YAKIMA REGIONAL CLEAN AIR AGENCY

Order of Approval Permit No NSRP-01-JMS-19

New Source Review Order of Approval for JM Smucker for an Existing 95 Horsepower (Hp) Cleaver-Brooks Boiler model M4HP-4000

IN THE MATTER OF approving a project which establishes a new air contaminant source at JM Smucker., in Grandview, WA. THIS ORDER OF APPROVAL IS HEREBY ISSUED TO:

Applicant/Permittee:	JM Smucker *Food Processing Facility*
Located at:	100 Forsell Rd Grandview, WA. 98930
Contact:	J.M. Smucker Attn: Chad Sander
Contact at the site:	Chad Sander 100 Forsell Rd Grandview, WA. 98930

IN COMPLIANCE WITH THE PROVISIONS OF THE STATE OF WASHINGTON CLEAN AIR ACT (Revised Code of Washington (RCW)) CHAPTER 70.94.152, WASHINGTON ADMINISTRATIVE CODE (WAC) 173-400-110, 173-460-040:

ISSUE DATE: January 28, 2019

THIS ORDER OF APPROVAL PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS:

Modification/Installation of the equipment must be conducted in compliance with all data and specifications submitted with the New Source Review (NSR) application under which this Order of Approval is issued unless otherwise specified herein. The conditions and limitations of this NSR Order of Approval are attached as follows:

1.0 DESCRIPTION OF THE SOURCE.

1.1 J.M. Smucker, hereafter referred to as the Permittee, the Facility, JMS or the Source is the owner and operator of a food processing facility at 100 Forsell Rd., Grandview, WA. The Permittee installed 95 Horsepower (Hp) Cleaver-Brook steam boiler Model M4HP-4000 (shown in Figures below) using Natural Gas (NG) as the only source of fuel. The Facility submitted a New Source Review (NSR) to permit the boiler voluntarily when they discovered it had never been permitted.

1.2 Air emissions from operating this boiler are in the form of small Particulate Matter (PM_{10}, $PM_{2.5}$), Oxides of Nitrogen and Sulfur (NOx, SOx), Volatile Organic Compounds (VOCs) some of which are known as Hazardous Air Pollutants (HAPs) and Toxic Air Pollutants (TAPs) in accordance with the Federal Clean Air Act (FCAA) or Washington Administrative Code (WAC), respectively.

1.3 These air emissions are emitted during boiler combustion operation. The City of Grandview exempted this installation from the State Environmental Policy Act (SEPA).

1.4 The layout and specifications of the boiler were submitted with the NSR application and are enclosed in the NSR review as provided by the Permittee.

1.5 Installation of this boiler is considered a new source of air contaminants requiring a NSR and an Order of Approval (Order/Permit) pursuant to the Revised Code of Washington (RCW) 70.94.152 and the Washington Administrative Code (WAC) 173-400-110 and 173-460-040

2.0 DETERMINATIONS.

In relation to the above installation, YRCAA determines that the source shall comply with the federal, state and local regulations and laws including but not limited to the following determination:

2.1 The Facility is located in an area that is in attainment with all state and federal air quality standards for all criteria pollutants;

2.2 The Facility is not a major stationary source as of the date of issuance of this Order nor is this installation subject to the Prevention of Significant Deterioration (PSD) permitting requirements of WAC 173-400-700 through 173-400-750;

2.3 This boiler has a heat capacity of 4 MMBtu/hr and therefore is not subject to 40 CFR Part 60 New Source Performance Standards (NSPS) for Area Sources: Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units;

2.4 The boiler installation is subject to the NSR requirements of WAC 173-400-110 and WAC 173-460-040;

2.5 The Facility is subject to Registration Program as outlined in WAC 173-400-099 –and YRCAA Regulation 1, 4.01

THEREFORE, it is hereby ordered that the project as described above, in the NSR application, and in detailed plans, specifications and other information submitted in reference thereto, is **APPROVED** for operation, **PROVIDED** the specification submitted with the application and the following conditions are met:

3.0 OPERATIONAL APROVAL CONDITIONS.

3.1 This Order is for the 95 Hp Cleaver-Brook steam boiler as specified above. The boiler is located at 100 Forsell Rd., Grandview, Washington, in accordance with the plan and specifications submitted with the NSR application to YRCAA. The boiler specifications are shown in Table 1 of this Order.

