

# AIR MONITORING SUMMARY REPORT



**Sims Metal Management  
699 Seaport Boulevard  
Redwood City, California**

***PREPARED FOR:***

**CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL  
HAZARDOUS WASTE MANAGEMENT PROGRAM  
PO BOX 806  
SACRAMENTO, CALIFORNIA 95812**

***PREPARED BY:***

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Project No. S9850-03-21  
December 30, 2016

Edward Benelli  
Hazardous Substances Engineer  
Hazardous Waste Management Program  
Department of Toxic Substances Control  
P.O. Box 806  
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Subject: AIR MONITORING SUMMARY REPORT  
SIMS METAL MANAGEMENT  
699 SEAPORT BLVD  
REDWOOD CITY, CALIFORNIA 94063-2712  
CONTRACT NO. 15-T4124 A-1

Dear Mr. Benelli:

In accordance with the above-referenced contract, Geocon has performed air monitoring at and prepared the enclosed Air Monitoring Summary Report for the above-referenced metal shredding/recycling facility. The California Department of Toxic Substances Control (DTSC) requested air monitoring to evaluate the potential for off-site migration of airborne particulates, toxic organic compounds, and asbestos from metal shredding/recycling facilities. The enclosed report summarizes the air monitoring activities performed including sample collection, laboratory analysis, and the results of a data quality assessment. The DTSC intends to use these results to assess the potential impacts from air emissions from metal shredding/recycling operations.

We appreciate the opportunity to work with the DTSC on this project. Please let us know if you have questions concerning the report or we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

Josh Ewert, PG  
Project Geologist



Jim Brake, PG  
Senior Geologist



## IDENTIFICATION FORM

**Document Title:** Air Monitoring Summary Report  
Sims Metal Management

**Site Location:** 699 Seaport Blvd, Redwood City, CA 94063-2712


**Contract No.:** 15-T4124 A-1

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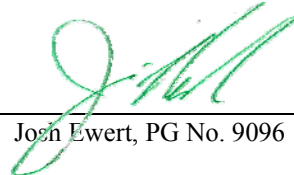
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Approval:  Date: December 30, 2016  
Jim Brake, PG No. 5753

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Approval:  Date: December 30, 2016  
Josh Ewert, PG No. 9096

This report has been prepared for the California Environmental Protection Agency (CalEPA), DTSC. The material herein is not to be disclosed to, discussed with, or made available to any person(s) for any reason without prior express approval of the appropriate responsible DTSC officer.

## APPROVAL FORM

**Document Title:** Air Monitoring Summary Report  
Sims Metal Management

**Site Location:** 699 Seaport Blvd, Redwood City, CA 94063-2712


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**Prepared by:** Geocon Consultants, Inc.  
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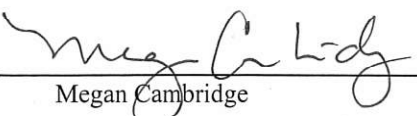
**Geocon Project Number:** S9850-03-21

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Edward Benelli

**DTSC Project Manager:**

Approval:  Date: 1/25/17  
Megan Cambridge

## **DISTRIBUTION LIST**

**Edward Benelli, Contract Manager** (1 hard-copy, e-copy)

California Environmental Protection Agency

DTSC

Hazardous Waste Management Program

**Megan Cambridge, Project Manager** (1 hard-copy, e-copy)

California Environmental Protection Agency

DTSC

Hazardous Waste Management Program

**Josh Ewert, PG and Jim Brake, PG** (project file)

Geocon Consultants, Inc.

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ABBREVIATIONS AND ACRONYMS	
aka	Also known as
AHERA	Asbestos Hazard Emergency Response Act
AQMD	Air Quality Management District
CFR	Code of Federal Regulations
CLN	CHESTER LabNet
COC	Chain-of-custody
COPC	Chemical of potential concern
DTSC	Department of Toxic Substances Control
EAT	Eurofins Air Toxics
ECS	Eurofins Calscience
EMSL	EMSL Analytical, Inc.
HSP	Health and safety plan
in-Hg	Inches of mercury pressure
L/min	Liters per minute
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate
m <sup>3</sup>	Cubic meter
m <sup>3</sup> /min	Cubic meter per minute
MPH	Miles per hour
MRP	Metal recovery plant
NELAP	National Environmental Laboratory Accreditation Program
NOAA	National Oceanic and Atmospheric Administration
NVLAP	National Voluntary Laboratory Accreditation Program
PCB	Polychlorinated biphenyls
PM <sub>10</sub>	Particulate matter less than 10 µm
PM <sub>2.5</sub>	Particulate matter less than 2.5 µm
PORC	Port of Redwood City
PTFE	Polytetrafluoroethylene
PUF	Polyurethane foam
QA/QC	Quality assurance/ quality control
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
SARB	SA Recycling Bakersfield
SARTI	SA Recycling Terminal Island
SB	Senate Bill
SMM	Sims Metal Management
T1/T2/T3	Test 1/Test 2/Test 3
TEM	Transmission electron microscopy
Tisch	Tisch Environmental
TOS	Toxic organic species
TSP	Total suspended particulates
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compounds
XRF	X-ray fluorescence
°F	Degrees Fahrenheit



**AIR MONITORING SUMMARY REPORT  
SIMS METAL MANAGEMENT  
CONTRACT NO. 15-T4124 A-1**

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## **1.0 INTRODUCTION**

Geocon Consultants, Inc. prepared this Air Monitoring Summary Report in compliance with California Department of Toxic Substances Control (DTSC) Contract Number 15-T4124 A-1, Start Work Order #1. This report summarizes air monitoring performed at Sims Metal Management (SMM) located at 699 Seaport Boulevard (the Site) in Redwood City, California (Figure 1, Vicinity Map). The work was conducted in accordance with the DTSC-approved *Sampling and Analysis Plan* (SAP) dated September 30, 2016 (Geocon, 2016).

### **1.1 Background**

Per the DTSC's Start Work Order, metal shredding/recycling facilities process end-of-life vehicles, appliances, and other forms of scrap metal to recover iron, steel, aluminum, and copper for re-use in new metal products. The metal shredding process generates large amounts of metal shredder waste, which consists of plastics, rubber, glass, foam, fabrics, automobile fluids, dirt, and residual metals. The metal shredding process can also potentially create environmental contamination in the forms of stormwater runoff, contaminated soil, contaminated groundwater, and fugitive air emissions. The purpose of air monitoring was to assess the potential for fugitive air emissions from facilities generating metal shredding waste.

Although metal shredding waste typically does not exceed the federal regulatory levels established by the Resource Conservation and Recovery Act (RCRA), metal shredder waste has been regulated as a California-only, non-RCRA hazardous waste since 1984 because residual levels of copper, lead, and zinc often exceed California's more stringent regulatory thresholds. Six large metal shredding facilities are currently authorized by DTSC to conduct metal shredding operations. Five of the facilities treat the metal shredding waste with a cement product which is intended to reduce the solubility of the metals and render the waste less hazardous. The sixth facility transfers their waste out of state for further processing. The treated waste is then disposed of in Class II or Class III landfills, where it is largely used as alternative daily cover.

Senate Bill (SB) 1249 (Hill, Chapter 756, Statutes of 2014) became law on January 1, 2015 and authorizes DTSC "to adopt regulations establishing alternative management standards for metal shredding facilities for hazardous waste management activities within the jurisdiction of the Department of Toxic Substances Control, that would apply in lieu of the hazardous waste management standards if the department performs specified actions" (SB 1249, Hill). SB 1249 authorizes the DTSC to consider the development of alternative management standards for metal shredding facilities. The

DTSC has developed a 3-year plan to conduct the evaluation authorized by SB 1249, which includes an assessment of the potential impacts from air emissions.

The SAP describes air monitoring activities at the following metals shredding facilities:

- SMM in Redwood City, California,
- SA Recycling – Bakersfield (SARB) located at 2000 E. Brundage Lane in Bakersfield, California, and
- SA Recycling – Terminal Island (SARTI) located at 901 New Dock Street in Terminal Island, California.

These three facilities were selected to represent examples of larger (SARTI, SMM) and smaller (SARB) metal shredding/recycling facilities that operate in a variety of different geographic conditions and under the jurisdiction of various local Air Quality Management Districts (AQMD). At each facility Geocon staff performed three consecutive 24-hour air monitoring events. Information from the air monitoring events will be used to develop regulations establishing alternative management standards for metal shredding facilities for hazardous waste management activities.

## 1.2 Responsible Agency

DTSC is the lead regulatory agency overseeing this air monitoring program. DTSC regulates hazardous waste in California under the authority of RCRA and the California Health and Safety Code.

## 1.3 Project Contact Information

The title/responsibility, names, phone numbers, and e-mail addresses of personnel associated with the air monitoring project are summarized in Table T1.3:

Table T1.3 – Personnel Contact Information and Title				
Agency/Company	Name	Title/Responsibility	Phone Number	E-mail Address
DTSC	Ed Benelli	Contract Manager	916.324.6564	<a href="mailto:Edward.Benelli@dtsc.ca.gov">Edward.Benelli@dtsc.ca.gov</a>
DTSC	Megan Cambridge	Project Manager	916.322.4233	<a href="mailto:Megan.Cambridge@dtsc.ca.gov">Megan.Cambridge@dtsc.ca.gov</a>
Geocon	Jim Brake	Program/Quality Assurance Manager	916.852.9118	<a href="mailto:brake@geoconinc.com">brake@geoconinc.com</a>
Geocon	Josh Ewert	Project/Technical Manager	916.852.9118	<a href="mailto:ewert@geoconinc.com">ewert@geoconinc.com</a>

<b>Table T1.3 – Personnel Contact Information and Title</b>				
<b>Agency/Company</b>	<b>Name</b>	<b>Title/Responsibility</b>	<b>Phone Number</b>	<b>E-mail Address</b>
CHESTER LabNet	Sheri Meldstab	Inorganic Lab Manager and QA/QC Coordinator	503.624.2183	<a href="mailto:sheldstab@chesterlab.net">sheldstab@chesterlab.net</a>
EMSL	Michael Chapman	Industrial Hygiene Client Services Manager	800.755.1794	<a href="mailto:mchapman@EMSL.com">mchapman@EMSL.com</a>
Eurofins Calscience	Alan Kemp	Northern California Operations Manager	925.786.8606	<a href="mailto:alankemp@eurofinsUS.com">alankemp@eurofinsUS.com</a>
Eurofins Air Toxics	Kelly Buettner	Air Toxics Project Manager	916.605.3378	<a href="mailto:kellybuettner@eurofinUS.com">kellybuettner@eurofinUS.com</a>

## 2.0 SITE DESCRIPTION

### 2.1 Facility Description

<b>Site Name:</b>	Sims Metal Management
<b>Site Address:</b>	699 Seaport Boulevard, Redwood City, CA 94063-2712
<b>County:</b>	San Mateo
<b>Site Operator:</b>	Sims Metal Management, Limited
<b>Local AQMD:</b>	Bay Area Air Quality Management District
<b>Local AQMD Contact:</b>	Eric Stevenson (415) 749-4695

SMM is located in the Port of Redwood City (PORC), on the eastern shore of Redwood Creek approximately 1.1 miles southwest of San Francisco Bay. According to SMM's webpage, the recycling center "processes ferrous scrap metal and specializes in bus, railcars and aluminum trailer scrap recycling. The yard is equipped with a metal shredder and can process materials via ship, rail and truck" (SMM website, 2016). The metal shredder is in the central/southeastern portion of the Site while the southwestern portion comprises a metal recovery plant (MRP) (Figure 2, Site Plan). The perimeter of the facility is lined with chain link fencing containing filter fabric. The fencing is approximately 35 feet high and topped with an inward-facing overhang along the eastern and southeastern portions of the property, is approximately 25 feet high along the southwestern portion of the property, and approximately 8 feet high along the western and northern portions of the property.

Properties surrounding the Site are used for commercial and heavy-industrial purposes. These properties include a carbon black processing facility, concrete and asphalt recycling facility and aggregate and cement importing terminal adjacent to the north, railroad tracks, an office complex and salt ponds/wetlands across Seaport Boulevard to the east, a petroleum refining and water treatment plant, ready-mix concrete plant, rail spur transfer facility and gypsum terminal adjacent to the south, and Redwood Creek and a dock used for loading and unloading cargo ships adjacent to west (PORC website, 2016). Surrounding properties and facilities are shown on Figure 2, Site Plan.

### 2.2 Regional Climate and Wind Direction

The monthly average temperatures range from the high-30s °F in December to the mid-80s °F in July. Annual average precipitation for Redwood City is 19.16 inches per year, with the lowest precipitation occurring from July through August (WRCC, 2016). Wind direction data was obtained from the National Oceanic and Atmospheric Administration's (NOAA) National Data Buoy Center weather station RTYC1, approximately 1,100 feet southwest of the Site at 37.507 N 122.212 W. The average wind speed ranges from 4.4 miles per hour (mph) in January to 8.9 mph in May. Higher wind speeds typically occur from March through August. The most common wind directions throughout the year are from the west-northwest and northwest. During the month of October, the average wind speed is 5.2 mph with a predominant wind directions of north-northwest and northwest.

### **3.0 METHODS AND PROCEDURES**

This section summarizes the activities to prepare for, and the methods and sampling procedures utilized during, each of the three air monitoring events performed at the Site. Detailed information and protocols for field methods are provided in the SAP (Geocon, 2016).

