

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **06 2 0 1 9 - 0 0 2**

Project Number: 2019-02-021
Installation Number: 071-0237

Parent Company: Midlawn Funeral Home and Memorial Gardens

Parent Company Address: 7280 Highway 47, Union, MO 63084

Installation Name: Midlawn Funeral Home and Memorial Gardens

Installation Address: 7280 Highway 47, Union, MO 63084

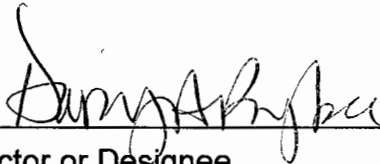
Location Information: Franklin County, S2, T42N, R1W

Application for Authority to Construct was made for:

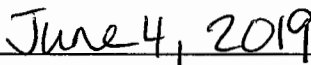
The installation of a new human crematory. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Director or Designee
Department of Natural Resources



Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of startup of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual startup of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (3)(E). "Conditions required by permitting authority."

**Midlawn Funeral Home and Memorial Gardens
Franklin County, S2, T42N, R1W**

1. **Mercury Emission Limitation**
 - A. Midlawn Funeral Home and Memorial Gardens shall emit less than 0.01 tons of mercury from the human crematory (EP-01) in any consecutive 12-month period.
 - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A.
2. **Operational Limitations for the Human Crematory (EP-01)**
 - A. Midlawn Funeral Home and Memorial Gardens shall burn exclusively non-infectious human bodies or body parts (as defined in the Installation Description) and caskets not containing chlorine.
 - B. Charging of waste during burn cycles is prohibited.
 - C. The crematory shall be equipped with a continuous digital temperature recorder that monitors, displays, and records the temperature in the final combustion chamber with an accuracy of two percent ($\pm 2\%$).
 - D. Midlawn Funeral Home and Memorial Gardens shall maintain the temperature in the final combustion chamber at or above 1600 degrees Fahrenheit.
 - E. The incinerator (EP-01) shall have an opacity of less than ten percent (10%) at all times in order to meet the opacity standards of good engineering practices. Within the first 60 days of startup, an opacity of less than ten percent (10%) shall be determined by an observer performing EPA Reference Method 9, Visual Determination of the Opacity of Emissions from Stationary Sources.
 - F. Midlawn Funeral Home and Memorial Gardens shall maintain an accurate record of the number of cremations and the total mass of remains cremated at this installation per month.

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. Requirements for Operators of the Human Crematory (EP-01)

- A. All crematory operators shall attend a training program equivalent to that developed by the American Society of Mechanical Engineers (ASME), by the crematory manufacturer, or by an individual with more than one (1) year experience in the operation of the crematory. The training shall include basic combustion theory, operating procedures, monitoring of combustion control parameters, and all emergency procedures to be followed if the crematory should malfunction or exceed operating parameters.
- B. The crematory operator shall have the essential steps necessary for satisfactory operation of the crematory readily available to him or her in an easy to read and follow manual.

4. Restriction of Emission of Odors

If a continued situation of verified nuisance odors exists in violation of 10 CSR 10-6.165, the Director may require through written notice that Midlawn Funeral Home and Memorial Gardens submit within ten days a corrective action plan adequate to timely and significantly mitigate the odors. Midlawn Funeral Home and Memorial Gardens shall implement any such plan immediately upon its approval by the Director. Failure to either submit or implement such a plan shall be in violation of this permit.

5. Record Keeping and Reporting Requirements

- A. Midlawn Funeral Home and Memorial Gardens shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
- B. Midlawn Funeral Home and Memorial Gardens shall report to the Air Pollution Control Program's Compliance/Enforcement Section, by mail at P.O. Box 176, Jefferson City, MO 65102 or by e-mail at AirComplianceReporting@dnr.mo.gov, no later than 10 days after the end of the month during which any record required by this permit shows an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2019-02-021
Installation ID Number: 071-0237
Permit Number: 06 2 0 1 9 - 0 0 2

Installation Address:

Midlawn Funeral Home and Memorial
Gardens
7280 Highway 47
Union, MO 63084

Parent Company:

