PETITION FOR VARIANCE
BEFORE THE HEARING BOARD OF THE
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

PETITIONER: Thermal Solutions Manufacturing, Inc. CASE NO:

FACILITY ID: 172808

FACILITY ADDRESS: 1390 S. Tippecanoe Ave., Suite B
[location of equipment/site of violation; specify business/corporate address, if different, under Item 2, below]

City, State, Zip: San Bernardino, California, 92408

1. TYPE OF VARIANCE REQUESTED (more than one box may be checked; see Attachment A, Item 1, before selecting)

☒ INTERIM ☐ SHORT ☒ REGULAR ☐ EMERGENCY ☐ EX PARTE EMERGENCY

2. CONTACT: Name, title, company (if different than Petitioner), address, and phone number of persons authorized to receive notices regarding this Petition (no more than two authorized persons).

Mr. Donald Keefer – CIO & VP of HR
Thermal Solutions Manufacturing, Inc.
1390 S. Tippecanoe Avenue, Suite B
San Bernardino, CA *Zip* 91761
☎ (336) 480-5991 *Ext.*
Fax ( )
E-mail donald.keefer@tsmus.com

Bill Winchester – Principal Scientist
Montrose Environmental Solutions, Inc.
1631 E. Saint Andrew Place
Santa Ana, CA *Zip* 92705
☎ (909) 226-1108 *Ext.*
Fax ( )
E-mail bwinchester@montrose-env.com

3. RECLAIM Permit ☐ Yes ☒ No Title V Permit ☐ Yes ☒ No

Persons with disabilities may request this document in an alternative format by contacting the Clerk of the Board at 909-396-2500 or by e-mail at clerkofboard@aqmd.gov.

If you require disability-related accommodations to facilitate participating in the hearing, contact the Clerk of the Board at least five (5) calendar days prior to the hearing.

[ALL DOCUMENTS FILED WITH CLERK'S OFFICE BECOME PUBLIC RECORD]

4. **GOOD CAUSE:** Explain why your petition was not filed in sufficient time to issue the required public notice. (Required only for Emergency and Interim Variances; see Attachment A, Item 4)

Original Petition Response in April 2024:

Thermal Solutions Manufacturing recently tested its lead pot furnace (A/N 544919, PO G26164) for Rule 1420 lead (Pb) emissions compliance in early March 2024. Late last week, the source testing company responsible for conducting the compliance test disclosed to the facility that preliminary data may indicate results in exceedance of the emission standard for lead (Pb) emissions. This was highly unexpected because the 2019 test results demonstrated Pb emissions of 0.00013 lb/hr from the device, which is less than one-half of the 0.0003 lb/hr Pb emission standard in Rule 1420, and the process is unchanged since the last test. Furthermore, other Pb testing conducted at TSM facilities in other parts of the country is more consistent with the 2019 test results. A subsequent discussion was had with the source testing company this morning, confirming the preliminary results, and justifying the need to petition for a variance. The final source test report is expected to be submitted to SCAQMD by the source testing company within the next two weeks.

Based on the results of the 2019 test and other Pb testing conducted at TSM facilities in other parts of the Country, TSM did not expect the test results it received for the lead pot. Once the results were confirmed, TSM promptly filed this variance petition.

TSM also took swift action to contact an air pollution control system vendor. TSM reached out to Ship & Shore Environmental (S&SE) for a quote on a HEPA filter system to remove Pb particles in the exhaust from the lead pot immediately upon notification of the preliminary test results. Based on the preliminary test results and rule requirements, a HEPA filter on the exhaust duct from the lead pot operation would facilitate compliance with the Pb emission standards. TSM will work with the vendor to have the filter system installed as soon as possible, but no earlier than a modified permit is received for the lead pot.

In conjunction with the need to install a filter, SCAQMD PO G26164 must be modified. TSM will be submitting a permit modification application to add the filter, with a request for expedited processing, immediately upon receiving the final filter system specifications from its vendor.

TSM cannot afford to shut down the lead pot operation since it is integral to its manufacturing process. If TSM must shut this equipment down for any amount of time, it will present hardship to the business, and could ultimately lead to the permanent closure of the facility if it cannot finish parts.

Given the eminent submittal of test results to SCAQMD that indicate that the equipment is operating in violation of Rules 1420, TSM is proactively petitioning for a variance. The variance could provide TSM with a mechanism to continue operating its critical equipment while air pollution controls are procured, installed, and source tested.

Supplemental Petition Response in May 2024:

The facts and circumstances from the original petition response are still valid. Furthermore, the ex-parte emergency variance petition was submitted to the Clerk of the Board as planned on April 23, 2024. SCAQMD Counsel opposed TSM's variance petition based on Rule 504(a)(1), on the grounds that allowing a variance would exceed federal NESHAP standards and it was anticipated that the Board would agree and deny the variance. In this context, TSM withdrew the variance petition with the Clerk of the Board and immediately began to work with SCAQMD Counsel on an Order for Abatement. TSM's representative also requested that SCAQMD Counsel provide the regulatory citation for the federal NESHAP that precluded the issuance of a variance. In the meantime, significant progress was made on the Order for Abatement language though collaboration between TSM's representative and SCAQMD Counsel.

On May 1, 2024, SCAQMD Counsel cited 40 CFR Part 63, Subpart TTT as the federal NESHAP regulation that forced its opposition to the variance. Upon further review of the NESHAP, TSM's representative responded the following statement to SCAQMD Counsel:

"[…]TSM takes small pre-made lead ingots and adds them to the lead pot, as stock. The pot melts the ingots for the purposes of lead dip soldering of radiator cores. I do not believe 40 CFR Part 63, Subpart TTT applies to TSM because they are not a primary lead processor; they are not engaged in producing lead metal from ore concentrates. I would suggest that the activity being conducted at TSM would make them a "lead remelter", as defined under the same Subpart. Lead remelters are not subject to this NESHAP."

During the subsequent period, TSM secured a quotation from an air pollution control system vendor for a filter that would be suitable to ensure lead emissions are below rule limits. Negotiations with the vendor that delivered the first quote remain ongoing while TSM is awaiting alternative quotes from other vendors.

On May 14, 2024, SCAQMD Counsel disclosed to TSM's representative by telephone that after further review, the SCAQMD Counsel would no longer be opposed to the variance petition; it was determined that the cited NESHAP regulation does not apply to TSM.

After consulting with TSM's representative, TSM is submitting a petition for an interim and regular variance. Due to the timely submission of the original ex-parte emergency variance petition, the fact that the petitioner only withdrew the variance petition in response to the SCAQMD Counsel's opposition to the variance under Rule 504, that TSM took prompt action through its representative to collaborate with SCAQMD Counsel on an Order for Abatement, that the SCAQMD Counsel ultimately withdrew its opposition to TSM's original variance petition, and that TSM promptly filed this variance petition, TSM requests that the variance coverage be retroactive to April 23, 2024.

5. Briefly describe the type of business and processes at your facility.

TSM only manufactures radiator cores at its San Bernardino facility. Radiator cores are built by hand, go through the flux bath and a heat-treating furnace (oven), and are then finished in the lead pot furnace.

6. List the equipment and/or activity(s) that are the subject of this petition (see Attachment A, Item 6, Example #1). **Attach copies of the Permit(s) to Construct and/or Permit(s) to Operate for the subject equipment. For RECLAIM or Title V facilities, attach *only* the relevant sections of the Facility Permit showing the equipment or process and conditions that are subject to this petition. You must bring the entire Facility Permit to the hearing.**

Equipment/Activity	Application/ Permit No.	RECLAIM Device No.	Date Application/Plan Denied (if relevant)*
Lead Pot Furnace	A/N 544919 PO G26164 (copy of permit attached)	n/a	n/a

*Attach copy of denial letter

7. Briefly describe the activity or equipment, and why it is necessary to the operation of your business. A schematic or diagram may be attached, in addition to the descriptive text.

The lead pot furnace is the final step of the manufacturing process and is used to seal the header to the tubes of the radiator. Radiators are dipped into the lead pot by hand and emissions from the lead pot are pulled into an adjacent slot vent and to an exhaust duct that extends vertically and discharges to atmosphere a couple of feet above the roof line through a stack with a rain cap.

Without the lead pot, the radiator cores cannot be finished. The facility manufactures approximately 15-20 radiator cores per day. No production is possible without the lead pot. It is also worth noting that the lead pot permit incorrectly states that it is heated with a natural gas-fired burner; the lead pot is heated electrically (this will be reconciled with the proposed permit modification to add air pollution controls to the lead pot).

8. Is there a regular maintenance and/or inspection schedule for this equipment? Yes ☒ No ☐

If yes, how often: Weekly Date of last maintenance and/or inspection* 4/19/2024

Describe the maintenance and/or inspection that was performed.

1.) Skim the bottom of the solder with a ladle to bring the dross to the top; and

2.) Check electrical panel to ensure all systems are working properly.

*Prior to original petition date. This maintenance is conducted weekly and has been conducted each week since.

9. List all District rules, and/or permit conditions [indicating the specific section(s) and subsection(s)] from which you are seeking variance relief (if requesting variance from Rule 401 or permit condition, see Attachment A). Briefly explain how you are or will be in violation of each rule or condition (see Attachment A, Item 9, Example #2).

Rule	Explanation
Rule 1420(f)(1)	Meet an outlet mass lead emission rate of less than 0.0003 pounds per hour or reduce lead emissions by a minimum of 99%, by June 1, 2018. The March 2024 preliminary source test results suggest that the lead pot emits lead at an average rate of approximately 0.00051 lb/hr which is above the emission standard, and the device is currently not equipped with an add-on control device. Based on the results of the last test in 2019, no add-on controls were required, the lead pot emissions met the standard, and the facility met the eligibility requirements to extend the source testing frequency to 48 months. For the facility to avoid permanent closure, it cannot afford to curtail operations while it procures an add-on control device and source tests to demonstrate compliance with Rule 1420. Any operations of the lead pot by the facility after the date that the source testing company confirmed the source test results would potentially be in violation of Rule 1420.

10. Are the equipment or activities subject to this request currently under variance coverage? Yes ☐ No ☒

Case No.	Date of Action	Final Compliance Date	Explanation

11. Are any other equipment or activities at this location currently (or within the last six months) under variance coverage? Yes ☐ No ☒

Case No.	Date of Action	Final Compliance Date	Explanation

12. Were you issued any Notice(s) of Violation or Notice(s) to Comply concerning this equipment or activity within the past year? Yes ☒ No ☐

If yes, you must attach a copy of each notice. NC# E55096 (attached)

13. Have you received any complaints from the public regarding the operation of the subject equipment or activity within the last six months? Yes ☐ No ☒

If yes, you should be prepared to present details at the hearing.

14. Explain why it is beyond your reasonable control to comply with the rule(s) and/or permit condition(s). Provide specific event(s) and date(s) of occurrence(s), if applicable.

Original Petition Response in April 2024:

The lead pot furnace is the final step of the manufacturing process and is used to seal the header to the tubes of the radiator. Without the lead pot, the radiator core cannot be finished. The facility manufactures approximately 15-20 radiator cores per day using the lead pot; no production is possible without the lead pot.

The source testing company confirmed this morning that the results of the 2024 source test show non-compliance with the emission standard. This was highly unexpected because the 2019 test results demonstrated Pb emissions of 0.00013 lb/hr from the device, which is less than one-half of the 0.0003 lb/hr Pb emission standard in Rule 1420, and the process is unchanged since the last test. Not only did the 2019 test result show compliance, but the result also qualified the equipment for an extended 48-month source testing schedule and did not seem to justify consideration of add-on air pollution controls at that time. The way TSM operates and maintains the lead pot has not changed since 2019.

Immediate variance relief is needed because any further operation of the lead pot without add-on air pollution controls could result in a violation of SCAQMD Rule 1420. The company had no reason to believe the 2024 test results would show non-compliance, or that it had a need to proactively apply add-on controls to comply with the emissions standards. After confirming the results of the 2024 source test with the source testing company today, TSM is responding as promptly as possible with this petition for variance.

For the facility to avoid significant financial hardship, and possibly permanent closure, it cannot afford to curtail operations for any amount of time while it procures an add-on control device and source tests to demonstrate compliance with Rule 1420. TSM is promptly filing for emergency variance relief because it cannot afford to shut down operations for any period.

Supplemental Petition Response in May 2024:

The facts and circumstances from the original petition response are still valid. Furthermore, since the original petition submittal, TSM has acted prudently to secure an initial quote from an air pollution control system vendor and remains in active negotiations with this vendor as it awaits alternative quotes. Furthermore, TSM and its representative have worked diligently with SCAQMD Counsel on an Order for Abatement, as was prudent once the original variance was opposed. TSM has also secured a quote from a source testing company for the eventual retest and are currently seeking alternative quotes from other source testing companies. TSM is also working with its environmental consultant to prepare SCAQMD permit applications to add the air pollution controls to the lead pot.

Because it is still not within the facility's reasonable control to comply with the cited rule, meanwhile TSM has done everything within its power to move ahead with the process of procuring air pollution controls and to hire an accredited emissions testing company to demonstrate compliance with the rule, variance relief is still needed.

15. When and how did you first become aware that you would not be in compliance with the rule(s) and/or permit condition(s)? Provide specific event(s) and date(s) of occurrence(s).

Original Petition Response in April 2024:

On Wednesday, April 17, 2024, the source testing company had a telephone discussion with TSM's consultant, Mr. Bill Winchester in which it was first disclosed that the preliminary test data suggested that emission rates may exceed the hourly limits in Rule 1420. It was late in the day and TSM was closed for the day when Mr. Winchester attempted to reach the facility.

On the afternoon of Thursday, April 18, 2024, Mr. Winchester met with Mr. Donald Keefer and Ms. Maureen Baker of TSM to discuss the preliminary test data of concern.

On Monday, April 22, 2024, TSM authorized Mr. Winchester to begin preparing the variance petition in anticipation of a possible violation.

On Tuesday, April 23, 2024, the source testing company confirmed through its delivery of a draft source test report to the facility, and verbally on a telephone call with Mr. Winchester, that the 2024 test result indicates the lead pot does not comply with the Rule 1420 emission standards for Pb. At this point TSM knew subsequent operations could be in violation of Rule 1420 and gave Mr. Winchester immediate approval to finalize and submit the variance petition.

Supplemental Petition Response in May 2024:

The facts and circumstances from the original petition response are still valid. Furthermore, on April 29, 2024, the source testing company submitted the final Rule 1420 source test results report to SCAQMD, thereby confirming that the lead pot does not comply with the Rule 1420 emission standards for Pb. By this time, TSM had withdrawn its original petition for an ex-parte emergency variance due to the SCAQMD Counsel's opposition under Rule 504, and its representatives were working with SCAQMD Counsel to craft an Order for Abatement.

Since the SCAQMD Counsel is no longer opposed to the variance TSM has acted prudently to file a new petition with recognition that it may not be in compliance with Rule 1420.

16. List date(s) and action(s) you have taken since that time to achieve compliance. That the Petition Form HB-V, and any related instructions, include requirement that the Petitioner include a timeline in suitable, chronological format to address the events, dates, and actions called for by Questions 15 and 16, including the dates of communication with the South Coast AQMD to notify them of the occurrence(s) giving rise to the requested variance.

Original Petition Response in April 2024:

On Tuesday, April 23, 2024, the source testing company confirmed through its delivery of a draft source test report to the facility, and verbally on a telephone call with Mr. Winchester, that the 2024 test result indicates the lead pot does not comply with the Rule 1420 emission standards for Pb. At this point TSM knew subsequent operations could be in violation of Rule 1420 and gave Mr. Winchester immediate approval to finalize and submit the variance petition. In accordance with Rule 1420(j)(5), within 5 days TSM will notify SCAQMD of the source test result in exceedance of the Rule 1420 emission standard to 1-800-CUT-SMOG. A written follow-up notification will be made to SCAQMD by TSM or its representative within 10 calendar days of this notification.

TSM is working with a vendor to procure an add-on control device for the lead pot exhaust and will soon submit an expedited permit modification application to SCAQMD for this change.

Supplemental Petition Response in May 2024:

The facts and circumstances from the original petition response are still valid. Furthermore, on April 29, 2024, the source testing company submitted the final Rule 1420 source test results report to SCAQMD, thereby confirming that the lead pot does not comply with the Rule 1420 emission standards for Pb. Because this was when TSM actually confirmed the final source test result, TSM provided the Rule 1420(j)(5)

notification to SCAQMD within 5 days of this date. The source test report serves as the written notification within 10 calendar days of the verbal notification.

Since the original petition submittal, TSM has acted prudently to secure an initial quote from an air pollution control system vendor and remains in active negotiations with this vendor as it awaits alternative quotes. Furthermore, TSM and its representative have worked diligently with SCAQMD Counsel on an Order for Abatement, as was prudent once the original variance was opposed. TSM has also secured a quote from a source testing company for the eventual retest and are currently seeking alternative quotes from other source testing companies. TSM is also working with its environmental consultant to prepare SCAQMD permit applications to add the air pollution controls to the lead pot, pending final equipment selection.

17. What would be the harm to your business during **and/or after** the period of the variance if the variance were not granted?

Economic losses: $113,514 in expected gross revenue per week, or $491,517 per month.

Number of employees laid off (if any): 11-18 employees depending on the length of disruption.

Provide detailed information regarding economic losses, if any, (anticipated business closure, breach of contracts, hardship on customers, layoffs, and/or similar impacts).

TSM may be able to operate some distribution for a very short period, but without the ability to produce any product locally, the facility would be looking at a potential closure within 2 to 3 weeks if they are unable to continue operations. Payroll servicing is $67,262 per month and rent is another $28,000 per month. If TSM is forced to discontinue manufacturing operations, it would have to lay off the direct labor work force within a few weeks. This would impact 11 people almost immediately.

Without the local manufacturing business, TSM would likely lose the distribution business within a matter of days (or up to a week) as well. This would force TSM to close the doors of the San Bernardino location completely, and if that were to occur, the facility would probably not reopen, as TSM would have to transfer production activities to another regional location.

18. Can you curtail or terminate operations in lieu of, or in addition to, obtaining a variance? Please explain.

The lead pot furnace is the final step of the manufacturing process and is used to seal the header to the tubes of the radiator. Without the lead pot, the radiator core cannot be finished. The facility manufactures approximately 15-20 radiator cores per day using the lead pot; no production is possible without the lead pot.

For the facility to avoid significant financial hardship and possibly permanent closure, it cannot afford to curtail operations for any amount of time while it procures an add-on control device and source tests to demonstrate compliance with Rule 1420. TSM is promptly filing for emergency variance relief because it cannot afford to shut down operations for any period.

