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March 6, 2025

Mr. Matthew Lee
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765

Subject: **Rule 1402 Risk Reduction Plan**

Facility: Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222
Facility ID No. 18989

Dear Mr. Lee:

Per your letter dated November 6, 2024, and subsequent communications with our office, please find enclosed the completed Rule 1402 Risk Reduction Plan for Bowman Plating. As required, this RRP includes an updated health risk assessment which reflects the air pollution controls and other risk reduction measures that have been implemented since the submittal of the 2019 HRA.

In addition, we are also providing the modeling input and output files for AERMOD and HARP2, which were utilized in the preparation of this RRP. Due to the size of this report submittal, we have uploaded all relevant documents per the instructions provided in your email dated February 25, 2025. If there are any questions, please contact our office to discuss the matter further.

Sincerely,

TRINITY CONSULTANTS

Steven R. Walters, P.E.
Director

Encl.

cc: Dan Cunningham, Bowman Plating

RULE 1402 RISK REDUCTION PLAN

Bowman Plating / Compton, CA

Prepared for:

Bowman Plating Company, Inc.
2631 East 126th Street
Compton, CA 90222
SCAQMD ID No. 18989

Prepared By:

Trinity Consultants
20 Corporate Park, Suite 285
Irvine, CA 92606

March 6, 2025

Project No. 200501.0023

FORM A	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AB 2588 Program, 21865 COPLEY DR., DIAMOND BAR, CA 91765-0949	INVENTORY YEAR 2019

AB 2588 AIR TOXICS DOCUMENT CERTIFICATION & SUBMITTAL FORM

Please check the appropriate boxes for purpose of submittal:

☐ *INITIAL INFORMATION for ATIR*	☐ *EARLY ACTION REDUCTION PLAN (EARP)*	☑ *INITIAL*
☐ *AIR TOXICS INVENTORY REPORT (ATIR)*	☐ *VOLUNTARY RISK REDUCTION PLAN (VRRP)*	☐ *REVISION*
☐ *HEALTH RISK ASSESSMENT (HRA)*	☐ *IMPLEMENTATION PROGRESS REPORT for VRRP/RRP*	☐ *FINAL*
☑ *RISK REDUCTION PLAN (RRP)*	☐ *OTHER:*	

Does your facility participate or wish to participate in VRRP program pursuant to Rule 1402(h)? *YES* ☐

Is your facility requesting any information in the submittal to be designated as trade secret?* *YES* ☐

**Information collected pursuant to the AB 2588 Air Toxics program constitutes public records with a limited exception only for data used to calculate emissions data, which may be treated as a trade secret upon request. By checking this box, the facility understands and agrees to separately designate information claimed to be trade secret, and further understands that the District is not making a determination on trade secret status, but will notify the facility if a request for public disclosure of the designated information is received by the District.*

Please provide the following information:

Facility name	South Coast AQMD ID	Facility SIC/NAICS CODE
Bowman Plating	18989	3471

Facility Location Address	Mailing Address
2631 East 126th Street, Compton, CA 90222	2631 East 126th Street, Compton, CA 90222

Contact Person (Company Official)

Name: Dan Cunningham	**Title:** Executive Vice President
Telephone: 310-639-4343	**eMail:** dan@bowmanplating.com

Preparer (If different from above)

Name: Tiffany Wang	**Title:** Senior Consultant
Company: Trinity Consultants	
Telephone: 949-567-9880	**eMail:** twang@trinityconsultants.com

FAILURE TO SUBMIT REQUIRED INFORMATION OR KNOWINGLY SUPPLYING FALSE INFORMATION IS PUNISHABLE TO THE EXTENT DEFINED IN HEALTH AND SAFETY CODE SECTIONS 44381(a) AND 44381(b), WHICH INCLUDES MINIMUM FINES OF NOT LESS THAN FIVE HUNDRED DOLLARS.

Signature of Responsible Company Official	Date
[signature]	3/5/25
Name of Responsible Company Official	**Title**
Dan Cunningham	Executive Vice President

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ABBREVIATIONS AND DEFINITIONS

Abbreviations

AB 2588	Air Toxics "Hot Spots" Information and Assessment Act
ADMRT	Air Dispersion Modeling Risk Tool
AERMOD	American Meteorological Society Regulatory Model
AER	Annual Emissions Report
AMS	American Meteorological Society
BPIP-PRIME	Building Profile Input Program PRIME
CARB	California Air Resources Board
CAS	Chemical Abstract System
HARP2	Hot Spots Analysis and Reporting Program
HI	Hazard Index
HRA	Health Risk Assessment
MEIR	Maximum Exposed Individual Resident
MEIW	Maximum Exposed Individual Worker
MICR	Maximum Individual Cancer Risk
OEHHA	Office of Environmental Health Hazard Assessment
PMI	Point of Maximum Impact
REL	Reference Exposure Level
RRP	Risk Reduction Plan
South Coast AQMD	South Coast Air Quality Management District
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
ZOI	Zone of Impact

Key Definitions

- **Action Risk Level -** An MICR equal or exceeding 25 in one million (25×10^{-6}), a cancer burden exceeding 0.5, a total acute hazard index (HIA) of 3.0, or chronic hazard index (HIC) of 3.0 for any target organ system at any receptor location.
- **Acute Health Impacts** - An effect caused by initial exposure of a hazardous chemical on the body. The effects are generally severe but are often reversible after exposure stops.
- **Cancer Health Impacts** - An increase in the likelihood for cancer in the exposed individual, caused by exposure to a carcinogenic substance.
- **Cancer Burden** - Cancer burden is the estimated number of cancer cases in a population exposed to toxic air contaminants.
- **Chronic Health Impacts** - An effect caused by prolonged or repeated exposures over time. Symptoms may not be apparent immediately but develop over time and are often irreversible.
- **Chronic 8-hour Health Impacts** - An effect caused by exposures for workers that occur on a recurrent basis, but only during a portion of the day.
- **Dose-Response Assessment** - The process of characterizing the relationship between the exposure to an agent and the incidence of an adverse health effect in exposed populations.
- **MEI** - Maximum exposed individual

- **MEIR** - Maximum Exposed Individual Resident
- **MEIW** - Maximum Exposed Individual Worker
- **Multi-pathway Substances** - A substance or chemical that once airborne from an emission source can, under environmental conditions, be taken into a human receptor by multiple exposure routes, such as inhalation, skin contact with contaminated surfaces, ingestion, etc.
- **PMI** - Off-site point of maximum impact. A location, with or without people currently present, at which the total cancer risk, or the total noncancer risk, has the highest numerical value.
- **Public Notification Level -** An MICR equal or exceeding 10 in one million (10×10^{-6}), a total acute hazard index (HIA) of 1.0, or chronic hazard index (HIC) of 1.0 for any target organ system at any receptor location.
- **Reference Exposure Level** - The REL is an exposure level at or below which no noncancer adverse health effect is anticipated to occur in a human population, including sensitive subpopulations, exposed for a specific duration. One-hour acute RELs are designed to be protective for infrequent one-hour maximum exposures. Eight-hour RELs are designed to be protective for repeated 8-hour exposures. Chronic RELs are designed to be protective for continuous long-term exposures. RELs are used to evaluate toxicity endpoints other than cancer. RELs are expressed in units of $\mu g/m^3$ for inhalation exposures and of mg/kg-day for non-inhalation exposures.
- **Risk** - The estimated probability of adverse effects to human health, in this instance from the exposure to environmental hazards.
- **Sensitive Receptor** - A location where the human occupants are considered to be more sensitive to air toxic pollutants than the "average" population, such as, K-12 schools, hospitals, nursing/convalescent homes, daycares, and senior centers.
- **Significant Risk Level** - An MICR equal or exceeding 100 in one million (1.0×10^{-4}), a total acute hazard index (HIA) of 5.0, or chronic hazard index (HIC) of 5.0 for any target organ system at any receptor location.
- **ZOI** - The area in the vicinity of the facility in which an individual is exposed to greater than or equal to one in a million of cancer risk (1.0×10^{-6}) or greater than or equal to one half (0.5) non-cancer hazard.

1. EXECUTIVE SUMMARY

Bowman Plating ("Bowman" or "the facility") is an industrial plant located at 2631 East 126th Street in the City of Compton, CA 90222. Bowman operates within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) under Facility ID No. 18989. In accordance with AB 2588 and SCAQMD Rule 1402, Bowman has prepared this Risk Reduction Plan (2025 RRP) in response to SCAQMD's notice dated November 6, 2024.

California's AB 2588 was adopted in order to collect emission data of routine predictable releases of toxic substances, evaluate air quality impacts from current facility emissions, assess health risks from exposure to the emissions, and notify nearby residents of health risks. Per local SCAQMD Rule 1402, this 2025 RRP identifies risk reduction measures and updated health risk modeling for all regulated AB 2588 toxic air contaminants (TACs) based on the implementation of air pollution controls and other risk reduction measures. Since this facility has already implemented several risk reduction measures, this 2025 RRP includes a comprehensive human health risk assessment and air dispersion analysis of regulated TACs into the environment, estimates of human exposure, and a quantitative assessment of cancer and non-cancer health risks associated with those levels of exposure.

1.1 Project Overview

On November 29, 2022, Bowman prepared and submitted an AB 2588 Health Risk Assessment (HRA) based on its reported emissions for Calendar Year 2019 (2019 HRA). As per SCAQMD requirements, Bowman was required to prepare the 2019 HRA utilizing the applicable state and local regulatory guidance for health risk assessments in effect at that time, which were the 2015 OEHHA Guidelines.[1] Pursuant to various communications and requirements of agency staff, the 2019 HRA report was subsequently modified by the SCAQMD, including changes to the previously reported air toxic emission rates and health risk results. Many of these 2019 HRA report modifications completed by the SCAQMD were disputed by Bowman. Irrespective, the 2019 HRA report "as modified" by the SCAQMD was received by Trinity Consultants via email on February 16, 2024, and September 10, 2024. The 2019 HRA "as modified" by the SCAQMD was subsequently approved in its letter dated November 6, 2024 (refer to Appendix E).

In its approval letter, pursuant to 1402(q)(1), the SCAQMD also required the distribution of an AB 2588 public notice for affected receptors near the facility, which Bowman completed and verified on December 16, 2024. In its approval letter, the SCAQMD also required Bowman to prepare this 2025 RRP to address the human health risk impacts identified by the modified 2019 HRA. Per the distributed public notice, an online community meeting was subsequently held by the SCAQMD on January 8, 2025.

While not reflected in the results of the 2019 HRA "as modified", Bowman had previously made numerous investments into air pollution controls for its facility since Calendar Year 2019 that significantly reduced air toxic emissions from its operations. Prior to Calendar Year 2019, Bowman had installed Ultra Low Particulate Air (ULPA) filtration for its spray booth operations which provided 99.999% control efficiency for particulates and metal emissions. In addition, since Calendar Year 2019, Bowman proactively reduced air toxic emissions from its facility and invested significant capital into additional air pollution controls for its Anodizing Room and Plating Room, which were not accounted in the "as modified" 2019 HRA. As part of these investments, Bowman constructed Permanent Total Enclosures (PTEs) to provide 100% capture of all emissions from its

[1] California Office of Environmental Health Hazard Assessment, Guidance Manual for Preparation of Health Risk Assessments, February 2015

metal finishing tanks in its Anodizing Room and Plating Room. Further, Bowman installed additional ULPA systems providing 99.999% control efficiencies for its tank operations in the Anodizing Room and Plating Room, which are referred to as ULPA #1, #2 and #3. Emission source tests for these PTEs and ULPA systems were conducted and approved by the SCAQMD (refer to Appendix D). In addition, the SCAQMD issued final Permits to Operate No. G75808, G75809 and G75810 for the operation of these air pollution control systems in the Anodizing Room and Plating Room, respectively (refer to Appendix C).

As a result of the above referenced air pollution controls, the health risk impacts from Bowman have been significantly reduced since Calendar Year 2019, which are reflected in this 2025 RRP. Per applicable requirements, the 2019 HRA report "as modified" by the SCAQMD served as the baseline for comparison purposes for this 2025 RRP, which identify the health risk reductions achieved from the installation of these PTEs and ULPA control systems for the Anodizing Rooms and Plating Rooms.

1.2 Facility Risk Characterization

Per applicable Rule 1402 requirements, this 2025 RRP contains a complete facility risk characterization and updated HRA to reflect the risk reduction measures implemented for the facility, approved source test data, and air toxic emissions as reported in the 2019 HRA "as modified". This 2025 RRP utilized the Hot Spots Analysis and Reporting Program Version 2 (HARP2) and air dispersion modeling output from the most recent version of U.S. EPA's AERMOD software (version 24132). The results obtained from HARP2 provide the necessary information to generate the zones of impact and identify the potentially exposed populations. In addition, potential health effects were evaluated for the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW) for both noncancer and carcinogenic health impacts.

Bowman operates spray booths, boilers, abrasive blasting, ovens, and process tanks with associated control equipment, including, tank lids, PTEs and ULPA controls (permits provided in Appendix C). Based on the 2019 HRA "as modified" that was approved by the SCAQMD, the uncontrolled emissions of hexavalent chromium from metal finishing tanks in the Anodizing Room comprised over 98% of the Maximum Individual Cancer Risk (MICR). To achieve the required risk reduction goals, Bowman installed PTEs and ULPA systems to capture and control emissions from its tank operations by at least 99.999%. The PTE, ULPA #1, and ULPA #2 systems for the Anodizing Room were source tested by Montrose Air Quality Services in July 2021 (refer to Appendix D).[2] The PTE and ULPA #3 system for the Plating Room were source tested by Montrose Air Quality Services in April 2022 (refer to Appendix D).[3] The facility risk characterization and post-implementation health risk assessment contained in this 2025 RRP applied the reported emission rates (hexavalent chromium, nickel and cadmium) and stack parameters measured from these Montrose source tests.

For purposes of this 2025 RRP, in order to compare the baseline health risks in the 2019 HRA "as modified", the reported emissions from the other reported air toxic sources were not changed, including, spray booths, ovens, abrasive blasting cabinet and boilers. As a consequence, the contribution of health risks from these other air toxic sources remained the same as in the 2019 HRA "as modified", while risk reductions were achieved from the installation of PTEs and ULPA systems per applicable source tests.

[2] Montrose Air Quality Services, Source Test Report for Anodizing Room – Bowman Plating, September 13, 2021

[3] Montrose Air Quality Services, Source Test Report for Plating Room – Bowman Plating, June 9, 2022

1.3 Summary of Results

Based on the facility risk characterization and proposed risk reduction measure, Bowman is anticipated to reduce all human health risk impacts to less than Rule 1402 Action Risk Levels. Table 1b provides a summary of all health risk impacts from this 2025 RRP. Summary discussions of the key health risk impacts are provided below, including, Point of Maximum Impact (PMI), Maximum Exposed Individual Resident (MEIR) and Maximum Exposed Individual Worker (MEIW).

1.3.1 Comparison of Health Risk Results

Table 1b presents the estimated health risk from the 2019 HRA, which was used as the Baseline for comparison purposes. As shown by Table 1a, this 2025 RRP indicates both cancer risk and health risk have significantly declined as a result of the proposed risk reduction measure of installing PTEs and ULPA systems. The MEIR and MEIW for acute and chronic health as well as cancer hazards all remain below Rule 1402 Action Risk Levels. Further details on the results of the 2025 RRP are summarized below.

1.3.2 Maximum Carcinogenic Risks

Table 1a summarizes the key results of this 2025 RRP for cancer risk. Figures 6 and 7 identify the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of hexavalent chromium, ethyl benzene, and PAHs from the spray booths are the driving contributors to the cancer risks, constituting over 98% and 96%, respectively. However, the main contributing sources in the 2025 RRP are the spray booths, whereas the contributing source in the 2019 HRA was the anodizing room. Key results for PMI, MEIR, and MEIW are as follows:

- PMI
  - Receptor ID – #3835
  - UTM Coordinates – 386789.6 E, 3753792.1 N
  - Location – along north side of the facility boundary, along the alley between E 125th Street and E 126th Street
  - Cancer Risk – 7.94 x 10^{-06}
- MEIR
  - Receptor ID – #2231
  - UTM Coordinates – 386766 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Cancer Risk – 5.58 x 10^{-06}
- MEIW
  - Receptor ID – #2235
  - UTM Coordinates – 386786 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Cancer Risk – 7.51 x 10^{-07}

Estimated cancer risks for MEIR and MEIW are both below 25 in a million, which is the Action Risk Level as defined by SCAQMD Rule 1402. Moreover, the values for the MEIR and MEIW do not exceed 1 x 10^{-5} (or 10 in 1 million), which the SCAQMD requires the distribution of public notices pursuant Rule 1402. No sensitive receptors exist in the zone of impact for cancer risks. Census tracts were included in the zone of impact (ZOI), e.g., boundary in which the lifetime cancer risk is greater than 1 x 10^{-6}.

1.3.3 Chronic Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for chronic noncancer health hazards. Figures 8 and 9 identify the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of Crystalline Silica and Ammonia are the driving contributors to chronic health risks, constituting over 93%. However, the main contributing sources in the 2025 RRP are the spray booths, whereas the contributing source in the 2019 HRA was the anodizing room. The overall chronic health risks have decreased from the 2019 HRA.

- PMI
  - Receptor ID – #3835
  - UTM Coordinates – 386789.6 E, 3753792.1 N
  - Location – along north side of the facility boundary, along the alley between E 125th Street and E 126th Street
  - Chronic Hazard – 0.133

- MEIR
  - Receptor ID – #2231
  - UTM Coordinates – 386766 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Chronic Hazard – 0.100

- MEIW
  - Receptor ID – #2235
  - UTM Coordinates – 386786 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Chronic Hazard – 0.122

Estimated chronic hazards for the MEIR and MEIW do not exceed the chronic hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the values for the MEIR and MEIW do not exceed the chronic hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

1.3.4 Chronic 8-hour Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for chronic 8-hour noncancer health hazards. Figure 10 identifies the location of the MEIW. For the MEIW, emissions of 1,2,4-Trimethylbenzene is the driving contributor to chronic health risks, constituting 100% of the maximum high risk. However, the main contributing sources in the 2025 RRP are the spray booths, whereas the contributing source in the 2019 HRA was the anodizing room. The overall chronic health risks have decreased significantly from the 2019 HRA.

- MEIW
  - Receptor ID – #2235
  - UTM Coordinates – 386786 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Chronic Hazard – 0.024

The estimated chronic 8-hr hazards for the MEIW does not exceed the chronic hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the value for the MEIW does not exceed the

chronic hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

1.3.5 Acute Noncarcinogenic Health Hazards

Table 1b summarizes the results of this HRA for acute noncancer health hazards. Figure 11 identifies the locations of the PMI, MEIR, and MEIW. For the MEIR and MEIW, emissions of nickel is the driving contributor to chronic health risks, constituting over 99% of the maximum high risk. The main contributing source remained to be the abrasive blasting cabinet baghouse. The overall chronic health risks have decreased significantly from the 2019 HRA.

- PMI
  - Receptor ID – #173
  - UTM Coordinates – 386690.2 E, 3753732 N
  - Location – south of the facility, along E 126th Street
  - Acute Hazard – 0.144

- MEIR
  - Receptor ID – #173
  - UTM Coordinates – 386690.2 E, 3753732 N
  - Location – south of the facility, along E 126th Street
  - Acute Hazard – 0.144

- MEIW
  - Receptor ID – #2235
  - UTM Coordinates – 386786 E, 3753797 N
  - Location – north of the facility, along the alley between E 125th Street and E 126th Street
  - Acute Hazard – 0.097

The MEIW and MEIR do not exceed the acute hazard index of 3.0, which is the Action Risk Level as defined by Rule 1402(c)(2). Moreover, the values for the MEIR and MEIW do not exceed the acute hazard index of 1.0, which the SCAQMD requires the distribution of public notice pursuant to Rule 1402.

2. INTRODUCTION

In response to an SCAQMD notice, this Risk Reduction Plan (RRP) was prepared pursuant to CARB's Air Toxics Hot Spots Program (Hot Spots Program) per the requirements of California Assembly Bill 2588 (AB 2588). SCAQMD Rule 1402 implements AB 2588, which is intended to collect information on air toxic emissions and reduce the health risks associated with toxic air contaminants from existing sources. Rule 1402 specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute hazard (HIA) and chronic hazards (HIC). Further, Rule 1402 requires applicable facilities to implement risk reduction plans to achieve specified risk limits, as required by the Hot Spots Program. This RRP contains the required plan elements to satisfy the requirements of SCAQMD Rule 1402, as described herein.

2.1 Applicable Requirements

SCAQMD Rule 1402 implements AB 2588 for facilities within its jurisdiction, which requires health risk assessment, public notification and risk reduction measures for facilities which exceed applicable risk levels. Rule 1402 identifies public notification and action risk levels for carcinogenic impacts, as well as non-cancer acute and chronic hazard impacts. SCAQMD Rule 1402 specifies the following key requirements:

- **Public Notification** – SCAQMD requires public notification to affected populations which equal or exceed the following health risk levels: MICR = 10 in 1 million, cancer burden = 0.5, HIC = 1.0, or HIA = 1.0

- **Action Risk Levels** – SCAQMD requires facilities to implement risk reduction measures if affected populations are exposed to health risk levels that equal or exceed the following: MICR = 25 in 1 million, HIC = 3.0, or HIA = 3.0

- **Significant Risk Levels** – SCAQMD considers the following health risk impacts of affected populations to be significant: MICR = 100 in 1 million, HIC = 5.0, or HIA = 5.0

- **Risk Reduction Plan (RRP)** – Rule 1402 specifies the following minimum plan elements for submittal of RRPs for subject facilities: (1) Facility Identification; (2) Facility Risk Characterization; (3) Identification of sources requiring risk reduction; (4) Evaluation of risk reduction measures for applicable sources; (5) Specification of selected risk reduction measures for applicable sources; (6) Implementation schedule; (7) Time extensions, if required; (8) Estimation of residual health risk; and (9) Proof of certification.

As per Rule 1402 (g)(2), if the RRP contains a facility risk characterization demonstrating to the satisfaction of the Executive Officer that the facility does not exceed the Action Risk Levels, the RRP may be approved without the inclusion of the minimum plan elements described above.

2.2 Background

On November 29, 2022, Bowman prepared and submitted an AB 2588 Health Risk Assessment (HRA) based on its reported emissions for Calendar Year 2019 (2019 HRA). As per SCAQMD requirements, Bowman was required to prepare the 2019 HRA utilizing the applicable state and local regulatory guidance for health risk assessments in effect at that time, which were the 2015 OEHHA Guidelines.[1] Pursuant to various communications and requirements of agency staff, the 2019 HRA report was subsequently modified by the SCAQMD, including changes to the previously reported air toxic emission rates and health risk results. Many of these 2019 HRA report modifications completed by the SCAQMD were disputed by Bowman. Irrespective, the 2019 HRA report "as modified" by the SCAQMD was received by Trinity Consultants via email on February 16, 2024, and September 10, 2024. The 2019 HRA "as modified" by the SCAQMD was subsequently approved in its letter dated November 6, 2024 (refer to Appendix D).

In its approval letter, pursuant to 1402(q)(1), the SCAQMD also required the distribution of an AB 2588 public notice for affected receptors near the facility, which Bowman completed and verified on December 16, 2024. In its approval letter, the SCAQMD also required Bowman to prepare this 2025 RRP to address the human health risk impacts identified by the modified 2019 HRA. Per the distributed public notice, an online community meeting was subsequently held by the SCAQMD on January 8, 2025.

While not reflected in the results of the 2019 HRA "as modified", Bowman had previously made numerous investments into air pollution controls for its facility since Calendar Year 2019 that significantly reduced air toxic emissions from its operations. Prior to Calendar Year 2019, Bowman had installed Ultra Low Particulate Air (ULPA) filtration for its spray booth operations which provided 99.999% control efficiency for particulates and metal emissions. In addition, since Calendar Year 2019, Bowman proactively reduced air toxic emissions from its facility and invested significant capital into additional air pollution controls for its Anodizing Room and Plating Room, which were not accounted in the "as modified" 2019 HRA. As part of these investments, Bowman constructed Permanent Total Enclosures (PTEs) to provide 100% capture of all emissions from its metal finishing tanks in its Anodizing Room and Plating Room. Further, Bowman installed additional ULPA systems providing 99.999% control efficiencies for its tank operations in the Anodizing Room and Plating Room, which are referred to as ULPA #1, #2 and #3. Emission source tests for these PTEs and ULPA systems were conducted and approved by the SCAQMD (refer to Appendix D). In addition, the SCAQMD issued final Permits to Operate No. G75808, G75809 and G75810 for the operation of these air pollution control systems in the Anodizing Room and Plating Room, respectively (refer to Appendix C).

2.3 Risk Reduction Plan Elements

As per Rule 1402, the RRP must contain minimum plan elements. The following describes the minimum plan elements, and the relevant section of this RRP where the information can be located.

Rule 1402 (f)(3)(A) The RRP must include the name, address, SCAQMD identification number and SIC code of the facility. This required facility identification can be found in Section 2.1 of this RRP.

Rule 1402 (f)(3)(B) The RRP requires a facility risk characterization which includes an updated air toxics emission inventory and health risk assessment, if the risk due to total facility emissions has increased above or decreased below the levels indicated in the previously approved health risk assessment.

Rule 1402 (f)(3)(C) The RRP must include identification of each source from which risk needs to be reduced in order to achieve a risk below the action risk level.

Rule 1402 (f)(3)(D) The RRP must include an evaluation of the risk reduction measures available for applicable sources identified in (f)(3)(C), including emission and risk reduction potential, estimated costs, and time necessary for implementation.

Rule 1402 (f)(3)(E) The RRP must specify the risk reduction measures that shall be implemented by the operator to achieve the action risk level or the lowest achievable level.

Rule 1402 (f)(3)(F) The RRP must specify a schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the plan, or in accordance with another schedule subject to approval of the Executive Officer, and specify the dates for other increments of progress associated with implementation of the risk reduction measures.

Rule 1402 (f)(3)(G) If requesting a time extension, the RRP must specify information required to demonstrate that the request meets the required criteria specified under paragraph (e)(2) and the length of time up to two years requested. This requirement does not apply to this RRP, as a time extension is not being requested.

Rule 1402 (f)(3)(H) The RRP must provide an estimation of the residual health risk after implementation of the specified risk reduction measures.

Rule 1402 (f)(3)(I) The RRP must provide proof of certification of the risk reduction plan as meeting all requirements by an individual who is officially responsible for the processes and operations of the facility.

2.4 Report Format

The report format for this 2025 RRP is consistent with South Coast AQMD requirements and based on guidance by the OEHHA.

Section 1.0 **Executive Summary** – This section summarizes facility information, emission sources, modeling parameters, and key findings of this HRA.

Section 2.0 **Introduction** – This section discusses applicable regulatory requirements, project background, and report format.

Section 3.0 **Risk Reduction Measures** – This section identifies the source(s) of risk from the facility and potential risk reduction measure(s) evaluated to reduce risk.

Section 4.0 **Hazard Identification** – This section identifies the reported substances emitted from the facility. The substances evaluated for cancer and noncancer endpoints are identified for Appendix A-I substances.

Section 5.0 **Exposure Assessment** – This section describes the estimated emissions for the chemicals of interest, the air dispersion modeling for determining airborne concentrations, the exposure pathways evaluated, and off-site receptors evaluated.

Section 6.0 **Risk Characterization** – This section presents the results of the risk assessment for the exposure scenarios evaluated. An evaluation of the zone of impact (ZOI), sensitive receptors, and population health risks are presented where appropriate.

Section 7.0 **Certification** – This section includes the proof of certification for this RRP.

Section 8.0 **References** – This section identifies the various publications, sources, and other references used to prepare this HRA.

In addition to this HRA report, the required and supplemental electronic files, including modeling input and output files, have been submitted to SCAQMD via the OnBase system. The electronic files included are as follows:

- AERMOD Input File [Bowman 2025-0131 v0.2.ami, Bowman 2025-0131 v0.2 Acute.ami]
- AERMOD File [Bowman 2025-0131 v0.2.amz, Bowman 2025-0131 v0.2 Acute.amz]
- AERMAP Input and Output Text Files
- BPIP Input and Output Text Files
- AERMOD Plot Files by 1 Hour and Period by Source (.plt)
- USGS Terrain File (Bowman Merged Terrain.tif)
- Meteorological Files (KHHR_V11_trimmed.pfl, KHHR_V11_trimmed.sfc)
- HARP2 input files (*HRAInput.hra)
- Supplemental input file with health values (*PolDB.csv)
- Supplemental input file with GLCs (*GLCList.csv)
- Output log file (*output.txt)
- Output file with cancer risk details (*CancerRisk.csv)
- Output file with chronic non-cancer risk details (*NCChronicRisk.csv)
- Output file with acute non-cancer risk details (*NCAcuteRisk.csv)
- Pathway Receptor Information (*PathwayRec.csv)
- HARP2 Generated Risk Plot Files (.plt)

3. RISK REDUCTION MEASURES

As per SCAQMD Rule 1402, the RRP must contain minimum plan elements to reduce health impacts from the approved health risk assessment. This section identifies the minimum plan elements, including a discussion of the baseline health risk impacts from which risk reduction can be measured.

3.1 Facility Identification

While Bowman's postal address indicates the City of Compton, the facility is located within an unincorporated area of Los Angeles County known as Willowbrook. Located at approximately 70 feet above sea level, the area of Willowbrook is located adjacent to the city limits of Compton (refer to Figure 1). As shown by Figure 2 – Vicinity Map, the facility boundary is located on 126th Street and East Alameda Street. In general, the local topography around the facility is flat terrain within a highly urbanized environmental setting, however with non-conforming land uses as described further below. Other pertinent facility information for Bowman's operations is summarized below.

Facility Name	Bowman Plating
Address	2631 East 126th Street, Compton, CA 90222
SIC	3471
County	Los Angeles County
Air Basin	South Coast Air Basin
Air District	South Coast Air Quality Management District
Contact Person	Dan Cunningham
Contact Phone Number	310-639-4343

For reference, the appendices provide a site plot of the facility including boundaries, emission sources, and stack locations, which are identified on Figure 3a, 3b, and 4. In addition, Figure 5a shows the immediate areas surrounding the facility that has been zoned for M-1, which extends north to 124th Street and south to 127th Street. Per Los Angeles County Zoning Maps, the neighborhood surrounding Bowman is currently zoned for light manufacturing only, which prohibits residential and school uses. However, despite these zoning and land use restrictions, many of the immediate surrounding neighborhoods include residential homes, which do not conform with the designated county zoning (refer to Figure 5b).

3.2 Baseline Health Risks

For purposes of this 2025 RRP, the 2019 HRA "as modified" will serve as initial baseline to evaluate the extent of health risk reductions required to meet Action Risk Levels. For reference, the following table compares the Baseline health risks that were reported in the 2019 HRA "as modified".

Summary of Baseline Health Risk Impacts
2019 HRA "as modified"

Health Risk Impact	MEIR Baseline	MEIW Baseline	Rule 1402 Action Risk Level
MICR	6.73×10^{-4}	4.42×10^{-5}	25×10^{-6}
HIC	0.797	0.788	3.0
8-Hour HIC	N/A	0.229	3.0
HIA	2.34	1.57	3.0

As shown above, only the Maximum Individual Cancer Risks (MICR) for residential and worker were above the applicable Rule 1402 Action Risk Level of 25 in 1 million. The non-cancer health risk impacts for HIA, HIC, and 8-hour HIC were already below Action Risk Level of 3.0 based on the 2019 HRA "as modified". As a consequence, for purposes of this 2025 RRP, the reduction of cancer risks for MEIR and MEIW associated with existing operations were required to comply with applicable Rule 1402 requirements.

3.3 Source Identification

As per Rule 1402 (f)(3)(C), the RRP must include identification of each source from which risk needs to be reduced in order to achieve a risk below the action risk level. As discussed above, over 90% of the health risks in the modified 2019 HRA were hexavalent chromium, nickel, and cadmium emissions from the process tanks operating in the Anodizing and Plating Rooms, which the Source IDs from the 2019 HRA "as modified" are identified as follows:

- Source ID #15 – Cadmium Plating Tank (in Plating Room)
- Source ID #16 – Tanks 314/321 (in Anodizing Room)
- Source ID #17 – Fugitive Emissions (in Plating Room)
- Source ID #18 – Fugitive Emissions (in Anodizing Room)

The above referenced air toxic sources were subsequently controlled when Bowman installed the PTEs and ULPA systems for the Anodizing Room and Plating Room, which are further described in the following section. All other air toxic emission sources remained unchanged for purposes of health risk modeling and baseline risk comparison purposes in this 2025 RRP.

3.4 Risk Reduction Evaluation

As per Rule 1402 (f)(3)(D), the RRP must include an evaluation of the risk reduction measures available for applicable sources identified in paragraph (f)(3)(C), including emission and risk reduction potential, estimated costs, and time necessary for implementation.

3.4.1 Permanent Total Enclosures (PTEs)

The construction of a PTE for the Anodizing Room enabled the 100% capture of all fugitive emissions of hexavalent chromium and other emissions from the Anodizing Room. Similarly, the construction of a PTE for the Plating Room enabled the 100% capture of the fugitive emissions of nickel, cadmium, and other emissions from the Plating Room. These PTEs were source tested and subsequently approved by the SCAQMD to satisfy requirements of EPA Method 204 (refer to Appendix D). In addition, as per requirements of the SCAQMD operating permits, these PTEs operate with differential pressure monitoring systems and continuous data loggers to ensure compliance with EPA Method 204 (refer to Appendix C).

3.4.2 Ultra Low Particulate Air (ULPA) Controls

The construction of ULPA systems #1 and #2 for the Anodizing Room was completed by Calendar Year 2021. For the Anodizing Room, these ULPA systems control and reduce the fugitive emissions of hexavalent chromium, nickel and other emissions from process tanks by an estimated 99.999%, including, Tanks 314/321. The construction of ULPA #3 for the Plating Room was completed by Calendar Year 2022. Similarly, for the Plating Room, this ULPA system controls and reduces the fugitive emissions of nickel, cadmium, and other emissions from process tanks by an estimated 99.999% efficiency. These ULPA systems were source tested and subsequently approved by the SCAQMD (refer to Appendix D). In addition, SCAQMD operating permits were issued for these ULPA systems (refer to Appendix C).

3.5 Measure Specification

As per Rule 1402 (f)(3)(E), the RRP must specify the risk reduction measures implemented that will achieve the Action Risk Level. As described above, the construction of PTEs and ULPA control systems have adequately reduced the air toxic emissions which comprised the vast majority of human health risk impacts, as determined by the modified 2019 HRA. As noted, the operation of the PTEs and ULPA systems have already reduced all applicable human health hazards well below Action Risk Levels. For reference, the 2025 RRP and facility risk characterization is provided in subsequent sections of this RRP, which further demonstrates the effectiveness of this risk reduction measure.

3.6 Schedule

As per Rule 1402 (f)(3)(F), the RRP must specify a schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the plan, or in accordance with another schedule subject to approval of the Executive Officer and specify the dates for other increments of progress associated with implementation of the risk reduction measures. As previously noted, SCAQMD permits have already been issued for the PTEs and ULPA systems that were modeled in this 2025 RRP. Therefore, Bowman is not required to implement any further risk reduction measures to comply with applicable requirements.

3.7 Time Extension

As per Rule 1402 (f)(3)(G), if requesting a time extension, the RRP must specify information required to demonstrate that the request meets the required criteria specified under paragraph (e)(2) and the length of time up to two years requested. This requirement does not apply, as a time extension is not being requested for the referenced risk reduction measures.

3.8 Residual Risk Estimate

As per Rule 1402 (f)(3)(H), the RRP must provide an estimation of the residual health risk after implementation of the specified risk reduction measures. As discussed, the specified risk reduction measures have already been implemented for the Anodizing Room and Plating Room. Consequently, the post-implementation risk estimates are being provided in this facility risk characterization and 2025 RRP. For reference, the summary table below identifies the post-implementation health risks for the facility due to the risk reductions achieved from the installation of PTEs and ULPA systems. As noted, the residual risks for MICR as determined by this 2025 RRP have been decreased well below Rule 1402 Action Risk Levels. Moreover, based on this 2025 RRP, it is anticipated that the residual risks for cancer and non-cancer hazards are lower than applicable Rule 1402 Public Notification thresholds.

Summary of Residual Risk Impacts
2025 Risk Reduction Plan

Health Risk Impact	Receptor	2025 RRP Residual Risk	Rule 1402 Action Risk Level	Rule 1402 Public Notice Level
Cancer	MEIR	5.58×10^{-6}	25×10^{-6}	10×10^{-6}
	MEIW	7.51×10^{-7}	25×10^{-6}	10×10^{-6}
HIC	MEIR	0.100	3.0	1.0
	MEIW	0.122	3.0	1.0
8-Hour HIC	MEIR	N/A	3.0	1.0
	MEIW	0.024	3.0	1.0
HIA	MEIR	0.144	3.0	1.0
	MEIW	0.097	3.0	1.0

4. HAZARD IDENTIFICATION

Hazard identification involves identifying if a hazard exists, and if so, what are the pollutant(s) of concern and whether a pollutant has potential human carcinogen and/or other adverse health effects. In general, OEHHA guidelines require health risk assessment for chemicals identified as Appendix A-I Substances per AB 2588 regulations. This section provides descriptions of the facility, applicable plant processes, pollutants of concern, and emission estimates.

4.1 Facility Description

Bowman operates a 102,000 square foot industrial plant that is located at 2631 East 126th Street in Compton, California. In general, the local topography around the plant is flat terrain within an urban environmental setting. The facility is located in an unincorporated area of Willowbrook city under the jurisdiction of Los Angeles County. As shown by Figure 2 – Vicinity Map, Bowman's facility boundary is located on 126th Street and west of East Alameda Street. A site plot of the facility including, facility boundary, building heights and emission sources are identified on Figure 3a, 3b, and 4. As shown on Figure 5a, per Los Angeles County Zoning Maps, the immediate areas surrounding the facility is zoned for M-1 and extends north to 124th Street and south to 127th Street. Per county requirements, zone M-1 allows permitted uses for light manufacturing and prohibits residential and school uses. However, despite these zoning and land use restrictions, much of the immediate surrounding areas currently include residential homes, which do not conform with the designated county zoning (refer to Figure 5b).

4.2 Process Description

Bowman provides various metal finishing capabilities for aerospace customers and products, including, plating, anodizing, spray coatings and others. For purposes of this 2025 RRP and updated HRA, the primary air toxic emission sources for Bowman's operations include spray booths, natural gas boilers and ovens, abrasive blasting cabinets, and metal finishing tanks (Anodizing Room and Plating Room). The primary emissions of regulated air toxics from Bowman's operations result from pigments and volatiles from liquid spray coating operations, acids and metal emissions from the process tanks, and products of natural gas combustion. Per requirements of applicable operating permits, Bowman currently utilizes PTEs and ULPA systems to control air toxic emissions for its operations, which provide at least 99.999% emission reductions, respectively. Emission source locations are depicted in Figure 4, and descriptions of each principal operations are provided as follows.

4.2.1 Spray Booths

Bowman operates four (4) permitted SCAQMD spray booths (Permit Nos. G54929, G45909, G45910, and G19828). Refer to Figure 4 for the location of the spray booths. These spray booths apply liquid coatings per customer specifications, some of which contain regulated AB 2588 chemicals. The principal toxic of concern from these spray booths is hexavalent chromium that exists within chromated pigments, such as strontium chromate, barium chromate, and others. Pigments can be emitted from the spray booths due to the overspray of coatings onto aerospace parts and components, which are then exhausted through existing roof top vertical stacks. Three of the primary spray booths are currently equipped with ULPA filter systems which reduces the emitted particulate emissions by a minimum of 99.999%, while the fourth spray booth is infrequently used which is equipped with regular HEPA filters with 99.97% control efficiency. All volatile and metal emissions from the spray booths are modeled as stack emission sources (point sources). Note that Spray Booth 4 has four (4) stacks for spray coating emissions, and an additional separate stack for

combustion emissions from a built-in natural gas heater. In this 2025 RRP, the spray booth stacks are identified as Source ID Nos. 1, 2, 3, 4, 5, 6, and 7.

4.2.2 Combustion Sources

Bowman operates several natural gas sources which are permitted and exempted, which include three (3) permitted ovens, one (1) permitted spray booth heater, and three (3) permit exempt boilers. AB 2588 chemicals are emitted from the combustion of natural gas from these sources. Air toxic emissions from natural gas combustion are principally benzene, formaldehyde, ammonia, naphthalene, PAHs, acetaldehyde, acrolein, propylene, toluene, xylene, ethyl benzene, and hexane. Emission factors for natural gas combustion are based on SCAQMD's Default Combustion Emission Factors. These combustion sources are modeled as point sources – Source ID Nos. 8, 9, 12, 13, 14.

4.2.3 Process Tanks

Bowman's metal finishing process tanks operate within two (2) primary rooms referred to as Anodizing Room and Plating Room. Based on aerospace specifications, metal parts are treated with different finishes or treatments. Metal finishing operations within the Anodizing Room include sulfuric anodizing, hard anodizing, chromic acid anodizing, titanium etch, sodium dichromate seal, chromic seal, deoxidizer, and others. Metal finishing operations within the Plating Room include nickel plating, nickel strike, cadmium plating, alkaline cleaning, passivation, and others. The approved tank emission calculations for the 2019 HRA "as modified" included heated tank, electrolytic, and evaporative emissions. AB 2588 chemicals from these rooms include nickel, cadmium, hexavalent chromium, sulfuric acid, nitric acid, sodium hydroxide, and others. For purposes of this 2025 RRP, the primary air pollution controls for the process tanks consist of tank lids, PTEs, and ULPA control systems. Consequently, the air toxic emissions from the Anodizing Room are modeled as two (2) point sources (ULPA #1 and #2), and the Plating Room is modeled as one point source (ULPA #3). Stack parameters and emission rates for the Anodizing Room and Plating Room are based on the approved final Montrose source tests that were previously referenced, and which final SCAQMD permits to operate were issued.[4,5]

In this 2025 RRP, ULPA #1 stack is modeled as the existing point source - Source ID No. 16. Due to the installation of the ULPA #3 stack for the Plating Room, Source ID Nos. 15 and 17 were removed from the air dispersion model, since these emission sources were replaced with a new Source ID No. 19 for the ULPA #3 stack. Further, a new Source ID No. 20 was created for purposes of modeling the ULPA #2 stack for the Anodizing Room (and prior Source ID No. 18 was removed).

4.2.4 Abrasive Blasting

Bowman operates two (2) abrasive blasting cabinets which are infrequently used, which operate under SCAQMD Permit Nos. G55996 and F83389. This emission source is modeled as a point source under Source ID No. 10.

[4] Montrose Air Quality Services, Source Test Report for Anodizing Room – Bowman Plating, September 13, 2021

[5] Montrose Air Quality Services, Source Test Report for Plating Room – Bowman Plating, June 9, 2022

4.3 Pollutants of Interest

Per OEHHA guidelines, the modeled chemicals in this HRA from the facility emission sources were identified from AB 2588 Appendix A-I list of substances, which include 34 chemicals were identified. Chemical profiles of these air toxics are well established by OEHHA and regulatory authorities, such as physical characteristics, general uses, and toxicity information. As shown by Table 3, 10 substances have carcinogenic impacts, and 25 substances have chronic, 8-hour chronic, and acute noncancer hazard impacts. Target organs for the acute and chronic noncancer health effects include: cardiovascular system, central nervous system, immune system, gastrointestinal tract & liver or alimentary tract, kidneys, reproductive system & developmental, respiratory system, skin, eyes, bone/teeth, endocrine system, hematological system (blood), and others as identified in Table 4.

5. EXPOSURE ASSESSMENT

Exposure assessment involves estimating the extent of public exposure to each regulated substance for which there exists potential cancer risk and/or noncancer health hazard effects. This involves modeling of environmental transport, evaluation of environmental fate, identification of exposure routes, identification of exposed populations, and estimation of short-term and long-term exposure levels.

This section describes air dispersion modeling and associated parameters used to estimate the potential for human exposure to the AB2588 emissions from this facility, including: (1) summarize and describe the source information and emission estimates used in the environmental transport models; (2) describe potentially exposed populations; (3) describe the assumptions used in the air dispersion and assessment of chemical exposure model; and (4) identify primary methodologies for calculating health risk impacts.

5.1 Air Dispersion Modeling

Air dispersion modeling is used to estimate off-site air concentrations of chemicals associated with facility emissions. For this HRA, Trinity used the most recent version of the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD) version 24142. Developed to replace the Industrial Source Complex Short-Term Version 3 (ISCST3) model, AERMOD is a steady-state Gaussian plume model that can be used to assess ground level pollutant concentrations from a wide variety of sources (point, line, area or volume) for distances up to approximately 50 km, including urban and rural terrains. AERMOD can calculate ground level concentrations for various averaging periods, such as acute short-term exposures (1-hour averaging), chronic long-term exposures (annual averages) or other required meteorological data periods (i.e., 3-hour, 8-hour, 24-hour). The assumptions used for this model are discussed in more detail below.

5.1.1 Model Options

For this facility, SCAQMD generally recommends single and multi-source dispersion modeling in urban or rural areas with "simple terrain" (flat or gently rolling, with ground elevations below the pollutant release heights), which is typical of the area immediately surrounding the facility. The following AERMOD model options were used in the modeling analysis:

- AERMOD Version — 24142
- HARP2 ADMRT — 22118
- Projection — Universal Transverse Mercator (UTM)
- Datum — World Geodetic System 1984
- UTM Zone — 11
- Hemisphere — Northern
- Selection — Hourly and Period
- AERMOD File — AMI and AMZ
- AERMOD Output File — Plot File by Source

The following default model options were used in accordance with SCAQMD guidelines:

- Use regulatory default? — Yes
- Urban or Rural? — Urban
- Gradual plume rise? — No
- Stack-tip downwash? — Yes
- Buoyancy-induced dispersion? — Yes

- Calms processing? No
- Missing data processing? No
- Include building downwash? Yes
- Low bound option? No

For reference, the point sources modeled in this RRP are identified on Figure 4. To determine noncarcinogenic acute health hazards, AERMOD estimates ground level concentrations for the maximum 1-hour averaging period. To determine noncarcinogenic chronic health hazards and carcinogenic health impacts, AERMOD estimates ground level concentrations for the annual average period.

5.1.2 Source Parameters

The AERMOD model supports a variety of source types, including point, area, volume, and line. Based on current facility operations and reported emissions, modeling sources were identified for purposes of this HRA. In the prior 2019 HRA "as modified", there were 17 sources that were modeled, which included 15 point sources and 2 area sources. For this 2025 RRP, there are sixteen (16) sources of AB 2588-listed substance emissions which were modeled, all of which were modeled as point sources (or stacks). A summary of the modeled emission sources is described as follows, which includes the removal of 3 prior modeled sources (#15, #17, #18) and addition of 2 new stacks (#19 and #20):

- Source ID No. 1 - Spray Booth #1 stack
- Source ID No. 2 - Spray Booth #2 stack
- Source ID No. 3 - Spray Booth #3 stack
- Source ID No. 4 - Spray Booth #4 stack (1 of 4)
- Source ID No. 5 - Spray Booth #4 stack (2 of 4)
- Source ID No. 6 - Spray Booth #4 stack (3 of 4)
- Source ID No. 7 - Spray Booth #4 stack (4 of 4)
- Source ID No. 8 - Spray Booth #4 heater stack
- Source ID No. 9 - Boiler stack
- Source ID No. 10 - Abrasive blasting cabinet stack
- Source ID No. 12 - Oven #1 stack
- Source ID No. 13 - Oven #2 stack
- Source ID No. 14 - Oven #3 stack
- Source ID No. 15 - Cadmium Tank Exhaust Stack (removed from model, replaced with ULPA #3 stack)
- Source ID No. 16 - ULPA #1 stack (Anodizing Room)
- Source ID No. 17 - Plating Room Area Source (removed from model, replaced with ULPA #3 stack)
- Source ID No. 18 - Anodizing Area Source (removed from model, replaced with ULPA #2)
- Source ID No. 19 - ULPA #3 stack (Plating Room)
- Source ID No. 20 - ULPA #2 stack (Anodizing Room)

The point sources/stacks are vertical, and there is no source grouping. There are no sources that are characterized as volume sources. All relevant emissions source parameters that were applied for this model are provided in Table 5. Maximum 1-hour and annual average emission rates for each source and regulated chemical are provided in Tables 2a and 2b. The following inputs are defined for each point source:

- Source ID
- X Coordinate
- Y Coordinate
- Base Elevation
- Release Height above Ground

- Emission Rate
- Stack Gas Exit Temperature
- Stack Gas Exit Velocity
- Stack Diameter

For modeled sources, AERMOD calculates ground level concentrations (hourly and annual average) based on input source-specific parameters, including the emission rate, stack height, stack inside diameter, stack exit velocity, and stack gas temperature.

5.1.3 Source Test Emission Rates

As previously described, the PTEs and ULPA systems have been source tested by Montrose Air Quality Services, which were approved by the SCAQMD (refer to Appendix D). As shown on Table 2a, the measured hourly emission rates for hexavalent chromium, nickel, and cadmium from these source tests were modeled in this RRP, which reflected the installation of the ULPA #1, #2 and #3 stacks. Based on the Montrose source tests, the following tables summarize the modeled hourly and annual emission rates for the ULPA systems, which are identified as Source ID Nos. 16, 19, and 20. Note that for the annual emission rates, the same operating hours for the Anodizing Room and Plating Room were utilized from the 2019 HRA report "as modified". For purposes of this RRP, note that the modeling emission rates from other Source IDs were not changed from the prior 2019 HRA "as modified".

Summary of Modeling – Hourly Emission Rates (lbs/hr)[6]

Source ID	Source Description	Hex Chrome[7]	Nickel	Cadmium
16	ULPA #1 (Anodizing Line)	9.11×10^{-7}	8.08×10^{-6}	Not Measured
19	ULPA #3 (Plating Room)	Not Measured	7.64×10^{-6}	1.39×10^{-6}
20	ULPA #2 (Anodizing Room)	2.79×10^{-7}	7.22×10^{-5}	Not Measured

Summary of Modeling – Annual Emission Rates (lbs/year)[8]

Source ID	Source Description	Hex Chrome	Nickel	Cadmium
16	ULPA #1 (Anodizing Room)	5.39×10^{-3}	4.79×10^{-2}	Not Measured
19	ULPA #3 (Plating Room)	Not Measured	2.27×10^{-2}	4.12×10^{-3}
20	ULPA #2 (Anodizing Room)	1.65×10^{-3}	4.27×10^{-1}	Not Measured

[6] Hourly modeling rates were the average of the three (3) measured emission rates of hexavalent chromium, nickel and cadmium as approved by the SCAQMD in the Montrose source test reports dated September 13, 2021, and June 9, 2022 (refer to Appendix D).

[7] Note that 2022 Source Test for Plating Room (ULPA #3) did not include hexavalent chrome, so these metal emissions for ULPA #3 were estimated based on SCAQMD heated tank equation with applied ULPA control efficiency of 99.999%.

[8] For the annual emission rates, the same operating hours for the Anodizing Room (5,920 hours) and Plating Room (2,968 hours) were utilized from the 2019 HRA report "as modified".

5.1.4 Variable Emission Rates

Variable emission rates were applied to each source in AERMOD based on the respective operating schedule. The operating schedule for each source is provided in the table below.

Variable Emission Rates

Source ID	Source Description	Hours of Operation	Variable Rate
1	SPRAY_BOOTH_1	Mon-Fri 08:00 - 24:00	2.10
2	SPRAY_BOOTH_2	Mon-Fri 08:00 - 24:00	2.10
3	SPRAY_BOOTH_3	Mon-Fri 08:00 - 24:00	2.10
4	SPRAY_BOOTH_4_1	Mon-Fri 08:00 - 24:00	2.10
5	SPRAY_BOOTH_4_2	Mon-Fri 08:00 - 24:00	2.10
6	SPRAY_BOOTH_4_3	Mon-Fri 08:00 - 24:00	2.10
7	SPRAY_BOOTH_4_4	Mon-Fri 08:00 - 24:00	2.10
8	HEATER	Mon-Fri 08:00 - 24:00	2.10
9	BOILERS	Mon-Fri 08:00 - 24:00	2.10
10	BLAST_CB	Mon-Fri 08:00-12:00, 13:00-17:00	4.20
12	OVEN_1	Mon-Fri 08:00 - 24:00	2.10
13	OVEN_2	Mon-Fri 08:00 - 24:00	2.10
14	OVEN_3	Mon-Fri 08:00 - 24:00	2.10
16	ANODE_LN (ULPA #1)	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	1.33
19	PLATE_RM (ULPA #3)	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	1.95
20	ANODE_RM (ULPA #2)	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	1.33

5.1.5 Receptors

According to OEHHA Guidelines, HRAs must provide a detailed analysis of the potentially exposed population. This analysis includes identification of the maximum exposed individuals (MEIs) for nearby residences (MEIR) and workers (MEIW), identification of sensitive receptors within the ZOI, identification of fence line receptors, and evaluation of potential population impacts within the ZOI. As required, various receptor locations were inputted into AERMOD which covered the property fenceline, nearby residences and workers, sensitive receptors, and census blocks. Additional details for each receptor type are provided as follow:

- **Fenceline** – Facility boundary receptors were defined at 20-meter increments along the property border. Figure 3a shows the fenceline for this HRA. The facility boundary receptors are identified as receptors 3830-3856.
- **Receptor Grid** – The general locations of potential MEIs were determined based on the location of sources and the surrounding land use. The nearest immediate residential receptors are located on the south side and north side of the facility boundary. Worker receptors are located immediately north of the facility boundary. Receptor grid points had 20-meter spacing from 0 to 200 meters from facility center, 50 meter spacing from 200 to 1000 meters, and 250 meter spacing beyond 1000 meters. Additional 5 meter spacing was added to the receptors north of the facility. Figures 5a and 5b show the surrounding zoning and land uses within the immediate vicinity of the facility.

- **Sensitive Receptors** - In accordance with OEHHA Guidelines, sensitive receptors must be identified within the ZOI, such as K-12 schools, hospitals, nursing/convalescent homes, daycares, and senior centers. As applicable, to determine the location of nearby sensitive receptors within the ZOI, Trinity reviewed applicable public sources of information and databases, including, Google and online search. A breakdown of the sensitive receptors is identified in Table 7a, and ground level concentrations for the sensitive receptors are provided in Table 7b, 7c and 7d.
- **Census Block Receptors -** AB2588 also requires an estimate of the number of impacted individuals in residences and off-site workplaces within the ZOI. Census data is used to determine affected populations within geographic areas defined by census tracts. A census tract centroid (geographical center) is identified as a receptor location, which represents exposure to the population within that census tract. Census tract information wasobtained directly from HARP dispersion modeling by inputting the facility center and a distance of 2,000 meters.

5.1.6 Building Downwash

The purpose of this evaluation is to determine if stack discharge might become caught in the turbulent wakes of structures within close proximity. Wind blowing around a building creates zones of turbulence that are greater than if the building was absent. The USEPA-approved Building Profile Input Program PRIME (BPIP-PRIME) was used to simulate the building downwash, which is the effect of nearby structures on the flow of the plumes from their respective emission sources. U.S. EPA has promulgated stack height regulations that restrict the use of stack heights in excess of "Good Engineering Practice" (GEP) in air dispersion modeling analyses.[9] Under these regulations, that portion of a stack in excess of the GEP height is generally not creditable when modeling to determine source impacts. This essentially prevents the use of excessively tall stacks to reduce the ground-level pollutant concentrations. The stack height not subject to the effects of downwash, called the GEP stack height, is defined by the following formula:

$$H_{GEP} = H + 1.5L$$

Where:

H_{GEP} = GEP stack height,
H = structure height, and
L = lesser dimension of the structure (height or projected width)

This equation is limited to stacks located within 5L of a structure. Stacks located at a distance greater than 5L are not subject to the wake effects of the structure. If there is more than one stack at a given facility, the above equation must be successively applied to each stack. If more than one structure is involved, the equations must also be successively applied to each structure. To calculate downwash effects, if any, building coordinates and height of nearby structures were inputted into BPIP-PRIME and can be seen on Table 6. A total of eight (8) facility buildings and a total of seven (7) external buildings were modeled for building downwash. Figure 3 shows the facility boundary, buildings, and sources.

5.1.7 Meteorological and Elevation Data

The facility is located in Compton at approximately 70 feet above sea level (refer to Figure 1 – Location Map). In general, the local topography around the facility is flat terrain within an urban environmental setting. For this 2025 RRP, the SCAQMD approved the use of meteorological data from the nearby

[9] U.S. Environmental Protection Agency, Good Engineering Practice Stack Height Regulations, October 1988

Hawthorne Airport (KHHR) station, which includes 5 years of processed data. OEHHA Guidelines recommend five years of meteorological data be used in the model if available. For this 2025 RRP, the following five-year AERMET processed meteorological data files for years 2016 through 2021 were downloaded from the South Coast AQMD Met Data site:

- KHHR_V11_trimmed.sfc
- KHHR_V11_trimmed.pfl

The surface file and profile file were inputted into AERMAP and processed with all receptors and sources. Topography classification (Simple, Intermediate, Complex) is not required with the AERMOD dispersion model. Terrain options employed within AERMOD, using AERMAP to obtain source, building, and receptor elevations from the following file downloaded and resized from the USGS National Map (USGS 2022):

- Bowman Merged Terrain.tif

5.2 Assessment of Chemical Exposure

For this 2025 RRP, SCAQMD requires the use of the Hotspots Analysis and Reporting Program, Version 2 (HARP2). The health risk module of HARP2 incorporates the current OEHHA guidelines, exposure factors, and the most recent toxicity values for modeled substances.

5.2.1 HARP2 Analysis

AERMOD estimates off-site ambient air concentrations for each averaging period (i.e., 1-hour, annual average, etc.) based on source parameters and a normalized emission rate (1 gram/sec) from each emission source. The AERMOD output provides a theoretical concentration based on this normalized emission rate for each chemical at each receptor location from each source. This normalized emission rate for each source was used to generate a file that contained the partial contribution of each source to the total air concentration in units of micrograms per cubic meter ($\mu g/m^3$) at each receptor. This AERMOD model output file was used as an input file to the HARP2 model, which combined the partial contributions with actual source emission rates to estimate the chemical-specific air concentrations at each receptor location. HARP2 sums up the contribution from each source at a given receptor in order to estimate the total pollutant concentration for each emitted chemical. HARP2 also contains updated toxicity information (cancer potency, RELs, etc.) for listed regulated substances, which are applied to estimate cancer and noncancer health hazard impacts for relevant exposure pathways and applicable target organs. As required, the HARP2 model input and output files were submitted with this HRA report in electronic format, as listed in Section 2.3.

5.2.2 Exposure Pathways

Exposure pathways are generally classified as primary pathways and secondary pathways. Inhalation is the primary exposure pathway for all modeled sources and substances. For multi-pathway substances, there are non-inhalation exposure pathways that should also be evaluated. As applicable, the non-inhalation pathways include dermal exposure, water ingestion, crop ingestion (direct deposition), soil ingestion, ingestion of mother's milk, fish, and dairy products, or other.

In general, most air toxics assessed under the Hot Spots program are volatile organic compounds that remain as gases when emitted into the air. These volatile chemicals are not subject to appreciable deposition to soil, surface waters, or plants. Therefore, human exposure does not normally occur to any appreciable extent via ingestion or dermal exposure. Rather, the primary exposure pathway to these volatiles occurs through the inhalation pathway. A small subset of regulated substances, i.e. semi-volatile

organic and metals, is emitted partially or totally as particles subject to deposition. In these cases, ingestion and dermal pathways as well as the inhalation pathway must be evaluated.

Based on OEHHA Guidelines the multi-pathway analyses that will be included in this HRA will consider exposure via the mandatory minimum pathways of:

- Inhalation
- Soil Ingestion (deposition rate = 0.02 m/s)
- Dermal Absorption
- Mother's Milk
- Homegrown Produce (fraction = 0.0137)

The area surrounding the facility is primarily industrial, commercial, and residential. There is no local potable surface water supply in the vicinity of the facility. Therefore, it is assumed that there is no risk involved in the exposure through ingestion of local fish nor through ingestion of surface water or groundwater. There is no adjustment to exposure time, worker adjustment, and time away from home applied to this HRA.

If applicable, particle deposition will be predicted using the procedures and the values presented in the OEHHA Air Toxics "Hot Spots" Program Risk Assessment Guidelines, February 2015. The deposition rate of 2 cm/s will be used in this HRA, as applicable.

5.2.3 Carcinogenic Health Impacts

In accordance with the OEHHA Guidelines, cancer risk estimates based on the theoretical upper-bound cancer risk were evaluated for the MEIR, MEIW, and PMI. The guidelines also require cancer risk to be evaluated for affected sensitive receptors and populations within the ZOI.

The HARP2 model computes the total cancer risk from both inhalation and non-inhalation pathways at each receptor location. For example, the inhalation risk for each pollutant at a receptor location is calculated by multiplying the inhalation dosage by its cancer potency factor (example below). The estimated risks for individual substances emitted by the facility are added to provide the total cancer risk for individual receptor locations. For inhalation exposures, cancer risk must be separately calculated for specified age groups because of age differences in sensitivity to carcinogens and age differences in intake rates. Some substances are subject to deposition onto soil, plants, and water bodies and therefore need to be evaluated by the appropriate non-inhalation pathway. Cancer risk for both inhalation and non-inhalation pathways is calculated using Equation 8.2.4 A and 8.2.5 from the OEHHA Guidelines, generalized in the following equation:

$$\text{Cancer Risk}_i = \text{Dose} \times \text{CPF} \times \text{ASF} \times \frac{\text{ED}}{\text{AT}} \times \text{FAH}$$

Where:

Cancer Risk_i	=	Cancer risk for specific exposure pathway *i* (inhalation/non-inhalation)
Dose	=	Daily Inhalation Dose (mg/kg-day)
CPF	=	Cancer Potency (or Unit Risk Factor) $(\text{mg/kg-day})^{-1}$
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless) (residential inhalation pathway only)

Per OEHHA Guidelines, South Coast AQMD assumes an exposure duration of 30 years for residential and sensitive receptors. For worker receptors, the exposure duration is reduced to 25 years.

5.2.4 Noncarcinogenic Health Impacts

Potential noncarcinogenic health effects (acute HI and chronic HI) associated with exposure to chemical emissions have been evaluated using the HARP2 model. Acute and chronic health hazards for different substances impact different target human organs (e.g., central nervous system, reproductive system, liver, etc.). For inhalation exposures, the model divides the predicted average air concentrations for each chemical at the receptor locations by the appropriate inhalation Reference Exposure Levels (RELs) provided by OEHHA. These ratios are chemical-specific to the chronic or acute hazard quotients.

Noncarcinogenic health effects were also evaluated in terms of their assumed potential additive effect on target organs or systems. For inhalation exposures, the target organ-specific HI is the sum of the individual hazard quotients for each chemical affecting a specific target organ as defined in Section 8.3.1 of the OEHHA Guidelines, as shown below:

$$\text{Hazard Index } (HI)_{Organ} = \sum \left[\frac{GLC}{REL_{Organ}} \right]_{Chemical}$$

Where:

GLC = ground level concentration (µg/m^3), annual average concentration for chronic and 1-hour max concentration for acute

REL = Reference Exposure Level (µg/m^3)

In the case of a multi-pathway pollutant (i.e., pollutants with non-inhalation exposures), health risk impacts consider the additional noncancer risks associated with non-inhalation routes of exposure from certain pollutants.

5.2.5 Worker Adjustment Factor

Per South Coast AQMD's AB 2588 and Rule 1402 Supplemental Guidelines, worker adjustment factors (WAFs) are needed for facilities that do not operate continuously. The adjustment reflects the pollutant concentration that an offsite worker breathes. WAFs are only applicable when estimating worker cancer risks and non-cancer chronic 8-hour HI, and the WAFs only affect the inhalation pathway. WAFs were calculated per source based on the potential operating hours, and it is conservatively assumed that the offsite worker and the facility have the same operating schedule, meaning the operating schedules completely overlap.

WAFs can typically be entered into HARP2 via the Inhalation Pathway. This method allows for one WAF to be used for the entire facility. However, for this facility, since each source has a different operating schedule and therefore multiple WAFs are necessary, the WAFs were directly applied to the worker cancer inhalation risk and the non-cancer chronic 8-hour risk for each source through post-processing in Microsoft Excel.

The HARP model assumes emissions are continuous. When emission sources do not run continuously, some hours have zero emissions and therefore receptors have zero exposure. If an offsite worker receptor is not present during these hours, the worker's health risks are underestimated. To account for this, a "worker adjustment factor" (WAF) must be applied to worker carcinogenic impacts and 8-hour noncarcinogenic chronic impacts. The WAF will vary depending on the operating schedule of the equipment, which is calculated per the following equation:

WAF = (24*7) / H

Where:

WAF = Worker Adjustment Factor
H = Hours operated by the equipment per week

For reference, the WAFs used for each source in this 2025 RRP are provided below, along with the potential operating hours used to calculate each WAF. The following table calculates the WAF for each of the facility's equipment.

Source ID	Equipment	Operating Schedule	Hours/Week	WAF
1	Spray Booth 1	Mon-Fri 08:00 - 24:00	80	2.1
2	Spray Booth 2	Mon-Fri 08:00 - 24:00	80	2.1
3	Spray Booth 3	Mon-Fri 08:00 - 24:00	80	2.1
4	Spray Booth 4_1	Mon-Fri 08:00 - 24:00	80	2.1
5	Spray Booth 4_2	Mon-Fri 08:00 - 24:00	80	2.1
6	Spray Booth 4_3	Mon-Fri 08:00 - 24:00	80	2.1
7	Spray Booth 4_4	Mon-Fri 08:00 - 24:00	80	2.1
8	Spray Booth 4 Heater	Mon-Fri 08:00 - 24:00	80	2.1
9	Boilers 1 - 3	Mon-Fri 08:00 - 24:00	80	2.1
10	Abrasive Blasting Cabinet Baghouse	Mon-Fri 08:00- 12:00, 13:00-17:00	40	4.2
12	Oven 1	Mon-Fri 08:00 - 24:00	80	2.1
13	Oven 2	Mon-Fri 08:00 - 24:00	80	2.1
14	Oven 3	Mon-Fri 08:00 - 24:00	80	2.1
16	Anodizing Room (ULPA #1)	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	126	1.33
19	Plating Room (ULPA #3)	Mon-Fri 08:00 - 24:00, Sat 06:00-12:00	86	1.95
20	Anodizing Room (ULPA #2)	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	126	1.33

6. RISK CHARACTERIZATION

The facility risk characterization section discusses the results of the modeling, including, noncancer health hazards, carcinogenic health hazards, zones of impact, maximum exposures, cancer burden calculations and affected populations. The following summarizes the key modeling parameters and results from this HRA.

6.1 Dose-Response and Dose Estimates

Dose-response assessment describes the quantitative relationship between the amount of exposure to a substance (the dose) and the incidence or occurrence of an adverse health impact (the response). For cancer health risk, CARB's Scientific Review Panel on Toxic Air Contaminants has approved a list of cancer potency factors developed by OEHHA or USEPA. The potency factors are provided in Appendix A of the OEHHA Guidelines and used in HARP2 ADMRT. For noncancer health effects, the dose-response information is used to determine the RELs. The RELs are provided in Appendix B of the OEHHA Guidelines and used in HARP2 ADMRT.

6.2 Zone of Impact

As required, modeling receptor points were identified to include the property fence line, nearby workers, and local residential neighborhoods. In addition, any sensitive receptors within the ZOI were identified (see Figure 6 for ZOI residential cancer risk). The ZOI is commonly defined as the area surrounding the facility where receptors have a potential cancer risk equal or greater than 1 in 1 million, acute hazards equal or greater than 0.5, or chronic hazards equal or greater than 0.5. The ZOI is defined once the air dispersion modeling process has determined the pollutant concentrations at each designated off-site receptor and a risk analysis has been performed. The results from the HARP2 model provide the information necessary to identify the ZOI by generating the associated risk isopleths (i.e., a geographical presentation of areas of equal risk). Maps depicting the ZOIs for this HRA are provided in Figures 6 through 10, as applicable.

6.3 Carcinogenic Health Effects

6.3.1 Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 8 and 9, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the PMI are listed below.

- Receptor ID – #3835
- UTM Coordinates – 386789.6 E, 3753792.1 N
- Cancer Risk – 7.94×10^{-6}
- Driving Compound – Hexavalent Chromium
- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Pathway – Inhalation

The PMI is located along north side of the facility boundary, along the alley between E 125th Street and E 126th Street, shown on Figure 6.

6.3.2 Maximum Exposed Individual Resident (MEIR)

Results for the MEIR by each pollutant and by each source are presented in Tables 10 and 11, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the MEIR are listed below.

- Receptor ID – #2231
- UTM Coordinates – 386766 E, 3753797 N
- Cancer Risk – 5.58×10^{-6}
- Driving Compound – Hexavalent Chromium
- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Pathway – Inhalation

The MEIR is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 6. Figure 6 presents the cancer risk isopleths identifying the ZOI for residential modeling scenarios.

6.3.3 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 12 and 13, respectively. The receptor ID, UTM coordinates, cancer risk, driving compound, driving emission source, and driving pathway for the MEIW are listed below.

- Receptor ID – #2235
- UTM Coordinates – 386786 E, 3753797 N
- Cancer Risk – 7.51×10^{-7}
- Driving Compound – Hexavalent Chromium
- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Pathway – Inhalation

The MEIW is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 7. Figure 7 presents the cancer risk isopleths identifying the ZOI for worker modeling scenarios.

6.3.4 Sensitive Receptors

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 12. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

6.3.5 Population Cancer Burden

AB 2588 requires an estimate of the number of impacted individuals in residences and off-site workplaces within the ZOI. Census data is used to determine affected populations within geographic areas defined by census tracts. A census tract centroid (geographical center) is identified as a receptor location, which represents exposure to the population within that census tract. Census tract information was obtained directly from the HARP2 ADMRT background data for census tracts located with the ZOI.

The ZOI is within Tract 582. For this HRA, affected populations were estimated based on census data from Calendar Year 2010, as published by the United States Census Bureau. The census tract receptors were

inputted into AERMOD and are identified as receptors 3259-3812. The cancer burden results are presented in Table 28, as follows:

- Total cancer burden – 0.0009

6.4 Noncancer Chronic Health Effects

6.4.1 Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 14 and 15, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the PMI are listed below.

- Receptor ID – #3835
- UTM Coordinates – 386789.6 E, 3753792.1 N
- Chronic Hazard – 0.133
- Driving Compound – Crystalline Silica
- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Target Organ – Respiratory System

The PMI is located along the north side of the facility boundary, along the alley between E 125th Street and E 126th Street as shown on Figure 8.

6.4.2 Maximum Exposed Individual Resident (MEIR)

Results for the MEIR by each pollutant and by each source are presented in Tables 16 and 17, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the MEIR are listed below.

- Receptor ID – #2231
- UTM Coordinates – 386766 E, 3753797 N
- Chronic Hazard – 0.100
- Driving Compound – Crystalline Silica
- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Target Organ – Respiratory System

The MEIR is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 8. Figure 8 presents the chronic hazard isopleths identifying the ZOI for residential modeling scenarios.

6.4.3 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 18 and 19, respectively. The receptor ID, UTM coordinates, chronic hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- Receptor ID – #2235
- UTM Coordinates – 386786 E, 3753797 N
- Chronic Hazard – 0.122
- Driving Compound – Crystalline Silica

- Driving Emission Source – Spray Booth 1, 2 and 3 (Source IDs 1, 2 and 3)
- Driving Target Organ – Respiratory System

The MEIW is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 9. Figure 9 presents the chronic hazard isopleths identifying the ZOI for worker modeling scenarios.

6.4.4 Sensitive Receptors

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 12. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

6.5 Noncancer Chronic 8-Hour Health Effects

6.5.1 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 26 and 27, respectively. The receptor ID, UTM coordinates, chronic 8-hour hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- Receptor ID – #2235
- UTM Coordinates – 386786 E, 3753797 N
- Chronic Hazard – 0.024
- Driving Compound – 1,2,4-Trimethylbenzene
- Driving Emission Source – Spray Booth 3 (Source ID 3)
- Driving Target Organ – Nervous System

The MEIW is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 10. Figure 10 presents the chronic hazard isopleths identifying the ZOI for worker modeling scenarios.

6.6 Noncancer Acute Health Effects

6.6.1 Point of Maximum Impact (PMI)

Results for the PMI by each pollutant and by each source are presented in Tables 20 and 21, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the PMI are listed below.

- Receptor ID – #173
- UTM Coordinates – 386690.2 E, 3753732 N
- Acute Hazard – 0.144
- Driving Compound – Nickel
- Driving Emission Source – Blasting Cabinet Baghouse (Source ID 10)
- Driving Target Organ – Immune System

The PMI is located to the south of the facility, along E 126th Street, shown on Figure 11.

6.6.2 Maximum Exposed Individual Resident (MEIR)

Results for the MEIR by each pollutant and by each source are presented in Tables 22 and 23, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the MEIR are listed below.

- Receptor ID – #173
- UTM Coordinates – 386690.2 E, 3753732 N
- Acute Hazard – 0.144
- Driving Compound – Nickel
- Driving Emission Source – Blasting Cabinet Baghouse (Source ID 10)
- Driving Target Organ – Immune System

The MEIR is located to the south of the facility, along E 126th Street, shown on Figure 11. Figure 11 presents the acute hazard isopleths identifying the ZOI for residential modeling scenarios.

6.6.3 Maximum Exposed Individual Worker (MEIW)

Results for the MEIW by each pollutant and by each source are presented in Tables 24 and 25, respectively. The receptor ID, UTM coordinates, acute hazard, driving compound, driving emission source, and driving target organ for the MEIW are listed below.

- Receptor ID – #2235
- UTM Coordinates – 386786 E, 3753797 N
- Acute Hazard – 0.097
- Driving Compound – Nickel
- Driving Emission Source – Blasting Cabinet Baghouse (Source ID 10)
- Driving Target Organ – Immune System

The MEIW is located to the north of the facility, along the alley between E 125th Street and E 126th Street, shown on Figure 11. Figure 11 presents the acute hazard isopleths identifying the ZOI for worker modeling scenarios.

6.6.4 Sensitive Receptors

Table 7a identifies the location of the sensitive receptors, which are also shown in Figure 12. None of the sensitive receptors that were modeled exceeded the level requiring public notification or risk reduction per Rule 1402.

7. CERTIFICATION

I, as the undersigned, certify that this Risk Reduction Plan meets the requirements set forth in South Coast Air Quality Management District Rule 1402, and that I am an official responsible for the processes and operations of this facility.

X _____ 3/5/25

Signature Date

_____ _____

Printed Name Title

8. REFERENCES

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South Coast Air Quality Management District (South Coast AQMD), November 6, 2024, Letter Approval of Modified AB 2588 Health Risk Assessment (HRA) for Bowman Plating Co. Inc. (SCAQMD Facility ID No. 18989).

--------. 2020. AB 2588 and Rule 1402 Supplemental Guidelines (Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information Assessment Act)

APPENDIX A. FIGURES



Trinity Consultants	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Location Map	
		Scale: N/A	Date: March 2025
			Figure: 1



Trinity Consultants	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Vicinity Map	
		Scale: N/A	Date: March 2025
			Figure: 2

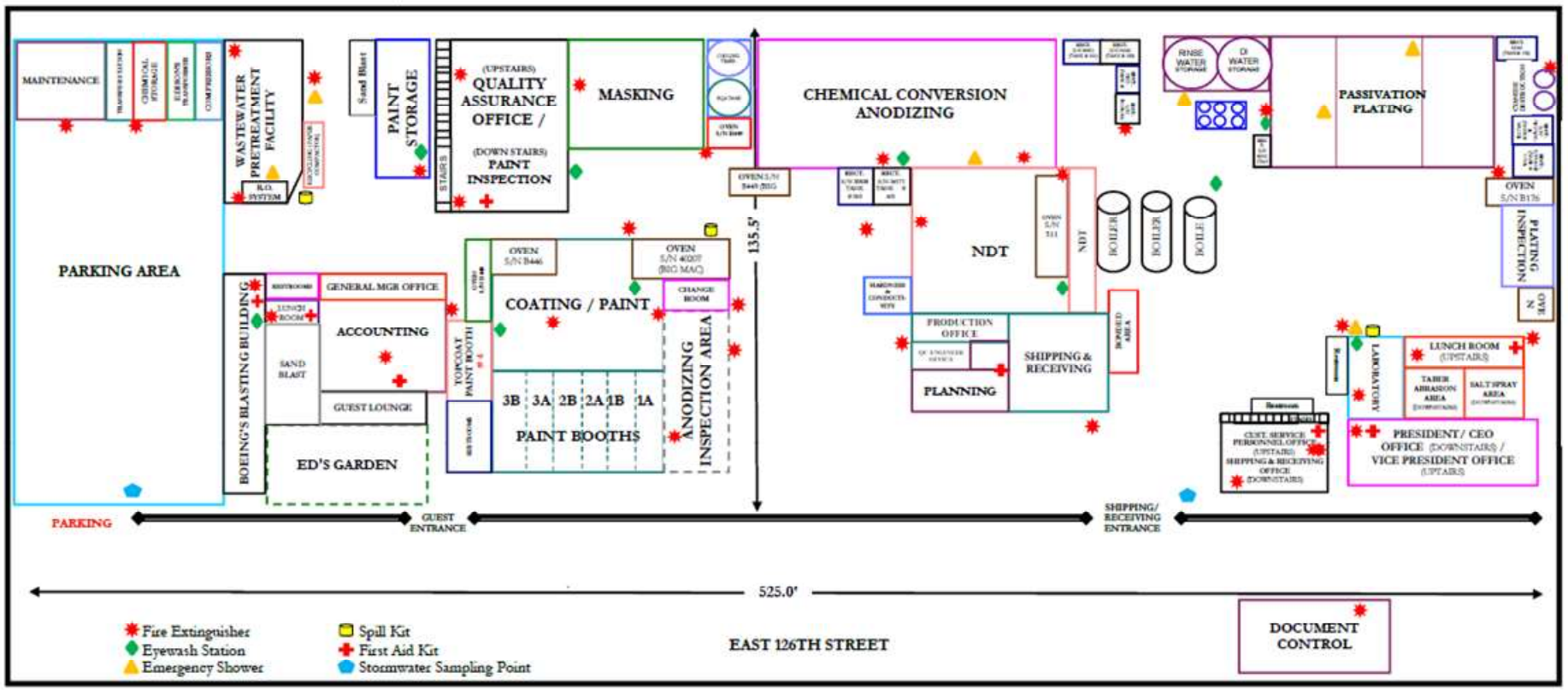


Trinity Consultants

BOWMAN PLATING COMPANY, INC.

Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

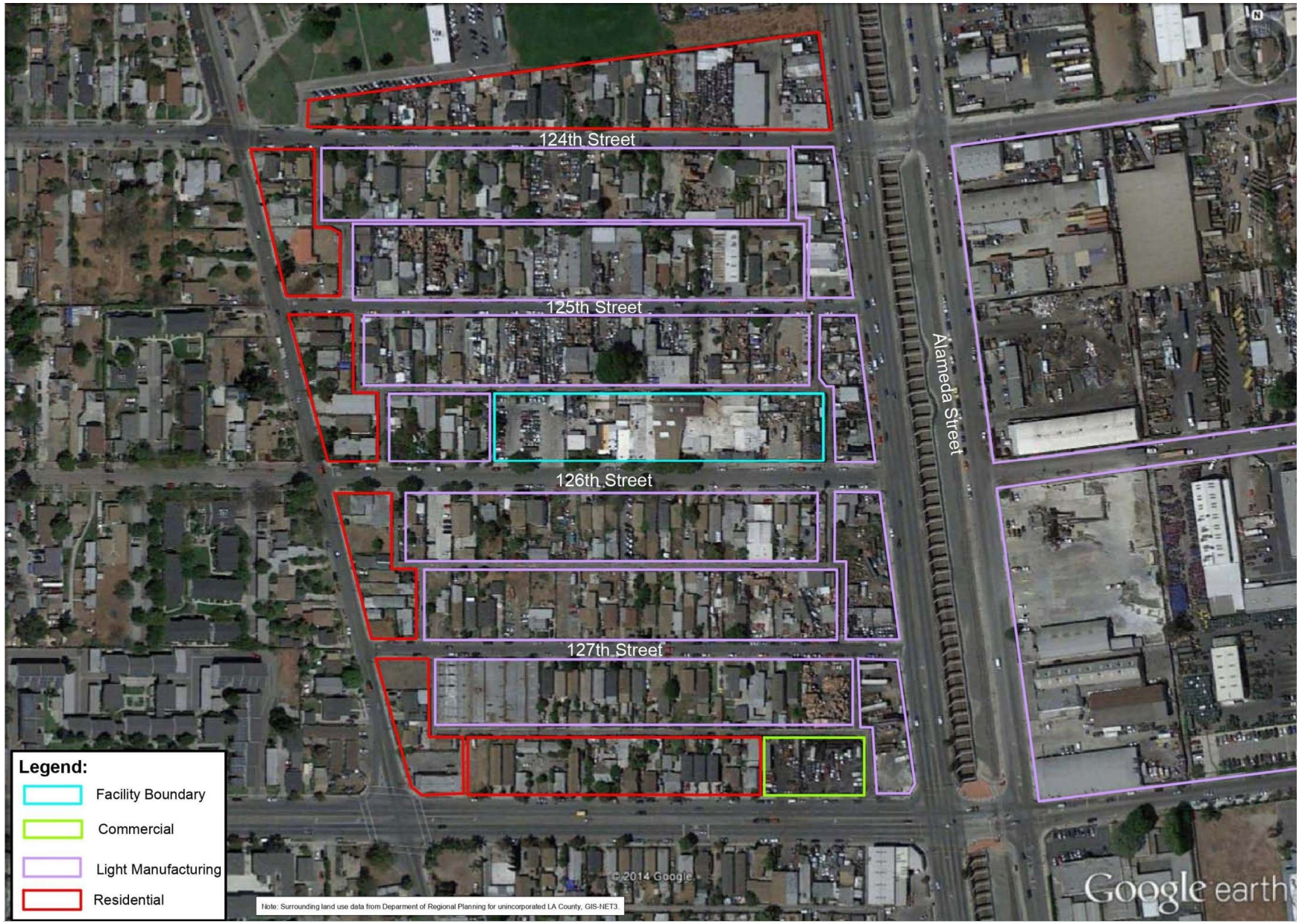
Description			
Site Plot Plan			
Scale	Date	Figure
N/A	March 2025	3a



Trinity Consultants	BOWMAN PLATING COMPANY, INC.	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: General Facility Layout	
			Scale: N/A	Date: March 2025
				Figure: 3b



Trinity Consultants	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Emission Sources/Stack Locations	
		Scale: N/A	Date: March 2025
			Figure: 4



Trinity Consultants

BOWMAN PLATING COMPANY, INC.

Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

Description			
Zoning Map			
Scale	Date	Figure
N/A	March 2025	5a



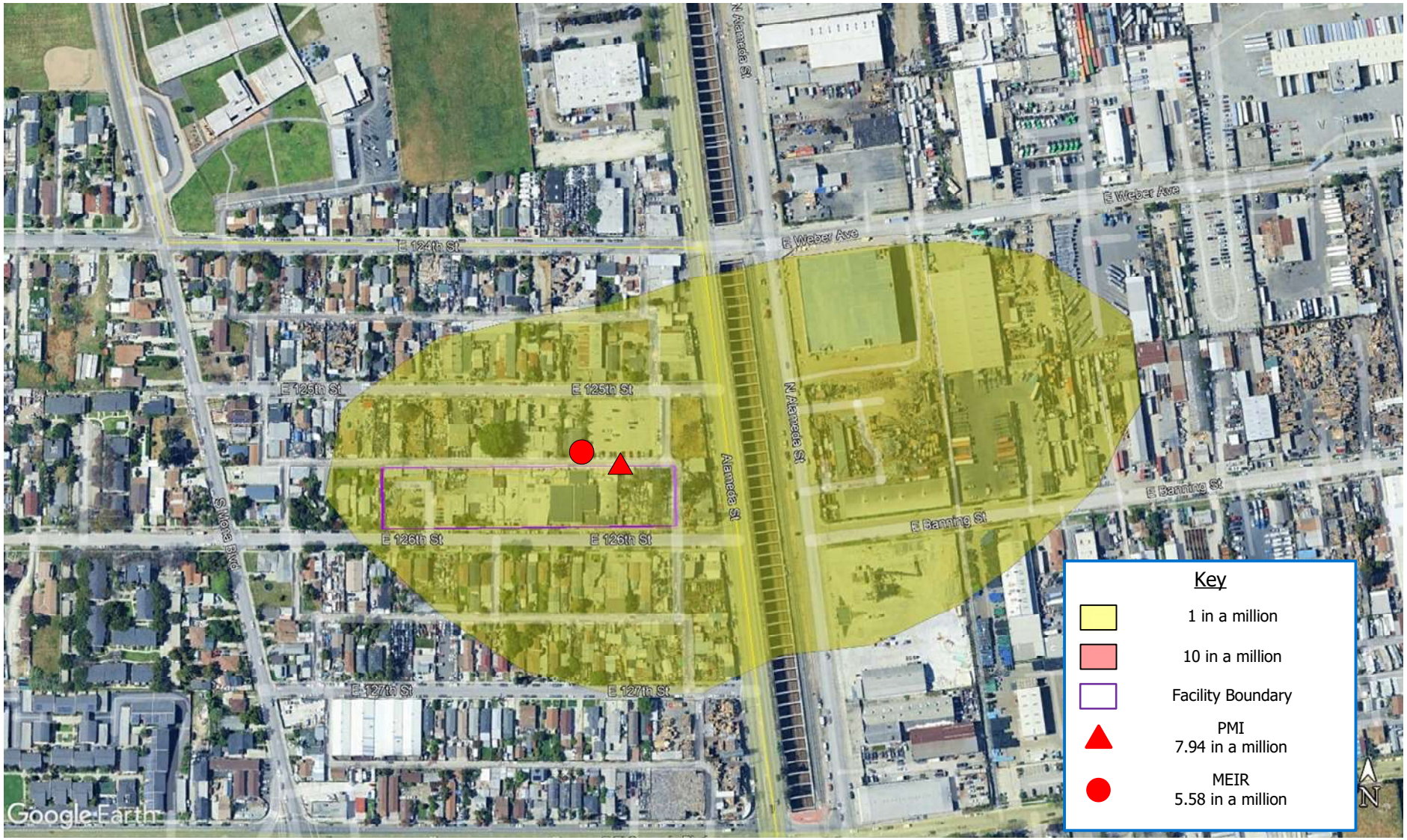
Trinity Consultants

BOWMAN PLATING COMPANY, INC.

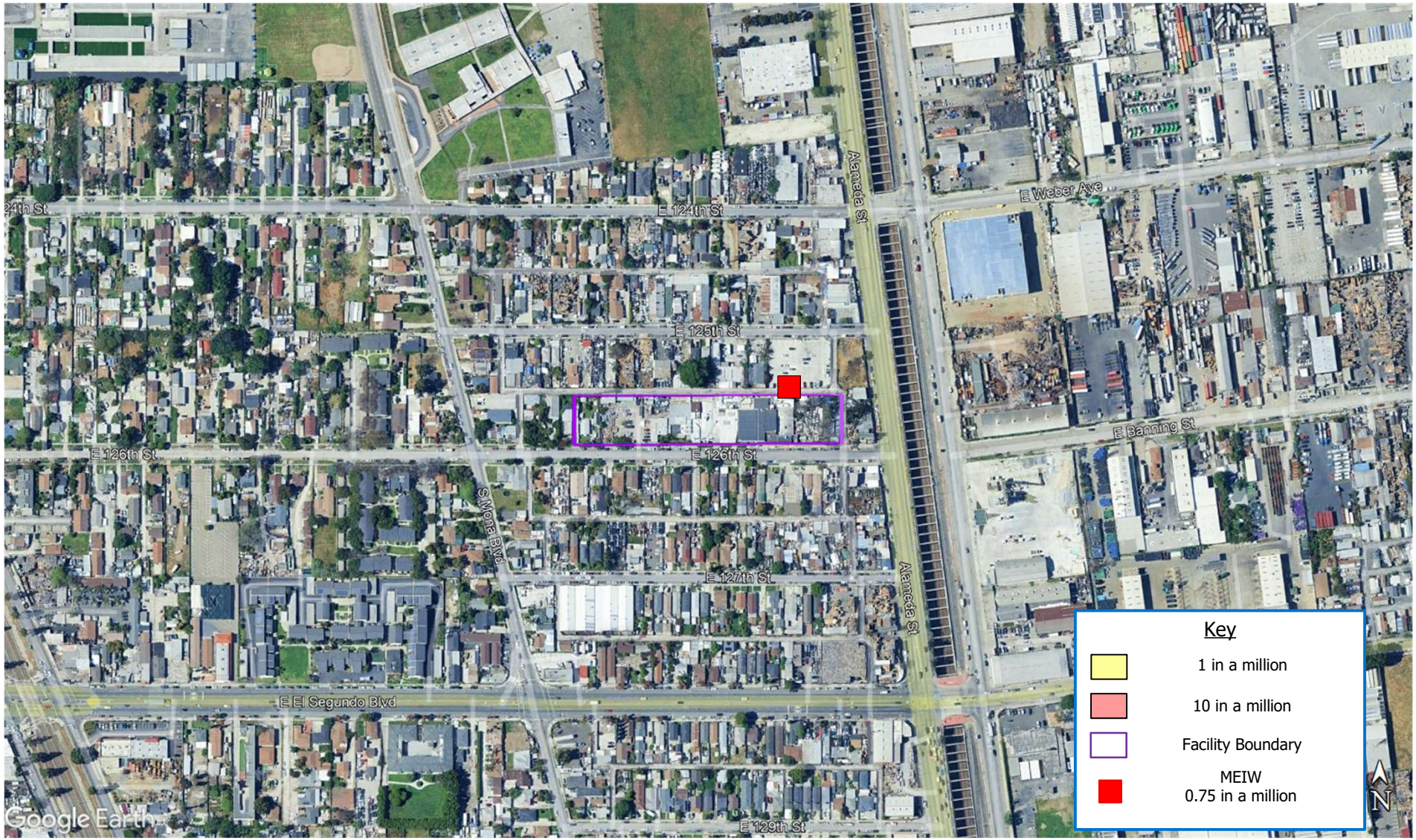
Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

Description: Surrounding Land Use

Scale	Date	Figure
N/A	March 2025	5b



Trinity Consultants	BOWMAN PLATING COMPANY, INC.	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Cancer Risk Isopleths - Resident Scale: N/A Date: March 2025 Figure: 6



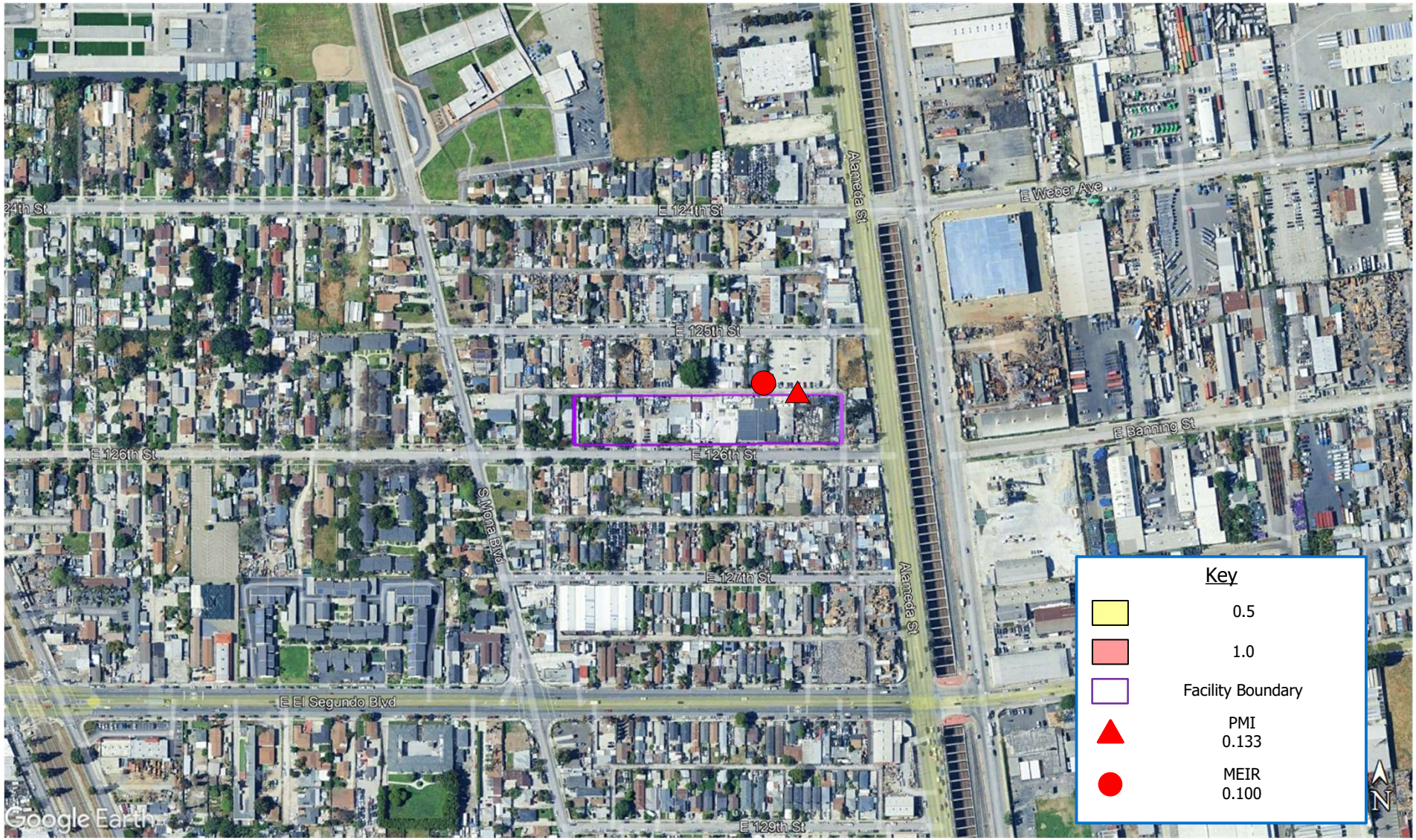
Trinity Consultants

BOWMAN PLATING COMPANY, INC.

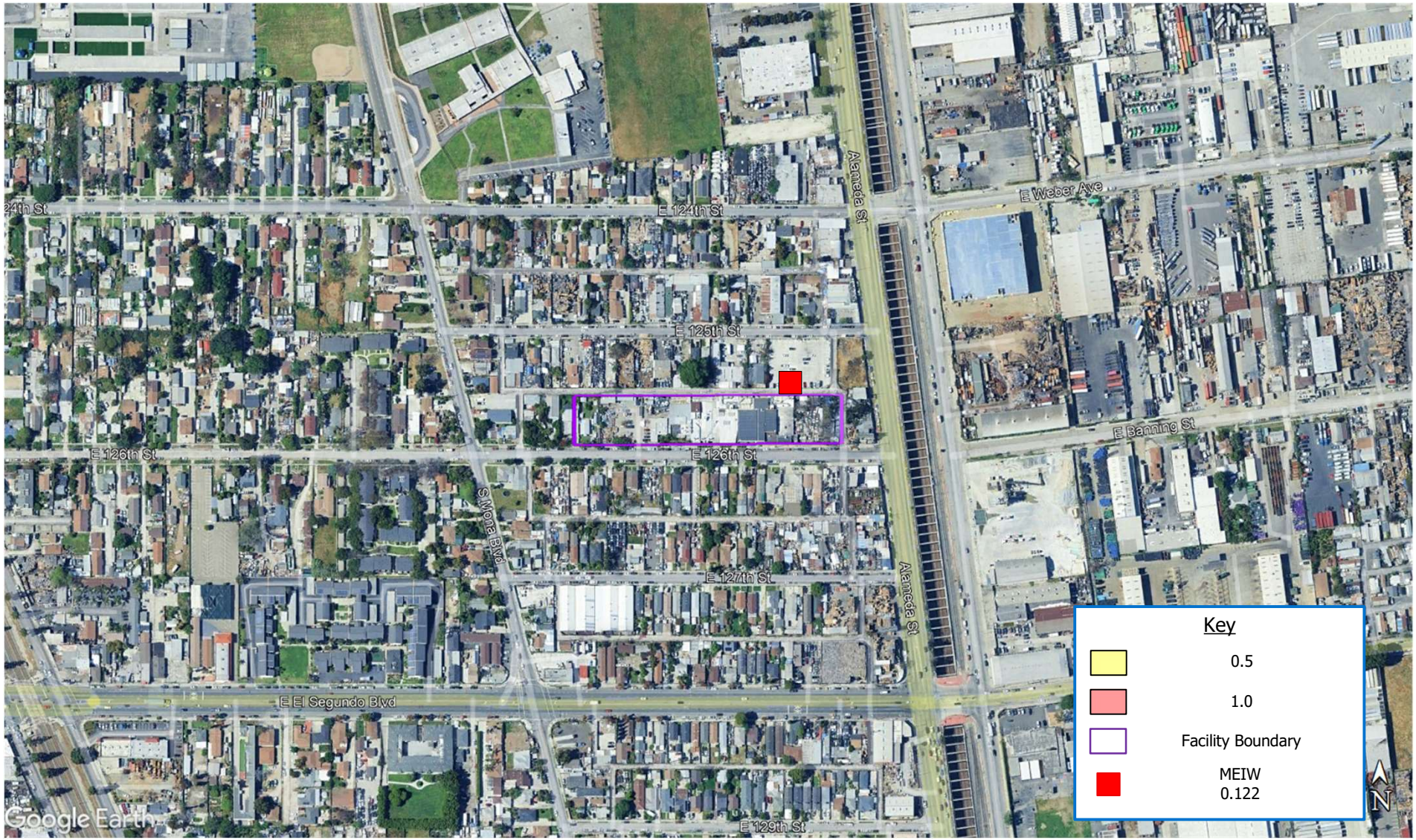
Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

Description: Cancer Risk Isopleths - Worker

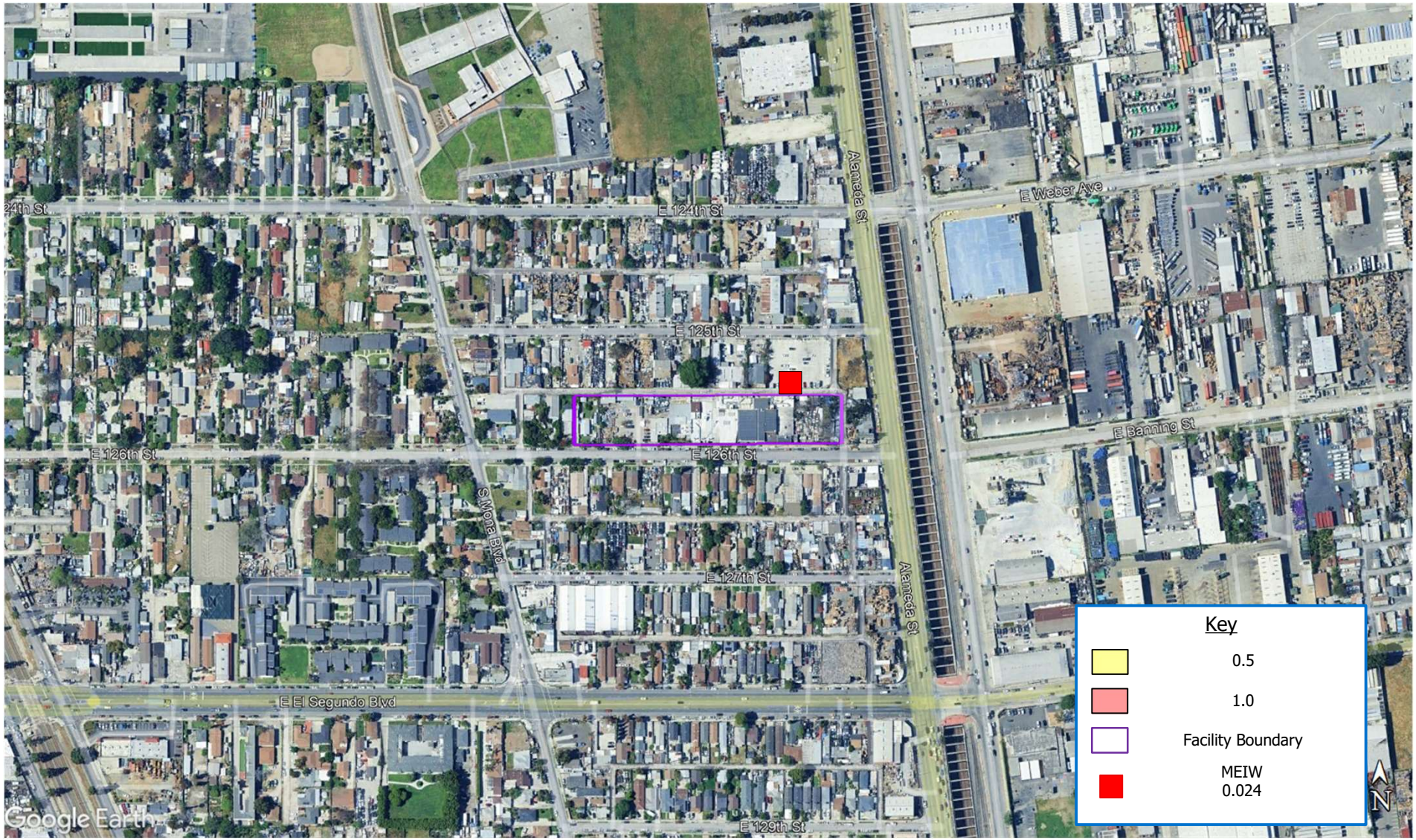
Scale	Date	Figure
N/A	March 2025	7



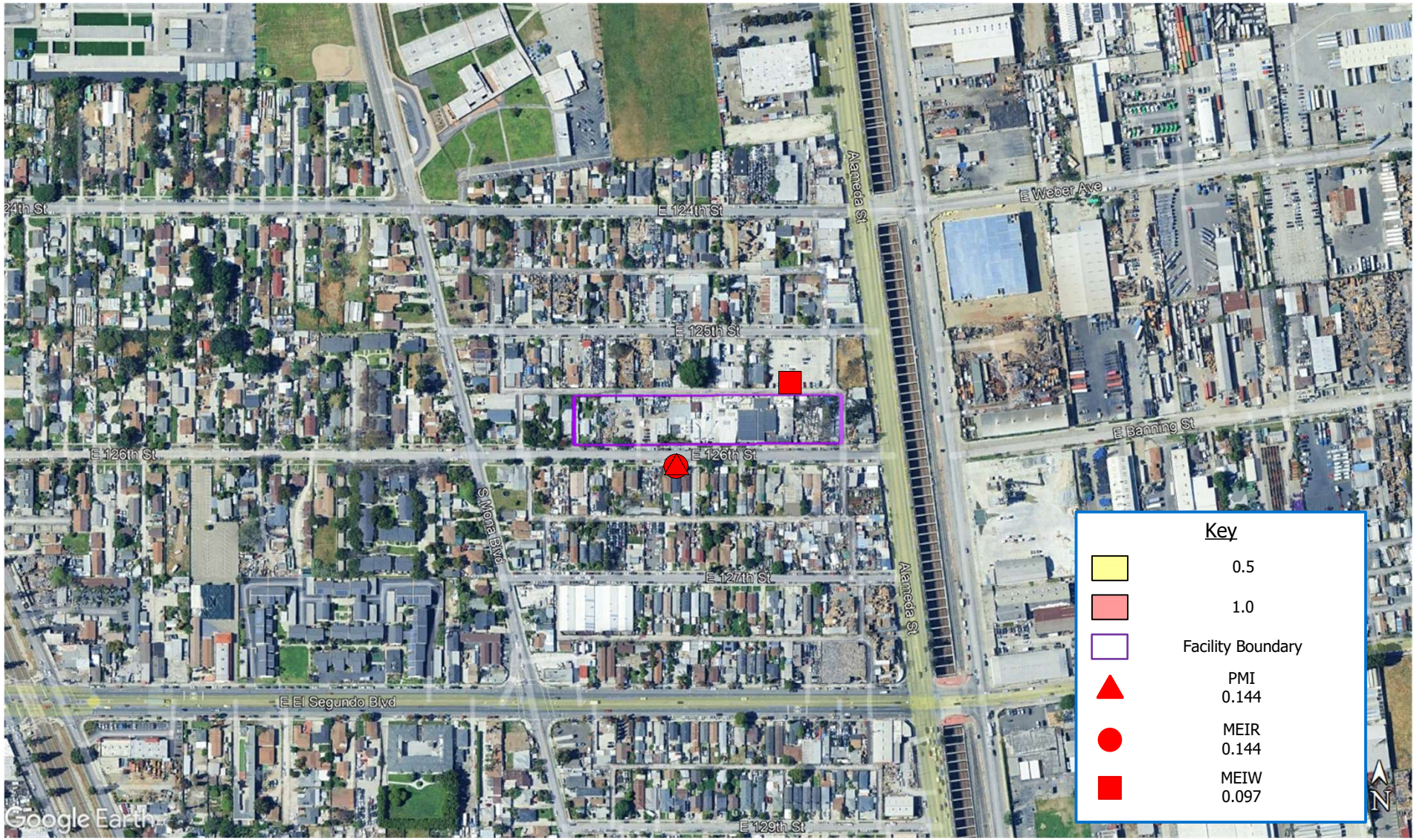
Trinity Consultants	BOWMAN PLATING COMPANY, INC.	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Chronic Hazard Isopleths - Resident Scale: N/A Date: March 2025 Figure: 8



Trinity Consultants	BOWMAN PLATING COMPANY, INC.	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Chronic Hazard Isopleths - Worker Scale: N/A Date: March 2025 Figure: 9



Trinity Consultants	**Bowman Plating Company** **2631 E. 126th Street** **Compton, CA 90222**	Description: Chronic 8-Hour Hazard Isopleths	
		Scale: N/A	Date: March 2025
			Figure: 10



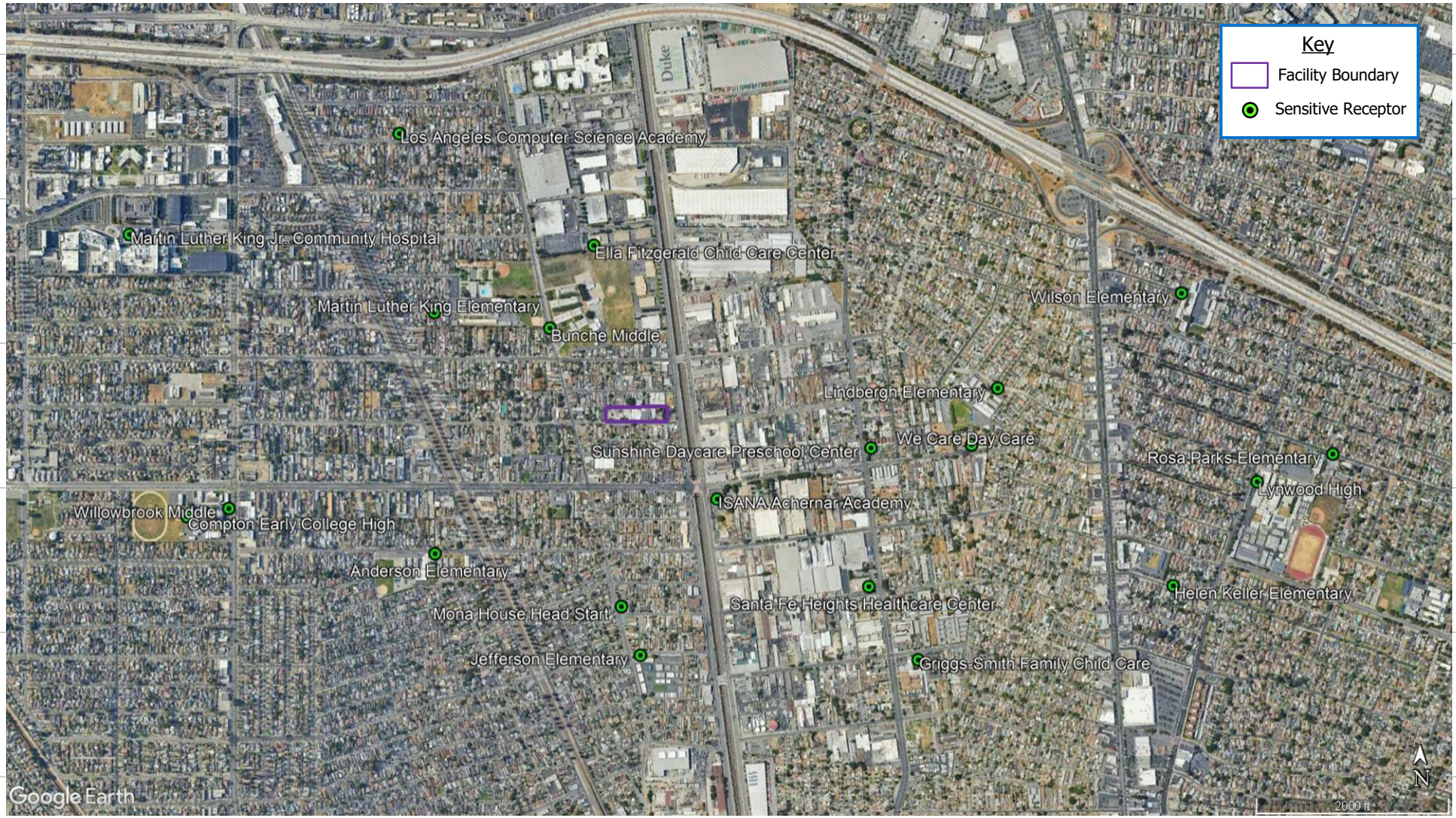
Trinity Consultants

BOWMAN PLATING COMPANY, INC.

Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

Description: Acute Hazard Isopleths

Scale	Date	Figure
N/A	March 2025	11



Trinity Consultants

BOWMAN PLATING COMPANY, INC.

Bowman Plating Company
2631 E. 126th Street
Compton, CA 90222

Description: Sensitive Receptors

Scale	Date	Figure
N/A	March 2025	12

APPENDIX B. TABLES

TABLE ES-1

HEALTH RISK ASSESSMENT SUMMARY FORM

Facility Name : **Bowman Plating**

Facility Address: **2631 East 126th Street**
Compton, CA 90222

Type of Business: **Metal Plating**

SCAQMD ID No.: **18989**

A. Cancer Risk* *(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over 30 years)*

1. Inventory Reporting Year : **2019**
2. Maximum Cancer Risk to Receptors :
   a. Offsite **7.9** in a million Location: **Receptor 3835 | UTME 386789.6 | UTMN 3753792.1**
   b. Residence **5.6** in a million Location: **Receptor 2231 | UTME 386766 | UTMN 3753797**
   c. Worker **0.8** in a million Location: **Receptor 2235 | UTME 386786 | UTMN 3753797**
3. Substances Accounting for 90% of Cancer Risk: **Hexavalent Chromium / Ethyl Benzene / PAHs**
   Processes Accounting for 90% of Cancer Risk: **Spray Booth 1 / Spray Booth 2 / Spray Booth 3 / Boilers**
4. Cancer Burden for a 70-yr exposure: *(Cancer Burden = [cancer risk] x [# of people exposed to specific cancer risk])*
   a. Cancer Burden **9.36E-04**
   b. Number of people exposed to >1 per million cancer risk for a 70-yr exposure **582**
   c. Maximum distance to edge of 70-year, 1 x 10^{-6} cancer risk isopleth **480 meters**

B. Hazard Indices* *[Long Term Effects(chronic) and Short Term Effects (acute)] (non-carcinogenic impacts are estimated by comparing calculated concentration to identified reference exposure levels, and expressing this comparison in terms of a "Hazard Index")*

1. Maximum Chronic Hazard Indices:
   a. Residence HI: **0.10** Location: **Receptor 2231 | UTME 386766 | UTMN 3753797** Toxicological endpoint: **RESP**
   b. Worker HI : **0.12** Location: **Receptor 2235 | UTME 386786 | UTMN 3753797** Toxicological endpoint: **RESP**
2. Substances Accounting for 90% of Chronic Hazard Index: **Silica Crystalline / Ammonia**
3. Maximum 8-hour Chronic Hazard Index:
   8-Hour Chronic HI: **0.02** Location: **Receptor 2235 | UTME 386786 | UTMN 3753797** Toxicological endpoint: **CNS**
4. Substances Accounting for 90% of 8-Hour Chronic Hazard Index: **1,2,4TriMeBenze**
5. Maximum Acute Hazard Indices:
   PMI: **0.14** Location: **Receptor 173 | UTME 386690.2 | UTMN 3753732** Toxicological endpoint: **IMMUN**
4. Substances Accounting for 90% of Acute Hazard Index: **Nickel**

C Public Notification and Risk Reduction

1. Public Notification Required? _____ Yes **X** No
   a. If 'yes', estimated population exposed to risks > 10 in a million for a 30-year exposure, or an HI > 1
   _____
2. Risk Reduction Required? _____ Yes **X** No

TABLE 1a. SUMMARY OF HEALTH RISK RESULTS

Bowman Plating, Compton, CA
Facility ID # 018989

Receptor Description	New Grid ID	New Cancer Risk	New Grid ID	New Chronic Hazard Index	New Grid ID	New Acute Hazard Index	New Grid ID	New 8-Hour Chronic Hazard Index
PMI (Point of Max Impact)	3835	7.94E-06	3835	1.33E-01	173	1.44E-01	N/A	N/A
MEIR (Residence)	2231	5.58E-06	2231	9.98E-02	173	1.44E-01	N/A	N/A
MEIW (Worker)	2235	7.51E-07	2235	1.22E-01	2235	9.69E-02	2235	2.35E-02

TABLE 1b. 2019 HRA HEALTH RISK RESULTS

Bowman Plating, Compton, CA
Facility ID # 018989

Receptor Description	Grid ID	Cancer Risk	Grid ID	Chronic Hazard Index	Grid ID	Acute Hazard Index	Grid ID	8-Hour Chronic Hazard Index
PMI (Point of Max Impact)	3837	8.54E-04	3837	1.01E+00	3836	2.89E+00	3835	4.49E-01
MEIR (Residence)	2229	6.73E-04	2229	7.97E-01	2231	2.34E+00	N/A	N/A
MEIW (Worker)	2228	4.42E-05	2228	7.88E-01	2228	1.57E+00	2228	2.29E-01

TABLE 2a. EMISSION RATE BY SOURCE

Bowman Plating, Compton, CA
Facility ID # 018989

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
1	SPRAY_BOOTH_1	Silica, Crystln	1175	3.72E-03	4.69E-04	1.55E+01	1.95E+00
	SPRAY_BOOTH_1	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_1	Methanol	67561	7.54E-05	9.50E-06	3.14E-01	3.95E-02
	SPRAY_BOOTH_1	Isopropyl Alcoh	67630	7.13E-03	8.98E-04	2.96E+01	3.74E+00
	SPRAY_BOOTH_1	n-Butyl Alcohol	71363	4.06E-03	5.12E-04	1.69E+01	2.13E+00
	SPRAY_BOOTH_1	sec-Butyl Alcoh	78922	1.30E-01	1.64E-02	5.41E+02	6.82E+01
	SPRAY_BOOTH_1	MEK	78933	5.42E-02	6.83E-03	2.26E+02	2.84E+01
	SPRAY_BOOTH_1	1,2,4TriMeBenze	95636	3.10E-04	3.90E-05	1.29E+00	1.62E-01
	SPRAY_BOOTH_1	Ethyl Benzene	100414	5.95E-03	7.50E-04	2.48E+01	3.12E+00
	SPRAY_BOOTH_1	PGME	107982	9.21E-03	1.16E-03	3.83E+01	4.83E+00
	SPRAY_BOOTH_1	MIBK	108101	4.54E-02	5.72E-03	1.89E+02	2.38E+01
	SPRAY_BOOTH_1	PGMEA	108656	9.21E-04	1.16E-04	3.83E+00	4.83E-01
	SPRAY_BOOTH_1	Toluene	108883	2.71E-02	3.42E-03	1.13E+02	1.42E+01
	SPRAY_BOOTH_1	Hexane	110543	3.55E-03	4.47E-04	1.48E+01	1.86E+00
	SPRAY_BOOTH_1	EGBE	111762	2.71E-04	3.41E-05	1.13E+00	1.42E-01
	SPRAY_BOOTH_1	DEGBE	112345	8.79E-05	1.11E-05	3.66E-01	4.61E-02
	SPRAY_BOOTH_1	Xylenes	1330207	2.05E-02	2.59E-03	8.54E+01	1.08E+01
	SPRAY_BOOTH_1	EGPE	2807309	6.02E-04	7.59E-05	2.51E+00	3.16E-01
	SPRAY_BOOTH_1	Cr(VI)	18540299	2.16E-07	2.72E-08	8.99E-04	1.13E-04
2	SPRAY_BOOTH_2	Silica, Crystln	1175	5.36E-03	6.75E-04	2.23E+01	2.81E+00
	SPRAY_BOOTH_2	Formaldehyde	50000	9.98E-07	1.26E-07	4.15E-03	5.23E-04
	SPRAY_BOOTH_2	Methanol	67561	2.01E-04	2.53E-05	8.35E-01	1.05E-01
	SPRAY_BOOTH_2	Isopropyl Alcoh	67630	7.34E-03	9.25E-04	3.05E+01	3.85E+00
	SPRAY_BOOTH_2	n-Butyl Alcohol	71363	3.60E-03	4.53E-04	1.50E+01	1.88E+00
	SPRAY_BOOTH_2	sec-Butyl Alcoh	78922	1.68E-01	2.12E-02	7.00E+02	8.82E+01
	SPRAY_BOOTH_2	MEK	78933	5.89E-02	7.42E-03	2.45E+02	3.09E+01
	SPRAY_BOOTH_2	1,2,4TriMeBenze	95636	3.89E-04	4.90E-05	1.62E+00	2.04E-01
	SPRAY_BOOTH_2	Ethyl Benzene	100414	7.95E-03	1.00E-03	3.31E+01	4.17E+00
	SPRAY_BOOTH_2	PGME	107982	9.39E-03	1.18E-03	3.90E+01	4.92E+00
	SPRAY_BOOTH_2	MIBK	108101	6.29E-02	7.93E-03	2.62E+02	3.30E+01
	SPRAY_BOOTH_2	PGMEA	108656	9.77E-04	1.23E-04	4.06E+00	5.12E-01
	SPRAY_BOOTH_2	Toluene	108883	2.93E-02	3.69E-03	1.22E+02	1.53E+01
	SPRAY_BOOTH_2	Hexane	110543	2.64E-03	3.33E-04	1.10E+01	1.38E+00
	SPRAY_BOOTH_2	EGBE	111762	2.94E-04	3.70E-05	1.22E+00	1.54E-01
	SPRAY_BOOTH_2	DEGBE	112345	7.63E-06	9.61E-07	3.17E-02	4.00E-03
	SPRAY_BOOTH_2	Xylenes	1330207	2.99E-02	3.77E-03	1.24E+02	1.57E+01
	SPRAY_BOOTH_2	EGPE	2807309	1.56E-03	1.96E-04	6.47E+00	8.15E-01
	SPRAY_BOOTH_2	Cr(VI)	18540299	2.87E-07	3.62E-08	1.20E-03	1.52E-04
3	SPRAY_BOOTH_3	Silica, Crystln	1175	2.42E-02	3.05E-03	1.01E+02	1.27E+01
	SPRAY_BOOTH_3	Formaldehyde	50000	9.98E-07	1.26E-07	4.15E-03	5.23E-04
	SPRAY_BOOTH_3	Methanol	67561	2.38E-04	3.00E-05	9.92E-01	1.25E-01
	SPRAY_BOOTH_3	Isopropyl Alcoh	67630	8.09E-03	1.02E-03	3.37E+01	4.24E+00
	SPRAY_BOOTH_3	n-Butyl Alcohol	71363	3.60E-03	4.53E-04	1.50E+01	1.88E+00
	SPRAY_BOOTH_3	sec-Butyl Alcoh	78922	1.70E-01	2.14E-02	7.08E+02	8.92E+01
	SPRAY_BOOTH_3	MEK	78933	8.90E-02	1.12E-02	3.70E+02	4.67E+01
	SPRAY_BOOTH_3	1,2,4TriMeBenze	95636	9.37E-03	1.18E-03	3.90E+01	4.91E+00
	SPRAY_BOOTH_3	Ethyl Benzene	100414	1.54E-02	1.93E-03	6.39E+01	8.05E+00
	SPRAY_BOOTH_3	PGME	107982	2.44E-02	3.07E-03	1.01E+02	1.28E+01
	SPRAY_BOOTH_3	MIBK	108101	7.34E-02	9.25E-03	3.05E+02	3.85E+01
	SPRAY_BOOTH_3	PGMEA	108656	4.40E-03	5.54E-04	1.83E+01	2.31E+00
	SPRAY_BOOTH_3	Toluene	108883	4.98E-02	6.28E-03	2.07E+02	2.61E+01
	SPRAY_BOOTH_3	Hexane	110543	2.81E-03	3.54E-04	1.17E+01	1.47E+00
	SPRAY_BOOTH_3	EGBE	111762	8.08E-03	1.02E-03	3.36E+01	4.24E+00
	SPRAY_BOOTH_3	DEGBE	112345	3.81E-06	4.81E-07	1.59E-02	2.00E-03
	SPRAY_BOOTH_3	Xylenes	1330207	3.98E-02	5.01E-03	1.65E+02	2.08E+01
	SPRAY_BOOTH_3	EGPE	2807309	1.52E-03	1.91E-04	6.30E+00	7.94E-01
	SPRAY_BOOTH_3	Cr(VI)	18540299	2.82E-07	3.55E-08	1.18E-03	1.49E-04
4	SPRAY_BOOTH_4_1	Silica, Crystln	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Methanol	67561	3.71E-04	4.68E-05	1.54E+00	1.95E-01
	SPRAY_BOOTH_4_1	Isopropyl Alcoh	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	n-Butyl Alcohol	71363	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	sec-Butyl Alcoh	78922	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	MEK	78933	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	1,2,4TriMeBenze	95636	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Ethyl Benzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	PGME	107982	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	MIBK	108101	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	PGMEA	108656	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Hexane	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	EGBE	111762	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	DEGBE	112345	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	EGPE	2807309	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_1	Cr(VI)	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00

TABLE 2a. EMISSION RATE BY SOURCE

Bowman Plating, Compton, CA
Facility ID # 018989

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
5	SPRAY_BOOTH_4_2	Silica, Crystln	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Methanol	67561	3.71E-04	4.68E-05	1.54E+00	1.95E-01
	SPRAY_BOOTH_4_2	Isopropyl Alcoh	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	n-Butyl Alcohol	71363	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	sec-Butyl Alcoh	78922	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	MEK	78933	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	1,2,4TriMeBenze	95636	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Ethyl Benzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	PGME	107982	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	MIBK	108101	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	PGMEA	108656	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Hexane	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	EGBE	111762	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	DEGBE	112345	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	EGPE	2807309	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_2	Cr(VI)	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	Silica, Crystln	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Methanol	67561	3.71E-04	4.68E-05	1.54E+00	1.95E-01
	SPRAY_BOOTH_4_3	Isopropyl Alcoh	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	n-Butyl Alcohol	71363	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	sec-Butyl Alcoh	78922	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	MEK	78933	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	1,2,4TriMeBenze	95636	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Ethyl Benzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	PGME	107982	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	MIBK	108101	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	PGMEA	108656	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Hexane	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	EGBE	111762	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	DEGBE	112345	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	EGPE	2807309	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_3	Cr(VI)	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	Silica, Crystln	1175	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Formaldehyde	50000	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Methanol	67561	3.71E-04	4.68E-05	1.54E+00	1.95E-01
	SPRAY_BOOTH_4_4	Isopropyl Alcoh	67630	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	n-Butyl Alcohol	71363	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	sec-Butyl Alcoh	78922	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	MEK	78933	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	1,2,4TriMeBenze	95636	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Ethyl Benzene	100414	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	PGME	107982	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	MIBK	108101	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	PGMEA	108656	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Toluene	108883	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Hexane	110543	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	EGBE	111762	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	DEGBE	112345	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Xylenes	1330207	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	EGPE	2807309	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	SPRAY_BOOTH_4_4	Cr(VI)	18540299	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	PAHs-w/o	1151	5.68E-08	7.15E-09	2.36E-04	2.98E-05
	HEATER	Formaldehyde	50000	6.98E-06	8.80E-07	2.90E-02	3.66E-03
	HEATER	Benzene	71432	3.29E-06	4.15E-07	1.37E-02	1.73E-03
	HEATER	Acetaldehyde	75070	1.76E-06	2.22E-07	7.32E-03	9.22E-04
	HEATER	Naphthalene	91203	1.70E-07	2.15E-08	7.09E-04	8.93E-05
	HEATER	Ethyl Benzene	100414	3.92E-06	4.94E-07	1.63E-02	2.05E-03
	HEATER	Acrolein	107028	1.53E-06	1.93E-07	6.38E-03	8.03E-04
	HEATER	Toluene	108883	1.50E-05	1.90E-06	6.26E-02	7.89E-03
	HEATER	Hexane	110543	2.61E-06	3.29E-07	1.09E-02	1.37E-03
	HEATER	Xylenes	1330207	1.12E-05	1.41E-06	4.65E-02	5.86E-03
	HEATER	NH3	7664417	1.02E-02	1.29E-03	4.25E+01	5.36E+00

TABLE 2a. EMISSION RATE BY SOURCE

Bowman Plating, Compton, CA
Facility ID # 018989

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
9	BOILERS	PAHs-w/o	1151	1.08E-07	1.36E-08	4.49E-04	5.65E-05
	BOILERS	Formaldehyde	50000	1.33E-05	1.67E-06	5.52E-02	6.95E-03
	BOILERS	Benzene	71432	6.26E-06	7.88E-07	2.60E-02	3.28E-03
	BOILERS	Acetaldehyde	75070	3.34E-06	4.21E-07	1.39E-02	1.75E-03
	BOILERS	Naphthalene	91203	3.24E-07	4.08E-08	1.35E-03	1.70E-04
	BOILERS	Ethyl Benzene	100414	7.44E-06	9.38E-07	3.10E-02	3.90E-03
	BOILERS	Acrolein	107028	2.91E-06	3.67E-07	1.21E-02	1.53E-03
	BOILERS	Toluene	108883	2.86E-05	3.60E-06	1.19E-01	1.50E-02
	BOILERS	Hexane	110543	4.96E-06	6.25E-07	2.06E-02	2.60E-03
	BOILERS	Xylenes	1330207	2.13E-05	2.68E-06	8.84E-02	1.11E-02
	BOILERS	NH3	7664417	1.94E-02	2.45E-03	8.08E+01	1.02E+01
	BOILERS	PAHs-w/o	1151	1.08E-07	1.36E-08	4.49E-04	5.65E-05
	BOILERS	Formaldehyde	50000	1.33E-05	1.67E-06	5.52E-02	6.95E-03
	BOILERS	Benzene	71432	6.26E-06	7.88E-07	2.60E-02	3.28E-03
	BOILERS	Acetaldehyde	75070	3.34E-06	4.21E-07	1.39E-02	1.75E-03
	BOILERS	Naphthalene	91203	3.24E-07	4.08E-08	1.35E-03	1.70E-04
	BOILERS	Ethyl Benzene	100414	7.44E-06	9.38E-07	3.10E-02	3.90E-03
	BOILERS	Acrolein	107028	2.91E-06	3.67E-07	1.21E-02	1.53E-03
	BOILERS	Toluene	108883	2.86E-05	3.60E-06	1.19E-01	1.50E-02
	BOILERS	Hexane	110543	4.96E-06	6.25E-07	2.06E-02	2.60E-03
	BOILERS	Xylenes	1330207	2.13E-05	2.68E-06	8.84E-02	1.11E-02
	BOILERS	NH3	7664417	1.94E-02	2.45E-03	8.08E+01	1.02E+01
	BOILERS	PAHs-w/o	1151	1.08E-07	1.36E-08	4.49E-04	5.65E-05
	BOILERS	Formaldehyde	50000	1.33E-05	1.67E-06	5.52E-02	6.95E-03
	BOILERS	Benzene	71432	6.26E-06	7.88E-07	2.60E-02	3.28E-03
	BOILERS	Acetaldehyde	75070	3.34E-06	4.21E-07	1.39E-02	1.75E-03
	BOILERS	Naphthalene	91203	3.24E-07	4.08E-08	1.35E-03	1.70E-04
	BOILERS	Ethyl Benzene	100414	7.44E-06	9.38E-07	3.10E-02	3.90E-03
	BOILERS	Acrolein	107028	2.91E-06	3.67E-07	1.21E-02	1.53E-03
	BOILERS	Toluene	108883	2.86E-05	3.60E-06	1.19E-01	1.50E-02
	BOILERS	Hexane	110543	4.96E-06	6.25E-07	2.06E-02	2.60E-03
	BOILERS	Xylenes	1330207	2.13E-05	2.68E-06	8.84E-02	1.11E-02
	BOILERS	NH3	7664417	1.94E-02	2.45E-03	8.08E+01	1.02E+01
10	BLAST_CB	Lead	7439921	1.00E-07	1.26E-08	1.70E-05	2.14E-06
	BLAST_CB	Nickel	7440020	1.14E-04	1.44E-05	1.94E-02	2.44E-03
	BLAST_CB	Copper	7440508	1.90E-06	2.39E-07	3.23E-04	4.07E-05
12	OVEN_1	PAHs-w/o	1151	1.70E-08	2.15E-09	7.09E-05	8.93E-06
	OVEN_1	Formaldehyde	50000	2.09E-06	2.64E-07	8.71E-03	1.10E-03
	OVEN_1	Benzene	71432	9.88E-07	1.24E-07	4.11E-03	5.18E-04
	OVEN_1	Acetaldehyde	75070	5.28E-07	6.65E-08	2.20E-03	2.77E-04
	OVEN_1	Naphthalene	91203	5.11E-08	6.44E-09	2.13E-04	2.68E-05
	OVEN_1	Ethyl Benzene	100414	1.18E-06	1.48E-07	4.89E-03	6.16E-04
	OVEN_1	Acrolein	107028	4.60E-07	5.79E-08	1.91E-03	2.41E-04
	OVEN_1	Toluene	108883	4.51E-06	5.69E-07	1.88E-02	2.37E-03
	OVEN_1	Hexane	110543	7.83E-07	9.87E-08	3.26E-03	4.11E-04
	OVEN_1	Xylenes	1330207	3.36E-06	4.23E-07	1.40E-02	1.76E-03
	OVEN_1	NH3	7664417	3.07E-03	3.86E-04	1.28E+01	1.61E+00
13	OVEN_2	PAHs-w/o	1151	5.68E-08	7.15E-09	2.36E-04	2.98E-05
	OVEN_2	Formaldehyde	50000	6.98E-06	8.80E-07	2.90E-02	3.66E-03
	OVEN_2	Benzene	71432	3.29E-06	4.15E-07	1.37E-02	1.73E-03
	OVEN_2	Acetaldehyde	75070	1.76E-06	2.22E-07	7.32E-03	9.22E-04
	OVEN_2	Naphthalene	91203	1.70E-07	2.15E-08	7.09E-04	8.93E-05
	OVEN_2	Ethyl Benzene	100414	3.92E-06	4.94E-07	1.63E-02	2.05E-03
	OVEN_2	Acrolein	107028	1.53E-06	1.93E-07	6.38E-03	8.03E-04
	OVEN_2	Toluene	108883	1.50E-05	1.90E-06	6.26E-02	7.89E-03
	OVEN_2	Hexane	110543	2.61E-06	3.29E-07	1.09E-02	1.37E-03
	OVEN_2	Xylenes	1330207	1.12E-05	1.41E-06	4.65E-02	5.86E-03
	OVEN_2	NH3	7664417	1.02E-02	1.29E-03	4.25E+01	5.36E+00
14	OVEN_3	PAHs-w/o	1151	5.68E-08	7.15E-09	2.36E-04	2.98E-05
	OVEN_3	Formaldehyde	50000	6.98E-06	8.80E-07	2.90E-02	3.66E-03
	OVEN_3	Benzene	71432	3.29E-06	4.15E-07	1.37E-02	1.73E-03
	OVEN_3	Acetaldehyde	75070	1.76E-06	2.22E-07	7.32E-03	9.22E-04
	OVEN_3	Naphthalene	91203	1.70E-07	2.15E-08	7.09E-04	8.93E-05
	OVEN_3	Ethyl Benzene	100414	3.92E-06	4.94E-07	1.63E-02	2.05E-03
	OVEN_3	Acrolein	107028	1.53E-06	1.93E-07	6.38E-03	8.03E-04
	OVEN_3	Toluene	108883	1.50E-05	1.90E-06	6.26E-02	7.89E-03
	OVEN_3	Hexane	110543	2.61E-06	3.29E-07	1.09E-02	1.37E-03
	OVEN_3	Xylenes	1330207	1.12E-05	1.41E-06	4.65E-02	5.86E-03
	OVEN_3	NH3	7664417	1.02E-02	1.29E-03	4.25E+01	5.36E+00

TABLE 2a. EMISSION RATE BY SOURCE

Bowman Plating, Compton, CA
Facility ID # 018989

Device ID	Source Name	Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
16	ANODE_LN	Nickel	7440020	8.08E-06	1.02E-06	4.79E-02	6.88E-07
	ANODE_LN	Cr(VI)	18540299	9.11E-07	1.15E-07	5.39E-03	7.76E-08
19	PLATE_RM	DEGBE	112345	8.43E-07	1.06E-07	7.39E-03	9.31E-04
	PLATE_RM	Sodium Hydroxid	1310732	1.50E-05	1.89E-06	1.31E-01	1.65E-02
	PLATE_RM	Nickel	7440020	7.64E-06	9.63E-07	2.27E-02	3.26E-07
	PLATE_RM	Cadmium	7440439	1.39E-06	1.75E-07	4.12E-03	5.93E-08
	PLATE_RM	HCl	7647010	8.83E-04	1.11E-04	3.80E+00	4.79E-01
	PLATE_RM	HF	7664393	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PLATE_RM	Sulfuric Acid	7664939	2.75E-19	3.47E-20	2.41E-15	3.04E-16
	PLATE_RM	Nitric Acid	7697372	1.29E-04	1.63E-05	8.38E-01	1.06E-01
	PLATE_RM	Cr(VI)	18540299	2.89E-11	3.64E-12	8.57E-08	1.23E-12
20	ANODE_RM	DEGBE	112345	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	ANODE_RM	Sodium Hydroxid	1310732	8.45E-06	1.06E-06	7.40E-02	9.32E-03
	ANODE_RM	Nickel	7440020	7.22E-05	9.09E-06	4.27E-01	6.14E-06
	ANODE_RM	Cadmium	7440439	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	ANODE_RM	HCl	7647010	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	ANODE_RM	HF	7664393	7.73E-03	9.74E-04	6.77E+01	8.53E+00
	ANODE_RM	Sulfuric Acid	7664939	2.54E-01	3.20E-02	1.07E+01	1.35E+00
	ANODE_RM	Nitric Acid	7697372	4.06E-04	5.11E-05	3.34E+00	4.21E-01
	ANODE_RM	Cr(VI)	18540299	2.79E-07	3.52E-08	1.65E-03	2.38E-08

Notes:
1. Montrose test report (Sept 2021) for stack emissions of Nickel and Hex Chrome for Anodizing Room - ULPA #1 and ULPA #2. Shown in yellow highlights.
2. Montrose test report (June 2022) for stack emissions of Nickel and Cadmium for Plating Room (ULPA #3). Shown in yellow highlights.
3. Hex chrome emissions for Plating Room (ULPA #3) based on SCAQMD heated tank equation with applied ULPA control efficiency of 99.999%.
4. Source ID No. 15 (Cadmium Tank Exhaust Stack) has been removed, as it was replaced with ULPA #3 Stack (Source ID No. 19).
5. Source ID No. 17 (Plating Room Area Source) has been removed, as it was replaced with ULPA #3 Stack (Source ID No. 19).
6. Source ID No. 18 (Anodizing Room Area Source) has been removed, as it was replaced with ULPA #2 Stack (Source ID No. 20).

TABLE 2b. TOTAL EMISSION RATE BY SUBSTANCE

Bowman Plating, Compton, CA
Facility ID # 018989

Substance Name	CAS No.	1-Hour Maximum (lb/hr)	1-Hour Maximum (g/s)	Annual Average (lb/yr)	Annual Average (g/s)
Silica, Crystln	1175	3.33E-02	4.19E-03	1.38E+02	1.74E+01
Formaldehyde	50000	6.48E-05	8.17E-06	2.70E-01	3.40E-02
Methanol	67561	2.00E-03	2.52E-04	8.32E+00	1.05E+00
Isopropyl Alcoh	67630	2.26E-02	2.84E-03	9.39E+01	1.18E+01
n-Butyl Alcohol	71363	1.13E-02	1.42E-03	4.68E+01	5.90E+00
sec-Butyl Alcoh	78922	4.69E-01	5.90E-02	1.95E+03	2.46E+02
MEK	78933	2.02E-01	2.55E-02	8.41E+02	1.06E+02
1,2,4TriMeBenze	95636	1.01E-02	1.27E-03	4.19E+01	5.28E+00
Ethyl Benzene	100414	2.93E-02	3.69E-03	1.22E+02	1.54E+01
PGME	107982	4.30E-02	5.41E-03	1.79E+02	2.25E+01
MIBK	108101	1.82E-01	2.29E-02	7.56E+02	9.53E+01
PGMEA	108656	6.30E-03	7.94E-04	2.62E+01	3.30E+00
Toluene	108883	1.06E-01	1.34E-02	4.42E+02	5.57E+01
Hexane	110543	9.02E-03	1.14E-03	3.75E+01	4.73E+00
EGBE	111762	8.64E-03	1.09E-03	3.60E+01	4.53E+00
DEGBE	112345	1.00E-04	1.26E-05	4.21E-01	5.30E-02
Xylenes	1330207	9.03E-02	1.14E-02	3.76E+02	4.73E+01
EGPE	2807309	3.67E-03	4.63E-04	1.53E+01	1.93E+00
Cr(VI)	18540299	1.98E-06	2.49E-07	1.03E-02	4.14E-04
PAHs-w/o	1151	5.11E-07	6.44E-08	2.13E-03	2.68E-04
Benzene	71432	2.96E-05	3.73E-06	1.23E-01	1.55E-02
Acetaldehyde	75070	1.58E-05	2.00E-06	6.59E-02	8.30E-03
Naphthalene	91203	1.53E-06	1.93E-07	6.38E-03	8.03E-04
Acrolein	107028	1.38E-05	1.74E-06	5.74E-02	7.23E-03
NH3	7664417	9.20E-02	1.16E-02	3.83E+02	4.82E+01
Lead	7439921	1.00E-07	1.26E-08	1.70E-05	2.14E-06
Nickel	7440020	2.02E-04	2.54E-05	5.17E-01	2.45E-03
Copper	7440508	1.90E-06	2.39E-07	3.23E-04	4.07E-05
Cadmium	7440439	1.39E-06	1.75E-07	4.12E-03	5.93E-08
Sodium Hydroxid	1310732	2.35E-05	2.96E-06	2.05E-01	2.59E-02
HCl	7647010	8.83E-04	1.11E-04	3.80E+00	4.79E-01
HF	7664393	7.73E-03	9.74E-04	6.77E+01	8.53E+00
Sulfuric Acid	7664939	2.54E-01	3.20E-02	1.07E+01	1.35E+00
Nitric Acid	7697372	5.35E-04	6.74E-05	4.18E+00	5.27E-01

TABLE 3. TOXICITY DATA BY SUBSTANCE- EXPOSURE PATHWAYS

Bowman Plating, Compton, CA
Facility ID # 018989

						Modeled Exposure Pathways									
Substance Name	**CAS No.**	**Cancer**	**Chronic**	**Acute**	**8-hr**	**Multipathway Substance**	**Inhalation**	**Dermal**	**Soil Ingestion**	**Home Grown Produce**	**Mother's Milk**	**Drinking Water**	**Fish**	**Beef & Dairy**	**Pig, Chicken, & Egg**
Silica, Crystln	1175		X				W,R	W,R	W,R	R	R				
Formaldehyde	50000	X	X	X	X		W,R	W,R	W,R	R	R				
Methanol	67561		X	X			W,R	W,R	W,R	R	R				
Isopropyl Alcoh	67630		X	X			W,R	W,R	W,R	R	R				
n-Butyl Alcohol	71363						W,R	W,R	W,R	R	R				
sec-Butyl Alcoh	78922						W,R	W,R	W,R	R	R				
MEK	78933			X			W,R	W,R	W,R	R	R				
1,2,4TriMeBenze	95636						W,R	W,R	W,R	R	R				
Ethyl Benzene	100414	X	X				W,R	W,R	W,R	R	R				
PGME	107982		X				W,R	W,R	W,R	R	R				
MIBK	108101						W,R	W,R	W,R	R	R				
PGMEA	108656						W,R	W,R	W,R	R	R				
Toluene	108883		X	X	X		W,R	W,R	W,R	R	R				
Hexane	110543		X				W,R	W,R	W,R	R	R				
EGBE	111762		X	X	X		W,R	W,R	W,R	R	R				
DEGBE	112345						W,R	W,R	W,R	R	R				
Xylenes	1330207		X	X			W,R	W,R	W,R	R	R				
EGPE	2807309						W,R	W,R	W,R	R	R				
Cr(VI)	18540299	X	X			Y	W,R	W,R	W,R	R	R				
PAHs-w/o	1151	X				Y	W,R	W,R	W,R	R	R				
Benzene	71432	X	X	X	X		W,R	W,R	W,R	R	R				
Acetaldehyde	75070	X	X	X	X		W,R	W,R	W,R	R	R				
Naphthalene	91203	X	X				W,R	W,R	W,R	R	R				
Acrolein	107028		X	X	X		W,R	W,R	W,R	R	R				
NH3	7664417		X	X			W,R	W,R	W,R	R	R				
Lead	7439921	X				Y	W,R	W,R	W,R	R	R				
Nickel	7440020	X	X	X	X	Y	W,R	W,R	W,R	R	R				
Copper	7440508			X			W,R	W,R	W,R	R	R				
Cadmium	7440439	X	X			Y	W,R	W,R	W,R	R	R				
Sodium Hydroxid	1310732			X			W,R	W,R	W,R	R	R				
HCl	7647010		X	X			W,R	W,R	W,R	R	R				
HF	7664393		X	X		Y	W,R	W,R	W,R	R	R				
Sulfuric Acid	7664939		X	X			W,R	W,R	W,R	R	R				
Nitric Acid	7697372			X			W,R	W,R	W,R	R	R				

OEHHA "Air Toxics Hot Spots Program Risk Assessment Guidelines" Table 6.1 page 6-4. Table 6.3 page 6-7and Table.
W: Modeled for worker receptors. R: Modeled for residential receptors

TABLE 4. TOXICITY DATA BY SUBSTANCE - TARGET ORGANS

Bowman Plating, Compton, CA
Facility ID # 018989

		Acute Target Organs													Chronic Target Organs													8-Hour Chronic Target Organs											
Substance Name	**CAS No.**	**CV**	**CNS**	**IMMUN**	**Kidney**	**GILV**	**REPRO/DEVEL**	**RESP**	**SKIN**	**EYE**	**BONE/ TEETH**	**ENDO**	**BLOOD**	**ODOR**	**CV**	**CNS**	**IMMUN**	**Kidney**	**GILV**	**REPRO/DEVEL**	**RESP**	**SKIN**	**EYE**	**BONE/ TEETH**	**ENDO**	**BLOOD**	**ODOR**	**CV**	**CNS**	**IMMUN**	**Kidney**	**GILV**	**REPRO/DEVEL**	**RESP**	**SKIN**	**EYE**	**BONE/ TEETH**	**ENDO**	**BLOOD**	**ODOR**
Silica, Crystln	1175																				X																		
Formaldehyde	50000									X											X													X						
Methanol	67561		X																	X																			
Isopropyl Alcoh	67630							X		X								X		X																			
n-Butyl Alcohol	71363																																						
sec-Butyl Alcoh	78922																																						
MEK	78933							X		X																													
1,2,4TriMeBenze	95636																																						
Ethyl Benzene	100414																	X	X	X					X														
PGME	107982																		X																				
MIBK	108101																																						
PGMEA	108656																																						
Toluene	108883		X					X		X													X													X			
Hexane	110543														X																								
EGBE	111762							X		X											X													X					
DEGBE	112345																																						
Xylenes	1330207		X					X		X					X						X		X																
EGPE	2807309																																						
Cr(VI)	18540299																				X					X													
PAHs-w/o	1151																																						
Benzene	71432			X			X						X													X												X	
Acetaldehyde	75070							X		X											X													X					
Naphthalene	91203																				X																		
Acrolein	107028							X		X											X													X					
NH3	7664417							X		X											X																		
Lead	7439921																																						
Nickel	7440020			X																X	X					X				X					X				
Copper	7440508							X																															
Cadmium	7440439																	X			X																		
Sodium Hydroxid	1310732							X	X	X																													
HCl	7647010							X		X											X																		
HF	7664393							X		X											X				X														
Sulfuric Acid	7664939							X													X																		
Nitric Acid	7697372							X																															

OEHHA "Air Toxics Hot Spots Program Risk Assessment Guidelines" Table 6.1 page 6-4. Table 6.3 page 6-7. and HARP output results.

CV: Cardiovascular System
CNS: Central Nervous System
IMMUN: Immune System
KIDNEY: Kidney
GILV: Gastrointestinal Tract & Liver or Alimentary Tract
REPRO/DEVEL: Reproductive System & Developmental
RESP: Respiratory System
SKIN: Skin
EYE: Eye
BONE/TEETH: Bones & Teeth
ENDO: Endocrine System
BLOOD: Hematological System
ODOR: Response to Odors

Trinity Consultants

TABLE 5. EMISSION SOURCE PARAMETERS

Bowman Plating, Compton, CA
Facility ID # 018989

Stack ID	Stack Name	UTM (km) Easting	UTM (km) Northing	Elevation (m)	Release Type	Orientation	Release Height (ft)	Diameter (ft)	Temp (K)	Stack Velocity (ft/min)	Hours of Operation	WAF
1	SPRAY_BOOTH_1	386720	3753754	24.51	Point	Vertical	30.5	2.5	297.0	2,933.54	Mon-Fri 08:00 - 24:00	2.10
2	SPRAY_BOOTH_2	386714	3753754	24.53	Point	Vertical	30.5	2.5	297.0	2,933.54	Mon-Fri 08:00 - 24:00	2.10
3	SPRAY_BOOTH_3	386708	3753754	24.55	Point	Vertical	30.5	2.5	297.0	2,933.54	Mon-Fri 08:00 - 24:00	2.10
4	SPRAY_BOOTH_4_1	386705	3753760	24.67	Point	Vertical	24	2.5	297.0	1,283.43	Mon-Fri 08:00 - 24:00	2.10
5	SPRAY_BOOTH_4_2	386701.5	3753760.4	24.68	Point	Vertical	24	2.5	297.0	1,283.43	Mon-Fri 08:00 - 24:00	2.10
6	SPRAY_BOOTH_4_3	386701.5	3753763.8	24.71	Point	Vertical	24	2.5	297.0	1,283	Mon-Fri 08:00 - 24:00	2.10
7	SPRAY_BOOTH_4_4	386704.9	3753763.8	24.70	Point	Vertical	24	2.5	297.0	1,283	Mon-Fri 08:00 - 24:00	2.10
8	HEATER	386703.8	3753766.6	24.72	Point	Vertical	21	1.25	305.4	52	Mon-Fri 08:00 - 24:00	2.10
9	BOILERS	386765.1	3753765.5	24.68	Point	Vertical	19	1.5	366.5	20	Mon-Fri 08:00 - 24:00	2.10
10	BLAST_CB	386675	3753754	24.46	Point	Vertical	25	0.51	297.0	567	Mon-Fri 08:00-12:00, 13:00-17:00	4.20
12	OVEN_1	386708.5	3753767.5	24.71	Point	Vertical	24	1	344.3	44	Mon-Fri 08:00 - 24:00	2.10
13	OVEN_2	386725.7	3753768.7	24.60	Point	Vertical	19	1	343.2	44	Mon-Fri 08:00 - 24:00	2.10
14	OVEN_3	386782.7	3753764.1	24.67	Point	Vertical	19	1.5	365.4	20	Mon-Fri 08:00 - 24:00	2.10
16	ANODE_LN (ULPA #1)	386784	3753787	24.72	Point	Vertical	42.25	1.38	294.50	1,675.98	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	1.33
19	PLATE_RM (ULPA #3)	386772	3753780	24.78	Point	Vertical	35	2.46	311.30	3,960.83	Mon-Fri 08:00 - 24:00, Sat 06:00-12:00	1.95
20	ANODE_RM (ULPA #2)	386739	3753780	24.70	Point	Vertical	40	2.46	299.02	3,491.34	Mon-Fri 00:00 - 24:00, Sat 06:00-12:00	1.33

TABLE 6. BUILDING DIMENSIONS AND BOUNDARY RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

Receptor Type	Receptor	Height (ft)	East UTM	North UTM	Elevation	Hill Height
Facility Center	--	--	386730.21	3753772	--	--
Boundary Receptors						
Boundary	3830	--	386828.5	3753751	24.53	24.53
	3831	--	386828.5	3753771	24.63	24.63
	3832	--	386828.5	3753791	24.61	24.61
	3833	--	386828.5	3753792.1	24.62	24.62
	3834	--	386809.6	3753792.1	24.74	24.74
	3835	--	386789.6	3753792.1	24.75	24.75
	3836	--	386769.6	3753792.1	24.72	24.72
	3837	--	386749.6	3753792.1	24.69	24.69
	3838	--	386729.6	3753792.1	24.66	24.66
	3839	--	386709.6	3753792.1	24.61	24.61
	3840	--	386689.6	3753792.1	24.6	24.6
	3841	--	386669.6	3753792.1	24.6	24.6
	3842	--	386649.6	3753792.1	24.58	24.58
	3843	--	386630.5	3753792.1	24.6	24.6
	3844	--	386630.5	3753791.2	24.62	24.62
	3845	--	386630.5	3753771.2	24.67	24.67
	3846	--	386630.5	3753751.2	24.47	24.47
	3847	--	386630.5	3753751	24.47	24.47
	3848	--	386650.3	3753751	24.36	24.36
	3849	--	386670.3	3753751	24.39	24.39
	3850	--	386690.3	3753751	24.52	24.52
	3851	--	386710.3	3753751	24.5	24.5
	3852	--	386730.3	3753751	24.49	24.49
	3853	--	386750.3	3753751	24.58	24.58
	3854	--	386770.3	3753751	24.63	24.63
	3855	--	386790.3	3753751	24.58	24.58
	3856	--	386810.3	3753751	24.56	24.56

TABLE 6. BUILDING DIMENSIONS AND BOUNDARY RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

Receptor Type	Receptor	Height (ft)	East UTM	North UTM	Elevation	Hill Height
Facility Buildings						
Building	B1	14.0	386672.3	3753752.1	24.4	--
Building	B2	25.0	386705.5	3753784.0	24.73	--
Building	B3	25.0	386728.0	3753791.9	24.65	--
Building	B4	22.5	386789.1	3753756.7	24.61	--
Building	B5	16.0	386688.6	3753766.2	24.73	--
Building	B6	18.0	386705.5	3753772.3	24.75	--
Building	B7	20.0	386768.3	3753791.0	24.73	--
Building	B8	19.0	386775.3	3753756.7	24.67	--
Building Downwash						
Building	DB1	23.0	386674.5	3753818.8	24.79	--
Building	DB2	18.0	386748.5	3753813.9	24.91	--
Building	DB3	20.0	386837.3	3753795.5	24.75	--
Building	DB4	41.0	386854.0	3753753.0	24.51	--
Building	DB5	22.0	386841.0	3753725.0	24.59	--
Building	DB6	20.0	386796.0	3753715.0	24.56	--
Building	DB7	25.0	386641.1	3753728.2	24.36	--

Notes:
UTM coordinates based on WGS 84.

