

FACT SHEET FOR: OP26R2-012**DATE:****DWEE ID:** 57640**Name of Source:** Lincoln Water System- Ashland Treatment Plant**Source Classification:** Class II Synthetic Minor at time of issuance
Area Source of Hazardous Air Pollutants (HAPs)

Regulatory changes may supersede information in this document. If the source should add or change equipment or change processes such that a NESHAP or NSPS subpart becomes an applicable requirement, it is the source's obligation to comply with that subpart and applicable requirements whether or not they are identified in the associated permitting action or Title 129. Also note that the NESHAP and NSPS subparts are subject to change. Detailed information related to NESHAP and NSPS subparts can be found on the DWEE Air Toxics Notebook and DWEE NSPS Notebook located on the DWEE website (<https://dwee.nebraska.gov/>). The DWEE website can also be used to find other permit related and facility specific information that is not identified in this fact sheet.

The source is subject to and will comply with all applicable requirements found in Title 40 Protection of Environment, Code of Federal Regulations that apply to the source including those found at 40 CFR Part 52, Subpart CC or 40 CFR Part 70, Appendix A (federally enforceable requirements); the State Implementation Plan (SIP) approved Title 129 as amended September 28, 2022 cited in this permit and denoted by an asterisk () are federally enforceable; and the Environmental Protection Act, Neb. Rev. Stat. §§ 81-1501 to 81-1532, and Nebraska Administrative Code Title 129 as amended June 28, 2026. When Title 129 as amended June 28, 2026, cited in this permit becomes SIP approved and federally enforceable it will supersede Title 129 as amended September 28, 2022.*

DESCRIPTION OF THE SOURCE OR ACTIVITY:

This operating permit OP26R2-012 approves the operation of a water treatment plant. The City of Lincoln Water System operates the Ashland Treatment Plant (ATP) under the standard industrial classification (SIC) code 4941 for Water Supply.

PERMIT HISTORY

Date Issued	Number	Status
04/09/2007	OPSP-0368	Not active; superseded by OP11R2-013
09/21/2016	OP11R2-013	Not active; superseded by OP21R2-016
09/29/2021	OP21R2-016	Not active; superseded by OP26R2-012
tbd	OP26R2-012	Active

PERMIT ACTION:

Permitted Emission Points are detailed in the table below:

Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-1			
Catalytic Oxidizer	EU-1 – Non-emergency compression ignition reciprocating internal combustion engine (CI RICE), maximum capacity: 1,960 HP, permitted fuel type: diesel	None	40 CFR Part 63, Subpart A; Title 129, Chapter 13, Section <u>002.01*</u> ; Title 129, Chapter 13, Section <u>002.01</u>
		None	40 CFR Part 63, Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78*</u> ; Title 129, Chapter 13, Section <u>002.79</u>
Emission Point ID#: EP-2			
Catalytic Oxidizer	EU-2 – Non-emergency CI RICE, maximum capacity: 1,960 HP, permitted fuel type: diesel	None	40 CFR Part 63, Subpart A; Title 129, Chapter 13, Section <u>002.01*</u> ; Title 129, Chapter 13, Section <u>002.01</u>
		None	40 CFR Part 63, Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78*</u> ; Title 129, Chapter 13, Section <u>002.79</u>
Emission Point ID#: EP-6			
None	EU-6 – Emergency CI RICE, maximum capacity: 102 HP, permitted fuel type: diesel	None	40 CFR Part 63, Subpart A; Title 129, Chapter 13, Section <u>002.01*</u> ; Title 129, Chapter 13, Section <u>002.01</u>

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		None	40 CFR Part 63, Subpart ZZZZ; Title 129, Chapter 13, Section <u>002.78*</u> ; Title 129, Chapter 13, Section <u>002.79</u>
Control Equipment ID# and Description	Emission Unit Description	Applicable NSPS Requirements	Applicable NESHAP Requirements
Emission Point ID#: EP-4			
None	EU-4: Superior Boiler, 15.75 MMBtu/hr, Natural Gas Fired, Installed in 1993	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01*</u> ; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05*</u> ; Title 129, Chapter 12, Section <u>001.06</u>	None
Emission Point ID#: EP-5			
None	EU-5: Superior Boiler, 15.75 MMBtu/hr, Natural Gas Fired, Installed in 1993	40 CFR Part 60, Subpart A; Title 129, Chapter 12, Section <u>001.01*</u> ; Title 129, Chapter 12, Section <u>001.01</u>	None
		40 CFR Part 60, Subpart Dc; Title 129, Chapter 12, Section <u>001.05*</u> ; Title 129, Chapter 12, Section <u>001.06</u>	None
Emission Point ID#: EP-7			
None	Chlorine cylinders – maximum annual throughput: 1,000 tons	None	None

TYPE AND QUANTITY OF AIR CONTAMINANT EMISSIONS ANTICIPATED:

The following table summarizes the potential and actual emissions:

Regulated Pollutant	Potential Emissions as limited by permit (tons/year)	Actual Emissions^[2] (tons/year)
Particulate Matter (PM)	-	-
Particulate Matter less than or equal to 10 microns (PM ₁₀)	2.26	0.23
Particulate Matter less than or equal to 2.5 microns (PM _{2.5})	2.24	0.23
Sulfur Dioxide (SO ₂)	0.17	0.02
Oxides of Nitrogen (NO _x)	84.88	3.07
Carbon Monoxide (CO)	27.70	2.42
Volatile Organic Compounds (VOCs)	2.41	0.17
Greenhouse Gases (GHGs) ^[1]	18,802	3,290
Carbon Dioxide Equivalents (CO ₂ e) ^[1]	18,829	3,297
Hazardous Air Pollutants (HAPs)		
Chlorine	3.28	1.17
All Other HAPs	0.29	0.05
Total HAPs	3.57	1.22

^[1] The U.S. Supreme Court ruled in 2014 that greenhouse gases (GHGs) may not be used to determine whether a source is a Class I (major) source. Utility Air Regulatory Group v. EPA, 134 S.Ct. 2427 (2014). Therefore, potential emissions of GHGs will not be used to determine a source's operating permit classification at this time. However, GHGs are still regulated air pollutants so GHGs and CO₂e will continue to be calculated and reported in this fact sheet.

^[2] Actual Emissions are from 2025 air emissions inventory.

SUPPLEMENTAL INFORMATION:

Title 129, Chapter 12*; Title 129, Chapter 12 - New Source Performance Standards (NSPS) and Emission Limits for Existing Sources

The following NSPS subparts apply to the boilers (EU-4 and EU-6) at the source:

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.01*; Title 129, Chapter 12, Section 001.01, applies to the owner or operator of any stationary source that is subject to any standard, limitation, prohibition, or federally enforceable requirement established pursuant to Part 60.

Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.05*; Title 129, Chapter 12, Section 001.06, applies to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr. Boilers EU-4 and EU-5 are subject to this subpart because they each have a heat input capacity of 15.75 MMBtu/hr and were constructed in 1993 which is after 1989 start point.

The following NSPS appear to apply to the source, but do not:

Subpart D – Standards of Performance for Fossil-Fuel-Fired Steam Generators: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.02*; Title 129, Chapter 12, Section 001.03, applies to

each fossil-fuel-fired and wood-residue-fired steam generating unit of more than 250 MMBtu/hr that commenced construction or modification after August 17, 1971. Boilers EU-4 and EU-5 are not subject to this subpart because they have heat input capacities of less than 250 MMBtu/hr.

Subpart Da – Standards of Performance for Electric Utility Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.03*; Title 129, Chapter 12, Section 001.04, applies to each electric utility steam generating unit capable of combusting more than 250 MMBtu/hr heat input of fossil fuel (either alone or in combination with any other fuel) for which construction, modification, or reconstruction is commenced after September 18, 1978. Boilers EU-4 and EU-5 are not subject to this subpart because they have heat input capacities of less than 250 MMBtu/hr.

Subpart Db – Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units: This subpart, adopted by reference in Title 129, Chapter 12, Section 001.04*; Title 129, Chapter 12, Section 001.05 applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 100 MMBtu/hr. Boilers EU-4 and EU-5 are not subject to this subpart because they have heat input capacities of less than 100 MMBtu/hr.

40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129 Chapter 12, Section 001.80*; Title 129 Chapter 12, Section 001.81, applies to owners and operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006 and are not fire pump engines, or manufactured as a certified National Fire Protection Association (NFPA) fire pump engines after July 1, 2006. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Engines EU-1 and EU-2 were installed in 1975, and EU-6 was installed in 1993. Thus, construction commenced prior to July 11, 2005, and they are not subject to this subpart.

40 CFR60, Subpart JJJJ-Standards of Performance for Stationary Spark Ignition Internal Combustion Engines: This subpart, adopted by reference in Title 129 Chapter12, Section 01.081*; Title 129 Chapter12, Section 01.082, applies to owners and operators of stationary spark ignition (SI) internal combustion engines (ICE) that commence construction after June 12, 2006, where the stationary SI ICE are manufactured after July 1, 2007 for engines with a maximum engine power greater than or equal to 500 HP or on or after January 1, 2008 for lean burn engines with a maximum engine power greater than or equal to 500 hp and less than 1350 hp or on or after July1, 2008, fir engines with a maximum engine power less than 500 hp or on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19kw (25hp). For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Engines EU-1 and EU-2 were installed in 1975, and EU-6 was installed in 1993. Thus, construction commenced prior to July 2, 2007. In addition, engines EU1, EU2 and EU6 are all compression ignition engines, and they are not subject to this subpart.