19. Estimate excess emissions, if any, on a daily basis, including, if applicable, excess opacity (the percentage of total opacity above 20% during the variance period). If the variance will result in no excess emissions, insert "N/A" here and skip to No. 20.

Pollutant	(A) Total Estimated Excess Emissions (lbs/day)	(B) Reduction Due to Mitigation (lbs/day)	(C)* Net Emissions After Mitigation (lbs/day)
Lead (Pb)	0.00189	0.00000	0.00189

* Column A minus Column B = Column C

Excess Opacity: n/a %

20. Show calculations used to estimate quantities in No. 19, **or** explain why there will be no excess emissions.

Hrs/day * (Avg. Actual hourly Pb emission rate – Rule 1420 hourly Pb emission rate) = excess Pb emissions

9 hrs/day * (0.00051 lbs/hr – 0.0003 lbs/hr) = 9 hrs/day * 0.00021 lbs/hr = **0.00189 lbs/day**

21. Explain how you plan to reduce (mitigate) excess emissions during the variance period to the maximum extent feasible, or why reductions are not feasible.

The lead pot furnace is the final step of the manufacturing process and is used to seal the header to the tubes of the radiator. Without the lead pot, the radiator core cannot be finished. The facility manufactures approximately 15-20 radiator cores per day using the lead pot; no production is possible without the lead pot.

For the facility to avoid significant financial hardship and possibly permanent closure, it cannot afford to curtail operations for any amount of time while it procures an add-on control device and source tests to demonstrate compliance with Rule 1420. TSM is promptly filing for emergency variance relief because it cannot afford to shut down operations for any period.

TSM will prepare and submit a SCAQMD permit modification application for the lead pot as soon as it receives sufficient specifications for the proposed add-on control system from its vendor. In the meantime, TSM will push its vendor(s) to provide the required quotations and information as quickly as possible.

Once a modified permit is issued by SCAQMD, TSM will proceed with the installation and operation of the new filter system. Within a reasonable amount of time after installation, TSM will have the lead pot emissions tested again for Rule 1420 compliance.

22. How do you plan to monitor or quantify emission levels from the equipment or activity(s) during the variance period, and to make such records available to the District? **Any proposed monitoring does not relieve RECLAIM facilities from applicable missing data requirements.**

TSM will keep track of the number of hours it operates the lead pot each day during the variance period. It will multiply the number of hours operated by the average Pb emission rate measured during the 2024 source test to quantify actual Pb emissions. Excess emissions will be quantified by subtracting the Rule 1420 allowable emission level from the calculated actual Pb emissions. This calculation will be done on any day the lead pot is used.

The 2,000 pound per month throughput limit on materials charged into the lead pot furnace will continue to be monitored and records will be kept to demonstrate compliance.

Since the lead pot is heated electrically, there is no natural gas usage to monitor or record.

TSM will continue to manage ongoing housekeeping requirements for Rule 1420 and will keep the appropriate records to demonstrate compliance.

23. How do you intend to achieve compliance with the rule(s) and/or permit condition(s)? Include a detailed description of any equipment to be installed, modifications or process changes to be made, permit conditions to be amended, etc., dates by which the actions will be completed, and an estimate of total costs.

Original Petition Response in April 2024:

TSM will prepare and submit a SCAQMD permit modification application for the lead pot to the equipment description and to incorporate any associated monitoring provisions to ensure proper filter operation. This will be done once TSM receives sufficient specifications from its vendor for the proposed add-on control system.

In the meantime, TSM is investigating potential sources of contamination in the lead pot and will also push its vendor to provide the quotation and information on the proposed add-on control equipment as quickly as possible. Once a modified permit is issued by SCAQMD, TSM will proceed with the installation and operation of the new filter system. By this time, TSM should also have had time Within a reasonable amount of time after installation, TSM will have the lead pot emissions tested again for Rule 1420 compliance.

The cost for its consultants to assist with the variance process and permit modification application is approximately $12,000. The variance petition fee is approximately $3,100 and the permit application fee with XPP will be approximately $5,400. Excess emissions fees will be the deminimis amount of $234.06 per operating day. The cost of the source test to demonstrate compliance after the filter is installed will be approximately $16,500.

Supplemental Petition Response in May 2024:

The facts and circumstances from the original petition response are still valid. Since the original petition, TSM has realized that add-on control equipment for the lead pot would require both a new permit application for the air pollution control system and a modification application for the lead pot permit. Permit application fees will be approximately doubled as a result. Furthermore, TSM has made progress on preparing these permit applications, while it awaits final filter specifications.

TSM has investigated the possibility for contamination in the lead pot, on the surface of products dipped in the pot, and from elsewhere in its process and has not found any evidence of contamination or an irregularity in the normal operation of its equipment. TSM inquired with the testing company, who confirmed that there was no indication of contamination in the actual test samples; that the results of the test appear to be valid.

TSM has acted prudently to secure an initial quote from an air pollution control system vendor and remains in active negotiations with this vendor as it awaits alternative quotes. Furthermore, TSM and its representative have worked diligently with SCAQMD Counsel on an Order for Abatement, as was prudent once the original variance was opposed. TSM has also secured a quote from a source testing company for the eventual retest and are currently seeking alternative quotes from other source testing companies.

24. State the date you are requesting the variance to begin: April 23, 2024; and the date by which you expect to achieve final compliance: September 30, 2024.

If the regular variance is to extend beyond one year, you **must** include a **Schedule of Increments of Progress**, specifying dates or time increments for steps needed to achieve compliance. See District Rule 102 for definition of Increments of Progress (see Attachment A, Item 24, Example #3).

List Increments of Progress here:
n/a

25. List the names of any District personnel with whom facility representatives have had contact concerning this variance petition or any related Notice of Violation or Notice to Comply.

Kenneth Dudash Ext. 3154

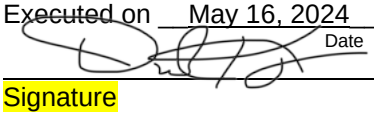
Ext.

If the petition was completed by someone other than the petitioner, please provide their name and title below.

Bill Winchester	Montrose Environmental Solutions	Principal Scientist
Name	Company	Title

The undersigned, under penalty of perjury, states that the above petition, including attachments and the items therein set forth, is true and correct.

Executed on May 16, 2024 (Date), at 25 Century Blvd., Ste. 210, Nashville (Address), TN (State)



Signature

Donald Keefer
Print Name

Title: CIO & VP of HR

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178

PERMIT TO OPERATE

Permit No.
G26164
A/N 544919

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

ID 172808

Legal Owner
or Operator: THERMAL SOLUTIONS MANUFACTURING, INC.
1390 S TIPPECANOE AVE, SUITE B
SAN BERNARDINO, CA 92408

Equipment Location: 1390 S TIPPECANOE SUITE B, SAN BERNARDINO, CA 92408

Equipment Description :

POT FURNACE, MODEL NO. 5600, 1'-1" W. X 7'-0" L. X 0'-10" H., SERIAL NO. 8186-97, 3750 POUND CAPACITY, WITH ONE ECLIPSE NATURAL GAS FIRED BURNER, 400,000 BTU PER HOUR TOTAL.

Conditions :

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL BE FIRED ON NATURAL GAS ONLY.
4. THE TOTAL QUANTITY OF MATERIAL CHARGED INTO THE FURNACE SHALL NOT EXCEED 2000 POUNDS IN ANY ONE CALENDAR MONTH.
5. MATERIALS CONTAMINATED WITH RUBBER, PLASTICS, RAGS, OIL, GREASE, OR SIMILAR SMOKE PRODUCING MATERIAL SHALL NOT BE CHARGED TO THE FURNACE.
6. DAILY RECORDS SHALL BE KEPT TO PROVE COMPLIANCE WITH CONDITION NO. 4. THE RECORDS SHALL BE KEPT FOR AT LEAST TWO YEARS, AND SHALL BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
7. MATERIALS PROCESSED IN THIS EQUIPMENT SHALL CONTAIN NO COMPOUNDS IDENTIFIED IN RULE 1401, AS AMENDED MARCH 4, 2005, WITH THE EXCEPTION OF LEAD.

PERMIT TO OPERATE

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M Bailey

By Dorris M.Bailey/PW02
8/8/2013

2019 Test Results Data

SCAQMD METHOD 12.1
DATA

PLANT: Thermal Solutions
SOURCE: Lead Pot Exhaust
DATE: 10/18/2019
STANDARD TEMP (SCAQMD = 60 DEG.) 60

RUN NUMBER	1	2	3	
FIELD DATA INPUTS:				
BAROMETRIC PRESSURE (Pb)	28.93	28.93	28.93	
STACK DIAMETER (Ds)	18.00	18.00	18.00	
PITOT CORRECTION (Cp)	0.84	0.84	0.84	
SQRT DELTA P	0.616	0.616	0.616	
STACK TEMP (DEG. F)	82.0	84.3	89.2	85.2
STATIC PRESSURE (Ps)	-2.0	-2.0	-2.0	-2.0
VOLUME SAMPLED (Vm)	97.514	96.881	97.935	
METER TEMPERATURE (DEG. F)	77.1	94.4	93.2	
METER GAMMA	0.989	0.989	0.989	
DELTA H (INCHES WATER)	2.00	2.00	2.00	
LIQUID COLLECTED (VLC)	26.6	28.7	27.7	
% O2	20.90	20.90	20.90	
%CO2	0.01	0.01	0.01	
SAMPLING TIME (MINUTES)	120.0	120.0	120.0	
NOZZLE DIAMETER (INCHES)	0.268	0.268	0.268	
LABORATORY DATA:				
Lead (ug)	9.3	32.0	35.0	25.4
FLOW RESULTS:				Average
VOLUME SAMPLED, DSCF	90.733	87.345	88.485	88.854
VOLUME SAMPLED, DSCM	2.569	2.473	2.506	
MOISTURE IN SAMPLE (CF)	1.24	1.33	1.29	
MOISTURE (%)	1.34	1.50	1.43	1.43
MOLECULAR WEIGHT (DRY)	28.84	28.84	28.84	
MOLECULAR WEIGHT (WET)	28.69	28.67	28.68	
STACK VELOCITY (FT/SEC)	35.9	35.9	36.1	36.0
ACTUAL CFM	3802	3810	3825	3812
STANDARD CFM	3509	3501	3485	3498
DRY STANDARD CFM	3462	3448	3435	3448
ISOKINETIC RATE (100% ±10%)	98.5	95.2	96.8	96.9
LEAD EMISSIONS				**Average**
ug/m3	3.62	12.94	13.97	10.18
lbs/hr	0.00005	0.00017	0.00018	0.00013
lbs/day	0.00113	0.00401	0.00431	0.00315

2024 Test Results Data

SOURCE TEST REPORT FOR
2024 SCAQMD RULE 1420 COMPLIANCE TESTING FOR THE POT FURNACE AT
THERMAL SOLUTIONS MANUFACTURING, INC.
SAN BERNARDINO, CALIFORNIA

Prepared For:

Thermal Solutions Manufacturing, Inc.
1390 S Tippecanoe Avenue # B
San Bernardino, California 92408

For Submittal To:

South Coast Air Quality Management District
21865 Cople0y Drive
Diamond Bar, California 91765-4182

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 279-6777

Joe Rubio

Test Date: **March 6, 2024**
Production Date: **April 29, 2024**
Report Number: **W002AS-032871-RT-5988**

MONTROSE AIR QUALITY SERVICES

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, the information contained in this communication is intended exclusively for the individual or entity to which it is addressed. This communication may contain information that is proprietary, privileged or confidential or otherwise legally exempt from disclosure. If you are not the named addressee, you are not authorized to read, print, retain, copy, or disseminate this message or any part of it.

REVIEW AND CERTIFICATION

All work, calculations, and other activities and tasks performed and presented in this document were carried out by me or under my direction and supervision. I hereby certify that, to the best of my knowledge, Montrose operated in conformance with the requirements of the Montrose Quality Management System and ASTM D7036-04 during this test project.

Signature:  Date: 4/29/2024

Name: Joe Rubio Title: Client Project Manager

I have reviewed, technically and editorially, details, calculations, results, conclusions, and other appropriate written materials contained herein. I hereby certify that, to the best of my knowledge, the presented material is authentic, accurate, and conforms to the requirements of the Montrose Quality Management System and ASTM D7036-04.

Signature:  Date: 4/29/2024

Name: S. Hugh Brown Title: Client Project Manager

GENERAL INFORMATION

Source:	Pot Furnace Model No 5600
Facility:	Thermal Solutions Manufacturing, Inc. 1390 S Tippecanoe Avenue # B San Bernardino, California 92408
Facility Contact:	Ms. Maureen Baker Telephone: (909) 332-3408 Email: Maureen.Baker@tsmus.com
Agency:	South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, California 91765-4178
Agency Contact:	Mr. Hiram Fong Telephone: (909) 396-2718 Email: hfong@aqmd.gov
Facility ID No.:	172808
SCAQMD Permit Nos.:	G26164, A/N 544919
Source Testing Contractor:	Montrose Air Quality Services, LLC 1631 E. St. Andrew Pl. Santa Ana, California 92705
Source Testing Contractor Contact:	Mr. Joe Rubio Telephone: (714) 332-8486 Email: jrubio@montrose-env.com
Test Date:	March 6, 2024

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1.0 INTRODUCTION

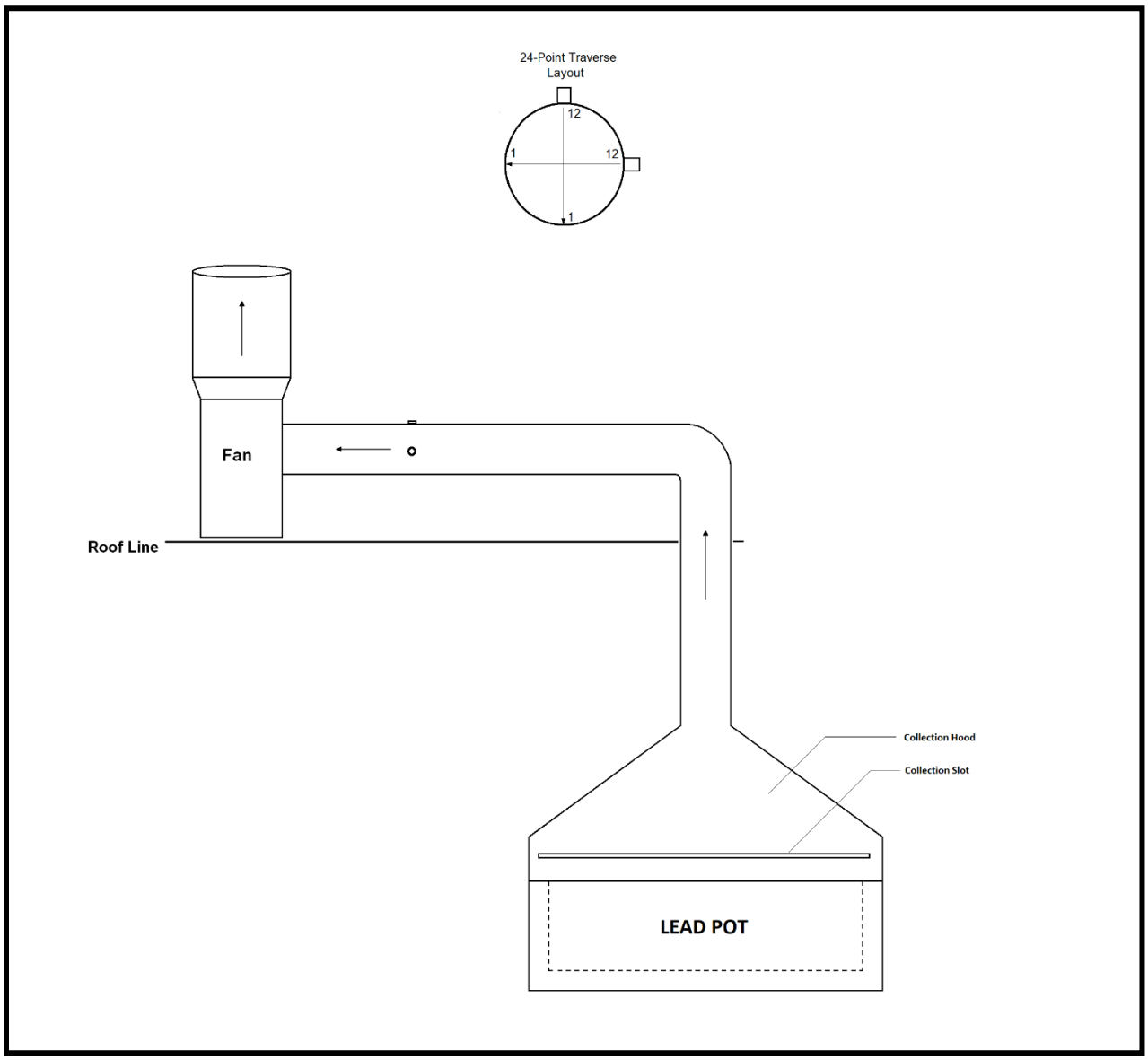
Montrose Air Quality Services, LLC (MAQS) is a participant in CARB's Independent Contractor Program and was hired by Thermal Solutions Manufacturing, Inc. to perform source testing. MAQS is certified by the South Coast Air Quality Management District (SCAQMD) to conduct testing for criteria pollutants using District Methods. Appendix D contains MAQS' SCAQMD and STAC certifications, and a Statement of No Conflict of Interest. MAQS and the analytical laboratory, Weck Laboratories, Inc. in City of Industry, California both qualify as independent testing laboratories under SCAQMD Rule 304 (no conflicts of interest).

Thermal Solutions Manufacturing, Inc. conducts soldering operations on radiators that utilize a pot furnace. (Permit No. G26164). Emissions from the pot are captured by a collection manifold that runs along the north side of the tank and vented to the roof and then to the atmosphere without the use of control equipment. A diagram showing the layout of the collection hood and sample ports is presented as Figure 1-1. A copy of the tank permit is provided in Appendix E.

The source tests determined the lead emissions of the pot, in triplicate, by SCAQMD Method 12.1 during a period of above-normal operation. District Rule 1420 limits the lead emissions to <0.0003 pounds per hour.

A test plan (document W002AS-032871-PP-913, dated December 18, 2023) was submitted prior to the testing. Testing was performed by Joe Rubio and Dominic Heredero. Joe Rubio and Dominic Heredero were the on-site Qualified Individuals for MAQS as required by ASTM-D7036-04. The test was coordinated by Maureen Baker of Thermal Solutions Manufacturing, Inc. The SCAQMD was notified of the testing but was not present.