Midlawn Funeral Home and Memorial
Gardens
7280 Highway 47
Union, MO 63084

Franklin County, S2, T42N, R1W

REVIEW SUMMARY

- Midlawn Funeral Home and Memorial Gardens has applied for authority to construct a human crematory.
- The application was deemed complete on February 25, 2019.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process are from the combustion of remains and the combustion of natural gas used to fuel the incinerator/cremator as listed in Table 2.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
 - NSPS Subpart CCCC & Subpart EEEE do not apply to this installation because the permitted incinerator is not classified as commercial, industrial, or medical; furthermore, exclusively non-hazardous waste, in the form of human remains, will be burned.
- A secondary combustion chamber is being used to control the emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels. Potential emissions of Mercury (Hg) are conditioned below its SMAL. All other remaining pollutants are below their de minimis levels.

- This installation is located in Franklin County, a nonattainment area for the 8-hour ozone standard and an attainment/nonclassifiable area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels and conditioned below the SMALs.
- Method 9 opacity testing applies to this project
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Midlawn Funeral Home and Memorial Gardens is established in Union, Missouri. This installation provides human cremation services for those who seek this service in lieu of earth burial. No previous permits have been issued to Midlawn Funeral Home and Memorial Gardens from the Air Pollution Control Program.

PROJECT DESCRIPTION

Midlawn Funeral Home and Memorial Gardens is installing a Cremation Systems CFS 2300 exclusively fueled by natural gas. The CFS 2300 is a crematory furnace with a single main chamber and an afterburner chamber that will be used to incinerate human remains including the casket material, which is typically made of wood or cardboard. Products of combustion from the main chamber flow into a U-shaped afterburner chamber located beneath the main chamber. Any combustible gases produced in the main chamber are combusted in the afterburner chamber. Additional air is added into the afterburner chamber as required when smoke is detected by the opacity monitor located at the entry to the flue. The opacity monitor will not be used for regulatory compliance, but rather Method 9 opacity testing will be conducted.

The crematory will be permitted to cremate non-infectious human bodies and body parts, as well as the associated casket. The Air Pollution Control Program's definition of this term is human bodies and body parts that do not fit the definition of medical/infectious waste as defined in the Code of Federal Regulations, 40 CFR 60.51, *Standards of Performance for New Stationary Sources*, Subpart Ec—"Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996." The rule defines medical/infectious waste as:

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that are listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in §261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment; and domestic sewage materials identified in §261.4(a)(1) of this chapter.

- (1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.
- (2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.
- (3) Human blood and blood products including:
 - (i) Liquid waste human blood;
 - (ii) Products of blood;
 - (iii) Items saturated and/or dripping with human blood; or
 - (iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.
- (4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.
- (5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.
- (6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

- (7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.”

Midlawn Funeral Home and Memorial Gardens supplied the Air Pollution Control Program with stack testing data courtesy of Cremation Systems that was conducted by TRC. This stack data has led to the approval of the CFS 2300 model crematory in the State of Missouri so long as Special Condition 2.E. is met.

EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the Environmental Protection Agency (EPA) website, WebFIRE, which lists data from document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition. The emission rates for PM, carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides (NO_x), Mercury (Hg) and Volatile Organic Compounds (VOC) were calculated using emission factors from the performance tests conducted by TRC for this model of incinerator. PM₁₀ and PM_{2.5} were assumed to be equal to PM.

Because the emissions provided in the performance tests submitted by TRC did not account for all potentially emitted HAPs, the emission factors used in the analysis of combined HAPs were also obtained from FIRE for SCC 3-15-021-01. The composite emission factor of HAPs listed in FIRE is 0.034 pounds of HAP per body cremated. Emissions due to the combustion of natural gas in the two burners (0.75 MMBtu/hr and 1.60 MMBtu/hr) are based on continuous operations, and are accounted for in the submitted performance test results. The recorded testing consisted of 3 different tests. The first two tests lasted 51 minutes and burned 271 lbs of human remains and the third test lasted 50 minutes and burned 300 lbs composed of human remains and wooden casket. Table 1 lists the emission rates that were derived from the performance test conducted by TRC and used in the calculations of potential emissions of this project.

Table1: Provided Emission Rates

Pollutant ¹	Emission Rate (lb/hr)
PM	0.13
SO _x	0.09
NO _x	0.34
VOC	0.005
CO	0.01
CO ₂	224

¹Emission factors for pollutants that are not listed in Table 1 were taken from FIRE for SCC 3-15-021-01.

