



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

M E M O R A N D U M

DATE: February 7, 2020
TO: Mike Morris
FROM: Mike Garibay 
SUBJECT: Evaluation of Source Test Report:
(Requested by Uyen Uyen Vo, January 1, 2020)

FACILITY ID NO. NA *APPLICATION NO.:* NA
COMPANY: **Metal Melting Facility C (PAR 1407.1),** 
EQUIPMENT: **Electric Induction Furnace
Baghouse w/ HEPA**

TEST LOCATION: 

TEST DATE: **June 13-16, 2019**

REFERENCE: R20013 (STE Source Test File)

Source Test Engineering has completed the evaluation of the subject source test report and has concluded that it is:

CONDITIONALLY ACCEPTABLE

Compliance with applicable Rules and/or Permit Conditions, as well as compliance limits, as presented in the source test report, may not have been acceptably demonstrated, and/or the accuracy of some of the reported gaseous emissions and/or flows may not have been confidently confirmed, and their use regarding emission calculations may be subject to certain restrictions. Refer to the attached evaluation for a complete discussion concerning these restrictions and compliance determination.

The attached evaluation has not been forwarded to the facility or the source testing firm. It is the responsibility of the requestor to review the attached evaluation and forward it to the parties involved, if you concur with our findings. If there are any questions, please contact Brian Speaks at Ext. 3212.

MG:BW:GBS
Attachment
cc: Bill Welch
Uyen Uyen Vo

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SCIENCE & TECHNOLOGY ADVANCEMENT * SOURCE TEST ENGINEERING BRANCH
SOURCE TEST REPORT EVALUATION

ST ID: **R20013**

FACILITY ID NO.: NA *A/N:* NA
COMPANY: Metal Melting Facility C (PAR 1407.1), [REDACTED]
EQUIPMENT: Electric Induction Furnace
Baghouse w/ HEPA

LOCATION: [REDACTED]

REQUESTED BY: Uyen Uyen Vo (Memo Dated January 28,2020)
TYPE OF TEST: PERFORMANCE/COMPLIANCE REPORT
DOCUMENT DATE: November 8, 2019

REASON FOR TEST: (TESTING SUBJECT TO THE FOLLOWING RULE, PERMIT, OR SPECIFIED CONDITIONS):
PAR 1407.1

REQUESTED EVAL: Cr, Cr⁺⁶, As, Cd, Ni, PM
TEST DATE: June 13-16, 2019
TEST FIRM: Almega Environmental

STE EVALUATOR: Brian Speaks EXT: 3212 **REVIEW DATE:** February 7, 2020

OVERVIEW OF EVALUATION:

OVERALL CONFIDENCE IN REPORTED TEST RESULTS:	<input type="checkbox"/> ACCEPTABLE <input checked="" type="checkbox"/> CONDITIONALLY ACCEPTABLE <input type="checkbox"/> UNACCEPTABLE
RESTRICTIONS FOR USE OF REPORTED RESULTS:	<ul style="list-style-type: none">• Cr, Cr⁺⁶, As, Cd, Ni, PM emissions, as reported, should <u>not</u> be used for compliance determination and/or emission calculations, without the adjustments specified in the next section of this evaluation.• Results understate the true emissions due to fugitive emissions. Emissions are therefore assured to be at least as high as those reported.
COMPLIANCE DETERMINATION:	<ul style="list-style-type: none">• Testing was performed for Rule making informational purposes. Testing was not conducted to establish compliance with any existing permit conditions.

(REFER TO NEXT SECTION FOR COMPLETE DISCUSSION OF TEST RESULTS AND CORRECTED EMISSION INFORMATION, IF APPLICABLE)

SOURCE TEST REPORT EVALUATION**DETAILED REVIEW**

This source test report has been reviewed by the Source Test Engineering Branch staff. The following specifically explains the restrictions concerning the treatment of the reported source test information:

- Completeness of Application/Protocol/Report
- Representativeness of Data & Process
- Rule/Permit Fulfillment
- Sampling & Analytical Methods
- Quality Assurance
- Calculations