FIGURE 1-1
LOCATION OF SAMPLE PORTS
THERMAL SOLUTION MANUFACTURING, INC.
POT FURNACE



2.0 EQUIPMENT AND PROCESS DESCRIPTION

Thermal Solutions Manufacturing, Inc. conducts fabrication of radiators that utilize a lead pot. After the radiator core is treated in the furnace, the ends of the radiator are cleaned and prepared by submerging both ends of the core in a flux bath for about 30 seconds. The ends of the radiator core are then soldered closed by submerging one end in the lead pot for about 30 – 45 seconds. The part is pulled from the tank and allowed to cool for about one minute and then the part is turned over and the process is repeated on the opposite end.

The pot furnace (serial No. 8186-97) is a Model No. 5600, 1’1” wide x 7’-0” long and 10” high. The pot has a capacity of 3,750 pounds of lead. The solder used in the pot is heated electrically. A Certificate of Analysis for the solder can be found in Appendix B.

Source testing was conducted during a condition of high production. The number of parts processed during a typical 8-hour day is 15-20 radiators. During the combined 6-hr test period a total of 18 radiators were processed. No additional solder was added to the pot furnace on the day of the test.

3.0 TESTING METHODOLOGY

3.1 SMOKE TEST

Prior to source testing, MAQS utilized smoke generating tubes to ensure that the ventilation system was providing adequate draft and air flow to collect the chromium emissions over the pot furnace. An imaginary grid of 12 squares was used along with a tube emitting a continuous stream of smoke to check the tank surface for proper fume collection and ensure that no fugitives are present. Results from the smoke test indicate the ventilation collection system for the pot furnace operating effectively. A DVD containing videos of the smoke test is attached to the inside back cover of this report.

3.2 SLOT VELOCITIES

In addition, hood slot velocities were measured with a TSI VelociCalc hot-wire anemometer and air flows were measured to confirm the recommended minimum velocities measured in fpm at the slot of 2,000 fpm were met. The average of the velocities measured was 3,308 fpm. Measurements taken at the slot intake indicate the pot furnace was operating in compliance with Rule 1420. A data sheet showing the slot velocities are available in Appendix A.

3.3 SCAQMD METHOD 12.1

The location of the traverse points was based on EPA Method 1 and the stack dimensions were verified on the day of the test. The sampling was conducted in triplicate during periods of high production.

Inorganic lead was measured by using SCAQMD Method 12.1. A diagram of the sampling equipment configuration is presented as Figure 3-1. The samples were extracted through a glass nozzle, a Teflon union, a 36" glass-lined stainless-steel probe, two Greenburg-Smith impingers each charged with 100 ml of 0.1N nitric acid solution, an empty impinger, a glass filter holder, an impinger filled with silica gel, a 10-foot umbilical line, a vacuum pump, a dry gas meter, and a calibrated orifice connected to an inclined oil manometer. High-purity quartz filters with 0.3-micron porosity were used in the filter holders. The sampling included a short length of ⅜-inch Teflon tubing between the probe and the first impinger.

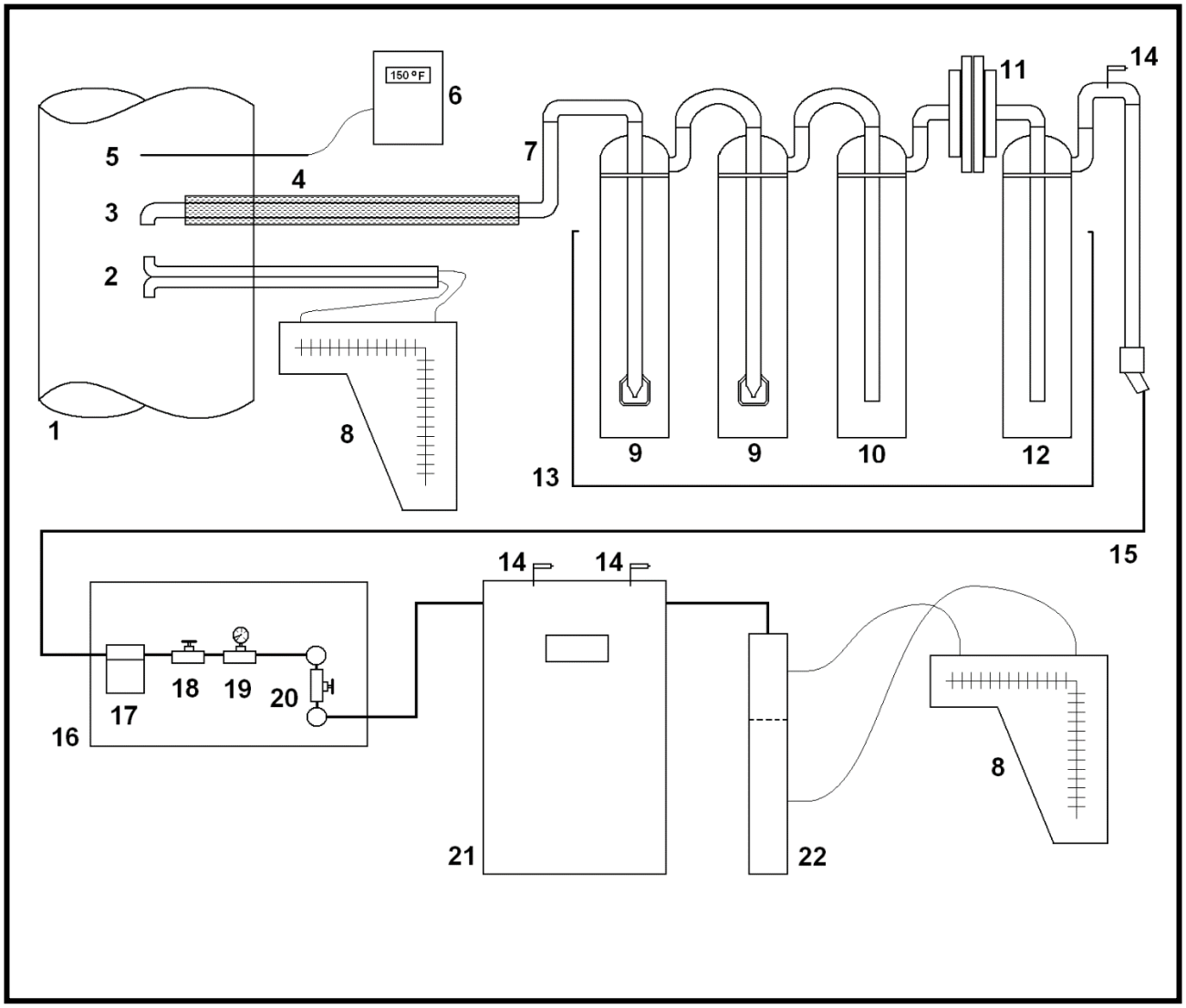
The weight of the impinger solution and the weight of the silica gel were recorded before and after the tests to obtain the moisture content of the stack gas. All sample weights were recorded immediately on sample recovery sheets during charging and sample recovery. Leak checks were performed before and after each test.

The sampling was conducted isokinetically for 120 minutes at the exhaust stack. Three test runs were performed. Volumetric flow rates were calculated from the measured velocity head and the cross-sectional area of the duct. As each traverse point was sampled, the velocity head of the flue gas was measured with an S-type Pitot tube connected to an inclined oil manometer, and the temperature of the flue gas was measured with a chromel-alumel (type K) thermocouple and a digital potentiometer (EPA Method 2).

After testing the samples were recovered in the MAQS Santa Ana Laboratory. The contents of the impingers were placed in a 500-ml. polyethylene container. The sampling train was rinsed from the third impinger to the nozzle with the charging solution and the rinse added to the sample. The filter was placed in a separate polyethylene container. The impinger solution was chilled to an exit gas temperature of 68°F or less during the tests and kept refrigerated prior to the analyses in order to prevent degradation of the sample. Disposable vinyl gloves were worn during sample retrieval to prevent contamination.

Laboratory analyses was conducted by Weck Laboratory, Inc., City of Industry, California. To achieve maximum detection limits, inorganic lead determinations were made by inductively coupled plasma mass spectroscopy (ICPMS). The detection level of the analytical procedure was 0.20 µg per sample. A chain of custody was used for tracking samples during this project and was maintained for each sample throughout the sample recovery and analytical process. The laboratory analysis report and data package are included in Appendix A.

FIGURE 3-1
SCAQMD METHOD 12.1 SAMPLING EQUIPMENT



1. Stack
2. t tube
3. Glass or Quartz probe
4. SS probe w/ glass liner
5. Thermocouple
6. Digital Potentiometer
7. Flexible Teflon line
8. Inclined oil manometer
9. G/S impinger w/0.1 N HNO_3
10. Modified G/S impinger empty
11. Filter
12. Modified G/S Impinger w/Silica Gel
13. Ice bath
14. Thermocouple
15. Umbilical line
16. Sealed vacuum pump
17. Pump filter
18. Shut-off valve
19. Vacuum gage
20. Bypass metering valve
21. Dry gas meter
22. Orifice Flow Indicator

4.0 RESULTS

Results indicate that the lead air emissions do not comply with the emissions limit of 0.0003 lb/hr, as specified in District Rule 1420. The summarized results of the testing program can be found in Table 4-1. Additionally, supporting data like process information, field data sheets, laboratory data, and equipment calibrations have been provided in the Appendices.

TABLE 4-1
LEAD EMISSIONS TEST RESULTS
THERMAL SOLUTIONS MANUFACTURING, INC.
POT FURNACE
MARCH 6, 2024

Parameter/Units	Run 1	Run 2	Run 3	Average
Start/Stop Time	0715/916	0930/1132	1145/1347	--
Stack Temperature, °F	69	71	72	71
Exhaust Stack Velocity, ft/second	35.4	35.5	35.5	35.4
Static Pressure, inches H_2O	-2.1	-2.1	-2.1	-2.1
Moisture, % v/v	1.32	1.33	1.32	1.32
Sample Volume, DSCF	90.733	87.345	88.485	88.854
Isokinetic Rate, %	98.5	95.2	96.8	96.9
Exhaust Flow Rate, ACFM	3,750	3,764	3,760	3,758
Exhaust Flow Rate, DSCF	3,494	3,495	3,481	3,490
Lead Data				
Total lead per sample, µg	110.0	120.0	77.0	102.3
Total Lead, µg/m^3	41.65	45.39	29.67	38.90
Total Lead, lb/hr	0.00055	0.00059	0.00039	0.00051
Total Lead, lb/day	0.01308	0.01426	0.00928	0.01221

APPENDIX A
TEST DATA

Appendix A.1
Field Data

PLANT: Thermal Solutions
SOURCE: Lead Pot Exhaust
DATE: 3/6/2024
STANDARD TEMP (SCAQMD = 60 DEG.) 60

RUN NUMBER	1	2	3	
FIELD DATA INPUTS:				
BAROMETRIC PRESSURE (Pb)	28.89	28.89	28.89	
STACK DIAMETER (Ds)	18.00	18.00	18.00	
PITOT CORRECTION (Cp)	0.84	0.84	0.84	
SQRT DELTA P	0.615	0.616	0.615	
STACK TEMP (DEG. F)	69.0	70.7	72.4	70.7
STATIC PRESSURE (Ps)	-2.1	-2.1	-2.1	-2.1
VOLUME SAMPLED (Vm)	97.313	97.641	97.548	
METER TEMPERATURE (DEG. F)	61.3	62.5	71.8	
METER GAMMA	0.990	0.990	0.990	
DELTA H (INCHES WATER)	2.0	2.0	2.0	
LIQUID COLLECTED (VLC)	26.8	27.1	26.4	
% O2	20.90	20.90	20.90	
%CO2	0.01	0.01	0.01	
SAMPLING TIME (MINUTES)	120.0	120.0	120.0	
NOZZLE DIAMETER (INCHES)	0.270	0.270	0.270	
LABORATORY DATA:				
Lead (ug)	110.0	120.0	77.0	102.3
FLOW RESULTS:				Average
VOLUME SAMPLED, DSCF	93.261	93.361	91.653	92.758
VOLUME SAMPLED, DSCM	2.641	2.644	2.595	
MOISTURE IN SAMPLE (CF)	1.25	1.26	1.23	
MOISTURE (%)	1.32	1.33	1.32	1.32
MOLECULAR WEIGHT (DRY)	28.84	28.84	28.84	
MOLECULAR WEIGHT (WET)	28.69	28.69	28.69	
STACK VELOCITY (FT/SEC)	35.4	35.5	35.5	35.4
ACTUAL CFM	3750	3764	3760	3758
STANDARD CFM	3540	3542	3527	3537
DRY STANDARD CFM	3494	3495	3481	3490
ISOKINETIC RATE (100% ±10%)	98.9	98.9	97.5	98.4
LEAD EMISSIONS				**Average**
ug/m3	41.65	45.39	29.67	38.90
lbs/hr	0.00055	0.00059	0.00039	0.00051
lbs/day	0.01308	0.01426	0.00928	0.01221

MONTROSE
AIR QUALITY SERVICES

1631 E St. Andrew Place
Santa Ana, California 92705
Phone: 714-279- 6777

TRAVERSE POINT LOCATION FOR CIRCULAR STACKS

Checked by: _____

Plant: Thermal Solution
Source: Lead Pot Exh
Date: 3/6/24
Inside of far wall to outside of nipple (a): 18"
Inside of near wall to outside of nipple (b): 0
Stack I.D. (a-b): 18"
Nearest upstream disturbance: 6 D
Nearest downstream disturbance: 1 D
Calculator: MT

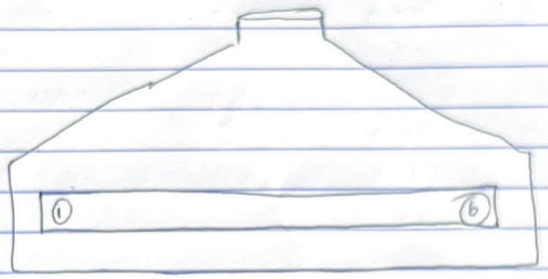
Schematic of duct

Traverse Point Number	Fraction of Stack I.D.	Stack I.D.	Products of Columns 2 & 3	Nipple Length	Traverse Point (sum of columns 4 & 5)
1	2.1	18"	0.4		
2	6.7		1.2		
3	11.8		2.1		
4	17.7		3.2		
5	25.0		4.5		
6	35.6		6.4		
7	64.4		11.6		
8	75.0		13.5		
9	82.3		14.8		
10	88.2		15.9		
11	93.3		16.8		
12	97.9		17.6		

JR / DH
3/6/24

THERMAL SOLUTIONS

SLOT SIZE IS 2.5" x 86"
POT TEMP = 702°F – 704°F



① 3,020
② 3,280
③ +4,000
④ +4,000
⑤ 3,150
⑥ 3,190

SLOT SIZE = 2.5" x 86
TANK SIZE = 19" x 86"

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Thermal Solution
LOCATION: Lea & Roy Eds
DATE: 3/6/24
RUN NO: Field Blank
OPERATOR: DH
METER BOX NO: 4 Mucs
METER ΔH@: 1.832
METER Yd: 0.990
STACK AREA, FT²: 1811
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 5.2
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: —
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: 63°
BAROMETRIC PRESSURE: 28.85
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 169/glass
PROBE LENGTH: 2'
NOZZLE ID NO/ MATERIAL: 0.270/glass
NOZZLE DIAMETER: 0.270
FILTER NO/TYPE: E-4 FB 121
PRE-TEST LEAK RATE: : 0.006 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : _____ CFM@ _____ in. Hg.
PITOT LEAK CHECK - PRE: _____ POST: _____
CHAIN OF CUSTODY: SAMPLE CUSTODIAN _____
SAMPLER DH
SAMPLE CUSTODIAN _____

Imp. #	Contents	Post-Test / Pre-Test	Difference
1	DI/NH4NO3	729.1 / 728.9	0.2
2	" "	732.5 / 732.4	0.1
3	MT	620.2 / 620.1	0.1
4	Si	896.6 / 896.4	0.2
—			
Total:			0.6

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
	1403	293.263											
Average:													

Comments: _____

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Thermal Solution
LOCATION: LEAD PET EXH
DATE: 3/6/17
RUN NO: 1
OPERATOR: DH
METER BOX NO: 41 WC3
METER ΔH@: 1.852
METER Yd: 0.990
STACK AREA, FT²: 18"
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= ____ X ΔP: 5.2
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: -
Filter Condition after Test: -
Check Weight: 500/500

AMBIENT TEMPERATURE: 50°
BAROMETRIC PRESSURE: 28.89
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84 pm
PROBE ID NO/MATERIAL: 169 ~~169~~ / glass
PROBE LENGTH: 2'
NOZZLE ID NO/ MATERIAL: 0.270 / glass
NOZZLE DIAMETER: 0.270
FILTER NO/TYPE: F-1 R-1 121
PRE-TEST LEAK RATE: : 0.004 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.004 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN ____
SAMPLER DH
SAMPLE CUSTODIAN ____

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	DIW HNO_3	772.1 / 764.4	7.7
2	" "	6165 / 6126	3.9
3	MT	6217 / 6193	2.4
4	SG	9243 / 9115	12.8
___	___	___ / ___	___
Total:	___	___	26.8

Point	Time	Meter Volume, ft³	ΔP in. H_2O	ΔH in. H_2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O_2 % (CVC)	Pstatic in. H_2O
4 1	0735	0.248	0.31	1.8	69	N/A	N/A	49	N/A	51	3	0	-2.1
2	5	3.7	0.36	1.9	69			48		56	3	2	
3	10	7.6	0.44	2.3	69			49		57	4	1	
4	15	11.9	0.40	2.1	69			49		57	4	2	
5	20	16.1	0.37	1.9	69			49		58	3	3	
6	25	20.0	~~0.40~~ 0.34	1.8	69			50		59	4	3	
7	30	23.8	0.29	1.5	69			50		60	4	4	
8	35	27.4	0.26	1.4	69			51		60	3	5	
9	40	30.8	0.37	1.9	69			52		62	4	4	
10	45	34.7	0.35	1.8	69			51		61	4	2	
11	50	38.0	0.29	1.5	69			52		60	3	3	
12	55	42.1	0.45	2.3	69			52		62	5	2	
5 1	0815/16	46.524	0.34	1.8	69			53		64	4	1	
2	65	50.3	0.29	1.5	68			54		64	3	0	
3	70	53.9	0.30	1.6	68			54		63	3	0	
4	75	57.5	0.32	1.7	68			55		64	3	2	
5	80	61.2	0.33	1.7	68			55		65	3	1	
6	85	64.9	0.30	1.6	69			56		64	3	1	
7	90	68.5	0.27	1.4	69			55		65	3	2	
8	95	72.0	0.33	1.7	70			56		64	4	4	
9	100	75.7	0.51	2.7	69			54		64	5	2	
10	105	80.4	0.63	3.3	70			54		63	6	3	
11	110	85.7	0.71	3.8	70			55		64	6	1	
12	115	91.5	0.73	3.8	70			56		64	6	1	
Average:	0916	97.361				END TEST							
Comments:		97.313	√0.415	2.0	69					61.3			