#### **3.1 Pre-Field Activities**

Geocon staff performed the following pre-field activities in preparation for air monitoring:

- Performed site visits on August 9 and October 11, 2016, to meet with SMM and DTSC staff and identified air sampling locations at the Site.
- Prepared a site-specific health and safety plan (HSP) providing guidelines on the use of personal protective equipment and health and safety procedures to be implemented during the field activities. Field activities were conducted in accordance with the HSP prepared for the air monitoring at SMM. A copy of the HSP is in Appendix A.
- Retained CHESTER LabNet (CLN), a National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory in Tigard, Oregon, to provide gravimetric and metals analysis of air samples.
- Retained EMSL Analytical Inc. (EMSL), a National Voluntary Laboratory Accreditation Program (NVLAP) and NELAP-certified laboratory in Cinnaminson, New Jersey, to provide asbestos and volatile organic compounds (VOC) analysis of air samples.
- Retained Eurofins Calscience (ECS), a California Environmental Laboratory Accreditation Program (ELAP) and NELAP-certified laboratory in Garden Grove, California, to perform polychlorinated biphenyls (PCB) analysis of air samples.
- Retained Eurofins Air Toxics (EAT), a California ELAP and NELAP-certified laboratory in Folsom, California, to perform formaldehyde analysis of air samples.

#### **3.2 Sampling Locations**

As described in Section 2.2, the anticipated wind direction during the monitoring events was from the northwest. Therefore, the four air sampling locations included one upwind (SMM1), one downwind (SMM2), and two cross-wind (SMM3 and SMM4) locations. SMM5 was a collocated duplicate sampling location for SMM2 and was sampled in accordance with the schedule for quality assurance/quality control sampling schedule in the SAP. Sample locations are shown on Figure 2. Photos 1 through 4 provide images of the sample equipment in reference to the sample locations.

### 3.3 Sampling Equipment

At each sampling location, air samples were collected using the equipment in Table T3.3A:

Table T3.3A – Sampling Analytes, Media and Equipment		
Analytes	Sample Media	Sampler
Total suspended particulates (TSP), Metals	8-inch x10-inch Quartz fiber filter	TE-5170V high-volume
Particulate matter (PM) less than 10 micrograms (µm) (PM <sub>10</sub> ), Metals	46.2-mm-diameter PTFE Teflon™ with integral support ring with a pore size of 10 µm	TE-Wilbur10 low-volume
PM less than 2.5 µm (PM <sub>2.5</sub> ), Metals	46.2-mm-diameter PTFE Teflon with integral support ring with a pore size of 10 µm	TE-Wilbur2.5 low-volume
Asbestos	Cartridge with a 25-mm-diameter mixed cellulose ester fiber filter	Gillian GilAir 3 personal air pump
PCBs	3-inch-thick polyurethane foam (PUF) plugs	TE-1000 PUF high-volume air sampler
Formaldehyde	Sorbent tube containing 0.35 g of 150-250 µm (60-100 mesh) silica gel coated with 1.0 mg of acidified 2,4-dinitrophenylhydrazine	Gillian GilAir 3 personal air pump
Toxic organic species <sup>1</sup> (TOS)	6-Liter Summa canisters	None. Canister shipped with a vacuum inside which was used to collect a sample.

Note: 1 = TOS includes benzene, chloromethane, 1,1-dichloroethene, ethylbenzene, 4-ethyltoluene, dichlorodifluoromethane [also known as (aka) Freon 12], trichlorofluoromethane (aka Freon 11), 1,2,4-trimethylbenzene, toluene, 1,3,5-trimethylbenzene, xylenes, and vinyl chloride.

Diesel-powered generators were used to supply power to the TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, and PCB samplers located at each of the sampling locations. Rechargeable batteries were used to power the asbestos and formaldehyde samplers. Power was not needed for the TOS samplers.

Spatial arrangement of samplers in each location (i.e., distance between samplers, height above ground surface) were in accordance with the sampling placement requirements listed in *40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring* [United States Environmental Protection Agency (USEPA), 2015] and comments provided by the Bay Area Air Quality Management District (Stevenson, 2016). As such, requirements for sampler spacing were relative to the sampling unit inlet (edge) and conformed to the spacing dimensions listed in Table T3.3B:

Table T3.3B – Sampler Spacing Requirements			
Parameter	Inlet Above Ground Level Height Requirement (meters)	Horizontal Collocation Requirement (meters)	Vertical Collocation Requirement (meters)
TSP, Metals	2-7	2-4	≤ 3
PM <sub>10</sub> , Metals	2-7	1-4	≤ 3
PM <sub>2.5</sub> , Metals	2-7	1-4	≤ 3
Asbestos	2-7	1-4	≤ 3
PCBs	2-7	2-4	≤ 3
Formaldehyde	2-7	0-4	≤ 3
TOS	2-7	0-4	≤ 3

Additionally, inlets were greater than 2 meters (m) away from supporting structures (like walls, parapets, or penthouses), greater than 10 m from trees, and between 2 and 10 m from roadways. Inlets also had unrestricted airflow and were located away from obstacles so that the distance from the obstacle to the inlet was at least twice the height that the obstacle protruded above the inlet. When conditions at the Site did not allow for moving far enough away from obstacles, scissor-lifts were used to raise the sampling equipment and inlets to elevations higher than the obstructions. For instance, scissor-lifts were used at locations SMM2, SMM4, and SMM5 due to proximity to the approximately 35-foot-high perimeter fence. Stepping back the required approximate 58 feet from the fence line was not possible because that would have placed the sampling equipment in areas of heavy traffic.

### 3.4 Calibration and Leak Check Testing

The TSP, PM<sub>10</sub>, PM<sub>2.5</sub>, asbestos, PCB, and formaldehyde sampling equipment was calibrated onsite on October 17 and 18, 2016. Calibration and leak check activities were performed once the equipment was set up at a sampling location and prior to its first use. Calibration and leak check procedures were performed in accordance with the calibration schedule in Table 3 of the SAP. A copy of the field log, which contains additional information about the calibration and leak check testing, is in Appendix B.

#### 3.4.1 TSP Calibration

Calibration included attaching a calibrated orifice and water manometer to each sampler, operating each device with the orifice at five positions that varied the flow rate into the sampler, and recording the measurements of the water manometer for each position directly into the *TE-5170V Sampler Calibration Worksheet* (Appendix C). Leak checks were performed by covering the top of the orifice and listening for a high-pitched squeal. The calculated flow rates and total flows for the TSP sampling equipment are listed in Table T3.4.1:

Table T3.4.1 – TSP Sampler Flow Rates and Total Flows		
Sample Location	Calculated TSP Flow Rate (m <sup>3</sup> /min)	Calculated TSP Total Flow1 (m <sup>3</sup> )
SMM1	1.213	1,747.21
SMM2	1.227	1,766.76
SMM3	1.216	1,750.73
SMM4	1.218	1,753.85
SMM5	1.217	1,752.47

Notes: m<sup>3</sup>/min = cubic meters per minute  
m<sup>3</sup> = cubic meters

No leaks were identified and observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

### **3.4.2 PM<sub>10</sub> and PM<sub>2.5</sub> Calibration Activities**

Calibration included measuring temperature and pressure using calibrated temperature and barometric pressure devices, and entering the measurements into the samplers at the appropriate calibration input screen. Flows were calibrated by placing a calibrated flow standard on the intake of the sampler and running the flow calibration program for the sampler. External leak checks were performed by installing a closed flow rate adapter to the sample inlet and running the leak check program on the sampler. Internal leak checks were performed by installing internal leak check disks into the samplers and running the internal leak check program on the sampler. The calibration results for the PM<sub>10</sub> and PM<sub>2.5</sub> sampling equipment were recorded in Geocon's field log (Appendix B) and on the PM<sub>10</sub> and PM<sub>2.5</sub> alarm logs on each unit (Appendices D and E, respectively). The calculated flow rates for the PM<sub>10</sub> and PM<sub>2.5</sub> sampling equipment are provided in Table T3.4.2:

<b>Table T3.4.2 – PM<sub>10</sub> and PM<sub>2.5</sub> Sampler Flow Rates</b>		
<b>Sample Location</b>	<b>Analyte</b>	<b>Calculated Flow Rate (m<sup>3</sup>/min)</b>
SMM1	PM <sub>10</sub>	16.67
	PM <sub>2.5</sub>	16.67
SMM2	PM <sub>10</sub>	16.67
	PM <sub>2.5</sub>	16.67
SMM3	PM <sub>10</sub>	16.67
	PM <sub>2.5</sub>	16.67
SMM4	PM <sub>10</sub>	16.67
	PM <sub>2.5</sub>	16.67
SMM5	PM <sub>10</sub>	16.67
	PM <sub>2.5</sub>	16.67

No leaks were identified and observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

### **3.4.3 PCB Calibration Activities**

Calibration included attaching a calibrated orifice and water manometer to each sampler, operating each device with the orifice at five positions that varied the flow rate into the sampler, and recording the measurements of the water manometer for each position directly into the *TE-1000 PUF Calibration Worksheet* (Appendix F). The calculated flow rates and total flows for the PCB sampling equipment are in Table T3.4.3.

<b>Table T3.4.3 – PCB Sampler Flow Rates and Total Flows</b>		
<b>Sample Location</b>	<b>Calculated PCB Flow Rate (m<sup>3</sup>/min)</b>	<b>Calculated PCB Total Flow<sup>1</sup> (m<sup>3</sup>)</b>
SMM1	0.278	400.0
SMM2	0.264	380.4
SMM3	0.258	371.8
SMM4	0.265	382.2
SMM5	0.263	379.4



The observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

#### **3.4.4 Formaldehyde and Asbestos Calibration Activities**

Information from the calibration was recorded in Geocon's field notes (Appendix B). Calibration included attaching a calibrated rotometer to each sampler, operating each device and adjusting the flow rates of the formaldehyde and asbestos samplers to 2.0 and 1.0 liters per minute (lpm), respectively. The observed flow rates were acceptable to achieve the desired reporting limits for a 24-hour sample specified in the SAP (Geocon, 2016).

### **3.5 Air Sampling Description**

The three 24-hour monitoring events (T1, T2, and T3) were performed between October 19 and 22, 2016. The following sub-sections summarize the activities performed during each event and describe the facility operations during each event.

#### **3.5.1 First Monitoring Event (T1)**

After calibrating and installing the appropriate sample media in each sampling device, Geocon staff began the first 24-hour monitoring event by turning on the sampling equipment for SMM4 at 0805 on October 19, 2016. Minutes later, Geocon staff turned on sampling equipment at locations at SMM2/SMM5, SMM3, and SMM1 at 0815, 0830, and 0835, respectively.

Geocon staff checked on the status of the sampling equipment after approximately 5.5 and 11.5 hours of runtime. During the sampling equipment check, Geocon staff noticed that the 6-liter Summa canister collecting sample SMM5-T1-TOS was sampling at a faster than anticipated rate. Despite the faster than expected sampling rate, sample SMM5-T1-TOS was able to collect a sample throughout the entire 24-hour sampling duration and therefore no adjustments to the sampler were necessary. No other equipment issues were noted during T1. After 24 hours, Geocon staff ended T1 by turning off the sampling equipment at each location, and retrieved and stored the sample media.

Field-based QC parameters performed during monitoring event T1 included the collection of collocated samples. Collocated samples, also referred to as duplicate samples for air sampling, were collected and analyzed to check for sampling and analysis error, reproducibility, and homogeneity. Collocated samples SMM2 (primary sample) and SMM5 (duplicate sample) were obtained from two identically configured sampler sets operating simultaneously in one location.

SMM staff's activity log (Appendix G) summarizes duration of shredding and MRP activities that occurred each day for the 4 days sampled. Monitoring event T1 coincided with at least a portion of three metal shredding shifts including the first and second shift on October 19, 2016 and the first shift on October 20, 2016. T1 also coincided with the entirety of the MRP activities performed on October 19, 2016. When only a portion of the metal shredding and/or MRP activities coincided with the sampling duration, prorated amounts, assuming a constant rate of work, were used. Approximately 273 tons of automobiles and 1,278 tons of tin (1,551 tons total) were shredded during T1. The MRP processed approximately 495 tons during T1. A freighter ship was docked at the terminal adjacent to the Site to the northwest and was unloading bauxite ore during T1. The unloading of bauxite ore was noted from the start of the test and continued until Geocon staff observed that the ship had departed by 0700 on October 20, 2016.

### **3.5.2 Second Monitoring Event (T2)**

At the completion of T1, Geocon staff replaced the sample media in each of the pumps, then began T2 as soon as practicable. The process of finishing T1 and beginning T2 took approximately 3 hours. T2 began by turning on the sampling equipment for SMM1, SMM4, SMM2, and SMM3 at 1110, 1120, 1130 and 1150, respectively.

Geocon staff checked on the status of the sampling equipment after approximately 9.5 hours of runtime. No equipment issues were noted during T2.

After 24 hours, Geocon staff ended T2 by turning off the sampling equipment at each location, and retrieving and storing the sample media.

Field-based QC parameters performed during monitoring event T2 included the collection of field blanks to assess the possible contamination of samples before, during, and after sample collection. Each field blank consisted of a clean filter that was placed onto the air sampler and then taken off without running the sampler. Geocon staff collected a field blank sample from location SMM1 in between T2 and T3.

Monitoring event T2 coincided with at least a portion of three metal shredding shifts including the first and second shift on October 20, 2016 and the first shift on October 21, 2016. T1 also coincided with the entirety of the MRP activities performed on October 20, 2016. Approximately 226 tons of automobiles and 994 tons of tin (1,219 tons total) were shredded during T2. The MRP processed approximately 380 tons during T2.