3.2 Best Available Control Technology (BACT) and Toxic BACT (t-BACT) pursuant to RCW 70.94.152, WAC 173-400-113 and WAC 173-460-060 shall be satisfied for any proposed new facility or modified air emission source to control air emissions. YRCAA finds BACT to be satisfied as follows:

3.2.1 The Cleaver-Brook boiler will be equipped with the burner as stipulated in the manufacturer's technical specifications submitted to YRCAA;

3.2.2 The maximum air emission limits for NOx, CO, PM and other air emissions shall be limited, as per the submitted specifications with this NSR application and specified in the emission limit Section 5.0 below;

3.2.3 An Operation and Maintenance (O&M) plan for the boiler shall be developed in accordance with the manufacturers recommended standards;

3.2.4 The boiler must be operated as per manufacturer specifications, tune-ups, maintenance and any required certification;

3.2.5 TAP air emissions shall always be below the Acceptable Source Impact Levels (ASIL);

3.2.6 Only NG shall be used as the sole source of fuel for the boiler;

3.2.7 The boiler shall meet the ASIL of WAC 173-460 and the National Ambient Air Standards (NAAQs) of 40 CFR Part 50 and as specified in this Order; and

3.2.8 The boiler shall not operate more than the limits specified in this Order.

3.3 All air emissions from this Facility shall be in compliance with air emission standards at

all times. It is the responsibility of the owner to make sure that air emissions are within all known rules and regulatory standards, including but not limited to 40 CFR Part 50, WAC 173-400-040 and 173-460.

3.4 This Order authorizes the operation of the following equipment:

Table 1 Authorized Equipment List.

Number of Units	Unit Type	Manufacturer	Model/ Serial number and/or Size	Motor Hp Capacity
1	Industrial Boiler	Cleaver-Brook	M4HP-4000	95

3.5 The Permittee must develop and implement a specific O&M plan based on the boiler manufacturer's operations manual as specified in the BACT determination above. In addition, the existing O&M plan must be updated to reflect this modification. The O&M plan must be completed within 120 days of the issuance of this Order.

3.6 Within 120 days from the date of issuance of this Order, the Permittee shall submit notification to YRCAA indicating that the O&M plan is completed and in place. If the Permittee needs to make any future modification to the boiler or its operating procedures, an approval in writing from YRCAA must be obtained before such modification takes place.

3.7 No emissions shall be released from this boiler beyond the property boundary in a quantity that interferes unreasonably with the use and enjoyment of the property owner upon which the material is deposited or is detrimental to the health, safety or welfare of any person or causes damage to any property or business.

3.8 An initial opacity as measured by 40 CFR Part 60, Appendix A, Method 9, July 1, 2004 from this Cleaver-Brook boiler must be conducted and shall not exceed zero percent (0%) using NG fuel average for six consecutive minutes in any given one hour period. The Permittee shall maintain 0% opacity from the boiler at all times, except during periods of startup, shutdown or malfunction as provided in WAC 173-400-081.

3.9 In addition to the initial opacity reading above, once a month, the Permittee shall conduct and record visual opacity from the boiler stack. Zero percent (0%) opacity means no visible smoke may be seen. Heat waves are acceptable only heat wave may be seen. If the observer sees any kind of smoke, the Permittee shall immediately stop the operation and take corrective action as directed in the O&M plan until visible emissions are 0% opacity. Corrective actions may include the following:

3.9.1 Certify that the boiler is performing according to its design functions within the acceptable design parameters and are being operated according to O&M procedures. The boiler must be checked against all operational conditions that have resulted in compliance in the past. If the boiler is not performing according

to its design and O&M procedures, the Permittee must take corrective action within 48 hours to correct the problem; or

3.9.2 Conduct an opacity evaluation by a certified opacity reader in accordance with 40 CFR 60, Appendix A, Method 9 within 48 hours of the malfunction correction to verify compliance with the 0% opacity limit. If opacity is greater than 0%, appropriate and timely corrective action must be taken no later than 48 hours to identify and correct the problem causing the opacity. If the Permittee has no certified reader on site, the Permittee should call YRCAA and will be advised accordingly.

3.10 In accordance with WAC 173-400-105(4) and YRCAA Regulation 1, Article V, Section 5.11(c), the Permittee shall conduct a source test when deemed necessary by YRCAA to demonstrate compliance for any air pollutant, specific to this boiler. YRCAA will inform the Permittee of the source test requirement and method at that time, if deemed necessary.

3.11 The YRCAA Air Pollution Control Officer (APCO) or his designated staff shall be allowed to enter the Facility at reasonable times to inspect for compliance with applicable laws, regulations and the conditions on this Order.

4.0 GENERAL APPROVAL CONDITIONS.

4.1 The Cleaver-Brook boiler shall comply with all other requirements specified in all current federal, state and local air pollution laws and regulations, including, but not limited to, RCW 70.94 (Washington Clean Air Act), WAC 173-400 (General Regulations for Air Pollution Sources), WAC 173-460 (Controls for New Sources of Toxic Air Pollutants), 40 CFR Part 60, Subpart Dc (Standards of Performance for New Stationary Sources) and the YRCAA Regulation 1.