MONTROSE
QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Thermal Solutions
LOCATION: Leach Pot EXH
DATE: 3/6/24
RUN NO: 2
OPERATOR: DH
METER BOX NO: 4 (WCS)
METER ΔH@: 1.832
METER Yd: 0.990
STACK AREA, FT²: 18"
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= ____ X ΔP: 5.2
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: —
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: 54°
BAROMETRIC PRESSURE: 28.89
ASSUMED MOISTURE: 20
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 69 / glass
PROBE LENGTH: 2'
NOZZLE ID NO/ MATERIAL: 0.270 / glass
NOZZLE DIAMETER: 0.270
FILTER NO/TYPE: 8-2 F-2 12-1
PRE-TEST LEAK RATE: : .0006 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : .0005 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN ____
SAMPLER DH
SAMPLE CUSTODIAN ____

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	DI w HNO3	744.5 / 736.6	7.9
2	" "	625.9 / 621.8	4.1
3	MT	625.7 / 623.3	2.4
4	SG	525.0 / 512.3	12.7
___	___	___ / ___	___
Total:			27.1

Point	Time	Meter Volume, ft³	ΔP in. H2O	ΔH in. H2O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O2 %	Pstatic in. H2O
1	0930	97.603	0.34	1.8	70	N/A	N/A	58	N/A	63	5	N/A	-2.1
2	5	101.4	0.38	2.0	70			56		63	5		
3	10	105.5	0.42	2.2	70			55		62	6		
4	15	109.7	0.41	2.1	70			56		61	6		
5	20	113.9	0.35	1.8	71			57		61	5		
6	25	117.8	0.32	1.7	71			57		61	5		
7	30	121.5	0.30	1.6	70			59		60	4		
8	35	125.1	0.26	1.4	71			58		61	4		
9	40	128.5	0.39	2.0	71			59		61	5		
10	45	132.6	0.32	1.7	71			58		60	5		
11	50	136.3	0.30	1.6	71			60		60	4		
12	55	139.9	0.47	2.4	72			60		61	7		
1	1000/32	144.408	0.33	1.7	72			59		62	5		
2	65	148.2	0.28	1.5	71			58		61	4		
3	70	151.7	0.27	1.4	71			57		62	4		
4	75	155.1	0.30	1.6	72			58		63	4		
5	80	158.7	0.35	1.8	71			58		64	5		
6	85	162.6	0.33	1.7	71			57		64	4		
7	90	166.4	0.30	1.6	70			58		64	4		
8	95	170.4	0.32	1.7	70			59		65	5		
9	100	173.7	0.55	2.9	70			60		63	6		
10	105	178.6	0.60	3.1	70			59		63	7		
11	110	183.6	0.69	3.6	70			58		60	7		
12	115	189.4	0.75	3.9	71			57		64	7		
Average:	1132	~~195.244~~				END	TEST						

Comments: 97.641 195.244 1046 20 70.7 625

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Thermal Solution
LOCATION: Lead Pot Exh
DATE: 3/6/24
RUN NO: 3
OPERATOR: DH
METER BOX NO: 4 (WC)
METER ΔH@: 1.832
METER Yd: 0.990
STACK AREA, FT²: 18"
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= ____ X ΔP: 5.2
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: —
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: 61°
BAROMETRIC PRESSURE: 28.85
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 169 / glass
PROBE LENGTH: 2'
NOZZLE ID NO/ MATERIAL: 0.270 / glass
NOZZLE DIAMETER: 0.270
FILTER NO/TYPE: F-3 Q-3 12.1
PRE-TEST LEAK RATE: : 0.006 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.005 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN ____
SAMPLER DH
SAMPLE CUSTODIAN ____

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	DIW HNO3	762.5	753.9	8.6
2	" "	756.5	752.6	3.9
3	mt	644.9	644.6	2.3
1	SG	921.9	910.3	11.6
Total:				26.4

Point	Time	Meter Volume, ft³	ΔP in. H₂O	ΔH in. H₂O	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Imp. Out Temp, °F	Meter Temp, °F In	Meter Temp, °F Out	Vacuum in. Hg.	O₂ %	Pstatic in. H₂O
1	1145	195.481	0.33	1.7	71	n/a	n/a	58	n/a	64	4	n/a	-2.1
2	5	155.3	0.39	2.0	72			59		65	5		
3	10	203.3	0.42	2.2	72			59		66	5		
4	15	207.6	0.40	2.1	71			60		67	5		
5	20	211.7	0.39	2.0	72			55		68	5		
6	25	215.8	0.36	1.9	73			58		68	5		
7	30	219.7	0.27	1.4	72			55		67	4		
8	35	223.2	0.25	1.3	72			58		69	4		
9	40	226.6	0.36	1.9	72			59		70	5		
10	45	230.5	0.35	1.8	72			59		70	5		
11	50	234.4	0.32	1.7	72			58		71	5		
12	55	238.1	0.42	2.2	72			58		73	6		
1	1245/47	242.353	0.36	1.9	73			57		72	5		
2	65	246.3	0.30	1.4	73			58		71	4		
3	70	249.9	0.32	1.7	73			57		72	4		
4	75	253.6	0.33	1.7	73			57		74	4		
5	80	257.5	0.35	1.8	73			58		73	4		
6	85	261.3	0.28	1.5	73			55		75	4		
7	90	264.8	0.25	1.3	73			57		76	4		
8	95	268.3	0.31	1.6	72			59		77	4		
9	100	271.8	0.50	2.6	73			58		77	6		
10	105	276.5	0.60	3.1	73			58		78	7		
11	110	281.7	0.68	3.5	73			58		79	7		
12	115	287.3	0.72	3.7	73			55		80	7		
Average:	1347	293.029						TEST					
Comments:		97.548	√0.615	2.0	72.4					71.8			

Appendix A.2
Calculation Sheets

SCAQMD 12.1 DATA INPUTS

PLANT: **Thermal Solutions**
SOURCE: **Lead Pot Exhaust**
DATE: **3/6/2024**
RUN NUMBER: **1**
BAROMETRIC : **28.89**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	0.1N HNO_3	772.1	764.4	7.7
2.	0.1N HNO_3	616.5	612.6	3.9
3.	EMPTY	621.7	619.3	2.4
4.	Silica Gel	924.3	911.5	12.8
			Total	**26.8**

K Factor: **5.2**

Control Box ID: **41 WCS** Meter Delta H: **1.832** Meter Gamma: **0.990**

Nozzle Diameter: **0.270** Stack Diameter: **18** Static Pressure: **-2.1**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	0.048	0.31	1.6	69	N/A	N/A	54	NA	0.557
2.	5	3.7	0.36	1.9	69	N/A	N/A	56	NA	0.600
3.	10	7.6	0.44	2.3	69	N/A	N/A	57	NA	0.663
4.	15	11.9	0.40	2.1	69	N/A	N/A	57	NA	0.632
5.	20	16.1	0.37	1.9	69	N/A	N/A	58	NA	0.608
6.	25	20.0	0.34	1.8	69	N/A	N/A	59	NA	0.583
7.	30	23.8	0.29	1.5	69	N/A	N/A	60	NA	0.539
8.	35	27.4	0.26	1.4	69	N/A	N/A	60	NA	0.510
9.	40	30.8	0.37	1.9	69	N/A	N/A	62	NA	0.608
10.	45	34.7	0.35	1.8	69	N/A	N/A	61	NA	0.592
11.	50	38.6	0.29	1.5	69	N/A	N/A	60	NA	0.539
12.	55	42.1	0.45	2.3	69	N/A	N/A	62	NA	0.671
1.	60	46.524	0.34	1.8	69	N/A	N/A	64	NA	0.583
2.	65	50.3	0.29	1.5	68	N/A	N/A	64	NA	0.539
3.	70	53.9	0.30	1.6	68	N/A	N/A	63	NA	0.548
4.	75	57.5	0.32	1.7	68	N/A	N/A	64	NA	0.566
5.	80	61.2	0.33	1.7	68	N/A	N/A	63	NA	0.574
6.	85	64.9	0.30	1.6	69	N/A	N/A	64	NA	0.548
7.	90	68.5	0.27	1.4	69	N/A	N/A	65	NA	0.520
8.	95	72.0	0.33	1.7	70	N/A	N/A	64	NA	0.574
9.	100	75.7	0.51	2.7	69	N/A	N/A	64	NA	0.714
10.	105	80.4	0.63	3.3	70	N/A	N/A	63	NA	0.794
11.	110	85.7	0.71	3.7	70	N/A	N/A	64	NA	0.843
12.	115	91.5	0.73	3.8	70	N/A	N/A	64	NA	0.854
-	120	97.361	END TEST	-	-	-	-	-	-	-
	120	97.313	0.615	2.0	69.0		61.3			

SCAQMD 12.1 DATA INPUTS

PLANT: **Thermal Solutions**
SOURCE: **Lead Pot Exhaust**
DATE: **3/6/2024**
RUN NUMBER: **2**
BAROMETRIC : **28.89**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	0.1N HNO_3	744.5	736.6	7.9
2.	0.1N HNO_3	625.9	621.8	4.1
3.	EMPTY	625.7	623.3	2.4
4.	Silica Gel	925	912.3	12.7
			Total	**27.1**

K Factor: **5.2**

Control Box ID: **41 WCS** Meter Delta H: **1.832** Meter Gamma: **0.990**

Nozzle Diameter: **0.270** Stack Diameter: **18** Static Pressure: **-2.1**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	97.603	0.34	1.8	70	N/A	N/A	63	N/A	0.583
2.	5	101.4	0.38	2.0	70	N/A	N/A	63	N/A	0.616
3.	10	105.5	0.42	2.2	70	N/A	N/A	62	N/A	0.648
4.	15	109.7	0.41	2.1	70	N/A	N/A	61	N/A	0.640
5.	20	113.9	0.35	1.8	71	N/A	N/A	61	N/A	0.592
6.	25	117.8	0.32	1.7	71	N/A	N/A	61	N/A	0.566
7.	30	121.5	0.30	1.6	70	N/A	N/A	60	N/A	0.548
8.	35	125.1	0.26	1.4	71	N/A	N/A	61	N/A	0.510
9.	40	128.5	0.39	2.0	71	N/A	N/A	61	N/A	0.624
10.	45	132.6	0.32	1.7	71	N/A	N/A	60	N/A	0.566
11.	50	136.3	0.30	1.6	71	N/A	N/A	60	N/A	0.548
12.	55	139.9	0.47	2.4	72	N/A	N/A	61	N/A	0.686
1.	60	144.408	0.33	1.7	72	N/A	N/A	62	N/A	0.574
2.	65	148.2	0.28	1.5	71	N/A	N/A	61	N/A	0.529
3.	70	151.7	0.27	1.4	71	N/A	N/A	62	N/A	0.520
4.	75	155.1	0.30	1.6	72	N/A	N/A	63	N/A	0.548
5.	80	158.7	0.35	1.8	71	N/A	N/A	64	N/A	0.592
6.	85	162.6	0.33	1.7	71	N/A	N/A	64	N/A	0.574
7.	90	166.4	0.30	1.6	70	N/A	N/A	64	N/A	0.548
8.	95	170.0	0.32	1.7	70	N/A	N/A	65	N/A	0.566
9.	100	173.7	0.55	2.9	70	N/A	N/A	65	N/A	0.742
10.	105	178.6	0.60	3.1	70	N/A	N/A	65	N/A	0.775
11.	110	183.6	0.69	3.6	70	N/A	N/A	66	N/A	0.831
12.	115	189.4	0.75	3.9	71	N/A	N/A	66	N/A	0.866
-	120	195.244	END TEST	-	-	-	-	-	-	-
	120	97.641	0.616	2.0	70.7		62.5			

SCAQMD 12.1 DATA INPUTS

PLANT: **Thermal Solutions**
SOURCE: **Lead Pot Exhaust**
DATE: **3/6/2024**
RUN NUMBER: **3**
BAROMETRIC : **28.89**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	0.1N HNO_3	762.5	753.9	8.6
2.	0.1N HNO_3	756.5	752.6	3.9
3.	EMPTY	646.9	644.6	2.3
4.	Silica Gel	921.9	910.3	11.6
			Total	**26.4**

K Factor: **5.2**

Control Box ID: **41 WCS** Meter Delta H: **1.832** Meter Gamma: **0.990**

Nozzle Diameter: **0.270** Stack Diameter: **18** Static Pressure: **-2.1**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	195.481	0.33	1.7	71	NA	N/A	64	NA	0.574
2.	5	199.3	0.39	2.0	72	NA	N/A	65	NA	0.624
3.	10	203.3	0.42	2.2	72	NA	N/A	66	NA	0.648
4.	15	207.6	0.40	2.1	71	NA	N/A	67	NA	0.632
5.	20	211.7	0.39	2.0	72	NA	N/A	68	NA	0.624
6.	25	215.8	0.36	1.9	72	NA	N/A	68	NA	0.600
7.	30	219.7	0.27	1.4	72	NA	N/A	67	NA	0.520
8.	35	223.2	0.25	1.3	72	NA	N/A	69	NA	0.500
9.	40	226.6	0.36	1.9	72	NA	N/A	70	NA	0.600
10.	45	230.5	0.35	1.8	72	NA	N/A	70	NA	0.592
11.	50	234.4	0.32	1.7	72	NA	N/A	71	NA	0.566
12.	55	238.1	0.42	2.2	72	NA	N/A	73	NA	0.648
1.	60	242.353	0.36	1.9	73	NA	N/A	72	NA	0.600
2.	65	246.3	0.30	1.6	73	NA	N/A	71	NA	0.548
3.	70	249.9	0.32	1.7	73	NA	N/A	72	NA	0.566
4.	75	253.6	0.33	1.7	73	NA	N/A	74	NA	0.574
5.	80	257.5	0.35	1.8	73	NA	N/A	73	NA	0.592
6.	85	261.3	0.28	1.5	73	NA	N/A	75	NA	0.529
7.	90	264.8	0.25	1.3	73	NA	N/A	76	NA	0.500
8.	95	268.2	0.31	1.6	72	NA	N/A	77	NA	0.557
9.	100	271.8	0.50	2.6	73	NA	N/A	77	NA	0.707
10.	105	276.5	0.60	3.1	73	NA	N/A	78	NA	0.775
11.	110	281.7	0.68	3.5	73	NA	N/A	79	NA	0.825
12.	115	287.3	0.72	3.7	73	NA	N/A	80	NA	0.849
-	120	293.029	END TEST	-	-	-	-	-	-	-
	120	97.548	0.615	2.0	72.4		71.8			

Appendix A.3
Laboratory Data

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 4C11024

Project: Thermal Solutions (Proj-032871)

Attn: Joe Rubio

Client: Montrose Air Quality Services, LLC - Santa Ana CA
1631 E. Saint Adrew Place
Santa Ana, CA 92705

Report Date: 4/08/2024
Received Date: 3/11/2024
Turnaround Time: Normal
Phones: (714) 332-8240
Fax:
P.O. #:
Billing Code:

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • NV-DEP #NAC 445A • SCAQMD #93LA1006

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. The report may include analytes that are not currently accreditable by some state agencies or accrediting bodies. This analytical report must be reproduced in its entirety.