Table 2 lists the emissions summary of this construction permit application for this new installation. Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year.) New installation conditioned potential emissions account for the 0.01 tons per year mercury emission limit taken by the facility to avoid screening model requirements. PM emissions are based off of the worst-case scenario, and thus all PM emissions are considered to be PM_{2.5}, PM₁₀, and PM. The following table provides an emissions summary for this project.

Table 2: Emissions Summary (tpy)

Pollutant	Regulatory De Minimis Levels	Existing Potential Emissions	Existing Actual Emissions (EIQ)	Potential Emissions of the Project	Conditioned Potential Emissions of the Application
PM	25.0	N/A	N/A	0.569	0.395
PM ₁₀	15.0	N/A	N/A	0.569	0.395
PM _{2.5}	10.0	N/A	N/A	0.569	0.395
SO _x	40.0	N/A	N/A	0.394	0.274
NO _x	40.0	N/A	N/A	1.489	1.033
VOC	40.0	N/A	N/A	0.022	0.015
CO	100.0	N/A	N/A	0.044	0.030
GHG (CO ₂ e)	N/A	N/A	N/A	981.120	680.851
GHG (mass)	N/A	N/A	N/A	981.120	680.851
*HAPs	25.0	N/A	N/A	0.334	0.232
<i>Mercury (Hg)</i>	10/0.01	N/A	N/A	0.014	< 0.01
<i>HCL</i>	10/10	N/A	N/A	0.315	0.219

N/A = Not Applicable; N/D = Not Determined; *Individual HAPs listed in italics, and respective SMALs are in column 2.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of Mercury (Hg) are conditioned below its SMAL. All other remaining pollutants are below their de minimis levels.

APPLICABLE REQUIREMENTS

Midlawn Funeral Home and Memorial Gardens shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Start-Up, Shutdown, and Malfunction Conditions*, 10 CSR 10-6.050
- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
 - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.

- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 4th, 2019, received February 11, 2019, designating Midlawn Funeral Home and Memorial Gardens as the owner and operator of the installation.

Attachment A - Mercury Compliance Worksheet

Midlawn Funeral Home and Memorial Gardens

Franklin County, S2, T42N, R1W

Project Number: 2019-02-021

Installation ID Number: 071-0237

Permit Number: ~~06-2019-002~~

This sheet covers the period from _____ to _____
(month, year) (month, year)

Date (month/year)	Number of Cremations	Mercury Emission Factor (lbs/body)	Monthly Mercury Emissions ¹ (tons)	SSM Mercury Emissions ² (tons)	12-Month Rolling Mercury Emissions ³ (tons/year)
<i>Example</i>	30	0.00329	4.9×10^{-5}	0.0	$4.9 \times 10^{-5} + 0.0 + \text{Previous 12 month's emissions}$
		0.00329			
		0.00329			
		0.00329			
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¹The Monthly Emissions (tons) are calculated by multiplying the number of cremations by the Emission Factor (lbs/body), and then dividing that number by 2000 lbs/ton.
²As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050 for the month
³The 12-Month Emissions (tons/year) are a rolling total calculated by adding the Month's Emissions (tons) to the Monthly Emissions (tons) of the previous eleven (11) months. A total of less than **0.01** tons in any consecutive 12-month period indicates compliance