REPRESENTATIVENESS OF DATA & PROCESS

- The results show that there are significant and measurable quantities of **Cr⁺⁶**, **As** and **Ni** at both the uncontrolled furnace exhaust and combined inlet sampling locations. These levels were reduced significantly by the baghouse and HEPA control system, with the **Cr⁺⁶**, and **As** being reduced to the detection limit at the HEPA outlet.
- The baghouse and HEPA control system demonstrated a control efficiency > 98.6% for **Cr⁺⁶**. A higher control efficiency would likely be demonstrated with a lower detection limit or an increase in sample duration/volume. The **Cr⁺⁶** produced was largely from the uncontrolled furnace while processing material with high chromium content.
- A sample of the baghouse catch which was collected and analyzed showed significant concentrations of **Ni** and **Pb**. Proper housekeeping related to baghouse catch is recommended based on these results.
- A sample of the slag which was collected and analyzed showed appreciable concentrations of **Cr⁺⁶**, **Ni**, and **Pb**. Additional housekeeping measures may need to be taken regarding slag, as slag is currently stored outside in a roll off dumpster.
- A sample of used casting sand which was collected and analyzed showed significant concentrations of **Ni**, **As**, **Cd**, and **Pb**. Additional housekeeping measures may need to be taken regarding used casting sand as it is stored uncovered outside in a roll off dumpster for cooling before being returned to the building interior for recycling back to the process.
- Reported **Cr**, **Cr⁺⁶**, **As**, and **Cd** concentrations at one or more locations fell below the detection limit of the analytical method, and they were calculated upward to the method reporting limit (MRL). This occurred for **As**, **Cr** and **Cr⁺⁶** at the HEPA outlet and for **Cd** at each test location.
- **As** emissions for the HEPA outlet were Non-Detects (ND) and have been reported at the MRL. Based on this control efficiency using this value is most likely biased low and has therefore not been reported.
- **Cd** emissions at all locations were ND and have been reported at the MRL, therefore control efficiency was not calculated.
- **As** emissions at inlet 2 were reported as "less than" which is normally indicative of values at the MRL. Lab results at this location were detected therefore values should not be reported as less than. Refer to reported values in the calculations section of this review for details.
- Delta P readings at the outlet test location were less than 0.05" H₂O for the majority of the traverse points. This was observed during the first day of testing and discussed with

SOURCE TEST REPORT EVALUATION

Almega staff. A digital manometer with a more sensitive range was utilized on day 2 of testing with a full comparison performed between the Method 5 box manometer and the digital manometer to validate readings. Flows for the Method 5 box are biased slightly low meaning that reported emissions are assured to be at least as high as those reported.

- All reagent was prepared from the same batch and held by the laboratory prior to testing of Metal Melting Facility A, for both Facility A and Facility C. Reagent blank was analyzed following initial preparation and results have been included in this report.
- Based on the design of the furnace and collection system a direct measurement of velocity was not possible using a hotwire anemometer due to temperatures involved. In lieu of a direct velocity measurement a pitot tube was utilized to measure the delta P at the furnace pour spout. Based upon delta P readings and the dimensions of the spout opening capture velocity of the furnace was calculated to be in the 863 – 1221 fpm range with the lid in place in the closed position.
- Calculated PM control efficiency was notably low at 78.3%. The outlet had an appreciable amount of solid residue in the impingers, it is unclear from the single run what the source of the solid residue was. However based on the control efficiencies from the CARB Method 425 and 436 runs it appears that the baghouse/HEPA was working properly during testing. Both Method 425 and 436 are more accurate than Method 5.1 at low concentrations.
- Smoke testing was conducted once the unit was operational and at operating temperature. Qualitative capture was demonstrated with the lid in the closed position described above.
- The furnace lid is removed during normal operations for multiple purposes including: charging with raw material, and de-slugging the furnace. During these periods it was noted that all emissions are not completely captured. Visible emissions were seen as escaping primarily during the charging, de-slugging and pouring operations (lid in place). Based on observations over the course of testing on day one between 09:22 and 10:54 it was observed that capture is lost approximately 15% of the time (see notes included in file for details). This means that emissions reported during testing may be understated. It should be noted that the loss of capture is highly dependent on operations and may vary considerably from the reported 15% value. Overcharging, duration that the operator leaves the furnace lid off for routine checks, and duration of pouring activities are a few items which affect capture.
- The purpose of this testing was to quantify uncontrolled emissions. Total capture is not currently required by any rules for these types of operations. Even though capture was lost periodically during testing this does not affect the usefulness of results, as emissions are at least as high (most likely higher based on fugitives) as those reported during testing and may therefore be used for rulemaking purposes.
- Samples were collected from the raw material used to charge the furnace, a test coupon from the molten material, baghouse catch, and the process slag. Results for these samples are included in the calculations section.
- The facility sample test coupon was analyzed by portable XRF, this is a qualitative screening test which indicates the elements present in a given sample. These results should not be used for quantitative purposes as this particular instrument is not optimized/setup to specifically deal with physical metal alloys.

SOURCE TEST REPORT EVALUATION**RULE/PERMIT FULFILLMENT**

Testing must satisfy the following Rule/Permit requirements:

- PAR 1407.1

All required testing has been performed and is properly formatted, except where noted in this evaluation.

SAMPLING & ANALYTICAL METHODS / RESULTS

- All testing and analyses were performed according to approved SCAQMD methods and procedures.

QUALITY ASSURANCE

- All reported testing results were well supported and documented with respect to raw data, calibrations, calculations, and lab analyses.