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Facility Center	--	386730.2	3753772	--	--	
Sensitive Receptors						
Ralph J. Bunche Middle School	2018	386492	3753952	24.93	24.93	3.82E-07
	2019	386512	3753950.8	25.23	25.23	4.05E-07
	2020	386525	3753950	25.25	25.25	4.21E-07
	2021	386525	3753956.9	25.33	25.33	4.06E-07
	2022	386525	3753965	25.27	25.27	3.93E-07
	2023	386536.8	3753966.6	25.34	25.34	4.01E-07
	2024	386556.7	3753969.2	25.5	25.5	4.14E-07
	2025	386576.5	3753971.9	25.44	25.44	4.32E-07
	2026	386596.3	3753974.5	25.39	25.39	4.51E-07
	2027	386616.1	3753977.2	25.61	25.61	4.61E-07
	2028	386636	3753979.8	25.77	25.77	4.71E-07
	2029	386645	3753981	25.69	25.69	4.79E-07
	2030	386655.8	3753982.3	25.69	25.69	4.86E-07
	2031	386675.6	3753984.7	25.55	25.55	5.01E-07
	2032	386695.5	3753987.2	25.42	25.42	5.13E-07
	2033	386715.4	3753989.6	25.45	25.45	5.19E-07
	2034	386735	3753992	25.51	25.51	5.20E-07
	2035	386735	3753992.2	25.5	25.5	5.20E-07
	2036	386732.7	3754012.1	25.51	25.51	4.62E-07
	2037	386730.5	3754032	25.67	25.67	4.09E-07
	2038	386728.2	3754051.8	25.69	25.69	3.68E-07
	2039	386726	3754071.7	25.92	25.92	3.29E-07
	2040	386723.8	3754091.6	26.04	26.04	2.98E-07
	2041	386721.5	3754111.4	26.06	26.06	2.72E-07
	2042	386721	3754116	26.05	26.05	2.67E-07
	2043	386719.3	3754131.3	26.08	26.08	2.50E-07
	2044	386717.1	3754151.2	26.31	26.31	2.28E-07
	2045	386714.9	3754171.1	26.29	26.29	2.11E-07
	2046	386712.7	3754191	26.18	26.18	1.97E-07
	2047	386710.5	3754210.8	26.18	26.18	1.83E-07
	2048	386708.3	3754230.7	26.5	26.5	1.69E-07
	2049	386706.1	3754250.6	26.2	26.2	1.60E-07
	2050	386703.9	3754270.5	25.93	25.93	1.52E-07
	2051	386701.7	3754290.4	26.32	26.32	1.41E-07
	2052	386701	3754297	26.48	26.48	1.37E-07
	2053	386687.8	3754295.5	26.08	26.08	1.39E-07
	2054	386667.9	3754293.1	26.16	26.16	1.38E-07
	2055	386648	3754290.8	25.99	25.99	1.39E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Ralph J. Bunche Middle School	2056	386628.2	3754288.5	25.86	25.86	1.38E-07
	2057	386608.3	3754286.2	25.95	25.95	1.37E-07
	2058	386588.4	3754283.9	26.07	26.07	1.34E-07
	2059	386568.6	3754281.6	25.76	25.76	1.35E-07
	2060	386548.7	3754279.3	25.61	25.61	1.34E-07
	2061	386528.8	3754277	25.58	25.58	1.32E-07
	2062	386509	3754274.7	25.57	25.57	1.30E-07
	2063	386489.1	3754272.3	25.49	25.49	1.28E-07
	2064	386469.2	3754270	25.4	25.4	1.27E-07
	2065	386449.4	3754267.7	25.54	25.54	1.23E-07
	2066	386429.5	3754265.4	25.44	25.44	1.21E-07
	2067	386426	3754265	25.39	25.39	1.21E-07
	2068	386429	3754248.8	25.43	25.43	1.26E-07
	2069	386432.6	3754229.1	25.24	25.24	1.35E-07
	2070	386436.2	3754209.5	25.31	25.31	1.42E-07
	2071	386439.8	3754189.8	25.16	25.16	1.51E-07
	2072	386443.4	3754170.1	25.2	25.2	1.60E-07
	2073	386447	3754150.5	25.05	25.05	1.70E-07
	2074	386450.6	3754130.8	25.1	25.1	1.82E-07
	2075	386454.3	3754111.1	24.96	24.96	1.94E-07
	2076	386457.9	3754091.4	24.99	24.99	2.08E-07
	2077	386461.5	3754071.8	24.89	24.89	2.24E-07
	2078	386464	3754058	24.86	24.86	2.36E-07
	2079	386465.5	3754052.2	24.93	24.93	2.42E-07
	2080	386470.6	3754032.9	24.94	24.94	2.63E-07
	2081	386475.7	3754013.5	25.05	25.05	2.86E-07
	2082	386480.9	3753994.2	24.94	24.94	3.12E-07
	2083	386486	3753974.8	24.84	24.84	3.42E-07
	2084	386491.1	3753955.5	24.92	24.92	3.76E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Martin Luther King Elementary	2085	386442	3754049	25.03	25.03	2.34E-07
	2086	386438.1	3754068.6	25.01	25.01	2.17E-07
	2087	386434.2	3754088.2	25.07	25.07	2.02E-07
	2088	386430.2	3754107.8	25.07	25.07	1.89E-07
	2089	386426.3	3754127.4	25.13	25.13	1.76E-07
	2090	386424	3754139	25.1	25.1	1.70E-07
	2091	386415.8	3754139	25.1	25.1	1.68E-07
	2092	386395.8	3754139	25.05	25.05	1.63E-07
	2093	386375.8	3754139	25.04	25.04	1.58E-07
	2094	386355.8	3754139	25.03	25.03	1.54E-07
	2095	386335.8	3754139	25.04	25.04	1.50E-07
	2096	386315.8	3754139	25.16	25.16	1.46E-07
	2097	386295.8	3754139	25.36	25.36	1.41E-07
	2098	386275.8	3754139	25.69	25.69	1.35E-07
	2099	386255.8	3754139	25.8	25.8	1.31E-07
	2100	386235.8	3754139	25.87	25.87	1.28E-07
	2101	386215.8	3754139	25.92	25.92	1.25E-07
	2102	386195.8	3754139	26.01	26.01	1.21E-07
	2103	386179	3754139	25.92	25.92	1.20E-07
	2104	386178.8	3754135.8	25.91	25.91	1.21E-07
	2105	386177.4	3754115.8	25.83	25.83	1.27E-07
	2106	386176	3754095.9	25.77	25.77	1.33E-07
	2107	386174.7	3754075.9	25.72	25.72	1.40E-07
	2108	386173.3	3754056	25.59	25.59	1.47E-07
	2109	386173	3754052	25.63	25.63	1.48E-07
	2110	386189	3754051.8	25.62	25.62	1.52E-07
	2111	386209	3754051.6	25.62	25.62	1.57E-07
	2112	386229	3754051.4	25.7	25.7	1.61E-07
	2113	386249	3754051.2	25.64	25.64	1.66E-07
	2114	386269	3754050.9	25.64	25.64	1.72E-07
	2115	386289	3754050.7	25.56	25.56	1.78E-07
	2116	386309	3754050.5	25.49	25.49	1.84E-07
	2117	386329	3754050.3	25.24	25.24	1.92E-07
	2118	386349	3754050	25.12	25.12	1.99E-07
	2119	386369	3754049.8	25.04	25.04	2.06E-07
	2120	386389	3754049.6	25.02	25.02	2.13E-07
	2121	386409	3754049.4	24.97	24.97	2.21E-07
	2122	386429	3754049.1	25.06	25.06	2.29E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Willard Elementary School	2725	387040.3	3753545.1	24.06	24.06	4.20E-07
	2726	387043.1	3753525.3	24.04	24.04	3.87E-07
	2727	387045.9	3753505.5	24.14	24.14	3.59E-07
	2728	387048.8	3753485.7	24.15	24.15	3.33E-07
	2729	387051.6	3753465.9	24.28	24.28	3.11E-07
	2730	387054.4	3753446.1	23.96	23.96	2.90E-07
	2731	387057.2	3753426.3	23.99	23.99	2.72E-07
	2732	387059.6	3753409.8	23.88	23.88	2.58E-07
	2733	387056.3	3753409.4	24.01	24.01	2.60E-07
	2734	387036.5	3753406.7	24.13	24.13	2.65E-07
	2735	387016.7	3753404	23.98	23.98	2.69E-07
	2736	386996.8	3753401.3	23.84	23.84	2.74E-07
	2737	386977	3753398.6	23.79	23.79	2.78E-07
	2738	386968.9	3753397.5	23.56	23.56	2.79E-07
	2739	386967.4	3753409.2	23.63	23.63	2.90E-07
	2740	386964.8	3753429	23.74	23.74	3.10E-07
	2741	386962.2	3753448.9	23.67	23.67	3.32E-07
	2742	386959.6	3753468.7	23.82	23.82	3.57E-07
	2743	386957	3753488.5	23.92	23.92	3.85E-07
	2744	386954.4	3753508.4	23.93	23.93	4.17E-07
	2745	386951.8	3753528.2	24	24	4.55E-07
	2746	386951.4	3753531.3	24.04	24.04	4.61E-07
	2747	386968.1	3753533.9	24.23	24.23	4.56E-07
	2748	386987.8	3753537	24.15	24.15	4.46E-07
	2749	387007.6	3753540	24.02	24.02	4.36E-07
	2750	387027.4	3753543.1	24.05	24.05	4.26E-07
Mona House Head Start	2751	386708.1	3753185.5	22.92	22.92	1.66E-07
	2752	386707.5	3753165.5	22.84	22.84	1.59E-07
	2753	386707	3753145.6	22.64	22.64	1.51E-07
	2754	386706.9	3753145.6	22.64	22.64	1.51E-07
	2755	386686.9	3753145.6	22.64	22.64	1.50E-07
	2756	386681	3753145.6	22.64	22.64	1.49E-07
	2757	386677.2	3753159.2	22.98	22.98	1.54E-07
	2758	386671.7	3753178.4	22.83	22.83	1.60E-07
	2759	386669.6	3753185.9	22.85	22.85	1.63E-07
	2760	386681.8	3753185.8	22.97	22.97	1.64E-07
	2761	386701.8	3753185.6	22.98	22.98	1.66E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Anderson Elementary	2790	386228	3753330.7	24.37	24.37	1.25E-07
	2791	386235.4	3753312.1	24.15	24.15	1.23E-07
	2792	386242.8	3753293.5	24.02	24.02	1.21E-07
	2793	386250.1	3753274.9	23.97	23.97	1.19E-07
	2794	386257.2	3753257.1	23.92	23.92	1.17E-07
	2795	386256.4	3753257	23.94	23.94	1.17E-07
	2796	386236.5	3753254.5	23.92	23.92	1.13E-07
	2797	386216.7	3753252	23.87	23.87	1.10E-07
	2798	386196.9	3753249.5	23.93	23.93	1.06E-07
	2799	386177	3753247	23.98	23.98	1.03E-07
	2800	386157.2	3753244.5	23.73	23.73	9.96E-08
	2801	386137.3	3753242	23.93	23.93	9.66E-08
	2802	386117.5	3753239.5	24.02	24.02	9.37E-08
	2803	386097.6	3753237	23.92	23.92	9.08E-08
	2804	386077.8	3753234.5	23.97	23.97	8.81E-08
	2805	386058	3753232	24.1	24.1	8.56E-08
	2806	386038.1	3753229.4	24.1	24.1	8.30E-08
	2807	386018.8	3753224.6	24.18	24.18	8.05E-08
	2808	385999.7	3753218.7	24.15	24.15	7.80E-08
	2809	385980.6	3753212.8	24.12	24.12	7.56E-08
	2810	385961.4	3753206.9	24.17	24.17	7.34E-08
	2811	385942.3	3753201.1	24	24	7.12E-08
	2812	385923.2	3753195.2	24.1	24.1	6.91E-08
	2813	385915.8	3753192.9	23.98	23.98	6.83E-08
	2814	385913.7	3753205	24.03	24.03	6.88E-08
	2815	385910.3	3753224.7	24.14	24.14	6.96E-08
	2816	385906.8	3753244.4	24.13	24.13	7.03E-08
	2817	385903.4	3753264.1	24.21	24.21	7.10E-08
	2818	385902.8	3753284	24.23	24.23	7.20E-08
	2819	385902.5	3753304	24.29	24.29	7.30E-08
	2820	385902.3	3753324	24.36	24.36	7.40E-08
	2821	385902.2	3753332.4	24.39	24.39	7.44E-08
	2822	385913.8	3753332.3	24.57	24.57	7.57E-08
	2823	385933.8	3753332.2	24.57	24.57	7.80E-08
	2824	385953.8	3753332.1	24.55	24.55	8.04E-08
	2825	385973.8	3753332	24.57	24.57	8.28E-08
	2826	385993.8	3753331.9	24.56	24.56	8.54E-08
	2827	386013.8	3753331.8	24.54	24.54	8.81E-08
	2828	386033.8	3753331.7	24.61	24.61	9.09E-08
	2829	386053.8	3753331.6	24.7	24.7	9.38E-08
	2830	386073.8	3753331.5	24.64	24.64	9.68E-08
	2831	386093.8	3753331.4	24.58	24.58	1.00E-07
	2832	386113.8	3753331.3	24.49	24.49	1.03E-07
	2833	386133.8	3753331.2	24.45	24.45	1.07E-07
	2834	386153.8	3753331.1	24.51	24.51	1.10E-07
	2835	386173.8	3753331	24.3	24.3	1.14E-07
	2836	386193.8	3753330.9	24.28	24.28	1.18E-07
	2837	386213.8	3753330.8	24.28	24.28	1.22E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Jefferson Elementary	2838	386876.4	3753010.6	22.85	22.85	1.18E-07
	2839	386876.8	3752990.6	22.92	22.92	1.13E-07
	2840	386877.2	3752970.6	22.91	22.91	1.09E-07
	2841	386877.7	3752950.6	22.95	22.95	1.05E-07
	2842	386878.1	3752930.6	22.8	22.8	1.02E-07
	2843	386878.5	3752910.6	22.91	22.91	9.83E-08
	2844	386878.9	3752890.6	22.94	22.94	9.51E-08
	2845	386879.3	3752874.1	22.85	22.85	9.24E-08
	2846	386875.8	3752874.1	22.85	22.85	9.25E-08
	2847	386855.8	3752874.2	22.85	22.85	9.25E-08
	2848	386835.8	3752874.2	22.82	22.82	9.25E-08
	2849	386815.8	3752874.2	22.8	22.8	9.24E-08
	2850	386795.8	3752874.3	22.79	22.79	9.22E-08
	2851	386775.8	3752874.3	22.74	22.74	9.19E-08
	2852	386755.8	3752874.4	22.66	22.66	9.16E-08
	2853	386750.7	3752874.4	22.61	22.61	9.14E-08
	2854	386747	3752888.8	22.64	22.64	9.36E-08
	2855	386742	3752908.2	22.76	22.76	9.67E-08
	2856	386736.9	3752927.5	23.06	23.06	1.00E-07
	2857	386731.9	3752946.9	23.02	23.02	1.03E-07
	2858	386726.9	3752966.2	22.98	22.98	1.07E-07
	2859	386721.9	3752985.6	23.09	23.09	1.11E-07
	2860	386716.9	3753005	22.91	22.91	1.14E-07
	2861	386715.7	3753009.5	22.79	22.79	1.15E-07
	2862	386731	3753009.6	22.82	22.82	1.16E-07
	2863	386751	3753009.7	22.83	22.83	1.16E-07
	2864	386771	3753009.9	22.83	22.83	1.17E-07
	2865	386791	3753010	22.87	22.87	1.17E-07
	2866	386811	3753010.2	22.96	22.96	1.18E-07
	2867	386831	3753010.3	22.98	22.98	1.18E-07
	2868	386851	3753010.4	22.99	22.99	1.18E-07
	2869	386871	3753010.6	22.92	22.92	1.18E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Lindbergh Elementary School	2870	387831.9	3753738.5	24.95	24.95	1.61E-07
	2871	387812.1	3753735.4	24.93	24.93	1.65E-07
	2872	387792.4	3753732.3	24.86	24.86	1.69E-07
	2873	387772.6	3753729.1	24.76	24.76	1.74E-07
	2874	387752.9	3753726	24.53	24.53	1.78E-07
	2875	387733.1	3753722.9	24.59	24.59	1.83E-07
	2876	387713.4	3753719.8	24.58	24.58	1.88E-07
	2877	387693.6	3753716.7	24.55	24.55	1.93E-07
	2878	387690.6	3753716.2	24.62	24.62	1.94E-07
	2879	387689.1	3753733.1	24.58	24.58	2.00E-07
	2880	387688	3753744.6	24.57	24.57	2.05E-07
	2881	387679.7	3753743.4	24.44	24.44	2.07E-07
	2882	387676.6	3753742.9	24.4	24.4	2.08E-07
	2883	387674.6	3753759.7	24.27	24.27	2.15E-07
	2884	387672.2	3753779.5	24.39	24.39	2.23E-07
	2885	387669.9	3753799.4	24.44	24.44	2.31E-07
	2886	387667.5	3753819.3	24.44	24.44	2.39E-07
	2887	387665.7	3753834.3	24.39	24.39	2.45E-07
	2888	387670.5	3753834.8	24.43	24.43	2.43E-07
	2889	387683.6	3753836.1	24.49	24.49	2.38E-07
	2890	387683.2	3753843	24.52	24.52	2.40E-07
	2891	387681.9	3753862.9	24.57	24.57	2.46E-07
	2892	387685	3753881.5	24.68	24.68	2.49E-07
	2893	387697.1	3753897.5	24.83	24.83	2.47E-07
	2894	387707.3	3753910.9	24.71	24.71	2.44E-07
	2895	387710.1	3753909.5	24.68	24.68	2.43E-07
	2896	387728	3753900.7	24.63	24.63	2.34E-07
	2897	387747.2	3753897.3	24.75	24.75	2.25E-07
	2898	387767.1	3753898	24.81	24.81	2.18E-07
	2899	387786.8	3753897.5	24.8	24.8	2.11E-07
	2900	387803.4	3753886.3	24.67	24.67	2.03E-07
	2901	387820	3753875.1	24.74	24.74	1.95E-07
	2902	387836.5	3753863.9	24.75	24.75	1.88E-07
	2903	387853.1	3753852.8	24.81	24.81	1.81E-07
	2904	387871.9	3753846.9	24.8	24.8	1.75E-07
	2905	387891.5	3753843.1	24.88	24.88	1.69E-07
	2906	387898	3753841.8	24.85	24.85	1.67E-07
	2907	387889.8	3753831.2	24.94	24.94	1.67E-07
	2908	387877.5	3753815.5	25.05	25.05	1.67E-07
	2909	387865.2	3753799.7	25.16	25.16	1.67E-07
	2910	387852.9	3753783.9	25.12	25.12	1.67E-07
	2911	387840.6	3753768.1	25.07	25.07	1.66E-07
	2912	387831.3	3753751.4	24.87	24.87	1.64E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Helen Keller Elementary School	2925	388403.2	3753334.7	24.18	24.18	5.37E-08
	2926	388395.7	3753316.2	24.38	24.38	5.31E-08
	2927	388388.2	3753297.6	24.58	24.58	5.26E-08
	2928	388380.8	3753279.1	24.53	24.53	5.20E-08
	2929	388373.3	3753260.5	24.52	24.52	5.15E-08
	2930	388366.5	3753243.7	24.31	24.31	5.10E-08
	2931	388364.7	3753244.3	24.3	24.3	5.11E-08
	2932	388345.9	3753251.1	24.24	24.24	5.21E-08
	2933	388327.1	3753257.8	24.17	24.17	5.31E-08
	2934	388308.2	3753264.5	24.19	24.19	5.42E-08
	2935	388289.4	3753271.3	24.38	24.38	5.53E-08
	2936	388270.4	3753277.2	24.46	24.46	5.65E-08
	2937	388250.4	3753277.2	24.47	24.47	5.74E-08
	2938	388230.4	3753277.2	23.87	23.87	5.82E-08
	2939	388222.5	3753277.2	24	24	5.86E-08
	2940	388222.4	3753289.3	24.01	24.01	5.93E-08
	2941	388222.2	3753309.3	24.02	24.02	6.04E-08
	2942	388222.1	3753329.3	24.05	24.05	6.16E-08
	2943	388221.9	3753349.3	24.12	24.12	6.29E-08
	2944	388221.8	3753369.3	24.09	24.09	6.41E-08
	2945	388221.7	3753378	24.11	24.11	6.47E-08
	2946	388233	3753378	24.07	24.07	6.41E-08
	2947	388253	3753378	24.13	24.13	6.30E-08
	2948	388272.8	3753376.7	24.07	24.07	6.19E-08
	2949	388291.8	3753370.6	24.12	24.12	6.06E-08
	2950	388310.8	3753364.4	24.07	24.07	5.93E-08
	2951	388329.9	3753358.3	24.12	24.12	5.81E-08
	2952	388348.9	3753352.2	24.11	24.11	5.69E-08
	2953	388368	3753346	24.18	24.18	5.57E-08
	2954	388387	3753339.9	24.22	24.22	5.46E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Lynwood High School	2955	388946.5	3753507.9	24.68	24.68	4.21E-08
	2956	388940.6	3753488.8	24.52	24.52	4.17E-08
	2957	388934.7	3753469.7	24.42	24.42	4.12E-08
	2958	388928.8	3753450.6	24.42	24.42	4.08E-08
	2959	388923	3753431.4	24.4	24.4	4.04E-08
	2960	388917.1	3753412.3	24.37	24.37	3.99E-08
	2961	388911.2	3753393.2	24.33	24.33	3.95E-08
	2962	388905.3	3753374.1	24.38	24.38	3.91E-08
	2963	388899.4	3753355	24.36	24.36	3.87E-08
	2964	388893.5	3753335.9	24.27	24.27	3.83E-08
	2965	388887.6	3753316.8	24.34	24.34	3.80E-08
	2966	388881.8	3753297.6	24.43	24.43	3.76E-08
	2967	388875.9	3753278.5	24.37	24.37	3.72E-08
	2968	388870	3753259.4	24.31	24.31	3.69E-08
	2969	388864.1	3753240.3	24.21	24.21	3.65E-08
	2970	388858.6	3753222.4	24.06	24.06	3.62E-08
	2971	388857.4	3753222.8	24.06	24.06	3.62E-08
	2972	388838.6	3753229.5	24.3	24.3	3.68E-08
	2973	388819.7	3753236.3	24.54	24.54	3.74E-08
	2974	388800.9	3753243	24.5	24.5	3.80E-08
	2975	388782	3753249.7	24.42	24.42	3.87E-08
	2976	388763.2	3753256.4	24.26	24.26	3.93E-08
	2977	388744.4	3753263.1	24.19	24.19	4.00E-08
	2978	388725.5	3753269.8	24.24	24.24	4.07E-08
	2979	388706.7	3753276.5	24.24	24.24	4.14E-08
	2980	388687.8	3753283.2	24.21	24.21	4.21E-08
	2981	388669	3753290	24.26	24.26	4.28E-08
	2982	388650.2	3753296.7	24.25	24.25	4.36E-08
	2983	388631.3	3753303.4	24.17	24.17	4.44E-08
	2984	388612.5	3753310.1	24.16	24.16	4.52E-08
	2985	388593.6	3753316.8	24	24	4.60E-08
	2986	388578.2	3753322.3	24.24	24.24	4.68E-08
	2987	388579.4	3753325.7	24.24	24.24	4.69E-08
	2988	388585.8	3753344.7	24.33	24.33	4.74E-08
	2989	388592.2	3753363.6	24.25	24.25	4.79E-08
	2990	388598.7	3753382.5	24.18	24.18	4.84E-08
	2991	388605.1	3753401.5	24.27	24.27	4.90E-08
	2992	388611.5	3753420.4	24.35	24.35	4.96E-08
	2993	388618	3753439.3	24.41	24.41	5.01E-08
	2994	388624.4	3753458.3	24.45	24.45	5.07E-08
	2995	388630.8	3753477.2	24.42	24.42	5.13E-08
	2996	388637.3	3753496.2	24.5	24.5	5.20E-08
	2997	388643.7	3753515.1	24.53	24.53	5.26E-08
	2998	388650.1	3753534	24.57	24.57	5.32E-08
	2999	388656.6	3753553	24.63	24.63	5.39E-08
	3000	388663	3753571.9	24.68	24.68	5.45E-08
	3001	388669.4	3753590.8	24.59	24.59	5.52E-08
	3002	388673.7	3753603.4	24.89	24.89	5.56E-08
	3003	388680.1	3753601.2	24.62	24.62	5.52E-08
	3004	388698.9	3753594.6	24.74	24.74	5.41E-08
	3005	388717.8	3753588	24.89	24.89	5.30E-08
	3006	388736.7	3753581.4	24.84	24.84	5.20E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Lynwood High School	3007	388755.6	3753574.7	24.76	24.76	5.09E-08
	3008	388774.4	3753568.1	24.88	24.88	4.99E-08
	3009	388793.3	3753561.5	24.65	24.65	4.90E-08
	3010	388812.2	3753554.9	24.68	24.68	4.80E-08
	3011	388831.1	3753548.3	24.79	24.79	4.71E-08
	3012	388849.9	3753541.7	24.88	24.88	4.62E-08
	3013	388868.8	3753535.1	24.98	24.98	4.54E-08
	3014	388887.7	3753528.5	24.75	24.75	4.46E-08
	3015	388906.6	3753521.9	24.78	24.78	4.38E-08
	3016	388925.5	3753515.3	24.75	24.75	4.30E-08
	3017	388944.3	3753508.7	24.7	24.7	4.22E-08
Rosa Parks Elementary	3018	388901.8	3753639.9	24.61	24.61	4.82E-08
	3019	388894.8	3753621.1	24.81	24.81	4.78E-08
	3020	388887.9	3753602.4	25.29	25.29	4.74E-08
	3021	388880.9	3753583.6	25.29	25.29	4.70E-08
	3022	388874	3753564.9	25.26	25.26	4.65E-08
	3023	388867	3753546.1	25.11	25.11	4.59E-08
	3024	388865.3	3753541.5	25.02	25.02	4.57E-08
	3025	388851.3	3753547	24.94	24.94	4.64E-08
	3026	388832.7	3753554.3	24.84	24.84	4.73E-08
	3027	388814.1	3753561.6	24.73	24.73	4.82E-08
	3028	388795.5	3753569	24.7	24.7	4.92E-08
	3029	388776.8	3753576.3	24.94	24.94	5.02E-08
	3030	388758.2	3753583.6	24.72	24.72	5.12E-08
	3031	388739.6	3753590.9	24.73	24.73	5.23E-08
	3032	388721.4	3753598.1	24.84	24.84	5.33E-08
	3033	388721.5	3753598.5	24.83	24.83	5.34E-08
	3034	388728.6	3753617.2	24.88	24.88	5.39E-08
	3035	388735.6	3753636	24.85	24.85	5.45E-08
	3036	388742.6	3753654.7	24.84	24.84	5.51E-08
	3037	388749.6	3753673.4	24.91	24.91	5.57E-08
	3038	388755.7	3753689.8	24.86	24.86	5.62E-08
	3039	388758.1	3753689	24.83	24.83	5.61E-08
	3040	388777	3753682.5	24.86	24.86	5.49E-08
	3041	388795.9	3753676.1	24.8	24.8	5.38E-08
	3042	388814.9	3753669.6	24.74	24.74	5.28E-08
	3043	388833.8	3753663.1	24.69	24.69	5.17E-08
	3044	388852.7	3753656.7	24.66	24.66	5.07E-08
	3045	388871.6	3753650.2	24.61	24.61	4.97E-08
	3046	388890.6	3753643.7	24.69	24.69	4.88E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Mark Twain Elementary	3047	389087.4	3753286.4	24.51	24.51	3.30E-08
	3048	389081	3753267.5	24.26	24.26	3.27E-08
	3049	389074.5	3753248.5	24.41	24.41	3.25E-08
	3050	389068.1	3753229.6	24.43	24.43	3.22E-08
	3051	389061.6	3753210.7	24.48	24.48	3.19E-08
	3052	389055.2	3753191.7	24.34	24.34	3.17E-08
	3053	389048.8	3753172.8	24.27	24.27	3.14E-08
	3054	389046	3753164.7	24.23	24.23	3.13E-08
	3055	389056.7	3753160.7	24.19	24.19	3.10E-08
	3056	389075.5	3753153.8	24.35	24.35	3.06E-08
	3057	389094.3	3753147	24.39	24.39	3.02E-08
	3058	389113.1	3753140.1	24.42	24.42	2.98E-08
	3059	389131.8	3753133.2	24.44	24.44	2.93E-08
	3060	389150.6	3753126.3	24.68	24.68	2.89E-08
	3061	389169.4	3753119.4	24.7	24.7	2.85E-08
	3062	389188.2	3753112.5	24.54	24.54	2.81E-08
	3063	389206.9	3753105.6	24.64	24.64	2.78E-08
	3064	389225.7	3753098.7	24.58	24.58	2.74E-08
	3065	389244.5	3753091.8	24.61	24.61	2.70E-08
	3066	389250.6	3753089.5	24.62	24.62	2.69E-08
	3067	389254.6	3753102.4	24.61	24.61	2.71E-08
	3068	389260.5	3753121.5	24.66	24.66	2.73E-08
	3069	389266.4	3753140.6	24.66	24.66	2.75E-08
	3070	389272.3	3753159.7	24.59	24.59	2.77E-08
	3071	389278.2	3753178.8	24.53	24.53	2.79E-08
	3072	389284.1	3753197.9	24.33	24.33	2.81E-08
	3073	389288.2	3753211.3	24.68	24.68	2.83E-08
	3074	389282.6	3753213.4	24.64	24.64	2.84E-08
	3075	389263.8	3753220.4	24.67	24.67	2.88E-08
	3076	389245.1	3753227.4	24.8	24.8	2.92E-08
	3077	389226.4	3753234.4	24.43	24.43	2.96E-08
	3078	389207.7	3753241.4	24.71	24.71	3.00E-08
	3079	389188.9	3753248.4	24.8	24.8	3.05E-08
	3080	389170.2	3753255.4	24.72	24.72	3.09E-08
	3081	389151.5	3753262.4	24.67	24.67	3.14E-08
	3082	389132.7	3753269.4	24.51	24.51	3.18E-08
	3083	389114	3753276.5	24.56	24.56	3.23E-08
	3084	389095.3	3753283.5	24.62	24.62	3.28E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Foster Elementary School	3085	389005.6	3752476.4	22.75	22.75	2.10E-08
	3086	389006.9	3752456.4	22.82	22.82	2.08E-08
	3087	389008.2	3752436.5	22.73	22.73	2.05E-08
	3088	389009.4	3752416.5	22.73	22.73	2.03E-08
	3089	389010.7	3752396.6	22.71	22.71	2.00E-08
	3090	389011.2	3752389	22.7	22.7	1.99E-08
	3091	388998.9	3752390.7	22.95	22.95	2.00E-08
	3092	388979.1	3752393.4	22.96	22.96	2.02E-08
	3093	388959.3	3752396.2	22.95	22.95	2.04E-08
	3094	388939.5	3752398.9	22.92	22.92	2.06E-08
	3095	388919.6	3752401.6	22.97	22.97	2.08E-08
	3096	388899.8	3752404.4	22.96	22.96	2.10E-08
	3097	388880	3752407.1	23.22	23.22	2.12E-08
	3098	388860.2	3752409.9	23.51	23.51	2.14E-08
	3099	388840.4	3752412.6	23.41	23.41	2.16E-08
	3100	388820.6	3752415.3	23.46	23.46	2.18E-08
	3101	388800.8	3752418.1	23.43	23.43	2.20E-08
	3102	388785.3	3752420.2	23.15	23.15	2.22E-08
	3103	388784.9	3752424.6	23.16	23.16	2.23E-08
	3104	388783	3752444.5	23.17	23.17	2.25E-08
	3105	388781.2	3752464.4	23.47	23.47	2.29E-08
	3106	388780	3752477	23.53	23.53	2.31E-08
	3107	388772.8	3752478.3	23.53	23.53	2.31E-08
	3108	388753.1	3752482	23.5	23.5	2.34E-08
	3109	388734.2	3752485.5	23.43	23.43	2.36E-08
	3110	388734.2	3752486.2	23.43	23.43	2.36E-08
	3111	388735	3752506.2	23.6	23.6	2.39E-08
	3112	388735.5	3752519	23.49	23.49	2.41E-08
	3113	388742.7	3752518.2	23.47	23.47	2.40E-08
	3114	388762.6	3752516	23.41	23.41	2.38E-08
	3115	388782.4	3752513.8	23.45	23.45	2.36E-08
	3116	388802.3	3752511.5	23.34	23.34	2.33E-08
	3117	388822.2	3752509.3	23.35	23.35	2.31E-08
	3118	388842.1	3752507.1	23.24	23.24	2.29E-08
	3119	388861.9	3752504.9	23.33	23.33	2.27E-08
	3120	388881.8	3752502.7	23.27	23.27	2.25E-08
	3121	388901.7	3752500.5	23.22	23.22	2.23E-08
	3122	388921.6	3752498.2	23.21	23.21	2.20E-08
	3123	388941.4	3752496	23.18	23.18	2.18E-08
	3124	388961.3	3752493.8	23.2	23.2	2.16E-08
	3125	388981.2	3752491.6	23.04	23.04	2.14E-08
	3126	389001.1	3752489.4	22.75	22.75	2.12E-08
	3127	389004.3	3752489	22.68	22.68	2.12E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Mayo Elementary	3128	387787.5	3752046.6	21.71	21.71	2.73E-08
	3129	387807.4	3752048	21.92	21.92	2.71E-08
	3130	387827.4	3752049.5	22.06	22.06	2.69E-08
	3131	387847.3	3752050.9	21.82	21.82	2.67E-08
	3132	387849.7	3752051.1	21.79	21.79	2.67E-08
	3133	387850.5	3752033.5	21.73	21.73	2.64E-08
	3134	387851.5	3752013.5	21.64	21.64	2.60E-08
	3135	387852.4	3751993.5	21.64	21.64	2.57E-08
	3136	387853.4	3751973.6	21.62	21.62	2.54E-08
	3137	387854.4	3751953.6	21.6	21.6	2.50E-08
	3138	387855.3	3751933.6	21.57	21.57	2.47E-08
	3139	387856.3	3751913.6	21.52	21.52	2.44E-08
	3140	387857.2	3751893.6	21.42	21.42	2.41E-08
	3141	387857.5	3751887.8	21.39	21.39	2.40E-08
	3142	387843.4	3751887.3	21.67	21.67	2.41E-08
	3143	387823.4	3751886.7	21.9	21.9	2.43E-08
	3144	387803.4	3751886	21.83	21.83	2.45E-08
	3145	387797.9	3751885.8	21.72	21.72	2.45E-08
	3146	387797	3751900.3	21.63	21.63	2.48E-08
	3147	387795.7	3751920.2	21.64	21.64	2.51E-08
	3148	387794.4	3751940.2	21.64	21.64	2.54E-08
	3149	387793.1	3751960.2	21.66	21.66	2.58E-08
	3150	387791.8	3751980.1	21.7	21.7	2.61E-08
	3151	387790.5	3752000.1	21.7	21.7	2.65E-08
	3152	387789.2	3752020	21.75	21.75	2.68E-08
	3153	387787.9	3752040	21.73	21.73	2.72E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Rosecrans Elementary	3154	386415.6	3752304.1	22.56	22.56	3.97E-08
	3155	386414	3752303.1	22.6	22.6	3.97E-08
	3156	386421.6	3752286.7	22.52	22.52	3.91E-08
	3157	386430	3752268.5	22.47	22.47	3.85E-08
	3158	386438.5	3752250.4	22.41	22.41	3.80E-08
	3159	386446.9	3752232.2	22.32	22.32	3.74E-08
	3160	386455.3	3752214.1	22.22	22.22	3.69E-08
	3161	386463.7	3752196	22.22	22.22	3.63E-08
	3162	386472.1	3752177.8	22.16	22.16	3.58E-08
	3163	386474.7	3752158.2	22.15	22.15	3.52E-08
	3164	386475.7	3752138.3	22.07	22.07	3.46E-08
	3165	386476.5	3752121.9	21.99	21.99	3.41E-08
	3166	386472.9	3752121.9	21.98	21.98	3.40E-08
	3167	386452.9	3752121.8	21.99	21.99	3.38E-08
	3168	386432.9	3752121.7	22.04	22.04	3.36E-08
	3169	386412.9	3752121.7	22.09	22.09	3.34E-08
	3170	386392.9	3752121.6	22.13	22.13	3.32E-08
	3171	386372.9	3752121.5	22.17	22.17	3.30E-08
	3172	386352.9	3752121.4	22.24	22.24	3.28E-08
	3173	386343.8	3752121.4	22.25	22.25	3.27E-08
	3174	386343.9	3752132.3	22.35	22.35	3.30E-08
	3175	386344.2	3752152.3	22.52	22.52	3.37E-08
	3176	386344.3	3752165.1	22.51	22.51	3.40E-08
	3177	386337.1	3752165.1	22.78	22.78	3.40E-08
	3178	386317.1	3752165.1	22.8	22.8	3.37E-08
	3179	386297.1	3752165.1	22.7	22.7	3.35E-08
	3180	386283.9	3752165.1	22.48	22.48	3.33E-08
	3181	386283.4	3752171.9	22.52	22.52	3.35E-08
	3182	386282	3752191.9	22.52	22.52	3.41E-08
	3183	386280.7	3752211.8	22.38	22.38	3.47E-08
	3184	386279.3	3752231.8	22.42	22.42	3.53E-08
	3185	386277.9	3752251.7	22.45	22.45	3.59E-08
	3186	386276.5	3752271.7	22.44	22.44	3.65E-08
	3187	386275.1	3752291.6	22.47	22.47	3.72E-08
	3188	386273.7	3752311.6	22.5	22.5	3.78E-08
	3189	386273	3752322.3	22.49	22.49	3.82E-08
	3190	386282.2	3752322.5	22.52	22.52	3.84E-08
	3191	386302.2	3752323	22.53	22.53	3.87E-08
	3192	386322.2	3752323.5	22.52	22.52	3.90E-08
	3193	386342.2	3752324	22.66	22.66	3.94E-08
	3194	386359.9	3752324.4	22.86	22.86	3.97E-08
	3195	386360.8	3752322.3	22.84	22.84	3.96E-08
	3196	386368.9	3752304	22.74	22.74	3.91E-08
	3197	386374.5	3752291.1	22.8	22.8	3.87E-08
	3198	386380.2	3752292.9	22.8	22.8	3.88E-08
	3199	386399.3	3752298.9	22.75	22.75	3.93E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Sunshine Daycare Preschool Center	2762	387514.3	3753673.6	24.42	24.42	2.42E-07
	2763	387516.4	3753653.7	24.11	24.11	2.30E-07
	2764	387516.7	3753651.3	24.11	24.11	2.28E-07
	2765	387499.3	3753648.9	24.17	24.17	2.34E-07
	2766	387479.5	3753646.2	24.12	24.12	2.41E-07
	2767	387465.9	3753644.4	24.08	24.08	2.46E-07
	2768	387465.1	3753650.7	24.07	24.07	2.50E-07
	2769	387463.3	3753666	24.13	24.13	2.61E-07
	2770	387467.8	3753666.7	24.24	24.24	2.59E-07
	2771	387487.6	3753669.6	24.47	24.47	2.52E-07
	2772	387507.4	3753672.6	24.43	24.43	2.44E-07
Ella Fitzgerald Child Care Center	2773	386559.9	3754284.4	25.56	25.56	1.34E-07
	2774	386576	3754286.3	26.06	26.06	1.32E-07
	2775	386575.6	3754290.1	26.1	26.1	1.30E-07
	2776	386574.8	3754299	26.14	26.14	1.27E-07
	2777	386585.7	3754300.6	26.39	26.39	1.26E-07
	2778	386603.9	3754303.4	26.41	26.41	1.27E-07
	2779	386603.8	3754305	26.42	26.42	1.26E-07
	2780	386602.5	3754325	26.27	26.27	1.20E-07
	2781	386602	3754333.4	26.14	26.14	1.19E-07
	2782	386590.5	3754332.5	26.07	26.07	1.18E-07
	2783	386575.7	3754331.3	25.84	25.84	1.19E-07
	2784	386575.7	3754326.1	26.01	26.01	1.19E-07
	2785	386575.7	3754324.1	26.07	26.07	1.19E-07
	2786	386557.8	3754323	25.55	25.55	1.21E-07
	2787	386555.5	3754322.9	25.52	25.52	1.21E-07
	2788	386557.5	3754305.3	25.48	25.48	1.27E-07
	2789	386559.8	3754285.4	25.54	25.54	1.34E-07

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
We Care Daycare Center	2913	387789.9	3753664.6	24.74	24.74	1.52E-07
	2914	387786.5	3753684.3	24.76	24.76	1.58E-07
	2915	387783.1	3753704	24.71	24.71	1.64E-07
	2916	387779.9	3753722.8	24.81	24.81	1.70E-07
	2917	387779	3753722.6	24.81	24.81	1.70E-07
	2918	387759.4	3753718.7	24.64	24.64	1.74E-07
	2919	387753.6	3753717.5	24.6	24.6	1.76E-07
	2920	387755.9	3753703.6	24.72	24.72	1.71E-07
	2921	387759.2	3753683.8	24.65	24.65	1.64E-07
	2922	387762.5	3753664.1	24.8	24.8	1.58E-07
	2923	387762.8	3753662.4	24.81	24.81	1.57E-07
	2924	387781	3753663.9	24.8	24.8	1.54E-07
Tiny Treasures Daycare	3200	388154.6	3754050.1	25.51	25.51	1.33E-07
	3201	388153.8	3754030.1	25.33	25.33	1.33E-07
	3202	388153.5	3754021.2	25.31	25.31	1.32E-07
	3203	388142.4	3754020.7	25.35	25.35	1.34E-07
	3204	388122.4	3754019.9	25.34	25.34	1.38E-07
	3205	388109.9	3754019.4	25.34	25.34	1.40E-07
	3206	388110	3754026.8	25.35	25.35	1.40E-07
	3207	388110.3	3754046.8	25.47	25.47	1.41E-07
	3208	388110.3	3754049.1	25.49	25.49	1.41E-07
	3209	388128	3754049.5	25.54	25.54	1.38E-07
	3210	388148	3754050	25.55	25.55	1.34E-07
Griggs-Smith Family Child Care	3211	387597.3	3753008	23.26	23.26	7.09E-08
	3212	387599.9	3752988.2	23.51	23.51	6.92E-08
	3213	387602.5	3752968.3	23.44	23.44	6.74E-08
	3214	387603	3752964.7	23.41	23.41	6.71E-08
	3215	387619.2	3752966.6	23.54	23.54	6.64E-08
	3216	387639.1	3752968.9	23.38	23.38	6.56E-08
	3217	387639.7	3752969	23.39	23.39	6.56E-08
	3218	387636.7	3752988.1	23.35	23.35	6.72E-08
	3219	387633.6	3753007.9	23.26	23.26	6.89E-08
	3220	387632.8	3753013	23.24	23.24	6.94E-08
	3221	387618.1	3753010.9	23.27	23.27	7.00E-08
	3222	387598.3	3753008.1	23.27	23.27	7.09E-08

TABLE 7a. SENSITIVE RECEPTORS

Bowman Plating, Compton, CA
Facility ID # 018989

	Receptor	East UTM	North UTM	Elevation	Hill Height	Cancer Risk
Rainbow Child Development Center	3223	386052.2	3753735.3	25.17	25.17	1.37E-07
	3224	386032.2	3753735.5	25.48	25.48	1.30E-07
	3225	386012.2	3753735.6	25.54	25.54	1.25E-07
	3226	385993	3753735.8	25.54	25.54	1.21E-07
	3227	385993	3753735	25.55	25.55	1.20E-07
	3228	385992.8	3753715	25.64	25.64	1.18E-07
	3229	385992.7	3753695	25.56	25.56	1.15E-07
	3230	385992.5	3753675	25.5	25.5	1.13E-07
	3231	385992.4	3753662.5	25.48	25.48	1.12E-07
	3232	385999.9	3753662.6	25.54	25.54	1.13E-07
	3233	386019.9	3753662.9	25.46	25.46	1.18E-07
	3234	386039.9	3753663.2	25.45	25.45	1.22E-07
	3235	386059.9	3753663.5	25.33	25.33	1.28E-07
	3236	386079.9	3753663.8	25	25	1.34E-07
	3237	386081.4	3753663.8	24.95	24.95	1.34E-07
	3238	386074.4	3753680.9	24.89	24.89	1.35E-07
	3239	386066.8	3753699.4	25.13	25.13	1.36E-07
	3240	386059.3	3753717.9	25.16	25.16	1.36E-07
Santa Fe Heights Healthcare Center	3241	387481.3	3753282	23.37	23.37	1.17E-07
	3242	387461.4	3753279.9	23.72	23.72	1.19E-07
	3243	387441.5	3753277.7	23.78	23.78	1.21E-07
	3244	387421.6	3753275.6	23.76	23.76	1.23E-07
	3245	387401.8	3753273.4	23.7	23.7	1.25E-07
	3246	387400.7	3753273.3	23.69	23.69	1.25E-07
	3247	387402.7	3753254.5	23.66	23.66	1.21E-07
	3248	387404.8	3753234.6	23.66	23.66	1.17E-07
	3249	387406.8	3753214.7	23.62	23.62	1.13E-07
	3250	387408.1	3753202.7	23.42	23.42	1.10E-07
	3251	387415.9	3753203.9	23.46	23.46	1.10E-07
	3252	387435.7	3753207	23.53	23.53	1.08E-07
	3253	387455.5	3753210.1	23.71	23.71	1.07E-07
	3254	387475.2	3753213.2	23.51	23.51	1.05E-07
	3255	387484.7	3753214.7	23.32	23.32	1.04E-07
	3256	387484.2	3753225.1	23.37	23.37	1.06E-07
	3257	387483.2	3753245.1	23.43	23.43	1.10E-07
	3258	387482.2	3753265	23.33	23.33	1.13E-07

Table 7b. Annual Ground Level Concentrations (µg/m^3) at Sensitive Receptors Within ZOI

Bowman Plating, Compton, CA
Facility ID # 018989

Chemical Name	CAS #	Ralph J. Bunche Middle School	Martin Luther King Elementary	Willard Elementary School	Mona House Head Start	Anderson Elementary	Jefferson Elementary	Lindbergh Elementary School	Helen Keller Elementary School	Lynwood High School	Rosa Parks Elementary	Sunshine Daycare Preschool Center
		Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
		2033	2085	2746	2751	2790	2861	2886	2945	3002	3036	2769
Silica, Crystln	1175	6.28E-03	2.94E-03	6.48E-03	2.19E-03	1.61E-03	1.50E-03	4.33E-03	1.10E-03	9.94E-04	9.91E-04	4.60E-03
Formaldehyde	50000	2.98E-05	1.05E-05	1.83E-05	5.54E-06	4.19E-06	3.49E-06	7.92E-06	1.60E-06	1.49E-06	1.51E-06	8.06E-06
Methanol	67561	5.51E-04	2.45E-04	4.46E-04	1.50E-04	1.14E-04	9.88E-05	2.57E-04	6.20E-05	5.68E-05	5.68E-05	2.70E-04
Isopropyl Alcoh	67630	4.24E-03	1.98E-03	4.39E-03	1.48E-03	1.08E-03	1.02E-03	2.96E-03	7.48E-04	6.76E-04	6.74E-04	3.14E-03
n-Butyl Alcohol	71363	2.11E-03	9.89E-04	2.19E-03	7.38E-04	5.40E-04	5.07E-04	1.48E-03	3.73E-04	3.37E-04	3.36E-04	1.57E-03
sec-Butyl Alcoh	78922	8.81E-02	4.12E-02	9.12E-02	3.08E-02	2.25E-02	2.11E-02	6.14E-02	1.55E-02	1.40E-02	1.40E-02	6.52E-02
MEK	78933	3.80E-02	1.78E-02	3.94E-02	1.33E-02	9.72E-03	9.12E-03	2.65E-02	6.70E-03	6.05E-03	6.03E-03	2.81E-02
1,2,4TriMeBenze	95636	1.90E-03	8.92E-04	1.96E-03	6.63E-04	4.88E-04	4.55E-04	1.31E-03	3.33E-04	3.01E-04	3.00E-04	1.39E-03
Ethyl Benzene	100414	5.53E-03	2.59E-03	5.71E-03	1.92E-03	1.41E-03	1.32E-03	3.83E-03	9.70E-04	8.76E-04	8.74E-04	4.07E-03
PGME	107982	8.10E-03	3.79E-03	8.37E-03	2.82E-03	2.07E-03	1.94E-03	5.62E-03	1.42E-03	1.29E-03	1.28E-03	5.96E-03
MIBK	108101	3.42E-02	1.60E-02	3.54E-02	1.19E-02	8.74E-03	8.20E-03	2.38E-02	6.03E-03	5.44E-03	5.43E-03	2.53E-02
PGMEA	108656	1.19E-03	5.56E-04	1.23E-03	4.14E-04	3.04E-04	2.84E-04	8.21E-04	2.08E-04	1.88E-04	1.88E-04	8.72E-04
Toluene	108883	2.01E-02	9.38E-03	2.07E-02	6.99E-03	5.12E-03	4.80E-03	1.39E-02	3.52E-03	3.18E-03	3.17E-03	1.48E-02
Hexane	110543	1.70E-03	7.94E-04	1.76E-03	5.92E-04	4.33E-04	4.07E-04	1.18E-03	2.99E-04	2.70E-04	2.69E-04	1.26E-03
EGBE	111762	1.64E-03	7.66E-04	1.68E-03	5.69E-04	4.19E-04	3.91E-04	1.12E-03	2.86E-04	2.58E-04	2.57E-04	1.19E-03
DEGBE	112345	1.87E-05	8.73E-06	1.95E-05	6.55E-06	4.77E-06	4.51E-06	1.34E-05	3.36E-06	3.04E-06	3.03E-06	1.42E-05
Xylenes	1330207	1.70E-02	7.96E-03	1.76E-02	5.93E-03	4.35E-03	4.07E-03	1.18E-02	2.99E-03	2.70E-03	2.69E-03	1.26E-02
EGPE	2807309	6.91E-04	3.24E-04	7.15E-04	2.41E-04	1.77E-04	1.66E-04	4.81E-04	1.22E-04	1.10E-04	1.10E-04	5.10E-04
Cr(VI)	18540299	7.41E-07	3.35E-07	6.60E-07	2.37E-07	1.77E-07	1.64E-07	3.31E-07	9.02E-08	7.70E-08	7.63E-08	3.63E-07
PAHs-w/o	1151	2.39E-07	8.36E-08	1.45E-07	4.40E-08	3.33E-08	2.77E-08	6.23E-08	1.25E-08	1.16E-08	1.18E-08	6.33E-08
Benzene	71432	1.39E-05	4.85E-06	8.43E-06	2.55E-06	1.93E-06	1.60E-06	3.61E-06	7.24E-07	6.75E-07	6.82E-07	3.67E-06
Acetaldehyde	75070	7.41E-06	2.59E-06	4.50E-06	1.36E-06	1.03E-06	8.57E-07	1.93E-06	3.87E-07	3.61E-07	3.65E-07	1.96E-06
Naphthalene	91203	7.17E-07	2.51E-07	4.36E-07	1.32E-07	9.98E-08	8.30E-08	1.87E-07	3.74E-08	3.49E-08	3.53E-08	1.90E-07
Acrolein	107028	6.45E-06	2.26E-06	3.92E-06	1.19E-06	8.98E-07	7.47E-07	1.68E-06	3.37E-07	3.14E-07	3.18E-07	1.71E-06
NH3	7664417	4.30E-02	1.50E-02	2.62E-02	7.91E-03	5.99E-03	4.98E-03	1.12E-02	2.25E-03	2.10E-03	2.12E-03	1.14E-02
Lead	7439921	5.73E-10	2.13E-10	2.49E-10	5.87E-11	5.40E-11	3.27E-11	2.23E-10	3.47E-11	3.73E-11	3.79E-11	2.25E-10
Nickel	7440020	2.13E-05	1.16E-05	2.02E-05	1.03E-05	8.22E-06	7.73E-06	1.39E-05	4.26E-06	3.58E-06	3.54E-06	1.50E-05
Copper	7440508	1.09E-08	4.05E-09	4.72E-09	1.11E-09	1.03E-09	6.21E-10	4.24E-09	6.59E-10	7.08E-10	7.20E-10	4.27E-09
Cadmium	7440439	9.22E-08	4.26E-08	5.85E-08	2.78E-08	2.21E-08	2.26E-08	1.08E-07	2.99E-08	2.75E-08	2.74E-08	1.06E-07
Sodium Hydroxid	1310732	5.60E-06	2.93E-06	4.57E-06	2.39E-06	1.92E-06	1.87E-06	5.42E-06	1.58E-06	1.40E-06	1.39E-06	5.52E-06
HCl	7647010	8.50E-05	3.93E-05	5.39E-05	2.57E-05	2.04E-05	2.08E-05	9.95E-05	2.76E-05	2.54E-05	2.53E-05	9.80E-05
HF	7664393	2.44E-03	1.44E-03	2.47E-03	1.38E-03	1.12E-03	1.06E-03	1.81E-03	5.73E-04	4.78E-04	4.72E-04	1.95E-03
Sulfuric Acid	7664939	3.87E-04	2.28E-04	3.92E-04	2.18E-04	1.77E-04	1.67E-04	2.87E-04	9.09E-05	7.59E-05	7.48E-05	3.10E-04
Nitric Acid	7697372	1.39E-04	7.96E-05	1.34E-04	7.37E-05	5.96E-05	5.67E-05	1.11E-04	3.44E-05	2.92E-05	2.89E-05	1.18E-04

Ella Fitzgerald Child Care Center	We Care Daycare Center	Tiny Treasures Daycare	Griggs-Smith Family Child Care	Rainbow Child Development Center	Santa Fe Heights Healthcare Center
Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
2774	2919	3205	3211	3237	3246
1.62E-03	3.15E-03	2.57E-03	1.02E-03	1.77E-03	1.87E-03
6.10E-06	5.34E-06	4.65E-06	1.86E-06	4.56E-06	3.40E-06
1.27E-04	1.84E-04	1.53E-04	5.97E-05	1.29E-04	1.10E-04
1.10E-03	2.15E-03	1.75E-03	6.93E-04	1.19E-03	1.27E-03
5.48E-04	1.07E-03	8.73E-04	3.46E-04	5.94E-04	6.34E-04
2.28E-02	4.47E-02	3.63E-02	1.44E-02	2.48E-02	2.64E-02
9.85E-03	1.92E-02	1.57E-02	6.21E-03	1.07E-02	1.14E-02
4.93E-04	9.52E-04	7.76E-04	3.08E-04	5.38E-04	5.64E-04
1.43E-03	2.78E-03	2.27E-03	8.99E-04	1.55E-03	1.65E-03
2.10E-03	4.08E-03	3.32E-03	1.32E-03	2.28E-03	2.41E-03
8.86E-03	1.73E-02	1.41E-02	5.58E-03	9.62E-03	1.02E-02
3.07E-04	5.98E-04	4.86E-04	1.93E-04	3.35E-04	3.54E-04
5.19E-03	1.01E-02	8.23E-03	3.27E-03	5.64E-03	5.98E-03
4.40E-04	8.61E-04	7.00E-04	2.77E-04	4.76E-04	5.08E-04
4.23E-04	8.17E-04	6.66E-04	2.65E-04	4.62E-04	4.84E-04
4.87E-06	9.69E-06	7.88E-06	3.10E-06	5.23E-06	5.68E-06
4.41E-03	8.59E-03	6.99E-03	2.77E-03	4.78E-03	5.08E-03
1.79E-04	3.50E-04	2.84E-04	1.13E-04	1.95E-04	2.07E-04
1.89E-07	2.43E-07	1.93E-07	1.00E-07	1.91E-07	1.77E-07
4.88E-08	4.18E-08	3.66E-08	1.46E-08	3.62E-08	2.67E-08
2.83E-06	2.43E-06	2.12E-06	8.47E-07	2.10E-06	1.55E-06
1.51E-06	1.30E-06	1.13E-06	4.53E-07	1.12E-06	8.29E-07
1.46E-07	1.26E-07	1.10E-07	4.38E-08	1.09E-07	8.02E-08
1.32E-06	1.13E-06	9.87E-07	3.94E-07	9.78E-07	7.22E-07
8.78E-03	7.53E-03	6.58E-03	2.63E-03	6.52E-03	4.81E-03
8.46E-11	1.47E-10	1.20E-10	1.67E-11	7.39E-11	3.89E-11
6.89E-06	1.05E-05	8.42E-06	4.87E-06	8.40E-06	7.97E-06
1.61E-09	2.80E-09	2.29E-09	3.16E-10	1.40E-09	7.39E-10
2.89E-08	7.91E-08	6.79E-08	2.21E-08	2.47E-08	3.67E-08
1.87E-06	4.03E-06	3.37E-06	1.43E-06	2.02E-06	2.34E-06
2.66E-05	7.29E-05	6.26E-05	2.04E-05	2.28E-05	3.38E-05
8.69E-04	1.38E-03	1.11E-03	6.65E-04	1.12E-03	1.07E-03
1.38E-04	2.18E-04	1.76E-04	1.05E-04	1.78E-04	1.70E-04
4.88E-05	8.41E-05	6.85E-05	3.74E-05	6.06E-05	6.05E-05

Table 7c. 8-Hour Ground Level Concentrations (µg/m^3) at Sensitive Receptors Within ZOI

Bowman Plating, Compton, CA
Facility ID # 018989

Chemical Name	CAS #	Ralph J. Bunche Middle School	Martin Luther King Elementary	Willard Elementary School	Mona House Head Start	Anderson Elementary	Jefferson Elementary	Lindbergh Elementary School	Helen Keller Elementary School	Lynwood High School	Rosa Parks Elementary	Sunshine Daycare Preschool Center
		Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
		2033	2085	2746	2751	2790	2861	2886	2945	3002	3036	2769
Silica, Crystln	1175	6.28E-03	2.94E-03	6.48E-03	2.19E-03	1.61E-03	1.50E-03	4.33E-03	1.10E-03	9.94E-04	9.91E-04	4.60E-03
Formaldehyde	50000	2.98E-05	1.05E-05	1.83E-05	5.54E-06	4.19E-06	3.49E-06	7.92E-06	1.60E-06	1.49E-06	1.51E-06	8.06E-06
Methanol	67561	5.51E-04	2.45E-04	4.46E-04	1.50E-04	1.14E-04	9.88E-05	2.57E-04	6.20E-05	5.68E-05	5.68E-05	2.70E-04
Isopropyl Alcoh	67630	4.24E-03	1.98E-03	4.39E-03	1.48E-03	1.08E-03	1.02E-03	2.96E-03	7.48E-04	6.76E-04	6.74E-04	3.14E-03
n-Butyl Alcohol	71363	2.11E-03	9.89E-04	2.19E-03	7.38E-04	5.40E-04	5.07E-04	1.48E-03	3.73E-04	3.37E-04	3.36E-04	1.57E-03
sec-Butyl Alcoh	78922	8.81E-02	4.12E-02	9.12E-02	3.08E-02	2.25E-02	2.11E-02	6.14E-02	1.55E-02	1.40E-02	1.40E-02	6.52E-02
MEK	78933	3.80E-02	1.78E-02	3.94E-02	1.33E-02	9.72E-03	9.12E-03	2.65E-02	6.70E-03	6.05E-03	6.03E-03	2.81E-02
1,2,4TriMeBenze	95636	1.90E-03	8.92E-04	1.96E-03	6.63E-04	4.88E-04	4.55E-04	1.31E-03	3.33E-04	3.01E-04	3.00E-04	1.39E-03
Ethyl Benzene	100414	5.53E-03	2.59E-03	5.71E-03	1.92E-03	1.41E-03	1.32E-03	3.83E-03	9.70E-04	8.76E-04	8.74E-04	4.07E-03
PGME	107982	8.10E-03	3.79E-03	8.37E-03	2.82E-03	2.07E-03	1.94E-03	5.62E-03	1.42E-03	1.29E-03	1.28E-03	5.96E-03
MIBK	108101	3.42E-02	1.60E-02	3.54E-02	1.19E-02	8.74E-03	8.20E-03	2.38E-02	6.03E-03	5.44E-03	5.43E-03	2.53E-02
PGMEA	108656	1.19E-03	5.56E-04	1.23E-03	4.14E-04	3.04E-04	2.84E-04	8.21E-04	2.08E-04	1.88E-04	1.88E-04	8.72E-04
Toluene	108883	2.01E-02	9.38E-03	2.07E-02	6.99E-03	5.12E-03	4.80E-03	1.39E-02	3.52E-03	3.18E-03	3.17E-03	1.48E-02
Hexane	110543	1.70E-03	7.94E-04	1.76E-03	5.92E-04	4.33E-04	4.07E-04	1.18E-03	2.99E-04	2.70E-04	2.69E-04	1.26E-03
EGBE	111762	1.64E-03	7.66E-04	1.68E-03	5.69E-04	4.19E-04	3.91E-04	1.12E-03	2.86E-04	2.58E-04	2.57E-04	1.19E-03
DEGBE	112345	1.87E-05	8.73E-06	1.95E-05	6.55E-06	4.77E-06	4.51E-06	1.34E-05	3.36E-06	3.04E-06	3.03E-06	1.42E-05
Xylenes	1330207	1.70E-02	7.96E-03	1.76E-02	5.93E-03	4.35E-03	4.07E-03	1.18E-02	2.99E-03	2.70E-03	2.69E-03	1.26E-02
EGPE	2807309	6.91E-04	3.24E-04	7.15E-04	2.41E-04	1.77E-04	1.66E-04	4.81E-04	1.22E-04	1.10E-04	1.10E-04	5.10E-04
Cr(VI)	18540299	7.41E-07	3.35E-07	6.60E-07	2.37E-07	1.77E-07	1.64E-07	3.31E-07	9.02E-08	7.70E-08	7.63E-08	3.63E-07
PAHs-w/o	1151	2.39E-07	8.36E-08	1.45E-07	4.40E-08	3.33E-08	2.77E-08	6.23E-08	1.25E-08	1.16E-08	1.18E-08	6.33E-08
Benzene	71432	1.39E-05	4.85E-06	8.43E-06	2.55E-06	1.93E-06	1.60E-06	3.61E-06	7.24E-07	6.75E-07	6.82E-07	3.67E-06
Acetaldehyde	75070	7.41E-06	2.59E-06	4.50E-06	1.36E-06	1.03E-06	8.57E-07	1.93E-06	3.87E-07	3.61E-07	3.65E-07	1.96E-06
Naphthalene	91203	7.17E-07	2.51E-07	4.36E-07	1.32E-07	9.98E-08	8.30E-08	1.87E-07	3.74E-08	3.49E-08	3.53E-08	1.90E-07
Acrolein	107028	6.45E-06	2.26E-06	3.92E-06	1.19E-06	8.98E-07	7.47E-07	1.68E-06	3.37E-07	3.14E-07	3.18E-07	1.71E-06
NH3	7664417	4.30E-02	1.50E-02	2.62E-02	7.91E-03	5.99E-03	4.98E-03	1.12E-02	2.25E-03	2.10E-03	2.12E-03	1.14E-02
Lead	7439921	5.73E-10	2.13E-10	2.49E-10	5.87E-11	5.40E-11	3.27E-11	2.23E-10	3.47E-11	3.73E-11	3.79E-11	2.25E-10
Nickel	7440020	2.13E-05	1.16E-05	2.02E-05	1.03E-05	8.22E-06	7.73E-06	1.39E-05	4.26E-06	3.58E-06	3.54E-06	1.50E-05
Copper	7440508	1.09E-08	4.05E-09	4.72E-09	1.11E-09	1.03E-09	6.21E-10	4.24E-09	6.59E-10	7.08E-10	7.20E-10	4.27E-09
Cadmium	7440439	9.22E-08	4.26E-08	5.85E-08	2.78E-08	2.21E-08	2.26E-08	1.08E-07	2.99E-08	2.75E-08	2.74E-08	1.06E-07
Sodium Hydroxid	1310732	5.60E-06	2.93E-06	4.57E-06	2.39E-06	1.92E-06	1.87E-06	5.42E-06	1.58E-06	1.40E-06	1.39E-06	5.52E-06
HCl	7647010	8.50E-05	3.93E-05	5.39E-05	2.57E-05	2.04E-05	2.08E-05	9.95E-05	2.76E-05	2.54E-05	2.53E-05	9.80E-05
HF	7664393	2.44E-03	1.44E-03	2.47E-03	1.38E-03	1.12E-03	1.06E-03	1.81E-03	5.73E-04	4.78E-04	4.72E-04	1.95E-03
Sulfuric Acid	7664939	3.87E-04	2.28E-04	3.92E-04	2.18E-04	1.77E-04	1.67E-04	2.87E-04	9.09E-05	7.59E-05	7.48E-05	3.10E-04
Nitric Acid	7697372	1.39E-04	7.96E-05	1.34E-04	7.37E-05	5.96E-05	5.67E-05	1.11E-04	3.44E-05	2.92E-05	2.89E-05	1.18E-04

Ella Fitzgerald Child Care Center	We Care Daycare Center	Tiny Treasures Daycare	Griggs-Smith Family Child Care	Rainbow Child Development Center	Santa Fe Heights Healthcare Center
Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
2774	2919	3205	3211	3237	3246
1.62E-03	3.15E-03	2.57E-03	1.02E-03	1.77E-03	1.87E-03
6.10E-06	5.34E-06	4.65E-06	1.86E-06	4.56E-06	3.40E-06
1.27E-04	1.84E-04	1.53E-04	5.97E-05	1.29E-04	1.10E-04
1.10E-03	2.15E-03	1.75E-03	6.93E-04	1.19E-03	1.27E-03
5.48E-04	1.07E-03	8.73E-04	3.46E-04	5.94E-04	6.34E-04
2.28E-02	4.47E-02	3.63E-02	1.44E-02	2.48E-02	2.64E-02
9.85E-03	1.92E-02	1.57E-02	6.21E-03	1.07E-02	1.14E-02
4.93E-04	9.52E-04	7.76E-04	3.08E-04	5.38E-04	5.64E-04
1.43E-03	2.78E-03	2.27E-03	8.99E-04	1.55E-03	1.65E-03
2.10E-03	4.08E-03	3.32E-03	1.32E-03	2.28E-03	2.41E-03
8.86E-03	1.73E-02	1.41E-02	5.58E-03	9.62E-03	1.02E-02
3.07E-04	5.98E-04	4.86E-04	1.93E-04	3.35E-04	3.54E-04
5.19E-03	1.01E-02	8.23E-03	3.27E-03	5.64E-03	5.98E-03
4.40E-04	8.61E-04	7.00E-04	2.77E-04	4.76E-04	5.08E-04
4.23E-04	8.17E-04	6.66E-04	2.65E-04	4.62E-04	4.84E-04
4.87E-06	9.69E-06	7.88E-06	3.10E-06	5.23E-06	5.68E-06
4.41E-03	8.59E-03	6.99E-03	2.77E-03	4.78E-03	5.08E-03
1.79E-04	3.50E-04	2.84E-04	1.13E-04	1.95E-04	2.07E-04
1.89E-07	2.43E-07	1.93E-07	1.00E-07	1.91E-07	1.77E-07
4.88E-08	4.18E-08	3.66E-08	1.46E-08	3.62E-08	2.67E-08
2.83E-06	2.43E-06	2.12E-06	8.47E-07	2.10E-06	1.55E-06
1.51E-06	1.30E-06	1.13E-06	4.53E-07	1.12E-06	8.29E-07
1.46E-07	1.26E-07	1.10E-07	4.38E-08	1.09E-07	8.02E-08
1.32E-06	1.13E-06	9.87E-07	3.94E-07	9.78E-07	7.22E-07
8.78E-03	7.53E-03	6.58E-03	2.63E-03	6.52E-03	4.81E-03
8.46E-11	1.47E-10	1.20E-10	1.67E-11	7.39E-11	3.89E-11
6.89E-06	1.05E-05	8.42E-06	4.87E-06	8.40E-06	7.97E-06
1.61E-09	2.80E-09	2.29E-09	3.16E-10	1.40E-09	7.39E-10
2.89E-08	7.91E-08	6.79E-08	2.21E-08	2.47E-08	3.67E-08
1.87E-06	4.03E-06	3.37E-06	1.43E-06	2.02E-06	2.34E-06
2.66E-05	7.29E-05	6.26E-05	2.04E-05	2.28E-05	3.38E-05
8.69E-04	1.38E-03	1.11E-03	6.65E-04	1.12E-03	1.07E-03
1.38E-04	2.18E-04	1.76E-04	1.05E-04	1.78E-04	1.70E-04
4.88E-05	8.41E-05	6.85E-05	3.74E-05	6.06E-05	6.05E-05

Table 7d. Hourly Ground Level Concentrations (µg/m^3) at Sensitive Receptors Within ZOI

Bowman Plating, Compton, CA
Facility ID # 018989

Chemical Name	CAS #	Ralph J. Bunche Middle School	Martin Luther King Elementary	Willard Elementary School	Mona House Head Start	Anderson Elementary	Jefferson Elementary	Lindbergh Elementary School	Helen Keller Elementary School	Lynwood High School	Rosa Parks Elementary	Sunshine Daycare Preschool Center
		Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
		2033	2085	2746	2751	2790	2861	2886	2945	3002	3036	2769
Silica, Crystln	1175	2.09E-01	1.13E-01	1.63E-01	9.38E-02	7.83E-02	6.98E-02	8.72E-02	2.95E-02	3.11E-02	3.23E-02	9.21E-02
Formaldehyde	50000	9.90E-04	2.66E-04	6.47E-04	9.46E-05	7.00E-05	4.67E-05	1.31E-04	2.55E-05	3.83E-05	4.01E-05	1.44E-04
Methanol	67561	2.59E-02	7.58E-03	1.00E-02	5.38E-03	4.39E-03	3.96E-03	5.19E-03	1.38E-03	1.74E-03	1.80E-03	5.55E-03
Isopropyl Alcoh	67630	1.41E-01	7.82E-02	1.09E-01	6.36E-02	5.28E-02	4.73E-02	5.94E-02	2.01E-02	2.11E-02	2.20E-02	6.28E-02
n-Butyl Alcohol	71363	7.05E-02	3.91E-02	5.43E-02	3.17E-02	2.63E-02	2.36E-02	2.96E-02	1.00E-02	1.05E-02	1.10E-02	3.13E-02
sec-Butyl Alcoh	78922	2.94E+00	1.62E+00	2.26E+00	1.32E+00	1.10E+00	9.83E-01	1.23E+00	4.17E-01	4.38E-01	4.56E-01	1.30E+00
MEK	78933	1.27E+00	6.97E-01	9.79E-01	5.69E-01	4.73E-01	4.24E-01	5.32E-01	1.80E-01	1.89E-01	1.97E-01	5.62E-01
1,2,4TriMeBenze	95636	6.33E-02	3.37E-02	4.96E-02	2.84E-02	2.38E-02	2.11E-02	2.63E-02	8.92E-03	9.39E-03	9.77E-03	2.78E-02
Ethyl Benzene	100414	1.84E-01	1.00E-01	1.42E-01	8.25E-02	6.87E-02	6.14E-02	7.69E-02	2.60E-02	2.73E-02	2.85E-02	8.13E-02
PGME	107982	2.70E-01	1.47E-01	2.09E-01	1.21E-01	1.01E-01	9.01E-02	1.13E-01	3.82E-02	4.01E-02	4.18E-02	1.19E-01
MIBK	108101	1.14E+00	6.27E-01	8.79E-01	5.12E-01	4.26E-01	3.81E-01	4.78E-01	1.62E-01	1.70E-01	1.77E-01	5.05E-01
PGMEA	108656	3.96E-02	2.14E-02	3.08E-02	1.77E-02	1.48E-02	1.32E-02	1.65E-02	5.59E-03	5.88E-03	6.12E-03	1.74E-02
Toluene	108883	6.68E-01	3.66E-01	5.17E-01	2.99E-01	2.49E-01	2.23E-01	2.80E-01	9.44E-02	9.93E-02	1.03E-01	2.95E-01
Hexane	110543	5.67E-02	3.14E-02	4.37E-02	2.54E-02	2.10E-02	1.89E-02	2.38E-02	8.01E-03	8.43E-03	8.78E-03	2.51E-02
EGBE	111762	5.44E-02	2.90E-02	4.26E-02	2.44E-02	2.04E-02	1.81E-02	2.26E-02	7.66E-03	8.06E-03	8.39E-03	2.39E-02
DEGBE	112345	6.21E-04	3.58E-04	4.82E-04	2.81E-04	2.31E-04	2.10E-04	2.65E-04	8.94E-05	9.38E-05	9.77E-05	2.80E-04
Xylenes	1330207	5.67E-01	3.11E-01	4.38E-01	2.54E-01	2.11E-01	1.89E-01	2.37E-01	8.02E-02	8.43E-02	8.78E-02	2.51E-01
EGPE	2807309	2.30E-02	1.26E-02	1.77E-02	1.03E-02	8.61E-03	7.70E-03	9.65E-03	3.26E-03	3.43E-03	3.57E-03	1.02E-02
Cr(VI)	18540299	1.30E-05	9.31E-06	1.15E-05	5.02E-06	4.14E-06	3.76E-06	5.44E-06	1.56E-06	1.75E-06	1.84E-06	5.40E-06
PAHs-w/o	1151	7.95E-06	2.10E-06	5.18E-06	7.23E-07	5.31E-07	3.46E-07	1.02E-06	1.93E-07	2.96E-07	3.10E-07	1.13E-06
Benzene	71432	4.60E-04	1.22E-04	3.00E-04	4.19E-05	3.08E-05	2.00E-05	5.94E-05	1.12E-05	1.72E-05	1.79E-05	6.53E-05
Acetaldehyde	75070	2.46E-04	6.51E-05	1.60E-04	2.24E-05	1.64E-05	1.07E-05	3.17E-05	5.97E-06	9.17E-06	9.59E-06	3.49E-05
Naphthalene	91203	2.38E-05	6.31E-06	1.55E-05	2.17E-06	1.59E-06	1.04E-06	3.07E-06	5.78E-07	8.88E-07	9.28E-07	3.38E-06
Acrolein	107028	2.14E-04	5.67E-05	1.40E-04	1.95E-05	1.43E-05	9.32E-06	2.76E-05	5.20E-06	7.98E-06	8.35E-06	3.04E-05
NH3	7664417	1.43E+00	3.78E-01	9.32E-01	1.30E-01	9.55E-02	6.22E-02	1.84E-01	3.47E-02	5.33E-02	5.57E-02	2.03E-01
Lead	7439921	1.25E-06	2.11E-07	3.67E-07	1.28E-07	1.22E-07	7.41E-08	1.97E-07	3.92E-08	6.10E-08	6.23E-08	2.20E-07
Nickel	7440020	1.84E-03	6.25E-04	8.40E-04	3.56E-04	3.22E-04	2.49E-04	4.51E-04	1.22E-04	1.44E-04	1.50E-04	4.72E-04
Copper	7440508	2.38E-05	4.01E-06	6.97E-06	2.43E-06	2.31E-06	1.41E-06	3.75E-06	7.45E-07	1.16E-06	1.18E-06	4.17E-06
Cadmium	7440439	4.72E-06	3.24E-06	4.97E-06	2.56E-06	2.24E-06	2.07E-06	2.58E-06	1.24E-06	1.06E-06	1.13E-06	2.37E-06
Sodium Hydroxid	1310732	8.89E-05	7.22E-05	9.31E-05	4.84E-05	4.24E-05	3.86E-05	4.99E-05	2.11E-05	1.87E-05	1.99E-05	4.74E-05
HCl	7647010	3.00E-03	2.06E-03	3.16E-03	1.63E-03	1.43E-03	1.31E-03	1.64E-03	7.91E-04	6.73E-04	7.21E-04	1.51E-03
HF	7664393	3.47E-02	3.41E-02	3.61E-02	1.90E-02	1.66E-02	1.49E-02	2.01E-02	6.99E-03	6.64E-03	7.03E-03	2.00E-02
Sulfuric Acid	7664939	1.14E+00	1.12E+00	1.19E+00	6.23E-01	5.46E-01	4.91E-01	6.61E-01	2.29E-01	2.18E-01	2.31E-01	6.56E-01
Nitric Acid	7697372	2.26E-03	2.09E-03	2.36E-03	1.23E-03	1.08E-03	9.77E-04	1.30E-03	4.83E-04	4.47E-04	4.75E-04	1.27E-03

Ella Fitzgerald Child Care Center	We Care Daycare Center	Tiny Treasures Daycare	Griggs-Smith Family Child Care	Rainbow Child Development Center	Santa Fe Heights Healthcare Center
Receptor	Receptor	Receptor	Receptor	Receptor	Receptor
2774	2919	3205	3211	3237	3246
4.95E-02	7.43E-02	5.35E-02	4.28E-02	1.07E-01	6.03E-02
1.09E-04	1.10E-04	7.40E-05	2.82E-05	1.64E-04	4.85E-05
2.82E-03	4.39E-03	3.12E-03	2.25E-03	6.98E-03	3.31E-03
3.31E-02	5.06E-02	3.64E-02	2.91E-02	7.21E-02	4.11E-02
1.65E-02	2.52E-02	1.82E-02	1.45E-02	3.59E-02	2.05E-02
6.89E-01	1.05E+00	7.56E-01	6.04E-01	1.50E+00	8.53E-01
2.98E-01	4.53E-01	3.26E-01	2.60E-01	6.46E-01	3.68E-01
1.51E-02	2.24E-02	1.62E-02	1.29E-02	3.24E-02	1.82E-02
4.33E-02	6.55E-02	4.72E-02	3.77E-02	9.38E-02	5.32E-02
6.35E-02	9.61E-02	6.92E-02	5.53E-02	1.38E-01	7.81E-02
2.68E-01	4.07E-01	2.93E-01	2.34E-01	5.81E-01	3.31E-01
9.35E-03	1.41E-02	1.01E-02	8.09E-03	2.02E-02	1.14E-02
1.57E-01	2.38E-01	1.71E-01	1.37E-01	3.40E-01	1.93E-01
1.32E-02	2.02E-02	1.46E-02	1.16E-02	2.88E-02	1.64E-02
1.29E-02	1.93E-02	1.39E-02	1.11E-02	2.78E-02	1.56E-02
1.44E-04	2.25E-04	1.62E-04	1.30E-04	3.16E-04	1.84E-04
1.33E-01	2.02E-01	1.45E-01	1.16E-01	2.89E-01	1.64E-01
5.42E-03	8.22E-03	5.92E-03	4.73E-03	1.18E-02	6.68E-03
2.95E-06	4.51E-06	3.28E-06	2.36E-06	5.78E-06	3.46E-06
8.59E-07	8.56E-07	5.75E-07	2.08E-07	1.28E-06	3.64E-07
4.98E-05	4.96E-05	3.33E-05	1.21E-05	7.41E-05	2.11E-05
2.66E-05	2.65E-05	1.78E-05	6.44E-06	3.96E-05	1.13E-05
2.58E-06	2.57E-06	1.72E-06	6.24E-07	3.83E-06	1.09E-06
2.31E-05	2.31E-05	1.55E-05	5.61E-06	3.44E-05	9.82E-06
1.55E-01	1.54E-01	1.03E-01	3.74E-02	2.30E-01	6.55E-02
1.43E-07	1.63E-07	1.22E-07	4.54E-08	2.87E-07	8.05E-08
2.92E-04	3.75E-04	2.84E-04	1.61E-04	5.40E-04	2.47E-04
2.72E-06	3.09E-06	2.32E-06	8.62E-07	5.46E-06	1.53E-06
1.83E-06	2.20E-06	1.91E-06	1.60E-06	2.07E-06	2.18E-06
3.22E-05	4.23E-05	3.47E-05	2.80E-05	4.32E-05	3.87E-05
1.16E-03	1.40E-03	1.22E-03	1.02E-03	1.32E-03	1.39E-03
1.14E-02	1.70E-02	1.29E-02	9.85E-03	1.91E-02	1.39E-02
3.73E-01	5.59E-01	4.23E-01	3.23E-01	6.26E-01	4.55E-01
7.67E-04	1.10E-03	8.55E-04	6.66E-04	1.19E-03	9.32E-04

Table 8. PMI Cancer Risk By Substance and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 3835 | UTME 386789.6 | UTMN 3753792.1

Chemical Name	CAS #	Concentration ($\mu g/m^3$)	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig
Silica, Crystln	1175	3.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	1.62E-03	2.31E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.91E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	2.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.59E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.97E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	9.66E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.86E-01	1.68E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	4.18E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.78E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	6.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	1.04E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	8.90E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	8.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	9.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	8.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	3.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	8.41E-06	2.90E-06	5.13E-08	1.97E-09	0.00E+00	0.00E+00	0.00E+00	2.18E-06	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	1.30E-05	2.43E-08	9.05E-08	2.25E-08	2.15E-07	0.00E+00	0.00E+00	6.12E-07	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	7.57E-04	5.12E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	4.04E-04	2.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	3.91E-05	3.18E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	3.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	2.35E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	3.96E-08	7.95E-13	9.70E-12	2.36E-13	1.76E-13	0.00E+00	0.00E+00	2.68E-12	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.15E-04	7.11E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	7.53E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	3.77E-08	3.83E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	3.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.67E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	5.27E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**4.76E-06**	**1.42E-07**	**2.45E-08**	**2.15E-07**	**0.00E+00**	**0.00E+00**	**2.79E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**

Chicken	EGG	Oral Subtotal	Total	Contribution
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	2.31E-08	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	1.68E-06	0.11%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	2.18E-06	5.14E-06	98.63%
0.00E+00	0.00E+00	8.27E-07	9.65E-07	0.12%
0.00E+00	0.00E+00	0.00E+00	5.12E-08	0.01%
0.00E+00	0.00E+00	0.00E+00	2.74E-09	0.00%
0.00E+00	0.00E+00	0.00E+00	3.18E-09	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	2.86E-12	1.36E-11	0.00%
0.00E+00	0.00E+00	0.00E+00	7.11E-08	0.73%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	3.83E-10	0.40%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	**0.00E+00**	**3.01E-06**	**7.94E-06**	**100.00%**

Table 9. PMI Cancer Risk By Source and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 3835 | UTME 386789.6 | UTMN 3753792.1

Source ID	Source Name	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig	Chicken
1	SPRAY_BOOTH_1	1.09E-06	1.32E-08	5.04E-10	0.00E+00	0.00E+00	0.00E+00	5.60E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	1.45E-06	1.74E-08	6.68E-10	0.00E+00	0.00E+00	0.00E+00	7.41E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	1.80E-06	1.66E-08	6.35E-10	0.00E+00	0.00E+00	0.00E+00	7.05E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	9.26E-09	7.65E-09	1.91E-09	1.82E-08	0.00E+00	0.00E+00	5.18E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	BOILERS	8.15E-08	6.74E-08	1.68E-08	1.60E-07	0.00E+00	0.00E+00	4.56E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	BLAST_CB	2.78E-08	9.70E-12	2.36E-13	1.76E-13	0.00E+00	0.00E+00	2.68E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	3.06E-09	2.53E-09	6.30E-10	6.02E-09	0.00E+00	0.00E+00	1.71E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	OVEN_2	1.04E-08	8.61E-09	2.15E-09	2.05E-08	0.00E+00	0.00E+00	5.83E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	OVEN_3	5.21E-09	4.30E-09	1.07E-09	1.02E-08	0.00E+00	0.00E+00	2.91E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ANODE_LN	1.48E-07	2.58E-09	9.89E-11	0.00E+00	0.00E+00	0.00E+00	1.10E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	5.11E-10	4.78E-15	1.83E-16	0.00E+00	0.00E+00	0.00E+00	2.04E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	1.29E-07	1.56E-09	6.00E-11	0.00E+00	0.00E+00	0.00E+00	6.66E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		**4.76E-06**	**1.42E-07**	**2.45E-08**	**2.15E-07**	**0.00E+00**	**0.00E+00**	**2.79E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

EGG	Oral Subtotal	Total	Contribution
0.00E+00	5.60E-07	1.67E-06	21.02%
0.00E+00	7.41E-07	2.21E-06	27.81%
0.00E+00	7.05E-07	2.52E-06	31.81%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	7.00E-08	8.88E-08	1.12%
0.00E+00	6.16E-07	7.82E-07	9.85%
0.00E+00	2.86E-12	2.78E-08	0.35%
0.00E+00	2.31E-08	2.93E-08	0.37%
0.00E+00	7.87E-08	9.99E-08	1.26%
0.00E+00	3.93E-08	4.99E-08	0.63%
0.00E+00	1.10E-07	2.61E-07	3.29%
0.00E+00	2.04E-13	5.11E-10	0.01%
0.00E+00	6.66E-08	1.98E-07	2.49%
0.00E+00	**3.01E-06**	**7.94E-06**	**100%**

Table 10. MEIR Cancer Risk By Substance and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2231 | UTME 386766 | UTMN 3753797

Chemical Name	CAS #	Concentration	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig
Silica, Crystln	1175	2.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	8.93E-04	1.27E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.36E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	7.90E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.43E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	7.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.08E-01	1.22E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	3.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	4.49E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	7.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	6.34E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	6.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	6.80E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	6.39E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	2.60E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	6.07E-06	2.10E-06	3.70E-08	1.42E-09	0.00E+00	0.00E+00	0.00E+00	1.58E-06	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	7.15E-06	1.33E-08	4.96E-08	1.24E-08	1.18E-07	0.00E+00	0.00E+00	3.35E-07	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	4.15E-04	2.80E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	2.22E-04	1.50E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	2.14E-05	1.74E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	1.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	1.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	3.88E-08	7.78E-13	9.49E-12	2.31E-13	1.72E-13	0.00E+00	0.00E+00	2.62E-12	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.25E-04	7.69E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	7.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	1.34E-08	1.36E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	1.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	6.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**3.45E-06**	**8.66E-08**	**1.38E-08**	**1.18E-07**	**0.00E+00**	**0.00E+00**	**1.91E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**

Chicken	EGG	Oral Subtotal	Total	Contribution
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	1.27E-08	0.23%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	1.22E-06	21.92%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	1.58E-06	3.71E-06	66.44%
0.00E+00	0.00E+00	4.53E-07	5.29E-07	9.47%
0.00E+00	0.00E+00	0.00E+00	2.80E-08	0.50%
0.00E+00	0.00E+00	0.00E+00	1.50E-09	0.03%
0.00E+00	0.00E+00	0.00E+00	1.74E-09	0.03%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	2.80E-12	1.33E-11	0.00%
0.00E+00	0.00E+00	0.00E+00	7.69E-08	1.38%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	1.36E-10	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	**0.00E+00**	**2.03E-06**	**5.58E-06**	**100.00%**

Table 11. MEIR Cancer Risk By Source and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2231 | UTME 386766 | UTMN 3753797

Source ID	Source Name	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig	Chicken
1	SPRAY_BOOTH_1	7.46E-07	8.97E-09	3.44E-10	0.00E+00	0.00E+00	0.00E+00	3.82E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	1.04E-06	1.25E-08	4.78E-10	0.00E+00	0.00E+00	0.00E+00	5.31E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	1.36E-06	1.25E-08	4.78E-10	0.00E+00	0.00E+00	0.00E+00	5.31E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	8.12E-09	6.71E-09	1.67E-09	1.60E-08	0.00E+00	0.00E+00	4.54E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	BOILERS	2.83E-08	2.34E-08	5.83E-09	5.57E-08	0.00E+00	0.00E+00	1.58E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	BLAST_CB	2.72E-08	9.49E-12	2.31E-13	1.72E-13	0.00E+00	0.00E+00	2.62E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	2.81E-09	2.32E-09	5.79E-10	5.53E-09	0.00E+00	0.00E+00	1.57E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	OVEN_2	1.53E-08	1.26E-08	3.15E-09	3.00E-08	0.00E+00	0.00E+00	8.54E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	OVEN_3	5.44E-09	4.50E-09	1.12E-09	1.07E-08	0.00E+00	0.00E+00	3.04E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ANODE_LN	7.09E-08	1.23E-09	4.72E-11	0.00E+00	0.00E+00	0.00E+00	5.24E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	1.82E-10	1.70E-15	6.53E-17	0.00E+00	0.00E+00	0.00E+00	7.25E-14	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	1.54E-07	1.86E-09	7.12E-11	0.00E+00	0.00E+00	0.00E+00	7.91E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		**3.45E-06**	**8.66E-08**	**1.38E-08**	**1.18E-07**	**0.00E+00**	**0.00E+00**	**1.91E-06**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

EGG	Oral Subtotal	Total	Contribution
0.00E+00	3.82E-07	1.14E-06	20.38%
0.00E+00	5.31E-07	1.58E-06	28.32%
0.00E+00	5.31E-07	1.90E-06	34.08%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	6.14E-08	7.79E-08	1.40%
0.00E+00	2.14E-07	2.72E-07	4.87%
0.00E+00	2.80E-12	2.72E-08	0.49%
0.00E+00	2.12E-08	2.70E-08	0.48%
0.00E+00	1.15E-07	1.47E-07	2.62%
0.00E+00	4.11E-08	5.22E-08	0.93%
0.00E+00	5.24E-08	1.25E-07	2.23%
0.00E+00	7.25E-14	1.82E-10	0.00%
0.00E+00	7.91E-08	2.35E-07	4.20%
0.00E+00	**2.03E-06**	**5.58E-06**	**100%**

Table 12. MEIW Cancer Risk By Substance and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Chemical Name	CAS #	Concentration	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig
Silica, Crystln	1175	2.94E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	1.27E-03	3.14E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	9.86E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.78E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	8.95E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.58E-01	2.66E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	3.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	5.57E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	9.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	7.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	7.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	8.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	7.95E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	3.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	7.19E-06	4.37E-07	4.53E-09	3.14E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	1.02E-05	3.46E-09	7.02E-09	6.08E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	5.89E-04	6.96E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	3.15E-04	3.72E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	3.05E-05	4.32E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	2.74E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	1.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	4.47E-08	4.44E-13	4.62E-13	4.80E-14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	5.79E-05	1.60E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	8.49E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	3.52E-08	5.79E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	3.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	7.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.14E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	4.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**7.34E-07**	**1.15E-08**	**6.40E-09**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

Chicken	EGG	Oral Subtotal	Total	Contribution
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	3.14E-09	0.42%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	2.66E-07	35.35%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	4.42E-07	58.86%
0.00E+00	0.00E+00	0.00E+00	1.66E-08	2.20%
0.00E+00	0.00E+00	0.00E+00	6.96E-09	0.93%
0.00E+00	0.00E+00	0.00E+00	3.72E-10	0.05%
0.00E+00	0.00E+00	0.00E+00	4.32E-10	0.06%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	9.53E-13	0.00%
0.00E+00	0.00E+00	0.00E+00	1.60E-08	2.13%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	5.79E-11	0.01%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	**0.00E+00**	**0.00E+00**	**7.51E-07**	**100%**

Table 13. MEIW Cancer Risk By Source and Exposure Pathway

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Source ID	Source Name	Inhalation	Soil	Dermal	Mother's Milk	Water	Fish	Homegrown Produce	Beef	Dairy	Pig	Chicken
1	SPRAY_BOOTH_1	1.65E-07	1.13E-09	7.84E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	2.25E-07	1.54E-09	1.07E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	2.93E-07	1.54E-09	1.07E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	1.63E-09	7.62E-10	6.60E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	BOILERS	1.02E-08	4.78E-09	4.14E-09	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	BLAST_CB	1.10E-08	4.62E-13	4.80E-14	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	5.55E-10	2.59E-10	2.25E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	OVEN_2	1.73E-09	8.09E-10	7.01E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	OVEN_3	8.88E-10	4.14E-10	3.59E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ANODE_LN	9.47E-09	1.48E-10	1.03E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	7.74E-11	4.44E-16	3.08E-17	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	1.54E-08	1.07E-11	7.41E-13	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total		**7.34E-07**	**1.14E-08**	**6.39E-09**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.00E+00**

EGG	Oral Subtotal	Total	Contribution
0.00E+00	0.00E+00	1.66E-07	22.09%
0.00E+00	0.00E+00	2.26E-07	30.15%
0.00E+00	0.00E+00	2.95E-07	39.21%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	0.00E+00	0.00%
0.00E+00	0.00E+00	3.06E-09	0.41%
0.00E+00	0.00E+00	1.91E-08	2.55%
0.00E+00	0.00E+00	1.10E-08	1.46%
0.00E+00	0.00E+00	1.04E-09	0.14%
0.00E+00	0.00E+00	3.24E-09	0.43%
0.00E+00	0.00E+00	1.66E-09	0.22%
0.00E+00	0.00E+00	9.63E-09	1.28%
0.00E+00	0.00E+00	7.74E-11	0.01%
0.00E+00	0.00E+00	1.54E-08	2.05%
0.00E+00	**0.00E+00**	**7.51E-07**	**100%**

Table 14. PMI Chronic Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 3835 | UTME 386789.6 | UTMN 3753792.1

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN
Silica, Crystln	1175	3.21E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-01	0.00E+00
Formaldehyde	50000	1.62E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-04	0.00E+00
Methanol	67561	2.91E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-06	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	2.21E-01	0.00E+00	0.00E+00	0.00E+00	3.16E-05	0.00E+00	3.16E-05	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	1.10E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.59E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.97E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	9.66E-02	0.00E+00	2.41E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.86E-01	0.00E+00	0.00E+00	0.00E+00	1.43E-04	1.43E-04	1.43E-04	0.00E+00	0.00E+00
PGME	107982	4.18E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.97E-05	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.78E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	6.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	1.04E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	8.90E-02	0.00E+00	1.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	8.29E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-03	0.00E+00
DEGBE	112345	9.90E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	8.83E-01	0.00E+00	1.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-03	0.00E+00
EGPE	2807309	3.59E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	8.41E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.21E-05	0.00E+00
PAHs-w/o	1151	1.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	7.57E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	4.04E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.89E-06	0.00E+00
Naphthalene	91203	3.91E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-06	0.00E+00
Acrolein	107028	3.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-03	0.00E+00
NH3	7664417	2.35E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-02	0.00E+00
Lead	7439921	3.96E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.65E-04	8.25E-03	0.00E+00
Copper	7440508	7.53E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	3.77E-08	0.00E+00	0.00E+00	0.00E+00	3.95E-06	0.00E+00	0.00E+00	1.89E-06	0.00E+00
Sodium Hydroxid	1310732	1.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	3.48E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-06	0.00E+00
HF	7664393	1.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.50E-04	0.00E+00
Sulfuric Acid	7664939	1.67E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-03	0.00E+00
Nitric Acid	7697372	5.27E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**2.54E-02**	**0.00E+00**	**1.78E-04**	**2.03E-04**	**3.47E-04**	**1.33E-01**	**0.00E+00**

EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-01
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.80E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.28E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.41E-02
0.00E+00	0.00E+00	1.43E-04	0.00E+00	0.00E+00	1.43E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.97E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.48E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.48E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.26E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	1.20E-04	0.00E+00	1.20E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	2.52E-04	0.00E+00	2.52E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.89E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	8.25E-03	0.00E+00	8.25E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.95E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.86E-06
0.00E+00	4.81E-03	0.00E+00	0.00E+00	0.00E+00	4.81E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.67E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.74E-03	**4.81E-03**	**1.43E-04**	**8.62E-03**	**0.00E+00**	**1.33E-01**

Table 15. PMI Chronic Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 3835 | UTME 386789.6 | UTMN 3753792.1

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP	SKIN
1	SPRAY_BOOTH_1	0.00E+00	1.07E-03	0.00E+00	3.99E-05	4.29E-05	4.01E-05	1.27E-02	0.00E+00
2	SPRAY_BOOTH_2	0.00E+00	1.38E-03	0.00E+00	4.96E-05	5.24E-05	5.01E-05	1.81E-02	0.00E+00
3	SPRAY_BOOTH_3	0.00E+00	2.30E-02	0.00E+00	8.45E-05	1.07E-04	8.51E-05	7.86E-02	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-06	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-06	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-06	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-06	0.00E+00	0.00E+00
8	HEATER	0.00E+00	3.18E-07	0.00E+00	3.81E-08	3.81E-08	3.81E-08	1.09E-03	0.00E+00
9	BOILERS	0.00E+00	2.80E-06	0.00E+00	3.35E-07	3.35E-07	3.35E-07	9.63E-03	0.00E+00
10	BLAST_CB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.46E-05	3.23E-03	0.00E+00
12	OVEN_1	0.00E+00	1.05E-07	0.00E+00	1.26E-08	1.26E-08	1.26E-08	3.61E-04	0.00E+00
13	OVEN_2	0.00E+00	3.58E-07	0.00E+00	4.28E-08	4.28E-08	4.28E-08	1.23E-03	0.00E+00
14	OVEN_3	0.00E+00	1.79E-07	0.00E+00	2.14E-08	2.14E-08	2.14E-08	6.15E-04	0.00E+00
16	ANODE_LN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.36E-06	2.70E-04	0.00E+00
19	PLATE_RM	0.00E+00	0.00E+00	0.00E+00	3.95E-06	0.00E+00	2.97E-07	2.06E-05	0.00E+00
20	ANODE_RM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.48E-05	7.15E-03	0.00E+00
Total		**0.00E+00**	**2.54E-02**	**0.00E+00**	**1.78E-04**	**2.03E-04**	**3.47E-04**	**1.33E-01**	**0.00E+00**

EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
9.38E-04	0.00E+00	2.97E-05	3.08E-05	0.00E+00	1.27E-02
1.11E-03	0.00E+00	3.92E-05	4.07E-05	0.00E+00	1.81E-02
1.68E-03	0.00E+00	7.35E-05	3.87E-05	0.00E+00	7.86E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.56E-06
1.01E-06	0.00E+00	3.81E-08	2.13E-05	0.00E+00	1.09E-03
8.86E-06	0.00E+00	3.35E-07	1.88E-04	0.00E+00	9.63E-03
0.00E+00	0.00E+00	0.00E+00	3.23E-03	0.00E+00	3.23E-03
3.33E-07	0.00E+00	1.26E-08	7.05E-06	0.00E+00	3.61E-04
1.13E-06	0.00E+00	4.28E-08	2.40E-05	0.00E+00	1.23E-03
5.66E-07	0.00E+00	2.14E-08	1.20E-05	0.00E+00	6.15E-04
0.00E+00	0.00E+00	0.00E+00	2.74E-04	0.00E+00	2.74E-04
0.00E+00	0.00E+00	0.00E+00	1.48E-05	0.00E+00	2.06E-05
0.00E+00	4.81E-03	0.00E+00	4.74E-03	0.00E+00	7.15E-03
3.74E-03	**4.81E-03**	**1.43E-04**	**8.62E-03**	**0.00E+00**	**1.33E-01**

Table 16. MEIR Chronic Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2231 | UTME 386766 | UTMN 3753797

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
Silica, Crystln	1175	2.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	8.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.36E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.90E-06
Isopropyl Alcoh	67630	1.59E-01	0.00E+00	0.00E+00	0.00E+00	2.27E-05	0.00E+00	2.27E-05
n-Butyl Alcohol	71363	7.90E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	3.30E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.43E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	7.24E-02	0.00E+00	1.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.08E-01	0.00E+00	0.00E+00	0.00E+00	1.04E-04	1.04E-04	1.04E-04
PGME	107982	3.05E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-05	0.00E+00
MIBK	108101	1.28E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	4.49E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	7.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	6.34E-02	0.00E+00	9.06E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	6.22E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	6.80E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	6.39E-01	0.00E+00	9.13E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	2.60E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	6.07E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	7.15E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	4.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	2.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	2.14E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	1.93E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	1.29E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	3.88E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.25E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.78E-04
Copper	7440508	7.37E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	1.34E-08	0.00E+00	0.00E+00	0.00E+00	1.41E-06	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.41E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	1.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.25E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	6.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**1.90E-02**	**0.00E+00**	**1.28E-04**	**1.47E-04**	**3.11E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
7.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.92E-02
9.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.93E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.90E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.27E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.81E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.04E-04	0.00E+00	0.00E+00	1.04E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.35E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	1.79E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.06E-06
7.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.58E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.13E-04	0.00E+00	9.13E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.13E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.04E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.66E-05	0.00E+00	8.66E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-04	0.00E+00	1.38E-04
1.58E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-06
2.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.38E-06
5.51E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.51E-04
6.43E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.43E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.92E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.92E-03	0.00E+00	8.92E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6.72E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.38E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.38E-06
8.91E-04	0.00E+00	0.00E+00	5.71E-03	0.00E+00	0.00E+00	0.00E+00	5.71E-03
1.98E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.98E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.98E-02	**0.00E+00**	**2.71E-03**	**5.71E-03**	**1.04E-04**	**9.14E-03**	**0.00E+00**	**9.98E-02**

Table 17. MEIR Chronic Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2231 | UTME 386766 | UTMN 3753797

