** 001

	Participants	Signature	Completed	Status	Result	Comments
Signers	**7/23/2025 1:04 PM**					
	Jones, Mandy		7/23/2025 1:17 PM	Completed	Approve	
Final Approver	**7/23/2025 1:17 PM**					
	Haggard, Robert		7/25/2025 5:24 PM	Completed	Approve	

Attachment 3
25-ECD-0058

Notification of Administrative Permit Amendment

(3 pages including cover sheet)

HANFORD SITE AIR OPERATING PERMIT
Notification of Administrative Permit

Amendment
This notification is provided to the Washington State Department of Ecology, Washington State Department of Health, and the U.S. Environmental Protection Agency as notice of an administrative permit amendment described as follows.

This change is allowed pursuant to WAC 173-401-720(1) and WAC 173-401-720(3)

(1) Corrects typographical errors,
(2) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source,
(3) Requires more frequent monitoring or reporting by the permittee,
(4) Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change is necessary, provided that a written agreement containing the specific information of the transfer between the current and new permittee has been submitted to the permitting authority,
(5) Incorporates into the Chapter 401 permit the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401, and
(6) Changes addressed in the administrative permit amendment can be implemented immediately upon submittal.

Permit Number: 00-05-006
Provide the following information pursuant to WAC-173-401-720:

Description of the Change:
This Nonradioactive Air Emissions Notice of Construction Permit Application Modification to Air Permit DE02NWP-002, Revision 3 (24590-WTP-RPT-ENV-25-001) pursues Washington State Department of Ecology (Ecology) approval of a proposed increase in the total number of waste samples processed at the WTP Analytical Laboratory. This NOC application also includes information on burner replacement for three (3) Steam Plant boilers. Upon Ecology review and approval of the application, the Hanford Site AOP 00-05-006 should be revised to incorporate and amend DE02NWP-002.
Submittal Date of Change:
Upon Ecology issuance of revised DE02NWP-002

Describe the emissions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401:
An emissions analysis is included in the application. No increase in potential-to-emit or emission rates results from the Steam Plant boiler burner replacement. Emission increases are only from the proposed increase in the number of waste samples at the Analytical Laboratory. A new source review (NSR) determination was made for toxic air pollutant (TAP) and criteria pollutant emissions. The estimated increases in all criteria pollutant emissions are below NSR exemption thresholds. The estimated emission increase for chromium (vi) compounds exceeds the NSR exemption threshold; however, abated emissions are below the small quantity emission rate.
List the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401:
Terms, conditions, and provisions will be identified in the revised DE02NWP-002 upon Ecology issuance.