APPENDIX A

Abbreviations and Acronyms

%percent	Mgal1,000 gallons
°Fdegrees Fahrenheit	MWmegawatt
acfmactual cubic feet per minute	MHDRmaximum hourly design rate
BACT Best Available Control Technology	MMBtuMillion British thermal units
BMPsBest Management Practices	MMCFmillion cubic feet
BtuBritish thermal unit	MSDSMaterial Safety Data Sheet
CAM Compliance Assurance Monitoring	NAAQSNational Ambient Air Quality Standards
CAS Chemical Abstracts Service	NESHAPs National Emissions Standards for Hazardous Air Pollutants
CEMS Continuous Emission Monitor System	NO_xnitrogen oxides
CFR Code of Federal Regulations	NSPSNew Source Performance Standards
COcarbon monoxide	NSRNew Source Review
CO₂carbon dioxide	PMparticulate matter
CO_{2e}carbon dioxide equivalent	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COMS Continuous Opacity Monitoring System	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CSR Code of State Regulations	ppmparts per million
dscfdry standard cubic feet	PSDPrevention of Significant Deterioration
EIQEmission Inventory Questionnaire	PTEpotential to emit
EP Emission Point	RACTReasonable Available Control Technology
EPA Environmental Protection Agency	RALRisk Assessment Level
EU Emission Unit	SCCSource Classification Code
fpsfeet per second	scfmstandard cubic feet per minute
ft feet	SDSSafety Data Sheet
GACT Generally Available Control Technology	SICStandard Industrial Classification
GHG Greenhouse Gas	SIPState Implementation Plan
gpmgallons per minute	SMALScreening Model Action Levels
grgrains	SO_xsulfur oxides
GWP Global Warming Potential	SO₂sulfur dioxide
HAPHazardous Air Pollutant	SSMStartup, Shutdown & Malfunction
hrhour	tphtons per hour
hphorsepower	tpytons per year
lbpound	VMTvehicle miles traveled
lbs/hrpounds per hour	VOC Volatile Organic Compound
MACT Maximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ACETALDEHYDE	75-07-0	9		Y	N	CHLOROMETHYL METHYL ETHER	107-30-2	0.1		Y	N
ACETAMIDE	60-35-5	1		Y	N	CHLOROPRENE	126-99-8	1		Y	N
ACETONITRILE	75-05-8	4		Y	N	CHROMIUM (VI) COMPOUNDS		0.002	L	N	Y
ACETOPHENONE	98-86-2	1		Y	N	CHROMIUM COMPOUNDS		5	L	N	Y
ACETYLAMINOFLUORINE, [2-]	53-96-3	0.005	V	Y	Y	CHRYSENE	218-01-9	0.01	V	Y	N
ACROLEIN	107-02-8	0.04		Y	N	COBALT COMPOUNDS		0.1	M	N	Y
ACRYLAMIDE	79-06-1	0.02		Y	N	COKE OVEN EMISSIONS	8007-45-2	0.03	N	Y	N
ACRYLIC ACID	79-10-7	0.6		Y	N	CRESOL, [META-]	108-39-4	1	B	Y	N
ACRYLONITRILE	107-13-1	0.3		Y	N	CRESOL, [ORTHO-]	95-48-7	1	B	Y	N
ALLYL CHLORIDE	107-05-1	1		Y	N	CRESOL, [PARA-]	106-44-5	1	B	Y	N
AMINOBIIPHENYL, [4-]	92-67-1	1	V	Y	N	CRESOLS (MIXED ISOMERS)	1319-77-3	1	B	Y	N
ANILINE	62-53-3	1		Y	N	CUMENE	98-82-8	10		Y	N
ANISIDINE, [ORTHO-]	90-04-0	1		Y	N	CYANIDE COMPOUNDS		0.1	O	Y	N
ANTHRACENE	120-12-7	0.01	V	Y	N	DDE	72-55-9	0.01	V	Y	Y
ANTIMONY COMPOUNDS		5	H	N	Y	DI(2-ETHYLHEXYL) PHTHALATE, (DEHP)	117-81-7	5		Y	N
ANTIMONY PENTAFLUORIDE	7783-70-2	0.1	H	N	Y	DIAMINOTOLUENE, [2,4-]	95-80-7	0.02		Y	N