4.2 All plans, specifications or other information submitted to YRCAA and any further authorizations, approvals, or denials in relation to this project, shall be incorporated herein and made a part of the YRCAA file and this Order.

4.3 Nothing in this approval shall be construed as obviating compliance with any requirement(s) of law including those imposed pursuant to the Washington Clean Air Act, and rules and regulations thereunder. Any violation(s) of such rules and regulations are penalized in accordance with RCW 70.94.430 and YRCAA Regulation 1, Article 5, Compliance and Enforcement.

4.4 Authorization may be modified, suspended or revoked in whole or part for cause including, but not limited to, the following:

4.4.1 Violation of any terms or conditions of this authorization; or,

4.4.2 Obtaining this authorization by misrepresentation or failure to disclose fully all relevant facts.

4.5 The provisions of this authorization are severable and, if any provision of this authorization, or application of any provisions of this authorization to any circumstance, is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, shall not be affected thereby.

4.6 This Order and its requirements apply to the Facility owner and/or operator(s) and any contractor or subcontractor performing any activity authorized under this Order. Any persons, including contractors and/or subcontractors, not in compliance with the applicable requirements in this Order are in violation of State and local laws and subject to appropriate civil and criminal penalties. The Facility owner and/or operator, and all contractors or subcontractors are liable for the actions and violations of their employees. Any violation committed by a contractor or subcontractor shall be considered a violation by the Facility owner and/or operator, and is also a violation by the contractor and/or any subcontractors.

4.7 Laws, rules and regulations may be superseded or revised without notice. It is the Permittee's responsibility to stay current with laws, rules and regulations governing their business and therefore is expected to comply with all new laws, rules and regulations immediately upon their effective date. New laws, rules and regulation updates will be incorporated into existing Orders or upon renewal of said Orders.

4.8 All air emissions from this boiler and this Facility shall be in compliance with all air emission standards at all times. It is the responsibility of the owner to make sure that air emissions are within all known and promulgated laws, rules and regulations standards.

4.9 If, or whenever the Permittee wants to change the quantity of air emissions set forth in this Order or any modification to the boiler, another NSR must be filed with YRCAA before any change takes place and BACT requirements must be satisfied.

4.10 Pursuant this Order is invalid without paying the required fees to YRCAA, pursuant to RCW 70.94.152 within the specified time on the invoice.

5.0 EMISSION LIMITS

5.1 Pursuant to WAC 173-400-113(2), the Cleaver-Brook boiler shall use the specified burner as stated in the NSR application and the specified emission limit.

5.2 Air emissions from this operation are estimated to generate small PM_{10}, $PM_{2.5}$, CO, VOC's, NOx, SOx and others as shown in Appendix A. These maximum emissions shall not be exceeded as specified in this Appendix.

5.3 Emissions of NOx from the boiler shall not exceed 30 parts per million by volume, dry and corrected to three percent oxygen (30 ppmvd @ 3% O_2) using NG fuel.

5.4 Emissions of CO from the boiler shall not exceed fifty parts per million by volume, dry and corrected to three percent oxygen (50 ppmvd @ 3% O_2) using NG fuel.

5.5 TAPs air emissions shall always be below the Acceptable Source Impact Levels (ASIL);

6.0 MONITORING AND RECORDKEEPING REPORTING REQUIREMENTS.

6.1 The Permittee shall record the annual amount of NG used, the number of hours used, and dates of use for this boiler and report it along with the plant-wide total in the annual registration submittal on forms provided by the agency.

6.2 This Order and its conditions shall remain in effect in the event of any change in control of ownership or operation of the Facility. In the event of any such change in control of ownership or operation, the Permittee shall notify the succeeding owner of this Order and conditions and shall notify the YRCAA of the change by filing an "Ownership or Name Change" form within fifteen (15) days of that change. The form can be obtained or requested from YRCAA's office or the website.

6.3 If a source test is ever required for this boiler, the results of the source test shall be submitted to the YRCAA within 30 days following the completion date of the source test.

6.4 The final source test results must be reported to YRCAA in units of ppmvd, pounds per hour and potential tons per year for each pollutant.

6.5 The Permittee shall keep all records including this Order on site. Records shall include, at minimum, the monthly number of hours of operation of all units, the NG usage, and the O&M items performed. Forms for recordkeeping must be designed by the Permittee and shall include the date and time of maintenance performed and the operator's name.

6.6 The required records, logs and O&M plan for this Facility shall be kept on site and shall always be available to the APCO of the YRCAA or his designated staff during inspections or upon request. The O&M plan shall be updated to reflect any changes in operating procedures and such changes shall be routinely be implemented.

6.7 Records shall be maintained and kept at the site for the most recent three year period, and be made available during inspections or when requested by YRCAA.

6.8 Any application form, report, compliance certification, monthly record and the annual consumption report submitted to YRCAA pursuant to this Order must be signed by the responsible official.

