

# Notice of Construction (NOC) Worksheet



<b>Source:</b> Solie Funeral Home	<b>NOC Number:</b> 12307
<b>Installation Address:</b> 3301 Colby Ave   Everett, WA 98201	<b>Registration Number:</b> 18695
<b>Contact Name:</b> Bryan Lorentzen	<b>Contact Email:</b> <a href="mailto:bryanl@soliefunerals.com">bryanl@soliefunerals.com</a>
<b>Applied Date:</b> 12/05/2022	<b>Contact Phone:</b> (208) 304-6041
<b>Engineer:</b> Carl Slimp	<b>Inspector:</b> Rain Yates

## A. DESCRIPTION

### For the Order of Approval:

To install one Natural Gas fueled Facultative Technologies Model (FT) FT III Human Crematory rated for 200 lbs/hr.

### Proposed Equipment/Activities

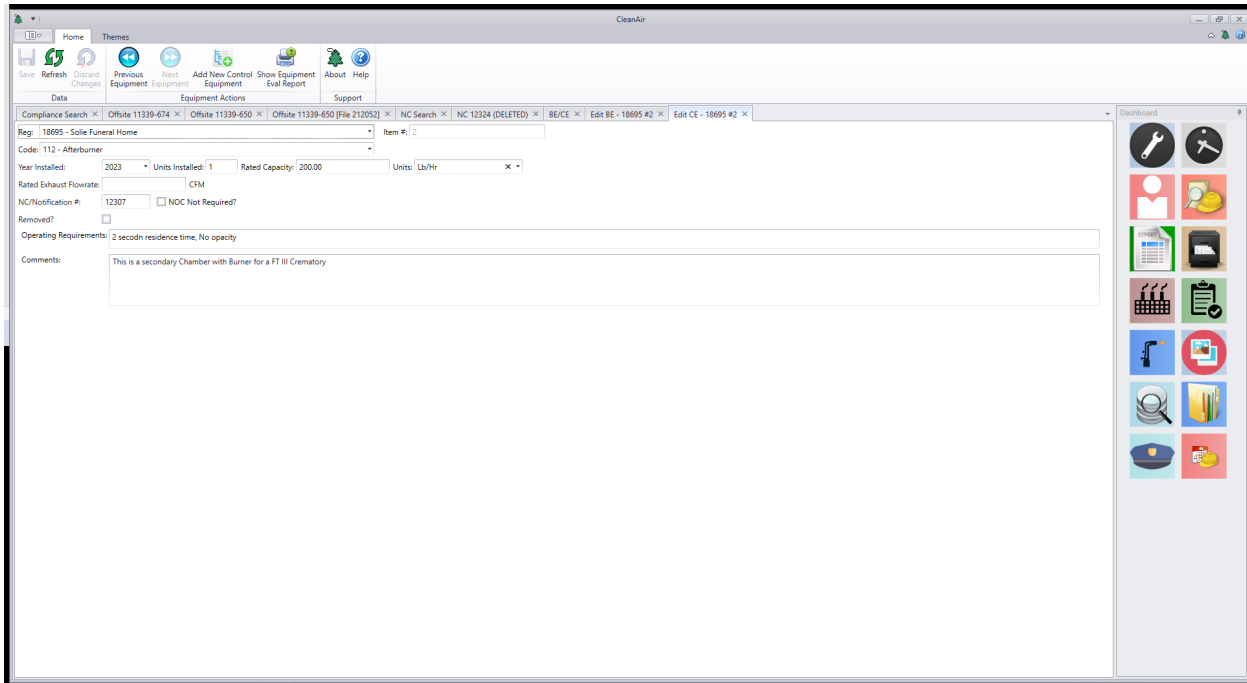
This unit is rated for 200 lb/hr.

### Permit History

The facility is currently permitted under NOC 7764 on 5/18/1999 for One IEE Co. Model IE43-ET natural gas fired Cremator rated at 250 lb/hr. As originally submitted, the application for NOC 12307 refers to this project as the replacement of the original crematory unit with this new unit. However, during the permitting process, the applicant changed the request to be for an additional unit, not a replacement.

## B. DATABASE INFORMATION

The screenshot shows the CleanAir database interface. The top navigation bar includes Home, Themes, and various action buttons like Save, Refresh, Discard Changes, Add New Basic Equipment, Show Equipment Eval Report, About, and Help. The main content area displays details for NOC 12307, including the facility name (Solie Funeral Home), equipment code (18 - crematory (human, animal)), year installed (2023), units installed (1), rated capacity (200), and primary fuel (Natural Gas). Below this, there is a section for 'Currently Linked Control Equipment' with a table showing one entry: Item # 2, CE Code 112, Code Description Afterburner, Link Created 2/8/2023, and Comments 'This is a secondary Chamber with Burner for...'. The 'Previously Linked Control Equipment' section is currently empty.



<b>New NSPS due to this NOCOA?</b>	No	<b>Applicable NSPS: N/A</b>	<b>Delegated? N/A</b>
<b>New NESHAP due to this NOCOA?</b>	No	<b>Applicable NESHAP: N/A</b>	<b>Delegated? N/A</b>
<b>New Synthetic Minor due to this NOCOA?</b>	No		

### C. NOC FEES AND ANNUAL REGISTRATION FEES

#### NOC Fees:

Fees have been assessed in accordance with the fee schedule in Regulation I, Section 6.04. All fees must be paid prior to issuance of the final Order of Approval.

<b>Fee Description</b>	<b>Cost</b>	<b>Amount Received (Date)</b>
Filing Fee	\$ 1,550	
Equipment	\$ 1,000	
SEPA (DNS)	\$ 1,200	
Public Notice	\$750 + publication costs	
Modelling Review	\$800	
Filing received		\$ 1,550 (12/05/22)
Additional fee received		\$3,750 (10/21/25)
<b>Total</b>	<b>\$5,300</b>	

**Registration Fees:**

Registration fees are assessed to the facility on an annual basis. Fees are assessed in accordance with Regulation I, Section 5.07. This source is already registered, and this permit will not change their current registration fees.



## Puget Sound Clean Air Agency

1904 Third Avenue, Suite 105  
Seattle, WA 98101-3317  
Tax ID: 91-0823558  
206.689.4072

### Invoice for Year 2022 Registration Fees

<b>Bill To:</b>
Solie Funeral Home 3301 Colby Ave Everett, WA 98201
<b>Attention: Accounts Payable</b>

<b>Invoice Date:</b>	<b>Invoice #:</b>
November 19, 2021	20220472
<b>Due Date:</b>	<b>Terms:</b>
January 03, 2022	Net 45 Days
<b>Facility ID (Registration #):</b>	
18895	

**Site Address:** Solie Funeral Home  
3301 Colby Ave, Everett, WA 98201

The annual registration fee is required by Washington State law and Puget Sound Clean Air Agency's Regulation I.

