PERMIT APPLICATION FOR INCINERATORS/CREMATORIES

NORTH DAKOTA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
SFN 8522 (4-2026)

NOTE: READ INSTRUCTIONS BEFORE COMPLETING THIS FORM.
- Must include SFN 8516 or SFN 52858

SECTION A – GENERAL INFORMATION

Name of Firm or Organization	Facility Name

SECTION B – CONSTRUCTION INFORMATION

Actual or Planned Dates for Installation/Construction	Start Date	Completion Date

SECTION C – EQUIPMENT INFORMATION

Type: ☐ Incinerator ☐ Crematory

Source ID Number (From form SFN 8516)

Incinerator/Crematory Manufacturer	Model No.

Rated Capacity (lb/hr) Design Criteria	Cost of Installation ($)

Type
☐ Single Chamber ☐ Air Pollution Control Device (i.e., scrubber, fabric filter, etc.). Attach SFN 8532
☐ Multiple Chamber ☐ Other – Specify:

Feed Method
☐ Flue Fed ☐ Continuous Direct Fed ☐ Batch Direct Fed ☐ Other – Specify:

Combustion Air (see instructions)
☐ Natural Draft ☐ Induced Draft ☐ Forced Draft ☐ Starved Air ☐ Other – Specify:

Auxiliary Fuel Burners	Quantity	Fuel Type	Btu/Hr Rating		Make	Model
			Minimum	Maximum		
Primary Chamber						
Secondary Chamber						

Is temperature control provided for Secondary Chamber burner? ◯ No ◯ Yes	If Yes:	Maximum Temp (°F)	Minimum Temp (°F)

Average Operating Schedule

Hours Per Day	Time		Days Per Week	On (Check Days)	Weeks Per Year
	From	To		☐M ☐T ☐W ☐T ☐F ☐S ☐S	

SECTION D – STACK DATA

Inside Diameter (ft)	Height Above Grade (ft)	Gas Temperature at Exit (°F)

Equipped with Spark Arrestor? ☐ Yes ☐ No

Exit Gas Moisture Content (%)	Gas Velocity at Exit (FPS)	Gas Volume (SCFM)

Nearest Residences or Buildings	Distance	Direction

SECTION E – AIR CONTAMINANTS EMITTED

Pollutant	Maximum Emission Rate (lb/hr)	Basis of Estimate (If emission factors are used, identify factors and sources)
Particulate (PM, PM_{10}, $PM_{2.5}$)		
Carbon Monoxide		
Hydrocarbons		
Sulfur Oxides		
Greenhouse Gases (CO_2e)		
Other – Specify		

SECTION F – TESTING

Check all of the following that apply

- ☐ Emission test is enclosed
- ☐ Emission test data have previously been submitted for this model or model series
- ☐ Incinerator/Crematory will be source tested upon completion of construction

SECTION G – PROCESS MATERIAL INFORMATION

Type of Material to be Burned (See Process Material Classification Chart - Attached)	Quantity	
	Pounds Per Hour	Tons Per Year
Type 0 Trash		
Type 1 Rubbish		
Type 2 Refuse		
Type 3 Garbage		
Type 4 Human/Animal Remains and Solid Organic Wastes		
Type 5 Gaseous, Liquid, or Semi-Liquid Wastes*		
Type 6 Semi-Solid and Solid Wastes*		
Other - Specify*		
Other - Specify*		
TOTAL		

*Describe (Include Origin, Description, and Chemical Composition)

Is this incinerator/crematory installation in compliance with all applicable State and local refuse burning, building, fire and other ordinances, codes and regulations? ☐ Yes ☐ No – Explain:

Attach additional sheets if needed to explain any answers.

INSTRUCTIONS FOR COMPLETION OF
SFN 8522
PERMIT APPLICATION FOR
INCINERATORS/CREMATORIES

GENERAL:

All new crematories and incinerators, regardless of size, type of waste, or use, are required to have a PERMIT TO CONSTRUCT and a PERMIT TO OPERATE prior to installation and operation. All existing incinerators and crematories are required to have a PERMIT TO OPERATE in order to continue operating.

PRINT OR TYPE YOUR ANSWERS ON THE FORM:

If an item does not apply, place "NA" in the appropriate space. If you have any questions about completing this form or are unsure whether the incinerator or crematory complies with the North Dakota Air Pollution Control Rules, contact the Department of Environmental Quality by mail or by telephone.

SECTION C - PURPOSE OF APPLICATION:

You may apply for a **PERMIT TO CONSTRUCT** and a **PERMIT TO OPERATE** on this form (SFN 8522) at the same time. After construction is completed and the incinerator or crematory is inspected by the Department of Environmental Quality, a **PERMIT TO OPERATE** may be issued by the Department.