6.9 Total air emissions for each air pollutant including HAPs/TAPs, and the number of hours of operation must be calculated and reported to YRCAA on an annual basis as specified in the annual registration documents provided by YRCAA to the Facility, as long as the Facility is not a Title V source.

You may appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process and applicable requirements is governed by Chapter 43.21B RCW. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB, P.O. Box 40903, Olympia, WA, 98504-0903. Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on YRCAA in paper form - by mail or in person. E-mail is not accepted.

DATED at the City of Yakima, Washington this 28th day of January 2019.

PREPARED BY:

Wade Porter
Engineering Specialist
Yakima Regional Clean Air Agency

REVIEWED BY:

Hasan M. Tahat, Ph.D.
Compliance, Engineering and Planning Supervisor
Yakima Regional Clean Air Agency

REVIEWED BY:

Norman Hepner, P.E.,
Nth Degree Engineering Solutions

ISSUED BY:

Keith M. Hurley
Air Pollution Control Officer
Yakima Regional Clean Air Agency

Appendix A

JM Smucker
NSRP-01-JMS-19
Page 9 of 13
Boiler: 95 hp M4HP-4000
With Modeling for NG

Max hours using Diesel	0
Hours of NG operation:	8760
Natural gas usage:	4.000
1 SCF NG	1020 btu

	Emission Factor NG		Heat Input	Emissions							
	Emission(E)		**Heat Input**								
Pollutants	**#/MMft^3**		**MMBtu/Hr**	**lbs/year NG**	**lbs/year Diesel**	**Emissions Total (lbs/Yr)**	**Emissions Total (tons/Yr)**	**Deminimis Threshold (tons/yr)**	**Exceeds Deminimis**	**Major Threshold (tons/yr)**	**Exceeds Major Threshold**
PM_{10}	7.6		4.00	261.1	0.0	261.08	*0.131*	*0.75*	*NO*	*15*	*no*
$PM_{2.5}$ (30% of PM10)	2.28		4.00	78.3	0.0	78.32	*0.039*	*0.5*	*NO*	*10*	*no*
SO_2	0.6		4.00	20.6	0.0	20.61	*0.010*	*2*	*NO*	*40*	*no*
NOx	100		4.00	3435.3	0.0	3435.29	*1.718*	*2*	*NO*	*40*	*no*
N_2O (uncontrolled)	2.2		4.00	75.6	0.0	75.58	*0.038*				
TOC	11		4.00	377.9	0.0	377.88	*0.189*				
CO	84		4.00	2885.6	0.0	2885.65	*1.443*	5	*NO*		
lead	0.0005		4.00	1.718E-02	0.0	0.02	*0.000*	*0.005*	*NO*	*0.6*	*no*
CO_2	120,000		4.00	4122352.9	0.0	4122352.94	*2061.176*				
Methane	2.3		4.00	79.0	0.0	79.01	*0.040*				
VOC	5.5		4.00	188.9	0.0	188.94	*0.094*	*1*	*NO*	*40*	*no*

Appendix A
JM Smucker
NSRP-01-JMS-19
Page 10 of 13
Boiler: 95 hp M4HP-4000
With Modeling for NG