Title 129, Chapter 13, Sections 002* and 003*; Title 129, Chapter 13, Sections 002 and 003 - National Emission Standards for Hazardous Air Pollutants (NESHAP)

The following NESHAP subpart apply to the source:

Subpart A – General Provisions: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.01*; Title 129, Chapter 13, Section 002.01, applies to the owner or operator of any stationary source that is subject to any standard, limitation, prohibition, or federally enforceable requirement established pursuant to Part 63.

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines: This subpart, adopted by reference in Title 129 Chapter 13, Section 002.78*; Title 129 Chapter 13, Section 002.79, applies to new and existing stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAPs. Engines EU-1, EU-2, and EU-6 are subject to this standard.

Engines EU-1 and EU-2 are 1,960-hp General Motors diesel-fired compression ignition engines installed in 1975, with a displacement of 10.57 liters/cylinder. These engines are non-emergency and non-black start. These engines have each been equipped with catalytic oxidizers, crankcase vent filters, and a continuous parameter monitoring system (CPMS), which must be adequately maintained in accordance with the facility's site-specific monitoring plan. The source is required to operate and maintain the engines, controls, and monitoring devices in accordance with parameters seen during periodic performance testing in accordance with 40 CFR Subpart ZZZZ.

Engine EU-6 is a 102-hp John Deere diesel-fired emergency compression ignition engine installed in 1993 with a displacement of 0.98 liters/cylinder. EU-6 is a non-black start engine. If at any time the engine is not operated in accordance with the emergency engine requirements of NESHAP Subpart ZZZZ, including 40 CFR 63.6640(f), the source must comply with the applicable requirements for non-emergency engines for EU-6.

The following NESHAPs appear to apply to the source, but do not:

Subpart VVV – National Emissions Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.54*; Title 129, Chapter 13, Section 002.55, applies to an owner or operator of a publicly owned treatment works (POTW) facility that includes an affected source. POTWs include wastewater treatment units themselves, as well as intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment. ATP is not subject to this subpart because the facility does not treat sewage or wastewater.

Subpart JJJJJ – National Emissions Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources: This subpart, adopted by reference in Title 129, Chapter 13, Section 002.101*; Title 129, Chapter 13, Section 002.103, applies to new and existing industrial, commercial, and institutional boilers located at area sources of HAPs, except for those boilers listed in 40 CFR 63.11195. The boilers at this source are not subject to this subpart because they are natural gas-fired [40 CFR 63.11195(e)].

Title 129, Chapter 15*; Title 129, Chapter 15 - Compliance

Process Weight Rate

Title 129, Chapter 15, Section 001.01*; Title 129, Chapter 15, Section 001.01, limits PM (filterable) emissions to the amounts shown in Table 15-1*; Table 15-1 during any one hour. These process weight rate limits, which are based on throughput of the emission units, vary as throughputs change. Since the potential to emit for each emission point is less than the process weight rate limitations, these PM limitations were not included in Condition III of this permit.

Particulate Emissions from Combustion Sources

All of the PM emission points subject to Chapter 15, Section 001.02 limitations are in compliance with those limitations, as the potential to emit for each emission point is less than the limitations. Therefore, these PM limitations were not included in Condition III of this permit.

Opacity Limitations from Emission Units (Section 001.04)*; (Section 001.04)

Specific Condition I.(J) specifies that no person shall cause or allow emissions, from any source, which has an opacity equal to or greater than twenty percent (20%). Opacity must be determined using an EPA-approved method or recorded by a continuous opacity monitoring system which has been operated and maintained pursuant to 40 CFR Part 60 Appendix B except as provided for in Chapter 15, Sections 001.05 and 001.05E*; Chapter 15, Sections 001.05 and 001.05E; (Title 129, Chapter 15, Section 001.04)*; (Title 129, Chapter 15, Section 001.04). Therefore, while not specifically stated in Condition III, this requirement is still applicable to all emission units at the source.

Prevention of Accidental Releases of Title III, Section 112(r)

Title 129, Chapter 6, Section 003.10*; Title 129, Chapter 6, Section 003.10 states that an operating permit must contain conditions pertaining to the Prevention of Accidental Releases program when a source is subject to this program [Federal Clean Air Act Section 112(r)]. ATP is subject to this section of the Federal Clean Air Act because the source handles threshold quantities of substances (i.e., chlorine) regulated under Section 112(r). Therefore, the operating permit contains conditions for the Prevention of Accidental Releases program (§68.10 and §68.115).

SPECIFIC PERMIT CONDITIONS DISCUSSION:

Condition III includes conditions that are specific to the emissions units and emission points listed in each respective condition. Permit conditions that require no additional discussion are not included in this section.

(A) Specific Conditions for Internal Combustion Engines

(A)(1)(a) These conditions identify the permitted engines at the source, including two (2) non-emergency engines (EU-1 and EU-2) and one emergency engine (EU-6). These conditions require that the source comply with applicable NESHAP Subpart A and ZZZZ requirements for the engines. If at any time EU-6 is not operated as an emergency engine in accordance with the emergency engine requirements of NESHAP Subpart ZZZZ, the source must comply with the applicable non-emergency engine requirements of the NESHAP.