ANTIMONY POTASSIUM TARTRATE	28300-74-5	1	H	N	Y	DIAZOMETHANE	334-88-3	1		Y	N
ANTIMONY TRIOXIDE	1309-64-4	1	H	N	Y	DIBENZ(A,H)ANTHRACENE	53-70-3	0.01	V	Y	N
ANTIMONY TRISULFIDE	1345-04-6	0.1	H	N	Y	DIOXINS/FURANS		6E-07	D,V	Y	N
ARSENIC COMPOUNDS		0.005	I	N	Y	DIBENZOFURAN	132-64-9	5	V	Y	N
ASBESTOS	1332-21-4	0	A	N	Y	DIBROMO-3-CHLOROPROPANE, [1,2-]	96-12-8	0.01		Y	N
BENZ(A)ANTHRACENE	56-55-3	0.01	V	Y	N	DIBROMOETHANE, [1,2-]	106-93-4	0.1		Y	N
BENZENE	71-43-2	2		Y	N	DIBUTYL PHTHALATE	84-74-2	10		Y	Y
BENZIDINE	92-87-5	0.0003	V	Y	N	DICHLOROBENZENE, [1,4-]	106-46-7	3		Y	N
BENZO(A)PYRENE	50-32-8	0.01	V	Y	N	DICHLOROBENZIDENE, [3,3-]	91-94-1	0.2	V	Y	Y
BENZO(B)FLUORANTHENE	205-99-2	0.01	V	Y	N	DICHLOROETHANE, [1,1-]	75-34-3	1		Y	N
BENZO(K)FLUORANTHENE	207-08-9	0.01	V	Y	N	DICHLOROETHANE, [1,2-]	107-06-2	0.8		Y	N
BENZOTRICHLORIDE	98-07-7	0.006		Y	N	DICHLOROETHYLENE, [1,1-]	75-35-4	0.4		Y	N
BENZYL CHLORIDE	100-44-7	0.1		Y	N	DICHLOROMETHANE	75-09-2	10		N	N
BERYLLIUM COMPOUNDS		0.008	J	N	Y	DICHLOROPHENOXY ACETIC ACID, [2,4-]	94-75-7	10	C	Y	Y
BERYLLIUM SALTS		2E-05	J	N	Y	DICHLOROPROPANE, [1,2-]	78-87-5	1		Y	N
BIPHENYL, [1,1-]	92-52-4	10	V	Y	N	DICHLOROPROPENE, [1,3-]	542-75-6	1		Y	N
BIS(CHLOROETHYL)ETHER	111-44-4	0.06		Y	N	DICHLOROVOS	62-73-7	0.2		Y	N
BIS(CHLOROMETHYL)ETHER	542-88-1	0.0003		Y	N	DIETHANOLAMINE	111-42-2	5		Y	N
BROMOFORM	75-25-2	10		Y	N	DIETHYL SULFATE	64-67-5	1		Y	N
BROMOMETHANE	74-83-9	10		Y	N	DIETHYLENE GLYCOL MONOBUTYL ETHER	112-34-5	5	P	Y	N
BUTADIENE, [1,3-]	106-99-0	0.07		Y	N	DIMETHOXYBENZIDINE, [3,3-]	119-90-4	0.1	V	Y	Y
BUTOXYETHANOL ACETATE, [2-]	112-07-2	5	P	Y	N	DIMETHYL BENZIDINE, [3,3-]	119-93-7	0.008	V	Y	Y
BUTYLENE OXIDE, [1,2-]	106-88-7	1		Y	N	DIMETHYL CARBAMOYL CHLORIDE	79-44-7	0.02		Y	N
CADMIUM COMPOUNDS		0.01	K	N	Y	DIMETHYL FORMAMIDE	68-12-2	1		Y	N
CALCIUM CYANAMIDE	156-62-7	10		Y	Y	DIMETHYL HYDRAZINE, [1,1-]	57-14-7	0.008		Y	N
CAPROLACTAM (Delisted)	105-60-2					DIMETHYL PHTHALATE	131-11-3	10		Y	N
CAPTAN	133-06-2	10		Y	Y	DIMETHYL SULFATE	77-78-1	0.1		Y	N
CARBARYL	63-25-2	10	V	Y	Y	DIMETHYLAMINOAZOBENZENE, [4-]	60-11-7	1		Y	N
CARBON DISULFIDE	75-15-0	1		Y	N	DIMETHYLANILINE, [N-N-]	121-69-7	1		Y	N
CARBON TETRACHLORIDE	56-23-5	1		Y	N	DINITRO-O-CRESOL, [4,6-] (Note 6)	534-52-1	0.1	E	Y	Y
CARBONYL SULFIDE	463-58-1	5		Y	N	DINITROPHENOL, [2,4-]	51-28-5	1		Y	N
CATECHOL	120-80-9	5		Y	N	DINITROTOLUENE, [2,4-]	121-14-2	0.02		Y	N
CHLORAMBEN	133-90-4	1		Y	Y	DIOXANE, [1,4-]	123-91-1	6		Y	N
CHLORDANE	57-74-9	0.01		Y	Y	DIPHENYLHYDRAZINE, [1,2-]	122-66-7	0.09	V	Y	Y
CHLORINE	7782-50-5	0.1		N	N	DIPHENYLMETHANE DIISOCYANATE, [4,4-]	101-68-8	0.1	V	Y	N
CHLOROACETIC ACID	79-11-8	0.1		Y	N	EPICHLOROHYDRIN	106-89-8	2		Y	N
CHLOROACETOPHENONE, [2-]	532-27-4	0.06		Y	N	ETHOXYETHANOL, [2-]	110-80-5	10	P	Y	N
CHLOROENZENE	108-90-7	10		Y	N	ETHOXYETHYL ACETATE, [2-]	111-15-9	5	P	Y	N
CHLOROBENZILATE	510-15-6	0.4	V	Y	Y	ETHYL ACRYLATE	140-88-5	1		Y	N
CHLOROFORM	67-66-3	0.9		Y	N	ETHYL BENZENE	100-41-4	10		Y	N