Dear Joe Rubio,

Enclosed are the results of analyses for samples received 3/11/24 with the Chain-of-Custody document. The samples were received in good condition, at 1.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Reviewed by:

Tiffany T. Felix
Project Manager

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139
www.weclabs.com

Montrose Air Quality Services, LLC - Santa Ana CA
1631 E. Saint Adrew Place
Santa Ana, CA 92705

Project Number: Thermal Solutions (Proj-032871)

Project Manager: Joe Rubio

Reported:
04/08/2024 16:11

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
Lead Pot Exhaust Run 1	D. Heredero	4C11024-01	Filter	03/06/24 00:00	
Lead Pot Exhaust Run 2	D. Heredero	4C11024-03	Filter	03/06/24 00:00	
Lead Pot Exhaust Run 3	D. Heredero	4C11024-05	Filter	03/06/24 00:00	
Fild Blank	D. Heredero	4C11024-07	Filter	03/06/24 00:00	

Analyses Accreditation Summary

Analyte	CAS #	Not By ELAP-CA	Not By NELAP	Not ANAB ISO 17025
EPA 6020 in Filter				
Lead, Total	7439-92-1	⊗	⊗	⊗

Montrose Air Quality Services, LLC - Santa Ana CA
1631 E. Saint Adrew Place
Santa Ana, CA 92705

Project Number: Thermal Solutions (Proj-032871)
Project Manager: Joe Rubio

Reported: 04/08/2024 16:11

Sample Results

Sample: Lead Pot Exhaust Run 1
Sampled: 03/06/24 0:00 by D. Heredero

4C11024-01 (Filter)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods						
Method: EPA 6020			**Instr:** ICPMS05			
Batch ID: W4C1460 **Preparation:** EPA M12			**Prepared:** 03/19/24 11:05			**Analyst:** ALN
Lead, Total	**110**	0.20	ug/filter	1	03/28/24	

Sample Results

Sample: Lead Pot Exhaust Run 2
Sampled: 03/06/24 0:00 by D. Heredero

4C11024-03 (Filter)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods						
Method: EPA 6020			**Instr:** ICPMS05			
Batch ID: W4C1460 **Preparation:** EPA M12			**Prepared:** 03/19/24 11:05			**Analyst:** ALN
Lead, Total	**120**	0.20	ug/filter	1	03/28/24	

Sample Results

Sample: Lead Pot Exhaust Run 3
Sampled: 03/06/24 0:00 by D. Heredero

4C11024-05 (Filter)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods						
Method: EPA 6020			**Instr:** ICPMS05			
Batch ID: W4C1460 **Preparation:** EPA M12			**Prepared:** 03/19/24 11:05			**Analyst:** ALN
Lead, Total	**77**	0.20	ug/filter	1	03/28/24	

Sample Results

Sample: Fild Blank
Sampled: 03/06/24 0:00 by D. Heredero

4C11024-07 (Filter)

Analyte	Result	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods						
Method: EPA 6020			**Instr:** ICPMS05			
Batch ID: W4C1460 **Preparation:** EPA M12			**Prepared:** 03/19/24 11:05			**Analyst:** ALN
Lead, Total	**0.54**	0.20	ug/filter	1	03/28/24	

Montrose Air Quality Services, LLC - Santa Ana CA
1631 E. Saint Adrew Place
Santa Ana, CA 92705

Project Number: Thermal Solutions (Proj-032871)

Project Manager: Joe Rubio

Reported:
04/08/2024 16:11

Quality Control Results

Metals (Non-Aqueous) by EPA 6000/7000 Series Methods

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W4C1460 - EPA 6020										
Blank (W4C1460-BLK1)			**Prepared: 03/19/24**	**Analyzed: 03/28/24**						
Lead, Total	ND	0.20	ug/filter							
Blank (W4C1460-BLK2)			**Prepared: 03/19/24**	**Analyzed: 03/28/24**						
Lead, Total	ND	0.20	ug/filter							
LCS (W4C1460-BS1)			**Prepared: 03/19/24**	**Analyzed: 03/28/24**						
Lead, Total	4.80	0.20	ug/filter	5.00		96	80-120			
LCS Dup (W4C1460-BSD1)			**Prepared: 03/19/24**	**Analyzed: 03/28/24**						
Lead, Total	4.93	0.20	ug/filter	5.00		99	80-120	3	20	

Montrose Air Quality Services, LLC - Santa Ana CA
1631 E. Saint Adrew Place
Santa Ana, CA 92705

Project Number: Thermal Solutions (Proj-032871)

Project Manager: Joe Rubio

Reported:
04/08/2024 16:11

Notes and Definitions

Item	Definition
%REC	Percent Recovery
Dil	Dilution
MRL	Method Reporting Limit (MRL) is the minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

W0024-032871-RT-5988

32 of 64

WECK LABORATORIES, INC.
Analytical Laboratory Service - Since 1964
14859 Clark Avenue : Industry : CA 91745
Tel 626-336-2139 ♦ Fax 626-336-2634 ♦ www.wecklabs.com

Standard CHAIN OF CUSTODY RECORD

WECK WKO# 4C11024

CLIENT NAME: MONTROSE

PROJECT: Proj-032871 Thermal Solutions

ADDRESS:

PHONE: 626-831-7307
FAX:
EMAIL: jrubio@montrose-env.com

PROJECT MANAGER: JOE RUBIO

SAMPLER: D. HEREDERO

ANALYSES REQUESTED: SCAQMD 12.1

SPECIAL HANDLING

- ☐ Same Day Rush 150%
- ☐ 24 Hour Rush 100%
- ☐ 48-72 Hour Rush 75%
- ☐ 4 - 5 Day Rush 30%
- ☐ Rush Extractions 50%
- ☐ 10 - 15 Business Days
- ☐ QA/QC Data Package

Charges will apply for weekends/holidays

Method of Shipment:

COMMENTS

ID# (Lab Use Only)	DATE SAMPLED	TIME SAMPLED	SMPL TYPE	Cl_2 Y/N	SAMPLE IDENTIFICATION/SITE LOCATION	# OF CONT.	SCAQMD 12.1
	3/6/24		AQ		LEAD POT EXHAUST RUN 1	2	X
	"		AQ		" " RUN 2	2	X
	"		AQ		" " RUN 3	2	X
	"		AQ		FIELD BLANK	2	X

RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
	3/8/24 1112	CSA	3/8/24 1112
RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME
RELINQUISHED BY	DATE / TIME	RECEIVED BY	DATE / TIME

SAMPLE CONDITION:

Actual Temperature: T0307 1.3°C

Received On Ice	(Y) / N
Preserved	Y / N
Evidence Seals Present	Y / N
Container Attacked	Y / N
Preserved at Lab	Y / N

SAMPLE TYPE CODE:

AQ=Aqueous
NA= Non Aqueous
SL = Sludge
DW = Drinking Water
WW = Waste Water
RW = Rain Water
GW = Ground Water
SO = Soil
SW = Solid Waste
OL = Oil
OT = Other Matrix

PRESCHEDULED RUSH ANALYSES WILL TAKE PRIORITY OVER UNSCHEDULED RUSH REQUESTS
Client agrees to Terms & Conditions at: www.wecklabs.com

SPECIAL REQUIREMENTS / BILLING INFORMATION

COC version 042707

JG 3/11/24

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **4C11024**
WKO Logged by: Jaime Gomez
Samples Checked by: Jaime Gomez

Date/Time Received: 03/08/24 11:12
# of Samples: 08
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified about COC discrepancy?	☐	☐	☒	
Receipt Information	Sample Temperature	1.3 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified about receipt info?	☐	☒	☐	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (see comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐<6mm/Pea Size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2, 6710B<2, 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☐	☒	☐	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified about sample preservation?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Completed by:
Signature: *Jaime Gomez* Date: 03/11/24

Appendix A.4
Equipment Calibration Data

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 41-WCS
Readout Description: Control Box
Date: 1/2/2024
Performed By: JS

Calibrated Thermocouple ID: TC-295
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 2786

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-295	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	41-WCS	362	362	362	362	370	370	370	370	8.0	1.0%	Pass
T2 (~212 F)	41-WCS	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (~ 32 F)	41-WCS	31	30	30	30	32	32	32	32	1.7	0.3%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source	T/C - Readout °F				T/C Source °F				Difference		
	S/N	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	125097	649	649	649	649	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	125097	368	368	368	368	370	370	370	370	2.0	0.2%	Pass
T2 (~212 F)	125097	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	125097	30	30	30	30	32	32	32	32	2.0	0.4%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Model #: Model 522-D
ID #: 41-WCS
Date: 10/16/2023
Bar. Pressure: 29.94 (in. Hg)
Performed By: L. Olivares
Reviewed By: S. Adhikari

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
					Initial Temps.		Final Temps.					Ambient Temperature		
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.15	26.00	0.000	5.625	5.625		77.0		77.0	14742-33	0.1618	18.0	71.0	71.0	71.0
0.15	26.00	5.625	11.246	5.621		77.0		77.0	14742-33	0.1618	18.0	71.0	72.0	71.5
0.15	26.00	11.246	16.867	5.621		77.0		78.0	14742-33	0.1618	18.0	72.0	73.0	72.5
0.66	12.00	0.000	5.520	5.520		76.0		77.0	PK-48	0.3452	17.0	70.0	70.0	70.0
0.66	12.00	5.520	11.040	5.520		77.0		77.0	PK-48	0.3452	17.0	70.0	71.0	70.5
0.66	12.00	11.040	16.561	5.521		77.0		77.0	PK-48	0.3452	17.0	71.0	71.0	71.0
1.80	7.00	0.000	5.260	5.260		76.0		76.0	PK-63	0.5666	16.0	69.0	69.0	69.0
1.80	7.00	5.260	10.530	5.270		76.0		76.0	PK-63	0.5666	16.0	69.0	70.0	69.5
1.80	7.00	10.530	15.785	5.255		76.0		76.0	PK-63	0.5666	16.0	70.0	70.0	70.0
3.40	5.00	0.000	5.180	5.180		73.0		75.0	PK-73	0.7871	15.0	68.0	69.0	68.5
3.40	5.00	5.180	10.370	5.190		75.0		76.0	PK-73	0.7871	15.0	69.0	69.0	69.0
3.40	5.00	10.370	15.575	5.205		76.0		77.0	PK-73	0.7871	15.0	69.0	69.0	69.0

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR	Individual Run	Individual Orifice	Orifice Average	Orifice Average
VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y Value (number)	dH@ Value (in H2O)	0.95 < Y < 1.05?	Ymax - Ymin < 0.010?	0.98 < Y/Yd < 1.02?	dH@ - dH@ av < 0.155?
5.534	156.7	5.466	154.8	5.495	0.988	1.878	Pass			
5.530	156.6	5.463	154.7	5.498	0.988	1.880	Pass			
5.525	156.5	5.458	154.6	5.503	0.988	1.882	Pass			
				Average	**0.988**	**1.880**		Pass	Pass	Pass
5.443	154.1	5.387	152.6	5.406	0.990	1.814	Pass			
5.438	154.0	5.385	152.5	5.409	0.990	1.814	Pass			
5.439	154.0	5.382	152.4	5.411	0.990	1.816	Pass			
				Average	**0.990**	**1.815**		Pass	Pass	Pass
5.206	147.4	5.163	146.2	5.171	0.992	1.835	Pass			
5.216	147.7	5.161	146.1	5.174	0.989	1.836	Pass			
5.201	147.3	5.158	146.1	5.176	0.992	1.838	Pass			
				Average	**0.991**	**1.836**		Pass	Pass	Pass
5.166	146.3	5.125	145.2	5.129	0.992	1.801	Pass			
5.161	146.2	5.123	145.1	5.131	0.993	1.797	Pass			
5.167	146.3	5.123	145.1	5.131	0.992	1.794	Pass			
				Average	**0.992**	**1.797**		Pass	Pass	Pass

Average Yd:	**0.990**	**dH@:**	**1.832**
		Q @ dH = 1:	**0.554**

Performed by signature: _____ Date: 10/16/2023

Reviewed by signature: _____ Date: 10/16/2023

Note: Control box not equipped with meter inlet temperature reading.

41WCS Semi Annual Cal 10-16-2023 .WCS
10/16/2023
1:19 PM

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 162
Date: 1/3/2024
Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-83
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 805002770

T/C I.D. **162**	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-83	366	366	366	366	370	370	370	370	4.0	0.5%	Pass
T2 (~ 212 F)	PTC-83	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-83	33	33	33	33	32	32	32	32	1.0	0.2%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

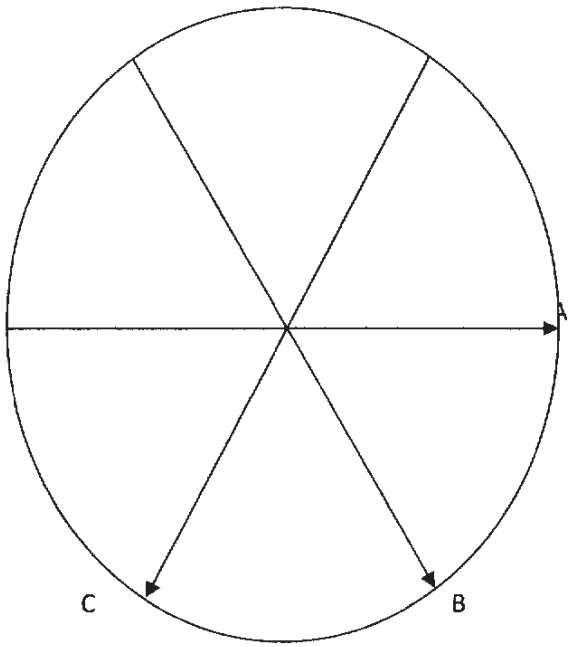
Thermocouple ID: 169
Date: 1/2/2024
Performed By: JS

Calibrated Digital Temperature Readout ID: PTC-83
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 2736
T3 Reference Thermometer ID: 805002770

T/C I.D. **169**	Readout I.D.	T/C - Readout °F				Reference Thermometer °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (~ 370 F)	PTC-83	365	365	365	365	370	370	370	370	5.0	0.6%	Pass
T2 (~ 212 F)	PTC-83	213	213	213	213	212	212	212	212	1.0	0.1%	Pass
T1 (~ 32 F)	PTC-83	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

FACILITY: Thermal Solution
SOURCE TESTED: Lens Pet
CALIBRATED BY: DH
DATE: 3/6/24



NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
0.270	0.270	0.271	0.270	0.270

Calibrated by:

Measuring Device Used : Mitutoyo Digital Calipers
Serial Number : 0247955
Model Number : CD-6" CS
Resolution : 0.01mm or 0.0005"/0.01mm
Accuracy : ±0.02mm or ± 0.001"/±0.02mm

APPENDIX B
PROCESS DATA

		Cores dipped on 3/6/24		
	Core Type	**Core Dimensions**	**Header Type**	**Header Sizes**
1	BB	13 1/2 X 17 X 5 1/4	SOLDER-ON SQUARE	6 5/8 X 16 7/8
2	BC	39 1/4 X 20 X 3 3/4	SQUARE-ON SQUARE	4 3/4 X 20 3/4
3	XC	13 1/4 X 20 X 2 1/4	SOLDER-ON GROOVED	3 3/4 X 20 / 2 3/8 X 20
4	ZE	28 X 18 1/8 X 3 11/16	SOLDER-ON GROOVED	4 3/8 X 18 3/4
5	VT	17 3/8 X 25 1/4 X 2	SOLDER-ON SQUARE	3 3/4 X 25 3/8
6	VT	17 3/8 X 19 1/4 X 2 5/8	SOLDER-ON GROOVED	3 1/2 X 19 1/4
7	VT	19 3/4 X 19 1/4 X 2 5/8	SOLDER-ON GROOVED	3 1/4 X 19 5/8
8	VT	17 3/8 X 19 1/4 X 2 5/8	SOLDER-ON GROOVED	3 1/2 X 19 1/4
9	SC	33 3/8 X 30 X 2 3/8	SOLDER-ON GROOVED	3 1/8 X 30 1/2
10	LF	54 5/8 X 55 X 3 3/4	BOLT-ON - HEAVY	7 X 57
11	VTH	40 X 28 5/8 X 3	BOLT-ON - LIGHT	7 3/8 X 32 1/8
12	VTH	18 X 10 15/16 X 2 1/4	SOLDER-ON SQUARE	2 7/8 X 11
13	VT	16 3/4 X 19 1/4 X 2 5/8	SOLDER-ON SQUARE	3 1/4 X 19 1/2
14	VTW	21 1/8 X 23 5/8 X 3 1/4	SOLDER-ON SQUARE	4 X 24
15	XD	24 3/4 X 17 1/2 X 3 3/4	BOLT-ON - LIGHT	7 X 20
16	VT	19 5/8 X 22 1/2 X 2	SOLDER-ON CONVERSION	2 1/4 X 22 1/2
17	ZE	35 X 29 3/8 X 2 15/16	BOLT-ON - LIGHT	10 3/8 X 31 1/4 / 6 X 31 1/4
18	VH	40 X 28 1/2 X 3	BOLT-ON - LIGHT	7 3/8 X 32 1/8

APPENDIX C
GENERAL EMISSIONS CALCULATIONS

GENERAL EMISSIONS CALCULATIONS

I. Stack Gas Velocity

A. Stack gas molecular weight, lb/lb-mole

$MW_{dry} = 0.44 * \%\ CO_2 + 0.32 * \%\ O_2 + 0.28 * \%\ N_2$

$MW_{wet} = MW_{dry} * (1 - B_{wo}) + 18 * B_{wo}$

B. Absolute stack pressure, iwg

$$P_s = P_{bar} + \frac{P_{sg}}{13.6}$$

C. Stack gas velocity, ft/sec

$$V_s = 2.9 * C_p * \sqrt{\Delta P} * \sqrt{T_s} * \sqrt{\frac{29.92 * 28.95}{P_s * MW_{wet}}}$$

II. Moisture

A. Sample gas volume, dscf

$$V_{mstd} = 0.03342 * V_m * \left(P_{bar} + \frac{\Delta H}{13.6}\right) * \frac{T_{ref}}{T_m} * Y_d$$

B. Water vapor volume, scf

$$V_{wstd} = 0.0472 * V_{ic} * \frac{T_{ref}}{528°R}$$

C. Moisture content, dimensionless

$$B_{wo} = \frac{V_{wstd}}{(V_{mstd} + V_{wstd})}$$

III. Stack Gas Volumetric Flow Rate

A. Actual stack gas volumetric flow rate, wacfm

$Q = V_s * A_s * 60$

B. Standard stack gas flow rate, dscfm

$$Q_{sd} = Q * (1 - B_{wo}) * \frac{T_{ref}}{T_s} * \frac{P_s}{29.92}$$

IV. Gaseous Mass Emission Rates, lb/hr

$$M = \frac{ppm * MW_i * Q_{sd} * 60}{SV * 10^6}$$

V. Emission Rates, lb/MMBtu

$$\frac{lb}{MMBtu} = \frac{ppm * MW_i * F}{SV * 10^6} * \frac{20.9}{20.9 - \%\ O_2}$$

VI. Percent Isokinetic

$$I = \frac{17.32 * T_s\ (V_{mstd})}{(1 - B_{wo})\ 0 * V_s * P_s * Dn^2} * \frac{520°R}{T_{ref}}$$

VII. Particulate Emissions

(a) Grain loading, gr/dscf
$C = 0.01543\ (M_n/V_{m\ std})$

(b) Grain loading at 12% CO_2, gr/dscf
$C_{12\%}\ CO_2 = C\ (12/\%\ CO_2)$

(c) Mass emissions, lb/hr
$M = C * Q_{sd} * (60\ min/hr) / (7000\ gr/lb)$

(d) Particulate emission factor

$$lb/10^6\ Btu = Cx\ \frac{1\ lb}{7000\ gr} * F * \frac{20.9}{20.9 - \%\ O_2}$$

Nomenclature:

A_s	=	stack area, ft^2
B_{wo}	=	flue gas moisture content, dimensionless
$C_{12\%CO2}$	=	particulate grain loading, gr/dscf corrected to 12% CO_2
C	=	particulate grain loading, gr/dscf
C_p	=	pitot calibration factor, dimensionless
Dn	=	nozzle diameter, inches
F	=	fuel F-Factor, dscf/MMBtu @ 0% O_2
H	=	orifice differential pressure, iwg
I	=	% isokinetics
M_n	=	mass of collected particulate, mg
M_i	=	mass emission rate of specie i, lb/hr
MW	=	molecular weight of flue gas, lb/lb-mole
M_{wi}	=	molecular weight of specie i:
	SO_2:	64
	NO_x:	46
	CO:	28
	HC:	16
0	=	sample time, minutes
ΔP	=	average velocity head, iwg = $(\sqrt{\Delta P})^2$
P_{bar}	=	barometric pressure, inches Hg
P_s	=	stack absolute pressure, inches Hg
P_{sg}	=	stack static pressure, iwb
Q	=	wet stack flow rate at actual conditions, wacfm
Q_{sd}	=	dry standard stack flow rate, dscfm
SV	=	specific molar volume of an ideal gas at standard conditions, ft^3/lb-mole
T_m	=	meter temperature, °R
T_{ref}	=	reference temperature, °R
T_s	=	stack temperature, °R
V_s	=	stack gas velocity, ft/sec
V_{lc}	=	volume of liquid collected in impingers, ml
V_m	=	uncorrected dry meter volume, dcf
V_{mstd}	=	dry meter volume at standard conditions, dscf
V_{wstd}	=	volume of water vapor at standard conditions, scf
Y_d	=	meter calibration coefficient

APPENDIX D
QUALITY ASSURANCE

Appendix D.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (Montrose) ASTM D7036-04 certification, Montrose is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. Montrose quality assurance program and procedures are designed to ensure that the data meet or exceed the requirements of each test method for each of these items. The quality assurance program consists of the following items:

- Assignment of an Internal QA Officer
- Development and use of an internal QA Manual
- Personnel training
- Equipment maintenance and calibration
- Knowledge of current test methods
- Chain-of-custody
- QA reviews of test programs

Assignment of an Internal QA Officer: Montrose has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: Montrose has prepared a QA Manual according to the requirements of ASTM D7036-04 and guidelines issued by EPA. The manual documents and formalizes all of Montrose's QA efforts. The manual is revised upon periodic review and as Montrose adds capabilities. The QA manual provides details on the items provided in this summary.