(A)(2)(a) This condition contains permitted emission limitations for the engines. The engines are subject to a NO_x limitation in order to remain a Class II synthetic minor source; they will demonstrate compliance with this limit by complying with limits on the hours of operation for the engines. They are expected to comply with the Title 129 Chapter 15*; Title 129 Chapter 15 PM limits because the calculations of potential emissions result in emissions lower than the permitted limits, as shown in the Fact Sheet Attachment. The engines are subject to the Title 129 Chapter 15*; Title 129 Chapter 15 opacity limitation and will demonstrate compliance through performance of visible emission surveys as detailed in Condition III.(A)(3)(e). This condition also requires that engines EU-1 and EU-2 should comply with the applicable emission limitations and testing requirements under NESHAP Subpart ZZZZ.

(A)(3)(a) & (b) These conditions limit the annual hours of operation of engines EU-1, EU-2, and EU-6 in order to demonstrate compliance with the NO_x limitation in Condition III.(A)(2)(a).

(B) Specific Conditions for Boilers

(B)(1) This condition identifies the permitted boilers at the source. These boilers are subject to NSPS Subparts A and Dc; requirements of these rules are prescribed in the following conditions.

(B)(4)(a) This condition requires the permittee to comply with applicable recordkeeping and reporting of NSPS Subpart Dc, which includes recording the amount of natural gas combusted in each boiler on a daily or monthly basis.

Insignificant Activities

The following table contains a description of insignificant activities at the source at the time of permit issuance, in accordance with operating permit application op26R2-012, received March 25, 2026, including any supporting information received prior to issuance of the permit:

Insignificant Activity ID	Unit Description	Insignificance Criteria
EU-3	150,000 gallon diesel fuel storage tank	Aggregate annual fuel throughput of less than 1 million gallons for the entire source

Insignificant Activity ID	Unit Description	Insignificance Criteria
-	Three (3) water heaters: 40,000 Btu/hr, 199,900 Btu/hr, and 120,000 Btu/hr; natural gas fired	Stationary natural gas fired external combustion units rated less than 10.0 MMBtu/hr
-	Eight (8) Reznor hanging heaters: 225,000 Btu/hr each, natural gas fired	Space heaters
-	Two (2) Hastings seasonal use make-up air units: 665,000 Btu/hr and 400,000 Btu/hr; natural gas fired	Stationary natural gas fired external combustion units rated less than 10.0 MMBtu/hr
-	York forced air furnace: 57,000 Btu/hr, natural gas fired	Stationary natural gas fired external combustion units rated less than 10.0 MMBtu/hr
-	Two (2) IR heaters: 100,000 Btu/hr each, natural gas fired	Space heaters

Although not required, DWEE recommends that the source submit a written notification to DWEE if there are additions or changes to the list of insignificant activities identified above, containing the following suggested information:

- A brief description of the addition or change within the permitted source;
- The date on which the addition or change occurred;
- Any change in potential emissions; and
- The criteria, as defined in the Operating Permit Application Forms, used to determine that the addition or change to the list of insignificant activities qualifies as insignificant.

This notification helps the DWEE keep an up to date list on file for compliance purposes. In addition, because emissions from insignificant activities must be counted toward major source (Class I) applicability, it is important to know if a source makes additions or changes to the list of insignificant activities that would cause a change in potential to emit at the source, and ultimately whether the source has a change in classification (i.e., Class I vs. Class II.).

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT SUMMARY OF EMISSIONS

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

2026 Permit Renewal Potential to Emit Calculations

PM₁₀	2.26	ton/yr
PM_{2.5}	2.24	ton/yr
NO_x	84.88	ton/yr
CO	27.70	ton/yr
SO_x	0.17	ton/yr
VOC (Inclusive of VOC-HAPs)	2.69	ton/yr
VOC (Excluding VOC-HAPs)	2.41	ton/yr
Lead (Pb)	6.76E-05	ton/yr
Total Hazardous Air Pollutants	3.57	ton/yr
Reportable HAPs - 1 (7,12-Dimethylbenz(a)anthracene)	2.16E-06	ton/yr
CO₂	18,802	ton/yr
CH₄	0.43	ton/yr
N₂O	0.056	ton/yr
Greenhouse Gas (as CO₂e)	18,829	ton/yr

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-1 - HIGH-HEAD PUMP 7

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-1 - HIGH-HEAD PUMP 7**Methodology Source Reference: Operating Permit OP21R2-016 Fact Sheet Attachment****Calculations:**

Engine Size = 1,960 hp, manufacturer specifications
 = 13.72 MMBtu/hr, manufacturer specifications
 Hours of Operation = 1,500 hrs/yr, permitted limit
 Diesel Fuel Sulfur Limit = 0.0015 % by weight