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
ETHYL CHLORIDE	75-00-3	10		Y	N	NITROBENZENE	98-95-3	1		Y	N
ETHYLENE GLYCOL	107-21-1	10		Y	N	NITROBIPHENYL, [4-]	92-93-3	1	V	Y	N
ETHYLENE GLYCOL MONOBUTYL ETHER (Delisted)	111-76-2					NITROPHENOL, [4-]	100-02-7	5		Y	N
ETHYLENE GLYCOL MONOHEXYL ETHER	112-25-4	5	P	Y	N	NITROPROPANE, [2-]	79-46-9	1		Y	N
ETHYLENE IMINE [AZIRIDINE]	151-56-4	0.003		Y	N	NITROSODIMETHYLAMINE, [N-]	62-75-9	0.001		Y	N
ETHYLENE OXIDE	75-21-8	0.1		Y	N	NITROSOMORPHOLINE, [N-]	59-89-2	1		Y	N
ETHYLENE THIOUREA	96-45-7	0.6		Y	Y	NITROSO-N-METHYLUREA, [N-]	684-93-5	0.0002		Y	N
FORMALDEHYDE	50-00-0	2		Y	N	OCTACHLORONAPHTHALENE	2234-13-1	0.01	V	Y	N
GLYCOL ETHER (ETHYLENE GLYCOL ETHERS)		5	P	Y	N	PARATHION	56-38-2	0.1		Y	Y
GLYCOL ETHER (DIETHYLENE GLYCOL ETHERS)		5	P	Y	N	PCB [POLYCHLORINATED BIPHENYLS]	1336-36-3	0.009	X	Y	Y
HEPTACHLOR	76-44-8	0.02		Y	N	PENTACHLORONITROBENZENE	82-88-8	0.3		Y	N
HEXACHLORO BENZENE	118-74-1	0.01		Y	N	PENTACHLOROPHENOL	87-86-5	0.7		Y	N
HEXACHLOROBUTADIENE	87-68-3	0.9		Y	N	PHENOL	108-95-2	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [ALPHA-]	319-84-6	0.01	F	Y	N	PHENYLENEDIAMINE, [PARA-]	106-50-3	10		Y	N
HEXACHLOROCYCLOHEXANE, [BETA-]	319-85-7	0.01	F	Y	N	PHOSGENE	75-44-5	0.1		Y	N
HEXACHLOROCYCLOHEXANE, [DELTA-]	319-86-8	0.01	F	Y	N	PHOSPHINE	7803-51-2	5		N	N
HEXACHLOROCYCLOHEXANE, [TECHNICAL]	608-73-1	0.01	F	Y	N	PHOSPHOROUS (YELLOW OR WHITE)	7723-14-0	0.1		N	N
HEXACHLOROCYCLOPENTADIENE	77-47-4	0.1		Y	N	PHTHALIC ANHYDRIDE	85-44-9	5		Y	N
HEXACHLOROETHANE	67-72-1	5		Y	N	POLYCYLIC ORGANIC MATTER		0.01	V	Y	N
HEXAMETHYLENE,-1,6-DIISOCYANATE	822-06-0	0.02		Y	N	PROPANE SULTONE, [1,3-]	1120-71-4	0.03		Y	Y
HEXAMETHYLPHOSPHORAMIDE	680-31-9	0.01		Y	N	PROPIOLACTONE, [BETA-]	57-57-8	0.1		Y	N
HEXANE, [N-]	110-54-3	10		Y	N	PROPIONALDEHYDE	123-38-6	5		Y	N
HYDRAZINE	302-01-2	0.004		N	N	PROPOXUR [BAYGON]	114-26-1	10		Y	Y
HYDROGEN CHLORIDE	7647-01-0	10		N	N	PROPYLENE OXIDE	75-56-9	5		Y	N
HYDROGEN FLUORIDE	7664-39-3	0.1		N	N	PROPYLENEIMINE, [1,2-]	75-55-8	0.003		Y	N
HYDROQUINONE	123-31-9	1		Y	N	QUINOLINE	91-22-5	0.006		Y	N
