STATEMENT OF BASIS

For the issuance of Air Permit #1976-AGP-000 AFIN: Statewide

1. PERMITTING AUTHORITY:
Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Qualifying Animal/Human Remains Incinerator Facilities

3. PERMIT WRITER:

Alexander Sudibjo

4. NAICS DESCRIPTION AND CODE:

NAICS Description:
NAICS Code:

5. SUBMITTALS:

Date of Submittal	Type of Permitting Action (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
Not Applicable	Renewal	None

6. REVIEWER'S NOTES:

This is the 5th renewal for this General Permit. This renewal adds total HAPs emissions based on EPA 2020 National Emissions Inventory Technical Support Document: Cremation and updates the language of the General Conditions. Total allowable emissions are increasing by 7.68 tpy total HAPs.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

Not Applicable – This is a General Permit.

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8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? N

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
N/A		

10. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
N/A		

11. EMISSION CHANGES AND FEE CALCULATION:

Plantwide Permitted Emissions (tons/yr)			
Pollutant	Previous Permit	This Permit	Change
PM	9.9	9.9	0
PM_{10}	9.9	9.9	0
SO_2	4.8	4.8	0
VOC	0.7	0.7	0
CO	6.4	6.4	0
NO_X	7.7	7.7	0
Total HAPs	0	7.68	7.68

12. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

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a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m^3)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Mercury Elemental	0.025	0.0028	0.093	No

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL ($\mu g/m^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu g/m^3$)	Pass?
Mercury Elemental	0.25	0.01	Yes

Mercury was modeled in previous renewals. The following is the discussion provided in previous Statement of Basis.

Modeling Discussion:

The modeling was performed using the following data:

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Facility location: 155 Section Line Road, Hot springs, AR 71913
UTM coordinates: X = 493937.58 m; Y = 3813703.11 m
Stack height: 20 ft
Inside stack dimensions: 2.3 ft
Stack gas temperature: 1413^0 F
Stack gas velocity: 756 ft/sec
Fence line was not used in the modeling
Emission rate: 0.093 lb/hr
50 meters receptor grid
24-HR maximum modeled concentration is at 474.34 m from stack location

c) H_2S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H_2S Standards Y
If exempt, explain: the facility does not have H_2S emissions.

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
Each Unit	AP-42, 2.3 Med. Waste Incinerator	lb/ton PM= 4.7 PM_{10}= 3.1 SO_2= 2.2 VOC= 0.3 CO= 3.0 NO_x= 3.6	N/A	N/A	Emission factor uncontrolled. 4250 tpy waste combusted (to keep below 10 tpy emission of PM)
	EPA 2020 National Inventory Technical Support Document: Cremation – Human and Animal	Total HAPs: 3.61 lb/ton	N/A	N/A	
Each Unit (Mercury calculation)	Bay Area Air Quality Management District (BAAQMD) Permit Handbook and Study: ‘’Mercury Emissions from the	Annual average of Mercury emission: 3.4 E-03 lb/body	N/A	N/A	Calculation was done based on: 4250 ton/year of combusted waste, assumed body average of 150 lbs, and annual average

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SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
	Crematory of Human Remains'' September 24, 2012, by jane Lundquist.				hours of operation of 2080 hrs.

Emission Calculations

Waste: Based on 4250 tpy waste burned

PM/PM_{10}	4250 tpy waste x 4.7 lb/ton waste = 19975 lbs PM/PM_{10}	(9.9 tons)
SO_2	4250 tpy waste x 2.2 lb/ton waste = 9350 lbs SO_2	(4.7 tons)
VOC	4250 tpy waste x 0.3 lb/ton waste = 1275 lbs VOC	(0.63 tons)
CO	4250 tpy waste x 3.0 lb/ton waste = 12750 lbs CO	(6.3 tons)
NO_X	4250 tpy waste x 3.6 lb/ton waste = 15300 lbs NO_X	(7.65 tons)

SO_2 set at 9.9 tpy. 9.9 tpy – 4.7 tpy = 5.1 tpy = 10,200 lb/year
10,200 lb/yr /(142lb*0.0015% S in diesel/(10^3Gallons) = 478 million gallons
This number greatly exceeds usage to consume the 4250 tpy production. No permit limits were applied for liquid fuels as was done in the past.

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
Every Source	PM	5	Initial	8 CAR § 40-902 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311

15. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

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SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
All	Temperature	Continuous Temperature Monitor	During Operation	N

16. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
All	Secondary Combustion Chamber Temperature	Minimum of 1600 °F	Start and Mid-Cycle	N
All	Date and Time of Charge	No Limit	Each Charge	N
All	Weight of Charge	Not to exceed unit design capacity	Each Charge	N
All	Process Rate	Not to exceed unit design capacity	After Complete Cycle	N
All	Opacity	5%	Weekly	N
All	Design Capacity	25 ton/day total	As needed	N

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
Facility	5%	8 CAR § 40-401 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311	Weekly observation

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

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19. GROUP A INSIGNIFICANT ACTIVITIES:

The insignificant activities will be detailed in the Notice of Intent.

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
All Previously Issued Permits

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