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	7.30E-04	0.00E+00	2.72E-05	2.92E-05	2.73E-05
2	SPRAY_BOOTH_2	0.00E+00	9.91E-04	0.00E+00	3.55E-05	3.76E-05	3.59E-05
3	SPRAY_BOOTH_3	0.00E+00	1.73E-02	0.00E+00	6.37E-05	8.05E-05	6.41E-05
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-06
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-06
8	HEATER	0.00E+00	2.79E-07	0.00E+00	3.34E-08	3.34E-08	3.34E-08
9	BOILERS	0.00E+00	9.72E-07	0.00E+00	1.16E-07	1.16E-07	1.16E-07
10	BLAST_CB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.32E-05
12	OVEN_1	0.00E+00	9.64E-08	0.00E+00	1.16E-08	1.16E-08	1.16E-08
13	OVEN_2	0.00E+00	5.24E-07	0.00E+00	6.28E-08	6.28E-08	6.28E-08
14	OVEN_3	0.00E+00	1.87E-07	0.00E+00	2.24E-08	2.24E-08	2.24E-08
16	ANODE_LN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.56E-06
19	PLATE_RM	0.00E+00	0.00E+00	0.00E+00	1.41E-06	0.00E+00	1.06E-07
20	ANODE_RM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-04
Total		**0.00E+00**	**1.90E-02**	**0.00E+00**	**1.28E-04**	**1.47E-04**	**3.11E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
8.67E-03	0.00E+00	6.40E-04	0.00E+00	2.03E-05	2.10E-05	0.00E+00	8.67E-03
1.30E-02	0.00E+00	7.94E-04	0.00E+00	2.81E-05	2.92E-05	0.00E+00	1.30E-02
5.93E-02	0.00E+00	1.26E-03	0.00E+00	5.54E-05	2.92E-05	0.00E+00	5.93E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-06
9.60E-04	0.00E+00	8.83E-07	0.00E+00	3.34E-08	1.87E-05	0.00E+00	9.60E-04
3.35E-03	0.00E+00	3.08E-06	0.00E+00	1.16E-07	6.53E-05	0.00E+00	3.35E-03
3.16E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.16E-03	0.00E+00	3.16E-03
3.32E-04	0.00E+00	3.05E-07	0.00E+00	1.16E-08	6.47E-06	0.00E+00	3.32E-04
1.81E-03	0.00E+00	1.66E-06	0.00E+00	6.28E-08	3.52E-05	0.00E+00	1.81E-03
6.43E-04	0.00E+00	5.92E-07	0.00E+00	2.24E-08	1.25E-05	0.00E+00	6.43E-04
1.29E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.31E-04	0.00E+00	1.31E-04
7.33E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.28E-06	0.00E+00	7.33E-06
8.50E-03	0.00E+00	0.00E+00	5.71E-03	0.00E+00	5.63E-03	0.00E+00	8.50E-03
9.98E-02	**0.00E+00**	**2.71E-03**	**5.71E-03**	**1.04E-04**	**9.14E-03**	**0.00E+00**	**9.98E-02**

Table 18. MEIW Chronic Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
Silica, Crystln	1175	2.94E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	1.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.02E-06
Isopropyl Alcoh	67630	1.98E-01	0.00E+00	0.00E+00	0.00E+00	2.83E-05	0.00E+00	2.83E-05
n-Butyl Alcohol	71363	9.86E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.78E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	8.95E-02	0.00E+00	2.24E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.58E-01	0.00E+00	0.00E+00	0.00E+00	1.29E-04	1.29E-04	1.29E-04
PGME	107982	3.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.41E-05	0.00E+00
MIBK	108101	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	5.57E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	9.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	7.92E-02	0.00E+00	1.13E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	7.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	8.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	7.95E-01	0.00E+00	1.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	3.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	7.45E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	1.02E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	5.89E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	3.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	3.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	2.74E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	1.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	4.47E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.25E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.17E-05
Copper	7440508	8.49E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	3.52E-08	0.00E+00	0.00E+00	0.00E+00	2.12E-06	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.35E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	3.25E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.13E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.79E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	5.66E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**2.35E-02**	**0.00E+00**	**1.60E-04**	**1.83E-04**	**2.26E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
9.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.81E-02
1.41E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.41E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.02E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.24E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-04	0.00E+00	0.00E+00	1.29E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.41E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	2.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.23E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.13E-05
9.37E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.37E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.14E-03	0.00E+00	1.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.73E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.03E-06	0.00E+00	3.73E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E-04	0.00E+00	1.96E-04
2.25E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.25E-06
3.39E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.39E-06
7.84E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.84E-04
9.14E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.14E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.91E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.91E-03	0.00E+00	8.91E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.76E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.12E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.61E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-06
8.08E-04	0.00E+00	0.00E+00	2.41E-03	0.00E+00	0.00E+00	0.00E+00	2.41E-03
1.79E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.79E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.22E-01	**0.00E+00**	**3.37E-03**	**2.41E-03**	**1.29E-04**	**9.10E-03**	**0.00E+00**	**1.22E-01**

Table 19. MEIW Chronic Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	9.23E-04	0.00E+00	3.44E-05	3.69E-05	3.45E-05
2	SPRAY_BOOTH_2	0.00E+00	1.23E-03	0.00E+00	4.41E-05	4.66E-05	4.45E-05
3	SPRAY_BOOTH_3	0.00E+00	2.14E-02	0.00E+00	7.87E-05	9.94E-05	7.92E-05
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-06
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-06
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-06
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-06
8	HEATER	0.00E+00	3.18E-07	0.00E+00	3.80E-08	3.80E-08	3.80E-08
9	BOILERS	0.00E+00	1.99E-06	0.00E+00	2.38E-07	2.38E-07	2.38E-07
10	BLAST_CB	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.52E-05
12	OVEN_1	0.00E+00	1.08E-07	0.00E+00	1.29E-08	1.29E-08	1.29E-08
13	OVEN_2	0.00E+00	3.37E-07	0.00E+00	4.04E-08	4.04E-08	4.04E-08
14	OVEN_3	0.00E+00	1.73E-07	0.00E+00	2.07E-08	2.07E-08	2.07E-08
16	ANODE_LN	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.07E-06
19	PLATE_RM	0.00E+00	0.00E+00	0.00E+00	2.12E-06	0.00E+00	9.60E-08
20	ANODE_RM	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.53E-05
Total		**0.00E+00**	**2.35E-02**	**0.00E+00**	**1.60E-04**	**1.83E-04**	**2.26E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1.10E-02	0.00E+00	8.09E-04	0.00E+00	2.56E-05	5.06E-07	0.00E+00	1.10E-02
1.61E-02	0.00E+00	9.86E-04	0.00E+00	3.49E-05	6.91E-07	0.00E+00	1.61E-02
7.32E-02	0.00E+00	1.56E-03	0.00E+00	6.84E-05	6.88E-07	0.00E+00	7.32E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.46E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.45E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.54E-06
1.09E-03	0.00E+00	1.01E-06	0.00E+00	3.80E-08	2.13E-05	0.00E+00	1.09E-03
6.85E-03	0.00E+00	6.30E-06	0.00E+00	2.38E-07	1.34E-04	0.00E+00	6.85E-03
3.64E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.64E-03	0.00E+00	3.64E-03
3.72E-04	0.00E+00	3.42E-07	0.00E+00	1.29E-08	7.25E-06	0.00E+00	3.72E-04
1.16E-03	0.00E+00	1.07E-06	0.00E+00	4.04E-08	2.26E-05	0.00E+00	1.16E-03
5.94E-04	0.00E+00	5.47E-07	0.00E+00	2.07E-08	1.16E-05	0.00E+00	5.94E-04
1.56E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.55E-04	0.00E+00	1.56E-04
1.92E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-05	0.00E+00	1.92E-05
7.70E-03	0.00E+00	0.00E+00	2.41E-03	0.00E+00	5.10E-03	0.00E+00	7.70E-03
1.22E-01	**0.00E+00**	**3.37E-03**	**2.41E-03**	**1.29E-04**	**9.10E-03**	**0.00E+00**	**1.22E-01**

Table 20. PMI Acute Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 173 | UTME 386690.2 | UTMN 3753732

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL	RESP
Silica, Crystln	1175	2.19E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	6.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	1.66E-01	0.00E+00	5.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.61E-04
n-Butyl Alcohol	71363	7.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	3.05E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.32E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-03
1,2,4TriMeBenze	95636	6.69E-01	0.00E+00	2.79E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	1.92E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	2.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.18E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	4.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	6.97E+00	0.00E+00	1.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-03
Hexane	110543	5.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	5.74E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-04
DEGBE	112345	6.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	5.89E+00	0.00E+00	2.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-04
EGPE	2807309	2.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	7.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	3.16E-03	0.00E+00	0.00E+00	1.17E-04	0.00E+00	0.00E+00	1.17E-04	0.00E+00
Acetaldehyde	75070	1.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-06
Naphthalene	91203	1.63E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	1.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-04
NH3	7664417	9.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-03
Lead	7439921	2.40E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	2.88E-02	0.00E+00	0.00E+00	1.44E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	4.56E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-06
Cadmium	7440439	9.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	2.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.03E-05
HCl	7647010	5.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-06
HF	7664393	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-04
Sulfuric Acid	7664939	4.26E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-02
Nitric Acid	7697372	7.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.93E-05
Total			**0.00E+00**	**1.95E-03**	**1.44E-01**	**0.00E+00**	**0.00E+00**	**1.17E-04**	**4.31E-02**

SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	1.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.91E-06
0.00E+00	4.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.61E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	1.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	1.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	1.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	2.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-04	0.00E+00	1.17E-04
0.00E+00	3.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	5.87E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-04
0.00E+00	3.06E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-01
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.03E-05	3.03E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.03E-05
0.00E+00	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-06
0.00E+00	5.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.93E-05
3.03E-05	**7.61E-03**	**0.00E+00**	**0.00E+00**	**1.17E-04**	**0.00E+00**	**1.44E-01**

Table 21. PMI Acute Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 173 | UTME 386690.2 | UTMN 3753732

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	4.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	0.00E+00	4.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	0.00E+00	1.04E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	1.22E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	1.28E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	1.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	1.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	0.00E+00	3.32E-07	1.15E-05	0.00E+00	0.00E+00	1.15E-05
9	BOILERS	0.00E+00	1.49E-06	5.15E-05	0.00E+00	0.00E+00	5.15E-05
10	BLAST_CB	0.00E+00	0.00E+00	1.37E-01	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	0.00E+00	1.09E-07	3.77E-06	0.00E+00	0.00E+00	3.77E-06
13	OVEN_2	0.00E+00	7.41E-07	2.57E-05	0.00E+00	0.00E+00	2.57E-05
14	OVEN_3	0.00E+00	7.01E-07	2.43E-05	0.00E+00	0.00E+00	2.43E-05
16	ANODE_LN	0.00E+00	0.00E+00	7.65E-04	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	0.00E+00	0.00E+00	2.57E-04	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	0.00E+00	0.00E+00	6.05E-03	0.00E+00	0.00E+00	0.00E+00
Total		**0.00E+00**	**1.95E-03**	**1.44E-01**	**0.00E+00**	**0.00E+00**	**1.17E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
8.75E-04	0.00E+00	8.75E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E-04
8.64E-04	0.00E+00	8.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.65E-04
1.52E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-06
3.61E-04	0.00E+00	3.73E-04	0.00E+00	0.00E+00	1.15E-05	0.00E+00	3.73E-04
1.61E-03	0.00E+00	1.66E-03	0.00E+00	0.00E+00	5.15E-05	0.00E+00	1.66E-03
4.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-01
1.18E-04	0.00E+00	1.22E-04	0.00E+00	0.00E+00	3.77E-06	0.00E+00	1.22E-04
8.06E-04	0.00E+00	8.32E-04	0.00E+00	0.00E+00	2.57E-05	0.00E+00	8.32E-04
7.62E-04	0.00E+00	7.87E-04	0.00E+00	0.00E+00	2.43E-05	0.00E+00	7.87E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.65E-04
2.55E-05	1.26E-05	1.54E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.57E-04
3.61E-02	1.77E-05	5.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-02
4.31E-02	**3.03E-05**	**7.61E-03**	**0.00E+00**	**0.00E+00**	**1.17E-04**	**0.00E+00**	**1.44E-01**

Table 22. MEIR Acute Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 173 | UTME 386690.2 | UTMN 3753732

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
Silica, Crystln	1175	2.19E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	6.83E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	1.66E-01	0.00E+00	5.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.47E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	7.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	3.05E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.32E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	6.69E-01	0.00E+00	2.79E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	1.92E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	2.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.18E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	4.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	6.97E+00	0.00E+00	1.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	5.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	5.74E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	6.72E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	5.89E+00	0.00E+00	2.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	2.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	7.30E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	5.45E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	3.16E-03	0.00E+00	0.00E+00	1.17E-04	0.00E+00	0.00E+00	1.17E-04
Acetaldehyde	75070	1.69E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	1.63E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	1.47E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	9.80E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	2.40E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	2.88E-02	0.00E+00	0.00E+00	1.44E-01	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	4.56E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	9.34E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	2.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	5.93E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	4.26E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	7.68E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**1.95E-03**	**1.44E-01**	**0.00E+00**	**0.00E+00**	**1.17E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	1.24E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.24E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.91E-06
4.61E-04	0.00E+00	4.61E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.61E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.02E-03	0.00E+00	1.02E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.02E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.79E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.39E-03	0.00E+00	1.39E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.39E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.22E-04	0.00E+00	1.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.68E-04	0.00E+00	2.68E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.68E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.17E-04	0.00E+00	1.17E-04
3.59E-06	0.00E+00	3.59E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.87E-04	0.00E+00	5.87E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-04
3.06E-03	0.00E+00	3.06E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.44E-01
4.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.56E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.03E-05	3.03E-05	3.03E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.03E-05
2.83E-06	0.00E+00	2.83E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.83E-06
5.40E-04	0.00E+00	5.40E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.40E-04
3.55E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.55E-02
8.93E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.93E-05
4.31E-02	**3.03E-05**	**7.61E-03**	**0.00E+00**	**0.00E+00**	**1.17E-04**	**0.00E+00**	**1.44E-01**

Table 23. MEIR Acute Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 173 | UTME 386690.2 | UTMN 3753732

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	4.43E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	0.00E+00	4.52E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	0.00E+00	1.04E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	1.22E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	1.28E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	1.14E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	1.09E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	0.00E+00	3.32E-07	1.15E-05	0.00E+00	0.00E+00	1.15E-05
9	BOILERS	0.00E+00	1.49E-06	5.15E-05	0.00E+00	0.00E+00	5.15E-05
10	BLAST_CB	0.00E+00	0.00E+00	1.37E-01	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	0.00E+00	1.09E-07	3.77E-06	0.00E+00	0.00E+00	3.77E-06
13	OVEN_2	0.00E+00	7.41E-07	2.57E-05	0.00E+00	0.00E+00	2.57E-05
14	OVEN_3	0.00E+00	7.01E-07	2.43E-05	0.00E+00	0.00E+00	2.43E-05
16	ANODE_LN	0.00E+00	0.00E+00	7.65E-04	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	0.00E+00	0.00E+00	2.57E-04	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	0.00E+00	0.00E+00	6.05E-03	0.00E+00	0.00E+00	0.00E+00
Total		**0.00E+00**	**1.95E-03**	**1.44E-01**	**0.00E+00**	**0.00E+00**	**1.17E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
8.75E-04	0.00E+00	8.75E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E-04
8.64E-04	0.00E+00	8.65E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.65E-04
1.52E-03	0.00E+00	1.52E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.52E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.28E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.14E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.09E-06
3.61E-04	0.00E+00	3.73E-04	0.00E+00	0.00E+00	1.15E-05	0.00E+00	3.73E-04
1.61E-03	0.00E+00	1.66E-03	0.00E+00	0.00E+00	5.15E-05	0.00E+00	1.66E-03
4.56E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.37E-01
1.18E-04	0.00E+00	1.22E-04	0.00E+00	0.00E+00	3.77E-06	0.00E+00	1.22E-04
8.06E-04	0.00E+00	8.32E-04	0.00E+00	0.00E+00	2.57E-05	0.00E+00	8.32E-04
7.62E-04	0.00E+00	7.87E-04	0.00E+00	0.00E+00	2.43E-05	0.00E+00	7.87E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.65E-04
2.55E-05	1.26E-05	1.54E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.57E-04
3.61E-02	1.77E-05	5.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.61E-02
4.31E-02	**3.03E-05**	**7.61E-03**	**0.00E+00**	**0.00E+00**	**1.17E-04**	**0.00E+00**	**1.44E-01**

Table 24. MEIW Acute Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
Silica, Crystln	1175	2.79E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	3.33E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	3.14E-01	0.00E+00	1.12E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.99E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	1.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.13E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.77E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	8.20E-01	0.00E+00	3.42E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.54E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	3.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.59E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	5.31E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	9.31E+00	0.00E+00	1.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	8.16E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	7.04E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	9.42E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	7.91E+00	0.00E+00	3.59E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	3.19E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	8.67E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	2.70E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	1.56E-02	0.00E+00	0.00E+00	5.79E-04	0.00E+00	0.00E+00	5.79E-04
Acetaldehyde	75070	8.34E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	8.08E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	7.26E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	4.85E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	1.55E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	1.93E-02	0.00E+00	0.00E+00	9.64E-02	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	2.94E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	2.83E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	4.69E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	1.80E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	1.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	4.91E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	1.05E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**2.58E-03**	**9.69E-02**	**0.00E+00**	**0.00E+00**	**5.79E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	6.06E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.06E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.12E-05
6.23E-04	0.00E+00	6.23E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.23E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.36E-03	0.00E+00	1.36E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.36E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.42E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.86E-03	0.00E+00	1.86E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.86E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.50E-04	0.00E+00	1.50E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3.59E-04	0.00E+00	3.59E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.59E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.79E-04	0.00E+00	5.79E-04
1.77E-05	0.00E+00	1.77E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-05
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.90E-03	0.00E+00	2.90E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.90E-03
1.51E-02	0.00E+00	1.51E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.51E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.64E-02
2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.94E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.86E-05	5.86E-05	5.86E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.86E-05
8.57E-06	0.00E+00	8.57E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.57E-06
6.23E-04	0.00E+00	6.23E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.23E-04
4.09E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.09E-02
1.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.22E-04
6.42E-02	**5.86E-05**	**2.37E-02**	**0.00E+00**	**0.00E+00**	**5.79E-04**	**0.00E+00**	**9.69E-02**

Table 25. MEIW Acute Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	6.22E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	0.00E+00	6.62E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	0.00E+00	1.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	2.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	2.36E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	2.44E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	2.46E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	0.00E+00	1.27E-06	4.39E-05	0.00E+00	0.00E+00	4.39E-05
9	BOILERS	0.00E+00	1.26E-05	4.38E-04	0.00E+00	0.00E+00	4.38E-04
10	BLAST_CB	0.00E+00	0.00E+00	8.81E-02	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	0.00E+00	3.82E-07	1.32E-05	0.00E+00	0.00E+00	1.32E-05
13	OVEN_2	0.00E+00	1.52E-06	5.29E-05	0.00E+00	0.00E+00	5.29E-05
14	OVEN_3	0.00E+00	8.89E-07	3.09E-05	0.00E+00	0.00E+00	3.09E-05
16	ANODE_LN	0.00E+00	0.00E+00	5.38E-04	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	0.00E+00	0.00E+00	7.78E-04	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	0.00E+00	0.00E+00	6.98E-03	0.00E+00	0.00E+00	0.00E+00
Total		**0.00E+00**	**2.58E-03**	**9.69E-02**	**0.00E+00**	**0.00E+00**	**5.79E-04**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
1.23E-03	0.00E+00	1.23E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.23E-03
1.26E-03	0.00E+00	1.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.27E-03
1.84E-03	0.00E+00	1.85E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.36E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-06
1.37E-03	0.00E+00	1.42E-03	0.00E+00	0.00E+00	4.39E-05	0.00E+00	1.42E-03
1.37E-02	0.00E+00	1.41E-02	0.00E+00	0.00E+00	4.38E-04	0.00E+00	1.41E-02
2.94E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.81E-02
4.14E-04	0.00E+00	4.28E-04	0.00E+00	0.00E+00	1.32E-05	0.00E+00	4.28E-04
1.66E-03	0.00E+00	1.71E-03	0.00E+00	0.00E+00	5.29E-05	0.00E+00	1.71E-03
9.66E-04	0.00E+00	9.98E-04	0.00E+00	0.00E+00	3.09E-05	0.00E+00	9.98E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.38E-04
7.74E-05	3.82E-05	4.68E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.78E-04
4.17E-02	2.04E-05	6.44E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.17E-02
6.42E-02	**5.86E-05**	**2.37E-02**	**0.00E+00**	**0.00E+00**	**5.79E-04**	**0.00E+00**	**9.69E-02**

Table 26. MEIW 8-Hour Chronic Hazard By Substance

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Chemical Name	CAS #	Concentration	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
Silica, Crystln	1175	2.94E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Formaldehyde	50000	1.27E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methanol	67561	2.81E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Isopropyl Alcoh	67630	1.98E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
n-Butyl Alcohol	71363	9.86E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
sec-Butyl Alcoh	78922	4.11E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEK	78933	1.78E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1,2,4TriMeBenze	95636	8.95E-02	0.00E+00	2.35E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Ethyl Benzene	100414	2.58E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGME	107982	3.79E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MIBK	108101	1.60E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PGMEA	108656	5.57E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	108883	9.37E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Hexane	110543	7.92E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGBE	111762	7.69E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
DEGBE	112345	8.58E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Xylenes	1330207	7.95E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EGPE	2807309	3.23E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cr(VI)	18540299	7.19E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PAHs-w/o	1151	1.02E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Benzene	71432	5.89E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acetaldehyde	75070	3.15E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Naphthalene	91203	3.05E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acrolein	107028	2.74E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NH3	7664417	1.83E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Lead	7439921	4.47E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nickel	7440020	5.79E-05	0.00E+00	0.00E+00	5.20E-03	0.00E+00	0.00E+00	0.00E+00
Copper	7440508	8.49E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Cadmium	7440439	3.52E-08	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sodium Hydroxid	1310732	1.91E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HCl	7647010	3.24E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
HF	7664393	7.20E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sulfuric Acid	7664939	1.14E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Nitric Acid	7697372	4.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total			**0.00E+00**	**2.35E-02**	**5.20E-03**	**0.00E+00**	**0.00E+00**	**0.00E+00**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2.96E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.96E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.35E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	2.37E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.37E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9.84E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.84E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.12E-04	0.00E+00	4.12E-04
2.20E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.20E-06
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8.23E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.23E-04
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.20E-03
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7.31E-03	**0.00E+00**	**2.37E-03**	**0.00E+00**	**0.00E+00**	**4.12E-04**	**0.00E+00**	**2.35E-02**

Table 27. MEIW 8-Hour Chronic Hazard By Source

Bowman Plating, Compton, CA
Facility ID # 018989
Receptor 2235 | UTME 386786 | UTMN 3753797

Source ID	Source Name	CV	CNS	IMMUN	KIDNEY	GILV	REPRO/DEVEL
1	SPRAY_BOOTH_1	0.00E+00	6.99E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2	SPRAY_BOOTH_2	0.00E+00	8.95E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	SPRAY_BOOTH_3	0.00E+00	2.19E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4	SPRAY_BOOTH_4_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	SPRAY_BOOTH_4_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
6	SPRAY_BOOTH_4_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
7	SPRAY_BOOTH_4_4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
8	HEATER	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
9	BOILERS	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
10	BLAST_CB	0.00E+00	0.00E+00	3.57E-03	0.00E+00	0.00E+00	0.00E+00
12	OVEN_1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
13	OVEN_2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
14	OVEN_3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
16	ANODE_LN	0.00E+00	0.00E+00	4.80E-05	0.00E+00	0.00E+00	0.00E+00
19	PLATE_RM	0.00E+00	0.00E+00	6.31E-06	0.00E+00	0.00E+00	0.00E+00
20	ANODE_RM	0.00E+00	0.00E+00	1.58E-03	0.00E+00	0.00E+00	0.00E+00
Total		**0.00E+00**	**2.35E-02**	**5.20E-03**	**0.00E+00**	**0.00E+00**	**0.00E+00**

RESP	SKIN	EYE	BONE/TEETH	ENDO	BLOOD	ODOR	MAX
2.99E-05	0.00E+00	5.91E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.99E-04
3.50E-05	0.00E+00	6.50E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.95E-04
9.23E-04	0.00E+00	1.12E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.19E-02
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1.21E-04	0.00E+00	7.39E-07	0.00E+00	0.00E+00	4.48E-05	0.00E+00	1.21E-04
7.60E-04	0.00E+00	4.63E-06	0.00E+00	0.00E+00	2.81E-04	0.00E+00	7.60E-04
3.57E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.57E-03
4.12E-05	0.00E+00	2.51E-07	0.00E+00	0.00E+00	1.52E-05	0.00E+00	4.12E-05
1.29E-04	0.00E+00	7.85E-07	0.00E+00	0.00E+00	4.75E-05	0.00E+00	1.29E-04
6.59E-05	0.00E+00	4.02E-07	0.00E+00	0.00E+00	2.43E-05	0.00E+00	6.59E-05
4.80E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-05
6.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.31E-06
1.58E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.58E-03
7.31E-03	**0.00E+00**	**2.37E-03**	**0.00E+00**	**0.00E+00**	**4.12E-04**	**0.00E+00**	**2.35E-02**

TABLE 28. CANCER BURDEN

Bowman Plating, Compton, CA
Facility ID # 018989

Receptor	Census Tract Population[1]	East UTM	North UTM	Maximum Cancer Risk	Cancer Burden[2]
3611	189	386674.09	3753892.57	1.11E-06	2.11E-04
3612	121	386692.96	3753792.98	2.97E-06	3.59E-04
3613	235	386709.15	3753692.97	1.34E-06	3.15E-04
3651	5	386958.49	3753846.15	2.92E-06	1.46E-05
3652	32	387164.12	3753870.32	1.13E-06	3.63E-05
3657	0	386913.76	3753739.77	2.56E-06	0.00E+00
3658	0	386889.23	3753736.74	2.21E-06	0.00E+00
				Total	**0.0009**

[1] Population from 2010 Census data using HARP Database
[2] Cancer Burden = (Maximum Cancer Risk) x (Zone of Impact Population)

APPENDIX C. SCAQMD PERMITS

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

PERMIT TO OPERATE

Permit No.
G75808
A/N 611650

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(d)) is not received by the expiration date, contact the District.

ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Air Pollution Control System (APC) #1 Consisting of:

1. Chevron Mist Eliminator, 18" x 18" x 8".
2. Two-stage Composite Mesh Pad Mist Eliminator, Each Stage with One 36" x 36" x 4" Mesh Pad, with a Washdown System.
3. Two 24" x 24" x 1" Pre-filters and Two 24" x 24" x 12" Ultra-low Penetration Air (ULPA) Filters.
4. Exhaust System with One 5-H.P. Exhaust Fan Venting Tank Nos. 301 (Chromic Acid Anodize), 314 (Dilute Chromic Seal), and 321 (Sodium Dichromate Seal) of the Chromic Acid Anodizing Line.

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 system shall be in full use when any of the equipment it serves is in operation. For the purpose of this condition: Tank No. 301 is in operation whenever electric current is applied to the bath; Tank Nos. 314 and 321 are in operation whenever their bath temperature is at or above 140 degrees Fahrenheit.
4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.
5. This equipment shall be operated in compliance with all applicable requirements of Rules 1155, 1426, and 1469.
6. The ULPA filters used in this equipment shall be individually tested with 0.12 micron or smaller particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

ORIGINAL

7. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

   A. Each stage of the composite mesh pad mist eliminator.

   B. The pre-filters.

   C. The ULPA filters.

   The scale on the gauges shall not exceed two times the limit specified in Condition No. 8. The gauges shall be located so that they can be easily viewed and are in clear sight of the operator or maintenance personnel.

8. In operation, the pressure differential shall remain within the following ranges:

   A. 0.08 to 1.15 inches of water column across the 1st stage of the composite mesh pad mist eliminator.

   B. 0.25 to 1.50 inches of water column across the 2nd stage of the composite mesh pad mist eliminator.

   C. 0.10 to 1 inch of water column across the pre-filters.

   D. 0.30 to 1.20 inches of water column across the ULPA filters.

   The owner/operator shall maintain a weekly record of the static pressure differentials to verify compliance with this condition.

9. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) Plan shall be instituted if the static pressure differential exceeds the following:

   A. 1.0 inch of water column across the 1st stage of the mesh pad eliminator.

   B. 1.25 inches of water across the 2nd stage of the mesh pad eliminator.

   C. 0.95 inch of water column across the pre-filters.

   D. 1.10 inches of water column across the ULPA filters.

10. The hexavalent chromium emissions discharged to the atmosphere and measured at the outlets of this APC and the APC venting the Anodizing Room shall not exceed a combined total of 0.0015 milligrams per ampere-hour.

11. The owner/operator shall comply with the inspection and maintenance requirements listed below:

   A. Quarterly visual inspection of the equipment to ensure there is proper drainage, no unusual chromic acid buildup on the mesh pads, and no evidence of chemical attack that affects the structural integrity of this equipment.

B. Quarterly visual inspection of the ULPA filters to ensure there is no breakthrough of chromic acid mist.

C. Quarterly visual inspection of the ductwork from the chromic acid anodizing tank to the control device to ensure there are no leaks.

D. Repair any leaks detected before any further operation of the equipment.

E. Perform washdown of the composite mesh pads in accordance with the manufacturer's recommendations.

F. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

G. Replace the ULPA filters per manufacturer's specifications.

If the inspection and maintenance frequency is not specified by the manufacturer, inspection and maintenance activities shall be conducted at least once per calendar quarter.

12. The owner/operator shall maintain inspection and maintenance records for the mesh pads, pre-filters, the ULPA filters, and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected.

B. The date and time of inspection.

C. The working condition of the device during the inspection.

D. Any maintenance activities performed on the mesh pads and the ULPA filters or the parameter monitoring system.

E. Any actions taken to correct deficiencies found during the inspection.

13. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of Tank Nos. 301, 314, and 321, the air pollution control systems, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

14. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

15. The owner/operator shall report breakdowns, as required by South Coast AQMD Rule 430. The owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

16. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit, the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

17. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

18. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

19. The operator shall conduct source tests to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment, pursuant to the following requirements:

    A. The source tests shall be conducted in parallel and simultaneously to the tests conducted for the Air Pollution Control System venting the Anodizing Room.

    B. The source test shall be conducted by a laboratory approved by the South Coast AQMD under the Laboratory Approval Program (LAP) in the required test methods for each pollutant to be measured and in compliance with South Coast AQMD Rule 304 (no conflict of interest).

    C. A minimum of three test runs shall be conducted using U.S. EPA Method 306 or CARB Method 425.

    D. The tests shall be performed while Tank Nos. 301, 314, and 321 are in operation at maximum temperature, maximum chemical concentrations, and maximum load (electric current and parts processed).

    E. The test shall be conducted to measure total chromium and hexavalent chromium emissions in units of pounds per hour, milligrams per ampere-hour, and milligrams per dry standard cubic feet.

20. The operator shall conduct source tests to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment, pursuant to the following requirements:

    A. The following data shall be monitored and recorded during each test run.

        I. Concentration of total chromium and hexavalent chromium in Tank Nos. 301, 314, and 321 in parts per million (ppm) during each test run.

        II. Quantity of water, total chromium, and hexavalent chromium added to the tanks during the test.

        III. Duration of operation or inactivity for each of the above tanks during the test run.

        IV. Totalizing current readings, in amperes, at the start and end of each test run for Tank No. 301.

V. The rectifier readings during the test run. The readings should be measured at intervals of time not less than once every hour during each test run.

VI. Pressure drops across each stage of mesh pad mist eliminator, the pre-filters, and the ULPA filters. The pressure drop data shall be recorded at intervals of time not less than once every hour.

VII. Type and quantity of parts processed, and number of batches of parts in each tank.

VIII. Operating temperature of Tank Nos. 301, 314, and 321. The temperature shall be recorded at intervals of time not less than once every hour.

21. A test protocol shall be approved by the South Coast AQMD in writing before the test commences. The protocol shall include the following, at a minimum:

A. The identity of the testing laboratory.

B. A statement from the testing laboratory certifying it meets the criteria in South Coast AQMD Rule 304(k).

C. A list of contaminants to be tested.

D. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.

E. The location of points of sampling. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

F. Quality assurance measures.

G. Experience in testing procedures.

H. Proposed operating conditions during the test.

I. Completed South Coast AQMD Form ST-1.

22. The operator shall notify the South Coast AQMD at least 14 calendar days prior to the source test(s), or within a time period agreed upon by the South Coast AQMD.

23. The source test report shall include, at a minimum, the total chromium and hexavalent chromium emissions, stack temperature, the operating parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1. Two copies of the report shall be submitted to the South Coast AQMD via mail (addressed to South Coast AQMD, P.O. Box 4941, Diamond Bar, CA 91765) or e-mail (sourcetesting@aqmd.gov) no later than 60 calendar days after the final source test date. A copy of the source test report shall be kept on file and shall be made available to South Coast AQMD personnel upon request.

24. The source tests described in Condition Nos. 19-23 shall be conducted no later than 84 calendar months from the date of the most recent source test that demonstrates compliance with all applicable requirements.

25. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

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 applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

Executive Officer

BY JASON ASPELL/GM02
4/24/2024

ORIGINAL

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

PERMIT TO OPERATE

Permit No.
G75809
A/N 622504

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(d)) is not received by the expiration date, contact the District.

ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Air Pollution Control System for Anodizing Room Housing the Chromic Acid Anodizing, Chemfilm, Titanium Etch, and Sulfuric Acid Hard Anodizing Lines, Consisting of:

1. Two Identical Single-stage Chevron Mist Eliminators, Munters, Model No. T-100, in Parallel, each 3'-4" W. x 4'-8" L. x 3'-4" H.

2. Filtration System, 9'-0" W. x 12'-0" L. x 7'-0" H., with Twelve 24" x 24" x 1" Pre-filters and Twelve 24" x 24" x 12" ULPA Filters.

3. Exhaust System with a 15-H.P. Exhaust Fan, 20,000 scfm Maximum, Venting the Anodizing Room Permanent Total Enclosure (PTE), 87'-6" W. x 37'-6" L. x Maximum 25'-0" H., with:

   A. One Automatic Roll-up Door

   B. One Self-closing Man Door

   C. A Digital Building Differential Pressure Monitoring System with a Differential Pressure Transmitter, Dwyer, Model No. Series 616KD-LR-B31-BD1, and a Continuous Data Logger, VersaLog Model No. DCC-HR

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 system shall be in full use when any of the tanks within the Anodizing Room is in operation. For the purpose of this condition: rectified tanks are in operation whenever electric current is applied to the bath; heated tanks are in operation whenever their bath temperature is at or above 140 degrees Fahrenheit; and unheated tanks containing volatile acids are in operation whenever the tank is left uncovered.

ORIGINAL

4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.

5. The Anodizing Room shall be maintained as a Permanent Total Enclosure (PTE) per U.S. EPA Method 204.

6. The operator shall install and maintain a digital building differential pressure monitoring system to monitor the static pressure differential within the Anodizing Room pursuant to the following requirements:

   A. In operation, the measured static pressure differential within any rolling 15-minute period shall be greater than or equal to 0.007 inch of water column.

   B. The digital building differential pressure monitoring system shall be equipped with a continuous data logger. The data logger shall take at least one reading per minute. Electronic records of the building differential pressure shall be retained on file for at least five calendar years.

   C. The digital building differential pressure monitoring system must be installed in the northeastern corner of the Anodizing Room.

   D. The digital building differential pressure monitoring system shall be certified by the manufacturer to:
      I. Have an accuracy of at least +/- 0.001 inch of water column.
      II. Be capable of measuring and displaying negative pressures containing values in the range of 0.005 to 0.11 inch of water column.
      III. Be capable of recording data in increments of 0.001 inch of water column.

   E. The operator shall calibrate the digital building differential pressure monitoring system at least once every 12 calendar months.

7. The operator shall maintain the PTE free of significant cracks, gaps, corrosion, or other deterioration that could cause chromium-bearing material to be released from the PTE. The operator shall inspect the PTE at least once per month. The operator shall repair any gaps, leak points, or other possible routes for fugitive emissions within seventy-two hours of identification unless the operator obtains written approval for an extension from the South Coast AQMD before the repair period is exceeded.

8. This equipment shall be operated in compliance with all applicable requirements of Rules 1155, 1426, and 1469.

9. The ULPA filters used in this equipment shall be individually tested with 0.12 micron or smaller particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

10. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

   A. Each of the chevron mist eliminators.

   B. The pre-filters.

C. The ULPA filters.

The scale on the gauges shall not exceed two times the limit specified in Condition No. 11. The gauges shall be located so that they can be easily viewed and are in clear sight of the operator or maintenance personnel.

11. In operation, the pressure differential shall remain within the following ranges:

A. 0 to 0.3 inches of water column across each of the chevron mist eliminators.

B. 0.10 to 1 inch of water column across the pre-filters.

C. 0.30 to 1.20 inches of water column across the ULPA filters.

The owner/operator shall maintain a weekly record of the static pressure differential to verify compliance with this condition.

12. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) plan shall be instituted if the static pressure differential exceeds the following:

A. 0.25 inch of water column across each of the chevron mist eliminators.

B. 0.95 inch of water column across the pre-filters.

C. 1.10 inches of water column across the ULPA filters.

13. The hexavalent chromium emissions discharged to the atmosphere and measured at the outlets of this APC and APC #1 shall not exceed a combined total of 0.0015 milligrams per ampere-hour.

14. The owner/operator shall comply with the inspection and maintenance requirements listed below:

A. Chevron mist eliminator maintenance per manufacturer's specifications.

B. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

C. Replace the ULPA filters per manufacturer's specifications.

If the inspection and maintenance frequency is not specified by the manufacturer, inspection and maintenance activities shall be conducted at least once per calendar quarter.

15. The owner/operator shall maintain inspection and maintenance records for the chevron mist eliminators, pre-filters, the ULPA filters, and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected.

B. The date and time of inspection.

C. The working condition of the device during the inspection.

D. Any maintenance activities performed on the ULPA filters or the parameter monitoring system.

E. Any actions taken to correct deficiencies found during the inspection.

16. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of Tank Nos. 301, 314, and 321, the air pollution control systems, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

17. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

18. The owner/operator shall report breakdowns, as required by South Coast AQMD Rule 430. The owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

19. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit, the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

20. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

21. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

22. The operator shall conduct source tests to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment, pursuant to the following requirements:

A. The source tests shall be conducted in parallel and simultaneously to the tests conducted for APC #1.

B. The source test shall be conducted by a laboratory approved by the South Coast AQMD under the Laboratory Approval Program (LAP) in the required test methods for each pollutant to be measured and in compliance with South Coast AQMD Rule 304 (no conflict of interest).

C. A minimum of three test runs shall be conducted using U.S. EPA Method 306 or CARB Method 425.

D. The tests shall be performed while all tanks in the PTE for the Anodizing Room are in operation at the maximum temperature, maximum chemical concentrations, and maximum load (electric current and parts processed).

E. The test shall be conducted to measure total chromium and hexavalent chromium emissions in units of pounds per hour, milligrams per ampere-hour, and milligrams per dry standard cubic feet.

23. The operator shall conduct source tests to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment, pursuant to the following requirements:

A. The following data shall be monitored and recorded during each test run:

I. Concentration of total chromium and hexavalent chromium in Tank Nos. 301, 305, 312, 314, 320, 321, and 610 in parts per million (ppm) during each test run.

II. Quantity of water, total chromium, and hexavalent chromium added to the tanks during the test.

III. Duration of operation or inactivity for each of the above tanks during the test run.

IV. The amperage totalizer readings at the start and end of each test run for each applicable tank.

V. The rectifier readings during the test run. The readings should be measured at intervals of time not less than once every hour during each test run.

VI. Pressure drops across each chevron mist eliminator, the pre-filters, and the ULPA filters. The pressure drop data shall be recorded at intervals of time not less than once every hour.

VII. Type and quantity of parts processed, and number of batches of parts in each tank.

VIII. Operating temperature of the above tanks. The temperature shall be recorded at intervals of time not less than once every hour during each test run.

B. The Anodizing Room shall be tested to demonstrate that it meets the requirements for PTEs as specified under U.S. EPA Method 204. The demonstration shall occur while all equipment in the Anodizing Room are in operation.

24. A test protocol shall be approved by the South Coast AQMD in writing before the test commences. The protocol shall include the following, at a minimum:

A. The identity of the testing laboratory.

B. A statement from the testing laboratory certifying it meets the criteria in South Coast AQMD Rule 304(k).

C. A list of contaminants to be tested.

D. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.

E. The location of points of sampling. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

F. Quality assurance measures.

G. Experience in testing procedures.

H. Proposed operating conditions during the test.

I. Completed South Coast AQMD Form ST-1.

25. The operator shall notify the South Coast AQMD at least 14 calendar days prior to the source test(s), or within a time period agreed upon by the South Coast AQMD.

26. The source test report shall include, at a minimum, the total chromium and hexavalent chromium emissions, stack temperature, the operating parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1. Two copies of the report shall be submitted to the South Coast AQMD via mail (addressed to South Coast AQMD, P.O. Box 4941, Diamond Bar, CA 91765) or e-mail (sourcetesting@aqmd.gov) no later than 60 calendar days after the final source test date. A copy of the source test report shall be kept on file and shall be made available to South Coast AQMD personnel upon request.

27. The source tests described in Condition Nos. 22-26 shall be conducted no later than 84 calendar months from the date of the most recent source test that demonstrates compliance with all applicable requirements.

28. There shall be no source of compressed air located within 10 feet of any natural draft openings (NDOs) of the Anodizing Room PTE. In addition, the operator shall not use compressed air for any operations that are conducted within 10 feet of any NDOs of the Anodizing Room PTE.

29. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

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 applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

Executive Officer

BY JASON ASPELL/GM02
4/24/2024

ORIGINAL

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

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

PERMIT TO OPERATE

Permit No.
G75810
A/N 622505

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(d)) is not received by the expiration date, contact the District.

ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Air Pollution Control System for Plating Room Housing the Acid Cleaning, Passivation, Zinc Plating, and Cadmium Plating (Still & Barrel) Lines, Consisting of:

1. Two Identical Single-stage Chevron Mist Eliminators, Munters, Model No. T-100, in Parallel, each 3'-4" W. x 4'-8" L. x 3'-4" H.

2. Filtration System, 9'-0" W. x 12'-0" L. x 7'-0" H., with Twelve 24" x 24" x 1" Pre-filters and Twelve 24" x 24" x 12" Ultra-low Penetration Air (ULPA) Filters.

3. Exhaust System with a 15-H.P. Exhaust Fan, 20,000 scfm Maximum, Venting the Plating Room Permanent Total Enclosure (PTE), 62'-0" W. x 42'-0" L. x Maximum 20'-0" H., with:

   A. One Automatic Roll-up Door

   B. Two Doors, Double-lined with Plastic Strip Curtains

   C. A Digital Building Differential Pressure Monitoring System with a Differential Pressure Transmitter, Dwyer, Model No. Series 616KD-LR-B31-BD1, and a Continuous Data Logger, VersaLog Model No. DCC-HR

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 system shall be in full use when any of the tanks within the Plating Room is in operation. For the purpose of this condition: rectified tanks are in operation whenever electric current is applied to the bath; heated tanks are in operation whenever their bath temperature is at or above 140 degrees Fahrenheit; and unheated tanks containing volatile acids are in operation whenever the tank is left uncovered.

ORIGINAL

4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.

5. The Plating Room shall be maintained as a Permanent Total Enclosure (PTE) per U.S. EPA Method 204.

6. The operator shall install and maintain a digital building differential pressure monitoring system to monitor the static pressure differential within the Plating Room pursuant to the following requirements:

   A. In operation, the measured static pressure differential within any rolling 15-minute period shall be greater than or equal to 0.007 inch of water column.

   B. The digital building differential pressure monitoring system shall be equipped with a continuous data logger. The data logger shall take at least one reading per minute. Electronic records of the building differential pressure shall be retained on file for at least five calendar years.

   C. The digital building differential pressure monitoring system must be installed in the northeastern corner of the Plating Room.

   D. The digital building differential pressure monitoring system shall be certified by the manufacturer to:
      I. Have an accuracy of at least +/- 0.001 inch of water column.
      II. Be capable of measuring and displaying negative pressures containing values in the range of 0.005 to 0.11 inch of water column.
      III. Be capable of recording data in increments of 0.001 inch of water column.

   E. The operator shall calibrate the digital building differential pressure monitoring system at least once every 12 calendar months.

7. The operator shall maintain the PTE free of significant cracks, gaps, corrosion, or other deterioration that could cause chromium-bearing material to be released from the PTE. The operator shall inspect the PTE at least once per month. The operator shall repair any gaps, leak points, or other possible routes for fugitive emissions within seventy-two hours of identification unless the operator obtains written approval for an extension from the South Coast AQMD before the repair period is exceeded.

8. This equipment shall be operated in compliance with all applicable requirements of Rules 1155, 1426, and 1469.

9. The ULPA filters used in this equipment shall be individually tested with 0.12 micron or smaller particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

10. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

    A. Each of the chevron mist eliminators.

    B. The pre-filters.

C. The ULPA filters.

The scale on the gauges shall not exceed two times the limit specified in Condition No. 11. The gauges shall be located so that they can be easily viewed and are in clear sight of the operator or maintenance personnel.

11. In operation, the pressure differential shall remain within the following ranges:

A. 0 to 0.3 inches of water column across each of the chevron mist eliminators.

B. 0.10 to 1 inch of water column across the pre-filters.

C. 0.30 to 1.20 inches of water column across the ULPA filters.

The owner/operator shall maintain a weekly record of the static pressure differential to verify compliance with this condition.

12. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) plan shall be instituted if the static pressure differential exceeds the following:

A. 0.25 inch of water column across each of the chevron mist eliminators.

B. 0.95 inch of water column across the pre-filters.

C. 1.10 inches of water column across the ULPA filters.

13. The owner/operator shall comply with the inspection and maintenance requirements listed below:

A. Chevron mist eliminator maintenance per manufacturer's specifications.

B. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

C. Replace the ULPA filters per manufacturer's specifications.

If the inspection and maintenance frequency is not specified by the manufacturer, inspection and maintenance activities shall be conducted at least once per calendar quarter.

14. The owner/operator shall maintain inspection and maintenance records for the chevron mist eliminators, the ULPA filters, and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected.

B. The date and time of inspection.

C. The working condition of the device during the inspection.

D. Any maintenance activities performed on the ULPA filters or the parameter monitoring system.

E. Any actions taken to correct deficiencies found during the inspection.

15. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of the air pollution control system, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

16. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

17. The owner/operator shall report breakdowns, as required by South Coast AQMD Rule 430. The owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

18. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit, the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

19. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

20. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

21. There shall be no source of compressed air located within 10 feet of any natural draft openings (NDOs) of the Plating Room PTE. In addition, the operator shall not use compressed air for any operations that are conducted within 10 feet of any NDOs of the Plating Room PTE.

22. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

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 applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This permit cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

Executive Officer

BY JASON ASPELL/GM02
4/24/2024

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

APPENDIX D. SOURCE TEST REPORTS

SOURCE TEST REPORT FOR 2021 MEASUREMENT OF HEXAVALENT CHROMIUM, NICKEL, AND PARTICULATE MATTER EMISSIONS FROM ULPA FILTERS SERVING AN ANODIZING ROOM HOUSING THREE CHROMIUM PROCESS TANKS

Prepared For:

Bowman Plating Company
2631 E. 126th Street
Compton, California 90222

For Submittal To:

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

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705
(714) 332-8491

S. Hugh Brown

Production Date: **September 13, 2021**
Document Number: **W002AS-010019-RT-2801**
Test Dates: **July 7, 9, and 12, 2021**

STAC STACK TESTING ACCREDITATION COUNCIL
A2LA ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

MONTROSE AIR QUALITY SERVICES

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this 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: S. Hugh Brown Date: 9/13/2021

Name: S. Hugh Brown 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: Joe Rubio Date: 9/13/2021

Name: Joe Rubio Title: Client Project Manager

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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 Bowman Plating to perform source testing. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the South Coast Air Quality Management District (SCAQMD) to conduct testing for criteria pollutants using District Methods. Appendix C contains MAQS' SCAQMD, CARB, and STAC certifications, and a Statement of No Conflict of Interest. MAQS and the analytical laboratories Quantum Analytical Services Inc. in Carson, California and Weck Analytical Laboratories all qualify as independent testing laboratories under SCAQMD Rule 304 (no conflicts of interest). MAQS had a Qualified Individual as defined in ASTM D7036-04 on-site during the testing program.

Bowman Plating Company conducts plating operations on aluminum aerospace parts that utilize a chromic acid anodizing tank and two chromate seal tanks in an enclosed room. The tanks are vented to an Ultra-Low Particulate Arrestor (ULPA) filter. Figure 1-1 shows the tank and control equipment layout, Figure 1-2 shows the control equipment details, Figure 1-3 shows the condenser details, and Figure 1-4 shows the cover details. The tanks and control equipment were issued Permits to Operate by the South Coast Air Quality Management District (SCAQMD). A copy of the permit for the anodizing line is provided in Appendix D. SCAQMD Rule 1469 required source testing for total and hexavalent chromium on the exhaust to atmosphere. Testing on the ULPA filter was conducted in 2019 and after review of the source test report by Peter Ko at the SCAQMD, the anodizing room was established as a permanent total enclosure (PTE) for controlling the fugitive emissions from the room with ULPA filters. The PTE and control equipment were issued Permits to Construct by the South Coast Air Quality Management District (SCAQMD). A copy of the permit for the PTE is provided in Appendix D. The anodizing room was certified as a (PTE) by EPA Method 204 and triplicate source tests to determine the hexavalent chromium emissions on the exhausts of both sets of ULPA filters from the anodizing room were conducted concurrently at normal operating condition on the chromium tanks. The hexavalent chromium was determined by EPA Method 306. During each 3-hour test, the clamshell hood on the chromium seal tanks was opened at least once per hour for normal operation for these tanks. All production activities and operational settings during the test were documented. In addition, testing was also conducted for nickel (triplicate tests for 2 hours) by CARB Method 433, and for total Particulate Matter (PM) by SCAQMD Method 5.1 (single tests for 1 hour) on the exhaust of the PTE ULPA filters.

FIGURE 1-1
TANK AND CONTROL EQUIPMENT LAYOUT

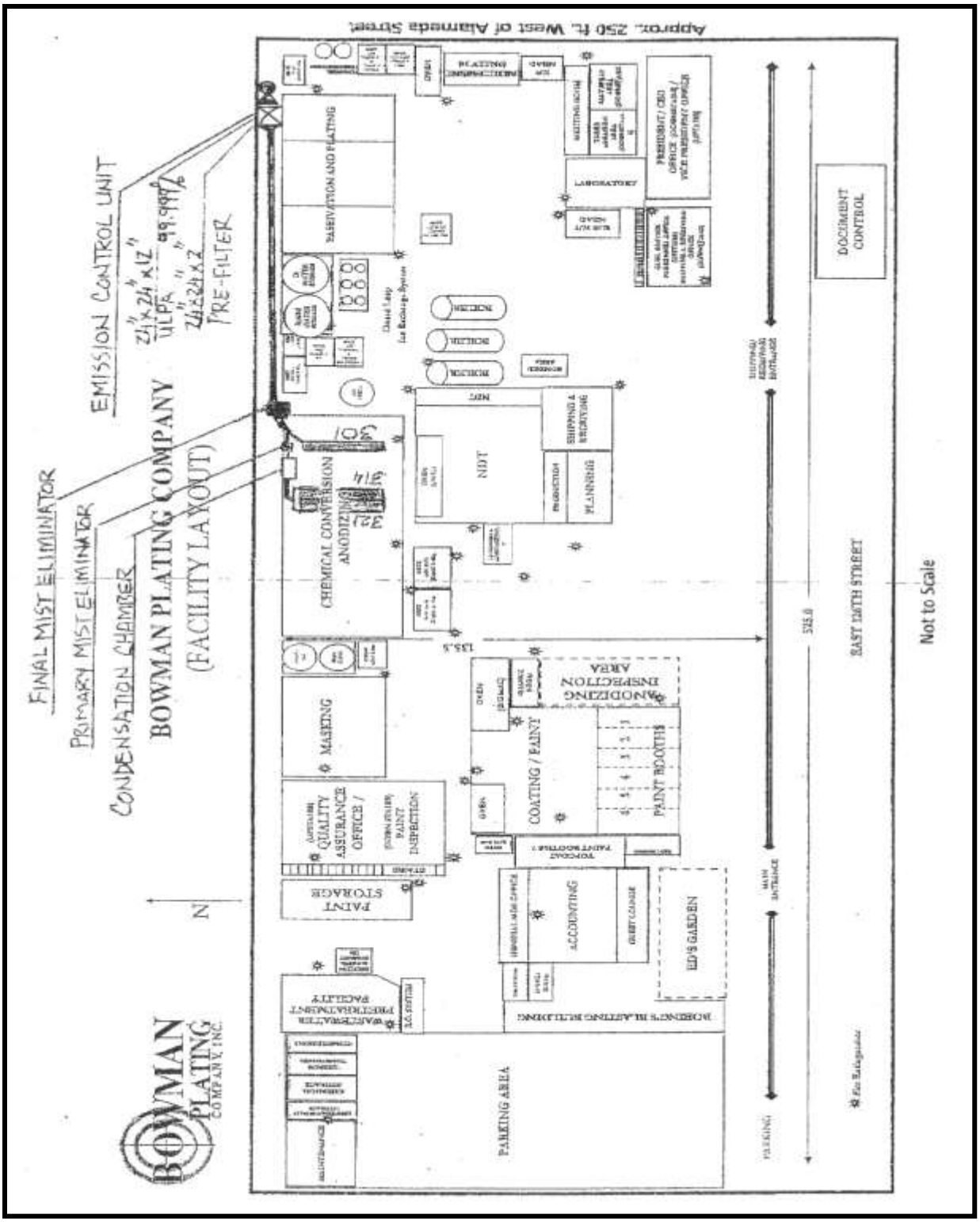


FIGURE 1-2
CONTROL EQUIPMENT DETAILS

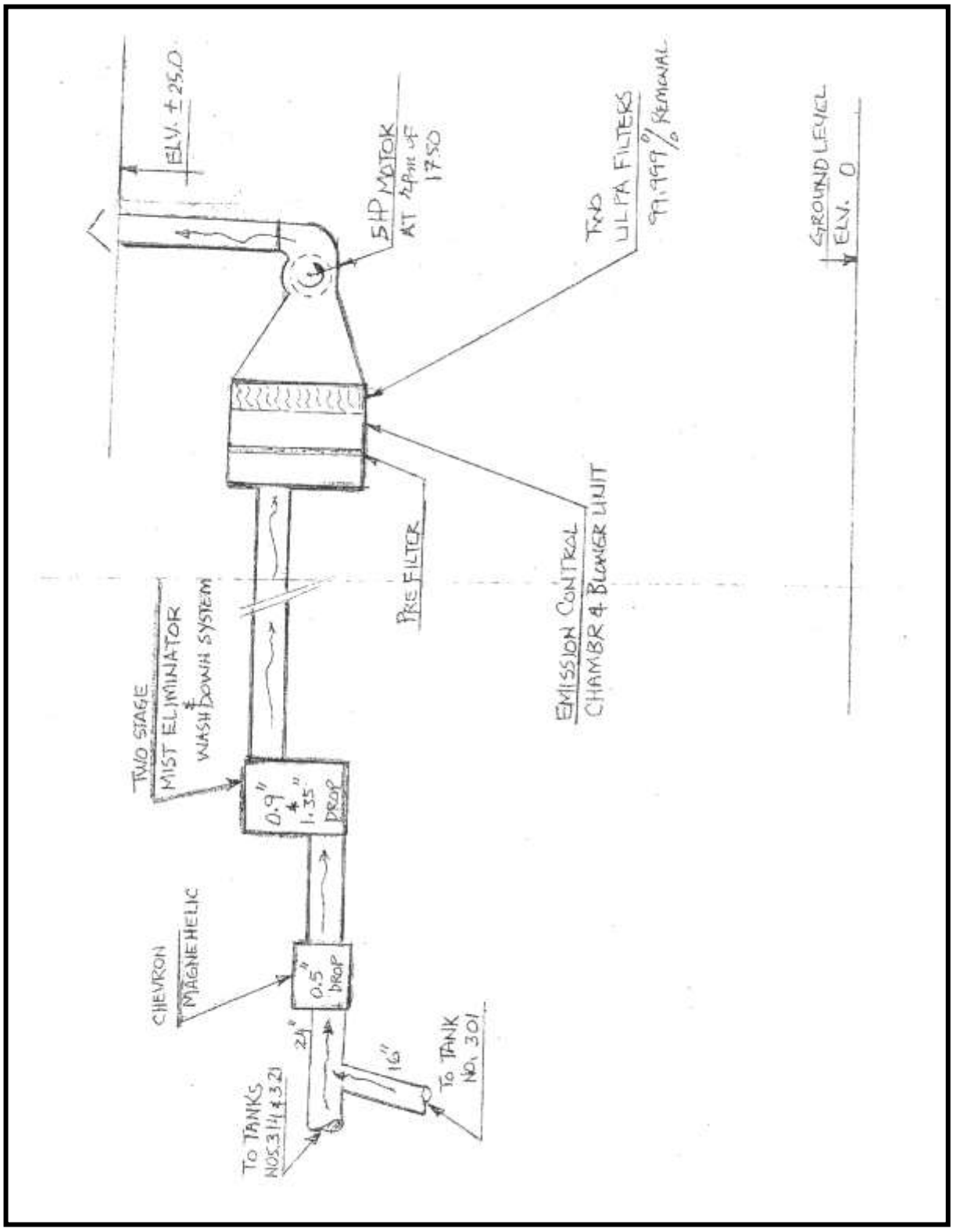


FIGURE 1-3
CONDENSER DETAILS

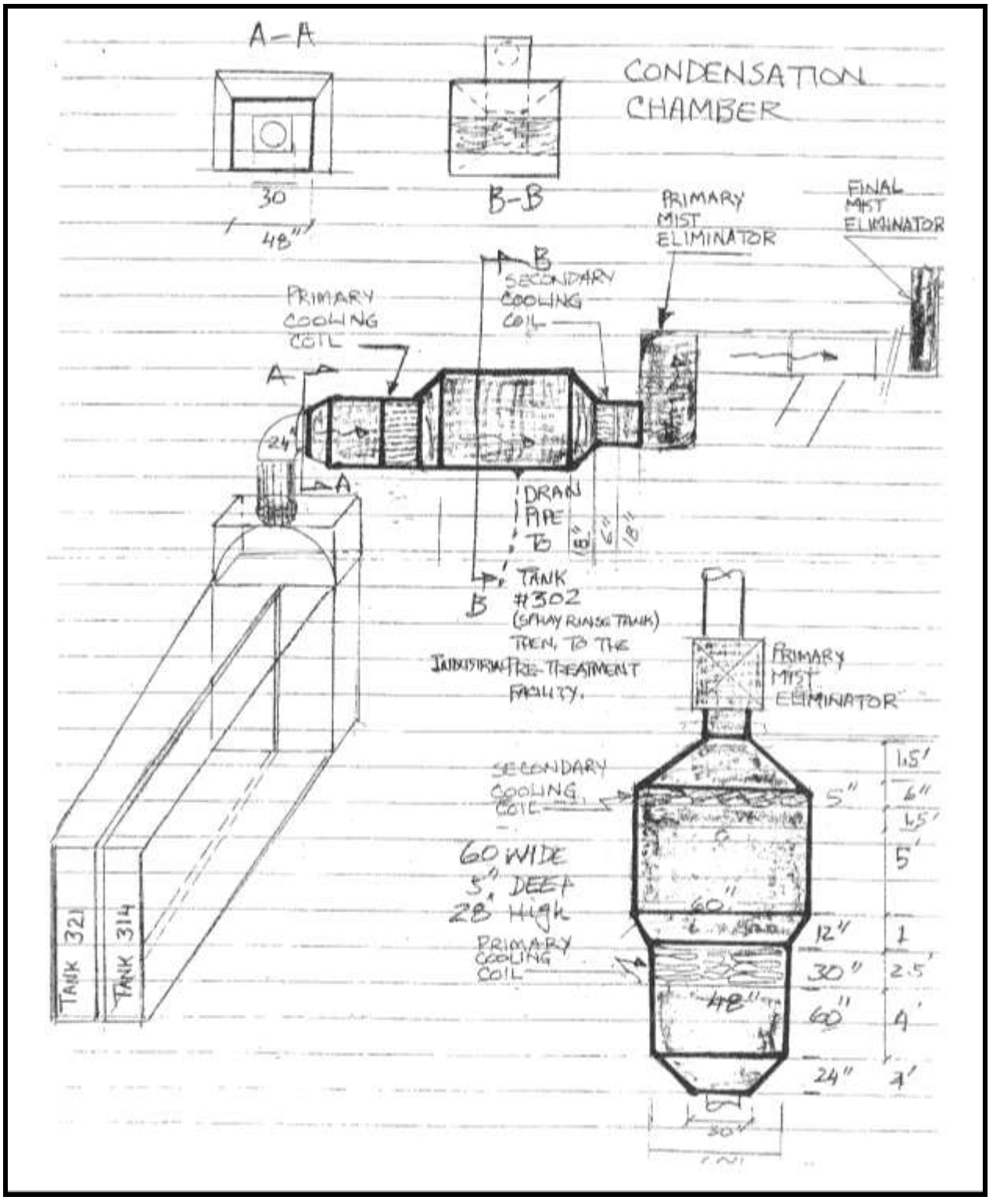
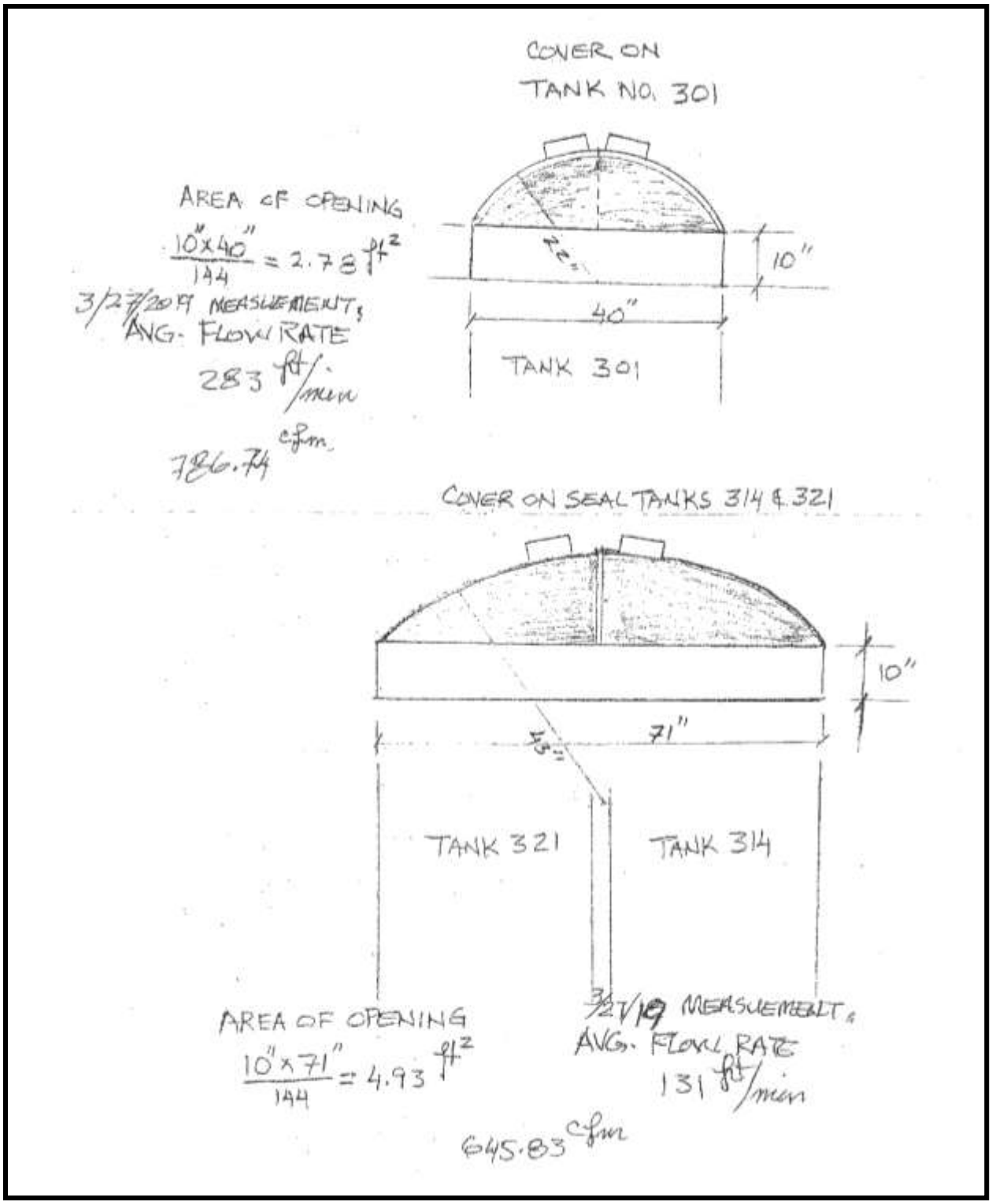


FIGURE 1-4
COVER DETAILS



2.0 EQUIPMENT AND PROCESS DESCRIPTION

Bowman Plating Company conducts metal finishing operations on aluminum aerospace parts that involve a chromic acid anodizing tank (#301) and two chromate seal tanks (#314 & #321), which are located in the Anodizing Building. The anodizing tank is equipped with clamshell type enclosed hood and utilizes no mist suppressant. The hood is vented to atmosphere through a two-stage mist eliminator and a prefilter/ULPA filter up on the roof. The seal tanks are side by side and equipped with a common clamshell type enclosed hood and utilize polyballs. The hood is vented through a refrigerated condenser out to the two-stage mist eliminator and ULPA along with the anodizing tank (APC #1). Figure 1-1 shows the tank and control equipment layout, Figure 1-2 shows the control equipment details, Figure 1-3 shows the condenser details, and Figure 1-4 shows the cover details.

Tank #301 is a chromic acid anodizing tank (Tier III) and is 21' long, 28" wide, and 96" deep. The tank is heated by steam and served by a rectifier with a capacity of 48 volts and 4,000 amps. The tank utilizes no mist suppressant and has a dedicated amp-hour meter. This tank operated normally during the test period. Permit to Operate G46872 covers this equipment and a copy is included in Appendix D.

Tank #314 is a dilute chromate seal tank (Tier III) and is 21' long, about 36" wide, and 96" deep. The tank is heated by steam. Permit to Operate G46872 covers this equipment and a copy is included in Appendix D.

Tank #321 is a sodium dichromate seal tank (Tier III) and is 21' long, 36" wide, and 96" deep. The tank is heated by steam. Permit to Operate G46872 covers this equipment and a copy is included in Appendix D.

Note that Tank #610 is a chem film tank (Tier II) and is also located in the Anodizing Building. The tank is normally covered but the tank lid was opened once per hour for two minutes to simulate high production.

The emissions of chromic acid from the anodizing tank are collected by a two-piece semicircular enclosed hood (see Figure 1-4) that covers the tank during anodizing and opens up to move the parts by way of an overhead crane. The hood is open on one end and vented from the opposite end to a vertical in-line mist eliminator that consists of two separate four-inch mesh pads. Each mesh pad has a spray header below it that is connected to a fresh water supply. The stages are washed periodically and drain into the anodizing tank. Each stage is equipped with a Magnehelic differential pressure gage.

The emissions of chromic acid from the dichromate seal tanks are collected by a two-piece semicircular enclosed hood (see Figure 1-4) that covers both tanks during processing and opens up to move the parts by way of an overhead crane. The hood is open on one end and vented from the opposite end to a refrigerated condenser (see Figure 1-3) and then to the two-stage mist eliminator. The mist eliminator is vented through the ULPA filter (APC #1). Fugitive emissions of hexavalent chromium are generated when the clamshell hood is opened to place or remove parts. These emissions are captured by the PTE and vented to APC #2.

APC #1 is equipped with two 24" x 24" x 4" prefilters and two 24" x 24" x 11.5" ULPA filters. The ULPA filters are rated at 99.999% efficiency for 0.12 micron particles. The ULPA filter stage is equipped with a Magnehelic differential gage. A 10-HP variable speed blower induces the draft in

the filter and hoods and exhausts to the atmosphere at a rate of about 2,000 ACFM. Permit to Construct 611650 covers this equipment and a copy is included in Appendix D.

The anodizing room has six ceiling ventilators with axial fans that are combined into two duct runs that are each vented through mesh pad mist eliminators to APC #2. Figure 2-1 shows a ventilation diagram of the anodizing room. With the assist of the induced draft fan of APC #2, the room was balanced negative by operating just two of the axial fans - one on each duct run (#1 and #4).

APC #2 is equipped with twelve 24" x 24" x 1" prefilters and twelve 24" x 24" x 11.5" ULPA filters. The ULPA filters are rated at 99.999% efficiency for >0.12 micron particles. The ULPA filter stage is equipped with a Magnehelic differential gage. A 15-HP blower induces the draft in the filter and hoods and exhausts to the atmosphere at a rate of about 16,000 ACFM. Permit to Contruct 622504 covers this equipment and a copy is included in Appendix D.

Permanent Total Enclosure (PTE)

During the source testing period, the PTE was monitored to ensure that it met the 5-point criteria according to EPA Method 204:

1. The natural draft openings (NDO's) are at least four equivalent diameters from the nearest emission source.
2. The total area of the NDO's is less than 5% of the total surface area of the PTE.
3. The enclosure is maintained at a negative static pressure of at least 0.007 inches of water or has a negative inflow of air of at least 200 ft/min.
4. All access doors to the enclosure are normally closed.
5. All exhausts from the enclosure are controlled.

The room enclosure area is about 20' high by 37'6" wide by 87'6" long for a total of about 11,600 square feet of surface area. There are curtains hung on one 10' by 12' opening in the south wall. The gap at the bottom of the curtains is about 1" x 12' that constitutes a natural draft opening (NDO) of about 1.0 square foot. This provides a ratio of NDO's to total enclosure area of about 0.008%. The criterion for EPA Method 204 (2) above is satisfied.

The NDO is at least 12' from the nearest tank and has an equivalent round diameter of about 14". This is equivalent to >10 diameters between the NDO and the nearest emission point. The criterion for EPA Method 204 (1) above is satisfied.

The enclosure has a swinging door at the east end of the room that is normally closed during tank operations. The criterion for EPA Method 204 (4) above is satisfied.

The exhausts from the clamshells controlling the hexavalent chromium emissions of tanks 301, 314, and 321 inside the PTE are vented to an ULPA filter. The room exhausts from the PTE are controlled by an ULPA filter. There are no other exhausts from the PTE. The criterion for EPA Method 204 (5) above is satisfied.

The indraft of air into the enclosure was measured with a TSI VelociCalc thermo anemometer during the source tests to ensure a minimum of 200 fpm. The measurement was checked on the curtains forming the NDO on the south side of the room as well as on the swinging door on the

east side of the room with the door held slightly ajar. A tell-tale test was performed as visual confirmation of the negative pressure (photos are included in Appendix A). The criterion for EPA Method 204 (3) above was satisfied and the enclosure met the criteria for classification as a PTE. Figure 2-2 shows a diagram of the enclosure.

During each test period, the duration of time the seal tank clamshell was open was recorded by MAQS personnel on a process data sheet along with the tank temperatures.

FIGURE 2-1
ANODIZING ROOM VENTILATION DIAGRAM

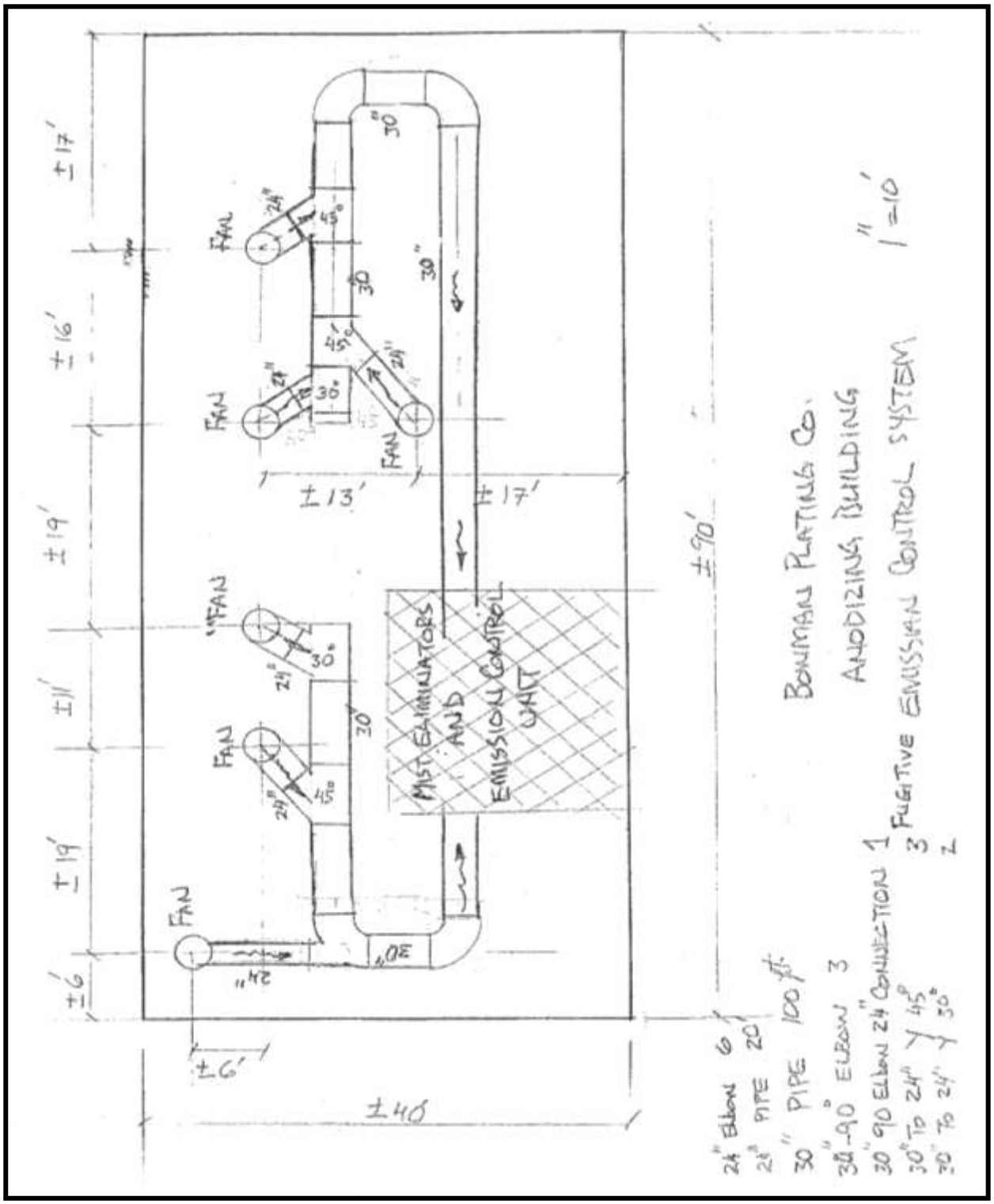
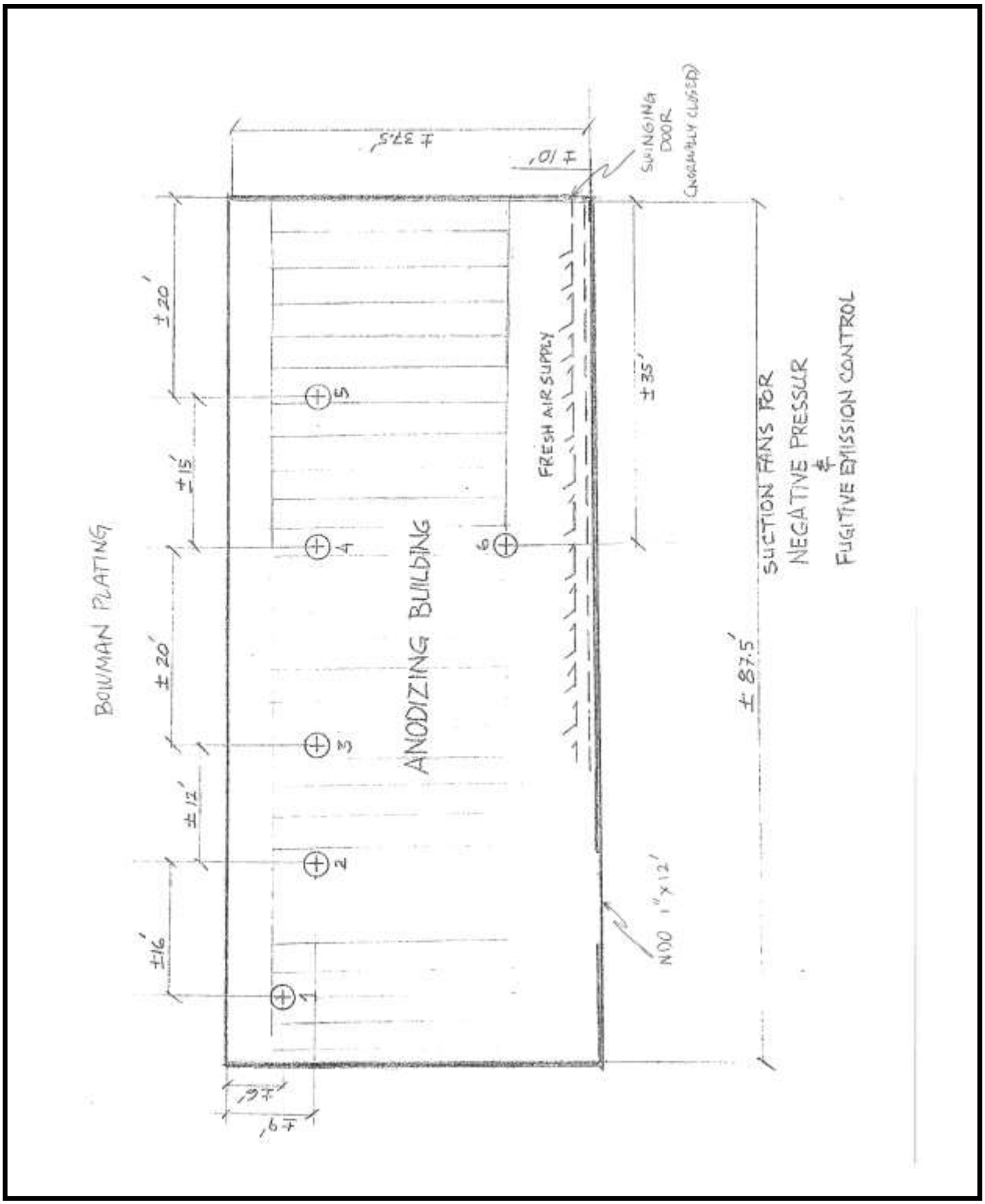


FIGURE 2-2
ANODIZING ROOM PTE



3.0 TESTING METHODOLOGY

Prior to source testing, MAQS utilized a telltale strip to ensure that the ventilation system was providing adequate draft and air flow to maintain the PTE under negative pressure. Photos of the telltale test are included in Appendix A. In addition, air inflow was measured with a TSI VelociCalc 9515 hot-wire anemometer to confirm the recommended minimum control velocity of 100 FPM for the open end of each enclosed hood.

The approximate sampling port locations are shown in Figures 3-1 and 3-2. The ports for ULPA #1 are located about 1.5 duct diameters upstream from the fan and about 3 duct diameters downstream of a ULPA unit. The ports for ULPA #2 are located about 1 duct diameters upstream from the exit to atmosphere and about 2 duct diameters downstream of the fan. The number of traverse points required (12 on each of 2 diameters, 90° apart) and their locations are specified in SCAQMD Method 1.1.

Prior to source testing, the test locations were checked for cyclonic flow by the Pitot tube traverse method. The Pitot tube was rotated through the null point the angle of which was measured with an incline gage.

FIGURE 3-1
ANODIZING ROOM ULPA #1 SAMPLING LOCATIONS

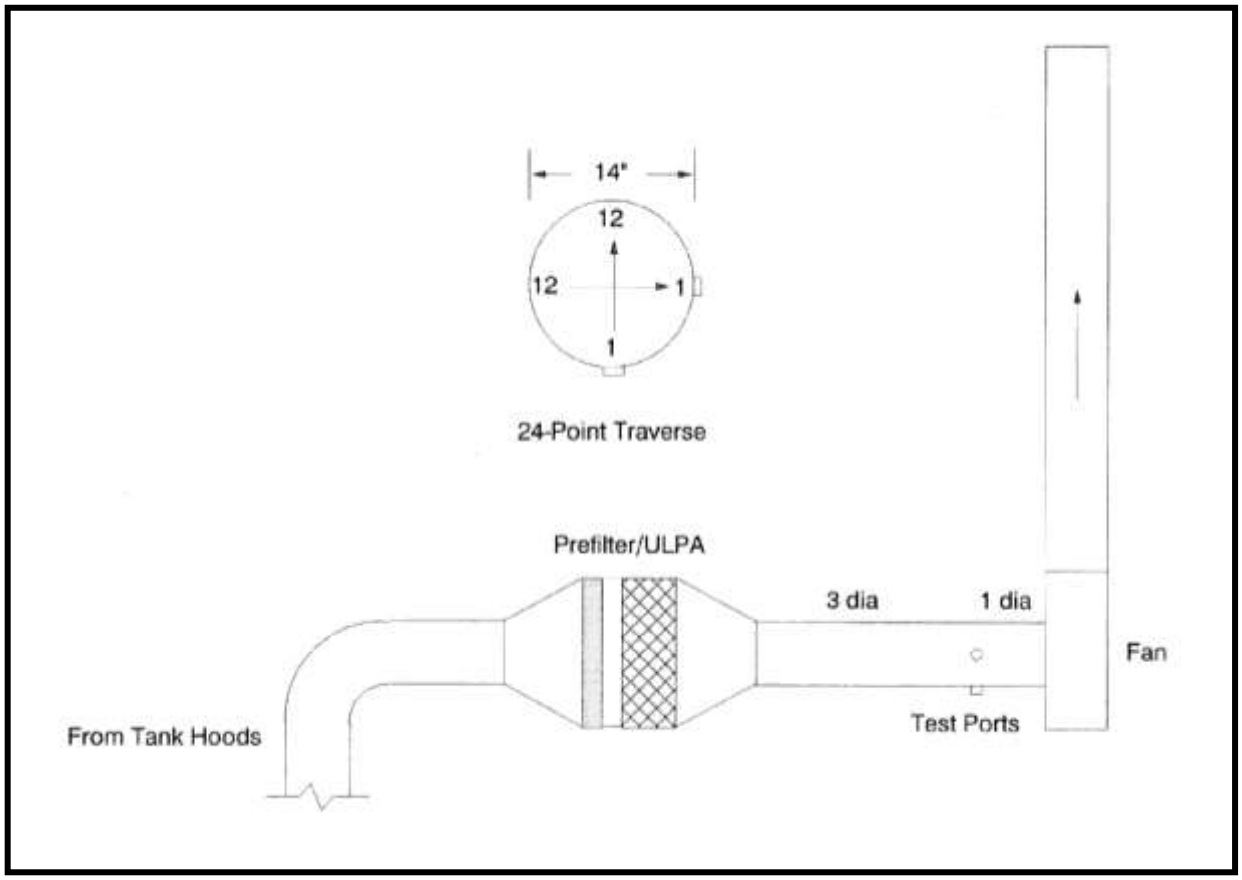
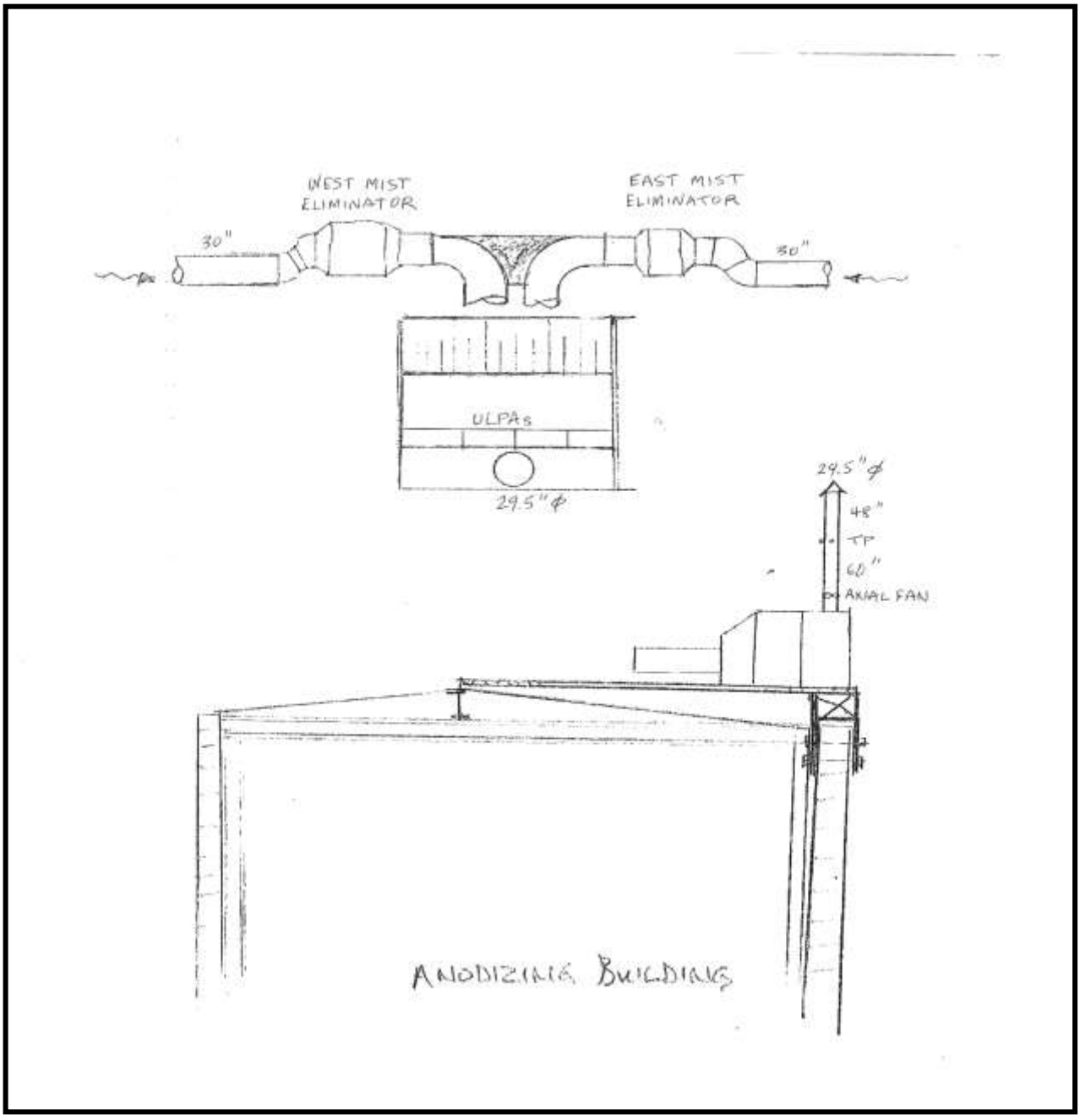


FIGURE 3-2
ANODIZING ROOM ULPA #2 SAMPLING LOCATIONS



3.1 HEXAVALENT CHROMIUM

Hexavalent and total chromium were measured by using CARB Method 425. The sampling train is shown in Figure 3-3. The samples were extracted through a glass nozzle, a Teflon union, a 36" glass-lined stainless steel probe, a short length of ⅜" Teflon tubing from the probe to an ambient quartz filter located at the inlet to the first impinger, two Greenburg-Smith impingers each with 100 ml of 0.1N sodium bicarbonate solution, an empty impinger, 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.