INDENO(1,2,3CD)PYRENE	193-39-5	0.01	V	Y	N	QUINONE	106-51-4	5		Y	N
ISOPHORONE	78-59-1	10		Y	N	RADIONUCLIDES		Note 1	Y	N	Y
LEAD COMPOUNDS		0.01	Q	N	Y	SELENIUM COMPOUNDS		0.1	W	N	Y
LINDANE [GAMMA-HEXACHLOROCYCLOHEXANE]	58-89-9	0.01	F	Y	N	STYRENE	100-42-5	1		Y	N
MALEIC ANHYDRIDE	108-31-6	1		Y	N	STYRENE OXIDE	96-09-3	1		Y	N
MANGANESE COMPOUNDS		0.8	R	N	Y	TETRACHLORODIBENZO-P-DIOXIN,[2,3,7,8]	1746-01-6	6E-07	D,V	Y	Y
MERCURY COMPOUNDS		0.01	S	N	N	TETRACHLOROETHANE, [1,1,2,2-]	79-34-5	0.3		Y	N
METHANOL	67-56-1	10		Y	N	TETRACHLOROETHYLENE	127-18-4	10		N	N
METHOXYCHLOR	72-43-5	10	V	Y	Y	TITANIUM TETRACHLORIDE	7550-45-0	0.1		N	N
METHOXYETHANOL, [2-]	109-86-4	10	P	Y	N	TOLUENE	108-88-3	10		Y	N
METHYL CHLORIDE	74-87-3	10		Y	N	TOLUENE DIISOCYANATE, [2,4-]	584-84-9	0.1		Y	N
METHYL ETHYL KETONE (Delisted)	78-93-3					TOLUIDINE, [ORTHO-]	95-53-4	4		Y	N
METHYL HYDRAZINE	60-34-4	0.06		Y	N	TOXAPHENE	8001-35-2	0.01		Y	N
METHYL IODIDE	74-88-4	1		Y	N	TRICHLORO BENZENE, [1,2,4-]	120-82-1	10		Y	N
METHYL ISOBUTYL KETONE	108-10-1	10		Y	N	TRICHLOROETHANE, [1,1,1-]	71-55-6	10		N	N
METHYL ISOCYANATE	624-83-9	0.1		Y	N	TRICHLOROETHANE, [1,1,2-]	79-00-5	1		Y	N
METHYL METHACRYLATE	80-62-6	10		Y	N	TRICHLOROETHYLENE	79-01-6	10		Y	N
METHYL TERT-BUTYL ETHER	1634-04-4	10		Y	N	TRICHLOROPHENOL, [2,4,5-]	95-95-4	1		Y	N
METHYLCYCLOPENTADIENYL MANGANESE	12108-13-3	0.1	R	N	Y	TRICHLOROPHENOL, [2,4,6-]	88-06-2	6		Y	N
METHYLENE BIS(2-CHLOROANILINE), [4,4-]	101-14-4	0.2	V	Y	Y	TRIETHYLAMINE	121-44-8	10		Y	N
METHYLENEDIANILINE, [4,4-]	101-77-9	1	V	Y	N	TRIFLURALIN	1582-09-8	9		Y	Y
METHYLNAPHTHALENE, [2-]	91-57-6	0.01	V	Y	N	TRIMETHYLPENTANE, [2,2,4-]	540-84-1	5		Y	N
MINERAL FIBERS		0	T	N	Y	URETHANE [ETHYL CARBAMATE]	51-79-6	0.8		Y	N
NAPHTHALENE	91-20-3	10	V	Y	N	VINYL ACETATE	108-05-4	1		Y	N
NAPHTHYLAMINE, [ALPHA-]	134-32-7	0.01	V	Y	N	VINYL BROMIDE	593-60-2	0.6		Y	N
NAPHTHYLAMINE, [BETA-]	91-59-8	0.01	V	Y	N	VINYL CHLORIDE	75-01-4	0.2		Y	N
NICKEL CARBONYL	13463-39-3	0.1	U	N	Y	XYLENE, [META-]	108-38-3	10	G	Y	N
NICKEL COMPOUNDS		1	U	N	Y	XYLENES (MIXED ISOMERS)	1330-20-7	10	G	Y	N
NICKEL REFINERY DUST		0.08	U	N	Y						
NICKEL SUBSULFIDE	12035-72-2	0.04	U	N	Y						

Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM	Chemical	CAS #	SMAL tons/yr	Group ID	VOC	PM
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Legend	
Group ID	
A	Asbestos
B	Cresols/Cresylic Acid (isomers and mixtures)
C	2,4 - D, Salts and Esters
D	Dibenzofurans, Dibenzodioxins
E	4, 6 Dinitro-o-cresol, and Salts
F	Lindane (all isomers)
G	Xylenes (all isomers and mixtures)
H	Antimony Compounds
I	Arsenic Compounds
J	Beryllium Compounds
K	Cadmium Compounds
L	Chromium Compounds
M	Cobalt Compounds
N	Coke Oven Emissions
O	Cyanide Compounds
P	Glycol Ethers
Q	Lead Compounds (except elemental Lead)
R	Manganese Compounds
S	Mercury Compounds
T	Fine Mineral Fibers
U	Nickel Compounds
V	Polycyclic Organic Matter
W	Selenium Compounds
X	Polychlorinated Biphenyls (Aroclors)
Y	Radionuclides
Notes	The SMAL for radionuclides is defined as the effective dose equivalent to 0.3 millirems per year for 7 years exposure associated with a cancer risk of 1 in 1 million

WebFIRE

SCC	31502101	
Pollutant	Mercury	
EF	0.00329	lb/body
Burn Rate	150	lbs/hr
Max Run Time	8760	hrs/yr
Hg/year	28.8204	lb/yr
Hg/year	0.0144102	tpy

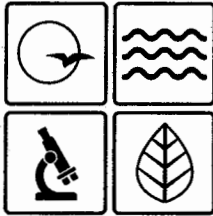
Conditioned Run Time
Conditioned Bodys/yr:

6079.027356
6079.027356

Pollutant ¹	Emission Rate (lb/hr)	Emission Rate (tpy)
PM	0.13	0.569
SOx	0.09	0.394
NOx	0.34	1.489
VOC	0.005	0.022
CO	0.01	0.044
CO ₂	224	981.120
HAPs	0.0762	0.334
Hg	0.00329	0.014

Conditioned Emission Rate (tpy)
0.395
0.274
1.033
0.015
0.030
680.851
0.232
0.010

PM	0.028	0.006393
PM ₁₀	0.028	0.006393
PM _{2.5}	0.028	0.006393
SOx	0.047	0.010731
NOx	0.245	0.055936
VOC	0.154	0.03516
CO	0.004	0.000913
HAPs	0.15	0.034247
*Mercury (Hg)	0.014	0.003196



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Carol S. Comer, Director

JUN 07 2019

Mr. Gary Willingham
President
Midlawn Funeral Home and Memorial Gardens
7280 Highway 47
Union, MO 63084

RE: New Source Review Permit - Project Number: 2019-02-021

Dear Mr. Willingham:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, and your new source review permit application is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.oa.mo.gov/ahc.



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If you have any questions regarding this permit, please do not hesitate to contact Dakota Fox at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Halo for

Susan Heckenkamp
New Source Review Unit Chief

SH:dfj

Enclosures

c: St. Louis Regional Office
PAMS File: 2019-02-021

Permit Number: **06 2 0 1 9 - 0 0 2**