SECTION D - EQUIPMENT INFORMATION:

Rated Capacity Design Criteria can be obtained from the manufacturer or from the name plate. The name plate is usually in a conspicuous place on the device.

Combustion Air

The pressure difference existing between the device or any component part and the atmosphere, which cause a continuous flow of air and products of combustion through the gas passages of the device to the atmosphere.

A. **Forced Draft** - the pressure difference created by the action of a fan, blower, or ejector, which supplied the primary combustion air above atmospheric pressure.

B. **Induced Draft** - the pressure difference created by the action of a fan, blower, or ejector, which is located between the device and the stack, or the stack exit.

C. **Natural Draft** - the pressure difference created by the stack or chimney due to its height and the temperature difference between the flue gases and the atmosphere.

D. **Starved Air** - a process based on the combustibility of smoke and gases generated by burning organic materials under controlled conditions. The burning or cooking in the absence of sufficient oxygen molecules (starved air) generates quantities of carbon monoxide and water vapor which then mix to produce a highly combustible gas. This process is maintained at a slight negative pressure in the main combustion chamber eliminating the blowing of fly ash into the stack or atmosphere. Once the gases have been produced they rise into a secondary combustion chamber where they are mixed with preheated air and complete combustion occurs.

Information on **Burner Ratings** can be found on the name plate of the burner and/or from the manufacturer or installer.

SECTION E - STACK DATA

Data can be obtained from the plans for the incinerator installation and/or from the manufacturer or installer.

SECTION F - AIR CONTAMINANTS EMITTED

Information can be obtained from emission test data and/or from the manufacturer.

The **maximum emission rate estimate** should be based on a representative emission test or on a compilation of air pollution factors (i.e. AP-42).

SECTION G - TESTING

Emission Test Data must be submitted with this application unless: (1) results have previously been submitted to the Department for this model or model series, or (2) the incinerator/crematory will be source tested upon completion.

SECTION H – PROCESS MATERIAL INFORMATION

The "Type of Material to be Burned" is based on the attached Process Material Classification Chart which is adapted from the Incinerator Institute of America Waste Classification Chart. For "Type 0" wastes containing more than 1 percent plastic and/or rubber, "Type 5" wastes, "Type 6" wastes, and "Other" wastes, the origin, a description of the waste and the chemical composition of the waste must be noted.

SEND COMPLETED APPLICATION AND ALL ATTACHMENTS TO:

North Dakota Department of Environmental Quality
Division of Air Quality
4201 Normandy Street, 2nd Floor
Bismarck, ND 58503-1324
(701) 328-5188

Process Material Classification Chart
CLASSIFICATION OF MATERIALS TO BE INCINERATED

Classification Type and Description	Principal Components	Approximate Composition % By Weight	Moisture Content %	Incombustible Solids %	Btu Value/Lb of Refuse As Fired	Btu of Auxiliary Fuel Per Pound of Material to be Included in Combustion Calculations	Recommended Minimum Btu/Hr Burner Input Per Pound of Material
*0 Trash	Highly combustible waste, paper, wood, cardboard cartons, including up to 10% treated papers, plastic or rubber scraps; commercial and industrial source.	Trash – 100%	10%	5%	8500	0	0
*1 Rubbish	Combustible waste, paper, cartons, rags, wood scraps, combustible floor sweepings; domestic, commercial, and industrial sources.	Rubbish – 80% Garbage – 20%	25%	10%	6500	0	0
*2 Refuse	Rubbish and garbage; residential sources	Rubbish – 50% Garbage – 50%	50%	7%	4300	0	1500
*3 Garbage	Animal and vegetable wastes, restaurants, hotels, markets; institutional, commercial, and club sources.	Garbage – 65% Rubbish – 35%	70%	5%	2500	1500	3000
4 Animal Solids and Organic Wastes	Human remains, carcasses, organs, solid organic wastes; hospital, laboratory, abattoirs, animal pounds, and similar sources.	Animal and Human Tissue – 100%	85%	5%	1000	3000	8000 5000 Primary 3000 Secondary
5 Gaseous Liquid or Semi-Liquid Wastes	Industrial process wastes.	Variable	Dependent Upon Predominant Components	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey
6 Semi-Solid and Solid Wastes	Combustibles requiring hearth, retort, or grate burning equipment.	Variable	Dependent Upon Predominant Components	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey	Variable According to Wastes Survey

* The above figures on moisture content, ash, and Btu as fired have been determined by analysis of many samples. They are recommended for use in computing heat release, burning rate, velocity, and other details of incinerator designs. Any design based on these calculations can accommodate minor variations.