Facility Fees and Applicable Regulations	Charges
Base Fee for Registered Sources. Reg I, 5.07(c) Reg I, 5.03(a)(4)(A) - Facilities with incinerators	\$ 1,150.00
<b>Fee Totals</b>	
<b>TOTAL REGISTRATION FEE</b>	<b>\$ 1,150.00</b>
<i>The Total Registration Fee is due by January 03, 2022. If unpaid after January 03, 2022, the facility may be subject to enforcement action with civil penalties (Reg I, 5.07(b)).</i>	

**Pay online and confirm payment: [www.pscleanair.gov/annualfee](http://www.pscleanair.gov/annualfee)**

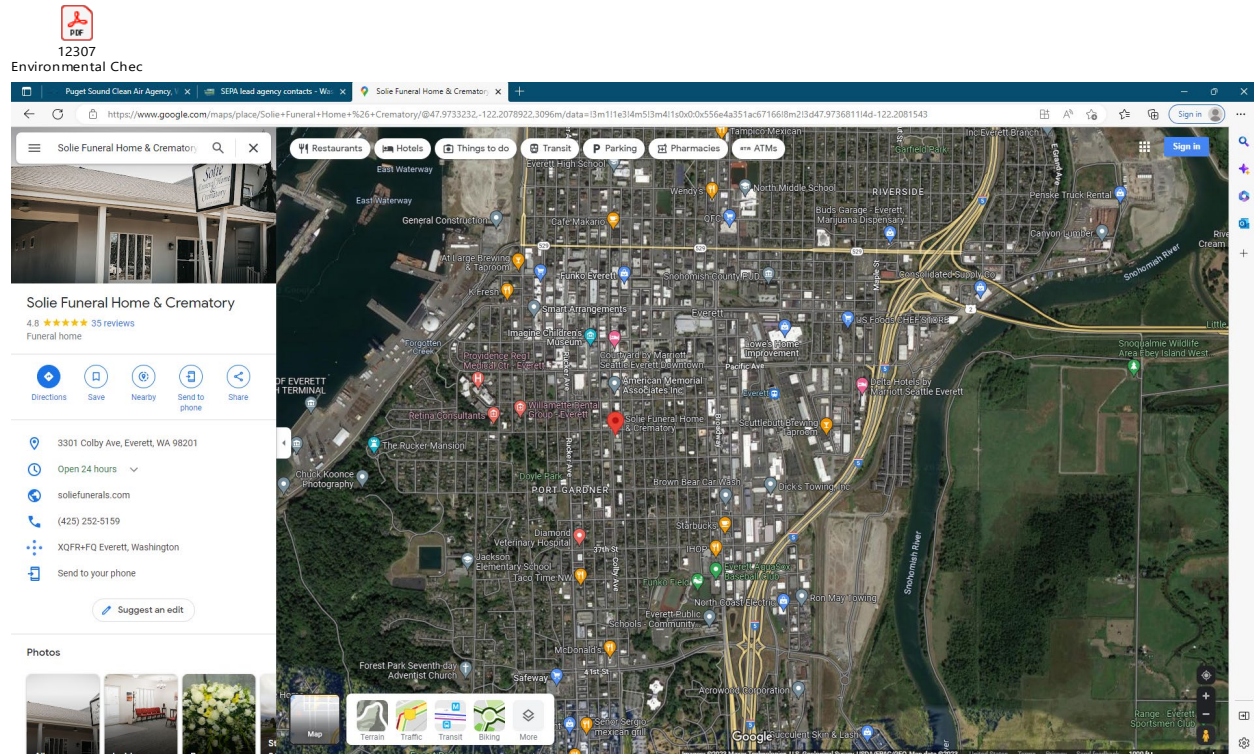
This copy is for your records. If paying by check, please mail the yellow copy with your payment.  
Your canceled check is your receipt.

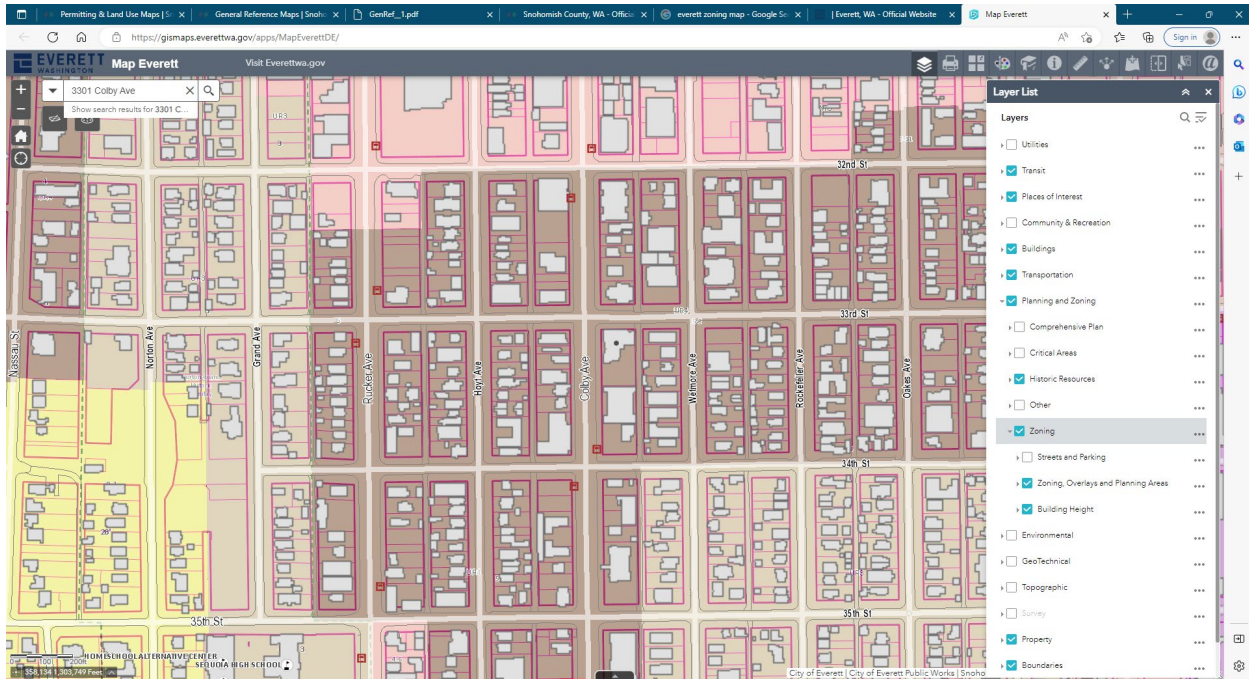
11/08/2021

## D. STATE ENVIRONMENTAL POLICY ACT (SEPA) REVIEW

State Environmental Policy Act (SEPA) review was conducted in accordance with Regulation I, Article 2. The SEPA review is undertaken to identify and help government decision-makers, applicants, and the public to understand how a project will affect the environment. A review under SEPA is required for projects that are not categorically exempt in WAC 197-11-800 through WAC 197-11-890. A new source review action which requires a NOC application submittal to the Agency is not categorically exempt.

