

**PATHOLOGICAL WASTE INCINERATOR –
 OPERATING PERMIT REQUIREMENTS**

Operation of the Pathological Incinerator on East Campus is subject to the terms and conditions of the Class II Synthetic Minor Air Contaminant Source Operating Permit issued by the Lincoln-Lancaster County Health Department (LLCHD). Table 1 provides a summary of air permit requirements. Refer to the EHS SOPs, ***Pathological Incinerator Operator - Environmental Compliance Responsibilities*** and ***Opacity of Emissions from Combustion Sources*** for additional procedures. Other permit conditions apply to other types of emission sources (e.g., boilers and emergency generators), which are beyond the scope of this SOP.

Table 1 - Summary of Air Permit Requirements

Operational Requirements		VDC Incinerator
Fuel Limitations		
Allowed Fuel	Natural Gas (no consumption limit, however must maintain record of amount consumed)	
Waste Incineration Restrictions		
Allowed Waste Types	Limited to no less than 90%, by weight, "Type 4 waste" (pathological) and less than 10%, by weight, remaining "other wastes" on a calendar quarter basis. See definitions below.	
Maximum Waste Charge Weights (per manufacturer's recommendations)	588 lbs. per charge	
Minimum Waste Incineration Burn Time	One hour per every 588 lbs. charged.	
Estimating vs. Actual Weighing of Individual Waste Charge Weights	Specific types & weights of individual waste charges must be recorded. Estimations of individual waste charge weights based on process knowledge are acceptable and may be used to calculate the required incineration time to meet incineration rate maximums.	

Operational Requirements**VDC Incinerator****Burner Operation Requirements**

Primary Burn Chamber Operating Temperature Requirements	Operate according to manufacturer's operating instructions.
Secondary Burn Chamber (equipped w/ auxillary burners)	Required.
Pre-Charge Secondary Chamber Pre-Heat Time Minimum (per manufacturer specifications)	The secondary chamber must be pre-heated for 15 minutes prior to charging the incinerator with waste.
Secondary Chamber Operating Temperature Requirements	Maintain a one-hour average temperature of 1200°F during waste combustion cycle until all waste is incinerated to ashes/bone-chips. This temperature is the compliance measure (per LLCHD operating permit). A minimum of four readings is used to calculate average hourly temperature. 1800°F set point (1600°F lower set range limit and 2000°F upper set range limit; per manufacturer's recommendations)
Secondary Chamber Continuous Temperature Monitor/Recorder	Secondary chamber temperatures must be recorded by a continuous temperature-monitoring device through completion of waste combustion.
Calculate Hourly Secondary Chamber Temperature Averages	Since the secondary chamber temperatures are continuously recorded, operators are not required to calculate hourly averages. However, operators must verify data on continuous temperature-monitoring charts demonstrate a one hour average of 1200°F during the entire waste combustion cycle.

Visible Emissions Limitations and Monitoring Requirements

Fugitive Visible Emissions Limits	All incinerator emissions must be vented through the single stack exhausting the incinerator. Fugitive emissions from any source (e.g., dust) must not be visible beyond East Campus property lines.
Stack Opacity Limit	20% for a six-minute average.

Operational Requirements	VDC Incinerator
Visible Emissions/Opacity Monitoring Records	<p>Operators must conduct a six-minute Method 22 Visible Emissions (VE) survey on a monthly basis after startup is complete and secondary chamber temperature has reached 1200°F.¹</p> <p>If the observer is unable to conduct VE/opacity monitoring because of extreme weather conditions, or operations that occur after dark, the observer must note such conditions on the appropriate form.</p> <p>Under the terms of the most recently issued permit, the operating records must also indicate those months when no VE survey was conducted because the incinerator was not operated.</p> <p>VE/opacity monitoring is not required during startups, shutdowns, or malfunctions.</p>
Recordkeeping and Reporting Requirements	
Instructions	Operators must read UNL's air permit and the manufacturer's operators' manual.
Recordkeeping Requirements	<ol style="list-style-type: none"> 1) Type and weight of each waste charge, and monthly waste charge totals, in pounds. 2) Date, start and end times, secondary chamber temperature, and circle charts showing this data. 3) Calculated waste incineration rate in lbs/hour. 4) Copy of air permit. 5) Copies of VE/opacity reading records & corrective action taken (if required). 6) Records that demonstrate that less than 10% "Other Wastes" (non Type 4) were incinerated on a calendar quarter basis will be maintained at the EHS Office.
Due Date For Submission of Monthly Operational Records to EHS	15 th of each month for previous month's data.
Manufacturer's Operating Instructions	Maintain on site.

