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

Via Email and CERTIFIED RETURN RECEIPT to Addressee

October 28, 2026

Mr. Rodrigo Amaya
Superintendent
R.J. Noble Company
15505 East Lincoln Avenue
Orange, CA 92865-1015

Subject: Conditional Approval of Rule 1402 Risk Reduction Plan for R.J. Noble Company (South Coast AQMD ID # **19167**)

Dear Mr. Amaya:

This letter provides conditional approval of the Risk Reduction Plan (RRP) for R.J. Noble Company (R.J. Noble), located at 15505 East Lincoln Avenue, Orange, CA 92865-1015 (South Coast AQMD ID # 19167), pursuant to the Air Toxics "Hot Spots" Act (AB 2588) and South Coast Air Quality Management District's (South Coast AQMD) Rule 1402[1].

Background

In accordance with AB 2588 and South Coast Air Quality Management District (South Coast AQMD) Rule 1402, South Coast AQMD staff notified R.J. Noble on April 24, 2024 that it must submit a Health Risk Assessment (HRA) based on its 2017 Air Toxics Inventory Report (ATIR). The initial HRA prepared for this request was submitted on July 23, 2024. Following staff's request for revisions, the final version was submitted on January 2, 2025. After review of the HRA from both South Coast AQMD and the Office of Environmental Health Hazard Assessment (OEHHA), South Coast AQMD approved the HRA on September 24, 2025.

The HRA demonstrated that cancer risk levels exceeded the Action Risk Level of Rule 1402; therefore an RRP was required. The main sources of cancer risk came from storage piles and paved roads and were driven mainly by Cobalt and Arsenic emissions. R.J. Noble submitted the initial version of the RRP to South Coast AQMD on January 22, 2026 and after working closely with South Coast AQMD staff to refine the plan, submitted the final version of the RRP on June 10, 2026.

[1] https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1402.pdf

Risk Reduction Plan and Next Steps

The RRP requires the installation of a dust suppression water spray system on the main aggregate storage pile and commits RJ Noble to routinely perform silt loading testing on paved roads in addition to moisture testing on the aggregate storage pile to ensure fugitive dust emissions are sufficiently controlled. The RRP demonstrates that risk reduction from these risk reduction measures (RRMs) will reduce the facility's risk below the Action Risk Level of Rule 1402.

Therefore, R.J. Noble's RRP is conditionally approved contingent upon the conditions of approval in the attached Compliance Plan. The facility must submit an application for the attached compliance plan to incorporate it into the permit, along with any fees in accordance with Rule 306. This application will be processed separately by the Engineering and Permitting Division. Additionally, please note the Compliance Plan becomes enforceable in accordance with Rule 1402 upon issuance of this approval letter.

In accordance with Rule 1402 (i), R.J. Noble is required to reduce risks below the Action Risk Level consistent with the dates prescribed in the Compliance Plan. Additionally, please be advised that pursuant to South Coast AQMD Rule 1402 (k)(1), if information becomes known to the Executive Officer after the last submitted risk reduction plan that would substantially impact risks to exposed persons, implementation, or effectiveness of the plan, the Executive Officer may require the plan to be updated and resubmitted. Such examples include the discovery of fugitive emissions emitted outside of traditional ventilation stacks or new equipment or processes.

Rule 1402 (j)(1) requires the submittal of annual progress reports to demonstrate the progress achieved in implementing the Risk Reduction Measures. However, since R.J. Noble has already completed the installation of the dust suppression water spray system and since the Compliance Plan is enforceable upon the issuance of this letter, no progress reports are required.

In accordance with AB 2588, Rules 301 and 1402, R.J. Noble is still required to prepare future annual emission reports and quadrennial emission inventories. Your facility continues to be subject to an annual "Hot Spots" fee (refer to Table I of Rule 307.1). Should your facility have significant changes in activities or operations, please notify South Coast AQMD promptly.

If you have any questions, please feel free to contact me at (909) 396-3754 or Alberto Jasso, Program Supervisor at (909) 396-3581.

Sincerely,

Scott A. Epstein

Scott A. Epstein, Ph.D.
Planning & Rules Manager
Planning, Rule Development & Implementation

SE:AJ:ML

FACILITY PERMIT TO OPERATE: COMPLIANCE PLAN
R.J. NOBLE COMPANY

Rule 1402 Risk Reduction Plan

A/N XXXXXX

Site Location: 15505 E. Lincoln Ave., Orange, CA 92865

ADMINISTRATIVE REQUIREMENTS:

This facility shall be subject to the terms and conditions of this plan unless this plan is suspended, revoked, modified, reissued or denied. Failure to maintain a valid plan is a violation of Rule 1402.

It is the responsibility of the facility to comply with other District Rules and Regulations and with all laws, ordinances and regulations of other government agencies which are applicable to the operation of the equipment.

This plan does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code or the Rules and Regulations of the South Coast AQMD. This plan shall not be considered as permission to violate existing laws, ordinances, regulations or statutes of other governmental agencies.

CONDITIONS:

1. Beginning on October 28, 2026, the facility shall fall and remain below the Action Risk Level as defined in Rule 1402(c)(2). All conditions of this Compliance Plan shall apply beginning October 28, 2026.
2. A dust suppression water spray system shall remain installed and operated in good working condition on the storage pile identified as S0038 (See Attachment A) in the Risk Reduction Plan approved on October 28, 2026.
3. The surface material moisture content of the S0038 storage pile shall be maintained at 1.4% or greater.
4. Collection of an aggregate sample of S0038 shall be conducted in accordance with the California Department of Transportation Method CT 125 – Method of Test For Sampling Highway Materials and Products Used in the Roadway Pavement Structure Sections. Consistent with the method, three total samples shall be taken from the storage pile: one sample from the top third, one sample from the midpoint, and one sample from the bottom of the volume of the storage pile. In the event it is deemed that sampling from the bottom or midpoint of the pile poses a safety concern, additional sampling may occur at unique locations from the top third of the pile.

5. Aggregate sampling shall be conducted by personnel certified by the California Department of Transportation for Method CT 125. The facility shall provide proof of personnel certification and laboratory accreditation to South Coast AQMD upon request
6. Collection of an aggregate sample of S0038 shall be conducted weekly every Wednesday and shall be in accordance with the conditions for a Qualifying Sampling Event.

    a) Qualifying Sampling Event conditions require:
        i. Sampling is conducted between 12:00 PM and 4:00 PM on Wednesdays
        ii. Sampling collects three (3) unique samples
        iii. Sampling occurs at least one hour after the most recent watering event
        iv. Sampling day falls on a normal business day during normal operating hours.
    b) Failure to collect an aggregate sample of S0038 for three consecutive weeks shall be a violation of this Compliance Plan, except under the following conditions:
        i. If environmental or operational conditions require watering more frequently than once per hour and an opportunity for a Qualifying Sampling Event cannot be achieved by 4:00 PM due to the need to maintain compliance with Rule 403 and Rule 1157, sampling shall resume the following week and the event shall not be counted as a failure to collect an aggregate sample of S0038, provided records are maintained consistent with Condition 7.
        ii. In the event that Wednesday falls on a holiday or scheduled plant closure, sampling will resume the following week and the event shall not be counted as a failure to collect an aggregate sample of S0038, provided records are maintained consistent with Condition 7.
7. The date and time when an aggregate sample collection was conducted shall be recorded in a digital record that South Coast AQMD can readily request and review. If no aggregate sample collection occurs in accordance with Condition 6 because the conditions for a qualifying sampling event are not met, a description of why the qualifying sampling event conditions were not met shall be recorded in the digital record.
8. Moisture testing shall be conducted every Wednesday on the aggregate sampling prescribed in Condition 6, according to the American Association of State Highway and Transportation Officials (AASHTO) Method T255 – Total Moisture Content of Aggregate by Drying. Moisture testing shall be conducted by personnel certified by the California Department of Transportation to perform AASHTO Method T255 and in a laboratory accredited by California Department of Transportation Independent Assurance Staff to perform AASHTO Method T255. The facility shall mainta in on-site and provide proof of personnel certification and laboratory accreditation to South Coast AQMD upon request.
9. Moisture testing shall be conducted by the facility on-site laboratory. If the moisture testing cannot be performed by the facility's on-site laboratory and must be performed by an off-site laboratory, or if the moisture testing results will be analyzed by an off-site laboratory, the facility shall notify South Coast AQMD by calling (800) CUT-SMOG no more than 5 calendar days from the moisture testing and/or analysis event.
10. Moisture testing results shall be recorded in a digital record that South Coast AQMD can readily request and review at any time. The digital record shall also include the date and time when the moisture testing was conducted.

11. The facility shall notify South Coast AQMD's AB 2588 Program staff at AB2588@aqmd.gov if the S0038 storage pile is relocated to a different location within the facility property boundary within 10 calendar days of relocation.
12. The facility shall maintain silt loading level of 2.0 g/m^2 or less on all paved haul roads.
13. The facility shall conduct sampling of paved road dust according to Environmental Protection Agency's AP-42 Compilation of Air Emission Factors from Stationary Sources (AP-42) Appendix C.1. The facility shall maintain a map on-site which clearly identifies uniquely numbered paved road segments based on 3-meter intervals. Sampling shall always occur at three separate road segments determined by a random number generator to create one composite sample.
14. The facility shall conduct a silt loading analysis according to Environmental Protection Agency's AP-42 Compilation of Air Emission Factors from Stationary Sources (AP-42) Appendix C.2. The facility may utilize ASTM D6913 as an acceptable sieve analysis.
15. Silt loading testing shall be conducted at a frequency of once every two calendar weeks for the first 9 months after RRP approval. No two sampling events will occur within the same calendar week. If all the results of the testing comply with the silt loading level listed in condition 12, then testing can be reduced to once every quarter. If any test conducted on the quarterly cycle exceeds the silt loading level in condition 12 then testing shall return to tests every two weeks for 9 months. If all the results of the subsequent 9 months of testing show compliance, then the facility can return to testing every quarter. The three uniquely identified road segments, road segment dimensions (in meters), total area (in square meters), area avoided due to potholes or mounding (in square meters), net sampled area (in square meters), mass of total composite sample (in grams), mass of sample passed through #200 sieve (in grams), and calculated silt loading number (in g/m^2) shall be recorded in a digital record that South Coast AQMD can readily request and review at any time.
16. South Coast AQMD reserves the right, at its discretion as long as it is safe to do so and does not disrupt asphalt production or delivery, to independently conduct sampling and laboratory analyses consistent with the requirements of this Compliance Plan to verify compliance with the limits established herein.
17. Within 60 days following the end of each calendar quarter, the facility shall submit the records required by Condition 6 and Condition 8 for each calendar quarter to the South Coast AQMD's AB 2588 Program staff at AB2588@aqmd.gov.
18. The facility shall keep a copy of all recordkeeping requirements established in Condition 7 and Condition 10 for at least 5 years.

Attachment A



SCOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr.
Diamond Bar, CA 91765-4178

R.J. Noble Company
Orange HOT MIX ASPHALT PLANT
Facility ID #19167
Health Risk Reduction Plan
REPORTING YEAR 2017

Prepared For:

R.J. Noble Company
15505 E Lincoln Ave.
Orange, CA 92865 1015

Project No.: RJNOB-17-2268
Contact: Scott Taylor
Date: January 20, 2026

TAYLOR ENVIRONMENTAL SERVICES, INC.

5122 Bolsa Avenue, Suite 101
Huntington Beach, CA 92649
Phone: (714) 587-2595 Fax: (714) 587-2598
www.tayloresinc.com

FORM A	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AB 2588 Program, 21865 COPLEY DR., DIAMOND BAR CA 91765-0949	INVENTORY YEAR 2017

AB 2588 AIR TOXICS DOCUMENT CERTIFICATION & SUBMITTAL FORM

Please check the appropriate boxes for purpose of submittal:

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

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

Please provide the following information:

Facility name: RJ Noble Company

South Coast AQMD ID: 19167

Facility SIC/NAICS CODE: 2951/324121

Facility Location Address: 15505 E Lincoln Ave., Orange, CA 92865

Mailing Address: 15505 E Lincoln Ave., Orange, CA 92865

Contact Person (Company Official)

Name: Rodrigo Amaya — Title: General Superintendent

Telephone: 714-637-1550 ext. 305 — eMail: rodrigoamaya@rjnoblecompany.com

Preparer (if different from above)

Name: Hayden Street — Title: Consultant

Company: Taylor Environmental Services Inc.

Telephone: 714-479-2591 — eMail: hayden.street@tayloresinc.com

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

Signature Of Responsible Company Official

Date: 1/22/2026

Name Of Responsible Company Official: Rodrigo Amaya

Title: General Superintendent

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Part I EXECUTIVE SUMMARY

South Coast Air Quality Management District (SCAQMD) notified R.J. Noble on September 24, 2025, of the approval of the 2017 Health Risk Assessment (HRA) submitted pursuant to the Air Toxics "Hot Spots" Act (AB2588) and SCAQMD rule 1402. Results of the assessment demonstrate that risks from the Orange Hot Mix Asphalt plant exceed the Notification Risk Level for both the Residential Maximum Exposed Individual cancer risk and the Residential Maximum Chronic Hazard Index; however, exceedance of the Action Risk Level occurs only for the residential cancer risk. Since receiving the approval of the HRA, the required Public Notification and meeting occurred on November 19, 2025. The approval also required preparation of a Risk Reduction plan. This application, prepared by Taylor Environmental Services, on behalf of R.J. Noble Company (R.J. Noble) details the Risk Reduction Plan (RRP) for the Hot Mix Asphalt facility located at 15505 East Lincoln Ave, Orange, CA 92865.

On September 24, 2025, R.J. Noble received approval of the 2017 Health Risk Assessment (HRA). The resulting HRA determined a residential cancer risk of 63.7 in a million. Pursuant to Rule 1402, since the HRA resulted in risk above the action risk threshold equal to or greater than 25 in a million for maximum individual cancer risk, a Risk Reduction Plan is required.

In accordance with South Coast AQMD Rule 1402(f):

(1) Submittal of Risk Reduction Plans

An owner or operator of a facility shall submit a Risk Reduction Plan to the Executive Officer to reduce the impact of total facility emissions below the Action Risk Level within 120 days from the date of Health Risk Assessment approval or Health Risk Assessment preparation by the SCAQMD, if the approved or District prepared Health Risk Assessment shows a risk greater than or equal to the Action Risk Level.

(2) Requirements for Risk Reduction Plans

The Risk Reduction Plan shall include:

(A) The name, address, and SCAQMD facility identification number, and SIC and NAICS codes of the facility;

(B) A facility risk characterization which includes an updated Air Toxics Inventory Report and Health Risk Assessment, if the risk due to total facility emissions has increased above or decreased below the levels indicated in the previously approved Health Risk Assessment;

(C) Identification of each source from which risk needs to be reduced in order to achieve a risk below the Action Risk Level;

(D) For each source identified in subparagraph (f)(2)(C), an evaluation of the risk reduction measures available to the owner or operator, including emission and risk reduction potential, and time necessary for implementation;

(E) Specification of the risk reduction measures that shall be implemented by the owner or operator to comply with the requirements of subdivision (i) to achieve the Action Risk Level or the lowest achievable level;

(F) A schedule for implementing the specified risk reduction measures as quickly as feasible. The schedule shall include the submittal of all necessary applications for permits to construct or modify within 180 days of approval of the Risk Reduction Plan, or in accordance with another schedule subject to approval of the Executive Officer, and specify the dates for other increments of progress associated with implementation of the risk reduction measures;

(G) If requesting a time extension, provide the information specified under paragraph (l)(3). Time extensions shall be approved as specified under paragraph (l)(4);

(H) An estimation of the residual health risk after implementation of the specified risk reduction measures; and

(I) Proof of certification of the Risk Reduction Plan as meeting all requirements by an individual who is officially responsible for the processes and operations of the facility.

Part II Project Description

A. Business Background

1.	Name	R.J. Noble Company
2.	Owner	R.J. Noble Company
3.	Contact	Rodrigo Amaya - Superintendent R.J. Noble 15505 E Lincoln Ave Orange, CA 92865 (714) 637-1550 ext. 305
	Facility Address	15505 E Lincoln Ave Orange, CA 92865 (Site ID 19167)
4.	Business Description	Hot Mix Asphalt Plant
5.	Facility SIC/NAICS Code	2951/324121

B. Description of Facility

R.J. Noble Company operates a hot mix asphalt facility located at 15505 E Lincoln Ave in Orange, CA 92865 (Site ID 19167). Refer to Figure 1 below for a vicinity map detailing the location of the site. The facility produces hot mix asphalt to supply the construction needs of the Orange County area. Asphalt is a critical material used in the construction and maintenance of roads, highways, parking lots, and other paved surfaces. The asphalt plant produces high-quality asphalt mixes designed to meet the demands of modern infrastructure projects. The facility supplies asphalt materials for wholesale delivery to customers.



Figure 1 - Vicinity Map

Part III Risk Reduction

A. Emission Sources

The approved 2017 Health Risk Assessment (HRA) for R.J. Noble evaluated numerous emission sources contributing to potential health impacts in the vicinity of the Orange facility. While multiple sources were assessed, the analysis identified two sources as the primary contributors to overall risk. Accordingly, this Risk Reduction Plan focuses on the following sources to reduce emissions and achieve a residential cancer risk below the Rule 1402 Action Risk Level of 25 in one million:

- Storage Pile (Source S0038)
- Paved Haul Roads (Sources S0072-S0082)

All other health risk scenarios evaluated in the 2017 HRA were below the applicable Action Risk Level thresholds. Therefore, this Risk Reduction Plan is solely focused on reducing residential cancer risk to achieve compliance with Rule 1402.

B. Existing Risk Contribution

Table 1 details the existing cancer risk contribution according to the approved 2017 HRA which resulted in a maximum residential cancer risk of 63.7 in a million. The location of the maximally exposed resident is shown below in Figure 2.

Table 1 – Maximally Exposed Individual Resident (MEIR) Cancer Risk Contribution

MEIR 30-Year Cancer Risk Summary			
Receptor ID:	2501	**UTM Zone:**	11
UTME (m):	420629.4	**UTMN (m):**	3744602
Total cancer risk (in a million):		63.7	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
Cobalt		INHALATION	26.2
Arsenic		SOIL, CROP	26.0
Lead		SOIL, CROP	2.674
1,3-Butadiene		INHALATION	2.475
Cadmium		INHALATION	2.193
Diesel Exhaust PM		INHALATION	1.81
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0072-S0082 (Paved Haul Roads)		57.6%	36.72
S0038 (Aggregate Storage Pile)		29.0%	18.50
S0063 (Dryer D127)		6.9%	4.38

The largest contributing emission source is paved haul roads, accounting for 57.6% of the overall risk, followed by the aggregate storage pile at 29.0%. Cobalt and arsenic associated from the haul roads and storage piles are the primary toxic air contaminants (TACs) driving the majority of the residential cancer risk. Under Rule 1402, the residential cancer risk must be reduced to below 25 in one million.



Figure 2 – Maximum Resident Cancer Risk Location

C. Risk Reduction Evaluation

To reduce risk below the Action Risk Level threshold, two risk reduction measures were evaluated and incorporated into a Risk Reduction Plan HARP model to demonstrate the ability of these measures to bring down the risk to acceptable levels. The modifications to the emissions inventory used in the approved 2017 HRA involve the storage pile and paved haul roads. Revised emission calculations for these sources are provided in Attachment B. The revised emissions upload file, HRA modeling files, and detailed calculation spreadsheet can be accessed using the following dropbox link:

https://www.dropbox.com/scl/fo/oxu1kq66ptnhc1yd3pmh7/AKAvWldZkyAefghUMipT-us?rlkey=gmpzc6i9mkpyvicmiblcocdiz&st=ayifvh93&dl=0

The risk reduction measures are as follows:

1. A dust suppression water spray system installed on the storage pile was incorporated into the model to ensure that material moisture on the storage pile can be maintained, thereby reducing fugitive dust emissions from wind erosion and material handling activities. The surface material moisture content used was 1.4 percent.

2. Site specific source testing has shown that the measured silt loading is significantly lower than the default uncontrolled 76 g/m^2 silt loading assumed for paved roads at asphalt facilities in SCAQMD's *Particulate Matter (PM) Emission Factors for Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants, December 2021*. The model has incorporated a silt loading level of 2.0 g/m2 in the emission calculations for the paved haul road. The paved haul road follows the perimeter of the facility and is utilized by the asphalt trucks. Additionally, the site uses Best Available Control Technologies (BACT) throughout the facility's operation to prevent dust from getting onto the haul road including dust suppression on the material handling and uses defined routes for truck travel on site. The paved road will be swept by a full-time SCAQMD Rule 1186 compliant street sweeper which reduces silt build up providing even greater mitigative controls of dust from the haul road.

Table 2 summarizes the revised Health Risk Analysis after application of the additional controls to the storage pile and paved haul roads. The 30-year residential cancer risk isopleth is provided in Attachment A.

Table 2 - Revised Cancer Risk Analysis After Mitigation

MEIR 30-Year Cancer Risk Summary			
Receptor ID:	2501	**UTM Zone:**	11
UTME (m):	420629.4	**UTMN (m):**	3744602
Total cancer risk (in a million):		18.9	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
Arsenic		SOIL, CROP	8.3
Cobalt		INHALATION	3.8
1,3-Butadiene		INHALATION	2.48
Diesel Exhaust PM		INHALATION	1.81
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0038 (Aggregate Storage Pile)		43.7%	8.24
S0063 (Dryer D127)		23.2%	4.38
S0072-S0082 (Paved Haul Roads)		11.2%	2.12

After implementing the mitigation measures into the health risk assessment, the maximum residential cancer risk is under the respective threshold at 18.9 in a million. Lowering the risk below the 25 in a million Action Risk Level brings the risk to a level that satisfies the goal of the Risk Reduction Plan. Once the Risk Reduction Plan is approved, an application will be submitted to add conditions to the permit so that the measures are enforceable.

D. Risk Reduction Schedule

A dust suppression water spray has been installed on the storage pile and applies water to provide adequate moisture to maintain dust suppression. Paved haul roads are maintained around the perimeter of the facility for asphalt pick up and will be controlled through the use of a full-time street sweeper operated during facility operating hours. The silt loading source test has been completed that substantiates the ability of the facility to achieve the proposed haul road silt loading discussed in this plan, and the results have been submitted to the SCAQMD and are pending approval from District staff.

E. Permit Modification

Upon SCAQMD approval of the Risk Reduction Plan, an application will be prepared to request a modification to the Permit to Operate to include a condition for the paved haul roads to maintain a maximum silt loading of 2.0 g/m^{2}and a permit condition for the storage piles requiring a material moisture content of 1.4 percent on all fine material (#4 sieve and smaller)

ATTACHMENT "A"

ISOPLETH



Prepared For: R.J. Noble
Job Number: RJNOB-17-2268
CRS: WGS 84 / UTM zone 11N
Date: 01/16/2026

30-Year Resident Cancer Risk

N

0 100 200 m

TAYLOR ENVIRONMENTAL SERVICES, INC.

ATTACHMENT "B"

HAUL ROAD AND STORAGE PILE EMISSIONS CALCULATIONS

Paved Haul Roads (S0072-S0082)

Paved Haul Road PM Emission Factors

	$EF^{1} = k^* (sL)^a * (W)^b$				
	$PM_{2.5}$	PM_{10}	PM		
k	0.00054	0.0022	0.011	**PM2.5 =**	5.9632E-03 lbs/vmt
a	0.91	0.91	0.91	**PM10 =**	2.4295E-02 lbs/vmt
b	1.02	1.02	1.02	**PM =**	1.2147E-01 lbs/vmt
sL (g/m^2)	2.00	2.00	2.00		
w (weight [tons])	27.50	27.50	27.50		
c (control ef)[2]	80.00%	80.00%	80.00%		

1. AP-42, Jan 2011 Chapter13.2.1.3, Equation 1

2. Default 80% control efficiency from SCAQMD's Particulate Matter (PM) Emission Factors for Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants (December 2021), applied for paved road sweeping.

Pollutant	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	÷	11 Haul Road Segments	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	6,815.84		9.58E-03		11		5.94E+00		3193		1.86E-03
Antimony	7440360	6,815.84		8.50E-07		11		5.27E-04		3193		1.65E-07
Arsenic	7440382	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Barium	7440393	6,815.84		1.16E-04		11		7.17E-02		3193		2.24E-05
Bromine	7726956	6,815.84		2.55E-06		11		1.58E-03		3193		4.95E-07
Cadmium	7440439	6,815.84		3.04E-06		11		1.88E-03		3193		5.89E-07
Chlorine	7782505	6,815.84		1.58E-04		11		9.80E-02		3193		3.07E-05
Chromium	7440473	6,815.84		2.98E-05		11		1.84E-02		3193		5.78E-06
Cobalt	7440484	6,815.84		1.81E-05		11		1.12E-02		3193		3.51E-06
Copper	7440508	6,815.84		1.06E-05		11		6.55E-03		3193		2.05E-06
Lead	7439921	6,815.84		1.09E-04		11		6.78E-02		3193		2.12E-05
Manganese	7439965	6,815.84		1.28E-04		11		7.91E-02		3193		2.48E-05
Mercury	7439976	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Nickel	7440020	6,815.84		7.65E-06		11		4.74E-03		3193		1.49E-06
Phosphorus	7723140	6,815.84		1.95E-04		11		1.21E-01		3193		3.78E-05
Selenium	7782492	6,815.84		1.21E-07		11		7.53E-05		3193		2.36E-08
Silver	7440224	6,815.84		1.09E-06		11		6.77E-04		3193		2.12E-07
Vanadium (Fume Or Dust)	7440622	6,815.84		3.79E-05		11		2.35E-02		3193		7.35E-06
Zinc	7440666	6,815.84		7.56E-05		11		4.68E-02		3193		1.47E-05

*CARB Profile 416.

Storage Pile (S0038)

Stockpile PM Emission Factor

$E = k(0.0032)\dfrac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$	k= 0.74 U= 8.15 M= 1.4
E = emission factor k = particle size multipler (dimensionless) U = mean wind speed, meters per second (m/s) (miles per hour [mph]) M= material moisture content (%)	EF = 0.007363568 (lbs PM/ton)
1. AP42 13.2.4 - Aggregate Handling and Storage Piles	

Pollutant	CAS #	Annual Throughput (tons)	×	Emission Factor (lbs/ton)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001,077.00		6.19E-08		6.19E-02		8760		7.07E-06
Silica, Crystalline **	1175	1,001,077.00		2.18E-04		2.18E+02		8760		2.49E-02
Copper *	7440508	1,001,077.00		3.09E-07		3.10E-01		8760		3.53E-05
Cr (VI)*	18540299	1,001,077.00		0.00E+00		0.00E+00		8760		0.00E+00
Lead*	7439921	1,001,077.00		1.91E-07		1.92E-01		8760		2.19E-05
Nickel *	7440020	1,001,077.00		2.14E-07		2.14E-01		8760		2.44E-05
Beryllium*	7440417	1,001,077.00		3.53E-09		3.54E-03		8760		4.04E-07
Cadmium*	7440439	1,001,077.00		4.12E-09		4.13E-03		8760		4.71E-07
Barium*	7440393	1,001,077.00		1.10E-06		1.11E+00		8760		1.26E-04
Chromium*	7440473	1,001,077.00		3.31E-07		3.32E-01		8760		3.79E-05
Cobalt*	7440484	1,001,077.00		8.10E-08		8.11E-02		8760		9.26E-06
Zinc*	7440666	1,001,077.00		7.36E-07		7.37E-01		8760		8.41E-05
Silver*	7440224	1,001,077.00		7.00E-09		7.00E-03		8760		7.99E-07
Vanadium*	7440622	1,001,077.00		4.79E-07		4.79E-01		8760		5.47E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012

SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr.
Diamond Bar, CA 91765-4178

R.J. Noble Company
Orange HOT MIX ASPHALT PLANT
Facility ID #19167
Updated Health Risk Assessment for Risk Reduction Plan
Reporting Year 2017

Prepared For:

R.J. Noble Company
15505 E Lincoln Ave.
Orange, CA 92865 1015

Project No.: RJNOB-17-2268
Contact: Scott Taylor
Date: March 24, 2026

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RISK SUMMARY FORM

RJ Noble Company	19167	2017
Facility Name	Facility I.D.	Inventory Year
15505 E Lincoln Ave.	Orange	92865
Facility Address	City	Zip Code
Hot Mix Asphalt Facility		
Type of Business		

A. Cancer Risk:

Receptor Type	Cancer Risk (Per Million)	Receptor I.D.	UTME (m)	UTMN (m)
PMI	47.00	8131	420467.7	3744434
MEIR	18.85	2501	420629.4	3744602
MEIW	0.79	2031	420549.4	3744282

Substances Accounting for 90% of Cancer Risk:	Cobalt, Arsenic, DieselExhPM, 1,3-Butadiene
Processes Accounting for 90% of Cancer Risk:	Paved Haul Roads, Aggregate Storage Piles, Dryer, Light Towers
Cancer Burden (based on a 70-yr exposure):	0.027
Number of people exposed to >1 per million Cancer Risk:	9,881
Number of people exposed to >10 per million Cancer Risk:	100
Number of people exposed to >100 per million Cancer Risk:	0
Max distance from center of facility to the furthest edge of 70-yr, 1 per million isopleth (m):	2500

B. Maximum Chronic Hazard Indices:

Receptor Type	Hazard Index	Receptor I.D.	UTME (m)	UTMN (m)	Toxicological Endpoint
PMI	1.97	8145	420568.2218	3744571.048	Respiratory System
MEIR	0.745	2501	420629.4	3744602	Respiratory System
MEIW	0.085	2031	420549.4	3744282	Respiratory System

Substances Accounting for 90% of Chronic HI:	Arsenic, Silica Crystln, Nickel, Chlorine
Processes Accounting for 90% of Chronic HI:	Aggregate Storage Piles, Paved Haul Roads

C. Maximum 8-hour Chronic Hazard Index:

Receptor Type	Hazard Index	Receptor I.D.	UTME (m)	UTMN (m)	Toxicological Endpoint
MEIW	0.007	2031	420549.4	3744282	Central Nervous System

Substances Accounting for 90% of 8-hr Chronic HI:	Manganese, Arsenic, Mercury, 1,2,4TriMeBenze
Processes Accounting for 90% of 8-hr Chronic HI:	Paved Haul Roads, Dryer, Unpaved Roads, Aggregate Storage Piles

D. Maximum Acute Hazard Indices:

Receptor Type	Hazard Index	Receptor I.D.	UTME (m)	UTMN (m)	Toxicological Endpoint
PMI	0.243	8164	420354.4382	3744439.531	Immune System
MEIR	0.040	2559	420639.4	3744572	Immune System
MEIW	0.067	2031	420549.4	3744282	Immune System

Substances Accounting for 90% of Acute HI:	Nickel, Benzene
Processes Accounting for 90% of Acute HI:	Paved Haul Roads, Dryer, Aggregate Storage Piles, Unpaved Roads, Welding (gasoline)

Public Notification Required ☑ Risk Reduction Required ☐

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List of Abbreviations / Acronyms

AB	Assembly Bill
AERMOD Model	American Meteorological Society/Environmental Protection Agency Regulatory
APR	Application Policy Review
BLL	Blood Lead level
CARB	California Air Resources Board
CAS	Chemical Abstracts Service DEM - Digital Elevation Models
GEP	Good Engineering Practice
HRA	Health Risk Assessment
HARP	Hot Spots Analysis and Reporting Program
HI	Hazard Index
MEIR	Maximum Exposed Individual Resident
MEIW	Maximum Exposed Individual Worker
MET	Meteorological
OEHHA	Office of Environmental Health Hazard Assessment
PM	Particulate Matter
PMI	Point of Maximum Impact
RAP	Recycled Asphalt Pavement
REL	Reference Exposure Limit
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
TEIR	Toxic Emissions Inventory Report
US EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds

List of Key Definitions

2015 OEHHA Guidelines - Office of Environmental Health Hazard Assessment (OEHHA), Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015

Action Risk Level - For Rule 1402, the action risk level is a MICR of twenty-five in one million (25 x 10-6) total acute or chronic HI of three (3.0) for any target organ system at any receptor location, or the National Ambient Air Quality Standard (NAAQS) for lead.

Acute Health Impacts - An effect caused by initial exposure of a hazardous chemical on the body. The effects are generally severe but are often reversible after exposure stops.

Chronic Health Impacts - An effect caused by prolonged or repeated exposures over time. Symptoms may not be apparent immediately but develop over time and are often irreversible.

Cancer Health Impacts - An exposure to a carcinogenic substance that causes an increase in the likelihood for cancer in the exposed individual.

Dose-Response Assessment - The process of characterizing the relationship between the exposure to an agent and the incidence of an adverse health effect in exposed populations.

Maximum Exposed Individual (MEI) - The receptor location having the highest cancer, 8-hour chronic, chronic, or acute health impact.

Multipathway Substances - A substance or chemical that once airborne from an emission source can, under environmental conditions, be taken into a human receptor by inhalation and by other non-inhalation exposure routes, such as deposition on skin or ingestion of soil contaminated by the emission.

Notification Risk Level - For Rule 1402, the notification risk level is a MICR of ten in one million (10 x 10-6), a total acute or chronic HI of one (1.0) for any target organ system at any receptor location, or the more stringent of either the NAAQS for lead or ambient lead concentration limit in an applicable SCAQMD rule.

Risk Reduction Measure - A control measure which will reduce or eliminate the health risk associated with emissions of toxic air contaminants, is real, permanent, quantifiable, and enforceable through District permit conditions if applicable. Risk reduction measures may include but are not limited to feedstock modification; product reformulations; production system modifications; system enclosure, emissions control, capture or conversion; operational standards or practices modifications; emissions collection and exhaust; source control; or alternative technologies.

Part I EXECUTIVE SUMMARY

On behalf of R.J. Noble, Taylor Environmental Services has prepared a Health Risk Assessment (HRA) in accordance with AB2588 for R.J. Noble facility (ID 19167) located at 15505 E Lincoln Ave, Orange CA 92865. R.J. Noble has prepared this Health Risk Assessment (HRA) in accordance with SCAQMD letter dated April 24, 2024.

A revised HRA was submitted on January 2, 2025 and subsequently approved by SCAQMD on September 24, 2025. Following the approval, a Risk Reduction Plan (RRP) was submitted on January 20, 2026. On February 18, 2026, SCAQMD notified R.J. Noble that a fully updated HRA and Air Toxics Inventory Report (ATIR) are required to incorporate the emission reduction measures identified in the RRP. This HRA has been prepared in response to that request and implements the RRP measures.

A. Project overview

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588 or the “Act”) was enacted in September 1987. Under the Act, stationary sources are required to report the types and quantities of certain toxic substances their facilities routinely release into the air. AB 2588 is designed to provide information to state and local agencies and to the general public on the extent of airborne emissions from stationary sources and the potential public health impacts of those emissions. The South Coast Air Quality Management District is mandated by the State to implement AB 2588.

On March 6, 2015, The State Office of Environmental Health Hazard Assessment (OEHHA) adopted changes to the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments. These revisions were designed to incorporate three technical support documents and to provide enhanced protection of children as required under state law (SB 25, Escutia, 1999). Due to these recent changes, and the corresponding potential increases in calculated health risk, the district notified RJ Noble that a Health Risk Assessment (HRA) is required under AB 2588. The Health Risk Assessment was completed based on 2017 reporting year.

Pursuant to the Air Toxics "Hot Spots" Information and Assessment Act of 1987, we have prepared a Health Risk Assessment (HRA) Report following OEHHA “Air Toxic Hot Spots Program, Risk Assessment Guidelines, Guidance Manual for Preparation of Health Risk Assessment”, February 2015 and South Coast AQMD’s AB 2588 and Rule 1402 Supplemental Guidelines, September 2024.

R.J. Noble’s Hot Mix Asphalt facility produces State of California Standard Specification asphalt concrete mixes, which typically consist of ¾", ½", ⅜" asphalt concrete mix. The emissions from this facility are from asphaltic concrete drum mix plant, aggregate handling, aggregate stockpiles, asphalt silo storage and loadout, recycled asphalt product handling and stockpiles, asphalt oil tanks and crumb rubber processing facility.

On January 2, 2025, R.J. Noble submitted the final Health Risk Assessment (HRA), which was approved by SCAQMD on September 24, 2025. Following this approval, a Risk Reduction Plan (RRP) was submitted on January 20, 2026.

This HRA has been updated to incorporate and implement the RRP measures as requested by SCAQMD.

B. Summary results

BREEZE AERMOD v11.0.0.7 was used to run an air dispersion model to determine ground-level concentrations from the facility. The dose-response assessment was completed utilizing The California Air Resource Board Health Risk Assessment model (HARP2) model. Dose-response assessment for cancer and non-cancer health impacts involves evaluating the relationship between the amount of a chemical substance (dose) and the effect on human health. Non-cancer health impacts refer to adverse health effects caused by exposure to air pollutants that do not result in cancer but can still harm human health. The HRA evaluated worker and residential receptor impacts from the site. The HARP2 software was used to calculate the cancer risk and non-cancer health impacts of chemical substances through various exposure pathways including inhalation, soil ingestion, dermal, mother's milk, and homegrown produce. Table 2 lists the exposure pathways and target organs of the Toxic Air Contaminants (TACs).

The listed substances predominantly driving the risk for the Maximally Exposed Individual Resident (MEIR) and the Maximally Exposed Individual Worker (MEIW) are cobalt, arsenic, DieselExhPM, 1,3-Butadiene, and nickel. The main sources of these substances are the paved haul roads, aggregate storage piles, dryer, and screens.

Table 1 below summarizes the results of MEIR and MEIW, non-cancer chronic, and the acute hazard indices.

Table 1 - Risk Summary Results

Risk Assessment [1]	Results	Coordinates		Receptor Number
		X (m)	Y (m)	
MEIR (in a million)	18.9	420629.4	3744602	2501
MEIW (in a million)	0.793	420549.4	3744282	2031
Non-Cancer Chronic Hazard Index (Resident)[1]	0.745	420629.4	3744602	2501
Non-Cancer Chronic Hazard Index (Worker)	0.085	420549.4	3744282	2031
Acute PMI	0.243	420354.4382	3744439.531	8164

1. Residential cancer risk is based on 30-year exposure. Worker cancer risk is based on 25-year exposure.

The South Coast AQMD Rule 1402 has Action Risk Levels of > 25 in a million for MICR and an Acute or Chronic HI > 3.0. Following the implementation of the risk reduction measures, the HRA has determined the facility is below the Action Risk Levels for the MICR for the Resident Receptor at 18.9 in a million.

The South Coast AQMD's Rule 1402 has Notification Risk Levels of > 10 in a million for MICR and Acute and Chronic HI is > 1.0. The HRA has determined the facility is above the Notification Risk levels for the MICR for the Resident Receptor at 18.9 in a million.

Table 2 – Exposure Pathway and Target Organs by Pollutant

CAS	Pollutant	Multi-pathway	Pathway					Acute Target Organs								Chronic Target Organs											Chronic 8-Hr Target Organs								
			Inhalation	Dermal	Soil Ingestion	Homegrown Produce	Mother's Milk	CV	CNS	Immune	Reproductive Devel.	Respiratory	Skin	Eye	Blood	CV	CNS	Immune	Kidney	GILV	Reproductive Devel.	Respiratory	Skin	Eye	Endocrine	Blood	CV	CNS	Immune	Kidney	Reproductive Devel.	Respiratory	Skin	Eye	Blood
1128	Lead cmp(inorg)	x	x	x	x	x	x																											
1151	PAHs-w/o	x	x	x	x	x	x																											
1175	Silica, Crystln		x																			x												
9901	DieselExhPM		x																			x												
50000	Formaldehyde		x											x								x										x		
50328	B[a]P	x	x	x	x	x	x																											
53703	D[a,h]anthracene	x	x	x	x	x	x																											
56553	B[a]anthracene	x	x	x	x	x	x																											
67561	Methanol		x						x												x													
71432	Benzene		x							x	x				x											x								x
71556	1,1,1-TCA		x						x								x																	
74839	Methyl Bromide		x						x		x	x					x				x	x												
74873	Methyl Chloride		x																															
75003	Ethyl Chloride		x																	x	x													
75070	Acetaldehyde		x									x		x								x										x		
75092	Methylene Chlor		x					x	x							x	x																	
75150	CS2		x						x		x						x				x													
76131	CFC-113		x																															
78933	MEK		x									x		x																				
79016	TCE		x														x							x										

83329	Acenaphthene		x																														
85018	Phenanthrene		x																														
86737	Fluorene		x																														
91203	Naphthalene		x																	x													
91576	2MeNaphthalene		x																														
95476	o-Xylene		x					x			x		x			x					x		x										
95636	1,2,4TriMeBenze		x																														
100414	Ethyl Benzene		x															x	x	x				x									
100425	Styrene		x							x	x		x			x																	
106423	p-Xylene		x					x			x		x			x					x		x										
106990	1,3-Butadiene		x							x										x										x			
107028	Acrolein		x								x		x								x										x		
108383	m-Xylene		x					x			x		x			x					x		x										
108883	Toluene		x					x			x		x										x										x	
110543	Hexane		x													x																	
115071	Propylene		x																	x													
120127	Anthracene		x																														
127184	Perc		x					x			x		x					x	x														
129000	Pyrene		x																														
191242	B[g,h,i]perylene		x																														
192972	B[e]pyrene		x																														
193395	In[1,2,3-cd]pyrene	x	x	x	x	x	x																										
198550	Perylene		x																														
205992	B[b]fluoranthene	x	x	x	x	x	x																										
206440	Fluoranthene		x																														
207089	B[k]fluoranthene	x	x	x	x	x	x																										
208968	Acenaphthylene		x																														
218019	Chrysene	x	x	x	x	x	x																										

1330207	Xylenes		x						x			x		x			x					x		x											
1634044	Met-ButylEther		x																x	x				x											
7429905	Aluminum		x																																
7439921	Lead	x	x	x	x	x	x																												
7439965	Manganese		x														x												x						
7439976	Mercury	x	x	x	x	x			x		x						x		x		x								x		x	x			
7440020	Nickel	x	x	x	x	x				x												x				x			x			x			
7440224	Silver		x																																
7440360	Antimony		x																																
7440382	Arsenic	x	x	x	x	x		x	x		x					x	x				x	x	x				x	x			x	x	x		
7440393	Barium		x																																
7440417	Beryllium	x	x	x	x	x												x				x													
7440439	Cadmium	x	x	x	x	x													x			x													
7440473	Chromium		x																																
7440484	Cobalt		x																																
7440508	Copper		x								x																								
7440622	Vanadium		x								x		x																						
7440666	Zinc		x																																
7647010	HCl		x								x		x									x													
7664417	NH3		x								x		x									x													
7723140	Phosphorus		x																																
7726956	Bromine		x																																
7782492	Selenium		x													x	x			x															
7782505	Chlorine		x								x		x									x													
18540299	Cr(VI)	x	x	x	x	x																x													

Part II Project Description

A. Business Background

1.	Name	R.J. Noble Company
2.	Owner	R.J. Noble Company 15505 E Lincoln Ave. Orange, CA 92865
3.	Contact	Rodrigo Amaya (714) 637-1550 ext. 305
4.	Entitlement	Equipment is owned and operated by R.J. Noble Company
5.	Business Description	Hot Mix Asphalt Facility

B. Type of Project

Health Risk Assessment Report
(Reporting Year 2017)

C. Description of Facility

1. Location

The facility is located at 15505 E Lincoln Ave, Orange CA 92865 (ID 19167). Refer to Figure 1 for a vicinity map detailing the location of the site.

2. Local Topography

The facility is in the city of Orange, CA and is characterized by an urban environment that includes gentle hills and valleys, predominantly within the Santa Ana Mountains foothills. The facility is situated in an area characterized by relatively flat terrain, with gentle slopes leading towards the Santa Ana River to the east. The elevation in this vicinity is approximately 200 feet above sea level. Surrounding the site are residential neighborhoods and commercial establishments with the Santa Ana River bordering the facility on the east side.

D. Description of Process

1. Aggregate Receiving System

Hot Mix Plant

This facility produces hot mix asphalt which is comprised of aggregate and asphalt oil. The facility receives aggregate at the plant by truck. The aggregate is stored in open stockpiles and wetted to control PM emissions. The stockpiles are serviced by a loader which is used to feed the plant. The 100 MMBTU/hr dryer fired on natural gas heats the aggregate and oil is introduced. The blended asphalt is transferred from the external coater to a drag slat conveyer, which is conveyed to silos. The finished product is then loaded out of the silos into trucks.

Recycle Plant

Sand and gravel are delivered to the vibrating grizzly feeder. Oversized materials are sent to a Horizontal Shaft Impactor (HIS) while smaller material passes to an under-belt. The material is then processed through a screen. Material from the top deck is conveyed to a conveyor crusher and recirculated to the double-deck screen. Material for the second deck and fine material is conveyed to stockpiles.

RAP Feed System

Recycled Asphalt Pavement (RAP) will be loaded by end loader into the feed hopper where it will be delivered by belt conveyor into the hot aggregate weigh hopper. Note when RAP is added, the virgin aggregate is reduced by a like amount.

2. Process Flow Diagram and Plant Location

Attached you will find the process flow diagram shows the interaction between equipment and process lines, transfer of materials and basic control equipment (Refer to Attachment “D”).

3. Production Data

The plant production for 2017 is as follows:

Sand and Aggregate Used (tons/yr)	1,001,076.83
Hot Mix Asphalt Produced (tons/yr)	1,064,975.35
RAP (tons/yr)	664,992.0
AC oil (tons/year)	15,043,795.41
Stockpile Tons	1,001,077.0



Figure 1 - Vicinity Map

Part III Risk Assessment Procedures

A. Hazard Identification

For air toxic source, hazard identification involves the pollutant(s) of concern emitted by a facility, and the types of adverse health effects associated with exposure to the chemical(s), including whether a pollutant is a potential human carcinogen or is associated with other types of adverse health effects.

Table 3 below describes the sources of the toxic emissions at the facility.
The emission sources used in the HRA were imported directly from the EIM database that was prepared for the ATIR. Table 3 links the source IDs used in this HRA with the associated devices and processes found in the approved ATIR.

During the 2017 reporting year, the facility produced both continuous and intermittent emissions. Continuous emissions arise from asphalt oil tanks and diesel tanks, which are assumed to release emissions consistently during storage, filling, and dispensing. These emissions include particulate matter (PM) and volatile organic compounds (VOCs). Additionally, storage piles contribute to most continuous PM emissions through fugitive dust. In contrast, most emissions from the facility are associated with intermittent sources that operate only when production is active. These intermittent emissions stem from the combustion processes of an asphalt plant dryer, which releases VOCs, PM, nitrogen oxides (NOx), sulfur oxides (SOx), and carbon monoxide (CO). Emissions from asphalt silo loading and loadout are vented to a blue smoke control device, contributing further to VOC, PM, and CO emissions. Moreover, fugitive sources of particulate matter arise from material transfer and processing activities, including conveyors, screens, haul roads, and crushers, which can release emissions intermittently based on operational conditions. The specific types and amount of TACs associated with these processes are detailed in the exposure assessment section in Part III B and in Appendix A.

There are 16 multi-pathway pollutants that present potential cancer risks or chronic risks via non-inhalation routes of exposure (see Table 2): inorganic lead compounds, PAHs, Benzo[a]pyrene, Dibenz[a,h]anthracene, Benzo[a]anthracene, Indeno[1,2,3-cd]pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Lead, Mercury, Nickel, Arsenic, Beryllium, Cadmium, and hexavalent chromium.

Table 3- Toxic Emissions Source Summary

HRA Source ID	ATIR Source ID		ATIR Source Description
	Device No.	Process No.	
S0001	2	P1	STORAGE TANK, UNDERGROUND, GASOLINE, METHANOL COMPATIBLE, WITH PHASE I VAPOR RECOVERY SYSTEM OPW (VR-102-E/J), 10000 GALS A/N: 496934
S0002	4	P1	D35: HOPPER, DUMP, AGGREGATE, DRIVE OVER TYPE

	4	P2	HOPPER, DUMP, AGGREGATE, DRIVE OVER TYPE
S0003	5	P1	D36: CONVEYOR, BELT, AGGREGATE
S0004	6	P1	CONVEYOR, BELT, AGGREGATE
S0005	7	P1	BIN, SURGE, AGGREGATE, 20 TONS
S0006	8	P1	CONVEYOR, BELT, AGGREGATE
S0007	9	P1	CONVEYOR, BELT, AGGREGATE
S0008	10	P1	CONVEYOR, BELT, AGGREGATE
S0009	11	P1	CONVEYOR, BELT, AGGREGATE
S0010	12	P1	CONVEYOR, BELT, AGGREGATE
S0011	13	P1	CONVEYOR, BELT, AGGREGATE
S0012	25	P1	HOPPER, DUMP, AGGREGATE
	25	P2	HOPPER, DUMP, AGGREGATE
S0013	26	P1	FEEDER, VIBRATING GRIZZLY, AGGREGATE
S0014	27	P1	CRUSHER, HORIZONTAL SHAFT IMPACT (HSI), CEDAR RAPIDS, AGGREGATE
	27	P2	CRUSHER, HORIZONTAL SHAFT IMPACT (HSI), CEDAR RAPIDS, AGGREGATE
S0015	28	P1	CONVEYOR, BELT, AGGREGATE
S0016	29	P1	CONVEYOR, BELT, AGGREGATE
S0017	30	P1	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
	30	P2	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
S0018	31	P1	CONVEYOR, BELT, AGGREGATE
S0019	32	P1	CONVEYOR, BELT, AGGREGATE
S0020	33	P1	CONVEYOR, BELT, AGGREGATE
S0021	34	P1	CONVEYOR, BELT, AGGREGATE
S0022	35	P1	CONVEYOR, BELT, AGGREGATE
S0023	36	P1	CONVEYOR, BELT, AGGREGATE
S0024	37	P1	CONVEYOR, BELT, AGGREGATE
S0025	38	P1	CONVEYOR, BELT, AGGREGATE
S0026	39	P1	CONVEYOR, BELT, AGGREGATE
S0027	40	P1	CONVEYOR, BELT, AGGREGATE
S0028	41	P1	HOPPER, AGGREGATE
S0029	42	P1	CONVEYOR, AGGREGATE
S0030	43	P1	CRUSHER, VERTICAL SHAFT IMPACT, CANICA 2050
	43	P2	CRUSHER, VERTICAL SHAFT IMPACT, CANICA 2050
S0031	44	P1	CONVEYOR, BELT, AGGREGATE
S0032	45	P1	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK

	45	P2	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
S0033	46	P1	CONVEYOR, BELT, AGGREGATE
S0034	47	P1	CONVEYOR, BELT, AGGREGATE
S0035	52	P1	CONVEYOR, BELT, AGGREGATE
S0067-S0071	59	P1	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 527072
	59	P2	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 549624
	59	P3	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 549625
	59	P4	STORAGE TANK, HEATED, UNDERGROUND, ASPHALT, 20,000 GALS A/N: 16488X
	59	P5	STORAGE TANK, HEATED, UNDERGROUND, ASPHALT, 20,000 GALS A/N: 16487X
S0038	64	P1	AGGREGATE STORAGE PILES
S0042	69	P1	D9 – HOPPER
S0043	70	P1	D5 – HOPPER
S0044	71	P1	D6 – CONVEYOR BELT
S0045	72	P1	D7 – CONVEYOR BELT
S0046	73	P1	D8 – HOPPER
S0047	74	P1	D74 – HOPPER
S0048	75	P1	D75 – HOPPER
S0049	76	P1	D76 – HOPPER
S0050	77	P1	D11 – HOPPER
S0051	78	P1	D12 – HOPPER
S0052	79	P1	D13 - HOPPER
S0053	80	P1	D121 – CONVEYOR BELT
S0054	81	P1	D122 – CONVEYOR BELT
S0055	82	P1	D123 – CONVEYOR BELT
S0056	83	P1	D124 – CONVEYOR BELT
S0057	84	P1	D125 – CONVEYOR BELT
S0058	85	P1	D126 – CONVEYOR BELT
S0059	87	P1	D17 -CONVEYOR BELT
S0060	88	P1	D18 – CONVEYOR BELT
S0061	89	P1	D10 – HOPPER
S0062	90	P1	D130 – SCREEN
	90	P2	D130 – SCREEN
S0063	91	P1	DRYER D127
	91	P2	DRYER D127

S0065	94	P1	ASPHALT SILO LOADOUT
S0066	95	P1	ASPHALT SILO FILLING
S0072-S0082	61	P1-P11	PAVED ROADS - HMA
S0036	62	P1	UNPAVED ROADS – OTHER NON HAUL
S0037	63	P1	DIESEL STORAGE
S0039	65	P1	ELECTRODE USAGE FOR WELDER
S0040	66	P1	PROPANE TORCHES
S0041	68	P1	WELDING - GASOLINE
S0064	92	P1	LIGHT TOWERS

Attached are tables identifying all substances evaluated for cancer risk, as well as noncancer acute, 8-hour, and chronic health impacts (see Attachment "A"). Attachment "A" also includes toxic emissions data presented by device, by pollutant, and as summed pollutant totals.

The emissions inventory for the facility was based on production data from the facility for reporting year 2017.

B. Exposure Assessment

1. Facility Information

R.J. Noble owns and operates a Hot Mix Asphalt Facility located 15505 E Lincoln Ave, Orange CA 92865 (UTM 420305.00 m E, 3744235.00 m N, Zone 11). Attached you will find a vicinity map which details the location of the facility (Refer to Figure 1). Refer to Figure 2, 3, and 4 for a facility plot plan detailing the emission source locations and property boundary lines. Refer to Figure 5 for a map detailing the locations of the receptors.

2. Toxic Emission Inventory Report – Reporting Year 2017

The following tables detail the toxic emissions for each source for the 2017 reporting year. Emissions are estimated utilizing a combination of source tested data and default emission factors from SCAQMD guidance documents, AP-42 and CARB speciation profiles. The references to emission factor sources can be found underneath the calculation tables presented below and the source documents can be found in Attachment C.

3. Control Equipment

There are several pieces of control equipment to reduce emissions at the facility. The asphalt dryer is vented to a baghouse with an estimated control efficiency of 95%. The emissions were calculated based off a source test on the baghouse performed by AirX on March 7, 2022. The asphalt storage silos are vented to a blue smoke control device which controls particulate matter generated from filling and load-out with an efficiency of 90%. The emissions were estimated using AP-42 Chapter 11.1-15 and 11.1-16 emission factors for silo loading and loadout operations. The asphalt oil storage tanks are equipped with vent condensers that control particulate matter with a 90% efficiency. The emissions were estimated utilizing the same AP-42 emission factors as the asphalt silos. Fugitive particulate emissions from haul roads, material transfer points, and storage piles are controlled with water sprays and sweeping with control efficiencies ranging from 80% to 95%, depending on the assumptions provided in SCAQMD's Particulate Matter (PM) Emission Factors For Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants.

A. Permit Toxic Emission Summary

The following reflect the individual permitted devices and processes as listed above (table 3). Included are the device and process name, emission, annual throughput, and pounds of toxics per year.