CALCULATIONS

- See next page for details.

SOURCE TEST REPORT EVALUATION

Test Results Summary

	Units	Uncontrolled Furnace	Combined Inlet	HEPA Outlet	Control Efficiency
CARB Method 425 Concentration					
Total Cr (3 Run Avg)	ug/dscm	538.07	107.34	< 0.28	-
Cr ⁺⁶ (3 Run Avg)	ug/dscm	5.88	1.54	< 0.07	-
CARB Method 425 Mass Emissions					
Total Cr (3 Run Avg)	lb/hr	2.03E-03	2.24E-03	< 7.43E-06	> 99.7
Cr ⁺⁶ (3 Run Avg)	lb/hr	2.25E-05	3.29E-05	< 1.72E-06	> 98.6 *
CARB Method 425 Mass Emissions					
Total Cr (3 Run Avg)	mg/hr	922.8	1016.5	< 3.4	> 99.7
Cr ⁺⁶ (3 Run Avg)	mg/hr	10.2	14.9	< 0.78	> 98.6 *

* Run 1 omitted from control efficiency calculation; lab reported that sample was diluted so MRL was biased high and sample was a Non-Detect.

CARB Method 436 Concentration					
Arsenic (3 Run Avg)	ug/dscm	3.50	0.86	< 0.46	-
Cadmium (3 Run Avg)	ug/dscm	< 0.40	< 0.37	< 0.46	-
Total Cr (3 Run Avg)	ug/dscm	2091.18	511.01	1.48	-
Nickel (3 Run Avg)	ug/dscm	61.95	16.99	0.57	-
CARB Method 436 Mass Emissions					
Arsenic (3 Run Avg)	lb/hr	1.31E-05	1.91E-05	< 1.26E-05	NR
Cadmium (3 Run Avg)	lb/hr	< 1.51E-06	< 8.20E-06	< 1.26E-05	NR
Total Cr (3 Run Avg)	lb/hr	7.85E-03	1.12E-02	3.93E-05	99.7
Nickel (3 Run Avg)	lb/hr	2.33E-04	3.72E-04	1.56E-05	95.8
CARB Method 436 Mass Emissions					
Arsenic (3 Run Avg)	mg/hr	5.9	8.7	< 5.7	NR
Cadmium (3 Run Avg)	mg/hr	< 0.69	< 3.7	< 5.7	NR
Total Cr (3 Run Avg)	mg/hr	3559.3	5075.3	17.8	99.7
Nickel (3 Run Avg)	mg/hr	105.6	168.7	7.1	95.8

NR - Not Reported

Method 5.1 PM Results					
PM Concentration	gr/dscf	0.0304	0.0125	0.0026	-
PM Mass Emissions	lb/hr	0.270	0.625	0.136	78.3
PM Mass Emissions	mg/hr	122533	283356	61568	78.3

SOURCE TEST REPORT EVALUATION

Laboratory Analysis

Laboratory Results Summary						
	Cr ⁺⁶	Cr	Ni	As	Cd	Pb
Sample Description	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Baghouse Catch	< 1	5750	3260	< 5	20	471
Slag from SS Melt	59	169	18	< 5	< 1	3
Used Casting Sand	< 1	40300	794	62	13	8

Analysis: Cr⁺⁶ by EPA 7196A, Metals by EPA 6010B

	Cr ⁺⁶	Cr	Ni	As	Cd	Pb
Sample Description	% [mg/kg]	% [mg/kg]	% [mg/kg]	% [mg/kg]	% [mg/kg]	% [mg/kg]
Raw Material	N/T*	48.7	0.64	< 0.01	< 0.02	0.01
Test Coupon	N/T*	81.1	0.93	< 0.01	< 0.02	0.006
Baghouse Catch	N/T*	3.4 [34000]	0.29 [2900]	0.01 [100]	< 0.007 [< 70]	0.11 [1100]

Analysis: S1 Titan Handheld XRF

*N/T = not tested

SOURCE TEST REPORT EVALUATION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 3)

To: Mike Garibay
Source Testing Manager
Source Test Engineering

Laboratory No. 1922602-01 to -02

Requested By Brian Speaks

Rule No. R1407.1

ST No. NA

Report Created 10/18/2019

Sampling Location



ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Hexavalent Chromium by EPA 7196A

Metals by EPA 6010B

See attached results and sample information.

Note: The samples were analyzed by a contract laboratory - Western Analytical Laboratories, Inc.

Reviewed By:

Handwritten signature of Brad Parrack in black ink.

Brad Parrack
Principal A.Q. Chemist
Laboratory Services

Date Reviewed:

10/18/19

Approved By:

Handwritten signature of Aaron Katzenstein in black ink.

Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Date Approved:

10/18/2019

SOURCE TEST REPORT EVALUATION



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 2 of 3)

Laboratory No. 1922602-01
Sample Description Plastic Jar - Slag from hi-chrome iron melt at a metal melting facility
Sample Date 08/13/2019 **Received Date 08/13/2019** **Analyzed Date 09/24/2019**

Hexavalent Chromium by EPA 7196A

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Hexavalent Chromium, mg/kg	59	1	NA	1.0

Laboratory No. 1922602-01
Sample Description Plastic Jar - Slag from hi-chrome iron melt at a metal melting facility
Sample Date 08/13/2019 **Received Date 08/13/2019** **Analyzed Date 09/17/2019**

Metals by EPA 6010B

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Arsenic, mg/kg	ND	1	NA	5.0
Cadmium, mg/kg	ND	1	NA	1.0
Lead, mg/kg	3.0	1	NA	5.0
Nickel, mg/kg	18.0	1	NA	1.0
Total Chromium, mg/kg	169	1	NA	1.0

SOURCE TEST REPORT EVALUATION



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
 21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 3 of 3)

Laboratory No. 1922602-02
Sample Description Plastic Jar - Baghouse catch from a metal melting facility
Sample Date 08/13/2019 **Received Date 08/13/2019** **Analyzed Date 09/24/2019**

Hexavalent Chromium by EPA 7196A

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Hexavalent Chromium, mg/kg	ND	1	NA	1.0

Laboratory No. 1922602-02
Sample Description Plastic Jar - Baghouse catch from a metal melting facility
Sample Date 08/13/2019 **Received Date 08/13/2019** **Analyzed Date 09/17/2019**

Metals by EPA 6010B

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Arsenic, mg/kg	ND	1	NA	5.0
Cadmium, mg/kg	20.0	1	NA	1.0
Lead, mg/kg	471	1	NA	5.0
Nickel, mg/kg	3,260	1	NA	1.0
Total Chromium, mg/kg	5,750	1	NA	1.0

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

DISTRICT INFORMATION
 INVOICE SOURCE
 LABORATORY NO. 1922602

TO: _____ OTHER: _____
 SOURCE NAME: _____ I.D. No. _____
 Source Address: _____ City: _____
 Mailing Address: Same as Above City: _____ Zip: 90280
 Contact Person: Brian Speaks Title: Sr. AQ Engineer Tel: (909)396-3212

Analysis Requested by: Brian Speaks Date: 8/13/19
 Approved by: [Signature] Office: S&TA Budget #: 44657
 REASON REQUESTED: Court/Hearing Board Permit Pending Hazardous/Toxic Spill
 Suspected Violation Rule(s) Rule 1407.1 Other

Sample Collected by: Brian Speaks Date: 8/13/19 Time: 09:42 - 11:50

- 01: Slag from hi-chrome iron melt at a metal melting facility
- 02: Baghouse catch from a metal melting facility
- 03: Hi-chrome iron, raw material used to charge furnace at a metal melting facility
- 04: Molten material test coupon from electric induction furnace from a hi-chrome iron melt

Analysis Requested: Samples 3 and 4: Metals (Arsenic, Cadmium, Lead, Nickel, Total Chromium)
 Samples 1 and 2: Hexavalent Chromium and Metals (Arsenic, Cadmium, Lead, Nickel, Total Chromium)

Relinquished by	Received by	Firm/Agency	Date	Time
<u>[Signature]</u>	<u>Christie</u>	<u>STA-Lab</u>	<u>8/13/19</u>	<u>9:58 PM</u>

Remarks: Please send report to: Mike Garibay, Bill Welch, Uyen Uyen Vo, Brian Speaks

Special Notes:

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

DISTRICT INFORMATION
 INVOICE SOURCE
LABORATORY NO. 1922602

TO: _____ OTHER: _____
 SOURCE NAME: SCAQMD I.D. No. _____
 Source Address: 21865 Copley Drive City: Diamond Bar
 Mailing Address: _____ City: _____ Zip: 91765
 Contact Person: Monna Trinh Title: Senior Chemist Tel: 909-396-2245

Analysis Requested by: Cesar Garcia Date: 9/11/2019
 Approved by: _____ Office: _____ Budget #: _____
 REASON REQUESTED: Court/Hearing Board Permit Pending Hazardous/Toxic Spill
 Suspected Violation Rule(s) _____ Other

Sample Collected by: Brian Speaks Date: 08/13/2019 Time: 09:42 to 11:50

1922602-01: Slag from hi-chrome iron melt *1909102*
 1922602-02: Baghouse catch *1909103*

Analysis Requested: arsenic, nickel, lead, cadmium, total chromium, hexavalent chromium
 (ppm or weight % as appropriate)