	Pollutant	CAS	Emission Factor		Actual Emissions	
			lb/hp-hr	lb/hr	tons/yr	
Criteria Pollutants	NO _x ^[1]	-	2.40E-02	4.70E+01	3.53E+01	
	SO _x ^[1]	-	1.21E-05	2.37E-02	1.78E-02	
	CO ^[1]	630-08-0	5.50E-03	1.08E+01	8.09E+00	
	VOC	-	6.42E-04	1.26E+00	9.43E-01	
	Pollutant	CAS	Emission Factor			
			lb/MMBtu	lb/hr	tons/yr	
	PM ^[1]	-	6.97E-02	9.56E-01	7.17E-01	
GHG	PM ₁₀	-	5.70E-02	7.82E-01	5.87E-01	
	PM _{2.5}	-	5.60E-02	7.68E-01	5.76E-01	
	CO ₂	124-38-9	1.63E+02	2.24E+03	1.68E+03	
	CH ₄	74-82-8	6.61E-03	9.07E-02	6.81E-02	
	N ₂ O	10024-97-2	1.32E-03	1.81E-02	1.36E-02	
HAPs	CO ₂ e	-	1.64E+02	2.24E+03	1.68E+03	
	Benzene	71-43-2	7.76E-04	1.06E-02	7.99E-03	
	Toluene	108-88-3	2.81E-04	3.86E-03	2.89E-03	
	Xylenes	1330-20-7	1.93E-04	2.65E-03	1.99E-03	
	Formaldehyde	50-00-0	7.89E-05	1.08E-03	8.12E-04	
	Acetaldehyde	75-07-0	2.52E-05	3.46E-04	2.59E-04	
	Acrolein	107-02-8	7.88E-06	1.08E-04	8.11E-05	
	Naphthalene ^[2]	91-20-3	1.30E-04	1.78E-03	1.34E-03	
	Total HAP	-	1.49E-03	2.05E-02	1.54E-02	

^[1] Emission factors from AP-42 3.4 Table 3.4-1.^[2] Emission factors from AP-42 3.4 Table 3.4-4.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-2 - HIGH-HEAD PUMP 9

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-2 - HIGH-HEAD PUMP 9**Methodology Source Reference: Operating Permit OP21R2-016 Fact Sheet Attachment****Calculations:**

Engine Size = 1,960 hp, manufacturer specifications
 = 13.72 MMBtu/hr, manufacturer specifications
 Hours of Operation = 1,500 hrs/yr, permitted limit
 Diesel Fuel Sulfur Limit = 0.0015 % by weight

	Pollutant	CAS	Emission Factor		Actual Emissions	
			lb/hp-hr	lb/hr	tons/yr	
Criteria Pollutants	NO _x	-	2.40E-02	4.70E+01	3.53E+01	
	SO _x	-	1.21E-05	2.37E-02	1.78E-02	
	CO	630-08-0	5.50E-03	1.08E+01	8.09E+00	
	VOC	-	6.42E-04	1.26E+00	9.43E-01	
	Pollutant	CAS	Emission Factor			
			lb/MMBtu	lb/hr	tons/yr	
	PM ^[1]	-	6.97E-02	9.56E-01	7.17E-01	
	PM ₁₀	-	5.70E-02	7.82E-01	5.87E-01	
	PM _{2.5}	-	5.60E-02	7.68E-01	5.76E-01	
GHG	CO ₂	124-38-9	1.63E+02	2.24E+03	1.68E+03	
	CH ₄	74-82-8	6.61E-03	9.07E-02	6.81E-02	
	N ₂ O	10024-97-2	1.32E-03	1.81E-02	1.36E-02	
	CO ₂ e	-	1.64E+02	2.24E+03	1.68E+03	
HAPs	Benzene	71-43-2	7.76E-04	1.06E-02	7.99E-03	
	Toluene	108-88-3	2.81E-04	3.86E-03	2.89E-03	
	Xylenes	1330-20-7	1.93E-04	2.65E-03	1.99E-03	
	Formaldehyde	50-00-0	7.89E-05	1.08E-03	8.12E-04	
	Acetaldehyde	75-07-0	2.52E-05	3.46E-04	2.59E-04	
	Acrolein	107-02-8	7.88E-06	1.08E-04	8.11E-05	
	Naphthalene ^[2]	91-20-3	1.30E-04	1.78E-03	1.34E-03	
		-	1.49E-03	2.05E-02	1.54E-02	

^[1] Emission factors from AP-42 3.4 Table 3.4-2.^[2] Emission factors from AP-42 3.4 Table 3.4-4.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-4 - UNIT NO. 4 BOILER

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-4 - UNIT NO. 4 BOILER**Methodology Source Reference: Operating Permit OP11R2-013 Fact Sheet Attachment****Calculations:**