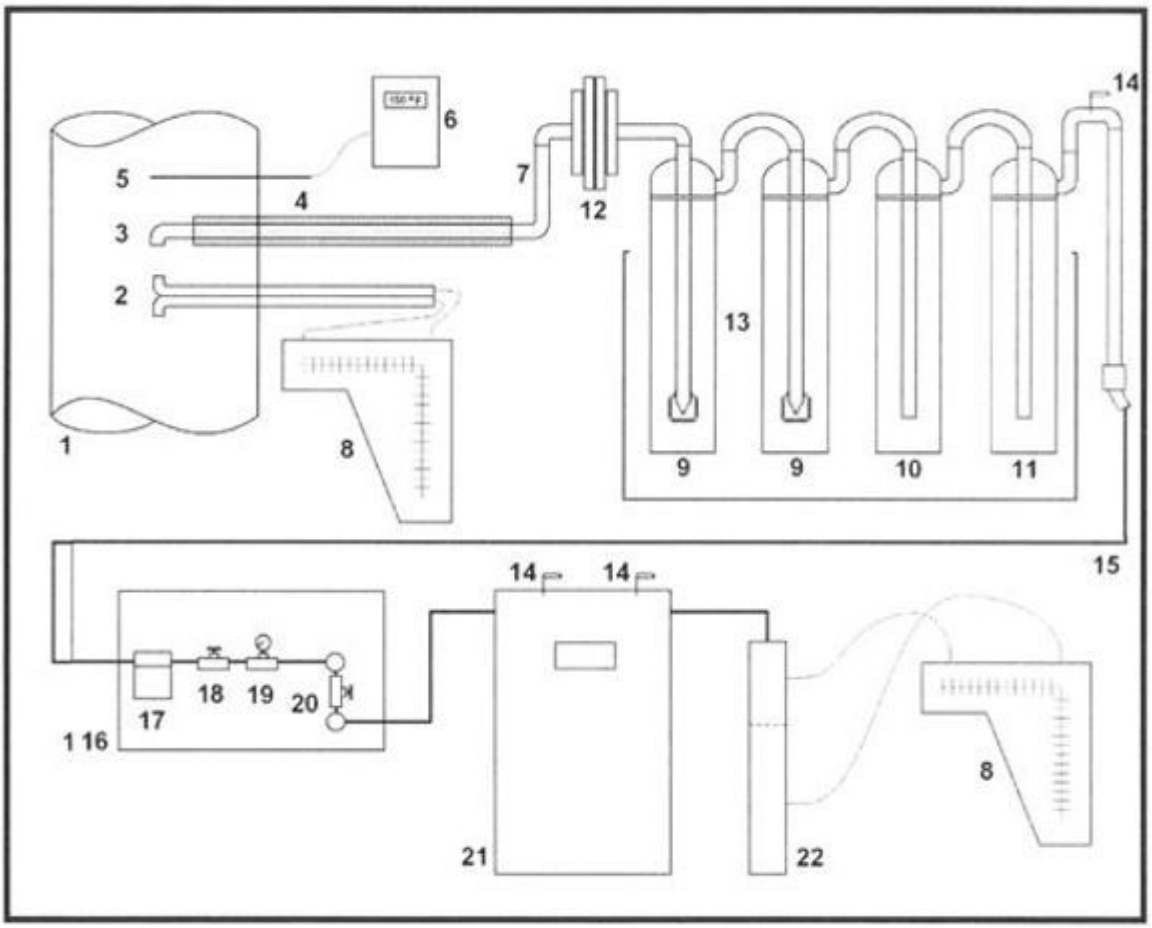
The weight of the impinger solution and the weight of the silica gel were recorded before and after the tests in order to obtain the moisture content of the stack gas. All sample weights were recorded immediately on sample recovery sheets during charging and sample recovery. Leak checks were performed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

The sampling was conducted isokinetically for 180 minutes at 7.5 minutes per point (24 points total) generating a sample size of about 150 cubic feet through the train. Triplicate test runs were made at one operating condition: high activity for process tanks. Field data was recorded on the data sheets shown in Appendix A, which also details the calculation sheets. Volumetric flow rates of the exhaust ducts 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 (SCAQMD Method 2.1).

After the test, the contents of the impingers were placed in a 500-ml. polyethylene container. The sampling train was then rinsed from the 3rd impinger to the nozzle with the charging solution and the rinse was added to the sample. 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 reduction of hexavalent chromium to trivalent chromium. Disposable vinyl gloves were worn during sample retrieval to help prevent contamination. The solution in the first impinger was checked with litmus paper to ensure a pH greater than 8.5.

Laboratory analyses were conducted by Quantum Analytical in Carson, California. Hexavalent chromium determinations were made by ion chromatography with a post column reactor (IC/PCR). The detection level of the analytical procedure for hexavalent chromium, Cr+6, was 0.05 µg/L. Total chromium determinations were made by inductively coupled plasma atomic emission spectrometry (ICP/AES). The detection level of the analytical procedure for total chromium, Cr, was 0.00858 mg/L. The laboratory analysis reports and data package are included in Appendix A.

FIGURE 3-3
TOTAL AND HEXAVALENT CHROMIUM SAMPLING TRAIN
CARB METHOD 425



1. Stack
2. Pitot 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 NaOH
10. Modified G/S impinger empty
11. Modified G/S impinger w/ silica gel
12. Filter
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

3.2 NICKEL (CARB METHOD 433)

The sampling for nickel was conducted in triplicate by CARB Method 433. Sampling was conducted isokinetically for 120 minutes at 5 minutes per point (24 points total) generating a sample size of approximately 100 cubic feet through the sampling train. The sampling train was modified to accommodate vertical sampling and low moisture (ambient stack temperature).

The samples were collected with a sampling train configured with: a glass nozzle; Teflon union, a 60-inch glass-lined probe; a 10-foot Teflon tube from the probe to an ambient quartz filter (untared) located at the inlet to the first impinger, two Greenburg-Smith impingers; each containing 100 milliliters of 0.1N nitric acid solution; an empty impinger; an impinger filled with approximately 200 grams silica gel; a 10-foot umbilical line; a vacuum pump; a dry gas meter; and a calibrated orifice connected to an inclined oil manometer.

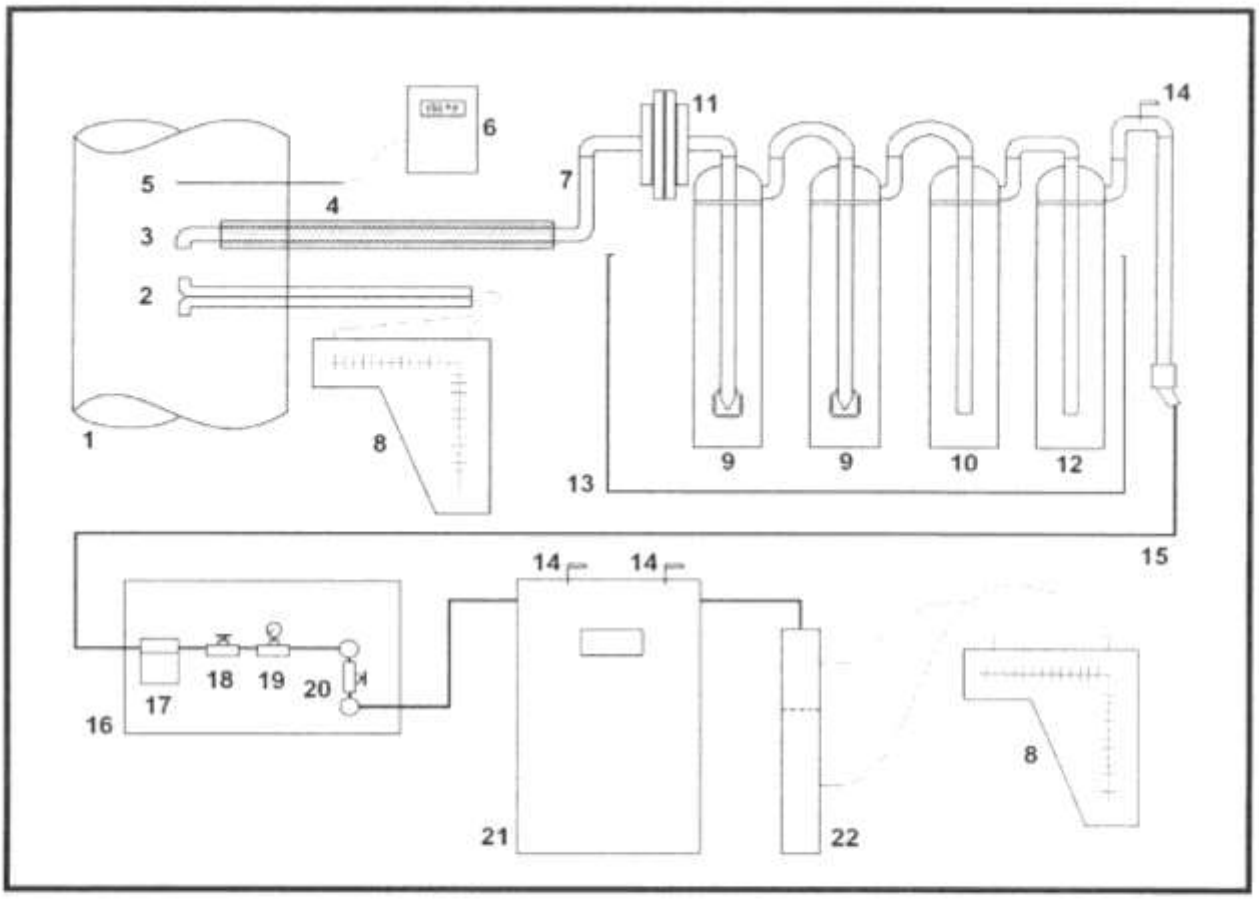
The weight of the impinger solution and the weight of the silica gel were recorded before and after each test run in order to obtain the moisture content of the exhaust gases. All sample weights were recorded on sample recovery sheets during sample train preparation and sample recovery. Leak checks were performed immediately before and after each test run.

Volumetric flow rates for the exhaust were calculated from the measured velocity head and the cross-sectional area of each stack. As each traverse point was sampled, the velocity head of the exhaust gas was measured with an S-type Pitot tube connected to an inclined oil manometer, and the temperature of the exhaust gas was measured with a chromal-alumel (type K) thermocouple connected to a digital readout as required by CARB Method 2.

After each test run, the contents of the impingers were recovered and placed in 500-milliliter, labeled, polyethylene containers. The components of the sampling train were rinsed from the nozzle through the third impinger with the charging solution and the rinse added to the sample. Each sample bottle was sealed with plastic tape and the liquid level marked on each bottle. During sample collection the impingers and solution were immersed in an ice bath (chilled to 68°F or less during the tests) and refrigerated prior to the analyses. A single field blank was prepared, recovered and analyzed according to the method.

The laboratory analyses for nickel was performed by Weck Labs, City of Industry, California. The analytical procedures employed inductively coupled plasma mass spectrometry (ICP/MS). The detection level of the analytical procedure was approximately 0.04 micrograms/sample. A chain of custody procedure was used for tracking samples during this project and maintained for each sample throughout the sample recovery and analytical process. A diagram showing the configuration of the sampling train for CARB Method 433 is shown in Figure 3-4.

FIGURE 3-4
NICKEL SAMPLING TRAIN CARB METHOD 433



1. Stack
2. Pitot 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/ 0.1N HNO_3
10. Modified G/S impinger empty
11. Modified G/S impinger w/ silica gel
12. Orifice flow indicator
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

3.3 PARTICULATE MATTER

The PM emissions were determined by SCAQMD Method 5.1. The sampling train is shown in Figure 3-5 and consisted of a 5-foot glass probe connected with Teflon tubing to a set of Greenburg-Smith impingers, followed by a 10-foot umbilical line, a vacuum pump, a dry gas meter and a calibrated orifice connected to an inclined oil manometer. The impinger set consisted of 2 impingers each containing 100 milliliters of distilled water, an empty impinger, a Gelman type A/E tared glass fiber filter in a glass filter holder, and an impinger filled with 250 grams of silica gel.

The sampling was conducted isokinetically for 60 minutes at 24 points (2.5 minutes per point) generating a sample size of about 50 cubic feet through the train. Field data and calculation sheets are included in Appendix A.

Volumetric flow rates of the exhaust duct 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 (SCAQMD Method 2.1).

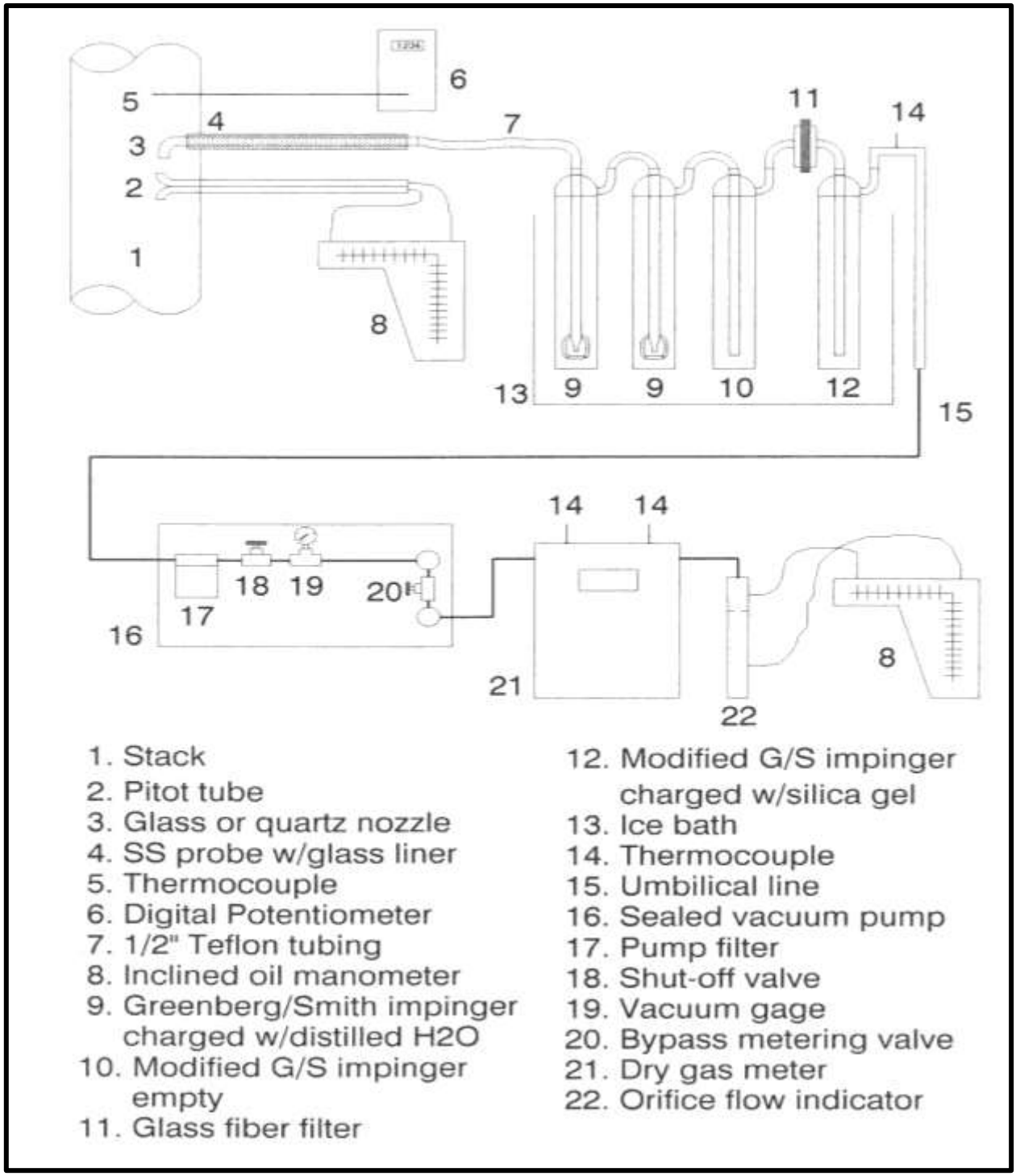
The volume of the impinger solution and the weight of the silica gel were recorded before and after the tests in order to obtain the moisture content of the stack gas stream. The weight of the filter was also recorded before and after the tests as part of the analyses to determine the amount of particulate collected. All sample volumes and silica gel weights were recorded immediately on sample recovery sheets (Appendix A) during charging and sample recovery. Leak checks of the sampling train were performed before and after the test.

After testing, the sample was recovered in the MAQS' mobile laboratory. The contents of the impingers were placed in a 500-ml polyethylene container. The impinger train was rinsed with distilled water and acetone and the rinses were added to the same container. The filter was placed in a plastic petri dish. The probe, nozzle, and filter bell front were brushed and rinsed with deionized water and the rinses added to the sample container. The impinger solution was chilled to an exit gas temperature of 60°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 help prevent contamination.

The particulate collections were analyzed in the MAQS laboratory. The sample was passed through the sample filter to isolate the insoluble particulates. The filtrate was then evaporated to dryness on a hot plate at a temperature below boiling. All sample fractions were desiccated to a constant weight (<0.0005 g change over 6 hours).

The PM was reported based on the mass of the filter and the aqueous portion of the filtrate. Since the ULPA filters remove particles down to 0.12 microns, the PM is assumed to be all PM_{10}.

FIGURE 3-5
SCAQMD METHOD 5.1 PM SAMPLING TRAIN



4.0 TEST RESULTS AND OVERVIEW

4.1 TEST RESULTS

Calculations were made from the field data sheets to determine sample volume, molecular weight, velocities, flow rate, isokinetic variation, and component concentrations for the tests. Dummy parts may be used to generate an average work load in the tanks.

Tables 4-1, 4-2, and 4-3 summarize the results of the hexavalent chromium testing on the anodizing room ULPA exhausts. The hexavalent chromium emissions from ULPA #1 serving the three chromium tanks for the three test runs were 0.00062, <0.000036, and 0.0011 mg/AH for an average of 0.00059 mg/AH. The hexavalent chromium emissions from ULPA #2 serving the anodizing room fugitives for the three test runs were <0.14, <0.12, and <0.12 mg/hr for an average of <0.13 mg/hr.

Tables 4-4, 4-5, and 4-6 summarize the results of the nickel testing on the anodizing room ULPA exhausts. The nickel emissions from ULPA #1 serving the three chromium tanks for the three test runs were 3.8, 4.0, and 3.2 mg/hr for an average of 3.7 mg/hr. The nickel emissions from ULPA #2 serving the anodizing room fugitives for the three test runs were 21.0, 36.9, and 40.3 mg/hr for an average of 32.7 mg/hr.

Table 4-7 summarizes the results of the PM testing on the anodizing room ULPA exhausts. The PM emissions from ULPA #1 serving the three chromium tanks were 0.0092 lb/hr. The PM emissions from ULPA #2 serving the anodizing room fugitives were 0.026 lb/hr.

The process data recorded during the seven test periods is summarized in Appendix A.

TABLE 4-1
CHROMIUM EMISSIONS TEST #1 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 9, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Plating Load, AH/hr	709	-
Flue Gas		
Temperature, °F	73	83
Velocity, ft/sec	28.3	57.3
Static Pressure, inches of H_2O	-2.2	0.44
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,510	16,300
Flow Rate, DSCFM	2,400	15,400
Moisture, % v/v	1.9	1.5
Chromium		
Sample Start	10:10	10:10
Sample Stop	13:10	13:12
Sampling Time, minutes	180	180
Sample Volume, DSCF	146.52	133.84
Isokinetic Rate, %	99.0	99.8
Concentration, mg/dscm		
Total Chromium	<0.00079	<0.00093
Hexavalent Chromium	0.00011	<0.000006
Concentration, mg/hr		
Total Chromium	<3.3	<24.3
Hexavalent Chromium	0.44	<0.14
Emission Factor, mg/amp-hr		
Total Chromium	<0.0046	-
Hexavalent Chromium	0.00062	-

TABLE 4-2
CHROMIUM EMISSIONS TEST #2 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 12, 2021

Parameter/Units	Test Location Cr Tank ULPA #1 Exhaust	 PTE ULPA #2 Exhaust
Plating Load, AH/hr	554	-
Flue Gas		
Temperature, °F	62	83
Velocity, ft/sec	27.7	57.2
Static Pressure, inches of H_2O	-2.1	0.42
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,460	16,300
Flow Rate, DSCFM	2,410	15,400
Moisture, % v/v	1.3	1.3
Chromium		
Sample Start	07:55	07:55
Sample Stop	10:55	10:57
Sampling Time, minutes	180	180
Sample Volume, DSCF	147.42	135.94
Isokinetic Rate, %	99.0	101.3
Concentration, mg/dscm		
Total Chromium	<0.00084	<0.00077
Hexavalent Chromium	0.000005	<0.000005
Concentration, mg/hr		
Total Chromium	<3.3	<20.2
Hexavalent Chromium	<0.02	<0.12
Emission Factor, mg/amp-hr		
Total Chromium	<0.0062	-
Hexavalent Chromium	<0.000036	-

TABLE 4-3
CHROMIUM EMISSIONS TEST #3 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 12, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Plating Load, AH/hr	684	-
Flue Gas		
Temperature, °F	72	79
Velocity, ft/sec	27.3	56.8
Static Pressure, inches of H_2O	-2.1	0.42
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,420	16,200
Flow Rate, DSCFM	2,340	15,400
Moisture, % v/v	1.0	1.2
Chromium		
Sample Start	11:10	11:10
Sample Stop	14:10	14:12
Sampling Time, minutes	180	180
Sample Volume, DSCF	147.17	134.94
Isokinetic Rate, %	102.0	100.5
Concentration, mg/dscm		
Total Chromium	<0.00084	<0.00079
Hexavalent Chromium	0.00020	<0.000005
Concentration, mg/hr		
Total Chromium	<3.4	<20.7
Hexavalent Chromium	0.78	<0.12
Emission Factor, mg/amp-hr		
Total Chromium	<0.0049	-
Hexavalent Chromium	0.0011	-

TABLE 4-4
NICKEL EMISSIONS TEST #1 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 7, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Flue Gas		
Temperature, °F	75	80
Velocity, ft/sec	28.2	60.0
Static Pressure, inches of H_2O	-2.2	0.42
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,500	17,100
Flow Rate, DSCFM	2,380	16,300
Moisture, % v/v	3.0	2.5
Nickel		
Sample Start	10:40	10:40
Sample Stop	12:40	12:42
Sampling Time, minutes	120	120
Sample Volume, DSCF	98.72	97.87
Isokinetic Rate, %	100.7	103.5
Concentration, mg/dscm	0.00093	0.00076
Concentration, mg/hr	3.8	21.0

TABLE 4-5
NICKEL EMISSIONS TEST #2 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 7, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Flue Gas		
Temperature, °F	77	69
Velocity, ft/sec	28.4	59.6
Static Pressure, inches of H_2O	-2.2	0.44
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,520	16,900
Flow Rate, DSCFM	2,420	16,500
Moisture, % v/v	1.9	2.5
Nickel		
Sample Start	13:00	13:00
Sample Stop	15:00	15:02
Sampling Time, minutes	120	120
Sample Volume, DSCF	100.56	99.39
Isokinetic Rate, %	101.1	103.8
Concentration, mg/dscm	0.00098	0.00131
Concentration, mg/hr	4.0	36.9

TABLE 4-6
NICKEL EMISSIONS TEST #3 RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 9, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Flue Gas		
Temperature, °F	63	87
Velocity, ft/sec	28.0	57.5
Static Pressure, inches of H_2O	-2.4	0.42
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,480	16,300
Flow Rate, DSCFM	2,470	15,300
Moisture, % v/v	1.0	3.3
Nickel		
Sample Start	07:45	10:40
Sample Stop	09:45	12:42
Sampling Time, minutes	120	120
Sample Volume, DSCF	97.45	91.19
Isokinetic Rate, %	95.8	102.7
Concentration, mg/dscm	0.00076	0.00155
Concentration, mg/hr	3.2	40.3

TABLE 4-7
PARTICULATE EMISSIONS TEST RESULTS
BOWMAN PLATING
ANODIZING ROOM
JULY 7, 2021

Parameter/Units	Test Location	
	Cr Tank ULPA #1 Exhaust	PTE ULPA #2 Exhaust
Flue Gas		
Temperature, °F	71	69
Velocity, ft/sec	28.7	28.6
Static Pressure, inches of H_2O	-2.4	0.42
Stack Dimension, inches	16.5	29.5
Stack Area, ft^2	1.48	4.74
Flow Rate, ACFM	2,530	16,900
Flow Rate, DSCFM	2,420	16,300
Moisture, % v/v	1.7	2.3
Particulate Matter		
Sample Start	09:22	09:22
Sample Stop	10:22	10:24
Sampling Time, minutes	60	60
Sample Volume, DSCF	48.61	49.43
Isokinetic Rate, %	97.7	104.6
Concentration, gr/dscf	0.00044	0.00019
Concentration, lb/hr	0.0092	0.026

4.2 TEST OVERVIEW

The testing utilized one rack of dummy parts. During the PM and chromium testing, the rack was anodized in Tank 301. During the nickel testing, the rack was placed in Tank 310 (normally covered) and the tank left uncovered for at least 15 minutes every hour (Tank 301 was idle). Between each dip in the nickel tank, the rack was kept in a rinse tank.

APPENDIX A
TEST DATA

Appendix A.1
Field Data and Calculations

MONTROSE
AIR QUALITY SERVICES

1631 E. St. Andrew Place
Santa Ana, CA 92705
Phone: 714-279-6777
Fax: 714-279-6781

Chrome Plating / Anodizing Tank Operating Data

Facility: BOWMAN PLATING
Date: 7-7-21
Tank ID: 301

Job Number: 10019

Page 1 of 1

TANK 301 PM TEST

RUN 1	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
09:21	4"	26.2	543	95	8486906
10:21	4	32.2	629	97	8487484
Average					Total: 578 AH/HR
Comments:					

RUN 2	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
Average					Total:
Comments:					

RUN 3	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
Average					Total:
Comments:					

ISO/IEC 17025-2005 CERTIFICATE OF CALIBRATION

TOTALIZER INSTRUMENT **R & C MAINTENANCE** NO. 4091

CUSTOMER NAME LOWMAN PLATING COMPANY

CUSTOMER ADDRESS: 2631 E. 126th ST COMPTON CALIFORNIA 90222

This certificate only to the item specified below and shall not be reproduced, except in full. Without prior written Approval from. R & C MAINTENANCE

EQUIPMENT SERVICED

Description:	TOTALIZER 2669	Meter Type:	DIGITAL
Manufacturer:	JP TECH	Function:	COUNTER
Model Number;	AH-3	Range/Size:	N/A
Serial Number:	N/A	Rectifier # :	2669
Ac Input:	120 VOLTS	Amp:	740
Tank:	301		

SERVICE INFORMATION

Service Location:	PLATING LINE	Calibration Date:	FEB/16/2021
Tolerance/Accurancy:	3 COUNTS	Cal.Due Date:	AUGUST/16/2021
Instrument/Accurancy:	0.50%	Cal. Service Result:	PASS
Shunt Range:	50 MV	Cal. Service Interval:	SIX MONTHS

TOTALIZER INFORMATION

Standard Milli Volts	Unit Under Test Amp	Initial Count	Ending count @ 60 SECS	Deviation Count
12.2	1740	83827903	838/7922	
Status Pass	Status Pass	Status Pass	Status Pass	Status Pass

STANDARD EMPLOYED

CAL. STANDARD	MODEL NUMBER	INSTRUMENT TYPE	DUE DATE
MAR/8/2020	FLUKE 70III	DIGITAL	MAR/8/2021

The above was calibrated using the following onstrument

Calibration Date:	Due Date:	Nist #	Serial #	Model #
MAR/8/2020	MAR/8/2021	120469.003	77521203	FLUKE 70III

This item published specification. It has been calibrated using standards traceable to SI units and/or the National Institute of Standards and Technology. Alternatively, accuracies have been derived from accepted values of natural physical constans. or derived by the ratio type self-calibration techniques. This certificate may be reproduced in full. Partial reproduction may be done only with written prior consent. All calibration activities are performed with applicable of.

ISO/IEC 17025:2005, ANSI/NCSL Z540-1 1994,ISO 10012,and/or MIL-STD-45662A

Technician Signature

Approval Signature

15442 REEVE ST. GARDEN GROVE CALIFORNIA.92843 TEL.(562)302-7420 & (714) 631-2919

235 BOW ACC 2/17/21

Facility:	BOWMAN PLATING			ANODIZING ROOM		
Date:	7-7-21					
	PM TEST			Ni TEST #1		
	09:20	10:20				
TEMP, °F				10:40	11:40	12:40
T305	80	80		80	80	80
T310	194	193		147	168	189
T312	84	84		84	85	85
T314	205	205		205	204	204
T321	206	205		205	204	206
T610	153	154		151	153	152
T320	80	80	TANK 301	97	97	96
ΔP ULPA #1, IN. H2O			TANK 320	80	80	80
STAGE 1	0.20	0.18		0.18	0.18	0.18
2	0.25	0.25		0.25	0.25	0.25
PREFILTER	0.26	0.27		0.27	0.27	0.27
ULPA #1	0.80	0.80		0.80	0.80	0.80
CLAMSHELL HOOD						
34/321 OPENTIME, MIN	3.2	–		4	–	2
FREE BOARD, IN.	3	3		3	3	3
CONDENSER IN °F	127	121		121	126	126
OUT °F	67	67		67	66	66
ΔP ULPA #2, IN. H2O						
ME WEST	0.06	0.06		0.06	0.06	0.06
ME EAST	0.06	0.06		0.06	0.06	0.06
ULPA #2	1.2	1.2		1.2	1.2	1.2
TANK 610						
UNCOVER TIME, MIN	2	–		2	2	–
TANK 310						
UNCOVER TIME, MIN	–	–		15	15	–
VENT FANS ON:	#1, #4	#1, #4		#1, #4	#1, #4	#1, #4
HOOD INFLOW, FPM						
T301	220					
T314	255					
T321	255					
PTE INFLOW, FPM						
S CURTAINS	314					
E DOOR AJAR	275					

DUMMY PARTS 54 PARTS HANGERS T301 T310
55 4" CUPS T312

Facility:	BOWMAN PLATING					
Date:	7-7-21					
	Ni TEST #2			Ni TEST #3 7-9-21		
	13:00	14:00	15:00	07:45	08:45	09:45
TEMP, °F						
T305	80	80	80	82	82	81
T310	193	195	196	162	153	149
T312	85	85	85	76	75	74
T314	204	206	205	197	192	188
T321	204	205	205	198	189	185
T610	153	153	153	152	153	151
T301	96	96	95	90	90	90
T320	80	80	80	80	80	80
ΔP ULPA #1, IN. H_2O						
STAGE 1	0.18	0.18	0.18	0.18	0.18	
2	0.25	0.25	0.25	0.25	0.25	
PREFILTER	0.27	0.27	0.27	0.35	0.27	
ULPA #1	0.80	0.80	0.80	0.90	0.85	
CLAMSHELL HOOD						
314/321 OPEN TIME, MIN						
FREEBOARD, IN.	3	3	3	3	3	3
CONDENSER IN, °F	126	124	125	108	104	102
OUT, °F	65	69	68	71	67	63
ΔP ULPA #2, IN. H_2O						
ME WEST	0.06	0.06	0.06	0.06	0.06	0.06
ME EAST	0.06	0.06	0.06	0.06	0.06	0.06
ULPA #2	1.2	1.2	1.2	1.2	1.2	1.2
TANK 610						
UNCOVER TIME, MIN.	2	2	-	2	2	-
TANK 310						
UNCOVER TIME, MIN.	15	15	-	15	15	-
VENT FANS ON	#1, #4	#1, #4	#1, #4	#1, #4	#1, #4	#1, #4

DUMMY RACK: 37 PARTS HANGERS

MONTROSE
AIR QUALITY SERVICES

1631 E. St. Andrew Place
Santa Ana, CA 92705
Phone: 714-279-6777
Fax: 714-279-6781

Chrome Plating / Anodizing Tank Operating Data

Facility: BOWMAN PLATING
Date: 7-9-21
Tank ID: T-301

Job Number: 10019

Page 1 of 1

Cr^6 TEST #1

RUN 1	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
10:10	4"	48.5	402	91	8487873
11:10	4	32.6	704	99	8488700
12:10	4	29.8	663	102	8489296
13:10	4	29.6	718	104	8489999
Average					Total: 2126/3
Comments:					SHB ~~1063~~ AH/HR

Cr^6 TEST #2 7-12-21

709

RUN 2	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
07:55	4"	22.0	547	94	8491250
08:55	4	22.9	516	97	8491780
09:55	4	22.9	560	100	8492256
10:55	4	22.8	607	100	8492913
Average					Total: 1663/3
Comments:					SHB ~~832~~ AH/HR

Cr^6 TEST #3 7-12-21

554

RUN 3	Free-Board	VDC	Amps	Temperature	Totalizer
TIME					
11:10	4"	21.9	610	103	8493056
12:10	4"	21.9	644	104	8493700
13:10	4	21.8	678	106	8494395
14:10	4	21.8	727	107	8495109
Average					Total: 2053/3
Comments:					SHB ~~1026~~ AH/HR

684

Facility: BOWMAN PLATING

Date: 7-9-21 ANODIZING ROOM

G6 TEST #1

	10:10	11:10	12:10	13:10		
TEMP, °F						
T305	81	81	81	81		
T310	149	170	186	194		
T312	74	77	77	77		
T314	188	196	198	205		
T321	183	190	198	205		
T610	153	153	153	153		
T320	80	80	80	80		
ΔP ULPA #1, IN. H_2O						
STAGE 1	0.18	0.19	0.18	0.18		
2	0.25	0.27	0.25	0.25		
PREFILTER	0.27	0.27	0.27	0.27		
ULPA #1	0.82	0.82	0.82	0.82		
CLAMSHELL HOOD						
314/321 OPENTIME, MIN	3	3	3	—		
FREEBOARD, IN.	3	3	3	3		
CONDENSER IN, °F	104	110	114	118		
OUT, °F	66	66	68	69		
ΔP ULPA #2, IN. H_2O						
ME WEST	0.06	0.06	0.06	0.06		
ME EAST	0.06	0.06	0.06	0.06		
ULPA #2	1.2	1.2	1.2	1.2		
TANK 610	& SUB					
UNCOVER TIME, MIN	2	2	2	—		
TANK						
VENT FANS ON	#1, #4	#1 #4	#1, #4	#1, #4		

Facility: BOWMAN PLATING
Date: 7-12-21

ANODIZING ROOM

	CAL	TEST #2				
	07:55	08:55	09:55	10:55		
TEMP °F						
T305	84	84	84	84		
T310	153	153	161	155		
T312	87	87	84	84		
T314	189	189	188	189		
T321	205	205	205	204		
T610	153	153 ~~205~~ SHB	153	155		
T320	83	83	83	8		
ΔP ULPA #1, IN. H_2O						
STAGE 1	0.19	0.19	0.19	0.19		
2	0.25	0.25	0.27	0.27		
PREFILTER	0.30	0.27	0.27	0.27		
ULPA #1	0.85	0.85	0.82	0.80		
CLAMSHELL HOOD						
314/321 OPEN TIME, MIN.	–	3	3	3		
FREEBOARD, IN.	3	3	3	3		
CONDENSER IN, °F	110	110	110	110		
OUT, °F	60	61	61	62		
ΔP ULPA #2, IN. H_2O						
ME WEST	0.06	0.06	0.06	0.06		
ME EAST	0.06	0.06	0.06	0.06		
ULPA #2	1.2	1.2	1.2	1.2		
TANK 610						
UNCOVER TIME, MIN.	2	2	2	–		
VENT FANS ON	#1, #4	#1, #4	#1, #4	#1, #4		

Facility: BOWMAN PLATING
Date: 7-12-21

ANODIZING ROOM

Cr6 TEST #3

	11:10	12:10	13:10	14:10		
TEMP, °F						
T305	84	84	84	84		
T310	151	148	172	154		
T312	84	84	82	81		
T314	190	190	190	196		
T321	204	205	204	204		
T610	153	153	153	153		
T320	83	83	83	83		
ΔP ULPA #1, IN. H_2O						
STAGE 1	0.19	0.19	0.18	0.18		
2	0.27	0.27	0.28	0.28		
PREFILTER	0.27	0.27	0.27	0.27		
ULPA #1	0.80	0.80	0.80	0.80		
CLAMSHELL HOOD						
314/321 OPEN TIME, MIN	3	3	3	3		
FREEBOARD, IN.	3	3	3	3		
CONDENSER IN, °F	110	110	110	110		
OUT, °F	62	62	63	63		
AP ULPA #2, IN. H_2O						
ME WEST	0.06	0.06	0.06	0.06		
ME EAST	0.06	0.08	0.06	0.06		
ULPA #2	1.2	1.2	1.2	1.2		
TANK 610						
UNCOVER TIME, M	2	2	2	—		
VENT FANS ON	#1, #4	#1, #4	#1, #4	#1, #4		

MONTROSE
AIR QUALITY SERVICES

1631 E St. Andrew Place
Santa Ana, California 92705
Phone: 714-279- 6777
Fax: 714-279-6781

TRAVERSE POINT LOCATION FOR CIRCULAR STACKS

Job Number: 5727

Checked by: STB

Plant: BOWMAN PLATING
Source: AP ULPA EXHAUST
Date: 4/27/21
Inside of far wall to outside of nipple (a): 16.½"
Inside of near wall to outside of nipple (b): 0
Stack I.D. (a-b): 16½"
Nearest upstream disturbance: 53½"
Nearest downstream disturbance: 16"
Calculator: DN

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	16.½	0.3	0	0.3
2	6.7		1.1		1.1
3	11.8		1.9		1.9
4	17.7		2.9		2.9
5	25.0		4.1		4.1
6	35.1		5.9		5.9
7			10.6		10.6
8			12.4		12.4
9			12.6	V	13.6
10			14.6		14.6
11			15.4		15.4
12			16.2		16.2

FLUE GAS VELOCITY DATASHEET

CLIENT: Bowman
LOCATION:
UNIT: AP ULPA EXH
TEST DATE: 4/27/21
TEST NUMBER: Pre Flows
LEAK CHECK PRE- ok POST- ok
ΔP INDICATOR TYPE: 42 wcs
ΔP INDICATOR ID:

PERFORMED BY: DH / JR
BAR. PRESSURE:
STATIC PRESSURE: -2.3
TC READOUT ID: 42 wcs
TC ID: 179
PITOT TUBE ID: 179
PITOT TUBE COEFFICIENT: 0.84
ZERO: ok LEVEL: ok

Time	Port	Point	Vel. Head in. H_2O	Temp., °F	Time	Port	Point	Vel. Head in. H_2O	Temp, °F
	S	1	0.25	72		T	1	0.16	72
		2	0.20				2	0.17	
		3	0.18				3	0.18	
		4	0.16				4	0.20	
		5	0.17				5	0.20	
		6	0.19				6	0.19	
		7	0.20				7	0.20	
		8	0.20				8	0.21	
		9	0.21				9	0.22	
		10	0.21				10	0.24	
		11	0.22				11	0.25	
		12	0.21				12	0.23	
			cyc					cyc	
		1	<10				1	<10	
		2	↓				2	↓	
		3					3		
		4	↓				4	↓	
		5					5		

Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: TANK EXH ULPA #1 EXH
DATE: 7/7/21
RUN NO: 1 PM
OPERATOR: DH
METER BOX NO: 7 WCS
METER ΔH@: 1.550
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 2.5/24
ΔH= _____ X ΔP: 8.038
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: ✓
Filter Condition after Test: ✓
Check Weight: 500/500

AMBIENT TEMPERATURE: 68°
BAROMETRIC PRESSURE: 29.94
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 183/ q/SS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0.305 q/SS
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: 55-4191
PRE-TEST LEAK RATE: : 0.008 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.008 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER DH
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	Difference
1	D.I	744.7 / 740.0	4.7
2	D.I	738.5 / 736.5	2.0
3	M.T	615.5 / 616.1	-0.6
4	SG	860.6 / 848.7	11.9
___	___	___ / ___	___
Total:			18.0

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	0922	585.320	0.19	1.5	70	NA	NA	61	70	70	3		-2.4
2		587.5	0.20	1.6	70			53	73	72	3		
3	0927	589.5	0.20	1.6	70			52	74	72	3		
4		591.3	0.22	1.8	70			53	75	72	3		
5	0932	593.2	0.24	1.9	70			53	77	73	3		
6		595.4	0.22	1.8	70			54	78	73	3		
7	0937	597.3	0.25	2.0	70			55	79	74	3		
8		599.5	0.26	2.1	70			54	80	75	3		
9	0942	601.6	0.28	2.3	70			54	81	75	4		
10		603.9	0.25	2.0	70			55	83	76	3		
11	0947	606.0	0.30	2.4	70			53	84	76	4		
12		608.1	0.31	2.5	71			55	84	77	4		
1	0952	610.5	0.22	1.8	71			56	85	78	5		
2		612.6	0.24	1.9	71			57	87	79	3		
3	0957	614.4	0.26	2.1	71			57	88	80	3		
4		616.7	0.27	2.2	71			57	88	80	3		
5	1002	618.8	0.25	2.0	71			59	86	78	3		
6		620.8	0.23	1.8	71			60	84	77	3		
7	1007	622.9	0.21	1.7	71			59	84	78	3		
8		624.7	0.21	1.7	71			57	85	95	3		
9	1012	626.4	0.20	1.6	71			59	54	78	3		
10		628.1	0.23	1.8	72			60	85	78	3		-
11	1017	630.2	0.36	2.9	72			60	86	79	5		
12		632.7	0.38	3.1	72			61	88	80	5		
Average:	1022	~~635.~~ 320						TEST					

Comments: 635.328 — 50.008 — √0.497

Date of last revision 2/14/2017

MAQS
Particulate Matter Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room T301, T314, T321
Run	1
Location	ULPA #1 Exhaust
Date	7/7/2021

INPUT DATA

Vlc =	18.0	cc	Vol. of H2O collected (impingers)
Vm =	50.008	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.76	in. Hg	Stack pressure
dP^0.5 =	0.502	in. H2O	Average sq.rt delta P
dH =	2.050	in. H2O	Average draft gauge reading
Tm =	542.3	R	Average meter temperature
Ts =	531.3	R	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	60	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant

Bowman Plating Anodizing Room T301, T314, T321
ULPA #1 Exhaust
Run 1

[O2] = 20.9 %
[CO2] = 0.04 % N2 = 100 - (CO2 + O2)

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 48.61 cu.ft
1.38 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 0.84 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.0169

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.66

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^.5

vs = 28.47 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2528 cfm
72 cmm

Bowman Plating Anodizing Room T301, T314, T321
ULPA #1 Exhaust
Run 1

7) Average stack gas dry volumetric flowrate. Tstd = 520 oR
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd =	2420	dscfm
	68.5	dscmm

8) PM10 Emissions

[Pm] = mass *15.43 grains per gram / Vmstd
E(PM) = [Pm] * 60 min/hr * Qstd / 7000 grains per pound

Collection, grams

Wash PM	
Filter PM	0.0000
Extract PM	0.0000
Impingers PM	0.0014
Total	0.0014

[PM10] =	0.00044	grains/DSCF
E(PM10) =	0.0092	lbs/hr

9) Isokinetic Calculation

An =	5.07E-04	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 97.67

Bowman Plating
ULPA #1 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	1	
Static P	-2.40	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

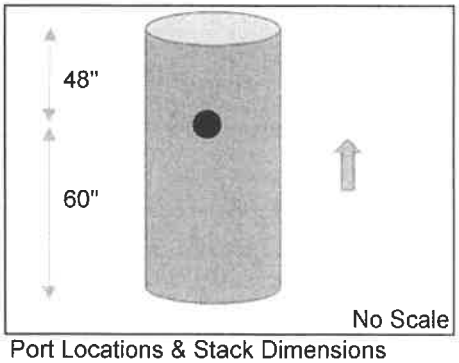
Traverse Point	Delta-P (in. H2O)	Temp. (Deg.F)	delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^0.5
L-1	0.19	70	1.50	70	70	0.436
2	0.20	70	1.60	73	72	0.447
3	0.20	70	1.60	74	72	0.447
4	0.22	70	1.80	75	72	0.469
5	0.24	70	1.90	77	73	0.490
6	0.22	70	1.80	78	73	0.469
7	0.25	70	2.00	79	74	0.500
8	0.26	70	2.10	80	75	0.510
9	0.28	70	2.30	81	75	0.529
10	0.25	70	2.00	83	76	0.500
11	0.30	70	2.40	84	76	0.548
12	0.31	71	2.50	84	77	0.557
R-1	0.22	71	1.80	85	78	0.469
2	0.24	71	1.90	87	79	0.490
3	0.26	71	2.10	88	80	0.510
4	0.27	71	2.20	88	80	0.520
5	0.25	71	2.00	86	78	0.500
6	0.23	71	1.80	84	78	0.480
7	0.21	71	1.70	84	78	0.458
8	0.21	71	1.70	85	79	0.458
9	0.20	71	1.60	84	78	0.447
10	0.23	72	1.80	85	78	0.480
11	0.36	72	2.90	86	79	0.600
12	0.38	72	3.10	88	80	0.616
		71.3	2.05	85.8	78.8	0.502
				Avg. 82.3		

MONTROSE
AIR QUALITY SERVICES

1631 E St. Andrew Place
Santa Ana, California 92705
Phone: 714-279-6777
Fax: 714-279-6781

TRAVERSE POINT LOCATION FOR CIRCULAR STACKS

Plant:	Bowman Plating	
Source:	Ulpa #2 Exhaust	
Date:	7/72021	
Inside of far wall to outside of nipple (a):	29.5"	
Inside of near wall to outside of nipple (b):	N/A	
Stack Diameter (a-b):	29.5"	
Nearest upstream disturbance:		60"
Nearest downstream disturbance:		48"
Calculator:	SJ	



Port Locations & Stack Dimensions

Traverse Point Number	Percent of Stack Diameter	Stack Diameter	Traverse Point Location (without nipple)	Length of Nipple	Traverse Point Location (with nipple)
1	2.1	29.5	0.6	0	0.6
2	6.7	29.5	2.0	0	2.0
3	11.8	29.5	3.5	0	3.5
4	17.7	29.5	5.2	0	5.2
5	25.0	29.5	7.4	0	7.4
6	35.6	29.5	10.5	0	10.5
7	64.4	29.5	19.0	0	19.0
8	75.0	29.5	22.1	0	22.1
9	82.3	29.5	24.3	0	24.3
10	88.2	29.5	26.0	0	26.0
11	93.3	29.5	27.5	0	27.5
12	97.9	29.5	28.9	0	28.9

MONTROSE AIR QUALITY SERVICES

FLUE GAS VELOCITY DATASHEET

CLIENT: Bowman
LOCATION: ICIPA #2
UNIT: VIPA 2 EXH
TEST DATE: 7/7/21
TEST NUMBER: PM2
LEAK CHECK PRE- ✓ POST- ✓
ΔP INDICATOR TYPE: dif ✓
ΔP INDICATOR ID: 42wc5

PERFORMED BY: SA / DR
BAR. PRESSURE: 29.94
STATIC PRESSURE: -0.42
TC READOUT ID: 186 42wc5
TC ID: 186
PITOT TUBE ID: 186
PITOT TUBE COEFFICIENT: 0.84
ZERO: ✓ LEVEL: ✓

Time	Port	Point	Vel. Head in. H_2O	Temp., °F	Time	Port	Point	Vel. Head in. H_2O	Temp, °F
N/A	N	1	1.0	84 CYCL 2°	N/A	W	1	1.3	84 CYCL 3°
		2	1.1	1°			2	1.1	5°
		3	1.1	0°			3	1.0	1°
		4	1.0	3°			4	1.1	4°
		5	1.0	1°			5	0.95	3°
		6	0.88	2°			6	0.80	1°
		7	0.85	1°			7	0.84	0°
		8	1.0	4°			8	0.89	3°
		9	1.3	3°			9	1.1	2°
		10	1.4	1°			10	1.5	1°
		11	1.4	3°			11	1.6	2°
		12	1.1	0°			12	1.6	1°

Comments:

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: ANODIZING ROOM EXH ULPA #2
DATE: 7/7/21
RUN NO: 1 PM
OPERATOR: SS/JR
METER BOX NO: 42 WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: 29.5" Ø
TRAVERSE POINTS, MIN/POINT: 25x24
ΔH= 1.835 X ΔP:
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: —
Check Weight: 500.0 - 500.1 g

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE: 29.94
ASSUMED MOISTURE: 2.%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: GLASS
PROBE LENGTH: 36"
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: 55-4192
PRE-TEST LEAK RATE: : 0.007 CFM@ 13 in. Hg.
POST-TEST LEAK RATE: : CFM@ in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	DI	735.8 / 723.7	12.1
2	DI	718.1 / 716.7	1.4
3	MT	638.4 / 637.8	0.6
4	S.G	890.0 / 879.2	10.8
Total:			24.9

Point	0922 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
W 1	0	0.0	1.1	2.1	65	—	—	63	73		3	—	0.47
2		2.2	1.2	2.2	65	—	—	57	74		3	—	
3	5	4.6	1.0	1.8	65	—	—	51	74		3	—	
4		6.9	1.0	1.8	64	—	—	51	75		3	—	
5	10	8.3	0.95	1.7	64	—	—	52	75		3	—	
6		10.5	0.80	1.5	64	—	—	52	75		3	—	
7	15	12.5	0.85	1.6	64	—	—	52	77		3	—	
8		14.7	0.92	1.7	63	—		53	78		3	—	
9	20	16.5	1.1	2.1	63	—	—	53	79		3	—	
10		18.7	1.5	2.9	63	—	—	53	80		3	—	
11	25	20.8	1.7	3.3	61	—	—	54	80		3	—	
12		23.4	1.60	2.9	63	—	—	54	81		3	—	
N 1	30	26.5	1.1	2.1	60	—	—	57	81		3	—	
2		28.7	1.0	1.8	67	—	—	55	82		3	—	
3	35	31.4	1.1	2.1	67	—	—	55	82		3	—	
4		33.1	1.0	1.8	67	—	—	56	82		3	—	
5	40	35.3	0.99	1.8	68	—	—	56	82		3	—	
6		37.3	0.85	1.6	68	—	—	56	82		3	—	
7	45	39.5	0.82	1.5	68	—	—	57	83		3	—	
8		41.9	1.2	2.2	69	—	—	57	83		3	—	
9	50	42.8	1.3	2.4	70	—	—	57	83		3	—	
10		44.8	1.5	2.8	70	—	—	58	84		3	—	—
11	55	47.5	1.3	2.4	70	—	—	58	84		3	—	
12		50.0	1.3	2.4	72	—	—	59	86		3	—	—
Average:	60	52.194	—	END TEST									

Comments: ULPA @ START 1.2" WEST ME 0.06" EAST ME 0.06" @30 ULPA 1.2" WEST ME = 0.06" EAST ME = 0.06"

MAQS
Particulate Matter Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room PTE Fugitive Emissions
Run	1
Location	ULPA #2 Exhaust
Date	7/7/2021

INPUT DATA

Vlc =	24.9	cc	Vol. of H2O collected (impingers)
Vm =	52.194	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.97	in. Hg	Stack pressure
dP^0.5 =	1.055	in. H2O	Average sq.rt delta P
dH =	2.075	in. H2O	Average draft gauge reading
Tm =	542.8	R	Average meter temperature
Ts =	528.5	R	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	60	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant

Bowman Plating Anodizing Room PTE Fugitive Emissions
ULPA #2 Exhaust
Run 1

[O2] = 20.9 %
[CO2] = 0.04 % N2 = 100 - (CO2 + O2)

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 49.43 cu.ft
1.40 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 1.16 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.0228

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.59

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^.5

vs = 59.50 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 16921 cfm
479 cmm

Bowman Plating Anodizing Room PTE Fugitive Emissions
ULPA #2 Exhaust
Run 1

7) Average stack gas dry volumetric flowrate. Tstd = 520 oR
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd =	16297	dscfm
	461.5	dscmm

8) PM10 Emissions

[Pm] = mass *15.43 grains per gram / Vmstd
E(PM) = [Pm] * 60 min/hr * Qstd / 7000 grains per pound

Collection, grams

Wash PM	
Filter PM	0.0000
Extract PM	0.0000
Impingers PM	0.0006
Total	0.0006

[PM10] =	0.00019	grains/DSCF
E(PM10) =	0.026	lbs/hr

9) Isokinetic Calculation

An =	2.29E-04	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 104.55

Bowman Plating
ULPA #2 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	1	
Static P	0.42	in.H2O
Pitot Cp	0.84	
Nozzle	0.205	

Traverse Point	Delta-P (in. H2O)	Temp. (Deg.F)	delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^0.5
L-1	1.10	65	2.10		73	1.049
2	1.20	65	2.20		74	1.095
3	1.00	65	1.80		74	1.000
4	1.00	64	1.80		75	1.000
5	0.95	64	1.70		75	0.975
6	0.80	64	1.50		75	0.894
7	0.85	64	1.60		77	0.922
8	0.92	63	1.70		78	0.959
9	1.10	63	2.10		79	1.049
10	1.50	63	2.80		80	1.225
11	1.70	61	3.30		80	1.304
12	1.60	63	2.90		81	1.265
R-1	1.10	66	2.10		81	1.049
2	1.00	67	1.80		82	1.000
3	1.10	67	2.10		82	1.049
4	1.00	68	1.80		82	1.000
5	0.99	68	1.80		82	0.995
6	0.85	68	1.60		82	0.922
7	0.82	68	1.50		83	0.906
8	1.20	69	2.20		83	1.095
9	1.30	70	2.40		83	1.140
10	1.50	70	2.80		84	1.225
11	1.30	70	2.40		84	1.140
12	1.30	71	2.40		86	1.140
		68.5	2.08		82.8	1.055
				Avg. 82.8		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: TANK 6X4 UCPA 1
DATE: 7/7/21
RUN NO: SHB 1 2 N1
OPERATOR: DH
METER BOX NO: 2wcs
METER ΔH@: 1.550
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 8.038
Probe Condition, pre/post test: good/good
Silica Gel Expended, Y/N: Y/good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 72°
BAROMETRIC PRESSURE: 29.94
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 183/glass
PROBE LENGTH: 31
NOZZLE ID NO/ MATERIAL: 0.305/glass
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: 83-UP890
PRE-TEST LEAK RATE: : 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.008 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER DH
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	Difference
1	0.1N HNO3	720.2 / 711.4	8.8
2	0.1N HNO3	682.6 / 676.2	6.4
3	MT	803.3 / 800.9	2.4
4	S.GEL	952.5 / 927.5	25.0
Total:			64.2

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	1040	635.844	0.18	1.4	73	N/A	N/A	59	80	80	3		-2.2
2	1045	639.0	0.20	1.6	73			57	80	80	3		
3	1050	642.8	0.21	1.7	73			57	84	80	3		
4	1055	646.6	0.22	1.8	73			57	84	80	3		
5	1100	650.5	0.24	1.9	74			56	86	80	3		
6	1105	654.5	0.23	1.8	74			55	87	81	3		
7	1110	658.7	0.26	2.1	74			55	88	81	3		
8	1115	662.9	0.27	2.2	74			56	88	81	3		
9	1120	667.1	0.24	1.9	74			56	88	81			
10	1125	671.2	0.29	2.3	74			55	88	82	3		
11	1130	675.3	0.32	2.6	74			54	88	82	4		
12	1135	679.5	0.22	1.8	75			57	85	82	3		
1	1140	683.2	0.24	1.9	75			58	87	82	3		
2 *	~~1145~~ 1141	688.3	0.25	2.0	75			57	87	82	3		
3 *	~~1150~~ 1150	692.2	0.25	2.0	75			58	86	82	3		
4 *	~~1155~~ 1155	696.4	0.24	1.9	75			57	86	82	3		
5	1200	700.5	0.23	1.8	75			58	86	82	3		
6 *	~~1205~~ 1205	704.9	0.22	1.8	75			59	87	83	3		
7 *	~~1210~~ 1210	709.2	0.21	1.7	76			58	87	83	3		
8	1215	713.1	0.21	1.7	76			59	87	83	3		
9 *	~~1220~~ 1220	717.0	0.20	1.6	77			60	88	83	3		
10	1225	720.8	0.23	1.8	77			66	88	83	3		-
11	1230	724.9	0.37	* ~~2.9~~ 3.0	77			55	90	83	3		
12	1235	730.5	0.38	3.1	77			55	91	83	4		
Average:	1140	726.271									4		

Comments: 100, 427
* = DH 7/7/21

Date of last revision 2/14/2017

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	1
Location	ULPA #1 Exhaust
Date	7/9/2021

Input Data:

Vlc =	59.8	cc	Vol. of H_2O collected (impingers)
Vm =	152.434	cf	Dry gas meter reading
Pb =	29.99	in. Hg	Barometric pressure
Ps =	29.83	in. Hg	Stack pressure
dP^0.5 =	0.499	in. H2O	Average sq.rt delta P
dH =	2.03	in. H2O	Average delta H reading
Tm =	89.3	F	Average meter temperature
Ts =	73.4	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
	709	AH/hr	Load

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #1 Exhaust
Run # 1
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd =	146.52	cu.ft
	4.15	cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) =	2.77	scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws =	0.019

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms =	28.64

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs =	28.31	ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q =	2514	cfm
	71	cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd =	2398	dscfm
	68	dscmm

8) Analytical data

Chromium Concentrations

V(c) =	0.383	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00329	mg	Total Cr collected
[Cr] =	0.00079	mg/dscm	
E =	3.23	mg/hr	
F=	0.0046	mg/amp-hr	
C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00116	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000444	mg	Total Cr+6 collected
[Cr+6] =	0.0001071	mg/dscm	
E =	0.436	mg/hr	
EF =	0.00062	mg/AH	
C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000507	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 99.0

Bowman Plating
ULPA #1 Exhaust

Test Date	7/9/2021	
Barometer	29.99	in.Hg
Run #	1	
Static P	-2.2	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.22	72	1.80	82	82	0.469
2	0.25	70	2.00	83	82	0.500
3	0.28	70	2.30	88	84	0.529
4	0.28	70	2.30	91	84	0.529
5	0.24	72	1.90	91	85	0.490
6	0.22	72	1.80	90	85	0.469
7	0.21	71	1.70	91	86	0.458
8	0.20	72	1.60	91	85	0.447
9	0.20	72	1.60	92	86	0.447
10	0.22	72	1.80	92	86	0.469
11	0.37	72	3.00	93	87	0.608
12	0.39	72	3.10	93	87	0.624
V-1	0.19	72	1.50	93	87	0.436
2	0.20	72	1.60	93	88	0.447
3	0.21	73	1.70	92	88	0.458
4	0.22	75	1.80	92	87	0.469
5	0.25	76	2.00	92	87	0.500
6	0.23	76	1.80	93	87	0.480
7	0.24	76	1.90	95	88	0.490
8	0.26	77	2.10	96	88	0.510
9	0.27	77	2.20	97	88	0.520
10	0.26	77	2.10	99	88	0.510
11	0.29	77	2.30	98	88	0.539
12	0.33	77	2.70	98	89	0.574
		73.4	2.03	92.3	86.3	0.499
				Avg. 89.3		

MONTROSE AIR QUALITY SERVICES ULPA 2 EXH

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN PLATING
LOCATION: ANODIZING ROOM EXHAUST ULPA #2
DATE: 7/7/21
RUN NO: 1 OF 3 CARB 433
OPERATOR: SJ
METER BOX NO: H2WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: 29.5" Ø
TRAVERSE POINTS, MIN/POINT: 24 x 5
ΔH= 1.825 X ΔP:
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE:
BAROMETRIC PRESSURE: 29.94
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: GLASS
PROBE LENGTH: GLASS 36"
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: 83-00891
PRE-TEST LEAK RATE: : 0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.005 CFM@ 15 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	Difference
1	0.1N HNO3	SHB 677.2 ~~722.4~~ / 655.0	22.2
2	" "	742.0 / 738.1	3.9
3	"	638.8 / 637.3	1.5
4	"	922.4 / 896.7	25.7
—			
Total:			53.3

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
N1	0 (10:40)	0.0	1.0	1.8	84	—	—	54	84		5	—	0.42
2	5	4.1	1.0	1.8	84	—	—	54	82		5	—	
3	10	8.3	1.1	2.1	84	—	—	54	83		5	—	
4	15	12.5	1.1	2.1	84	—	—	55	83		5	—	
5	20	16.6	1.0	1.8	85	—	—	55	83		5	—	
6	25	20.8	0.87	1.6	85	—	—	55	84		5	—	
7	30	25.3	0.85	1.6	84	—	—	56	84		5	—	
8	35	29.7	1.1	2.1	78	—	—	55	84		5	—	
9	40	32.8	1.2	2.2	80	—	—	56	84		5	—	
10	45	37.0	1.4	2.6	80	—	—	56	84		5	—	
11	50	41.2	1.4	2.6	80	—	—	57	85		5	—	
W12	55	45.7	1.3	2.4	80	—	—	57	85		5	—	
1	60	49.9	1.1	2.1	80	—	—	57	84		5	—	
2	65	54.2	1.1	2.1	79	—	—	57	84		5	—	
3	70	58.4	1.1	2.1	78	—	—	56	84		5	—	
4	75	63.1	1.0	1.8	78	—	—	56	84		5	—	
5	80	68.3	0.98	1.8	77	—	—	56	84		5	—	
6	85	72.4	0.80	1.5	77	—	—	57	84		5	—	
7	90	76.4	0.82	1.5	77	—	—	57	85		5	—	
8	95	79.8	0.90	1.7	77	—	—	59	86		5	—	
9	100	83.7	1.1	2.1	75	—	—	59	86		5	—	
10	105	87.9	1.4	2.6	75	—	—	59	86		5	—	
11	110	92.4	1.6	2.9	75	—	—	59	86		5	—	
12	115	97.0	1.6	2.9	75	—	—	59	86		5	—	
Average:	120	102.092	END	TEST	—								

Comments: ULPA @ START = 1.2" WEST ME = 0.06" / EAST ME = 0.06" ULPA @ 60 MIN = 1.2" WEST ME = 0.06" / EAST ME = 0.06"

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	1
Location	ULPA #2 Exhaust
Date	7/9/2021

Input Data:

Vlc =	43.8	cc	Vol. of H_2O collected (impingers)
Vm =	143.042	cf	Dry gas meter reading
Pb =	29.99	in. Hg	Barometric pressure
Ps =	30.02	in. Hg	Stack pressure
dP^0.5 =	1.004	in. H2O	Average sq.rt delta P
dH =	1.85	in. H2O	Average delta H reading
Tm =	90.1	F	Average meter temperature
Ts =	83.3	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #2 Exhaust
Run # 1
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 133.84 cu.ft
3.79 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 2.03 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.015

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.68

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs = 57.29 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 16292 cfm
461 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd = 15413 dscfm
436 dscmm

8) Analytical data

Chromium Concentrations

V(c) =	0.409	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00351	mg	Total Cr collected
[Cr] =	0.00093	mg/dscm	
E =	24.25	mg/hr	
F=			

C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00005	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000020	mg	Total Cr+6 collected
[Cr+6] =	0.0000054	mg/dscm	
E =	0.141	mg/hr	

C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000229	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 99.8

Bowman Plating	Test Date	7/9/2021	
ULPA #2 Exhaust	Barometer	29.99	in.Hg
	Run #	1	
	Static P	0.44	in.H2O
	Pitot Cp	0.84	
	Nozzle	0.205	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
W-1	1.00	87	1.80		88	1.000
2	0.95	85	1.70		88	0.975
3	0.87	83	1.60		89	0.933
4	0.80	80	1.40		89	0.894
5	0.70	80	1.30		90	0.837
6	0.65	80	1.20		91	0.806
7	0.70	79	1.30		91	0.837
8	1.00	78	1.80		91	1.000
9	1.20	78	2.20		91	1.095
10	1.30	78	2.30		90	1.140
11	1.30	77	2.30		89	1.140
12	1.20	77	2.20		89	1.095
N-1	1.10	90	2.00		90	1.049
2	1.10	91	2.00		91	1.049
3	1.10	91	2.00		91	1.049
4	1.00	88	1.80		91	1.000
5	0.95	87	1.70		91	0.975
6	0.90	85	1.60		90	0.949
7	0.90	84	1.60		90	0.949
8	1.00	84	1.80		91	1.000
9	1.20	84	2.20		91	1.095
10	1.20	84	2.20		90	1.095
11	1.30	85	2.30		90	1.140
12	1.00	84	2.00		90	1.000
		83.3	1.85		90.1	1.004
				Avg.	90.1	

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: TANK EXH ULPA #1
DATE: 2/2/21
RUN NO: 2 NI
OPERATOR: DH
METER BOX NO: 3WCS
METER ΔH@: 1.590
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 8.039
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 77°
BAROMETRIC PRESSURE: 29.54
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 183/glass
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0305/glass
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: 83-WP 886
PRE-TEST LEAK RATE: : 0.008 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: OK POST: OK
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER DH
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	Difference
1	0.1N HNO_3	SKB 755.5 ~~785.8~~ / 747.8	7.7
2	" "	757.5 / 753.4	4.1
3	MT	583.3 / ~~747.8~~ 580.4 (SR)	2.9
4	S. GEL	985.8 / 958.9	26.9
___			
Total:			41.6

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 %	Pstatic in. H_2O
H 1	1300	736.907	0.19	1.5	77	N/A	N/A	60	83	81	3		-2.2
2	1305	741.3	0.20	1.4	77			57	85	82	3		
3	1310	745.4	0.21	1.7	77			56	84	81	3		
4	1315	749.1	0.23	1.8	79			54	84	81	3		
5	1320	753.3	0.24	1.9	76			54	86	81	3		
6	1325	757.5	0.22	1.8	76			56	86	82	3		
7	1330	761.7	0.24	1.9	76			56	88	83	3		
8	1335	766.0	0.26	2.1	76			57	88	82	3		
9	1340	770.3	0.29	2.3	76			56	88	82	3		
10	1345	776.0	0.26	2.1	76			54	89	84	4		
11	1350	779.5	0.30	2.4	76			55	89	85	4		
12	1355	784.3	0.32	2.6	77			56	85	83	4		
V 1	1400	788.9	0.21	1.7	77			57	88	82	3		
2	1405	792.5	0.24	1.9	77			58	88	82	3		
3	1410	797.0	0.26	2.1	77			58	89	83	3		
4	1415	800.9	0.28	2.3	77			55	89	83	4		
5	1420	805.4	0.24	1.8	77			57	85	83	3		
6	1425	809.4	0.22	1.8	77			58	85	82	3		
7	1430	813.8	0.20	1.6	77			60	88	83	3		
8	1435	818.1	0.21	1.7	77			59	88	82	3		
9	1440	822.2	0.20	1.6	76	V		60	87	83	3		
10	1445	825.3	0.24	1.9	77		V	61	89	83	3		-
11	1450	829.2	0.35	2.8	77			60	88	83	3		
12	1455	834.0	039	3.1	77			61	87	83	4		
Average:	1504	838.336				SAMPLE	TEST						

Comments: 102.429

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	2
Location	ULPA #1 Exhaust
Date	7/12/2021

Input Data:

Vlc =	41.7	cc	Vol. of H_2O collected (impingers)
Vm =	150.169	cf	Dry gas meter reading
Pb =	29.98	in. Hg	Barometric pressure
Ps =	29.83	in. Hg	Stack pressure
dP^0.5 =	0.494	in. H2O	Average sq.rt delta P
dH =	1.98	in. H2O	Average delta H reading
Tm =	77.6	F	Average meter temperature
Ts =	62.0	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
	554	AH/hr	Load

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #1 Exhaust
Run # 2
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 147.42 cu.ft
4.18 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 1.93 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.013

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.70

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs = 27.72 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2461 cfm
70 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd = 2413 dscfm
68 dscmm

Bowman Plating ULPA #1 Exhaust
Run # 2
Page 3

8) Analytical data

Chromium Concentrations

V(c) =	0.408	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00350	mg	Total Cr collected
[Cr] =	0.00084	mg/dscm	
E =	3.44	mg/hr	
F=	0.0062	mg/amp-hr	
C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00005	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000020	mg	Total Cr+6 collected
[Cr+6] =	0.0000049	mg/dscm	
E =	0.020	mg/hr	
EF =	0.000036	mg/AH	
C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000507	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 99.0

Bowman Plating
ULPA #1 Exhaust

Test Date	7/12/2021	
Barometer	29.98	in.Hg
Run #	2	
Static P	-2.1	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.21	60	1.70	68	65	0.458
2	0.24	60	1.90	69	65	0.490
3	0.28	59	2.30	72	67	0.529
4	0.24	60	1.90	76	68	0.490
5	0.21	60	1.70	78	70	0.458
6	0.20	59	1.60	77	70	0.447
7	0.20	59	1.60	77	71	0.447
8	0.22	60	1.80	77	71	0.469
9	0.23	60	1.80	78	72	0.480
10	0.24	60	1.90	79	72	0.490
11	0.35	60	2.80	79	73	0.592
12	0.39	61	3.10	80	73	0.624
V-1	0.18	61	1.40	81	74	0.424
2	0.19	62	1.60	83	77	0.436
3	0.21	62	1.70	83	77	0.458
4	0.21	63	1.70	84	77	0.458
5	0.24	63	1.90	84	78	0.490
6	0.22	64	1.80	85	79	0.469
7	0.24	65	1.90	87	80	0.490
8	0.26	65	2.10	88	81	0.510
9	0.28	66	2.30	88	81	0.529
10	0.26	66	2.10	89	82	0.510
11	0.30	66	2.40	88	81	0.548
12	0.32	66	2.60	89	82	0.566
		62.0	1.98	80.8	74.4	0.494
				Avg. 77.6		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN PLATING
LOCATION: ANODIZING ROOM EXH ULPA #2
DATE: 7/7/21
RUN NO: 2 OF 3 CAERS 433
OPERATOR: SJ
METER BOX NO: 42WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: 29.5" Ø
TRAVERSE POINTS, MIN/POINT: 24x5
ΔH= 1.835 X ΔP:
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: N
Filter Condition after Test: ✓
Check Weight: 500/500

AMBIENT TEMPERATURE: 77°
BAROMETRIC PRESSURE: 29.94
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: GLASS
PROBE LENGTH: GLASS
NOZZLE ID NO/ MATERIAL: GLASS 0.205
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: QUARTZ FIBER
PRE-TEST LEAK RATE: : 0.003 CFM@ 11 in. Hg.
POST-TEST LEAK RATE: : 0.003 CFM@ 11 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER SJ
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	0.1N HNO3	751.8 / 731.9	19.9
2	" "	747.7 / 743.6	4.1
3	MT	677.1 / 674.9	2.2
4	S.G	928.4 / 950.8	27.6
Total:			53.8

Point	1300 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
W	0	0.0	1.1	2.0	67	—	—	59	80		3	—	0.42
2	5	4.1	1.1	2.0	67	—	—	52	80		3	—	
3	10	8.3	1.1	2.0	66	—	—	52	81		3	—	
4	15	12.5	1.0	1.8	66	—	—	53	81		3	—	
5	20	16.8	0.95	1.7	66	—	—	54	81		3	—	
6	25	20.8	0.82	1.5	66	—	—	54	82		3	—	
7	30	24.7	0.85	1.6	67	—	—	54	82		3	—	
8	35	28.9	0.90	1.7	67	—	—	54	83		3	—	
9	40	32.4	1.2	2.2	65	—	—	52	83		3	—	
10	45	36.8	1.5	2.8	65	—	—	52	84		3	—	
11	50	41.9	1.6	2.9	67	—	—	53	84		3	—	
12	55	47.0	1.10	2.9	67	—	—	53	85		3	—	
1	60	52.2	1.0	1.8	69	—	—	53	85		3	—	
N2	65	56.0	1.0	1.8	69	—	—	54	85		3	—	
2	70	60.2	1.1	2.0	70	—	—	54	85		3	—	
3	75	104.6	1.1	2.0	70	—	—	54	85		3	—	
4	80	68.8	0.98	1.8	71	—	—	54	85		3	—	
5	85	73.1	0.85	1.6	72	—	—	55	86		3	—	
6	90	77.5	0.85	1.6	72	—	—	55	86		3	—	
7	95	80.8	1.0	1.8	73	—	—	56	86		3	—	
8	100	84.3	1.3	2.4	74	—	—	56	87		3	—	
9	105	89.6	1.4	2.6	74	—	—	56	87		3	—	
10	110	94.8	1.4	2.6	75	—	—	56	87		3	—	
12	115	99.2	1.3	2.4	74	—	—	57	87		3	—	
Average:	120	103.638	END TEST										

Comments: ULPA @ START 1.2" WEST ME = 0.06" / EAST ME = 0.06 / @ 60 MIN ULPA 1.2" / WEST ME = 0.06 / EAST ME = 0.06

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	2
Location	ULPA #2 Exhaust
Date	7/12/2021

Input Data:

Vlc =	38.7	cc	Vol. of H_2O collected (impingers)
Vm =	143.525	cf	Dry gas meter reading
Pb =	29.98	in. Hg	Barometric pressure
Ps =	30.01	in. Hg	Stack pressure
dP^0.5 =	1.003	in. H2O	Average sq.rt delta P
dH =	1.83	in. H2O	Average delta H reading
Tm =	83.2	F	Average meter temperature
Ts =	83.0	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #2 Exhaust
Run # 2
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd =	135.94	cu.ft
	3.85	cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) =	1.80	scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws =	0.013

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms =	28.70

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs =	57.21	ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q =	16270	cfm
	461	cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd =	15423	dscfm
	437	dscmm

Bowman Plating ULPA #2 Exhaust
Run # 2
Page 3

8) Analytical data

Chromium Concentrations

V(c) =	0.345	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00296	mg	Total Cr collected
[Cr] =	0.00077	mg/dscm	
E =	20.15	mg/hr	
F=			

C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00005	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000017	mg	Total Cr+6 collected
[Cr+6] =	0.0000045	mg/dscm	
E =	0.117	mg/hr	

C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000229	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 101.3

Bowman Plating	Test Date	7/12/2021		
ULPA #2 Exhaust	Barometer	29.98	in.Hg	
	Run #	2		
	Static P	0.42	in.H2O	
	Pitot Cp	0.84		
	Nozzle	0.205		

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
N-1	1.20	74	2.20		70	1.095
2	1.10	78	2.00		74	1.049
3	1.10	80	2.00		76	1.049
4	1.00	81	1.80		78	1.000
5	0.95	84	1.70		79	0.975
6	0.95	84	1.70		80	0.975
7	0.90	85	1.60		81	0.949
8	1.00	86	1.80		82	1.000
9	1.20	85	2.20		82	1.095
10	1.20	86	2.20		83	1.095
11	1.30	87	2.30		84	1.140
12	1.10	84	2.00		85	1.049
W-1	1.00	86	1.80		85	1.000
2	1.00	87	1.80		85	1.000
3	0.95	86	1.70		86	0.975
4	0.80	86	1.40		86	0.894
5	0.75	87	1.40		86	0.866
6	0.65	84	1.20		87	0.806
7	0.80	80	1.40		88	0.894
8	0.87	84	1.60		88	0.933
9	1.00	81	1.80		88	1.000
10	1.10	80	2.00		88	1.049
11	1.20	79	2.20		88	1.095
12	1.20	79	2.20		88	1.095
		83.0	1.83		83.2	1.003
				Avg. 83.2		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: TANK EXH ULPA #1
DATE: 7/9/21
RUN NO: 3 N1
OPERATOR: DH
METER BOX NO: 7 wcs
METER ΔH@: 1.550
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 8.038
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 66°
BAROMETRIC PRESSURE: 29.99
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 183/glass
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0.305/glass
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: 53-UP887
PRE-TEST LEAK RATE: : 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HD
SAMPLER DH
SAMPLE CUSTODIAN HD

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	0.1N HNO3	662.3 / 663.2	-0.9
2	"	749.6 / 747.2	2.4
3	mt	641.1 / 639.3	1.8
4	S.G	943.7 / 923.4	20.3
Total:			387.8 - 55.6

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
S 1	0745	839.517	0.20	1.4	62	n/a	n/a	58	66	68	4		-2.2
2	0750	842.9	0.21	1.7	62			55	70	67	4		
3	0755	845.2	0.21	1.7	63			54	72	68	4		
4	0800	848.9	0.23	1.8	63			54	72	68	4		
5	0805	853.3	0.24	1.9	63			53	75	70	4		
6	0810	857.7	0.21	1.7	63			54	77	71	4		
7	0815	861.4	0.26	2.1	63			54	80	72	5		
8	0820	865.1	0.28	2.3	63			54	81	72	5		
9	0825	869.3	0.28	2.3	62			55	82	73	5		
10	0830	873.7	0.24	1.9	62			56	83	73	4		
11	0835	878.0	0.30	2.4	62			54	84	75	6		
12	0840	882.8	0.32	2.6	62			55	84	76	6		
T 1	0845	887.6	0.20	1.6	63			56	85	77	4		
T 2	0850	891.5	0.24	1.8	63			57	85	77	4		
3	0855	895.4	0.25	2.0	63			58	86	78	4		
4	0900	899.5	0.27	2.2	63			58	86	78	5		
5	0905	903.6	0.25	2.0	63			60	87	78	4		
6	0910	907.9	0.22	1.8	63			59	87	79	4		
7	0915	911.8	0.22	1.8	63			60	88	79	4		
8	0920	915.9	0.20	1.6	64			60	88	80	4		
9	0925	919.2	0.20	1.6	64			59	88	81	4		
10	0930	923.7	0.24	1.9	64			61	85	83	4		-
11	0935	927.8	0.35	2.8	64			60	51	82	7		
12	0940	932.4	0.35	3.1	64			61	80	83	7		
Average:	0945	937.496				END TEST							

Comments: 97.999

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	3
Location	ULPA #1 Exhaust
Date	7/12/2021

Input Data:

Vlc =	31.1	cc	Vol. of H_2O collected (impingers)
Vm =	151.763	cf	Dry gas meter reading
Pb =	29.98	in. Hg	Barometric pressure
Ps =	29.83	in. Hg	Stack pressure
dP^0.5 =	0.482	in. H2O	Average sq.rt delta P
dH =	2.01	in. H2O	Average delta H reading
Tm =	84.3	F	Average meter temperature
Ts =	72.2	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
	684	AH/hr	Load

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #1 Exhaust
Run # 3
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 147.17 cu.ft
4.17 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 1.44 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.010

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.74

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs = 27.30 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2424 cfm
69 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd = 2338 dscfm
66 dscmm

Bowman Plating ULPA #1 Exhaust
Run # 3
Page 3

8) Analytical data

Chromium Concentrations

V(c) =	0.408	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00350	mg	Total Cr collected
[Cr] =	0.00084	mg/dscm	
E =	3.34	mg/hr	
F=	0.0049	mg/amp-hr	
C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00200	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000816	mg	Total Cr+6 collected
[Cr+6] =	0.0001958	mg/dscm	
E =	0.778	mg/hr	
EF =	0.001137	mg/AH	
C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000507	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 102.0

Bowman Plating
ULPA #1 Exhaust

Test Date	7/12/2021	
Barometer	29.98	in.Hg
Run #	3	
Static P	-2.1	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.02	67	1.60	82	80	0.141
2	0.23	68	1.80	83	80	0.480
3	0.28	70	2.30	85	81	0.529
4	0.23	70	1.80	88	82	0.480
5	0.20	71	1.60	89	82	0.447
6	0.21	72	1.70	88	82	0.458
7	0.20	73	1.60	88	83	0.447
8	0.22	72	1.80	87	82	0.469
9	0.24	72	1.90	86	82	0.490
10	0.24	72	1.90	86	82	0.490
11	0.36	72	2.90	87	83	0.600
12	0.38	73	3.10	86	83	0.616
V-1	0.19	72	1.50	87	82	0.436
2	0.20	72	1.60	88	82	0.447
3	0.21	73	1.70	89	81	0.458
4	0.23	73	1.80	89	81	0.480
5	0.24	73	1.90	88	80	0.490
6	0.21	74	1.70	88	81	0.458
7	0.24	74	1.90	87	81	0.490
8	0.27	74	2.80	87	82	0.520
9	0.28	71	2.30	87	82	0.529
10	0.26	75	2.10	88	82	0.510
11	0.30	75	2.40	87	81	0.548
12	0.32	75	2.60	87	81	0.566
		72.2	2.01	87.0	81.6	0.482
				Avg. 84.3		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN
LOCATION: ULPA 2 EXHAUST
DATE: 9/9/21
RUN NO: 3 OF 3 NJ
OPERATOR: JR
METER BOX NO: 42 WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: DIA=29.5"
TRAVERSE POINTS, MIN/POINT: 5 x 24
ΔH= 1.8 X ΔP:
Probe Condition, pre/post test: ✓
Silica Gel Expended, Y/N: NO
Filter Condition after Test: ✓
Check Weight: 500/500

AMBIENT TEMPERATURE: 66°F
BAROMETRIC PRESSURE: 29.99
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 0.205 GLASS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: 83-UP885
PRE-TEST LEAK RATE: : 0.003 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.004 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: OK POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER JR WB HD
SAMPLE CUSTODIAN HB

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	0.1 N HNO_3	774.0 / 726.6	47.4
2	" "	757.2 / 755.1	2.1
3	MT	586.1 / 584.1	2.0
4	S.GEL	1000.7 - 987.0	13.7
—			
Total:		397.2 - 56.0	65.2

K = 1.8

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 %	Pstatic in. H_2O
W-1	745	0.000	1.0	1.8	75	NA	NA	64	NA	65	3		0.44
2	750	3.9	0.90	1.6	78			60		67	3		
3	755	7.8	0.85	1.5	80			58		69	3		
4	800	11.7	0.70	1.3	81			58		72	3		
5	805	15.4	0.65	1.2	83			57		75	3		
6	810	19.2	0.62	1.1	84			57		76	3		
7	815	22.9	0.69	1.2	86			57		78	3		
8	820	26.6	0.99	1.8	87			58		81	3		
9	825	30.6	1.2	2.2	89			59		81	3		
10	830	34.7	1.4	2.5	90			59		82	3		
11	835	38.8	1.3	2.3	92			59		83	3		
12	840	42.9	1.2	2.2	93			60		84	3		
N-1	845/47	46.904	1.1	2.0	92			60		84	3		
2	852	50.9	1.2	2.2	91			60		84	3		
3	857	54.9	1.0	1.8	90			60		85	3		
4	902	58.8	0.98	1.8	89			61		85	3		
5	907	62.7	0.96	1.7	88			61		85	3		
6	912	66.5	0.88	1.6	87			61		85	3		
7	917	70.4	0.87	1.6	88			62		86	3		
8	922	74.2	1.0	1.8	88			61		86	3		
9	927	78.1	1.1	2.0	89			62		87	3		
10	932	82.0	1.3	2.3	90			62		87	3		-
11	937	86.1	1.3	2.3	89			62		87	3		
12	942	90.2	1.1	2.0	88			62		87	3		
Average:	947	94.422	—	END	TEST	—	—	—		—	—		—