S0001 (Gasoline Dispensing)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Benzene*	71432	82.62		1.44E-02		1.19E+00		8760		1.36E-04

* AQMD Default

S0002, S0003, S0004, S0005, S0006, S0011 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0007, S0008, S0009, S0010 (Aggregate Stacking Conveyors)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	250.27		1.18E-06		2.94E-04		3193		9.22E-08
Copper *	7440508	250.27		5.88E-06		1.47E-03		3193		4.61E-07
Cr (VI)*	18540299	250.27		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	250.27		3.64E-06		9.11E-04		3193		2.85E-07
Nickel *	7440020	250.27		4.06E-06		1.02E-03		3193		3.18E-07
Silica, Crystalline **	1175	250.27		3.20E-03		8.01E-01		3193		2.51E-04
Beryllium*	7440417	250.27		6.72E-08		1.68E-05		3193		5.27E-09
Cadmium*	7440439	250.27		7.84E-08		1.96E-05		3193		6.15E-09
Barium*	7440393	250.27		2.10E-05		5.26E-03		3193		1.65E-06
Chromium*	7440473	250.27		6.30E-06		1.58E-03		3193		4.94E-07
Cobalt*	7440484	250.27		1.54E-06		3.85E-04		3193		1.21E-07
Zinc*	7440666	250.27		1.40E-05		3.50E-03		3193		1.10E-06
Silver*	7440224	250.27		1.33E-07		3.33E-05		3193		1.04E-08
Vanadium*	7440622	250.27		9.10E-06		2.28E-03		3193		7.13E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0012 (Aggregate Receiving and Crushing)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	664.99		8.96E-07		5.96E-04		3193		1.87E-07
Copper ***	7440508	664.99		1.04E-05		6.89E-03		3193		2.16E-06
Cr (VI)*	18540299	664.99		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	664.99		9.52E-06		6.33E-03		3193		1.98E-06
Nickel ***	7440020	664.99		6.16E-06		4.10E-03		3193		1.28E-06
Silica, Crystalline **	1175	664.99		3.20E-03		2.13E+00		3193		6.66E-04
Barium***	7440393	664.99		1.96E-05		1.30E-02		3193		4.08E-06
Chromium***	7440473	664.99		5.60E-06		3.72E-03		3193		1.17E-06
Cobalt***	7440484	664.99		1.96E-06		1.30E-03		3193		4.08E-07
Vanadium***	7440622	664.99		8.40E-06		5.59E-03		3193		1.75E-06
Zinc***	7440666	664.99		5.88E-05		3.91E-02		3193		1.22E-05

* Enthalpy Analytic Report 08-14-2023

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

***Enthalpy Analytic Report 08-03-22

S0013 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	332.5		8.96E-07		2.98E-04		3193		9.33E-08
Copper ***	7440508	332.5		1.04E-05		3.44E-03		3193		1.08E-06
Cr (VI)*	18540299	332.5		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	332.5		9.52E-06		3.17E-03		3193		9.91E-07
Nickel ***	7440020	332.5		6.16E-06		2.05E-03		3193		6.41E-07
Silica, Crystalline **	1175	332.5		3.20E-03		1.06E+00		3193		3.33E-04
Barium***	7440393	332.5		1.96E-05		6.52E-03		3193		2.04E-06
Chromium***	7440473	332.5		5.60E-06		1.86E-03		3193		5.83E-07
Cobalt***	7440484	332.5		1.96E-06		6.52E-04		3193		2.04E-07
Vanadium***	7440622	332.5		8.40E-06		2.79E-03		3193		8.75E-07
Zinc***	7440666	332.5		5.88E-05		1.96E-02		3193		6.12E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0014 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	498.74		7.68E-07		3.83E-04		3193		1.20E-07
Copper ***	7440508	498.74		8.88E-06		4.43E-03		3193		1.39E-06
Cr (VI)*	18540299	498.74		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	498.74		8.16E-06		4.07E-03		3193		1.27E-06
Nickel ***	7440020	498.74		5.28E-06		2.63E-03		3193		8.25E-07
Silica, Crystalline **	1175	498.74		2.74E-03		1.37E+00		3193		4.29E-04
Barium***	7440393	498.74		1.68E-05		8.38E-03		3193		2.62E-06
Chromium***	7440473	498.74		4.80E-06		2.39E-03		3193		7.50E-07
Cobalt***	7440484	498.74		1.68E-06		8.38E-04		3193		2.62E-07
Vanadium***	7440622	498.74		7.20E-06		3.59E-03		3193		1.12E-06
Zinc***	7440666	498.74		5.04E-05		2.51E-02		3193		7.87E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0015, S0016 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		8.96E-07		7.45E-04		3193		2.33E-07
Copper ***	7440508	831.24		1.04E-05		8.61E-03		3193		2.70E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		9.52E-06		7.91E-03		3193		2.48E-06
Nickel ***	7440020	831.24		6.16E-06		5.12E-03		3193		1.60E-06
Silica, Crystalline **	1175	831.24		3.20E-03		2.66E+00		3193		8.33E-04
Barium***	7440393	831.24		1.96E-05		1.63E-02		3193		5.10E-06
Chromium***	7440473	831.24		5.60E-06		4.65E-03		3193		1.46E-06
Cobalt***	7440484	831.24		1.96E-06		1.63E-03		3193		5.10E-07
Vanadium***	7440622	831.24		8.40E-06		6.98E-03		3193		2.19E-06
Zinc***	7440666	831.24		5.88E-05		4.89E-02		3193		1.53E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0017 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		1.41E-06		1.17E-03		3193		3.67E-07
Copper ***	7440508	831.24		1.63E-05		1.35E-02		3193		4.24E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		1.50E-05		1.24E-02		3193		3.89E-06
Nickel ***	7440020	831.24		9.68E-06		8.05E-03		3193		2.52E-06
Silica, Crystalline **	1175	831.24		5.03E-03		4.18E+00		3193		1.31E-03
Barium***	7440393	831.24		3.08E-05		2.56E-02		3193		8.02E-06
Chromium***	7440473	831.24		8.80E-06		7.31E-03		3193		2.29E-06
Cobalt***	7440484	831.24		3.08E-06		2.56E-03		3193		8.02E-07
Vanadium***	7440622	831.24		1.32E-05		1.10E-02		3193		3.44E-06
Zinc***	7440666	831.24		9.24E-05		7.68E-02		3193		2.41E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0018, S0019 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	166.25		8.96E-07		1.49E-04		3193		4.67E-08
Copper ***	7440508	166.25		1.04E-05		1.72E-03		3193		5.39E-07
Cr (VI)*	18540299	166.25		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	166.25		9.52E-06		1.58E-03		3193		4.96E-07
Nickel ***	7440020	166.25		6.16E-06		1.02E-03		3193		3.21E-07
Silica, Crystalline **	1175	166.25		3.20E-03		5.32E-01		3193		1.67E-04
Barium***	7440393	166.25		1.96E-05		3.26E-03		3193		1.02E-06
Chromium***	7440473	166.25		5.60E-06		9.31E-04		3193		2.92E-07
Cobalt***	7440484	166.25		1.96E-06		3.26E-04		3193		1.02E-07
Vanadium***	7440622	166.25		8.40E-06		1.40E-03		3193		4.37E-07
Zinc***	7440666	166.25		5.88E-05		9.78E-03		3193		3.06E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0020, S0021, S0022, S0023, S0024, S0025 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	581.89		8.96E-07		5.21E-04		3193		1.63E-07
Copper ***	7440508	581.89		1.04E-05		6.03E-03		3193		1.89E-06
Cr (VI)*	18540299	581.89		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	581.89		9.52E-06		5.54E-03		3193		1.73E-06
Nickel ***	7440020	581.89		6.16E-06		3.58E-03		3193		1.12E-06
Silica, Crystalline **	1175	581.89		3.20E-03		1.86E+00		3193		5.83E-04
Barium***	7440393	581.89		1.96E-05		1.14E-02		3193		3.57E-06
Chromium***	7440473	581.89		5.60E-06		3.26E-03		3193		1.02E-06
Cobalt***	7440484	581.89		1.96E-06		1.14E-03		3193		3.57E-07
Vanadium***	7440622	581.89		8.40E-06		4.89E-03		3193		1.53E-06
Zinc***	7440666	581.89		5.88E-05		3.42E-02		3193		1.07E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0026, S0027, S0028 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	83.12		8.96E-07		7.45E-05		3193		2.33E-08
Copper ***	7440508	83.12		1.04E-05		8.61E-04		3193		2.70E-07
Cr (VI)*	18540299	83.12		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	83.12		9.52E-06		7.91E-04		3193		2.48E-07
Nickel ***	7440020	83.12		6.16E-06		5.12E-04		3193		1.60E-07
Silica, Crystalline **	1175	83.12		3.20E-03		2.66E-01		3193		8.33E-05
Barium***	7440393	83.12		1.96E-05		1.63E-03		3193		5.10E-07
Chromium***	7440473	83.12		5.60E-06		4.65E-04		3193		1.46E-07
Cobalt***	7440484	83.12		1.96E-06		1.63E-04		3193		5.10E-08
Vanadium***	7440622	83.12		8.40E-06		6.98E-04		3193		2.19E-07
Zinc***	7440666	83.12		5.88E-05		4.89E-03		3193		1.53E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0029 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	7440508	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	7440020	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	1175	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0030 – ES43 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		7.68E-07		9.58E-05		3193		3.00E-08
Copper ***	7440508	124.69		8.88E-06		1.11E-03		3193		3.47E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		8.16E-06		1.02E-03		3193		3.19E-07
Nickel ***	7440020	124.69		5.28E-06		6.58E-04		3193		2.06E-07
Silica, Crystalline **	1175	124.69		2.74E-03		3.42E-01		3193		1.07E-04
Barium***	7440393	124.69		1.68E-05		2.09E-03		3193		6.56E-07
Chromium***	7440473	124.69		4.80E-06		5.99E-04		3193		1.87E-07
Cobalt***	7440484	124.69		1.68E-06		2.09E-04		3193		6.56E-08
Vanadium***	7440622	124.69		7.20E-06		8.98E-04		3193		2.81E-07
Zinc***	7440666	124.69		5.04E-05		6.28E-03		3193		1.97E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0030 - ES43 P2 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-08		1.12E-05		3193		3.50E-09
Copper ***	7440508	124.69		1.04E-06		1.29E-04		3193		4.05E-08
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-07		1.19E-04		3193		3.72E-08
Nickel ***	7440020	124.69		6.16E-07		7.68E-05		3193		2.41E-08
Silica, Crystalline **	1175	124.69		3.20E-04		3.99E-02		3193		1.25E-05
Barium***	7440393	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Chromium***	7440473	124.69		5.60E-07		6.98E-05		3193		2.19E-08
Cobalt***	7440484	124.69		1.96E-07		2.44E-05		3193		7.65E-09
Vanadium***	7440622	124.69		8.40E-07		1.05E-04		3193		3.28E-08
Zinc***	7440666	124.69		5.88E-06		7.33E-04		3193		2.30E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0031 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	7440508	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	7440020	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	1175	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0032 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		1.41E-06		1.76E-04		3193		5.50E-08
Copper ***	7440508	124.69		1.63E-05		2.03E-03		3193		6.36E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		1.50E-05		1.87E-03		3193		5.84E-07
Nickel ***	7440020	124.69		9.68E-06		1.21E-03		3193		3.78E-07
Silica, Crystalline **	1175	124.69		5.03E-03		6.27E-01		3193		1.96E-04
Barium***	7440393	124.69		3.08E-05		3.84E-03		3193		1.20E-06
Chromium***	7440473	124.69		8.80E-06		1.10E-03		3193		3.44E-07
Cobalt***	7440484	124.69		3.08E-06		3.84E-04		3193		1.20E-07
Vanadium***	7440622	124.69		1.32E-05		1.65E-03		3193		5.15E-07
Zinc***	7440666	124.69		9.24E-05		1.15E-02		3193		3.61E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0033, S0034 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	41.56		8.96E-07		3.72E-05		3193		1.17E-08
Copper ***	7440508	41.56		1.04E-05		4.31E-04		3193		1.35E-07
Cr (VI)*	18540299	41.56		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	41.56		9.52E-06		3.96E-04		3193		1.24E-07
Nickel ***	7440020	41.56		6.16E-06		2.56E-04		3193		8.02E-08
Silica, Crystalline **	1175	41.56		3.20E-03		1.33E-01		3193		4.17E-05
Barium***	7440393	41.56		1.96E-05		8.15E-04		3193		2.55E-07
Chromium***	7440473	41.56		5.60E-06		2.33E-04		3193		7.29E-08
Cobalt***	7440484	41.56		1.96E-06		8.15E-05		3193		2.55E-08
Vanadium***	7440622	41.56		8.40E-06		3.49E-04		3193		1.09E-07
Zinc***	7440666	41.56		5.88E-05		2.44E-03		3193		7.65E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0035 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	83.12		8.96E-07		7.45E-05		3193		2.33E-08
Copper ***	7440508	83.12		1.04E-05		8.61E-04		3193		2.70E-07
Cr (VI)*	18540299	83.12		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	83.12		9.52E-06		7.91E-04		3193		2.48E-07
Nickel ***	7440020	83.12		6.16E-06		5.12E-04		3193		1.60E-07
Silica, Crystalline **	1175	83.12		3.20E-03		2.66E-01		3193		8.33E-05
Barium***	7440393	83.12		1.96E-05		1.63E-03		3193		5.10E-07
Chromium***	7440473	83.12		5.60E-06		4.65E-04		3193		1.46E-07
Cobalt***	7440484	83.12		1.96E-06		1.63E-04		3193		5.10E-08
Vanadium***	7440622	83.12		8.40E-06		6.98E-04		3193		2.19E-07
Zinc***	7440666	83.12		5.88E-05		4.89E-03		3193		1.53E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0067, S0068, S0069 (Asphalt Oil Storage)

	CAS #	Annual Throughput (gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Formaldehyde	50000	3008759.08		2.86E-06		8.61E-03		8760		9.83E-07
Benzo(a) pyrene [PAH, POM]	50328	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Dibenz(a,h)anthracene [PAH, POM]	53703	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benz(a) anthracene [PAH,POM]	56553	3008759.08		6.55E-09		1.97E-05		8760		2.25E-09
Benzene	71432	3008759.08		1.33E-07		3.99E-04		8760		4.56E-08
1,1,1-Trichloroethane	71556	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Bromomethane	74839	3008759.08		2.03E-08		6.12E-05		8760		6.98E-09
Chloroethane	75003	3008759.08		1.66E-08		4.99E-05		8760		5.70E-09
Methylene chloride	75092	3008759.08		1.12E-09		3.37E-06		8760		3.85E-10
Carbon Disulfide	75150	3008759.08		6.64E-08		2.00E-04		8760		2.28E-08
Trichlorofluoromethane	76131	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
2-Butanone	78933	3008759.08		1.62E-07		4.87E-04		8760		5.56E-08
Trichloroethene	79016	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthene [PAH,POM]	83329	3008759.08		5.50E-08		1.65E-04		8760		1.89E-08
Phenanthrene [PAH, POM]	85018	3008759.08		2.11E-07		6.34E-04		8760		7.23E-08
Fluorene	86737	3008759.08		1.18E-07		3.56E-04		8760		4.06E-08
Naphthalene [PAH, POM]	91203	3008759.08		2.13E-07		6.41E-04		8760		7.31E-08
2-Methyl naphthalene [PAH, POM]	91576	3008759.08		6.17E-07		1.86E-03		8760		2.12E-07
o-Xylene	95476	3008759.08		1.58E-07		4.74E-04		8760		5.41E-08
Ethyl benzene	100414	3008759.08		1.58E-07		4.74E-04		8760		5.41E-08
Styrene	100425	3008759.08		2.24E-08		6.74E-05		8760		7.69E-09
p-Xylene	106423	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
m-Xylene	108383	3008759.08		8.30E-07		2.50E-03		8760		2.85E-07
Toluene	108883	3008759.08		2.57E-07		7.74E-04		8760		8.83E-08
n-Hexane	110543	3008759.08		4.15E-07		1.25E-03		8760		1.42E-07
Anthracene [PAH,POM]	120127	3008759.08		1.52E-08		4.58E-05		8760		5.22E-09
Tetrachloroethene	127184	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Pyrene [PAH, POM]	129000	3008759.08		5.15E-08		1.55E-04		8760		1.77E-08
Benzo(g,h,i) perylene [PAH, POM]	191242	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benzo(e)pyrene [PAH, POM]	192972	3008759.08		1.11E-09		3.34E-06		8760		3.82E-10
Indeno(1,2,3-cd)pyrene [PAH, POM]	193395	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Perylene [PAH, POM]	198550	3008759.08		3.51E-09		1.06E-05		8760		1.21E-09
Benzo(b) fluoranthene [PAH, POM]	205992	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Fluoranthene	206440	3008759.08		1.75E-08		5.28E-05		8760		6.03E-09
Benzo(k) fluoranthene [PAH, POM]	207089	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthylene [PAH,POM]	208968	3008759.08		1.64E-09		4.93E-06		8760		5.63E-10
Chrysene [PAH, POM]	218019	3008759.08		2.46E-08		7.39E-05		8760		8.44E-09

* AP-42

S0070, S0071 (Asphalt Oil Storage)

	CAS #	Annual Throughput (gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Formaldehyde	50000	3008759.08		2.41E-06		7.27E-03		8760		8.29E-07
Benzo(a) pyrene [PAH, POM]	50328	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Dibenz(a,h)anthracene [PAH, POM]	53703	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benz(a) anthracene [PAH,POM]	56553	3008759.08		5.53E-09		1.66E-05		8760		1.90E-09
Benzene	71432	3008759.08		1.12E-07		3.37E-04		8760		3.85E-08
1,1,1-Trichloroethane	71556	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Bromomethane	74839	3008759.08		1.71E-08		5.16E-05		8760		5.89E-09
Chloroethane	75003	3008759.08		1.40E-08		4.21E-05		8760		4.81E-09
Methylene chloride	75092	3008759.08		9.45E-10		2.84E-06		8760		3.25E-10
Carbon Disulfide	75150	3008759.08		5.60E-08		1.68E-04		8760		1.92E-08
Trichlorofluoromethane	76131	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
2-Butanone	78933	3008759.08		1.36E-07		4.11E-04		8760		4.69E-08
Trichloroethene	79016	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthene [PAH,POM]	83329	3008759.08		4.64E-08		1.40E-04		8760		1.59E-08
Phenanthrene [PAH, POM]	85018	3008759.08		1.78E-07		5.35E-04		8760		6.10E-08
Fluorene	86737	3008759.08		9.97E-08		3.00E-04		8760		3.42E-08
Naphthalene [PAH, POM]	91203	3008759.08		1.80E-07		5.41E-04		8760		6.17E-08
2-Methyl naphthalene [PAH, POM]	91576	3008759.08		5.20E-07		1.57E-03		8760		1.79E-07
o-Xylene	95476	3008759.08		1.99E-07		6.00E-04		8760		6.85E-08
Ethyl benzene	100414	3008759.08		1.33E-07		4.00E-04		8760		4.57E-08
Styrene	100425	3008759.08		1.89E-08		5.69E-05		8760		6.49E-09
p-Xylene	106423	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
m-Xylene	108383	3008759.08		7.00E-07		2.11E-03		8760		2.40E-07
Toluene	108883	3008759.08		2.17E-07		6.53E-04		8760		7.45E-08
n-Hexane	110543	3008759.08		3.50E-07		1.05E-03		8760		1.20E-07
Anthracene [PAH,POM]	120127	3008759.08		1.28E-08		3.86E-05		8760		4.41E-09
Tetrachloroethene	127184	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Pyrene [PAH, POM]	129000	3008759.08		4.34E-08		1.31E-04		8760		1.49E-08
Benzo(g,h,i) perylene [PAH, POM]	191242	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benzo(e)pyrene [PAH, POM]	192972	3008759.08		9.38E-10		2.82E-06		8760		3.22E-10
Indeno(1,2,3-cd)pyrene [PAH, POM]	193395	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Perylene [PAH, POM]	198550	3008759.08		2.96E-09		8.91E-06		8760		1.02E-09
Benzo(b) fluoranthene [PAH, POM]	205992	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Fluoranthene	206440	3008759.08		1.48E-08		4.46E-05		8760		5.09E-09
Benzo(k) fluoranthene [PAH, POM]	207089	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthylene [PAH,POM]	208968	3008759.08		1.38E-09		4.16E-06		8760		4.75E-10
Chrysene [PAH, POM]	218019	3008759.08		2.07E-08		6.24E-05		8760		7.12E-09

* AP-42

S0038 (Storage Piles)

	CAS #	Annual Throughput (tons)	×	Emission Factor (lbs/ton)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001,077.00		6.19E-08		6.19E-02		8760		7.07E-06
Silica, Crystalline **	1175	1,001,077.00		2.18E-04		2.18E+02		8760		2.49E-02
Copper *	7440508	1,001,077.00		3.09E-07		3.10E-01		8760		3.53E-05
Cr (VI)*	18540299	1,001,077.00		0.00E+00		0.00E+00		8760		0.00E+00
Lead*	7439921	1,001,077.00		1.91E-07		1.92E-01		8760		2.19E-05
Nickel *	7440020	1,001,077.00		2.14E-07		2.14E-01		8760		2.44E-05
Beryllium*	7440417	1,001,077.00		3.53E-09		3.54E-03		8760		4.04E-07
Cadmium*	7440439	1,001,077.00		4.12E-09		4.13E-03		8760		4.71E-07
Barium*	7440393	1,001,077.00		1.10E-06		1.11E+00		8760		1.26E-04
Chromium*	7440473	1,001,077.00		3.31E-07		3.32E-01		8760		3.79E-05
Cobalt*	7440484	1,001,077.00		8.10E-08		8.11E-02		8760		9.26E-06
Zinc*	7440666	1,001,077.00		7.36E-07		7.37E-01		8760		8.41E-05
Silver*	7440224	1,001,077.00		7.00E-09		7.00E-03		8760		7.99E-07
Vanadium*	7440622	1,001,077.00		4.79E-07		4.79E-01		8760		5.47E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0042 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	111.23		1.18E-06		1.31E-04		3193		4.11E-08
Copper *	7440508	111.23		5.88E-06		6.54E-04		3193		2.05E-07
Cr (VI)*	18540299	111.23		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	111.23		3.64E-06		4.05E-04		3193		1.27E-07
Nickel *	7440020	111.23		4.06E-06		4.52E-04		3193		1.41E-07
Silica, Crystalline **	1175	111.23		3.20E-03		3.56E-01		3193		1.11E-04
Beryllium*	7440417	111.23		6.72E-08		7.47E-06		3193		2.34E-09
Cadmium*	7440439	111.23		7.84E-08		8.72E-06		3193		2.73E-09
Barium*	7440393	111.23		2.10E-05		2.34E-03		3193		7.32E-07
Chromium*	7440473	111.23		6.30E-06		7.01E-04		3193		2.19E-07
Cobalt*	7440484	111.23		1.54E-06		1.71E-04		3193		5.36E-08
Zinc*	7440666	111.23		1.40E-05		1.56E-03		3193		4.88E-07
Silver*	7440224	111.23		1.33E-07		1.48E-05		3193		4.63E-09
Vanadium*	7440622	111.23		9.10E-06		1.01E-03		3193		3.17E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0043, S0044, S0045 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0046, S0047, S0048, S0049, S0050, S0051, S0052, S0061 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	111.23		1.18E-06		1.31E-04		3193		4.11E-08
Copper *	7440508	111.23		5.88E-06		6.54E-04		3193		2.05E-07
Cr (VI)*	18540299	111.23		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	111.23		3.64E-06		4.05E-04		3193		1.27E-07
Nickel *	7440020	111.23		4.06E-06		4.52E-04		3193		1.41E-07
Silica, Crystalline **	1175	111.23		3.20E-03		3.56E-01		3193		1.11E-04
Beryllium*	7440417	111.23		6.72E-08		7.47E-06		3193		2.34E-09
Cadmium*	7440439	111.23		7.84E-08		8.72E-06		3193		2.73E-09
Barium*	7440393	111.23		2.10E-05		2.34E-03		3193		7.32E-07
Chromium*	7440473	111.23		6.30E-06		7.01E-04		3193		2.19E-07
Cobalt*	7440484	111.23		1.54E-06		1.71E-04		3193		5.36E-08
Zinc*	7440666	111.23		1.40E-05		1.56E-03		3193		4.88E-07
Silver*	7440224	111.23		1.33E-07		1.48E-05		3193		4.63E-09
Vanadium*	7440622	111.23		9.10E-06		1.01E-03		3193		3.17E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0053, S0054, S0055, S0056, S0057, S0058 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	166.85		1.18E-06		1.97E-04		3193		6.17E-08
Copper *	7440508	166.85		5.88E-06		9.81E-04		3193		3.07E-07
Cr (VI)*	18540299	166.85		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	166.85		3.64E-06		6.07E-04		3193		1.90E-07
Nickel *	7440020	166.85		4.06E-06		6.77E-04		3193		2.12E-07
Silica, Crystalline **	1175	166.85		3.20E-03		5.34E-01		3193		1.67E-04
Beryllium*	7440417	166.85		6.72E-08		1.12E-05		3193		3.51E-09
Cadmium*	7440439	166.85		7.84E-08		1.31E-05		3193		4.10E-09
Barium*	7440393	166.85		2.10E-05		3.50E-03		3193		1.10E-06
Chromium*	7440473	166.85		6.30E-06		1.05E-03		3193		3.29E-07
Cobalt*	7440484	166.85		1.54E-06		2.57E-04		3193		8.05E-08
Zinc*	7440666	166.85		1.40E-05		2.34E-03		3193		7.32E-07
Silver*	7440224	166.85		1.33E-07		2.22E-05		3193		6.95E-09
Vanadium*	7440622	166.85		9.10E-06		1.52E-03		3193		4.76E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0059, S0060 (Asphalt Plant Feed)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0062 (Asphalt Plant Feed)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.85E-05		1.85E-02		3193		5.79E-06
Copper *	7440508	1,001.08		9.24E-05		9.25E-02		3193		2.90E-05
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		5.72E-05		5.73E-02		3193		1.79E-05
Nickel *	7440020	1,001.08		6.38E-05		6.39E-02		3193		2.00E-05
Silica, Crystalline **	1175	1,001.08		5.03E-02		5.04E+01		3193		1.58E-02
Beryllium*	7440417	1,001.08		1.06E-06		1.06E-03		3193		3.31E-07
Cadmium*	7440439	1,001.08		1.23E-06		1.23E-03		3193		3.86E-07
Barium*	7440393	1,001.08		3.30E-04		3.30E-01		3193		1.03E-04
Chromium*	7440473	1,001.08		9.90E-05		9.91E-02		3193		3.10E-05
Cobalt*	7440484	1,001.08		2.42E-05		2.42E-02		3193		7.59E-06
Zinc*	7440666	1,001.08		2.20E-04		2.20E-01		3193		6.90E-05
Silver*	7440224	1,001.08		2.09E-06		2.09E-03		3193		6.55E-07
Vanadium*	7440622	1,001.08		1.43E-04		1.43E-01		3193		4.48E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

S0063 (Dryer)

	CAS #	Annual Throughput (mmscf)	×	Emission Factor* (lbs/mmscf)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Acrolein	107028	199.04		2.70E-03		5.37E-01		3193.4		1.68E-04
NH3	7664417	199.04		3.20E+00		6.37E+02		3193.4		1.99E-01

* AQMD Default

S0063 (Asphalt Plant Baghouse)

	CAS #	Annual Throughput (tons)	×	Emission Factor* (lbs/tons)*	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,3-Butadiene	106990	1,001,076.83		2.00E-04		2.00E+02		3193		6.26E-02
2-Methyl Naphthalene	91576	1,001,076.83		9.73E-06		9.74E+00		3193		3.05E-03
Acenapthene	83329	1,001,076.83		3.28E-07		3.29E-01		3193		1.03E-04
Acenapthylene	208968	1,001,076.83		1.18E-06		1.18E+00		3193		3.68E-04
Acetaldehyde	75070	1,001,076.83		1.00E-04		1.00E+02		3193		3.14E-02
Aluminum	7429905	1,001,076.83		1.17E-03		1.17E+03		3193		3.65E-01
Anthracene	120127	1,001,076.83		2.31E-08		2.32E-02		3193		7.26E-06
Antimony	7440360	1,001,076.83		5.56E-07		5.57E-01		3193		1.74E-04
Arsenic	7440382	1,001,076.83		1.55E-07		1.55E-01		3193		4.86E-05
Barium	7440393	1,001,076.83		9.56E-06		9.57E+00		3193		3.00E-03
Benzene	71432	1,001,076.83		2.26E-04		2.26E+02		3193		7.08E-02
Benzo(b)fluoranthene	205992	1,001,076.83		2.64E-10		2.65E-04		3193		8.29E-08
Benzo(e)pyrene	192972	1,001,076.83		2.91E-10		2.91E-04		3193		9.12E-08
Benzo(g,h,i)perylene	191242	1,001,076.83		ND		--		3193		--
Benzo[k]fluoranthene	207089	1,001,076.83		ND		--		3193		--
Beryllium	7440417	1,001,076.83		2.49E-08		2.49E-02		3193		7.80E-06
Cadmium	7440439	1,001,076.83		1.23E-07		1.23E-01		3193		3.86E-05
Carbon Disulfide	75150	1,001,076.83		5.18E-05		5.18E+01		3193		1.62E-02
Chloromethane	74873	1,001,076.83		8.80E-06		8.81E+00		3193		2.76E-03
Chromium	7440473	1,001,076.83		9.06E-07		9.07E-01		3193		2.84E-04
Chrysene	218019	1,001,076.83		1.91E-09		1.91E-03		3193		6.00E-07
Cobalt	7440484	1,001,076.83		3.17E-07		3.17E-01		3193		9.93E-05
Copper	7440508	1,001,076.83		4.70E-07		4.70E-01		3193		1.47E-04
Dibenz(a,h)anthracene	53703	1,001,076.83		ND		--		3193		--
Ethyl Benzene	100414	1,001,076.83		ND		--		3193		--
Fluoranthene	206440	1,001,076.83		3.56E-08		3.57E-02		3193		1.12E-05
Fluorene	86737	1,001,076.83		3.93E-07		3.94E-01		3193		1.23E-04
Formaldehyde	50000	1,001,076.83		1.40E-03		1.40E+03		3193		4.39E-01
Hexane	110543	1,001,076.83		1.54E-05		1.55E+01		3193		4.84E-03
Hexavalent Chromium	18540299	1,001,076.83		5.24E-09		5.25E-03		3193		1.64E-06
Indeo[1,2,3-cd]pyrene	193395	1,001,076.83		ND		--		3193		--
Lead	1128	1,001,076.83		6.23E-07		6.23E-01		3193		1.95E-04
m & p-Xylenes	1330207	1,001,076.83		4.49E-05		4.49E+01		3193		1.41E-02
Manganese	7439965	1,001,076.83		1.59E-05		1.59E+01		3193		4.98E-03
MEK	78933	1,001,076.83		2.72E-05		2.72E+01		3193		8.52E-03
Mercury	7439976	1,001,076.83		2.48E-07		2.48E-01		3193		7.77E-05
Methanol	67561	1,001,076.83		2.18E-04		2.19E+02		3193		6.85E-02
Methly Chloroform (1,1,1-Trichloroethane)	71556	1,001,076.83		ND		--		3193		--
Naphthalene	91203	1,001,076.83		3.62E-05		3.62E+01		3193		1.14E-02
Nickel	7440020	1,001,076.83		3.14E-06		3.15E+00		3193		9.85E-04
Perylene	198550	1,001,076.83		ND		--		3193		--
Phenanthrene	85018	1,001,076.83		5.06E-07		5.07E-01		3193		1.59E-04
Phosphorous	7723140	1,001,076.83		1.07E-05		1.07E+01		3193		3.36E-03
Propene	115071	1,001,076.83		4.42E-04		4.43E+02		3193		1.39E-01
Pyrene	129000	1,001,076.83		3.54E-08		3.54E-02		3193		1.11E-05
Selenium	7782492	1,001,076.83		3.99E-07		4.00E-01		3193		1.25E-04
Styrene	100425	1,001,076.83		7.08E-05		7.09E+01		3193		2.22E-02
Toluene	108883	1,001,076.83		9.10E-05		9.11E+01		3193		2.85E-02
Vanadium	7440622	1,001,076.83		1.65E-06		1.65E+00		3193		5.16E-04
Zinc	7440666	1,001,076.83		5.21E-06		5.22E+00		3193		1.63E-03

* AIRx source test 3/7/2022

S0065 (Asphalt Plant Silo Loadout)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor* (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
2-Methylnapthalene	91576	1,064.98		8.11E-04		8.64E-01		3193		2.71E-04
Acenaphthene	83329	1,064.98		8.86E-05		9.44E-02		3193		2.96E-05
Acenaphthylene	208968	1,064.98		9.55E-06		1.02E-02		3193		3.18E-06
Anthracene	120127	1,064.98		2.39E-05		2.54E-02		3193		7.96E-06
B[a]anthracene	56553	1,064.98		6.48E-06		6.90E-03		3193		2.16E-06
B[a]P	50328	1,064.98		7.84E-07		8.35E-04		3193		2.62E-07
B[b]fluoranthene	205992	1,064.98		2.59E-06		2.76E-03		3193		8.64E-07
B[e]pyrene	192972	1,064.98		2.66E-06		2.83E-03		3193		8.87E-07
B[g,h,i]perylene	191242	1,064.98		6.48E-07		6.90E-04		3193		2.16E-07
B[k]fluoranthene	207089	1,064.98		7.50E-07		7.99E-04		3193		2.50E-07
Benzene	71432	1,064.98		5.74E-04		6.11E-01		3193		1.91E-04
CFC-113	76131	1,064.98		1.44E-05		1.53E-02		3193		4.78E-06
Chrysene	218019	1,064.98		3.51E-05		3.74E-02		3193		1.17E-05
D[a,h]anthracene	53703	1,064.98		1.26E-07		1.34E-04		3193		4.21E-08
Ethyl benzene	100414	1,064.98		3.09E-03		3.29E+00		3193		1.03E-03
Fluoranthene	206440	1,064.98		1.71E-05		1.82E-02		3193		5.69E-06
Fluorene	86737	1,064.98		2.63E-04		2.80E-01		3193		8.77E-05
Formaldehyde	50000	1,064.98		9.71E-04		1.03E+00		3193		3.24E-04
Hexane	110543	1,064.98		1.65E-03		1.76E+00		3193		5.52E-04
In[1,2,3-cd]pyr	193395	1,064.98		1.60E-07		1.71E-04		3193		5.34E-08
m-Xylene	108383	1,064.98		4.52E-03		4.82E+00		3193		1.51E-03
Naphthalene	91203	1,064.98		4.26E-04		4.54E-01		3193		1.42E-04
O-Xylenes	95476	1,064.98		8.82E-04		9.40E-01		3193		2.94E-04
Perylene	198550	1,064.98		7.50E-06		7.99E-03		3193		2.50E-06
Phenanthrene	85018	1,064.98		2.76E-04		2.94E-01		3193		9.21E-05
p-Xylene	106423	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Pyrene	129000	1,064.98		5.11E-05		5.45E-02		3193		1.71E-05
Styrene	100425	1,064.98		8.05E-05		8.58E-02		3193		2.69E-05
Toluene	108883	1,064.98		2.32E-03		2.47E+00		3193		7.73E-04

* AP-42

S0066 (Asphalt Silo Filling)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor* (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
2-Methylnapthalene	91576	1,064.98		1.34E-03		1.42E+00		3193		4.46E-04
Acenaphthene	83329	1,064.98		1.19E-04		1.27E-01		3193		3.98E-05
Acenaphthylene	208968	1,064.98		3.55E-06		3.79E-03		3193		1.19E-06
Anthracene	120127	1,064.98		3.30E-05		3.52E-02		3193		1.10E-05
B[a]anthracene	56553	1,064.98		1.42E-05		1.51E-02		3193		4.74E-06
B[a]P	50328	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[b]fluoranthene	205992	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[e]pyrene	192972	1,064.98		2.41E-06		2.57E-03		3193		8.04E-07
B[g,h,i]perylene	191242	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[k]fluoranthene	207089	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Benzene *	71432	1,064.98		8.53E-04		9.09E-01		3193		2.85E-04
CFC-113	76131	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Chrysene	218019	1,064.98		5.33E-05		5.68E-02		3193		1.78E-05
D[a,h]anthracene	53703	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Ethyl Benzene	100414	1,064.98		1.01E-03		1.08E+00		3193		3.38E-04
Fluoranthene	206440	1,064.98		3.81E-05		4.06E-02		3193		1.27E-05
Fluorene	86737	1,064.98		2.56E-04		2.74E-01		3193		8.58E-05
Formaldehyde *	50000	1,064.98		1.84E-02		1.96E+01		3193		6.14E-03
Hexane	110543	1,064.98		2.67E-03		2.84E+00		3193		8.89E-04
In[1,2,3-cd]pyrene	193395	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Methyl chloride {Chloromethane} *	74873	1,064.98		3.29E-05		3.50E-02		3193		1.10E-05
m-Xylene	108383	1,064.98		5.33E-03		5.68E+00		3193		1.78E-03
Naphthalene	91203	1,064.98		4.62E-04		4.92E-01		3193		1.54E-04
o-Xylene	95476	1,064.98		1.52E-03		1.62E+00		3193		5.07E-04
Perylene	198550	1,064.98		7.62E-06		8.11E-03		3193		2.54E-06
Phenanthrene	85018	1,064.98		4.57E-04		4.87E-01		3193		1.53E-04
p-Xylene	106423	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Pyrene	129000	1,064.98		1.12E-04		1.19E-01		3193		3.73E-05
Styrene	100425	1,064.98		1.44E-04		1.53E-01		3193		4.80E-05
Toluene	108883	1,064.98		1.65E-03		1.76E+00		3193		5.51E-04

* AP-42

S0014 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	498.74		8.96E-08		4.47E-05		3193		1.40E-08
Copper ***	7440508	498.74		1.04E-06		5.17E-04		3193		1.62E-07
Cr (VI)*	18540299	498.74		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	498.74		9.52E-07		4.75E-04		3193		1.49E-07
Nickel ***	7440020	498.74		6.16E-07		3.07E-04		3193		9.62E-08
Silica, Crystalline **	1175	498.74		3.20E-04		1.60E-01		3193		5.00E-05
Barium***	7440393	498.74		1.96E-06		9.78E-04		3193		3.06E-07
Chromium***	7440473	498.74		5.60E-07		2.79E-04		3193		8.75E-08
Cobalt***	7440484	498.74		1.96E-07		9.78E-05		3193		3.06E-08
Vanadium***	7440622	498.74		8.40E-07		4.19E-04		3193		1.31E-07
Zinc***	7440666	498.74		5.88E-06		2.93E-03		3193		9.18E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0017 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		8.96E-07		7.45E-04		3193		2.33E-07
Copper ***	7440508	831.24		1.04E-05		8.61E-03		3193		2.70E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		9.52E-06		7.91E-03		3193		2.48E-06
Nickel ***	7440020	831.24		6.16E-06		5.12E-03		3193		1.60E-06
Silica, Crystalline **	1175	831.24		3.20E-03		2.66E+00		3193		8.33E-04
Barium***	7440393	831.24		1.96E-05		1.63E-02		3193		5.10E-06
Chromium***	7440473	831.24		5.60E-06		4.65E-03		3193		1.46E-06
Cobalt***	7440484	831.24		1.96E-06		1.63E-03		3193		5.10E-07
Vanadium***	7440622	831.24		8.40E-06		6.98E-03		3193		2.19E-06
Zinc***	7440666	831.24		5.88E-05		4.89E-02		3193		1.53E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0032 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	7440508	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	7440020	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	1175	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

S0062 (Asphalt Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

B. Permit Exempt Toxic Emission Summary

The following reflect the individual unpermitted devices and processes as listed above (table 3). Included are the device and process name, emission, annual throughput, and pounds of toxics per year.

S0072-S0082
(Paved Roads)

	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	÷	11 Haul Road Segments	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	6,815.84		9.58E-03		11		5.94E+00		3193		1.86E-03
Antimony	7440360	6,815.84		8.50E-07		11		5.27E-04		3193		1.65E-07
Arsenic	7440382	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Barium	7440393	6,815.84		1.16E-04		11		7.17E-02		3193		2.24E-05
Bromine	7726956	6,815.84		2.55E-06		11		1.58E-03		3193		4.95E-07
Cadmium	7440439	6,815.84		3.04E-06		11		1.88E-03		3193		5.89E-07
Chlorine	7782505	6,815.84		1.58E-04		11		9.80E-02		3193		3.07E-05
Chromium	7440473	6,815.84		2.98E-05		11		1.84E-02		3193		5.78E-06
Cobalt	7440484	6,815.84		1.81E-05		11		1.12E-02		3193		3.51E-06
Copper	7440508	6,815.84		1.06E-05		11		6.55E-03		3193		2.05E-06
Lead	7439921	6,815.84		1.09E-04		11		6.78E-02		3193		2.12E-05
Manganese	7439965	6,815.84		1.28E-04		11		7.91E-02		3193		2.48E-05
Mercury	7439976	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Nickel	7440020	6,815.84		7.65E-06		11		4.74E-03		3193		1.49E-06
Phosphorus	7723140	6,815.84		1.95E-04		11		1.21E-01		3193		3.78E-05
Selenium	7782492	6,815.84		1.21E-07		11		7.53E-05		3193		2.36E-08
Silver	7440224	6,815.84		1.09E-06		11		6.77E-04		3193		2.12E-07
Vanadium (Fume Or Dust)	7440622	6,815.84		3.79E-05		11		2.35E-02		3193		7.35E-06
Zinc	7440666	6,815.84		7.56E-05		11		4.68E-02		3193		1.47E-05

*CARB Profile 416.

S0036 (Unpaved Roads)

	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	638.99		8.99E-02		5.75E+01		3193		1.80E-02
Antimony	7440360	638.99		7.98E-06		5.10E-03		3193		1.60E-06
Arsenic	7440382	638.99		1.71E-05		1.09E-02		3193		3.42E-06
Barium	7440393	638.99		1.09E-03		6.93E-01		3193		2.17E-04
Bromine	7726956	638.99		2.39E-05		1.53E-02		3193		4.79E-06
Cadmium	7440439	638.99		2.85E-05		1.82E-02		3193		5.70E-06
Chlorine	7782505	638.99		1.48E-03		9.48E-01		3193		2.97E-04
Chromium	7440473	638.99		2.79E-04		1.78E-01		3193		5.59E-05
Cobalt	7440484	638.99		1.70E-04		1.09E-01		3193		3.40E-05
Copper	7440508	638.99		9.92E-05		6.34E-02		3193		1.98E-05
Lead	7439921	638.99		1.03E-03		6.56E-01		3193		2.06E-04
Manganese	7439965	638.99		1.20E-03		7.66E-01		3193		2.40E-04
Mercury	7439976	638.99		1.71E-05		1.09E-02		3193		3.42E-06
Nickel	7440020	638.99		7.18E-05		4.59E-02		3193		1.44E-05
Phosphorus	7723140	638.99		1.83E-03		1.17E+00		3193		3.65E-04
Selenium	7782492	638.99		1.14E-06		7.28E-04		3193		2.28E-07
Silver	7440224	638.99		1.03E-05		6.56E-03		3193		2.05E-06
Vanadium (Fume Or Dust)	7440622	638.99		3.56E-04		2.27E-01		3193		7.12E-05
Zinc	7440666	638.99		7.09E-04		4.53E-01		3193		1.42E-04

*CARB Profile 416.

S0037 (Diesel Fuel Storage)

	CAS #	Annual Throughput (M gal)	×	Emission Factor (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Benzene *	71432	750.6		8.00E-06		6.00E-03		8760		6.85E-07
Hexane *	110543	750.6		1.00E-06		7.51E-04		8760		8.57E-08
Toluene *	108883	750.6		3.20E-04		2.40E-01		8760		2.74E-05
Ethyl benzene *	100414	750.6		1.30E-04		9.76E-02		8760		1.11E-05
Xylenes *	108383	750.6		2.90E-03		2.18E+00		8760		2.49E-04
1,2,4-Trimethylbenzene *	95636	750.6		1.00E-02		7.51E+00		8760		8.57E-04

* AQMD Default

S0039 (Welder Electrodes)

	CAS #	Annual Throughput (lbs)	×	Emission Factor* (lbs/lbs)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Chromium	7440473	100		6.00E-06		6.00E-04		1,920		3.13E-07
HexChrome	18540299	100		ND		--		1,920		--
Cobalt	7440484	100		5.00E-07		5.00E-05		1,920		2.60E-08
Manganese	7439965	100		1.03E-03		1.03E-01		1,920		5.36E-05
Nickel	7440020	100		2.00E-06		2.00E-04		1,920		1.04E-07
Lead	7439921	100		ND		--		1,920		--

* Based on AP-42, Table 12.19-2, Refer to Attachment "C"

S0040 (Propane Torches)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Acetaldehyde	75070	0.44		3.80E-04		1.67E-04		240		6.97E-07
Acrolein	107028	0.44		2.40E-04		1.06E-04		240		4.40E-07
Ammonia	7664417	0.44		3.00E-01		1.32E-01		240		5.50E-04
Benzene	71432	0.44		7.10E-04		3.12E-04		240		1.30E-06
Ethyl benzene	100414	0.44		8.40E-04		3.70E-04		240		1.54E-06
Formaldehyde	50000	0.44		1.51E-03		6.64E-04		240		2.77E-06
Hexane	110543	0.44		5.60E-04		2.46E-04		240		1.03E-06
PAHs	1151	0.44		4.00E-05		1.76E-05		240		7.33E-08
Toluene	108883	0.44		3.25E-03		1.43E-03		240		5.96E-06
Xylene	1330207	0.44		2.41E-03		1.06E-03		240		4.42E-06

* AQMD Default

S0041 (Gasoline Welder)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,2,4-Trimethylbenzene	95636	0.52		1.39E+00		7.25E-01		287.6		2.52E-03
1,3 Butadiene	106990	0.52		9.18E-01		4.78E-01		287.6		1.66E-03
Acetaldehyde	75070	0.52		8.30E-01		4.31E-01		287.6		1.50E-03
Acrolein	107028	0.52		1.99E-01		1.04E-01		287.6		3.60E-04
Benzene	71432	0.52		3.81E+00		1.98E+00		287.6		6.88E-03
Chlorine	7782505	0.52		4.45E-01		2.31E-01		287.6		8.05E-04
Copper	7440508	0.52		3.30E-03		1.72E-03		287.6		5.97E-06
Ethyl benzene	100414	0.52		1.66E+00		8.63E-01		287.6		3.00E-03
Formaldehyde	50000	0.52		3.45E+00		1.80E+00		287.6		6.24E-03
Hexane	110543	0.52		1.45E+00		7.54E-01		287.6		2.62E-03
Manganese	7439965	0.52		3.30E-03		1.72E-03		287.6		5.97E-06
Methanol	67561	0.52		7.75E-01		4.03E-01		287.6		1.40E-03
Methyl ethyl ketone - MEK	78933	0.52		6.64E-02		3.45E-02		287.6		1.20E-04
Methyl tert-butyl ether (MTBE)	1634044	0.52		2.06E+00		1.07E+00		287.6		3.72E-03
m-Xylene	108383	0.52		4.92E+00		2.56E+00		287.6		8.90E-03
Naphthalene	91203	0.52		1.44E-01		7.48E-02		287.6		2.60E-04
Nickel	7440020	0.52		3.25E-03		1.69E-03		287.6		5.88E-06
o-Xylene	95476	0.52		1.71E+00		8.92E-01		287.6		3.10E-03
Styrene	100425	0.52		1.44E-01		7.48E-02		287.6		2.60E-04
Toluene	108883	0.52		7.51E+00		3.91E+00		287.6		1.36E-02

* AQMD Default

S0064 (Diesel Light Towers)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,3 Butadiene	106990	0.4559		2.17E-01		9.91E-02		763.1		1.30E-04
Acetaldehyde	75070	0.4559		7.83E-01		3.57E-01		763.1		4.68E-04
Acrolein	107028	0.4559		3.39E-02		1.55E-02		763.1		2.03E-05
Ammonia	7664417	0.4559		1.40E+00		6.38E-01		763.1		8.36E-04
Arsenic	7440382	0.4559		1.60E-03		7.29E-04		763.1		9.56E-07
Benzene	71432	0.4559		1.86E-01		8.49E-02		763.1		1.11E-04
Cadmium	7440439	0.4559		1.50E-03		6.84E-04		763.1		8.96E-07
Copper compounds	7440508	0.4559		4.10E-03		1.87E-03		763.1		2.45E-06
Ethyl benzene	100414	0.4559		1.09E-02		4.97E-03		763.1		6.51E-06
Formaldehyde	50000	0.4559		1.73E+00		7.87E-01		763.1		1.03E-03
Hexane	110543	0.4559		2.69E-02		1.23E-02		763.1		1.61E-05
Hexavalent Chromium	18540299	0.4559		1.00E-04		4.56E-05		763.1		5.97E-08
Hydrochloric acid	7647010	0.4559		1.86E-01		8.49E-02		763.1		1.11E-04
Lead	7439921	0.4559		8.30E-03		3.78E-03		763.1		4.96E-06
Manganese Compounds	7439965	0.4559		3.10E-03		1.41E-03		763.1		1.85E-06
Mercury Compounds	7439976	0.4559		2.00E-03		9.12E-04		763.1		1.19E-06
Naphthalene	91203	0.4559		1.97E-02		8.98E-03		763.1		1.18E-05
Nickel	7440020	0.4559		3.90E-03		1.78E-03		763.1		2.33E-06
PAHs	1151	0.4559		3.62E-02		1.65E-02		763.1		2.16E-05
Selenium compounds	7782492	0.4559		2.20E-03		1.00E-03		763.1		1.31E-06
Toluene	108883	0.4559		1.05E-01		4.81E-02		763.1		6.30E-05
Xylene	1330207	0.4559		4.24E-02		1.93E-02		763.1		2.53E-05
Diesel exhaust particulates	9901	0.4559		3.35E+01		1.53E+01		763.1		2.00E-02

* AQMD Default

4. Source and Emission Inventory Information

a. Release Parameters

In Attachment G you will find tables that summarize the source release data which includes release name, release type, source identification numbers, release location, release parameters, and stack information. The release data is identical to the release parameters found in the EIM file submitted with the ATIR. See Attachment G for tables.



Figure 2 - Point Source ID Map



Figure 3 - Area Source ID Map



Figure 4 - Volume Source ID Map



Figure 5 - Receptor Locations

b. Source Description, Operating Schedule, Emission Control Equipment

A table detailing the source description, operating schedule, and emission equipment control can be found below in Table 4.

Table 4 - Source Schedule and Control Equipment

Source ID	Description	Operating Schedule (hrs./yr)
S0017	CRUSHING PLANT	3193
S0018, S0019	CRUSHING PLANT	3193
S0020-S0025	CRUSHING PLANT	3193
S0026-S0028	CRUSHING PLANT	3193
S0029	CRUSHING PLANT	3193
S0030	CRUSHING PLANT	3193
S0030	CRUSHING PLANT	3193
S0031	CRUSHING PLANT	3193
S0032	CRUSHING PLANT	3193
S0033, S0034	CRUSHING PLANT	3193
S0035	CRUSHING PLANT	3193
S0067-S0069	ASPHALT OIL STORAGE	8760
S0070, S0071	ASPHALT OIL STORAGE	8760
S0038	STORAGE PILES	8760
S0042	AGGREGATE RECEIVING	3193
S0043-S0045	AGGREGATE RECEIVING	3193
S0046-S0052, S0061	AGGREGATE RECEIVING	3193
S0053-S00058	AGGREGATE RECEIVING	3193
S0059, S0060	ASPHALT PLANT FEED	3193
S0062	ASPHALT PLANT FEED	3193
S0063	DRYER	3193.4
S0065	ASPHALT PLANT SILO LOADOUT	3193
S0066	ASPHALT SILO FILLING	3193
S0014	CRUSHING PLANT	3193
S0017	CRUSHING PLANT	3193
S0032	CRUSHING PLANT	3193
S0062	ASPHALT PLANT	3193
S0063	ASPHALT PLANT BAGHOUSE	3193
S0072-S0082	PAVED ROADS	3193
S0036	UNPAVED ROADS	3193
S0037	DIESEL FUEL STORAGE	8760
S0039	WELDER ELECTRODES	1920
S0040	PROPANE TORCHES	240
S0041	GASOLINE WELDER	287.6
S0064	DIESEL LIGHT TOWERS	763.1

c. Emissions Data Grouped by Source

Attached you will find a report which details the Annual and Hourly Emissions which includes the source name, source identification number, substance name, and CAS number (Refer to Attachment "A").

d. Emissions Data Grouped by Substance

Attached you will find a report which details the Annual and Hourly facility total emission rate by substance for all emitted substance (Refer to Attachment "A").

e. Emission Estimation Methods

The emissions approved in the submitted toxic emission report were utilized in the Health Risk Assessment. The methods used to calculate the emissions are detailed in the submitted Toxic Emission Inventory Report (TEIR).

f. List of Substances

Attached you will find a table listing all "Hot Spots" Program substances which are emitted (Refer to Attachment "A").

g. Exposed Population and Receptor Location

Below you will find Table 5 which summarizes the location of the Worker and Residential receptors. Figure 5 details the location of these receptors.

Table 6 summarizes the location of the sensitive receptor locations which are not subjected to risks above the thresholds.

Table 5 - Receptor Location: Resident and Worker

Receptor No.	Name	UTM Coordinates		Miles From Site
		X (m)	Y (m)	
2559	Resident 1	420639.4	3744572	0.04
2501	Resident 2	420629.4	3744602	0.04
2031	Worker 1	420549.4	3744282	0.02
2533	Worker 2	420639.4	3744312	0.06
1812	Recreation Area (Acute Risk)	420489.4	3744402	0.1

Table 6 - Receptor Locations: Sensitive

Receptor No.	Name	UTM Coordinates		Miles From Site
		X (m)	Y (m)	
8036	Addie's Cottage Senior Living	418854.75 m E	3744974.53 m N	1.03
8037	Benito Juarez Elementary School	418438.44 m E	3743842.60 m N	1.28
8038	Cerro Villa Middle School	424211.27 m E	3742621.96 m N	2.61
8039	Childtime of Anaheim	417753.42 m E	3743110.80 m N	1.84
8040	Childtime of Orange	423818.44 m E	3743630.77 m N	2.17
8041	Concentra Urgent Care	418498.83 m E	3747363.82 m N	2.18
8042	Early Childhood Montessori Preschool	421381.62 m E	3743126.08 m N	1.00
8043	Fletcher Elementary School	420667.43 m E	3743623.62 m N	0.52
8044	Glenview Elementary School	424804.33 m E	3747921.00 m N	3.49
8045	International School of Orange County	421331.35 m E	3742326.90 m N	1.42
8046	John O. Tynes Elementary School	420777.63 m E	3748380.36 m N	2.47
8047	Juanita's Day Care	419308.86 m E	3744939.02 m N	0.76
8048	Kaiser Permanente Orange County - Anaheim Medical Center	421919.89 m E	3746070.87 m N	1.39
8049	Katella High School	418058.27 m E	3743095.58 m N	1.68
8050	Lamb of God Child Care Center	418437.34 m E	3743999.43 m N	1.26
8051	Liliana Bever Daycare	420011.78 m E	3747768.63 m N	2.10
8052	Little Champs Daycare	422361.44 m E	3742789.36 m N	1.58
8053	Luna's Little Stars Daycare	418484.49 m E	3742644.52 m N	1.63
8054	Melrose Elementary School	419242.08 m E	3746878.79 m N	1.69
8055	Mercy's Family Day Care	418787.19 m E	3743523.24 m N	1.15
8056	Nohl Canyon Elementary School	423473.66 m E	3744420.99 m N	1.90
8057	Nohl Ranch Elderly Care	423115.90 m E	3744276.23 m N	1.68
8058	Nora's Day Care	418043.97 m E	3742612.09 m N	1.85
8059	Olive Elementary School	421866.17 m E	3744562.37 m N	0.91
8060	Orange Blossom Montessori Daycare	421047.25 m E	3743886.43 m N	0.51
8061	Orange Lutheran High School	423321.99 m E	3743074.71 m N	1.99
8062	Pacific Urgent Care & Family Medicine	422430.30 m E	3744027.52 m N	1.28
8063	Placentia Head Start	419200.27 m E	3747065.31 m N	1.81

8064	Placentia Senior Center	419430.82 m E	3748171.16 m N	2.41
8065	Rio Vista Elementary School	419545.64 m E	3745157.36 m N	0.71
8066	Serrano Elementary School	423864.47 m E	3742680.30 m N	2.40
8067	St. Paul's Preschool	422186.90 m E	3743600.64 m N	1.21
8068	St. Paul's Lutheran School	421848.30 m E	3743720.81 m N	0.99
8069	Sunkist Elementary School	418687.63 m E	3745369.78 m N	1.23
8070	Sunrise of Orange Assisted Living	422303.13 m E	3744246.02 m N	1.18
8071	Taft Elementary School	422016.21 m E	3742328.72 m N	1.64
8072	The Adventure Lagoon Waterpark	420975.20 m E	3746945.31 m N	1.61
8073	Valadez Middle School Academy	419400.04 m E	3746927.94 m N	1.68
8074	Valencia High School	419796.03 m E	3748920.10 m N	2.82

Attached you will find isopleths which detail the cancer risk and the hazard index for both residential and worker impacts. (Refer to Attachment "B" for each respective isopleth).

R.J. Noble's Facility is in the Northeast part of Anaheim in the County of Orange. The facility lies in an industrial and residential area of the city of Orange surrounded by businesses and residences on all sides along the Santa Ana River.

5. Meteorological Data

Meteorological data for the surface and profile preprocessed files were obtained for South Coast AQMD John Wayne Airport MET station (Station No. 93184) for the years 2010-2016. The MET Station is approximately 10.8 miles to the South of the facility. Figure 6 details the location of the meteorological station and the site location. Data is coming from South Coast AQMD MET data found here: https://www.aqmd.gov/home/air-quality/meteorological-data/aermod-table-1

Figure 7 wind rose details the prevailing wind direction coming from the Southwest direction.

6. Geographical Data

The Geographic Data for the Health Risk Assessment included in the model is the *World Geodetic System 1984 (WGS 84) a*nd *Universal Transverse Mercator Zone 11N (UTM WGS 84)*. Both coordinate systems were used in site and device identification, receptor location, and modeling.



Figure 6 - MET Station

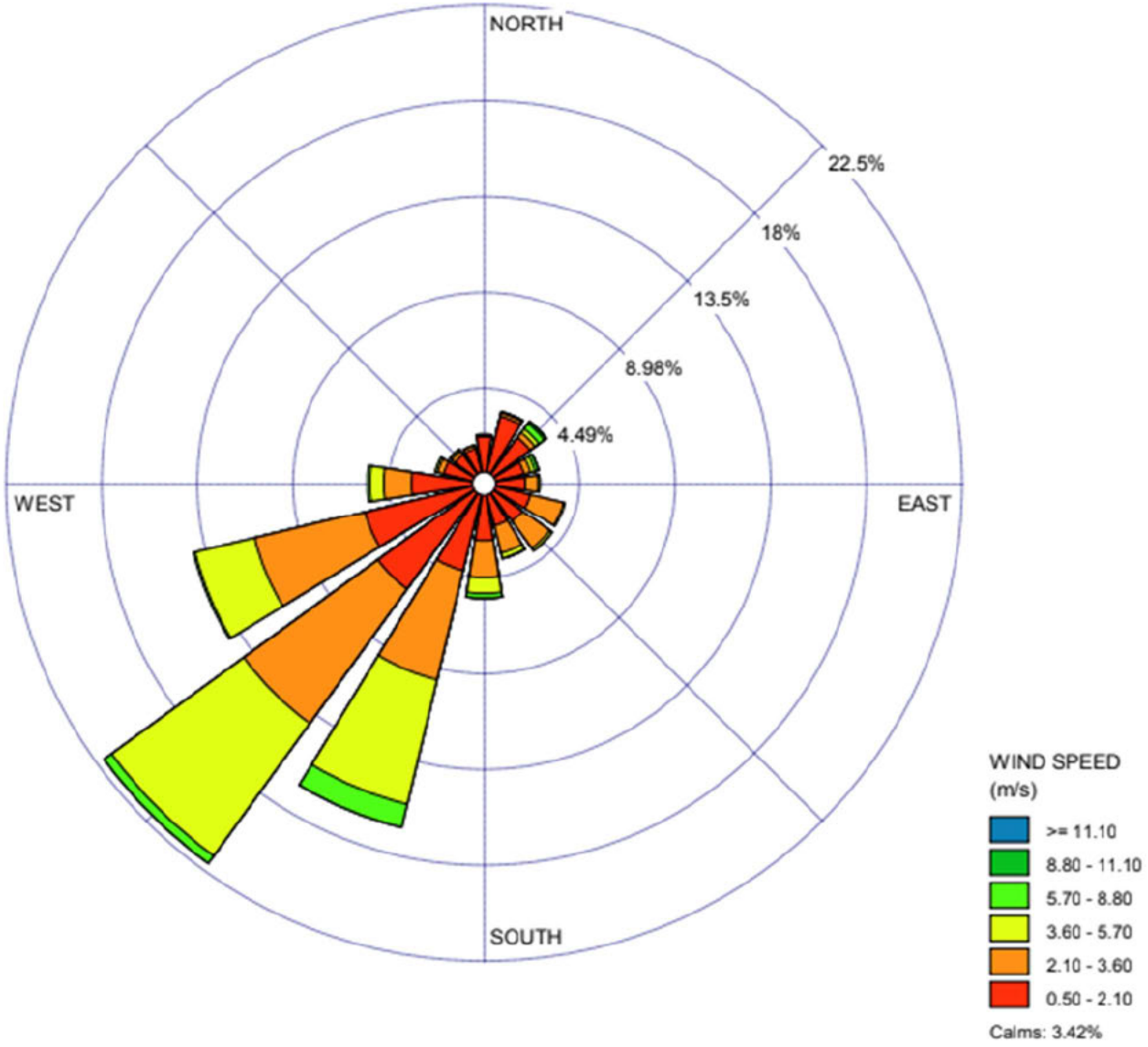


Figure 7 - Windrose

7. Model Selection

The air dispersion modeling was done using BREEZE AERMOD v12.0.0.27. An emission rate of 1 g/s was used to complete the model. A variable density Cartesian Grid of 6.4 km x 7.3 km was created with a 10 m receptor spacing between the facility boundary and 300 m and a 100m spacing between 300m and the grid boundary. Receptors were placed on the boundary of the facility with a 20 m spacing.

In Figure 8 below you will find a map detailing the gridded receptors.

8. Terrain Data

Terrain Data was obtained from CARB's digital elevation model files website. The Anaheim, La Habra, Orange, and Yorba Linda DEM files (10m x 10m resolution) were used to capture the full extent of the sources and receptor grid. The terrain data was uploaded to BREEZE AERMOD and AERMAP was run to obtain the elevations for the sources and receptors.

9. Model Options

No non-regulatory options or deposition was used in the BREEZE model. Table 7 below details the options and parameters used in BREEZE.