Boiler Size = 15.75 MMBtu/hr, facility records
 Natural Gas HHV = 1,020 Btu/scf, Table 1.4-1 of AP-42 Chapter 1.4
 Hours of Operation = 8,760 hrs/yr, maximum annual operation

	Pollutant	CAS	Emission Factor lb/10 ⁶ scf	Actual Emissions	
				lb/hr	tons/yr
Criteria Pollutants	NO _x	-	1.00E+02	1.54E+00	6.76E+00
	SO _x	-	6.00E-01	9.26E-03	4.06E-02
	CO	630-08-0	8.40E+01	1.30E+00	5.68E+00
	VOC	-	5.50E+00	8.49E-02	3.72E-01
	Lead (Pb) ^[1]	7439-92-1	5.00E-04	7.72E-06	3.38E-05
	Pollutant	CAS	Emission Factor lb/10 ⁶ scf	lb/hr	tons/yr
	PM	-	7.60E+00	1.17E-01	5.14E-01
	PM ₁₀	-	7.60E+00	1.17E-01	5.14E-01
	PM _{2.5}	-	7.60E+00	1.17E-01	5.14E-01
	CO ₂	124-38-9	1.14E+05	1.76E+03	7.72E+03
GHG	CH ₄	74-82-8	2.15E+00	3.32E-02	1.45E-01
	N ₂ O	10024-97-2	2.15E-01	3.32E-03	1.45E-02
	CO ₂ e	-	1.14E+05	1.76E+03	7.73E+03

^[1] Emission factors from AP-42 1.4 Tables 1.4-2.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-4 - UNIT NO. 4 BOILER

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-4 - UNIT NO. 4 BOILER

Methodology Source Reference: Operating Permit OP11R2-013 Fact Sheet Attachment

Continued Calculations:

	Pollutant	CAS	Emissions Factor		Actual Emissions	
			lb/10 ⁶ scf		lb/hr	tons/yr
HAPs	Arsenic	7440-38-2	2.00E-04		3.09E-06	1.35E-05
	Beryllium	7440-41-7	1.20E-05		1.85E-07	8.12E-07
	Cadmium	7440-43-9	1.10E-03		1.70E-05	7.44E-05
	Chromium	7440-47-3	1.40E-03		2.16E-05	9.47E-05
	Cobalt	7440-48-4	8.40E-05		1.30E-06	5.68E-06
	Manganese	7439-96-5	3.80E-04		5.87E-06	2.57E-05
	Mercury	7439-97-6	2.60E-04		4.01E-06	1.76E-05
	Nickel	7440-02-0	2.10E-03		3.24E-05	1.42E-04
	Selenium	7782-49-2	2.40E-05		3.71E-07	1.62E-06
	Lead ^[1]	7439-92-1	5.00E-04		7.72E-06	3.38E-05
HAPs & VOCs	Benzene	71-43-2	2.10E-03		3.24E-05	1.42E-04
	Dichlorobenzene, mixed isomers ^[1]	25321-22-6	1.20E-03		1.85E-05	8.12E-05
	Formaldehyde	50-00-0	7.50E-02		1.16E-03	5.07E-03
	Naphthalene	91-20-3	6.10E-04		9.42E-06	4.13E-05
	Toluene	108-88-3	3.40E-03		5.25E-05	2.30E-04
	Acenaphthene ^[2]	83-32-9	1.80E-06		2.78E-08	1.22E-07
	Acenaphthylene ^[2]	208-96-8	1.80E-06		2.78E-08	1.22E-07
	Anthracene ^[2]	120-12-7	2.40E-06		3.71E-08	1.62E-07
	Benzo (a) anthracene	56-55-3	1.80E-06		2.78E-08	1.22E-07
	Benzo (a) pyrene	50-32-8	1.20E-06		1.85E-08	8.12E-08
	Benzo (b) fluoranthene	205-99-2	1.80E-06		2.78E-08	1.22E-07
	Benzo (g,h,i) perylene ^[2]	191-24-2	1.20E-06		1.85E-08	8.12E-08
	Benzo (k) fluoranthene ^[2]	207-08-9	1.80E-06		2.78E-08	1.22E-07
	Chrysene	218-01-9	1.80E-06		2.78E-08	1.22E-07
	Dibenzo(a,h) anthracene	53-70-3	1.20E-06		1.85E-08	8.12E-08
	7, 12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05		2.47E-07	1.08E-06
	Fluoranthene ^[2]	206-44-0	3.00E-06		4.63E-08	2.03E-07
	Fluorene ^[2]	86-73-7	2.80E-06		4.32E-08	1.89E-07
	Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06		2.78E-08	1.22E-07
	2-Methyl Naphthalene ^[2]	91-57-6	2.40E-05		3.71E-07	1.62E-06
	3-Methylcholanthrene ^[2]	56-49-5	1.80E-06		2.78E-08	1.22E-07
	Hexane	110-54-3	1.80E+00		2.78E-02	1.22E-01
	Phenanthrene ^[2]	85-01-8	1.70E-05		2.63E-07	1.15E-06
	Pyrene ^[2]	129-00-0	5.00E-06		7.72E-08	3.38E-07
	Total HAPs				2.92E-02	1.28E-01
	Total VOCs				2.91E-02	1.27E-01
	Total VOCs only				5.59E-02	2.45E-01

^[1] Emission factors from AP-42 1.4 Table 1.4-2.