¹ The operator is required to conduct a 6-minute visual emission survey at least monthly. If visible emissions are detected for 5% or more (18 seconds) of the survey time the operator must take necessary corrective action to eliminate the visible emissions within one hour, followed by another 6 minute survey that is satisfactory (e.g., VEs detected for less than 5% of the survey time). Alternatively, a Method 9 survey may be conducted. However, only persons currently certified by attending and passing a smoke school within the previous 6 months are authorized to conduct Method 9. If not currently certified to conduct Method 9 and corrective action was not successful in meeting method 22 criteria, immediately notify EHS and refrain from further operation until authorized by EHS.

Definitions/References

- **Waste Charge Weight** - Refers to the total pounds of waste charged into the incinerator each time the door is opened and new waste is added to the primary burn chamber.
- **Burn-Cycle** - Refers to time in hours beginning when waste is charged until the primary/main chamber is charged again or shut off.
- **Incineration Rate** - Refers to the pounds per hour incinerated beginning with the time when the waste is charged until the time the waste combustion/burn-cycle is complete. The rate is calculated by dividing the total pounds charged by the total number of hours that the primary burn chamber operated.
- **“Type 4 Wastes” (pathological)** – Means material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding, animal feces, and animal feed if applicable.
- **“Other Wastes” (non-pathological)** – which are limited to less than 10% of the total, by weight, on a calendar quarter basis:
 - Feed sacks;
 - Packaging materials;
 - Rawhide, plastic, rubber & bone chew toys;
 - Feeding or watering bowls/bottles;
 - Used PPE:
 - Gloves including leather, latex, vinyl, & nitrile;
 - Hair nets and
 - Plastic booties
 - Plastic Petri dishes and agar plates;
 - And other specific wastes authorized, in writing, by EHS as acceptable for incineration.

Monthly Incineration Record: Month: _____ Year: _____

Facility: **UNL VETERINARY DIAGNOSTIC CENTER (VDC)**

Incinerator Make: Conumat Model: C 225 P Facility Contact/Phone: _____

Air Permits: Class II Operating Permit Issued: February 25, 2014

Allowed Waste Materials: ≥90% Type IV Pathological Waste and <10% other wastes on a calendar quarter basis

Allowed Fuel: Natural gas

Maximum Allowable Incineration Rate: 588 lbs./hr. Maximum Allowable Waste Charge: 588 lbs. at intervals at least 1 hour apart

INSTRUCTIONS: For each waste charge during the month listed above, record one complete row of information.

IMPORTANT: A minimum of one hour of incineration time is required for each 588 lbs. indicated charged.

Note: Please send records for each month no later than the 15th of the following month to: Air Quality Specialist, Environmental Health & Safety, 3630 E. Campus Loop, Lincoln NE 68583-0824. Telephone: (402) 472-4925. Fax: (402) 472-9650.

Keep a copy in the on-site incinerator records.

Date	Type of Animal or Waste Material P = Pathological NP = Non Pathological	Charge Weight (Pounds of Waste Charged) A	Burn Cycle Start Time (Time Waste Charged)	Time Burn Cycle Completed (Time of day of next waste charge or of daily primary burner shut down)	Total # of Hours in Burn Cycle B	Calculated Incineration Rate (Lbs/Hour) A ÷ B