Personnel Testing and Training: Personnel testing and training is essential to the production of high quality test results. Montrose training programs include:

- A requirement for all technical personnel to read and understand the test methods performed
- A requirement for all technical personnel to read and understand the Montrose QA manual
- In-house testing and training
- Quality Assurance meetings
- Third party testing where available
- Maintenance of training records.

Equipment Maintenance and Calibration: All laboratory and field equipment used as a part of Montrose's emission measurement programs is maintained according to manufacturer's recommendations. A summary of the major equipment maintenance schedules is summarized in Table 1. In addition to routine maintenance, calibrations are performed on all sampling equipment according to the procedures outlined in the applicable test method. The calibration intervals and techniques for major equipment components is summarized in Table 2. The calibration technique may vary to meet regulatory agency requirements.

Knowledge of Current Test Methods: Montrose maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: Montrose maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to Montrose source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to Montrose office. Electronic field data is duplicated for backup on secure storage media. The original data sheets are used for report preparation and any additions are initialed and dated.

QA Reviews: Periodic field, laboratory, and report reviews are performed by the in-house QA coordinator. Periodically, test plans are reviewed to ensure proper test methods are selected and reports are reviewed to ensure that the methods were followed and any deviations from the methods are justified and documented.

ASTM D7036-04 Required Information

Uncertainty Statement

Montrose is qualified to conduct this test program and has established a quality management system that led to accreditation with ASTM Standard D7036-04 (Standard Practice for Competence of Air Emission Testing Bodies). Montrose participates in annual functional assessments for conformance with D7036-04 which are conducted by the American Association for Laboratory Accreditation (A2LA). All testing performed by Montrose is supervised on site by at least one Qualified Individual (QI) as defined in D7036-04 Section 8.3.2. Data quality objectives for estimating measurement uncertainty within the documented limits in the test methods are met by using approved test protocols for each project as defined in D7036-04 Sections 7.2.1 and 12.10. Additional quality assurance information is presented in the report appendices.

Performance Data

Performance data are available for review.

Qualified Personnel

A qualified individual (QI), defined by performance on a third party or internal test on the test methods, is present on each test event.

Plant Entry and Safety Requirements

Plant Entry

All test personnel are required to check in with the guard at the entrance gate or other designated area. Specific details are provided by the facility and project manager.

Safety Requirements

All personnel shall have the following personal protective equipment (PPE) and wear them where designated:

- Hard Hat
- Safety Glasses
- Steel Toe Boots
- Hearing Protection
- Gloves
- High Temperature Gloves (if required)
- Flame Resistant Clothing (if required)

The following safety measures are followed:

- Good housekeeping
- SDS for all on-site hazardous materials
- Confine selves to necessary areas (stack platform, mobile laboratory, CEMS data acquisition system, control room, administrative areas)
- Knowledge of evacuation procedures

Each facility will provide plant specific safety training.

TABLE 1
EQUIPMENT MAINTENANCE SCHEDULE

Equipment	Acceptance Limits	Frequency of Service	Methods of Service
Pumps	1. Absence of leaks 2. Ability to draw manufacturers required vacuum and flow	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Replace parts 4. Leak check
Flow Meters	1. Free mechanical movement	As recommended by manufacturer	1. Visual inspection 2. Clean 3. Calibrate
Sampling Instruments	1. Absence of malfunction 2. Proper response to zero span gas	As recommended by manufacturer	As recommended by manufacturer
Integrated Sampling Tanks	1. Absence of leaks	Depends on nature of use	1. Steam clean 2. Leak check
Mobile Van Sampling System	1. Absence of leaks	Depends on nature of use	1. Change filters 2. Change gas dryer 3. Leak check 4. Check for system contamination
Sampling Lines	1. Sample degradation less than 2%	After each test series	1. Blow dry, inert gas through line until dry

TABLE 2
MAJOR SAMPLING EQUIPMENT CALIBRATION REQUIREMENTS

Sampling Equipment	Calibration Frequency	Calibration Procedure	Acceptable Calibration Criteria
Continuous Analyzers	Before and After Each Test Day	3-point calibration error test	< 2% of analyzer range
Continuous Analyzers	Before and After Each Test Run	2-point sample system bias check	< 5% of analyzer range
Continuous Analyzers	After Each Test Run	2-point analyzer drift determination	< 3% of analyzer range
CEMS System	Beginning of Each Day	leak check	< 1 in. Hg decrease in 5 min. at > 20 in. Hg
Continuous Analyzers	Semi-Annually	3-point linearity	< 1% of analyzer range
NO_x Analyzer	Daily	NO_2 -> NO converter efficiency	> 90%
Differential Pressure Gauges (except for manometers)	Semi-Annually	Correction factor based on 5-point comparison to standard	± 5%
Differential Pressure Gauges (except for manometers)	Bi-Monthly	3-point comparison to standard, no correction factor	± 5%
Barometer	Semi-Annually	Adjusted to mercury-in-glass or National Weather Service Station	± 0.1 inches Hg
Dry Gas Meter	Semi-Annually	Calibration check at 4 flow rates using a NIST traceable standard	± 2%
Dry Gas Meter	Bi-Monthly	Calibration check at 2 flow rates using a NIST traceable standard	± 2% of semi-annual factor
Dry Gas Meter Orifice	Annually	4-point calibration for ΔH@	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	± 1.5%

Note: Calibration requirements that meet applicable regulatory agency requirements are used.

Appendix D.2
SCAQMD and STAC Certificates

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

September 14, 2023

Mr. John Peterson
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place
Santa Ana, CA 92705

Subject: LAP Approval Notice
Reference # 96LA1220

Dear Mr. Peterson:

We have completed our review of Montrose Air Quality Services' revised renewal application, which was submitted as notification of Montrose's recent acquisition of AirKinetics, Inc. under the South Coast AQMD Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2023, and ending September 30, 2024, for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

South Coast AQMD Methods 1-4
South Coast AQMD Methods 10.1 and 100.1
South Coast AQMD Methods 5.1, 5.2, 5.3, 6.1 (Sampling and Analysis)
South Coast AQMD Methods 25.1 and 25.3 (Sampling)
Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling
USEPA CTM-030 and ASTM D6522-00

Your LAP approval to perform nitrogen oxide emissions compliance testing for Rule 1121/ 1146.2 Protocols includes satellite facilities located at:

McKenna Boiler
1510 North Spring Street
Los Angeles, CA 90012

Noritz America Corp.
11160 Grace Avenue
Fountain Valley, CA 92708

Ajax Boiler, Inc.
2701 S. Harbor Blvd.
Santa Ana, CA 92704

VA Laundry Bldg., Greater LA Healthcare Sys.
508 Constitution Avenue
Los Angeles, CA 90049

So Cal Gas – Engr Analysis Ctr, Bldg H
8101 Rosemead Blvd
Pico Rivera, CA 90660

Thank you for participating in the LAP. Your cooperation helps us to achieve the goal of the LAP: to maintain high standards of quality in the sampling and analysis of source emissions. You may direct any questions or information to LAP Coordinator, Colin Eckerle. He may be reached by telephone at (909) 396-2476, or via e-mail at ceckerle@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:CE
Attachment

230914 LapRenewal.doc

STAC STACK TESTING ACCREDITATION COUNCIL

A2LA American Association for Laboratory Accreditation

Accredited Air Emission Testing Body

A2LA has accredited

MONTROSE AIR QUALITY SERVICES

In recognition of the successful completion of the joint A2LA and Stack Testing Accreditation Council (STAC) evaluation process, this laboratory is accredited to perform testing activities in compliance with ASTM D7036:2004 - Standard Practice for Competence of Air Emission Testing Bodies.

Presented this 27th day of February 2024.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2026

This accreditation program is not included under the A2LA ILAC Mutual Recognition Arrangement.

Appendix D.3
Individual QI Certificates

CERTIFICATE OF COMPLETION

Joe A Rubio

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

Source Evaluation Society Group 1: *EPA Manual Gas Volume and Flow Measurements and Isokinetic Particulate Sampling Methods*

Certificate Number: 002-2021-19

Tate Strickler, VP – Quality Systems

DATE OF ISSUE: 5/11/21

DATE OF EXPIRATION: 5/10/26

MONTROSE ENVIRONMENTAL

CERTIFICATE OF COMPLETION

Dominic Heredero

This document certifies that this individual has passed a comprehensive examination and is now a Qualified Individual (QI) as defined in Section 8.3 of ASTM D7036-04 for the following method(s):

SCAQMD Method 12.1

Certificate Number: 002-2017-192

Tate Strickler, Accreditation Director

DATE OF ISSUE: 10/18/17

DATE OF EXPIRATION: 10/18/22

MONTROSE ENVIRONMENTAL

Appendix D.4
Statement of No Conflict of Interest

STATEMENT OF NO CONFLICT OF INTEREST AS AN INDEPENDENT TESTING LABORATORY

(To be completed by authorized source testing firm representative and included in source test report)

The following facility and equipment were tested by my source testing firm and are the subjects of this statement:

Facility ID:	**172808**
Date(s) Tested:	**March 6, 2024**
Facility Name:	**Thermal Solutions Manufacturing, Inc.**
Equipment Address:	**1390 S. Tippecanoe Avenue #B**
	San Bernardino, California 92408
Equipment Tested:	**Pot Furnace**
Device ID, A/N, P/N:	**P/N: G26164, A/N 544919**

I state, as its legally authorized representative, that the source testing firm of:

Source Test Firm:	Montrose Air Quality Services, LLC
Business Address:	1631 E. St. Andrew Pl.
	Santa Ana, California 92705

is an "Independent Testing Laboratory" as defined in ***District Rule 304(k):***

For the purposes of this Rule, when an independent testing laboratory is used for the purposes of establishing compliance with District rules or to obtain a District permit to operate, it must meet all of the following criteria:

(1) The testing laboratory shall have no financial interest in the company or facility being tested, or in the parent company, or any subsidiary thereof -

(2) The company or facility being tested, or parent company or any subsidiary thereof, shall have no financial interest in the testing laboratory;

(3) Any company or facility responsible for the emission of significant quantities of pollutants to the atmosphere, or parent company or any subsidiary thereof shall have no financial interest in the testing laboratory; and

(4) The testing laboratory shall not be in partnership with, own or be owned by, in part or in full, the contractor who has provided or installed equipment (basic or control), or monitoring systems, or is providing maintenance for installed equipment or monitoring systems, for the company being tested.

Furthermore, I state that any contracts or agreements entered into by my source testing firm and the facility referenced above, or its designated contractor(s), either verbal or written, are not contingent upon the outcome of the source testing, or the source testing information provided to the SCAQMD.

Signature: Joe Rubio **Date:** **4/29/2024**

Joe Rubio	**Client Project Manager**	**(714) 279-6777**	**4/29/2024**
(Name)	(Title)	(Phone)	(Date)

FORM ST-110 :stevforl.doc (Revised 11/18/98

APPENDIX E
SCAQMD PERMIT TO OPERATE

PERMIT TO OPERATE

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301.f) is not received by the expiration date, contact the District.

Legal Owner
or Operator:

ID 172808

THERMAL SOLUTIONS MANUFACTURING, INC.
1390 S TIPPECANOE AVE, SUITE B
SAN BERNARDINO, CA 92408

Equipment Location: 1390 S TIPPECANOE SUITE B, SAN BERNARDINO, CA 92408

Equipment Description :

POT FURNACE, MODEL NO. 5600, 1'-1" W. X 7'-0" L. X 0'-10" H., SERIAL NO. 8186-97, 3750 POUND CAPACITY, WITH ONE ECLIPSE NATURAL GAS FIRED BURNER, 400,000 BTU PER HOUR TOTAL.

Conditions :

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.
3. THIS EQUIPMENT SHALL BE FIRED ON NATURAL GAS ONLY.
4. THE TOTAL QUANTITY OF MATERIAL CHARGED INTO THE FURNACE SHALL NOT EXCEED 2000 POUNDS IN ANY ONE CALENDAR MONTH.
5. MATERIALS CONTAMINATED WITH RUBBER, PLASTICS, RAGS, OIL, GREASE, OR SIMILAR SMOKE PRODUCING MATERIAL SHALL NOT BE CHARGED TO THE FURNACE.
6. DAILY RECORDS SHALL BE KEPT TO PROVE COMPLIANCE WITH CONDITION NO. 4. THE RECORDS SHALL BE KEPT FOR AT LEAST TWO YEARS, AND SHALL BE MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST.
7. MATERIALS PROCESSED IN THIS EQUIPMENT SHALL CONTAIN NO COMPOUNDS IDENTIFIED IN RULE 1401, AS AMENDED MARCH 4, 2005, WITH THE EXCEPTION OF LEAD.

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR COPY SHALL BE POSTED ON OR WITHIN 8 METERS OF THE EQUIPMENT.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT CANNOT BE CONSIDERED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF OTHER GOVERNMENT AGENCIES.

EXECUTIVE OFFICER

Dorris M Bailey
By Dorris M.Bailey/PW02
8/8/2013

THIS IS THE LAST PAGE OF THIS DOCUMENT

If you have any questions, please contact one of the following individuals by email or phone.

Name:	Mr. Joe Rubio
Title:	Client Project Manager
Region:	West
E-Mail:	JRubio@montrose-env.com
Phone:	(714) 279-6777

Name:	Mr. Matt McCune
Title:	Regional Vice President
Region:	West
E-Mail:	MMccune@montrose-env.com
Phone:	(714) 279-6777

Copy of Rule 1420

(Adopted September 11, 1992)(Amended December 1, 2017)

RULE 1420. EMISSIONS STANDARD FOR LEAD

(a) Purpose

The purpose of this rule is to protect public health by reducing emissions and ambient air concentrations of lead from non-vehicular sources, reduce public health impacts by reducing the exposure to lead, and to help ensure continued attainment of the National Ambient Air Quality Standard for Lead.

(b) Applicability

(1) This rule applies to any owner or operator of a metal melting facility or lead processing facility that processes lead-containing materials, including, primary or secondary lead smelters, foundries, lead-acid battery manufacturers or recyclers, lead platers, and lead-oxide, brass, and bronze producers that process lead-containing materials. Specific provisions of this rule shall apply as follows:

(A) A facility that processes two (2) tons per year or less of lead with an average lead content that is greater than 0.05 percent by weight, shall only be subject to paragraphs (d)(1) and (d)(2) and subdivisions (h) and (i) of this rule.

(B) A facility that processes more than two (2) tons per year of lead with an average lead content greater than 0.05 percent by weight, shall be subject to all provisions of this rule.

(2) Amount of lead processed in a year referenced in paragraph (b)(1) shall be determined based on any of the five calendar years prior to December 1, 2017, or any year thereafter.

(3) Average lead content referenced in paragraph (b)(1) shall be determined based on the highest one-month average after December 1, 2017, or any month thereafter using one of the methods specified in paragraph (i)(2).

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

(1) BAG LEAK DETECTION SYSTEM is a system that monitors electrical charge transfer based in triboelectric or electrostatic induction to continuously monitor bag leakage and similar failures by detecting changes in particle mass loading in the exhaust.

(2) CAPTURE VELOCITY is the minimum hood induced air velocity necessary to capture and convey air contaminants into an emission collection system.

(3) DUCT SECTION is a length of duct including angles and bends which is contiguous between two or more process devices (e.g., between a furnace and a heat exchanger; baghouse and scrubber; scrubber and stack; etc.).

(4) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(5) EMISSION COLLECTION SYSTEM is any equipment, including the associated ducting, installed for the purpose of directing, taking in, confining, and conveying an air contaminant, and which at minimum conforms to design and operation specifications given in the most current edition of *Industrial Ventilation, Guidelines and Recommended Practices*, published by the American Conference of Government and Industrial Hygienists, at the time a complete permit application is on file with the SCAQMD.

(6) EMISSION CONTROL DEVICE is any equipment installed in the ventilation system of a lead point source or emission collection system for the purpose of collecting and reducing emissions of lead.

(7) FOUNDRY is any facility, operation, or process where metal or a metal alloy is melted and cast.

(8) FUGITIVE LEAD-DUST EMISSIONS are emissions of lead-containing material from locations other than lead point sources including, but not limited to, foot and vehicular traffic and storage piles, where the dust forming material at the emission source has a lead content of greater than 0.05 percent by weight as determined by EPA-approved methods.

(9) FURNACE is a device used to melt metal including, but not limited to, cupola, electric arc, pot, induction, blast, crucible, sweat and reverberatory furnaces.

(10) LEAD means elemental lead, alloys containing elemental lead, or lead compounds, calculated as elemental lead.

(11) LEAD-ACID BATTERY MANUFACTURER is any facility, operation, or process that produces storage batteries or battery components using lead or lead compounds.

(12) LEAD-ACID BATTERY RECYCLER is any facility, operation, or process in which lead-containing batteries are disassembled and/or the lead battery components are melted.

(13) LEAD-OXIDE PRODUCER is any facility, operation, or process intended to produce lead-oxide from materials containing lead, including, but not limited to,

lead melting and/or oxidizing furnaces, lead-oxide conveying systems, associated air pollution control systems, and equipment used for product recovery, storage, and dispensing.