^[2] Emission factors from AP-42 1.4 Table 1.4-3.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-5 - UNIT NO. 5 BOILER

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-5 - UNIT NO. 5 BOILER**Methodology Source Reference: Operating Permit OP11R2-013 Fact Sheet Attachment****Calculations:**

Boiler Size = 15.75 MMBtu/hr, facility records
 Natural Gas HHV = 1,020 Btu/scf, Table 1.4-1 of AP-42 Chapter 1.4
 Hours of Operation = 8,760 hrs/yr, maximum annual operation

	Pollutant	CAS	Emission Factor lb/10 ⁶ scf	Actual Emissions	
				lb/hr	tons/yr
Criteria Pollutants	NO _x	-	1.00E+02	1.54E+00	6.76E+00
	SO _x	-	6.00E-01	9.26E-03	4.06E-02
	CO	630-08-0	8.40E+01	1.30E+00	5.68E+00
	VOC	-	5.50E+00	8.49E-02	3.72E-01
	Lead (Pb) ^[1]	7439-92-1	5.00E-04	7.72E-06	3.38E-05
	Pollutant	CAS	Emission Factor lb/10 ⁶ scf	lb/hr	tons/yr
	PM	-	7.60E+00	1.17E-01	5.14E-01
	PM ₁₀	-	7.60E+00	1.17E-01	5.14E-01
	PM _{2.5}	-	7.60E+00	1.17E-01	5.14E-01
	CO ₂	124-38-9	1.14E+05	1.76E+03	7.72E+03
GHG	CH ₄	74-82-8	2.15E+00	3.32E-02	1.45E-01
	N ₂ O	10024-97-2	2.15E-01	3.32E-03	1.45E-02
	CO ₂ e	-	1.14E+05	1.76E+03	7.73E+03

^[1] Emission factors from AP-42 1.4 Table 1.4-2.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-5 - UNIT NO. 5 BOILER

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-5 - Unit No. 5 Boiler

Methodology Source Reference: Operating Permit OP11R2-013 Fact Sheet Attachment

Continued Calculations:

	Pollutant	CAS	Emissions Factor lb/10 ⁶ scf	Actual Emissions	
				lb/hr	tons/yr
HAPs	Arsenic	7440-38-2	2.00E-04	3.09E-06	1.35E-05
	Beryllium	7440-41-7	1.20E-05	1.85E-07	8.12E-07
	Cadmium	7440-43-9	1.10E-03	1.70E-05	7.44E-05
	Chromium	7440-47-3	1.40E-03	2.16E-05	9.47E-05
	Cobalt	7440-48-4	8.40E-05	1.30E-06	5.68E-06
	Manganese	7439-96-5	3.80E-04	5.87E-06	2.57E-05
	Mercury	7439-97-6	2.60E-04	4.01E-06	1.76E-05
	Nickel	7440-02-0	2.10E-03	3.24E-05	1.42E-04
	Selenium	7782-49-2	2.40E-05	3.71E-07	1.62E-06
	Lead ^[1]	7439-92-1	5.00E-04	7.72E-06	3.38E-05
HAPs & VOCs	Benzene	71-43-2	2.10E-03	3.24E-05	1.42E-04
	Dichlorobenzene, mixed isomers ^[1]	25321-22-6	1.20E-03	1.85E-05	8.12E-05
	Formaldehyde	50-00-0	7.50E-02	1.16E-03	5.07E-03
	Naphthalene	91-20-3	6.10E-04	9.42E-06	4.13E-05
	Toluene	108-88-3	3.40E-03	5.25E-05	2.30E-04
	Acenaphthene ^[2]	83-32-9	1.80E-06	2.78E-08	1.22E-07
	Acenaphthylene ^[2]	208-96-8	1.80E-06	2.78E-08	1.22E-07
	Anthracene ^[2]	120-12-7	2.40E-06	3.71E-08	1.62E-07
	Benzo (a) anthracene	56-55-3	1.80E-06	2.78E-08	1.22E-07
	Benzo (a) pyrene	50-32-8	1.20E-06	1.85E-08	8.12E-08
	Benzo (b) fluoranthene	205-99-2	1.80E-06	2.78E-08	1.22E-07
	Benzo (g,h,i) perylene ^[2]	191-24-2	1.20E-06	1.85E-08	8.12E-08
	Benzo (k) fluoranthene ^[2]	207-08-9	1.80E-06	2.78E-08	1.22E-07
	Chrysene	218-01-9	1.80E-06	2.78E-08	1.22E-07
	Dibenzo(a,h) anthracene	53-70-3	1.20E-06	1.85E-08	8.12E-08
	7, 12-Dimethylbenz(a)anthracene	57-97-6	1.60E-05	2.47E-07	1.08E-06
	Fluoranthene ^[2]	206-44-0	3.00E-06	4.63E-08	2.03E-07
	Fluorene ^[2]	86-73-7	2.80E-06	4.32E-08	1.89E-07
	Indeno(1,2,3-cd)pyrene	193-39-5	1.80E-06	2.78E-08	1.22E-07
	2-Methyl Naphthalene ^[2]	91-57-6	2.40E-05	3.71E-07	1.62E-06
	3-Methylcholanthrene ^[2]	56-49-5	1.80E-06	2.78E-08	1.22E-07
	Hexane	110-54-3	1.80E+00	2.78E-02	1.22E-01
	Phenanthrene ^[2]	85-01-8	1.70E-05	2.63E-07	1.15E-06
	Pyrene ^[2]	129-00-0	5.00E-06	7.72E-08	3.38E-07
	Total HAPs			2.92E-02	1.28E-01
	Total VOCs			2.91E-02	1.27E-01
	Total VOCs only			5.59E-02	2.45E-01