Comments: ULPA @ START = 1.2" H_2O ✓ ✓ WEST ME = 0.06" H_2O ✓ ✓ EAST ME = 0.06" H_2O ✓ ✓

MAQS
Chromium Calculations

Plant	Bowman Plating
Project #	10019
Operation	Anodizing Room
Run	3
Location	ULPA #2 Exhaust
Date	7/12/2021

Input Data:

Vlc =	36.5	cc	Vol. of H_2O collected (impingers)
Vm =	143.118	cf	Dry gas meter reading
Pb =	29.98	in. Hg	Barometric pressure
Ps =	30.01	in. Hg	Stack pressure
dP^0.5 =	1.000	in. H2O	Average sq.rt delta P
dH =	1.83	in. H2O	Average delta H reading
Tm =	85.7	F	Average meter temperature
Ts =	79.4	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	180	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.38	R/in.Hg	constant
K2 =	0.04639	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant

Gas Density (Air)

[O2] =	20.9	%	N2 = 100 - (%O2 + %CO2)
[CO2] =	0.04	%	N2 = 79.06

Bowman Plating ULPA #2 Exhaust
Run # 3
Page 2

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd =	134.94	cu.ft
	3.82	cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) =	1.69	scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws =	0.012

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms =	28.71

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/Ps*Ms)^0.5

vs =	56.81	ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q =	16156	cfm
	458	cmm

7) Average stack gas dry volumetric flowrate. Tstd = 60oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) * (1-Bws) Pstd = 29.92 in. Hg

Qstd =	15428	dscfm
	437	dscmm

8) Analytical data

Chromium Concentrations

V(c) =	0.351	l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

CHROMIUM

C(Cr) =	0.00858	mg/l	Concentration of Cr in wash
mCr =	0.00301	mg	Total Cr collected
[Cr] =	0.00079	mg/dscm	
E =	20.66	mg/hr	
F=			

C(B) =	0.00858	mg/l	Concentration of Cr in blank
V(B) =	0.160	l	Volume of blank
m(B) =	0.00137	mg	Total Cr in blank

CHROMIUM +6

C(Cr+6) =	0.00005	mg/l	Concentration of Cr+6 in wash
mCr+6 =	0.000018	mg	Total Cr+6 collected
[Cr+6] =	0.0000046	mg/dscm	
E =	0.120	mg/hr	

C(B) =	0.00005	mg/l	Concentration of Cr+6 in blank
V(B) =	0.250	l	Volume of blank
m(B) =	0.0000125	mg	Total Cr+6 in blank

10) Isokinecity

An =	0.000229	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 100.5

Bowman Plating	Test Date	7/12/2021		
ULPA #2 Exhaust	Barometer	29.98	in.Hg	
	Run #	3		
	Static P	0.42	in.H2O	
	Pitot Cp	0.84		
	Nozzle	0.205		

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
N-1	1.10	80	2.00		82	1.049
2	1.20	80	2.20		84	1.095
3	1.20	82	2.20		84	1.095
4	1.00	82	1.80		84	1.000
5	1.00	83	1.80		85	1.000
6	0.92	84	1.70		85	0.959
7	0.92	84	1.70		85	0.959
8	0.95	85	1.70		86	0.975
9	1.10	83	2.00		85	1.049
10	1.20	83	2.20		85	1.095
11	1.30	82	2.30		85	1.140
12	1.10	80	2.00		85	1.049
W-1	1.10	79	2.00		84	1.049
2	0.94	76	1.70		84	0.970
3	0.90	76	1.60		85	0.949
4	0.82	75	1.50		86	0.906
5	0.75	76	1.40		86	0.866
6	0.67	76	1.20		87	0.819
7	0.77	76	1.40		87	0.877
8	0.90	76	1.60		88	0.949
9	1.00	76	1.80		88	1.000
10	1.00	75	1.80		88	1.000
11	1.10	78	2.00		89	1.049
12	1.20	79	2.20		89	1.095
		79.4	1.83		85.7	1.000
				Avg. 85.7		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: Trinic Exh WUPA #1
DATE: 7/9/21
RUN NO: 1 Crb
OPERATOR: DH
METER BOX NO: 7 WCS
METER ΔH@: 1.550
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 7.5/24
ΔH= _____ X ΔP: 8.038
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 69°
BAROMETRIC PRESSURE: 29.99
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 187/SS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0.305/SS
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: Trinic Exh 2-1
PRE-TEST LEAK RATE: : 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: OK POST: OK
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER DH
SAMPLE CUSTODIAN HB

pH	Imp. #	Contents	Post-Test / Pre-Test	= Difference
9	1	0.1 $NaHCO_3$	795.5 / 777.4	18.1
9	2	" "	696.3 / 685.1	11.2
	3	mt	665.8 / 660.8	5.0
	4	S.G	996.0 / 970.5	25.5
	Total:			59.8
			439.1 - 56.0	383.1 MLS

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 %	Pstatic in. H_2O
1	1010	937.825	0.22	1.8	72	amb	amb	60	82	82	4		-2.2
2		942.6	0.25	2.0	70			58	83	82	4		
3	1025	949.3	0.28	2.3	70			56	88	84	4		
4		955.5	0.29	2.3	70			54	91	87	4		
5	1040	963.1	0.24	1.9	72			55	91	85	4		
6		968.8	0.22	1.8	72			56	90	85	4		
7	1055	975.1	0.21	1.7	71			56	91	86	4		
8		980.7	0.20	1.6	72			58	91	85	4		
9	1110	986.7	0.20	1.6	72			57	92	86	4		
10		992.1	0.22	1.8	72			56	92	86	4		
11	1125	998.5	0.37	3.0	72			57	93	87	5		
12		1006.2	0.39	3.1	72			57	93	87	5		
1	1140	1014.021	0.19	1.5	72			56	93	87	4		
2		1020.0	0.20	1.6	72			57	93	88	4		
3	1155	1026.2	0.21	1.7	73			58	92	88	4		
4		1031.8	0.22	1.8	75			55	92	87	4		
5	1210	1037.6	0.25	2.0	76			60	92	87	4		
6		1043.9	0.23	1.8	76			60	93	87	4		
7	1225	1050.4	0.24	1.9	76			61	95	88	4		
8		1056.8	0.26	2.1	77			62	96	88	4		
9	1240	1063.1	0.27	2.2	77			61	97	88	4		
10		1067.1	0.26	2.1	77			60	95	88	4		-
11	1255	1076.2	0.29	2.3	77			60	99	91	5		
12		1082.6	0.33	2.7	77			61	98	85	5		
Average:	1310	1090.262				END	TEST						

Comments: 152.434

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room T301, T314, T321

Run 1

Location ULPA #1 Exhaust

Date 7/7/2021

INPUTS

Vlc =	64.2	cc	Vol. of H2O collected (impingers)
Vm =	100.427	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.78	in. Hg	Stack pressure
dP^0.5 =	0.494		Average sq.rt delta P
dH =	1.98	in. H2O	Average delta H reading
Tm =	84.2	F	Average meter temperature
Ts =	74.8	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

Bowman Plating ULPA #1 Exhaust
Run # 1
Page 2

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 98.72 cu.ft
2.80 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 3.02 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.030

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.50

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs = 28.16 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2501 cfm
70.82 cmm

7) Average stack gas dry volumetric flowrate.
Qstd = Q * (Tstd/Ts) * (Ps/Pstd)

Tstd = 68oF
Pstd = 29.92 in. Hg

Qstd = 2384 dscfm
67.52 dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0026	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0008	mg	Total Ni net
[Ni] =	0.00093	mg/dscm	
E =	3.8	mg/hr	

9) Isokinecity

An =	0.00051	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 100.7

Bowman Plating
ULPA #1 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	1	
Static P	-2.2	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.18	73	1.4	80	80	0.424
2	0.20	73	1.6	80	80	0.447
3	0.21	73	1.7	84	80	0.458
4	0.22	73	1.8	84	80	0.469
5	0.24	74	1.9	86	80	0.490
6	0.23	74	1.8	87	81	0.480
7	0.26	74	2.1	88	81	0.510
8	0.27	74	2.2	88	81	0.520
9	0.24	74	1.9	88	81	0.490
10	0.29	74	2.3	88	82	0.539
11	0.32	74	2.6	88	82	0.566
12	0.22	75	1.8	89	82	0.469
V-1	0.24	75	1.9	87	82	0.490
2	0.25	75	2.0	87	82	0.500
3	0.25	75	2.0	86	82	0.500
4	0.24	75	1.9	86	82	0.490
5	0.23	75	1.8	86	82	0.480
6	0.22	75	1.8	87	83	0.469
7	0.21	76	1.7	87	83	0.458
8	0.21	76	1.7	87	83	0.458
9	0.20	77	1.6	88	83	0.447
10	0.23	77	1.8	88	83	0.480
11	0.37	77	3.0	90	83	0.608
12	0.38	77	3.1	91	83	0.616
		74.8	1.98	86.7	81.7	0.494
				Avg. 84.2		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN PLATING
LOCATION: ULPA #2 EXHAUST
DATE: 7/9/21
RUN NO: 1 of 3 Cnb
OPERATOR: JRUBIO
METER BOX NO: 42 WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: DIA = 29.5"
TRAVERSE POINTS, MIN/POINT: 7.5/180
ΔH= 1.8 X ΔP:
Probe Condition, pre/post test: ✓/✓
Silica Gel Expended, Y/N: NO
Filter Condition after Test: ✓
Check Weight: 500/500

AMBIENT TEMPERATURE: 69°F
BAROMETRIC PRESSURE: 29.99
ASSUMED MOISTURE: 27.
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 186 = GLASS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: Room EV R-1
PRE-TEST LEAK RATE: : 0.005 CFM@ 15 in. Hg.
POST-TEST LEAK RATE: : 0.003 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER JR
SAMPLE CUSTODIAN HB

pH	Imp. #	Contents	Post-Test / Pre-Test	= Difference
9	1	0.1N NaHCO3	769.4 / 748.4	21.0
9	2	"	719.0 / 713.2	5.8
	3	MT	635.4 / 628.4	7.0
	4	SILICA GEL	947.4 / 937.4	10.0
		TOTAL		43.8
Total:		WASH	464.9 - 55.6	409.3 ML'S

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
W-1	1010	0.0	1.0	1.8	87	NA	NA	63	88	NA	5		0.44
2		6.3	0.95	1.7	85			60	88		5		
3	1025	10.2	0.87	1.6	83			58	89		5		
4		16.5	0.80	1.4	80			57	89		5		
5	1040	22.6	0.70	1.3	80			57	90		5		
6		28.8	0.65	1.2	80			57	91		5		
7	1055	34.9	0.70	1.3	79			58	91		5		
8		41.0	1.0	1.8	78			57	91		5		
9	1110	47.4	1.2	2.2	78			57	91		5		
10		53.9	1.3	2.3	78			57	90		5		
11	1125	60.4	1.3	2.3	77			57	89		5		
12		66.9	1.2	2.2	77			57	89		5		
N-1	1140/42	73.3	1.1	2.0	90			58	90		5		
2		79.7	1.1	2.0	91			58	91		5		
3	1157	86.1	1.1	2.0	91			57	91		5		
4		92.4	1.0	1.8	88			58	91		5		
5	1212	98.7	0.95	1.7	87			58	91		5		
6		105.0	0.90	1.6	85			59	90		5		
7	1227	111.2	0.90	1.6	84			59	90		5		
8		117.4	1.0	1.8	84			59	91		5		
9	1242	123.7	1.2	2.2	84			60	91		5		
10		129.5	1.2	2.2	84			61	90		5		
11	1257	133.3	1.3	2.3	85			62	90		5		
12		138.1	1.0	2.0	84			63	90		5		
Average:	1312	143.024	—	END	TEST								

Comments: ULPA @ START = 1.2" H2O ✓✓ WEST ME = 0.06" H2O ✓✓ EAST ME = 0.06" H2O ✓✓

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room PTE Fugitive Emissions

Run 1

Location ULPA #2 Exhaust

Date 7/7/2021

INPUTS

Vlc =	53.3	cc	Vol. of H2O collected (impingers)
Vm =	102.092	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.97	in. Hg	Stack pressure
dP^0.5 =	1.052		Average sq.rt delta P
dH =	2.08	in. H2O	Average delta H reading
Tm =	84.3	F	Average meter temperature
Ts =	79.6	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

Bowman Plating ULPA #2 Exhaust
Run # 1
Page 2

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 97.87 cu.ft
2.77 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 2.51 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.025

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.56

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs = 59.99 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 17060 cfm
483.15 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 68oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) Pstd = 29.92 in. Hg

Qstd = 16303 dscfm
461.71 dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0021	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0003	mg	Total Ni net
[Ni] =	0.00076	mg/dscm	
E =	21.0	mg/hr	

9) Isokinecity

An =	0.00023	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 103.5

Bowman Plating
ULPA #2 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	1	
Static P	0.42	in.H2O
Pitot Cp	0.84	
Nozzle	0.205	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
N-1	1.00	84	1.8		84	1.000
2	1.00	84	1.8		82	1.000
3	1.10	84	2.1		83	1.049
4	1.10	84	2.1		83	1.049
5	1.00	85	1.8		83	1.000
6	0.87	85	1.6		84	0.933
7	0.85	84	1.6		84	0.922
8	1.10	78	2.1		84	1.049
9	1.20	80	2.2		84	1.095
10	1.40	80	2.6		84	1.183
11	1.40	80	2.6		85	1.183
12	1.30	80	2.4		85	1.140
W-1	1.10	80	2.1		84	1.049
2	1.10	79	2.1		84	1.049
3	1.10	78	2.1		84	1.049
4	1.00	78	1.8		84	1.000
5	0.98	77	1.8		84	0.990
6	0.80	77	1.5		84	0.894
7	0.82	77	1.5		85	0.906
8	0.90	77	1.7		86	0.949
9	1.10	75	2.1		86	1.049
10	1.40	75	2.6		86	1.183
11	1.60	75	2.9		86	1.265
12	1.60	75	2.9		86	1.265
		79.6	2.08		84.3	1.052
				Avg.	84.3	

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: ULPA#1 TANK EX4
DATE: 7/12/21
RUN NO: 2 CrB
OPERATOR: DH
METER BOX NO: 7WCS
METER ΔH@: 1.550
METER Yd: 1.008
STACK AREA, FT²: 1.48
TRAVERSE POINTS, MIN/POINT: 7.5/24
ΔH= _____ X ΔP: 0.038
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 64°
BAROMETRIC PRESSURE: 29.98
ASSUMED MOISTURE: 20/0
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 183/glass
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0.305/glass
NOZZLE DIAMETER: 0.305
FILTER NO/TYPE: ULPA#1 R-2
PRE-TEST LEAK RATE: : 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.008 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN AB
SAMPLER DH
SAMPLE CUSTODIAN HB

DH	Imp. #	Contents	Post-Test / Pre-Test	= Difference
9	1	0.1N HNO_3	751.0 / 745.5	1.5
9	2	0.1N HNO_3	719.5 / 711.5	8.0
	3	wet	610.0 / 604.8	5.2
	4	S.G	980.4 / 953.4	27.0
		TOTAL		41.7
	Total:	WASH	466.2 - 55.8	408.4 mls

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 %	Pstatic in. H_2O
1	0755	090.584	0.21	1.7	60	n/a	n/a	61	68	65	4		-2.1
2		095.4	0.24	1.9	60			57	69	65	4		
3	0810	101.6	0.28	2.3	59			54	72	67	4		
4		107.9	0.24	1.9	60			56	76	68	4		
5	0825	114.2	0.21	1.7	60			54	78	70	4		
6		119.5	0.20	1.4	59			54	77	70	4		
7	0840	125.6	0.20	1.6	59			56	77	71	4		
8		130.9	0.22	1.8	60			55	77	71	4		
9	0855	137.2	0.23	1.8	60			55	78	72	4		
10		143.0	0.24	1.9	60			56	79	72	4		
11	0910	149.7	0.35	2.8	60			58	79	73	5		
12		156.4	0.39	3.1	61			57	80	73	5		
1	0925	164.811	0.18	1.4	61			57	81	74	4		
2		168.9	0.18	1.5	62			56	83	77	4		
3	0940	175.5	021	1.7	62			57	83	77	4		
4		181.1	0.21	1.7	63			58	84	77	4		
5	0955	187.4	0.24	1.9	63			58	84	78	4		
6		193.1	0.22	1.8	64			60	85	79	4		
7	1010	199.6	0.24	1.9	65			60	87	80	4		
8		205.5	0.26	2.1	65			61	88	81	4		
9	1025	212.4	0.28	2.3	66			60	88	81	4		
10		218.7	0.26	2.1	66			59	85	82	4		
11	1040	225.5	0.30	2.4	66			61	88	81	5		
12		231.9	0.32	2.16	66			61	89	82	5		
Average:	1055	270.753				STD	TB 57						

Comments: 150.169

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room T301, T314, T321

Run 2

Location ULPA #1 Exhaust

Date 7/7/2021

INPUTS

Vlc =	41.6	cc	Vol. of H2O collected (impingers)
Vm =	102.429	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.78	in. Hg	Stack pressure
dP^0.5 =	0.498		Average sq.rt delta P
dH =	2.00	in. H2O	Average delta H reading
Tm =	84.9	F	Average meter temperature
Ts =	76.7	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

Bowman Plating ULPA #1 Exhaust
Run # 2
Page 2

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 100.56 cu.ft
2.85 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 1.96 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.019

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.63

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs = 28.36 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2518 cfm
71.32 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 68oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) Pstd = 29.92 in. Hg

Qstd = 2419 dscfm
68.50 dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0028	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0010	mg	Total Ni net
[Ni] =	0.00098	mg/dscm	
E =	4.0	mg/hr	

9) Isokinecity

An =	0.00051	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 101.1

Bowman Plating
ULPA #1 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	2	
Static P	-2.2	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.19	77	1.5	83	81	0.436
2	0.20	77	1.6	85	82	0.447
3	0.21	77	1.7	84	81	0.458
4	0.23	77	1.8	84	81	0.480
5	0.24	76	1.9	86	81	0.490
6	0.22	76	1.8	86	82	0.469
7	0.24	76	1.9	88	83	0.490
8	0.26	76	2.1	88	82	0.510
9	0.29	76	2.3	88	82	0.539
10	0.26	76	2.1	89	84	0.510
11	0.30	76	2.4	89	85	0.548
12	0.32	77	2.6	89	83	0.566
V-1	0.21	77	1.7	88	82	0.458
2	0.24	77	1.9	88	82	0.490
3	0.26	77	2.1	88	83	0.510
4	0.28	77	2.3	89	83	0.529
5	0.24	77	1.9	89	83	0.490
6	0.22	77	1.8	89	82	0.469
7	0.20	77	1.6	88	83	0.447
8	0.21	77	1.7	88	82	0.458
9	0.20	76	1.6	88	83	0.447
10	0.24	77	1.9	89	83	0.490
11	0.35	77	2.8	88	83	0.592
12	0.39	77	3.1	87	83	0.624
		76.7	2.00	87.4	82.5	0.498
				Avg. 84.9		

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN PLATING
LOCATION: ULPA 2 EXHAUST
DATE: 7-12-21
RUN NO: 2 of 3 Ch6
OPERATOR: J. RUBIO
METER BOX NO: 42 WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: DIA = 29.5"
TRAVERSE POINTS, MIN/POINT: 7.5/180
ΔH= 1.8 X ΔP:
Probe Condition, pre/post test: ✓ / ✓
Silica Gel Expended, Y/N: NO
Filter Condition after Test: —
Check Weight: 500/500

AMBIENT TEMPERATURE: 66
BAROMETRIC PRESSURE: 29.98
ASSUMED MOISTURE: 27.0
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 186 / GLASS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: ULPA #2 R-2
PRE-TEST LEAK RATE: : 0.004 CFM@ 13 in. Hg.
POST-TEST LEAK RATE: : 0.004 CFM@ 13 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER JRUBIO
SAMPLE CUSTODIAN HB

pH	Imp. #	Contents	Post-Test / Pre-Test	Difference
9	1	DI w/ NaHCO3	665.9 / 651.6	14.3
9	2	" "	754.0 / 749.5	4.5
	3	dry	640.9 / 639.8	1.1
	4	S.G.	CHB 963.0 / 944.2	18.8
		TOTAL		36.7
	Total:	WASH	400.9 - 55.8	345.1 mls

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
N-1	755	0.0	1.2	2.2	74	NA	NA	63	70	NA	2	20.9	0.42
2		6.2	1.1	2.0	78			60	74		2		
3	810	12.2	1.1	2.0	80			58	76		2		
4		18.3	1.0	1.8	81			56	78		2		
5	825	24.2	0.95	1.7	84			56	79		2		
6		30.2	0.95	(8) ~~0.7~~ 1.7	84			57	80		2		
7	840	36.1	0.90	1.6	85			57	81		2		
8		42.1	1.0	1.8	86			57	82		2		
9	855	48.0	1.2	2.2	85			58	82		2		
10		54.2	1.2	2.2	86			58	83		2		
11	910	60.3	1.3	2.3	87			58	84		2		
12		66.4	1.1	2.0	84			59	85		2		
W-1	925/27	72.4	1.0	1.8	86			59	85		2		
2		78.3	1.0	1.8	87			59	85		2		
3	942	84.2	0.95	1.7	86			58	86		2		
4		90.2	0.80	1.4	86			58	86		2		
5	957	95.9	0.75	1.4	87			58	86		2		
6		101.7	0.65	1.2	84			59	87		2		
7	1012	107.5	0.80	1.4	80			59	88		2		
8		113.4	0.87	1.6	84			59	88		2		
9	1027	119.3	1.0	1.8	81			60	88		2		
10		125.4	1.1	2.0	80			60	88		2		-
11	1042	131.5	1.20	2.2	79			60	88		2		
12		137.7	1.2	2.2	79			60	88		2		
Average:	1057	143.525	—	END	TEST								

Comments:

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room PTE Fugitive Emissions

Run 2

Location ULPA #2 Exhaust

Date 7/7/2021

INPUTS

Vlc =	53.8	cc	Vol. of H2O collected (impingers)
Vm =	103.63	cf	Dry gas meter reading
Pb =	29.94	in. Hg	Barometric pressure
Ps =	29.97	in. Hg	Stack pressure
dP^0.5 =	1.055		Average sq.rt delta P
dH =	2.06	in. H2O	Average delta H reading
Tm =	84.0	F	Average meter temperature
Ts =	69.1	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 99.39 cu.ft
2.81 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 2.53 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.025

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.56

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs = 59.58 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 16944 cfm
479.84 cmm

7) Average stack gas dry volumetric flowrate.
Qstd = Q * (Tstd/Ts) * (Ps/Pstd)

Tstd = 68oF
Pstd = 29.92 in. Hg

Qstd = 16516 dscfm
467.72 dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0037	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0019	mg	Total Ni net
[Ni] =	0.00131	mg/dscm	
E =	36.9	mg/hr	

9) Isokinecity

An =	0.00023	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 103.8

Bowman Plating
ULPA #2 Exhaust

Test Date	7/7/2021	
Barometer	29.94	in.Hg
Run #	2	
Static P	0.42	in.H2O
Pitot Cp	0.84	
Nozzle	0.205	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
W-1	1.10	67	2.0		80	1.049
2	1.10	67	2.0		80	1.049
3	1.10	66	2.0		81	1.049
4	1.00	66	1.8		81	1.000
5	0.95	66	1.7		81	0.975
6	0.82	66	1.5		82	0.906
7	0.85	67	1.6		82	0.922
8	0.90	67	1.7		83	0.949
9	1.20	65	2.2		83	1.095
10	1.50	65	2.8		84	1.225
11	1.60	67	2.9		84	1.265
12	1.60	67	2.9		85	1.265
N-1	1.00	69	1.8		85	1.000
2	1.00	69	1.8		85	1.000
3	1.10	70	2.0		85	1.049
4	1.10	70	2.0		85	1.049
5	0.98	71	1.8		85	0.990
6	0.85	72	1.6		86	0.922
7	0.85	72	1.6		86	0.922
8	1.00	73	1.8		86	1.000
9	1.30	74	2.4		87	1.140
10	1.40	74	2.6		87	1.183
11	1.40	75	2.6		87	1.183
12	1.30	74	2.4		87	1.140
		69.1	2.06		84.0	1.055
				Avg.	84.0	

MONTROSE AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: ULPA #1 TANK FARM
DATE: 7/12/21
RUN NO: 3 Cr 6
OPERATOR: DH
METER BOX NO: 7 wes
METER ΔH@: 1.590
METER Yd: 1.008
STACK AREA, FT²:
TRAVERSE POINTS, MIN/POINT: 7.5/24
ΔH= _____ X ΔP: 8.038
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 74°
BAROMETRIC PRESSURE: 29.98
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 182 / s/ss
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: 0.305 / s/ss
NOZZLE DIAMETER: 0.305"
FILTER NO/TYPE: ULPA #2 8-3
PRE-TEST LEAK RATE: : 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.007 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: ok POST: ok
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER DH
SAMPLE CUSTODIAN HB

Pt	Imp. #	Contents	Post-Test / Pre-Test	= Difference
9	1	0.1N NaHCO	752.7 / 756.6	-3.9
9	2	" "	754.9 / 749.1	5.8
	3	water	621.6 / 618.0	3.6
	4	silica gel	883.7 / 858.1	25.6
		TOTAL		31.1
Total:		WASH	464.0 - 55.6	408.4 mls

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	1110	241.068	0.20	1.6	67	N/A	N/A	60	82	80	3		-2.1
2		246.6	0.23	1.8	68			57	83	80	3		
3	1125	253.1	0.28	2.3	70			56	85	81	4		
4		259.0	0.23	1.8	70			56	88	82	3		
5	1140	264.8	0.20	1.6	71			55	89	82	3		
6		270.1	0.21	1.7	72			55	88	82	3		
7	1155	279.8	0.20	1.6	73			56	88	83	3		
8		281.9	0.22	1.8	72			58	87	82	3		
9	1210	288.2	0.24	1.9	72			57	86	82	3		
10		294.4	0.24	1.9	72			57	86	82	3		
11	1225	300.0	0.36	2.9	72			52	87	83	4		
12		307.1	0.38	3.1	73			58	86	83	4		
1	1240	315.816	0.19	1.5	72			59	87	82	3		
2		321.5	0.20	1.6	72			55	88	82	3		
3	1255	327.8	0.21	1.7	73			60	85	81	3		
4		334.0	0.23	1.8	73			59	85	81	3		
5	1310	340.2	0.24	1.9	73			60	88	80	3		
6		346.1	0.21	1.7	74			61	88	81	3		
7	1325	352.1	0.24	1.9	74			60	87	81	3		
8		358.1	0.27	2.8	74			55	87	82	4		
9	1340	365.7	0.28	2.3	71			60	87	82	4		
10		372.3	0.26	2.1	75			60	88	82	4		-
11	1355	378.8	0.30	2.4	75	✓		61	87	81	4		
12		384.8	0.32	2.6	75			55	87	81	4		
Average:	1410	252.831				END	END						

Comments: 151.763

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room T301, T314, T321

Run 3

Location ULPA #1 Exhaust

Date 7/9/2021

INPUTS

Vlc =	20.3	cc	Vol. of H2O collected (impingers)
Vm =	97.979	cf	Dry gas meter reading
Pb =	29.99	in. Hg	Barometric pressure
Ps =	29.83	in. Hg	Stack pressure
dP^0.5 =	0.498		Average sq.rt delta P
dH =	2.01	in. H2O	Average delta H reading
Tm =	78.8	F	Average meter temperature
Ts =	63.0	F	Average stack temperature
Dn =	0.305	in.	Nozzle diameter
Y =	1.008		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	1.48	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

Bowman Plating ULPA #1 Exhaust
Run # 3
Page 2

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd = 97.45 cu.ft
2.76 cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) = 0.96 scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws = 0.010

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms = 28.74

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs = 27.95 ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q = 2482 cfm
70.29 cmm

7) Average stack gas dry volumetric flowrate. Tstd = 68oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) Pstd = 29.92 in. Hg

Qstd = 2474 dscfm
70.06 dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0021	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0003	mg	Total Ni net
[Ni] =	0.00076	mg/dscm	
E =	3.2	mg/hr	

9) Isokinecity

An =	0.00051	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 95.8

Bowman Plating
ULPA #1 Exhaust

Test Date	7/9/2021	
Barometer	29.99	in.Hg
Run #	3	
Static P	-2.2	in.H2O
Pitot Cp	0.84	
Nozzle	0.305	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
H-1	0.20	62	1.6	66	66	0.447
2	0.21	62	1.7	70	67	0.458
3	0.21	63	1.7	72	68	0.458
4	0.23	63	1.8	72	68	0.480
5	0.24	63	1.9	75	70	0.490
6	0.21	63	1.7	77	71	0.458
7	0.26	63	2.1	80	72	0.510
8	0.28	63	2.3	81	72	0.529
9	0.28	62	2.3	82	73	0.529
10	0.24	62	1.9	83	73	0.490
11	0.30	62	2.4	84	75	0.548
12	0.32	62	2.6	84	76	0.566
V-1	0.20	63	1.6	85	77	0.447
2	0.24	63	1.9	85	77	0.490
3	0.25	63	2.0	86	78	0.500
4	0.27	63	2.2	86	78	0.520
5	0.25	63	2.0	87	78	0.500
6	0.22	63	1.8	87	79	0.469
7	0.22	63	1.8	88	79	0.469
8	0.20	64	1.6	88	80	0.447
9	0.20	64	1.6	88	81	0.447
10	0.24	64	1.9	89	83	0.490
11	0.35	64	2.8	91	82	0.592
12	0.39	64	3.1	90	83	0.624
		63.0	2.01	82.3	75.3	0.498
				Avg. 78.8		

MONTROSE
AIR QUALITY SERVICES

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: BOWMAN PLATING
LOCATION: ULPA 2 EXHAUST
DATE: 7/12/21
RUN NO: 3 of 3 ~~Cr+6~~ SHB
OPERATOR: JRUBIO
METER BOX NO: 42 WCS
METER ΔH@: 1.791
METER Yd: 0.983
STACK AREA, FT²: DIA = 29.5"
TRAVERSE POINTS, MIN/POINT: 7.5/24
ΔH= 1.8 X ΔP:
Probe Condition, pre/post test: ✓/✓
Silica Gel Expended, Y/N: NO
Filter Condition after Test:
Check Weight:

AMBIENT TEMPERATURE: 74°F
BAROMETRIC PRESSURE: 29.98
ASSUMED MOISTURE: 22
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 186 / GLASS
PROBE LENGTH: 3'
NOZZLE ID NO/ MATERIAL: GLASS
NOZZLE DIAMETER: 0.205
FILTER NO/TYPE: ULPA #1 R-3
PRE-TEST LEAK RATE: : 0.004 CFM@ 14 in. Hg.
POST-TEST LEAK RATE: : 0.004 CFM@ 14 in. Hg.
PITOT LEAK CHECK - PRE: ✓ POST: ✓
CHAIN OF CUSTODY: SAMPLE CUSTODIAN HB
SAMPLER JRUBIO
SAMPLE CUSTODIAN HB

pH	Imp. #	Contents	Post-Test / Pre-Test	= Difference
9	1	0.1N NaOH	786.5 / 773.7	12.8
9	2	" "	696.2 / 694.9	1.3
	3	mt	662.2 / 661.6	0.5
	4	S.G	1008.3 / 986.4	21.9
		TOTAL		36.5
	Total:		406.8 − 55.6	351.2 MLS

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
N-1	1110	145.022	1.1	2.0	80	NA	NA	60	82	NA	2	~20.9	0.42
2		151.0	1.2	2.2	80			59	84		2		
3	1125	156.9	1.2	2.2	82			59	84		2		
4		162.9	1.0	1.8	82			59	84		2		
5	1140	168.7	1.0	1.8	83			58	85		2		
6		174.5	0.92	1.7	84			58	85		2		
7	1155	180.3	0.92	1.7	84			58	85		2		
8		186.0	0.95	1.7	85			58	86		2		
9	1210	192.1	1.1	2.0	83			58	85		2		
10		198.3	1.2	2.2	83			59	85		2		
11	1225	204.4	1.3	2.3	82			59	85		2		
12		210.6	1.1	2.0	80			59	85		2		
W-1	1240/42	216.6	1.1	2.0	79			60	84		2		
2		222.7	0.94	1.7	76			60	84		2		
3	1257	228.8	0.90	1.6	76			60	85		2		
4		234.7	0.82	1.5	75			60	86		2		
5	1312	240.6	0.75	1.4	76			60	86		2		
6		246.5	0.67	1.2	76			61	87		2		
7	1327	252.4	0.77	1.4	76			61	87		2		
8		258.2	0.90	1.6	76			61	88		2		
9	1342	264.1	1.0	1.8	76			61	88		2		
10		270.0	1.0	1.8	75			61	88		2		-
11	1357	276.1	1.1	2.0	78			61	89		2		
12		282.2	1.2	2.2	79			61	89		2		
Average:	1412	288.140	—	END	TEST								

Comments: ULPA 2 @ START = 1.2" H₂O ✓ ✓ WEST MF = 0.06" H₂O ✓ ✓ EAST MF = 0.06" H₂O ✓ ✓
143.118

Date of last revision 2/14/2017

MAQS Nickel Calculations CARB 433

Plant Bowman Plating

Project # 10019

Operation Anodizing Room PTE Fugitive Emissions

Run 3

Location ULPA #2 Exhaust

Date 7/9/2021

INPUTS

Vlc =	65.2	cc	Vol. of H2O collected (impingers)
Vm =	94.422	cf	Dry gas meter reading
Pb =	29.99	in. Hg	Barometric pressure
Ps =	30.02	in. Hg	Stack pressure
dP^0.5 =	1.000		Average sq.rt delta P
dH =	1.83	in. H2O	Average delta H reading
Tm =	80.9	F	Average meter temperature
Ts =	87.0	F	Average stack temperature
Dn =	0.205	in.	Nozzle diameter
Y =	0.983		Meter calibration factor
t =	120	min.	Duration of sampling time
A =	4.74	sq.ft.	Cross sectional area of stack
Cp =	0.84		Pitot tube coefficient
Kp =	85.49		Pitot tube constant
K1 =	17.64	R/in.Hg	constant
K2 =	0.04707	cu.ft/ml	constant
K3 =	0.002669	in.Hg-cf/ml-R	constant
[O2] =	20.9	%	Ambient Air
[CO2] =	0.04	%	N2 = 100 - (CO2 + O2)

CALCULATIONS

1) Volume of gas sampled at standard conditions, Vmstd
Vmstd =K1* Y * Vm *(Pb + dH/13.6)/Tm

Vmstd =	91.19	cu.ft
	2.58	cu.m

2) Volume of water vapor collected at standard conditions.
Vw(std) = K2 * Vlc

Vw(std) =	3.07	scf

3) Decimal fraction of moisture by volume in stack gas
Bws = Vwstd/(Vmstd+Vwstd)

Bws =	0.033	

4) Molecular weight of the stack gas on a wet basis Ms.
Ms = (1-Bws)*((44*%CO2)+(32*%O2)+(28*%N2))+(18*Bws)

Ms =	28.47	

5) Average stack gas velocity.
vs = Kp*Cp*(dP^0.5)*(Ts/(Ps*Ms))^0.5

vs =	57.45	ft/sec

6) Average actual stack gas volumetric flowrate.
Q = 60 * vs * As

Q =	16340	cfm
	462.75	cmm

7) Average stack gas dry volumetric flowrate. Tstd = 68oF
Qstd = Q * (Tstd/Ts) * (Ps/Pstd) Pstd = 29.92 in. Hg

Qstd =	15312	dscfm
	433.64	dscmm

8) Analytical data

Metals Concentrations

V(c) =		l	Volume of wash
Df =	1		Dilution Factor

[metal] = mass metal / Vmstd

Nickel

mNi =	0.0040	mg	Total Ni collected
m(B) =	0.0018	mg	Total Ni in blank
m(net) =	0.0022	mg	Total Ni net
[Ni] =	0.00155	mg/dscm	
E =	40.3	mg/hr	

9) Isokinecity

An =	0.00023	ft^2	Area of nozzle orifice

% I = 100*Ts*((K3*Vlc+(Vm*Y/Tm)(Pb+dH/13.6))/(60*t*Ps*vs*An)

% I = 102.7

Bowman Plating
ULPA #2 Exhaust

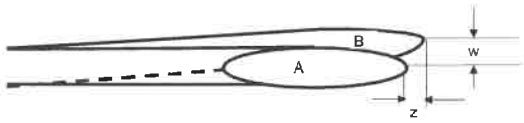
Test Date	7/9/2021	
Barometer	29.99	in.Hg
Run #	3	
Static P	0.44	in.H2O
Pitot Cp	0.84	
Nozzle	0.205	

Sample Time	Delta-P (in. H2O)	Stack Temp. (Deg.F)	Delta H (in. H2O)	Gas Meter Temp IN	Gas Meter Temp OUT	(dP)^.5
W-1	1.00	75	1.8		65	1.000
2	0.90	78	1.6		67	0.949
3	0.85	80	1.5		69	0.922
4	0.70	81	1.3		72	0.837
5	0.65	83	1.2		75	0.806
6	0.62	84	1.1		76	0.787
7	0.69	86	1.2		78	0.831
8	0.99	87	1.8		81	0.995
9	1.20	89	2.2		81	1.095
10	1.40	90	2.5		82	1.183
11	1.30	92	2.3		83	1.140
12	1.20	93	2.2		84	1.095
N-1	1.10	92	2.0		84	1.049
2	1.20	91	2.2		84	1.095
3	1.00	90	1.8		85	1.000
4	0.98	89	1.8		85	0.990
5	0.96	88	1.7		85	0.980
6	0.88	87	1.6		85	0.938
7	0.87	88	1.6		86	0.933
8	1.00	88	1.8		86	1.000
9	1.10	89	2.0		87	1.049
10	1.30	90	2.3		87	1.140
11	1.30	89	2.3		87	1.140
12	1.10	88	2.0		87	1.049
		87.0	1.83		80.9	1.000
				Avg.	80.9	

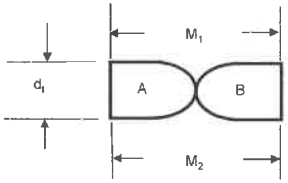
Appendix A.2
Calibration Data

MONTROSE

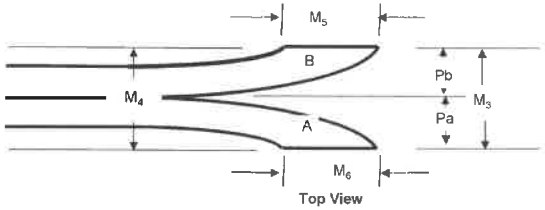
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



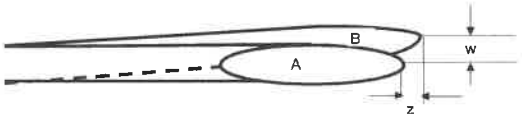
Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
183	7/6/21	RD	Y	Y	Y	0.375	0.942	0.945	0.955	0.941	0.410	0.424	-0.2	1.0	1.3	Pass

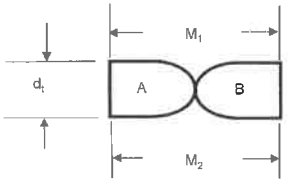
Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

MONTROSE

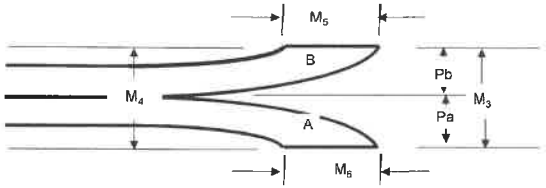
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
186	7/6/21	RD	Y	Y	Y	0.373	0.891	0.890	0.890	0.896	0.407	0.420	0.1	-0.4	1.2	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa = Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 183
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Digital Temperature Readout ID: PTC-66
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D. 183	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 (OIL)	PTC-66	358	358	358	358	358	358	358	358	0.0	0.0%	Pass
T2 (Boiling H_2O)	PTC-66	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (Ice/Water)	PTC-66	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)

MONTROSE
AIR QUALITY SERVICES

THERMOCOUPLE CALIBRATION

Thermocouple ID: 186
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Digital Temperature Readout ID: PTC-66
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
186	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	PTC-66	358	358	358	358	358	358	358	358	0.0	0.0%	Pass
T2 (Boiling H_2O)	PTC-66	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (Ice/Water)	PTC-66	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)

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\7-WCS\2021\[7WCS Semi Annual Cal 6-23-2021.xlsx]WCS
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

C-5000
ID #: 7-WCS
Date: 6/23/2021
Bar. Pressure: 29.92 (in. Hg)
Performed By: L.Olivares
Meter Serial #:

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	Ambient Temperature		
dH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.11	26.00	568.900	574.150	5.250	76.0	75.0	76.0	75.0	33	0.1552	24.0	65.0	65.0	65.0
0.11	26.00	574.150	579.405	5.255	76.0	75.0	77.0	76.0	33	0.1552	24.0	65.0	65.0	65.0
0.11	26.00	579.405	584.660	5.255	77.0	76.0	77.0	76.0	33	0.1552	24.0	65.0	65.0	65.0
0.53	12.00	542.900	548.160	5.260	81.0	76.0	78.0	75.0	48	0.3346	19.0	65.0	65.0	65.0
0.53	12.00	548.160	553.420	5.260	78.0	75.0	78.0	75.0	48	0.3346	19.0	65.0	65.0	65.0
0.53	12.00	553.420	558.690	5.270	78.0	75.0	78.0	75.0	48	0.3346	19.0	65.0	65.0	65.0
1.80	7.00	525.100	530.565	5.465	84.0	75.0	84.0	75.0	63	0.5918	13.0	65.0	65.0	65.0
1.80	7.00	530.565	536.050	5.485	84.0	75.0	84.0	76.0	63	0.5918	13.0	65.0	65.0	65.0
1.80	7.00	536.050	541.530	5.480	84.0	76.0	84.0	76.0	63	0.5918	13.0	65.0	65.0	65.0
3.00	5.00	508.100	513.190	5.090	84.0	72.0	85.0	73.0	73	0.7681	11.0	65.0	65.0	65.0
3.00	5.00	513.190	518.290	5.100	85.0	73.0	86.0	74.0	73	0.7681	11.0	65.0	65.0	65.0
3.00	5.00	518.290	523.405	5.115	86.0	74.0	87.0	74.0	73	0.7681	11.0	65.0	65.0	65.0
											508.1			

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?
5.176	146.6	5.268	149.2	5.240		1.018	1.488	**Pass**			
5.176	146.6	5.268	149.2	5.240		1.018	1.486	**Pass**			
5.171	146.4	5.268	149.2	5.240		1.019	1.485	**Pass**			
					Average	**1.018**	**1.486**		**Pass**	**Pass**	**Pass**
5.172	146.5	5.243	148.5	5.215		1.014	1.540	**Pass**			
5.181	146.7	5.243	148.5	5.215		1.012	1.541	**Pass**			
5.191	147.0	5.243	148.5	5.215		1.010	1.541	**Pass**			
					Average	**1.012**	**1.541**		**Pass**	**Pass**	**Pass**
5.370	152.1	5.409	153.2	5.380		1.007	1.673	**Pass**			
5.387	152.6	5.409	153.2	5.380		1.004	1.672	**Pass**			
5.380	152.4	5.409	153.2	5.380		1.005	1.670	**Pass**			
					Average	**1.006**	**1.672**		**Pass**	**Pass**	**Pass**
5.026	142.3	5.015	142.0	4.989		0.998	1.663	**Pass**			
5.026	142.3	5.015	142.0	4.989		0.998	1.660	**Pass**			
5.034	142.6	5.015	142.0	4.989		0.996	1.658	**Pass**			
					Average	**0.997**	**1.661**		**Pass**	**Pass**	**Pass**

Average Yd: 1.008 **dH@: 1.590**

Q @ dH = 1: 0.595

SIGNED: Signature on File Date: 6/23/2021

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\42-WCS\2021\[42WCS Semi Annual Cal 1-22-2021.xisx]WCS
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

ID #: 42-WCS
Date: 1/13/2021
Bar. Pressure: 30.01 (in. Hg)
Performed By: L.Olivares
Meter Serial #:

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)
0.14	26.00	69.900	75.334	5.434		71.0		72.0	33	0.1552	19.0	63.0	63.0	63.0
0.14	26.00	75.334	80.764	5.430		72.0		73.0	33	0.1552	19.0	63.0	63.0	63.0
0.14	26.00	80.764	86.193	5.429		73.0		73.0	33	0.1552	19.0	63.0	63.0	63.0
0.62	12.00	52.500	57.855	5.355		73.0		72.0	48	0.3346	15.0	63.0	63.0	63.0
0.62	12.00	57.855	63.210	5.355		72.0		72.0	48	0.3346	15.0	63.0	63.0	63.0
0.62	12.00	63.210	68.564	5.354		72.0		72.0	48	0.3346	15.0	63.0	63.0	63.0
1.90	7.00	34.500	40.024	5.524		71.0		72.0	63	0.5918	14.0	62.0	62.0	62.0
1.90	7.00	40.024	45.548	5.524		72.0		73.0	63	0.5918	14.0	62.0	62.0	62.0
1.90	7.00	45.548	51.073	5.525		73.0		73.0	63	0.5918	14.0	62.0	62.0	62.0
3.10	5.00	17.800	22.909	5.109		68.0		69.0	73	0.7681	11.5	63.0	63.0	63.0
3.10	5.00	22.909	28.018	5.109		69.0		71.0	73	0.7681	11.5	63.0	63.0	63.0
3.10	5.00	28.018	33.128	5.110		71.0		73.0	73	0.7681	11.5	63.0	63.0	63.0

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?
5.414	153.3	5.294	149.9	5.230	0.978	1.893	**Pass**			
5.400	152.9	5.294	149.9	5.230	0.980	1.889	**Pass**			
5.394	152.8	5.294	149.9	5.230	0.981	1.887	**Pass**			
				Average	**0.980**	**1.890**		**Pass**	**Pass**	**Pass**
5.332	151.0	5.269	149.2	5.205	0.988	1.799	**Pass**			
5.337	151.1	5.269	149.2	5.205	0.987	1.801	**Pass**			
5.336	151.1	5.269	149.2	5.205	0.987	1.801	**Pass**			
				Average	**0.988**	**1.800**		**Pass**	**Pass**	**Pass**
5.528	156.5	5.441	154.1	5.365	0.984	1.763	**Pass**			
5.517	156.2	5.441	154.1	5.365	0.986	1.759	**Pass**			
5.513	156.1	5.441	154.1	5.365	0.987	1.758	**Pass**			
				Average	**0.986**	**1.760**		**Pass**	**Pass**	**Pass**
5.156	146.0	5.040	142.7	4.979	0.977	1.720	**Pass**			
5.142	145.6	5.040	142.7	4.979	0.980	1.715	**Pass**			
5.123	145.1	5.040	142.7	4.979	0.984	1.709	**Pass**			
				Average	**0.980**	**1.714**		**Pass**	**Pass**	**Pass**

Average Yd: 0.983 **dH@: 1.791**

Q @ dH = 1: 0.560

SIGNED: Signature on File Date: 1/13/2021

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

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 7-WCS
Readout Description: Control Box
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-CAL	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	7-WCS	358	358	358	358	358	358	358	358	0.0	0.0%	Pass
T2 (Boiling H_2O)	7-WCS	210	210	210	210	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	7-WCS	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)

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)	129103	649	649	649	649	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	129103	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	129103	211	211	211	211	212	212	212	212	1.0	0.1%	Pass
T1 (~32 F)	129103	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)

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 42-WCS
Readout Description: Control Box
Date: 7/6/2021
Performed By: RD/DA/RM

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 313010
T2 Reference Thermometer ID: 242196
T3 Reference Thermometer ID: 242167

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-CAL	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	42-WCS	358	358	358	358	358	358	358	358	0.0	0.0%	Pass
T2 (Boiling H_2O)	42-WCS	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (Ice/Water)	42-WCS	32	32	32	32	32	32	32	32	0.0	0.0%	Pass

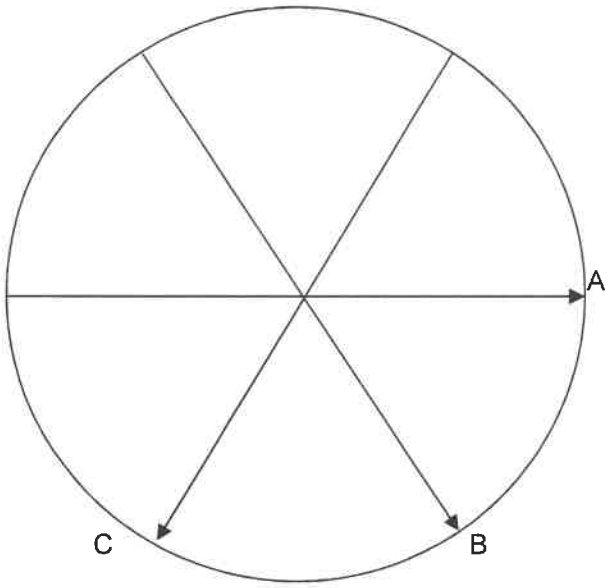
1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	649	649	649	649	650	650	650	650	1.0	0.1%	Pass
T3 (~370 F)	129103	370	370	370	370	370	370	370	370	0.0	0.0%	Pass
T2 (~212 F)	129103	212	212	212	212	212	212	212	212	0.0	0.0%	Pass
T1 (~32 F)	129103	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: BOWMAN
SOURCE TESTED: ULPA #2
CALIBRATED BY: [illegible]
DATE: 7/2/21

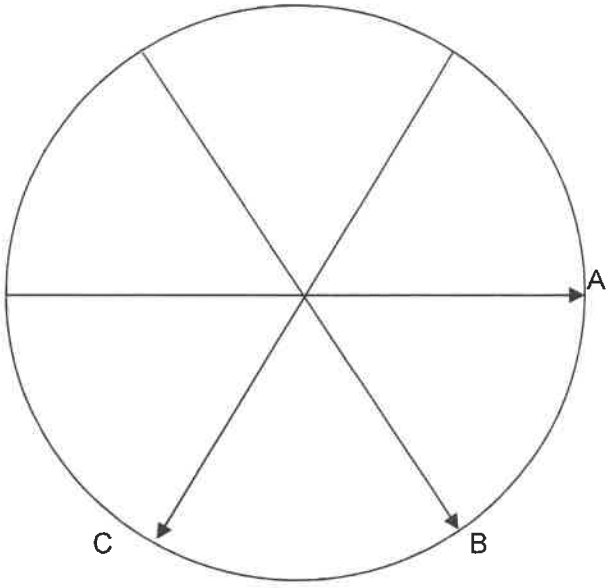


NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
#288	0.205	0.204	0.205	0.205

Calibrated by: [signature]

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

FACILITY: Bowman
SOURCE TESTED: ULPA #1
CALIBRATED BY: SJ
DATE: 7/7/21



NOZZLE ID	READING (INCHES)			AVG DIA.
	A	B	C	
#337	0.305	0.305	0.305	0.305

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 A.3
Laboratory Data

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
SCAQMD 5.1, WET IMPINGEMENT

Project # PROJ-010019
Client/Location ~~Bowerman~~ Bowman/Compton
Sample Location Anodizing
Test # Tank Exhaust
Water Blank mg/ml * 0.0004 ~~0.0000~~
$MeCl_2$ Blank mg/ml ~~0.0004~~ * 0.0000
Sample Date 07/07/2021
Analysis Date 07/09/2021
Analyst Initials HS

Item	Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/Sample)	Blank based on Total Volume (mg)
1. Glass Fiber Filter (Backup Filter)	55-4191	0.1470	0.1474	0.0	—	0.0	—
2. Insoluble Solids Filter	55-4188	0.1449	0.1449	0.0	—	0.0	—
3. Impingers and Probe Catches a. Water Fraction	7493	29.0580	29.0566	1.4	380.4/380.4	1.4	* 0.2 ~~0.0~~
b. Organic Extraction 125 ml $MeCl_2$	7494	29.3611	29.3612	0.0	380.4/380.4	0.0	* 0.0 ~~0.1~~

Total Particulate = 1.4 mg

Method of Sample Prep/Notes

* KC 7/14/21

PARTICULATE

SCAQMD 5.1, WET IMPINGEMENT

Project #	PROJ-010019				
Client/Location	Bowman/ Compton			**Sample Date**	7/7/2021
Sample Location	Anodizing Tank Exhaust	**Water Blank (mg/ml)**	0.0004	**Analysis Date**	7/9/2021
Test #	Anodizing Tank Exhaust	**$MeCl_2$ Blank (mg/ml)**	0.0000	**Analyst**	HS/KC

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter (backup filter)	55-4191	0.1470	0.1474	0.0	--------	0.0	----------
2. Insoluble Solids Filter	55-4188	0.1449	0.1449	0.0	-------	0.0	----------
3. Impingers and Probe Catches a. Water Fraction	7493	29.0580	29.0566	1.4	380.4 380.4	1.4	0.2
b. Organic Fraction 125 ml $MeCl_2$ (5x25mL)	7494	29.3611	29.3612	0.0	380.4 380.4	0.0	0.0

Total Particulate = 1.4

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
SCAQMD 5.1, WET IMPINGEMENT

Project # PROJ-010019
Client/Location ~~Bowerman~~ Bowman / Compton
Sample Location Anodizing
Test # Room Exhaust
Water Blank mg/ml * 0.0004 ~~0.0000~~
$MeCl_2$ Blank mg/ml ~~0.0004~~ * 0.0000
Sample Date 07/07/2021
Analysis Date 07/09/2021
Analyst Initials HS

Item	Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/Sample)	Blank based on Total Volume (mg)
1. Glass Fiber Filter (Backup Filter)	55-4192	0.1460	0.1461	0.0	—	0.0	—
2. Insoluble Solids Filter	55-4189	0.1463	0.1464	0.0	—	0.0	—
3. Impingers and Probe Catches a. Water Fraction	7489	29.6579	29.6573	0.6	385.7 / 385.7	0.6	* 0.2 ~~0.0~~
b. Organic Extraction 125 ml $MeCl_2$	7490	29.6045	29.6045	0.0	385.7 / 385.7	0.0	* 0.0 ~~0.1~~
$MeCl_2$ Blank Lt # 206170	7491	29.0170	29.0171	0.0	250.0 / 250.0	—	—
DI H_2O Blank	7492	29.3730	29.3729	0.1	250.0 / 250.0	—	—

Total Particulate = 0.6 mg

Method of Sample Prep/Notes

* KC 7/14/21

MONTROSE

PARTICULATE

SCAQMD 5.1, WET IMPINGEMENT

Project #	PROJ-010019				
Client/Location	Bowman /Compton			**Sample Date**	7/7/2021
Sample Location	Anodizing room exhaust	**Water Blank (mg/ml)**	0.0004	**Analysis Date**	7/9/2021
Test #	Anodizing room exhaust	**$MeCl_2$ Blank (mg/ml)**	0.0000	**Analyst**	HS/KC

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter (backup filter)	55-4192	0.1460	0.1461	0.0	--------	0.0	---------
2. Insoluble Solids Filter	55-4189	0.1463	0.1464	0.0	--------	0.0	---------
3. Impingers and Probe Catches a. Water Fraction	7489	29.6579	29.6573	0.6	385.7 385.7	0.6	0.2
b. Organic Fraction 125 ml MeCl2	7490	29.6045	29.6045	0.0	385.7 385.7	0.0	0.0
DI Water Blank	7492	29.3730	29.3729	0.1	250.0 250.0	------	------
$MeCl_2$ Blank	7491	29.0170	29.0171	0.0	250.0 250.0	------	------

Total Particulate = 0.6

Method of Sample Prep/Analysis Notes

CHAIN OF CUSTODY

CLIENT: Bauman PROJECT NO: Proj-010019 TEST DATE(S): 7/7/21

LOCATION: Compton SAMPLER(S): DH / JR

SAMPLE LOCATION: Anodizing tank exh / Room exh PROJECT MANAGER: Joe Rubio

TEST METHOD(S): SCAQMD 5.1 DATE DUE: —

OUTSIDE LAB REQUIRED?: — COMPLIANCE TEST? Yes

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
7/7/21		Run 1	Anodizing tank exh	2	DH	
" "		Run 1	Anodizing Room exh	2	JR/PSJ	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[redacted]	7/8/21 1400	Jim Nai (Lim (LAB)	7/8/21 1400

ANALYSIS REQUIRED: _____

W002AS-010019-RT-2801

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CHAIN OF CUSTODY

Email: andrewkitto.quantum@gmail.com

Page: 1 of: 1

Client: MAQS

Contact Person: JOE RUBIO
tel: 626-831-7907
fax:

Project No.: PROJ-010019
Project Name: BOWMAN
Project Manager: J. RUBIO
P.O. Number:

Analysis: CARB 425 TCH, CO2

Turnaround Time:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Normal

Client Sample ID	Tag #	Date	Time	Lab ID Number	Remarks
VLPA #1 EXH RUN 1		7/9/21	—		FILTER + SOLUTION
" " " 2		7/12/21	—		" "
" " " 3		7/12/21	—		" "
VLPA #2 EXH RUN 1		7/9/21	—		" "
" " " 2		7/12/21	—		" "
" " " 3		7/12/21	—		" "
0.1 N $NaHCO_3$ BLANK		7/12/21	—		" "

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
S-Hugh Brown	7/12/21 15:26		7/12/21 1526
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

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CLIENT	Montrose AQS
CLIENT JOB NO:	Bowman
LABORATORY NO:	21-598
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Laboratory Results

Analysis Method	EPA 306			
Detection Limits	0.05 ng/ml			
Sample ID Description	Sampling Date	Sample Vol (mL)	Cr^{6+} ng/ml	Cr^{6+} ng/sample
VLPA # 1 EXH Run 1	7/9/21	383.1	1.16	444
VLPA # 1 EXH Run 2	7/12/21	408.4	<0.05	<20.42
VLPA # 1 EXH Run 3	7/12/21	408.4	2.00	817
VLPA # 2 EXH Run 1	7/9/21	409.3	<0.05	<20.465
VLPA # 2 EXH Run 2	7/12/21	345.1	<0.05	<17.255
VLPA # 2 EXH Run 3	7/12/21	351.2	<0.05	<17.56
0.1N NaHCO3 Blank	7/12/21	250.0	<0.05	<12.5

Dr. Andrew Kitto
President

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CLIENT:	**Montrose AQS**
CLIENT JOB NO:	**Bowman**
LABORATORY NO:	**21-598**
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Quality Assurance/Quality Control Report

Blanks

Sample ID	Theoretical Value ng/ml	Tested Value ng/ml	% RPD	% Recovery*
ICB - Lab Blank	**<0.05**	**<0.05**	-	**N/A**
CCB - Lab Blank	<0.05	<0.05	-	N/A

*: Must be between 90-110%

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President

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CLIENT	**Montrose AQS**
CLIENT JOB NO:	**Bowman**
LABORATORY NO:	**21-598**
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Quality Assurance Report

Duplicate Analysis

Sample ID	Analyte	Analysis # 1 ng/sample	Analysis # 2 ng/sample	Mean ng/sample	% Difference from the Mean*
VLPA # 1 EXH Run 2	Cr6+	<20.42	<20.42	<20.42	N/A
VLPA # 2 EXH Run 3	Cr6+	<17.56	<17.56	<17.56	N/A

*Must be ±10%

N/A: Not applicable

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President

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CLIENT:	**Montrose AQS**
CLIENT JOB NO:	**Bowman**
LABORATORY NO:	**21-598**
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Quality Assurance/Quality Control Report

Standard Verifications

Sample ID	Theoretical Valu ng/ml	Tested Value ng/ml	% RPD	% Recovery*
ICV STD	1.00	0.99	1.0	99%
CCV1 STD	0.50	0.49	2.0	98%
LCS	2.00	2.01	0.5	101%

ICV; Initial Calibration Verification
CCV: Continuous Calibration Verification
*: Must be between 90-110%

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CLIENT:	**Montrose AQS**
CLIENT JOB NO:	**Bowman**
LABORATORY NO:	**21-598**
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Quality Assurance/Quality Control Report

LCS

Sample ID	Theoretical Value ng/ml	Tested Value ng/ml	% RPD	% Recovery*
LCS	2.00	2.00	0.0	100%

*: Must be between 90-110%

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CLIENT	**Montrose AQS**
CLIENT JOB NO:	**Bowman**
LABORATORY NO:	**21-598**
SAMPLING DATE:	7/9-12/2021
RECEIVING DATE:	07/12/21
ANALYSIS DATE:	07/15/21
REPORT DATE:	07/16/21

Quality Assurance/Quality Control Report

Matrix Spike

Analysis Method	**EPA 306**			
Detection Limits	**0.1 ng/mL**			
Sample ID Description	**Std Conc Spiked ng/mL**	**Expected Recovery ng/mL**	**Actual Recovery ng/mL**	**Recovery* %**
VLPA # 2 EXH Run 3	2.00	1.00	1.00	100

*Must be ±10%

Dr. Andrew Kitto
President

Gmail

Andrew Kitto <andrewkitto.quantum@gmail.com>

Bowman samples dropped off on 7/12/21

Stanley Brown <sbrown@montrose-env.com> Mon, Jul 12, 2021 at 4:18 PM
To: Andrew Kitto <andrewkitto.quantum@gmail.com>

Andrew,

The gravimetric volumes for the six Bowman samples are:
ULPA #1 Exh Run 1 = 383.1 mls
ULPA #1 Exh Run 2 = 408.4 mls
ULPA #1 Exh Run 3 = 408.4 mls
ULPA #2 Exh Run 1 = 409.3 mls
ULPA #2 Exh Run 2 = 345.1 mls
ULPA #2 Exh Run 3 = 351.2 mls

S. Hugh Brown
Client Project Manager
Montrose Air Quality Services, LLC
1631 E. Saint Andrew Place, Santa Ana, CA 92705
O: 714-332-8481; M: 626-831-7713
sbrown@montrose-env.com
www.montrose-env.com

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CHAIN OF CUSTODY

Email: andrewkitto.quantum@gmail.com

Page: 1 of: 1

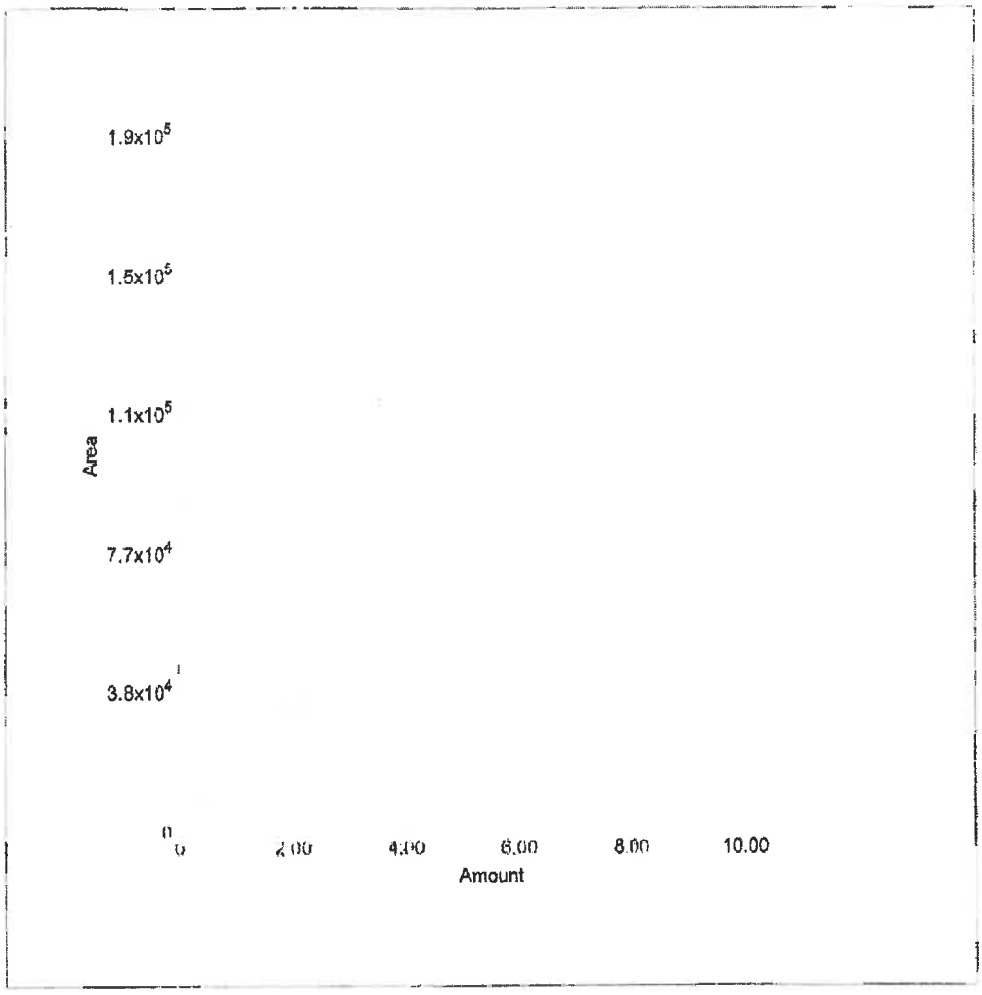
Client: MA&S	**Project No.:** P&S - 010019	**Analysis**	**Turnaround Time:**
	Project Name: BOWMAN		☐ Same Day
Contact Person: JOE RUBIO	**Project Manager:** J. RUBIO		☐ 24 Hours
tel: 626-831-7707	**P.O. Number:**		☐ 48 Hours
fax: 7707			☒ Normal

Client Sample ID	Tag #	Date	Time	Lab ID Number							Remarks
VLPA #1 EXH RUN 1		7/9/21	—		X						FILTER + SOLUTION
" " " 2		7/12/21	—		X						" "
" " " 3		7/12/21	—		X						" "
VLPA #2 EXH RUN 1		7/9/21	—		X						" "
" " " 2		7/12/21	—		X						" "
" " " 3		7/12/21	—		X						" "
0.1 N $NaHCO_3$ BLANK		7/12/21	—		X						" "

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
S-Hwan Bum	7/12/21 15:26	[signature]	7/12/21 1526
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

Method:C:\PEAKNET\METHOD\CR62021B.MET Updated:7/15/2021 11:22:55 AM Total:1

1. Component:Hex Chrome
Standard:External Fit Type:Linear
Origin:Force Calibration:Area
r^2=0.998986
Amt=5.205e-005*Resp+0



Sample Analysis Report

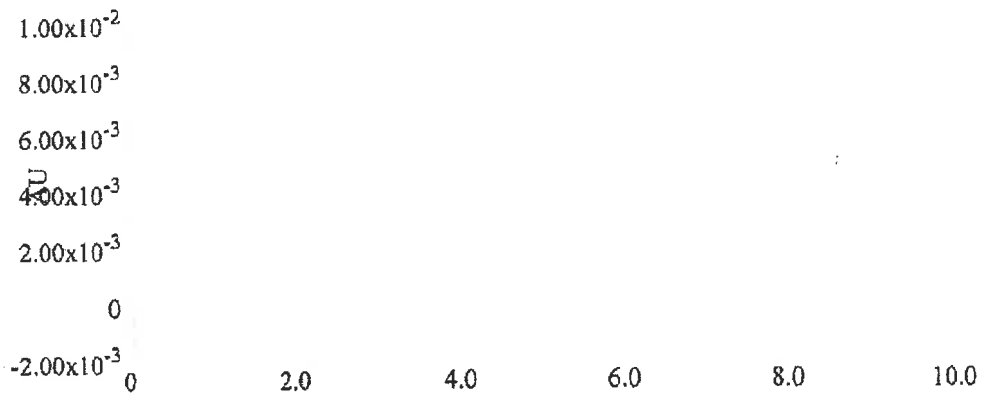
Sample Name : Lab Blank
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 001.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 10:55:14 AM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height

Lab Blank



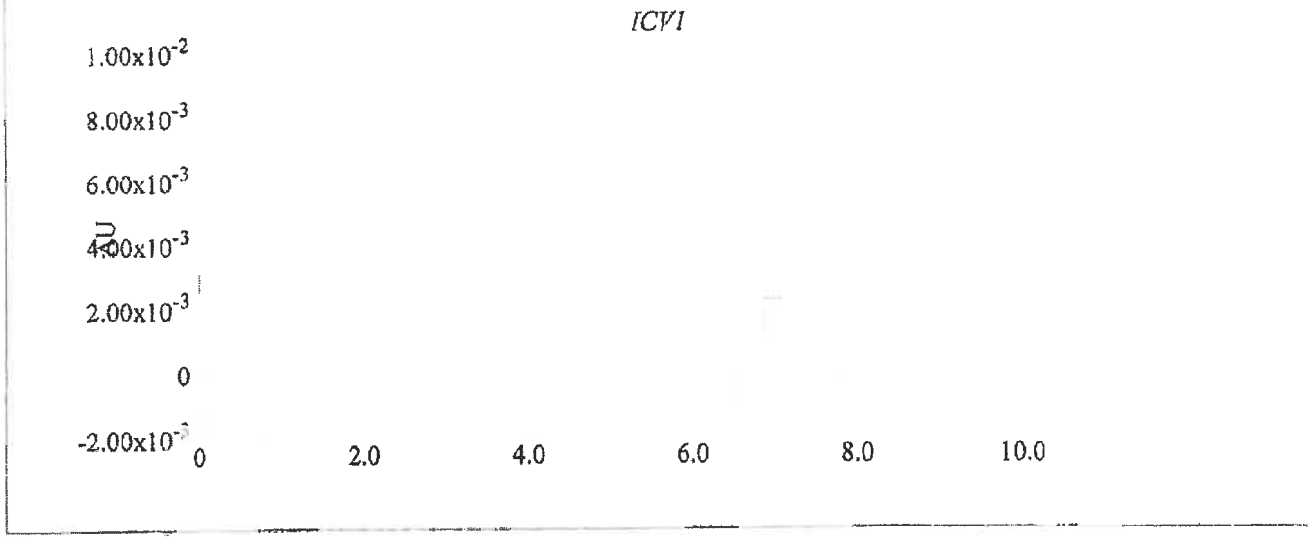
Sample Analysis Report

Sample Name : ICV1
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- _002.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 11:16:18 AM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Hex Chrome	6.87	0.99	19007	



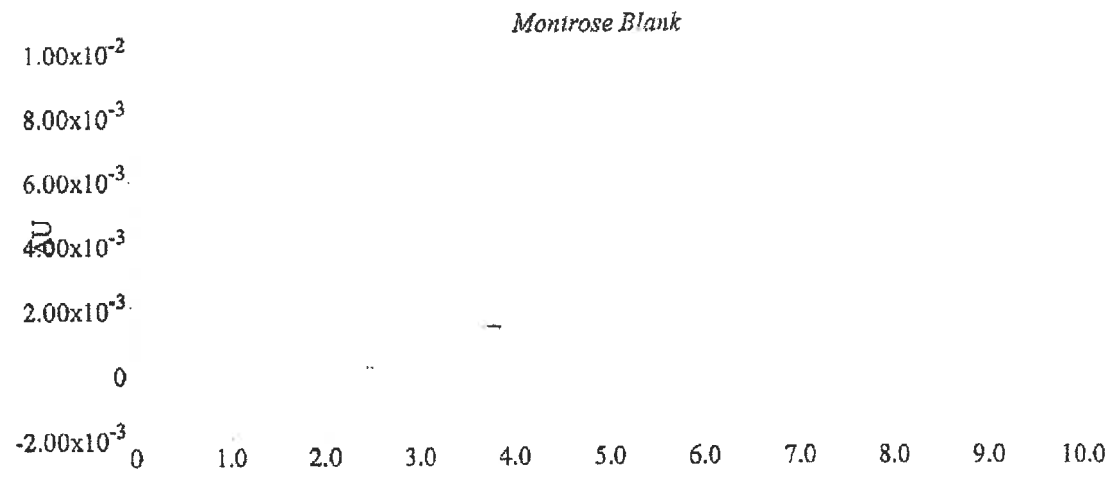
Sample Analysis Report

Sample Name : Montrose Blank
Data File Name : C:\PEAKNET\DATA\JUL1521\19621-_003.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 11:27:03 AM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Unknown 1	3.67	0.00	579	11



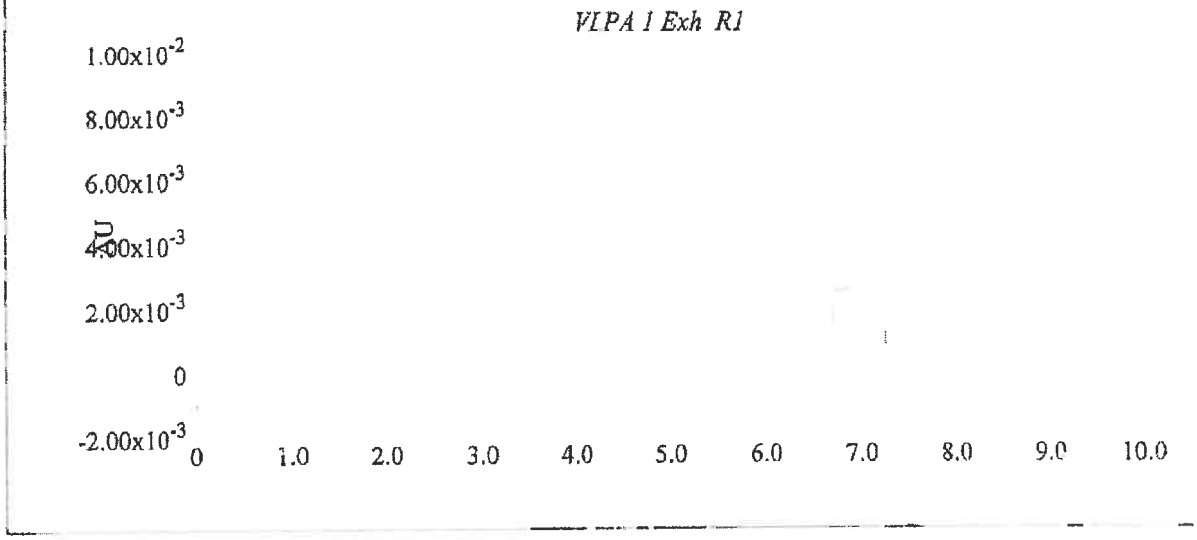
Sample Analysis Report

Sample Name : VLPA 1 Exh R1
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 004.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 11:39:26 AM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Hex Chrome	6.72	1.16	22268	2.