### **3.5.3 Third Monitoring Event (T3)**

At the completion of T2, Geocon staff replaced the sample media in each of the pumps, then began T3 as soon as practicable. The process of finishing T2 and beginning T3 took approximately 2 hours. T3 began by turning on the sampling equipment for SMM2/SMM5, SMM3, SMM1, and SMM4 at 1315, 1330, 1335, and 1345, respectively.

Geocon staff checked on the status of the sampling equipment after approximately 4 and 7.5 hours of runtime. No equipment issues were noted during T3.

After 24 hours, Geocon staff ended T3 by turning off the sampling equipment at each location, and retrieved and stored the sample media.

Field-based QC parameters performed during T3 included collection of collocated samples, field blanks and filter blanks. Collocated samples SMM2 (primary sample) and SMM5 (duplicate sample) were obtained from two identically configured sampler sets operating simultaneously in one location. Geocon staff collected a field blank sample from location SMM3 after T3. Filter blanks (sometimes referred to as trip blanks for air sampling) were collected and analyzed to assess the contamination of samples from the native presence of target analytes in the filters used for air sample collection. Each filter blank consisted of a clean filter that was transported with the associated primary samples, but was not taken out of its protective sleeve. One filter blank was selected for analysis after T3.

Monitoring event T3 coincided with at portions of two metal shredding shifts including the second shift on October 21, 2016 and the first shift on October 22, 2016. T3 also coincided with a portion of the MRP activities performed on October 21, 2016. Approximately 228 tons of automobiles and 835 tons of tin (1,063 tons total) were shredded during T3. The MRP processed approximately 346 tons during T3.

## **3.6 Meteorological Conditions**

Data from the NOAA weather station RTYC1 was used to represent the meteorological conditions at the Site. The meteorological data measured include wind direction, wind speed, peak gust speed, and air temperature. Weather station RTYC1 uses an R. M. Young Model 05103 wind monitor to record wind direction and speed (NOAA, 2016). The meteorological data is in Appendix G.

## **3.7 Packaging and Shipping**

Geocon staff shipped the asbestos and TOS samples via 2-day shipping under standard chain-of-custody (COC) to EMSL on October 22, 2016. Geocon staff shipped the TSP, PM<sub>10</sub>, and PM<sub>2.5</sub> samples via overnight delivery under standard COC to CLN on October 24, 2016. Geocon staff shipped the PCB samples via overnight delivery under standard COC to ECS on October 24, 2016.

Formaldehyde samples were picked up by an EAT courier and delivered to EAT under standard COC on October 25, 2016.

The following summarizes the sample packaging procedures used for the proposed investigation:

- Sample and QA/QC containers were placed into re-sealable plastic storage bags that were put into the sample coolers. Blue ice bags were packed on top and around the samples to maintain an appropriate temperature in the cooler.
- Empty space in sample coolers was filled with bubble wrap to prevent sample containers from shifting during transportation to the laboratory.
- The appropriate COC(s) associated with the sample cooler were double-bagged in re-sealable plastic bags and placed inside the cooler.

### **3.8 Laboratory Analysis**

CLN analyzed the samples for the following:

- TSP - 40 CFR Part 50, Appendix B to Part 50 *Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere* (USEPA, 1998);
- PM<sub>10</sub> - 40 CFR Part 50, Appendix J to Part 50 *Reference Method for the Determination of Particulate Matter as PM<sub>10</sub> in the Atmosphere* (USEPA, 1998), 40 CFR Part 50, Appendix L to Part 50 *Reference Method for the Determination of Particulate Matter as PM<sub>2.5</sub> in the Atmosphere* (USEPA, 1998) and *Quality Assurance Guidance Document 2.12 – Monitoring PM<sub>2.5</sub> in Ambient Air Using Designated Reference or Class I Equivalent Methods* (USEPA, 2016);
- PM<sub>2.5</sub> - 40 CFR Part 50, Appendix L to Part 50 *Reference Method for the Determination of Particulate Matter as PM<sub>2.5</sub> in the Atmosphere* (USEPA, 1998) and *Quality Assurance Guidance Document 2.12 – Monitoring PM<sub>2.5</sub> in Ambient Air Using Designated Reference or Class I Equivalent Methods* (USEPA, 2016);

EMSL analyzed the samples for the following:

- Asbestos – Asbestos Hazard Emergency Response Act (AHERA)-modified transmission electron microscopy (TEM) as found in 40 CFR part 763 Appendix A Subpart E (USEPA, 1987);
- VOCs - USEPA method TO-15 (USEPA, 1999c).

ECS and EAT respectively analyzed the samples for the following:

- PCBs – USEPA method TO-4A (USEPA, 1999a).
- Formaldehyde – USEPA method TO-11A (USEPA, 1999b).

### **3.9 Variance from SAP**

Sample location SMM3 was relocated approximately 400 feet northwest from the location proposed in the SAP. The Site Plan (Figure 2) shows the modified sampling location for SMM3. Changing the sampling location was necessary because of the unlevel surface at the proposed location and the presence of a curb that was higher than the scissor lift's clearance. DTSC staff approved of this modification during a phone call on October 14, 2016.

Data from the NOAA National Data Buoy Center weather station RTYC1 was used to represent the meteorological conditions at the Site instead of Geocon's weather station. Communication issues between Geocon's weather station and datalogger resulted in long periods without meteorological data collection. SMM does have an onsite weather station but it was not operational during the monitoring events.

## 4.0 RESULTS

This section presents the laboratory analytical results for samples collected during the three monitoring events and an evaluation of the quality of the data reported by the laboratory.

### 4.1 Analytical Results

The results of the gravimetric and metals analyses for the TSP, PM<sub>10</sub>, and PM<sub>2.5</sub> samples are shown in Tables 1 through 3, respectively. The results of the analyses for asbestos, PCBs, formaldehyde, and TOS samples are shown in Tables 4 through 7, respectively. Copies of the analytical reports are in Appendix H.

Following are our observations with respect to the analytical results:

#### **4.1.1 TSP**

- The greatest TSP concentrations were measured in samples from SMM2, followed by SMM4, SMM1, and SMM3. Potential reasons for SMM2 having the greatest concentrations are that the sample location was the closest of the metal shredder and was in a relatively dirtier and dustier area of the Site.
- The greatest TSP concentrations were measured in samples collected during monitoring event T1, followed by T2, and T3. One possible explanation for why the greatest TSP concentrations were during T1 is that there was more activity occurring at and around the Site during the sampling duration. T1 coincided with the greatest tonnage of material processed by the metal shredder and MRP, as well as with the unloading of bauxite ore from the terminal adjacent to the west. T3 coincided with the lowest tonnage of material processed by the metal shredder and MRP.
- The TSP metals with the highest concentrations were:
  - calcium at 10.66 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ),
  - iron at  $7.461 \mu\text{g}/\text{m}^3$ ,
  - aluminum at  $2.696 \mu\text{g}/\text{m}^3$ ,
  - chlorine at  $1.670 \mu\text{g}/\text{m}^3$ ,
  - zinc at  $1.453 \mu\text{g}/\text{m}^3$ , and
  - sulfur at  $1.299 \mu\text{g}/\text{m}^3$ .
- The concentrations for aluminum were the highest during T1, which coincided with the unloading of bauxite ore from the terminal adjacent to the west. Also, the aluminum concentrations were greatest in samples collected from SMM1, which is the location closest to where the bauxite unloading was taking place, whereas most of the other greatest concentrations were from samples collected from sample location SMM2.

#### **4.1.2 PM<sub>10</sub>**

- The greatest PM<sub>10</sub> concentrations were measured in samples from SMM2, followed by SMM4, SMM1, and SMM3.
- The greatest PM<sub>10</sub> concentrations were measured in samples collecting during monitoring event T1, followed by T2, and T3.
- The PM<sub>10</sub> metals with the greatest concentrations were:
  - calcium at 5.937 µg/m<sup>3</sup>,
  - silicon at 5.862 µg/m<sup>3</sup>,
  - iron at 4.422 µg/m<sup>3</sup>,
  - aluminum at 2.457 µg/m<sup>3</sup>,
  - chlorine at 1.709 µg/m<sup>3</sup>, and
  - sulfur at 1.244 µg/m<sup>3</sup>.

#### **4.1.3 PM<sub>2.5</sub>**

- The greatest PM<sub>2.5</sub> concentrations were measured in samples from SMM2, followed by SMM4, SMM3, and SMM1.
- The greatest PM<sub>2.5</sub> concentrations were detected in samples collected during monitoring event T1, followed by T2, and T3.
- The PM<sub>2.5</sub> metals with the greatest concentration were:
  - calcium at 0.6314 µg/m<sup>3</sup>,
  - iron at 0.6191 µg/m<sup>3</sup>,
  - silicon at 0.5909 µg/m<sup>3</sup>,
  - sodium at 0.4242 µg/m<sup>3</sup>,
  - chlorine at 0.3912 µg/m<sup>3</sup>, and
  - zinc at 0.3719 µg/m<sup>3</sup>.

#### **4.1.4 Asbestos**

Chrysotile was observed in sample SMM2-T2-Asbestos at a concentration of 19 structures per millimeter squared. Asbestos fibers were not observed at concentrations greater than or equal to their reporting limit in any of the other samples analyzed.

#### **4.1.5 PCBs**

PCBs were not detected at concentrations greater than or equal to the reporting limit in any of the samples analyzed.

#### **4.1.6 Formaldehyde**

Formaldehyde was detected in each of samples analyzed at masses ranging from 1.8 to 3.7 µg.

#### **4.1.7 VOCs**

Benzene, toluene, ethylbenzene, xylenes, chloromethane, 4-ethyltoluene, Freon 12, Freon 11, and 1,3,5-trimethylbenzene were detected in at least one TOS sample (Table 7). 1,1-Dichloroethene, 1,2,4-trichlorobenzene, and vinyl chloride were not detected at concentrations equal to or greater than their reporting limits in any of the samples analyzed.

### **4.2 Data Quality Analysis**

The analytical data was reviewed as described in Section 10 of the SAP. Appendix I includes the complete data quality assessment for the three air monitoring events. In summary, the laboratory reported that the samples were received in good condition and that the QC samples analyzed met the minimum requirements for acceptability. Analysis of the field duplicate samples identified multiple analytes, mostly metals that had relative percent differences exceeding 20%. However, this variability of 20% can be at least moderately attributed to the variability inherent in the filter sample media.

### **4.3 Meteorological Data**

The meteorological data is presented in Appendix G. Wind rose diagrams showing the wind directions and speeds measured during the three 24-hour sampling durations are presented in Appendix J. Additional meteorological information collected during each of the three 24-hour duration tests is presented in Table T4.3A.

<b>Table T4.3A – Meteorological Data Per Test</b>									
<b>Event</b>	<b>Start Time/ Date</b>	<b>End Time/ Date</b>	<b>High Temp (°F)</b>	<b>Low Temp (°F)</b>	<b>Avg. Temp (°F)</b>	<b>Avg. Wind Speed (mph)</b>	<b>Dominant Wind Directions (% of Readings)</b>	<b>Rainfall (inches)</b>	<b>Avg. Pressure (in-Hg)</b>
T1	0805 on 10/19/16	0830 on 10/20/16	72.9	53.8	62.5	2.65	WNW (13.0%), SSW (12.6%), WSW (11.0%), NW (8.1%), W (7.7) SW (7.7%).	0	30.16
T2	1110 on 10/20/16	1150 on 10/21/16	77.9	53.1	64.5	2.38	NW (13.2%), SE (10.0%), WSW (8.0%), WNW (7.6%) SW (7.6%).	0	30.05



Table T4.3A – Meteorological Data Per Test									
Event	Start Time/ Date	End Time/ Date	High Temp (°F)	Low Temp (°F)	Avg. Temp (°F)	Avg. Wind Speed (mph)	Dominant Wind Directions (% of Readings)	Rainfall (inches)	Avg. Pressure (in-Hg)
T3	1315 on 10/21/16	1345 on 10/22/16	71.4	55.0	62.0	3.24	N (15.1%), NW (12.4%), NNW (8.8%), SE (8.0%), and SW (8.0%).	0	29.91
T1-T3	0805 on 10/19/16	1345 on 10/22/16	77.9	53.1	63.0	2.76	NW (11.2%), WNW (8.4%), SSW (7.9%), SW (7.8%), SE (7.6%), and WSW (7.4).	0	30.04

Notes: °F = Degrees Fahrenheit  
mph = Miles per hour  
in-Hg = inches of mercury pressure

Following are our observations with respect to the metrological measurements:

- There was measurable wind nearly continuously during each sampling event. Wind speeds of 0 mph were recorded 0, 5, and 10 times during T1, T2, and T3, respectively. The NOAA dataset also contains instances of missing data at irregular intervals. Missing data was observed 38, 36, and 21 times during T1, T2, and T3, respectively.
- The peak wind speeds for each monitoring event generally occurred between 4:00 PM and 3:00 AM with lower wind speeds generally occurring from 4:00 AM to 3:00 PM.
- The peak wind speeds were generally from the northwest, north-northwest, and north.
- The wind directions were variable during each monitoring event. During monitoring event T1, the most frequently occurring wind direction measured was from the north-northwest, occurring 13% of the time. However, wind directions from southwesterly and southeasterly variations also occurred. The frequency of similar (i.e., SSW, SW, and WSW are considered “similar”) wind directions for T1 and upwind, cross-wind, and downwind positions of the sample locations is provided in Table 4.3B.

