



Air Quality Permitting Statement of Basis

August 26, 2003

Project No. P-030115

Coeur d'Alene Memorial Gardens, Coeur d'Alene

AIRS Facility No. 055-00026

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Final

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Acronyms, Units, and Chemical Nomenclatures

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
CO	carbon monoxide
DEQ	Department of Environmental Quality
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
lb/hr	pound per hour
MACT	Maximum Achievable Control Technology
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM ₁₀	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
<i>Rules</i>	<i>Rules for the Control of Air Pollution in Idaho</i>
SIP	State Implementation Plan
SO ₂	sulfur dioxide
T/yr	Tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, *Rules for the Control of Air Pollution in Idaho*, for issuing permits to construct.

PROJECT DESCRIPTION

Coeur d'Alene Memorial Gardens recently changed ownership. They had no record of the permit to construct or exemption, and requested that a new one be issued in their name.

FACILITY DESCRIPTION

This facility is a crematory with Industrial Equipment and Engineering Model IE-43 Power Pak cremator unit.

SUMMARY OF EVENTS

May 23, 2003 DEQ received a request from Coeur d'Alene Memorial Gardens to have the permit to construct or exemption issued to the new owner.

June 5, 2003 DEQ requested additional information about the cremator's emissions.

June 17, 2003 DEQ received information regarding the cremator's emissions.

June 26, 2003 DEQ received all of the information necessary to process the permit.

PERMIT HISTORY

This facility was previously permitted, however DEQ does not have records of the previous permit history. Therefore, DEQ staff have updated the technical analysis to show that the facility complies with all applicable rules and regulations.

TECHNICAL ANALYSIS

Emission Estimates

Emissions were estimated based on a source test from a similar unit. The emissions calculations submitted by the applicant are included in the appendix. Emissions of all criteria pollutants are less than 10% of their applicable significant emissions rates when operating uncontrolled. Based on information supplied to the applicant from the vendor, the equipment is capable of 800 cremations per year. The applicant only expects to use the equipment once per day. This equipment existed prior to the states toxic air pollutant rules. Therefore, no toxic pollutant analysis was performed.

Modeling

The ambient concentrations for criteria pollutants from this facility were estimated with the Screen3 model. The modeling analysis assumed 24-hours per day and 2,400 hours per year. The resulting concentrations did not exceed any National Ambient Air Quality Standards. A summary of the modeling analysis and the Screen3 output is included in the appendix.

Facility Classification

This facility is classified as a natural minor (B) facility because the uncontrolled potential emissions of any criteria pollutant are less than 100 T/yr, and the emissions of any hazardous pollutant or combination of hazardous pollutants are less than 10 T/yr and 25 T/yr respectively.

Area Classification

This facility is located in Coeur d'Alene in Kootenai County. Kootenai County is in AQCR 62 and Zone 11. This area is unclassifiable for all criteria air pollutants.

PERMIT REQUIREMENTS

Regulatory Review

The following rules were reviewed in this permitting analysis:

IDAPA 58.01.01.201 Permit to Construct Required
This permit to construct is for a change in ownership of the facility.

IDAPA 58.01.01.625 Visible Emissions

The emissions from the cremator stack shall not exceed 20% opacity for a period or periods aggregating more than three minutes during any one hour period.

IDAPA 58.01.01.785 Rules for control of Incinerators

This facility may not emit more than 0.2 pounds of particulate matter per 100 pounds of incinerated material. The estimated particulate emissions from this facility are 0.07 lb/hr, and the facility can process approximately 100 lb/hr. The estimated emissions are less than half of the applicable standard. Therefore, no performance test is required.

AIRS INFORMATION

Table 0.1 AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

AIR PROGRAM	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION ^b
POLLUTANT							A – Attainment U – Unclassifiable N – Nonattainment
SO ₂	B						U
NO _x	B						U
CO	B						U
PM ₁₀	B						U
PT (Particulate)	B						U
VOC	B						U
THAP (Total HAPs)	B						U
			APPLICABLE SUBPART				

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

FEES

No application fee or processing fee was required in accordance with IDAPA 58.01.01.224-225 because this project was for a change in ownership.

This facility is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees are not applicable in accordance with IDAPA 58.01.01.387.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommend that DEQ issue PTC No. P-030115 to Coeur d'Alene Memorial Gardens. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

DH/sd Project No. P-030115

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APPENDIX

Emissions Estimate and Screen3 Modeling Output

Cremations/Year 800
 Hours/Cremation 2
 Hours/Day 24

	Emissions Rate (lb/hr)	1-hr	3-hr	8-hr	24-hr	Annual
PM ₁₀	0.07	--	--	--	17.78	0.649498
CO	0.16	101.6	--	71.12	--	--
NO _x	0.68	--	--	--	--	6.309406
SO ₂	0.09	--	51.435	--	22.86	0.835068

Screen3 Modeled 1-hr Unity Concentration
 635

Background Concentration for Coeur d'Alene Area					
PM ₁₀	--	--	--	73	26
CO	10200	--	3400	--	--
NO _x	--	--	--	--	17
SO ₂	--	34	--	26	8

Total Concentration					
PM ₁₀	--	--	--	91	27
CO	10302	--	3471	--	--
NO _x	--	--	--	--	23
SO ₂	--	85	--	49	9

Allowable Concentration					
PM ₁₀	--	--	--	150	50
CO	40000	--	10000	--	--
NO _x	--	--	--	--	100
SO ₂	--	1300	--	365	80

07/07/03
14:18:20

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Coeur d'Alene Memorial Gardens

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 5.1816
STK INSIDE DIAM (M) = 0.5078
STK EXIT VELOCITY (M/S) = 1.3984
STK GAS EXIT TEMP (K) = 755.3722
AMBIENT AIR TEMP (K) = 293.1500
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 3.6576
MIN HORIZ BLDG DIM (M) = 5.7912
MAX HORIZ BLDG DIM (M) = 24.3840

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.541 M**4/S**3; MOM. FLUX = 0.049 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	163.6	4	2.5	2.5	800.0	7.00	8.20	5.85	SS
200.	100.6	4	1.5	1.5	480.0	10.28	15.56	9.46	SS
300.	69.72	4	1.0	1.0	320.0	14.92	22.61	12.57	SS
400.	55.19	4	1.0	1.0	320.0	14.92	29.45	15.72	SS
500.	43.13	4	1.0	1.0	320.0	14.92	36.15	18.73	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:
28. 410.3 6 4.0 4.0 10000.0 5.60 1.29 2.89 SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS

WITH ORIGINAL SCREEN CAVITY MODEL
 (BRODE, 1988)

*** CAVITY CALCULATION - 1 ***

CONC (UG/M**3) = 634.9
 CRIT WS @10M (M/S) = 2.97
 CRIT WS @ HS (M/S) = 2.97
 DILUTION WS (M/S) = 1.48
 CAVITY HT (M) = 4.40

*** CAVITY CALCULATION - 2 ***

CONC (UG/M**3) = 0.000
 CRIT WS @10M (M/S) = 99.99
 CRIT WS @ HS (M/S) = 99.99
 DILUTION WS (M/S) = 99.99
 CAVITY HT (M) = 3.66

.....
 END OF CAVITY CALCULATIONS

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	410.3	28.	0.
BLDG. CAVITY-1	634.9	16.	-- (DIST = CAVITY LENGTH)
BLDG. CAVITY-2	0.000	7.	-- (DIST = CAVITY LENGTH)