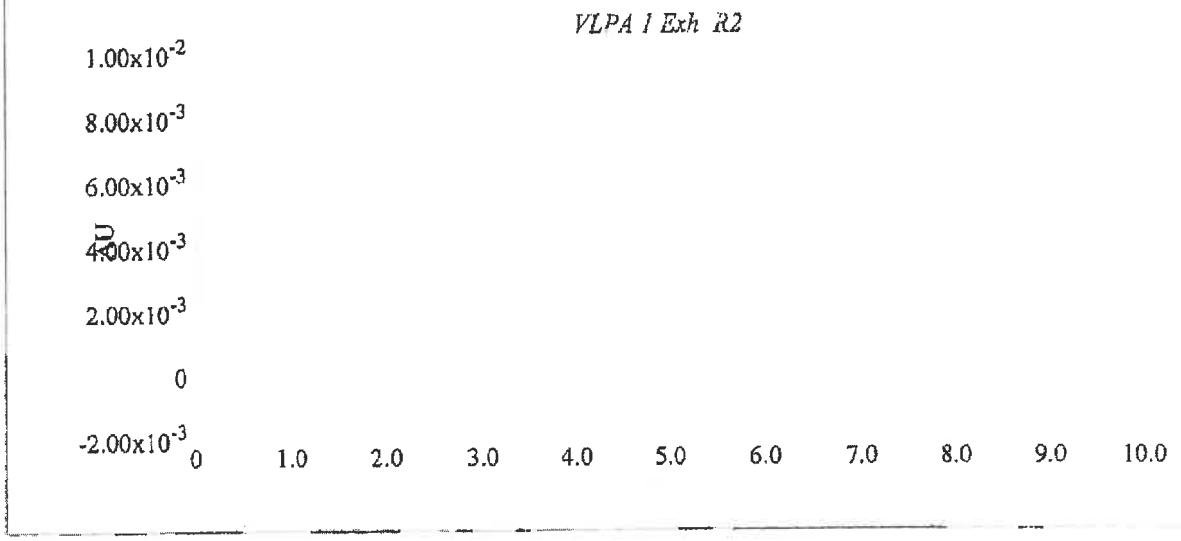
Sample Analysis Report

Sample Name : VLPA 1 Exh R2
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 005.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 11:51:48 AM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



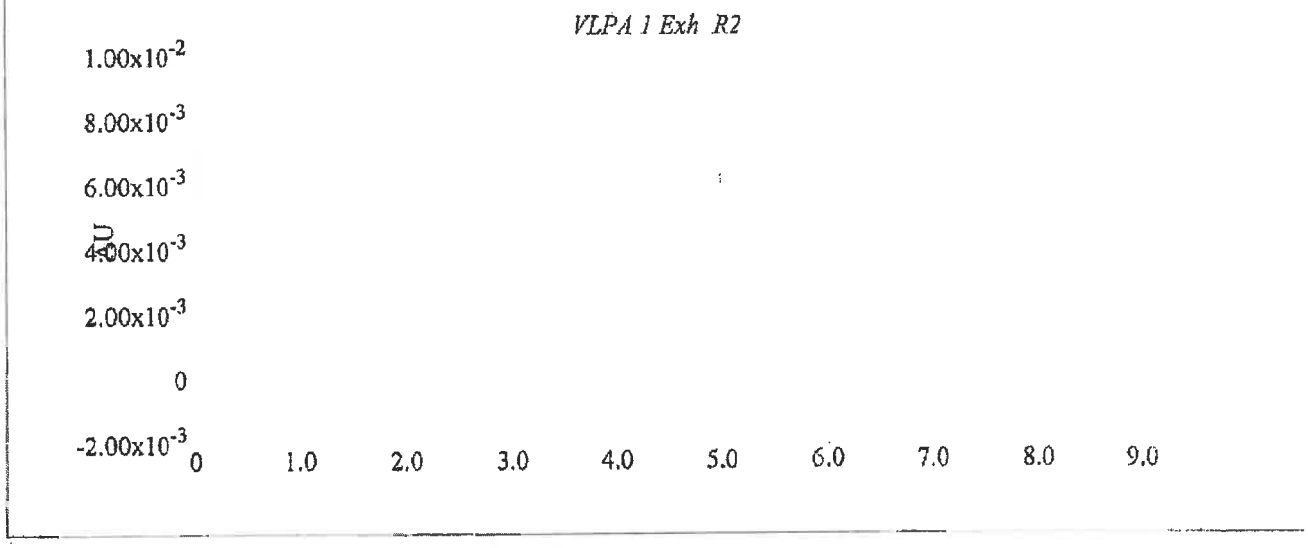
Sample Analysis Report

Sample Name : VLPA 1 Exh R2 Dup
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 014.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 1:42:19 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



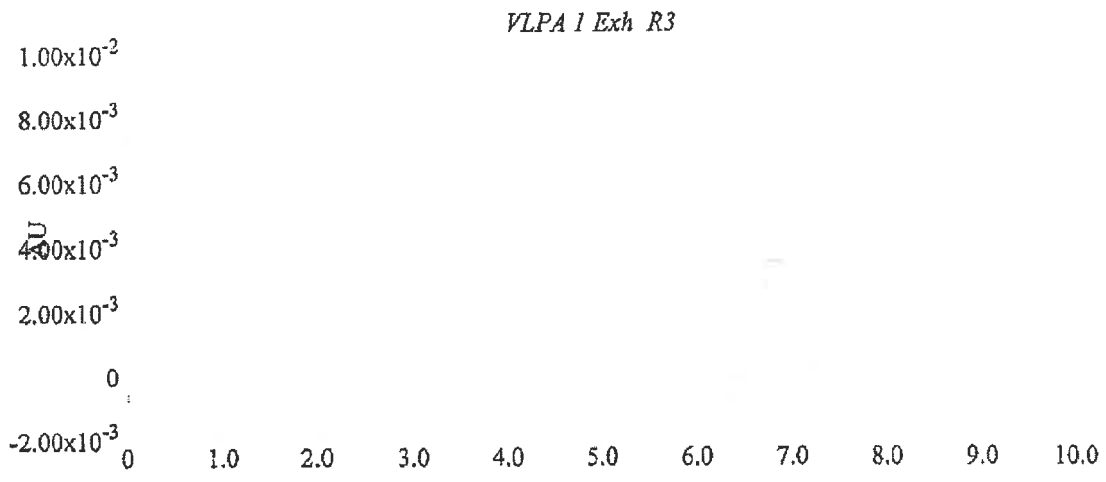
Sample Analysis Report

Sample Name : VLPA 1 Exh R3
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 006.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 12:04:11 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Hex Chrome	6.73	2.00	38458	11



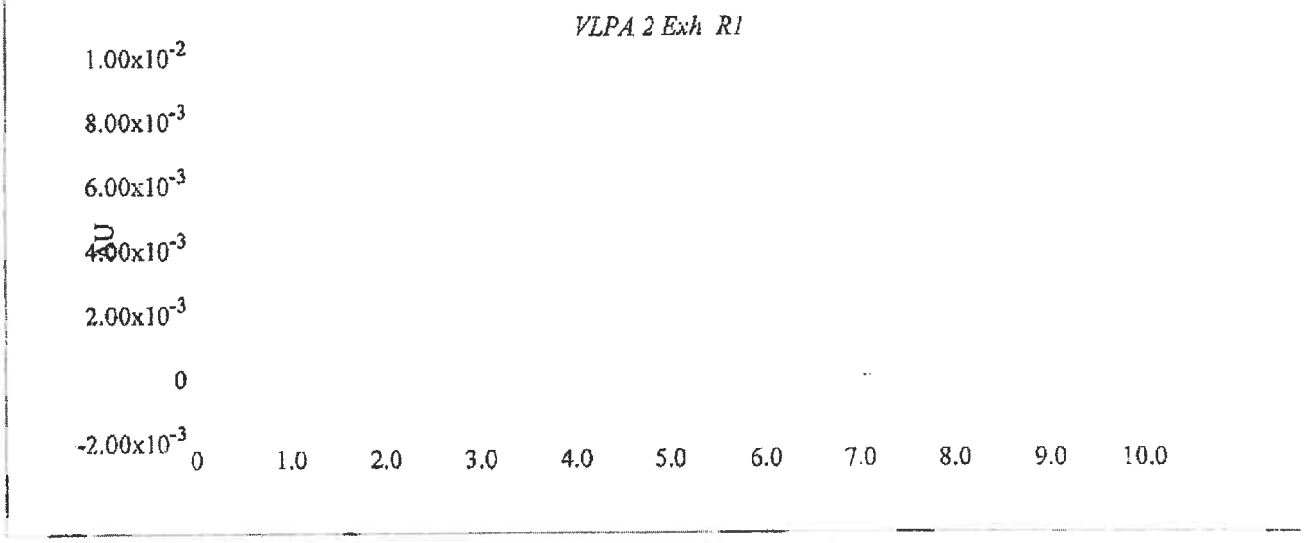
Sample Analysis Report

Sample Name : VLPA 2 Exh R1
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 007.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 12:16:34 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



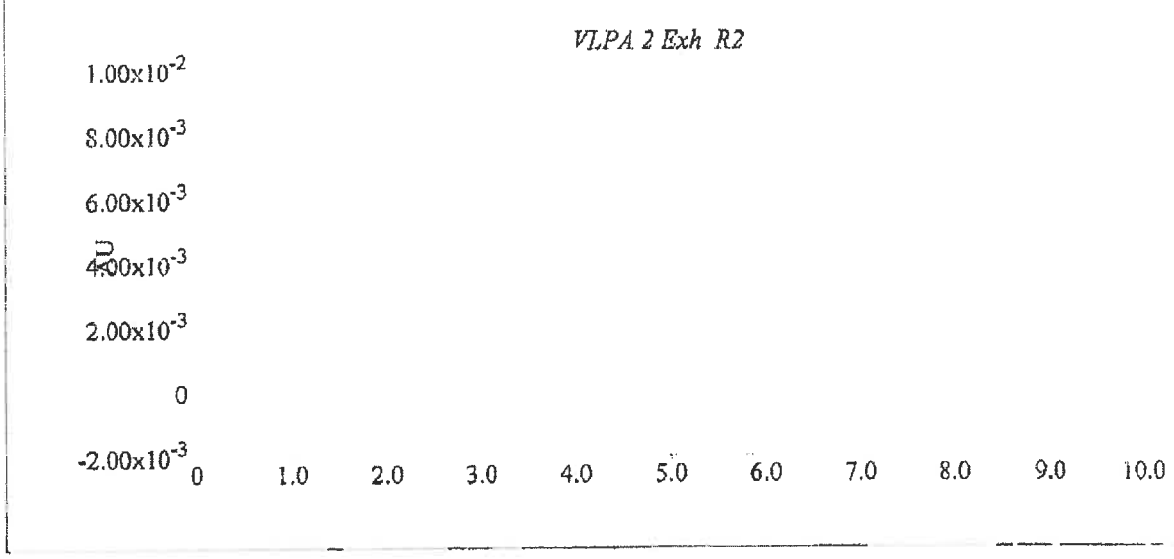
Sample Analysis Report

Sample Name : VLPA 2 Exh R2
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 008.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 12:28:57 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



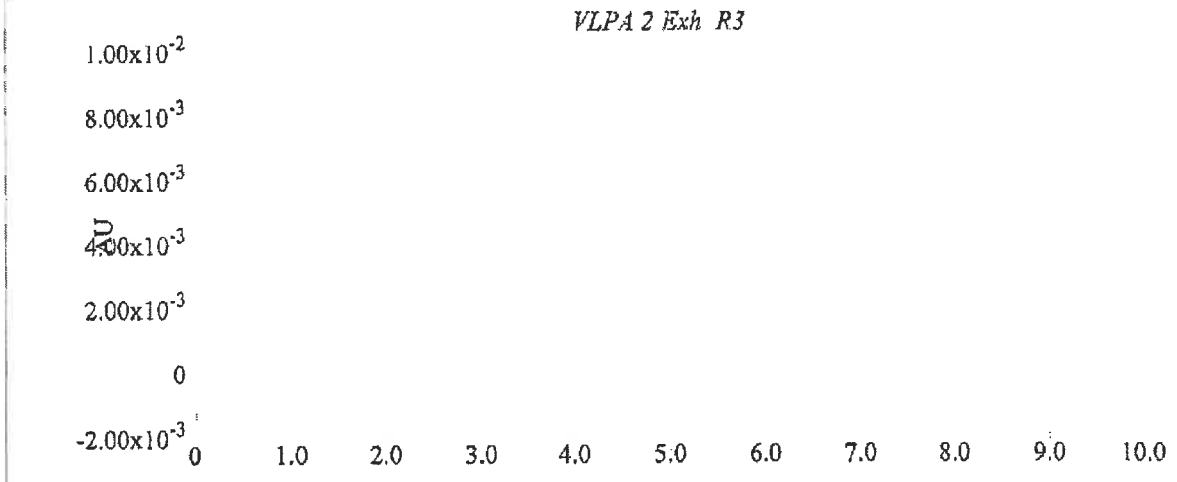
Sample Analysis Report

Sample Name : VLPA 2 Exh R3
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 009.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 12:41:20 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



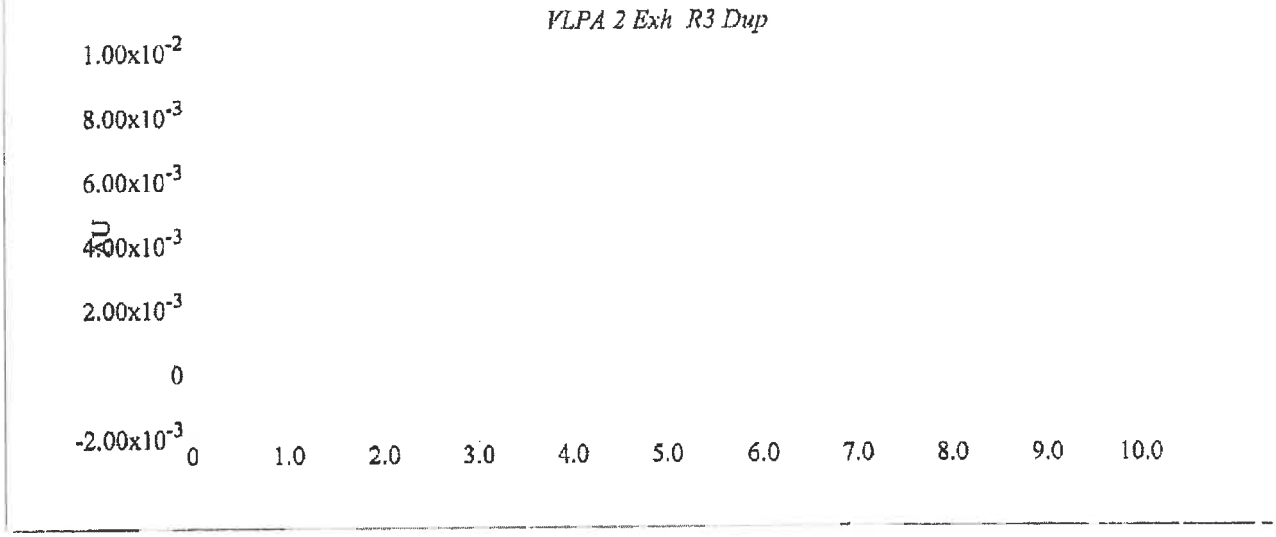
Sample Analysis Report

Sample Name : VLPA 2 Exh R3 Dup
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 010.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 12:53:43 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height



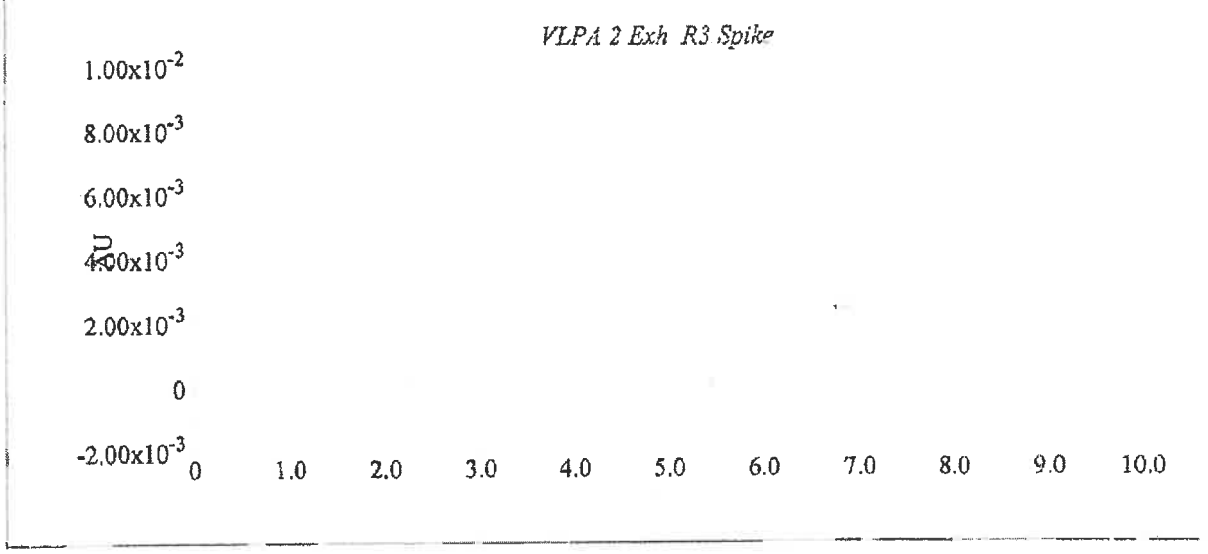
Sample Analysis Report

Sample Name : VLPA 2 Exh R3 Spike
Data File Name : C:\PEAKNET\DATA\JUL1521\19621-_011.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 1:06:06 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Hei
1	Hex Chrome	6.75	1.00	1916[illegible]	1086



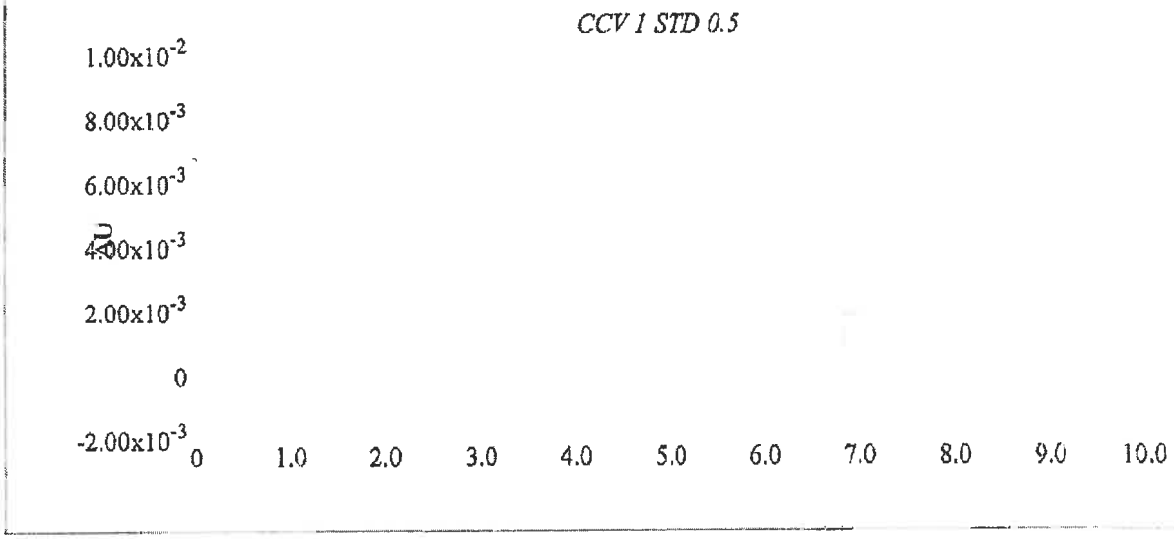
Sample Analysis Report

Sample Name : CCV 1 STD 0.5
Data File Name : C:\PEAKNET\DATA\JUL1521\19621-_012.DXD

Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 1:18:29 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Hex Chrome	6.83	0.49	9350	500



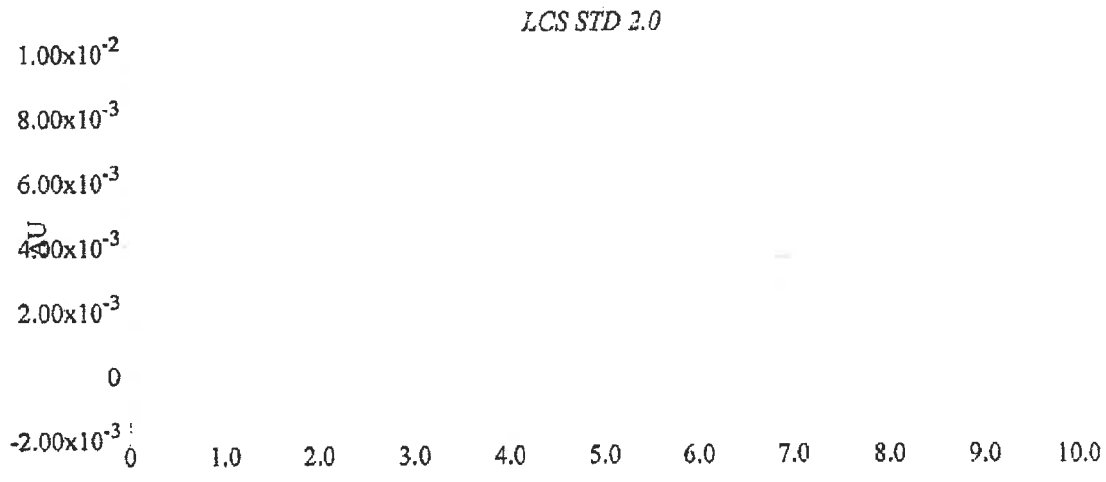
Sample Analysis Report

Sample Name : LCS STD 2.0
Data File Name : C:\PEAKNET\DATA\JUL1521\19621- 013.DXD

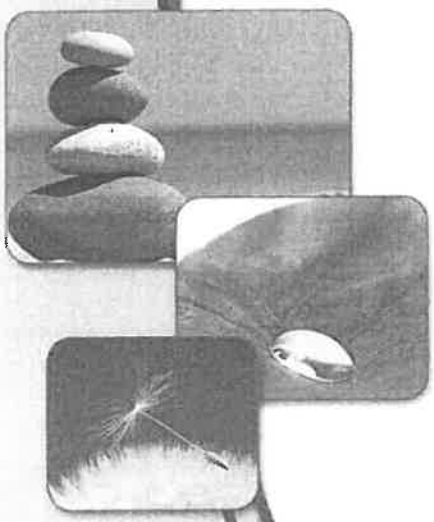
Method File Name : c:\peaknet\method\cr62021b.met
Date Time Collected : 7/15/2021 1:31:35 PM
System Operator : Dr Kitto

Peak Information : All Peaks

Peak #	Component Name	Retention Time	Amount	Peak Area	Peak Height
1	Hex Chrome	6.83	2.01	38630	22



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ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-64723-1
Client Project/Site: 21-598

For:
Quantum Analytical Services
1210 E. 223rd Street
314
Carson, California 90745

Attn: Andrew Kitto

Authorized for release by:
7/28/2021 4:54:20 PM

Xuan Dang, Project Manager I
(714)895-5494
Xuan.Dang@eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-64723-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-64723-1

Comments
No additional comments.

Receipt
The samples were received on 7/16/2021 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.3° C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Client Sample ID: VLPA #1 Exh Run 1 + Filter — **Lab Sample ID: 570-64723-1**

No Detections.

Client Sample ID: VLPA #1 Exh Run 2 + Filter — **Lab Sample ID: 570-64723-2**

No Detections.

Client Sample ID: VLPA #1 Exh Run 3 + Filter — **Lab Sample ID: 570-64723-3**

No Detections.

Client Sample ID: VLPA #2 Exh Run 1 + Filter — **Lab Sample ID: 570-64723-4**

No Detections.

Client Sample ID: VLPA #2 Exh Run 2 + Filter — **Lab Sample ID: 570-64723-5**

No Detections.

Client Sample ID: VLPA #2 Exh Run 3 + Filter — **Lab Sample ID: 570-64723-6**

No Detections.

Client Sample ID: 0.1N NaHCO3 Blank — **Lab Sample ID: 570-64723-7**

No Detections.

This Detection Summary does not include radiochemical test results.

Method: 6010B - Metals (ICP)

Client Sample ID: VLPA #1 Exh Run 1 + Filter
Date Collected: 07/09/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:02	1

Client Sample ID: VLPA #1 Exh Run 2 + Filter
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:05	1

Client Sample ID: VLPA #1 Exh Run 3 + Filter
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:07	1

Client Sample ID: VLPA #2 Exh Run 1 + Filter
Date Collected: 07/09/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:10	1

Client Sample ID: VLPA #2 Exh Run 2 + Filter
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:12	1

Client Sample ID: VLPA #2 Exh Run 3 + Filter
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:15	1

Client Sample ID: 0.1N NaHCO3 Blank
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50
Lab Sample ID: 570-64723-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 21:00	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 570-165157/1-A
Matrix: Water
Analysis Batch: 166130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 165157

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0500	0.00858	mg/L		07/20/21 10:50	07/23/21 16:42	1

Lab Sample ID: LCS 570-165157/2-A
Matrix: Water
Analysis Batch: 166130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 165157

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.500	0.5350		mg/L		107	80 - 120

Lab Sample ID: LCSD 570-165157/3-A
Matrix: Water
Analysis Batch: 166130

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 165157

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.500	0.5336		mg/L		107	80 - 120	0	20

QC Association Summary

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Metals

Prep Batch: 165157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-64723-1	VLPA #1 Exh Run 1 + Filter	Total/NA	Water	3010A	
570-64723-2	VLPA #1 Exh Run 2 + Filter	Total/NA	Water	3010A	
570-64723-3	VLPA #1 Exh Run 3 + Filter	Total/NA	Water	3010A	
570-64723-4	VLPA #2 Exh Run 1 + Filter	Total/NA	Water	3010A	
570-64723-5	VLPA #2 Exh Run 2 + Filter	Total/NA	Water	3010A	
570-64723-6	VLPA #2 Exh Run 3 + Filter	Total/NA	Water	3010A	
570-64723-7	0.1N NaHCO3 Blank	Total/NA	Water	3010A	
MB 570-165157/1-A	Method Blank	Total/NA	Water	3010A	
LCS 570-165157/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 570-165157/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 166130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-165157/1-A	Method Blank	Total/NA	Water	6010B	165157
LCS 570-165157/2-A	Lab Control Sample	Total/NA	Water	6010B	165157
LCSD 570-165157/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	165157

Analysis Batch: 166483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-64723-1	VLPA #1 Exh Run 1 + Filter	Total/NA	Water	6010B	165157
570-64723-2	VLPA #1 Exh Run 2 + Filter	Total/NA	Water	6010B	165157
570-64723-3	VLPA #1 Exh Run 3 + Filter	Total/NA	Water	6010B	165157
570-64723-4	VLPA #2 Exh Run 1 + Filter	Total/NA	Water	6010B	165157
570-64723-5	VLPA #2 Exh Run 2 + Filter	Total/NA	Water	6010B	165157
570-64723-6	VLPA #2 Exh Run 3 + Filter	Total/NA	Water	6010B	165157
570-64723-7	0.1N NaHCO3 Blank	Total/NA	Water	6010B	165157

Lab Chronicle

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Client Sample ID: VLPA #1 Exh Run 1 + Filter

Lab Sample ID: 570-64723-1
Matrix: Water
Date Collected: 07/09/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:02	ULPF	ECL 1
	Instrument ID: ICP8									

Client Sample ID: VLPA #1 Exh Run 2 + Filter

Lab Sample ID: 570-64723-2
Matrix: Water
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:05	ULPF	ECL 1
	Instrument ID: ICP8									

Client Sample ID: VLPA #1 Exh Run 3 + Filter

Lab Sample ID: 570-64723-3
Matrix: Water
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:07	ULPF	ECL 1
	Instrument ID: ICP8									

Client Sample ID: VLPA #2 Exh Run 1 + Filter

Lab Sample ID: 570-64723-4
Matrix: Water
Date Collected: 07/09/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:10	ULPF	ECL 1
	Instrument ID: ICP8									

Client Sample ID: VLPA #2 Exh Run 2 + Filter

Lab Sample ID: 570-64723-5
Matrix: Water
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:12	ULPF	ECL 1
	Instrument ID: ICP8									

Lab Chronicle

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Client Sample ID: VLPA #2 Exh Run 3 + Filter

Lab Sample ID: 570-64723-6
Matrix: Water
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:15	ULPF	ECL 1
	Instrument ID: ICP8									

Client Sample ID: 0.1N NaHCO3 Blank

Lab Sample ID: 570-64723-7
Matrix: Water
Date Collected: 07/12/21 00:00
Date Received: 07/16/21 16:50

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	165157	07/20/21 10:50	B4SY	ECL 1
Total/NA	Analysis	6010B		1			166483	07/23/21 21:00	ULPF	ECL 1
	Instrument ID: ICP8									

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Laboratory: Eurofins Calscience LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2944	09-30-21
Oregon	NELAP	CA300001	01-30-22

Method Summary

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	ECL 1
3010A	Preparation, Total Metals	SW846	ECL 1

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Quantum Analytical Services
Project/Site: 21-598

Job ID: 570-64723-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-64723-1	VLPA #1 Exh Run 1 + Filter	Water	07/09/21 00:00	07/16/21 16:50
570-64723-2	VLPA #1 Exh Run 2 + Filter	Water	07/12/21 00:00	07/16/21 16:50
570-64723-3	VLPA #1 Exh Run 3 + Filter	Water	07/12/21 00:00	07/16/21 16:50
570-64723-4	VLPA #2 Exh Run 1 + Filter	Water	07/09/21 00:00	07/16/21 16:50
570-64723-5	VLPA #2 Exh Run 2 + Filter	Water	07/12/21 00:00	07/16/21 16:50
570-64723-6	VLPA #2 Exh Run 3 + Filter	Water	07/12/21 00:00	07/16/21 16:50
570-64723-7	0.1N NaHCO3 Blank	Water	07/12/21 00:00	07/16/21 16:50

64723

№ 9345

Quantum Analytical Services Inc.

570-64723 Chain of Custody

310/830-2226 • www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745

CHAIN OF CUSTODY

Email andrewkitto.quantum@gmail.com

Page: 1 of: 1

Client: Montrose

Contact Person:
tel:
fax:

Project No.: 21-598
Project Name:
Project Manager:
P.O. Number:

Analysis: Total Chrome

Turnaround Time:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☒ Normal

Client Sample ID	Tag #	Date	Time	Lab ID Number	Total Chrome	Remarks
VLPA #1 Exh Run1 +	Filter	7/9/21		1	X	Report all to MDL
" " " " 2	"	7/12/21		2	X	
" " " " 3	"	"		3	X	
VLPA #2 Exh Run 1	"	7/9/21		4	X	
" " " 2	"	7/12/21		5	X	
" " " 3	"	"		6	X	
0.1N $NaHCO_3$ Blank		"		7	X	

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
[signature]	7/16/21 1210	[signature] EC	7/16/21 1210
[signature]	7/16/21 1650	[signature]	7/16/21 1650
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

7/28/2021

37 33 SC6

Login Sample Receipt Checklist

Client: Quantum Analytical Services

Job Number: 570-64723-1

Login Number: 64723
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

WECK LABORATORIES, INC

Certificate of Analysis

FINAL REPORT

Work Orders: 1G14080

Project: PROJ-010019 Bowman Plating

Attn: Joe Rubio

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

Report Date: 8/16/2021
Received Date: 7/14/2021
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 • Guam-EPA #17-008R • HW-DOH #4047 • ISO17025 ANAB #L2457.01 • LACSD #10143 • NELAP-OR #4047 • NJ-DEP #CA015 • 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. This analytical report must be reproduced in its entirety.

Dear Joe Rubio,

Enclosed are the results of analyses for samples received 7/14/21 with the Chain-of-Custody document. The samples were received in good condition, at 10.5 °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:

Brandon Gee
Operations Manager/Senior PM

Certificate of Analysis

FINAL REPORT

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

Project Number: PROJ-010019 Bowman Plating

Project Manager: Joe Rubio

Reported:
08/16/2021 10:37

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
Run 1 ULPA #1 EXH	DH/JR	1G14080-01	Filter	07/07/21 00:00	
Run 2 ULPA #1 EXH	DH/JR	1G14080-02	Filter	07/07/21 00:00	
Run 1 ULPA #2 EXH	DH/JR	1G14080-03	Filter	07/07/21 00:00	
Run 2 ULPA #2 EXH	DH/JR	1G14080-04	Filter	07/07/21 00:00	
Run 3 ULPA #1 EXH	DH/JR	1G14080-05	Filter	07/09/21 00:00	
Run 3 ULPA #2 EXH	DH/JR	1G14080-06	Filter	07/09/21 00:00	
Blank	DH/JR	1G14080-07	Filter	07/09/21 00:00	

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

Project Number: PROJ-010019 Bowman Plating

Project Manager: Joe Rubio

Reported: 08/16/2021 10:37

Sample Results

Sample: Run 1 ULPA #1 EXH
1G14080-01 (Filter)

Sampled: 07/07/21 0:00 by DH/JR

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	2.6	0.040	0.20	ug/filter	1	08/05/21	

Sample Results

Sample: Run 2 ULPA #1 EXH
1G14080-02 (Filter)

Sampled: 07/07/21 0:00 by DH/JR

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	2.8	0.040	0.20	ug/filter	1	08/05/21	

Sample Results

Sample: Run 1 ULPA #2 EXH
1G14080-03 (Filter)

Sampled: 07/07/21 0:00 by DH/JR

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	2.1	0.040	0.20	ug/filter	1	08/05/21	

Sample Results

Sample: Run 2 ULPA #2 EXH
1G14080-04 (Filter)

Sampled: 07/07/21 0:00 by DH/JR

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	3.7	0.040	0.20	ug/filter	1	08/05/21	

Sample Results

Sample: Run 3 ULPA #1 EXH
1G14080-05 (Filter)

Sampled: 07/09/21 0:00 by DH/JR

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	2.1	0.040	0.20	ug/filter	1	08/05/21	

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

Project Number: PROJ-010019 Bowman Plating

Project Manager: Joe Rubio

Reported: 08/16/2021 10:37

Sample Results

(Continued)

Sample: Run 3 ULPA #2 EXH — Sampled: 07/09/21 0:00 by DH/JR

1G14080-06 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	4.0	0.040	0.20	ug/filter	1	08/05/21	

Sample Results

(Continued)

Sample: Blank — Sampled: 07/09/21 0:00 by DH/JR

1G14080-07 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W1G1601 **Preparation:** CARB 436			**Prepared:** 07/29/21 18:16				**Analyst:** aln
Nickel, Total	1.8	0.040	0.20	ug/filter	1	08/05/21	

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

Project Number: PROJ-010019 Bowman Plating

Project Manager: Joe Rubio

Reported:
08/16/2021 10:37

Quality Control Results

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

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W1G1601 - EPA 6020											
Blank (W1G1601-BLK1)					**Prepared: 07/29/21 Analyzed: 08/05/21**						
Nickel, Total	ND	0.040	0.20	ug/filter							
LCS (W1G1601-BS1)					**Prepared: 07/29/21 Analyzed: 08/05/21**						
Nickel, Total	4.93	0.040	0.20	ug/filter				80-120			
LCS Dup (W1G1601-BSD1)					**Prepared: 07/29/21 Analyzed: 08/05/21**						
Nickel, Total	4.76	0.040	0.20	ug/filter				80-120	4	20	

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

Project Number: PROJ-010019 Bowman Plating

Project Manager: Joe Rubio

Reported:
08/16/2021 10:37

Notes and Definitions

Item	Definition
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	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.

Paloma Rodriquez

To: Massoud Akhabi
Subject: Solutions analysis results

Date	*Tank #*	*Component*	*Results*	*pH*
July 6,2021	301 Chromic Acid Anodize	Free Chromic Acid Total Chromic Acid Alumina	6.25 oz/gal 9.51 oz/gal 4.22 g/L	0 .65
July 12,2021	301 Chromic Acid Anodize	Free Chromic Acid Total Chromic Acid Alumina	6.13 9.51 oz/gal 4.36 g/L	0.70
July 6,2021	314 Dilute Chromic Seal	Cr+6	61.03 ppm	3.32
July 12,2021	314 Dilute Chromic Seal	Cr+6	55.25 ppm	3.34
July 6,2021	310 Nickel Acetate Seal	Anodal Seal ASL Powder	6.69 g/L	5.7
July 13,2021	310 Nickel Acetate Seal	Anodal Seal ASL Powder	6.65 g/L	5.68
July 6,2021	321 Sodium Dichromate Seal	Sodium Dichromate	7.04 oz/gal	5.2
July 13,2021	321 Sodium Dichromate Seal	Sodium Dichromate	7.09 oz/gal	5.2

Thank You.

Paloma Rodriguez
Laboratory Supervisor.
Bowman Plating Company
310-639-4343 x 137
paloma@bowmanplating.com

Appendix A.4
Photos



Tell-Tale Test Tank 314 on 7/7/2021



Tell-Tale Test Tank 314 on 7/9/2021



Tell-Tale Test Tank 314 on 7/12/2021



Tell-Tale Test Tank 321 on 7/7/2021



Tell-Tale Test Tank 321 on 7/9/2021



Tell-Tale Test Tank 321 on 7/12/2021



Tell-Tale Test Tank 301 on 7/7/2021



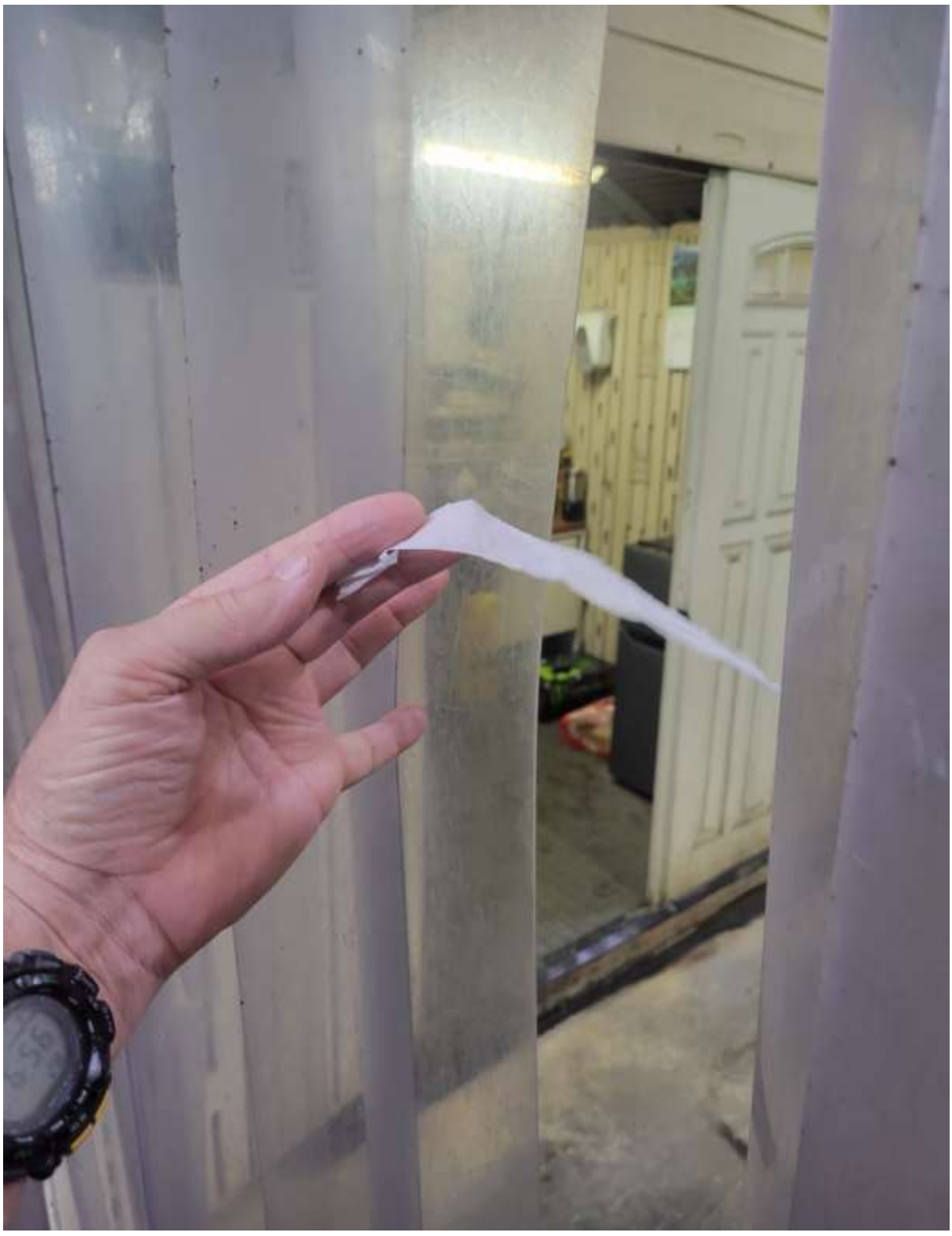
Tell-Tale Test Tank 301 on 7/9/2021



Tell-Tale Test Tank 301 on 7/12/2021



Tell-Tale Test PTE Curtains South Wall 7/7/2021



Tell-Tale Test PTE Curtains South Wall 7/9/2021



Tell-Tale Test PTE Curtains South Wall 7/12/2021



Tell-Tale Test PTE East Door Ajar 7/7/2021



Tell-Tale Test PTE East Door Ajar 7/9/2021



Control Velocity Tank 301 on 7/7/2021



Control Velocity Tank 314 on 7/7/2021



Control Velocity Tank 321 on 7/7/2021



PTE Inflow South Wall Curtains 7/7/2021



PTE Inflow East Wall Door Ajar 7/7/2021



Tank 301 Amperage Totalizer

APPENDIX B
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

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

I. 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 C
QUALITY ASSURANCE

Appendix C.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS 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: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS 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 MAQS QA efforts. The manual is revised upon periodic review and as MAQS 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. MAQS 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 MAQS 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 MAQS 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: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS 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 Section 4.0.

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, will be 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)

The following safety measures will be 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 $\Delta H@$	--
Temperature Sensors	Semi-Annually	3-point calibration vs. NIST traceable standard	+/- 1.5%

Note: Calibration requirements will be used that meet applicable regulatory agency requirements.

Appendix C.2
SCAQMD, CARB, and STAC Certifications

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

September 9, 2020

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 reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2020, and ending September 30, 2021 for the following methods, subject to the requirements in the LAP Conditions For Approval Agreement and conditions listed in the attachment to this letter:

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

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

Laundry Building of VA Greater Los Angeles Healthcare System
508 Constitution Avenue
Los Angeles, CA 90049

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, Glenn Kasai. He may be reached by telephone at (909) 396-2271, or via e-mail at gkasai@aqmd.gov.

Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:GK/gk
Attachment

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Cleaning the air that we breathe...

State of California
California Air Resources Board
Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

CARB Source Test Methods:
1, 2, 3, 4, 5, 6, 8, 17, 20
100 (CO_2, CO, NOx, O_2, SO_2, THC)

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

State of California

California Air Resources Board

Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

U.S. EPA Source Test Methods 201A, 202 and 205
Visible Emissions Evaluation

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

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 11th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 28, 2022

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

Appendix C.3
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:	**18989**
Date(s) Tested:	**July 7, 9, and 12, 2021**
Facility Name:	**Bowman Plating**
Equipment Address:	**2631 E. 126th Street**
	Compton, California 90224
Equipment Tested:	**Anodizing Room**
Device ID, A/N, P/N:	**PTC #611650, 622504**

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: S. Hugh Brown **Date:** **9/13/2021**

S. Hugh Brown	**Client Project Manager**	**(714) 279-6777**	**9/13/2021**
(Name)	(Title)	(Phone)	(Date)

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

APPENDIX D
EQUIPMENT PERMITS

PERMIT TO CONSTRUCT

Granted as of 9/25/2020
ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Modification of Air Pollution Control System: APC #1 under Permit PO G46953 by Additionally Venting Tank Nos. 314 and 321.

Equipment Description after Modification:

Air Pollution Control System: APC #1 Consisting of:

1. Chevron Mist Eliminator, 18" x 18" x 8".
2. Two-stage Composite Mesh Pad Mist Eliminator, Each Stage with One 36" x 36" x 4" Mesh Pad, and a Washdown System.
3. Two 24" x 24" x 1" Pre-filters and Two 24" x 24" x 12" ULPA Filters.
4. Exhaust System with One 5-H.P. Exhaust Fan Venting Tank Nos. 301, 314, and 321 of the Chromic Acid Anodizing Line.

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 system shall be in full use when any of the equipment it serves is in operation. For the purposes of this condition, Tank No. 301 is in operation when rectification is occurring, and Tank Nos. 314 and 321 individually are in operation when their respective bath temperature is 140F or greater.
4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.
5. This equipment shall be operated in compliance with all applicable requirements of Rules 1155 and 1469.

ORIGINAL

6. The ULPA filters used in this equipment shall be individually DOP (or equivalent) tested with 0.12 micron particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

7. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

   A. Each stage of the composite mesh pad mist eliminator.

   B. The ULPA filters.

   The scale on the gauges shall not exceed two times the limit specified in Condition No. 8.

8. In operation, the pressure differential shall remain within the following ranges:

   A. 0.08 to 1.15 inches of water column across the 1st stage of the composite mesh pad mist eliminator.

   B. 0.25 to 1.50 inches of water column across the 2nd stage of the composite mesh pad mist eliminator.

   C. 0.30 to 1.20 inches of water column across the ULPA filters.

   These limits are subject to change based on initial start-up of the equipment and results from the source test.

9. The gauges shall be located so that they can be easily viewed and are in clear sight of the operation or maintenance personnel.

10. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) Plan shall be instituted if the static pressure differential exceeds the following:

    1.0 inch of water column across the 1st stage of the mesh pad eliminator
    1.25 inches of water across the 2st stage of the mesh pad eliminator
    1.10 inches of water column across the ULPA filters

    These limits are subject to change based on initial start-up of the equipment and results from the source test.

11. The owner/operator shall maintain a weekly record of the static pressure differential to verify compliance with Condition No. 8.

12. The combined total hexavalent chromium emissions discharged to the atmosphere from Chromic Acid Anodize Tank No. 301, Dilute-Chromic Seal Tank No. 314, and Sodium Dichromate Seal Tank No. 321 shall not exceed 0.0015 milligrams per ampere-hour as measured at the outlet of the air pollution control systems serving these tanks.

13. The owner/operator shall comply with the inspection and maintenance requirements listed below:

ORIGINAL

A. Quarterly visual inspection of the equipment to ensure there is proper drainage, no unusual chromic acid buildup on the mesh pads, and no evidence of chemical attack that affects the structural integrity of this equipment.

B. Quarterly visual inspection of the ULPA filters to ensure there is no breakthrough of chromic acid mist.

C. Quarterly visual inspection of the ductwork from the chromic acid anodizing tank to the control device to ensure there are no leaks.

D. Repair any leaks detected before any further operation of the equipment.

E. Perform washdown of the composite mesh pads in accordance with the manufacturer's recommendations.

F. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

G. Replace the ULPA filters per manufacturer's specifications.

14. The owner/operator shall maintain inspection and maintenance records for the mesh pads and the ULPA filters and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected

B. The date and time of inspection

C. The working condition of the device during the inspection

D. Any maintenance activities performed on the mesh pads and the ULPA filters or the parameter monitoring system

E. Any actions taken to correct deficiencies found during the inspection

15. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of Tank Nos. 301, 314, and 321, the air pollution control systems, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

16. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

ORIGINAL

17. The owner/operator shall report breakdowns as required by South Coast AQMD Rule 430, and the owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

18. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit, the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

19. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

20. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

21. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

22. The operator shall conduct a source test for total chromium and hexavalent chromium in parallel and simultaneously to the test conducted for PTE for Anodizing Room under A/N 622504, pursuant to the following requirements to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment.

    A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

    B. The source test shall be conducted by an independent, qualified testing laboratory and conducted in accordance with acceptable South Coast AQMD procedures and test methods outlined in applicable South Coast AQMD rules and regulations. The test shall be monitored by a South Coast AQMD representative.

    C. A minimum of three test runs using U.S. EPA Method 306 shall be performed while tank Nos. 301, 314, and 321 are in operation at maximum load (electric current and parts processed). The total chromium and hexavalent chromium emissions measured shall be reported in units of pounds per hour, milligrams per dry standard cubic feet, and milligrams per ampere-hour.

    D. The following data shall be monitored and recorded during each test run.
        i. Concentration of total chromium and hexavalent chromium in Tank Nos. 301, 314, and 321 in percent by weight.
        ii. Quantity of water, total chromium, and hexavalent chromium added to the tanks.
        iii. Totalizing current readings, in amperes, at the start and end of each test run for Tank No. 301.
        iv. Pressure drops across each stage of mesh pad mist eliminator and the ULPA filters. The pressure drop data shall be recorded at intervals of time not less than once every hour.
        v. Type and quantity of parts processed, and number of batches of parts in each tank.
        vi. Operating temperature of Tank Nos. 301, 314, and 321 not less than once every hour.

ORIGINAL

23. A source test protocol shall be submitted to the South Coast AQMD no less than 30 calendar days from the issuance of this Permit to Construct, and shall be approved by the South Coast AQMD before the test commences. The protocol shall include the following, at a minimum:

    A. The identity of the testing laboratory.

    B. A statement from the testing laboratory certifying it meets the criteria in South Coast AQMD Rule 304(k).

    C. A list of contaminants to be tested.

    D. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.

    E. The location of points of sampling. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

    F. Quality assurance measures.

    G. Experience in testing procedures.

    H. Proposed operating conditions during the test.

24. The operator shall notify the South Coast AQMD at least 14 calendar days prior to the source test(s), or within a time period agreed upon by the South Coast AQMD.

25. The source test report shall include, at a minimum, the total chromium and hexavalent chromium, stack temperature, the operating parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1 and ST-2. Two copies of the report shall be submitted to the South Coast AQMD no later than 60 calendar days after the final source test date. A copy of the source test report shall be kept on file and shall be made available to South Coast AQMD personnel upon request.

ORIGINAL

PERMIT TO CONSTRUCT

Approval or denial of this application for Permit to Operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD).

Please notify KEVIN NI at (909) 396 - 2462 when construction of equipment is complete.

This Permit to Construct is based on plans, specifications, and data submitted as it pertains to the release of air contaminants and control measures to reduce air contaminants. No approval or opinion concerning safety and other factors in design, construction or operation of equipment is expressed or implied.

This Permit to Construct shall serve as a temporary Permit to Operate provided the Executive Officer is given prior notice of such intent to operate.

This Permit to Construct will become invalid if the Permit to Operate is denied or if the application is cancelled. This PERMIT TO CONSTRUCT SHALL EXPIRE ONE YEAR FROM THE DATE OF ISSUANCE unless an extension is granted by the Executive Officer.

By Amir Dejbakhsh

DMB/KN03

AMIR DEJBAKHSH
Deputy Executive Officer

ORIGINAL

PERMIT TO CONSTRUCT

Granted as of 9/25/2020

ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Air Pollution Control System for Anodizing Room Housing the Chromic Acid Anodizing, Chemfilm, Titanium Etch, and Sulfuric Acid Hard Anodizing Lines, Consisting of:

1. Permanent Total Enclosure (PTE) for Anodizing Room, 87'-6" W. x 37'-6" L. x Maximum 25'-0" H., with One Automatic Sliding Door, One Self-closing Man Door, and an Exhaust System with a 15-H.P. Exhaust Fan, 20,000 scfm Maximum Venting to:

2. Two Identical Chevron Mist Eliminators in Parallel, each a Munters, Model No. T-100, each Single Stage, and each 3'-4" W. x 4'-8" L. x 3'-4" H.

3. Filtration System, 9'-0" W. x 12'-0" L. x 7'-0" H., with Twelve 24" x 24" x 1" Pre-filters and Twelve 24" x 24" x 12" ULPA Filters.

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 system shall be in full use when any of the equipment it serves is in operation. For the purposes of this condition, rectified tanks are in operation when electric current is running through the bath, heated tanks are in operation when their bath temperature is 140F or higher, and unheated tanks containing volatile acids are uncovered.

4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.

5. The Anodizing Room shall be maintained as a Permanent Total Enclosure (PTE) per EPA Method 204.

ORIGINAL

6. The operator shall install and maintain a minimum of one building digital differential pressure monitoring system on the wall containing the automatic sliding door. The operator shall install, operate, and maintain a digital differential pressure monitoring system to indicate, in inches of water column, the static pressure differential within the PTE. When in operation, the measured pressure differential shall be greater than or equal to 0.007 inch of water.

   This limit is subject to change based on initial start-up of the equipment and results from the source test.

7. The digital differential pressure monitoring systems shall be certified by the manufacturer to be capable of measuring negative pressures containing values in the range of 0.005 to 0.11 inches of water and capable of recording data in increments of 0.001 inch of water.

8. The digital differential pressure monitoring system shall be equipped with a continuous recorder. To demonstrate compliance with Condition No. 6, the operator shall maintain the pressure in the PTE such that the average pressure in any rolling 15-minute period does not fall below the level specified in Condition No. 6. The rolling 15-minute averages shall include at least one reading per minute, and electronic records shall be retained on file.

9. The operator shall calibrate the digital differential pressure monitoring system once every 12 calendar months.

10. The operator shall maintain the PTE free of significant cracks, gaps, corrosion or other deterioration that could cause chromium bearing material to be released from the PTE.

11. The operator shall inspect the PTE at least once per month. The operator shall repair any gaps, leak points, or other possible routes for emissions of chromium to the atmosphere within seventy-two hours of identification unless the operator obtains written approval for an extension from the South Coast AQMD before the repair period is exceeded.

12. This equipment shall be operated in compliance with all applicable requirements of Rules 1155 and 1469.

13. The ULPA filters used in this equipment shall be individually DOP (or equivalent) tested with 0.12 micron particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

14. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

    A. Each of the chevron mist eliminators.

    B. The pre-filters.

    C. The ULPA filters.

    The scale on the gauges shall not exceed two times the limit specified in Condition No. 15.

15. In operation, the pressure differential shall remain within the following ranges:

ORIGINAL

A. 0 to 0.3 inches of water column across each of the chevron mist eliminators.

B. 0.10 to 1 inch of water column across the pre-filters.

C. 0.30 to 1.20 inches of water column across the ULPA filters.

These limits are subject to change based on initial start-up of the equipment and results from the source test.

16. The gauges shall be located so that they can be easily viewed and are in clear sight of the operation or maintenance personnel.

17. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) plan shall be instituted if the static pressure differential exceeds the following:

0.25 inch of water column across each of the chevron mist eliminators
0.95 inch of water column across the pre-filters
1.10 inches of water column across the ULPA filters

These limits are subject to change based on initial start-up of the equipment and results from the source test.

18. The owner/operator shall maintain a weekly record of the static pressure differential to verify compliance with Condition No. 15.

19. The combined total hexavalent chromium emissions discharged to the atmosphere from Chromic Acid Anodize Tank No. 301, Dilute-Chromic Seal Tank No. 314, and Sodium Dichromate Seal Tank No. 321 shall not exceed 0.0015 milligrams per ampere-hour as measured at the outlet of the air pollution control systems serving these tanks.

20. The owner/operator shall comply with the inspection and maintenance requirements listed below:

A. Chevron mist eliminator maintenance per manufacturer's specifications.

B. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

C. Replace the ULPA filters per manufacturer's specifications.

21. The owner/operator shall maintain inspection and maintenance records for the chevron mist eliminators and the ULPA filters and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected

B. The date and time of inspection

ORIGINAL

C. The working condition of the device during the inspection

D. Any maintenance activities performed on the ULPA filters or the parameter monitoring system

E. Any actions taken to correct deficiencies found during the inspection

22. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of Tank Nos. 301, 314, and 321, the air pollution control systems, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

23. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

24. The owner/operator shall report breakdowns as required by South Coast AQMD Rule 430, and the owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

25. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit, the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

26. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

27. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

28. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

29. The operator shall conduct a source test for total chromium and hexavalent chromium in parallel and simultaneously to the source test conducted for APC #1 under A/N 611650, pursuant to the following requirements to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment.

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. The source test shall be conducted by an independent, qualified testing laboratory and conducted in accordance with acceptable South Coast AQMD procedures and test methods outlined in applicable South Coast AQMD rules and regulations. The test shall be monitored by a South Coast AQMD representative.

ORIGINAL

C. A minimum of three test runs using U.S. EPA Method 306 shall be performed while all tanks in the PTE for the Anodizing Room are in operation at maximum load (electric current and parts processed).

D. The test shall be conducted to measure total chromium and hexavalent chromium emissions in units of pounds per hour and milligrams per dry standard cubic feet, stack temperature, the operating parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1 and ST-2.

E. The following data shall be monitored and recorded during each test run.
   i. Concentration of total chromium and hexavalent chromium in Tank Nos. 301, 305, 312, 314, 320, 321, and 610 in percent by weight.
   ii. Quantity of water, total chromium, and hexavalent chromium added to the tanks.
   iii. Pressure drops across each chevron mist eliminator and the ULPA filters. The pressure drop data shall be recorded at intervals of time not less than once every hour.
   iv. Type and quantity of parts processed, and number of batches of parts in each tank.
   v. Operating temperature of the above tanks not less than once every hour.

30. The operator of this equipment shall conduct a source test, pursuant to the following requirements to measure the Total PM, PM10, and nickel at the outlet of the air pollution control equipment:

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. The source test shall be conducted by an independent, qualified testing laboratory and conducted in accordance with acceptable South Coast AQMD procedures and test methods outlined in applicable South Coast AQMD rules and regulations. The test shall be monitored by a South Coast AQMD representative.

C. The test shall be performed while all tanks in the PTE for the Anodizing Room are in operation at maximum load (current and parts processed).

D. Emissions shall be reported in units of pounds per hour and grain per standard cubic feet (PM only).

E. The following data shall be monitored and recorded during the source test.
   i. Concentration of nickel compounds in Tank No. 310 in percent by weight.
   ii. Quantity of water and nickel compounds added to the tanks.
   iii. Type and quantity of parts processed in Tank No. 310.
   iv. Operating temperature of Tank No. 310 not less than once every hour.

31. Source test protocol(s) shall be submitted to the South Coast AQMD no less than 30 calendar days from the date of issuance of this Permit to Construct, and shall be approved by the South Coast AQMD before the test commences. The protocol shall include the following, at a minimum:

A. The identity of the testing laboratory.

ORIGINAL

B. A statement from the testing laboratory certifying it meets the criteria in South Coast AQMD Rule 304(k).

C. A list of contaminants to be tested.

D. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.

E. The location of points of sampling. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

F. Quality assurance measures.

G. Experience in testing procedures.

H. Proposed operating conditions during the test.

32. The owner or operator of this equipment shall conduct a source test under the following conditions:

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. A source test protocol shall be submitted to the South Coast AQMD no later than 30 days after the initial start-up of this equipment unless otherwise approved in writing by the South Coast AQMD. The test protocol shall be approved in writing by the South Coast AQMD before the test commences. The test protocol shall include the completed South Coast AQMD Forms ST-1 and ST-2 specifying the proposed operating conditions of the equipment during the test, the identity of the testing laboratory, a statement from the test laboratory certifying it mees the criteria in South Coast AQMD Rule 304(k), and a description of the sampling and analytical procedures to be used.

C. The source test(s) shall consist of, but may not be limited to demonstrating that PTE for Anodizing Room meets the requirements as a PTE as specified under US EPA Method 204, and capture efficiency. The requirement shall be demonstrated while all equipment vented by the air pollution control system is in operation.

33. The operator shall notify the South Coast AQMD at least 14 calendar days prior to the source test(s), or within a time period agreed upon by the South Coast AQMD.

34. Source test report(s) shall include, at a minimum, the parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1 and ST-2. Two copies of the report shall be submitted to the South Coast AQMD no later than 60 calendar days after the final source test date. A copy of the source test report shall be kept on file and shall be made available to South Coast AQMD personnel upon request.

ORIGINAL

35. There shall be no source of compressed air located within 10 feet of any natural draft openings (NDOs) of the Anodizing Room PTE. In addition, the operator shall not use compressed air for any operations that are conducted within 10 feet of any NDOs of the Anodizing Room PTE.

ORIGINAL

PERMIT TO CONSTRUCT

Approval or denial of this application for Permit to Operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD).

Please notify KEVIN NI at (909) 396 - 2462 when construction of equipment is complete.

This Permit to Construct is based on plans, specifications, and data submitted as it pertains to the release of air contaminants and control measures to reduce air contaminants. No approval or opinion concerning safety and other factors in design, construction or operation of equipment is expressed or implied.

This Permit to Construct shall serve as a temporary Permit to Operate provided the Executive Officer is given prior notice of such intent to operate.

This Permit to Construct will become invalid if the Permit to Operate is denied or if the application is cancelled. This PERMIT TO CONSTRUCT SHALL EXPIRE ONE YEAR FROM THE DATE OF ISSUANCE unless an extension is granted by the Executive Officer.

By

AMIR DEJBAKHSH
Deputy Executive Officer

DMB:KN03

ORIGINAL

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: S. Hugh Brown
Title: Client Project Manager
Region: West
Email: SBrown@montrose-env.com
Phone: (714) 279-6777

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

SOURCE TEST REPORT FOR MEASUREMENT OF NICKEL, CADMIUM AND PARTICULATE MATTER EMISSIONS FROM ULPA FILTERS SERVING A PLATING ROOM

Prepared For:

Bowman Plating Company
2631 E. 126th Street
Compton, California 90222

For Submittal To:

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

Prepared By:

Montrose Air Quality Services, LLC
1631 E. St. Andrew Pl.
Santa Ana, California 92705

Joe Rubio (714) 332-8486

Report Number: **W002AS-005728-RT-3656**
Production Date: **June 9, 2022**
Test Dates: **April 5-6, 2022**

ACCREDITED TO ASTM D7036 ONLY CERT #3925.01

CONFIDENTIALITY STATEMENT

Except as otherwise required by law or regulation, this 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: S. Hugh Brown Date: 6/9/2022

Name: S. Hugh Brown 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: Joe Rubio Date: 6/9/2022

Name: Joe Rubio Title: Client Project Manager

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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 Bowman Plating to perform source testing. MAQS qualifies as an independent testing laboratory under SCAQMD Rule 304 (no conflict of interest) and is certified by the South Coast Air Quality Management District (SCAQMD) to conduct testing for criteria pollutants using District Methods. Appendix B contains MAQS' SCAQMD, CARB, and STAC certifications, and a Statement of No Conflict of Interest. MAQS and the analytical laboratory, Weck Laboratories, Inc. in Hacienda Heights, California both qualify as independent testing laboratories under SCAQMD Rule 304 (no conflicts of interest). MAQS had a qualified individual on-site as required by ASTM-D7036-04. The testing was conducted by Joe Rubio, Dominic Heredero, and S. Hugh Brown.

Bowman Plating Company conducts plating operations on aluminum aerospace parts that utilize cadmium and nickel process tanks in an enclosed room that was prepared as a permanent total enclosure (PTE). Four ventilation exhausts from the PTE are vented to Chevron Mist Eliminators and an Ultra-Low Particulate Arrestor (ULPA) filter. Figure 1-1 shows a ventilation diagram of the plating room and Figure 1-2 shows details of the PTE. The PTE and control equipment were issued a Permit to Construct by the South Coast Air Quality Management District (SCAQMD). A copy of the permit is provided in Appendix D. The plating room was certified as a PTE by EPA Method 204 and triplicate source tests to determine the nickel and cadmium emissions on the exhaust of the ULPA filters were conducted at high operating condition on the process tanks. The nickel and cadmium were determined by CARB Method 436. All production activities and operational settings during the test were documented. In addition, testing was also conducted for total Particulate Matter (PM) by SCAQMD Method 5.1 (single test for 1 hour) on the exhaust of the PTE ULPA filters. The tests were conducted on April 5-6, 2022.

FIGURE 1-1
PLATING ROOM VENTILATION DIAGRAM

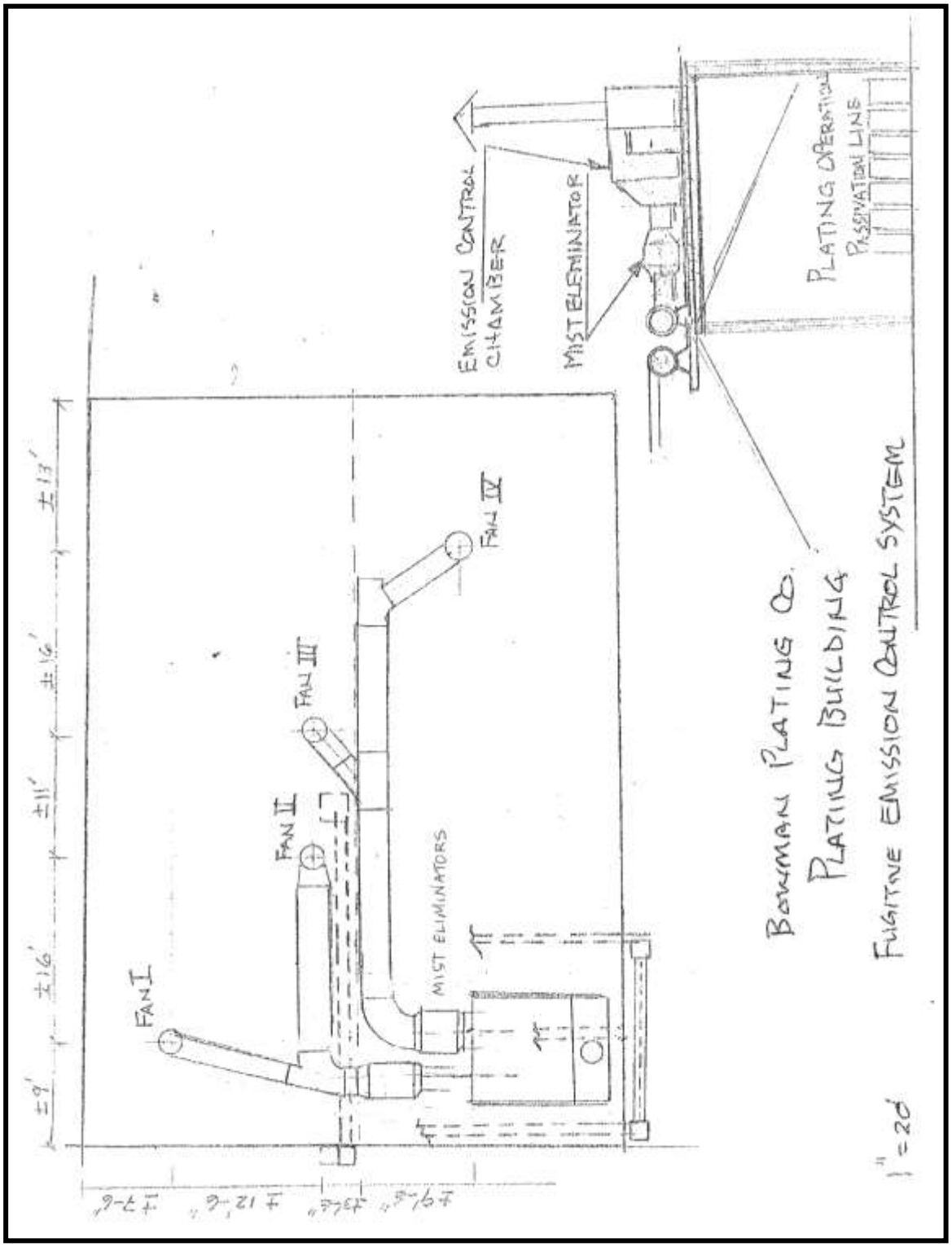
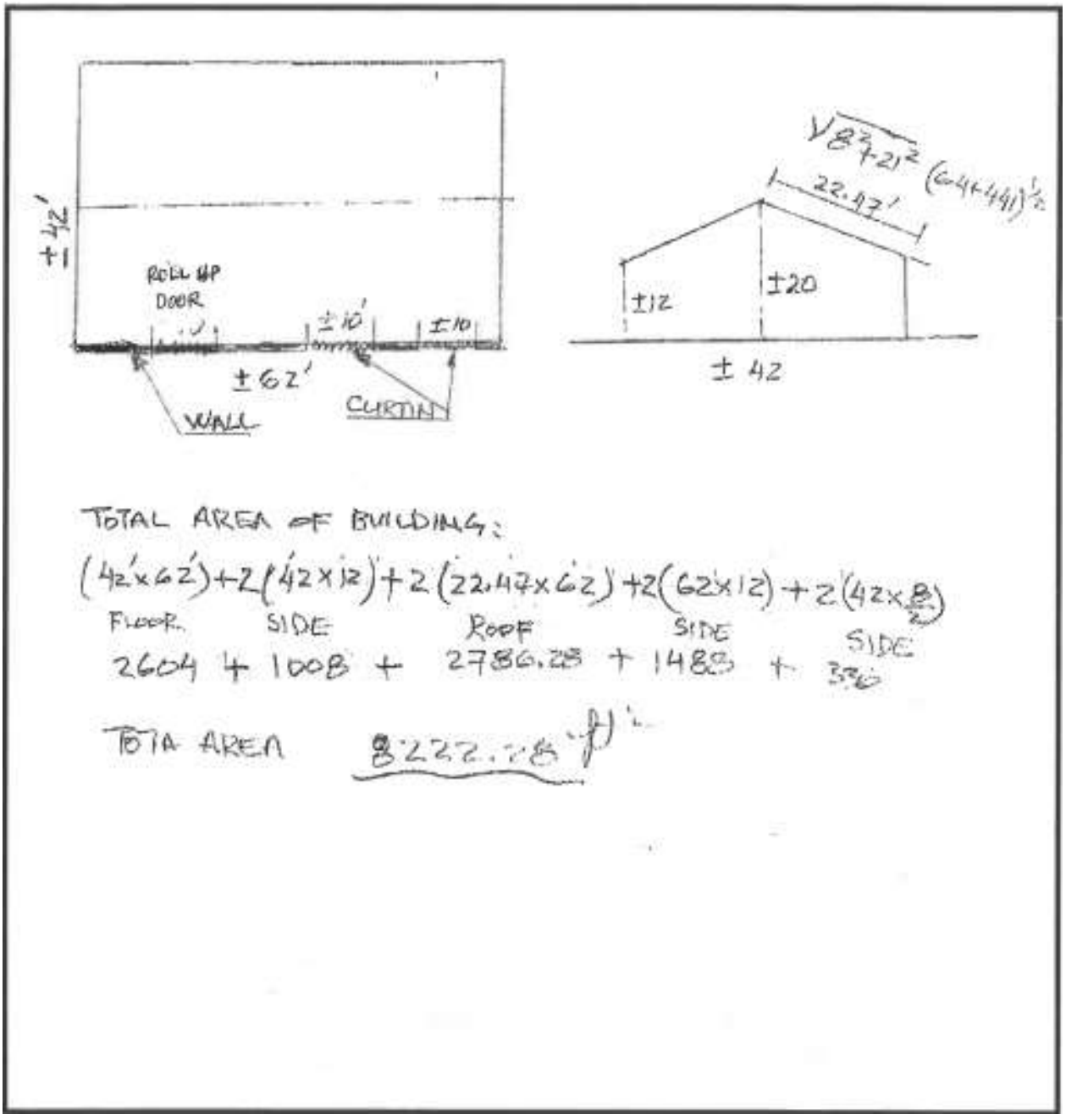


FIGURE 1-2
PTE DETALS



2.0 EQUIPMENT AND PROCESS DESCRIPTION

Bowman Plating Company conducts metal finishing operations on aluminum aerospace parts that involve a cadmium and nickel process tanks which are located in the Plating Room.

The plating room has four ceiling ventilators with axial fans that are combined into two duct runs. Each duct run is equipped with a Munters T-100 chevron mist eliminator that is connected to APC #3.

APC #3 is equipped with twelve 24" x 24" x 1" prefilters and twelve 24" x 24" x 11.5" ULPA filters. The ULPA filters are rated at 99.999% efficiency for 0.12-micron particles. The ULPA filter stage is equipped with a Magnehelic differential gage. A 15-HP blower induces the draft in the filter and hoods and exhausts to the atmosphere at a rate of about 20,000 ACFM. Permit to Construct 622505 covers this equipment and a copy is included in Appendix D. Figure 2-1 shows a diagram of the ULPA unit.

Permanent Total Enclosure (PTE)

During the source testing period, the PTE was monitored to ensure that it met the 5-point criteria according to EPA Method 204:

1. The natural draft openings (NDO's) or are at least four equivalent diameters from the nearest emission source.
2. The total area of the NDO's is less than 5% of the total surface area of the PTE.
3. The enclosure is maintained at a negative static pressure of at least 0.007 inches of water or has a negative inflow of air of at least 200 ft/min.
4. All access doors to the enclosure are normally closed.
5. All exhausts from the enclosure are controlled.

The room enclosure area is about 42' wide by 62'6” long by 20' high in the center and 12” high on the ends for a total of about 8,222 square feet of surface area. There are three 10’ by 12’ openings in the south wall. There is an automatic roll-up door in the first opening and curtains are hung on the second and third openings in the south wall. The gap at the bottom of the curtains is about 4” x 10’ that constitutes a natural draft opening (NDO) of about 3.33 square feet for each set of curtains or 6.7 square feet total. This provides a ratio of NDO's to total enclosure area of about 0.08%. The criterion for EPA Method 204 (2) above was satisfied.

The NDOs are at least 9' from the nearest tank containing cadmium or nickel and each has an equivalent round diameter of about 24.7". This is equivalent to >4 diameters between the NDO and the nearest emission point. The criterion for EPA Method 204 (1) above was satisfied.

There are no access doors, just the curtained openings. The criterion for EPA Method 204 (4) above was satisfied.

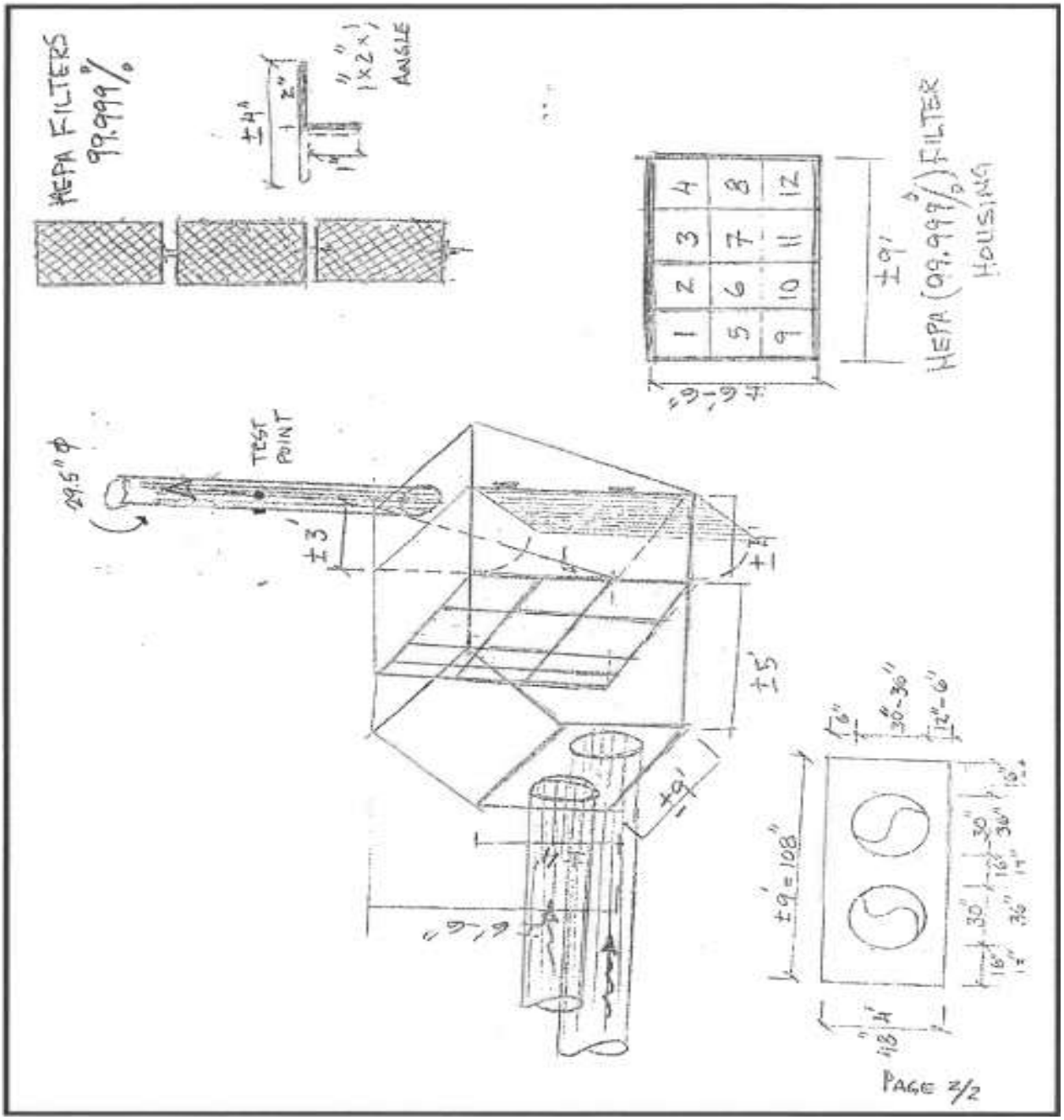
The room exhausts from the PTE are controlled by an ULPA filter. There are no other exhausts from the PTE. The criterion for EPA Method 204 (5) above was satisfied.

The indraft of air into the enclosure was measured with a TSI VelociCalc thermo anemometer during the source tests to ensure a minimum of 200 fpm. The measurement was checked on the

curtains forming the NDOs on the south side of the room. A tell-tale test was performed as visual confirmation of the negative pressure (photos are included in Appendix A). The criterion for EPA Method 204 (3) above was satisfied and the enclosure met the criteria for classification as a PTE. Figure 1-2 shows a diagram of the enclosure.

During each test period, the process information was recorded by MAQS personnel on a process data sheet along with the tank temperatures.

FIGURE 2-1
ULPA FILTER DIAGRAM AND TEST LOCATION



3.0 TESTING METHODOLOGY

Prior to source testing, MAQS utilized a telltale strip to ensure that the ventilation system was providing adequate draft and air flow to maintain the PTE under negative pressure. Photos of the telltale test are included in Appendix A.

The approximate sampling port locations of the ULPA exhaust are shown in Figure 2-1. The ports are located about 1 duct diameter upstream from the exit to atmosphere and about 2 duct diameters downstream of the fan. The number of traverse points required (12 on each of 2 diameters, 90 degrees apart) and their locations are specified in SCAQMD Method 1.1. The tests were conducted on the exhaust side of the fan at the exit to atmosphere.

Prior to source testing, the test location was checked for cyclonic flow by the Pitot tube traverse method. The Pitot tube was rotated through the null point the angle of which was measured with an incline gage.

3.1 NICKEL AND CADMIUM (CARB METHOD 436)

The sampling for the nickel and cadmium was conducted in triplicate by CARB Method 436. Sampling was conducted isokinetically for two hours per test run generating a sample size of approximately 90 cubic feet through the sampling train. The sampling train was modified to accommodate vertical sampling and low moisture (ambient stack temperature).

The samples were collected with a sampling train configured with: a glass nozzle; Teflon union, a 60-inch glass-lined probe; a 10-foot Teflon tube from the probe to an ambient quartz filter (untared) located at the inlet to the first impinger; two Greenburg-Smith impingers, each containing 100 milliliters of 5% nitric acid and 10% hydrogen peroxide solution; an empty impinger; an impinger filled with approximately 200 grams silica gel; a 10-foot umbilical line; a vacuum pump; a dry gas meter; and a calibrated orifice connected to an inclined oil manometer.

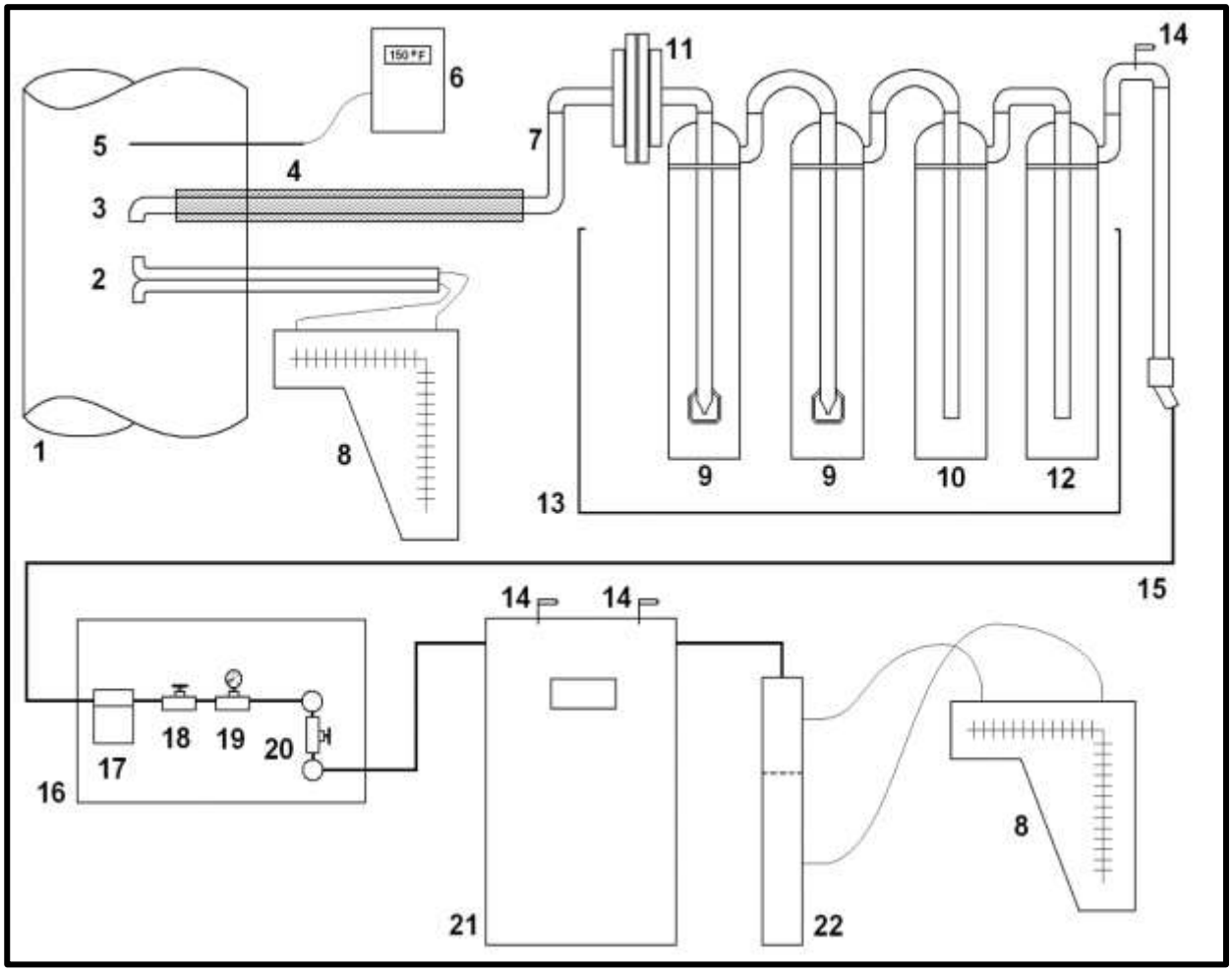
The weight of the impinger solution and the weight of the silica gel were recorded before and after each test run in order to obtain the moisture content of the exhaust gases. All sample weights were recorded on sample recovery sheets during sample train preparation and sample recovery. Leak checks were performed immediately before and after each test run.

Volumetric flow rates for the exhaust were calculated from the measured velocity head and the cross-sectional area of each stack. As each traverse point was sampled, the velocity head of the exhaust gas was measured with an S-type Pitot tube connected to an inclined oil manometer, and the temperature of the exhaust gas was measured with a chromal-alumel (type K) thermocouple connected to a digital readout as required by CARB Method 2.

After each test run, the contents of the impingers were recovered and placed in 500-milliliter labeled, polyethylene containers. The components of the sampling train were rinsed from the nozzle through the third impinger with 0.1N HNO_3 solution and the rinse added to the sample. Each sample bottle was sealed with plastic tape and the liquid level marked on each bottle. During sample collection, the impingers and solution were immersed in an ice bath (chilled to 68°F or less during the tests) and refrigerated prior to the analyses. A single field blank was prepared, recovered and analyzed according to the method.

The laboratory analyses for nickel and cadmium were performed by Weck Labs, City of Industry, California. The analytical procedures employ inductively coupled plasma mass spectrometry (ICP/MS). The detection level of the analytical procedure was approximately 0.1 micrograms/sample. A chain of custody procedure was used for tracking samples during this project and maintained for each sample throughout the sample recovery and analytical process. A diagram showing the configuration of the sampling train for CARB Method 436 is shown in Figure 3-1.

FIGURE 3-1
METALS SAMPLING TRAIN CARB METHOD 436



1. Stack
2. Pitot 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/ 5% HNO_3, 10% H_2O_2
10. Modified G/S impinger empty
11. Modified G/S impinger w/ silica gel
12. Orifice flow indicator
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

3.2 PARTICULATE MATTER

The PM emissions were determined by SCAQMD Method 5.1. The sampling train is shown in Figure 3-2 and consisted of a 5-foot glass probe connected with Teflon tubing to a set of Greenburg-Smith impingers, followed by a 10-foot umbilical line, a vacuum pump, a dry gas meter and a calibrated orifice connected to an inclined oil manometer. The impinger set consisted of 2 impingers each containing 100 milliliters of distilled water, an empty impinger, a Gelman type A/E tared glass fiber filter in a glass filter holder, and an impinger filled with 250 grams of silica gel.

The sampling was conducted isokinetically for 60 minutes at 24 points (2.5 minutes per point) generating a sample size of about 45 cubic feet through the train. Examples of field data and calculation sheets are included in Appendix A.

Volumetric flow rates of the exhaust duct 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 (SCAQMD Method 2.1).

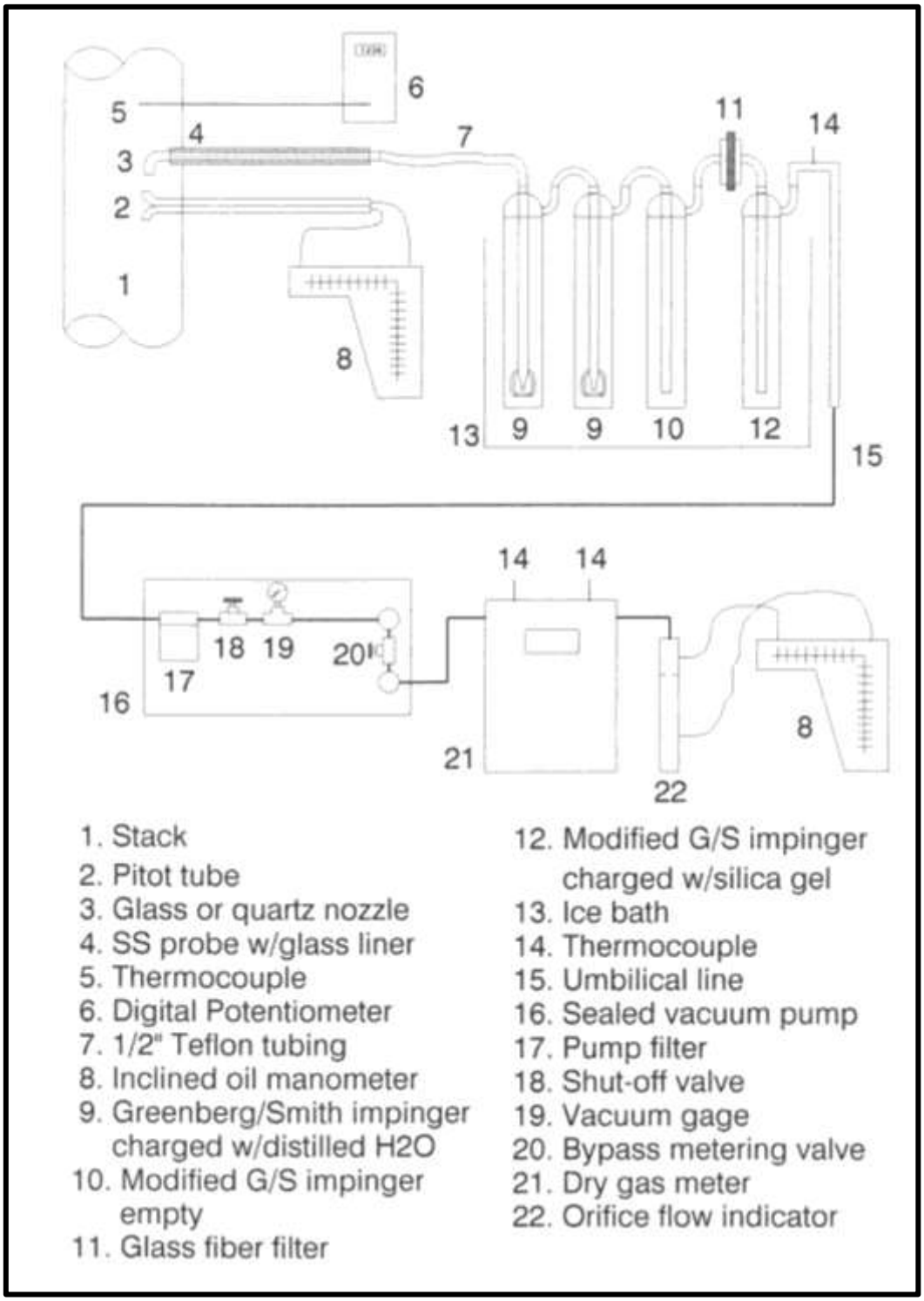
The volume of the impinger solution and the weight of the silica gel were recorded before and after the tests in order to obtain the moisture content of the stack gas stream. The weight of the filter was also recorded before and after the tests as part of the analyses to determine the amount of particulate collected. All sample volumes and silica gel weights were recorded immediately on sample recovery sheets (Appendix A) during charging and sample recovery. Leak checks of the sampling train were performed before and after the test.

After testing, the sample was recovered in the MAQS mobile lab. The contents of the impingers were placed in a 500-ml polyethylene container. The impinger train was rinsed with distilled water and acetone and the rinses were added to the same container. The filter was placed in a plastic petri dish. The probe, nozzle, and filter bell front were brushed and rinsed with deionized water and the rinses added to the sample container. The impinger solution was chilled to an exit gas temperature of 60°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 help prevent contamination.

The particulate collections were analyzed in the MAQS lab. The sample was passed through a tared filter to isolate the insoluble particulates. The filtrate was then extracted with three portions of methylene chloride and the remaining filtrate was evaporated to dryness on a hot plate at a temperature below boiling. The methylene chloride extractions were evaporated to dryness at room temperature. All sample fractions were desiccated to a constant weight (<0.0005 g change over 6 hours).

The PM was reported based on the mass of the filters, extractions, and the aqueous portion of the filtrate.

FIGURE 3-2
PM SAMPLING TRAIN
SCAQMD METHOD 5.1



4.0 TEST RESULTS

Calculations were made from the field data sheets to determine sample volume, molecular weight, velocities, flow rate, isokinetic variation, and component concentrations for the tests. Dummy and production parts were used to generate an above average work load in the tanks.

Table 4-1 summarizes the results of the metals testing on the plating room ULPA exhaust. The emissions of nickel from the ULPA exhaust on the three tests runs were 4.7, 3.4, and 2.3 mg/hr for an average of 3.5 mg/hr. The emissions of cadmium from the ULPA exhaust on the three tests runs were 0.65, 0.65, and <0.59 mg/hr for an average of 0.63 mg/hr.

Table 4-2 summarizes the results of the PM testing on the plating room ULPA exhaust. The PM emissions for the test run were 0.00055 grains/DSCF and 0.080 lb/hr.

Table 4-3 summarizes the tank ventilation data during the test periods. The process data is located in Appendix A.