PSCAA is the SEPA lead agency for this project. The applicant submitted a completed Environmental checklist that is included below.





Note that the SEPA checklist refers to this project as the replacement of the original crematory unit with this new unit. However, during the permitting process, the applicant changed the request to be for an additional unit, not a replacement.

The City of Everett was consulted for comments on February 13<sup>th</sup>, 2023, and no reply was received. This area is designated as UR4, or Urban residential. Requirements found here. [UR4-Zone-Summary \(everettwa.gov\)](#).

Based on the proposed action and the information in the checklist, the project will not: adversely affect environmentally sensitive or special areas, or endangered or threatened species; conflict with local, state, or federal laws or requirements for the protection of the environment, or establish a precedent for future actions with significant effects. This proposal is not likely to have a probable significant adverse environmental impact, and I recommend the issuance of a Determination of Non-Significance with an opportunity for public comment.

## E. TRIBAL CONSULTATION

On November 21, 2019, the Agency's Interim Tribal Consultation Policy was adopted by the Board. Criteria requiring tribal consultation are listed in Section II.A of the policy and include establishment of a new air operating permit source, establishment of a new emission reporting source, modification of an existing emission reporting source to increase production capacity, or establishment or modification of certain equipment or activities. In addition, if the Agency receives an NOC application that does not meet the criteria in Section II.A but may represent similar types and quantities of emissions, the Agency has the discretion to provide additional consultation opportunities.



This project does not meet any of the criteria for consultation listed in Section II.A of the Agency's Interim Tribal Consultation Policy.

## **F. BEST AVAILABLE CONTROL TECHNOLOGY (BACT) REVIEW**

### **Best Available Control Technology (BACT)**

New stationary sources of air pollution are required to use BACT to control all pollutants not previously emitted, or those for which emissions would increase as a result of the new source or modification. BACT is defined in WAC 173-400-030 as, "an emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under Chapter 70A.15 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each pollutant."

An emissions standard or emissions limitation means "a requirement established under the Federal Clean Air Act or Chapter 70A.15 RCW which limits the quantity, rate, or concentration of emissions of air contaminants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction and any design, equipment, work practice, or operational standard adopted under the Federal Clean Air Act or Chapter 70A.15 RCW."

### **Best Available Control Technology for Toxics (tBACT)**

New or modified sources are required to use tBACT for emissions control for TAP. Best available control technology for toxics (tBACT) is defined in WAC 173-460-020 as, "the term defined in WAC 173-400-030, as applied to TAP." In this situation, tBACT will be the same as BACT

Similar Permits

Origin	Emissions Limitation	Operational and Design Limitation
PSCAA (No 11869)	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 7% O<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% for more than 3 minutes in any 1 hour</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <p>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</p>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>A minimum secondary chamber residence time of 1.2 seconds or more</li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> <li>651,000 lbs 12-month rolling average limit</li> </ul>
PSCAA (No. 11808)	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 7% O<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% for more than 3 minutes in any 1 hour</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>Secondary chamber temperature interlock set point at 1,650 degrees Fahrenheit</li> <li>A minimum secondary chamber residence time of 1.2 seconds or more</li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>



Origin	Emissions Limitation	Operational and Design Limitation
PSCAA (No. 11670)	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 7% O<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% for more than 3 minutes in any 1 hour</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>Secondary chamber temperature interlock set point at 1,650 degrees Fahrenheit</li> <li>A minimum secondary chamber residence time of 1.2 seconds or more</li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
PSCAA (No. 11540)	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 7% O<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>No visible emissions during daylight operation</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 60 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>Secondary chamber temperature interlock set point at 1,650 degrees Fahrenheit</li> <li>A minimum secondary chamber residence time of 1.2 seconds or more</li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>

Origin	Emissions Limitation	Operational and Design Limitation
PSCAA (No. 11376)	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 12% CO<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Not to exceed 5% for more than 3 minutes in any 1 hour as determined by Ecology Method 9A</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>Hexavalent Chromium</b></p> <ul style="list-style-type: none"> <li>6.57E-08 gr/dscf As measured by EPA method 0061 or EPA method 29</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>Secondary chamber temperature interlock set point at 1,650 degrees Fahrenheit</li> <li>A minimum secondary chamber residence time of 1.2 seconds or more</li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul> <p><b>Hexavalent Chromium</b></p> <ul style="list-style-type: none"> <li>Chrome free refractory</li> </ul>
PSCAA 11864	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.06 grains per dry standard cubic foot corrected to 12% CO<sub>2</sub></li> </ul> <p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>No visible emissions during daylight operation</li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 60 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <p>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</p>	

Other Regulatory Agencies BACT

Origin	Emissions Limitation	Operational and Design Limitation
TCEQ	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM: Visible emissions shall not exceed 5.0% opacity averaged over a six minute period</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>Secondary chamber is heated by a natural gas/propane fired burner and fires at twice the heat rate of the primary chamber burner</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>A minimum secondary chamber flue gas residence time of 0.5 seconds or more</li> </ul> <p><b>Visible Emissions, CO:</b></p> <ul style="list-style-type: none"> <li>Cremators without continuous opacity or carbon monoxide monitors are limited to operating from one-hour after sunrise to one-hour before sunset</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
MassDep (No. SE-14-003)	<p><b>Visible Emissions:</b></p> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% opacity except when 5% to 20% for &lt; 2 consecutive minutes during any one hour</li> </ul> <p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b></p> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.060 grains per dry standard cubic foot corrected to 7% O<sub>2</sub></li> </ul> <p><b>NO<sub>x</sub>:</b></p> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 200 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul> <p><b>CO:</b></p> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 50 ppmv corrected to 7% O<sub>2</sub> dry basis</li> </ul>	<p><b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b></p> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 °F during cremation cycle</li> </ul> <p><b>SO<sub>2</sub>:</b></p> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>