^[1] Emission factors from AP-42 1.4 Table 1.4-2.

^[2] Emission factors from AP-42 1.4 Table 1.4-3.

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CLIENT Lincoln Water System - Ashland WTP
 PROJECT 2026 Operating Permit Renewal
 SUBJECT EP-6 - UNIT NO. 6 EMERGENCY GENERATOR

PROJECT NO. 27226093.02
 PREPARED BY S. Sharp DATE 7/2/2025
 REVIEWED BY S. Phung DATE 2/18/2026
 APPROVED BY B. Graham DATE 3/17/2026
 UPDATED BY B. Graham DATE 3/17/2026

EP-6 - UNIT NO. 6 EMERGENCY GENERATOR**Methodology Source Reference: Operating Permit OP11R2-013 Fact Sheet Attachment**

Calculations:

Engine Size = 102 hp, engine specifications
 = 0.71 MMBtu/hr, engine specifications

Hours of Operation = 500 hrs/yr, permitted limit

	Pollutant	Emission Factor	Actual Emissions	
		lb/hp-hr	lb/hr	tons/yr
Criteria Pollutants	PM	2.20E-03	2.24E-01	5.61E-02
	PM ₁₀	2.20E-03	2.24E-01	5.61E-02
	PM _{2.5}	2.20E-03	2.24E-01	5.61E-02
	NO _x	3.10E-02	3.16E+00	7.91E-01
	SO _x	2.05E-03	2.09E-01	5.23E-02
	CO	6.68E-03	6.81E-01	1.70E-01
	VOC	2.51E-03	2.56E-01	6.40E-02
GHG	CO ₂	4.15E-01	4.23E+01	1.06E+01
	CH ₄	1.68E-05	1.72E-03	4.29E-04
	N ₂ O	3.37E-06	3.43E-04	8.58E-05
	CO ₂ e	4.16E-01	4.25E+01	1.06E+01
	Pollutant	Emission Factor	Actual Emissions	
		lb/MMBtu	lb/hr	tons/yr
HAPs	1,3-Butadiene ^[1]	3.91E-05	2.78E-05	6.94E-06
	Acetaldehyde	7.67E-04	5.45E-04	1.36E-04
	Acrolein	9.25E-05	6.57E-05	1.64E-05
	Benzene	9.33E-04	6.62E-04	1.66E-04
	Formaldehyde	1.18E-03	8.38E-04	2.09E-04
	Naphthalene ^[1]	8.48E-05	6.02E-05	1.51E-05
	Toluene	4.09E-04	2.90E-04	7.26E-05
	Xylenes	2.85E-04	2.02E-04	5.06E-05
	Total HAP	3.79E-03	2.69E-03	6.73E-04

^[1] Emission factors from AP-42 3.3 Table 3.3-2.

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CLIENT Lincoln Water System - Ashland WTP
PROJECT 2026 Operating Permit Renewal
SUBJECT EP-7 - CHLORINE TANKS

PROJECT NO. 27226093.02
PREPARED BY S. Sharp DATE 7/2/2025
REVIEWED BY S. Phung DATE 2/18/2026
APPROVED BY B. Graham DATE 3/17/2026
UPDATED BY B. Graham DATE 3/17/2026

EP-7 - CHLORINE TANKS**Methodology Source Reference: WebFIRE**

Calculations:

Chlorine Usage = 1,000 tons, requested maximum annual throughput

Pollutant	CAS	Emission Factor ^[1] lb Cl/ lb Cl added	Actual Emissions tons/yr
Chlorine	7782-50-5	3.28E-03	3.28E+00

^[1] WebFIRE Emission Factor Number 24041.