TABLE 4-1
METAL EMISSIONS TEST RESULTS
BOWMAN PLATING
PLATING ROOM PTE ULPA EXHAUST

Parameter/Units	Test 1	Test 2	Test 3
Test Date:	4/5/2022	4/5/2022	4/6/2022
Flue Gas			
Temperature, °F	100	113	89
Velocity, ft/sec	66.0	66.6	65.2
Static Pressure, inches of H_2O	0.54	0.54	0.54
Stack Dimension, inches	29.5	29.5	29.5
Stack Area, ft^2	4.74	4.74	4.74
Flow Rate, ACFM	18,800	19,000	18,600
Flow Rate, DSCFM	17,400	17,100	17,500
Moisture, % v/v	2.2	2.4	2.2
Metals			
Sample Start	09:15	11:35	08:20
Sample Stop	11:15	13:35	10:20
Sampling Time, min.	120	120	120
Sample Volume, DSCF	89.21	89.39	89.63
Isokinetic Rate, %	96.1	97.7	95.7
Concentration, mg/dscm			
Nickel	0.00016	0.00012	0.00008
Cadmium	0.000022	0.000023	<0.000020
Concentration, mg/hr			
Nickel	4.7	3.4	2.3
Cadmium	0.65	0.65	<0.59

TABLE 4-2
PARTICULATE EMISSIONS TEST RESULTS
BOWMAN PLATING
PLATING ROOM
APRIL 6, 2022

Parameter/Units	PTE ULPA Exhaust
Flue Gas	
Temperature, °F	106
Velocity, ft/sec	65.9
Static Pressure, inches of H_2O	0.54
Stack Dimension, inches	29.5
Stack Area, ft^2	4.74
Flow Rate, ACFM	18,800
Flow Rate, DSCFM	17,000
Moisture, % v/v	1.9
Particulate Matter	
Sample Start	10:35
Sample Stop	11:35
Sampling Time, min.	60
Sample Volume, DSCF	44.84
Isokinetic Rate, %	98.7
Concentration, gr/dscf	0.00055
Concentration, lbs/hr	0.080

TABLE 4-3
PTE VENTILATION DATA
BOWMAN PLATING

Location	Test Day 4/5/2022	4/6/2022
Center Curtains, FPM	298	284
East Curtains, FPM	270	310

APPENDIX A
TEST DATA

Appendix A.1
Field Data and Calculations

Facility: BOWMAN

Date: 4-5-22

BOWMAN PTE PLATING ROOM

TIME	TANK #	TOTALIZER	VOLTS	AMPS	TEMP °F	FREEBOARD	TEST #1 Ni Cd
09:15	T150	1081980	6.8	241	72	6"	
	T115A	622120	6.0	140	71	5"	
	T115	1322079	2.0	87	70	4"	
	T102	108150	2.5	200	70	6"	
	T152	–	6.0	106	186	3"	
10:15	T150	1082284	6.8	246	72		
	T115A	622361	6.0	63	71		
	T115	1322575	2.0	90	70		
	T102	108229	2.5	46	70		
	T152	–	8.3	100	184		
11:15	T150	1082406	6.6	151	73	2406-1980	/2 = 213 AH/HR
	T115A	622514	4.0	91	70	514-120/2	= 197 AH/HR
	T115	1322858	2.0	90	70	858-79/2	= 390 AH/HR
	T102	108283	2.5	274	70	283-150/2	= 67 AH/HR
	T152	–	8.4	85	181		
							TEST #2
11:35	T150	1082458	6.6	154	73		Ni Cd
	T115A	622832	4.0	91	71		
	T115	1322860	2.0	90	70		
	T102	108296	3.1	274	70		
	T152	–	8.2	85	184		
12:35	T150	1082542	6.4	159	73		
	T115A	OFF	~	~	72		
	T115	OFF	–	–	70		
	T102	108416	1.7	138	70		
	T152	–	8.2	100	185		
13:35	T150	1082682	6.2	149	73	682-458/2	= 112 AH/HR
	T115A	623239	3.2	73	72	3239-2832/2	= 204 AH/HR
	T115	1323538	2.0	88	72	3538-1860/2	= 339 AH/HR
	T102	108476	–	–	70	476-296/2	= 90 AH/HR
	T152	–	8.2	100	185		
	CURTAINS	FPM					
	CENTER	298					
	EAST	270					

	Facility:	BOWMAN					
	Date:	4-6-22			BOWMAN PLATING	PTE ROOM	
TIME	TANK #	TOTALIZER	VOLTS	AMPS	FREEBOARD	TEMP, °F	
08:19	T 150	1083170	7.0	241	6"	74	
	T 115A	623300	2.5	70	5"	73	
	T 115	1326328	1.8	66	4"	72	
	T 102	108730	2.4	220	6"	70	
~~09:19~~ SHB	T 152	—	8.2	90	3"	185	
09:19	T150	1083415	7.0	245		74	
	T115A	623407	3.1	70		73	TEST 3
	T115	1326711	2.2	83		72	Cd Ni
	T102	108825	2.1	189		70	
	T152	—	15.6	85		184	
10:19	T150	1083636	6.8	240		74	
	T115A	623421	3.1	66		73	
	T115	1326748	2.2	80		72	
	T102	108825	—	—		70	
	T152	—	15.6	100		186	
10:35	T150	1083666	7.0	244		74	
	T115A	623421	3.1	66		73	
	T115	1326748	2.2	83		72	TEST 1
	T102	108825	2.0	178 ~~70~~ SHB		70	PM
	T152	—	15.6	100		184	
11:35	T150	1083924	7.0	244		76	
	T115A	623522	3.1	83 → 70		73	
	T115	1326944	2.2			72	
	T102	108875	—	—		70	
	T152	—	15.6	90		184	
Cd, Ni T-3							
	T150	1083636 -	1083170 =	466/2 =	233 AH/HR		
	T115A	623421 -	623300 =	121/2 =	61 AH/HR		
	T115	1326748 -	1326328 =	420/2 =	210 AH/HR		
	T102	108825 -	108730 =	95/2 =	48 AH/HR		
PM T-1							
	T150	1083924 -	1083666 =	258/1 =	258 AH/HR		
	T115A	623522 -	623421 =	101/1 =	101 AH/HR		
	T115	1326944 -	1326748 =	196/1 =	196 AH/HR		
	T102						

Facility:	BOWMAN					
Date:	4-5-22			BOWMAN PTE PLATING ROOM		
	TEST #1 Cd Ni			TEST #2 Cd Ni		
TANK # TIME:	09:15	10:15	11:15	11:35	12:35	13:35
161	177	178	175	175	176	174
167	137	138	138	136	140	138
165	84	84	83	83	83	83
168	73	73	73	73	73	73
166	80	80	80	80	80	80
166B	84	85	85	87	87	88
108	69	69	70	69	69	69
109B	75	75	75	75	75	75
109	73	73	73	73	73	73
110	67	67	67	67	67	67
101	190	190	191	190	191	190
147	164	164	164	165	164	165
145	171	171	171	169	171	169
176	144	144	144	144	144	144
4-6-22	TEST #3 Cd Ni			TEST #1 PM		
	08:19	09:19	10:19	10:35	11:35	
161	177	177	176	175	176	
167	137	138	137	137	139	
165	86	86	86	86	87	
168	76	76	76	76	76	
166	81	81	81	81	81	
166 B	83	86	89	89	91	
108	73	73	73	73	73	
109 B	72	72	72	72	72	
109	81	81	81	81	81	
110	67	67	67	67	68	
101	136	152	170	174	184	
147	111	109	108	107	107	
145	99	99	98	97	97	
176	140	136	132	130	130	

MONTROSE
AIR QUALITY SERVICES

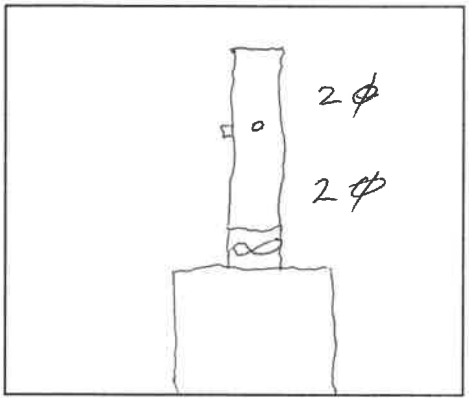
1631 E. St. Andrew Place
Santa Ana, California 92705
Phone: 714-279-6777
Fax: 714-279-6781

TRAVERSE POINT LOCATION FOR CIRCULAR STACKS

Job Number: 5728

Checked by: SHB

Plant: BOWMAN PLATING
Source: PLATING ROOM ULPA EXHAUST
Date: 4-5-22
Inside of far wall to outside of nipple (a): 29.5"
Inside of near wall to outside of nipple (b): —
Stack I.D. (a-b): 29.5"
Nearest upstream disturbance: 2 ϕ
Nearest downstream disturbance: 2 ϕ
Calculator: SHB



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	0.021	29.5"	0.6" → 1.0"	—	—
2	0.067	↓	2.0		
3	0.118		3.5		
4	0.177		5.2		
5	0.250		7.4		
6	0.356		10.5		
7	0.644		19.0		
8	0.750		22.1		
9	0.823		24.3		
10	0.882		26.0		
11	0.933		27.5		
12	0.979		28.9 → 28.5		

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: PR ULPA EVAPORST
DATE: 4/6/22
RUN NO: 1 C436
OPERATOR: DH
METER BOX NO: 23445
METER ΔH@: 1.719
METER Yd: 0.985
STACK AREA, FT²: 28.3
TRAVERSE POINTS; MIN/POINT: 2.5/24
ΔH= _____ X ΔP: 1.500
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 77°
BAROMETRIC PRESSURE: 29.46
ASSUMED MOISTURE: 20%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 130/glass
PROBE LENGTH: 5'
NOZZLE ID NO/ MATERIAL: 0.197/glass
NOZZLE DIAMETER: 0.197
FILTER NO/TYPE: 55-7424
PRE-TEST LEAK RATE: : 0.009 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 _____

pH: 4.5

Imp. #	Contents	Post-Test	Pre-Test	Difference
1	0.8	745.0	741.5	3.5
2	N S	641.5	639.4	2.1
3	mt	646.0	645.1	0.9
4	5.2	1013.4	1061.1	12.3
Total:				18.8

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	1035	281.579	1.2	1.8	94	n/a	n/a	58	92	89	4	n/a	0.51
2		283.8	1.7	2.6	95			58	94	90	5		
3	1040	285.9	1.6	2.4	96			56	96	92	5		
4		288.1	1.5	2.3	96			53	96	92	5		
5	1045	290.2	1.2	1.8	96			52	97	92	4		
6		292.2	1.0	1.5	97			53	96	92	4		
7	1050	293.9	0.94	1.4	97			54	97	93	4		
8		295.7	0.92	1.4	99			56	97	93	4		
9	1055	297.6	1.3	2.0	103			55	96	93	5		
10		299.3	1.5	2.3	106			55	97	94	5		
11	1100	301.3	1.4	2.1	110			56	98	94	5		
12		303.5	1.0	1.5	111			56	98	94	4		
1	1105	305.2	1.4	2.1	110			57	100	95	5		
2		307.4	1.2	1.8	110			55	101	95	4		
3	1110	309.1	1.2	1.8	111			58	99	95	4		
4		310.9	1.0	1.5	111			58	102	96	4		
5	1115	312.7	0.86	1.3	111			57	102	96	4		
6		314.4	0.85	1.3	111			58	101	96	4		
7	1120	315.9	0.86	1.3	112			59	101	96	4		
8		317.5	0.96	1.4	112			60	102	96	4		
9	1125	319.2	1.5	2.3	110			59	103	97	5		
10		321.7	2.0	3.0	111			60	103	97	4		
11	1130	323.9	2.1	3.2	111			60	103	97	4		
12		327.1	2.2	3.3	112		End	61	104	98	4		
Average:	1135	330.016						TOT					
		48.437	√1.132	2.0	106					96.7			

Comments: CYC = <30

CARB METHOD 436 DATA INPUTS

PLANT: **Bowman**
SOURCE: **PR ULPA EXHAUST**
DATE: **4/5/2022**
RUN NUMBER: **1**
BAROMETRIC : **29.92**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	5% HNO3/10% H2O2	770.6	755.4	15.2
2.	5% HNO3/10% H2O2	734.3	730.1	4.2
3.	EMPTY	663.1	662.1	1
4.	Silica Gel	914.7	893.5	21.2
		Total	**41.6**	

K Factor: **1.500**

Control Box ID: **23 WCS** Meter Delta H: **1.719** Meter Gamma: **0.985**

Nozzle Diameter: **0.197** Stack Diameter: **29.5** Static Pressure: **0.54**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	0.179	1.20	1.8	86	N/A	70	68	N/A	1.095
2.	5		1.70	2.6	87	N/A	71	69	N/A	1.304
3.	10		1.60	2.4	88	N/A	73	70	N/A	1.265
4.	15		1.50	2.3	88	N/A	74	72	N/A	1.225
5.	20		1.20	1.8	88	N/A	75	72	N/A	1.095
6.	25		1.10	1.7	91	N/A	77	74	N/A	1.049
7.	30		0.91	1.4	93	N/A	80	77	N/A	0.954
8.	35		0.91	1.4	95	N/A	83	80	N/A	0.954
9.	40		1.30	2.0	97	N/A	84	81	N/A	1.140
10.	45		1.60	2.4	99	N/A	87	82	N/A	1.265
11.	50		1.40	2.1	102	N/A	87	83	N/A	1.183
12.	55		1.10	1.7	102	N/A	88	85	N/A	1.049
1.	60	46.076	1.40	2.1	100	N/A	89	86	N/A	1.183
2.	65		1.20	1.8	100	N/A	91	87	N/A	1.095
3.	70		1.20	1.8	101	N/A	91	87	N/A	1.095
4.	75		1.10	1.7	104	N/A	92	88	N/A	1.049
5.	80		0.89	1.3	106	N/A	91	88	N/A	0.943
6.	85		0.87	1.3	109	N/A	92	88	N/A	0.933
7.	90		0.86	1.3	107	N/A	93	89	N/A	0.927
8.	95		0.96	1.4	107	N/A	93	89	N/A	0.980
9.	100		1.40	2.1	109	N/A	94	90	N/A	1.183
10.	105		1.90	2.9	111	N/A	94	91	N/A	1.378
11.	110		2.10	3.2	114	N/A	95	90	N/A	1.449
12.	115		2.20	3.3	117	N/A	95	91	N/A	1.483
-	120	93.058	END TEST	-	-	-	-	-	-	-
	120	92.879	1.137	2.0	100		84.1			

Amp Hrs: Start: N/A Stop: N/A Total / 2: #VALUE!

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bauman Plating
LOCATION: PB UCPA Exhaust
DATE: 4/5/22
RUN NO: 2 C436
OPERATOR: DH
METER BOX NO: 23 wcs
METER ΔH@: 1.714
METER Yd: 0.995
STACK AREA, FT²: 28.5
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 1.500
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 71°
BAROMETRIC PRESSURE: 29.92
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 131/glass
PROBE LENGTH: 4'
NOZZLE ID NO/ MATERIAL: 0.197/glass
NOZZLE DIAMETER: 0.197
FILTER NO/TYPE: 22-UP-916
PRE-TEST LEAK RATE: : 0.009 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.008 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	Stds DI H2O	740.3	728.2	12.1
2	" "	634.5	627.1	7.4
3	wet	654.6	651.1	3.5
4	silica gel	1001.0	978.1	22.9
Total:				45.9

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	1135	93.216	1.2	1.8	113	n/a	n/a	55	87	84	6	n/a	0.51
2	1140	95.9	1.7	2.6	111			54	87	85	5		
3	1145	100.2	1.5	2.3	112			54	90	86	6		
4	1150	104.7	1.5	2.3	112			54	91	87	6		
5	1155	109.1	1.2	1.8	114			53	91	88	5		
6	1200	113.3	1.1	1.7	115			53	92	89	4		
7	1205	116.9	0.93	1.4	117			51	94	90	4		
8	1210	120.1	0.92	1.4	116			51	94	90	4		
9	1215	123.5	1.3	2.0	115			52	95	90	4		
10	1220	127.3	1.5	2.3	115			54	95	91	5		
11	1225	131.4	1.4	2.1	113			54	96	92	5		
12	1230	135.7	1.1	1.7	113			56	87	92	4		
1	1235	139.744	1.4	2.1	114			55	96	92	4		
2	1240	143.7	1.2	1.8	114			56	96	93	4		
3	1245	147.0	1.1	1.7	112			54	95	92	4		
4	1250	151.3	1.1	1.7	111			55	94	90	4		
5	1255	155.3	0.91	1.4	110			57	96	92	4		
6	1300	158.5	0.98	1.5	112			57	96	92	4		
7	1305	161.9	0.86	1.3	112			58	95	91	4		
8	1310	164.9	0.95	1.4	112			55	95	90	4		
9	1315	168.3	1.5	2.3	111			58	94	90	5		
10	1320	172.7	2.0	3.0	111			59	95	91	6		
11	1325	177.6	2.1	3.2	109			58	95	91	6		
12	1330	182.5	2.2	3.3	109			60	97	92	6		
Average:	1330	187.628						TEST					
Comments:		94.412	√1.139	2.0	113					91.8			

CARB METHOD 436 DATA INPUTS

PLANT: **Bowman**
SOURCE: **PR ULPA EXHAUST**
DATE: **4/5/2022**
RUN NUMBER: **2**
BAROMETRIC : **29.92**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	5% HNO3/10% H2O2	740.3	728.2	12.1
2.	5% HNO3/10% H2O2	634.5	627.1	7.4
3.	EMPTY	654.6	651.1	3.5
4.	Silica Gel	1001	978.1	22.9
		Total	**45.9**	

K Factor: **1.50**

Control Box ID: **23 WCS** Meter Delta H: **1.719** Meter Gamma: **0.985**

Nozzle Diameter: **0.197** Stack Diameter: **29.5** Static Pressure: **0.54**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	93.216	1.20	1.8	113	N/A	87	84	N/A	1.095
2.	5		1.70	2.6	111	N/A	87	85	N/A	1.304
3.	10		1.50	2.3	112	N/A	90	86	N/A	1.225
4.	15		1.50	2.3	112	N/A	91	87	N/A	1.225
5.	20		1.20	1.8	114	N/A	91	88	N/A	1.095
6.	25		1.10	1.7	115	N/A	92	89	N/A	1.049
7.	30		0.93	1.4	117	N/A	94	90	N/A	0.964
8.	35		0.92	1.4	116	N/A	94	90	N/A	0.959
9.	40		1.30	2.0	115	N/A	95	90	N/A	1.140
10.	45		1.50	2.3	115	N/A	95	91	N/A	1.225
11.	50		1.40	2.1	113	N/A	96	92	N/A	1.183
12.	55		1.10	1.7	113	N/A	97	92	N/A	1.049
1.	60	139.744	1.40	2.1	114	N/A	96	92	N/A	1.183
2.	65		1.20	1.8	114	N/A	96	93	N/A	1.095
3.	70		1.10	1.7	112	N/A	95	92	N/A	1.049
4.	75		1.10	1.7	111	N/A	94	90	N/A	1.049
5.	80		0.91	1.4	110	N/A	96	92	N/A	0.954
6.	85		0.88	1.3	112	N/A	96	92	N/A	0.938
7.	90		0.86	1.3	112	N/A	95	91	N/A	0.927
8.	95		0.95	1.4	112	N/A	95	90	N/A	0.975
9.	100		1.40	2.1	111	N/A	94	90	N/A	1.183
10.	105		2.00	3.0	111	N/A	95	91	N/A	1.414
11.	110		2.10	3.2	109	N/A	95	91	N/A	1.449
12.	115		2.20	3.3	109	N/A	97	92	N/A	1.483
-	120	187.628	END TEST	-	-	-	-	-	-	-
	120	94.412	1.134	2.0	113		91.9			

Amp Hrs: Start: N/A Stop: N/A Total / 2: #VALUE!

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Roman Plating
LOCATION: PR ULDA EXHAUST
DATE: 4/6/22
RUN NO: 3 C436
OPERATOR: DH
METER BOX NO: 23405
METER ΔH@: 1.719
METER Yd: 0.985
STACK AREA, FT²: 28.5
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 1.500
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: good
Filter Condition after Test: good
Check Weight: 500/500

AMBIENT TEMPERATURE: 63°
BAROMETRIC PRESSURE: 29.96
ASSUMED MOISTURE: 2%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 121 Leak check
PROBE LENGTH: 4'
NOZZLE ID NO/ MATERIAL: 0.197/glass
NOZZLE DIAMETER: 0.197
FILTER NO/TYPE: 83-UP-912
PRE-TEST LEAK RATE: : 0.007 CFM@ 10 in. Hg.
POST-TEST LEAK RATE: : 0.006 CFM@ 10 in. Hg.
PITOT LEAK CHECK - PRE: OK POST: OK
CHAIN OF CUSTODY: SAMPLE CUSTODIAN
SAMPLER DH
SAMPLE CUSTODIAN
8/9/22

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	Knock out H2O	782.0 / 764.9	17.1
2	H2O	685.9 / 680.9	5.0
3	empty	638.3 / 637.9	0.4
4	silica	1866.7 / 1796.6	70.1
—			
Total:			426

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	0820	187.744	1.2	1.8	75	N/A	N/A	55	69	67	4	N/A	0.51
2	0825	191.5	1.8	2.7	76			53	72	70	5		
3	0830	195.9	1.6	2.1	76			51	75	72	5		
4	0835	199.9	1.6	2.4	78			53	76	73	5		
5	0840	204.2	1.2	1.8	80			52	78	74	4		
6	0845	207.8	1.0	1.5	82			52	81	76	4		
7	0850	211.3	0.92	1.4	84			51	84	78	3		
8	0855	214.9	0.91	1.4	86			52	85	80	3		
9	1000	218.2	1.2	1.8	86			53	85	81	4		
10	1005	221.9	1.6	2.4	87			54	88	83	4		
11	1010	226.1	1.3	2.0	87			53	88	84	5		
12	1015	230.2	1.1	1.7	89			54	90	86	4		
1	1020	233.969	1.4	2.1	90			55	91	87	5		
2	1025	237.9	1.2	1.8	90			55	93	88	4		
3	1030	241.6	1.1	1.7	93			56	95	89	4		
4	1035	245.5	1.1	1.7	95			55	95	89	4		
5	1040	249.2	0.88	1.3	96			57	97	90	3		
6	1045	252.2	0.83	1.3	96			57	96	90	3		
7	1050	255.7	0.85	1.3	97			56	96	91	3		
8	1055	258.9	0.97	1.5	99			57	97	91	4		
9	1100	262.2	1.4	2.1	98			57	98	92	5		
10	1105	266.2	2.0	3.0	97			59	98	92	6		
11	1110	271.0	2.1	3.2	96			60	99	93	6		
12	1115	276.0	2.3	3.5	97			59	101	94	4		
Average:	1120	281.300											
		93.556	√1.135	2.0	89								

END TEST

Comments: 96.2

CARB METHOD 436 DATA INPUTS

PLANT: **Bowman**
SOURCE: **PR ULPA EXHAUST**
DATE: **4/6/2022**
RUN NUMBER: **3**
BAROMETRIC : **29.96**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	5%/10%	782	764.9	17.1
2.	5%/10%	685.9	680.9	5
3.	EMPTY	638.3	637.9	0.4
4.	Silica Gel	1016.7	996.6	20.1
			Total	**42.6**

K Factor: **1.50**

Control Box ID: **23 WCS** Meter Delta H: **1.719** Meter Gamma: **0.985**

Nozzle Diameter: **0.197** Stack Diameter: **29.5** Static Pressure: **0.54**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	187.744	1.20	1.8	75	N/A	69	67	N/A	1.095
2.	5		1.80	2.7	76	N/A	72	70	N/A	1.342
3.	10		1.60	2.4	76	N/A	75	72	N/A	1.265
4.	15		1.60	2.4	78	N/A	76	73	N/A	1.265
5.	20		1.20	1.8	80	N/A	78	74	N/A	1.095
6.	25		1.00	1.5	82	N/A	81	76	N/A	1.000
7.	30		0.92	1.4	84	N/A	84	78	N/A	0.959
8.	35		0.91	1.4	86	N/A	85	80	N/A	0.954
9.	40		1.20	1.8	86	N/A	85	81	N/A	1.095
10.	45		1.60	2.4	87	N/A	88	83	N/A	1.265
11.	50		1.30	2.0	87	N/A	88	84	N/A	1.140
12.	55		1.10	1.7	89	N/A	90	86	N/A	1.049
1.	60	234.0	1.40	2.1	90	N/A	91	87	N/A	1.183
2.	65		1.20	1.8	90	N/A	93	88	N/A	1.095
3.	70		1.10	1.7	93	N/A	95	89	N/A	1.049
4.	75		1.10	1.7	95	N/A	95	89	N/A	1.049
5.	80		0.88	1.3	96	N/A	97	90	N/A	0.938
6.	85		0.85	1.3	96	N/A	96	90	N/A	0.922
7.	90		0.85	1.3	97	N/A	96	91	N/A	0.922
8.	95		0.97	1.5	99	N/A	97	91	N/A	0.985
9.	100		1.40	2.1	98	N/A	98	92	N/A	1.183
10.	105		2.00	3.0	97	N/A	99	92	N/A	1.414
11.	110		2.10	3.2	96	N/A	99	93	N/A	1.449
12.	115		2.30	3.5	97	N/A	101	94	N/A	1.517
-	120	281.300	END TEST	-	-	-	-	-	-	-
	120	93.556	1.135	2.0	89		86.2			

Amp Hrs: Start: N/A Stop: N/A Total / 2: #VALUE!

PLANT: **Bowman**
SOURCE: **PR ULPA EXHAUST**
DATE: **4/5/2022**
STANDARD TEMP (EPA = 68 DEG.) 68

RUN NUMBER	1	2	3	Average
FIELD DATA INPUTS:				
BAROMETRIC PRESSURE (Pb)	29.92	29.92	29.96	
STACK DIAMETER	29.5	29.5	29.5	
PITOT CORRECTION (Cp)	0.84	0.84	0.84	
SQRT DELTA P	1.137	1.134	1.135	
STACK TEMP (DEG. F)	100.0	112.6	88.8	100.5
STATIC PRESSURE (Ps)	0.54	0.54	0.54	0.54
VOLUME SAMPLED (Vm)	92.879	94.412	93.556	
METER TEMPERATURE (DEG. F)	84.1	91.9	86.2	
METER GAMMA	0.985	0.985	0.985	
DELTA H (INCHES WATER)	1.98	1.97	1.97	
LIQUID COLLECTED (VLC)	41.6	45.9	42.6	
% O2	20.9	20.9	20.9	
%CO2	0.04	0.04	0.04	
SAMPLING TIME (MINUTES)	120	120	120	
NOZZLE DIAMETER (INCHES)	0.197	0.197	0.197	
LABORATORY DATA:				
NICKEL (ug)	0.4	0.3	0.2	
CADMIUM (ug)	0.056	0.057	0.050	
FLOW RESULTS:				
VOLUME SAMPLED, DSCF	89.212	89.392	89.632	89.412
VOLUME SAMPLED, DSCM	2.526	2.531	2.538	
MOISTURE IN SAMPLE (CF)	1.96	2.17	2.01	
MOISTURE (%)	2.15	2.37	2.19	2.24
MOLECULAR WEIGHT (DRY)	28.84	28.84	28.84	
MOLECULAR WEIGHT (WET)	28.61	28.59	28.60	
STACK VELOCITY (FT/SEC)	65.98	66.58	65.16	65.9
ACTUAL CFM	18790	18962	18556	18769
STANDARD CFM	17738	17507	17902	
DRY STANDARD CFM	17356	17093	17509	17319
METAL RESULTS:				
ISOKINETIC SAMPLING RATE (100% ±10%)	96.1	97.7	95.7	96.5
NICKEL (mg/dscm)	0.00016	0.00012	0.00008	0.00012
NICKEL (mg/hr)	4.7	3.4	2.3	3.5
CADMIUM (mg/dscm)	0.000022	0.000023	0.000020	0.000021
CADMIUM (mg/hr)	0.65	0.65	0.59	0.63

MONTROSE

WET CHEMICAL SAMPLING SYSTEM DATA AND WORKSHEET

CLIENT: Bowman
LOCATION: PR ULPA Exhaust
DATE: 4/5/22
RUN NO: 1 PM
OPERATOR: DH
METER BOX NO: 23WCS
METER ΔH@: 1.719
METER Yd: 0.985
STACK AREA, FT²: 29.5
TRAVERSE POINTS, MIN/POINT: 5/24
ΔH= _____ X ΔP: 1500
Probe Condition, pre/post test: good
Silica Gel Expended, Y/N: Good
Filter Condition after Test: Good
Check Weight: 500/500

AMBIENT TEMPERATURE: 61°
BAROMETRIC PRESSURE: 29.92
ASSUMED MOISTURE: 20%
PITOT TUBE COEFF, Cp: 0.84
PROBE ID NO/MATERIAL: 131 / glass
PROBE LENGTH: 4'
NOZZLE ID NO/ MATERIAL: 0.197 / glass
NOZZLE DIAMETER: 0.197
FILTER NO/TYPE: 83-UP-915
PRE-TEST LEAK RATE: : 0.005 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 _____

RH 76%

Imp. #	Contents	Post-Test / Pre-Test	= Difference
1	5% HNO_3, 10% H_2O_2	770.6 / 755.4	15.2
2	" "	734.3 / 730.1	4.2
3	mt	663.1 / 662.1	1.0
—	sica	914.7 / 893.5	21.2
—			
Total:			41.6

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 % (cyc)	Pstatic in. H_2O
1	0915	0.179	1.2	1.8	86	AMB	AMB	53	70	68	3	<10	0.51
2	0920	3.6	1.7	2.6	87			51	71	69	4		
3	0925	7.6	1.6	2.4	88			49	73	70	4		
4	0930	11.7	1.5	2.3	88			49	74	72	4		
5	0935	15.7	1.2	1.8	88			50	75	72	3		
6	0940	19.4	1.1	1.7	91			51	77	74	3		
7	0945	23.1	0.91	1.4	93			51	80	77	2		
8	0950	26.2	0.91	1.4	95			52	83	80	2		
9	0955	29.6	1.3	2.0	97			53	84	81	3		
10	1000	33.9	1.6	2.4	99			53	87	82	4		
11	1005	37.9	1.4	2.1	102			55	87	83	4		
12	1010	42.0	1.1	1.7	102			57	88	85	3		
1	1015	46.076	1.4	2.1	100			54	89	86	4		
2	1020	50.1	1.2	1.8	100			56	91	87	3		
3	1025	53.9	1.2	1.8	101			56	91	87	3		
4	1030	57.7	1.1	1.7	101			57	92	88	3		
5	1035	61.5	0.85	1.3	104			58	91	85	3		
6	1040	64.6	0.87	1.3	109			58	92	88	3		
7	1045	67.9	0.86	1.3	102			57	93	89	3		
8	1050	71.3	0.96	1.4	107			57	93	89	3		
9	1055	75.7	1.4	2.1	102			58	94	90	4		
10	1100	79.6	1.9	2.9	111			60	94	91	6	✓	
11	1105	83.1	2.1	3.2	114			59	95	90	6		
12	1110	87.8	~~2.2~~ 2.2	3.3	117			58	95	91	6		
Average:	1115	93.058					END	TEST					

Comments: 92.879 EAST ✓1.137 WEST 2.0 100 84.1

Date of last revision 2/14/2017 HEPA 1.2

SCAQMD 5.1

PLANT: **Bowman**
SOURCE: **PR ULPA EXHAUST**
DATE: **4/5/2022**
RUN NUMBER: **1**
BAROMETRIC : **29.92**

Moisture Data

Impinger #	Contents	Final	Initial	Difference
1.	D.I WATER	745	741.5	3.5
2.	D.I WATER	641.5	639.4	2.1
3.	EMPTY	646.0	645.1	0.9
4.	Silica Gel	1013.4	1001.1	12.3
			Total	**18.8**

K Factor: **1.500**

Control Box ID: **23 WCS** Meter Delta H: **1.719** Meter Gamma: **0.985**

Nozzle Diameter: **0.197** Stack Diameter: **29.5** Static Pressure: **0.54**

Point	Time	Meter	Delta P	Delta H	Stack T°	Imp T°	Meter In T°	Meter Out T°	Vacuum	SQRT DP
1.	0	281.579	1.20	1.8	94	N/A	92	89	N/A	1.095
2.	5		1.70	2.6	95	N/A	94	90	N/A	1.304
3.	10		1.60	2.4	96	N/A	96	92	N/A	1.265
4.	15		1.50	2.3	96	N/A	96	92	N/A	1.225
5.	20		1.20	1.8	96	N/A	97	92	N/A	1.095
6.	25		1.00	1.5	97	N/A	96	92	N/A	1.000
7.	30		0.94	1.4	97	N/A	97	93	N/A	0.970
8.	35		0.92	1.4	99	N/A	97	93	N/A	0.959
9.	40		1.30	2.0	103	N/A	96	93	N/A	1.140
10.	45		1.50	2.3	106	N/A	97	94	N/A	1.225
11.	50		1.40	2.1	110	N/A	98	94	N/A	1.183
12.	55		1.00	1.5	111	N/A	99	94	N/A	1.000
1.	60		1.40	2.1	110	N/A	100	95	N/A	1.183
2.	65		1.20	1.8	110	N/A	101	95	N/A	1.095
3.	70		1.20	1.8	111	N/A	101	95	N/A	1.095
4.	75		1.00	1.5	111	N/A	102	96	N/A	1.000
5.	80		0.86	1.3	111	N/A	102	96	N/A	0.927
6.	85		0.85	1.3	111	N/A	101	96	N/A	0.922
7.	90		0.86	1.3	112	N/A	101	96	N/A	0.927
8.	95		0.96	1.4	112	N/A	102	96	N/A	0.980
9.	100		1.50	2.3	110	N/A	103	97	N/A	1.225
10.	105		2.00	3.0	111	N/A	103	97	N/A	1.414
11.	110		2.10	3.2	111	N/A	103	97	N/A	1.449
12.	115		2.20	3.3	112	N/A	104	98	N/A	1.483
-	120	330.016	END TEST	-	-	-	-	-	-	-
	120	48.437	1.132	2.0	106		96.7			

Amp Hrs: Start: N/A Stop: 0 Total / 2: #VALUE!

PLANT: Bowman
SOURCE: PR ULPA EXHAUST
DATE: 4/5/2022
STANDARD TEMP (EPA = 68 DEG.) 60

RUN NUMBER	1
FIELD DATA INPUTS:	
BAROMETRIC PRESSURE (Pb)	29.96
STACK DIAMETER	29.5
PITOT CORRECTION (Cp)	0.84
SQRT DELTA P	1.132
STACK TEMP (DEG. F)	105.5
STATIC PRESSURE (Ps)	0.54
VOLUME SAMPLED (Vm)	48.437
METER TEMPERATURE (DEG. F)	96.7
METER GAMMA	0.985
DELTA H (INCHES WATER)	1.96
LIQUID COLLECTED (VLC)	18.8
% O2	20.9
%CO2	0.04
SAMPLING TIME (MINUTES)	60
NOZZLE DIAMETER (INCHES)	0.197
PM LABORATORY DATA:	
FILTER (g)	0.0000
AQUEOUS (g)	0.0015
ORGANIC EXTRACT (g)	0.0001
TOTAL (g)	0.0016
FLOW RESULTS:	
VOLUME SAMPLED, DSCF	44.842
VOLUME SAMPLED, DSCM	1.270
MOISTURE IN SAMPLE (CF)	0.87
MOISTURE (%)	1.91
MOLECULAR WEIGHT (DRY)	28.84
MOLECULAR WEIGHT (WET)	28.64
STACK VELOCITY (FT/SEC)	65.94
ACTUAL CFM	18780
STANDARD CFM	17315
DRY STANDARD CFM	16984
PM RESULTS:	
ISOKINETIC SAMPLING RATE (100% ±10%)	98.7
TOTAL PM (grains/DSCF)	0.00055
TOTAL PM (LB/HR)	0.080

Appendix A.2
Tank Analyses

Source Test Process Tank Analysis

Tank #
Tank # 102 Cadmium Plating Still
Cadmium : 3.64 oz/gal
Sodium Hydroxide : 1.79 oz/gal
Tank # 150 Cadmium Plating Barrel
Cadmium : 3.66 oz/gal
Sodium Hydroxide : 1.89 oz/gal
Tank # 115 Nickel Strike Plating
Hydrochloric Acid = 13.27 oz/gal
Nickel : 8.33 oz/gal
Tank # 115A Nickel Strike Plating
Hydrochloric Acid = 12.24 oz/gal
Nickel : 8.35 oz/gal
Tank # 176 Stainless Steel Pickel
Nitric Acid = 24.78 oz/gal
Nickel : 0.79 g/L

Sample Date on: 4/6/2022

Analysis Date on: 4/12/2022

Report Generated on: 4/15/2022

Paloma Rodriguez
Supervisor

Laboratory
Bowman Plating Co.

4/15/2022

Appendix A.3
Lab Reports

CHAIN OF CUSTODY

CLIENT: Bowman PROJECT NO: _____ TEST DATE(S): 4/6/22

LOCATION: Compton SAMPLER(S): DH

SAMPLE LOCATION: ULPA EXHAUST PROJECT MANAGER: JOE RUBIO

TEST METHOD(S): SCAQMD 5.1 DATE DUE: _____

OUTSIDE LAB REQUIRED?: _____ COMPLIANCE TEST? YES

DATE	TIME	TEST #	SAMPLE DESCRIPTION	CONTAINERS	SAMPLER	COMMENTS
4/6/22		Run 1	ULPA EXHAUST	2	DH	

RELEASED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[signature]	4/11/22 0810	Hector Reyes	4/11/22 1247

ANALYSIS REQUIRED: _____

PARTICULATE

SCAQMD 5.1, WET IMPINGEMENT

Project #	PROJ - 005728				
Client/Location	Bowman			**Sample Date**	4/6/2022
Sample Location	PRULPA Exhaust	**Water Blank (mg/ml)**	0.0000	**Analysis Date**	4/11/2022
Test #	Run 1	**$MeCl_2$ Blank (mg/ml)**	0.0008	**Analyst**	PR

Item	Item Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/sample)	Blank Based on Total Volume (mg)
1. Glass Fiber Filter (backup filter)	55-7424	0.1481	0.1482	0.0	--------	0.0	----------
2. Insoluble Solids Filter	55-7436	0.1478	0.1474	0.4	--------	0.4	----------
3. Impingers and Probe Catches a. Water Fraction	8313	28.3332	28.3322	1.0	224.0 224.0	1.0	0.0
b. Organic Fraction 125 ml $MeCl_2$ (5x25mL)	8314	30.0056	30.0054	0.2	224.0 224.0	0.2	0.1
DI Water Blank	8316	28.3014	28.3021	0.0	250.0 250.0	------	------
MeCl2 Blank	8381	27.8109	27.8107	0.2	250.0 250.0	------	------

Total Particulate = 1.6

Method of Sample Prep/Analysis Notes

MONTROSE
AIR QUALITY SERVICES

PARTICULATE
SCAQMD 5.1, WET IMPINGEMENT

Project # PROJ-005728
Client/Location Bowman
Sample Location PRU PA Exhaust
Test # Run 1

Water Blank mg/ml 0.0001
$MeCl_2$ Blank mg/ml 0.0008

Sample Date 4/6/2022
Analysis Date 4/11/2022
Analyst Initials PR

Item	Number	Final Weight (g)	Tare Weight (g)	Gain Weight (mg)	Aliquot Correction (ml/ml)	Net Gain (mg/Sample)	Blank based on Total Volume (mg)
1. Glass Fiber Filter (Backup Filter)	55-7424	0.1481	0.1482	0.0	—	0.0	—
2. Insoluble Solids Filter	55-7436	0.1478	0.1474	0.4	—	0.4	—
3. Impingers and Probe Catches a. Water Fraction	8313	28.3332	28.3322	1.0	224/224	1.0	0.0
b. Organic Extraction 125 ml $MeCl_2$	8314	30.0056	30.0054	0.2	224/224	0.2	0.1
DI H_2O Blank	8316	28.3014	28.3021 ~~27.8109~~ PR 4/18	0.0	250/250	—	—
$MeCl_2$ Blank	8381	27.8109	27.8107	0.2	250/250	—	—

Total Particulate = 1.6 mg

Method of Sample Prep/Notes

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders:	2D06090	**Report Date:**	6/01/2022
		Received Date:	4/6/2022
Project:	005728 Bowman Plating	**Turnaround Time:**	Normal
		Phones:	(714) 332-8240
		Fax:	
Attn:	Joe Rubio	**P.O. #:**	
Client:	Montrose Air Quality Services, LLC - Santa Ana CA 1631 E. Saint Adrew Place Santa Ana, CA 92705	**Billing Code:**	

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • HW-DOH #4047 • 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. This analytical report must be reproduced in its entirety.

Dear Joe Rubio,

Enclosed are the results of analyses for samples received 4/06/22 with the Chain-of-Custody document. The samples were received in good condition, at 4.6 °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:

Brandon Gee
Operations Manager/Senior PM

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

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

Project Number: 005728 Bowman Plating

Project Manager: Joe Rubio

Reported:
06/01/2022 11:08

Sample Summary

Sample Name	Sampled By	Lab ID	Matrix	Sampled	Qualifiers
PR ULPA Exhaust Run 1	D.Heredero	2D06090-01	Filter	04/05/22 00:00	
PR ULPA Exhaust Run 2	D.Heredero	2D06090-02	Filter	04/05/22 00:00	
PR ULPA Exhaust Run 3	D.Heredero	2D06090-03	Filter	04/06/22 00:00	
Blank	D.Heredero	2D06090-04	Filter	04/06/22 00:00	

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www.wecklabs.com

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

Project Number: 005728 Bowman Plating

Project Manager: Joe Rubio

Reported:
06/01/2022 11:08

Sample Results

Sample: PR ULPA Exhaust Run 1 — Sampled: 04/05/22 0:00 by D.Heredero

2D06090-01 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W2E0746 **Preparation:** CARB 436			**Prepared:** 05/11/22 09:27				**Analyst:** aln
Cadmium, Total	**0.056**	0.050	1.0	ug/filter	5	05/13/22	J
Nickel, Total	**2.5**	0.20	1.0	ug/filter	5	05/13/22	

Sample Results

Sample: PR ULPA Exhaust Run 2 — Sampled: 04/05/22 0:00 by D.Heredero

2D06090-02 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W2E0746 **Preparation:** CARB 436			**Prepared:** 05/11/22 09:27				**Analyst:** aln
Cadmium, Total	**0.057**	0.050	1.0	ug/filter	5	05/13/22	J
Nickel, Total	**2.4**	0.20	1.0	ug/filter	5	05/13/22	

Sample Results

Sample: PR ULPA Exhaust Run 3 — Sampled: 04/06/22 0:00 by D.Heredero

2D06090-03 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W2E0746 **Preparation:** CARB 436			**Prepared:** 05/11/22 09:27				**Analyst:** aln
Cadmium, Total	ND	0.050	1.0	ug/filter	5	05/13/22	
Nickel, Total	**2.3**	0.20	1.0	ug/filter	5	05/13/22	

Sample Results

Sample: Blank — Sampled: 04/06/22 0:00 by D.Heredero

2D06090-04 (Filter)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Metals (Non-Aqueous) by EPA 6000/7000 Series Methods							
Method: EPA 6020			**Instr:** ICPMS05				
Batch ID: W2E0746 **Preparation:** CARB 436			**Prepared:** 05/11/22 09:27				**Analyst:** aln
Cadmium, Total	ND	0.050	1.0	ug/filter	5	05/13/22	
Nickel, Total	**2.1**	0.20	1.0	ug/filter	5	05/13/22	

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

Project Number: 005728 Bowman Plating

Project Manager: Joe Rubio

Reported:
06/01/2022 11:08

Quality Control Results

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

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch: W2E0746 - EPA 6020											
Blank (W2E0746-BLK1)					**Prepared: 05/11/22 Analyzed: 05/13/22**						
Cadmium, Total	ND	0.050	1.0	ug/filter							
Nickel, Total	ND	0.20	1.0	ug/filter							
LCS (W2E0746-BS1)					**Prepared: 05/11/22 Analyzed: 05/13/22**						
Cadmium, Total	4.62	0.050	1.0	ug/filter	5.00		92	80-120			
Nickel, Total	5.10	0.20	1.0	ug/filter	5.00		102	80-120			
LCS Dup (W2E0746-BSD1)					**Prepared: 05/11/22 Analyzed: 05/13/22**						
Cadmium, Total	4.53	0.050	1.0	ug/filter	5.00		91	80-120	2	20	
Nickel, Total	4.97	0.20	1.0	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: 005728 Bowman Plating

Project Manager: Joe Rubio

Reported:
06/01/2022 11:08

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	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.

Appendix A.4
Calibration Data

CERTIFICATE OF CALIBRATION

CUSTOMER:	MONTROSE AIR QUALITY SERVICES, LLC : SANTA ANA, CA	**CALIBRATION DATE:**	07/26/2021
PO NUMBER:	N/A	**CALIBRATION DUE:**	07/26/2022
INST. MANUFACTURER:	TSI	**PROCEDURE:**	T.O.33K6-4-1769-1
INST. DESCRIPTION:	AIR VELOCITY METER	**CALIBRATION FLUID:**	AIR @ 14.7 PSIA 70°F
MODEL NUMBER:	9515	**RECEIVED CONDITION:**	WITHIN MFG. SPECS.
SERIAL NUMBER:	T95151133003	**LEFT CONDITION:**	WITHIN MFG. SPECS.
RATED ACCURACY:	± 5% RD. OR ±5 FPM (WHICHEVER IS GREATER) : ± 0.5 °F	**AMBIENT CONDITIONS:**	763 mm HGA 51% RH 72°F
UNCERTAINTY GIVEN:	± 0.37% RD ; K=2	**CERTIFICATE FILE #:**	453989.2021

NOTES: **Q.MANUAL IM 2.0 REV 2020.2 DATED 7-27-2020 **** DECISION RULE : NO PFA%**

UUT INDICATED FT/MIN	DM.STD. ACTUAL FT/MIN	UUT INDICATED DEG. F	DM STD. ACTUAL DEG. F
50	48	0 TO 200°F	0 TO 200°F
109	107	44.0	44.3
268	265	70.8	71.0
502	497	98.5	98.8
1034	1022		
1515	1497		
2586	2551		
3048	3004		
3992	3933		

STANDARDS USED:

A220: 12" WIND TUNNEL 0 - 8000 FPM | CMC ± 0.203% RD | TRACE# 1329407628	DUE	02/18/2022
A24: HART SCIENTIFIC TEMP. STANDARD | ± 0.024 F | TRACE# 1617259390	DUE	04/01/2022

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) and the Unit Under Test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed according to the shown procedure. The use of IAS/ILAC logo indicates calibrations are in accordance to ISO/IEC 17025:2017.

Dick Munns Company · 11133 Winners Circle, Los Alamitos, CA 90720
Phone: 714-827-1215 · www.dickmunns.com

This Calibration Certificate shall not be reproduced except, in full, without approval by Dick Munns Company. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Issuing Date:	Approved By:	Cal. Technician:	Calibrated at:
07/26/2021	[signature]	D. C.	✓ Lab ___ On-Site (Customer's)

SEMI-ANNUAL DRY GAS METER/ORIFICE CALIBRATION

Orifice Method - Triplicate Runs/Four Calibration Points
English Meter Box Units, English K' Factor
Filename: M:\Santa Ana\Equipment\Test Equipment\Calibrations\Dry Gas Meters\23-WCS\2022\[23WCS Semi Annual Cal 2-28-2022.xls]WCS
File Modified From: APEX 522 Series Meter box Calibration
Revised: 4/8/2005

Model #: CleanAir Express
ID #: 23-WCS
Date: 2/28/2022
Bar. Pressure: 30.05 (in. Hg)
Performed By: L.Olivares
Reviewed By: M.Chowsanitphon

DRY GAS METER READINGS									CRITICAL ORIFICE READINGS					
		Volume	Volume	Volume	Initial Temps.		Final Temps.		Orifice	K' Orifice	Actual	Ambient Temperature		
dH (in H2O)	Time (min)	Initial (cu ft)	Final (cu ft)	Total (cu ft)	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	Serial# (number)	Coefficient (see above)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.14	26.00	347.500	352.960	5.460	67.0	65.0	67.0	66.0	AA-33	0.1574	20.0	64.0	64.0	64.0
0.14	26.00	352.960	358.420	5.460	67.0	66.0	68.0	67.0	AA-33	0.1574	20.0	64.0	64.0	64.0
0.14	26.00	358.420	363.880	5.460	68.0	67.0	69.0	68.0	AA-33	0.1574	20.0	64.0	64.0	64.0
0.61	12.00	330.000	335.460	5.460	68.0	63.0	68.0	63.0	QI-48	0.3434	18.0	63.0	63.0	63.0
0.61	12.00	335.460	340.920	5.460	68.0	63.0	69.0	64.0	QI-48	0.3434	18.0	63.0	64.0	63.5
0.61	12.00	340.920	346.395	5.475	69.0	64.0	69.0	65.0	QI-48	0.3434	18.0	64.0	64.0	64.0
1.80	7.00	312.100	317.600	5.500	67.0	60.0	68.0	61.0	QI-63	0.5994	17.0	61.0	61.0	61.0
1.80	7.00	317.600	323.095	5.495	68.0	61.0	70.0	62.0	QI-63	0.5994	17.0	61.0	62.0	61.5
1.80	7.00	323.095	328.600	5.505	70.0	62.0	71.0	63.0	QI-63	0.5994	17.0	62.0	62.0	62.0
3.30	5.00	294.600	299.895	5.295	62.0	60.0	64.0	60.0	AA-73	0.8121	16.0	60.0	60.0	60.0
3.30	5.00	299.895	305.165	5.270	64.0	60.0	66.0	60.0	AA-73	0.8121	16.0	60.0	60.0	60.0
3.30	5.00	305.165	310.450	5.285	66.0	60.0	68.0	60.0	AA-73	0.8121	16.0	60.0	61.0	60.5

DRY GAS METER		ORIFICE			DRY GAS METER CALIBRATION FACTOR	ORIFICE CALIBRATION FACTOR				
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)	Individual Run 0.95 < Y < 1.05?	Individual Orifice Ymax - Ymin < 0.010?	Orifice Average 0.98 < Y/Yd < 1.02?	Orifice Average dH@ - dH@ av < 0.155?
5.502	155.8	5.372	152.1	5.311		[redacted]	1.861	Pass			
5.494	155.6	5.372	152.1	5.311			1.858	Pass			
5.483	155.3	5.372	152.1	5.311			1.854	Pass			
					Average		**1.858**		**Pass**	**Pass**	**Pass**
5.516	156.2	5.415	153.3	5.342		0.982	1.709	Pass			
5.511	156.1	5.412	153.3	5.345		0.982	1.709	Pass			
5.518	156.3	5.410	153.2	5.347		0.980	1.707	Pass			
					Average	**0.981**	**1.708**		**Pass**	**Pass**	**Pass**
5.588	158.3	5.524	156.4	5.429		0.988	1.657	Pass			
5.570	157.7	5.521	156.4	5.432		0.991	1.655	Pass			
5.567	157.7	5.519	156.3	5.434		0.991	1.653	Pass			
					Average	**0.990**	**1.655**		**Pass**	**Pass**	**Pass**
5.426	153.7	5.351	151.5	5.249		0.986	1.653	Pass			
5.390	152.6	5.351	151.5	5.249		0.993	1.653	Pass			
5.395	152.8	5.348	151.5	5.252		0.991	1.654	Pass			
					Average	**0.990**	**1.653**		**Pass**	**Pass**	**Pass**

Average Yd: 0.985 **dH@: 1.719**

Q @ dH = 1: 0.572

SIGNED: Signature on File Date: 2/28/2022

MONTROSE
AIR QUALITY SERVICES

DIGITAL TEMPERATURE READOUT CALIBRATION

Digital Temperature Readout ID: 23 WCS
Readout Description: Control Box
Date: 1/4/2022
Performed By: JG, NG, RM, DA, AS

Calibrated Thermocouple ID: TC-CAL
T1 Reference Thermometer ID: 661731
T2 Reference Thermometer ID: 805002770
T3 Reference Thermometer ID: 805002770

T/C I.D.	Readout	T/C - Readout °F				Reference Thermometer °F				Difference		
TC-CAL	I.D.	Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T3 (OIL)	23 WCS	355	355	355	355	350	350	350	350	5.0	0.6%	Pass
T2 (Boiling H_2O)	23 WCS	217	217	217	217	212	212	212	212	5.0	0.7%	Pass
T1 (Ice/Water)	23 WCS	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)

Thermocouple Source Readings

	T/C Source S/N	T/C - Readout °F				T/C Source °F				Difference		
		Reading 1	Reading 2	Reading 3	Average	Reading 1	Reading 2	Reading 3	Average	°F	%, (°R)	
T4 (~650 F)	129103	654	654	654	654	650	650	650	650	4.0	0.4%	Pass
T3 (~370 F)	129103	375	375	375	375	370	370	370	370	5.0	0.6%	Pass
T2 (~212 F)	129103	214	214	213	214	212	212	212	212	1.7	0.2%	Pass
T1 (~32 F)	129103	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: 131
Date: 1/7/2022
Performed By: JG, NG, RM, DA, A

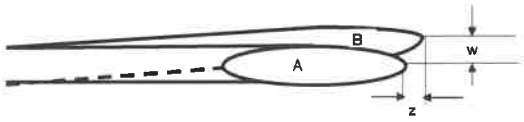
Calibrated Digital Temperature Readout ID: PTC -79
T1 Reference Thermometer ID: 661731
T2 Reference Thermometer ID: 805002770
T3 Reference Thermometer ID: 805002770

T/C I.D. 131	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 (OIL)	PTC -79	350	350	350	350	345	345	345	345	5.0	0.6%	Pass
T2 (Boiling H_2O)	PTC -79	214	214	214	214	212	212	212	212	2.0	0.3%	Pass
T1 (Ice/Water)	PTC -79	35	35	35	35	32	32	32	32	3.0	0.6%	Pass

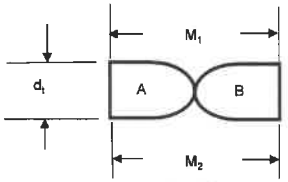
1) Difference % (°R) = Difference (°F) / (Average Tref + 460)
2) Pass if all Differences are less than 1.5% (°R)

MONTROSE

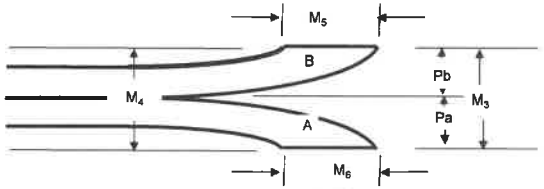
S Type Pitot Tube Dimensional Calibration Record



Side View



End View



Top View

Acceptability Criteria			z < 1/8"	w < 1/32"	Yes	"3/16" < Dt < 3/8"	n/a	n/a	n/a	n/a	n/a	n/a	10 degrees	5 degrees	1.05 Dt < P < 1.5 Dt	
Pitot ID	Date	Calibrated By	Side View, Impact openings Properly aligned, z < 1/8"	Side View, Impact openings Properly aligned, w < 1/32"	Pa = Pb	Tubing Diameter, dt	M1	M2	M3	M4	M5	M6	Average Face Opening Plane Angle, offset from perpendicular to transverse axis	Average Face Opening Plane Frontal Angle from parallel to Longitudinal Axis	Ratio of P/Dt	Status
131	1/5/22	NG	Y	Y	Y	0.372	0.940	0.944	0.948	0.949	0.434	0.434	-0.3	-0.1	1.3	Pass
068	1/5/22	NG	Y	Y	Y	0.371	0.943	0.939	0.941	0.939	0.425	0.425	0.3	0.1	1.3	Pass

Notes: Reference "A Type-S Pitot Tube Calibration Study", Robert F. Vollaro, October 15, 1975
If tube is not visibly deformed it is assumed that Pa ≈ Pb = .5 x avg. of M1 & M2, and that average face opening plane angles represent individual angles to tube axis

MONTROSE
AIR QUALITY SERVICES

NOZZLE CALIBRATION

Nozzle #	Date	Performed By	D_1	D_2	D_3	Average D_n	Status
31	1/12/18	JG	0.197	0.197	0.197	0.197	Pass
197T	1/12/18	JG	0.202	0.202	0.202	0.202	Pass

Appendix A.5
Photos



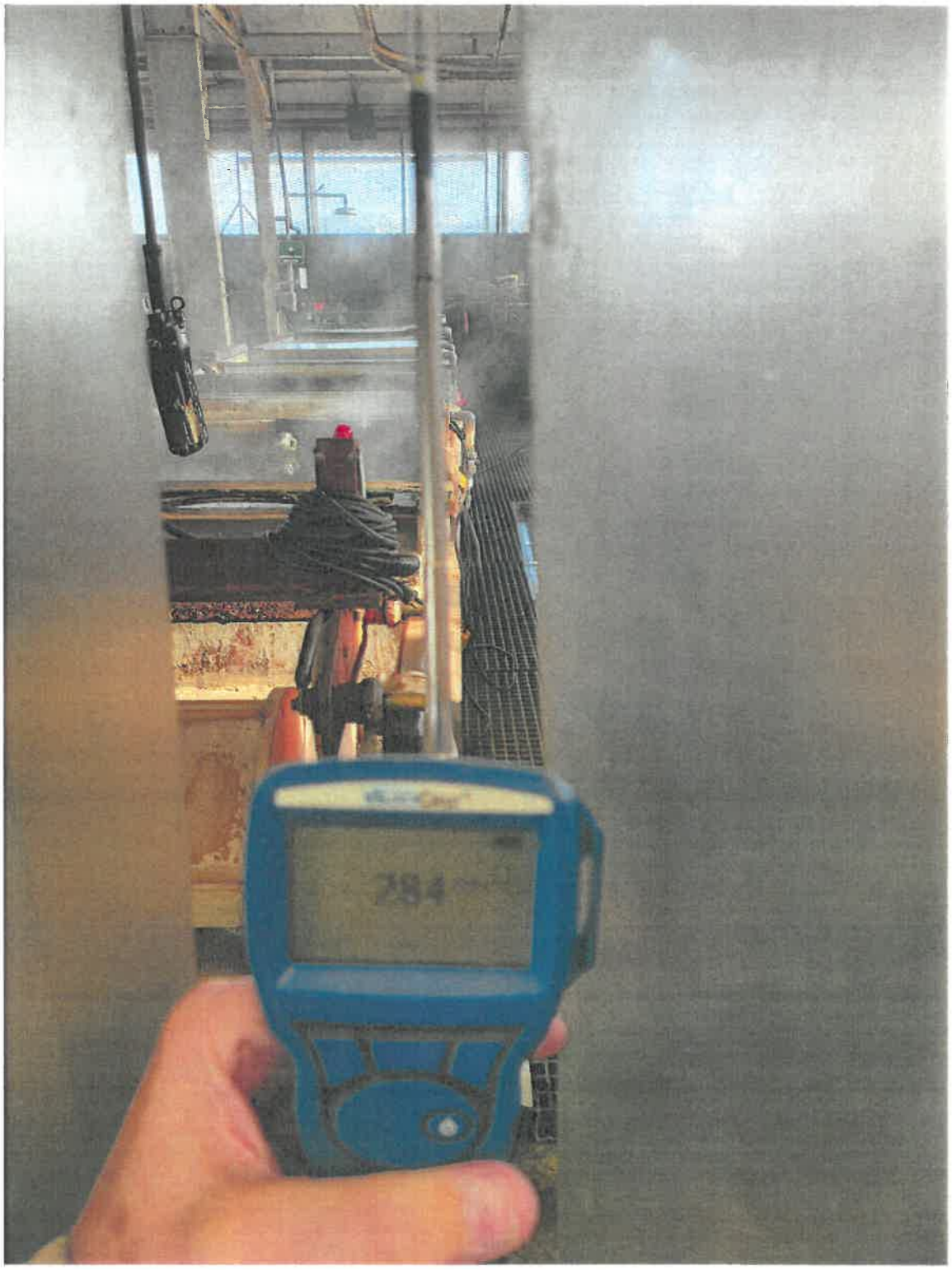
East Curtains Inflow Tell-tale



East Curtains 310 FPM Inflow 4/6/2022



Center Curtains Inflow Tell-tale



Center Curtains 284 FPM Inflow 4/6/2022

APPENDIX B
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 C
QUALITY ASSURANCE

Appendix C.1
Quality Assurance Program Summary

QUALITY ASSURANCE PROGRAM SUMMARY

As part of Montrose Air Quality Services, LLC (MAQS) ASTM D7036-04 certification, MAQS is committed to providing emission related data which is complete, precise, accurate, representative, and comparable. MAQS 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: MAQS has assigned an internal QA Officer who is responsible for administering all aspects of the QA program.

Internal Quality Assurance Manual: MAQS 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 MAQS QA efforts. The manual is revised upon periodic review and as MAQS 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. MAQS 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 MAQS 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 MAQS 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: MAQS maintains current copies of EPA, ARB, and SCAQMD Source Test Manuals and Rules and Regulations.

Chain-of-Custody: MAQS maintains chain-of-custody documentation on all data sheets and samples. Samples are stored in a locked area accessible only to MAQS source test personnel. Data sheets are kept in the custody of the originator, program manager, or in locked storage until return to MAQS 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)

The following safety measures will be 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 will be used that meet applicable regulatory agency requirements.

Appendix C.2
SCAQMD, CARB, and STAC Certifications

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

September 1, 2021

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 reviewed your renewal letter under the South Coast Air Quality Management District's Laboratory Approval Program (LAP). We are pleased to inform you that your firm is approved for the period beginning September 30, 2021, and ending September 30, 2022 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 5.1, 5.2, 5.3, 6.1
South Coast AQMD Methods 10.1 and 100.1	South Coast AQMD Methods 25.1 and 25.3 (Sampling)
USEPA CTM-030 and ASTM D6522-00	Rule 1121/ 1146.2 Protocol
Rule 1420/1420.1/1420.2 – (Lead) Source and Ambient Sampling	

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.

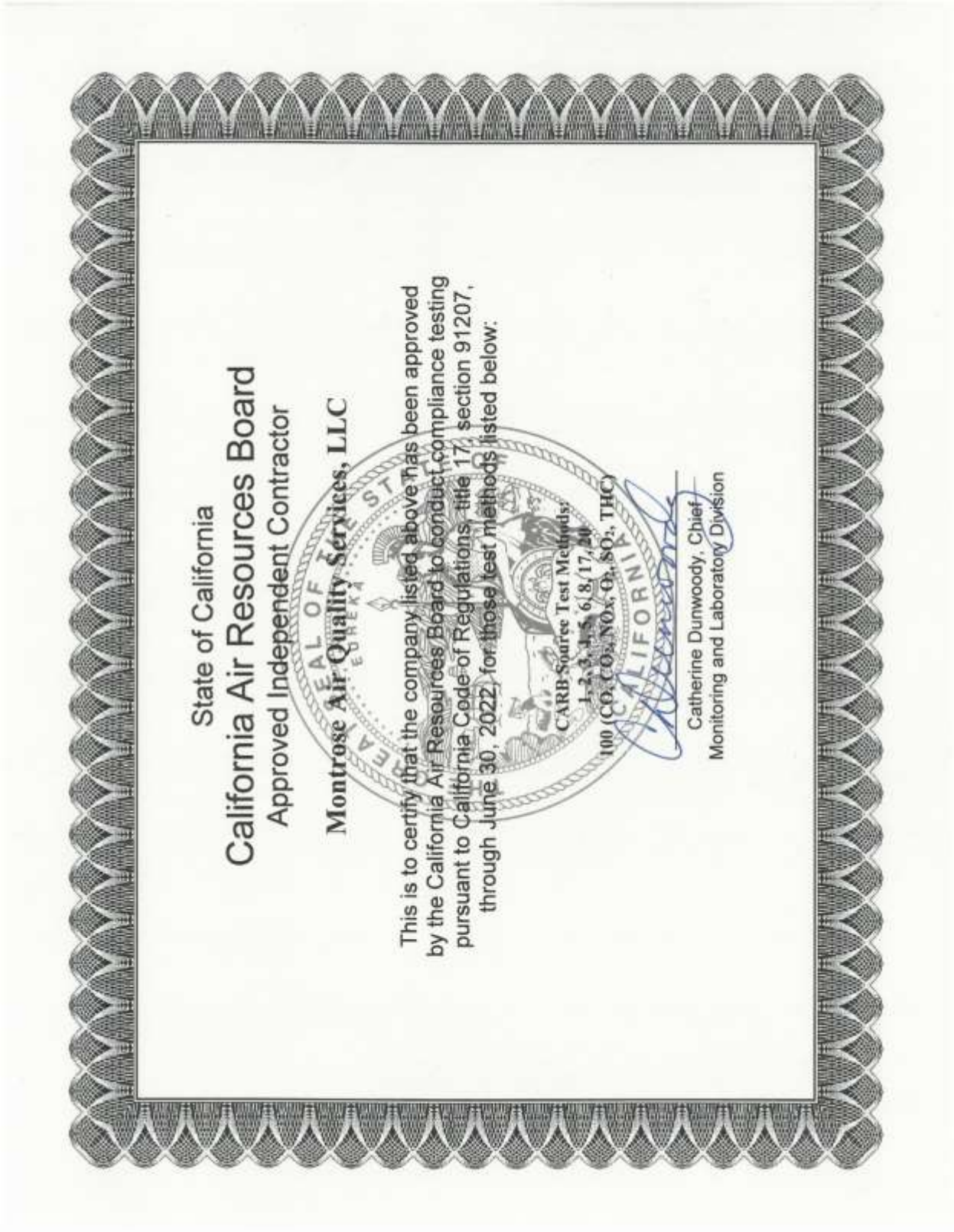
Sincerely,

D. Sarkar

Dipankar Sarkar
Program Supervisor
Source Test Engineering

DS:CE
Attachment

210901 LapRenewal.doc



State of California

California Air Resources Board

Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

CARB Source Test Methods:

1, 2, 3, 4, 5, 6, 8, 17, 20

100 (CO_2, CO, NOx, O_2, SO_2, THC)

Catherine Dunwoody, Chief
Monitoring and Laboratory Division

State of California

California Air Resources Board

Approved Independent Contractor

Montrose Air Quality Services, LLC

This is to certify that the company listed above has been approved by the California Air Resources Board to conduct compliance testing pursuant to California Code of Regulations, title 17, section 91207, through June 30, 2022, for those test methods listed below:

U.S. EPA Source Test Methods 201A, 202 and 205
Visible Emissions Evaluation

Catherine Dunwoody, Chief
Monitoring and Laboratory Division



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 4th day of February 2022.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3925.01
Valid to February 29, 2024

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

Appendix C.3
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:	**18989**
Date(s) Tested:	**4/5 and 4/6/2022**
Facility Name:	**Bowman Plating**
Equipment Address:	**2631 E. 126th Street**
	Compton, California 90224
Equipment Tested:	**Anodizing Room**
Device ID, A/N, P/N:	**A/N 622505**

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:** **6/9/2022**

Joe Rubio	**Client Project Manager**	**(714) 279-6777**	**6/9/2022**
(Name)	(Title)	(Phone)	(Date)

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

APPENDIX D
EQUIPMENT PERMITS

PERMIT TO CONSTRUCT

Granted as of 9/25/2020

ID 18989

Legal Owner or Operator:

BOWMAN PLATING CO INC
P.O. BOX 5205
COMPTON, CA 90224

Equipment Location: 2631 E 126TH ST, COMPTON, CA 90222-1599

Equipment Description :

Air Pollution Control System for Anodizing Room Housing the Chromic Acid Anodizing, Chemfilm, Titanium Etch, and Sulfuric Acid Hard Anodizing Lines, Consisting of:

1. Permanent Total Enclosure (PTE) for Anodizing Room, 87'-6" W. x 37'-6" L. x Maximum 25'-0" H., with One Automatic Sliding Door, One Self-closing Man Door, and an Exhaust System with a 15-H.P. Exhaust Fan, 20,000 scfm Maximum Venting to:

2. Two Identical Chevron Mist Eliminators in Parallel, each a Munters, Model No. T-100, each Single Stage, and each 3'-4" W. x 4'-8" L. x 3'-4" H.

3. Filtration System, 9'-0" W. x 12'-0" L. x 7'-0" H., with Twelve 24" x 24" x 1" Pre-filters and Twelve 24" x 24" x 12" ULPA Filters.

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 system shall be in full use when any of the equipment it serves is in operation. For the purposes of this condition, rectified tanks are in operation when electric current is running through the bath, heated tanks are in operation when their bath temperature is 140F or higher, and unheated tanks containing volatile acids are uncovered.

4. The exhaust stack shall be oriented and maintained to ensure emissions from this equipment are discharged vertically to the outside atmosphere without obstruction. If the stack is equipped with a weather cap, it shall exclusively utilize a butterfly damper or equivalent as determined by the South Coast AQMD.

5. The Anodizing Room shall be maintained as a Permanent Total Enclosure (PTE) per EPA Method 204.

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6. The operator shall install and maintain a minimum of one building digital differential pressure monitoring system on the wall containing the automatic sliding door. The operator shall install, operate, and maintain a digital differential pressure monitoring system to indicate, in inches of water column, the static pressure differential within the PTE. When in operation, the measured pressure differential shall be greater than or equal to 0.007 inch of water.

   This limit is subject to change based on initial start-up of the equipment and results from the source test.

7. The digital differential pressure monitoring systems shall be certified by the manufacturer to be capable of measuring negative pressures containing values in the range of 0.005 to 0.11 inches of water and capable of recording data in increments of 0.001 inch of water.

8. The digital differential pressure monitoring system shall be equipped with a continuous recorder. To demonstrate compliance with Condition No. 6, the operator shall maintain the pressure in the PTE such that the average pressure in any rolling 15-minute period does not fall below the level specified in Condition No. 6. The rolling 15-minute averages shall include at least one reading per minute, and electronic records shall be retained on file.

9. The operator shall calibrate the digital differential pressure monitoring system once every 12 calendar months.

10. The operator shall maintain the PTE free of significant cracks, gaps, corrosion or other deterioration that could cause chromium bearing material to be released from the PTE.

11. The operator shall inspect the PTE at least once per month. The operator shall repair any gaps, leak points, or other possible routes for emissions of chromium to the atmosphere within seventy-two hours of identification unless the operator obtains written approval for an extension from the South Coast AQMD before the repair period is exceeded.

12. This equipment shall be operated in compliance with all applicable requirements of Rules 1155 and 1469.

13. The ULPA filters used in this equipment shall be individually DOP (or equivalent) tested with 0.12 micron particles and certified by the manufacturer to have an efficiency of not less than 99.999%.

14. Mechanical gauges shall be installed and maintained to indicate, in inches of water column, the static pressure differential across each of the following:

    A. Each of the chevron mist eliminators.

    B. The pre-filters.

    C. The ULPA filters.

    The scale on the gauges shall not exceed two times the limit specified in Condition No. 15.

15. In operation, the pressure differential shall remain within the following ranges:

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A. 0 to 0.3 inches of water column across each of the chevron mist eliminators.

B. 0.10 to 1 inch of water column across the pre-filters.

C. 0.30 to 1.20 inches of water column across the ULPA filters.

These limits are subject to change based on initial start-up of the equipment and results from the source test.

16. The gauges shall be located so that they can be easily viewed and are in clear sight of the operation or maintenance personnel.

17. The specific operation and maintenance activities identified in the Operation and Maintenance (O&M) plan shall be instituted if the static pressure differential exceeds the following:

0.25 inch of water column across each of the chevron mist eliminators
0.95 inch of water column across the pre-filters
1.10 inches of water column across the ULPA filters

These limits are subject to change based on initial start-up of the equipment and results from the source test.

18. The owner/operator shall maintain a weekly record of the static pressure differential to verify compliance with Condition No. 15.

19. The combined total hexavalent chromium emissions discharged to the atmosphere from Chromic Acid Anodize Tank No. 301, Dilute-Chromic Seal Tank No. 314, and Sodium Dichromate Seal Tank No. 321 shall not exceed 0.0015 milligrams per ampere-hour as measured at the outlet of the air pollution control systems serving these tanks.

20. The owner/operator shall comply with the inspection and maintenance requirements listed below:

A. Chevron mist eliminator maintenance per manufacturer's specifications.

B. Annual calibration of the devices monitoring pressure drop and temperature gauges according to respective manufacturer specification.

C. Replace the ULPA filters per manufacturer's specifications.

21. The owner/operator shall maintain inspection and maintenance records for the chevron mist eliminators and the ULPA filters and the monitoring equipment according to the manufacturer's recommendations to document compliance with the inspection and maintenance requirements of this permit. The record shall identify:

A. The device inspected

B. The date and time of inspection

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C. The working condition of the device during the inspection

D. Any maintenance activities performed on the ULPA filters or the parameter monitoring system

E. Any actions taken to correct deficiencies found during the inspection

22. The operator shall prepare an Operation and Maintenance (O&M) Plan pursuant to Rule 1469. The O&M plan shall incorporate the inspection and maintenance requirements identified in this permit and shall include the following elements:

A. A standardized checklist to document the operation and maintenance of Tank Nos. 301, 314, and 321, the air pollution control systems, and the process and control system monitoring equipment.

B. Procedures to be followed to ensure that equipment is properly maintained.

23. The operator shall keep the written O&M Plan on record, and after it is developed, to be made available for inspection upon request by South Coast AQMD personnel. Any changes made to the plan shall be documented in an addendum to the plan and signed and dated by the operator or appropriate designee.

24. The owner/operator shall report breakdowns as required by South Coast AQMD Rule 430, and the owner/operator shall maintain records of the occurrence, duration, cause (if known), and action taken on each breakdown.

25. The operator shall maintain records of any exceedances of the emission limit and/or parameter limits contained in this permit. the records shall include the date of occurrence, the duration, causes (if known), and where possible, the magnitude of any excess emissions.

26. The operator shall retain purchase orders for filters and waste manifest records for filter disposal.

27. The operator shall maintain all documentation supporting the notification and report(s) required by Rule 1469.

28. All records required by this permit shall be retained on file for five years, with the most recent two years' kept on site. All records shall be made available to any South Coast AQMD representative upon request.

29. The operator shall conduct a source test for total chromium and hexavalent chromium in parallel and simultaneously to the source test conducted for APC #1 under A/N 611650, pursuant to the following requirements to measure the total chromium and hexavalent chromium emissions at the outlet of the air pollution control equipment.

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. The source test shall be conducted by an independent, qualified testing laboratory and conducted in accordance with acceptable South Coast AQMD procedures and test methods outlined in applicable South Coast AQMD rules and regulations. The test shall be monitored by a South Coast AQMD representative.

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C. A minimum of three test runs using U.S. EPA Method 306 shall be performed while all tanks in the PTE for the Anodizing Room are in operation at maximum load (electric current and parts processed).

D. The test shall be conducted to measure total chromium and hexavalent chromium emissions in units of pounds per hour and milligrams per dry standard cubic feet, stack temperature, the operating parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1 and ST-2.

E. The following data shall be monitored and recorded during each test run.
   i. Concentration of total chromium and hexavalent chromium in Tank Nos. 301, 305, 312, 314, 320, 321, and 610 in percent by weight.
   ii. Quantity of water, total chromium, and hexavalent chromium added to the tanks.
   iii. Pressure drops across each chevron mist eliminator and the ULPA filters. The pressure drop data shall be recorded at intervals of time not less than once every hour.
   iv. Type and quantity of parts processed, and number of batches of parts in each tank.
   v. Operating temperature of the above tanks not less than once every hour.

30. The operator of this equipment shall conduct a source test, pursuant to the following requirements to measure the Total PM, PM10, and nickel at the outlet of the air pollution control equipment:

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. The source test shall be conducted by an independent, qualified testing laboratory and conducted in accordance with acceptable South Coast AQMD procedures and test methods outlined in applicable South Coast AQMD rules and regulations. The test shall be monitored by a South Coast AQMD representative.

C. The test shall be performed while all tanks in the PTE for the Anodizing Room are in operation at maximum load (current and parts processed).

D. Emissions shall be reported in units of pounds per hour and grain per standard cubic feet (PM only).

E. The following data shall be monitored and recorded during the source test.
   i. Concentration of nickel compounds in Tank No. 310 in percent by weight.
   ii. Quantity of water and nickel compounds added to the tanks.
   iii. Type and quantity of parts processed in Tank No. 310.
   iv. Operating temperature of Tank No. 310 not less than once every hour.

31. Source test protocol(s) shall be submitted to the South Coast AQMD no less than 30 calendar days from the date of issuance of this Permit to Construct, and shall be approved by the South Coast AQMD before the test commences. The protocol shall include the following, at a minimum:

A. The identity of the testing laboratory.

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B. A statement from the testing laboratory certifying it meets the criteria in South Coast AQMD Rule 304(k).

C. A list of contaminants to be tested.

D. Testing procedures for each contaminant and a description of all sampling and analytical procedures to be used.

E. The location of points of sampling. Sampling facilities shall comply with South Coast AQMD "Guidelines for Construction of Sampling and Testing Facilities" pursuant to Rule 217.

F. Quality assurance measures.

G. Experience in testing procedures.

H. Proposed operating conditions during the test.

32. The owner or operator of this equipment shall conduct a source test under the following conditions:

A. The source test shall be conducted no later than 30 calendar days after the latter of start-up or source test protocol approval unless otherwise approved in writing by the South Coast AQMD.

B. A source test protocol shall be submitted to the South Coast AQMD no later than 30 days after the initial start-up of this equipment unless otherwise approved in writing by the South Coast AQMD. The test protocol shall be approved in writing by the South Coast AQMD before the test commences. The test protocol shall include the completed South Coast AQMD Forms ST-1 and ST-2 specifying the proposed operating conditions of the equipment during the test, the identity of the testing laboratory, a statement from the test laboratory certifying it mees the criteria in South Coast AQMD Rule 304(k), and a description of the sampling and analytical procedures to be used.

C. The source test(s) shall consist of, but may not be limited to demonstrating that PTE for Anodizing Room meets the requirements as a PTE as specified under US EPA Method 204, and capture efficiency. The requirement shall be demonstrated while all equipment vented by the air pollution control system is in operation.

33. The operator shall notify the South Coast AQMD at least 14 calendar days prior to the source test(s), or within a time period agreed upon by the South Coast AQMD.

34. Source test report(s) shall include, at a minimum, the parameters outlined in the permit conditions, and all items listed in the South Coast AQMD Source Test Checklist Form ST-1 and ST-2. Two copies of the report shall be submitted to the South Coast AQMD no later than 60 calendar days after the final source test date. A copy of the source test report shall be kept on file and shall be made available to South Coast AQMD personnel upon request.

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35. There shall be no source of compressed air located within 10 feet of any natural draft openings (NDOs) of the Anodizing Room PTE. In addition, the operator shall not use compressed air for any operations that are conducted within 10 feet of any NDOs of the Anodizing Room PTE.

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PERMIT TO CONSTRUCT

Approval or denial of this application for Permit to Operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD).

Please notify KEVIN NI at (909) 396 - 2462 when construction of equipment is complete.

This Permit to Construct is based on plans, specifications, and data submitted as it pertains to the release of air contaminants and control measures to reduce air contaminants. No approval or opinion concerning safety and other factors in design, construction or operation of equipment is expressed or implied.

This Permit to Construct shall serve as a temporary Permit to Operate provided the Executive Officer is given prior notice of such intent to operate.

This Permit to Construct will become invalid if the Permit to Operate is denied or if the application is cancelled. This PERMIT TO CONSTRUCT SHALL EXPIRE ONE YEAR FROM THE DATE OF ISSUANCE unless an extension is granted by the Executive Officer.

By

AMIR DEJBAKHSH
Deputy Executive Officer

DMB/KN03

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

Name: S. Hugh Brown
Title: Client Project Manager
Region: West
Email: SBrown@montrose-env.com
Phone: (714) 279-6777

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

APPENDIX E. CORRESPONDENCE

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

Via Email and CERTIFIED RETURN RECEIPT to Addressee

November 6, 2024

Dan Cunningham
Bowman Plating Co. Inc.
2631 East 126th Street
Compton, CA 90222-1599

Subject: Approval of Modified AB 2588 Health Risk Assessment (HRA) for Bowman Plating Co. Inc. (South Coast AQMD Facility ID No.: 18989)

Dear Mr. Cunningham:

This letter provides approval of the Health Risk Assessment (HRA) submitted by Bowman Plating Co. Inc. (Bowman) and modified by South Coast Air Quality Management District (South Coast AQMD). The HRA was submitted pursuant to the Air Toxics "Hot Spots" Act (AB 2588) and South Coast AQMD's Rule 1402. As noted in the modified HRA Summary Form (Attachment A), the risks posed by Bowman are above the Notification Risk Level and the Action Risk Level specified in Rule 1402.

On September 16, 2022, South Coast AQMD rejected the HRA submitted by Bowman and identified deficiencies in the HRA. As required by the rejection letter and in accordance with the extension granted by staff on November 10, 2022, Bowman submitted a revised HRA on November 29, 2022. Upon review of the revised HRA, staff found that the unit rate emission factor for the Anodizing Room area source was incorrect. Since Bowman previously received an HRA rejection, South Coast AQMD elected to modify and approve the HRA in accordance with Rule 1402(e)(2)(D).

South Coast AQMD submitted the HRA to OEHHA for review on April 19, 2023, noting the usage of an incorrect emission rate in the HRA. On June 7, 2023, South Coast AQMD received comments back from OEHHA confirming the HRA was consistent with OEHHA HRA guidelines.

Next Step: ***Public Notification***

As summarized in Attachment A, the cancer risk at the Maximum Exposed Individual Resident (MEIR) receptor is estimated to be 673.5 chances in-one-million. The cancer risk at the Maximum Exposed Individual Worker (MEIW) receptor is estimated to be 44.2 chances in-one-million. The

cancer risk is due to hexavalent chromium emissions. The acute hazard index at the Point of Maximum Impact (PMI) is estimated to be 2.89 due to nickel emissions.

As stated in South Coast AQMD's Public Notification Procedures[1], public notification typically consists of three components: distribution of the approved HRA, distribution of public notification materials, and a public meeting. Bowman must distribute the facility's approved HRA and public notification materials pursuant to South Coast AQMD Public Notification Procedures within **30** days of the approval date on this letter, or **December 6, 2024**. A map showing the areas with health risk levels exceeding the Notification Risk Level is also attached to this letter (Attachment B). Please note that although there are additional health scenarios that exceed the Notification Risk Levels, the isopleths fall within the bounds of the isopleths shown in Attachment B. The public notification materials must be approved by South Coast AQMD and sent to all addresses within the notification area contour (cancer risk of 10 chances in-one-million or greater and non-cancer acute hazard of 1.0 or greater) found in Attachment B. The public meeting must take place within **30** days of the distribution of public notification materials.

Future Plans: ***Risk Reduction***

Because the Rule 1402 Action Risk Level was exceeded in the approved HRA, Bowman shall submit a Risk Reduction Plan (RRP) within 120 days of this letter pursuant to Rule 1402(f)(1) to reduce the impact of total facility emissions below the Rule 1402 Action Risk Level.

South Coast AQMD will post the approved HRA on our website. South Coast AQMD staff did not find any information marked confidential in the submitted HRA. If there is any business confidential information contained within the submitted HRA, please let us know and provide us with a redacted version of the HRA, both in electronic format and hardcopy, within two weeks, or no later than **November 20, 2024**.

In addition, given the short timeframe for conducting public notification, please schedule a meeting with us within one week to discuss the next steps for public notification. If you have any questions regarding this letter, please contact either Matthew Lee, Air Quality Engineer II, at (909) 396-2053, or Victoria Moaveni, Program Supervisor, at (909) 396-2455.

Sincerely,

Scott A. Epstein

Scott A. Epstein, Ph.D.
Planning & Rules Manager
Planning, Rule Development & Implementation

[1] http://www.aqmd.gov/docs/default-source/planning/risk-assessment/pn_procedures.pdf

Attachments:

A. HRA Summary Form
B. Public Notification Area Map

SE:VM:TT:ML

South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4182
(909) 396-2000 • www.aqmd.gov

HEALTH RISK ASSESSMENT SUMMARY FORM

(Required in Executive Summary of HRA)

Facility Name : Bowman Plating
Facility Address: 2631 East 126th Street
Compton, CA 90222
Type of Business: Metal Plating
SCAQMD ID No.: 18989

A. Cancer Risk

(One in a million means one chance in a million of getting cancer from being constantly exposed to a certain level of a chemical over a period of time)

1. Inventory Reporting Year : 2019
2. Maximum Cancer Risk to Receptors : *(Offsite and residence = 30-year exposure, worker = 25-year exposure)*
   a. Offsite 853.9 in a million Location: Receptor 3837 | UTME 386749.6 | UTMN 3753792.1
   b. Residence 673.5 in a million Location: Receptor 2229 | UTME 386756 | UTMN 3753797
   c. Worker 44.2 in a million Location: Receptor 2228 | UTME 386751 | UTMN 3753797
3. Substances Accounting for 90% of Cancer Risk: Hexavalent Chromium
   Processes Accounting for 90% of Cancer Risk: Anodizing Room
4. Cancer Burden for a 70-yr exposure: *(Cancer Burden = [cancer risk] x [# of people exposed to specific cancer risk])*
   a. Cancer Burden 1.42E-01
   b. Number of people exposed to >1 per million cancer risk for a 70-yr exposure 36,241
   c. Maximum distance to edge of 70-year, 1 x 10^{-6} cancer risk isopleth (meters) 2480 meters

B. Hazard Indices

[Long Term Effects (chronic) and Short Term Effects (acute)]
(non-carcinogenic impacts are estimated by comparing calculated concentration to identified Reference Exposure Levels, and expressing this comparison in terms of a "Hazard Index")

1. Maximum Chronic Hazard Indices:
   a. Residence HI: 0.80 Location: UTME 386756 | UTMN 3753797 toxicological endpoint: RESP
   b. Worker HI : 0.79 Location: UTME 386751 | UTMN 3753797 toxicological endpoint: RESP
2. Substances Accounting for 90% of Chronic Hazard Index: Nickel, Sulfuric Acid, Silica Crystalline
3. Maximum 8-hour Chronic Hazard Index:
   8-Hour Chronic HI: 0.18 Location: UTME 386751 | UTMN 3753797 toxicological endpoint: RESP
4. Substances Accounting for 90% of 8-hour Chronic Hazard Index: Nickel
5. Maximum Acute Hazard Index:
   PMI: 2.89 Location: UTME 386769.6 | UTMN 3753 toxicological endpoint: IMMUN
6. Substances Accounting for 90% of Acute Hazard Index: Nickel

C. Public Notification and Risk Reduction

1. Public Notification Required? X Yes ____ No
   a. If 'Yes', estimated population exposed to risks > 10 in a million for a 30-year exposure, or an HI >1
   1463
2. Risk Reduction Required? X Yes ____ No

Attachment B

Public Notification Map

Residential Cancer Risk 10 chances in-one-million