Origin	Emissions Limitation	Operational and Design Limitation
MaineDep (No. A-818-71-C-R)	<b>VOC:</b> <ul style="list-style-type: none"> <li>VOC emissions shall not exceed 0.130 lbs per hour</li> </ul> <b>Visible Emissions:</b> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 10.0% opacity based on a six minute block average basis</li> </ul> <b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b> <ul style="list-style-type: none"> <li>PM emissions shall not exceed 0.920 lbs per hour</li> </ul> <b>NO<sub>x</sub>:</b> <ul style="list-style-type: none"> <li>NO<sub>x</sub> emissions shall not exceed 0.350 lbs per hour</li> </ul> <b>CO:</b> <ul style="list-style-type: none"> <li>CO emissions shall not exceed 0.230 lbs per hour</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>SO<sub>2</sub> emissions shall not exceed 0.370 lbs per hour</li> </ul>	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>A minimum secondary chamber flue gas residence time of 0.5 seconds or more</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
SMAQMD (No. 145)	<b>NO<sub>x</sub>:</b> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 60 ppmv corrected to 3% O<sub>2</sub> dry basis (natural gas combustion only with no charge)</li> </ul>	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
SCAQMD (BACT Guidelines for Non Major Polluting Facilities, Page 36)	None	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,500 degrees Fahrenheit</li> <li>Operation imitations only apply to PM<sub>10</sub> – none for PM<sub>2.5</sub></li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
BAAQMD (BACT Guideline – Crematory)	None	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>A minimum secondary chamber temperature of 1,600 °F (set point at 1,650)</li> <li>Limitations only apply to PM<sub>10</sub> – none for PM<sub>2.5</sub></li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
SWCAA (ADP 17-3240R1)	<b>NO<sub>x</sub>:</b> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub></li> </ul> <b>CO:</b> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 40 ppmv corrected to 7% O<sub>2</sub></li> </ul>	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>Minimum afterburner temperature of 1,500°F during the entire cremation process</li> <li>Prior to charging the primary chamber, afterburner must reach a minimum of 1,600°F for a period of at least 30 minutes</li> </ul>

Origin	Emissions Limitation	Operational and Design Limitation
	<b>Visible Emissions:</b> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% opacity for more than three minutes during the initial 15 minutes of the cremation cycle and 0% opacity for more than three minutes during any-1hour period after the initial 15-minute period.</li> </ul>	<ul style="list-style-type: none"> <li>A minimum afterburner residence time of 0.5 seconds or more</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
SWCAA (ADP 18-3308)	<b>NO<sub>x</sub>:</b> <ul style="list-style-type: none"> <li>NO<sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O<sub>2</sub></li> </ul> <b>CO:</b> <ul style="list-style-type: none"> <li>CO concentration shall not exceed 40 ppmv corrected to 7% O<sub>2</sub></li> </ul> <b>Visible Emissions:</b> <ul style="list-style-type: none"> <li>Visible emissions shall not exceed 5% opacity for more than three minutes during the initial 15 minutes of the cremation cycle and 0% opacity for more than three minutes during any-1hour period after the initial 15-minute period.</li> </ul>	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>Minimum afterburner temperature of 1,500°F during the entire cremation process</li> <li>Prior to charging the primary chamber, afterburner must reach a minimum of 1,600°F for a period of at least 30 minutes</li> <li>A minimum afterburner residence time of 0.5 seconds or more</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>
MDEQ (No. 3236-04)	<b>Visible Emissions:</b> <ul style="list-style-type: none"> <li>Visible emissions shall not exhibit an opacity of 10% or greater averaged over 6 consecutive minutes</li> </ul> <b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP:</b> <ul style="list-style-type: none"> <li>PM emissions shall not cause an excess of 0.10 grains per dry standard cubic feet (gr/dscf) corrected to 12% carbon dioxide (CO<sub>2</sub>)</li> </ul>	<b>PM<sub>2.5</sub>, PM<sub>10</sub>, TSP, Visible Emissions, NO<sub>x</sub>, CO, VOC:</b> <ul style="list-style-type: none"> <li>Proper crematorium design and operation relying on good turbulence, high temperature and gas residence time within the secondary combustion chamber:               <ol style="list-style-type: none"> <li>Turbulence is achieved with proper introduction of air into the combustion chambers</li> <li>Temperature in the secondary chamber must be maintained at an operating temperature of 1,500 degrees Fahrenheit with no single reading less than 1,400 degrees Fahrenheit</li> <li>The gas residence time in the secondary chamber and flue stack must be over 1.2 seconds</li> </ol> </li> <li>Operating procedures, design including temperature and timer interlocks to ensure proper combustion</li> <li>Flame monitoring for both the primary and secondary chamber burners</li> </ul>

Origin	Emissions Limitation	Operational and Design Limitation
		<ul style="list-style-type: none"> <li>Smoke control managed by automatically detecting rate of temperature rise within the primary chamber and adding additional secondary chamber combustion air</li> </ul> <b>SO<sub>2</sub>:</b> <ul style="list-style-type: none"> <li>Combustion of natural gas</li> </ul>

Analysis & Recommendations

Pollutant	Available Method That Meets BACT	Implementation of Method
VOCs including volatile TAPs	None	<ul style="list-style-type: none"> <li>Dual-chambered cremator design</li> <li>Combustion of natural gas</li> <li>A minimum secondary chamber temperature of 1,600 degrees Fahrenheit during cremation cycle</li> <li>Implementation of an opacity monitoring system and temperature control system interlocked to a combustion control system with an audible alarm</li> <li>Secondary chamber residence time sufficient to meet emission limitations</li> </ul>
PM including non-volatile TAPs	PM emissions shall not exceed 0.05 grains per dry standard cubic foot corrected to 7% O <sub>2</sub> (to match PSCAA Regulation I, Article 9.09)	
NO <sub>x</sub>	NO <sub>x</sub> concentration shall not exceed 140 ppmv corrected to 7% O <sub>2</sub> dry basis	
CO	CO concentration shall not exceed 50 ppmv corrected to 7% O <sub>2</sub> dry basis	
SO <sub>2</sub>	None	
Visible Emissions	Visible emissions may exceed 5 percent opacity for up to 3 minutes in any one hour, using Ecology Method 9A.	