Table 7 - BREEZE Model Options

BREEZE MODEL OPTIONS
AERMOD Version 23132
Model Result Type- Concentration
Urban

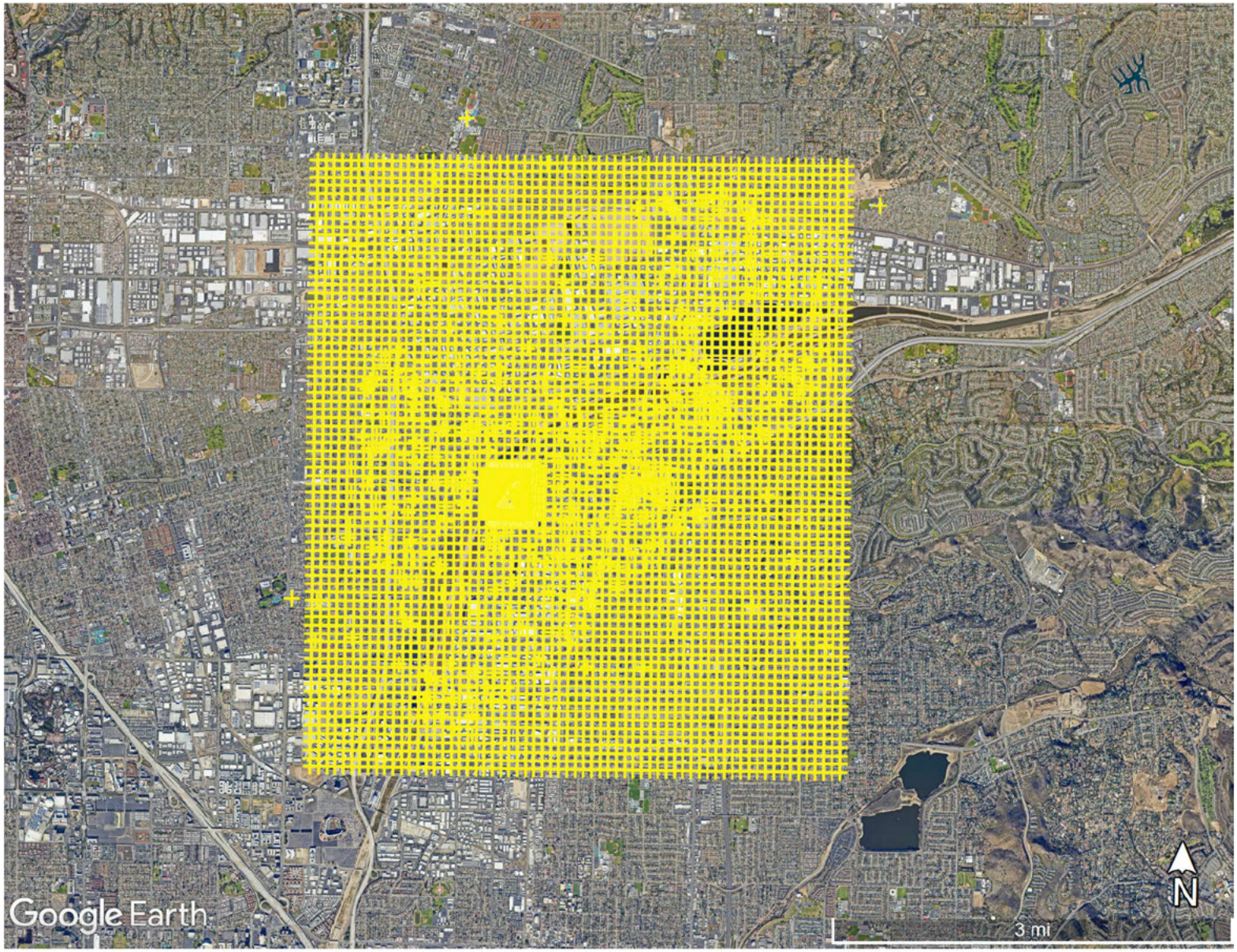


Figure 8 - Receptor Grid

10. Air Dispersion Modeling Results

The modeling files were uploaded through the SCAQMD HARP Electronic Files Submittal Form.

C. Health Values Used in Dose-Response and Dose Estimates

Refer to Attachment "F" for the table which details the REL, cancer potency factors, and target organ systems evaluated for the health risk assessment.

D. Risk Characterization

1. HARP2 Modeling Parameters

The HARP 2 model was prepared using the Office of Environmental Health Hazard Assessment Air Toxic Hot Spots Program Risk Assessment Guidelines "Guidance Manual for Preparation of Health Risk Assessments", dated February 2015. HARP Version 22118, released April 28, 2022, was used to calculate the health risk for residents and workers. Tables 8,9, and 10 list the parameters for the residential worker, and acute analysis.

Tier 1 evaluation was completed for all risk scenarios for comparison with South Coast AQMD Rule 1402 thresholds.

Table 8 - Residential Risk HARP Parameters

Cancer Risk 30-year Lifetime Exposure Period
RMP Derived Method
Exposure Pathways: Inhalation, Soil, Dermal, Mother's Milk, Homegrown Produce Dermal Climate: Warm Deposition of 0.02 m/s Fraction at Time at Home: 16 years to 70 years enabled Daily Breathing Rates: RMP Tier 1 Analysis Completed for all Pathways

Resident Chronic HI Risk
OEHHA Derived Method
Exposure Pathway: Inhalation, Soil, Dermal, Mother's Milk, Homegrown Produce Dermal Climate: Warm Deposition of 0.02 m/s Fraction at Time at Home: Disabled Daily Breathing Rates: Long Term 24 hr Tier 1 Analysis Completed for all Pathways

Table 9 - Worker Risk HARP Parameters

Cancer Risk 25-year Lifetime Exposure Period
OEHHA Derived Method
Worker Exposure Pathways: Inhalation, Soil, Dermal Dermal Climate: Warm Deposition of 0.02 m/s Fraction at Time at Home: Disabled Worker Adjustment Factors: Disabled Daily Breathing Rate: 8-hour Moderate Intensity Tier 1 Analysis Completed for all Pathways

Worker Chronic HI Risk
OEHHA Derived Method
Exposure Pathway: Inhalation, Soil, Dermal Dermal Climate: Warm Deposition of 0.02 m/s Fraction at Time at Home: Disabled Daily Breathing Rates: 8-hour Moderate Intensity Tier 1 Analysis Completed for all Pathways

Chronic 8-hour HI
OEHHA Derived Method
Worker Exposure Pathways: Inhalation Dermal Climate: Warm Deposition of 0.02 m/s Fraction of Time at Home: Disabled Worker Adjustment Factor: Disabled Daily Breathing Rate: 8-hour Moderate Intensity Tier 1 Analysis Completed for all Pathways

Table 10 - Acute Risk HARP Parameters

Acute
OEHHA Derived Method
Exposure Pathway: Inhalation Daily Breathing Rates: Long Term 24hr Fraction at time at home: Disabled

2. Summary of Risk Results

Tables 11-29 below details the facility Health Risk Assessment for the residential, worker, and sensitive receptors.

The HRA determined the residential cancer risk is below the Action Risk Levels for the MICR for the Residential Receptor at 18.9 in a million.

The Residential Cancer Risk is above the Rule 1402 Notification Risk Level. The HRA determined the facility to be above the Notification Risk Levels for Residential MICR.

A map detailing the location of the Maximum Exposed Cancer Risk for Worker and Residential Receptors can be found in Figure 9.

Table 11 - Summary of Resident and Worker Health Risk Assessment Results

Receptor No.	Name	UTM Coordinates		30 Year Cancer Risk in a million (MEIR)	25 Year Cancer Risk in a million (MEIW)	Chronic HI	8-Hour Chronic HI	Acute HI
		X (m)	Y (m)					
2559	Resident 1	420639.4	3744572	17.1	--	0.647	--	0.040
2501	Resident 2	420629.4	3744602	18.9	--	0.745	--	0.039
2031	Worker 1	420549.4	3744282	--	0.79	0.085	0.007	0.067
2533	Worker 2	420639.4	3744312	--	0.44	0.051	0.004	0.049
1812	Recreation Area (Acute Risk)	420489.4	3744402	--	--	--	--	0.120

Table 12 - Summary of Sensitive Receptor Health Risk Assessment Results

Receptor No.	Name	UTM Coordinates		30 Year Cancer Risk (in a million)	Chronic HI	Acute HI
		X (m)	Y (m)			
8036	Addie's Cottage Senior Living	418854.75	3744974.53	0.523	0.0092	0.006
8037	Benito Juarez Elementary School	418438.44	3743842.60	0.303	0.0053	0.005
8038	Cerro Villa Middle School	424211.27	3742621.96	0.081	0.0013	0.003
8039	Childtime of Anaheim	417753.42	3743110.80	0.196	0.0032	0.003
8040	Childtime of Orange	423818.44	3743630.77	0.096	0.0015	0.004
8041	Concentra Urgent Care	418498.83	3747363.82	0.197	0.0031	0.003
8042	Early Childhood Montessori Preschool	421381.62	3743126.08	0.296	0.0057	0.006
8043	Fletcher Elementary School	420667.43	3743623.62	0.733	0.0158	0.010
8044	Glenview Elementary School	424804.33	3747921	0.251	0.0039	0.002
8045	International School of Orange County	421331.35	3742326.9	0.210	0.0037	0.005
8046	John O. Tynes Elementary School	420777.63	3748380.36	0.213	0.0033	0.003
8047	Juanita's Day Care	419308.86	3744939.02	0.763	0.0146	0.007
8048	Kaiser Permanente Orange County - Anaheim Medical Center	421919.89	3746070.87	0.926	0.0159	0.005
8049	Katella High School	418058.27	3743095.58	0.224	0.0038	0.003
8050	Lamb of God Child Care Center	418437.34	3743999.43	0.312	0.0055	0.004
8051	Liliana Bever Daycare	420011.78	3747768.63	0.220	0.0035	0.004
8052	Little Champs Daycare	422361.44	3742789.36	0.152	0.0026	0.005
8053	Luna's Little Stars Daycare	418484.49	3742644.52	0.253	0.0043	0.004
8054	Melrose Elementary School	419242.08	3746878.79	0.276	0.0045	0.004
8055	Mercy's Family Day Care	418787.19	3743523.24	0.354	0.0063	0.005
8056	Nohl Canyon Elementary School	423473.66	3744420.99	0.161	0.0026	0.004
8057	Nohl Ranch Elderly Care	423115.9	3744276.23	0.208	0.0033	0.005
8058	Nora's Day Care	418043.97	3742612.09	0.208	0.0035	0.003
8059	Olive Elementary School	421866.17	3744562.37	0.735	0.0135	0.008
8060	Orange Blossom Montessori Daycare	421047.25	3743886.43	0.701	0.0150	0.012
8061	Orange Lutheran High School	423321.99	3743074.71	0.119	0.0020	0.004
8062	Pacific Urgent Care & Family Medicine	422430.3	3744027.52	0.286	0.0050	0.006
8063	Placentia Head Start	419200.27	3747065.31	0.253	0.0041	0.004
8064	Placentia Senior Center	419430.82	3748171.16	0.167	0.0026	0.003
8065	Rio Vista Elementary School	419545.64	3745157.36	0.797	0.0161	0.008
8066	Serrano Elementary School	423864.47	3742680.3	0.091	0.0015	0.004
8067	St. Paul's Preschool	422186.9	3743600.64	0.238	0.0043	0.006

8068	St. Paul's Lutheran School	421848.3	3743720.81	0.312	0.0059	0.006
8069	Sunkist Elementary School	418687.63	3745369.78	0.459	0.0079	0.005
8070	Sunrise of Orange Assisted Living	422303.13	3744246.02	0.380	0.0068	0.006
8071	Taft Elementary School	422016.21	3742328.72	0.153	0.0026	0.004
8072	The Adventure Lagoon Waterpark	420975.2	3746945.31	0.499	0.0082	0.004
8073	Valadez Middle School Academy	419400.04	3746927.94	0.277	0.0046	0.004
8074	Valencia High School	419796.03	3748920.1	0.137	0.0021	0.003



Figure 9 - Maximum Individual Cancer Risk Locations

3. Risk Drivers

The following section details the device and listed substances driving the cancer, chronic, and acute impacts.

Table 13 - Facility Risk Summary

Facility Risk Summary			
Facility Name:	R.J. Noble		
Facility Location:	15505 E Lincoln Ave, Orange CA 92865		
Facility ID:	19167	**Inventory Year:**	2017
Cancer Risk (in a million):			
Maximally exposed individual resident 30-year (MEIR):	18.9		
Maximally exposed individual worker 25-year (MEIW):	0.79		
Chronic hazard index (HI):			
Maximally exposed individual resident (MEIR):	0.745		
Maximally exposed individual worker (MEIW):	0.085		
Maximally exposed individual worker 8-hr (MEIW):	0.007		
Acute hazard index			
Recreation Area (PMI):	0.120		

Table 14 - MEIR Cancer Risk Drivers

MEIR 30-Year Cancer Risk Summary			
Receptor ID:	2501	**UTM Zone:**	11
UTME (m):	420629.4	**UTMN (m):**	3744602
Total cancer risk (in a million):	18.85		
Cancer risk contribution by substance	**Pathway**	**Risk (in a million)**	
Arsenic	SOIL, CROP	8.3	
Cobalt	INHALATION	3.8	
1,3-Butadiene	INHALATION	2.48	
DieselExhPM	INHALATION	1.81	
Cancer risk contribution by device	**Risk (% of total)**	**Risk (in a million)**	
S0038 (Aggregate Storage Piles)	43.7%	8.24	
S0063 (Dryer D127)	23.2%	4.38	
S0072-S0082 (Paved Haul Roads)	11.2%	2.12	
S0064 (Light Towers)	10.8%	2.04	

Table 15 – Maximum Sensitive Receptor Cancer Risk Drivers

Max Sensitive Receptor 30-Year Cancer Risk Summary			
Receptor ID:	8048	**UTM Zone:**	11
UTME (m):	421919.89	**UTMN (m):**	3746071
Total cancer risk (in a million):		0.93	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
1,3-Butadiene		INHALATION	0.35
Arsenic		SOIL, CROP	0.17
Cobalt		INHALATION	0.09
DieselExhPM		INHALATION	0.09
Formaldehyde		INHALATION	0.09
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0063 (Dryer D127)		67.2%	0.62
S0064 (Light Towers)		11.0%	0.10
S0038 (Aggregate Storage Piles)		8.2%	0.08

Table 16 – PMI 30-Year Cancer Risk Drivers

MEIR 30-Year Cancer Risk Summary			
Receptor ID:	8131	**UTM Zone:**	11
UTME (m):	420467.7	**UTMN (m):**	3744434
Total cancer risk (in a million):		47.0	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
Arsenic		SOIL, CROP	18.4
Cobalt		INHALATION	14.4
DieselExhPM		INHALATION	7.1
1,3-Butadiene		INHALATION	2.0
Lead		SOIL, CROP	1.4
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0072-S0082 (Paved Haul Roads)		25.6%	12.0
S0064 (Light Towers)		17.0%	8.0
S0038 (Aggregate Storage Piles)		10.3%	4.9
S0036 (Unpaved Roads)		8.1%	3.8

Table 17 - MEIW Cancer Risk Drivers

MEIW 25-Year Cancer Risk Summary			
Receptor ID:	2031	**UTM Zone:**	11
UTME (m):	420549.4	**UTMN (m):**	3744282
Total cancer risk (in a million):		0.79	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
DieselExhPM		INHALATION	0.39
Cobalt		INHALATION	0.19
Arsenic		SOIL	0.08
1,3-Butadiene		INHALATION	0.05
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0064 (Light Towers)		51%	0.41
S0072-S0082 (Paved Haul Roads)		18%	0.15
S0063 (D127-Dryer)		11%	0.08
S0036 (Unpaved Roads)		8%	0.06

Table 18 – PMI 25-Year Cancer Risk Drivers

PMI 25-Year Cancer Risk Summary			
Receptor ID:	8131	**UTM Zone:**	11
UTME (m):	420467.7	**UTMN (m):**	3744434
Total cancer risk (in a million):		2.89	
Cancer risk contribution by substance		**Pathway**	**Risk (in a million)**
Cobalt		INHALATION	1.19
Arsenic		SOIL, DERMAL	0.64
DieselExhPM		INHALATION	0.59
1,3-Butadiene		INHALATION	0.16
Cancer risk contribution by device		**Risk (% of total)**	**Risk (in a million)**
S0072-S0082 (Paved Haul Roads)		27.6%	0.80
S0064 (Light Towers)		21.2%	0.61
S0036 (Unpaved Roads)		8.8%	0.25
S0063 (Dryer D127)		8.3%	0.24

Table 19 - MEIR Chronic Risk Drivers

MEIR Chronic Risk Summary			
Receptor ID:	2501	**UTM Zone:**	11
UTME (m):	420629.4	**UTMN (m):**	3744602
Total chronic hazard index:		0.745	
Chronic endpoint:		Respiratory	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Arsenic		INHALATION, CROP, SOIL	0.611
Silica, Crystln		INHALATION	0.092
Nickel		INHALATION, SOIL, CROP	0.030
Formaldehyde		INHALATION	0.005
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0038 (Aggregate Storage Piles)		75%	0.56
S0072-S0082 (Paved Haul Roads)		7%	0.05
S0063 (D127-Dryer)		6%	0.04

Table 20 – PMI Resident Chronic Risk Drivers

PMI Resident Chronic Risk Summary			
Receptor ID:	8145	**UTM Zone:**	11
UTME (m):	420568	**UTMN (m):**	3744571
Total chronic hazard index:		1.97	
Chronic endpoint:		Respiratory	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Arsenic		INHALATION, CROP, SOIL	1.62
Silica, Crystln		INHALATION	0.26
Nickel		INHALATION, SOIL, CROP	0.07
Chlorine		INHALATION	0.01
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0038 (Aggregate Storage Piles)		84.1%	1.66
S0072-S0082 (Paved Haul Roads)		6.1%	0.12

Table 21 – Maximum Sensitive Receptor Chronic Risk Drivers

Max Sensitive Receptor Chronic Risk Summary			
Receptor ID:	8065	**UTM Zone:**	11
UTME (m):	419545.64	**UTMN (m):**	3745157
Total chronic hazard index:		0.016	
Chronic endpoint:		Respiratory	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Arsenic		INHALATION, CROP, SOIL	0.013
Silica, Crystln		INHALATION	0.001
Nickel		INHALATION, SOIL, CROP	0.001
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0038 (Aggregate Storage Piles)		33.3%	0.005
S0063 (D127-Dryer)		24.8%	0.004
S0062 (D130-Screens)		13.2%	0.002
S0072-S0082 (Paved Haul Roads)		5.8%	0.001
S0036 (Unpaved Roads)		5.3%	0.001

Table 22 - Chronic Worker Risk Drivers

MEIW Chronic Risk Summary			
Receptor ID:	2031	**UTM Zone:**	11
UTME (m):	420549.4	**UTMN (m):**	3744282
Total chronic hazard index:		0.085	
Chronic endpoint:		Respiratory System	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Arsenic		INHALATION, SOIL, DERMAL	0.051
Silica, Crystln		INHALATION	0.016
Nickel		INHALATION, SOIL, DERMAL	0.009
Chlorine		INHALATION	0.005
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0072-S0082 (Paved Haul Roads)		22.6%	0.019
S0038 (Aggregate Storage Piles)		21.4%	0.018
S0062 (D130-Screens)		13.3%	0.011
S0063 (D127-Dryer)		6.0%	0.005

Table 23 – PMI Worker Chronic Risk Drivers

PMI Worker Chronic Risk Summary			
Receptor ID:	8145	**UTM Zone:**	11
UTME (m):	420568	**UTMN (m):**	3744571
Total chronic hazard index:		0.821	
Chronic endpoint:		Respiratory	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Arsenic		INHALATION, SOIL, DERMAL	0.47
Silica, Crystln		INHALATION	0.26
Nickel		INHALATION, SOIL, DERMAL	0.07
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0038 (Aggregate Storage Piles)		84.5%	0.69
S0072-S0082 (Paved Haul Roads)		5.4%	0.04

Table 24 - MEIW 8-Hour Chronic Risk Drivers

MEIW 8-Hour Chronic Risk Summary			
Receptor ID:	2031	**UTM Zone:**	11
UTME (m):	420549.4	**UTMN (m):**	3744282
Total chronic hazard index:		0.007	
Chronic endpoint:		Central Nervous System	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Manganese		INHALATION	0.0050
Arsenic		INHALATION	0.0018
1,2,4TriMeBenze		INHALATION	0.0003
Mercury		INHALATION	0.0002
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0072-S0082 (Paved Haul Roads)		47.9%	0.0035
S0036 (Unpaved Roads)		20.2%	0.0015
S0063 (D127-Dryer)		10.8%	0.0008
S0038 (Aggregate Storage Piles)		5.0%	0.0004

Table 25 - Recreational Area Acute Risk Drivers

Recreational Area Acute Risk Summary			
Receptor ID:	1852	**UTM Zone:**	11
UTME (m):	420499.4	**UTMN (m):**	3744442
Total acute hazard index:		0.120	
Acute endpoint:		Immune System	
Acute hazard index contribution by substance		**Pathway**	**HI**
Nickel		INHALATION	0.089
Benzene		INHALATION	0.031
Acute hazard index contribution by device		**HI (% of total)**	**HI**
S0063 (D127-Dryer)		37.8%	0.045
S0038 (Aggregate Storage Piles)		14%	0.017
S0041 (Welding - Gasoline)		13.5%	0.016
S0072-S0082 (Paved Haul Roads)		10.3%	0.012

Table 26 – MEIR Acute Risk Drivers

MEIR Acute Risk Summary			
Receptor ID:	2559	**UTM Zone:**	11
UTME (m):	420639.4	**UTMN (m):**	3744572
Total acute hazard index:		0.0396	
Acute endpoint:		Immune System	
Acute hazard index contribution by substance		**Pathway**	**HI**
Nickel		INHALATION	0.0307
Benzene		INHALATION	0.0089
Acute hazard index contribution by device		**HI (% of total)**	**HI**
S0063 (D127-Dryer)		46.0%	0.018
S0038 (Aggregate Storage Piles)		21.6%	0.009
S0072-S0082 (Paved Haul Roads)		12.8%	0.005

Table 27 – MEIW Acute Risk Drivers

MEIW Acute Risk Summary			
Receptor ID:	2031	**UTM Zone:**	11
UTME (m):	420549.4	**UTMN (m):**	3744282
Total acute hazard index:		0.067	
Acute endpoint:		Immune System	
Acute hazard index contribution by substance		**Pathway**	**HI**
Nickel		INHALATION	0.050
Benzene		INHALATION	0.017
Acute hazard index contribution by device		**HI (% of total)**	**HI**
S0063 (D127-Dryer)		52.2%	0.0349
S0072-S0082 (Paved Haul Roads)		11%	0.0073
S0038 (Aggregate Storage Piles)		7.6%	0.0051
S0036 (Unpaved Roads)		7.1%	0.0048
S0041 (Welding - Gasoline)		7.0%	0.0047

Table 28 – PMI Acute Risk Drivers

PMI Acute Risk Summary			
Receptor ID:	8164	**UTM Zone:**	11
UTME (m):	420354.4382	**UTMN (m):**	3744439.531
Total acute hazard index:		0.243	
Acute endpoint:		Immune System	
Acute hazard index contribution by substance		**Pathway**	**HI**
Nickel		INHALATION	0.128
Benzene		INHALATION	0.115
Acute hazard index contribution by device		**HI (% of total)**	**HI**
S0041 (Welding - Gasoline)		52.3%	0.127
S0063 (D127-Dryer)		14.7%	0.036
S0062 (D130-Screens)		12.5%	0.030
S0072-S0082 (Paved Haul Roads)		5.7%	0.014

Table 29 – Maximum Sensitive Receptor Acute Risk Drivers

Max Sensitive Receptor Acute Risk Summary			
Receptor ID:	8060	**UTM Zone:**	11
UTME (m):	421047.25	**UTMN (m):**	3743886.43
Total chronic hazard index:		0.0115	
Chronic endpoint:		Immune System	
Chronic hazard index contribution by substance		**Pathway**	**HI**
Nickel		INHALATION	0.0085
Benzene		INHALATION	0.0030
Chronic hazard index contribution by device		**HI (% of total)**	**HI**
S0063 (D127-Dryer)		59.7%	0.0069
S0038 (Aggregate Storage Piles)		10.1%	0.0012
S0072-S0082 (Paved Haul Roads)		7.9%	0.0009
S0036 (Unpaved Roads)		5.7%	0.0007

4. Cancer Burden

The HARP software was utilized to determine the population exposure estimates as cancer burden or as the number of persons exposed to selected health risk. The 70-year exposure duration was HARP model run was completed to estimate the cancer burden. The 2020 census tract data was obtained from the HARP model. The cancer burden was calculated by multiplying the cancer risk at the census block centroid by the number of people who live in the census block and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate the number of potential cancer cases within the population that is exposed to the emissions for a lifetime (70 years). See Attachment "E" for details on the cancer burden results. The estimated population exposed to cancer and chronic risks are shown below in Table 30.

Table 30 – Population Estimates Exposed to Cancer and Chronic Risks

Cancer Risk (in a million)	Exposed Population Estimate
1	9,881
10	100
100	0
Chronic HI Risk	**Exposed Population Estimate**
0.5	100
1	0
3	0
5	0

As you will find the cancer burden is less than 1. Therefore, the cancer burden is below the South Coast AQMD Rule 1402 public health risk notification requirements.

ATTACHMENT "A"

SUMMARY TABLES

HRA Source ID	Release Name	CAS	Pollutant Name	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	g/s
S0001	GASOLINE DISPENSING	71432	Benzene	1.189728	0.000135814	1.71122E-05
S0067	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0068	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0069	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07

		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0070	STORAGE TANK	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
		71432	Benzene	0.000337	3.85E-08	4.85091E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
		75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
		75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
		75150	CS2	0.000168	1.92E-08	2.41916E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000411	4.69E-08	5.9093E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
		85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
		86737	Fluorene	0.0003	3.42E-08	4.30912E-09
		91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
		91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
		95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
		100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
		100425	Styrene	0.0000569	6.49E-09	8.17726E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.00211	0.00000024	3.02395E-08
		108883	Toluene	0.000653	7.45E-08	9.38683E-09
		110543	Hexane	0.00105	0.00000012	1.51197E-08
		120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000131	1.49E-08	1.87737E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.00000891	1.02E-09	1.28518E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
		218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0071	STORAGE TANK	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
		71432	Benzene	0.000337	3.85E-08	4.85091E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10

		75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
		75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
		75150	CS2	0.000168	1.92E-08	2.41916E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000411	4.69E-08	5.9093E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
		85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
		86737	Fluorene	0.0003	3.42E-08	4.30912E-09
		91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
		91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
		95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
		100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
		100425	Styrene	0.0000569	6.49E-09	8.17726E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.00211	0.00000024	3.02395E-08
		108883	Toluene	0.000653	7.45E-08	9.38683E-09
		110543	Hexane	0.00105	0.00000012	1.51197E-08
		120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000131	1.49E-08	1.87737E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.00000891	1.02E-09	1.28518E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
		218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0042	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0043	Hopper	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0044	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0045	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09

		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0046	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0047	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0048	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0049	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0050	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0051	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08

		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0052	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0061	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0053	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0054	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0055	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08

S0056	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0057	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0058	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0059	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0060	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0062	Screen	7440382	Arsenic	0.018499958	5.79391E-06	7.3002E-07
		7440508	Copper	0.092499792	2.89696E-05	3.6501E-06
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.057261776	1.79335E-05	2.25959E-06
		7440020	Nickel	0.063868904	2.00028E-05	2.52031E-06
		1175	Silica, Crystln	50.35248201	0.015769647	0.00198694
		7440417	Beryllium	0.00105714	3.31081E-07	4.17154E-08
		7440439	Cadmium	0.001233331	3.86261E-07	4.8668E-08
		7440393	Barium	0.3303564	0.000103463	1.30361E-05
		7440473	Chromium	0.09910692	3.10388E-05	3.91082E-06

		7440484	Cobalt	0.024226136	7.58726E-06	9.55978E-07
		7440666	Zinc	0.2202376	6.89751E-05	8.69071E-06
		7440224	Silver	0.002092257	6.55264E-07	8.25618E-08
		7440622	Vanadium	0.14315444	4.48338E-05	5.64896E-06
S0062	Screen	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0063	Dryer Baghouse	107028	Acrolein	0.537	0.000168	2.11676E-05
		7664417	NH3	637	0.199	0.025073558
S0065	Asphalt Silo Loadout	91576	2MeNaphthalene	0.864	0.000271	3.41454E-05
		83329	Acenaphthene	0.0944	0.0000296	3.72953E-06
		208968	Acenaphthylene	0.0102	0.00000318	4.00673E-07
		120127	Anthracene	0.0254	0.00000796	1.00294E-06
		56553	B[a]anthracene	0.0069	0.00000216	2.72155E-07
		50328	B[a]P	0.000835	0.000000262	3.30114E-08
		205992	B[b]fluoranthen	0.00276	0.000000864	1.08862E-07
		192972	B[e]pyrene	0.00283	0.000000887	1.1176E-07
		191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
		207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
		71432	Benzene	0.611	0.000191	2.40656E-05
		76131	CFC-113	0.0153	0.00000478	6.02269E-07
		218019	Chrysene	0.0374	0.0000117	1.47417E-06
		53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
		100414	Ethyl Benzene	3.29	0.00103	0.000129778
		206440	Fluoranthene	0.0182	0.00000569	7.16927E-07
		86737	Fluorene	0.28	0.0000877	1.105E-05
		50000	Formaldehyde	1.03	0.000324	4.08233E-05
		110543	Hexane	1.76	0.000552	6.95508E-05
		193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
		108383	m-Xylene	4.82	0.00151	0.000190257
		91203	Naphthalene	0.454	0.000142	1.78917E-05
		95476	o-Xylene	0.94	0.000294	3.70433E-05
		198550	Perylene	0.00799	0.0000025	3.14994E-07
		85018	Phenanthrene	0.294	0.0000921	1.16044E-05
		106423	p-Xylene	0	0	0
		129000	Pyrene	0.0545	0.0000171	2.15456E-06
		100425	Styrene	0.0858	0.0000269	3.38934E-06
		108883	Toluene	2.47	0.000773	9.73963E-05
S0066	ASPHALT SILO FILLING	91576	2MeNaphthalene	1.42	0.000446	5.6195E-05
		83329	Acenaphthene	0.127	0.0000398	5.01471E-06
		208968	Acenaphthylene	0.00379	0.00000119	1.49937E-07
		120127	Anthracene	0.0352	0.000011	1.38598E-06
		56553	B[a]anthracene	0.0151	0.00000474	5.97229E-07
		50328	B[a]P	0	0	0
		205992	B[b]fluoranthen	0	0	0
		192972	B[e]pyrene	0.00257	0.000000804	1.01302E-07
		191242	B[g,h,i]perylen	0	0	0
		207089	B[k]fluoranthen	0	0	0
		71432	Benzene	0.909	0.000285	3.59094E-05
		76131	CFC-113	0	0	0
		218019	Chrysene	0.0568	0.0000178	2.24276E-06
		53703	D[a,h]anthracen	0	0	0
		100414	Ethyl Benzene	1.08	0.000338	4.25872E-05
		206440	Fluoranthene	0.0406	0.0000127	1.60017E-06
		86737	Fluorene	0.274	0.0000858	1.08106E-05
		50000	Formaldehyde	19.6	0.00614	0.000773626
		110543	Hexane	2.84	0.000889	0.000112012
		193395	In[1,2,3-cd]pyr	0	0	0
		74873	Methyl Chloride	0.035	0.000011	1.38598E-06
		108383	m-Xylene	5.68	0.00178	0.000224276
		91203	Naphthalene	0.492	0.000154	1.94037E-05
		95476	o-Xylene	1.62	0.000507	6.38809E-05
		198550	Perylene	0.00811	0.00000254	3.20034E-07
		85018	Phenanthrene	0.487	0.000153	1.92777E-05
		106423	p-Xylene	0	0	0
		129000	Pyrene	0.119	0.0000373	4.69972E-06
		100425	Styrene	0.153	0.000048	6.04789E-06
		108883	Toluene	1.76	0.000551	6.94248E-05
S0063	Dryer Baghouse	106990	1,3-Butadiene	199.8347628	0.062585269	0.007885605

		91576	2MeNaphthalene	9.739520041	0.003050272	0.000384328
		83329	Acenaphthene	0.328789223	0.000102972	1.29742E-05
		208968	Acenaphthylene	1.176402851	0.000368432	4.64216E-05
		75070	Acetaldehyde	100.1076829	0.031352234	0.003950312
		7429905	Aluminum	1166.259727	0.36525516	0.046021339
		120127	Anthracene	0.023165673	7.25514E-06	9.14132E-07
		7440360	Antimony	0.556523866	0.000174295	2.19608E-05
		7440382	Arsenic	0.155315079	4.86424E-05	6.12883E-06
		7440393	Barium	9.565461577	0.00299576	0.000377459
		71432	Benzene	225.9974493	0.070779032	0.008918001
		205992	B[b]fluoranthen	0.000264682	8.28944E-08	1.04445E-08
		192972	B[e]pyrene	0.000291324	9.12383E-08	1.14958E-08
		7440417	Beryllium	0.024898425	7.79782E-06	9.82507E-07
		7440439	Cadmium	0.123209869	3.85875E-05	4.86194E-06
		75150	CS2	51.84092399	0.016235805	0.002045675
		74873	Methyl Chloride	8.805401159	0.00275772	0.000347467
		7440473	Chromium	0.907178252	0.000284115	3.57978E-05
		218019	Chrysene	0.001914837	5.99698E-07	7.55607E-08
		7440484	Cobalt	0.317102415	9.93117E-05	1.25131E-05
		7440508	Copper	0.470242035	0.000147273	1.8556E-05
		206440	Fluoranthene	0.035680238	1.11745E-05	1.40796E-06
		86737	Fluorene	0.393799855	0.000123332	1.55396E-05
		50000	Formaldehyde	1401.507561	0.438931275	0.055304365
		110543	Hexane	15.4651297	0.004843448	0.000610264
		18540299	Cr(VI)	0.005249736	1.64414E-06	2.07158E-07
		1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
		1330207	Xylenes	44.91087159	0.014065415	0.001772211
		7439965	Manganese	15.89557194	0.004978256	0.000627249
		78933	MEK	27.21477044	0.00852326	0.001073912
		7439976	Mercury	0.248020895	7.76764E-05	9.78706E-06
		67561	Methanol	218.585628	0.06845776	0.008625526
		91203	Naphthalene	36.24474036	0.011351312	0.00143024
		7440020	Nickel	3.145702806	0.000985187	0.000124131
		85018	Phenanthrene	0.506607075	0.000158662	1.9991E-05
		7723140	Phosphorus	10.72355235	0.003358457	0.000423158
		115071	Propylene	442.5962152	0.138614537	0.017465124
		129000	Pyrene	0.03541179	1.10904E-05	1.39737E-06
		7782492	Selenium	0.399697696	0.000125179	1.57723E-05
		100425	Styrene	70.90509357	0.022206418	0.002797959
		108883	Toluene	91.11106331	0.028534627	0.0035953
		7440622	Vanadium	1.648057569	0.000516147	6.50334E-05
		7440666	Zinc	5.218470875	0.001634347	0.000205924
S0012	Hopper	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
		7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
		7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
		1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
		7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
		7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
		7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
		7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
		7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0012	Hopper	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
		7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
		7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
		1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
		7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
		7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
		7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
		7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
		7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0013	Feeder	7440382	Arsenic	0.00029792	9.33041E-08	1.17561E-08
		7440508	Copper	0.0034447	1.07883E-06	1.3593E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0031654	9.91356E-07	1.24909E-07
		7440020	Nickel	0.0020482	6.41466E-07	8.08233E-08
		1175	Silica, Crystln	1.064	0.000333229	4.19861E-05
		7440393	Barium	0.006517	2.04103E-06	2.57165E-07
		7440473	Chromium	0.001862	5.83151E-07	7.34757E-08
		7440484	Cobalt	0.0006517	2.04103E-07	2.57165E-08
		7440622	Vanadium	0.002793	8.74726E-07	1.10214E-07
		7440666	Zinc	0.019551	6.12308E-06	7.71495E-07
S0014	Crusher	7440382	Arsenic	0.000383032	1.1996E-07	1.51147E-08
		7440508	Copper	0.004428811	1.38704E-06	1.74764E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.004069718	1.27458E-06	1.60594E-07
		7440020	Nickel	0.002633347	8.24725E-07	1.03914E-07

		1175	Silica, Crystln	1.368311145	0.000428535	5.39944E-05
		7440393	Barium	0.008378832	2.62413E-06	3.30634E-07
		7440473	Chromium	0.002393952	7.4975E-07	9.44668E-08
		7440484	Cobalt	0.000837883	2.62413E-07	3.30634E-08
		7440622	Vanadium	0.003590928	1.12463E-06	1.417E-07
		7440666	Zinc	0.025136496	7.87238E-06	9.91902E-07
S0014	Crusher	7440382	Arsenic	4.46871E-05	1.39953E-08	1.76338E-09
		7440508	Copper	0.000516695	1.61821E-07	2.03891E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0004748	1.487E-07	1.87359E-08
		7440020	Nickel	0.000307224	9.62179E-08	1.21232E-08
		1175	Silica, Crystln	0.1595968	4.99833E-05	6.29779E-06
		7440393	Barium	0.00097753	3.06148E-07	3.8574E-08
		7440473	Chromium	0.000279294	8.74708E-08	1.10211E-08
		7440484	Cobalt	9.7753E-05	3.06148E-08	3.8574E-09
		7440622	Vanadium	0.000418942	1.31206E-07	1.65317E-08
		7440666	Zinc	0.002932591	9.18444E-07	1.15722E-07
S0015	Conveyor Belt	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0016	CONVEYOR BELT	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0017	Screen	7440382	Arsenic	0.001170386	3.66547E-07	4.61842E-08
		7440508	Copper	0.013532587	4.2382E-06	5.34004E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.01243535	3.89457E-06	4.90707E-07
		7440020	Nickel	0.008046403	2.52001E-06	3.17516E-07
		1175	Silica, Crystln	4.1811372	0.00130947	0.00016499
		7440393	Barium	0.025602192	8.01822E-06	1.01028E-06
		7440473	Chromium	0.007314912	2.29092E-06	2.88651E-07
		7440484	Cobalt	0.002560219	8.01822E-07	1.01028E-07
		7440622	Vanadium	0.010972368	3.43638E-06	4.32977E-07
		7440666	Zinc	0.076806576	2.40547E-05	3.03084E-06
S0017	Screen	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0018	CONVEYOR BELT	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
		7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
		7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
		1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
		7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
		7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
		7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
		7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
		7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0019	CONVEYOR BELT	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
		7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
		7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
		1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
		7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
		7440473	Chromium	0.000931	2.91575E-07	3.67378E-08

		7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
		7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
		7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0020	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0021	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0022	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0023	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0024	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0025	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0026	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07

S0027	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0028	HOPPER	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0029	CONVEYOR BELT	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0030	CRUSHER	7440382	Arsenic	9.57619E-05	2.99912E-08	3.77883E-09
		7440508	Copper	0.001107247	3.46773E-07	4.36927E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00101747	3.18657E-07	4.015E-08
		7440020	Nickel	0.000658363	2.0619E-07	2.59794E-08
		1175	Silica, Crystln	0.3416506	0.000107	1.34817E-05
		7440393	Barium	0.002094792	6.56058E-07	8.26618E-08
		7440473	Chromium	0.000598512	1.87445E-07	2.36177E-08
		7440484	Cobalt	0.000209479	6.56058E-08	8.26618E-09
		7440622	Vanadium	0.000897768	2.81168E-07	3.54265E-08
		7440666	Zinc	0.006284376	1.96817E-06	2.47985E-07
S0030	CRUSHER	7440382	Arsenic	1.11722E-05	3.49897E-09	4.40863E-10
		7440508	Copper	0.000129179	4.04569E-08	5.09748E-09
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000118705	3.71766E-08	4.68417E-09
		7440020	Nickel	7.6809E-05	2.40554E-08	3.03093E-09
		1175	Silica, Crystln	0.0399008	1.24963E-05	1.57451E-06
		7440393	Barium	0.000244392	7.65401E-08	9.64388E-09
		7440473	Chromium	6.98264E-05	2.18686E-08	2.75539E-09
		7440484	Cobalt	2.44392E-05	7.65401E-09	9.64388E-10
		7440622	Vanadium	0.00010474	3.28029E-08	4.13309E-09
		7440666	Zinc	0.000733177	2.2962E-07	2.89316E-08
S0031	CONVEYOR BELT	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0032	SCREEN	7440382	Arsenic	0.000175564	5.49839E-08	6.92785E-09
		7440508	Copper	0.002029953	6.35751E-07	8.01032E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001865362	5.84204E-07	7.36084E-08
		7440020	Nickel	0.001206999	3.78014E-07	4.76289E-08
		1175	Silica, Crystln	0.6271907	0.000196427	2.47493E-05
		7440393	Barium	0.003840452	1.20277E-06	1.51547E-07
		7440473	Chromium	0.001097272	3.43649E-07	4.3299E-08
		7440484	Cobalt	0.000384045	1.20277E-07	1.51547E-08
		7440622	Vanadium	0.001645908	5.15474E-07	6.49486E-08
		7440666	Zinc	0.011521356	3.60832E-06	4.5464E-07
S0032	SCREEN	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0

		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0033	CONVEYOR BELT	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
		7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
		7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
		1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
		7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
		7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
		7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
		7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
		7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0034	CONVEYOR BELT	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
		7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
		7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
		1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
		7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
		7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
		7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
		7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
		7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0035	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0038	STORAGE PILE	7440382	Arsenic	0.061920592	7.06856E-06	8.90623E-07
		1175	Silica, Crystln	217.9088821	0.024875443	0.003134251
		7440508	Copper	0.309602958	3.53428E-05	4.45311E-06
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.191658974	2.18789E-05	2.75669E-06
		7440020	Nickel	0.213773471	2.44034E-05	3.07477E-06
		7440417	Beryllium	0.00353832	4.03918E-07	5.08927E-08
		7440439	Cadmium	0.004128039	4.71237E-07	5.93749E-08
		7440393	Barium	1.105724851	0.000126224	1.5904E-05
		7440473	Chromium	0.331717455	3.78673E-05	4.77119E-06
		7440484	Cobalt	0.081086489	9.25645E-06	1.16629E-06
		7440666	Zinc	0.7371499	8.41495E-05	1.06027E-05
		7440224	Silver	0.007002924	7.99421E-07	1.00725E-07
		7440622	Vanadium	0.479147435	5.46972E-05	6.89173E-06
S0002	HOPPER	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0002	HOPPER	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08

		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0003	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0004	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0005	AGGREGATE BIN	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0006	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0011	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0007	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10

		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0008	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0009	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0010	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0072	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0073	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06

		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0074	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0075	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0076	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0077	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09

		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0078	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0079	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0080	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0081	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0082	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346

		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0036	UNPAVED ROAD	7429905	Aluminum	57.47605144	0.018000642	0.002268041
		7440360	Antimony	0.00509914	1.59697E-06	2.01215E-07
		7440382	Arsenic	0.010926729	3.42209E-06	4.31176E-07
		7440393	Barium	0.693483067	0.000217189	2.73653E-05
		7726956	Bromine	0.015297421	4.79092E-06	6.03646E-07
		7440439	Cadmium	0.018211215	5.70348E-06	7.18626E-07
		7782505	Chlorine	0.948440077	0.000297037	3.7426E-05
		7440473	Chromium	0.178469907	5.58941E-05	7.04253E-06
		7440484	Cobalt	0.108538841	3.39927E-05	4.28301E-06
		7440508	Copper	0.063375028	1.98481E-05	2.50082E-06
		7439921	Lead	0.656332189	0.000205553	2.58993E-05
		7439965	Manganese	0.765599479	0.000239774	3.0211E-05
		7439976	Mercury	0.010926729	3.42209E-06	4.31176E-07
		7440020	Nickel	0.045892262	1.43728E-05	1.81094E-06
		7723140	Phosphorus	1.166974657	0.000365479	4.60496E-05
		7782492	Selenium	0.000728449	2.28139E-07	2.8745E-08
		7440224	Silver	0.006556037	2.05325E-06	2.58705E-07
		7440622	Vanadium	0.227275963	7.11794E-05	8.96845E-06
		7440666	Zinc	0.453095029	0.000141903	1.78794E-05
S0037	DIESEL STORAGE	71432	Benzene	0.006	0.000000685	8.63085E-08
		110543	Hexane	0.000751	8.57E-08	1.0798E-08
		108883	Toluene	0.24	0.0000274	3.45234E-06
		100414	Ethyl Benzene	0.0976	0.0000111	1.39858E-06
		108383	m-Xylene	2.18	0.000249	3.13734E-05
		95636	1,2,4TriMeBenze	7.51	0.000857	0.00010798
S0039	Electrode Usage for Welder	7440473	Chromium	0.0006	3.125E-07	3.93743E-08
		7440484	Cobalt	0.00005	2.60417E-08	3.28119E-09
		7439965	Manganese	0.103	5.36458E-05	6.75926E-06
		7440020	Nickel	0.0002	1.04167E-07	1.31248E-08
S0040	Propane Torches	75070	Acetaldehyde	0.0001672	6.96667E-07	8.77785E-08
		107028	Acrolein	0.0001056	0.00000044	5.5439E-08
		7664417	NH3	0.132	0.00055	6.92988E-05
		71432	Benzene	0.0003124	1.30167E-06	1.64007E-07
		100414	Ethyl Benzene	0.0003696	0.00000154	1.94037E-07
		50000	Formaldehyde	0.0006644	2.76833E-06	3.48804E-07
		110543	Hexane	0.0002464	1.02667E-06	1.29358E-07
		1151	PAHs-w/o	0.0000176	7.33333E-08	9.23984E-09
		108883	Toluene	0.00143	5.95833E-06	7.50737E-07
		1330207	Xylenes	0.0010604	4.41833E-06	5.567E-07
S0041	Welding- Gasoline	95636	1,2,4TriMeBenze	0.724932	0.002520626	0.000317593
		106990	1,3-Butadiene	0.477516	0.001660348	0.0002092
		75070	Acetaldehyde	0.431496	0.001500334	0.000189039
		107028	Acrolein	0.103584	0.000360167	4.53802E-05
		71432	Benzene	1.979172	0.006881683	0.000867077
		7782505	Chlorine	0.2366	0.00082267	0.000103655
		7440508	Copper	0.001716	5.96662E-06	7.51781E-07
		100414	Ethyl Benzene	0.862992	0.003000668	0.000378077
		50000	Formaldehyde	1.79504	0.006241446	0.000786408
		110543	Hexane	0.753688	0.002620612	0.000330191
		7439965	Manganese	0.001716	5.96662E-06	7.51781E-07
		67561	Methanol	0.40274	0.001400348	0.000176441
		78933	MEK	0.034528	0.000120056	1.51267E-05
		1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
		108383	m-Xylene	2.56022	0.008902017	0.001121634
		91203	Naphthalene	0.074776	0.00026	3.27594E-05
		7440020	Nickel	0.00169	5.87622E-06	7.4039E-07
		95476	o-Xylene	0.891748	0.003100654	0.000390675
		100425	Styrene	0.074776	0.00026	3.27594E-05
		108883	Toluene	3.9065	0.013583102	0.001711441
S0064	LIGHT TOWERS	106990	1,3-Butadiene	0.09911266	0.000129882	1.63648E-05
		75070	Acetaldehyde	0.35710647	0.000467968	5.89629E-05
		107028	Acrolein	0.01545501	2.02529E-05	2.55182E-06

		7664417	NH3	0.63826	0.000836404	0.000105385
		7440382	Arsenic	0.00072944	9.5589E-07	1.2044E-07
		71432	Benzene	0.08493417	0.000111301	1.40237E-05
		7440439	Cadmium	0.00068385	8.96147E-07	1.12913E-07
		7440508	Copper	0.00186919	2.44947E-06	3.08628E-07
		100414	Ethyl Benzene	0.00496931	6.512E-06	8.20498E-07
		50000	Formaldehyde	0.78692899	0.001031227	0.000129932
		110543	Hexane	0.01226371	1.60709E-05	2.0249E-06
		18540299	Cr(VI)	0.00004559	5.97432E-08	7.5275E-09
		7647010	HCl	0.08493417	0.000111301	1.40237E-05
		7439921	Lead	0.00378397	4.95868E-06	6.24783E-07
		7439965	Manganese	0.00141329	1.85204E-06	2.33353E-07
		7439976	Mercury	0.0009118	1.19486E-06	1.5055E-07
		91203	Naphthalene	0.00898123	1.17694E-05	1.48292E-06
		7440020	Nickel	0.00177801	2.32998E-06	2.93573E-07
		1151	PAHs-w/o	0.01650358	2.1627E-05	2.72496E-06
		7782492	Selenium	0.00100298	1.31435E-06	1.65605E-07
		108883	Toluene	0.04805186	6.29693E-05	7.93399E-06
		1330207	Xylenes	0.01933016	2.53311E-05	3.19166E-06
		9901	DieselExhPM	15.27265	0.020013956	0.002521714

HRA Source ID	CAS	Pollutant Name	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	g/s
S0067	71556	1,1,1-TCA	0	0	0
S0068	71556	1,1,1-TCA	0	0	0
S0069	71556	1,1,1-TCA	0	0	0
S0070	71556	1,1,1-TCA	0	0	0
S0071	71556	1,1,1-TCA	0	0	0
S0037	95636	1,2,4TriMeBenze	7.51	0.000857	0.00010798
S0041	95636	1,2,4TriMeBenze	0.724932	0.002520626	0.000317593
S0063	106990	1,3-Butadiene	199.8347628	0.062585269	0.007885605
S0041	106990	1,3-Butadiene	0.477516	0.001660348	0.0002092
S0064	106990	1,3-Butadiene	0.09911266	0.000129882	1.63648E-05
S0067	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0068	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0069	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0070	91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
S0071	91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
S0065	91576	2MeNaphthalene	0.864	0.000271	3.41454E-05
S0066	91576	2MeNaphthalene	1.42	0.000446	5.6195E-05
S0063	91576	2MeNaphthalene	9.739520041	0.003050272	0.000384328
S0067	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0068	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0069	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0070	83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
S0071	83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
S0065	83329	Acenaphthene	0.0944	0.0000296	3.72953E-06
S0066	83329	Acenaphthene	0.127	0.0000398	5.01471E-06
S0063	83329	Acenaphthene	0.328789223	0.000102972	1.29742E-05
S0067	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0068	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0069	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0070	208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
S0071	208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
S0065	208968	Acenaphthylene	0.0102	0.00000318	4.00673E-07
S0066	208968	Acenaphthylene	0.00379	0.00000119	1.49937E-07
S0063	208968	Acenaphthylene	1.176402851	0.000368432	4.64216E-05
S0063	75070	Acetaldehyde	100.1076829	0.031352234	0.003950312
S0040	75070	Acetaldehyde	0.0001672	6.96667E-07	8.77785E-08
S0041	75070	Acetaldehyde	0.431496	0.001500334	0.000189039
S0064	75070	Acetaldehyde	0.35710647	0.000467968	5.89629E-05
S0063	107028	Acrolein	0.537	0.000168	2.11676E-05
S0040	107028	Acrolein	0.0001056	0.00000044	5.5439E-08
S0041	107028	Acrolein	0.103584	0.000360167	4.53802E-05
S0064	107028	Acrolein	0.01545501	2.02529E-05	2.55182E-06
S0063	7429905	Aluminum	1166.259727	0.36525516	0.046021339
S0072	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0073	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0074	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0075	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0076	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0077	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0078	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0079	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0080	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0081	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0082	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0036	7429905	Aluminum	57.47605144	0.018000642	0.002268041

S0067	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0068	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0069	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0070	120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
S0071	120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
S0065	120127	Anthracene	0.0254	0.00000796	1.00294E-06
S0066	120127	Anthracene	0.0352	0.000011	1.38598E-06
S0063	120127	Anthracene	0.023165673	7.25514E-06	9.14132E-07
S0063	7440360	Antimony	0.556523866	0.000174295	2.19608E-05
S0072	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0073	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0074	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0075	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0076	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0077	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0078	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0079	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0080	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0081	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0082	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0036	7440360	Antimony	0.00509914	1.59697E-06	2.01215E-07
S0042	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0043	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0044	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0045	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0046	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0047	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0048	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0049	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0050	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0051	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0052	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0061	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0053	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0054	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0055	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0056	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0057	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0058	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0059	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0060	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0062	7440382	Arsenic	0.018499958	5.79391E-06	7.3002E-07
S0062	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0063	7440382	Arsenic	0.155315079	4.86424E-05	6.12883E-06
S0012	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
S0012	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
S0013	7440382	Arsenic	0.00029792	9.33041E-08	1.17561E-08
S0014	7440382	Arsenic	0.000383032	1.1996E-07	1.51147E-08
S0014	7440382	Arsenic	4.46871E-05	1.39953E-08	1.76338E-09
S0015	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0016	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0017	7440382	Arsenic	0.001170386	3.66547E-07	4.61842E-08
S0017	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0018	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
S0019	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
S0020	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0021	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0022	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08

S0023	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0024	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0025	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0026	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0027	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0028	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0029	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0030	7440382	Arsenic	9.57619E-05	2.99912E-08	3.77883E-09
S0030	7440382	Arsenic	1.11722E-05	3.49897E-09	4.40863E-10
S0031	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0032	7440382	Arsenic	0.000175564	5.49839E-08	6.92785E-09
S0032	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0033	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
S0034	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
S0035	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0038	7440382	Arsenic	0.061920592	7.06856E-06	8.90623E-07
S0002	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0002	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0003	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0004	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0005	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0006	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0011	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0007	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0008	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0009	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0010	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0072	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0073	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0074	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0075	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0076	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0077	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0078	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0079	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0080	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0081	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0082	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0036	7440382	Arsenic	0.010926729	3.42209E-06	4.31176E-07
S0064	7440382	Arsenic	0.00072944	9.5589E-07	1.2044E-07
S0067	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0068	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0069	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0070	56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
S0071	56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
S0065	56553	B[a]anthracene	0.0069	0.00000216	2.72155E-07
S0066	56553	B[a]anthracene	0.0151	0.00000474	5.97229E-07
S0067	50328	B[a]P	0	0	0
S0068	50328	B[a]P	0	0	0
S0069	50328	B[a]P	0	0	0
S0070	50328	B[a]P	0	0	0
S0071	50328	B[a]P	0	0	0
S0065	50328	B[a]P	0.000835	0.000000262	3.30114E-08
S0066	50328	B[a]P	0	0	0
S0067	205992	B[b]fluoranthen	0	0	0
S0068	205992	B[b]fluoranthen	0	0	0
S0069	205992	B[b]fluoranthen	0	0	0
S0070	205992	B[b]fluoranthen	0	0	0

S0071	205992	B[b]fluoranthen	0	0	0
S0065	205992	B[b]fluoranthen	0.00276	0.000000864	1.08862E-07
S0066	205992	B[b]fluoranthen	0	0	0
S0063	205992	B[b]fluoranthen	0.000264682	8.28944E-08	1.04445E-08
S0067	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0068	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0069	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0070	192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
S0071	192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
S0065	192972	B[e]pyrene	0.00283	0.000000887	1.1176E-07
S0066	192972	B[e]pyrene	0.00257	0.000000804	1.01302E-07
S0063	192972	B[e]pyrene	0.000291324	9.12383E-08	1.14958E-08
S0067	191242	B[g,h,i]perylen	0	0	0
S0068	191242	B[g,h,i]perylen	0	0	0
S0069	191242	B[g,h,i]perylen	0	0	0
S0070	191242	B[g,h,i]perylen	0	0	0
S0071	191242	B[g,h,i]perylen	0	0	0
S0065	191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
S0066	191242	B[g,h,i]perylen	0	0	0
S0067	207089	B[k]fluoranthen	0	0	0
S0068	207089	B[k]fluoranthen	0	0	0
S0069	207089	B[k]fluoranthen	0	0	0
S0070	207089	B[k]fluoranthen	0	0	0
S0071	207089	B[k]fluoranthen	0	0	0
S0065	207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
S0066	207089	B[k]fluoranthen	0	0	0
S0042	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0043	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0044	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0045	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0046	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0047	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0048	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0049	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0050	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0051	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0052	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0061	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0053	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0054	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0055	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0056	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0057	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0058	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0059	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0060	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0062	7440393	Barium	0.3303564	0.000103463	1.30361E-05
S0062	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0063	7440393	Barium	9.565461577	0.00299576	0.000377459
S0012	7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
S0012	7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
S0013	7440393	Barium	0.006517	2.04103E-06	2.57165E-07
S0014	7440393	Barium	0.008378832	2.62413E-06	3.30634E-07
S0014	7440393	Barium	0.00097753	3.06148E-07	3.8574E-08
S0015	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
S0016	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
S0017	7440393	Barium	0.025602192	8.01822E-06	1.01028E-06
S0017	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07

S0018	7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
S0019	7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
S0020	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0021	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0022	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0023	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0024	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0025	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0026	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0027	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0028	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0029	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0030	7440393	Barium	0.002094792	6.56058E-07	8.26618E-08
S0030	7440393	Barium	0.000244392	7.65401E-08	9.64388E-09
S0031	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0032	7440393	Barium	0.003840452	1.20277E-06	1.51547E-07
S0032	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0033	7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
S0034	7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
S0035	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0038	7440393	Barium	1.105724851	0.000126224	1.5904E-05
S0002	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0002	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0003	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0004	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0005	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0006	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0011	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0007	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0008	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0009	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0010	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0072	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0073	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0074	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0075	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0076	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0077	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0078	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0079	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0080	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0081	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0082	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0036	7440393	Barium	0.693483067	0.000217189	2.73653E-05
S0001	71432	Benzene	1.189728	0.000135814	1.71122E-05
S0067	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0068	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0069	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0070	71432	Benzene	0.000337	3.85E-08	4.85091E-09
S0071	71432	Benzene	0.000337	3.85E-08	4.85091E-09
S0065	71432	Benzene	0.611	0.000191	2.40656E-05
S0066	71432	Benzene	0.909	0.000285	3.59094E-05
S0063	71432	Benzene	225.9974493	0.070779032	0.008918001
S0037	71432	Benzene	0.006	0.000000685	8.63085E-08
S0040	71432	Benzene	0.0003124	1.30167E-06	1.64007E-07
S0041	71432	Benzene	1.979172	0.006881683	0.000867077
S0064	71432	Benzene	0.08493417	0.000111301	1.40237E-05
S0042	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10

S0043	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0044	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0045	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0046	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0047	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0048	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0049	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0050	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0051	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0052	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0061	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0053	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0054	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0055	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0056	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0057	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0058	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0059	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0060	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0062	7440417	Beryllium	0.00105714	3.31081E-07	4.17154E-08
S0062	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0063	7440417	Beryllium	0.024898425	7.79782E-06	9.82507E-07
S0038	7440417	Beryllium	0.00353832	4.03918E-07	5.08927E-08
S0002	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0002	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0003	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0004	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0005	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0006	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0011	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0007	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0008	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0009	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0010	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0072	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0073	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0074	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0075	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0076	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0077	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0078	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0079	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0080	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0081	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0082	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0036	7726956	Bromine	0.015297421	4.79092E-06	6.03646E-07
S0042	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0043	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0044	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0045	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0046	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0047	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0048	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0049	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0050	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0051	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0052	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0061	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10

S0053	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0054	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0055	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0056	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0057	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0058	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0059	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0060	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0062	7440439	Cadmium	0.001233331	3.86261E-07	4.8668E-08
S0062	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0063	7440439	Cadmium	0.123209869	3.85875E-05	4.86194E-06
S0038	7440439	Cadmium	0.004128039	4.71237E-07	5.93749E-08
S0002	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0002	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0003	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0004	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0005	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0006	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0011	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0007	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0008	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0009	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0010	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0072	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0073	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0074	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0075	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0076	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0077	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0078	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0079	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0080	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0081	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0082	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0036	7440439	Cadmium	0.018211215	5.70348E-06	7.18626E-07
S0064	7440439	Cadmium	0.00068385	8.96147E-07	1.12913E-07
S0067	76131	CFC-113	0	0	0
S0068	76131	CFC-113	0	0	0
S0069	76131	CFC-113	0	0	0
S0070	76131	CFC-113	0	0	0
S0071	76131	CFC-113	0	0	0
S0065	76131	CFC-113	0.0153	0.00000478	6.02269E-07
S0066	76131	CFC-113	0	0	0
S0072	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0073	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0074	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0075	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0076	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0077	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0078	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0079	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0080	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0081	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0082	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0036	7782505	Chlorine	0.948440077	0.000297037	3.7426E-05
S0041	7782505	Chlorine	0.2366	0.00082267	0.000103655
S0042	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0043	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07