Table T4.3B – Frequency of Wind Direction and Its Effect on Sample Location Representativeness for T1					
Wind Direction	Frequency of Detection	SMM1	SMM2 and SMM5	SMM3	SMM4
SSW, SW, and WSW	31.3%	cross-wind/ upwind	upwind/ cross-wind	upwind	downwind
WNW, NW, and W	28.8%	upwind	downwind	upwind	downwind
S, SSE, SE	15.5%	downwind	upwind	upwind/ cross-wind	upwind
Missing	15.5%	N/A	N/A	N/A	N/A
Other	8.9%	Variable	Variable	Variable	Variable
No Wind	0%	N/A	N/A	N/A	N/A

The information in the table above indicates that during T1, SMM4 was generally downwind, SMM1 and SMM3 generally upwind conditions, and sample SMM2 and SMM5 were variable.

- The frequency of similar wind directions for T2 and upwind, cross-wind, and downwind positions of the sample locations is provided in Table 4.3C.

<b>Table T4.3C – Frequency of Wind Direction and Its Effect on Sample Location Representativeness for T2</b>					
<b>Wind Direction</b>	<b>Frequency of Detection</b>	<b>SMM1</b>	<b>SMM2 and SMM5</b>	<b>SMM3</b>	<b>SMM4</b>
NW, WNW, and NNW	26.7%	upwind	downwind	cross-wind/ upwind	downwind/ cross-wind
WSW, SW, and SSW	22.3%	cross-wind/ upwind	upwind/ cross-wind	upwind	downwind
SE, ESE, E	19.1%	downwind	upwind	downwind/ cross-wind	upwind/ cross-wind
Missing	14.3%	N/A	N/A	N/A	N/A
Other	15.6%	Variable	Variable	Variable	Variable
No Wind	2.0%	N/A	N/A	N/A	N/A

The information in the table above indicates that during T2, SMM4 was generally downwind, SMM1 and SMM3 were generally upwind, and sample SMM2 and SMM5 were generally variable.

- The frequency of similar wind directions for T3 and upwind, cross-wind, and downwind positions of the sample locations is provided in Table 4.3D.

<b>Table T4.3D – Frequency of Wind Direction and Its Effect on Sample Location Representativeness for T3</b>					
<b>Wind Direction</b>	<b>Frequency of Detection</b>	<b>SMM1</b>	<b>SMM2 and SMM5</b>	<b>SMM3</b>	<b>SMM4</b>
N, NW, and NNW	36.3%	upwind	downwind	downwind/ cross-wind	upwind/ cross-wind
SSE, SE, and ESE	21.5%	downwind	upwind	downwind/ cross-wind	upwind
SW, SSW, and WSW	15.5%	cross-wind/ upwind	upwind/ cross-wind	upwind	downwind
Other	14.3%	Variable	Variable	Variable	Variable
Missing	8.4%	N/A	N/A	N/A	N/A
No Wind	4.0%	N/A	N/A	N/A	N/A

The information in the table above indicates that during T3, SMM1 and SMM4 were generally upwind, SMM3 was generally cross-downwind, and SMM2 and SMM5 were generally variable.

## **5.0 REPORT LIMITATIONS**

This report was prepared for the DTSC. Geocon-authorized users of this report are limited to the DTSC. Individuals or organizations deemed appropriate by the DTSC (including, but not necessarily limited to other regulatory agencies, prospective real estate brokers and buyers of all or parts of the Site and their counsel, and/or prospective lending institutions) may utilize the report for informational purposes only.

Users of this report should understand that this monitoring event was not a comprehensive characterization of the Site. Air monitoring was limited to assessing the concentrations of the specified contaminants of potential concern (COPC) for this project with respect to the specific areas of potential concern identified in this report.

Geocon does not guarantee or warranty, either express or implied, that there is no environmental, health, or financial risk associated with the specific areas identified in this report, other areas of the Site, or the Site as a whole. Users of this report must evaluate the risk of reliance upon the information herein and assume that risk (if any). Geocon is not responsible for unfavorable results due to reliance on information provided in this report.

Information herein with respect to the condition of the specific areas associated with this project is valid only as of the dates of our field activities. Changes in site conditions not brought to our attention between or subsequent to those dates (if any) could result in the need for additional characterization investigation and/or mitigation activities.

Information in this report is based on our site observations, analytical results and associated QC data reported for the air samples. Geocon does not certify or guarantee that the information obtained and reported by others is accurate or suitable for the intended purpose.

The authors of this report declare that, to the best of their knowledge, the information provided herein is truthful and accurate, notwithstanding unknown incidental errors or omissions that would not materially impact or change results of this project or our conclusions. Geocon strived to conduct activities for this project in accordance with the standard level of care in the local geographic area at the time the activities were rendered.

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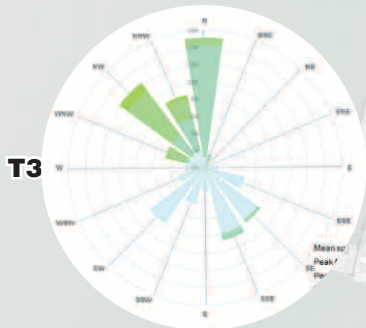
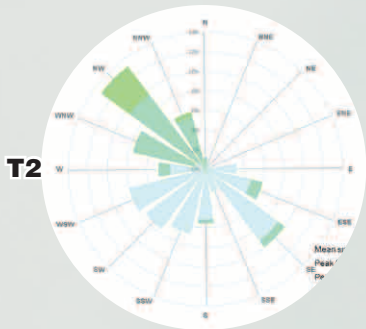
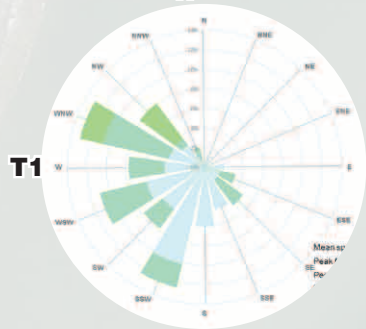
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## Wind Rose Diagrams

See Appendix J



## LEGEND:

- Approximate Site Boundary
- **SMM1** Proposed Air Sampling Location
- Railroad Tracks

0 250  
Scale in Feet



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## SITE PLAN

S9850-03-21

December 2016

Figure 2



Photo No. 1 Sampling location SMM1. Equipment shown from right to left, TE-1000 PUF, TE-5170V, TE-Wilbur2.5, and TE-Wilbur10. A 6-Liter Summa canister (not pictured) was set up on the platform with the TE-1000 PUF and TE-5170V samplers. GilAir pumps are located behind this set-up. Also pictured is the freighter ship unloading bauxite in background.



Photo No. 2 Sampling location SMM2 along with duplicate sample SMM5. During sample collection, scissor lifts were extended so that sample inlets were above the fabric-lined perimeter fence shown in the background.

## PHOTOS NO. 1 & 2



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GEOCON Project No. S9850-03-21

December 2016





Photo No. 3 Sampling location SMM3.



Photo No. 4 Sampling location SMM4 showing scissor lifts extended.

### PHOTOS NO. 3 & 4



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GEOCON Project No. S9850-03-21

December 2016



TABLE I  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (g)	Gross (g)	Net (µg)	Volume (m <sup>3</sup> )	Concentration (µg/m <sup>3</sup> )	Aluminium (Al) (µg/m <sup>3</sup> )	Phosphorus (P) (µg/m <sup>3</sup> )	Sulfur (S) (µg/m <sup>3</sup> )	Chlorine (Cl) (µg/m <sup>3</sup> )	Potassium (K) (µg/m <sup>3</sup> )	Calcium (Ca) (µg/m <sup>3</sup> )
SMM1-T1-TSP	10/20/2016	4.2262	4.3967	170,500	1,747	97.6	2.6960	0.0000	0.5224	0.7999	0.5989	5.4890
SMM1-T2-TSP	10/21/2016	4.3158	4.4402	124,400	1,747	71.2	1.1070	0.0000	0.6231	1.0740	0.5780	5.4730
SMM1-T3-TSP	10/22/2016	4.3165	4.3762	59,700	1,747	34.2	0.4590	0.0000	0.2749	1.6700	0.3474	2.7050
SMM2-T1-TSP	10/20/2016	4.2702	4.6268	356,600	1,767	202	1.5240	0.0000	1.2990	0.8538	0.8931	10.6600
SMM2-T2-TSP	10/21/2016	4.2719	4.5224	250,500	1,657	151	1.5130	0.0000	1.1100	0.9632	0.8093	8.1590
SMM2-T3-TSP	10/22/2016	4.2709	4.4317	160,800	1,767	91.0	0.7594	0.0000	0.5627	1.4030	0.7704	4.4440
SMM3-T1-TSP	10/20/2016	4.2683	4.4006	132,300	1,751	75.6	1.0870	0.0000	0.5702	0.8301	0.5189	7.1530
SMM3-T2-TSP	10/21/2016	4.2567	4.3864	129,700	1,751	74.1	1.0880	0.0000	0.8090	1.1510	0.6335	6.9510
SMM3-T3-TSP	10/22/2016	4.2527	4.3080	55,300	1,751	31.6	0.5372	0.0000	0.3242	1.5390	0.3664	2.9120
SMM4-T1-TSP	10/20/2016	4.2649	4.4510	186,100	1,754	106	1.7190	0.0000	0.6824	0.7530	0.7384	7.1060
SMM4-T2-TSP	10/21/2016	4.3023	4.4517	149,400	1,754	85.2	1.4080	0.0000	0.8518	0.9486	0.7122	7.1410
SMM4-T3-TSP	10/22/2016	4.2618	4.339	77,200	1,754	44.0	0.7493	0.0000	0.3687	1.6520	0.4467	3.7380
<i>Field Duplicate</i>												
SMM5-T1-TSP	10/20/2016	4.2699	4.6432	373,300	1,752	213	1.8320	0.0000	1.4840	0.9341	0.9879	12.3700
SMM5-T3-TSP	10/22/2016	4.2885	4.4452	156,700	1,752	89.4	0.8669	0.0000	0.6141	1.5420	0.9158	4.9450
<i>Field Blank</i>												
SMM1-T2-TSP-FB <sup>1</sup>	10/21/2016	4.2583	4.2587	400			178.1000	0.0000	2.5170	0.0000	316.4000	2125.000
SMM3-T3-TSP-FB <sup>1</sup>	10/22/2016	4.3031	4.3054	2,300			355.7000	0.0000	24.4400	4.5470	328.3000	2182.000
<i>Trip Blank</i>												
SMM-TB-TSP <sup>1</sup>	10/22/2016	4.2878	4.2886	800			338.7000	0.0000	20.2200	16.8900	312.7000	2107.000
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		4.2880	4.2886	600			284.5000	0.0000	17.9000	5.5620	319.1000	2099.000
Lab Blank <sup>1</sup>		4.3182	4.3184	200			299.6000	0.0000	35.9300	10.6800	310.2000	2131.000

TABLE I  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Titanium (Ti) (µg/m <sup>3</sup> )	Vanadium (V) (µg/m <sup>3</sup> )	Chromium (Cr) (µg/m <sup>3</sup> )	Manganese (Mn) (µg/m <sup>3</sup> )	Iron (Fe) (µg/m <sup>3</sup> )	Cobalt (Co) (µg/m <sup>3</sup> )	Nickel (Ni) (µg/m <sup>3</sup> )	Copper (Cu) (µg/m <sup>3</sup> )	Zinc (Zn) (µg/m <sup>3</sup> )	Gallium (Ga) (µg/m <sup>3</sup> )	Germanium (Ge) (µg/m <sup>3</sup> )
SMM1-T1-TSP	10/20/2016	0.3883	0.0000	0.0448	0.0642	4.4500	0.0000	0.0087	0.1505	0.3818	0.0074	0.0046
SMM1-T2-TSP	10/21/2016	0.1914	0.0000	0.0424	0.0602	3.5300	0.0000	0.0106	0.1398	0.2875	0.0043	0.0037
SMM1-T3-TSP	10/22/2016	0.0638	0.0000	0.0291	0.0210	1.1730	0.0000	0.0042	0.1246	0.4106	0.0067	0.0031
SMM2-T1-TSP	10/20/2016	0.3311	0.0000	0.0658	0.1347	7.4610	0.0000	0.0272	0.2849	1.4530	0.0014	0.0022
SMM2-T2-TSP	10/21/2016	0.2850	0.0000	0.0639	0.1016	5.6450	0.0000	0.0229	0.2149	0.8924	0.0045	0.0061
SMM2-T3-TSP	10/22/2016	0.1551	0.0000	0.0426	0.0566	3.0510	0.0000	0.0203	0.2776	0.7700	0.0019	0.0043
SMM3-T1-TSP	10/20/2016	0.1522	0.0000	0.0452	0.0535	2.9170	0.0000	0.0083	0.1584	0.2632	0.0059	0.0035
SMM3-T2-TSP	10/21/2016	0.1724	0.0000	0.0456	0.0709	3.6080	0.0000	0.0097	0.1854	0.4021	0.0018	0.0019
SMM3-T3-TSP	10/22/2016	0.0614	0.0000	0.0313	0.0252	1.2320	0.0000	0.0050	0.1579	0.1003	0.0038	0.0024
SMM4-T1-TSP	10/20/2016	0.2787	0.0000	0.0463	0.0848	4.9030	0.0000	0.0095	0.1733	0.3944	0.0052	0.0027
SMM4-T2-TSP	10/21/2016	0.2278	0.0000	0.0403	0.0715	3.9720	0.0000	0.0073	0.1961	0.1621	0.0039	0.0039
SMM4-T3-TSP	10/22/2016	0.1042	0.0000	0.0346	0.0332	1.7550	0.0000	0.0059	0.2075	0.1571	0.0029	0.0026
<i>Field Duplicate</i>												
SMM5-T1-TSP	10/20/2016	0.3916	0.0000	0.0675	0.1624	8.8890	0.0000	0.0329	0.2829	1.6970	0.0049	0.0038
SMM5-T3-TSP	10/22/2016	0.1734	0.0000	0.0472	0.0667	3.5590	0.0000	0.0217	0.2584	0.8382	0.0033	0.0016
<i>Field Blank</i>												
SMM1-T2-TSP-FB <sup>1</sup>	10/21/2016	1.5020	0.0000	44.3800	6.7400	131.0000	0.0000	7.8360	25.2900	10.0300	14.5800	9.1760
SMM3-T3-TSP-FB <sup>1</sup>	10/22/2016	28.4600	0.0000	47.9900	7.8760	156.9000	0.0000	8.4450	32.2000	17.1700	14.1700	7.3890
<i>Trip Blank</i>												
SMM-TB-TSP <sup>1</sup>	10/22/2016	24.6000	0.0000	44.3800	6.4150	135.9000	0.0000	7.5520	14.8200	6.8610	13.0300	7.4700
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		4.7100	0.0000	46.0400	7.5920	132.8000	0.0000	6.7800	14.8600	8.8910	13.2800	7.1460
Lab Blank <sup>1</sup>		3.1260	0.0000	46.8900	6.3340	136.4000	0.0000	6.8210	14.0500	5.8870	14.6600	6.4150