## G. EMISSION ESTIMATES

### Proposed Project Emissions

#### Actual Emissions and Potential Emissions

The following emissions were provided by the applicant. Emissions were first evaluated by the applicant, 5,500 hours per year at 200 lb/hr. These emissions were shown below. The criteria pollutants are not significant at this amount. However, not all toxic air pollutants passed a tier 1 review at this rate, and those emissions were reevaluated at 1,525 hours per year

Facultative Technologies The Americas  
FT SE III Cremator Emissions Summary

Pollutant	Emissions before controls (max) (lb/hr)	Actual emissions (lb/hr)	Actual emissions (ton/year) (6)	Requested Allowable (lb/hr)	Requested Allowable (ton/year) (6)
Particulate emissions (PE/PM) (1)	0.18	0.18	0.79	0.18	0.79
PM # 10 microns in diameter (2)	0.18	0.18	0.79	0.18	0.79
PM # 2.5 microns in diameter (2)	0.18	0.18	0.79	0.18	0.79
Sulfur dioxide (SO <sub>2</sub> ) (3)	0.41	0.41	1.80	0.41	1.80
Nitrogen oxides (NO <sub>x</sub> ) (1)	0.47	0.47	2.06	0.47	2.06
Carbon monoxide (CO) (1)	0.018	0.018	0.079	0.018	0.08
Organic compounds (OC) (4)	0.0008	0.0008	0.0035	0.0008	0.0035
Volatile organic compounds (VOC) (4)	0.0008	0.0008	0.0035	0.0008	0.0035
Lead (Pb) (1)	0.00013	0.00013	0.00058	0.00013	0.00058
Total Hazardous Air Pollutants (HAPs) (5)	0.049	0.049	0.21	0.049	0.21
Highest single HAP: (5)	0.048	0.048	0.21	0.048	0.21
Toxic Air Contaminants (TAC): (5)	0.052	0.052	0.23	0.052	0.23

Notes:

1. PM, NO<sub>x</sub>, CO, OC, and VOC emission rates are average values taken from stack testing events conducted on FT III and FT II SE units. FT III and FT II SE units have identical equipment and operating specifications, parameters and differ only in the width of the primary chamber.
2. Stack tests that provide the basis for these emission rates include the following:  
Evergreen Cemetery, Livermore, CA - FT III 3/14/2008  
Evergreen Cemetery, Livermore, CA - FT III 9/10/2014  
Jersey Crematorium, St. Helier, Jersey (UK) - FT III 1/27/2015  
Swan Point Cemetery, Providence, RI - FT III and FT II SE 2/5-6/2015 (two days of testing)  
Forest Lawn Cremation Company, Buffalo, NY - FT III 4/19/2016  
Stack test reports available upon request.
3. It was assumed that particulate emissions were below 2.5 micrometers in size, and therefore PM, PM<sub>10</sub> and PM<sub>2.5</sub> were reported as the same value.
4. Sulfur dioxide emissions are based on an emission factor developed by North Carolina Department of Natural Resources (NCDNR) 2009
5. It was assumed that VOCs and organic compounds were the same. VOC and OC emission rates are based on data from the St. Helier stack testing.
6. HAP and TAC emission rates was a combination of available stack testing data and USEPA AP-42 emission factors (found through WEBFIRE SCC code 31502101. See the "FT III Cremator HAP/TAC Emissions Summary" table attached.
7. The actual operating time for this unit will depend on the number of cremations that will be needed per year, and the amount that will be performed on this unit compared to the other existing units onsite. For the purposes of the calculations above, 8,760 hours per year was conservatively used to estimate tons per year.

### Facility-wide Emissions

There is currently a cremation unit at this facility that processes approximately 750 cases per year. Assuming 200 lbs/case, the total emissions for the facility are shown below.

Facility Wide Emissions							
Pollutant	Emission Factor	tons/year	Emissions (lbs/year)		Combined Emisions		
	lb/ton		IEE Co. Model	IE43-ET FTIII	lbs/year	tons/year	
CO	2.947	75	221.025	449.4175	670.4425	0.33522125	
Lead	0.009	75	0.675	1.3725	2.0475	0.00102375	
NOx	3.56	75	267	542.9	809.9	0.40495	
PM10	3.036	75	227.7	462.99	690.69	0.345345	
PM2.5	2.022	75	151.65	308.355	460.005	0.2300025	
SO2	2.173	75	162.975	331.3825	494.3575	0.24717875	
VOC	0.299	75	22.425	45.5975	68.0225	0.03401125	

#### H. OPERATING PERMIT OR PSD

The Title V Air Operating Permit (AOP) program applicability for the entire source has been reviewed.

The facility is not a Title V air operating permit source because post project PTE remains below Title V applicability thresholds and criteria. The source is considered a **“natural minor”**.

#### I. AMBIENT TOXICS IMPACT ANALYSIS

The estimated potential toxic air pollutant (TAP) emissions were first evaluated for operating at 200 lb/hr and 5,500 hours. During the TAPs analysis, it was determined that this would need to be lowered to 1,525 hours per year and 12 hours per day.

Emission factors were provided by the applicant are the following table.

Facultative Technologies The Americas  
FT III Cremator HAP/TAC Emissions Summary

Pollutant	Emission Rate lb/hr	HAP	TAC	Source
Antimony	1.18E-04	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Arsenic	3.13E-06	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Beryllium	2.31E-06	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Cadmium	3.62E-05	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Chromium	3.64E-05	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Cobalt	2.17E-07	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Copper	1.91E-04	No	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Iron	5.49E-04	No	No	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Lead	1.33E-04	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Manganese	8.33E-06	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Mercury	8.45E-05	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Nickel	2.09E-05	No	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Selenium	7.74E-06	Yes	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Silver	6.20E-05	No	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Thallium	1.13E-06	No	No	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Zinc	3.11E-03	No	Yes	Stack Test - FT III - Evergreen Cemetery, Livermore, CA 9/10/2104
Hydrogen Chloride	4.80E-02	Yes	Yes	AP-42 (WEBFIRE SCC code 31502101)
Benz(a)pyrene	1.94E-08	Yes	Yes	AP-42 (WEBFIRE SCC code 31502101)
Vanadium	3.86E-05	No	No	AP-42 (WEBFIRE SCC code 31502101)
Hydrogen Fluoride	4.37E-04	Yes	Yes	AP-42 (WEBFIRE SCC code 31502101)
Tetrachlorinated dibenzo-p-dioxins	9.40E-10	Yes	Yes	AP-42 (WEBFIRE SCC code 31502101)
2,3,7,8-Tetrachlorodibenzofuran	3.46E-10	Yes	Yes	AP-42 (WEBFIRE SCC code 31502101)
Barium	1.60E-05	No	Yes	AP-42 (WEBFIRE SCC code 31502101)
<b>Total</b>		0.0489	0.0523	
<b>Max</b>		0.048		

A copy of the Evergreen Cemetery stack test report is saved in the file folder.