Table 4. HAPs/TAPs Emission Summary

Heat Input Capacity	4.000 MMBtu/hr
Natural Gas Heating Valu	1050 Btu/scf

N.G will run for 8760 hrs/yr

				Natural Gas Combustion [a]			Fuel Oil Combustion [b]			Emissions [c]										
Pollutant	CAS Number	HAP?	TAP?	Emission Factor (lb/MMscf)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)	Emission Factor (lb/Mgal)	Hourly Emissions (lb/hr)	Annual Emissions (lb/yr)	HAPs (lb/yr)	TAPs (lb/yr)	Maximum Annual TAPs TAPs (tpy)	Ave Period	ASIL ($\mu g/m^3$)	SQER (lb/avg. period)	De Minimis (lb/avg. period)	Modeling Required?	Emissions lb/ave period	Model Concentration	Model concentration above ASIL
Benzene	71-43-2	Yes	Yes	2.10E-03	8.00E-06	7.008E-02	2.14E-04	-	-	7.008E-02	7.008E-02	3.50E-05	year	0.0345	6.62	0.331	No	0.07008	0.0001063	NO
Formaldehyde	50-00-0	Yes	Yes	7.50E-02	2.86E-04	2.503E+00	3.30E-02	-	-	2.503E+00	2.503E+00	1.25E-03	year	0.167	32	1.6	No	2.503E+00	0.003798	NO
Toluene	108-88-3	Yes	Yes	3.40E-03	1.30E-05	1.135E-01	6.20E-03	-	-	1.135E-01	1.135E-01	5.67E-05	24-hr	5000	657	32.9	No	0.000310857	0.0010334	NO
2-Methylnaphthalene	91-57-6	Yes	No	2.40E-05	9.14E-08	8.01E-04	--	-	-	8.01E-04	-	-	--	--	--	--	--			
3-Methylchloranthrene	56-49-5	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	--	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.000159	0.0305	0.00153	No	6.00686E-05	9.115E-08	NO
7,12-Dimethylbenz(a)antl	--	Yes	No	1.60E-05	6.10E-08	5.34E-04	--	-	-	5.34E-04	-	-	--	--	--	--	--			
Acenaphthylene	203-96-8	Yes	No	1.80E-06	6.86E-09	6.01E-05	2.53E-07	-	-	6.01E-05	-	-	--	--	--	--	--			
Benzo(a)pyrene	50-32-8	Yes	Yes	1.20E-06	4.57E-09	4.00E-05	--	-	-	4.00E-05	4.00E-05	2.00E-08	year	0.000909	0.174	0.00872	No	4.00457E-05	6.077E-08	NO
Benzo(b)fluoranthene	205-99-2	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	--	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.00909	1.74	0.0872	No	6.00686E-05	9.115E-08	NO
Benzo(k)fluoranthene	207-08-9	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	--	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.00909	1.74	0.0872	No	6.00686E-05	9.115E-08	NO
Dibenzo(a,h)anthracene	53-70-3	Yes	Yes	1.20E-06	4.57E-09	4.00E-05	1.67E-06	-	-	4.00E-05	4.00E-05	2.00E-08	year	0.000833	0.16	0.00799	No	4.00457E-05	6.077E-08	NO
Dichlorobenzene	25321-22-6	Yes	No	1.20E-03	4.57E-06	4.005E-02	--	-	-	4.005E-02	-	-	--	--	--	--	--			
Hexane	110-54-3	Yes	Yes	1.80	6.86E-03	6.007E+01	--	-	-	6.007E+01	60.07	0.03	24-hr	700	92	4.6	No	0.164571429	0.5470848	NO
Naphthalene	91-20-3	Yes	Yes	6.10E-04	2.32E-06	2.036E-02	1.13E-03	-	-	2.036E-02	0.02	1.02E-05	year	0.0294	5.64	0.282	No	0.020356571	3.089E-05	NO
Acenaphthene	83-32-9	Yes	No	1.80E-06	6.86E-09	6.01E-05	2.11E-05	-	-	6.01E-05	-	-	--	--	--	--	--			
Anthracene	120-12-7	Yes	No	2.40E-06	9.14E-09	8.01E-05	1.22E-06	-	-	8.01E-05	-	-	--	--	--	--	--			
Benz(a)anthracene	56-55-3	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	4.01E-06	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.00909	1.74	0.0872	No	6.00686E-05	9.115E-08	NO
Benzo(b,k)fluoranthene	--	Yes	No	--	-	-	1.48E-06	-	-	-	-	-	--	--	--	--	--			
Benzo(g,h,i)perylene	--	Yes	No	1.20E-06	4.57E-09	4.00E-05	2.26E-06	-	-	4.00E-05	-	-	--	--	--	--	--			