(14) LEAD POINT SOURCE is any process or equipment used at a metal melting facility or lead-processing facility to process materials that have a lead content of greater than 0.05 percent by weight as determined by paragraph (i)(2).

(15) LEAD-PROCESSING FACILITY is any primary or secondary lead smelter, foundry, lead-acid battery manufacturer or recycler, lead plating, or lead-oxide, bronze, or brass producer.,

(16) MAINTENANCE ACTIVITY is a routine process to keep equipment and machinery in working order or to prevent breakdowns and includes any of the following activities conducted outside of a total enclosure that generates or has the potential to generate fugitive lead-dust:

(A) Maintenance activities on any emission collection or control device that vents a lead point source or metal grinding operation; or

(B) Replacement or removal of any duct section used to vent a lead point source or metal grinding operation.

(17) METAL is any ferrous (iron-based) metal and alloys and non-ferrous (non-iron-based) metals and alloys. Examples of metals include, but are not limited to, iron, aluminum, copper, gold, silver, zinc, tin, lead, platinum, nickel, chromium, cadmium, manganese, mercury, tungsten, and titanium, and their alloys, including steel, brass, and bronze.

(18) METAL MELTING FACILITY is any facility that operates equipment to which scrap metal, ingots, and/or other forms of metals are charged and melted, including but not limited to, die casting, recycling, refining, sintering, smelting, or soldering operations where the lead content of the material processed is greater than 0.05 percent by weight as determined by paragraph (i)(2).

(19) PRIMARY LEAD SMELTER is any facility, operation, or process engaged in the production of lead, lead alloys, and/or lead compounds from lead ore and/or lead ore concentrates through the use of pyrometallurgical techniques.

(20) REPAIR is an operation or activity to return a damaged object or an object not operating properly, to good condition.

(21) RINGELMANN OPACITY refers to an opacity shade as given in a chart published by the United States Bureau of Mines.

(22) SECONDARY LEAD SMELTER is any facility, operation, or process engaged in the production of lead, lead alloys, and/or lead compounds from lead-bearing scrap material through the use of pyrometallurgical techniques.

(23) SLAG means the inorganic by-product material discharged, in melted state, from a smelting furnace and contains lead compounds. This shall include, but is not limited to, lead sulfate, lead sulfide, lead oxides, and lead carbonate consisting of other constituents charged to a smelting furnace, which are fused together during the pyrometallurgical process.

(24) SMELTING is the heating and chemical reduction of metal containing lead compounds.

(25) SMELTING FURNACE is any furnace where smelting takes place including, but not limited to, blast furnaces, reverberatory furnaces, rotary furnaces, and electric furnaces.

(26) TOTAL ENCLOSURE is a permanent containment structure, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, or run-off), that has limited openings to allow access for people and vehicles, that is free of breaks, cracks, gaps, or deterioration that could cause or result in the escape of fugitive lead-dust emissions.

(d) Ambient Air Lead Concentration Limit

(1) The owner or operator of a lead processing or metal melting facility shall not discharge emissions into the atmosphere, which contribute to ambient air concentrations of lead that exceed the following:

Effective Date	Ambient Air Concentrations of Lead ($\mu g/m^3$), averaged over 30 consecutive days
December 1, 2017 to December 31, 2020	0.150
On and after January 1, 2021	0.100

(2) An exceedance of the ambient air concentration of lead specified in the above table shall occur if it is measured by any monitor installed pursuant to subdivision (l) or a SCAQMD-installed monitor that measures lead concentrations resulting from the facility operations.

(3) Fugitive lead-dust emissions shall not exceed Ringelmann 0.5, or 10 percent opacity, for more than three (3) minutes aggregate in any 60-minute period.

(e) Executive Officer Determination to Conduct Ambient Air Monitoring

(1) The Executive Officer may notify the owner or operator of a lead processing or metal melting facility that ambient air monitoring may be required if the Executive Officer has reason to believe that:

(A) The ambient air concentration of lead from the lead processing facility contributes to ambient air concentrations of lead that exceeds 0.150 $\mu g/m^3$ averaged over 30 consecutive days; or

(B) The lead point source limits for any lead point source emission control device at the lead processing or metal melting facility exceeded the limits pursuant to subdivision (f), based on two (2) source tests over a rolling 36-month period.

(2) Within 30 days of the date of initial notification from the Executive Officer that ambient air monitoring may be required, the owner or operator may provide the Executive Officer any additional information that may substantiate that the criteria set forth in subparagraphs (e)(1)(A) or (e)(1)(B) has not been met.

(3) Prior to making a final determination, the Executive Officer will consider:

(A) The additional information provided to the Executive Officer pursuant to paragraph (e)(2);

(B) The evaluation of any emissions data, which includes, but is not limited to, ambient air lead data or source test data;

(C) Any facility site visit(s); and

(D) Any findings from an investigation of surrounding sources.

(4) The Executive Officer shall notify the owner or operator of the final determination. An owner or operator of a lead processing facility that receives notification that the Executive Officer has determined that ambient lead monitoring is required shall conduct ambient lead monitoring and sampling pursuant to subdivision (l).

(f) Lead Point Source Emissions Control

(1) The owner or operator of a lead-processing or metal melting facility shall vent emissions from each lead point source to an emission control device that meets an outlet mass lead emission rate of less than 0.0003 pound per hour or reduces lead emissions by a minimum of 99% as determined by the most recent SCAQMD-approved source test conducted on behalf of the facility or the SCAQMD pursuant to subdivision (j) based on the following schedule:

(A) No later than June 1, 2018, if the lead point source is vented to an existing lead emissions control device; and

(B) No later than six (6) months after a Permit to Construct for a lead emission control device is issued by the Executive Officer, if the lead point source was previously not vented to an existing lead emissions control device.

(2) In lieu of complying with paragraph (f)(1), the owner or operator of an uncontrolled lead point source may elect to demonstrate an outlet mass lead emissions rate of less than 0.0003 pound per hour, as determined by a SCAQMD-approved source test conducted on behalf of the facility or the SCAQMD pursuant to subdivision (j) no later than June 1, 2018.

(3) Any permit modification to the equipment or process that may increase the amount of lead emissions shall require a new source test to determine compliance with paragraphs (f)(1) or (f)(2).

(4) Each emission collection system and emission control device subject to this subdivision shall be approved, in writing, by the Executive Officer and, at a minimum, be inspected, maintained, and operated in accordance with the manufacturer's specifications.

(g) Total Enclosures

(1) An owner or operator of a lead-processing or metal melting facility shall conduct all metal melting and lead processing operations including metal grinding, in a total enclosure that minimizes cross-draft conditions that could result in the decrease in collection efficiency of the emission collection system and the release of fugitive lead-dust emissions from openings in the wall and roof of a total enclosure, such as windows, passages, doorways, and bay doors. Alternative methods to minimize the release of fugitive lead-dust from the total enclosure may be used if the owner or operator can demonstrate to the Executive Officer an equivalent or more effective method(s) to minimize cross-draft conditions.

(A) Acceptable methods to minimize cross-draft conditions include, but are not limited to the following:

(i) Closing openings, except when moving parts, people, vehicles, or equipment through the openings;

(ii) Use of automatic roll-up doors;

(iii) Installation of plastic strip curtains; or

(iv) Use of vestibules.

(2) For a lead processing or metal melting facility existing as of December 1, 2017, any modification or construction made to a structure to meet the provisions of paragraph (g)(1) shall be completed:

(A) No later than June 1, 2018, if the owner or operator is modifying a structure that is existing as of December 1, 2017; or

(B) No later than 12 months after December 1, 2017, if the owner or operator is constructing a new structure, provided the owner or operator provides written notice to the Executive Officer within 60 days after December 1, 2017.

(3) All enclosure types shall be designed in a manner that does not conflict with the requirements set forth by the United States Department of Labor Occupational Safety and Health Administration or the California Division of Occupational Safety and Health regarding worker safety.

(4) The owner or operator of a lead processing or metal melting facility shall inspect any total enclosure at least once a calendar month for breaks, cracks, gaps, or deterioration that could cause or result in fugitive lead-dust.

(5) The owner or operator of a lead processing or metal melting facility shall repair any breaks, cracks, gaps, or deterioration that could result in fugitive lead-dust from any total enclosure within 72 hours of discovery. The Executive Officer may approve a request for extension beyond the 72-hour limit if the request is submitted to Rule1420notifications@aqmd.gov before the 72-hour time limit has expired and the owner or operator can provide information to substantiate that either:

(A) The repair will take longer than 72 hours; or

(B) The equipment, parts, or materials needed for the repair cannot be obtained within 72 hours.

(h) Housekeeping Requirements

Unless otherwise specified, no later than 30 days after December 1, 2017, the owner or operator of a facility that processes lead shall control fugitive lead-dust by conducting the following housekeeping practices:

(1) Clean by wet wash, wet mop, or with a vacuum in a manner that does not generate fugitive lead-dust, the areas at specified frequencies listed in subparagraphs (h)(1)(A) through (h)(1)(C), unless located within a total enclosure vented to a lead emission control device.

(A) For lead processing facilities that process more than 10 tons per year of lead, cleaning of rooftops on structures that house areas associated with lead processing operations at least one time per year during the months of July through September.

(B) Effective December 1, 2017, weekly cleanings by wet wash, wet mop, vacuum, or stabilization with dust suppressant of all:

(i) Areas where lead-containing wastes generated from housekeeping activities are stored, disposed of, recovered, or recycled; and

(ii) Surfaces that accumulate lead-containing dust subject to vehicular or foot traffic.

(C) Initiate immediate cleaning, no later than one hour after any construction or maintenance activity or event, including, but not limited to accidents, process upsets, or equipment malfunction that causes deposition of fugitive lead-dust emissions onto areas specified in subparagraphs (h)(1)(A) and (h)(1)(B). If the facility can demonstrate that delays were due to unreasonable risks to safety posed by earlier cleaning or inability to reasonably obtain equipment required to implement this requirement, immediate cleanings of rooftops shall be completed within 72 hours.

(2) Effective December 1, 2017, the owner or operator of a lead processing or metal melting facility shall not conduct any housekeeping activities that involve dry sweeping or the use of compressed air.

(3) Conduct quarterly cleaning of collection vents, openings and ducting of each lead emission control device according to procedures in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Operation and Maintenance*.

(4) Remove any weather cap installed on any stack that is a source of lead emissions.

(5) Effective December 1, 2017, store all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other lead-containing waste generated from the housekeeping requirements of this subdivision and the construction or maintenance activities of subdivision (g), in sealed leak-proof containers, or stabilize such materials using dust suppressants approved in writing by the Executive Officer, unless located within a total enclosure.

(6) Transport all materials capable of generating any amount of fugitive lead-dust including, but not limited to, slag and any other waste generated from the housekeeping requirements of this subdivision and the construction or maintenance activities of subdivision (g), within closed conveyor systems or in sealed leak-proof containers, or stabilize such materials using dust suppressants approved in writing by the Executive Officer, unless located within a total enclosure. This paragraph shall not be applicable to the transport of high temperature materials exceeding 500

degrees Fahrenheit where implementation of the specified control requirements is infeasible.

(7) Conduct wet washing, wet scrubbing, or vacuum sweeping of any paved area located outside of a total enclosure that is subject to vehicular traffic, no later than one hour after any construction or maintenance activity or event, including accidents, process upsets, or equipment malfunction that results in the deposition of fugitive lead-dust, unless located within a total enclosure vented to a lead emissions control device. Wet scrubbing shall not be required during days of measurable precipitation.

(8) Effective December 1, 2017, except when inside a total enclosure, all lead-containing trash and debris shall be placed in covered containers that remain covered at all times except when trash or debris is actively deposited into a receptacle. Trash and debris containers shall be free of liquid or dust leaks.

(9) Post signs at all entrances and truck loading and unloading areas indicating a speed limit of five (5) miles per hour or less on any roadway located within 75 feet of the perimeter of a total enclosure.

(10) For any of the housekeeping requirements specified under paragraphs (h)(1) through (h)(9), an alternative housekeeping measure can be used provided the owner or operator demonstrates and receives written approval from the Executive Officer that the alternative housekeeping measure meets the same objective and effectiveness of the housekeeping requirement it is replacing.

(11) The owner or operator of a lead processing or metal melting facility that is conducting metal grinding of lead-containing materials shall wet wash, wet mop, or vacuum in a manner that does not generate fugitive lead-dust the following:

(A) Floors within 20 feet of a work station or work stations dedicated to the metal grinding operations;

(B) Floors within 20 feet of any entrance/exit point of a temporary enclosure, building or total enclosure that houses the grinding operations; and

(C) Floors within 10 feet of an emission control device dedicated to the metal grinding operations.

(i) Recordkeeping

The owner or operator of a lead processing or metal melting facility shall keep records of the following:

(1) Data related to lead-containing raw materials used at the facility, including quantities processed monthly and the lead content of these raw materials, purchase

records, results of analyses, source test data, and other SCAQMD-approved verification to indicate amounts of lead-containing materials processed. The Executive Officer may approve other alternative methods used to calculate the amount of lead processed and the percentages of lead contained within the lead-containing raw materials processed. The monthly amount of lead processed shall be calculated by multiplying the monthly average weight percentage of lead as calculated in paragraph (i)(2) by the quantity of raw material processed monthly at each lead point source. The annual amount of lead processed by the facility shall be calculated by summing the monthly amounts of lead processed for all lead point sources over a calendar year.

(2) Monthly records shall be maintained to determine the monthly average weight percentage of lead contained in processed materials. The monthly average weight percentage of lead shall be determined by using one of the following methods:

(A) EPA-approved method (s);

(B) Metal analyses for bulk samples of baghouse catches;

(C) Weighted monthly average of lead content from analysis of feedstock, including ingots and scrap; or

(D) An alternative method approved by the Executive Officer that can quantify the average weight percentage contained in processed materials.

(3) Results of all ambient air lead monitoring, wind monitoring, and other data specified in subdivision (l);

(4) Records of the following shall also be maintained:

(A) Construction, inspections, maintenance, and repairs of total enclosures pursuant to paragraphs (g)(2) through (g)(4);

(B) Housekeeping activities completed as required by paragraphs (h)(1), (h)(3), and (h)(7);

(C) Source tests data as required by subdivision (j) and paragraph (k)(3);

(D) Data files, inspection, and maintenance of emission collection devices as required by subdivision (k), including the name of the person conducting the activity and the dates and times at which specific activities were completed;

(E) Smoke test results as required by paragraph (k)(5); and

(F) Hot wire anemometer data collected, including capture velocities, dates of measurement and calibration documentation as required by paragraph (k)(6).

(5) The owner or operator shall maintain all records for three years, with at least the two most recent years kept onsite and made available to the SCAQMD upon request.

(j) Source Tests

(1) Effective December 1, 2017, the owner or operator of a lead processing or metal melting facility shall conduct a source test of all lead point sources once every 24 months after the initial source test to demonstrate compliance with the facility mass emissions standards specified in subdivision (f). If a source test to demonstrate compliance with the lead point source emission standards of subdivision (f) demonstrates stack outlet mass lead emissions of less than 0.00015 pounds per hour, then the next source test for the lead point source lead emissions control device shall be performed no later than 48 months after the date of the most recent source test.

(2) The owner or operator of a lead processing or metal melting facility with an existing lead emission control device in operation before December 1, 2017 shall conduct a source test for this device no later than June 1, 2018. The owner or operator with a new or modified lead control device with initial start-up on or after December 1, 2017 shall conduct the initial source test for the no later than six (6) months after a Permit to Construct is issued by the Executive Officer.

(3) At least 60 calendar days prior to conducting a source test pursuant to paragraph (j)(1) or (j)(2), the owner or operator of a lead processing or metal melting facility shall submit a source test protocol to the Executive Officer for approval. The source test protocol shall include the source test criteria of the end user, all assumptions, required data, calculated targets for testing, and the following:

(A) Target lead mass emission standard;

(B) Planned sampling parameters;

(C) Information on equipment, logistics, personnel, and other resources necessary for an efficient and coordinated source test; and

(D) Evaluation of emission collection system.

(4) The owner or operator of a lead processing or metal melting facility shall notify the Executive Officer, in writing, of the intent to conduct source testing, one week prior to conducting any source test required by paragraphs (j)(1) or (j)(2).

(5) The owner or operator of a lead processing or metal melting facility shall notify the Executive Officer within 5 calendar days of when the facility knew or should have known of any source test result that exceeds any of the emission standards specified

in subdivision (f). Notifications shall be made to 1-800-CUT-SMOG and followed up in writing to the Executive Officer with the results of the source tests within ten (10) calendar days of notification.

(6) Source tests shall be conducted while operating at a minimum of 80% of the equipment's permitted capacity and in accordance with any of the following applicable test methods:

(A) SCAQMD Method 12.1 – *Determination of Inorganic Lead Emissions from Stationary Sources Using a Wet Impingement Train*;

(B) CARB Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources*; or

(C) U.S. EPA Method 12 – *Determination of Inorganic Lead Emissions from Stationary Sources.*

(D) CARB Method 436 – *Determination of Multiple Metal Emissions from Stationary Sources.*

(7) The owner or operator of a lead processing or metal melting facility may use alternative or equivalent source test methods as defined in U.S. EPA 40 CFR 60.2, if approved in writing by the Executive Officer, in addition to the CARB, or the U.S. EPA, as applicable.

(8) The owner or operator of a lead processing or metal melting facility shall use a test laboratory approved under the SCAQMD Laboratory Approval Program for the source test methods cited in this subdivision. If there is no approved laboratory, then approval of the testing procedures used by the laboratory shall be granted by the Executive Officer on a case-by-case basis based on SCAQMD protocols and procedures.

(9) When more than one source test method or set of source test methods are specified for any testing, the application of these source test methods to a specific set of test conditions is subject to approval by the Executive Officer. In addition, a violation established by any one of the specified source test methods or set of source test methods shall constitute a violation of the rule.

(10) An existing source test conducted on or after January 1, 2014 for lead emission control devices existing before December 1, 2017 may be used as the initial source test specified in paragraph (j)(1) to demonstrate compliance with the lead emission control standards of subdivision (f). The source test shall meet, at a minimum, the following criteria:

(A) The source test is the most recent conducted since January 1, 2014;

(B) The source test demonstrated compliance with the control requirements of subdivision (f);

(C) The source test is representative of a method used to test emissions from control devices currently in use; and

(D) The source test was conducted using applicable and approved test methods specified in paragraphs (j)(6) through (j)(8).

(11) Source testing conducted by the facility, the SCAQMD, or a contractor acting on behalf of the SCAQMD or the facility to determine compliance with this rule shall be performed according to the most recent SCAQMD-approved source test protocol for the same purpose.