S0044	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0045	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0046	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0047	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0048	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0049	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0050	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0051	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0052	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0061	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0053	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0054	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0055	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0056	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0057	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0058	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0059	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0060	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0062	7440473	Chromium	0.09910692	3.10388E-05	3.91082E-06
S0062	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0063	7440473	Chromium	0.907178252	0.000284115	3.57978E-05
S0012	7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
S0012	7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
S0013	7440473	Chromium	0.001862	5.83151E-07	7.34757E-08
S0014	7440473	Chromium	0.002393952	7.4975E-07	9.44668E-08
S0014	7440473	Chromium	0.000279294	8.74708E-08	1.10211E-08
S0015	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0016	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0017	7440473	Chromium	0.007314912	2.29092E-06	2.88651E-07
S0017	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0018	7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
S0019	7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
S0020	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0021	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0022	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0023	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0024	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0025	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0026	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0027	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0028	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0029	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0030	7440473	Chromium	0.000598512	1.87445E-07	2.36177E-08
S0030	7440473	Chromium	6.98264E-05	2.18686E-08	2.75539E-09
S0031	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0032	7440473	Chromium	0.001097272	3.43649E-07	4.3299E-08
S0032	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0033	7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
S0034	7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
S0035	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0038	7440473	Chromium	0.331717455	3.78673E-05	4.77119E-06
S0002	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0002	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0003	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0004	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0005	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0006	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0011	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07

S0007	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0008	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0009	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0010	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0072	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0073	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0074	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0075	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0076	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0077	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0078	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0079	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0080	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0081	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0082	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0036	7440473	Chromium	0.178469907	5.58941E-05	7.04253E-06
S0039	7440473	Chromium	0.0006	3.125E-07	3.93743E-08
S0067	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0068	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0069	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0070	218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0071	218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0065	218019	Chrysene	0.0374	0.0000117	1.47417E-06
S0066	218019	Chrysene	0.0568	0.0000178	2.24276E-06
S0063	218019	Chrysene	0.001914837	5.99698E-07	7.55607E-08
S0042	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0043	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0044	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0045	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0046	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0047	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0048	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0049	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0050	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0051	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0052	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0061	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0053	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0054	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0055	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0056	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0057	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0058	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0059	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0060	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0062	7440484	Cobalt	0.024226136	7.58726E-06	9.55978E-07
S0062	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0063	7440484	Cobalt	0.317102415	9.93117E-05	1.25131E-05
S0012	7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
S0012	7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
S0013	7440484	Cobalt	0.0006517	2.04103E-07	2.57165E-08
S0014	7440484	Cobalt	0.000837883	2.62413E-07	3.30634E-08
S0014	7440484	Cobalt	9.7753E-05	3.06148E-08	3.8574E-09
S0015	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0016	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0017	7440484	Cobalt	0.002560219	8.01822E-07	1.01028E-07
S0017	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0018	7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08

S0019	7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
S0020	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0021	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0022	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0023	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0024	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0025	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0026	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0027	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0028	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0029	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0030	7440484	Cobalt	0.000209479	6.56058E-08	8.26618E-09
S0030	7440484	Cobalt	2.44392E-05	7.65401E-09	9.64388E-10
S0031	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0032	7440484	Cobalt	0.000384045	1.20277E-07	1.51547E-08
S0032	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0033	7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
S0034	7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
S0035	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0038	7440484	Cobalt	0.081086489	9.25645E-06	1.16629E-06
S0002	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0002	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0003	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0004	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0005	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0006	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0011	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0007	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0008	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0009	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0010	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0072	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0073	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0074	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0075	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0076	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0077	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0078	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0079	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0080	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0081	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0082	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0036	7440484	Cobalt	0.108538841	3.39927E-05	4.28301E-06
S0039	7440484	Cobalt	0.00005	2.60417E-08	3.28119E-09
S0042	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0043	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0044	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0045	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0046	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0047	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0048	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0049	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0050	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0051	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0052	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0061	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0053	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0054	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08

S0055	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0056	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0057	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0058	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0059	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0060	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0062	7440508	Copper	0.092499792	2.89696E-05	3.6501E-06
S0062	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0063	7440508	Copper	0.470242035	0.000147273	1.8556E-05
S0012	7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
S0012	7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
S0013	7440508	Copper	0.0034447	1.07883E-06	1.3593E-07
S0014	7440508	Copper	0.004428811	1.38704E-06	1.74764E-07
S0014	7440508	Copper	0.000516695	1.61821E-07	2.03891E-08
S0015	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0016	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0017	7440508	Copper	0.013532587	4.2382E-06	5.34004E-07
S0017	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0018	7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
S0019	7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
S0020	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0021	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0022	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0023	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0024	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0025	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0026	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0027	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0028	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0029	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0030	7440508	Copper	0.001107247	3.46773E-07	4.36927E-08
S0030	7440508	Copper	0.000129179	4.04569E-08	5.09748E-09
S0031	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0032	7440508	Copper	0.002029953	6.35751E-07	8.01032E-08
S0032	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0033	7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
S0034	7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
S0035	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0038	7440508	Copper	0.309602958	3.53428E-05	4.45311E-06
S0002	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0002	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0003	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0004	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0005	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0006	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0011	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0007	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0008	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0009	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0010	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0072	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0073	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0074	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0075	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0076	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0077	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0078	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0079	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07

S0080	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0081	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0082	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0036	7440508	Copper	0.063375028	1.98481E-05	2.50082E-06
S0041	7440508	Copper	0.001716	5.96662E-06	7.51781E-07
S0064	7440508	Copper	0.00186919	2.44947E-06	3.08628E-07
S0042	18540299	Cr(VI)	0	0	0
S0043	18540299	Cr(VI)	0	0	0
S0044	18540299	Cr(VI)	0	0	0
S0045	18540299	Cr(VI)	0	0	0
S0046	18540299	Cr(VI)	0	0	0
S0047	18540299	Cr(VI)	0	0	0
S0048	18540299	Cr(VI)	0	0	0
S0049	18540299	Cr(VI)	0	0	0
S0050	18540299	Cr(VI)	0	0	0
S0051	18540299	Cr(VI)	0	0	0
S0052	18540299	Cr(VI)	0	0	0
S0061	18540299	Cr(VI)	0	0	0
S0053	18540299	Cr(VI)	0	0	0
S0054	18540299	Cr(VI)	0	0	0
S0055	18540299	Cr(VI)	0	0	0
S0056	18540299	Cr(VI)	0	0	0
S0057	18540299	Cr(VI)	0	0	0
S0058	18540299	Cr(VI)	0	0	0
S0059	18540299	Cr(VI)	0	0	0
S0060	18540299	Cr(VI)	0	0	0
S0062	18540299	Cr(VI)	0	0	0
S0062	18540299	Cr(VI)	0	0	0
S0063	18540299	Cr(VI)	0.005249736	1.64414E-06	2.07158E-07
S0012	18540299	Cr(VI)	0	0	0
S0012	18540299	Cr(VI)	0	0	0
S0013	18540299	Cr(VI)	0	0	0
S0014	18540299	Cr(VI)	0	0	0
S0014	18540299	Cr(VI)	0	0	0
S0015	18540299	Cr(VI)	0	0	0
S0016	18540299	Cr(VI)	0	0	0
S0017	18540299	Cr(VI)	0	0	0
S0017	18540299	Cr(VI)	0	0	0
S0018	18540299	Cr(VI)	0	0	0
S0019	18540299	Cr(VI)	0	0	0
S0020	18540299	Cr(VI)	0	0	0
S0021	18540299	Cr(VI)	0	0	0
S0022	18540299	Cr(VI)	0	0	0
S0023	18540299	Cr(VI)	0	0	0
S0024	18540299	Cr(VI)	0	0	0
S0025	18540299	Cr(VI)	0	0	0
S0026	18540299	Cr(VI)	0	0	0
S0027	18540299	Cr(VI)	0	0	0
S0028	18540299	Cr(VI)	0	0	0
S0029	18540299	Cr(VI)	0	0	0
S0030	18540299	Cr(VI)	0	0	0
S0030	18540299	Cr(VI)	0	0	0
S0031	18540299	Cr(VI)	0	0	0
S0032	18540299	Cr(VI)	0	0	0
S0032	18540299	Cr(VI)	0	0	0
S0033	18540299	Cr(VI)	0	0	0
S0034	18540299	Cr(VI)	0	0	0
S0035	18540299	Cr(VI)	0	0	0

S0038	18540299	Cr(VI)	0	0	0
S0002	18540299	Cr(VI)	0	0	0
S0002	18540299	Cr(VI)	0	0	0
S0003	18540299	Cr(VI)	0	0	0
S0004	18540299	Cr(VI)	0	0	0
S0005	18540299	Cr(VI)	0	0	0
S0006	18540299	Cr(VI)	0	0	0
S0011	18540299	Cr(VI)	0	0	0
S0007	18540299	Cr(VI)	0	0	0
S0008	18540299	Cr(VI)	0	0	0
S0009	18540299	Cr(VI)	0	0	0
S0010	18540299	Cr(VI)	0	0	0
S0064	18540299	Cr(VI)	0.00004559	5.97432E-08	7.5275E-09
S0067	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0068	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0069	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0070	75150	CS2	0.000168	1.92E-08	2.41916E-09
S0071	75150	CS2	0.000168	1.92E-08	2.41916E-09
S0063	75150	CS2	51.84092399	0.016235805	0.002045675
S0067	53703	D[a,h]anthracen	0	0	0
S0068	53703	D[a,h]anthracen	0	0	0
S0069	53703	D[a,h]anthracen	0	0	0
S0070	53703	D[a,h]anthracen	0	0	0
S0071	53703	D[a,h]anthracen	0	0	0
S0065	53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
S0066	53703	D[a,h]anthracen	0	0	0
S0064	9901	DieselExhPM	15.27265	0.020013956	0.002521714
S0067	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0068	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0069	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0070	100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
S0071	100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
S0065	100414	Ethyl Benzene	3.29	0.00103	0.000129778
S0066	100414	Ethyl Benzene	1.08	0.000338	4.25872E-05
S0037	100414	Ethyl Benzene	0.0976	0.0000111	1.39858E-06
S0040	100414	Ethyl Benzene	0.0003696	0.00000154	1.94037E-07
S0041	100414	Ethyl Benzene	0.862992	0.003000668	0.000378077
S0064	100414	Ethyl Benzene	0.00496931	6.512E-06	8.20498E-07
S0067	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0068	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0069	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0070	75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
S0071	75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
S0067	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0068	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0069	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0070	206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
S0071	206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
S0065	206440	Fluoranthene	0.0182	0.00000569	7.16927E-07
S0066	206440	Fluoranthene	0.0406	0.0000127	1.60017E-06
S0063	206440	Fluoranthene	0.035680238	1.11745E-05	1.40796E-06
S0067	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0068	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0069	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0070	86737	Fluorene	0.0003	3.42E-08	4.30912E-09
S0071	86737	Fluorene	0.0003	3.42E-08	4.30912E-09
S0065	86737	Fluorene	0.28	0.0000877	1.105E-05
S0066	86737	Fluorene	0.274	0.0000858	1.08106E-05

S0063	86737	Fluorene	0.393799855	0.000123332	1.55396E-05
S0067	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0068	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0069	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0070	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
S0071	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
S0065	50000	Formaldehyde	1.03	0.000324	4.08233E-05
S0066	50000	Formaldehyde	19.6	0.00614	0.000773626
S0063	50000	Formaldehyde	1401.507561	0.438931275	0.055304365
S0040	50000	Formaldehyde	0.0006644	2.76833E-06	3.48804E-07
S0041	50000	Formaldehyde	1.79504	0.006241446	0.000786408
S0064	50000	Formaldehyde	0.78692899	0.001031227	0.000129932
S0064	7647010	HCl	0.08493417	0.000111301	1.40237E-05
S0067	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0068	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0069	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0070	110543	Hexane	0.00105	0.00000012	1.51197E-08
S0071	110543	Hexane	0.00105	0.00000012	1.51197E-08
S0065	110543	Hexane	1.76	0.000552	6.95508E-05
S0066	110543	Hexane	2.84	0.000889	0.000112012
S0063	110543	Hexane	15.4651297	0.004843448	0.000610264
S0037	110543	Hexane	0.000751	8.57E-08	1.0798E-08
S0040	110543	Hexane	0.0002464	1.02667E-06	1.29358E-07
S0041	110543	Hexane	0.753688	0.002620612	0.000330191
S0064	110543	Hexane	0.01226371	1.60709E-05	2.0249E-06
S0067	193395	In[1,2,3-cd]pyr	0	0	0
S0068	193395	In[1,2,3-cd]pyr	0	0	0
S0069	193395	In[1,2,3-cd]pyr	0	0	0
S0070	193395	In[1,2,3-cd]pyr	0	0	0
S0071	193395	In[1,2,3-cd]pyr	0	0	0
S0065	193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
S0066	193395	In[1,2,3-cd]pyr	0	0	0
S0042	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0043	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0044	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0045	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0046	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0047	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0048	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0049	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0050	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0051	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0052	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0061	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0053	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0054	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0055	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0056	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0057	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0058	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0059	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0060	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0062	7439921	Lead	0.057261776	1.79335E-05	2.25959E-06
S0062	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0012	7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
S0012	7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
S0013	7439921	Lead	0.0031654	9.91356E-07	1.24909E-07
S0014	7439921	Lead	0.004069718	1.27458E-06	1.60594E-07

S0014	7439921	Lead	0.0004748	1.487E-07	1.87359E-08
S0015	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0016	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0017	7439921	Lead	0.01243535	3.89457E-06	4.90707E-07
S0017	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0018	7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
S0019	7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
S0020	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0021	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0022	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0023	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0024	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0025	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0026	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0027	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0028	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0029	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0030	7439921	Lead	0.00101747	3.18657E-07	4.015E-08
S0030	7439921	Lead	0.000118705	3.71766E-08	4.68417E-09
S0031	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0032	7439921	Lead	0.001865362	5.84204E-07	7.36084E-08
S0032	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0033	7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
S0034	7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
S0035	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0038	7439921	Lead	0.191658974	2.18789E-05	2.75669E-06
S0002	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0002	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0003	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0004	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0005	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0006	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0011	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0007	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0008	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0009	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0010	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0072	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0073	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0074	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0075	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0076	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0077	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0078	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0079	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0080	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0081	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0082	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0036	7439921	Lead	0.656332189	0.000205553	2.58993E-05
S0064	7439921	Lead	0.00378397	4.95868E-06	6.24783E-07
S0063	1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
S0063	7439965	Manganese	15.89557194	0.004978256	0.000627249
S0072	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0073	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0074	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0075	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0076	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0077	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06

S0078	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0079	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0080	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0081	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0082	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0036	7439965	Manganese	0.765599479	0.000239774	3.0211E-05
S0039	7439965	Manganese	0.103	5.36458E-05	6.75926E-06
S0041	7439965	Manganese	0.001716	5.96662E-06	7.51781E-07
S0064	7439965	Manganese	0.00141329	1.85204E-06	2.33353E-07
S0041	1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
S0067	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0068	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0069	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0070	78933	MEK	0.000411	4.69E-08	5.9093E-09
S0071	78933	MEK	0.000411	4.69E-08	5.9093E-09
S0063	78933	MEK	27.21477044	0.00852326	0.001073912
S0041	78933	MEK	0.034528	0.000120056	1.51267E-05
S0063	7439976	Mercury	0.248020895	7.76764E-05	9.78706E-06
S0072	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0073	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0074	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0075	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0076	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0077	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0078	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0079	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0080	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0081	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0082	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0036	7439976	Mercury	0.010926729	3.42209E-06	4.31176E-07
S0064	7439976	Mercury	0.0009118	1.19486E-06	1.5055E-07
S0063	67561	Methanol	218.585628	0.06845776	0.008625526
S0041	67561	Methanol	0.40274	0.001400348	0.000176441
S0067	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0068	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0069	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0070	74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
S0071	74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
S0066	74873	Methyl Chloride	0.035	0.000011	1.38598E-06
S0063	74873	Methyl Chloride	8.805401159	0.00275772	0.000347467
S0067	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0068	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0069	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0070	75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
S0071	75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
S0067	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0068	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0069	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0070	108383	m-Xylene	0.00211	0.00000024	3.02395E-08
S0071	108383	m-Xylene	0.00211	0.00000024	3.02395E-08
S0065	108383	m-Xylene	4.82	0.00151	0.000190257
S0066	108383	m-Xylene	5.68	0.00178	0.000224276
S0037	108383	m-Xylene	2.18	0.000249	3.13734E-05
S0041	108383	m-Xylene	2.56022	0.008902017	0.001121634
S0067	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0068	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0069	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0070	91203	Naphthalene	0.000541	6.17E-08	7.77406E-09

S0071	91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
S0065	91203	Naphthalene	0.454	0.000142	1.78917E-05
S0066	91203	Naphthalene	0.492	0.000154	1.94037E-05
S0063	91203	Naphthalene	36.24474036	0.011351312	0.00143024
S0041	91203	Naphthalene	0.074776	0.00026	3.27594E-05
S0064	91203	Naphthalene	0.00898123	1.17694E-05	1.48292E-06
S0063	7664417	NH3	637	0.199	0.025073558
S0040	7664417	NH3	0.132	0.00055	6.92988E-05
S0064	7664417	NH3	0.63826	0.000836404	0.000105385
S0042	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0043	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0044	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0045	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0046	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0047	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0048	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0049	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0050	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0051	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0052	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0061	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0053	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0054	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0055	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0056	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0057	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0058	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0059	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0060	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0062	7440020	Nickel	0.063868904	2.00028E-05	2.52031E-06
S0062	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0063	7440020	Nickel	3.145702806	0.000985187	0.000124131
S0012	7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
S0012	7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
S0013	7440020	Nickel	0.0020482	6.41466E-07	8.08233E-08
S0014	7440020	Nickel	0.002633347	8.24725E-07	1.03914E-07
S0014	7440020	Nickel	0.000307224	9.62179E-08	1.21232E-08
S0015	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0016	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0017	7440020	Nickel	0.008046403	2.52001E-06	3.17516E-07
S0017	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0018	7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
S0019	7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
S0020	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0021	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0022	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0023	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0024	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0025	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0026	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0027	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0028	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0029	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
S0030	7440020	Nickel	0.000658363	2.0619E-07	2.59794E-08
S0030	7440020	Nickel	7.6809E-05	2.40554E-08	3.03093E-09
S0031	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
S0032	7440020	Nickel	0.001206999	3.78014E-07	4.76289E-08
S0032	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08

S0033	7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
S0034	7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
S0035	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0038	7440020	Nickel	0.213773471	2.44034E-05	3.07477E-06
S0002	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0002	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0003	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0004	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0005	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0006	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0011	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0007	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0008	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0009	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0010	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0072	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0073	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0074	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0075	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0076	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0077	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0078	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0079	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0080	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0081	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0082	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0036	7440020	Nickel	0.045892262	1.43728E-05	1.81094E-06
S0039	7440020	Nickel	0.0002	1.04167E-07	1.31248E-08
S0041	7440020	Nickel	0.00169	5.87622E-06	7.4039E-07
S0064	7440020	Nickel	0.00177801	2.32998E-06	2.93573E-07
S0067	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0068	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0069	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0070	95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
S0071	95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
S0065	95476	o-Xylene	0.94	0.000294	3.70433E-05
S0066	95476	o-Xylene	1.62	0.000507	6.38809E-05
S0041	95476	o-Xylene	0.891748	0.003100654	0.000390675
S0040	1151	PAHs-w/o	0.0000176	7.33333E-08	9.23984E-09
S0064	1151	PAHs-w/o	0.01650358	2.1627E-05	2.72496E-06
S0067	127184	Perc	0	0	0
S0068	127184	Perc	0	0	0
S0069	127184	Perc	0	0	0
S0070	127184	Perc	0	0	0
S0071	127184	Perc	0	0	0
S0067	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0068	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0069	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0070	198550	Perylene	0.00000891	1.02E-09	1.28518E-10
S0071	198550	Perylene	0.00000891	1.02E-09	1.28518E-10
S0065	198550	Perylene	0.00799	0.0000025	3.14994E-07
S0066	198550	Perylene	0.00811	0.00000254	3.20034E-07
S0067	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0068	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0069	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0070	85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
S0071	85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
S0065	85018	Phenanthrene	0.294	0.0000921	1.16044E-05

S0066	85018	Phenanthrene	0.487	0.000153	1.92777E-05
S0063	85018	Phenanthrene	0.506607075	0.000158662	1.9991E-05
S0063	7723140	Phosphorus	10.72355235	0.003358457	0.000423158
S0072	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0073	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0074	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0075	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0076	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0077	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0078	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0079	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0080	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0081	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0082	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0036	7723140	Phosphorus	1.166974657	0.000365479	4.60496E-05
S0063	115071	Propylene	442.5962152	0.138614537	0.017465124
S0067	106423	p-Xylene	0	0	0
S0068	106423	p-Xylene	0	0	0
S0069	106423	p-Xylene	0	0	0
S0070	106423	p-Xylene	0	0	0
S0071	106423	p-Xylene	0	0	0
S0065	106423	p-Xylene	0	0	0
S0066	106423	p-Xylene	0	0	0
S0067	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0068	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0069	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0070	129000	Pyrene	0.000131	1.49E-08	1.87737E-09
S0071	129000	Pyrene	0.000131	1.49E-08	1.87737E-09
S0065	129000	Pyrene	0.0545	0.0000171	2.15456E-06
S0066	129000	Pyrene	0.119	0.0000373	4.69972E-06
S0063	129000	Pyrene	0.03541179	1.10904E-05	1.39737E-06
S0063	7782492	Selenium	0.399697696	0.000125179	1.57723E-05
S0072	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0073	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0074	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0075	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0076	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0077	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0078	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0079	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0080	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0081	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0082	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0036	7782492	Selenium	0.000728449	2.28139E-07	2.8745E-08
S0064	7782492	Selenium	0.00100298	1.31435E-06	1.65605E-07
S0042	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0043	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0044	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0045	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0046	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0047	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0048	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0049	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0050	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0051	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0052	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0061	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0053	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05

S0054	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0055	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0056	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0057	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0058	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0059	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0060	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0062	1175	Silica, Crystln	50.35248201	0.015769647	0.00198694
S0062	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0012	1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
S0012	1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
S0013	1175	Silica, Crystln	1.064	0.000333229	4.19861E-05
S0014	1175	Silica, Crystln	1.368311145	0.000428535	5.39944E-05
S0014	1175	Silica, Crystln	0.1595968	4.99833E-05	6.29779E-06
S0015	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0016	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0017	1175	Silica, Crystln	4.1811372	0.00130947	0.00016499
S0017	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0018	1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
S0019	1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
S0020	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0021	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0022	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0023	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0024	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0025	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0026	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0027	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0028	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0029	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0030	1175	Silica, Crystln	0.3416506	0.000107	1.34817E-05
S0030	1175	Silica, Crystln	0.0399008	1.24963E-05	1.57451E-06
S0031	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0032	1175	Silica, Crystln	0.6271907	0.000196427	2.47493E-05
S0032	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0033	1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
S0034	1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
S0035	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0038	1175	Silica, Crystln	217.9088821	0.024875443	0.003134251
S0002	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0002	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0003	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0004	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0005	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0006	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0011	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0007	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0008	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0009	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0010	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0042	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0043	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0044	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0045	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0046	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0047	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0048	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0049	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10

S0050	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0051	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0052	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0061	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0053	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0054	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0055	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0056	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0057	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0058	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0059	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0060	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0062	7440224	Silver	0.002092257	6.55264E-07	8.25618E-08
S0062	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0038	7440224	Silver	0.007002924	7.99421E-07	1.00725E-07
S0002	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0002	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0003	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0004	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0005	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0006	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0011	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0007	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0008	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0009	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0010	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0072	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0073	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0074	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0075	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0076	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0077	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0078	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0079	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0080	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0081	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0082	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0036	7440224	Silver	0.006556037	2.05325E-06	2.58705E-07
S0067	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0068	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0069	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0070	100425	Styrene	0.0000569	6.49E-09	8.17726E-10
S0071	100425	Styrene	0.0000569	6.49E-09	8.17726E-10
S0065	100425	Styrene	0.0858	0.0000269	3.38934E-06
S0066	100425	Styrene	0.153	0.000048	6.04789E-06
S0063	100425	Styrene	70.90509357	0.022206418	0.002797959
S0041	100425	Styrene	0.074776	0.00026	3.27594E-05
S0067	79016	TCE	0	0	0
S0068	79016	TCE	0	0	0
S0069	79016	TCE	0	0	0
S0070	79016	TCE	0	0	0
S0071	79016	TCE	0	0	0
S0067	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0068	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0069	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0070	108883	Toluene	0.000653	7.45E-08	9.38683E-09
S0071	108883	Toluene	0.000653	7.45E-08	9.38683E-09
S0065	108883	Toluene	2.47	0.000773	9.73963E-05

S0066	108883	Toluene	1.76	0.000551	6.94248E-05
S0063	108883	Toluene	91.11106331	0.028534627	0.0035953
S0037	108883	Toluene	0.24	0.0000274	3.45234E-06
S0040	108883	Toluene	0.00143	5.95833E-06	7.50737E-07
S0041	108883	Toluene	3.9065	0.013583102	0.001711441
S0064	108883	Toluene	0.04805186	6.29693E-05	7.93399E-06
S0042	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0043	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0044	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0045	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0046	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0047	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0048	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0049	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0050	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0051	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0052	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0061	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0053	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0054	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0055	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0056	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0057	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0058	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0059	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0060	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0062	7440622	Vanadium	0.14315444	4.48338E-05	5.64896E-06
S0062	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0063	7440622	Vanadium	1.648057569	0.000516147	6.50334E-05
S0012	7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
S0012	7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
S0013	7440622	Vanadium	0.002793	8.74726E-07	1.10214E-07
S0014	7440622	Vanadium	0.003590928	1.12463E-06	1.417E-07
S0014	7440622	Vanadium	0.000418942	1.31206E-07	1.65317E-08
S0015	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0016	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0017	7440622	Vanadium	0.010972368	3.43638E-06	4.32977E-07
S0017	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0018	7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
S0019	7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
S0020	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0021	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0022	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0023	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0024	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0025	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0026	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0027	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0028	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0029	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0030	7440622	Vanadium	0.000897768	2.81168E-07	3.54265E-08
S0030	7440622	Vanadium	0.00010474	3.28029E-08	4.13309E-09
S0031	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0032	7440622	Vanadium	0.001645908	5.15474E-07	6.49486E-08
S0032	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0033	7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
S0034	7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
S0035	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08

S0038	7440622	Vanadium	0.479147435	5.46972E-05	6.89173E-06
S0002	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0002	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0003	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0004	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0005	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0006	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0011	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0007	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0008	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0009	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0010	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0072	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0073	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0074	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0075	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0076	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0077	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0078	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0079	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0080	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0081	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0082	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0036	7440622	Vanadium	0.227275963	7.11794E-05	8.96845E-06
S0063	1330207	Xylenes	44.91087159	0.014065415	0.001772211
S0040	1330207	Xylenes	0.0010604	4.41833E-06	5.567E-07
S0064	1330207	Xylenes	0.01933016	2.53311E-05	3.19166E-06
S0042	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0043	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0044	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0045	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0046	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0047	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0048	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0049	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0050	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0051	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0052	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0061	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0053	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0054	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0055	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0056	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0057	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0058	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0059	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0060	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0062	7440666	Zinc	0.2202376	6.89751E-05	8.69071E-06
S0062	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0063	7440666	Zinc	5.218470875	0.001634347	0.000205924
S0012	7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0012	7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0013	7440666	Zinc	0.019551	6.12308E-06	7.71495E-07
S0014	7440666	Zinc	0.025136496	7.87238E-06	9.91902E-07
S0014	7440666	Zinc	0.002932591	9.18444E-07	1.15722E-07
S0015	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0016	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0017	7440666	Zinc	0.076806576	2.40547E-05	3.03084E-06

S0017	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0018	7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0019	7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0020	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0021	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0022	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0023	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0024	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0025	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0026	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0027	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0028	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0029	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0030	7440666	Zinc	0.006284376	1.96817E-06	2.47985E-07
S0030	7440666	Zinc	0.000733177	2.2962E-07	2.89316E-08
S0031	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0032	7440666	Zinc	0.011521356	3.60832E-06	4.5464E-07
S0032	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0033	7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0034	7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0035	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0038	7440666	Zinc	0.7371499	8.41495E-05	1.06027E-05
S0002	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0002	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0003	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0004	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0005	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0006	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0011	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0007	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0008	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0009	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0010	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0072	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0073	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0074	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0075	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0076	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0077	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0078	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0079	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0080	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0081	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0082	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0036	7440666	Zinc	0.453095029	0.000141903	1.78794E-05

Facility Totals

Cas#	Pollutant Name	Lbs/yr	lbs/hr	g/s
71556	1,1,1-TCA	0	0	0
95636	1,2,4TriMeBenze	8.234932	0.003377626	0.000425573
106990	1,3-Butadiene	200.4113915	0.064375498	0.00811117
91576	2MeNaphthalene	12.03224004	0.003768266	0.000474793
83329	Acenaphthene	0.550964223	0.00017246	2.17296E-05
208968	Acenaphthylene	1.190415961	0.000372804	4.69725E-05
75070	Acetaldehyde	100.8964526	0.033321232	0.004198401
107028	Acrolein	0.65614461	0.00054886	6.91551E-05
7429905	Aluminum	1289.061878	0.403714963	0.050867188
120127	Anthracene	0.083980273	2.62396E-05	3.30613E-06
7440360	Antimony	0.567418584	0.000177707	2.23907E-05
7440382	Arsenic	0.288445551	7.87402E-05	9.9211E-06
56553	B[a]anthracene	0.0220923	6.91055E-06	8.70714E-07
50328	B[a]P	0.000835	0.000000262	3.30114E-08
205992	B[b]fluoranthen	0.003024682	9.46894E-07	1.19307E-07
192972	B[e]pyrene	0.005706984	1.78403E-06	2.24784E-07
191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
7440393	Barium	13.03261203	0.003861548	0.000486546
71432	Benzene	230.7794669	0.078386031	0.009876466
7440417	Beryllium	0.030570247	8.86991E-06	1.11759E-06
7726956	Bromine	0.032684154	1.02362E-05	1.28974E-06
7440439	Cadmium	0.169420552	5.29204E-05	6.66785E-06
76131	CFC-113	0.0153	0.00000478	6.02269E-07
7782505	Chlorine	2.263017576	0.001457314	0.000183618
7440473	Chromium	1.881690815	0.00052342	6.59498E-05
218019	Chrysene	0.096461337	3.01393E-05	3.79748E-06
7440484	Cobalt	0.70033597	0.000203207	2.56036E-05
7440508	Copper	1.218116072	0.000327169	4.12225E-05
18540299	Cr(VI)	0.005295326	1.70388E-06	2.14685E-07
75150	CS2	51.84185999	0.016235911	0.002045689
53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
9901	DieselExhPM	15.27265	0.020013956	0.002521714
100414	Ethyl Benzene	5.33815291	0.004388073	0.000552887
75003	Ethyl Chloride	0.0002339	2.672E-08	3.36666E-09
206440	Fluoranthene	0.094727838	2.95928E-05	3.72863E-06
86737	Fluorene	0.949467855	0.000297022	3.74242E-05
50000	Formaldehyde	1424.760564	0.452675323	0.057036085
7647010	HCl	0.08493417	0.000111301	1.40237E-05
110543	Hexane	20.83792881	0.008922909	0.001124267
193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
7439921	Lead	1.816782555	0.000534617	6.73605E-05
1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
7439965	Manganese	17.63746534	0.005552018	0.000699542
1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
78933	MEK	27.25158144	0.008643577	0.001089071

7439976	Mercury	0.27227852	8.61829E-05	1.08589E-05
67561	Methanol	218.988368	0.069858108	0.008801966
74839	Methyl Bromide	0.0002868	3.272E-08	4.12265E-09
74873	Methyl Chloride	8.840401159	0.00276872	0.000348853
75092	Methylene Chlor	0.00001579	1.805E-09	2.27426E-10
108383	m-Xylene	15.25194	0.012442352	0.001567709
91203	Naphthalene	37.27750259	0.011919424	0.001501821
7664417	NH3	637.77026	0.200386404	0.025248242
7440020	Nickel	3.657046398	0.001109947	0.000139851
95476	o-Xylene	3.45437	0.003901953	0.000491637
1151	PAHs-w/o	0.01652118	2.17004E-05	2.7342E-06
127184	Perc	0	0	0
198550	Perylene	0.01614962	5.04567E-06	6.35743E-07
85018	Phenanthrene	1.290579075	0.000404101	5.09158E-05
7723140	Phosphorus	13.21688642	0.004139332	0.000521547
115071	Propylene	442.5962152	0.138614537	0.017465124
106423	p-Xylene	0	0	0
129000	Pyrene	0.20963879	6.55733E-05	8.2621E-06
7782492	Selenium	0.402257064	0.000126981	1.59993E-05
1175	Silica, Crystln	354.2975412	0.067590338	0.008516232
7440224	Silver	0.025232975	6.5088E-06	8.20094E-07
100425	Styrene	71.21898557	0.022541354	0.002840161
79016	TCE	0	0	0
108883	Toluene	99.54067317	0.04353847	0.00548575
7440622	Vanadium	2.993006124	0.000842	0.00010609
1330207	Xylenes	44.93126215	0.014095165	0.001775959
7440666	Zinc	8.007247439	0.002361036	0.000297485

ATTACHMENT "B"

ISOPLETHS

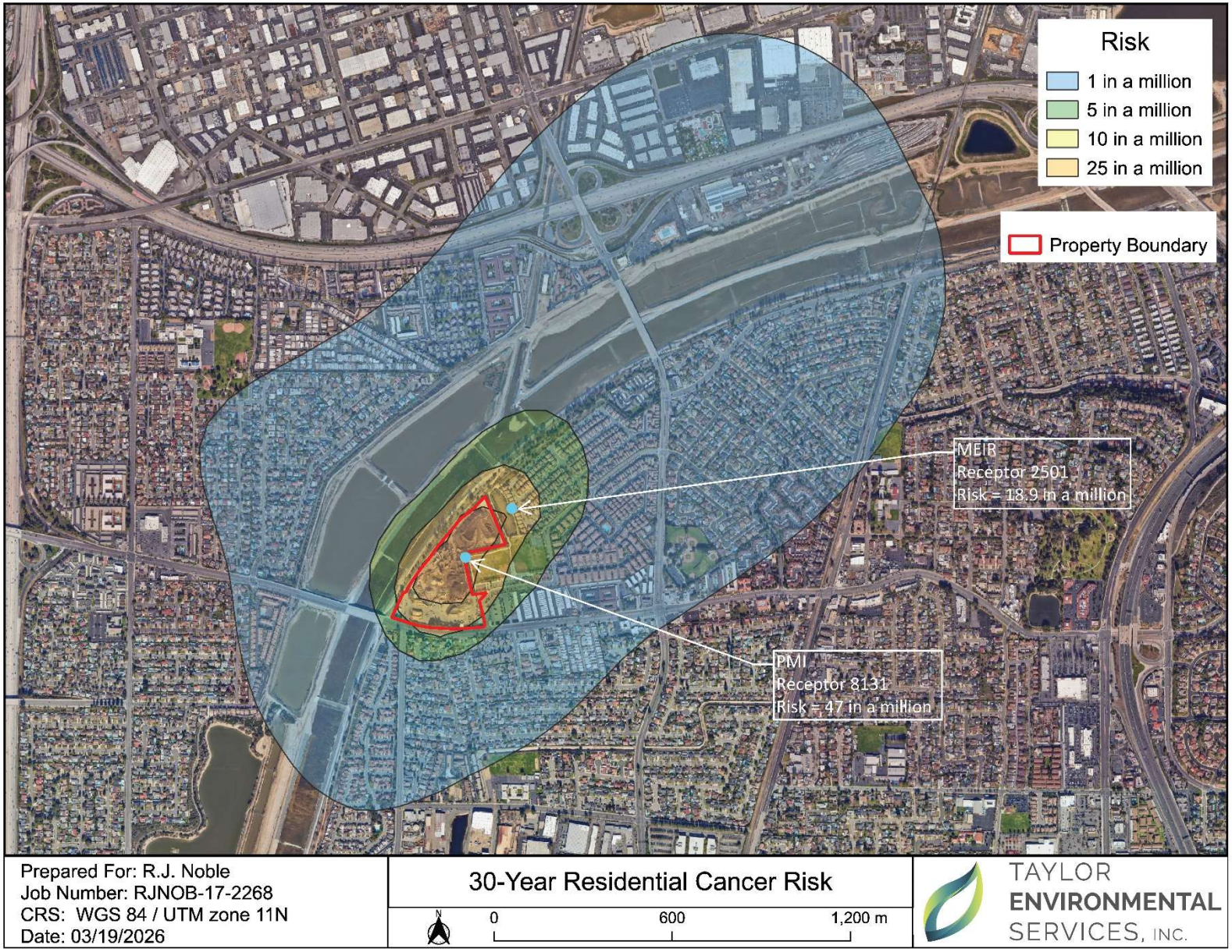


Figure 1 – 30 Year Resident Cancer Risk (in a Million)

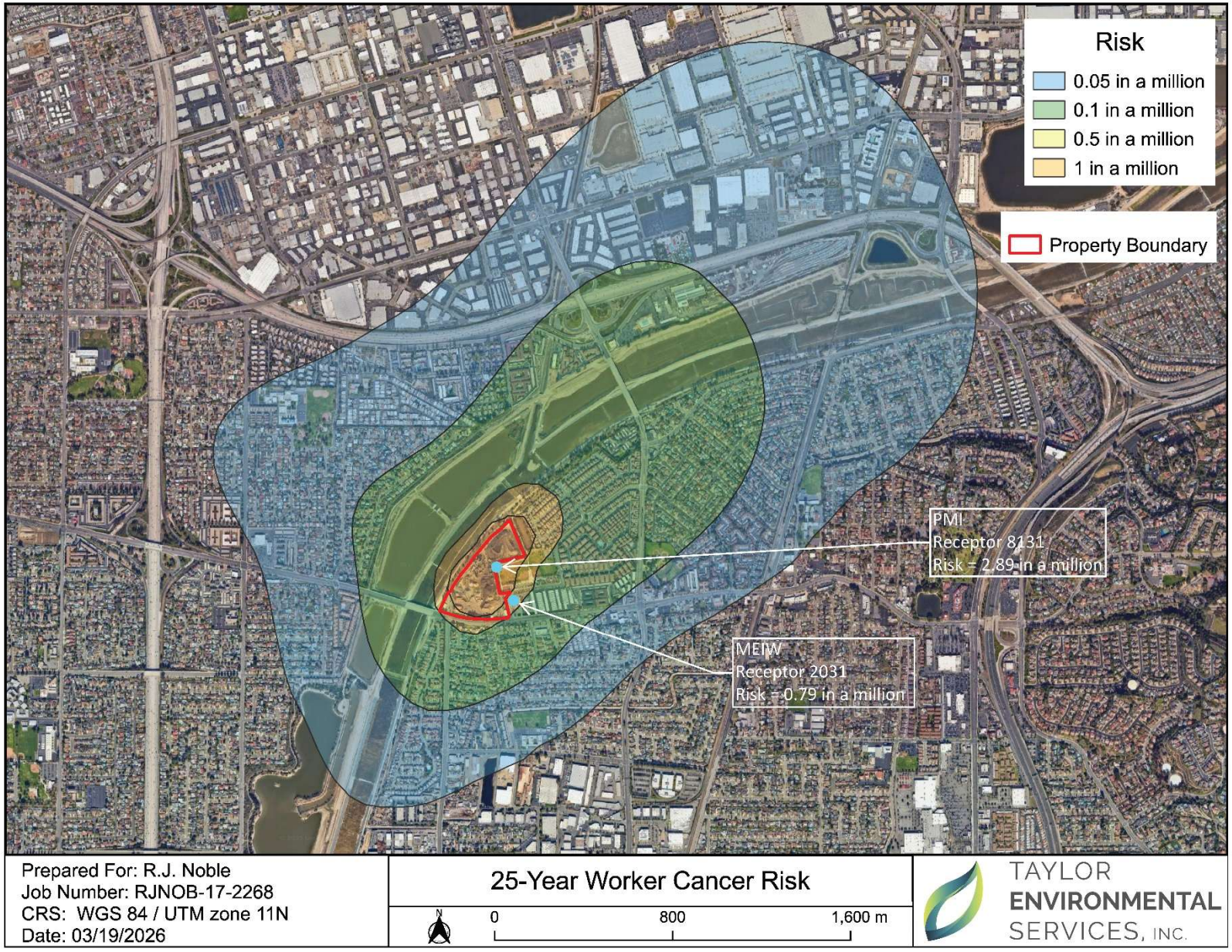


Figure 2 – 25 Year Worker Cancer Risk (in a Million)



Figure 3 – Acute Risk

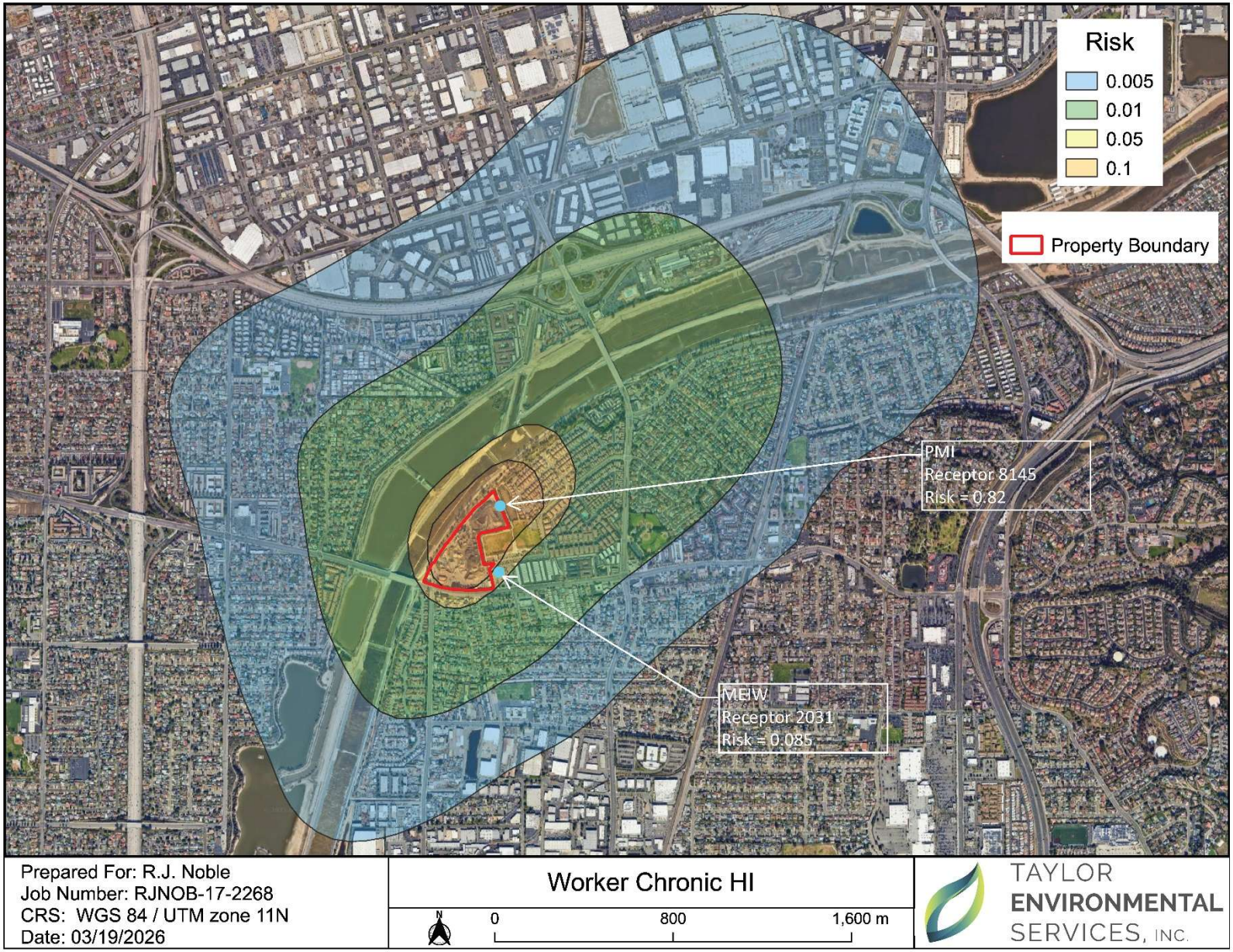


Figure 4 – Chronic Worker

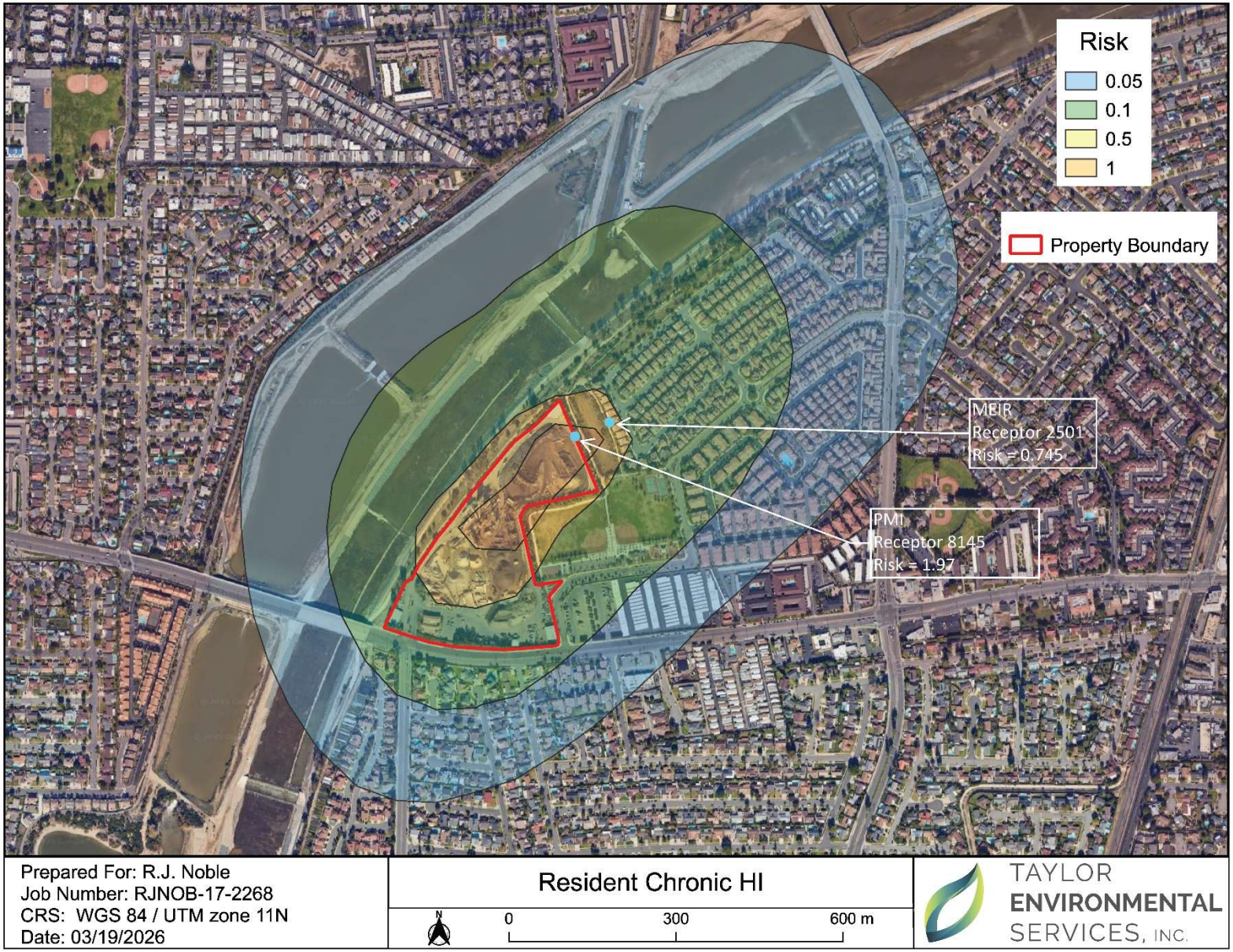


Figure 5 – Chronic Resident

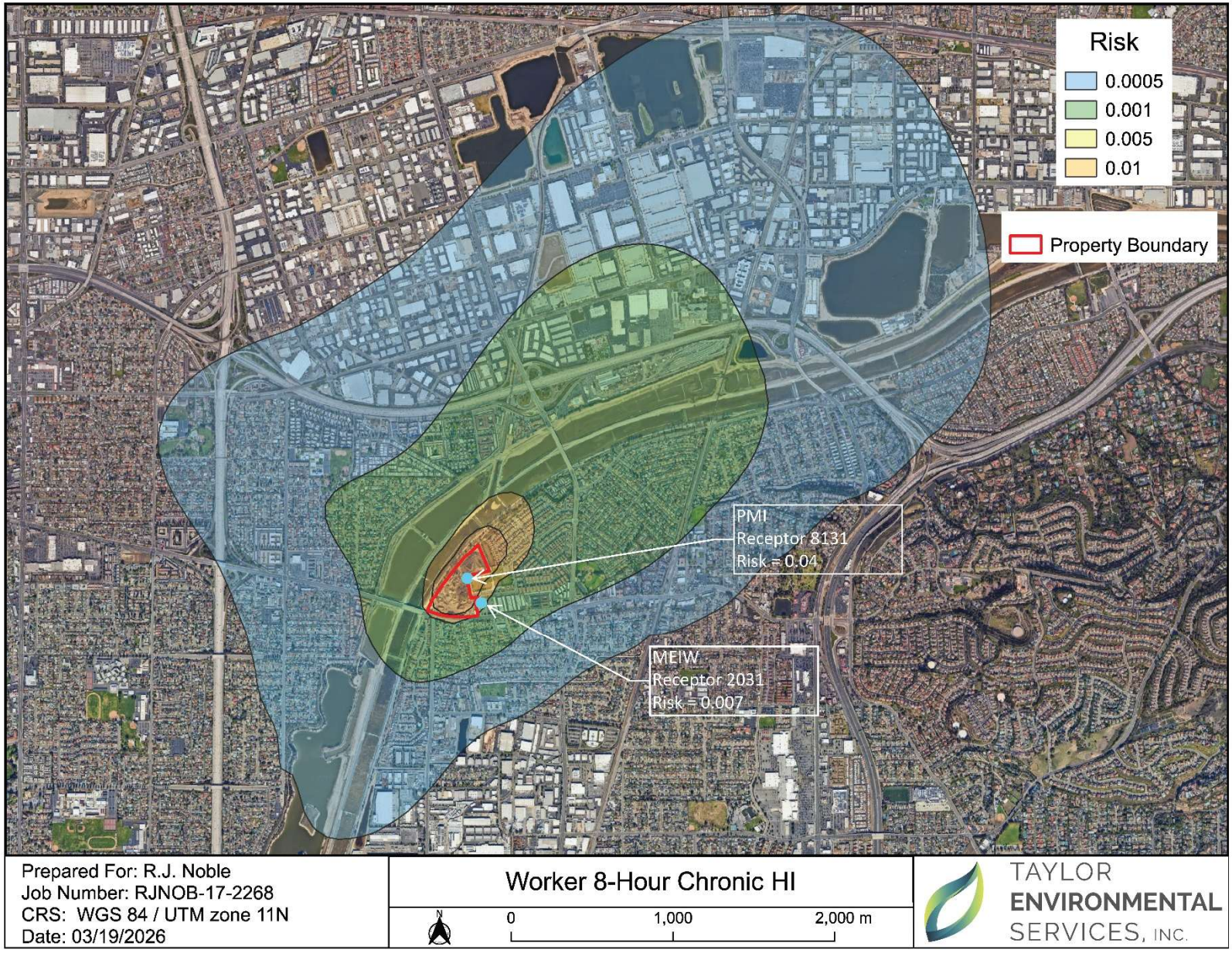


Figure 6 – 8-Hour Chronic HI

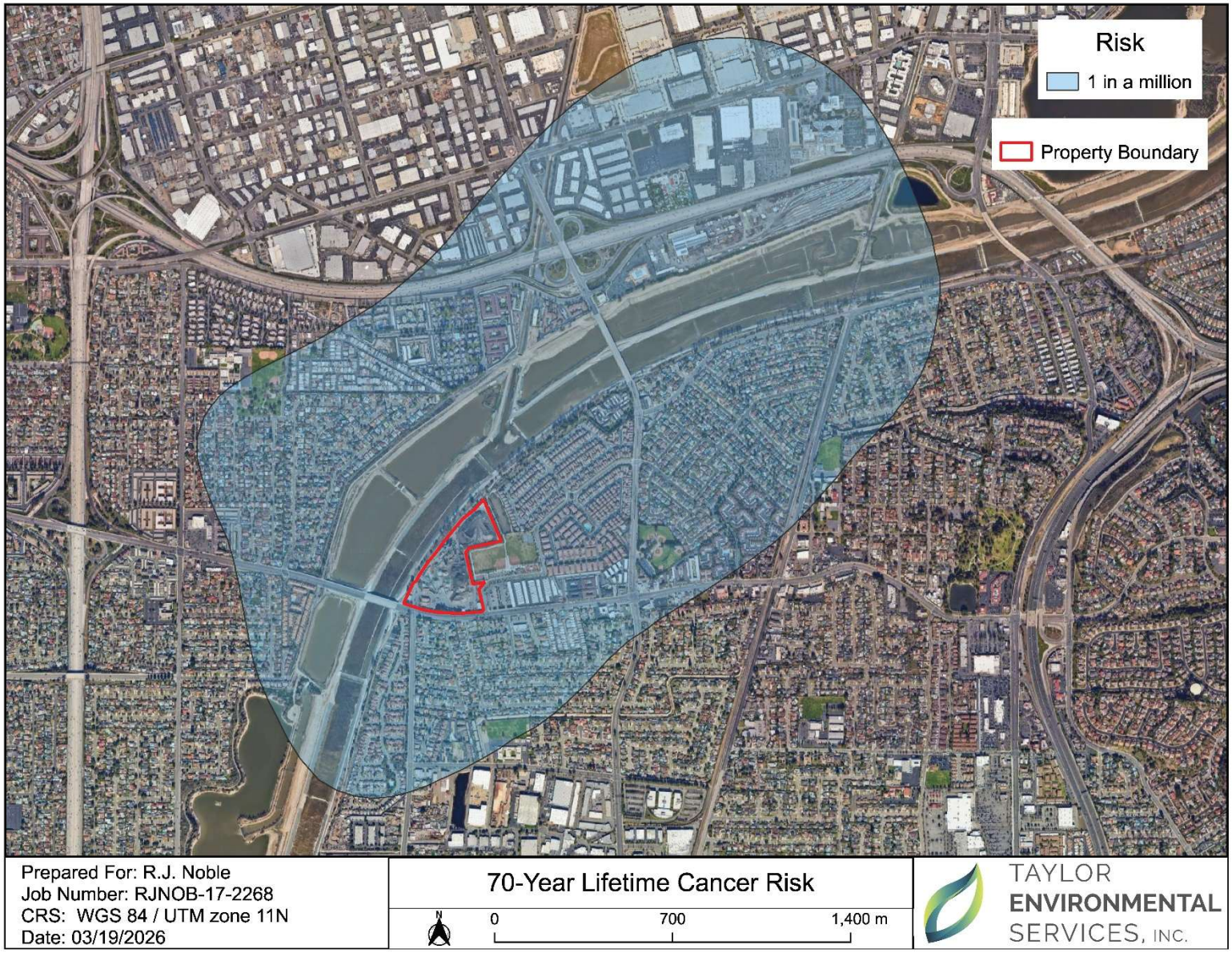


Figure 7 – 70-Year Cancer Risk

ATTACHMENT "C"

TOXIC EMISSION FACTORS



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John R. Richards , Todd T. Brozell , Charles Rea , Geoff Boraston & John Hayden

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PM_4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California

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ABSTRACT

The California Construction and Industrial Minerals Association and the National Stone, Sand, & Gravel Association have sponsored tests at three sand and gravel plants in California to compile crystalline silica emission factors for particulate matter (PM) of aerodynamic diameter of 4 μm or less (PM_4) and ambient concentration data. This information is needed by industrial facilities to evaluate compliance with the Chronic Reference Exposure Level (REL) for ambient crystalline silica adopted in 2005 by the California Office of Environmental Health Hazard Assessment. The REL applies to PM_4 respirable PM. Air Control Techniques, P.C. sampled for PM_4 crystalline silica using a conventional sampler for PM of aerodynamic diameter of 2.5 μm or less ($PM_{2.5}$), which met the requirements of 40 *Code of Federal Regulations* Part 50, Appendix L. The sample flow rate was adjusted to modify the 50% cut size to 4 μm instead of 2.5 μm. The filter was also changed to allow for crystalline silica analyses using National Institute for Occupational Safety and Health (NIOSH) Method 7500. The particle size-capture efficiency curve for the modified Appendix L instrument closely matched the performance curve of NIOSH Method 0600 for PM_4 crystalline silica and provided a minimum detection limit well below the levels attainable with NIOSH Method 0600. The results of the tests indicate that PM_4 crystalline silica emissions range from 0.000006 to 0.000110 lb/t for screening operations, tertiary crushers, and conveyor transfer points. The PM_4 crystalline silica emission factors were proportional to the crystalline silica content of the material handled in the process equipment. Measured ambient concentrations ranged from 0 (below detectable limit) to 2.8 μg/m³. All values measured above 2 μg/m³ were at locations upwind of the facilities being tested. The ambient PM_4 crystalline silica concentrations measured during this study were below the California REL of 3 μg/m³. The measured ambient concentrations in the PM_4 size range are consistent with previously published ambient crystalline silica data applicable to the $PM_{2.5}$ and PM of aerodynamic diameter of 10 μm or less (PM_{10}) size ranges.

IMPLICATIONS

Mineral processing facilities need PM_4 crystalline silica emission factor data to evaluate compliance with the 3 μg/m³ Chronic REL for PM_4 ambient crystalline silica adopted in 2005 by the California Office of Environmental Health Hazard Assessment. Emission tests at three sand and gravel plants have provided PM_4 crystalline silica data for screens, crushers, and conveyors. Mineral processing facilities can use the emission factor data to evaluate compliance with the stringent ambient PM_4 crystalline silica limit.