Chrysene	218-01-9	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	2.38E-06	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.0909	17.4	0.872	No	6.00686E-05	9.115E-08	NO
Ethylbenzene	100-41-4	Yes	Yes	--	-	-	6.36E-05	-	-	-	-	-	year	0.4	76.8	3.84	No	0	0	NO
1,1,1-Trichloroethane	71-55-6	Yes	Yes	--	-	-	2.36E-04	-	-	-	-	-	24-hr	1000	131	6.57	No	0	0	NO
o-Xylene	95-47-6	Yes	Yes	--	-	-	1.90E-04	-	-	-	-	-	24-hr	221	29	1.45	No	0	0	NO
OCDD	3268-87-9	Yes	Yes	--	-	-	3.10E-09	-	-	-	-	-	year	0.000263	0.0505	0.00252	No	0	0	NO
Fluoranthene	206-44-0	Yes	No	3.00E-06	1.14E-08	1.00E-04	4.84E-06	-	-	1.00E-04	-	-	--	--	--	--	--			
Fluorene	86-73-7	Yes	No	2.80E-06	1.07E-08	9.34E-05	4.47E-06	-	-	9.34E-05	-	-	--	--	--	--	--			
Indeno(1,2,3-cd)pyrene	193-39-5	Yes	Yes	1.80E-06	6.86E-09	6.01E-05	2.14E-06	-	-	6.01E-05	6.01E-05	3.00E-08	year	0.00909	1.74	0.0872	No	6.00686E-05	9.115E-08	NO
Phenanthrene	85-01-8	Yes	No	1.70E-05	6.48E-08	5.67E-04	1.05E-05	-	-	5.67E-04	-	-	--	--	--	--	--			
Pyrene	129-00-0	Yes	No	5.00E-06	1.90E-08	1.67E-04	4.25E-06	-	-	1.67E-04	-	-	--	--	--	--	--			
Arsenic	7440-38-2	Yes	Yes	2.00E-04	7.62E-07	6.67E-03	-	-	-	6.67E-03	6.67E-03	3.34E-06	year	0.000303	0.0581	0.00291	No	0.006674286	1.013E-05	NO
Beryllium	7440-41-7	Yes	Yes	1.20E-05	4.57E-08	4.00E-04	-	-	-	4.00E-04	4.00E-04	2.00E-07	year	0.000417	0.08	0.004	No	0.000400457	6.077E-07	NO
Cadmium	7440-43-9	Yes	Yes	1.10E-03	4.19E-06	0.04	-	-	-	3.671E-02	0.04	1.84E-05	year	0.000238	0.0457	0.00228	No	0.036708571	5.57E-05	NO
Chromium	7440-47-3	Yes	No	1.40E-03	5.33E-06	0.05	-	-	-	4.672E-02	-	-	--	--	--	--	--			
Chromium (VI) [d]	18540-29-9	Yes	Yes	5.60E-05	2.13E-07	1.87E-03	-	-	-	1.87E-03	1.87E-03	9.34E-07	year	6.67E-06	0.00128	0.000064	Yes	0.0018688	2.836E-06	NO
Cobalt	7440-48-4	Yes	Yes	8.40E-05	3.20E-07	2.80E-03	-	-	-	2.80E-03	2.80E-03	1.40E-06	24-hr	0.1	0.013	0.000657	No	0.00000768	2.553E-05	NO
Copper	7440-50-8	No	Yes	8.50E-04	3.24E-06	0.03	-	-	-	-	0.03	1.42E-05	1-hr	100	0.219	0.011	No	3.2381E-06	0.0004304	NO
Lead	7439-92-1	Yes	Yes	5.00E-04	1.90E-06	0.02	-	-	-	0.02	0.02	8.34E-06	year	0.0833	16	10	No	0.016685714	2.532E-05	NO
Manganese	7440-96-5	Yes	Yes	3.80E-04	1.45E-06	1.27E-02	-	-	-	1.27E-02	1.27E-02	6.34E-06	24-hr	0.04	0.00526	0.000263	No	3.47429E-05	0.0001155	NO
Mercury	7439-97-6	Yes	Yes	2.60E-04	9.90E-07	8.68E-03	-	-	-	8.68E-03	8.68E-03	4.34E-06	24-hr	0.09	0.0118	0.000591	No			
Nickel	7440-02-0	Yes	No	2.10E-03	8.00E-06	0.07	-	-	-	0.07	-	-	--	--	--	--	--			
Selenium	7782-49-2	Yes	Yes	2.40E-05	9.14E-08	8.01E-04	-	-	-	8.01E-04	8.01E-04	4.00E-07	24-hr	20	2.63	0.131	No	2.19429E-06	7.294E-06	NO
Vanadium	7440-62-2	No	Yes	2.30E-03	8.76E-06	0.08	-	-	-	-	0.08	3.84E-05	24-hr	0.2	0.0263	0.00131	No	0.000210286	0.0006991	NO
SO_2	7446-09-05	No	Yes	--	2.35E-03	20.61	0.21	-	-	-	20.61	1.03E-02	1-hr	660	1.45	0.457	No	0.002352941	0.3127765	NO
NO_2 [e]	10102-44-0	No	Yes	--	0.39	3435.29	20.00	-	-	-	3435.29	1.72	1-hr	470	1.03	0.457	No	0.392156863	52.129412	NO
CO	630-08-0	No	Yes	--	0.33	2885.65	5.00	-	-	-	2885.65	1.44	1-hr	23000	50.4	1.14	No	0.329411765	43.788706	NO
			Total							**63.02**	**6404.52**	**3.20**								