The table below includes estimated potential emissions of all TAP and compares those to the Small Quantity Emission Rates (SQER) in WAC 173-460-150 at 5,500 hours per year.

Pollutant	Emission Rate (lb/hr)	lb/day	lb/year	Averaging period	ASIL (ug/m3)	SQER(lb/averaging period)
Antimony trioxide	0.00018	4.32E-03	1.58E+00	24 hour	2.00E-01	1.50E-02
Arsenic & inorganic arsenic compounds, NOS	0.00000313	7.51E-05	2.74E-02	year	3.00E-04	4.90E-02
Beryllium & compounds, NOS	0.00000231	5.54E-05	2.02E-02	year	4.20E-04	6.80E-02
Cadmium & compounds, NOS	0.0000362	8.69E-04	3.17E-01	year	2.40E-04	3.90E-02
Chromium (III), insoluble	0.0000364	8.74E-04	3.19E-01	24-hr	5.00E+00	3.70E-01
Chromium (III), soluble	0.0000364	8.74E-04	3.19E-01	24-hr	1.00E-01	7.40E-03
Chromium(VI) & compounds, NOS	0.0000364	8.74E-04	3.19E-01	year	4.60E-05	6.50E-04
Cobalt and compounds, NOS	0.000000217	5.21E-06	1.90E-03	24-hr	1.00E-01	7.40E-03
Copper & compounds	0.000191	4.58E-03	1.67E+00	1-hr	1.00E+02	1.90E-01
Lead & compounds, NOS	0.000133	3.19E-03	1.17E+00	year	8.30E-02	1.40E+01
Manganese & compounds	0.00000833	2.00E-04	7.30E-02	24-hr	3.00E-01	2.20E-02
Mercury, elemental	0.0000845	2.03E-03	7.40E-01	24-hr	3.00E-02	2.20E-03
Nickel & compounds, NOS	0.0000209	5.02E-04	1.83E-01	year	3.80E-03	6.20E-01
Selenium & selenium compounds (other than H <sub>2</sub> Se)	0.00000774	1.86E-04	6.78E-02	24-hr	2.00E+01	1.50E+00
Hydrogen chloride	0.048	1.15E+00	4.20E+02	24-hr	9.00E+00	6.70E-01
Benzo[a]pyrene	1.94E-08	4.66E-07	1.70E-04	year	1.00E-03	1.60E-01
Hydrogen fluoride	0.000437	1.05E-02	3.83E+00	24-hr	1.40E+01	1.00E+00
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9.4E-10	2.26E-08	8.23E-06	year	2.60E-08	4.30E-06
2,3,7,8-Tetrachlorodibenzofuran (TcDF)	3.46E-10	8.30E-09	3.03E-06	year	2.60E-08	4.30E-06

Comparing these values to WAC 173-460-150 it appears Chromium(VI), cadmium, 2,3,7,8-Tetrachlorodibenzofuran (TcDF), and hydrogen chloride are over the SQER limit.

During the modeling process, it was found that Chromium(VI) and compounds were below the ASIL limit when a weighted factor of 1,525 hours was assumed for cadmium, chromium(VI) and 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD), because the ASIL values for these pollutants are annual averages. 12 hours per day was assumed for HCl, because the ASIL for this pollutant is a daily value. Those results are shown below, and the modeling files are saved in the application folder.

Pollutant	Emission Factor lb/hr	Weighted factor	Screening Result ug/m3	Model result ug/m3	ASIL ug/m3
Cadmium	4.03E-05	7.02E-06		4.68E-05	2.40E-04
Chromium VI	3.42E-06	5.95E-07		3.97E-06	4.00E-06
2,3,7,8 tetrachlorobenzo-p-dioxin	1.70E-10		2.42E-09	N/A	2.60E-08

Weighted factor assumes 1,525 hours of operation per year.

Pollutant	Emission Factor lb/hr	Weighted factor	Screening Result ug/m3	Model result ug/m3	ASIL ug/m3
HCl	3.02E-01	1.51E-01		8.76	9

Weighted factor assumes 12 hours per day operation

Note that the modeled concentration of chromium(VI) is 99.25% of the ASIL when 1,525 annual hours of usage is assumed at an emission rate of 3.42E-06 lb/hr. This is the basis for the restriction on operation of 1,525 hours per year to meet this tier 1 review. The Agency will impose a 3.44E-06 lb/hr limit to ensure the ASIL is not exceeded.

A source test for mercury was provided. Because dental mercury can vary drastically case by case, the EPA has put out guidelines for estimating Hg in the document titled 2020 National Emissions Inventory Technical Support Document: Miscellaneous Non-Industrial NEC: Cremation – Human and Animal. This file is saved in the project folder. It provides estimates of averages of dental mercury per age group. Using 2021 death rate data, and average estimate of ages was found. This is summarized in a table below:

			Average Grams of Mercury/person	
	Total	Percentage	g of dental Mercury	
Age Range			per person	Weighted Average
Under 1 year old	1115.9	0.021254914	0	0
1 to 4	49.9	0.000950462	2.50272E-05	2.37874E-08
5 to 14	28.6	0.000544754	0.000225245	1.22703E-07
15-24	176.2	0.003356139	0.000334739	1.12343E-06
25-34	359.8	0.006853229	0.00110385	7.56494E-06
35-44	574.5	0.01094269	0.00162855	1.78207E-05
45-54	1062.3	0.020233977	0.002666813	5.39602E-05
55-64	2245.5	0.042770777	0.002673	0.000114326
65-74	4355.6	0.082962545	0.00280665	0.000232847
75-84	10427.5	0.198616021	0.002710125	0.000538274
85+	32105	0.611514491	0.0021978	0.001343987
Total	52500.8			0.00231005

[Death rate by age and sex in the U.S. 2021 | Statista](#)

2020 National Emissions Inventory Technical Support Document: Miscellaneous Non-Industrial NEC:  
Cremation – Human and Animal

0.00231 g/person converts to 5.09E-6 lbs/case. This is less conservative than the 8.45E-5 lb/hr used in the emission estimates provided, which was already less than the SQER for mercury. Therefore, the Agency has determined that emissions of mercury will be below the SQER.

**J. APPLICABLE RULES & REGULATIONS**  
**Puget Sound Clean Air Agency Regulations**

**SECTION 5.05 (c):** The owner or operator of a registered source shall develop and implement an operation and maintenance plan to ensure continuous compliance with Regulations I, II, and III. A copy of the plan shall be filed with the Control Officer upon request. The plan shall reflect good industrial practice and shall include, but not be limited to, the following:

- (1) Periodic inspection of all equipment and control equipment;
- (2) Monitoring and recording of equipment and control equipment performance;
- (3) Prompt repair of any defective equipment or control equipment;
- (4) Procedures for startup, shut down, and normal operation;
- (5) The control measures to be employed to ensure compliance with Section 9.15 of this regulation; and
- (6) A record of all actions required by the plan.