TABLE I  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Arsenic (As) (µg/m <sup>3</sup> )	Selenium (Se) (µg/m <sup>3</sup> )	Bromine (Br) (µg/m <sup>3</sup> )	Rubidium (Rb) (µg/m <sup>3</sup> )	Strontium (Sr) (µg/m <sup>3</sup> )	Yttrium (Y) (µg/m <sup>3</sup> )	Zirconium (Zr) (µg/m <sup>3</sup> )	Molybdenum (Mo) (µg/m <sup>3</sup> )	Palladium (Pd) (µg/m <sup>3</sup> )	Silver (Ag) (µg/m <sup>3</sup> )	Cadmium (Cd) (µg/m <sup>3</sup> )
SMM1-T1-TSP	10/20/2016	0.0022	0.0023	0.0085	0.0005	0.0291	0.0044	0.0465	0.0422	0.0011	0.0013	0.0007
SMM1-T2-TSP	10/21/2016	0.0022	0.0011	0.0079	0.0014	0.0343	0.0028	0.0463	0.0474	0.0000	0.0000	0.0000
SMM1-T3-TSP	10/22/2016	0.0016	0.0002	0.0069	0.0006	0.0149	0.0041	0.0244	0.0396	0.0003	0.0000	0.0018
SMM2-T1-TSP	10/20/2016	0.0016	0.0118	0.0148	0.0027	0.0685	0.0060	0.0688	0.0403	0.0009	0.0000	0.0016
SMM2-T2-TSP	10/21/2016	0.0029	0.0027	0.0161	0.0000	0.0659	0.0056	0.0570	0.0366	0.0000	0.0017	0.0009
SMM2-T3-TSP	10/22/2016	0.0000	0.0012	0.0106	0.0020	0.0257	0.0060	0.0705	0.0316	0.0000	0.0012	0.0011
SMM3-T1-TSP	10/20/2016	0.0035	0.0019	0.0076	0.0013	0.0265	0.0027	0.0383	0.0402	0.0006	0.0017	0.0013
SMM3-T2-TSP	10/21/2016	0.0004	0.0014	0.0079	0.0026	0.0413	0.0022	0.0385	0.0387	0.0000	0.0014	0.0009
SMM3-T3-TSP	10/22/2016	0.0000	0.0002	0.0074	0.0007	0.0160	0.0038	0.0246	0.0387	0.0000	0.0009	0.0018
SMM4-T1-TSP	10/20/2016	0.0011	0.0007	0.0060	0.0027	0.0422	0.0020	0.0412	0.0467	0.0017	0.0003	0.0000
SMM4-T2-TSP	10/21/2016	0.0037	0.0020	0.0074	0.0015	0.0420	0.0032	0.0384	0.0450	0.0010	0.0000	0.0000
SMM4-T3-TSP	10/22/2016	0.0019	0.0007	0.0070	0.0018	0.0197	0.0039	0.0309	0.0490	0.0003	0.0006	0.0003
<i>Field Duplicate</i>												
SMM5-T1-TSP	10/20/2016	0.0022	0.0119	0.0164	0.0037	0.0798	0.0039	0.0698	0.0419	0.0009	0.0008	0.0052
SMM5-T3-TSP	10/22/2016	0.0004	0.0000	0.0119	0.0019	0.0317	0.0062	0.0854	0.0438	0.0003	0.0000	0.0013
<i>Field Blank</i>												
SMM1-T2-TSP-FB <sup>1</sup>	10/21/2016	3.1260	0.5684	0.0000	0.5684	6.8610	3.2890	35.0800	62.0400	0.4872	2.8830	1.0560
SMM3-T3-TSP-FB <sup>1</sup>	10/22/2016	0.0406	0.3654	2.2740	1.7860	7.0640	3.1260	37.3900	64.1100	0.0000	0.8526	0.0000
<i>Trip Blank</i>												
SMM-TB-TSP <sup>1</sup>	10/22/2016	0.0000	0.4060	0.6090	1.5020	9.1760	5.0750	33.4100	63.7800	0.1218	0.0000	0.1218
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0000	2.4770	1.3800	2.8420	6.5370	3.3700	31.0200	56.3500	0.0000	3.0860	1.2180
Lab Blank <sup>1</sup>		1.1770	0.6090	1.3400	0.0000	7.7950	3.2070	34.8300	53.4300	0.0000	0.5278	0.0000

TABLE I  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - TSP  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Indium (In) (µg/m <sup>3</sup> )	Tin (Sn) (µg/m <sup>3</sup> )	Antimony (Sb) (µg/m <sup>3</sup> )	Barium (Ba) (µg/m <sup>3</sup> )	Lanthanum (La) (µg/m <sup>3</sup> )	Mercury (Hg) (µg/m <sup>3</sup> )	Lead (Pb) (µg/m <sup>3</sup> )	Beryllium (Be) (µg/m <sup>3</sup> )	---	---	---
SMM1-T1-TSP	10/20/2016	0.0000	0.0172	0.0018	0.1316	0.0102	0.0024	0.0351	0.0001	---	---	---
SMM1-T2-TSP	10/21/2016	0.0000	0.0175	0.0029	0.1342	0.0020	0.0000	0.0320	0.0000	---	---	---
SMM1-T3-TSP	10/22/2016	0.0000	0.0122	0.0030	0.0768	0.0088	0.0000	0.0088	<0.0000	---	---	---
SMM2-T1-TSP	10/20/2016	0.0023	0.0275	0.0051	0.2051	0.0086	0.0011	0.1019	0.0001	---	---	---
SMM2-T2-TSP	10/21/2016	0.0000	0.0259	0.0044	0.1685	0.0024	0.0000	0.0859	0.0001	---	---	---
SMM2-T3-TSP	10/22/2016	0.0000	0.0186	0.0037	0.1288	0.0000	0.0000	0.0466	0.0001	---	---	---
SMM3-T1-TSP	10/20/2016	0.0000	0.0142	0.0032	0.1280	0.0000	0.0000	0.0395	0.0001	---	---	---
SMM3-T2-TSP	10/21/2016	0.0000	0.0153	0.0018	0.1718	0.0172	0.0000	0.0575	0.0001	---	---	---
SMM3-T3-TSP	10/22/2016	0.0002	0.0091	0.0008	0.0810	0.0097	0.0013	0.0110	<0.0000	---	---	---
SMM4-T1-TSP	10/20/2016	0.0006	0.0206	0.0005	0.1333	0.0000	0.0014	0.0337	0.0001	---	---	---
SMM4-T2-TSP	10/21/2016	0.0000	0.0164	0.0041	0.1388	0.0000	0.0000	0.0130	0.0001	---	---	---
SMM4-T3-TSP	10/22/2016	0.0000	0.0141	0.0027	0.0769	0.0035	0.0013	0.0079	<0.0000	---	---	---
<i>Field Duplicate</i>												
SMM5-T1-TSP	10/20/2016	0.0032	0.0298	0.0113	0.2442	0.0213	0.0020	0.1158	0.0001	---	---	---
SMM5-T3-TSP	10/22/2016	0.0000	0.0196	0.0035	0.1399	0.0252	0.0000	0.0464	0.0001	---	---	---
<i>Field Blank</i>												
SMM1-T2-TSP-FB <sup>1</sup>	10/21/2016	0.0000	9.9470	0.0000	74.2200	9.5820	0.0000	5.0340	<0.049	---	---	---
SMM3-T3-TSP-FB <sup>1</sup>	10/22/2016	0.0000	14.3300	4.6280	33.8200	15.5900	0.0000	3.9790	<0.049	---	---	---
<i>Trip Blank</i>												
SMM-TB-TSP <sup>1</sup>	10/22/2016	0.0000	14.9400	1.8270	30.1300	22.1700	3.8980	5.2780	<0.049	---	---	---
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0000	14.4500	4.1820	64.0300	0.0000	0.0000	3.2480	<0.049	---	---	---
Lab Blank <sup>1</sup>		2.2740	14.4500	0.0000	66.5800	9.2570	0.0000	0.0000	<0.049	---	---	---

Notes:

g = grams  
m<sup>3</sup> = cubic meters  
µg = micrograms

µg/m<sup>3</sup> = micrograms per cubic meter

--- = not sampled/tested

<sup>1</sup> = units for these QA/QC samples are µg/filter

Highlighted = concentrations are less than three times the uncertainty

*Italics* = Quality assurance/quality control samples

TABLE 2  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (mg)	Gross (mg)	Net (µg)	Volume (m <sup>3</sup> )	Concentration (µg/m <sup>3</sup> )	Sodium (Na) (µg/m <sup>3</sup> )	Magnesium (Mg) (µg/m <sup>3</sup> )	Aluminium (Al) (µg/m <sup>3</sup> )	Silicon (Si) (µg/m <sup>3</sup> )	Phosphorus (P) (µg/m <sup>3</sup> )	Sulfur (S) (µg/m <sup>3</sup> )
SMM1-T1-PM10	10/20/2016	374.645	375.755	1110	24	46.3	0.5457	0.4641	1.8480	2.6330	0.0356	0.4149
SMM1-T2-PM10	10/21/2016	349.155	350.082	927	24	38.6	0.6158	0.4075	1.0270	2.3370	0.0311	0.4868
SMM1-T3-PM10	10/22/2016	379.764	380.247	483	24	20.1	0.9501	0.2602	0.3198	0.7383	0.0105	0.2859
SMM2-T1-PM10	10/20/2016	354.778	356.932	2154	24	89.8	0.9266	0.8725	2.4570	5.8620	0.1080	1.2440
SMM2-T2-PM10	10/21/2016	348.688	350.386	1698	24	70.8	0.9793	0.7472	2.0100	4.8350	0.0563	1.0330
SMM2-T3-PM10	10/22/2016	382.796	383.710	914	24	38.1	0.9129	0.3781	0.7185	1.8320	0.0382	0.4788
SMM3-T1-PM10	10/20/2016	373.359	374.273	914	24	38.1	0.5076	0.3426	1.0310	2.0860	0.0330	0.4099
SMM3-T2-PM10	10/21/2016	358.900	359.883	983	24	41.0	0.5961	0.3925	0.9544	2.3130	0.0348	0.5335
SMM3-T3-PM10	10/22/2016	366.605	367.071	466	24	19.4	0.7929	0.2207	0.3197	0.7298	0.0128	0.2938
SMM4-T1-PM10	10/20/2016	374.327	375.565	1238	24	51.6	0.5815	0.6036	1.7100	3.6810	0.0365	0.4897
SMM4-T2-PM10	10/21/2016	381.196	382.292	1096	24	45.7	0.5876	0.5109	1.3030	3.0380	0.0336	0.6017
SMM4-T3-PM10	10/22/2016	342.877	343.511	634	24	26.4	0.9652	0.3403	0.5947	1.3990	0.0154	0.3416
<i>Field Duplicate</i>												
SMM5-T1-PM10	10/20/2016	352.339	354.431	2092	24	87.2	1.1420	0.9012	2.5400	6.0270	0.1081	1.2640
SMM5-T3-PM10	10/22/2016	359.157	360.046	889	24	37.0	0.8178	0.3472	0.6931	1.7630	0.0336	0.4489
<i>Field Blank</i>												
SMM1-T2-PM10-FB <sup>1</sup>	10/21/2016	355.952	355.964	12			0.1752	0.0000	0.0000	0.0362	0.0000	0.0000
SMM3-T3-PM10-FB <sup>1</sup>	10/22/2016	357.439	357.446	7			0.0000	0.0124	0.0000	0.0000	0.0000	0.0000
<i>Trip Blank</i>												
SMM-TB-PM10 <sup>1</sup>	10/22/2016	364.892	364.899	7			0.0000	0.0000	0.0068	0.0350	0.0000	0.0011
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		352.455	352.458	3			0.0000	0.0000	0.0000	0.0316	0.0000	0.0124
Lab Blank <sup>1</sup>		356.228	356.227	-1			0.0000	0.0000	0.0000	0.0000	0.0000	0.0079
Lab Blank <sup>1</sup>		386.875	386.878	3			0.0000	0.0000	0.0000	0.0147	0.0000	0.0328
Lab Blank <sup>1</sup>		352.932	352.933	1			0.0282	0.0000	0.0000	0.0113	0.0000	0.0000