[a]Natural gas emission factors are obtained from Table 1.4-2, Table 1.4-3, and Table 1.4-4, AP-42, for all the HAPs and TAPs with available emission factors. Annual emissions are based on 8,760 hours per year operation.

[d]Chromium compounds are assumed to be 4% chromium (VI) for gaseous fuel combustion and 18% for fuel oil combustion, from EPA 2005 National Emissions Inventory Data and Documentation chromium speciation data for utility boilers, which can be found here: http://www3.epa.gov/ttn/chief/net/2005inventory.html.

[e]It's conservatively assumed that all NO_x is emitted in the form of NO_2.

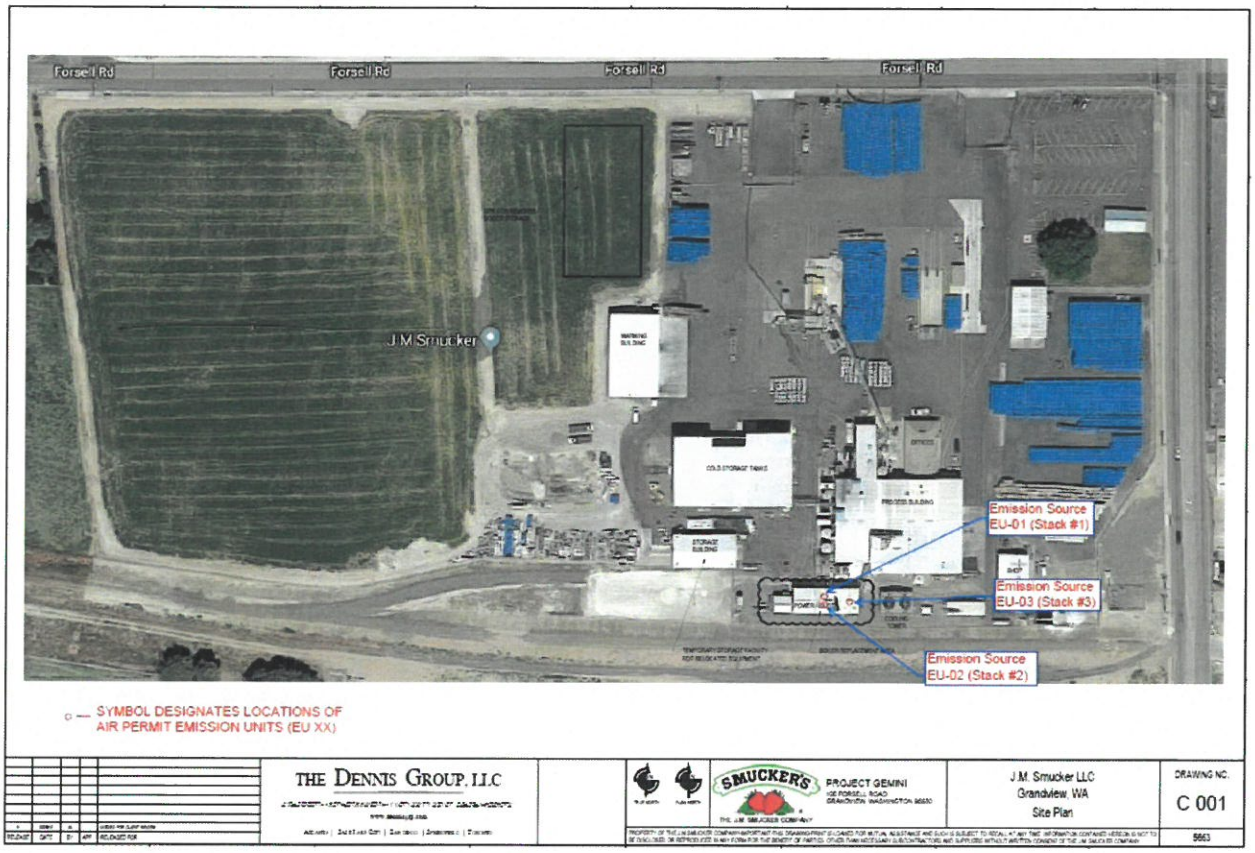

Figure 1. The boiler and facility location

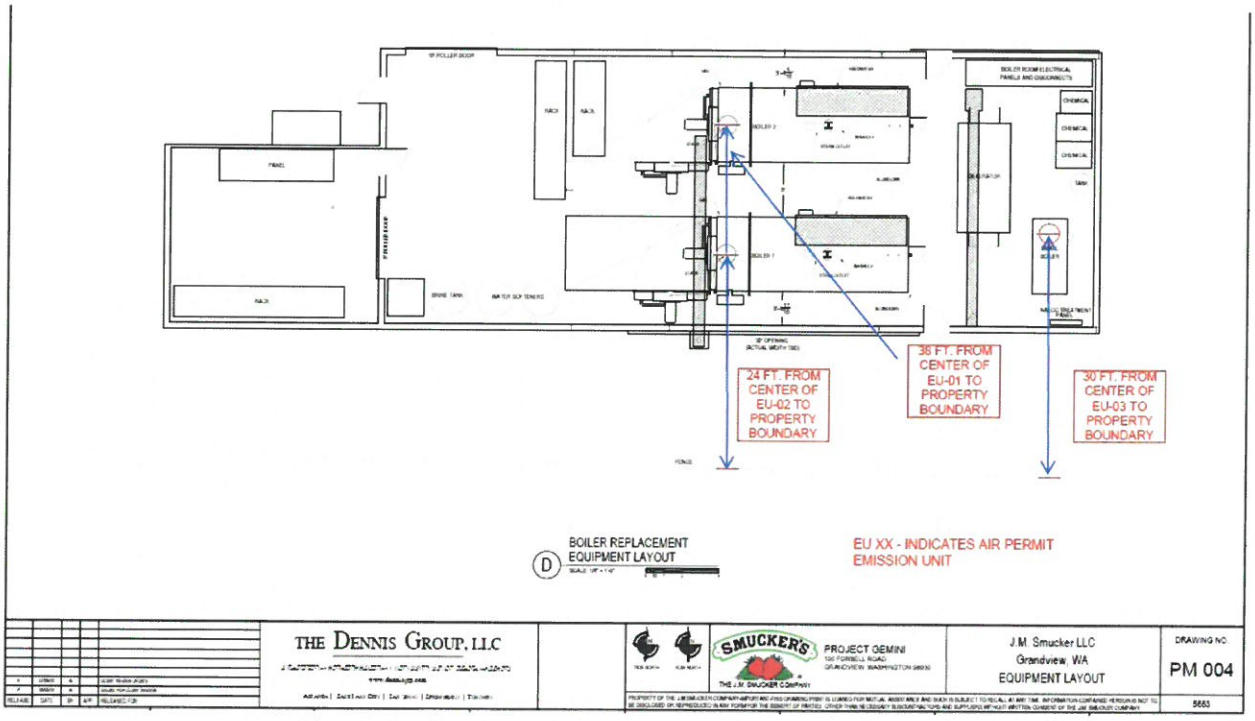

Figure 2. Plant layout showing the small boiler location

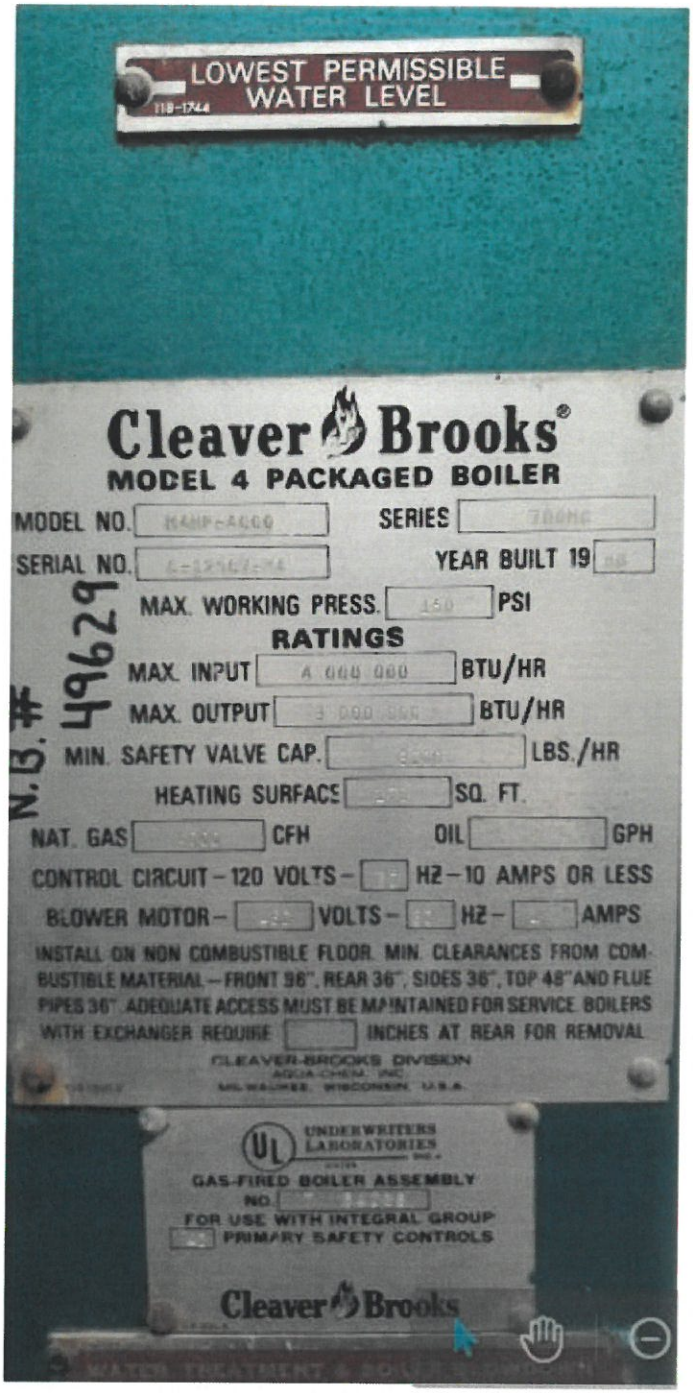

Figure 3. The boiler plate