The plan shall be reviewed by the source owner or operator at least annually and updated to reflect any changes in good industrial practice.

**SECTION 6.09:** Within 30 days of completion of the installation or modification of a stationary source subject to the provisions of Article 6 of this regulation, the owner or operator or applicant shall file a Notice of Completion with the Agency. Each Notice of Completion shall be submitted on a form provided by the Agency, and shall specify the date upon which operation of the stationary source has commenced or will commence.

**SECTION 9.03:** (a) It shall be unlawful for any person to cause or allow the emission of any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour, which is:

- (1) Darker in shade than that designated as No. 1 (20% density) on the Ringelmann Chart, as published by the United States Bureau of Mines; or
- (2) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Section 9.03(a)(1).

(b) The density or opacity of an air contaminant shall be measured at the point of its emission, except when the point of emission cannot be readily observed, it may be measured at an observable point of the plume nearest the point of emission.

(c) This section shall not apply when the presence of uncombined water is the only reason for the failure of the emission to meet the requirements of this section.

**SECTION 9.09:** General Particulate Matter (PM) Standard. It shall be unlawful for any person to cause or allow the emission of particulate matter in excess of the following concentrations:

Equipment Used in a Manufacturing Process: 0.05 gr/dscf

**SECTION 9.11:** It shall be unlawful for any person to cause or allow the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

**SECTION 9.13:** It shall be unlawful for any person to cause or allow the installation or use of any device or use of any means designed to mask the emission of an air contaminant which causes detriment to health, safety or welfare of any person.

**SECTION 9.15:** It shall be unlawful for any person to cause or allow visible emissions of fugitive dust unless reasonable precautions are employed to minimize the emissions. Reasonable precautions include, but are not limited to, the following:

- (1) The use of control equipment, enclosures, and wet (or chemical) suppression techniques, as practical, and curtailment during high winds;
- (2) Surfacing roadways and parking areas with asphalt, concrete, or gravel;
- (3) Treating temporary, low-traffic areas (e.g., construction sites) with water or chemical stabilizers, reducing vehicle speeds, constructing pavement or rip rap exit aprons, and cleaning vehicle undercarriages before they exit to prevent the track-out of mud or dirt onto paved public roadways; or
- (4) Covering or wetting truck loads or allowing adequate freeboard to prevent the escape of dust-bearing materials.

**REGULATION I, SECTION 9.20(a):** It shall be unlawful for any person to cause or allow the operation of any features, machines or devices constituting parts of or called for by plans, specifications, or other information submitted pursuant to Article 6 of Regulation I unless such features, machines or devices are maintained in good working order.

#### **Washington State Administrative Code**

WAC 173-400-040(3): Fallout. No person shall cause or allow the emission of particulate matter from any source to be deposited beyond the property under direct control of the owner or operator of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited.

WAC 173-400-040(4): Fugitive emissions. The owner or operator of any emissions unit engaging in materials handling, construction, demolition or other operation which is a source of fugitive emission:

- (a) If located in an attainment area and not impacting any nonattainment area, shall take reasonable precautions to prevent the release of air contaminants from the operation.

WAC173-400-111(7): Construction limitations.

- (a) Approval to construct or modify a stationary source becomes invalid if construction is not commenced within eighteen months after receipt of the approval, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable



time. The permitting authority may extend the eighteen-month period upon a satisfactory showing by the permittee that an extension is justified.

WAC 173-460-071: Voluntary limits on emissions

(1) If requested by an applicant, the permitting authority may issue a regulatory order that limits emissions of a particular TAP to a level that is lower than the potential emissions of that particular TAP otherwise allowed under all applicable requirements of chapter 70.94 RCW and the federal Clean Air Act.

(2) Any order issued under this section is subject to the notice and comment procedures in WAC 173-400-171 or the permitting authority's public notice and commenting procedures.

(3) Any order issued under this section must include monitoring, recordkeeping, and reporting requirements sufficient to ensure that the applicant complies with any conditions established under this section. Monitoring requirements must use terms, test methods, units, averaging periods, and other statistical conventions consistent with the requirements of WAC 173-400-105.

**Federal**

None

**K. PUBLIC NOTICE**

The Agency has determined that there is potential for significant public interest in the project. Therefore, this project triggers public notice under WAC 173-400-171(3)(n).

A notice of application was posted on the Agency's website for 15 days. No requests or responses were received. A copy of the website posting is below:

**New Construction Projects**

Company	Address	Project Description	Date Posted	Contact Engineer
<a href="#">Solie Funeral Home</a>	3301 Colby Ave, Everett, WA 98201	To replace the current crematory unit with a Facultative Technologies FD FTIII Cremator unit	12/5/22	<a href="#">Carl Slimp</a>

A corrected notification was posted on 10/21/25, shown below:

**New Construction Projects**

Company	Address	Project Description	Date Posted	Contact Engineer
Solie Funeral Home	<a href="#">3301 Colby Ave, Everett, WA 98201</a>	A new crematory unit rated at 200 pounds per hour. Model Facultative Technologies Model (FT) FT III Human Crematory.	10/21/25	<a href="#">Carl Slimp</a>

The Agency conducted a public comment period from **DATE** to **DATE**. Notice of the comment period was published in the *Everett Herald* on **DATE**.

#### Summary of comments received and Agency responses

### L. RECOMMENDED APPROVAL CONDITIONS

#### Standard Conditions:

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the installation address in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

#### Specific Conditions:

#### Throughput Limit:

3. The hours of operation of the primary burner for the Facultatieve Technologies Model FT III SE Human Crematory unit over any 12-month rolling period must not exceed 1,525 hours, nor may operation exceed 12 hours per day.