TABLE 2  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Chlorine (Cl) (µg/m <sup>3</sup> )	Potassium (K) (µg/m <sup>3</sup> )	Calcium (Ca) (µg/m <sup>3</sup> )	Titanium (Ti) (µg/m <sup>3</sup> )	Vanadium (V) (µg/m <sup>3</sup> )	Chromium (Cr) (µg/m <sup>3</sup> )	Manganese (Mn) (µg/m <sup>3</sup> )	Iron (Fe) (µg/m <sup>3</sup> )	Cobalt (Co) (µg/m <sup>3</sup> )	Nickel (Ni) (µg/m <sup>3</sup> )	Copper (Cu) (µg/m <sup>3</sup> )
SMM1-T1-PM10	10/20/2016	0.7835	0.2774	2.3620	0.1947	0.0081	0.0071	0.0308	2.0820	0.0000	0.0040	0.0337
SMM1-T2-PM10	10/21/2016	0.9798	0.2721	2.0740	0.1205	0.0060	0.0067	0.0253	1.6990	0.0000	0.0032	0.0427
SMM1-T3-PM10	10/22/2016	1.6000	0.1282	0.6700	0.0374	0.0020	0.0011	0.0080	0.5231	0.0000	0.0012	0.0274
SMM2-T1-PM10	10/20/2016	1.0920	0.4868	5.9370	0.2689	0.0152	0.0232	0.0742	4.4220	0.0000	0.0185	0.0799
SMM2-T2-PM10	10/21/2016	1.1480	0.4473	4.1830	0.2235	0.0134	0.0194	0.0531	3.4150	0.0000	0.0125	0.0554
SMM2-T3-PM10	10/22/2016	1.7080	0.4627	1.7020	0.1051	0.0032	0.0079	0.0256	1.4740	0.0000	0.0073	0.0421
SMM3-T1-PM10	10/20/2016	0.7919	0.2389	3.1280	0.1119	0.0071	0.0058	0.0220	1.5970	0.0000	0.0027	0.0786
SMM3-T2-PM10	10/21/2016	1.0260	0.2868	2.7490	0.1187	0.0054	0.0065	0.0306	1.8000	0.0000	0.0045	0.1222
SMM3-T3-PM10	10/22/2016	1.5360	0.1315	0.6921	0.0407	0.0018	0.0028	0.0070	0.5080	0.0000	0.0010	0.0505
SMM4-T1-PM10	10/20/2016	0.8503	0.3698	3.1890	0.1964	0.0104	0.0099	0.0392	2.6910	0.0000	0.0055	0.0354
SMM4-T2-PM10	10/21/2016	0.9497	0.3176	2.8370	0.1446	0.0076	0.0068	0.0288	1.9760	0.0000	0.0030	0.0386
SMM4-T3-PM10	10/22/2016	1.7090	0.1869	1.2720	0.0709	0.0030	0.0016	0.0133	0.8753	0.0000	0.0013	0.0200
<i>Field Duplicate</i>												
SMM5-T1-PM10	10/20/2016	1.1130	0.5203	6.1490	0.2851	0.0141	0.0214	0.0764	4.5940	0.0000	0.0170	0.0711
SMM5-T3-PM10	10/22/2016	1.5620	0.4333	1.6420	0.1015	0.0040	0.0076	0.0234	1.4170	0.0000	0.0070	0.0333
<i>Field Blank</i>												
SMM1-T2-PM10-FB <sup>1</sup>	10/21/2016	0.0000	0.0000	0.0260	0.0000	0.0000	0.0000	0.0124	0.0237	0.0000	0.0000	0.0000
SMM3-T3-PM10-FB <sup>1</sup>	10/22/2016	0.0000	0.0056	0.0316	0.0000	0.0011	0.0056	0.0000	0.0000	0.0000	0.0090	0.0000
<i>Trip Blank</i>												
SMM-TB-PM10 <sup>1</sup>	10/22/2016	0.0000	0.0090	0.0181	0.0090	0.0000	0.0056	0.0000	0.0396	0.0000	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0000	0.0497	0.3593	0.0362	0.0102	0.0023	0.0000	0.0000	0.0034	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0102	0.0565	0.0000	0.0000	0.0136	0.0056	0.0102	0.0000	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0000	0.0136	0.0000	0.0000	0.0000	0.0056	0.0034	0.0000	0.0000	0.0000

TABLE 2  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Zinc (Zn) (µg/m <sup>3</sup> )	Gallium (Ga) (µg/m <sup>3</sup> )	Germanium (Ge) (µg/m <sup>3</sup> )	Arsenic (As) (µg/m <sup>3</sup> )	Selenium (Se) (µg/m <sup>3</sup> )	Bromine (Br) (µg/m <sup>3</sup> )	Rubidium (Rb) (µg/m <sup>3</sup> )	Strontium (Sr) (µg/m <sup>3</sup> )	Yttrium (Y) (µg/m <sup>3</sup> )	Zirconium (Zr) (µg/m <sup>3</sup> )	Molybdenum (Mo) (µg/m <sup>3</sup> )
SMM1-T1-PM10	10/20/2016	0.2110	0.0010	0.0003	0.0000	0.0005	0.0055	0.0006	0.0136	0.0017	0.0142	0.0025
SMM1-T2-PM10	10/21/2016	0.1176	0.0005	0.0006	0.0018	0.0000	0.0047	0.0009	0.0158	0.0010	0.0163	0.0000
SMM1-T3-PM10	10/22/2016	0.3459	0.0008	0.0001	0.0000	0.0000	0.0047	0.0003	0.0054	0.0000	0.0050	0.0004
SMM2-T1-PM10	10/20/2016	0.8918	0.0018	0.0000	0.0000	0.0040	0.0115	0.0019	0.0391	0.0041	0.0282	0.0040
SMM2-T2-PM10	10/21/2016	0.5495	0.0017	0.0006	0.0032	0.0000	0.0109	0.0017	0.0321	0.0036	0.0289	0.0036
SMM2-T3-PM10	10/22/2016	0.3261	0.0009	0.0006	0.0020	0.0000	0.0075	0.0001	0.0124	0.0025	0.0255	0.0023
SMM3-T1-PM10	10/20/2016	0.1356	0.0010	0.0007	0.0034	0.0000	0.0051	0.0009	0.0135	0.0007	0.0105	0.0026
SMM3-T2-PM10	10/21/2016	0.1762	0.0013	0.0003	0.0004	0.0008	0.0067	0.0008	0.0196	0.0008	0.0135	0.0033
SMM3-T3-PM10	10/22/2016	0.0336	0.0004	0.0004	0.0000	0.0004	0.0050	0.0007	0.0051	0.0000	0.0060	0.0025
SMM4-T1-PM10	10/20/2016	0.1965	0.0005	0.0002	0.0007	0.0001	0.0052	0.0017	0.0215	0.0008	0.0137	0.0000
SMM4-T2-PM10	10/21/2016	0.0776	0.0011	0.0000	0.0004	0.0003	0.0056	0.0010	0.0192	0.0008	0.0146	0.0036
SMM4-T3-PM10	10/22/2016	0.0856	0.0002	0.0001	0.0011	0.0000	0.0052	0.0011	0.0087	0.0000	0.0058	0.0004
<i>Field Duplicate</i>												
SMM5-T1-PM10	10/20/2016	0.9087	0.0019	0.0007	0.0014	0.0053	0.0130	0.0017	0.0385	0.0043	0.0305	0.0043
SMM5-T3-PM10	10/22/2016	0.3134	0.0011	0.0009	0.0017	0.0001	0.0065	0.0009	0.0123	0.0023	0.0227	0.0006
<i>Field Blank</i>												
SMM1-T2-PM10-FB <sup>1</sup>	10/21/2016	0.0000	0.0011	0.0000	0.0011	0.0068	0.0068	0.0056	0.0034	0.0045	0.0000	0.0170
SMM3-T3-PM10-FB <sup>1</sup>	10/22/2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0079	0.0000	0.0000	0.0000	0.0124
<i>Trip Blank</i>												
SMM-TB-PM10 <sup>1</sup>	10/22/2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0023	0.0056	0.0000	0.0000	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0090	0.0000	0.0034	0.0000	0.0000	0.0000	0.0000	0.0011	0.0136	0.0000	0.0282
Lab Blank <sup>1</sup>		0.0000	0.0023	0.0045	0.0000	0.0000	0.0000	0.0045	0.0000	0.0000	0.0113	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0113	0.0056	0.0011	0.0000	0.0034	0.0000	0.0056	0.0000	0.0000	0.0136
Lab Blank <sup>1</sup>		0.0000	0.0034	0.0000	0.0147	0.0000	0.0000	0.0056	0.0000	0.0068	0.0000	0.0000

TABLE 2  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM10  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Palladium (Pd) (µg/m <sup>3</sup> )	Silver (Ag) (µg/m <sup>3</sup> )	Cadmium (Cd) (µg/m <sup>3</sup> )	Indium (In) (µg/m <sup>3</sup> )	Tin (Sn) (µg/m <sup>3</sup> )	Antimony (Sb) (µg/m <sup>3</sup> )	Barium (Ba) (µg/m <sup>3</sup> )	Lanthanum (La) (µg/m <sup>3</sup> )	Mercury (Hg) (µg/m <sup>3</sup> )	Lead (Pb) (µg/m <sup>3</sup> )	Beryllium (Be) (µg/m <sup>3</sup> )
SMM1-T1-PM10	10/20/2016	0.0000	0.0000	0.0016	0.0000	0.0048	0.0000	0.0534	0.0000	0.0000	0.0205	<0.0003
SMM1-T2-PM10	10/21/2016	0.0000	0.0000	0.0000	0.0002	0.0020	0.0104	0.0622	0.0000	0.0009	0.0124	<0.0003
SMM1-T3-PM10	10/22/2016	0.0009	0.0000	0.0000	0.0007	0.0018	0.0000	0.0223	0.0024	0.0000	0.0061	<0.0003
SMM2-T1-PM10	10/20/2016	0.0000	0.0005	0.0028	0.0000	0.0000	0.0056	0.0928	0.0000	0.0011	0.0590	<0.0003
SMM2-T2-PM10	10/21/2016	0.0000	0.0000	0.0035	0.0016	0.0156	0.0046	0.0896	0.0000	0.0000	0.0499	<0.0003
SMM2-T3-PM10	10/22/2016	0.0000	0.0018	0.0016	0.0019	0.0006	0.0028	0.0374	0.0000	0.0000	0.0155	<0.0003
SMM3-T1-PM10	10/20/2016	0.0010	0.0000	0.0021	0.0000	0.0024	0.0057	0.0527	0.0000	0.0000	0.0183	<0.0003
SMM3-T2-PM10	10/21/2016	0.0016	0.0016	0.0016	0.0016	0.0105	0.0000	0.0670	0.0000	0.0000	0.0254	<0.0003
SMM3-T3-PM10	10/22/2016	0.0000	0.0000	0.0000	0.0002	0.0010	0.0089	0.0175	0.0000	0.0000	0.0031	<0.0003
SMM4-T1-PM10	10/20/2016	0.0018	0.0007	0.0000	0.0000	0.0021	0.0029	0.0616	0.0000	0.0000	0.0196	<0.0003
SMM4-T2-PM10	10/21/2016	0.0000	0.0005	0.0000	0.0040	0.0010	0.0000	0.0631	0.0000	0.0008	0.0091	<0.0003
SMM4-T3-PM10	10/22/2016	0.0013	0.0000	0.0000	0.0026	0.0020	0.0019	0.0187	0.0000	0.0005	0.0039	<0.0003
<i>Field Duplicate</i>												
SMM5-T1-PM10	10/20/2016	0.0000	0.0017	0.0021	0.0016	0.0124	0.0092	0.1030	0.0000	0.0000	0.0555	<0.0003
SMM5-T3-PM10	10/22/2016	0.0002	0.0016	0.0024	0.0040	0.0048	0.0089	0.0317	0.0000	0.0002	0.0155	<0.0003
<i>Field Blank</i>												
SMM1-T2-PM10-FB <sup>1</sup>	10/21/2016	0.0045	0.0000	0.0000	0.0000	0.0000	0.0000	0.0192	0.0350	0.0000	0.0113	<0.008
SMM3-T3-PM10-FB <sup>1</sup>	10/22/2016	0.0000	0.0056	0.0701	0.0136	0.0927	0.0000	0.0000	0.0000	0.0000	0.0147	<0.008
<i>Trip Blank</i>												
SMM-TB-PM10 <sup>1</sup>	10/22/2016	0.0000	0.0000	0.0520	0.0000	0.0000	0.0000	0.0000	0.0542	0.0000	0.0000	<0.008
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0249	0.0000	0.0000	0.0056	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	<0.008
Lab Blank <sup>1</sup>		0.0090	0.0237	0.0237	0.0000	0.0814	0.1356	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank <sup>1</sup>		0.0000	0.0000	0.0836	0.0000	0.1153	0.0000	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank <sup>1</sup>		0.0000	0.0407	0.0113	0.0000	0.0000	0.1469	0.0000	0.0124	0.0000	0.0000	<0.008

Notes: g = grams                      µg/m<sup>3</sup> = micrograms per cubic meter                      Highlighted = concentrations are less than three times the uncertainty  
m<sup>3</sup> = cubic meters                      --- = not sampled/tested                      Italics = Quality assurance/quality control samples  
µg = micrograms                      <sup>1</sup> = units for these QA/QC samples are µg/filter