(12) Reports from source testing conducted pursuant to subdivision (j) shall be submitted to the SCAQMD within 90 days of completion of source testing.

(k) Emission Control Device Monitoring

(1) Bag Leak Detection System

The owner or operator of a lead processing or metal melting facility shall apply for a permit to install, operate, calibrate, and maintain a Bag Leak Detection System for baghouses subject to the requirements of SCAQMD Rule 1155 – Particulate Matter (PM) Control Devices.

(2) The owner or operator of a lead processing or metal melting facility shall continuously monitor the pressure drop across the filter of an emission control device used to control lead emissions with a gauge. The gauge shall be located so that it is easily visible and in clear sight of the owner or operator or maintenance personnel. For the purposes of this requirement, the owner or operator shall ensure that the monitoring device:

(A) Is equipped with ports to allow for periodic calibration in accordance with manufacturer's specifications;

(B) Is calibrated according to manufacturer's specifications at least once every calendar year;

(C) Is equipped with a continuous data acquisition system (DAS). The DAS shall record the data output from the monitoring device at a frequency of at least once every 60 minutes;

(D) Generates a data file from the computer system interfaced with each DAS each calendar day saved in Microsoft Excel (xls or xlsx) format or other format as approved by the Executive Officer. The file shall contain a table of chronological date and time and the corresponding data output value from

the monitoring device in inches of water column. The operator shall prepare a separate data file each day showing the 4-hour average pressure readings recorded by this device each calendar day; and

(E) Is maintained in accordance with manufacturer's specifications.

(3) The owner or operator of a lead emissions control device shall be required to conduct a source test pursuant to subdivision (j), if the pressure across the filter is not maintained within the range specified by the manufacturer or according to conditions of the Permit to Operate for the emission control device as determined by hourly or more frequent recordings by the DAS for the averaging periods below, no later than 30 days after the discrepancy is detected:

(A) A 4-hour time period on three (3) or more separate days over 60 continuous days; or

(B) Any consecutive 24-hour period.

(4) The owner or operator of a lead processing or metal melting facility shall operate the emission collection system associated with the lead emission control device at a minimum collection induced capture velocity specified in the most current edition of the *Industrial Ventilation, A Manual of Recommended Practice for Design, published by the American Conference of Governmental Industrial Hygienists*, at the time a permit application is deemed complete with the SCAQMD.

(5) For each emission collection system subject to this subdivision, a periodic smoke test shall be conducted during source testing, pursuant to paragraph (j)(1) and at least once every three months thereafter, using the procedure set forth in Appendix 1 of this rule. The smoke test need not be performed if it is demonstrated to the Executive Officer that it presents an unreasonable risk.

(6) A calibrated hot wire anemometer shall be used to measure the capture velocity of each emission collection system at least once monthly, based on its location within a lead processing facility and its design configuration:

(A) An emission collection system designed with a hood or enclosure shall maintain a capture velocity of at least 200 feet per minute as measured at the face of the enclosure or the minimum slot velocity measured in the most recent source test that verifies 100% collection efficiency.

(B) An emission collection system without an enclosing hood that is designed with collection slots shall maintain a capture velocity of at least 2,000 feet per minute, or the minimum slot velocity measured in the most recent source test that verifies 100% collection efficiency.

(l) Ambient Monitoring and Sampling Requirements

(1) Within 120 days of the date of final determination pursuant to paragraph (e)(4) that the owner or operator of a lead processing or metal melting facility shall conduct ambient air lead monitoring, the owner or operator of a lead processing or metal melting facility shall submit a Lead Ambient Air Monitoring and Sampling Plan for review and approval by the Executive Officer, subject to plan fees as specified in SCAQMD Rule 306 – Plan Fees that includes:

(A) Source test results of all lead point sources conducted pursuant to subdivision (j).

(B) Map of the facility identifying the location of all lead emission sources, emission control devices, stacks, enclosures, openings of enclosures, storage of lead containing materials, roadways where vehicles carrying lead containing materials travel within the facility, vehicle ingress and egress locations, the property line of the facility, the fence line of the facility if it differs from the property line of the facility, and any areas within the property line of the facility that are publicly accessible.

(C) Number and locations for sampling sites that meet the requirements of paragraph (l)(2).

(D) The Executive Officer shall notify the owner or operator in writing of whether the Lead Ambient Air Monitoring and Sampling Plan has been approved or disapproved.

(i) Determination of approval status shall be based on, at a minimum, submittal of information that satisfies the criteria set forth in subparagraphs (l)(1)(A) through (l)(1)(C).

(ii) If the Lead Ambient Air Monitoring and Sampling Plan is disapproved, the owner or operator shall resubmit the plan, subject to plan fees specified in Rule 306, within 30 calendar days after notification of disapproval of the plan. The resubmitted plan shall include any information necessary to address deficiencies identified in the disapproval letter. A facility shall be in violation of the rule after a second successive denial of the Lead Ambient Air Monitoring and Sampling Plan.

(iii) If the resubmitted plan is denied, the owner or operator may appeal the denial to the Hearing Board under Rule 216 – Appeals and Rule 221 – Plans.

(2) No later than 90 days after the approval of a Lead Ambient Air Monitoring and Sampling Plan, the owner of a lead processing or metal melting facility shall install monitors and conduct ambient air lead monitoring and sampling as follows:

(A) Collect samples from a minimum of two (2) sampling sites. Locations for sampling sites shall be approved by the Executive Officer.

(B) Locations for sampling sites shall be based on maximum expected ground level concentrations, at or beyond the property line, as determined by Executive Officer-approved air dispersion modeling calculations and emissions estimates from all lead point sources and fugitive lead dust sources, and other factors including, but not limited to, population exposure and seasonal meteorology.

(C) The Executive Officer may require one or more of the sampling sites to be at locations that are not based on maximum ground level lead concentrations, and that are instead at locations at or beyond the property line that are representative of upwind or background concentrations.

(D) Sampling sites at the property line may be located just inside the fence line on facility property if logistical constraints preclude placement outside the fence line at the point of maximum expected ground level lead concentrations.

(E) The Executive Officer may require a facility to relocate existing monitors or install additional monitors to those required under subparagraph (l)(2)(A) in order to measure ambient air lead concentrations at locations that may contribute to the exceedance of an ambient air lead concentration limit specified in subdivision (d), if information becomes available showing:

(i) A new or existing source of lead emissions that was not previously identified or fully disclosed;

(ii) An increase in lead emissions from an existing source where existing monitors are not capturing the potential ambient air lead concentration; or

(iii) That none of the existing monitors are capturing the maximum expected ground level lead concentration.

(3) All facilities required to conduct ambient monitoring pursuant to paragraphs (e)(4) and (l)(2), shall collect one valid 24-hour, midnight-to-midnight sample at least once every six calendar days, on a schedule approved by the Executive Officer.

(4) If a valid 24-hour, midnight-to-midnight sample was not collected due to a monitor malfunction or other occurrence beyond the control of the facility, the owner or operator shall:

(A) Report with a notification made to 1-800-CUT-SMOG within two (2) hours of knowing that the valid 24-hour, midnight-to-midnight sample was not collected, providing the facility name, name of the monitor, date of the occurrence, and reason that the valid 24-hour, midnight-to-midnight sample was not collected; and

(B) For each of the monitors, the operator shall not miss a valid 24-hour, midnight-to-midnight sample for more than one day over a consecutive 30-day period.

(5) The owner or operator of a lead processing or metal melting facility shall submit samples collected pursuant to this subdivision to a laboratory approved under the SCAQMD Laboratory Approval Program for analysis within five calendar days of collection and calculate ambient lead concentrations for individual valid 24-hour samples within 15 calendar days of the end of the calendar month in which the samples were collected. Split samples shall be made available and submitted to the SCAQMD upon request by the Executive Officer.

(6) Sample collection for lead shall be conducted using Title 40, CFR 50 Appendix B - *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*, or U.S. EPA-approved equivalent methods, and sample analysis for lead shall be conducted using Title 40, CFR 50 Appendix G - *Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air*, or U.S. EPA-approved equivalent methods.

(7) Continuously record wind speed and direction on sampling days using equipment approved by the Executive Officer at a minimum of one location approved by the Executive Officer.

(8) Ambient air monitoring shall be conducted by persons approved by the Executive Officer, or facility personnel trained and certified to conduct ambient air monitoring demonstrated through successful completion of a course offered or approved by the Executive Officer. Sampling equipment shall be operated and maintained in accordance with U.S. EPA-approved equivalent methods.

(9) Cleaning activities including, but not limited to, wet washing and misting, that could result in damage or biases to samples collected shall not be conducted within 10 meters of any sampling site required under this subdivision.

(10) Beginning no later than 90 days after a Lead Ambient Air Monitoring and Sampling Plan as required by subdivision (l), is approved by the Executive Officer, the owner or operator of a lead processing facility shall report by the 15th of each month to the Executive Officer, the results of all ambient air lead and wind monitoring for each preceding month, or more frequently if determined necessary by the Executive Officer. The report shall include the results of individual valid 24-hour samples and 30-day rolling averages for each day within the reporting period.

(11) Any exceedances of ambient air lead concentrations specified in subdivision (d) shall be reported with a notification made to the 1-800-CUT-SMOG within seven (7) calendar days of receipt of the completed sample analysis required in paragraph (l)(6), followed by a written report to the Executive Officer no later than three (3) calendar days after the notification. The written report shall include the potential causes of the exceedance and the specific corrective actions implemented.

(m) Exemptions

(1) A facility that processes materials with a monthly weighted average lead content of 0.05 percent or less is exempt from the requirements of this rule provided it maintains records consistent with (i)(2) for purposes of establishing the applicability of the exemption.

(2) Hand soldering operations are exempt from the requirements of this rule.

(3) Maintenance and repair activities, except for those associated with emission collection systems and emission control devices, and except any activities pursuant to subdivisions (g) and (h) that generate or have the potential to generate fugitive lead-dust, are exempt from the requirements of this rule.

(4) Lead Minimization

(A) If the owner or operator of a lead processing or metal melting facility that is otherwise subject to all provisions of this rule, obtains a permit condition limiting the amount of lead processed at the facility to two (2) tons per year or less, that facility shall only be subject to paragraphs (d)(1) and (d)(2) and subdivisions (h) and (i) of the rule

(B) If the owner or operator of a lead processing or metal melting facility that is otherwise subject to all provisions of this rule or only the provisions pursuant to paragraphs (d)(1) and (d)(2) and subdivisions (h) and (i) of the rule, obtains a permit condition limiting the lead content of the materials processed to less than or equal to 0.05 percent, that facility shall only be subject to subdivision (i) of the rule.

(5) Ambient Air Monitoring Relief Plan

An owner or operator of a lead processing or metal melting facility that demonstrates ambient air lead concentration levels of less than or equal to 0.07 $\mu g/m^3$ averaged over 30 consecutive days for 365 days, measured during normal conditions that are representative of the facility, may be exempt from the ambient air monitoring requirements set forth in subdivision (l) upon Executive Officer approval of an Air Monitoring Relief Plan, subject to plan fees specified in Rule 306 – Plan Fees, which shall be granted if the plan contains all of the following:

(A) Air dispersion modeling analysis that demonstrates an ambient air lead concentration that is less than or equal to 0.07 $\mu g/m^3$ averaged over 30 consecutive days that is representative of normal facility operations;

(B) One year of ambient air lead monitoring data without a single 30 consecutive day average exceeding an ambient air lead concentration of 0.07 $\mu g/m^3$; and

(C) Most recent source tests approved by the SCAQMD that demonstrate a total facility mass lead emission rate from all lead point sources of less than 0.040 pound per hour. The total facility mass lead emissions shall be determined based on the sum of the average of triplicate samples for each lead point source, using the most recently approved source tests conducted on behalf of the facility or the SCAQMD, pursuant to subdivision (j).

(6) Rules 1420.1 and 1420.2

The owner or operator of a lead processing or metal melting facility subject to the requirements of Rules 1420.1 - Emission Standards for Lead and Other Toxic Air Contaminants from Large Lead-Acid Battery Recycling Facilities and 1420.2 - Emission Standards for Lead from Metal Melting Facilities, shall be exempt from the requirements of this rule.

Appendix 1 - Smoke Test to Demonstrate Capture Efficiency for Ventilation Systems of (an) Emission Control Device(s) Pursuant to Paragraph (k)(5).

1. Applicability and Principle

1.1 Applicability. This method is applicable to all point sources where an emission control device is used to capture and control emissions from lead processing operations.

1.2 Principle. Collection of emissions from lead processing sources is achieved by the ventilation system associated with the emission control device for lead processing equipment. Emission control efficiency at the exhaust of an emission control device is related to capture efficiency at the inlet of the ventilation system. For this reason, it is imperative that 100% capture efficiency is maintained. A smoke device placed within the area where collection of emissions by the ventilation system occurs reveals this capture efficiency.

2. Apparatus

2.1 Smoke Generator. The smoke generator shall be adequate to produce a persistent stream of visible smoke (e.g., Model S102 Regin Smoke Emitter Cartridges). The smoke generating device should not provide excessive momentum to the smoke stream that may create a bias in the determination of collection efficiency. If the device provides slight momentum to the smoke stream, it shall be released perpendicular to the direction of the collection velocity.

3. Testing Conditions

3.1 Equipment Operation. Any equipment to be smoke tested that is capable of generating heat as part of normal operation must be smoke tested under those normal operating conditions. Operating parameters of the equipment during the smoke test shall be recorded. The smoke test shall be conducted while the emission control device is in normal operation. The position of any adjustable dampers that can affect air flow shall be documented. Precautions should be taken by the facility to evaluate any potential physical hazards to ensure the smoke test is conducted in a safe manner.

3.2 Cross-Draft. The smoke test shall be conducted while the emission control device is in normal operation and under typical draft conditions representative of the facility's lead processing operations. This includes cooling fans and openings affecting draft conditions around the metal grinding area including, but not limited to, vents, windows, doorways, bay

doors, and roll-ups, as well as the operation of other work stations and traffic. The smoke generator must be at full generation during the entire test and operated according to manufacturer's suggested use.

4. Procedure

4.1 Collection Slots. For work stations equipped with collection slots or hoods, the smoke shall be released at points where lead processing emissions are generated (e.g. the point where melting occurs). Observe the collection of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream to the collection location(s) of the ventilation system without meanderings out of this direct path. Smoke shall be released at points not to exceed 12 inches apart across ventilated work areas. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

4.2 Equipment Enclosures. Equipment enclosures include equipment where emissions are generated inside the equipment, and the equipment is intended to have inward air flow through openings to prevent the escape of process emissions. The smoke shall be released at points outside of the plane of the opening of the equipment, over an evenly spaced matrix across all openings with points not to exceed 12 inches apart. Observe the inward movement of the smoke to the collection location(s) of the ventilation system. An acceptable smoke test shall demonstrate a direct stream into the equipment without meanderings out of this direct path. Record these observations at each of the points providing a qualitative assessment of the collection of smoke to the ventilation system.

5. Documentation. The smoke test shall be documented by photographs or video at each point that clearly show the path of the smoke. Documentation shall also include a list of equipment tested and any repairs that were performed in order to pass the smoke test. As previously discussed, the documentation shall include the position of adjustable dampers, cross-draft conditions, and the heat input of the equipment, if applicable. The documentation shall be signed and dated by the person performing the test. The records shall be maintained on site for at least two years and be made available to SCAQMD personnel upon request.

South Coast Air Quality Management District
21865 COPLEY DR., P.O. Box 4941, DIAMOND BAR, CA 91765-0941

NOTICE TO COMPLY

10/20/2023
DATE OF INSPECTION

Facility Name:	Facility ID#:	Sector:
THERMAL SOLUTIONS MANUFACTURING, INC	172808	EH

Location Address:	City:	Zip:
1390 SOUTH TIPPECANOE AVE, SUITE B	SAN BERNARDINO, CA	92408

Mailing Address:	City:	Zip:
1390 SOUTH TIPPECANOE AVE, SUITE B	SAN BERNARDINO, CA	92408

This Notice to Comply is being issued to:

- [x] Request additional information needed to determine compliance with clean air requirements.
- [ ] Correct a minor violation found during an inspection.

Failure to respond or take corrective action, or providing false statements in response to this Notice to Comply can lead to issuance of a Notice of Violation pursuant to the California Health and Safety Code. The facility cited above is subject to re-inspection at any time to ensure compliance.

YOU ARE HEREBY DIRECTED TO COMPLY WITH:

#	AQMD RULE/ CAL H&S CODE	REQUIREMENT	COMPLIANCE DUE DATE	COMPLIANCE ACHIEVED DATE
1	CAL H&S CODE 42303	PROVIDE PROOF OF SOURCE TEST PROTOCOL FOR POT FURNACE (P/O G26164) SUBMITTED TO SOUTH COAST AQMD FOR APPROVAL, PER RULE	12/19/2023	12/19/23
2		1420(J)(3) REQUIREMENTS.		
3	CAL H&S CODE 42303	PROVIDE PROOF OF SOURCE TEST REPORT FOR POT FURNACE (P/O G26164), PER RULE 1420(J) REQUIREMENTS.	12/19/2023	N/A
4				
5				
6				

Served To:	Served By:		
MAUREEN BAKER	KENNETH DUDASH		
Title: BRANCH MANAGER	Date Served: 12/05/2023	Phone: (951) 830-8080	Fax: (909) 396-3342
Email Address: MAUREENBAKER@TSMUS.COM	Phone: (909) 322-3408	Email Address: KDUDASH@aqmd.gov	Forms/Applications/Info available at: www.aqmd.gov

Instructions:

- For each minor violation cited above, compliance shall be achieved by the compliance deadline specified for that particular violation.
- Within 5 working days of achieving compliance for each respective violation, the owner/responsible officer of the cited facility must complete and return a signed copy of this Notice to Comply to the South Coast Air Quality Management District at the address listed above.
- Please copy and return this Notice to Comply as many times as necessary to provide the required information. On each copy, include the date on which compliance was achieved. **Date, sign, and send all completed copies to the attention of the inspector named above.**

I hereby certify that the facility cited in this Notice to Comply has achieved compliance with the requirements listed above.

MAUREEN BAKER	GENERAL MANAGER		12/19/23
NAME OF OWNER/RESPONSIBLE OFFICIAL	TITLE	SIGNATURE	DATE

NOTICE#: E 55096

FILE COPY (Blue) *FACILITY COPY (Gold)* *INSPECTOR COPY (White)*