INTRODUCTION

Crystalline Silica Emission Factors of Particulate Matter of Aerodynamic Diameter of 4 μm or Less

There are no previously published data concerning particulate matter (PM) of aerodynamic diameter of 4 μm or less (PM_4) crystalline silica emissions from aggregate producing plants or other mineral industry sources. The PM_4 crystalline silica emission factors can be estimated based on published data concerning emission factors for PM of aerodynamic diameter of 10 μm (PM_{10}) or 2.5 μm ($PM_{2.5}$) or less for aggregate producing plants.[1–9] The U.S. Environmental Protection Agency (EPA) AP42 Section 11.19-2 emission factors for tertiary crushers, screens, and conveyor transfer points indicate that the $PM_{2.5}$ emissions range from 0.000013 to 0.000100 lb/t of stone. The AP42 Section 11.19-2 PM_{10} emission factors for these three types of processing equipment range from 0.000046 to 0.00074 lb/t.

These emission factors provide a starting point for evaluating possible PM_4 crystalline silica emission factors. It is reasonable to expect the PM_4 total emission factors to be between the $PM_{2.5}$ and PM_{10} emission factors. The PM_4

crystalline silica emission factors will depend on the crystalline silica content of the PM_4 total PM.

Ambient Crystalline Silica Concentrations

No PM_4 ambient concentration or emission factor data have been published. All previous crystalline silica ambient concentration data applied to the $PM_{2.5}$, PM_{10}, and/or PM of 15-μm or less (PM_{15}) size ranges.

One of the first studies of ambient crystalline silica concentrations was conducted by Davis et al.[10] This study focused on urban areas. Ambient crystalline silica concentrations were measured in 22 urban areas using dichotomous samplers that separate ambient PM into the 0- to 2.5-μm range ("fine PM") and the 2.5- to 15-μm range (termed here as "coarse/supercoarse PM"). Davis et al. measured mean 24-hr average ambient crystalline silica concentrations ranging from 0.9 to 8 $\mu g/M^3$ in the coarse/supercoarse size range. Crystalline silica was 1–9% of the coarse/supercoarse PM and 0–2.6% of the fine (<2.5 μm) PM.

EPA[11] used the data of Davis et al. to derive estimates of the annual average crystalline silica levels in urban areas. The city-specific crystalline silica content values were multiplied by annual average PM_{10} concentrations in these areas to estimate the annual average PM_{10} crystalline silica levels. EPA also calculated an annual average of 1.9 $\mu g/m^3$ with a range of 0.8–5 $\mu g/m^3$ in the PM_{10} size range. The crystalline silica content in the $PM_{2.5}$ size range was consistently less than 1 $\mu g/m^3$ because of the low crystalline silica content of the $PM_{2.5}$ PM and the low total concentration of $PM_{2.5}$ PM.

In 2000, the National Stone, Sand, & Gravel Association (NSSGA) sponsored upwind-downwind studies of ambient crystalline silica concentrations at four stone crushing plants processing high-quartz-content rock.[12] Air Control Techniques, P.C. used Rupprecht & Patashnick Co, Inc. Federal Reference Method (FRM)-2000 samplers that fully met the stringent design and operating specifications of 40 *Code of Federal Regulations* (CFR) Part 50, Appendix L.[13] The measured 8-hr working-shift PM_{10} crystalline silica concentrations at the collocated downwind PM_{10} samplers ranged from 1 to 10.9 $\mu g/m^3$. These values are similar to the range of mean 24-hr concentration values of 0.9–8 $\mu g/m^3$ for 24-hr concentrations measured by Davis et al. in the coarse/supercoarse size range. The measured upwind and downwind concentrations were similar. The crystalline silica levels of 5.07–6.24% by weight of the PM_{10} were similar to the 4.9 ± 2.3% levels in coarse/supercoarse PM reported by Davis et al.

Various other studies have provided limited data for urban, rural, and industrial areas. Puledda[14] measured PM_{10} crystalline silica levels in Rome, Italy of 0.11–2.27 $\mu g/m^3$. These levels were 1.7–3.4% of the measured PM_{10}. Norton and Gunter[15] measured PM_{10} crystalline silica levels averaging 10% in Moscow, ID. They also extracted PM from PM_{10} samples from numerous areas throughout Idaho and estimated crystalline silica levels to be between 7 and 16% of PM_{10} in various urban and rural areas in Idaho. Various other studies described by EPA[11] at urban, rural, and industrial areas indicated 24-hr average crystalline silica levels and crystalline silica contents in PM_{10} that were similar to those in Davis et al.,[10] Air Control Techniques, P.C.,[12] Puledda,[14] and Norton and Gunter.[15] These other studies include Schipper,[16] Goldsmith,[17] Chow et al.,[18] Chow,[19] and Chow.[20] Only the study of Shakari and Holmen[21] reported crystalline silica levels and PM_{10} crystalline silica contents outside of the range of the various papers summarized above. There are insufficient data in Shakari and Holmen to identify the possible reasons for the differences between their data and other studies.

On the basis of the available ambient crystalline silica data, the study participants concluded that there was a need for a monitoring technique having a minimum detectable limit of 0.3 $\mu g/m^3$. This is at or below the concentrations anticipated in this project. This minimum detectable concentration is also 10% of the California Relative Exposure Limit. An evaluation of National Institute for Occupational Safety and Health (NIOSH) Method 0600 used for in-plant industrial hygiene tests indicated that this method was not sufficiently precise at the necessary detection limit. Accordingly, the California Construction and Industrial Minerals Association (CalCIMA) and NSSGA sponsored the development of a more accurate and precise PM_4 crystalline silica monitoring method for this project. Information concerning the development of the PM_4 crystalline silica monitoring method on the basis of the validated $PM_{2.5}$ test method is described in the project report.[22]

TEST LOCATIONS AND PROCEDURES

PM_4 Crystalline Silica Measurement Test Locations

Study participants selected facilities for testing on the basis of (1) the representativeness of a vibrating screen, tertiary crusher, and conveyor transfer point of other California plants; (2) the representativeness of the crystalline silica content of the minerals processed; (3) the accessibility of the equipment for testing; (4) the capability to isolate the process unit tested from adjacent process units; and (5) the geographical location. The plants included the Service Rock Products, Inc. plant in Barstow; the Vulcan Materials, Inc. Carroll Canyon plant near San Diego; and the Teichert Aggregates, Inc. Vernalis plant near Tracy. These plants had crystalline silica levels ranging from 16.5 to 35.3% by weight in the minerals being processed.

PM_{10} data were compiled to provide a comparison of measured PM_4 crystalline silica emissions with measured PM_{10} emissions. The scope of the programs at each of these three facilities included PM_{10} emission factor tests on the crushers, vibrating screens, and conveyor transfer points.

The specific sources tested at Barstow included (1) a 16- by 5-ft flat vibrating screening operation, (2) a shorthead crusher, and (3) a conveyor transfer point. The equipment tested at Carroll Canyon included (1) a 16- by 8-ft flat vibrating screen, (2) a set of two cone crushers, and (3) a conveyor transfer point. The sources tested at Vernalis included (1) a 20- by 8-ft triple deck sloped vibrating screen, (2) a set of two cone crushers, and (3) a conveyor transfer point. Water sprays controlled all of the units with the exception of the Carroll Canyon cone

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crushers. A fabric filter supplemented wet suppression control at the Carroll Canyon cone crushers.

PM_4 Crystalline Silica Measurement Procedures

The PM_4 crystalline silica emission concentrations were measured using TECO Model 2000 FRMs modified to have a 50% cut point of 4 μm rather than 2.5 μm. This monitoring method was developed for CalCIMA and NSSGA by Air Control Techniques, P.C. in accordance with a protocol submitted to the California Air Resources Board in July 2005. The authors consider this method to be an extension of the $PM_{2.5}$ ambient monitoring procedures specified by EPA in 40 CFR Part 50, Appendix L because of the use of identical sampling equipment, sampling procedures, and quality assurance procedures.

The main adjustment necessary to an Appendix L qualifying instrument is a change in the 50% cut size of this instrument from $PM_{2.5}$ to PM_4. The 50% cut size was adjusted by reducing the sample airflow rate into the TECO sharp cut cyclone to 11.1 L/min from the 16.67 L/min used for $PM_{2.5}$ monitoring. The adequacy of the cut size was confirmed using National Institute for Standards and Technology (NIST) traceable microspheres.

A calculated sampling time of 1–3 hr was required to meet the minimum detection limits of NIOSH 7500 for crystalline silica during tests on the process equipment. These sampling time estimates were based on (1) the NIOSH Method 7500 detection limit of 5 μg, (2) the TECO FRM 2000 sample gas flow rate of 11.1 L/min that was used to collect PM_4, and (3) the estimated crystalline silica content of the stone material being processed. Crystalline silica was detected in all but one filter sample, which confirmed the adequacy of the 1- to 3-hr sampling periods used in the study. The filter samples were weighted at R.J. Lee Group, Inc. using a microbalance and analyzed for crystalline silica using NIOSH Method 7500.

The fugitive PM_{10} PM emissions from the process equipment sources tested in Barstow were measured using a TECO tapered element oscillating microbalance (TEOM) in accordance with EPA Reference Method IO-3. For the tests at Carroll Canyon and Vernalis, the fugitive PM_{10} PM emissions were measured using TECO Model 2000 FRMs modified for PM_{10}.

Sampling arrays designed based on EPA Method 5D (40 CFR Part 60, Appendix A) captured process equipment PM_4 crystalline silica emissions. The mass fluxes

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Figure 1. Side view of the sampling array on the downwind side of the vibrating sizing screen at the Barstow plant.



Figure 2. South-side view of sampling array on downwind side of the conveyor transfer point at the Barstow plant.

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of PM_4 and PM_{10} fugitive PM through the arrays were calculated by multiplying the total area of the array by the ambient wind speed and the measured PM_4 and PM_{10} concentrations.

The arrays for the vibrating screens, tertiary crushers, and conveyor transfer points were mounted within 5 ft of the locations of PM entrainment by ambient air. Because of this close spacing of the arrays to the source, the "plume" did not have time to substantially disperse in the horizontal or vertical direction. Accordingly, the dispersing PM was captured from the sources even as the ambient winds shifted direction within an angle of approximately 90°.

Each sampling array had more than 100 sampling points. This substantially exceeds the 30 sampling points specified in EPA Method 5D for testing open-top sources. The area monitored by the sampling array exceeded the area subject to dispersion of the PM on the downwind side of the process unit being tested. Each array consisted of manifolds having equally spaced nozzles for air sampling. The gas transport velocities through all sampling tubes and ductwork were above a minimum of 3200 ft/min to prevent any gravitational settling of dust. The sampling manifolds and ductwork were visually inspected after each test run. Following each set of emission tests, the sampling array piping and flex ducts were disassembled and checked for solids deposits. No deposits were present in any sections of the sampling system. Wind speed data and wind direction data demonstrated that each test run was consistent with study requirements.

Each of the array sampling manifolds was ducted together to yield a single sample gas stream. This gas stream flowed through a round duct 12 in. in diameter with sampling ports for a TECO FRM 2000 (modified for PM_4) sampling head and a PM_{10} sampling head. This duct size was the minimum necessary to accommodate the relatively large inlet heads for the TECO FRM 2000 and the TEOM. The gas velocity through the portion of the duct with the sampling ports for the monitoring instruments was less than 10 mph to be consistent with typical ambient wind velocities.

The actual sample gas flow rates through the sampling arrays provided near-isokinetic sampling velocities in the nozzles of the sampling arrays. The nozzles provided isokinetic sampling velocities equal to or lower than 110% at an average ambient wind speed of 5 mph. At isokinetic sampling rates below 100%, there is a slight bias to higher-than-true PM_4 concentrations because of the inertia of the PM_4 particles; however, this isokinetic effect is small for PM_4 particles because of their extremely low mass. Figures 1–3 show the sampling array arrangements.

The ambient airflow rate through each array was calculated based on the area of the array and the measured ambient wind speed. The tests were conducted only when the ambient winds were moving across the process being tested and through the downwind array. The adequacy of fugitive dust capture by the array was documented on a continuous basis using visible wind direction indicators and on an intermittent basis using a nephelometer continuous PM concentration analyzer inside and outside of the array.



Figure 3. Close-up view of the sampling orifices in the conveyor transfer point array at the Carroll Canyon plant.

As part of this testing program, meteorological monitoring stations were installed to measure the following parameters during the process equipment test programs.

- Average and peak wind speeds
- Wind direction
- Ambient temperature

The sample gas velocities and volumetric flow rates through the main sampling duct during the PM_4 and PM_{10} tests were determined according to the procedures outlined in EPA Reference Method 2.

The authors believe that this fugitive dust capture technique provides the most accurate means possible to quantify fugitive dust emissions without affecting the rate of fugitive dust emissions and without interfering with safe plant operations.

PM_4 Emission Factor Test Program Process Data

During each of the test runs, study participants compiled data concerning the process operating conditions and the characteristics of the materials being handled.

- Crystalline silica content of aggregate being processed through the tested units
- Material moisture content (% wt)
- Material particle size distribution (sieve analyses)
- Material throughput (t/hr)

Ambient PM_4 Crystalline Silica Measurements

The PM_4 crystalline silica ambient concentrations were measured using TECO Model 2000 FRMs adjusted for PM_4 monitoring. Two Model 2000 FRMs were located

Table 1. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Barstow.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent[b]	Emission Factor
Vibrating screen	PM_{10}	0.000167[a,c]	NA[c]	0.000167[a,c]
	PM_4	0.000079[c]	NA[c]	0.000079[c]
	PM_4 crystalline silica	0.000006[c]	NA[c]	0.000006[c]
Crusher	PM_{10}	0.002753	0.000172	0.002581
	PM_4	0.001442	0.000172	0.001270
	PM_4 crystalline silica	0.000111	0.000028	0.000083
Conveyor transfer point	PM_{10}	0.000625	0.000050	0.000575
	PM_4	0.000402	0.000050	0.000352
	PM_4 crystalline silica	0.000035	0.000006	0.000029

Notes: [a]PM_{10} emission factors were calculated based on TEOM data. [b]Ambient levels of PM_4 PM and PM_4 crystalline silica upwind of the units tested were subtracted from the emission factors to account for material not emitted by the source. [c]Ambient levels of PM and crystalline silica upwind of the vibrating screens were not subtracted because the upwind samplers were below the elevation of the screens; therefore, the air quality at this elevation was not necessarily representative of air quality on the inlet side of the screen.

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Table 2. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Carroll Canyon.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent	Emission Factor
Vibrating screen	PM_{10}	0.000930	0.000100	0.000831
	PM_4	0.000386	0.000029	0.000356
	PM_4 crystalline silica	0.000048	0.000001	0.000046
Crusher	PM_{10}	0.001271	0.000039	0.001232
	PM_4	0.000611	0.000017	0.000593
	PM_4 crystalline silica	0.000099	0.000002	0.000098
Conveyor transfer point	PM_{10}	0.000552	0.000026	0.000525
	PM_4	0.000245	0.000009	0.000236
	PM_4 crystalline silica	0.000031	0.00000	0.000031

Table 3. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Vernalis.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent	Emission Factor
Vibrating screen	PM_{10}	0.001754	0.000061	0.001693
	PM_4	0.000888	0.000006	0.000882
	PM_4 crystalline silica	0.000083	0.000002	0.000081
Crusher	PM_{10}	0.001767	0.000089	0.001677
	PM_4	0.000788	0.000021	0.000767
	PM_4 crystalline silica	0.000110	0.000001	0.000110
Conveyor transfer point	PM_{10}	0.001193	0.000103	0.001090
	PM_4	0.000476	0.000019	0.000457
	PM_4 crystalline silica	0.000088	0.000003	0.000085

Table 4. Comparison of measured PM_{10} PM emission factors and PM_4 crystalline silica emission factors.

Source	Plant	PM_{10} Emission Factors (lb/t)	Crystalline Silica PM_4 Factors (lb/t)	Ratio, Percent PM_4 Crystalline Silica to PM_{10}
Screen	Barstow	0.000167	0.000006	3.59
	Carroll Canyon	0.000831	0.000046	5.54
	Vernalis	0.001693	0.000081	4.78
Crusher	Barstow	0.002581	0.000083	3.21
	Carroll Canyon	0.001232	0.000098	7.95
	Vernalis	0.001677	0.00011	6.56
Conveyor transfer point	Barstow	0.000575	0.000029	5.04
	Carroll Canyon	0.000525	0.000031	5.90
	Vernalis	0.00109	0.000085	7.80

on the downwind side of the facility at a location immediately adjacent to the plant fence line. A single upwind Model 2000 FRM was located on the upwind side of the facility.

These instruments were operated for 24 hr and obtained sample volumes of 16 m^3. R.J. Lee Group, Inc. (RJL) weighed the filter samples using a microbalance and analyzed for crystalline silica using NIOSH Method 7500.

RESULTS

Emission Factor Test Results

The PM_{10}, PM_4, and PM_4 crystalline silica emission factors for the equipment sources measured at the three facilities are presented in Tables 1–3. The emission factors presented in the column on the right were calculated by subtracting the measured downwind concentrations from the measured upwind (ambient) concentrations.

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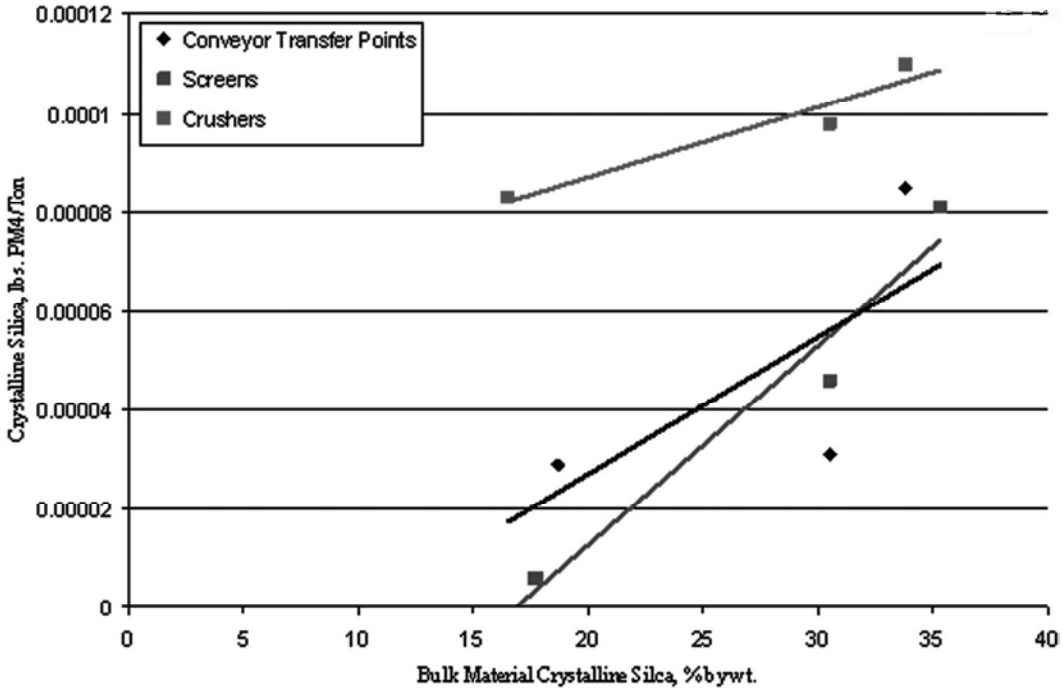


Figure 4. Relationship between bulk material crystalline silica content and the PM_4 crystalline silica emission factor.

As indicated in Table 4, the crystalline silica PM_4 emission factors range from 3.21 to 7.95% of the PM_{10} emission factors. This is a useful ratio because it compares the PM_4 crystalline silica emissions with PM_{10} emissions for which data are often available.

The plant-to-plant differences in PM_4 crystalline silica emission factors are primarily due to the crystalline silica content of the material being handled. As indicated in Figure 4, the bulk material crystalline silica content is responsible for most of the variance in the data. However, it is important to note that because of the small number of test values (three), it is not possible to demonstrate that the relationship between PM_4 crystalline silica emission factors and bulk crystalline silica content is significant at the 90% confidence level.

A less consistent relationship was observed for the conveyor transfer point tests. The reduced emission factor value for the Carroll Canyon plant (30.5% crystalline silica point) is probably due to the high aggregate throughput of this unit. It is theorized that at very high throughputs, some of the stone in the flowing material stream is shielded from attrition and, therefore, does not contribute to emissions. Despite this one test value, there appears to be a relationship between PM_4 crystalline silica emission factors and the crystalline silica content of the bulk material.

An alternative approach for summarizing the PM_4 crystalline silica concentrations is to compile average values for the datasets for the crushers, screens, and conveyor transfer points tested. Table 5 includes average values based on the data from the three plants provided in Tables 1–3.

Table 6 summarizes the crystalline silica fraction of the total PM_4. These data demonstrate that the crystalline silica content of the PM_4 material is considerably lower than the crystalline silica content measured in the bulk samples recovered from each unit tested. On the basis of an average of the tests at the three plants, the PM_4 crystalline silica content is 44% of the bulk material crystalline silica content. It is apparent that the crystalline silica content of the rock is not as prone to attrition size reduction as other constituents in the aggregate.

The process equipment PM_4 crystalline silica emission factors summarized in Tables 1–6 are consistent with previously published emission factors for $PM_{2.5}$ and PM_{10} from similar process units. The PM_4 crystalline silica emission factors are intended for use as input data to dispersion models to evaluate annual average PM_4 concentrations at plant fence lines.

Ambient PM_4 Crystalline Silica Concentrations

Ambient concentrations of PM_4 crystalline silica were measured during 3 consecutive 24-hr periods at the

Table 5. Average emission factors from Barstow, Carroll Canyon, and Vernalis: combined dataset.

Source	Analyte	Emissions (lb/t)
Vibrating screen	PM_{10}	0.00090 PM10 cs = 0.00009 lb/t
	PM_4	0.00044
	PM_4 crystalline silica	0.000044 PM4 cs = 10% of PM4
Crusher	PM_{10}	0.00183 PM10 cs = 0.0002 lb/t
	PM_4	0.00088
	PM_4 crystalline silica	0.000097 PM4 cs = 11% of PM4
Conveyor transfer point	PM_{10}	0.00073
	PM_4	0.00035
	PM_4 crystalline silica	0.000048

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Table 6. Crystalline silica fraction of PM_4 PM.

Plant	Source	Crystalline Silica Content (percent weight of total PM_4)	Crystalline Silica Content (percent weight of material samples)
Barstow	Screen	7.5	17.7
	Crusher	6.5	16.5
	Conveyor transfer point	8.3	18.7
	Average	6.9	17.3
Carroll Canyon	Screen	12.5	30.5
	Crusher	15.4	30.4
	Conveyor transfer point	12.8	30.6
	Average	13.6	30.5
Vernalis	Screen	9.6	35.3
	Crusher	21.9	33.9
	Conveyor transfer point	18.4	33.8
	Average	16.6	34.3

Carroll Canyon and Vernalis plants. Two collocated TECO FRM samplers modified for PM_4 crystalline silica measurement operated at a location downwind of the quarry and processing equipment. A single TECO FRM instrument for PM_4 crystalline silica monitoring operated at a location upwind of the entire facility being tested. Meteorological monitoring stations were placed at the upwind and downwind locations. The results of the ambient monitoring tests demonstrated that the plants operated at levels well below the 3-$\mu g/m^3$ REL value. Tables 7 and 8 summarize the results for the Carroll Canyon and Vernalis plants, respectively.

The differences between the upwind and downwind ambient PM_4 crystalline silica concentrations are small. The slightly higher upwind values observed during several of the test days are due to emissions from unpaved roads near the upwind monitoring sites.

Quality Assurance/Quality Control Procedures for PM_4 and PM_{10} Sampling

All of the PM_4 crystalline silica concentration tests conducted with modified Appendix L samplers included quality assurance (QA)/quality control (QC) procedures established by EPA for IO-1.3 (TEOMs) and 40 CFR Part 50, Appendix L (TECO FRM 2000s). The QA/QC data indicated that the TECO PM_4 samplers, the TECO PM_{10} samplers, and the TECO TEOM monitor used for PM_4 and PM_{10} monitoring performed extremely well throughout the three test programs.

All of the PM_4 concentration samplers used for emission factor testing and ambient air monitoring met all of the pre- and post-test requirements concerning filter temperature, ambient temperature, barometric pressure, sample flow, and sample gas stream leak rates.

A TEOM monitor was used during the tests at Barstow for the emission factor tests of the tertiary crusher, the vibrating screen, and the conveyor transfer point. The TEOM monitor satisfied the pre- and post-test QA requirements concerning ambient temperature, barometric pressure, sample flow, and sample gas stream leak rates.

SUMMARY

PM_4 crystalline silica emission factors measured using an Appendix L-based filter sampler ranged from 0.000006 to 0.000110 lb/t of stone processed in vibrating screens, tertiary crushers, and conveyor transfer points. The measured PM_4 crystalline silica emissions ranged from 3.21 to 7.95% of the simultaneously measured PM_{10} emission factors. The PM_4 crystalline silica emissions measured in this study appeared to be related to the crystalline silica content of the mineral being handled. The concentration of crystalline silica in PM_4 PM averaged 44% of the crystalline silica content of the bulk mineral.

Ambient concentrations of PM_4 crystalline silica were measured upwind and downwind of the facilities during the emission factor test programs. The measured ambient concentrations of PM_4 crystalline silica ranged from below the detectable limit of 0.3 $\mu g/m^3$ to 2.8 $\mu g/m^3$. These concentrations are well below the California REL of 3 $\mu g/m^3$.

Table 7. Plant upwind-downwind ambient monitoring at Carroll Canyon.

	PM_4 Crystalline Silica ($\mu g/m^3$)		
Date	Upwind	Downwind (primary)	Downwind (collocated)
September 17	1.3	1.1	1.0
September 18	1.4	0.7	0.8
September 19	0.6	0.5	0.4

Table 8. Plant upwind-downwind ambient monitoring at Vernalis.

	PM_4 Crystalline Silica ($\mu g/m^3$)		
Date	Upwind	Downwind (primary)	Downwind (collocated)
September 24	0.8	0.6	0.9
September 25	2.8	0.9	0.8
September 26	2.5	0.0	1.2

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AIRx Testing Services, Inc.

Dates Tested:	January 11-13, 2022
Dates Tested:	January 18-21, 2022
Date Issued:	March 7, 2022
Revision Number:	0

SOURCE EMISSION TEST REPORT
RJ NOBLE COMPANY
ASPHALT PLANT- ORANGE, CALIFORNIA FACILITY
ONE (1) ROTARY DRYER BAGHOUSE

Facility No. 019167
Application No. 559511

Source Location:
RJ NOBLE COMPANY
15505 EAST LINCOLN AVENUE
ORANGE, CALIFORNIA

Submitted to:
Same as Above

Attention: Scott Fraser

For Submittal to:
South Coast Air Quality Management District
21854 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:
AIRx Testing Services, Inc.
2472 Eastman Avenue Unit #34
Ventura, CA 93003

Job Number
18031

Laboratory Report Number
222-007

Test Team Leader
Ken Kennepohl



Tom Porter, Vice President of Testing Services

Ken Kennepohl, Project Engineer

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1.0 SUMMARY

Source Tested:	RJ Noble Company Rotary Dryer Baghouse - Asphalt Plant
Test Location:	RJ Noble Company 15505 East Lincoln Avenue Orange, California 92865
Test Requested by:	SCAQMD
Test Objectives	Toxics testing for emission factor reporting: Health Risk Assessment.
Test Performed by:	AIRx Testing Services, Inc.
Personnel:	Ken Kennepohl, Wesley Hart, Ferodie Torres & Jacob Thompson
Test Methodology:	O2 & CO2: SCAQMD Method 100.1 Multiple Metals: CARB Method 436 Toxic Organics: EPA TO-15 PAHs: CARB Method 429 Total & Hexavalent Chromium: CARB Method 425 Formaldehyde/Acetaldehyde: CARB Method 430, EPA 0011/8315A Stack Gas Moisture %: SCAQMD Method 4.1 Stack Gas Flow Rate: SCAQMD Methos 1.1/2.1
Test Observed by:	--
Plant Contact:	Scott Fraser
Facility ID Number:	019167
SCAQMD Application Number:	559511
SCAQMD Permit Number:	N/A

2.0 INTRODUCTION

Air pollutant emissions from stationary sources in the Los Angeles Basin (Los Angeles, Orange, Riverside, and the non-desert portion of San Bernardino County) are regulated by the South Coast Air Quality Management District (SCAQMD). AIRx Testing Services, Inc. was contracted by RJ Noble Company to conduct source emission testing to determine emission factors for the facility Health Risk Assessment. The rotary dryer baghouse exhaust testing was conducted for Formaldehyde, Acetaldehyde, PAH, Total Chromium, Hexavalent Chromium, Multiple Metals, Toxic Organics, Exhaust Gas Flow Rate, Exhaust Gas Moisture Percentage, O2 and CO2.

Source testing was conducted by AIRx Testing Services personnel on January 11-13, 2022 and January 18-21, 2022, to measure gaseous toxic emissions from one (1) baghouse attached to a natural gas fired rotary dryer baghouse. Testing was conducted while operating at a normal load condition.

AIRx personnel directly involved with this test program were Ryan Yanagihara, Ferodie Torres, Ken Kennepohl, Jacob Thompson, Wesley Hart and Tom Porter. The contact for RJ Noble Company for this project was Scott Fraser.

The baghouse is equipped with a round stack 54" in diameter. The two, 3-inch male sample ports are located 0.6 diameters upstream and 3.0 downstream from a flow disturbance. Two (2) male sample ports were accessed from a platform around the stack circumference. A total of 24 traverse points (12 per port) were utilized used for the flow rate and concentration sampling. A stack diagram with traverse points is included in the attachments.

The Rotary Dryer fuel usage was recorded every 30 minutes for all test runs. Plant production in tons per hour was recorded every 30 minutes during all testing. Results for all detected pollutants are reported in concentration (ppmv or ppbv), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million Btu (lb/MMBtu).

The Rotary Dryer (ID No. D127) and Baghouse (C101) (A/N 559511) are identified as follows:

Dryer, Rotary, Astec, Double-Barrel Drum, Natural gas with Low NOx Burner, 100 MMBTU/Hr. Burner: Natural gas Astec, Model Phoenix, With Low NOx Burner, 100 MMBTU/Hr.

Baghouse, Astec Industries, Model RBH-85W, 1280 Bags, Aromid Bags, 15499 square feet, 300 horsepower, pulse jet cleaning type, with Goyen, Model EMP6, Bag leak detection system, AN 559511

3.0 PROCESS DESCRIPTION

The facility produces asphalt by using virgin aggregate material and RAP material. The testing was conducted. While the plant was producing mix that included 5% to 35% RAP. The plant was producing mix that includes asphalt binder which has a range of 0% to 20% rubber.

The particulate emissions are controlled with a fabric baghouse attached to the Astec rotary drum dryer. The subject test was conducted determine the mass emissions of the required pollutants from the existing baghouse exhaust stack.

COMMENTS:

At the conclusion of the first day of sampling (January 11, 2022), it was determined that the baghouse had developed an issue. The first day of sampling consisted of an eight (8) hour test run for Multiple Metals and PAH. An additional three (3) test runs were conducted for Multiple Metals and PAH. The first test run results have been included in this test report and is labeled as sample A. The following three (3) sample runs were designated Runs 1-3. Please note that only runs 1 through 3 were averaged for pollutant reporting, since run A is not indicative of normal operation for this unit.

This report also includes an CD with four videos of the rotary dryer and baghouse. The four (4) videos are from different test dates and were taken concurrently while sampling was being performed. These videos have been supplied as per the request of the SCAQMD to show if any fugitive emissions were escaping the process. The four (4) videos do not show any evidence of fugitive emissions being present.

The Rotary Dryer fuel usage and plant production in tons per hour was recorded every 30 minutes for all test runs. Results for all detected pollutants are reported in concentration (ppmv or ppbv), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU (lb/MMBtu).

4.0 TEST PROCEDURES

Formaldehyde & Acetaldehyde CARB Method 430/EPA Method 0011/SW846:

Aldehyde concentrations were determined in triplicate according to a Modified CARB Method 430/EPA Method 0011/SW846. Sampling was conducted isokinetically for 120 minutes for each of three test runs. Three (3) test runs were conducted. The sample train consists of a glass nozzle, a glass probe attached to three (3) full sized impingers, each containing approximately 100 ml of fresh acidic DNPH solution. (NOTE: The third impinger, with the appropriate solutions, is added to avoid possible formaldehyde breakthrough). The 12" transfer Teflon line to the impingers is not heated as the entire line is rinsed into the first impinger after the end of each test run.

The acidic DNPH solution was supplied by Atmospheric Analysis and Consulting (AAC) of Ventura, California and was used within 48 hours following preparation.

Four (4) DNPH reagent blanks were analyzed for contamination prior to use in the field as per Section 3, page 4 of CARB Method 430. As per Section 4.2.2 the sample/field blank ratio shall be equal to or greater than five (5) as calculated per Section 11.9.

The samples were kept on ice and then returned to the laboratory for recovery and delivery to AAC for analysis by HPLC with a UV detection system. The recovered samples and field blanks were kept refrigerated or kept on ice prior delivery to AAC. The samples were delivered to AAC within 24-48 hours after the sampling. As per the method the samples were extracted within seven (7) days and the extract analyzed within 30 days

The appropriate field blanks were submitted for analysis along with the samples. Each impinger was weighed prior to submission for analysis. Each impinger was analyzed separately as per Section 8.4 – Analytical procedures (Warning #2) and the results are reported in ug/sample. The resulting concentrations (ug/dscm) from each analysis are added together to obtain the total weight of the aldehydes for each test run. The final results are reported in ppmv, pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

The following procedures are to be followed for Modified Method 430 (with the addition of toluene) /EPA Method 0011/SW846:

i. Fields Blanks: Taken by AIRx. Three (3) field blanks were taken by using Teflon tubing the same length as our sample line attached to one (1) impinger. Two (2) ml of DNPH solution is flushed through the tubing followed by one (1) ml of DI water. The vials are capped and labeled as field blanks 1-3. A spiked field blank was taken for Acrolein by adding a known amount of Acrolein to an empty vial in the laboratory and the DNPH was added in the field and then recovered as a field blank.

ii: Matrix Spike: The first impinger from one (1) of the test runs was spiked with a know amount of acrolein prior to delivery to the field. The DNPH and the Toluene is added in the field. The results are reported as percent recovery with the difference being the amount in the gas stream.

TEST PROCEDURES (cont)

Formaldehyde & Acetaldehyde CARB Method 430 EPA Method 0011/SW846/ (cont):

i: Reagent Blank: Conducted by AAC in house. An analysis is conducted on the DNPH solution returning from the field.
ii: Laboratory Spikes: Conducted by AAC in house. One (1) 10 ml portion of the DNPH solution returning from the field will be spiked with the three (3) constituents and the percent recovery reported.
iii: The QA on the stock DNPH solution: Conducted by AAC in house. Four (4) samples of the fresh DNPH solution will be analyzed prior to delivery to AIRx. The values have been reported in the final report.

Formaldehyde and Acetaldehyde results are reported in ppmv, ug/sample, lb/hr, lb/ton and lb/MMBtu.

NOTE: The Modified CARB 430/EPA Method 011/8315 was utilized due to prior discussions with the SCAQMD on an identical asphalt plant process. The modification in sampling replaces the midget impingers with full sized impingers but includes the QA/QC procedures required by CARB Method 430.

TEST PROCEDURES (cont)

Total & Hexavalent Chromium CARB Method 425:

California Air Resources Board Method (CARB) 425 was used to determine the emission rates of total and hexavalent chromium. The sample train consists of a glass nozzle, a glass probe and a flexible Teflon line followed by four impingers in series. The first two (2) impingers are Greenberg-Smith type and contain 100 ml of sodium bicarbonate (NaHCO3) solution. The third impinger is a modified type and is empty. A 47-millimeter, Teflon Coated glass fiber filter is placed between the third and fourth impingers. The fourth impinger contains approximately 200 grams of Silica Gel desiccant.

The samples were collected isokinetically for three (3) 360 minutes (6 hours) runs by using 24 traverse points. The impinger solutions was checked for sufficiently high pH (>8) upon recovery.

As directed in Section 13.3.2 of CARB Method 425 (Lower Concentrations), the sample train was recovered as follows:

The probe and nozzle rinse is placed into container #1. The contents of impinger #1 and rinses were placed into container #2. Impinger #2 solution and rinses were placed into container #3. The 47mm filter were placed into container #2. The resulting samples were refrigerated until delivery to Chester Labnet located in Tigard Oregon.

The three (3) fractions were each analyzed for total and hexavalent Chromium. Analysis for Hexavalent Chromium was performed using ion chromatography.

A schematic of the CARB Method 425 train is provided in the attachments.

NOTE: Prior to use of the sample train, the probe was prewashed with the NaHCO3 solution. A sample of the probe prewash will be submitted to the laboratory for Hexavalent Chromium analysis to assure the absence of Hexavalent Chromium.

As per CARB Method 425, section 21.2 "Alternative Test Methods", NaHCO3 impinger solution may be utilized provided that at all times during sampling and transport of samples, the pH of the impinger solutions be maintained above a pH of 8.0 as determined by the use of a clean rod and color indicating paper for pH. This alternative is highly recommended by the analytical laboratory.

NOTE: The stack moisture was determined gravimetrically using the CARB Method 425 sample train. The four (4) impingers were pre-weighed prior to the sampling and then reweighed after completion of the sampling.

TEST PROCEDURES (cont)

Total & Hexavalent Chromium CARB Method 425 (cont):

California Air Resources Board Method 425 requires pretest calculations to determine the minimum sample volume and sampling duration to meet the detection limits necessary to demonstrate compliance with applicable standards.

1) Section 3.4.2; Equation 425.2 – Reporting Limit (RL)

RL = LOD*220 = 0.2 ng/ml*220 ml = 44 ng

2) Section 3.5.2; Equation 425.3 – Minimum Sample Volume

MSV = RL*1/STC = 44*1/10ng/dscm = 4.4 dscm (155 cfm)

3) Section 3.5.3; Equation 425.4 – Minimum Sampling Time (MST)

MST = MSV/VSR = 4.4/45 dscf/hr or 1.27 dscm/hr = 3.5 hr

4) Section 3.5.4; Equation 425.6 – Planned Sample Volume (PSV)

PSV = PST*VSR = 8*1.0 = 8.0 dscm (282 cf)

Section 3.5.6 Equation 425-8 – Source Reporting Limit (SRL)

SRL = RL/PSV = 44/8.0 = 5.5 ng/dscm = 0.0055 mg/dscm

A blank train was prepared, transported to the site, recovered and analyzed in the same manner as the actual sample trains. All requirements established in CARB Method 425 were be adhered to.

All analyses conformed to the requirements of CARB Method 425 and all applicable QA/QC measures included in the final report.

Total and Hexavalent Chromium results are reported in gr/dscf, lb/hr, lb/ton and lb/MMBtu.

TEST PROCEDURES (cont)

Multiple Metals, CARB Method 436:

The Multiple Metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Phosphorous, Selenium, Silver, Thallium, Vanadium and Zinc) has been reported as pounds per hour. The sampling was conducted according to CARB Method 436, a description of which can be found in the Attachments. Three (3) 480-minute isokinetic samples were taken from the baghouse exhaust stack. The Multiple Metals samples were refrigerated until delivery to Chester Labnet located in Tigard Oregon.

The Multiple Metals sampling train consists of a glass nozzle, heated probe, heated filter, a series of six impingers immersed in an ice bath and a silica gel impinger.

The following system was used for the condensation and collection of gaseous metals and for determining the moisture content of the stack gas:

The impinger train consisted of six (6) impingers. Impingers are connected in series with leak-free ground glass fittings or other leak-free, non-contaminating fittings and immersed in an ice bath. The first impinger is utilized as a water knockout trap for use during test conditions where high stack gas moisture content might result in considerable dilution of the impinger solutions.

The impingers utilized in the multiple metals train are described as follows:

The first impinger was used as a water knockout, it was of the Greenburg-Smith design modified to have either a short or long stem, appropriately sized for the expected moisture catch and installed empty. The second impinger was of the Greenburg-Smith design modified to have a long stem as described for the first impinger in ARB Method 5, Section 2.1.7 and contain 100 ml of 5%HNO/10% H2O2 solution. The third impinger (or the impinger used as the second HNO/H2O2 impinger) was of the Greenburg-Smith design with the standard tip as described for the second impinger in ARB Method 5, Paragraph 2.1.7 and contain 100 ml of 5%HNO/10% H2O2 solution. The fourth impinger was installed empty and was of the Greenburg-Smith design modified to have a short stem. The function of the fourth impinger was to prevent commingling of the solution in the second and third impingers with the solution in the fifth and sixth impingers. The fifth and sixth impingers was of the Greenburg-Smith design modified to have a long stem and shall each contain 100 ml of acidic potassium permanganate (4% KMnO4/10%4H2SO4) solution. A thermometer capable of measuring to within 1C (2F) was placed at the outlet of the last impinger

Each of the multiple metals are reported in grains per dry standard cubic feet (gr/dscf), pounds per hour (lb/hr), pounds per ton of asphalt produced (lbs/ton) and pounds per million BTU (lb/MMBtu).

TEST PROCEDURES (cont)

Toxic Organics, EPA Method TO-15:

The toxic organics were sampled in duplicate from the dryer outlet for each of the three (3) 60-minute test runs. Summa passivated canisters were utilized to sample for the toxic organics. The Summa canisters were equipped with preset calibrated mass flow controllers. The sampling was integrated over each 60-minute test run. The samples were submitted to Atmospheric Analysis and Consulting (AAC) for analyses by GC/MS (TO-15).

The analyses followed EPA Method TO-15 methodology. The reported detection limit is 0.001 ppmv or 1 ppbv. The sample is cryogenically pre-concentrated in a series of multi-bed traps, with water and CO2 management protocols, and finally cryofocused before desorption into the gas chromatograph.

Upon separation in the Gas Chromatograph, the sample is introduced into the mass spectrometer. The HAPs characteristic retention time and mass spectra qualitatively identify compounds. The results have been reported in ppbv, lb/hr and lbs/ton of asphalt.

The TO-15 results are reported in ppbv, pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

TEST PROCEDURES (cont)

PAH, CARB Method 429:

PAH concentrations were determined in triplicate according CARB Method 429. Sampling was conducted isokinetically for 480 minutes. The sample train consists of a quartz sample probe with the appropriate nozzle, an "s" type pitot tube, a Teflon filter, a spiral condenser, a spiked sorbent module, two (2) preweighed Greensburg-Smith impingers containing 100 ml of 3mM Sodium bicarbonate/2.4 mM Sodium Carbonate, a third dry preweighed impinger and a fourth preweighed impinger containing silica get

The samples were sealed and returned to the laboratory for recovery. The recovery includes rinsing the nozzle, probe and top half of the filter holder three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Front half rinses'. The filter is removed from holder and placed into a petri dish. The bottom half of the filter holder, connector connection and the spiral condenser is rinsed three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Back half rinses". The rinses may be combined with the "front half rinses" container. The impingers are reweighed then the solution transferred to a container labeled "Impinger contents". The impingers are then rinsed three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Impinger rinses". The rinses may be combined with the container labeled as "Impinger contents". The silica get impinger is reweighed. The field blank will be recovered and submitted for analysis along with the samples.

The cleaned XAD resin and filters were supplied by Vista Analytical located in El Dorado Hill. The samples sent to VISTA Analytical for analysis according to procedures outlined in CARB Method 429.

The PAH results are reported in nanogram per sample (ng/sample), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

TEST PROCEDURES (cont)

Stack Gas Oxygen, Carbon Dioxide, SCAQMD Method 100.1:

The CEM sampling system consists of a stainless-steel probe, a heated Teflon sample line and a sample gas conditioner that cools the gas to <60°F entering a gas conditioner prior to distribution to the analyzers. The conditioner dries the gas to <37°F. The stack gas was extracted from the stack with a pump into the sample gas conditioner and transported under positive pressure to the flowpanel, which distributes the dry conditioned gas to the appropriate analyzers. A traverse was conducted on the exhaust stack to determine the presence or absence of stratification of a pollutant. A bias (probe tip) check was made at the beginning and end of each run to determine sample system integrity. EPA Protocol quality calibration gases were used for calibrating the analyzers. The stack was initially traversed utilizing sampling utilizing half the number of points dictated for a particulate traverse to determine the presence of stratification. No stratification was observed (<10% of average) thus a single representative sample point will be utilized. Data was continuously collected with a DAS and on a 10" strip chart recorder.

5.0 TEST RESULTS AND DISCUSSION

A summary of the emissions results has been provided on pages 5-2 thru 5-17

We are evaluating re-performing the Formaldehyde sampling due to the third run anomaly that yielded suspect high results and re-performing the Multiple Metals sampling due to the suspect high Aluminum results.

AIR TESTING SERVICES, INC.

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) SUMMARY

CARB 429

Client : RJ Noble
Site : Orange, CA
Unit : Baghouse

T std: 60 °F

Date : 1/11/2022
Job #: 18031
Lab #: 222-007

RUN A

Compound Name	lb/hr	lb/ton	lb/mmbtu
Acenaphthene	**0.0000059**	**0.000000015**	**0.00000011**
Acenaphthylene	**0.000024**	**0.000000064**	**0.00000044**
Anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benz(a)anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(a)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(e)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(b)fluoranthene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(g,h,i)perylene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(k)fluoranthene	< 0.000000083	< 0.00000000022	< 0.0000000015
Chrysene	**0.00000044**	**0.0000000012**	**0.0000000079**
Dibenz(a,h)anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Fluoranthene	**0.0000028**	**0.0000000074**	**0.000000051**
Fluorene	**0.000023**	**0.000000061**	**0.00000042**
Indeno(1,2,3-cd)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
2-Methylnaphthalene	**0.00070**	**0.0000018**	**0.000013**
Naphthalene	**0.0020**	**0.0000053**	**0.000036**
Perylene	< 0.000000083	< 0.00000000022	< 0.0000000015
Phenanthrene	**0.000029**	**0.000000076**	**0.00000052**
Pyrene	**0.0000019**	**0.0000000051**	**0.000000035**

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

AIR TESTING SERVICES, INC.

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) SUMMARY

CARB 429

Client : RJ Noble
Site : Orange, CA
Unit : Baghouse

T std: 60 °F

Date : 1/12, 1/18 & 1/19/22
Job # 18031
Lab #: 222-007

RESULTS in lb/hr

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.000017**	**0.000089**	**0.00013**	**0.000075**
Acenaphthylene	**0.000068**	**0.00029**	**0.00050**	**0.00029**
Anthracene	< 0.00000013	**0.0000082**	**0.0000083**	**0.0000055**
Benz(a)anthracene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(a)pyrene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(e)pyrene	**0.00000016**	< 0.000000084	< 0.00000011	**0.000000085**
Benzo(b)fluoranthene	**0.00000013**	< 0.000000084	< 0.00000011	**0.000000076**
Benzo(g,h,i)perylene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(k)fluoranthene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Chrysene	**0.0000011**	**0.00000023**	**0.00000037**	**0.00000056**
Dibenz(a,h)anthracene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Fluoranthene	**0.000016**	**0.0000081**	**0.0000059**	**0.0000101**
Fluorene	**0.000047**	**0.000099**	**0.00015**	**0.000098**
Indeno(1,2,3-cd)pyrene	< 0.00000013	< 0.000000084	< 0.00000011	< 0.00000011
2-Methylnaphthalene	**0.0011**	**0.0021**	**0.0041**	**0.0024**
Naphthalene	**0.0028**	**0.0089**	**0.015**	**0.0089**
Perylene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Phenanthrene	**0.000061**	**0.00014**	**0.00017**	**0.00013**
Pyrene	**0.000024**	**0.0000032**	**0.0000049**	**0.0000108**

RESULTS in lb/ton

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.000000050**	**0.00000038**	**0.00000056**	**0.00000033**
Acenaphthylene	**0.00000020**	**0.0000012**	**0.0000021**	**0.0000012**
Anthracene	< 0.00000000038	**0.000000035**	**0.000000035**	**0.000000023**
Benz(a)anthracene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(a)pyrene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(e)pyrene	**0.00000000048**	< 0.00000000035	< 0.00000000044	**0.00000000029**
Benzo(b)fluoranthene	**0.00000000040**	< 0.00000000035	< 0.00000000044	**0.00000000026**
Benzo(g,h,i)perylene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(k)fluoranthene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Chrysene	**0.0000000032**	**0.0000000010**	**0.0000000015**	**0.0000000019**
Dibenz(a,h)anthracene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000037**
Fluoranthene	**0.000000048**	**0.000000034**	**0.000000025**	**0.000000036**
Fluorene	**0.00000014**	**0.00000042**	**0.00000062**	**0.00000039**
Indeno(1,2,3-cd)pyrene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
2-Methylnaphthalene	**0.0000033**	**0.0000090**	**0.000017**	**0.0000097**
Naphthalene	**0.0000083**	**0.000037**	**0.000063**	**0.000036**
Perylene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Phenanthrene	**0.00000018**	**0.00000061**	**0.00000073**	**0.00000051**
Pyrene	**0.000000072**	**0.000000013**	**0.000000020**	**0.000000035**

PAH RESULTS in lb/MMBtu

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.00000021**	**0.0000017**	**0.0000025**	**0.00000147**
Acenaphthylene	**0.00000085**	**0.0000056**	**0.0000093**	**0.0000053**
Anthracene	< 0.0000000016	**0.00000016**	**0.00000015**	**0.00000010**
Benz(a)anthracene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(a)pyrene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(e)pyrene	**0.0000000020**	< 0.0000000016	< 0.0000000020	**0.0000000013**
Benzo(b)fluoranthene	**0.0000000017**	< 0.0000000016	< 0.0000000020	**0.0000000011**
Benzo(g,h,i)perylene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(k)fluoranthene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Chrysene	**0.000000014**	**0.0000000044**	**0.0000000068**	**0.0000000083**
Dibenz(a,h)anthracene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Fluoranthene	**0.00000020**	**0.00000016**	**0.00000011**	**0.00000016**
Fluorene	**0.00000059**	**0.0000019**	**0.0000028**	**0.0000018**
Indeno(1,2,3-cd)pyrene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
2-Methylnaphthalene	**0.000014**	**0.000041**	**0.000075**	**0.000043**
Naphthalene	**0.000035**	**0.00017**	**0.00028**	**0.00016**
Perylene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Phenanthrene	**0.00000076**	**0.0000028**	**0.0000032**	**0.0000023**
Pyrene	**0.00000030**	**0.000000062**	**0.000000090**	**0.00000015**

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 436

	Run A
Aluminum Weight (g)	0.254
Aluminum Emissions (grain/Dscf)	0.0119
Aluminum Flow Rate (lb/hr)	2.24
Aluminum (lb/ton)	0.0059
Aluminum (lb/mmbtu)	0.043
Antimony Weight (g)	0.0000768
Antimony Emissions (grain/Dscf)	0.00000360
Antimony Flow Rate (lb/hr)	0.00068
Antimony (lb/ton)	0.0000018
Antimony (lb/mmbtu)	0.000013
Arsenic Weight (g)	< 0.00000315
Arsenic Emissions (grain/Dscf)	< 0.000000148
Arsenic Flow Rate (lb/hr)	< 0.000028
Arsenic (lb/ton)	< 0.000000073
Arsenic (lb/mmbtu)	< 0.00000054
Barium Weight (g)	0.00191
Barium Emissions (grain/Dscf)	0.0000895
Barium Flow Rate (lb/hr)	0.017
Barium (lb/ton)	0.000044
Barium (lb/mmbtu)	0.00032
Beryllium Weight (g)	0.00000415
Beryllium Emissions (grain/Dscf)	0.000000194
Beryllium Flow Rate (lb/hr)	0.000037
Beryllium (lb/ton)	0.000000096
Beryllium (lb/mmbtu)	0.00000070
Cadmium Weight (g)	0.0000183
Cadmium Emissions (grain/Dscf)	0.000000857
Cadmium Flow Rate (lb/hr)	0.00016
Cadmium (lb/ton)	0.00000042
Cadmium (lb/mmbtu)	0.0000031
Chromium Weight (g)	0.000131
Chromium Emissions (grain/Dscf)	0.00000614
Chromium Flow Rate (lb/hr)	0.0012
Chromium (lb/ton)	0.0000030
Chromium (lb/mmbtu)	0.000022
Cobalt Weight (g)	0.0000553
Cobalt Emissions (grain/Dscf)	0.00000259
Cobalt Flow Rate (lb/hr)	0.00049
Cobalt (lb/ton)	0.0000013
Cobalt (lb/mmbtu)	0.0000094
Copper Weight (g)	0.0000546
Copper Emissions (grain/Dscf)	0.00000256
Copper Flow Rate (lb/hr)	0.00048
Copper (lb/ton)	0.0000013
Copper (lb/mmbtu)	0.0000093
Lead Weight (g)	< 0.0000753
Lead Emissions (grain/Dscf)	< 0.00000353
Lead Flow Rate (lb/hr)	< 0.00066
Lead (lb/ton)	< 0.0000017
Lead (lb/mmbtu)	< 0.000013
Manganese Weight (g)	0.00285
Manganese Emissions (grain/Dscf)	0.00013
Manganese Flow Rate (lb/hr)	0.025
Manganese (lb/ton)	0.000066
Manganese (lb/mmbtu)	0.00048

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

CALCULATED EMISSION RESULTS CARB METHOD 436 (Continued)

	Run A
Mercury Weight (g)	< 0.00000667
Mercury Emissions (grain/Dscf)	< 0.00000031
Mercury Flow Rate (lb/hr)	< 0.000059
Mercury (lb/ton)	< 0.00000015
Mercury (lb/mmbtu)	< 0.0000011
Nickel Weight (g)	0.0000685
Nickel Emissions (grain/Dscf)	0.00000321
Nickel Flow Rate (lb/hr)	0.00060
Nickel (lb/ton)	0.000063
Nickel (lb/mmbtu)	0.000012
Phosphorous Weight (g)	0.00256
Phosphorous Emissions (grain/Dsc	0.000120
Phosphorous Flow Rate (lb/hr)	0.023
Phosphorous (lb/ton)	0.000059
Phosphorous (lb/mmbtu)	0.00043
Selenium Weight (g)	< 0.00003380
Selenium Emissions (grain/Dscf)	< 0.00000158
Selenium Flow Rate (lb/hr)	< 0.00030
Selenium (lb/ton)	< 0.00000078
Selenium (lb/mmbtu)	< 0.0000057
Silver Weight (g)	< 0.000000900
Silver Emissions (grain/Dscf)	< 0.0000000422
Silver Flow Rate (lb/hr)	< 0.0000079
Silver (lb/ton)	< 0.000000021
Silver (lb/mmbtu)	< 0.00000015
Thallium Weight (g)	< 0.00002250
Thallium Emissions (grain/Dscf)	< 0.00000105
Thallium Flow Rate (lb/hr)	< 0.00020
Thallium (lb/ton)	< 0.00000052
Thallium (lb/mmbtu)	<0.0000038
Vanadium Weight (g)	0.0003270
Vanadium missions (grain/Dscf)	0.0000153
Vanadium Flow Rate (lb/hr)	0.0029
Vanadium (lb/ton)	0.0000076
Vanadium (lb/mmbtu)	0.000056
Zinc Weight (g)	0.000721
Zinc Emissions (grain/Dscf)	0.0000338
Zinc Flow Rate (lb/hr)	0.0064
Zinc Flow (lb/ton)	0.000017
Zinc Flow (lb/mmbtu)	0.00012

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 436

	Run 1	Run 2	Run 3	Average (3 Runs)
Aluminum Weight (g)	0.0742	0.00819	0.00122	0.02787
Aluminum Emissions (grain/Dscf)	0.003879	0.000432	0.0000798	0.00146
Aluminum Flow Rate (lb/hr)	1.03	0.086	0.017	0.38
Aluminum (lb/ton)	0.0031	0.00036	0.000070	0.0012
Aluminum (lb/mmbtu)	0.018	0.0010	0.00032	0.0064
Antimony Weight (g)	0.0000248	0.00000813	0.00000495	0.00001263
Antimony Emissions (grain/Dscf)	0.00000130	0.000000429	0.000000324	0.000000683
Antimony Flow Rate (lb/hr)	0.00034	0.000085	0.000068	0.00017
Antimony (lb/ton)	0.0000010	0.00000036	0.00000028	0.00000056
Antimony (lb/mmbtu)	0.0000060	0.0000010	0.0000013	0.0000028
Arsenic Weight (g)	< 0.00000315	0.00000349	0.00000315	<0.00000326
Arsenic Emissions (grain/Dscf)	< 0.000000165	0.000000184	0.000000206	< 0.000000185
Arsenic Flow Rate (lb/hr)	< 0.000044	0.000037	0.000043	< 0.000041
Arsenic (lb/ton)	< 0.00000013	0.00000015	0.00000018	< 0.00000016
Arsenic (lb/mmbtu)	< 0.00000076	0.00000045	0.00000083	<0.00000068
Barium Weight (g)	0.000594	0.0000761	0.0000136	0.0002279
Barium Emissions (grain/Dscf)	0.0000311	0.00000402	0.000000889	0.0000120
Barium Flow Rate (lb/hr)	0.0083	0.00080	0.00019	0.0031
Barium (lb/ton)	0.000025	0.0000034	0.00000078	0.0000096
Barium (lb/mmbtu)	0.00014	0.0000097	0.0000036	0.000052
Beryllium Weight (g)	0.0000012	< 0.00000045	< 0.000000090	< 0.000000580
Beryllium Emissions (grain/Dscf)	0.0000000627	< 0.0000000238	< 0.00000000588	< 0.0000000308
Beryllium Flow Rate (lb/hr)	0.000017	< 0.0000047	< 0.0000012	< 0.0000076
Beryllium (lb/ton)	0.000000050	< 0.000000020	< 0.0000000052	< 0.000000025
Beryllium (lb/mmbtu)	0.00000029	< 0.000000058	< 0.000000024	< 0.00000012
Cadmium Weight (g)	0.00000695	0.00000135	0.00000039	0.000002898
Cadmium Emissions (grain/Dscf)	0.000000363	0.000000071	0.0000000258	0.000000153
Cadmium Flow Rate (lb/hr)	0.000097	0.000014	0.0000054	0.000039
Cadmium (lb/ton)	0.00000029	0.000000060	0.000000023	0.00000012
Cadmium (lb/mmbtu)	0.0000017	0.00000017	0.00000010	0.00000065
Chromium Weight (g)	0.0000457	0.0000142	0.00000355	0.00002115
Chromium Emissions (grain/Dscf)	0.00000239	0.000000750	0.000000232	0.00000112
Chromium Flow Rate (lb/hr)	0.00064	0.00015	0.000049	0.00028
Chromium (lb/ton)	0.0000019	0.00000063	0.00000020	0.00000091
Chromium (lb/mmbtu)	0.000011	0.0000018	0.00000094	0.0000046
Cobalt Weight (g)	0.0000191	0.00000269	0.00000075	0.00000751
Cobalt Emissions (grain/Dscf)	0.000000998	0.000000142	0.0000000488	0.000000396
Cobalt Flow Rate (lb/hr)	0.00027	0.000028	0.000010	0.00010
Cobalt (lb/ton)	0.00000079	0.00000012	0.000000043	0.00000032
Cobalt (lb/mmbtu)	0.0000046	0.00000034	0.00000020	0.0000017
Copper Weight (g)	0.0000209	0.0000071	0.00000406	0.00001068
Copper Emissions (grain/Dscf)	0.00000109	0.000000374	0.000000265	0.000000577
Copper Flow Rate (lb/hr)	0.00029	0.000074	0.000056	0.00014
Copper (lb/ton)	0.00000086	0.00000031	0.00000023	0.00000047
Copper (lb/mmbtu)	0.0000050	0.00000091	0.0000011	0.0000023
Lead Weight (g)	0.0000272	0.00000825	0.00000661	0.00001402
Lead Emissions (grain/Dscf)	0.00000142	0.000000436	0.000000432	0.000000763
Lead Flow Rate (lb/hr)	0.00038	0.000087	0.000091	0.00019
Lead (lb/ton)	0.0000011	0.00000037	0.00000038	0.00000062
Lead (lb/mmbtu)	0.0000065	0.0000011	0.0000017	0.0000031
Manganese Weight (g)	0.000971	0.000112	0.00004530	0.0003761
Manganese Emissions (grain/Dscf)	0.0000508	0.00000591	0.00000296	0.0000199
Manganese Flow Rate (lb/hr)	0.014	0.0012	0.00062	0.0051
Manganese (lb/ton)	0.000040	0.0000050	0.0000026	0.000016
Manganese (lb/mmbtu)	0.00023	0.000014	0.000012	0.000087

CALCULATED EMISSION RESULTS CARB METHOD 436 (Continued)

	Run 1	Run 2	Run 3	Average (3 Runs)
Mercury Weight (g)	0.0000042	0.0000093	0.0000028	0.00000542
Mercury Emissions (grain/Dscf)	0.000000220	0.000000490	0.000000180	0.000000297
Mercury Flow Rate (lb/hr)	0.000059	0.000097	0.000038	0.000065
Mercury (lb/ton)	0.00000017	0.00000041	0.00000016	0.00000025
Mercury (lb/mmbtu)	0.0000010	0.0000012	0.00000073	0.00000098
Nickel Weight (g)	0.0000249	0.0000099	0.0000055	0.0000134
Nickel Emissions (grain/Dscf)	0.00000130	0.000000521	0.000000361	0.000000728
Nickel Flow Rate (lb/hr)	0.00035	0.00010	0.000076	0.00018
Nickel (lb/ton)	0.0000010	0.00000044	0.0000080	0.0000031
Nickel (lb/mmbtu)	0.0000060	0.0000013	0.0000015	0.0000029
Phosphorous Weight (g)	0.000670	0.000066	0.0000275	0.0002544
Phosphorous Emissions (grain/Dsc	0.0000350	0.00000346	0.00000180	0.0000134
Phosphorous Flow Rate (lb/hr)	0.0093	0.00069	0.00038	0.0035
Phosphorous (lb/ton)	0.000028	0.0000029	0.0000016	0.000011
Phosphorous (lb/mmbtu)	0.00016	0.0000084	0.0000072	0.000059
Selenium Weight (g)	< 0.00000675	0.0000068	0.0000108	< 0.0000081
Selenium Emissions (grain/Dscf)	< 0.000000353	0.000000356	0.000000706	< 0.000000472
Selenium Flow Rate (lb/hr)	< 0.000094	0.000071	0.00015	< 0.00010
Selenium (lb/ton)	< 0.00000028	0.00000030	0.00000062	< 0.00000040
Selenium (lb/mmbtu)	< 0.0000016	0.00000086	0.0000028	< 0.0000018
Silver Weight (g)	< 0.00000090	< 0.00000090	< 0.00000090	< 0.00000090
Silver Emissions (grain/Dscf)	< 0.0000000470	< 0.0000000475	< 0.0000000588	< 0.0000000511
Silver Flow Rate (lb/hr)	< 0.000013	< 0.0000094	< 0.000012	< 0.000011
Silver (lb/ton)	< 0.000000037	< 0.000000040	< 0.000000052	< 0.000000043
Silver (lb/mmbtu)	< 0.00000022	< 0.00000012	< 0.00000024	< 0.00000019
Thallium Weight (g)	< 0.0000225	< 0.0000045	< 0.00000450	< 0.0000105
Thallium Emissions (grain/Dscf)	< 0.00000118	< 0.000000238	< 0.000000294	< 0.000000569
Thallium Flow Rate (lb/hr)	< 0.00031	< 0.000047	< 0.000062	< 0.00014
Thallium (lb/ton)	< 0.00000093	< 0.00000020	< 0.00000026	< 0.00000046
Thallium (lb/mmbtu)	< 0.0000054	<0.00000058	< 0.0000012	< 0.0000024
Vanadium Weight (g)	0.000104	0.0000124	0.0000017	0.00003937
Vanadium missions (grain/Dscf)	0.00000544	0.000000655	0.000000111	0.00000207
Vanadium Flow Rate (lb/hr)	0.0014	0.00013	0.000023	0.00053
Vanadium (lb/ton)	0.0000043	0.00000055	0.000000098	0.0000016
Vanadium (lb/mmbtu)	0.000025	0.0000016	0.00000045	0.00000901
Zinc Weight (g)	0.000195	0.000148	0.0000181	0.0001204
Zinc Emissions (grain/Dscf)	0.0000102	0.00000782	0.0000012	0.00000640
Zinc Flow Rate (lb/hr)	0.0027	0.0016	0.00025	0.0015
Zinc Flow (lb/ton)	0.0000080	0.0000066	0.0000010	0.0000052
Zinc Flow (lb/mmbtu)	0.000047	0.000019	0.0000048	0.000024

AIR TESTING SERVICES, INC.