TABLE 3  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Tare (mg)	Gross (mg)	Net (µg)	Volume (m <sup>3</sup> )	Concentration (µg/m <sup>3</sup> )	Sodium (Na) (µg/m <sup>3</sup> )	Magnesium (Mg) (µg/m <sup>3</sup> )	Aluminium (Al) (µg/m <sup>3</sup> )	Silicon (Si) (µg/m <sup>3</sup> )	Phosphorus (P) (µg/m <sup>3</sup> )	Sulfur (S) (µg/m <sup>3</sup> )
SMM1-T1-PM2.5	10/20/2016	359.406	359.663	257	24	10.7	0.2209	0.0846	0.2810	0.2904	0.0064	0.1675
SMM1-T2-PM2.5	10/21/2016	373.932	374.159	227	24	9.46	0.1603	0.0582	0.1048	0.2043	0.0068	0.2123
SMM1-T3-PM2.5	10/22/2016	369.578	369.736	158	24	6.58	0.4242	0.0728	0.0462	0.0653	0.0000	0.1566
SMM2-T1-PM2.5	10/20/2016	379.065	379.560	495	24	20.6	0.3617	0.1367	0.2949	0.5909	0.0224	0.2807
SMM2-T2-PM2.5	10/21/2016	356.748	357.143	395	24	16.5	0.3631	0.1199	0.2016	0.4119	0.0132	0.2774
SMM2-T3-PM2.5	10/22/2016	368.320	368.555	235	24	9.79	0.3695	0.0804	0.0902	0.1994	0.0067	0.1881
SMM3-T1-PM2.5	10/20/2016	374.742	374.994	252	24	10.5	0.2015	0.0944	0.2276	0.4281	0.0082	0.1861
SMM3-T2-PM2.5	10/21/2016	360.573	360.843	270	24	11.3	0.2012	0.0865	0.1705	0.3640	0.0075	0.2526
SMM3-T3-PM2.5	10/22/2016	376.443	376.587	144	24	6.00	0.2837	0.0394	0.0344	0.0781	0.0026	0.1439
SMM4-T1-PM2.5	10/20/2016	382.821	383.095	274	24	11.4	0.1825	0.0879	0.1819	0.3351	0.0077	0.1596
SMM4-T2-PM2.5	10/21/2016	378.657	378.912	255	24	10.6	0.1726	0.0726	0.1389	0.2584	0.0053	0.2144
SMM4-T3-PM2.5	10/22/2016	369.453	369.635	182	24	7.58	0.3399	0.0708	0.0711	0.1315	0.0037	0.1569
<i>Field Duplicate</i>												
SMM5-T1-PM2.5	10/20/2016	385.008	385.503	495	24	20.6	0.3752	0.1496	0.2829	0.5471	0.0200	0.2762
SMM5-T3-PM2.5	10/22/2016	366.959	367.190	231	24	9.63	0.3732	0.0775	0.0861	0.1813	0.0056	0.1986
<i>Field Blank</i>												
SMM1-T2-PM2.5-FB <sup>1</sup>	10/21/2016	360.983	360.992	9			0.0000	0.0000	0.0000	0.0520	0.0136	0.0226
SMM3-T3-PM2.5-FB <sup>1</sup>	10/22/2016	361.732	361.757	25			0.0000	0.0000	0.1074	0.0881	0.0000	0.0102
<i>Trip Blank</i>												
SMM-TB-PM2.5 <sup>1</sup>	10/22/2016	381.306	381.320	14			0.2215	0.0339	0.0746	0.0588	0.0000	0.0000
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		352.455	352.458	3			0.0000	0.0000	0.0000	0.0316	0.0000	0.0124
Lab Blank <sup>1</sup>		356.228	356.227	-1			0.0000	0.0000	0.0000	0.0000	0.0000	0.0079
Lab Blank <sup>1</sup>		386.875	386.878	3			0.0000	0.0000	0.0000	0.0147	0.0000	0.0328
Lab Blank <sup>1</sup>		352.932	352.933	1			0.0282	0.0000	0.0000	0.0113	0.0000	0.0000

TABLE 3  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Chlorine (Cl) (µg/m <sup>3</sup> )	Potassium (K) (µg/m <sup>3</sup> )	Calcium (Ca) (µg/m <sup>3</sup> )	Titanium (Ti) (µg/m <sup>3</sup> )	Vanadium (V) (µg/m <sup>3</sup> )	Chromium (Cr) (µg/m <sup>3</sup> )	Manganese (Mn) (µg/m <sup>3</sup> )	Iron (Fe) (µg/m <sup>3</sup> )	Cobalt (Co) (µg/m <sup>3</sup> )	Nickel (Ni) (µg/m <sup>3</sup> )	Copper (Cu) (µg/m <sup>3</sup> )
SMM1-T1-PM2.5	10/20/2016	0.1213	0.0523	0.2321	0.0216	0.0016	0.0020	0.0043	0.2790	0.0000	0.0006	0.0124
SMM1-T2-PM2.5	10/21/2016	0.0585	0.0493	0.1722	0.0128	0.0001	0.0016	0.0021	0.2142	0.0000	0.0003	0.0150
SMM1-T3-PM2.5	10/22/2016	0.3912	0.0343	0.0619	0.0052	0.0001	0.0002	0.0010	0.0956	0.0000	0.0004	0.0165
SMM2-T1-PM2.5	10/20/2016	0.2828	0.0992	0.6314	0.0315	0.0017	0.0060	0.0177	0.6191	0.0000	0.0038	0.0242
SMM2-T2-PM2.5	10/21/2016	0.2235	0.0874	0.3874	0.0237	0.0018	0.0093	0.0083	0.5000	0.0000	0.0037	0.0191
SMM2-T3-PM2.5	10/22/2016	0.3304	0.0715	0.1872	0.0105	0.0008	0.0018	0.0081	0.2176	0.0000	0.0009	0.0154
SMM3-T1-PM2.5	10/20/2016	0.1541	0.0747	0.4089	0.0192	0.0019	0.0009	0.0048	0.3327	0.0000	0.0003	0.0197
SMM3-T2-PM2.5	10/21/2016	0.1272	0.0726	0.3513	0.0210	0.0020	0.0004	0.0055	0.3374	0.0000	0.0002	0.0250
SMM3-T3-PM2.5	10/22/2016	0.1918	0.0310	0.0691	0.0043	0.0002	0.0007	0.0009	0.0807	0.0001	0.0000	0.0137
SMM4-T1-PM2.5	10/20/2016	0.1113	0.0573	0.2774	0.0199	0.0005	0.0010	0.0043	0.3035	0.0000	0.0010	0.0084
SMM4-T2-PM2.5	10/21/2016	0.0723	0.0533	0.2247	0.0140	0.0008	0.0002	0.0031	0.2314	0.0000	0.0004	0.0101
SMM4-T3-PM2.5	10/22/2016	0.2564	0.0407	0.1168	0.0082	0.0001	0.0016	0.0014	0.1186	0.0000	0.0000	0.0087
<i>Field Duplicate</i>												
SMM5-T1-PM2.5	10/20/2016	0.2730	0.0965	0.5951	0.0274	0.0028	0.0065	0.0170	0.5904	0.0000	0.0038	0.0190
SMM5-T3-PM2.5	10/22/2016	0.3352	0.0700	0.1744	0.0105	0.0008	0.0013	0.0079	0.2070	0.0000	0.0007	0.0120
<i>Field Blank</i>												
SMM1-T2-PM2.5-FB <sup>1</sup>	10/21/2016	0.0000	0.0113	0.0034	0.0090	0.0068	0.0000	0.0102	0.0000	0.0000	0.0000	0.0000
SMM3-T3-PM2.5-FB <sup>1</sup>	10/22/2016	0.0429	0.0215	0.0260	0.0000	0.0000	0.0215	0.0136	0.0000	0.0000	0.0000	0.0000
<i>Trip Blank</i>												
SMM-TB-PM2.5 <sup>1</sup>	10/22/2016	0.0418	0.0045	0.0192	0.0000	0.0011	0.0000	0.0090	0.0079	0.0023	0.0068	0.0000
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0000	0.0497	0.3593	0.0362	0.0102	0.0023	0.0000	0.0000	0.0034	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0102	0.0565	0.0000	0.0000	0.0136	0.0056	0.0102	0.0000	0.0000	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0000	0.0136	0.0000	0.0000	0.0000	0.0056	0.0034	0.0000	0.0000	0.0000

TABLE 3  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Zinc (Zn) (µg/m <sup>3</sup> )	Gallium (Ga) (µg/m <sup>3</sup> )	Germanium (Ge) (µg/m <sup>3</sup> )	Arsenic (As) (µg/m <sup>3</sup> )	Selenium (Se) (µg/m <sup>3</sup> )	Bromine (Br) (µg/m <sup>3</sup> )	Rubidium (Rb) (µg/m <sup>3</sup> )	Strontium (Sr) (µg/m <sup>3</sup> )	Yttrium (Y) (µg/m <sup>3</sup> )	Zirconium (Zr) (µg/m <sup>3</sup> )	Molybdenum (Mo) (µg/m <sup>3</sup> )
SMM1-T1-PM2.5	10/20/2016	0.0799	0.0008	0.0001	0.0008	0.0000	0.0027	0.0006	0.0016	0.0002	0.0032	0.0022
SMM1-T2-PM2.5	10/21/2016	0.0222	0.0000	0.0000	0.0000	0.0010	0.0024	0.0003	0.0017	0.0005	0.0032	0.0021
SMM1-T3-PM2.5	10/22/2016	0.3338	0.0005	0.0002	0.0000	0.0000	0.0018	0.0005	0.0008	0.0000	0.0016	0.0000
SMM2-T1-PM2.5	10/20/2016	0.3719	0.0007	0.0004	0.0016	0.0002	0.0065	0.0009	0.0026	0.0000	0.0040	0.0024
SMM2-T2-PM2.5	10/21/2016	0.2359	0.0005	0.0006	0.0000	0.0000	0.0049	0.0001	0.0024	0.0008	0.0052	0.0008
SMM2-T3-PM2.5	10/22/2016	0.1323	0.0000	0.0003	0.0002	0.0000	0.0025	0.0006	0.0015	0.0000	0.0022	0.0000
SMM3-T1-PM2.5	10/20/2016	0.0216	0.0003	0.0001	0.0011	0.0000	0.0020	0.0001	0.0024	0.0000	0.0016	0.0018
SMM3-T2-PM2.5	10/21/2016	0.0397	0.0004	0.0000	0.0004	0.0003	0.0026	0.0005	0.0023	0.0003	0.0048	0.0026
SMM3-T3-PM2.5	10/22/2016	0.0101	0.0002	0.0000	0.0007	0.0003	0.0020	0.0002	0.0007	0.0000	0.0004	0.0007
SMM4-T1-PM2.5	10/20/2016	0.0386	0.0000	0.0003	0.0004	0.0004	0.0025	0.0000	0.0013	0.0000	0.0019	0.0000
SMM4-T2-PM2.5	10/21/2016	0.0104	0.0002	0.0004	0.0015	0.0000	0.0023	0.0000	0.0007	0.0000	0.0025	0.0002
SMM4-T3-PM2.5	10/22/2016	0.0513	0.0000	0.0001	0.0012	0.0005	0.0018	0.0002	0.0017	0.0010	0.0008	0.0000
<i>Field Duplicate</i>												
SMM5-T1-PM2.5	10/20/2016	0.3652	0.0000	0.0005	0.0000	0.0000	0.0070	0.0000	0.0032	0.0000	0.0041	0.0007
SMM5-T3-PM2.5	10/22/2016	0.1296	0.0000	0.0001	0.0000	0.0000	0.0020	0.0000	0.0015	0.0002	0.0030	0.0009
<i>Field Blank</i>												
SMM1-T2-PM2.5-FB <sup>1</sup>	10/21/2016	0.0000	0.0023	0.0023	0.0023	0.0011	0.0000	0.0079	0.0000	0.0000	0.0000	0.0000
SMM3-T3-PM2.5-FB <sup>1</sup>	10/22/2016	0.0011	0.0056	0.0034	0.0000	0.0000	0.0000	0.0034	0.0000	0.0000	0.0000	0.0000
<i>Trip Blank</i>												
SMM-TB-PM2.5 <sup>1</sup>	10/22/2016	0.0000	0.0011	0.0045	0.0000	0.0023	0.0000	0.0113	0.0124	0.0000	0.0000	0.0441
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0090	0.0000	0.0034	0.0000	0.0000	0.0000	0.0000	0.0011	0.0136	0.0000	0.0282
Lab Blank <sup>1</sup>		0.0000	0.0023	0.0045	0.0000	0.0000	0.0000	0.0045	0.0000	0.0000	0.0113	0.0000
Lab Blank <sup>1</sup>		0.0000	0.0113	0.0056	0.0011	0.0000	0.0034	0.0000	0.0056	0.0000	0.0000	0.0136
Lab Blank <sup>1</sup>		0.0000	0.0034	0.0000	0.0147	0.0000	0.0000	0.0056	0.0000	0.0068	0.0000	0.0000

TABLE 3  
SUMMARY OF GRAVIMETRIC AND METALS ANALYTICAL DATA - PM2.5  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