Relinquished by	Received by	Firm/Agency	Date	Time
<i>Cesar V. Garcia</i>	<i>[Signature]</i>	<i>Western Labs</i>	<i>9/11/19</i>	<i>17:62</i>

Remarks: Please send report to: Monna Trinh (ntrinh@aqmd.gov), Laura Saucedo (lsaucedo@aqmd.gov)

Special Notes:

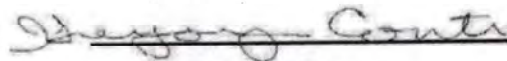
SOURCE TEST REPORT EVALUATION**Western Analytical Laboratories**13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3628 · Fax (909) 627-0491 · www.walab.com
LAGSD #16145

Date Received:	09/11/2019	WAL No.:	19090102
Date Reported:	10/08/2019		
Customer:	South Coast AQMD		
Address:	21865 E Copley Dr, Diamond Bar, CA 91765-4182		
Attention:	Monna Trinh		S465

Dear Monna Trinh,

Enclosed are the analytical reports for the sample received 09/11/2019 with the chain of custody present. The sample was received in acceptable condition at 25.2 deg C. The samples were analyzed in accordance with the chain of custody and meet all requirements unless flagged or written in the case narrative. This analytical report must be reproduced in its entirety.

Thank you for the opportunity to be of service to your company. Please feel free to contact us if there are any questions regarding this report or if we can be of further service.



Gregory P. Conti, Laboratory Director

SOURCE TEST REPORT EVALUATION

Western Analytical Laboratories

13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3628 · Fax (909) 627-0491 · www.walab.com
LACSD #10145

Date Received:	09/11/2019	WAL No.:	19090102
Date Reported:	10/08/2019		
Customer:	South Coast AQMD		HW
Address:	21865 E Copley Dr, Diamond Bar, CA 91765-4182		
Attention:	Monna Trinh		S465
Sample I.D.	Solid Waste		
Sample Point	Slag from hi-chrome iron melt		
Sampled By:	Cesar Garcia		
Date & Time Sampled:	08/13/2019 11:50		

Flag	Parameter	Value	Unit	Dilution Factor	Reporting Limit	Method	Date Analyzed & Analyst
	Arsenic	<5	mg/kg	1	5	EPA 6010B	09/17/2019 AL
	Nickel	18	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Cadmium	<1	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (total)	169	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (hex)	59	mg/kg	1	1	EPA 7196A	09/24/2019 AL
	Lead	3	mg/kg	1	5	EPA 6010B	09/17/2019 AL

nrinh@aqmd.gov; bparrack@aqmd.gov
lmartinez

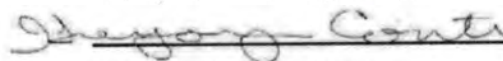
SOURCE TEST REPORT EVALUATION**Western Analytical Laboratories**13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3828 · Fax (909) 627-0491 · www.walab.com
LACSD #10145

Date Received:	09/11/2019	WAL No.:	19090103
Date Reported:	10/08/2019		
Customer:	South Coast AQMD		
Address:	21865 E Copley Dr, Diamond Bar, CA 91765-4182		
Attention:	Monna Trinh		S465

Dear Monna Trinh,

Enclosed are the analytical reports for the sample received 09/11/2019 with the chain of custody present. The sample was received in acceptable condition at 25.2 deg C. The samples were analyzed in accordance with the chain of custody and meet all requirements unless flagged or written in the case narrative. This analytical report must be reproduced in its entirety.

Thank you for the opportunity to be of service to your company. Please feel free to contact us if there are any questions regarding this report or if we can be of further service.



Gregory P. Conti, Laboratory Director

SOURCE TEST REPORT EVALUATION

Western Analytical Laboratories

13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3628 · Fax (909) 627-0491 · www.walab.com
LACSD #10145

Date Received: 09/11/2019
Date Reported: 10/08/2019
Customer: South Coast AQMD
Address: 21865 E Copley Dr. Diamond Bar, CA 91765-4182
Attention: Monna Trinh
Sample I.D.: Solid Waste
Sample Point: Baghouse Catch
Sampled By: Cesar Garcia
Date & Time Sampled: 08/13/2019 11:50

WAL No.: 19090103
HW
S465

Flag	Parameter	Value	Unit	Dilution Factor	Reporting Limit	Method	Date Analyzed & Analyst
	Arsenic	<1	mg/kg	1	5	EPA 6010B	09/17/2019 AL
	Nickel	3260	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Cadmium	20	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (total)	5750	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (hex)	<1	mg/kg	1	1	EPA 7196A	09/24/2019 AL
	Lead	471	mg/kg	1	5	EPA 6010B	09/17/2019 AL

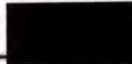
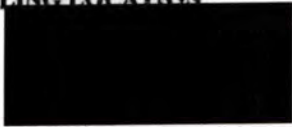
ntrinh@aqmd.gov; bparrack@aqmd.gov
lmartinez