EPA TO-15 Average Results

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1 - 3

Test Date : 1/20/2022
Job #: 18031
Lab #: 222-007

Q std: 24,361 dscfm (Average)
Production Rate: 277 TPH (Average)

Compound Name	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	0.12	0.00044	0.0023	42.08
Chlorodifluoromethane	< 0.0039	< 0.000015	< 0.000080	86.47
Dichlorodifluoromethane	< 0.0047	< 0.000018	< 0.000095	102.92
Chloromethane	0.0024	0.0000088	0.000048	50.50
1,2 Dichloro-1,1,2,2-Tetrafluoroethane	< 0.0078	< 0.000029	< 0.00016	170.92
Vinyl Chloride	< 0.0028	< 0.000011	< 0.000058	62.50
1,3-Butadiene	0.055	0.00020	0.0011	54.09
Bromomethane	< 0.0045	< 0.000017	< 0.000091	94.94
Methanol	0.054	0.00022	0.0012	32.04
Chloroethane	< 0.0029	< 0.000011	< 0.000059	64.50
Dichlorofluoromethane	< 0.0047	< 0.000018	< 0.000095	102.92
Ethanol	0.0061	0.000032	0.00018	46.07
Vinyl Bromide	0.0049	< 0.000018	< 0.000099	106.96
Trichlorofluoromethane	0.0058	< 0.000022	< 0.00012	127.50
Acetone	0.047	0.00017	0.00089	58.08
Isopropyl Alcohol	< 0.011	< 0.000041	< 0.00022	60.10
Allyl Chloride	< 0.0069	< 0.000026	< 0.00014	76.53
1,1-Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.00
Acrylonitrile	< 0.0096	< 0.000036	< 0.00020	53.06
Methylene Chloride	< 0.0089	< 0.000033	< 0.00018	98.00
Carbon Disulfide	0.0079	0.000052	0.00028	76.14
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 0.0085	< 0.000032	< 0.00017	187.40
trans-1,2- Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.94
1,1- Dichloroethane	< 0.0045	< 0.000017	< 0.000090	98.00
MTBE	< 0.016	< 0.000060	< 0.00033	88.15
Vinyl Acetate	< 0.0078	< 0.000029	< 0.00016	86.09
MEK	0.0065	0.000027	0.00015	72.11
cis-1,2- Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.00
Hexane	0.0041	0.000015	0.000083	86.18
Chloroform	< 0.0054	< 0.000020	< 0.00011	119.50
Ethyl Acetate	< 0.0040	< 0.000015	< 0.000081	88.11
Tetrahydrofuran	< 0.0033	< 0.000012	< 0.000067	72.11
1,2-Dichloroethane	< 0.0045	< 0.000017	< 0.000090	98.00
Benzene	0.061	0.00023	0.0012	78.11
Cyclohexane	< 0.0071	< 0.000027	< 0.00015	84.16
Heptane	< 0.0046	< 0.000017	< 0.000092	100.21
Toluene	0.025	0.000091	0.00047	92.14
Carbon Tetrachloride	< 0.0070	< 0.000026	< 0.00014	153.24
1,2-Dichloropropane	< 0.0059	< 0.000022	< 0.00012	112.99
Bromodichloromethane	< 0.0074	< 0.000028	< 0.00015	163.83
1,4-Dioxane	< 0.0085	< 0.000031	< 0.00017	88.11
Trichloroethene	< 0.0060	< 0.000022	< 0.00012	131.40
2,2,4-Trimethylpentane	< 0.0052	< 0.000019	< 0.00011	114.23
cis-1,3-Dichloropropene	< 0.0050	< 0.000019	< 0.00010	110.97
4-Methyl-2-Pentanone (MiBK)	< 0.018	< 0.000068	< 0.00037	100.16
t-1,3-Dichloropropene	< 0.0088	< 0.000032	< 0.00018	110.97
1,1,2-Trichloroethane	< 0.0061	< 0.000023	< 0.00012	133.40
2-Hexanone	< 0.061	< 0.000229	< 0.0012	134.60
Dibromochloromethane	< 0.0095	< 0.000035	< 0.00019	208.28
1,2-Dibromomethane	< 0.0085	< 0.000032	< 0.00017	187.88
Tetrachloroethylene	< 0.0075	< 0.000028	< 0.00015	165.83
Chlorobenzene	< 0.0051	< 0.000019	< 0.00010	112.56
Ethylbenzene	< 0.0089	< 0.000034	< 0.00018	106.16
m & p-Xylenes	0.011	0.000045	0.00024	106.16
Bromoform	< 0.011	< 0.000043	< 0.00023	252.72
Styrene	0.019	0.000071	0.00038	104.14
1,1,2,2-Tetrachloroethane	< 0.0076	< 0.000029	< 0.00016	167.85
o-Xylene	< 0.0092	< 0.000035	< 0.00019	106.16
4-Ethyltoluene	< 0.010	< 0.000039	< 0.00021	120.19
1,3,5-Trimethylbenzene	< 0.010	< 0.000038	< 0.00021	112.99
1,2,4-Trimethylbenzene	< 0.010	< 0.000041	< 0.00022	120.19
Benzyl Chloride	< 0.018	< 0.000068	< 0.00037	126.59
1,3-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.00
1,4-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.01
1,2-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.01
1,2,4-Trichlorobenzene	< 0.082	< 0.00031	< 0.0017	181.45
Hexachlorobutadiene	< 0.012	< 0.000044	< 0.00024	260.76
1,1,1-Trichloroethene	< 0.0060	< 0.000022	< 0.00012	131.40

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 54

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1

Test Date : 1/20/2022
Job #: 18031
Lab #: 222-007

Q std: 24,108 dscfm (Method 425)
Production Rate: 250 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	1090	0.17	0.00070	0.0034	42.08
Chlorodifluoromethane	< 8.7	<0.0029	< 0.000012	< 0.000056	86.47
Dichlorodifluoromethane	< 8.7	<0.0034	< 0.000014	< 0.000067	102.92
Chloromethane	< 8.7	<0.0017	< 0.0000067	< 0.000033	50.50
1,2 Dichloro-1,1,2,2-Tetrafluoroethane	< 8.7	<0.0057	< 0.000023	< 0.00011	170.92
Vinyl Chloride	< 8.7	<0.0021	< 0.0000083	< 0.000041	62.50
1,3-Butadiene	411	0.085	0.00034	0.0017	54.09
Bromomethane	< 8.7	<0.0032	< 0.000013	< 0.000062	94.94
Methanol	292	0.036	0.00014	0.00070	32.04
Chloroethane	< 8.7	<0.0021	< 0.0000086	< 0.000042	64.50
Dichlorofluoromethane	< 8.7	<0.0034	< 0.000014	< 0.000067	102.92
Ethanol	< 35.0	< 0.0061	< 0.000025	< 0.00012	46.07
Vinyl Bromide	< 8.7	<0.0036	< 0.000014	< 0.000070	106.96
Trichlorofluoromethane	< 8.7	<0.0042	< 0.000017	< 0.000083	127.50
Acetone	267	0.059	0.00024	0.0012	58.08
Isopropyl Alcohol	< 35.0	<0.0080	< 0.000032	< 0.00016	60.10
Allyl Chloride	< 17.5	<0.0051	< 0.000020	< 0.00010	76.53
1,1-Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.000063	96.00
Acrylonitrile	< 35.0	<0.0071	< 0.000028	< 0.00014	53.06
Methylene Chloride	< 17.5	<0.0065	< 0.000026	< 0.00013	98.00
Carbon Disulfide	< 35.0	<0.010	< 0.000041	< 0.00020	76.14
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 8.7	<0.0062	< 0.000025	< 0.00012	187.40
trans-1,2- Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.000063	96.94
1,1- Dichloroethane	< 8.7	<0.0033	< 0.000013	< 0.00006	98.00
MTBE	< 35.0	<0.0118	< 0.000047	< 0.00023	88.15
Vinyl Acetate	< 17.5	<0.006	< 0.000023	< 0.00011	86.09
MEK	<17.5	< 0.0048	< 0.000019	< 0.000094	72.11
cis-1,2- Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.00006	96.00
Hexane	10.8	0.0035	0.000014	0.000070	86.18
Chloroform	< 8.7	<0.0040	< 0.000016	< 0.00008	119.50
Ethyl Acetate	< 8.7	<0.0029	< 0.000012	< 0.000058	88.11
Tetrahydrofuran	< 8.7	<0.0024	< 0.000010	< 0.000047	72.11
1,2-Dichloroethane	< 8.7	<0.0033	< 0.000013	< 0.00006	98.00
Benzene	323	0.0962	0.00038	0.00189	78.11
Cyclohexane	< 17.5	<0.0056	<0.000022	< 0.000110	84.16
Heptane	< 8.7	<0.0033	<0.000013	< 0.00007	100.21
Toluene	114	0.0400	0.00016	0.000785	92.14
Carbon Tetrachloride	< 8.7	<0.0051	<0.000020	< 0.00010	153.24
1,2-Dichloropropane	< 8.7	<0.0038	<0.000015	< 0.00007	112.99
Bromodichloromethane	< 8.7	<0.0055	<0.000022	< 0.00011	163.83
1,4-Dioxane	< 8.7	<0.0029	<0.000012	< 0.00006	88.11
Trichloroethene	< 8.7	<0.0044	<0.000018	< 0.00009	131.40
2,2,4-Trimethylpentane	< 8.7	<0.0038	<0.000015	< 0.00007	114.23
cis-1,3-Dichloropropene	< 8.7	<0.0037	<0.000015	< 0.00007	110.97
4-Methyl-2-Pentanone (MiBK)	< 35.0	<0.013	<0.000053	< 0.00026	100.16
t-1,3-Dichloropropene	< 17.5	<0.0074	<0.000030	< 0.00015	110.97
1,1,2-Trichloroethane	< 8.7	<0.0044	<0.000018	< 0.00009	133.40
2-Hexanone	< 87.4	<0.045	<0.00018	< 0.00088	134.60
Dibromochloromethane	< 8.7	<0.007	<0.000028	< 0.00014	208.28
1,2-Dibromomethane	< 8.7	<0.006	<0.000025	< 0.00012	187.88
Tetrachloroethlene	< 8.7	<0.0055	<0.000022	< 0.00011	165.83
Chlorobenzene	< 8.7	<0.0037	<0.000015	< 0.00007	112.56
Ethylbenzene	< 17.5	<0.0071	<0.000028	< 0.00014	106.16
m & p-Xylenes	32.2	0.0130	0.000052	0.000255	106.16
Bromoform	< 8.7	<0.008	<0.000034	< 0.00017	252.72
Styrene	< 35.0	< 0.0139	< 0.00006	< 0.00027	104.14
1,1,2,2-Tetrachloroethane	< 8.7	<0.0056	<0.000022	< 0.00011	167.85
o-Xylene	< 17.5	<0.0071	<0.000028	< 0.00014	106.16
4-Ethyltoluene	< 17.5	<0.0080	<0.000032	< 0.00016	120.19
1,3,5-Trimethylbenzene	< 17.5	<0.0075	<0.000030	< 0.00015	112.99
1,2,4-Trimethylbenzene	< 17.5	<0.008	<0.000032	< 0.00016	120.19
Benzyl Chloride	< 35	<0.017	<0.00007	< 0.0003	126.59
1,3-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.00
1,4-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.01
1,2-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.01
1,2,4-Trichlorobenzene	< 87.4	<0.060	<0.00024	< 0.00118	181.45
Hexachlorobutadiene	< 8.7	<0.009	<0.00003	< 0.0002	260.76
1,1,1-Trichloroethene	< 8.7	<0.0044	<0.000018	< 0.00009	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 14

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1A

Date : 1/20/2022
Job #: 18031
Lab #: 222-007

O std: 24,108 dscfm (Method 425)
Production Rate: 250 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	1000	0.16	0.00064	0.0031	42.08
Chlorodifluoromethane	< 8.6	< 0.0028	< 0.000011	< 0.000055	86.47
Dichlorodifluoromethane	< 8.6	< 0.0034	< 0.000013	< 0.000066	102.92
Chloromethane	< 8.6	< 0.0016	< 0.0000066	< 0.000032	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 8.6	< 0.0056	< 0.000022	< 0.00011	170.92
Vinyl Chloride	< 8.6	< 0.0020	< 0.0000082	< 0.000040	62.50
1.3-Butadiene	301	0.062	0.00025	0.0012	54.09
Bromomethane	< 8.6	< 0.0031	< 0.000012	< 0.000061	94.94
Methanol	< 85.6	< 0.010	< 0.000042	< 0.000205	32.04
Chloroethane	< 8.6	< 0.0021	< 0.0000084	< 0.000041	64.50
Dichlorofluoromethane	< 8.6	< 0.0034	< 0.000013	< 0.000066	102.92
Ethanol	< 34.2	< 0.0060	< 0.000024	< 0.00012	46.07
Vinyl Bromide	< 8.6	< 0.0035	< 0.000014	< 0.000068	106.96
Trichlorofluoromethane	< 8.6	< 0.0042	< 0.000017	< 0.000082	127.50
Acetone	248	0.055	0.00022	0.0011	58.08
Isopropyl Alcohol	< 34.2	< 0.0078	< 0.000031	< 0.00015	60.10
Allyl Chloride	< 17.1	< 0.0050	< 0.000020	< 0.000098	76.53
1.1-Dichloroethene	< 8.6	< 0.0031	< 0.000013	< 0.000061	96.00
Acrylonitrile	< 34.2	< 0.0069	< 0.000028	< 0.00014	53.06
Methylene Chloride	< 17.1	< 0.0064	< 0.000026	< 0.00013	98.00
Carbon Disulfide	< 34.2	< 0.0099	< 0.000040	< 0.00019	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 8.6	< 0.0061	< 0.000024	< 0.00012	187.40
trans-1.2- Dichloroethene	< 8.6	< 0.0032	< 0.000013	< 0.000062	96.94
1.1- Dichloroethane	< 8.6	< 0.0032	< 0.000013	< 0.000063	98.00
MTBE	< 34.2	< 0.0115	< 0.000046	< 0.000225	88.15
Vinyl Acetate	< 17.1	< 0.0056	< 0.000022	< 0.00011	86.09
MEK	20.2	0.0056	0.000022	0.00011	72.11
cis-1.2- Dichloroethene	< 8.6	< 0.0031	< 0.000013	< 0.000061	96.00
Hexane	10.1	< 0.0033	< 0.000013	< 0.000065	86.18
Chloroform	< 8.6	< 0.0039	< 0.000016	< 0.000076	119.50
Ethyl Acetate	< 8.6	< 0.0029	< 0.000011	< 0.000056	88.11
Tetrahydrofuran	< 8.6	< 0.0024	< 0.0000094	< 0.000046	72.11
1.2-Dichloroethane	< 8.6	< 0.0032	< 0.000013	< 0.000063	98.00
Benzene	308	0.092	0.00037	0.0018	78.11
Cyclohexane	< 17.1	<0.0055	<0.000022	< 0.00011	84.16
Heptane	< 8.6	<0.0033	<0.000013	< 0.000064	100.21
Toluene	111	0.039	0.00016	0.00076	92.14
Carbon Tetrachloride	< 8.6	<0.0050	<0.000020	< 0.000098	153.24
1.2-Dichloropropane	< 8.6	<0.0037	<0.000015	< 0.000072	112.99
Bromodichloromethane	< 8.6	<0.0053	<0.000021	< 0.00010	163.83
1.4-Dioxane	< 8.6	<0.0029	<0.000011	< 0.000056	88.11
Trichloroethene	< 8.6	<0.0043	<0.000017	< 0.000084	131.40
2.2.4-Trimethylpentane	< 8.6	<0.0037	<0.000015	< 0.000073	114.23
cis-1.3-Dichloropropene	< 8.6	<0.0036	<0.000014	< 0.000071	110.97
4-Methyl-2-Pentanone (MiBK)	< 34.2	<0.013	<0.000052	< 0.00026	100.16
t-1.3-Dichloropropene	< 17.1	<0.0072	<0.000029	< 0.00014	110.97
1.1.2-Trichloroethane	< 8.6	<0.0044	<0.000017	< 0.000085	133.40
2-Hexanone	< 85.6	<0.044	<0.00018	< 0.00086	134.60
Dibromochloromethane	< 8.6	<0.0068	<0.000027	< 0.00013	208.28
1.2-Dibromomethane	< 8.6	<0.0061	<0.000025	< 0.00012	187.88
Tetrachloroethylene	< 8.6	<0.0054	<0.000022	< 0.00011	165.83
Chlorobenzene	< 8.6	<0.0037	<0.000015	< 0.00007	112.56
Ethylbenzene	< 17.1	<0.0069	<0.000028	< 0.00014	106.16
m & p-Xylenes	26.4	0.011	0.000043	0.00021	106.16
Bromoform	< 8.6	<0.0082	<0.000033	< 0.00016	252.72
Styrene	< 34.2	< 0.014	< 0.000054	< 0.00027	104.14
1.1.2.2-Tetrachloroethane	< 8.6	<0.0055	<0.000022	< 0.00011	167.85
o-Xylene	< 17.1	<0.0069	<0.000028	< 0.00014	106.16
4-Ethyltoluene	< 17.1	<0.0078	<0.000031	< 0.00015	120.19
1.3.5-Trimethylbenzene	< 17.1	<0.0074	<0.000029	< 0.00014	112.99
1.2.4-Trimethylbenzene	< 17.1	< 0.0078	< 0.000031	< 0.00015	120.19
Benzyl Chloride	< 34.2	<0.017	<0.000066	< 0.00032	126.59
1.3-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.00
1.4-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.01
1.2-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.01
1.2.4-Trichlorobenzene	< 85.6	<0.059	<0.00024	< 0.0012	181.45
Hexachlorobutadiene	< 8.6	<0.0085	<0.000034	< 0.00017	260.76
1.1.1-Trichloroethene	< 8.6	<0.0043	<0.000017	< 0.000084	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 503

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 2

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

Q std: 27,674 dscfm (Method 425)
Production Rate: 330 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	995	**0.18**	**0.00056**	**0.0031**	42.08
Chlorodifluoromethane	< 9.3	< 0.0035	< 0.000011	< 0.000060	86.47
Dichlorodifluoromethane	< 9.3	< 0.0042	< 0.000013	< 0.000071	102.92
Chloromethane	11.1	**0.0025**	**0.0000074**	**0.000042**	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 9.3	< 0.0069	< 0.000021	< 0.00012	170.92
Vinyl Chloride	< 9.3	< 0.0025	< 0.0000077	< 0.000043	62.50
1.3-Butadiene	405	**0.096**	**0.00029**	**0.0016**	54.09
Bromomethane	< 12.0	< 0.0050	< 0.000015	< 0.000085	94.94
Methanol	512	**0.072**	**0.00022**	**0.0012**	32.04
Chloroethane	< 9.3	< 0.0026	< 0.0000079	< 0.000045	64.50
Dichlorofluoromethane	< 9.3	< 0.0042	< 0.000013	< 0.000071	102.92
Ethanol	< 37.1	< 0.0075	< 0.000023	< 0.00013	46.07
Vinyl Bromide	< 9.3	< 0.0043	< 0.000013	< 0.000074	106.96
Trichlorofluoromethane	< 9.3	< 0.0052	< 0.000016	< 0.000088	127.50
Acetone	337	**0.086**	**0.00026**	**0.0015**	58.08
Isopropyl Alcohol	< 37.1	< 0.0098	< 0.000030	< 0.00017	60.10
Allyl Chloride	< 18.5	< 0.0062	< 0.000019	< 0.00011	76.53
1.1-Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000066	96.00
Acrylonitrile	< 37.1	< 0.0086	< 0.000026	< 0.00015	53.06
Methylene Chloride	< 18.5	< 0.0079	< 0.000024	< 0.00014	98.00
Carbon Disulfide	< 37.1	< 0.012	< 0.000037	< 0.00021	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 9.3	< 0.0076	< 0.000023	< 0.00013	187.40
trans-1.2- Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000067	96.94
1.1- Dichloroethane	< 9.3	< 0.0040	< 0.000012	< 0.000068	98.00
MTBE	< 37.1	< 0.014	< 0.000043	< 0.00024	88.15
Vinyl Acetate	< 18.5	< 0.0070	< 0.000021	< 0.00012	86.09
MEK	31.7	**0.010**	**0.000030**	**0.00017**	72.11
cis-1.2- Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000066	96.00
Hexane	< 9.3	< 0.0035	< 0.000011	< 0.000060	86.18
Chloroform	< 9.3	< 0.0048	< 0.000015	< 0.000083	119.50
Ethyl Acetate	< 9.3	< 0.0036	< 0.000011	< 0.000061	88.11
Tetrahydrofuran	< 9.3	< 0.0029	< 0.0000089	< 0.000050	72.11
1.2-Dichloroethane	< 9.3	< 0.0040	< 0.000012	< 0.000068	98.00
Benzene	250	**0.085**	**0.00026**	**0.0015**	78.11
Cyclohexane	< 9.3	<0.0034	<0.000010	< 0.000058	84.16
Heptane	< 9.3	<0.0041	<0.000012	< 0.000069	100.21
Toluene	105	**0.042**	**0.00013**	**0.00072**	92.14
Carbon Tetrachloride	< 9.3	<0.0062	<0.000019	< 0.00011	153.24
1.2-Dichloropropane	< 9.3	<0.0046	<0.000014	< 0.000078	112.99
Bromodichloromethane	< 9.3	<0.0066	<0.000020	< 0.00011	163.83
1.4-Dioxane	< 47.9	<0.018	<0.000056	< 0.00032	88.11
Trichloroethene	< 9.3	<0.0053	<0.000016	< 0.000091	131.40
2.2.4-Trimethylpentane	< 9.3	<0.0046	<0.000014	< 0.000079	114.23
cis-1.3-Dichloropropene	< 9.3	<0.0045	<0.000014	< 0.000077	110.97
4-Methyl-2-Pentanone (MiBK)	< 37.1	<0.016	<0.000049	< 0.00028	100.16
t-1.3-Dichloropropene	< 18.5	<0.0090	<0.000027	< 0.00015	110.97
1.1.2-Trichloroethane	< 9.3	<0.0054	<0.000016	< 0.000092	133.40
2-Hexanone	< 92.6	<0.055	<0.00017	< 0.00093	134.60
Dibromochloromethane	< 9.3	<0.0084	<0.000026	< 0.00014	208.28
1.2-Dibromomethane	< 9.3	<0.0076	<0.000023	< 0.00013	187.88
Tetrachloroethylene	< 9.3	<0.0067	<0.000020	< 0.00011	165.83
Chlorobenzene	< 9.3	<0.0046	<0.000014	< 0.000078	112.56
Ethylbenzene	< 9.3	<0.0043	<0.000013	< 0.000073	106.16
m &.p-Xylenes	28.3	**0.013**	**0.000040**	**0.00022**	106.16
Bromoform	< 9.3	<0.010	<0.000031	< 0.00017	252.72
Styrene	< 37.1	< 0.017	< 0.000051	< 0.00029	104.14
1.1.2.2-Tetrachloroethane	< 9.3	<0.0068	<0.000021	< 0.00012	167.85
o-Xylene	< 18.5	<0.0086	<0.000026	< 0.00015	106.16
4-Ethyltoluene	< 18.5	<0.0097	<0.000029	< 0.00017	120.19
1.3.5-Trimethylbenzene	< 18.5	<0.0091	<0.000028	< 0.00016	112.99
1.2.4-Trimethylbenzene	< 18.5	<0.0097	<0.000029	< 0.00017	120.19
Benzyl Chloride	< 37.1	<0.021	<0.000062	< 0.00035	126.59
1.3-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.00
1.4-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.01
1.2-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.01
1.2.4-Trichlorobenzene	< 92.6	<0.074	<0.00022	< 0.0013	181.45
Hexachlorobutadiene	< 9.3	<0.011	<0.000032	< 0.00018	260.76
1.1.1-Trichloroethene	< 9.3	<0.0053	<0.000016	< 0.000091	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIR TESTING SERVICES, INC.

EPA TO-15
Tank 62

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 2A

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

O std: 27,674 dscfm (Method 425)
Production Rate: 330 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/MMBtu	MW
Propene	416	**0.077**	**0.00023**	**0.0013**	42.08
Chlorodifluoromethane	< 6.1	< 0.0023	< 0.0000070	< 0.000039	86.47
Dichlorodifluoromethane	< 6.1	< 0.0027	< 0.0000083	< 0.000047	102.92
Chloromethane	< 6.1	< 0.0013	< 0.0000041	< 0.000023	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 6.1	< 0.0046	< 0.000014	< 0.000078	170.92
Vinyl Chloride	< 6.1	< 0.0017	< 0.0000051	< 0.000028	62.50
1.3-Butadiene	144	**0.034**	**0.00010**	**0.00058**	54.09
Bromomethane	< 6.1	< 0.0025	< 0.0000077	< 0.000043	94.94
Methanol	509	**0.071**	**0.00022**	**0.0012**	32.04
Chloroethane	< 6.1	< 0.0017	< 0.0000052	< 0.000029	64.50
Dichlorofluoromethane	< 6.1	< 0.0027	< 0.0000083	< 0.000047	102.92
Ethanol	35.0	**0.0071**	**0.000021**	**0.00012**	46.07
Vinyl Bromide	< 6.1	< 0.0029	< 0.0000087	< 0.000049	106.96
Trichlorofluoromethane	< 6.1	< 0.0034	< 0.000010	< 0.000058	127.50
Acetone	159	**0.040**	**0.00012**	**0.00069**	58.08
Isopropyl Alcohol	< 24.4	< 0.0064	< 0.000019	< 0.00011	60.10
Allyl Chloride	< 12.2	< 0.0041	< 0.000012	< 0.000070	76.53
1.1-Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.00
Acrylonitrile	< 24.4	< 0.0057	< 0.000017	< 0.000097	53.06
Methylene Chloride	< 12.2	< 0.0052	< 0.000016	< 0.000089	98.00
Carbon Disulfide	< 24.4	< 0.0081	< 0.000025	< 0.00014	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 6.1	< 0.0050	< 0.000015	< 0.000085	187.40
trans-1.2- Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.94
1.1- Dichloroethane	< 6.1	< 0.0026	< 0.0000079	< 0.000045	98.00
MTBE	< 24.4	< 0.0094	< 0.000029	< 0.00016	88.15
Vinyl Acetate	< 12.2	< 0.0046	< 0.000014	< 0.000078	86.09
MEK	< 12.2	< 0.0038	< 0.000012	< 0.000066	72.11
cis-1.2- Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.00
Hexane	< 6.1	< 0.0023	< 0.0000070	< 0.000039	86.18
Chloroform	< 6.1	< 0.0032	< 0.0000097	< 0.000054	119.50
Ethyl Acetate	< 6.1	< 0.0024	< 0.0000071	< 0.000040	88.11
Tetrahydrofuran	< 6.1	< 0.0019	< 0.0000058	< 0.000033	72.11
1.2-Dichloroethane	< 6.1	< 0.0026	< 0.0000079	< 0.000045	98.00
Benzene	84.4	**0.029**	**0.000087**	**0.00049**	78.11
Cyclohexane	< 12.2	< 0.0045	<0.000014	< 0.000077	84.16
Heptane	< 6.1	< 0.0027	<0.0000081	< 0.000046	100.21
Toluene	35.1	**0.014**	**0.000043**	**0.00024**	92.14
Carbon Tetrachloride	< 6.1	<0.0041	<0.000012	< 0.000070	153.24
1.2-Dichloropropane	< 15.6	<0.0077	<0.000023	< 0.00013	112.99
Bromodichloromethane	< 6.1	<0.0044	<0.000013	< 0.000075	163.83
1.4-Dioxane	< 6.1	<0.0024	<0.0000071	< 0.000040	88.11
Trichloroethene	< 6.1	<0.0035	<0.000011	< 0.000060	131.40
2.2.4-Trimethylpentane	< 6.1	<0.0030	<0.0000092	< 0.000052	114.23
cis-1.3-Dichloropropene	< 6.1	<0.0030	<0.0000090	< 0.000051	110.97
4-Methyl-2-Pentanone (MiBK)	< 24.4	<0.011	<0.000032	< 0.00018	100.16
t-1.3-Dichloropropene	< 12.2	<0.0059	<0.000018	< 0.00010	110.97
1.1.2-Trichloroethane	< 6.1	<0.0036	<0.000011	< 0.000061	133.40
2-Hexanone	< 61.0	<0.036	<0.00011	< 0.00061	134.60
Dibromochloromethane	< 6.1	<0.0056	<0.000017	< 0.000095	208.28
1.2-Dibromomethane	< 6.1	<0.0050	<0.000015	< 0.000086	187.88
Tetrachloroethylene	< 6.1	<0.0044	<0.000013	< 0.000076	165.83
Chlorobenzene	< 6.1	<0.0030	<0.000009	< 0.000051	112.56
Ethylbenzene	< 12.2	<0.0057	<0.000017	< 0.000097	106.16
m & p-Xylenes	< 12.2	< 0.0057	< 0.0000	< 0.000097	106.16
Bromoform	< 6.1	<0.0067	<0.000020	< 0.00012	252.72
Styrene	< 24.4	< 0.0111	< 0.0000	< 0.0002	104.14
1.1.2.2-Tetrachloroethane	< 6.1	<0.0045	<0.000014	< 0.000076	167.85
o-Xylene	< 6.1	<0.0028	<0.000009	< 0.000048	106.16
4-Ethyltoluene	< 6.1	<0.0032	<0.0000097	< 0.000055	120.19
1.3.5-Trimethylbenzene	< 12.2	<0.0060	<0.000018	< 0.00010	112.99
1.2.4-Trimethylbenzene	< 12.2	<0.0064	<0.000019	< 0.00011	120.19
Benzyl Chloride	< 24	<0.014	<0.000041	< 0.00023	126.59
1.3-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.00
1.4-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.01
1.2-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.01
1.2.4-Trichlorobenzene	< 61.0	<0.048	<0.00015	< 0.00083	181.45
Hexachlorobutadiene	< 6.1	<0.0070	<0.000021	< 0.00012	260.76
1.1.1-Trichloroethene	< 6.1	<0.0035	<0.000011	< 0.000060	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIR TESTING SERVICES, INC.

EPA TO-15
Tank 328

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 3

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

Q std: 21,301 dscfm (Method 425)
Production Rate: 252 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	496	0.070	0.00028	0.0016	42.08
Chlorodifluoromethane	< 20.2	<0.0059	< 0.000023	<0.00013	86.47
Dichlorodifluoromethane	< 20.2	<0.0070	< 0.000028	<0.00016	102.92
Chloromethane	< 20.2	<0.0034	< 0.000014	<0.000076	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 20.2	<0.012	< 0.000046	<0.00026	170.92
Vinyl Chloride	< 20.2	<0.0043	< 0.000017	<0.000094	62.50
1.3-Butadiene	151	0.028	0.00011	0.00061	54.09
Bromomethane	< 20.2	<0.0065	< 0.000026	<0.00014	94.94
Methanol	891	0.096	0.00038	0.0021	32.04
Chloroethane	< 20.2	<0.0044	< 0.000017	<0.000097	64.50
Dichlorofluoromethane	< 20.2	<0.0070	< 0.000028	<0.00016	102.92
Ethanol	< 80.6	<0.013	< 0.000050	<0.00028	46.07
Vinyl Bromide	< 20.2	<0.0073	< 0.000029	<0.00016	106.96
Trichlorofluoromethane	< 20.2	<0.0087	< 0.000034	<0.00019	127.50
Acetone	118	0.023	0.000092	0.00051	58.08
Isopropyl Alcohol	< 80.6	<0.016	< 0.000065	<0.00036	60.10
Allyl Chloride	< 40.3	<0.010	< 0.000041	<0.00023	76.53
1.1-Dichloroethene	< 20.2	<0.0065	< 0.000026	<0.00014	96.00
Acrylonitrile	< 80.6	<0.014	< 0.000057	<0.00032	53.06
Methylene Chloride	< 40.3	<0.013	< 0.000053	<0.00030	98.00
Carbon Disulfide	< 80.6	<0.021	< 0.000082	<0.00046	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 20.2	<0.013	< 0.000051	<0.00028	187.40
trans-1.2- Dichloroethene	< 20.2	<0.0066	< 0.000026	<0.00015	96.94
1.1- Dichloroethane	< 20.2	<0.0067	< 0.000026	<0.00015	98.00
MTBE	< 80.6	<0.024	< 0.000095	<0.00053	88.15
Vinyl Acetate	< 40.3	<0.012	< 0.000046	<0.00026	86.09
MEK	< 40.3	< 0.0098	< 0.000039	< 0.00022	72.11
cis-1.2- Dichloroethene	< 20.2	<0.0065	< 0.000026	<0.00014	96.00
Hexane	< 20.2	<0.0059	< 0.000023	<0.00013	86.18
Chloroform	< 20.2	<0.0081	< 0.000032	<0.00018	119.50
Ethyl Acetate	< 20.2	<0.0060	< 0.000024	<0.00013	88.11
Tetrahydrofuran	< 20.2	<0.0049	< 0.000019	<0.00011	72.11
1.2-Dichloroethane	< 20.2	<0.0067	< 0.000026	<0.00015	98.00
Benzene	129	0.034	0.00013	0.00075	78.11
Cyclohexane	< 40.3	<0.011	<0.000045	<0.00025	84.16
Heptane	< 20.2	<0.0068	<0.000027	<0.00015	100.21
Toluene	26.2	0.0081	0.000032	0.00018	92.14
Carbon Tetrachloride	< 20.2	<0.010	<0.000041	<0.00023	153.24
1.2-Dichloropropane	< 20.2	<0.0077	<0.000031	<0.00017	112.99
Bromodichloromethane	< 20.2	<0.011	<0.000044	<0.00025	163.83
1.4-Dioxane	< 40.3	<0.012	<0.000047	<0.00027	88.11
Trichloroethene	< 20.2	<0.0089	<0.000035	<0.00020	131.40
2.2.4-Trimethylpentane	< 20.2	<0.0078	<0.000031	<0.00017	114.23
cis-1.3-Dichloropropene	< 20.2	<0.0075	<0.000030	<0.00017	110.97
4-Methyl-2-Pentanone (MiBK)	< 80.6	<0.027	<0.00011	<0.00060	100.16
t-1.3-Dichloropropene	< 40.3	<0.015	<0.000060	<0.00033	110.97
1.1.2-Trichloroethane	< 20.2	<0.0091	<0.000036	<0.00020	133.40
2-Hexanone	< 202	<0.092	<0.00036	<0.0020	134.60
Dibromochloromethane	< 20.2	<0.014	<0.000056	<0.00031	208.28
1.2-Dibromomethane	< 20.2	<0.013	<0.000051	<0.00028	187.88
Tetrachloroethylene	< 20.2	<0.011	<0.000045	<0.00025	165.83
Chlorobenzene	< 20.2	<0.0077	<0.000030	<0.00017	112.56
Ethylbenzene	< 40.3	<0.014	<0.000057	<0.00032	106.16
m & p-Xylenes	< 40.3	< 0.014	< 0.000057	< 0.00032	106.16
Bromoform	< 20.2	<0.017	<0.000068	<0.00038	252.72
Styrene	< 80.6	< 0.028	< 0.00011	< 0.00063	104.14
1.1.2.2-Tetrachloroethane	< 20.2	<0.011	<0.000045	<0.00025	167.85
o-Xylene	< 40.3	<0.014	<0.000057	<0.00032	106.16
4-Ethyltoluene	< 40.3	<0.016	<0.000065	<0.00036	120.19
1.3.5-Trimethylbenzene	< 40.3	<0.015	<0.000061	<0.00034	112.99
1.2.4-Trimethylbenzene	< 40.3	<0.016	<0.000065	<0.00036	120.19
Benzyl Chloride	< 80.6	<0.034	<0.00014	<0.00076	126.59
1.3-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.00
1.4-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.01
1.2-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.01
1.2.4-Trichlorobenzene	< 202	<0.12	<0.00049	<0.0027	181.45
Hexachlorobutadiene	< 20.2	<0.018	<0.000070	<0.00039	260.76
1.1.1-Trichloroethene	< 20.2	<0.0089	<0.000035	<0.00020	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 204

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 3A

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

O std: 21,301 dscfm (Method 425)
Production Rate: 252 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	437	**0.062**	**0.00025**	**0.0014**	42.08
Chlorodifluoromethane	< 21.2	< 0.0062	< 0.000024	<0.00014	86.47
Dichlorodifluoromethane	< 21.2	< 0.0073	< 0.000029	<0.00016	102.92
Chloromethane	< 21.2	< 0.0036	< 0.000014	<0.000080	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 21.2	< 0.012	< 0.00005	<0.00027	170.92
Vinyl Chloride	< 21.2	< 0.0045	< 0.000018	<0.000099	62.50
1.3-Butadiene	149	**0.027**	**0.00011**	**0.00060**	54.09
Bromomethane	< 21.2	< 0.0068	< 0.000027	<0.00015	94.94
Methanol	725	**0.078**	**0.00031**	**0.0017**	32.04
Chloroethane	< 21.2	< 0.0046	< 0.000018	<0.00010	64.50
Dichlorofluoromethane	< 21.2	< 0.0073	< 0.000029	<0.00016	102.92
Ethanol	< 84.8	< 0.013	< 0.000052	<0.00029	46.07
Vinyl Bromide	< 21.2	< 0.0076	< 0.000030	<0.00017	106.96
Trichlorofluoromethane	< 21.2	< 0.0091	< 0.000036	<0.00020	127.50
Acetone	95.8	**0.019**	**0.000074**	**0.00042**	58.08
Isopropyl Alcohol	< 84.8	< 0.017	< 0.000068	<0.00038	60.10
Allyl Chloride	< 42.4	< 0.011	< 0.000043	<0.00024	76.53
1.1-Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.00
Acrylonitrile	< 84.8	< 0.015	< 0.000060	<0.00034	53.06
Methylene Chloride	< 42.4	< 0.014	< 0.000056	<0.00031	98.00
Carbon Disulfide	< 84.8	< 0.022	< 0.000086	<0.00048	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 21.2	< 0.013	< 0.000053	<0.00030	187.40
trans-1.2- Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.94
1.1- Dichloroethane	< 21.2	< 0.0070	< 0.000028	<0.00016	98.00
MTBE	< 84.8	< 0.025	< 0.00010	<0.00056	88.15
Vinyl Acetate	< 42.4	< 0.012	< 0.000049	<0.00027	86.09
MEK	< 42.4	< 0.010	< 0.000041	<0.00023	72.11
cis-1.2- Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.00
Hexane	< 21.2	< 0.0062	< 0.000024	<0.00014	86.18
Chloroform	< 21.2	< 0.0085	< 0.000034	<0.00019	119.50
Ethyl Acetate	< 21.2	< 0.0063	< 0.000025	<0.00014	88.11
Tetrahydrofuran	< 21.2	< 0.0051	< 0.000020	<0.00011	72.11
1.2-Dichloroethane	< 21.2	< 0.0070	< 0.000028	<0.00016	98.00
Benzene	117	**0.031**	**0.00012**	**0.00068**	78.11
Cyclohexane	< 42.4	<0.012	<0.000048	<0.00027	84.16
Heptane	< 21.2	<0.0072	<0.000028	<0.00016	100.21
Toluene	21.6	**<0.0067**	**0.000027**	**0.00015**	92.14
Carbon Tetrachloride	< 21.2	<0.011	<0.000043	<0.00024	153.24
1.2-Dichloropropane	< 21.2	<0.0081	<0.000032	<0.00018	112.99
Bromodichloromethane	< 21.2	<0.012	<0.000046	<0.00026	163.83
1.4-Dioxane	< 42.4	<0.013	<0.000050	<0.00028	88.11
Trichloroethene	< 21.2	<0.0094	<0.000037	<0.00021	131.40
2.2.4-Trimethylpentane	< 21.2	<0.0082	<0.000032	<0.00018	114.23
cis-1.3-Dichloropropene	< 21.2	<0.0079	<0.000031	<0.00018	110.97
4-Methyl-2-Pentanone (MiBK)	< 84.8	<0.029	<0.00011	<0.00063	100.16
t-1.3-Dichloropropene	< 21.2	<0.0079	<0.000031	<0.00018	110.97
1.1.2-Trichloroethane	< 21.2	<0.0095	<0.000038	<0.00021	133.40
2-Hexanone	< 212	<0.096	<0.00038	<0.0021	134.60
Dibromochloromethane	< 21.2	<0.015	<0.00006	<0.0003	208.28
1.2-Dibromomethane	< 21.2	<0.013	<0.000053	<0.00030	187.88
Tetrachloroethylene	< 21.2	<0.012	<0.000047	<0.00026	165.83
Chlorobenzene	< 21.2	<0.008	<0.000032	<0.00018	112.56
Ethylbenzene	< 42.4	<0.015	<0.000060	<0.00034	106.16
m & p-Xylenes	< 42.4	<0.015	<0.000060	<0.00034	106.16
Bromoform	< 21.2	<0.018	<0.000072	<0.00040	252.72
Styrene	< 84.8	< 0.030	< 0.00012	<0.00066	104.14
1.1.2.2-Tetrachloroethane	< 21.4	<0.012	<0.000048	<0.00027	167.85
o-Xylene	< 42.4	<0.015	<0.000060	<0.00034	106.16
4-Ethyltoluene	< 42.4	<0.017	<0.000068	<0.00038	120.19
1.3.5-Trimethylbenzene	< 42.4	<0.016	<0.000064	<0.00036	112.99
1.2.4-Trimethylbenzene	< 42.4	<0.017	<0.000068	<0.00038	120.19
Benzyl Chloride	< 21.2	<0.0090	<0.000036	<0.00020	126.59
1.3-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.00
1.4-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.01
1.2-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.01
1.2.4-Trichlorobenzene	< 212	<0.13	<0.00051	<0.0029	181.45
Hexachlorobutadiene	< 21.2	<0.019	<0.000074	<0.00041	260.76
1.1.1-Trichloroethene	< 21.2	<0.0094	<0.000037	<0.00021	131.40

lb/hr = (ppb/1000) * Ostd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Ostd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

RJ NOBLE COMPANY ORANGE 222-007 CALCULATED EMISSION RESULTS EPA METHOD 0011				
	Run 1	**Run 2**	**Run 3**	**Average (3 Runs)**
Formaldehyde (HCHO)				
HCHO Conc. (ppmv)	0.6	0.6	6.0	2.4
HCHO Weight (ug/sample)	1980	2150	21100	8410
HCHO Flow Rate (lb/hr)	0.075	0.080	0.75	0.30
HCHO Flow Rate (lb/Ton)	0.00030	0.00032	0.0030	0.0012
HCHO Flow Rate (lb/MMbtu)	0.0014	0.0016	0.010	0.0045
Acetaldehyde (CH3CHO)				
CH3CHO Conc. (ppmv)	0.1	0.1	0.2	0.1
CH3CHO Weight (ug/sample)	328	692	1040	687
CH3CHO Flow Rate (lb/hr)	0.012	0.026	0.037	0.025
CH3CHO Flow Rate (lb/Ton)	0.000050	0.00010	0.00015	0.00010
CH3CHO Flow Rate (lb/MMbtu)	0.00023	0.00051	0.00052	0.00042

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 425

	Run 1	Run 2	Run 3	Average (3 Runs)
Probe Rinse CR+6 Weight (g)	0.000000018	0.000000081	0.0000000076	0.000000036
Impinger #1 CR+6 Weight (g)	0.000000037	0.000000071	0.000000028	0.000000045
Impinger #2 CR+6 Weight (g)	0.0000000036	0.000000013	0.000000111	0.000000042
Total CR+6 Weight (g)	0.0000000585	0.000000158	0.000000146	0.000000121
Cr+6 Emissions (grain/Dscf)	0.0000000033	0.0000000091	0.0000000090	0.0000000071
Cr+6 Flow Rate (lb/hr)	0.00000067	0.0000022	0.0000016	0.0000015
Cr+6 Flow Rate (lb/ton)	0.0000000027	0.0000000065	0.0000000065	0.0000000052
Cr+6 Flow Rate (lb/MMBtu)	0.00000001	0.00000032	0.00000035	0.00000023

6.0 QUALITY ASSURANCE

Quality control procedures used in the test program followed SCAQMD, EPA & CARB procedures. Calibration methods and frequency follow the specifications of the SCAQMD Source Test Manual.

Quality control procedures used in continuous emissions monitoring follow SCAQMD Method 100.1 procedures. All method performance checks conducted during the subject test program were within allowable tolerances.

The analyzers used for the continuous emissions monitoring of CO2 and O2 have been approved by the California Air Resources Board for such use.

Acquired data is reduced using computer spreadsheets and validated using sound criteria by an individual familiar with the field procedures used. Results are reviewed by a second individual to prevent data reduction and reporting errors.

EPA Method TO-15, 0011/SW846, CARB Methods 425, 436 and 429 followed each agencies published procedures and the approved test protocol.

Leak checks on the CEM sampling system and all sampling trains were performed as per the published methods.

Calibration documentation for the equipment utilized in this sampling series have been provided in the attachments.

AIRx Testing Services, Inc.

CONFLICT OF INTEREST NEGATIVE DECLARATION

AIRx Testing is an independent emissions testing contractor.

AIRx Testing maintains that no conflict of interest exists between the partners and employees of AIRx Testing, and the partners, employees or interests involved in the facility detailed in this report.

INDEPENDENT CONTRACTOR

Tom Porter

Signature

Tom Porter – Vice President

03/08/2022

Date of Signature

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

MONITORING & ANALYSIS DIVISION * SOURCE TEST ENGINEERING BRANCH

SOURCE TEST REPORT EVALUATION

S/T ID: **PR21193**

SOUTH COAST AQMD ID: *FACILITY ID NO.* **19167** *A/N:* **559511**
COMPANY: **R. J. Noble Company, Orange**
EQUIPMENT: **Rotary Dryer (D127)**
Baghouse (C101)

LOCATION: **15505 E Lincoln Ave., Orange, CA 92865**

REQUESTED BY: **Matthew Lee (Memo Dated March 16, 2022)**
TYPE OF TEST: **PERFORMANCE/COMPLIANCE REPORT**
DOCUMENT DATE: **March 7, 2022**
REASON FOR TEST: *(TESTING SUBJECT TO THE FOLLOWING RULE, PERMIT, OR SPECIFIED CONDITIONS):*
- AB2588

REQUESTED EVAL: **PAHs, Metals, Toxic Organics, Hexavalent Chromium, Aldehydes**
TEST DATE: **January 11-13, 18-21, 2022**
TEST FIRM: **AIRx Testing Services**

STE EVALUATOR: **Peter Ko** *EXT:* **2545** *REVIEW DATE:* **June 7, 2022**

SOURCE TEST REPORT EVALUATION

OVERVIEW OF EVALUATION:

OVERALL CONFIDENCE IN REPORTED TEST RESULTS:	☐ **ACCEPTABLE** ☒ **CONDITIONALLY ACCEPTABLE** ☐ **UNACCEPTABLE**
RESTRICTIONS FOR USE OF REPORTED RESULTS:	• **All** 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.
COMPLIANCE DETERMINATION:	• **All** emissions, as adjusted (see next section of this evaluation), are in compliance by an acceptable margin[1] with the Rules/Permit Compliance Limits specified above.

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

DETAILED REVIEW

This source test report has been reviewed by the Source Test Engineering 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 test report stated that the rotary dryer was tested under normal operating conditions. AB2588 staff should verify whether the process rates and other process parameters represented normal operating conditions. The operating data is presented in Appendix F of the report.
- The protocol evaluation dated August 4, 2021, required PTE field verification. However, no PTE verification data was submitted with the report. Page 3-1 of the report indicated that videos taken do not show any evidence of fugitive emissions. AB2588 should determine if this is acceptable of if PTE verification is required.

RULE/PERMIT FULFILLMENT

Testing must satisfy the following Rule/Permit requirements:

- AB2588

SAMPLING & ANALYTICAL METHODS / RESULTS

- Pages 153 and 154 of the report labeled the lab results in µg. These results should be in the units of ng.
- The 1,4-Dioxane concentration on pages 301 and 303 should be <17.5 ppb and <18.5 ppb, respectively. The calculated results based on these concentrations are presented below:

1,4-Dioxane	Lb/hr	Lb/ton	Lb/MMBtu
Run No. 1 (pg. 301)	<0.0058	<0.000024	<0.00012
Run No. 2 (pg. 303)	<0.0071	<0.000022	<0.00012
Run No. 3 (no change)	<0.012	<0.000047	<0.00027
Avg	<0.0083	<0.000031	<0.00017

- All lb/MMBtu results presented in the report were based on a F_d of 8710 scf/MMBtu which is for 68 ^{0}F. Since the flow rates were corrected to a standard temperature of 60

^{0}F, the F_d should be 8578 scf/MMBtu. If the lb/MMBtu results are to be used, they should be all be adjusted by a factor of 0.985 (520/528).

- The average hexavalent chromium result should be $2.6x10^{-7}$ lb/MMBtu instead of $2.3x10^{-7}$.
- The formaldehyde and acetaldehyde results presented on pages 332 and 333 were not correct. The corrected results are tabulated below:

Formaldehyde	Lb/hr	Lb/ton
Run No. 1	0.067	0.00027
Run No. 2	0.069	0.00027
Run No. 3	0.94	0.00376
Avg	0.36	0.014
Acetaldehyde		
Run No. 1	0.011	0.000044
Run No. 2	0.022	0.000088
Run No. 3	0.047	0.000185
Avg	0.027	0.00011

- Page 5-1 of the report indicated that the facility is considering retesting for formaldehyde since the third run result was more than 10 times the first two runs results. In addition, since the aluminum results from CARB Method 436 were very high, the facility is also considering retesting for multiple metals.

QUALITY ASSURANCE

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

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number:	466163
Report Level:	II
Report Date:	08/03/2022

Analytical Report *prepared for:*

Scott Fraser
RJ Noble Company
15505 E. Lincoln Ave.
P.O. Box 620
Orange, CA 92856

Authorized for release by:



David Tripp, Project Manager
david.tripp@enthalpy.com

Th s data package has been rev ewed for techn ca correctness and comp eteness. Re ease of th s data has been author zed by the Laboratory Manager or the Manager's des gnee, as ver f ed by the above s gnature wh ch app es to th s PDF f e as we as any assoc ated e ectron c data de verab e f es. The resu ts conta ned n th s report meet a requ rements of NELAP and perta n on y to those samp es wh ch were subm tted for ana ys s. Th s report may be reproduced on y n ts ent rety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Analysis Results for 466163

Sample ID:	Lab ID: 466163-005	Collected: 07/22/22 13:55
50% ROCKDUST 50% SAND	Matrix: Miscell.	

466163-005 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Ant mony	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
Arsen c	**6.5**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Bar um	**300**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Bery um	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Cadm um	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Chrom um	**42**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Coba t	**14**		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Copper	**36**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Lead	**12**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Mo ybdenum	**1.7**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
N cke	**17**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Se en um	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
S ver	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Tha um	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
Vanad um	**71**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Z nc	**98**		mg/Kg	5.0	0.99	293703	07/25/22	07/26/22	SBW
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.14	1	293738	07/26/22	07/26/22	ECM

Resu ts for any subcontracted ana yses are not nc uded n th s sect on.

ENTHALPY ANALYTICAL

Analysis Results for 466163

Sample ID: 100% RAP DUST	Lab ID: 466163-006	Collected: 07/22/22 17:00
	Matrix: Miscell.	

466163-006 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Antimony	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Arsenic	**6.4**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Barium	**140**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Beryllium	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Cadmium	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Chromium	**40**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Cobalt	**14**		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Copper	**74**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Lead	**68**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Molybdenum	**2.7**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Nickel	**44**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Selenium	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Silver	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Thallium	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Vanadium	**60**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Zinc	**420**		mg/Kg	5.4	1.1	293703	07/25/22	07/26/22	SBW
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.16	1.2	293738	07/26/22	07/26/22	ECM

ND Not Detected

Results for any subcontracted analyses are not included in this section.

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Lab Job Number: 489941
Report Level: II
Report Date: 08/14/2023

Analytical Report *prepared for:*

Scott Fraser
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Authorized for release by:



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Th s data package has been rev ewed for techn ca correctness and comp eteness. Re ease of th s data has been author zed by the Laboratory Manager or the Manager's des gnee, as ver f ed by the above s gnature wh ch app es to th s PDF f e as we as any assoc ated e ectron c data de verab e f es. The resu ts conta ned n th s report meet a requ rements of NELAP and perta n on y to those samp es wh ch were subm tted for ana ys s. Th s report may be reproduced on y n ts ent rety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Analysis Results for 489941

Sample ID: 56-401-808-1	Lab ID: 489941-002	Collected: 08/08/23 09:00
	Matrix: Miscell.	

489941-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Ant mony	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
Arsen c	**8.4**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Bar um	**150**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Bery um	**0.48**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Cadm um	**0.56**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Chrom um	**45**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Coba t	**11**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Copper	**42**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Lead	**26**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Mo ybdenum	**2.6**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
N cke	**29**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Se en um	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
S ver	**0.95**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Tha um	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
Vanad um	**65**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Z nc	**100**		mg/Kg	4.8	0.96	319849	08/08/23	08/10/23	SBW
Method: EPA 7196A									
Hexava ent Chrom um	ND		mg/Kg	0.80	1	320143	08/10/23 13:00	08/11/23 12:47	WWC
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.16	1.1	319833	08/08/23	08/08/23	KAM

Resu ts for any subcontracted ana yses are not nc uded n th s sect on.

Mineral

Aggregate Batch Plant

District Toxic Profile ID	39
Description	Aggregate Batch Plant
Source	The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.