Client ID	Sample Date	Palladium (Pd) (µg/m <sup>3</sup> )	Silver (Ag) (µg/m <sup>3</sup> )	Cadmium (Cd) (µg/m <sup>3</sup> )	Indium (In) (µg/m <sup>3</sup> )	Tin (Sn) (µg/m <sup>3</sup> )	Antimony (Sb) (µg/m <sup>3</sup> )	Barium (Ba) (µg/m <sup>3</sup> )	Lanthanum (La) (µg/m <sup>3</sup> )	Mercury (Hg) (µg/m <sup>3</sup> )	Lead (Pb) (µg/m <sup>3</sup> )	Beryllium (Be) (µg/m <sup>3</sup> )
SMM1-T1-PM2.5	10/20/2016	0.0024	0.0000	0.0000	0.0007	0.0023	0.0085	0.0143	0.0018	0.0000	0.0073	<0.0003
SMM1-T2-PM2.5	10/21/2016	0.0000	0.0000	0.0000	0.0012	0.0000	0.0000	0.0094	0.0000	0.0000	0.0028	<0.0003
SMM1-T3-PM2.5	10/22/2016	0.0000	0.0015	0.0000	0.0000	0.0000	0.0000	0.0049	0.0000	0.0000	0.0048	<0.0003
SMM2-T1-PM2.5	10/20/2016	0.0000	0.0008	0.0009	0.0000	0.0023	0.0066	0.0178	0.0000	0.0000	0.0137	<0.0003
SMM2-T2-PM2.5	10/21/2016	0.0000	0.0014	0.0000	0.0000	0.0020	0.0042	0.0341	0.0096	0.0000	0.0234	<0.0003
SMM2-T3-PM2.5	10/22/2016	0.0000	0.0000	0.0000	0.0007	0.0000	0.0041	0.0127	0.0032	0.0002	0.0063	<0.0003
SMM3-T1-PM2.5	10/20/2016	0.0000	0.0000	0.0000	0.0000	0.0048	0.0061	0.0280	0.0057	0.0000	0.0059	<0.0003
SMM3-T2-PM2.5	10/21/2016	0.0000	0.0019	0.0022	0.0000	0.0000	0.0000	0.0252	0.0032	0.0001	0.0056	<0.0003
SMM3-T3-PM2.5	10/22/2016	0.0006	0.0000	0.0001	0.0000	0.0006	0.0036	0.0044	0.0002	0.0000	0.0002	<0.0003
SMM4-T1-PM2.5	10/20/2016	0.0026	0.0023	0.0000	0.0012	0.0022	0.0000	0.0104	0.0000	0.0003	0.0053	<0.0003
SMM4-T2-PM2.5	10/21/2016	0.0000	0.0000	0.0006	0.0000	0.0020	0.0071	0.0119	0.0000	0.0000	0.0026	<0.0003
SMM4-T3-PM2.5	10/22/2016	0.0000	0.0000	0.0000	0.0031	0.0000	0.0000	0.0031	0.0005	0.0000	0.0027	<0.0003
<i>Field Duplicate</i>												
SMM5-T1-PM2.5	10/20/2016	0.0000	0.0000	0.0027	0.0000	0.0000	0.0036	0.0309	0.0085	0.0006	0.0157	<0.0003
SMM5-T3-PM2.5	10/22/2016	0.0000	0.0024	0.0000	0.0018	0.0010	0.0024	0.0138	0.0024	0.0000	0.0049	<0.0003
<i>Field Blank</i>												
SMM1-T2-PM2.5-FB <sup>1</sup>	10/21/2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	<0.008
SMM3-T3-PM2.5-FB <sup>1</sup>	10/22/2016	0.0000	0.0588	0.0000	0.0282	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	<0.008
<i>Trip Blank</i>												
SMM-TB-PM2.5 <sup>1</sup>	10/22/2016	0.0045	0.0000	0.0000	0.0622	0.0000	0.0000	0.0203	0.0079	0.0056	0.0000	<0.008
<i>Lab Blank</i>												
Lab Blank <sup>1</sup>		0.0249	0.0000	0.0000	0.0056	0.0000	0.0000	0.0000	0.0000	0.0000	0.0124	<0.008
Lab Blank <sup>1</sup>		0.0090	0.0237	0.0237	0.0000	0.0814	0.1356	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank <sup>1</sup>		0.0000	0.0000	0.0836	0.0000	0.1153	0.0000	0.0000	0.0000	0.0000	0.0000	<0.008
Lab Blank <sup>1</sup>		0.0000	0.0407	0.0113	0.0000	0.0000	0.1469	0.0000	0.0124	0.0000	0.0000	<0.008

Notes: g = grams      µg/m<sup>3</sup> = micrograms per cubic meter      Highlighted = concentrations are less than three times the uncertainty  
m<sup>3</sup> = cubic meters      --- = not sampled/tested      Italics = Quality assurance/quality control samples  
µg = micrograms      <sup>1</sup> = units for these QA/QC samples are µg/filter

TABLE 4  
SUMMARY OF ASBESTOS ANALYTICAL DATA  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	SAMPLE TYPE	ANALYTICAL METHOD	ASBESTOS CONCENTRATION	ASBESTOS TYPE
				N s/mm <sup>2</sup>	
SMM1-T1-Asbestos	10/20/16	Air	AHERA - TEM	<19.00	N/A
SMM1-T2-Asbestos	10/21/16	Air	AHERA - TEM	<19.00	N/A
SMM1-T3-Asbestos	10/22/16	Air	AHERA - TEM	<19.00	N/A
SMM2-T1-Asbestos	10/20/16	Air	AHERA - TEM	<19.00	N/A
SMM2-T2-Asbestos	10/21/16	Air	AHERA - TEM	19.00	Chrysotile (1 structure ≥5μ)
SMM2-T3-Asbestos	10/22/16	Air	AHERA - TEM	<19.00	N/A
SMM3-T1-Asbestos	10/20/16	Air	AHERA - TEM	<19.00	N/A
SMM3-T2-Asbestos	10/21/16	Air	AHERA - TEM	<19.00	N/A
SMM3-T3-Asbestos	10/22/16	Air	AHERA - TEM	<19.00	N/A
SMM4-T1-Asbestos	10/20/16	Air	AHERA - TEM	<19.00	N/A
SMM4-T2-Asbestos	10/21/16	Air	AHERA - TEM	<19.00	N/A
SMM4-T3-Asbestos	10/22/16	Air	AHERA - TEM	<19.00	N/A
<i>Field Duplicate</i>					
<i>SMM5-T1-Asbestos</i>	<i>10/20/16</i>	<i>Air</i>	<i>AHERA - TEM</i>	<i>&lt;19.00</i>	<i>N/A</i>
<i>SMM5-T3-Asbestos</i>	<i>10/22/16</i>	<i>Air</i>	<i>AHERA - TEM</i>	<i>&lt;19.00</i>	<i>N/A</i>
<i>Trip Blank</i>					
<i>SMM-TB-Asbestos</i>	<i>10/22/16</i>	<i>Air</i>	<i>AHERA - TEM</i>	<i>&lt;7.70</i>	<i>N/A</i>

Notes:

AHERA = Asbestos Hazard Emergency Response Act

TEM =Transmission Electron Microscopy

s/mm<sup>2</sup> = Structures per milimeter squared

< = Less than the respective laboratory test method reporting limits for each tested analyte

*Italics* = Quality assurance/quality control samples

N/A = Not Applicable

TABLE 5  
SUMMARY OF PCB ANALYTICAL DATA  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	Aroclor-1016 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1221 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1232 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1242 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1248 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1254 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1260 ( $\mu\text{g}/\text{m}^3$ )	Aroclor-1262 ( $\mu\text{g}/\text{m}^3$ )
SMM1-T1-PCB	10/20/16	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
SMM1-T2-PCB	10/21/16	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
SMM1-T3-PCB	10/22/16	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
SMM2-T1-PCB	10/20/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM2-T2-PCB	10/21/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM2-T3-PCB	10/22/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM3-T1-PCB	10/20/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SMM3-T2-PCB	10/21/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SMM3-T3-PCB	10/22/16	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027
SMM4-T1-PCB	10/20/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM4-T2-PCB	10/21/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM4-T3-PCB	10/22/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
<i>Field Duplicates</i>									
SMM5-T1-PCB	10/20/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
SMM5-T3-PCB	10/22/16	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026
<i>Trip Blank</i>									
SMM-TB-PCB	10/22/16	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025

Notes:

Notes: PCB = Polychlorinated biphenyls

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter

*Italics* = Quality assurance/quality control samples

< = Less than the respective laboratory test method reporting limits for each tested analyte

TABLE 6  
SUMMARY OF FORMALDEHYDE ANALYTICAL DATA  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

SAMPLE I.D.	SAMPLE DATE	Formaldehyde (µg)
SMM1-T1-FORM	10/20/16	2.0
SMM1-T2-FORM	10/21/16	3.2 <sup>1</sup>
SMM1-T3-FORM	10/22/16	1.8
SMM2-T1-FORM	10/20/16	3.2 <sup>1</sup>
SMM2-T2-FORM	10/21/16	3.1 <sup>1</sup>
SMM2-T3-FORM	10/22/16	2.4 <sup>1</sup>
SMM3-T1-FORM	10/20/16	2.3
SMM3-T2-FORM	10/21/16	3.6 <sup>1</sup>
SMM3-T3-FORM	10/22/16	2.5 <sup>1</sup>
SMM4-T1-FORM	10/20/16	3.0
SMM4-T2-FORM	10/21/16	3.7 <sup>1</sup>
SMM4-T3-FORM	10/22/16	2.9 <sup>1</sup>
<i>Field Duplicates</i>		
<i>SMM5-T1-FORM</i>	<i>10/20/16</i>	<i>4.6 <sup>1</sup></i>
<i>SMM5-T3-FORM</i>	<i>10/22/16</i>	<i>3.6 <sup>1</sup></i>
<i>Trip Blank</i>		
<i>SMM-TB-FORM</i>	<i>10/22/16</i>	<i>&lt;0.050</i>

Notes:

µg = micrograms

*Italics* = Quality assurance/quality control samples

< = Less than the respective laboratory test method reporting limits for each tested analyte

1 = Reported value may be biased due to apparent matrix interferences.

TABLE 7  
SUMMARY OF TOXIC ORGANIC COMPOUNDS ANALYTICAL DATA  
DTSC METAL SHREDDING FACILITIES  
SIMS METAL RECYCLING (SMM), 699 SEAPORT BOULEVARD, REDWOOD CITY, CALIFORNIA  
CONTRACT NO. 15-T4124

SAMPLE ID	DATE	Benzene	Chloromethane	1,1-Dichloroethene	Ethylbenzene	4-Ethyltoluene	Freon 12 (Dichlorodifluoromethane)	Freon 11 (Trichlorofluoromethane)	1,2,4-Trichlorobenzene	Toluene	1,3,5-Trimethylbenzene	Xylene (p,m)	Xylene (Ortho)	Vinyl chloride
		Results in $\mu\text{g}/\text{m}^3$												
SMM1-T1-TOS	10/20/2016	<1.6	1.6	<2.0	<2.2	<2.5	3.5	18	<3.7	6.1	<2.5	<4.3	<2.2	<1.3
SMM1-T2-TOS	10/21/2016	3.4	1.6	<2.0	4.3	3.8	3.4	20	<3.7	23	<2.5	14	4.9	<1.3
SMM1-T3-TOS	10/22/2016	<1.6	1.6	<2.0	<2.2	<2.5	2.6	7.8	<3.7	3.0	<2.5	<4.3	<2.2	<1.3
SMM2-T1-TOS	10/20/2016	3.7	1.4	<2.0	7.1	9.1	30	92	<3.7	35	2.6	26	10	<1.3
SMM2-T2-TOS	10/21/2016	6.0	<1.0	<2.0	13	16	13	63	<3.7	56	4.4	47	17	<1.3
SMM2-T3-TOS	10/22/2016	1.7	1.5	<2.0	3.7	5.2	16	57	<3.7	15	<2.5	14	5.1	<1.3
SMM3-T1-TOS	10/20/2016	<1.6	1.5	<2.0	<2.2	<2.5	3.1	32	<3.7	5.9	<2.5	<4.3	<2.2	<1.3
SMM3-T2-TOS	10/21/2016	<1.6	1.6	<2.0	<2.2	<2.5	3.9	53	<3.7	10	<2.5	6.6	2.3	<1.3
SMM3-T3-TOS	10/22/2016	<1.6	1.4	<2.0	<2.2	<2.5	2.7	46	<3.7	4.7	<2.5	<4.3	<2.2	<1.3
SMM4-T1-TOS	10/20/2016	<1.6	1.5	<2.0	<2.2	<2.5	4.0	22	<3.7	5.5	<2.5	<4.3	<2.2	<1.3
SMM4-T2-TOS	10/21/2016	6.6	1.6	<2.0	6.9	5.6	4.3	21	<3.7	40	<2.5	23	7.8	<1.3
SMM4-T3-TOS	10/22/2016	<1.6	<1.0	<2.0	<2.2	<2.5	3.1	13	<3.7	4.3	<2.5	<4.3	<2.2	<1.3
<i>Field Duplicates</i>														
<i>SMM5-T1-TOS</i>	<i>10/20/2016</i>	<i>3.5</i>	<i>1.5</i>	<i>&lt;2.0</i>	<i>6.7</i>	<i>9.1</i>	<i>30</i>	<i>86</i>	<i>&lt;3.7</i>	<i>33</i>	<i>2.9</i>	<i>26</i>	<i>9.2</i>	<i>&lt;1.3</i>

Notes: < = Less than the respective laboratory test method reporting limits for each tested analyte  
 $\mu\text{g}/\text{m}^3$  = micrograms per cubic meter  
*Italics* = Quality assurance/quality control samples