SOURCE TEST REPORT EVALUATION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

Page 1 of 4


TO	Brian Speaks Sr. AQ Engineer	LABORATORY NO.	<u>1922602</u>
		DATE RECEIVED	<u>08/13/19</u>
SAMPLES DESCRIBED AS		FACILITY ID.	
Material from metal melting facility		REQUESTED BY	<u>Brian Speaks</u>
		RULE NO.	<u>1407.1</u>
SAMPLING LOCATION		REPORT GENERATED	<u>1/24/2020</u>

ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS
Metals determined by S1 Titan Handheld XRF Unit #3 (S/N 800N3625)

Results on next page

Reviewed By: 
Laura Saucedo, Principal A.Q. Chemist
Laboratory Services

Date Reviewed: 01/24/2020

Approved By: 
Aaron Katzenstein, Ph.D., Senior Manager
Laboratory Services
(909) 396-2219

Date Approved: 1/24/2020

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182**

**MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS
Page 2 of 4**

Metals Analysis Results

Lab ID: 1922602-02

Sample Description:

Baghouse catch from metal melting facility

Sample Date: 8/13/2019

Analysis Date: 8/14/2019

Analyte	Results (%)	LOD (%)
Cr	3.4	0.008
Ni	0.29	0.02
As	0.01	0.004
Cd	<LOD	0.007
Pb	0.11	0.007

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182**

**MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS**

Page 3 of 4

Metals Analysis Results

Lab ID: 1922602-03

Sample Description:

Hi-chrome iron, raw material used to charge furnace at a metal melting facility

Sample Date: 8/13/2019

Analysis Date: 8/14/2019

Analyte	Results (%)	LOD (%)
Cr	48.7	0.05
Ni	0.64	0.06
As	<LOD	0.01
Cd	<LOD	0.02
Pb	0.01	0.004

SOURCE TEST REPORT EVALUATION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING & ANALYSIS
REPORT OF LABORATORY ANALYSIS

Page 4 of 4

Metals Analysis Results

Lab ID: 1922602-04

Sample Description:

Molten material test coupon from electric induction furnace from a hi-chrome iron melt

Sample Date: 8/13/2019**Analysis Date:** 8/14/2019

Analyte	Results (%)	LOD (%)
Cr	81.1	0.08
Ni	0.93	0.08
As	<LOD	0.01
Cd	<LOD	0.02
Pb	ND	0.00
Pb*	0.006	0.002

*Sample placed in clear, plastic bag and analyzed

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

DISTRICT INFORMATION
 INVOICE SOURCE
 LABORATORY NO. 1922602

TO: _____ OTHER:

SOURCE NAME: _____ LD. No. _____

Source Address: _____ City: _____

Mailing Address: Same as Above City: _____ Zip: 90280

Contact Person: Brian Speaks Title: Sr. AQ Engineer Tel: (909)396-3212

Analysis Requested by: Brian Speaks Date: 8/13/19

Approved by: [Signature] Office: S&TA Budget #: 44657

REASON REQUESTED: Court/Hearing Board Permit Pending Hazardous/Toxic Spill

Suspected Violation Rule(s) Rule 1407.1 Other

Sample Collected by: Brian Speaks Date: 8/13/19 Time: 09:42 - 11:50

- 01: Slag from hi-chrome iron melt at a metal melting facility
- 02: Baghouse catch from a metal melting facility
- 03: HI-chrome iron, raw material used to charge furnace at a metal melting facility
- 04: Molten material test coupon from electric induction furnaces from a hi-chrome iron melt

Analysis Requested: Samples 3 and 4: Metals (Arsenic, Cadmium, Lead, Nickel, Total Chromium)
 Samples 1 and 2: Hexavalent Chromium and Metals (Arsenic, Cadmium, Lead, Nickel, Total Chromium)

Relinquished by	Received by	Firm/Agency	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>SJA-Lab</u>	<u>8/13/19</u>	<u>3:58 PM</u>

Remarks: Please send report to: Mike Garibay, Bill Welch, Uyen Uyen Vo, Brian Speaks

Special Notes:

SOURCE TEST REPORT EVALUATION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr., Diamond Bar, CA 91765-4182

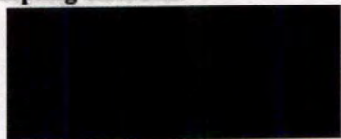
MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 1 of 2)

To: Mike Garibay
Source Testing Manager
Source Test Engineering

Laboratory No. 1922706-01
Requested By Brian Speaks
Rule No. R1407.1
ST No. NA
Report Created 10/18/2019

Sampling Location



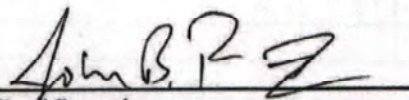
ANALYTICAL WORK PERFORMED, METHOD OF ANALYSIS, AND RESULTS

Hexavalent Chromium by EPA Method 7196A
Metals by EPA Method 6010B

See attached results and sample information.