Pollutant Name	Emission Factor	Emission Factor Units	CAS#
Aluminum	1.50E-02	lb/lb PM10	7429905
Arsenic	2.20E-05	lb/lb PM10	7440382
Barium	2.25E-04	lb/lb PM10	7440393
Beryllium	1.00E-06	lb/lb PM10	7440417
Cadmium	1.00E-06	lb/lb PM10	7440439
Chromium	2.80E-05	lb/lb PM10	7440473
Chromium, hexavalent (& compounds)	1.40E-06	lb/lb PM10	18540299
Cobalt	1.10E-05	lb/lb PM10	7440484
Copper	3.70E-05	lb/lb PM10	7440508
Lead	5.00E-05	lb/lb PM10	7439921
Manganese	5.30E-04	lb/lb PM10	7439965
Nickel	2.80E-05	lb/lb PM10	7440020
Selenium	1.00E-06	lb/lb PM10	7782492
Silica, crystalline	6.38E-02	lb/lb PM 10	1175
Zinc	9.90E-05	lb/lb PM10	7440666

Table 11.1-14. PREDICTIVE EMISSION FACTOR EQUATIONS FOR LOAD-OUT AND SILO FILLING OPERATIONS[a]

EMISSION FACTOR RATING: C

Source	Pollutant	Equation
Drum mix or batch mix plant load-out (SCC 3-05-002-14)	Total PM[b]	$EF = 0.000181 + 0.00141(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	Organic PM[c]	$EF = 0.00141(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	TOC[d]	$EF = 0.0172(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	CO	$EF = 0.00558(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
Silo filling (SCC 3-05-002-13)	Total PM[b]	$EF = 0.000332 + 0.00105(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	Organic PM[c]	$EF = 0.00105(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	TOC[d]	$EF = 0.0504(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	CO	$EF = 0.00488(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$

[a] Emission factor units are lb/ton of HMA produced. SCC = Source Classification Code. To convert from lb/ton to kg/Mg, multiply by 0.5. EF = emission factor; V = asphalt volatility, as determined by ASTM Method D2872-88 "Effects of Heat and Air on a Moving Film of Asphalt (Rolling Thin Film Oven Test - RTFOT)," where a 0.5 percent loss-on-heating is expressed as "-0.5." Regional- or site-specific data for asphalt volatility should be used, whenever possible; otherwise, a default value of -0.5 should be used for V in these equations. T = HMA mix temperature in °F. Site-specific temperature data should be used, whenever possible; otherwise a default temperature of 325°F can be used. Reference 1, Tables 4-27 through 4-31, 4-34 through 4-36, and 4-38 through 4-41.

[b] Total PM, as measured by EPA Method 315 (EPA Method 5 plus the extractable organic particulate from the impingers). Total PM is assumed to be predominantly PM-2.5 since emissions consist of condensed vapors.

[c] Extractable organic PM, as measured by EPA Method 315 (methylene chloride extract of EPA Method 5 particulate plus methylene chloride extract of impinger particulate).

[d] TOC as propane, as measured with an EPA Method 25A sampling train or equivalent sampling train.

Table 11.1-15. SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS–ORGANIC PARTICULATE-BASED COMPOUNDS

EMISSION FACTOR RATING: C

Pollutant	CASRN[a]	Speciation Profile for Load-out and Yard Emissions[b] Compound/Organic PM[c]	Speciation Profile for Silo Filling and Asphalt Storage Tank Emissions Compound/Organic PM[c]
PAH HAPs			
Acenaphthene	83-32-9	0.26%	0.47%
Acenaphthylene	208-96-8	0.028%	0.014%
Anthracene	120-1207	0.070%	0.13%
Benzo(a)anthracene	56-55-3	0.019%	0.056%
Benzo(b)fluoranthene	205-99-2	0.0076%	ND[d]
Benzo(k)fluoranthene	207-08-9	0.0022%	ND[d]
Benzo(g,h,i)perylene	191-24-2	0.0019%	ND[d]
Benzo(a)pyrene	50-32-8	0.0023%	ND[d]
Benzo(e)pyrene	192-97-2	0.0078%	0.0095%
Chrysene	218-01-9	0.103%	0.21%
Dibenz(a,h)anthracene	53-70-3	0.00037%	ND[d]
Fluoranthene	206-44-0	0.050%	0.15%
Fluorene	86-73-7	0.77%	1.01%
Indeno(1,2,3-cd)pyrene	193-39-5	0.00047%	ND[d]
2-Methylnaphthalene	91-57-6	2.38%	5.27%
Naphthalene	91-20-3	1.25%	1.82%
Perylene	198-55-0	0.022%	0.030%
Phenanthrene	85-01-8	0.81%	1.80%
Pyrene	129-00-0	0.15%	0.44%
Total PAH HAPs		5.93%	11.40%
Other semi-volatile HAPs			
Phenol		1.18%	ND[d]

[a] Chemical Abstract Service Registry Number.
[b] Emissions from loaded trucks during the period between load-out and the time the truck departs the plant.
[c] Emission factor for compound is determined by multiplying the percentage presented for the compound by the emission factor for extractable organic particulate (organic PM) as determined from Table 11.1-14.
[d] ND = Measured data below detection limits.

Table 11.1-16. SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS–ORGANIC VOLATILE-BASED COMPOUNDS

EMISSION FACTOR RATING: C

Pollutant	CASRN	Speciation Profile for Load-Out and Yard Emissions Compound/TOC[a]	Speciation Profile for Silo Filling and Asphalt Storage Tank Emissions Compound/TOC (%)[a]
VOC[b]		94%[b]	100%
<u>Non-VOC/non-HAPs</u>			
Methane	74-82-8	6.5%	0.26%
Acetone	67-64-1	0.046%	0.055%
Ethylene	74-85-1	0.71%	1.1%
Total non-VOC/non-HAPS		7.3%	1.4%
<u>Volatile organic HAPS</u>			
Benzene	71-43-2	0.052%	0.032%
Bromomethane	74-83-9	0.0096%	0.0049%
2-Butanone	78-93-3	0.049%	0.039%
Carbon Disulfide	75-15-0	0.013%	0.016%
Chloroethane	75-00-3	0.00021%	0.0040%
Chloromethane	74-87-3	0.015%	0.023%
Cumene	92-82-8	0.11%	ND[c]
Ethylbenzene	100-41-4	0.28%	0.038%
Formaldehyde	50-00-0	0.088%	0.69%
n-Hexane	100-54-3	0.15%	0.10%
Isooctane	540-84-1	0.0018%	0.00031%
Methylene Chloride	75-09-2	0.0%[d]	0.00027%
MTBE	596899	0.0%[d]	ND[c]
Styrene	100-42-5	0.0073%	0.0054%
Tetrachloroethene	127-18-4	0.0077%	ND[c]
Toluene	100-88-3	0.21%	0.062%
1,1,1-Trichloroethane	71-55-6	0.0%[d]	ND[c]
Trichloroethene	79-01-6	0.0%[d]	ND[c]
Trichlorofluoromethane	75-69-4	0.0013%	ND[c]
m-/p-Xylene	1330-20-7	0.41%	0.2%
o-Xylene	95-47-6	0.08%	0.057%
Total volatile organic HAPs		1.5%	1.3%

Table 11.1-16 (cont.)

[a] Emission factor for compound is determined by multiplying the percentage presented for the compound by the emission factor for total organic compounds (TOC) as determined from Table 11.1-14.

[b] The VOC percentages are equal to 100 percent of TOC minus the methane, acetone, methylene chloride, and 1,1,1-trichloroethane percentages.

[c] ND = Measured data below detection limits. Additional compounds that were not detected are: acrylonitrile, allyl chloride, bromodichloromethane, bromoform, 1,3-butadiene, carbon tetrachloride, chlorobenzene, chloroform, dibromochloromethane, 1,2-dibromoethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, cis-1,3-dichloropropene, trans-1,3-dichloropropene, 1,2-epoxybutane, ethyl acrylate, 2-hexanone, iodomethane, methyl methacrylate, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, vinyl acetate, vinyl bromide, and vinyl chloride

[d] Values presented as 0.0% had background concentrations higher than the capture efficiency-corrected measured concentration.

TAYLOR ENVIRONMENTAL SERVICES, INC.

Unpaved Haul Road Emission Factors

CARB Toxic Profile ID	416
Description	CARB Particulate Matter Speciation Profile 416: Windblown Dust Unpaved Road/Area
Source	California Air Resources Board. *Speciation Profiles Used in CARB Modeling*. https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling

Pollutant	Emission Factor	Emission Factor Units	CAS#
Aluminum	0.078902	lb/lb PM	7429905
Antimony	0.000007	lb/lb PM	7440360
Arsenic	0.000015	lb/lb PM	7440382
Barium	0.000952	lb/lb PM	7440393
Bromine	0.000021	lb/lb PM	7726956
Cadmium	0.000025	lb/lb PM	7440439
Chromium	0.000245	lb/lb PM	7440473
Cobalt	0.000149	lb/lb PM	7440484
Copper	0.000087	lb/lb PM	7440508
Chlorine	0.001302	lb/lb PM	7782505
Lead	0.000901	lb/lb PM	7439921
Manganese	0.001051	lb/lb PM	7439965
Nickel	0.000063	lb/lb PM	7440020
Mercury	0.000015	lb/lb PM	7439976
Phosphorus	0.001602	lb/lb PM	7723140
Selenium	0.000001	lb/lb PM	7782492
Vanadium (Fume Or Dust)	0.000312	lb/lb PM	7440622
Silver	0.000009	lb/lb PM	7440224
Zinc	0.000622	lb/lb PM	7440666

Table 12.19-2. HAZARDOUS AIR POLLUTANT (HAP) EMISSION FACTORS FOR WELDING OPERATIONS[a]

Welding Process	Electrode Type (With Last 2 Digits Of SCC)		HAP Emission Factor (10^{-1} g/kg [10^{-1} lb/10^{3} lb] Of Electrode Consumed)[b]						EMISSION FACTOR RATING
			Cr	Cr(VI)	Co	Mn	Ni	Pb	
SMAW[c]	14Mn-4Cr	(-04)	13.9	ND	ND	232	17.1	ND	C
(SCC 3-09-051)	E11018	(-08)[h]	ND	ND	ND	13.8	ND	ND	C
	E308	(-12)[j]	3.93	3.59	0.01	2.52	0.43	ND	D
	E310	(-16)[k]	25.3	18.8	ND	22.0	1.96	0.24	C
	E316	(-20)[m]	5.22	3.32	ND	5.44	0.55	ND	D
	E410	(-24)[n]	ND	ND	ND	6.85	0.14	ND	C
	E6010	(-28)	0.03	0.01	ND	9.91	0.04	ND	B
	E6011	(-32)	0.05	ND	0.01	9.98	0.05	ND	C
	E6012	(-36)	ND	ND	ND	ND	ND	ND	ND
	E6013	(-40)	0.04	ND	< 0.01	9.45	0.02	ND	B
	E7018	(-44)	0.06	ND	< 0.01	10.3	0.02	ND	C
	E7024	(-48)	0.01	ND	ND	6.29	ND	ND	C
	E7028	(-52)	0.13	ND	ND	8.4612	ND	1.62	C
	E8018	(-56)[p]	0.17	ND	ND	0.3	0.51	ND	C
	E9016	(-60)	ND	ND	ND	ND	ND	ND	ND
	E9018	(-64)[q]	2.12	ND	ND	7.83	0.13	ND	C
	ECoCr	(-68)	ND	ND	ND	ND	ND	ND	ND
	ENi-Cl	(-72)	ND	ND	ND	0.39	8.90	ND	C
	ENiCrMo	(-76)[r]	4.20	ND	ND	0.43	2.47	ND	C
	ENi-Cu-2	(-80)[s]	ND	ND	ND	2.12	4.23	ND	C
GMAW[d,e]	E308	(-12)[t]	5.24	ND	< 0.01	3.46	1.84	ND	C
(SCC 3-09-052)	E70S	(-54)[u]	0.01	ND	< 0.01	3.18	0.01	ND	A
	ER1260	(-10)	0.04	ND	ND	ND	ND	ND	D
	ER5154	(-26)	0.10	ND	ND	0.34	ND	ND	D
	ER316	(-20)[v]	5.28	0.10	ND	2.45	2.26	ND	D
	ERNiCrMo	(-76)[w]	3.53	ND	ND	0.70	12.5	ND	B
	ERNiCu	(-80)[x]	< 0.01	ND	ND	0.22	4.51	ND	C

Paved Haul Roads (S0072-S0082)

Paved Haul Road PM Emission Factors

	$EF^{1} = k^* (sL)^a * (W)^b$				
	$PM_{2.5}$	PM_{10}	PM		
k	0.00054	0.0022	0.011	**PM2.5 =**	5.9632E-03 lbs/vmt
a	0.91	0.91	0.91	**PM10 =**	2.4295E-02 lbs/vmt
b	1.02	1.02	1.02	**PM =**	1.2147E-01 lbs/vmt
sL (g/m^2)	2.00	2.00	2.00		
w (weight [tons])	27.50	27.50	27.50		
c (control ef)[2]	80.00%	80.00%	80.00%		

1. AP-42, Jan 2011 Chapter13.2.1.3, Equation 1

2. Default 80% control efficiency from SCAQMD's Particulate Matter (PM) Emission Factors for Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants (December 2021), applied for paved road sweeping.

Pollutant	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	÷	11 Haul Road Segments	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	6,815.84		9.58E-03		11		5.94E+00		3193		1.86E-03
Antimony	7440360	6,815.84		8.50E-07		11		5.27E-04		3193		1.65E-07
Arsenic	7440382	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Barium	7440393	6,815.84		1.16E-04		11		7.17E-02		3193		2.24E-05
Bromine	7726956	6,815.84		2.55E-06		11		1.58E-03		3193		4.95E-07
Cadmium	7440439	6,815.84		3.04E-06		11		1.88E-03		3193		5.89E-07
Chlorine	7782505	6,815.84		1.58E-04		11		9.80E-02		3193		3.07E-05
Chromium	7440473	6,815.84		2.98E-05		11		1.84E-02		3193		5.78E-06
Cobalt	7440484	6,815.84		1.81E-05		11		1.12E-02		3193		3.51E-06
Copper	7440508	6,815.84		1.06E-05		11		6.55E-03		3193		2.05E-06
Lead	7439921	6,815.84		1.09E-04		11		6.78E-02		3193		2.12E-05
Manganese	7439965	6,815.84		1.28E-04		11		7.91E-02		3193		2.48E-05
Mercury	7439976	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Nickel	7440020	6,815.84		7.65E-06		11		4.74E-03		3193		1.49E-06
Phosphorus	7723140	6,815.84		1.95E-04		11		1.21E-01		3193		3.78E-05
Selenium	7782492	6,815.84		1.21E-07		11		7.53E-05		3193		2.36E-08
Silver	7440224	6,815.84		1.09E-06		11		6.77E-04		3193		2.12E-07
Vanadium (Fume Or Dust)	7440622	6,815.84		3.79E-05		11		2.35E-02		3193		7.35E-06
Zinc	7440666	6,815.84		7.56E-05		11		4.68E-02		3193		1.47E-05

*CARB Profile 416.

Storage Pile (S0038)

Stockpile PM Emission Factor

$E = k(0.0032)\dfrac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$	k= 0.74 U= 8.15 M= 1.4
E = emission factor k = particle size multipler (dimensionless) U = mean wind speed, meters per second (m/s) (miles per hour [mph]) M= material moisture content (%)	EF = 0.007363568 (lbs PM/ton)
1. AP42 13.2.4 - Aggregate Handling and Storage Piles	

Pollutant	CAS #	Annual Throughput (tons)	×	Emission Factor (lbs/ton)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001,077.00		6.19E-08		6.19E-02		8760		7.07E-06
Silica, Crystalline **	1175	1,001,077.00		2.18E-04		2.18E+02		8760		2.49E-02
Copper *	7440508	1,001,077.00		3.09E-07		3.10E-01		8760		3.53E-05
Cr (VI)*	18540299	1,001,077.00		0.00E+00		0.00E+00		8760		0.00E+00
Lead*	7439921	1,001,077.00		1.91E-07		1.92E-01		8760		2.19E-05
Nickel *	7440020	1,001,077.00		2.14E-07		2.14E-01		8760		2.44E-05
Beryllium*	7440417	1,001,077.00		3.53E-09		3.54E-03		8760		4.04E-07
Cadmium*	7440439	1,001,077.00		4.12E-09		4.13E-03		8760		4.71E-07
Barium*	7440393	1,001,077.00		1.10E-06		1.11E+00		8760		1.26E-04
Chromium*	7440473	1,001,077.00		3.31E-07		3.32E-01		8760		3.79E-05
Cobalt*	7440484	1,001,077.00		8.10E-08		8.11E-02		8760		9.26E-06
Zinc*	7440666	1,001,077.00		7.36E-07		7.37E-01		8760		8.41E-05
Silver*	7440224	1,001,077.00		7.00E-09		7.00E-03		8760		7.99E-07
Vanadium*	7440622	1,001,077.00		4.79E-07		4.79E-01		8760		5.47E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012

Particulate Matter (PM) Emission Factors For Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants

December 2014

This document provides emission factors for estimating **total suspended particulate matter (PM) emissions (not PM_{10})** for **individual** emission source at aggregate (sand and gravel), brick and tile, hot mix asphalt, cement, concrete batch plants. These factors are also applicable to emission sources other than processes identified in recently adopted Rules 1156 and 1157.

The factors and equations are extracted from the US EPA AP-42 document. Some of the complex equations are simplified with either default settings or assumptions that are applicable to the conditions and operations existing in the South Coast Air Basin as shown in the Reference column of the attached table. Emission factors with an asterisk (*) are not published in the EPA AP-42. These emission factors are determined using the agreed control efficiencies that were established during rule development and also are listed in the Reference column.

Facility is encouraged to apply specific parameters that are applicable to its operations to calculate emissions from the equipment/processes including the results from approved source tests and efficiencies of the add-on control equipment. Supporting documents must be submitted with the annual emission report to show the use of such parameters or source test results in calculating annual emissions.

In the absence of specific parameters and/or source tests, facility can calculate its annual emissions using the factors provided in the attached table and the following equation.

$$E = TP \times EF$$

Where: E = Emission (tons/year)

TP = Annual Throughput

EF = Emission Factor

The unit for TP in this equation must be consistent with the unit of EF. For example, if EF is in pound per ton of material transferred (lb/ton), then TP must be tons of transferred material. For unique emission sources, additional data must be used in determining the factor (EF or TP) before it can be used in emission calculation as discussed in the following notes:

Note 1: For mining/quarrying, **<u>emission factor</u>** is expressed in pound per blast (lb/blast) and is calculated as:

$$EF = 0.000014 \times A^{1.5}$$

Where: A = Total horizontal blasted area in squared foot (ft^2), provided that the blast depth is less than 70 ft.

In this case, the throughput (TP) is number of blast per year.

Note 2: For road emissions (E) caused by vehicle traffic, the **throughput** is expressed in annual vehicle miles traveled (VMT) as follows:

$$\text{TP} = \text{VMT} = \text{Road Length} \times \left(\frac{\#\,\text{Truck Trips}}{\text{Day}}\right) \times \left(\frac{\#\,\text{Days}}{\text{Year}}\right) \times \left(\frac{1\,\text{Mile}}{5{,}280\,\text{ft}}\right)$$

Where: Road Length = One-way distance in feet (ft) of paved or unpaved road within the facility, used by haul trucks and non-haul trucks.

\# Truck Trips = the number of roundtrips the vehicle made.

Definitions: Haul Road: an unpaved road used by haul trucks to carry materials from the quarry to the unloading/processing area within the facility.

Non-Haul Road: unpaved and/or paved road used by non-haul trucks to carry materials from one location to another location within the facility, usually between the facility's entrance/exit to loading/unloading/processing areas.

Note 3: In addition to PM emissions, VOC emissions are also expected from asphalt product during loading out and silo filling operations. **Emission factor** (lb/ton of product loaded) is expressed in as follows:

ASPHALT LOAD-OUT

$$\text{EF}_{\text{PM}} = 0.000181 + 0.00141(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$
$$\text{EF}_{\text{VOC}} = 0.0172(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$

SILO FILLING

$$\text{EF}_{\text{PM}} = 0.000332 + 0.00105(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$
$$\text{EF}_{\text{VOC}} = 0.0504(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$

Where: V = Asphalt Volatility (in negative %); (Example -2.5%)

T = Asphalt Product Mix Temperature (degree F)

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
ROAD EMISSIONS FROM VEHICLE TRAFFIC • **PAVED ROAD** $E = VMT \times k \times \left(\frac{sL}{2}\right)^a \times \left(\frac{W}{3}\right)^b$ Where: E = PM emissions TP = VMT = annual vehicle mile traveled (see **Note 2**) $EF = k \times \left(\frac{sL}{2}\right)^a \times \left(\frac{W}{3}\right)^b$ k = particle size multiplier a, b = constants sL = road surface silt loading (g/m^2) W = average weight (tons) of the vehicle	**Aggregate / Crushed Material Plants** EF = 11.65 *EF = 2.33** lb/VMT **Hot Mix Asphalt Plants** EF = 14.73 *EF = 2.95** lb/VMT **Concrete Batching** EF = 4.91 *EF = 0.98** lb/VMT **Cement/Other Plants** EF = 4.19 *EF = 0.84** lb/VMT		Chapter 13.2.1, Equation 1 Assumptions: k = 0.082, a = 0.65, b = 1.5 Aggregate / Crushed Material sL = 53 g/m^2 Hot Mix Asphalt sL = 76 g/m^2 Cement / Concrete / Others sL = 11 g/m^2 W_{Loaded} = 30 tons $W_{Unloaded}$ = 5 tons $W_{Unloaded\ for\ concrete\ Batching}$ = 12 tons Control Efficiency for chemical stabilizer = 80%

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
• **UNPAVED ROAD** $E = VMT \times k \times \left(\frac{S}{12}\right)^a \times \left(\frac{W}{3}\right)^b$ Where: E = PM emissions TP = VMT = annual vehicle mile traveled (see **Note 2**) $EF = k \times \left(\frac{S}{12}\right)^a \times \left(\frac{W}{3}\right)^b$ k = particle size multiplier a, b = constants S = surface material silt content (%) W = average weight (tons) of the vehicle	**Aggregate Plants** HAUL VEHICLE EF = 16.36 *EF = 3.27** lb/VMT NON-HAUL VEHICLE EF = 8.79 *EF = 1.76** lb/VMT **Other Plant** HAUL VEHICLE EF = 14.66 *EF = 2.93** lb/VMT NON-HAUL VEHICLE EF = 5.26 *EF =1.05** lb/VMT		Assumptions: k = 4.9, a = 0.7, b = 0.45 HAUL W_{Loaded} = 120 tons $W_{Unloaded}$ = 45 tons $S_{Aggregate}$ = 8.3% S_{Others} = 7.1% NON-HAUL W_{Loaded} = 30 tons $W_{Unloaded}$ = 5 tons $S_{Aggregate}$ = 10% S_{Others} = 4.8 % Control Efficiency for chemical stabilizer = 80%
OPEN STORAGE PILE TP = annual tonnage of stored material = amount of material loaded into, or out of, the pile	EF = 0.33 *EF = 0.0165**	lb/ton	Chapter 11.19.1, Final Report, Table 4-1 Control Efficiency = 95%

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
MINING/QUARRYING			
• **DRILLING** TP = number of hole drilled	EF = 1.3	lb/hole	Chapter 11.9, Table 11.9-4
• **BLASTING** (see **Note 1**) TP = number of blast	EF = 0.000014 (A) $^{1.5}$	lb/blast	Chapter 11.9, Table 11.9-1
LOADING / UNLOADING			
• **CONVEYOR TRANSFER POINT** For a system of multiple transfer points, this EF must be multiplied by the number of transfer points (where materials drop from one point to another). Refer to Rule 1157 definition for more detail.	**Aggregate/Crushed Miscellaneous Base/ Asphalt Plants** EF = 0.003 *EF = 0.00014*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
	Concrete Batching and Others SAND: EF = 0.0021 *EF = 0.00011**	lb/ton	Chapter 11.12, Table 11.12-2 Control Efficiency = 95%
	AGGREGATE: EF = 0.0069 *EF = 0.00035**	lb/ton	

Operation/Emission Sources	Emission Factor UNCONTROLLED	 *CONTROLLED*	Unit	References And Assumptions
• **WEIGHT HOPPER / SURGE BIN**	EF = 0.0051	*EF = 0.00026**	lb/ton	Chapter 11.12, Table 11.12-2 Control Efficiency = 95%
• **SILOS**				
Cement	EF = 0.72	*EF = 0.00099*	lb/ton	Chapter 11.12, Table 11.12-2
Cement Supplements (Fly Ash)	EF = 3.14	*EF = 0.0089*	lb/ton	
• **CONCRETE LOADING (Truck Mix)**	EF = 0.995	*EF = 0.0568*	lb/ton	Chapter 11.12, Table 11.12-2
• **CONCRETE LOADING (Central Mix)**	EF = 0.544	*EF = 0.0173*	lb/ton	Chapter 11.12, Table 11.12-2
• **ASPHALT PRODUCTS LOAD OUT** (see **Note 3)**		**PM:** *EF = 0.00052* **VOC:** *EF = 0.0042*	lb/ton lb/ton	Chapter 11.1, Table 11.1-14 V=-0.5, T=325 ^{o}F
• **ASPHALT SILO FILLING** (see **Note 3)**		**PM:** *EF = 0.00059* **VOC:** *EF = 0.0122*	lb/ton lb/ton	Chapter 11.1, Table 11.1-14 V=-0.5, T=325 ^{o}F

Operation/Emission Sources	Emission Factor UNCONTROLLED	 *CONTROLLED*	Unit	References And Assumptions
CRUSHING				
• **PRIMARY CRUSHER**	EF = 0.014*	*EF = 0.00031*	lb/ton	Chapter 11.6, Table 11.6-4 Control Efficiency = 97.8%
• **TERTIARY CRUSHER**	EF = 0.0054	*EF = 0.0012*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **FINE CRUSHER**	EF = 0.039	*EF = 0.003*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
SCREENING				
• **COARSE**	EF = 0.025	*EF = 0.0022*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **FINE**	EF = 0.30	*EF = 0.0036*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **SAND**	EF = 0.21*	*EF = 0.0083*	lb/ton	Chapter 11.19.1, Table 11.19.1-1 Control Efficiency = 96.1%

Operation/Emission Sources	Emission Factor		Unit	References And Assumptions
	UNCONTROLLED	*CONTROLLED*		
GRINDING	EF = 8.5	*EF = 0.0062*	lb/ton	Chapter 11.3, Table 11.3-2
CEMENT MILLING				
Raw Mill	EF = 1.2*	*EF = 0.012*	lb/ton	Chapter 11.6, Table 11.6-4
Finish Grinding Mill	EF = 0.8*	*EF = 0.008*	lb/ton	Control Efficiency = 99%
OTHER PROCESS/EQUIPMENT				
• **DRYER**				
SAND and GRAVEL	EF = 2.0	*EF = 0.039*	lb/ton	Chapter 11.19.1, Table 11.19.1-1
BATCH MIX ASPHALT	EF = 32	*EF = 0.042*	lb/ton	Chapter 11.1, Table 11.1-1
DRUM MIX ASPHALT	EF = 28	*EF = 0.033*	lb/ton	Chapter 11.1, Table 11.1-3
BRICK MANUFACTURING	EF = 0.187		lb/ton	Chapter 11.3., Table 11.3-1
• **KILNS**				
BRICK	EF = 0.96		lb/ton	Chapter 11.3., Table 11.3-1
CEMENT	EF = 109*	*EF = 1.09*	lb/ton	Chapter 11.6, Table 11.6-2
CLINKER COOLER	EF = 14.7 *	*EF = 0.147*	lb/ton	Control Efficiency = 99%

ATTACHMENT "D"

FLOW DIAGRAMS

ATTACHMENT "E"

CANCER BURDEN

Receptor No.	Track No.	Block No.	Census Coordinates X (m)	Census Coordinates Y (m)	Population	x	Cancer Risk	=	Cancer Burden
7709	76204	1001	420186.1	3743790.9	27		1.80E-06		4.86E-05
7714	76202	4009	422140.1	3745235.2	203		1.13E-06		2.29E-04
7716	76201	4005	420777.6	3743877.7	103		1.18E-06		1.22E-04
7725	76201	4000	420868.7	3744123.5	377		1.60E-06		6.03E-04
7726	86407	4006	420443.1	3745237.2	195		1.73E-06		3.37E-04
7731	76201	1002	421599.3	3744529.6	430		1.20E-06		5.16E-04
7732	86407	4003	421983.8	3745511.4	0		1.26E-06		0.00E+00
7733	86407	4004	420787.0	3745517.8	0		1.95E-06		0.00E+00
7736	76201	2003	421770.5	3744990.1	84		1.49E-06		1.25E-04
7741	86407	1004	419832.1	3744454.8	21		1.68E-06		3.53E-05
7742	86407	2008	420045.7	3745101.1	252		1.31E-06		3.30E-04
7745	76201	2007	421470.1	3745056.4	79		2.09E-06		1.65E-04
7749	76202	4007	422016.0	3745049.5	65		1.20E-06		7.80E-05
7757	11714	1012	421501.0	3746027.4	553		1.32E-06		7.30E-04
7760	11714	1028	421676.3	3745862.1	0		1.35E-06		0.00E+00
7763	76201	5009	421012.9	3744623.8	53		3.94E-06		2.09E-04
7764	76201	4004	420346.6	3743943.5	146		2.82E-06		4.12E-04
7766	86407	1002	420118.6	3744923.5	88		1.82E-06		1.60E-04
7772	76201	2008	421657.6	3744830.4	76		1.56E-06		1.19E-04
7773	86407	4002	421567.2	3745640.5	3		1.59E-06		4.77E-06
7778	76201	5008	420314.6	3744358.1	0		4.52E-05		0.00E+00
7785	76204	1038	420186.4	3743677.6	40		1.41E-06		5.64E-05
7786	86407	1009	419529.5	3744529.7	562		1.02E-06		5.73E-04
7791	86407	1010	419741.8	3744503.4	117		1.40E-06		1.64E-04
7794	86407	1007	419675.9	3744804.9	278		1.33E-06		3.70E-04
7800	76201	4003	420660.5	3743715.5	745		1.01E-06		7.52E-04
7805	76201	1005	421295.4	3744817.6	30		2.55E-06		7.65E-05
7806	76201	1003	421619.3	3744755.3	90		1.55E-06		1.40E-04
7808	76201	5010	420697.7	3744263.4	0		4.32E-06		0.00E+00
7818	76201	5000	420978.8	3745040.3	320		3.88E-06		1.24E-03
7826	86407	2000	420148.9	3745354.9	825		1.07E-06		8.83E-04
7832	86407	1006	419846.1	3744539.9	52		1.78E-06		9.26E-05
7834	76201	1006	421374.0	3744758.0	62		2.18E-06		1.35E-04
7842	76201	2005	421714.4	3745091.6	105		1.62E-06		1.70E-04
7847	86407	2002	420263.4	3745206.2	484		1.38E-06		6.68E-04
7849	76201	1000	421871.9	3744983.9	0		1.34E-06		0.00E+00
7851	86407	1000	420172.9	3744697.9	280		3.27E-06		9.16E-04
7856	86407	2007	419787.9	3745140.5	84		1.08E-06		9.07E-05
7861	76201	5002	420987.1	3744385.4	1172		2.49E-06		2.92E-03
7864	76201	2009	421419.4	3744996.2	66		2.22E-06		1.47E-04
7866	86407	4005	420636.2	3745305.3	1192		2.24E-06		2.67E-03
7867	86304	5001	419581.5	3744287.1	266		9.96E-07		2.65E-04
7869	76201	2006	421693.0	3745165.0	129		1.66E-06		2.14E-04
7872	76202	4001	422188.6	3745463.2	0		1.11E-06		0.00E+00

7875	86304	5005	419816.2	3744190.5	315	1.48E-06	4.66E-04
7878	86407	2004	420172.3	3745136.1	182	1.38E-06	2.51E-04
7882	76201	1008	421227.2	3744476.9	472	1.86E-06	8.78E-04
7884	76201	5006	420864.1	3744845.9	101	5.72E-06	5.78E-04
7885	76201	1004	421229.5	3744900.3	111	2.87E-06	3.19E-04
7892	76202	4006	422075.4	3744948.2	126	1.06E-06	1.34E-04
7897	76204	1002	420110.9	3743550.9	139	1.13E-06	1.57E-04
7901	76201	2004	421696.3	3744904.9	61	1.56E-06	9.52E-05
7922	86407	1008	419458.7	3744839.2	368	1.05E-06	3.86E-04
7929	86407	4008	421177.3	3745371.6	0	2.43E-06	0.00E+00
7931	76201	2001	421534.9	3745206.9	92	1.92E-06	1.77E-04
7936	76204	1003	420227.6	3743624.8	105	1.26E-06	1.32E-04
7937	76201	5007	420912.3	3744798.1	144	5.35E-06	7.70E-04
7946	76202	4008	422081.1	3745153.8	82	1.17E-06	9.59E-05
7947	76201	2002	421724.2	3745264.8	73	1.60E-06	1.17E-04
7949	86407	1011	419945.0	3744793.6	44	1.83E-06	8.05E-05
7950	86304	5000	419825.6	3744311.2	73	1.58E-06	1.15E-04
7952	76201	5003	420744.1	3744655.2	125	1.03E-05	1.29E-03
7953	76201	4007	420784.8	3743956.7	140	1.36E-06	1.90E-04
7956	76201	4001	421042.6	3744065.9	42	1.05E-06	4.41E-05
7970	86407	1005	419858.6	3744621.4	47	1.84E-06	8.65E-05
7974	86407	2006	419955.1	3745229.4	70	1.07E-06	7.49E-05
7977	76201	4002	420567.0	3744087.9	150	3.44E-06	5.16E-04
7978	86407	4007	420899.4	3745250.1	0	3.14E-06	0.00E+00
7987	76202	2010	421809.8	3744629.1	31	1.04E-06	3.22E-05
7990	76201	1007	421378.7	3744577.5	103	1.75E-06	1.80E-04
7993	76201	5005	420708.8	3744717.5	100	1.07E-05	1.07E-03
7998	76201	5001	420993.9	3744772.0	143	4.47E-06	6.39E-04
7999	11714	1037	421516.6	3746366.4	0	1.06E-06	0.00E+00
8005	86407	2005	419951.8	3745163.7	175	1.15E-06	2.01E-04
8012	76201	5004	420870.5	3744601.1	125	6.01E-06	7.51E-04
8013	86407	1003	419933.5	3744926.3	194	1.51E-06	2.93E-04
8015	76202	2005	421905.9	3744708.5	56	1.00E-06	5.60E-05
8021	86407	1001	419870.4	3744703.4	49	1.81E-06	8.87E-05
8026	11714	1017	420780.5	3745800.7	0	1.35E-06	0.00E+00
8029	86407	2003	419857.9	3745100.7	120	1.16E-06	1.39E-04
8032	76201	2000	421293.6	3745178.7	66	2.48E-06	1.64E-04
						Total Cancer Burden =	0.027

ATTACHMENT "F"

HEALTH VALUES AND MULTIPATHWAY POLLUTANTS

									Pathway					Acute Target Organs								Chronic Target Organs										Chronic 8-Hr Target Organs									
CAS	Pollutant	InhalationCancerURF	InhalationCancerSlopeFactor	OralCancerSlopeFactor	AcuteREL	InhalationChronicREL	OralChronicREL	Multipathway	Inhalation	Dermal	Soil Ingestion	Homegrown Produce	Mother's Milk	CV	CNS	Immune	Reproductive Devel.	Respiratory	Skin	Eye	Blood	CV	CNS	Immune	Kidney	GILV	Reproductive Devel.	Respiratory	Skin	Eye	Endocrine	Blood	CV	CNS	Immune	Kidney	Reproductive Devel.	Respiratory	Skin	Eye	Blood
1128	Lead cmp(inorg)	1.20E-05	0.042	0.0085				x	x	x	x	x	x																												
1151	PAHs-w/o	0.0011	3.9	12				x	x	x	x	x	x																												
1175	Silica, Crystln					3			x																			x													
9901	DieselExhPM	0.0003	1.1			5			x																			x													
50000	Formaldehyde	6.00E-06	0.021		55	9			x											x								x										x			
50328	B[a]P	0.0011	3.9	12				x	x	x	x	x	x																												
53703	D[a,h]anthracene	0.0012	4.1	4.1				x	x	x	x	x	x																												
56553	B[a]anthracene	0.00011	0.39	1.2				x	x	x	x	x	x																												
67561	Methanol				28000	4000			x						x												x													
71432	Benzene	2.90E-05	0.1		27	3			x							x	x				x											x								x
71556	1,1,1-TCA				68000	1000			x						x								x																	
74839	Methyl Bromide				3900	5			x						x		x	x					x				x	x												
74873	Methyl Chloride								x																																
75003	Ethyl Chloride					30000			x																	x	x														
75070	Acetaldehyde	2.70E-06	0.01		470	140			x									x		x								x										x			
75092	Methylene Chlor	1.00E-06	0.0035		14000	400			x					x	x							x	x																	
75150	CS2				6200	800			x						x		x						x				x													
76131	CFC-113								x																																
78933	MEK				13000				x									x		x																				
79016	TCE	2.00E-06	0.007			600			x														x							x										
83329	Acenaphthene								x																																
85018	Phenanthrene								x																																
86737	Fluorene								x																																
91203	Naphthalene	3.40E-05	0.12			9			x																			x												
91576	2MeNaphthalene								x																																
95476	o-Xylene				22000	700			x						x			x		x			x					x		x										
95636	1,2,4TriMeBenze								x																																
100414	Ethyl Benzene	2.50E-06	0.0087			2000			x																x	x	x				x									
100425	Styrene				21000	900			x								x	x		x			x																	
106423	p-Xylene				22000	700			x						x			x		x			x					x		x										
106990	1,3-Butadiene	0.00017	0.6		660	2			x								x										x										x			
107028	Acrolein				2.5	0.35			x									x		x								x										x			
108383	m-Xylene				22000	700			x						x			x		x			x					x		x										
108883	Toluene				5000	420			x						x			x		x										x									x	
110543	Hexane					7000			x														x																		
115071	Propylene					3000			x																			x													
120127	Anthracene								x																																
127184	Perc	6.10E-06	0.021		20000	35			x						x			x		x					x	x														
129000	Pyrene								x																																
191242	B[g,h,i]perylene								x																																
192972	B[e]pyrene								x																																
193395	In[1,2,3-cd]pyr	0.00011	0.39	1.2				x	x	x	x	x	x																												
198550	Perylene								x																																
205992	B[b]fluoranthene	0.00011	0.39	1.2				x	x	x	x	x	x																												
206440	Fluoranthene								x																																
207089	B[k]fluoranthene	0.00011	0.39	1.2				x	x	x	x	x	x																												
208968	Acenaphthylene								x																																
218019	Chrysene	1.10E-05	0.039	0.12				x	x	x	x	x	x																												
1330207	Xylenes				22000	700			x						x			x		x			x					x		x										

1634044	Me t-ButylEther	2.60E-07	0.0018			8000			x															x	x				x													
7429905	Aluminum								x																																	
7439921	Lead	1.20E-05	0.042	0.0085				x	x	x	x	x	x																													
7439965	Manganese					0.09			x														x										x									
7439976	Mercury				0.6	0.03	0.00016	x	x	x	x	x			x		x							x		x		x						x		x	x					
7440020	Nickel	0.00026	0.91		0.2	0.014	0.011	x	x	x	x	x				x												x				x					x					
7440224	Silver								x																																	
7440360	Antimony								x																																	
7440382	Arsenic	0.0033	12	1.5	0.2	0.015	3.50E-06	x	x	x	x	x		x	x		x					x	x				x	x	x				x	x			x	x	x			
7440393	Barium								x																																	
7440417	Beryllium	0.0024	8.4			0.007	0.002	x	x	x	x	x													x				x													
7440439	Cadmium	0.0042	15			0.02	0.0005	x	x	x	x	x														x			x													
7440473	Chromium								x																																	
7440484	Cobalt	0.0077	27						x																																	
7440508	Copper				100				x								x																									
7440622	Vanadium				30				x								x		x																							
7440666	Zinc								x																																	
7647010	HCl				2100	9			x								x		x								x															
7664417	NH3				3200	200			x								x		x								x															
7723140	Phosphorus								x																																	
7726956	Bromine								x																																	
7782492	Selenium					20	0.005		x													x	x		x																	
7782505	Chlorine				210	0.2			x								x		x								x															
18540299	Cr(VI)	0.15	510	0.5		0.2	0.02	x														x																				

ATTACHMENT "G"

RELEASE PARAMETERS TABLES

	HRA Source ID	Release Name	Device/ Process	Type	UTM		Source Parameters				
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
Asphalt Plant	S0001	GASOLINE DISPENSING	ES2P1	Volume	420253.26	3744266.73	60.96	1.219215	0.9144	0.9144	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0042	Hopper	ES69P1	Volume	420386	3744387	60.77	1.828822	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0043	Hopper	ES70P1	Volume	420344	3744375	61.26	1.219215	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0044	Conveyor Belt	ES71P1	Volume	420344	3744375	61.26	0.6096074	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0045	Conveyor Belt	ES72P1	Volume	420365	3744391	60.96	10.97293	0.9300112	2.330028	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0046	Hopper	ES73P1	Volume	420388	3744383	60.7	1.828822	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0047	Hopper	ES74P1	Volume	420393	3744381	60.04	1.828822	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0048	Hopper	ES75P1	Volume	420395	3744396	60.43	1.828822	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0049	Hopper	ES76P1	Volume	420394	3744386	60.08	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0050	Hopper	ES77P1	Volume	420384	3744395	60.94	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0051	Hopper	ES78P1	Volume	420382	3744398	60.96	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0052	Hopper	ES79P1	Volume	420381	3744402	60.96	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0053	Conveyor Belt	ES80P1	Volume	420388	3744383	60.7	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0054	Conveyor Belt	ES81P1	Volume	420386	3744387	60.77	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0055	Conveyor Belt	ES82P1	Volume	420385	3744391	60.87	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0056	Conveyor Belt	ES83P1	Volume	420384	3744395	60.94	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0057	Conveyor Belt	ES84P1	Volume	420382	3744398	60.96	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0058	Conveyor Belt	ES85P1	Volume	420381	3744402	60.96	1.524019	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0059	Conveyor Belt	ES87P1	Volume	420378	3744406	60.96	2.43843	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0060	Conveyor Belt	ES88P1	Volume	420401	3744430	60.96	2.133626	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
	S0061	Hopper	ES89P1	Volume	420385	3744391	60.87	1.828822	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)
	S0062	Screen	ES90P1	Point	420375	3744408	60.96	4.572056	23.3333	0.1076181	0.3840527

					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)
			ES90P2	Point	420375	3744408	60.96	4.572056	23.3333	0.1076181	0.3840527
	S0063	Dryer Baghouse	ES91P1	Point	420404	3744422	60.78	7.924896	98.8889	9.087486	1.371617
			ES91P2	Point	420404	3744422	60.78	7.924896	98.8889	9.087486	1.371617
	S0065	Asphalt Silo Loadout	ES94P1	Point	420393	3744447	61.16	5.181663	23.3333	8.869929	1.472202
	S0066	ASPHALT SILO FILLING	ES95P1	Point	420305	3744235	61	5.181663	23.3333	8.869929	1.472202
	S0067	STORAGE TANK	ES59P1	Point	420426	3744424	56.59	6.339917	20	0.000999746	0.8534504
	S0068	STORAGE TANK	ES59P2	Point	420428	3744427	56.44	6.339917	20	0.000999746	0.8534504
	S0069	STORAGE TANK	ES59P3	Point	420417	3744441	60.6	6.339917	20	0.000999746	0.8534504
	S0070	STORAGE TANK	ES59P4	Point	420409.5	3744435	60.95	6.339917	20	0.000999746	0.8534504
	S0071	STORAGE TANK	ES59P5	Point	420411	3744437	60.87	6.339917	20	0.000999746	0.8534504
					Easting (m)	Northing (m)	Elevation (m)	Release Height (m)	init lat (m)	init ver (m)	
Recycle Plant	S0012	Hopper	ES25P1	Volume	420452	3744444	46.46	1.219215	0.7000085	1.160014	
	S0012	Hopper	ES25P2	Volume	420452	3744444	46.46	1.219215	0.7000085	1.160014	
	S0013	Feeder	ES26P1	Point	420452	3744444	46.46	4.572056	23.3333	0.1076181	0.3840527
	S0014	Crusher	ES27P1	Point	420445	3744449	51.82	4.572056	23.3333	0.009994921	0.3840527
	S0014	Crusher	ES27P2	Point	420445	3744449	51.82	4.572056	23.3333	0.009994921	0.3840527
	S0015	Conveyor Belt	ES28P1	Volume	420447	3744433	46.62	1.219215	0.7000085	1.160014	
	S0016	CONVEYOR BELT	ES29P1	Volume	420447	3744433	46.62	4.572056	0.7000085	1.160014	
	S0017	Screen	ES30P1	Point	420447	3744422	45.02	4.572056	23.3333	0.009994921	0.3840527
			ES30P2	Point	420447	3744422	45.02	4.572056	23.3333	0.009994921	0.3840527
	S0018	CONVEYOR BELT	ES31P1	Volume	420446.9	3744436	47.18	1.219215	0.7000085	1.160014	
	S0019	CONVEYOR BELT	ES32P1	Volume	420442	3744442	51.73	4.572056	0.7000085	1.160014	
	S0020	CONVEYOR BELT	ES33P1	Volume	420443.2	3744418	46.36	1.219215	0.7000085	1.160014	
	S0021	CONVEYOR BELT	ES34P1	Volume	420445.7	3744407	43.87	1.219215	0.7000085	1.160014	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	

	S0022	CONVEYOR BELT	ES35P1	Volume	420460.3	3744392	40.99	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0023	CONVEYOR BELT	ES36P1	Volume	420450.7	3744390	41.58	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0024	CONVEYOR BELT	ES37P1	Volume	420460	3744380	40.63	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0025	CONVEYOR BELT	ES38P1	Volume	420472	3744319	43.03	4.572056	0.93	1.63		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0026	CONVEYOR BELT	ES39P1	Volume	420464	3744387	40.72	1.219215	0.93	1.63		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0027	CONVEYOR BELT	ES40P1	Volume	420453.5	3744422	43.03	4.572056	0.93	1.63		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0028	HOPPER	ES41P1	Volume	420448	3744399	42.55	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)	
	S0029	CONVEYOR BELT	ES42P1	Point	420453.8	3744401	41.88	4.572056	296.4833	0.1076181	0.3840527	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)	
	S0030	CRUSHER	ES43P1	Point	420457	3744397	41.39	4.572056	296.4833	0.1076181	0.3840527	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)	
			ES43P2	Point	420457	3744397	41.39	4.572056	296.4833	0.1076181	0.3840527	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0031	CONVEYOR BELT	ES44P1	Volume	420305	3744235	61	4.572056	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)	
	S0032	SCREEN	ES45P1	Point	420457	3744379	40.71	4.572056	296.4833	0.1025394	0.3840527	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)	
			ES45P2	Point	420457	3744379	40.71	4.572056	296.4833	0.1025394	0.3840527	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0033	CONVEYOR BELT	ES46P1	Volume	420469	3744291	57.23	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0034	CONVEYOR BELT	ES47P1	Volume	420464	3744276	62.21	4.572056	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0035	CONVEYOR BELT	ES52P1	Volume	420450	3744261	62.97	1.219215	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)	
	S0038	STORAGE PILE	ES64P1	Area	420424.2	3744375	47.64	4.572056	3.4	90	100	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
Aggregate Plant	S0002	HOPPER	ES4P1	Volume	420390	3744275	61.37	1.828822	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0002	HOPPER	ES4P2	Volume	420390	3744275	61.37	1.828822	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0003	CONVEYOR BELT	ES5P1	Volume	420401	3744281	60.68	1.828822	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0004	CONVEYOR BELT	ES6P1	Volume	420370	3744276	60.68	4.572056	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0005	AGGREGATE BIN	ES7P1	Volume	420356	3744272	61.05	1.828822	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0006	CONVEYOR BELT	ES8P1	Volume	420352	3744300	60.96	1.828822	0.7000085	1.160014		
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)		
	S0007	CONVEYOR BELT	ES9P1	Volume	420337	3744302	61.26	9.144112	0.93	2.33		

					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
	S0008	CONVEYOR BELT	ES10P1	Volume	420331	3744289	61.08	9.144112	0.93	2.33	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
	S0009	CONVEYOR BELT	ES11P1	Volume	420369	3744294	60.3	9.144112	0.93	2.33	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
	S0010	CONVEYOR BELT	ES12P1	Volume	420366.5	3744359	60.96	9.144112	0.93	2.33	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
	S0011	CONVEYOR BELT	ES13P1	Volume	420355	3744275	60.98	9.144112	0.93	2.33	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
Permit Exempt	S0037	DIESEL STORAGE	ES63P1	Volume	420387	3744306	56.29	1.219215	0.9144	0.9144	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0036	UNPAVED ROAD	ES62P1	Area	420298.6	3744324.3	60.96	1.524019	10	138.9	105.1
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0072	PAVED ROAD	ES61P1	Area	420283.6	3744269.5	60.96	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0073	PAVED ROAD	ES61P2	Area	420375.9	3744234.2	61.92	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0074	PAVED ROAD	ES61P3	Area	420482.1	3744293.2	56.12	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0075	PAVED ROAD	ES61P4	Area	420467.5	3744215	63.46	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0076	PAVED ROAD	ES61P5	Area	420466.9	3744384.5	40.57	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0077	PAVED ROAD	ES61P6	Area	420489.5	3744460	41.26	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0078	PAVED ROAD	ES61P7	Area	420582.3	3744478.6	39.44	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0079	PAVED ROAD	ES61P8	Area	420556.3	3744564.8	44.55	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0080	PAVED ROAD	ES61P9	Area	420472.3	3744566.9	60.97	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0081	PAVED ROAD	ES61P10	Area	420405.5	3744473.7	61.08	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Int Vert Dimension (ft)	XINIT (m)	YINIT (m)
	S0082	PAVED ROAD	ES61P11	Area	420325	3744379.9	61.26	1.524019	10	8.3	75
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	init lat (m)	init ver (m)	
	S0039	Electrode Usage for Welder	ES65P1	Volume	420409	3744402	58.25	1.219215	1.219215	1.219215	
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)
	S0040	Propane Torches	ES66P1	Point	420419	3744450	60.77	1.219215	65.5556	0.000999746	0.1524018
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)
	S0041	Welding- Gasoline	ES68P1	Point	420387	3744425	60.96	1.524019	37.7778	0.9828969	0.1524018
					Easting (m)	Northing (m)	Elevation (m)	Stack Height (m)	Stack Temp (C)	Stack Velocity (m/s)	Stack Diameter (m)
	S0064	LIGHT TOWERS	ES92P1	Point	420411.7	3744300	54.66	1.524019	310.9278	0.1371254	1.828822

SOUTH COAST
AIR QUALITY MANAGEMENT DISTRICT
21865 Copley Dr.
Diamond Bar, CA 91765-4178

R.J. Noble Company
Orange HOT MIX ASPHALT PLANT
Facility ID #19167
Air Toxics Emissions Inventory Report
Reporting Year 2017-Risk Reduction Plan

Prepared For:

R.J. Noble Company
15505 E Lincoln Ave.
Orange, CA 92865 1015

Project No.: RJNOB-17-2268
Contact: Scott Taylor
Date: March 24, 2026

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EXECUTIVE SUMMARY

The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588 or the "Act") was enacted in September 1987. Under the Act, stationary sources are required to report the types and quantities of certain toxic substances their facilities routinely release into the air. AB 2588 is designed to provide information to state and local agencies and to the general public on the extent of airborne emissions from stationary sources and the potential public health impacts of those emissions. The South Coast Air Quality Management District is mandated by the State to implement AB 2588.

On March 6, 2015, The State Office of Environmental Health Hazard Assessment (OEHHA) adopted changes to the Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments. These revisions were designed to incorporate three technical support documents and to provide enhanced protection of children as required under state law (SB 25, Scotia, 1999). Additionally, SCAQMD updated Rule 1402 in 2017 to include Voluntary Risk Reduction Program. Due to these recent changes, and the corresponding potential increases in calculated health risk, the District notified R.J. Noble that a revised report must be prepared.

Pursuant to the Air Toxics "Hot Spots" Information and Assessment Act of 1987, a comprehensive, site-specific Air Toxics Inventory Report was provided for reporting year 2017 and approved on April 24, 2024. After approval, a Health Risk Assessment (HRA) was prepared and approved on September 24, 2025. The conclusion of the approved HRA required that a Risk Reduction Plan (RRP) be prepared and approved according to the Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment ACT (December 2025). This ATIR has been prepared according to Section 5.2 of the Supplemental Guidelines. The Guidelines require an updated ATIR which includes revised Toxic Emission Summary and HARP files that incorporate the proposed risk reduction measures.

TAYLOR ENVIRONMENTAL SERVICES, INC.

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TAYLOR ENVIRONMENTAL SERVICES, INC.

Part I Project Description

A. Business Background

1. Name

   R.J. Noble Company

2. Owner

   R.J. Noble Company
   15505 E Lincoln Ave.
   Orange, CA 92865

3. Contact

   Rodrigo Amaya
   (714) 637-1550 ext. 305

4. Business Description

   Hot Mix Asphalt Plant

B. Type of Project

Updated Air Toxics Inventory Report Incorporating Proposed Risk Reduction Measures

C. Description of Facility

1. Location

The facility is located at 15505 E Lincoln Ave, Orange CA 92865.

D. Description of Process

Aggregate Receiving System.

Hot Mix Plant

This facility produces hot mix asphalt which is comprised of aggregate and asphalt oil. The facility receives aggregate at the plant by truck. The aggregate is stored in open stockpiles and wetted to control PM emissions. The stockpiles are serviced by a loader which is used to feed the plant. The 100 MMBTU/hr dryer fired on natural gas heats the aggregate and oil is introduced. The blended asphalt is transferred from the external coater to a drag slat conveyer, which is conveyed to silos. The finished product is then loaded out of the silos into trucks.

Recycle Plant

Sand and gravel are delivered to the vibrating grizzly feeder. Oversized materials are sent to a Horizontal Shaft Impactor (HIS) while smaller material passes to an under-belt. The material is then processed through a screen. Material from the top deck is conveyed to a conveyor crusher and recirculated to the double-deck screen. Material for the second deck and fine material is conveyed to stockpiles.

RAP feed System

Recycled Asphalt Pavement (RAP) will be loaded by end loader into the feed hopper where it will be delivered by belt conveyor into the hot aggregate weigh hopper. Note when RAP is added, the virgin aggregate is reduced by a like amount.

Please refer to Attachment B for a process flow diagram which show the interaction of the equipment.

Production Data

The plant production for 2017 was as follows:

Sand and Aggregate Used (tons/yr)	1,001,076.83
Hot Mix Asphalt Produced (tons/yr)	1,064,975.35
RAP (tons/yr)	664,992.0
AC oil (gallons/yr)	15,043,795.41
Stockpile Sand and Aggregate (tons/yr)	1,001,077.0

Part II Methodology

During the reporting year (2017), R.J. Noble included the following sources of emissions, which are evaluated pursuant to AB 2588: (note that all data came from approved HRA)

A. Permitted Toxic Device ID's

HRA Source ID	ATIR Source ID		ATIR Source Description
	Device No.	Process No.	
S0001	2	P1	STORAGE TANK, UNDERGROUND, GASOLINE, METHANOL COMPATIBLE, WITH PHASE I VAPOR RECOVERY SYSTEM OPW (VR-102-E/J), 10000 GALS A/N: 496934
S0002	4	P1	D35: HOPPER, DUMP, AGGREGATE, DRIVE OVER TYPE
	4	P2	HOPPER, DUMP, AGGREGATE, DRIVE OVER TYPE
S0003	5	P1	D36: CONVEYOR, BELT, AGGREGATE
S0004	6	P1	CONVEYOR, BELT, AGGREGATE
S0005	7	P1	BIN, SURGE, AGGREGATE, 20 TONS
S0006	8	P1	CONVEYOR, BELT, AGGREGATE
S0007	9	P1	CONVEYOR, BELT, AGGREGATE
S0008	10	P1	CONVEYOR, BELT, AGGREGATE
S0009	11	P1	CONVEYOR, BELT, AGGREGATE
S0010	12	P1	CONVEYOR, BELT, AGGREGATE
S0011	13	P1	CONVEYOR, BELT, AGGREGATE
S0012	25	P1	HOPPER, DUMP, AGGREGATE
	25	P2	HOPPER, DUMP, AGGREGATE
S0013	26	P1	FEEDER, VIBRATING GRIZZLY, AGGREGATE
S0014	27	P1	CRUSHER, HORIZONTAL SHAFT IMPACT (HSI), CEDAR RAPIDS, AGGREGATE
	27	P2	CRUSHER, HORIZONTAL SHAFT IMPACT (HSI), CEDAR RAPIDS, AGGREGATE
S0015	28	P1	CONVEYOR, BELT, AGGREGATE
S0016	29	P1	CONVEYOR, BELT, AGGREGATE
S0017	30	P1	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
	30	P2	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
S0018	31	P1	CONVEYOR, BELT, AGGREGATE
S0019	32	P1	CONVEYOR, BELT, AGGREGATE
S0020	33	P1	CONVEYOR, BELT, AGGREGATE
S0021	34	P1	CONVEYOR, BELT, AGGREGATE

S0022	35	P1	CONVEYOR, BELT, AGGREGATE
S0023	36	P1	CONVEYOR, BELT, AGGREGATE
S0024	37	P1	CONVEYOR, BELT, AGGREGATE
S0025	38	P1	CONVEYOR, BELT, AGGREGATE
S0026	39	P1	CONVEYOR, BELT, AGGREGATE
S0027	40	P1	CONVEYOR, BELT, AGGREGATE
S0028	41	P1	HOPPER, AGGREGATE
S0029	42	P1	CONVEYOR, AGGREGATE
S0030	43	P1	CRUSHER, VERTICAL SHAFT IMPACT, CANICA 2050
	43	P2	CRUSHER, VERTICAL SHAFT IMPACT, CANICA 2050
S0031	44	P1	CONVEYOR, BELT, AGGREGATE
S0032	45	P1	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
	45	P2	SCREEN, CLASSIFYING, CEDARAPIDS, AGGREGATE, DOUBLE DECK
S0033	46	P1	CONVEYOR, BELT, AGGREGATE
S0034	47	P1	CONVEYOR, BELT, AGGREGATE
S0035	52	P1	CONVEYOR, BELT, AGGREGATE
S0067-S0071	59	P1	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 527072
	59	P2	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 549624
	59	P3	STORAGE TANK, HEATED, AST, ASPHALT, 35,000 GALS A/N: 549625
	59	P4	STORAGE TANK, HEATED, UNDERGROUND, ASPHALT, 20,000 GALS A/N: 16488X
	59	P5	STORAGE TANK, HEATED, UNDERGROUND, ASPHALT, 20,000 GALS A/N: 16487X
S0038	64	P1	AGGREGATE STORAGE PILES
S0042	69	P1	D9 – HOPPER
S0043	70	P1	D5 – HOPPER
S0044	71	P1	D6 – CONVEYOR BELT
S0045	72	P1	D7 – CONVEYOR BELT
S0046	73	P1	D8 – HOPPER
S0047	74	P1	D74 – HOPPER
S0048	75	P1	D75 – HOPPER
S0049	76	P1	D76 – HOPPER
S0050	77	P1	D11 – HOPPER
S0051	78	P1	D12 – HOPPER
S0052	79	P1	D13 - HOPPER
S0053	80	P1	D121 – CONVEYOR BELT
S0054	81	P1	D122 – CONVEYOR BELT

S0055	82	P1	D123 – CONVEYOR BELT
S0056	83	P1	D124 – CONVEYOR BELT
S0057	84	P1	D125 – CONVEYOR BELT
S0058	85	P1	D126 – CONVEYOR BELT
S0059	87	P1	D17 -CONVEYOR BELT
S0060	88	P1	D18 – CONVEYOR BELT
S0061	89	P1	D10 – HOPPER
S0062	90	P1	D130 – SCREEN
	90	P2	D130 – SCREEN
S0063	91	P1	DRYER D127
	91	P2	DRYER D127
S0065	94	P1	ASPHALT SILO LOADOUT
S0066	95	P1	ASPHALT SILO FILLING
S0072-S0082	61	P1-P11	PAVED ROADS - HMA
S0036	62	P1	UNPAVED ROADS – OTHER NON HAUL
S0037	63	P1	DIESEL STORAGE
S0039	65	P1	ELECTRODE USAGE FOR WELDER
S0040	66	P1	PROPANE TORCHES
S0041	68	P1	WELDING - GASOLINE
S0064	92	P1	LIGHT TOWERS

B. Permitted Toxic Emission Summary

The following reflect the individual permitted devices and processes as listed above (table 1). Included are the device and process name, emission, annual throughput, and pounds of toxics per year.