#### Emissions Limitations and Standards:

4. The exhaust concentration of total particulate matter (filterable and condensable particulate matter) from Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 0.05 grains per dry standard cubic feet (gr/dscf) corrected to 7% oxygen (O<sub>2</sub>) as measured by EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.
5. The exhaust concentration of carbon monoxide (CO) from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 50.0 ppm, on a dry, volumetric basis corrected to 7% O<sub>2</sub> as measured by EPA Methods 1, 3A and 10 from Appendix A of 40 CFR Part 60.
6. The exhaust concentration of nitrogen oxides (NO<sub>x</sub>) from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 140 ppm, on a dry, volumetric basis corrected to 7% O<sub>2</sub> as measured by EPA reference methods 1, 3A and 7E from Appendix A of 40 CFR Part 60.
7. Visible emissions from the Facultatieve Technologies Model FT III SE Human Crematory unit may exceed 5 percent opacity for up to 3 minutes in any one hour. At all other times, visible emissions may not exceed 5 percent opacity. Compliance with this condition is determined using Ecology Method 9A.
8. Emissions of hexavalent chromium from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 3.44E-06 pounds per hour as measured by the average of three runs

using U.S. EPA Method 0061. The EPA Method 29 test method may be used as an alternative test method with the understanding that total chromium results shall be used as a surrogate for demonstrating compliance with the hexavalent chromium limit. Other alternative methods or modifications to a method must be approved by the Puget Sound Clean Air Agency.

**Operational Limits:**

9. The exhaust stack of the Facultatieve Technologies Model FT III SE Human Crematory unit shall be vertical and unobstructed.
10. This cremation unit must only be utilized for human remains and their corresponding containers. No other material shall be incinerated in the primary chamber. Incinerated containers must not contain chlorinated plastics.
11. The secondary chamber of the Facultatieve Technologies Model FT III SE Human Crematory unit must be heated to a minimum temperature of 1,600 degrees Fahrenheit (°F) prior to igniting the primary chamber, and the operating temperature in the secondary chamber (afterburner) must be maintained at or above 1600 °F for the entirety of each cremation cycle and at least 0.5 hours before each cremation cycle. This pre-heat requirement is satisfied for subsequent cycles if the temperature is maintained at or above 1600°F continuously.
12. The Facultatieve Technologies Model FT III SE Human Crematory unit must operate with a monitoring system that measures the temperature in the primary and secondary chambers, in degrees Fahrenheit, for the entirety of each cremation cycle and at least 0.5 hours before each cremation cycle begins. Temperature data for the secondary chamber must be recorded continuously (or sampled at intervals no greater than 15 seconds and recorded as 1-minute averages) for the entirety of each cremation cycle and for at least 0.5 hours after each cremation cycle ends. The temperature monitoring system must be interlocked with an audible alarm such that if the temperature in the secondary chamber falls below 1,600 degrees Fahrenheit, the alarm will sound at which time immediate corrective action must be taken to correct the problem.
13. The Facultatieve Technologies Model FT III SE Human Crematory unit must operate with a monitoring system that measures opacity in the exhaust stack, as a percentage. The opacity monitoring system must be interlocked with an audible alarm such that if the opacity in the exhaust stack exceeds 5 percent, the alarm will sound at which time immediate corrective action must be taken to correct the problem or cease operation of the crematory until the problem is corrected.
14. All temperature and opacity monitoring system components must be maintained, repaired, and replaced in accordance with the manufacturer's recommendations, instructions, and operating manuals.
15. The owner or operator shall annually test or replace the temperature monitoring system thermocouples or pyrometers. If performed, the test shall consist of either a physical or electronically simulated comparison and shall follow manufacturer specifications. The results of the test readings must be within +/- 16 degrees F. If the results of the test readings exceed +/- 16

degrees of the reference value, the thermocouple must be replaced or adjusted to read within +/- 16 degrees of the reference value.

**Compliance Demonstration:**

16. Initial compliance with Condition 4 must be demonstrated by testing the Facultatieve Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Method 5 as modified by Puget Sound Clean Air Agency's Board Resolution 540 dated August 11, 1983. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases. One Ecology Method 9A observation of at least one hour duration shall be conducted concurrently with each of the particulate sampling runs to demonstrate initial compliance with Condition 7.
17. Initial compliance with Condition 5 must be demonstrated by testing the Facultatieve Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 3A, and 10. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases.
18. Initial compliance with Condition 6 must be demonstrated by testing the Facultatieve Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 3A, and 7E. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases.
19. Initial compliance with Condition 8 must be demonstrated by testing the Facultatieve Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 2, 3A, 4 and U.S. EPA Method 0061. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases. The EPA Method 29 test method may be used as an alternative test method with the understanding that total chromium results shall be used as a surrogate for demonstrating compliance with the hexavalent chromium limit. Other alternative methods or modifications to a method must be approved by the Puget Sound Clean Air Agency.
20. If requested by the Agency, ongoing compliance with Conditions 4, 5, 6 and 8 must be demonstrated by testing the Facultatieve Technologies Model FT III SE Human Crematory unit in the timeframe requested by the Agency and in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I.

**Recordkeeping Requirements:**

21. All records required by this Order of Approval must be maintained for at least two years.
22. The following records shall be kept onsite, updated within 30 days at the end of each month for at least two years from the date of generation, and be made readily available to Agency personnel upon request:
  - a. Compliance test reports.
  - b. Thermocouple or pyrometer calibration test reports, including the date and results of each test, the test method used, and a record of who performed the test. If any gauge is replaced, the owner or operator shall keep a record of the date it was replaced and who replaced it.
  - c. All temperature monitoring data.
  - d. Total cremated mass in pounds and total hours of cremation operation, for each month and the resulting 12-month rolling totals. The 12-month rolling total is defined as the sum of the current month and the previous eleven (11) months.
  - e. Total number of cremations conducted each calendar day.
  - f. Operating time and weight per case.
  - g. A log showing corrective actions taken to maintain the secondary chamber temperature at or above 1,600°F.
  - h. A log showing corrective actions taken to maintain the opacity in the exhaust stack at or below 5 percent.

**Reporting Requirements:**

23. For every compliance test required by this Order of Approval, a test notification must be submitted to the Puget Sound Clean Air Agency as required by Regulation I, Section 3.07. Each notification must clearly state whether modifications or alternatives to a required test method are planned.
24. A test plan must be submitted to the Puget Sound Clean Air Agency at least 30 days before conducting a test to demonstrate compliance with Conditions 4, 5, 6 and 8. The test plan must include the following:
  - a. Description of all test methods.
  - b. Description of modifications or alternatives to a required test method.
  - c. Quality assurance and control procedures.
  - d. Procedures and intent to monitor temperature and opacity during each test run.
  - e. Procedures and intent to calculate total mass cremated during the entire test.

#### M. CORRESPONDENCE AND SUPPORTING DOCUMENTS



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Solie Funeral Home  
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#### N. REVIEWS

Reviews	Name	Date
Engineer:	Carl Slimp	2/28/2023, 7/7/2025
Inspector:	Rain Yates	3/13/2023, 7/11/2025
Second Review:	John Dawson	3/16/2023
Applicant Name:	Bryan Lorentzen	