Note: The samples were analyzed by a contract laboratory - Western Analytical Laboratories, Inc.

Reviewed By:


Brad Parrack
Principal A.Q. Chemist
Laboratory Services

Date Reviewed: 10/18/19

Approved By:


Aaron Katzenstein, Ph.D.
Senior Manager
Laboratory Services
(909) 396-2219

Date Approved: 10/18/2019

SOURCE TEST REPORT EVALUATION



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
 21865 Copley Dr., Diamond Bar, CA 91765-4182

MONITORING AND ANALYSIS
REPORT OF LABORATORY ANALYSIS

(Page 2 of 2)

Laboratory No. 1922706-01
Sample Description Plastic Jar - Recycled casting sand from a metal melting facility
Sample Date 08/15/2019 **Received Date 08/15/2019** **Analyzed Date 09/24/2019**

Hexavalent Chromium by EPA Method 7196A

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Hexavalent Chromium, mg/kg	ND	1	NA	1.0

Laboratory No. 1922706-01
Sample Description Plastic Jar - Recycled casting sand from a metal melting facility
Sample Date 08/15/2019 **Received Date 08/15/2019** **Analyzed Date 09/17/2019**

Metals by EPA Method 6010B

Analyte, Unit	Result	Dilution Factor	MDL	MRL
Arsenic, mg/kg	62	1	NA	5.0
Cadmium, mg/kg	13.0	1	NA	1.0
Lead, mg/kg	8.0	1	NA	5.0
Nickel, mg/kg	794	1	NA	1.0
Total Chromium, mg/kg	40,300	1	NA	1.0

SOURCE TEST REPORT EVALUATION

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST**

DISTRICT INFORMATION
 INVOICE SOURCE
 LABORATORY NO. 1922704

TO: _____ OTHER:

SOURCE NAME: _____ I.D. No. _____

Source Address: _____ City: _____

Mailing Address: Same as Above City: _____ Zip: 90280

Contact Person: Brian Speaks Title: Sr. AQ Engineer Tel: (909)396-3212

Analysis Requested by: Brian Speaks Date: 8/15/19

Approved by: [Signature] Office: S&TA Budget #: 44657

REASON REQUESTED: Court/Hearing Board Permit Pending Hazardous/Toxic Spill

Suspected Violation Rule(s) Rule 1407.1 Other

Sample Collected by: Brian Speaks Date: 8/15/19 Time: 10:38

01: Recycled casting sand from a metal melting facility

Analysis Requested:
 Hexavalent Chromium and Metals (Arsenic, Cadmium, Lead, Nickel, Total Chromium)

Relinquished by	Received by	Firm/Agency	Date	Time
<u>[Signature]</u>	<u>Iliana Garcia</u>	<u>SCAQMD</u>	<u>8/15/19</u>	<u>1440</u>

Remarks: Please send report to: Mike Garibay, Bill Welch, Uyen Uyen Vo, Brian Speaks

Special Notes:

SOURCE TEST REPORT EVALUATION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SAMPLE ANALYSIS REQUEST
 DISTRICT INFORMATION
 INVOICE SOURCE
 LABORATORY NO. 1922706

TO:	OTHER: <input type="checkbox"/>			
SOURCE NAME:	SCAQMD	I.D. No.		
Source Address:	21865 Copley Drive	City:	Diamond Bar	
Mailing Address:		City:	Zip: 91765	
Contact Person:	Monna Trinh	Title:	Senior Chemist Tel: 909-396-2245	
Analysis Requested by:	Cesar Garcia	Date:	9/11/2019	
Approved by:		Office:	Budget #:	
REASON REQUESTED:	Court/Hearing Board <input type="checkbox"/>	Permit Pending <input type="checkbox"/>	Hazardous/Toxic Spill <input type="checkbox"/>	
Suspected Violation	Rule(s)	Other		
		<input type="checkbox"/>		
Sample Collected by:	Brian Speaks	Date:	08/15/2019 Time: 10:38	
1922706-01: Recycled Casting Sand 1909104				
Analysis Requested: arsenic, nickel, lead, cadmium, total chromium, hexavalent chromium (ppm or weight % as appropriate)				
Relinquished by	Received by	Firm/Agency	Date	Time
<i>Cesar V. Garcia</i>	<i>[Signature]</i>	Western Lab	9/11/19	17.02
Remarks: Please send report to: Monna Trinh (ntrinh@aqmd.gov), Laura Saucedo (lsaucedo@aqmd.gov)				

Special Notes:

SOURCE TEST REPORT EVALUATION**Western Analytical Laboratories**13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3628 · Fax (909) 627-0491 · www.walab.com
LACSD #10145

Date Received:	09/11/2019	WAL No.:	19090104
Date Reported:	10/08/2019		
Customer:	South Coast AQMD		
Address:	21865 E Copley Dr, Diamond Bar, CA 91765-4182		
Attention:	Monna Trinh		S465

Dear Monna Trinh,

Enclosed are the analytical reports for the sample received 09/11/2019 with the chain of custody present. The sample was received in acceptable condition at 25.2 deg C. The samples were analyzed in accordance with the chain of custody and meet all requirements unless flagged or written in the case narrative. This analytical report must be reproduced in its entirety.

Thank you for the opportunity to be of service to your company. Please feel free to contact us if there are any questions regarding this report or if we can be of further service.



Gregory P. Conti, Laboratory Director

SOURCE TEST REPORT EVALUATION

Western Analytical Laboratories

13744 Monte Vista Ave · Chino, CA 91710-5512 · Phone (909) 627-3628 · Fax (909) 627-0491 · www.walab.com
LACSD #10145

Date Received: 09/11/2019
 Date Reported: 10/08/2019
 Customer: South Coast AQMD
 Address: 21865 E Copley Dr, Diamond Bar, CA 91765-4182
 Attention: Monna Trinh
 Sample I.D.: Solid Waste
 Sample Point: Recycled Casting Sand
 Sampled By: Ceaser Garcia
 Date & Time Sampled: 08/15/2019 10:38

WAL No.: 19090104
 HW
 S465

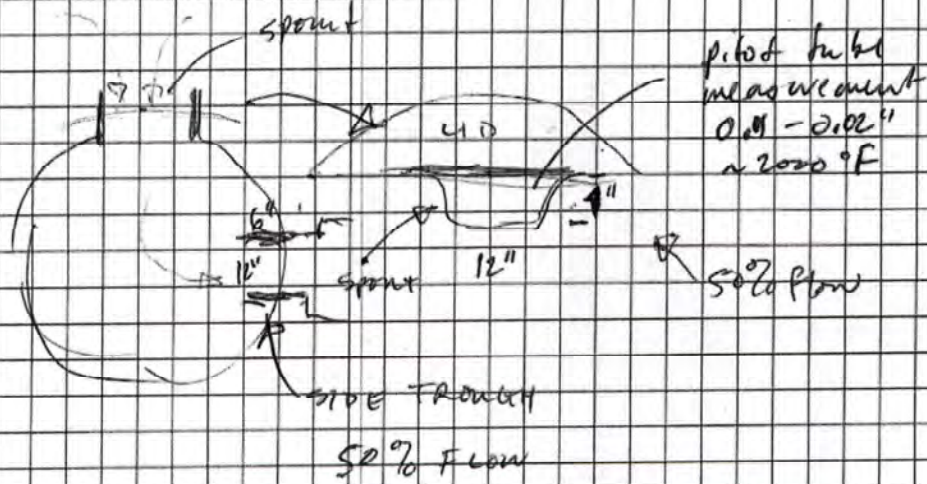
Flag	Parameter	Value	Unit	Dilution Factor	Reporting Limit	Method	Date Analyzed & Analyst
	Arsenic	62	mg/kg	1	5	EPA 6010B	09/17/2019 AL
	Nickel	794	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Cadmium	13	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (total)	40300	mg/kg	1	1	EPA 6010B	09/17/2019 AL
	Chromium (hex)	<1	mg/kg	1	1	EPA 7196A	09/24/2019 AL
	Lead	8	mg/kg	1	5	EPA 6010B	09/17/2019 AL

ntrinh@aqmd.gov; bparrack@aqmd.gov
 lmartinez

SOURCE TEST REPORT EVALUATION

GENERAL NOTES:

- AIR USED TO DUST OFF STAIRS & OTHER ITEMS IN THE SAND CASTING AREA
- VISIBLE DUST PRESENT IN AIR INSIDE OF BUILDING.



$$a) \text{ Velocity Head} = 0.01 \text{ "H}_2\text{O} \quad \text{---}$$

$$= 2.9 \sqrt{0.01 (460 + 2000)} = \frac{45.48 \text{ FPS}}{14.38}$$

$$= \frac{14.38 \text{ Ft}}{\text{Sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} = \frac{863 \text{ FPM}}{863}$$

$$b) \text{ Velocity Head} = 0.02 \text{ "H}_2\text{O}$$

$$= 2.9 \sqrt{0.02 (460 + 2000)} = 20.34 \text{ FPS}$$

$$\frac{20.34 \text{ Ft}}{\text{Sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} = \underline{\underline{1220.5 \text{ FPM}}}$$