ES2 P1 (Gasoline Dispensing)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Benzene*	**71432**	**82.62**		**1.44E-02**		**1.19E+00**		**8760**		**1.36E-04**

*** AQMD Default**

ES4 P1, ES4 P2, ES5 P1, ES6 P1, ES7 P1 ES8 P1 ES13 P1 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES9 P1, ES10 P1, ES11 P1, ES12 P1 (Aggregate Stacking Conveyors)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	250.27		1.18E-06		2.94E-04		3193		9.22E-08
Copper *	7440508	250.27		5.88E-06		1.47E-03		3193		4.61E-07
Cr (VI)*	18540299	250.27		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	250.27		3.64E-06		9.11E-04		3193		2.85E-07
Nickel *	7440020	250.27		4.06E-06		1.02E-03		3193		3.18E-07
Silica, Crystalline **	1175	250.27		3.20E-03		8.01E-01		3193		2.51E-04
Beryllium*	7440417	250.27		6.72E-08		1.68E-05		3193		5.27E-09
Cadmium*	7440439	250.27		7.84E-08		1.96E-05		3193		6.15E-09
Barium*	7440393	250.27		2.10E-05		5.26E-03		3193		1.65E-06
Chromium*	7440473	250.27		6.30E-06		1.58E-03		3193		4.94E-07
Cobalt*	7440484	250.27		1.54E-06		3.85E-04		3193		1.21E-07
Zinc*	7440666	250.27		1.40E-05		3.50E-03		3193		1.10E-06
Silver*	7440224	250.27		1.33E-07		3.33E-05		3193		1.04E-08
Vanadium*	7440622	250.27		9.10E-06		2.28E-03		3193		7.13E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES25 P1, ES25 P2 (Aggregate Receiving and Crushing)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	664.99		8.96E-07		5.96E-04		3193		1.87E-07
Copper ***	7440508	664.99		1.04E-05		6.89E-03		3193		2.16E-06
Cr (VI)*	18540299	664.99		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	664.99		9.52E-06		6.33E-03		3193		1.98E-06
Nickel ***	7440020	664.99		6.16E-06		4.10E-03		3193		1.28E-06
Silica, Crystalline **	1175	664.99		3.20E-03		2.13E+00		3193		6.66E-04
Barium***	7440393	664.99		1.96E-05		1.30E-02		3193		4.08E-06
Chromium***	7440473	664.99		5.60E-06		3.72E-03		3193		1.17E-06
Cobalt***	7440484	664.99		1.96E-06		1.30E-03		3193		4.08E-07
Vanadium***	7440622	664.99		8.40E-06		5.59E-03		3193		1.75E-06
Zinc***	7440666	664.99		5.88E-05		3.91E-02		3193		1.22E-05

* Enthalpy Analytic Report 08-14-2023

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

***Enthalpy Analytic Report 08-03-22

ES26 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	332.5		8.96E-07		2.98E-04		3193		9.33E-08
Copper ***	7440508	332.5		1.04E-05		3.44E-03		3193		1.08E-06
Cr (VI)*	18540299	332.5		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	332.5		9.52E-06		3.17E-03		3193		9.91E-07
Nickel ***	7440020	332.5		6.16E-06		2.05E-03		3193		6.41E-07
Silica, Crystalline **	1175	332.5		3.20E-03		1.06E+00		3193		3.33E-04
Barium***	7440393	332.5		1.96E-05		6.52E-03		3193		2.04E-06
Chromium***	7440473	332.5		5.60E-06		1.86E-03		3193		5.83E-07
Cobalt***	7440484	332.5		1.96E-06		6.52E-04		3193		2.04E-07
Vanadium***	7440622	332.5		8.40E-06		2.79E-03		3193		8.75E-07
Zinc***	7440666	332.5		5.88E-05		1.96E-02		3193		6.12E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES27 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	498.74		7.68E-07		3.83E-04		3193		1.20E-07
Copper ***	7440508	498.74		8.88E-06		4.43E-03		3193		1.39E-06
Cr (VI)*	18540299	498.74		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	498.74		8.16E-06		4.07E-03		3193		1.27E-06
Nickel ***	7440020	498.74		5.28E-06		2.63E-03		3193		8.25E-07
Silica, Crystalline **	1175	498.74		2.74E-03		1.37E+00		3193		4.29E-04
Barium***	7440393	498.74		1.68E-05		8.38E-03		3193		2.62E-06
Chromium***	7440473	498.74		4.80E-06		2.39E-03		3193		7.50E-07
Cobalt***	7440484	498.74		1.68E-06		8.38E-04		3193		2.62E-07
Vanadium***	7440622	498.74		7.20E-06		3.59E-03		3193		1.12E-06
Zinc***	7440666	498.74		5.04E-05		2.51E-02		3193		7.87E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES28 P1 ES29 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		8.96E-07		7.45E-04		3193		2.33E-07
Copper ***	7440508	831.24		1.04E-05		8.61E-03		3193		2.70E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		9.52E-06		7.91E-03		3193		2.48E-06
Nickel ***	7440020	831.24		6.16E-06		5.12E-03		3193		1.60E-06
Silica, Crystalline **	1175	831.24		3.20E-03		2.66E+00		3193		8.33E-04
Barium***	7440393	831.24		1.96E-05		1.63E-02		3193		5.10E-06
Chromium***	7440473	831.24		5.60E-06		4.65E-03		3193		1.46E-06
Cobalt***	7440484	831.24		1.96E-06		1.63E-03		3193		5.10E-07
Vanadium***	7440622	831.24		8.40E-06		6.98E-03		3193		2.19E-06
Zinc***	7440666	831.24		5.88E-05		4.89E-02		3193		1.53E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES30 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		1.41E-06		1.17E-03		3193		3.67E-07
Copper ***	7440508	831.24		1.63E-05		1.35E-02		3193		4.24E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		1.50E-05		1.24E-02		3193		3.89E-06
Nickel ***	7440020	831.24		9.68E-06		8.05E-03		3193		2.52E-06
Silica, Crystalline **	1175	831.24		5.03E-03		4.18E+00		3193		1.31E-03
Barium***	7440393	831.24		3.08E-05		2.56E-02		3193		8.02E-06
Chromium***	7440473	831.24		8.80E-06		7.31E-03		3193		2.29E-06
Cobalt***	7440484	831.24		3.08E-06		2.56E-03		3193		8.02E-07
Vanadium***	7440622	831.24		1.32E-05		1.10E-02		3193		3.44E-06
Zinc***	7440666	831.24		9.24E-05		7.68E-02		3193		2.41E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES31 P1 ES32 P1(Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	**7440382**	166.25		8.96E-07		1.49E-04		3193		4.67E-08
Copper ***	**7440508**	166.25		1.04E-05		1.72E-03		3193		5.39E-07
Cr (VI)*	**18540299**	166.25		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	**7439921**	166.25		9.52E-06		1.58E-03		3193		4.96E-07
Nickel ***	**7440020**	166.25		6.16E-06		1.02E-03		3193		3.21E-07
Silica, Crystalline **	**1175**	166.25		3.20E-03		5.32E-01		3193		1.67E-04
Barium***	7440393	166.25		1.96E-05		3.26E-03		3193		1.02E-06
Chromium***	7440473	166.25		5.60E-06		9.31E-04		3193		2.92E-07
Cobalt***	7440484	166.25		1.96E-06		3.26E-04		3193		1.02E-07
Vanadium***	7440622	166.25		8.40E-06		1.40E-03		3193		4.37E-07
Zinc***	7440666	166.25		5.88E-05		9.78E-03		3193		3.06E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES33 P1, ES34 P1, ES35 P1, ES36 P1, ES37 P1, ES38 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	**7440382**	581.89		8.96E-07		5.21E-04		3193		1.63E-07
Copper ***	**7440508**	581.89		1.04E-05		6.03E-03		3193		1.89E-06
Cr (VI)*	**18540299**	581.89		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	**7439921**	581.89		9.52E-06		5.54E-03		3193		1.73E-06
Nickel ***	**7440020**	581.89		6.16E-06		3.58E-03		3193		1.12E-06
Silica, Crystalline **	**1175**	581.89		3.20E-03		1.86E+00		3193		5.83E-04
Barium***	7440393	581.89		1.96E-05		1.14E-02		3193		3.57E-06
Chromium***	7440473	581.89		5.60E-06		3.26E-03		3193		1.02E-06
Cobalt***	7440484	581.89		1.96E-06		1.14E-03		3193		3.57E-07
Vanadium***	7440622	581.89		8.40E-06		4.89E-03		3193		1.53E-06
Zinc***	7440666	581.89		5.88E-05		3.42E-02		3193		1.07E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES39 P1, ES40 P1, ES41 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	83.12		8.96E-07		7.45E-05		3193		2.33E-08
Copper ***	7440508	83.12		1.04E-05		8.61E-04		3193		2.70E-07
Cr (VI)*	18540299	83.12		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	83.12		9.52E-06		7.91E-04		3193		2.48E-07
Nickel ***	7440020	83.12		6.16E-06		5.12E-04		3193		1.60E-07
Silica, Crystalline **	1175	83.12		3.20E-03		2.66E-01		3193		8.33E-05
Barium***	7440393	83.12		1.96E-05		1.63E-03		3193		5.10E-07
Chromium***	7440473	83.12		5.60E-06		4.65E-04		3193		1.46E-07
Cobalt***	7440484	83.12		1.96E-06		1.63E-04		3193		5.10E-08
Vanadium***	7440622	83.12		8.40E-06		6.98E-04		3193		2.19E-07
Zinc***	7440666	83.12		5.88E-05		4.89E-03		3193		1.53E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES42 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	7440508	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	7440020	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	1175	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES43 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		7.68E-07		9.58E-05		3193		3.00E-08
Copper ***	7440508	124.69		8.88E-06		1.11E-03		3193		3.47E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		8.16E-06		1.02E-03		3193		3.19E-07
Nickel ***	7440020	124.69		5.28E-06		6.58E-04		3193		2.06E-07
Silica, Crystalline **	1175	124.69		2.74E-03		3.42E-01		3193		1.07E-04
Barium***	7440393	124.69		1.68E-05		2.09E-03		3193		6.56E-07
Chromium***	7440473	124.69		4.80E-06		5.99E-04		3193		1.87E-07
Cobalt***	7440484	124.69		1.68E-06		2.09E-04		3193		6.56E-08
Vanadium***	7440622	124.69		7.20E-06		8.98E-04		3193		2.81E-07
Zinc***	7440666	124.69		5.04E-05		6.28E-03		3193		1.97E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES43 P2 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-08		1.12E-05		3193		3.50E-09
Copper ***	7440508	124.69		1.04E-06		1.29E-04		3193		4.05E-08
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-07		1.19E-04		3193		3.72E-08
Nickel ***	7440020	124.69		6.16E-07		7.68E-05		3193		2.41E-08
Silica, Crystalline **	1175	124.69		3.20E-04		3.99E-02		3193		1.25E-05
Barium***	7440393	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Chromium***	7440473	124.69		5.60E-07		6.98E-05		3193		2.19E-08
Cobalt***	7440484	124.69		1.96E-07		2.44E-05		3193		7.65E-09
Vanadium***	7440622	124.69		8.40E-07		1.05E-04		3193		3.28E-08
Zinc***	7440666	124.69		5.88E-06		7.33E-04		3193		2.30E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES 44 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	**7440382**	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	**7440508**	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	**7439921**	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	**7440020**	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	**1175**	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES45 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	**7440382**	124.69		1.41E-06		1.76E-04		3193		5.50E-08
Copper ***	**7440508**	124.69		1.63E-05		2.03E-03		3193		6.36E-07
Cr (VI)*	**18540299**	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	**7439921**	124.69		1.50E-05		1.87E-03		3193		5.84E-07
Nickel ***	**7440020**	124.69		9.68E-06		1.21E-03		3193		3.78E-07
Silica, Crystalline **	**1175**	124.69		5.03E-03		6.27E-01		3193		1.96E-04
Barium***	7440393	124.69		3.08E-05		3.84E-03		3193		1.20E-06
Chromium***	7440473	124.69		8.80E-06		1.10E-03		3193		3.44E-07
Cobalt***	7440484	124.69		3.08E-06		3.84E-04		3193		1.20E-07
Vanadium***	7440622	124.69		1.32E-05		1.65E-03		3193		5.15E-07
Zinc***	7440666	124.69		9.24E-05		1.15E-02		3193		3.61E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES46 P1 ES47 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	41.56		8.96E-07		3.72E-05		3193		1.17E-08
Copper ***	7440508	41.56		1.04E-05		4.31E-04		3193		1.35E-07
Cr (VI)*	18540299	41.56		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	41.56		9.52E-06		3.96E-04		3193		1.24E-07
Nickel ***	7440020	41.56		6.16E-06		2.56E-04		3193		8.02E-08
Silica, Crystalline **	1175	41.56		3.20E-03		1.33E-01		3193		4.17E-05
Barium***	7440393	41.56		1.96E-05		8.15E-04		3193		2.55E-07
Chromium***	7440473	41.56		5.60E-06		2.33E-04		3193		7.29E-08
Cobalt***	7440484	41.56		1.96E-06		8.15E-05		3193		2.55E-08
Vanadium***	7440622	41.56		8.40E-06		3.49E-04		3193		1.09E-07
Zinc***	7440666	41.56		5.88E-05		2.44E-03		3193		7.65E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES52 P1 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	83.12		8.96E-07		7.45E-05		3193		2.33E-08
Copper ***	7440508	83.12		1.04E-05		8.61E-04		3193		2.70E-07
Cr (VI)*	18540299	83.12		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	83.12		9.52E-06		7.91E-04		3193		2.48E-07
Nickel ***	7440020	83.12		6.16E-06		5.12E-04		3193		1.60E-07
Silica, Crystalline **	1175	83.12		3.20E-03		2.66E-01		3193		8.33E-05
Barium***	7440393	83.12		1.96E-05		1.63E-03		3193		5.10E-07
Chromium***	7440473	83.12		5.60E-06		4.65E-04		3193		1.46E-07
Cobalt***	7440484	83.12		1.96E-06		1.63E-04		3193		5.10E-08
Vanadium***	7440622	83.12		8.40E-06		6.98E-04		3193		2.19E-07
Zinc***	7440666	83.12		5.88E-05		4.89E-03		3193		1.53E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES59 P1-P3 (Asphalt Oil Storage)

	CAS #	Annual Throughput (gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Formaldehyde	50000	3008759.08		2.86E-06		8.61E-03		8760		9.83E-07
Benzo(a) pyrene [PAH, POM]	50328	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Dibenz(a,h)anthracene [PAH, POM]	53703	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benz(a) anthracene [PAH,POM]	56553	3008759.08		6.55E-09		1.97E-05		8760		2.25E-09
Benzene	71432	3008759.08		1.33E-07		3.99E-04		8760		4.56E-08
1,1,1-Trichloroethane	71556	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Bromomethane	74839	3008759.08		2.03E-08		6.12E-05		8760		6.98E-09
Chloroethane	75003	3008759.08		1.66E-08		4.99E-05		8760		5.70E-09
Methylene chloride	75092	3008759.08		1.12E-09		3.37E-06		8760		3.85E-10
Carbon Disulfide	75150	3008759.08		6.64E-08		2.00E-04		8760		2.28E-08
Trichlorofluoromethane	76131	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
2-Butanone	78933	3008759.08		1.62E-07		4.87E-04		8760		5.56E-08
Trichloroethene	79016	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthene [PAH,POM]	83329	3008759.08		5.50E-08		1.65E-04		8760		1.89E-08
Phenanthrene [PAH, POM]	85018	3008759.08		2.11E-07		6.34E-04		8760		7.23E-08
Fluorene	86737	3008759.08		1.18E-07		3.56E-04		8760		4.06E-08
Naphthalene [PAH, POM]	91203	3008759.08		2.13E-07		6.41E-04		8760		7.31E-08
2-Methyl naphthalene [PAH, POM]	91576	3008759.08		6.17E-07		1.86E-03		8760		2.12E-07
o-Xylene	95476	3008759.08		1.58E-07		4.74E-04		8760		5.41E-08
Ethyl benzene	100414	3008759.08		1.58E-07		4.74E-04		8760		5.41E-08
Styrene	100425	3008759.08		2.24E-08		6.74E-05		8760		7.69E-09
p-Xylene	106423	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
m-Xylene	108383	3008759.08		8.30E-07		2.50E-03		8760		2.85E-07
Toluene	108883	3008759.08		2.57E-07		7.74E-04		8760		8.83E-08
n-Hexane	110543	3008759.08		4.15E-07		1.25E-03		8760		1.42E-07
Anthracene [PAH,POM]	120127	3008759.08		1.52E-08		4.58E-05		8760		5.22E-09
Tetrachloroethene	127184	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Pyrene [PAH, POM]	129000	3008759.08		5.15E-08		1.55E-04		8760		1.77E-08
Benzo(g,h,i) perylene [PAH, POM]	191242	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benzo(e)pyrene [PAH, POM]	192972	3008759.08		1.11E-09		3.34E-06		8760		3.82E-10
Indeno(1,2,3-cd)pyrene [PAH, POM]	193395	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Perylene [PAH, POM]	198550	3008759.08		3.51E-09		1.06E-05		8760		1.21E-09
Benzo(b) fluoranthene [PAH, POM]	205992	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Fluoranthene	206440	3008759.08		1.75E-08		5.28E-05		8760		6.03E-09
Benzo(k) fluoranthene [PAH, POM]	207089	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthylene [PAH,POM]	208968	3008759.08		1.64E-09		4.93E-06		8760		5.63E-10
Chrysene [PAH, POM]	218019	3008759.08		2.46E-08		7.39E-05		8760		8.44E-09

* AP-42

ES59 P4-P5 (Asphalt Oil Storage)

	CAS #	Annual Throughput (gal)	×	Emission Factor* (lbs/M gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Formaldehyde	50000	3008759.08		2.41E-06		7.27E-03		8760		8.29E-07
Benzo(a) pyrene [PAH, POM]	50328	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Dibenz(a,h)anthracene [PAH, POM]	53703	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benz(a) anthracene [PAH,POM]	56553	3008759.08		5.53E-09		1.66E-05		8760		1.90E-09
Benzene	71432	3008759.08		1.12E-07		3.37E-04		8760		3.85E-08
1,1,1-Trichloroethane	71556	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Bromomethane	74839	3008759.08		1.71E-08		5.16E-05		8760		5.89E-09
Chloroethane	75003	3008759.08		1.40E-08		4.21E-05		8760		4.81E-09
Methylene chloride	75092	3008759.08		9.45E-10		2.84E-06		8760		3.25E-10
Carbon Disulfide	75150	3008759.08		5.60E-08		1.68E-04		8760		1.92E-08
Trichlorofluoromethane	76131	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
2-Butanone	78933	3008759.08		1.36E-07		4.11E-04		8760		4.69E-08
Trichloroethene	79016	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthene [PAH,POM]	83329	3008759.08		4.64E-08		1.40E-04		8760		1.59E-08
Phenanthrene [PAH, POM]	85018	3008759.08		1.78E-07		5.35E-04		8760		6.10E-08
Fluorene	86737	3008759.08		9.97E-08		3.00E-04		8760		3.42E-08
Naphthalene [PAH, POM]	91203	3008759.08		1.80E-07		5.41E-04		8760		6.17E-08
2-Methyl naphthalene [PAH, POM]	91576	3008759.08		5.20E-07		1.57E-03		8760		1.79E-07
o-Xylene	95476	3008759.08		1.99E-07		6.00E-04		8760		6.85E-08
Ethyl benzene	100414	3008759.08		1.33E-07		4.00E-04		8760		4.57E-08
Styrene	100425	3008759.08		1.89E-08		5.69E-05		8760		6.49E-09
p-Xylene	106423	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
m-Xylene	108383	3008759.08		7.00E-07		2.11E-03		8760		2.40E-07
Toluene	108883	3008759.08		2.17E-07		6.53E-04		8760		7.45E-08
n-Hexane	110543	3008759.08		3.50E-07		1.05E-03		8760		1.20E-07
Anthracene [PAH,POM]	120127	3008759.08		1.28E-08		3.86E-05		8760		4.41E-09
Tetrachloroethene	127184	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Pyrene [PAH, POM]	129000	3008759.08		4.34E-08		1.31E-04		8760		1.49E-08
Benzo(g,h,i) perylene [PAH, POM]	191242	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Benzo(e)pyrene [PAH, POM]	192972	3008759.08		9.38E-10		2.82E-06		8760		3.22E-10
Indeno(1,2,3-cd)pyrene [PAH, POM]	193395	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Perylene [PAH, POM]	198550	3008759.08		2.96E-09		8.91E-06		8760		1.02E-09
Benzo(b) fluoranthene [PAH, POM]	205992	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Fluoranthene	206440	3008759.08		1.48E-08		4.46E-05		8760		5.09E-09
Benzo(k) fluoranthene [PAH, POM]	207089	3008759.08		0.00E+00		0.00E+00		8760		0.00E+00
Acenaphthylene [PAH,POM]	208968	3008759.08		1.38E-09		4.16E-06		8760		4.75E-10
Chrysene [PAH, POM]	218019	3008759.08		2.07E-08		6.24E-05		8760		7.12E-09

* AP-42

ES64 P1 (Storage Piles)***

	CAS #	Annual Throughput (tons)	×	Emission Factor (lbs/ton)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001,077.00		6.19E-08		6.19E-02		8760		7.07E-06
Silica, Crystalline **	1175	1,001,077.00		2.18E-04		2.18E+02		8760		2.49E-02
Copper *	7440508	1,001,077.00		3.09E-07		3.10E-01		8760		3.53E-05
Cr (VI)*	18540299	1,001,077.00		0.00E+00		0.00E+00		8760		0.00E+00
Lead*	7439921	1,001,077.00		1.91E-07		1.92E-01		8760		2.19E-05
Nickel *	7440020	1,001,077.00		2.14E-07		2.14E-01		8760		2.44E-05
Beryllium*	7440417	1,001,077.00		3.53E-09		3.54E-03		8760		4.04E-07
Cadmium*	7440439	1,001,077.00		4.12E-09		4.13E-03		8760		4.71E-07
Barium*	7440393	1,001,077.00		1.10E-06		1.11E+00		8760		1.26E-04
Chromium*	7440473	1,001,077.00		3.31E-07		3.32E-01		8760		3.79E-05
Cobalt*	7440484	1,001,077.00		8.10E-08		8.11E-02		8760		9.26E-06
Zinc*	7440666	1,001,077.00		7.36E-07		7.37E-01		8760		8.41E-05
Silver*	7440224	1,001,077.00		7.00E-09		7.00E-03		8760		7.99E-07
Vanadium*	7440622	1,001,077.00		4.79E-07		4.79E-01		8760		5.47E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

*** Based on Updated Moisture Content in Storage Pile, Refer to Attachment “D”

ES69 P1 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	111.23		1.18E-06		1.31E-04		3193		4.11E-08
Copper *	7440508	111.23		5.88E-06		6.54E-04		3193		2.05E-07
Cr (VI)*	18540299	111.23		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	111.23		3.64E-06		4.05E-04		3193		1.27E-07
Nickel *	7440020	111.23		4.06E-06		4.52E-04		3193		1.41E-07
Silica, Crystalline **	1175	111.23		3.20E-03		3.56E-01		3193		1.11E-04
Beryllium*	7440417	111.23		6.72E-08		7.47E-06		3193		2.34E-09
Cadmium*	7440439	111.23		7.84E-08		8.72E-06		3193		2.73E-09
Barium*	7440393	111.23		2.10E-05		2.34E-03		3193		7.32E-07
Chromium*	7440473	111.23		6.30E-06		7.01E-04		3193		2.19E-07
Cobalt*	7440484	111.23		1.54E-06		1.71E-04		3193		5.36E-08
Zinc*	7440666	111.23		1.40E-05		1.56E-03		3193		4.88E-07
Silver*	7440224	111.23		1.33E-07		1.48E-05		3193		4.63E-09
Vanadium*	7440622	111.23		9.10E-06		1.01E-03		3193		3.17E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment “C”

ES70 P1, ES 71 P1, ES72 P1 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES73 P1, ES74 P1, ES75 P1, ES76 P1, ES77 P1, ES78 P1, ES79 P1, ES89 P1 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	111.23		1.18E-06		1.31E-04		3193		4.11E-08
Copper *	7440508	111.23		5.88E-06		6.54E-04		3193		2.05E-07
Cr (VI)*	18540299	111.23		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	111.23		3.64E-06		4.05E-04		3193		1.27E-07
Nickel *	7440020	111.23		4.06E-06		4.52E-04		3193		1.41E-07
Silica, Crystalline **	1175	111.23		3.20E-03		3.56E-01		3193		1.11E-04
Beryllium*	7440417	111.23		6.72E-08		7.47E-06		3193		2.34E-09
Cadmium*	7440439	111.23		7.84E-08		8.72E-06		3193		2.73E-09
Barium*	7440393	111.23		2.10E-05		2.34E-03		3193		7.32E-07
Chromium*	7440473	111.23		6.30E-06		7.01E-04		3193		2.19E-07
Cobalt*	7440484	111.23		1.54E-06		1.71E-04		3193		5.36E-08
Zinc*	7440666	111.23		1.40E-05		1.56E-03		3193		4.88E-07
Silver*	7440224	111.23		1.33E-07		1.48E-05		3193		4.63E-09
Vanadium*	7440622	111.23		9.10E-06		1.01E-03		3193		3.17E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES80 P1, ES81 P1 ES82 P1, ES83 P1, ES84 P1, ES85 P1 (Aggregate Receiving)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	166.85		1.18E-06		1.97E-04		3193		6.17E-08
Copper *	7440508	166.85		5.88E-06		9.81E-04		3193		3.07E-07
Cr (VI)*	18540299	166.85		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	166.85		3.64E-06		6.07E-04		3193		1.90E-07
Nickel *	7440020	166.85		4.06E-06		6.77E-04		3193		2.12E-07
Silica, Crystalline **	1175	166.85		3.20E-03		5.34E-01		3193		1.67E-04
Beryllium*	7440417	166.85		6.72E-08		1.12E-05		3193		3.51E-09
Cadmium*	7440439	166.85		7.84E-08		1.31E-05		3193		4.10E-09
Barium*	7440393	166.85		2.10E-05		3.50E-03		3193		1.10E-06
Chromium*	7440473	166.85		6.30E-06		1.05E-03		3193		3.29E-07
Cobalt*	7440484	166.85		1.54E-06		2.57E-04		3193		8.05E-08
Zinc*	7440666	166.85		1.40E-05		2.34E-03		3193		7.32E-07
Silver*	7440224	166.85		1.33E-07		2.22E-05		3193		6.95E-09
Vanadium*	7440622	166.85		9.10E-06		1.52E-03		3193		4.76E-07

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES87 P1, ES88 P1 (Asphalt Plant Feed)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	7440508	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	7440020	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	1175	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	7440417	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	7440439	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES90 P1 (Asphalt Plant Feed)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001.08		1.85E-05		1.85E-02		3193		5.79E-06
Copper *	7440508	1,001.08		9.24E-05		9.25E-02		3193		2.90E-05
Cr (VI)*	18540299	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	7439921	1,001.08		5.72E-05		5.73E-02		3193		1.79E-05
Nickel *	7440020	1,001.08		6.38E-05		6.39E-02		3193		2.00E-05
Silica, Crystalline **	1175	1,001.08		5.03E-02		5.04E+01		3193		1.58E-02
Beryllium*	7440417	1,001.08		1.06E-06		1.06E-03		3193		3.31E-07
Cadmium*	7440439	1,001.08		1.23E-06		1.23E-03		3193		3.86E-07
Barium*	7440393	1,001.08		3.30E-04		3.30E-01		3193		1.03E-04
Chromium*	7440473	1,001.08		9.90E-05		9.91E-02		3193		3.10E-05
Cobalt*	7440484	1,001.08		2.42E-05		2.42E-02		3193		7.59E-06
Zinc*	7440666	1,001.08		2.20E-04		2.20E-01		3193		6.90E-05
Silver*	7440224	1,001.08		2.09E-06		2.09E-03		3193		6.55E-07
Vanadium*	7440622	1,001.08		1.43E-04		1.43E-01		3193		4.48E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES91 P1 (Dryer)

	CAS #	Annual Throughput (mmscf)	×	Emission Factor* (lbs/mmscf)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Acrolein	107028	199.04		2.70E-03		5.37E-01		3193.4		1.68E-04
NH3	7664417	199.04		3.20E+00		6.37E+02		3193.4		1.99E-01

* AQMD Default

TAYLOR ENVIRONMENTAL SERVICES, INC.

ES94 P1 (Asphalt Plant Silo Loadout)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor* (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
2-Methylnapthalene	91576	1,064.98		8.11E-04		8.64E-01		3193		2.71E-04
Acenaphthene	83329	1,064.98		8.86E-05		9.44E-02		3193		2.96E-05
Acenaphthylene	208968	1,064.98		9.55E-06		1.02E-02		3193		3.18E-06
Anthracene	120127	1,064.98		2.39E-05		2.54E-02		3193		7.96E-06
B[a]anthracene	56553	1,064.98		6.48E-06		6.90E-03		3193		2.16E-06
B[a]P	50328	1,064.98		7.84E-07		8.35E-04		3193		2.62E-07
B[b]fluoranthene	205992	1,064.98		2.59E-06		2.76E-03		3193		8.64E-07
B[e]pyrene	192972	1,064.98		2.66E-06		2.83E-03		3193		8.87E-07
B[g,h,i]perylene	191242	1,064.98		6.48E-07		6.90E-04		3193		2.16E-07
B[k]fluoranthene	207089	1,064.98		7.50E-07		7.99E-04		3193		2.50E-07
Benzene	71432	1,064.98		5.74E-04		6.11E-01		3193		1.91E-04
CFC-113	76131	1,064.98		1.44E-05		1.53E-02		3193		4.78E-06
Chrysene	218019	1,064.98		3.51E-05		3.74E-02		3193		1.17E-05
D[a,h]anthracene	53703	1,064.98		1.26E-07		1.34E-04		3193		4.21E-08
Ethyl benzene	100414	1,064.98		3.09E-03		3.29E+00		3193		1.03E-03
Fluoranthene	206440	1,064.98		1.71E-05		1.82E-02		3193		5.69E-06
Fluorene	86737	1,064.98		2.63E-04		2.80E-01		3193		8.77E-05
Formaldehyde	50000	1,064.98		9.71E-04		1.03E+00		3193		3.24E-04
Hexane	110543	1,064.98		1.65E-03		1.76E+00		3193		5.52E-04
In[1,2,3-cd]pyr	193395	1,064.98		1.60E-07		1.71E-04		3193		5.34E-08
m-Xylene	108383	1,064.98		4.52E-03		4.82E+00		3193		1.51E-03
Naphthalene	91203	1,064.98		4.26E-04		4.54E-01		3193		1.42E-04
O-Xylenes	95476	1,064.98		8.82E-04		9.40E-01		3193		2.94E-04
Perylene	198550	1,064.98		7.50E-06		7.99E-03		3193		2.50E-06
Phenanthrene	85018	1,064.98		2.76E-04		2.94E-01		3193		9.21E-05
p-Xylene	106423	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Pyrene	129000	1,064.98		5.11E-05		5.45E-02		3193		1.71E-05
Styrene	100425	1,064.98		8.05E-05		8.58E-02		3193		2.69E-05
Toluene	108883	1,064.98		2.32E-03		2.47E+00		3193		7.73E-04

* AP-42

ES95 P1 (Asphalt Silo Filling)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor* (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
2-Methylnapthalene	91576	1,064.98		1.34E-03		1.42E+00		3193		4.46E-04
Acenaphthene	83329	1,064.98		1.19E-04		1.27E-01		3193		3.98E-05
Acenaphthylene	208968	1,064.98		3.55E-06		3.79E-03		3193		1.19E-06
Anthracene	120127	1,064.98		3.30E-05		3.52E-02		3193		1.10E-05
B[a]anthracene	56553	1,064.98		1.42E-05		1.51E-02		3193		4.74E-06
B[a]P	50328	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[b]fluoranthene	205992	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[e]pyrene	192972	1,064.98		2.41E-06		2.57E-03		3193		8.04E-07
B[g,h,i]perylene	191242	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
B[k]fluoranthene	207089	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Benzene *	71432	1,064.98		8.53E-04		9.09E-01		3193		2.85E-04
CFC-113	76131	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Chrysene	218019	1,064.98		5.33E-05		5.68E-02		3193		1.78E-05
D[a,h]anthracene	53703	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Ethyl Benzene	100414	1,064.98		1.01E-03		1.08E+00		3193		3.38E-04
Fluoranthene	206440	1,064.98		3.81E-05		4.06E-02		3193		1.27E-05
Fluorene	86737	1,064.98		2.56E-04		2.74E-01		3193		8.58E-05
Formaldehyde *	50000	1,064.98		1.84E-02		1.96E+01		3193		6.14E-03
Hexane	110543	1,064.98		2.67E-03		2.84E+00		3193		8.89E-04
In[1,2,3-cd]pyrene	193395	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Methyl chloride {Chloromethane} *	74873	1,064.98		3.29E-05		3.50E-02		3193		1.10E-05
m-Xylene	108383	1,064.98		5.33E-03		5.68E+00		3193		1.78E-03
Naphthalene	91203	1,064.98		4.62E-04		4.92E-01		3193		1.54E-04
o-Xylene	95476	1,064.98		1.52E-03		1.62E+00		3193		5.07E-04
Perylene	198550	1,064.98		7.62E-06		8.11E-03		3193		2.54E-06
Phenanthrene	85018	1,064.98		4.57E-04		4.87E-01		3193		1.53E-04
p-Xylene	106423	1,064.98		0.00E+00		0.00E+00		3193		0.00E+00
Pyrene	129000	1,064.98		1.12E-04		1.19E-01		3193		3.73E-05
Styrene	100425	1,064.98		1.44E-04		1.53E-01		3193		4.80E-05
Toluene	108883	1,064.98		1.65E-03		1.76E+00		3193		5.51E-04

* AP-42

ES27 P2 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	498.74		8.96E-08		4.47E-05		3193		1.40E-08
Copper ***	7440508	498.74		1.04E-06		5.17E-04		3193		1.62E-07
Cr (VI)*	18540299	498.74		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	498.74		9.52E-07		4.75E-04		3193		1.49E-07
Nickel ***	7440020	498.74		6.16E-07		3.07E-04		3193		9.62E-08
Silica, Crystalline **	1175	498.74		3.20E-04		1.60E-01		3193		5.00E-05
Barium***	7440393	498.74		1.96E-06		9.78E-04		3193		3.06E-07
Chromium***	7440473	498.74		5.60E-07		2.79E-04		3193		8.75E-08
Cobalt***	7440484	498.74		1.96E-07		9.78E-05		3193		3.06E-08
Vanadium***	7440622	498.74		8.40E-07		4.19E-04		3193		1.31E-07
Zinc***	7440666	498.74		5.88E-06		2.93E-03		3193		9.18E-07

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES30 P2 (Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	831.24		8.96E-07		7.45E-04		3193		2.33E-07
Copper ***	7440508	831.24		1.04E-05		8.61E-03		3193		2.70E-06
Cr (VI)*	18540299	831.24		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	831.24		9.52E-06		7.91E-03		3193		2.48E-06
Nickel ***	7440020	831.24		6.16E-06		5.12E-03		3193		1.60E-06
Silica, Crystalline **	1175	831.24		3.20E-03		2.66E+00		3193		8.33E-04
Barium***	7440393	831.24		1.96E-05		1.63E-02		3193		5.10E-06
Chromium***	7440473	831.24		5.60E-06		4.65E-03		3193		1.46E-06
Cobalt***	7440484	831.24		1.96E-06		1.63E-03		3193		5.10E-07
Vanadium***	7440622	831.24		8.40E-06		6.98E-03		3193		2.19E-06
Zinc***	7440666	831.24		5.88E-05		4.89E-02		3193		1.53E-05

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES45 P2(Crushing Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic ***	7440382	124.69		8.96E-07		1.12E-04		3193		3.50E-08
Copper ***	7440508	124.69		1.04E-05		1.29E-03		3193		4.05E-07
Cr (VI)*	18540299	124.69		0.00E+00		0.00E+00		3193		0.00E+00
Lead***	7439921	124.69		9.52E-06		1.19E-03		3193		3.72E-07
Nickel ***	7440020	124.69		6.16E-06		7.68E-04		3193		2.41E-07
Silica, Crystalline **	1175	124.69		3.20E-03		3.99E-01		3193		1.25E-04
Barium***	7440393	124.69		1.96E-05		2.44E-03		3193		7.65E-07
Chromium***	7440473	124.69		5.60E-06		6.98E-04		3193		2.19E-07
Cobalt***	7440484	124.69		1.96E-06		2.44E-04		3193		7.65E-08
Vanadium***	7440622	124.69		8.40E-06		1.05E-03		3193		3.28E-07
Zinc***	7440666	124.69		5.88E-05		7.33E-03		3193		2.30E-06

* Enthalpy Analytic Report 08-14-2023
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"
***Enthalpy Analytic Report 08-03-22

ES90 P2 (Asphalt Plant)

	CAS #	Annual Throughput (1000 tons)	×	Emission Factor (lbs/1000 tons)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	**7440382**	1,001.08		1.18E-06		1.18E-03		3193		3.70E-07
Copper *	**7440508**	1,001.08		5.88E-06		5.89E-03		3193		1.84E-06
Cr (VI)*	**18540299**	1,001.08		0.00E+00		0.00E+00		3193		0.00E+00
Lead*	**7439921**	1,001.08		3.64E-06		3.64E-03		3193		1.14E-06
Nickel *	**7440020**	1,001.08		4.06E-06		4.06E-03		3193		1.27E-06
Silica, Crystalline **	**1175**	1,001.08		3.20E-03		3.20E+00		3193		1.00E-03
Beryllium*	**7440417**	1,001.08		6.72E-08		6.73E-05		3193		2.11E-08
Cadmium*	**7440439**	1,001.08		7.84E-08		7.85E-05		3193		2.46E-08
Barium*	7440393	1,001.08		2.10E-05		2.10E-02		3193		6.58E-06
Chromium*	7440473	1,001.08		6.30E-06		6.31E-03		3193		1.98E-06
Cobalt*	7440484	1,001.08		1.54E-06		1.54E-03		3193		4.83E-07
Zinc*	7440666	1,001.08		1.40E-05		1.40E-02		3193		4.39E-06
Silver*	7440224	1,001.08		1.33E-07		1.33E-04		3193		4.17E-08
Vanadium*	7440622	1,001.08		9.10E-06		9.11E-03		3193		2.85E-06

*Enthalpy Analytic Report 08-14-23
** Based on Air and Waste Journal, January 2012, Refer to Attachment "C"

ES 91 P2 (Asphalt Plant Baghouse)

	CAS #	Annual Throughput (tons)	×	Emission Factor* (lbs/tons)*	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,3-Butadiene	106990	1,001,076.83		2.00E-04		2.00E+02		3193		6.26E-02
2-Methyl Naphthalene	91576	1,001,076.83		9.73E-06		9.74E+00		3193		3.05E-03
Acenapthene	83329	1,001,076.83		3.28E-07		3.29E-01		3193		1.03E-04
Acenapthylene	208968	1,001,076.83		1.18E-06		1.18E+00		3193		3.68E-04
Acetaldehyde	75070	1,001,076.83		1.00E-04		1.00E+02		3193		3.14E-02
Aluminum	7429905	1,001,076.83		1.17E-03		1.17E+03		3193		3.65E-01
Anthracene	120127	1,001,076.83		2.31E-08		2.32E-02		3193		7.26E-06
Antimony	7440360	1,001,076.83		5.56E-07		5.57E-01		3193		1.74E-04
Arsenic	7440382	1,001,076.83		1.55E-07		1.55E-01		3193		4.86E-05
Barium	7440393	1,001,076.83		9.56E-06		9.57E+00		3193		3.00E-03
Benzene	71432	1,001,076.83		2.26E-04		2.26E+02		3193		7.08E-02
Benzo(b)fluoranthene	205992	1,001,076.83		2.64E-10		2.65E-04		3193		8.29E-08
Benzo(e)pyrene	192972	1,001,076.83		2.91E-10		2.91E-04		3193		9.12E-08
Benzo(g,h,i)perylene	191242	1,001,076.83		ND		--		3193		--
Benzo[k]fluoranthene	207089	1,001,076.83		ND		--		3193		--
Beryllium	7440417	1,001,076.83		2.49E-08		2.49E-02		3193		7.80E-06
Cadmium	7440439	1,001,076.83		1.23E-07		1.23E-01		3193		3.86E-05
Carbon Disulfide	75150	1,001,076.83		5.18E-05		5.18E+01		3193		1.62E-02
Chloromethane	74873	1,001,076.83		8.80E-06		8.81E+00		3193		2.76E-03
Chromium	7440473	1,001,076.83		9.06E-07		9.07E-01		3193		2.84E-04
Chrysene	218019	1,001,076.83		1.91E-09		1.91E-03		3193		6.00E-07
Cobalt	7440484	1,001,076.83		3.17E-07		3.17E-01		3193		9.93E-05
Copper	7440508	1,001,076.83		4.70E-07		4.70E-01		3193		1.47E-04
Dibenz(a,h)anthracene	53703	1,001,076.83		ND		--		3193		--
Ethyl Benzene	100414	1,001,076.83		ND		--		3193		--
Fluoranthene	206440	1,001,076.83		3.56E-08		3.57E-02		3193		1.12E-05
Fluorene	86737	1,001,076.83		3.93E-07		3.94E-01		3193		1.23E-04
Formaldehyde	50000	1,001,076.83		1.40E-03		1.40E+03		3193		4.39E-01
Hexane	110543	1,001,076.83		1.54E-05		1.55E+01		3193		4.84E-03
Hexavalent Chromium	18540299	1,001,076.83		5.24E-09		5.25E-03		3193		1.64E-06
Indeo[1,2,3-cd]pyrene	193395	1,001,076.83		ND		--		3193		--
Lead	1128	1,001,076.83		6.23E-07		6.23E-01		3193		1.95E-04
m & p-Xylenes	1330207	1,001,076.83		4.49E-05		4.49E+01		3193		1.41E-02
Manganese	7439965	1,001,076.83		1.59E-05		1.59E+01		3193		4.98E-03
MEK	78933	1,001,076.83		2.72E-05		2.72E+01		3193		8.52E-03
Mercury	7439976	1,001,076.83		2.48E-07		2.48E-01		3193		7.77E-05
Methanol	67561	1,001,076.83		2.18E-04		2.19E+02		3193		6.85E-02
Methly Chloroform (1,1,1-Trichloroethane)	71556	1,001,076.83		ND		--		3193		--
Naphthalene	91203	1,001,076.83		3.62E-05		3.62E+01		3193		1.14E-02
Nickel	7440020	1,001,076.83		3.14E-06		3.15E+00		3193		9.85E-04
Perylene	198550	1,001,076.83		ND		--		3193		--
Phenanthrene	85018	1,001,076.83		5.06E-07		5.07E-01		3193		1.59E-04
Phosphorous	7723140	1,001,076.83		1.07E-05		1.07E+01		3193		3.36E-03
Propene	115071	1,001,076.83		4.42E-04		4.43E+02		3193		1.39E-01
Pyrene	129000	1,001,076.83		3.54E-08		3.54E-02		3193		1.11E-05
Selenium	7782492	1,001,076.83		3.99E-07		4.00E-01		3193		1.25E-04
Styrene	100425	1,001,076.83		7.08E-05		7.09E+01		3193		2.22E-02
Toluene	108883	1,001,076.83		9.10E-05		9.11E+01		3193		2.85E-02
Vanadium	7440622	1,001,076.83		1.65E-06		1.65E+00		3193		5.16E-04
Zinc	7440666	1,001,076.83		5.21E-06		5.22E+00		3193		1.63E-03

* AIRx source test 3/7/2022

ES 61 P1-P11 (Paved Roads)**

	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	÷	11 Haul Road Segments	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	6,815.84		9.58E-03		11		5.94E+00		3193		1.86E-03
Antimony	7440360	6,815.84		8.50E-07		11		5.27E-04		3193		1.65E-07
Arsenic	7440382	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Barium	7440393	6,815.84		1.16E-04		11		7.17E-02		3193		2.24E-05
Bromine	7726956	6,815.84		2.55E-06		11		1.58E-03		3193		4.95E-07
Cadmium	7440439	6,815.84		3.04E-06		11		1.88E-03		3193		5.89E-07
Chlorine	7782505	6,815.84		1.58E-04		11		9.80E-02		3193		3.07E-05
Chromium	7440473	6,815.84		2.98E-05		11		1.84E-02		3193		5.78E-06
Cobalt	7440484	6,815.84		1.81E-05		11		1.12E-02		3193		3.51E-06
Copper	7440508	6,815.84		1.06E-05		11		6.55E-03		3193		2.05E-06
Lead	7439921	6,815.84		1.09E-04		11		6.78E-02		3193		2.12E-05
Manganese	7439965	6,815.84		1.28E-04		11		7.91E-02		3193		2.48E-05
Mercury	7439976	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Nickel	7440020	6,815.84		7.65E-06		11		4.74E-03		3193		1.49E-06
Phosphorus	7723140	6,815.84		1.95E-04		11		1.21E-01		3193		3.78E-05
Selenium	7782492	6,815.84		1.21E-07		11		7.53E-05		3193		2.36E-08
Silver	7440224	6,815.84		1.09E-06		11		6.77E-04		3193		2.12E-07
Vanadium (Fume Or Dust)	7440622	6,815.84		3.79E-05		11		2.35E-02		3193		7.35E-06
Zinc	7440666	6,815.84		7.56E-05		11		4.68E-02		3193		1.47E-05

*CARB Profile 416.

** Based Revised Silt Loading Numbers and Improved Dust Control Measures, Refer to Attachment "D"

C. Permit Exempt Toxic Emission Summary

The following reflects the individual unpermitted devices and processes as listed above (Table 2). Included are the device and process name, emission, annual throughput, and pounds of toxics per year.

ES62 P1 (Unpaved Roads)

	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	638.99		8.99E-02		5.75E+01		3193		1.80E-02
Antimony	7440360	638.99		7.98E-06		5.10E-03		3193		1.60E-06
Arsenic	7440382	638.99		1.71E-05		1.09E-02		3193		3.42E-06
Barium	7440393	638.99		1.09E-03		6.93E-01		3193		2.17E-04
Bromine	7726956	638.99		2.39E-05		1.53E-02		3193		4.79E-06
Cadmium	7440439	638.99		2.85E-05		1.82E-02		3193		5.70E-06
Chlorine	7782505	638.99		1.48E-03		9.48E-01		3193		2.97E-04
Chromium	7440473	638.99		2.79E-04		1.78E-01		3193		5.59E-05
Cobalt	7440484	638.99		1.70E-04		1.09E-01		3193		3.40E-05
Copper	7440508	638.99		9.92E-05		6.34E-02		3193		1.98E-05
Lead	7439921	638.99		1.03E-03		6.56E-01		3193		2.06E-04
Manganese	7439965	638.99		1.20E-03		7.66E-01		3193		2.40E-04
Mercury	7439976	638.99		1.71E-05		1.09E-02		3193		3.42E-06
Nickel	7440020	638.99		7.18E-05		4.59E-02		3193		1.44E-05
Phosphorus	7723140	638.99		1.83E-03		1.17E+00		3193		3.65E-04
Selenium	7782492	638.99		1.14E-06		7.28E-04		3193		2.28E-07
Silver	7440224	638.99		1.03E-05		6.56E-03		3193		2.05E-06
Vanadium (Fume Or Dust)	7440622	638.99		3.56E-04		2.27E-01		3193		7.12E-05
Zinc	7440666	638.99		7.09E-04		4.53E-01		3193		1.42E-04

*CARB Profile 416.

ES63 P1 (Diesel Fuel Storage)

	CAS #	Annual Throughput (M gal)	×	Emission Factor (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Benzene *	71432	750.6		8.00E-06		6.00E-03		8760		6.85E-07
Hexane *	110543	750.6		1.00E-06		7.51E-04		8760		8.57E-08
Toluene *	108883	750.6		3.20E-04		2.40E-01		8760		2.74E-05
Ethyl benzene *	100414	750.6		1.30E-04		9.76E-02		8760		1.11E-05
Xylenes *	108383	750.6		2.90E-03		2.18E+00		8760		2.49E-04
1,2,4-Trimethylbenzene *	95636	750.6		1.00E-02		7.51E+00		8760		8.57E-04

* AQMD Default

ES65 P1 (Welder Electrodes)

	CAS #	Annual Throughput (lbs)	×	Emission Factor* (lbs/lbs)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Chromium	7440473	100		6.00E-06		6.00E-04		1,920		3.13E-07
HexChrome	18540299	100		ND		--		1,920		--
Cobalt	7440484	100		5.00E-07		5.00E-05		1,920		2.60E-08
Manganese	7439965	100		1.03E-03		1.03E-01		1,920		5.36E-05
Nickel	7440020	100		2.00E-06		2.00E-04		1,920		1.04E-07
Lead	7439921	100		ND		--		1,920		--

* Based on AP-42, Table 12.19-2, Refer to Attachment "C"

ES66 P1 (Propane Torches)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Acetaldehyde	75070	0.44		3.80E-04		1.67E-04		240		6.97E-07
Acrolein	107028	0.44		2.40E-04		1.06E-04		240		4.40E-07
Ammonia	7664417	0.44		3.00E-01		1.32E-01		240		5.50E-04
Benzene	71432	0.44		7.10E-04		3.12E-04		240		1.30E-06
Ethyl benzene	100414	0.44		8.40E-04		3.70E-04		240		1.54E-06
Formaldehyde	50000	0.44		1.51E-03		6.64E-04		240		2.77E-06
Hexane	110543	0.44		5.60E-04		2.46E-04		240		1.03E-06
PAHs	1151	0.44		4.00E-05		1.76E-05		240		7.33E-08
Toluene	108883	0.44		3.25E-03		1.43E-03		240		5.96E-06
Xylene	1330207	0.44		2.41E-03		1.06E-03		240		4.42E-06

* AQMD Default

ES68 P1 (Gasoline Welder)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,2,4-Trimethylbenzene	95636	0.52		1.39E+00		7.25E-01		287.6		2.52E-03
1,3 Butadiene	106990	0.52		9.18E-01		4.78E-01		287.6		1.66E-03
Acetaldehyde	75070	0.52		8.30E-01		4.31E-01		287.6		1.50E-03
Acrolein	107028	0.52		1.99E-01		1.04E-01		287.6		3.60E-04
Benzene	71432	0.52		3.81E+00		1.98E+00		287.6		6.88E-03
Chlorine	7782505	0.52		4.45E-01		2.31E-01		287.6		8.05E-04
Copper	7440508	0.52		3.30E-03		1.72E-03		287.6		5.97E-06
Ethyl benzene	100414	0.52		1.66E+00		8.63E-01		287.6		3.00E-03
Formaldehyde	50000	0.52		3.45E+00		1.80E+00		287.6		6.24E-03
Hexane	110543	0.52		1.45E+00		7.54E-01		287.6		2.62E-03
Manganese	7439965	0.52		3.30E-03		1.72E-03		287.6		5.97E-06
Methanol	67561	0.52		7.75E-01		4.03E-01		287.6		1.40E-03
Methyl ethyl ketone - MEK	78933	0.52		6.64E-02		3.45E-02		287.6		1.20E-04
Methyl tert-butyl ether (MTBE)	1634044	0.52		2.06E+00		1.07E+00		287.6		3.72E-03
m-Xylene	108383	0.52		4.92E+00		2.56E+00		287.6		8.90E-03
Naphthalene	91203	0.52		1.44E-01		7.48E-02		287.6		2.60E-04
Nickel	7440020	0.52		3.25E-03		1.69E-03		287.6		5.88E-06
o-Xylene	95476	0.52		1.71E+00		8.92E-01		287.6		3.10E-03
Styrene	100425	0.52		1.44E-01		7.48E-02		287.6		2.60E-04
Toluene	108883	0.52		7.51E+00		3.91E+00		287.6		1.36E-02

* AQMD Default

ES92 P1 (Diesel Light Towers)

	CAS #	Annual Throughput (M gal)	×	Emission Factor* (lbs/M Gal)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
1,3 Butadiene	106990	0.4559		2.17E-01		9.91E-02		763.1		1.30E-04
Acetaldehyde	75070	0.4559		7.83E-01		3.57E-01		763.1		4.68E-04
Acrolein	107028	0.4559		3.39E-02		1.55E-02		763.1		2.03E-05
Ammonia	7664417	0.4559		1.40E+00		6.38E-01		763.1		8.36E-04
Arsenic	7440382	0.4559		1.60E-03		7.29E-04		763.1		9.56E-07
Benzene	71432	0.4559		1.86E-01		8.49E-02		763.1		1.11E-04
Cadmium	7440439	0.4559		1.50E-03		6.84E-04		763.1		8.96E-07
Copper compounds	7440508	0.4559		4.10E-03		1.87E-03		763.1		2.45E-06
Ethyl benzene	100414	0.4559		1.09E-02		4.97E-03		763.1		6.51E-06
Formaldehyde	50000	0.4559		1.73E+00		7.87E-01		763.1		1.03E-03
Hexane	11053	0.4559		2.69E-02		1.23E-02		763.1		1.61E-05
Hexavalent Chromium	18540299	0.4559		1.00E-04		4.56E-05		763.1		5.97E-08
Hydrochloric acid	7647010	0.4559		1.86E-01		8.49E-02		763.1		1.11E-04
Lead	7439921	0.4559		8.30E-03		3.78E-03		763.1		4.96E-06
Manganese Compounds	7439965	0.4559		3.10E-03		1.41E-03		763.1		1.85E-06
Mercury Compounds	7439976	0.4559		2.00E-03		9.12E-04		763.1		1.19E-06
Naphthalene	91203	0.4559		1.97E-02		8.98E-03		763.1		1.18E-05
Nickel	7440020	0.4559		3.90E-03		1.78E-03		763.1		2.33E-06
PAHs	1151	0.4559		3.62E-02		1.65E-02		763.1		2.16E-05
Selenium compounds	7782492	0.4559		2.20E-03		1.00E-03		763.1		1.31E-06
Toluene	108883	0.4559		1.05E-01		4.81E-02		763.1		6.30E-05
Xylene	1330207	0.4559		4.24E-02		1.93E-02		763.1		2.53E-05
Diesel exhaust particulates	9901	0.4559		3.35E+01		1.53E+01		763.1		2.00E-02

* AQMD Default

Part III Receptors

Attachment A, Figure 1 details the site layout and the associated receptor distances.

A. Residential and Worker Receptors

The following table summarizes the location of the Work and Residential receptors.

Receptor No.	Name	UTM Coordinates		Miles From Site
		X (m)	Y (m)	
2559	Resident 1	420639.4	3744572	0.04
2501	Resident 2	420629.4	3744602	0.04
2031	Worker 1	420549.4	3744282	0.02
2533	Worker 2	420639.4	3744312	0.06
1812	Recreation Area (Acute Risk)	420489.4	3744402	0.1

B. Sensitive Receptors

The following table summarizes the location of the Sensitive Receptors

Receptor No.	Name	UTM Coordinates		Miles From Site
		X (m)	Y (m)	
8036	Addie's Cottage Senior Living	418854.75 m E	3744974.53 m N	1.03
8037	Benito Juarez Elementary School	418438.44 m E	3743842.60 m N	1.28
8038	Cerro Villa Middle School	424211.27 m E	3742621.96 m N	2.61
8039	Childtime of Anaheim	417753.42 m E	3743110.80 m N	1.84
8040	Childtime of Orange	423818.44 m E	3743630.77 m N	2.17
8041	Concentra Urgent Care	418498.83 m E	3747363.82 m N	2.18
8042	Early Childhood Montessori Preschool	421381.62 m E	3743126.08 m N	1.00
8043	Fletcher Elementary School	420667.43 m E	3743623.62 m N	0.52
8044	Glenview Elementary School	424804.33 m E	3747921.00 m N	3.49
8045	International School of Orange County	421331.35 m E	3742326.90 m N	1.42
8046	John O. Tynes Elementary School	420777.63 m E	3748380.36 m N	2.47
8047	Juanita's Day Care	419308.86 m E	3744939.02 m N	0.76
8048	Kaiser Permanente Orange County - Anaheim Medical Center	421919.89 m E	3746070.87 m N	1.39
8049	Katella High School	418058.27 m E	3743095.58 m N	1.68

8050	Lamb of God Child Care Center	418437.34 m E	3743999.43 m N	1.26
8051	Liliana Bever Daycare	420011.78 m E	3747768.63 m N	2.10
8052	Little Champs Daycare	422361.44 m E	3742789.36 m N	1.58
8053	Luna's Little Stars Daycare	418484.49 m E	3742644.52 m N	1.63
8054	Melrose Elementary School	419242.08 m E	3746878.79 m N	1.69
8055	Mercy's Family Day Care	418787.19 m E	3743523.24 m N	1.15
8056	Nohl Canyon Elementary School	423473.66 m E	3744420.99 m N	1.90
8057	Nohl Ranch Elderly Care	423115.90 m E	3744276.23 m N	1.68
8058	Nora's Day Care	418043.97 m E	3742612.09 m N	1.85
8059	Olive Elementary School	421866.17 m E	3744562.37 m N	0.91
8060	Orange Blossom Montessori Daycare	421047.25 m E	3743886.43 m N	0.51
8061	Orange Lutheran High School	423321.99 m E	3743074.71 m N	1.99
8062	Pacific Urgent Care & Family Medicine	422430.30 m E	3744027.52 m N	1.28
8063	Placentia Head Start	419200.27 m E	3747065.31 m N	1.81
8064	Placentia Senior Center	419430.82 m E	3748171.16 m N	2.41
8065	Rio Vista Elementary School	419545.64 m E	3745157.36 m N	0.71
8066	Serrano Elementary School	423864.47 m E	3742680.30 m N	2.40
8067	St. Paul’s Preschool	422186.90 m E	3743600.64 m N	1.21
8068	St. Paul's Lutheran School	421848.30 m E	3743720.81 m N	0.99
8069	Sunkist Elementary School	418687.63 m E	3745369.78 m N	1.23
8070	Sunrise of Orange Assisted Living	422303.13 m E	3744246.02 m N	1.18
8071	Taft Elementary School	422016.21 m E	3742328.72 m N	1.64
8072	The Adventure Lagoon Waterpark	420975.20 m E	3746945.31 m N	1.61
8073	Valadez Middle School Academy	419400.04 m E	3746927.94 m N	1.68
8074	Valencia High School	419796.03 m E	3748920.10 m N	2.82

Part IV HARP Files

The 2017 annual emissions have been updated in a new HARP report which incorporates the Risk Reduction measures. A detailed discussion of the HARP models including modeling files, assumptions and summary of the results based on the implementation of the proposed risk reduction measures is provided under separate cover in the Risk Reduction Plan that was submitted with this revised ATIR.

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT "A"

SITE MAP, PLANT LAYOUT, AND RECEPTOR LOCATIONS



TAYLOR ENVIRONMENTAL SERVICES, INC.

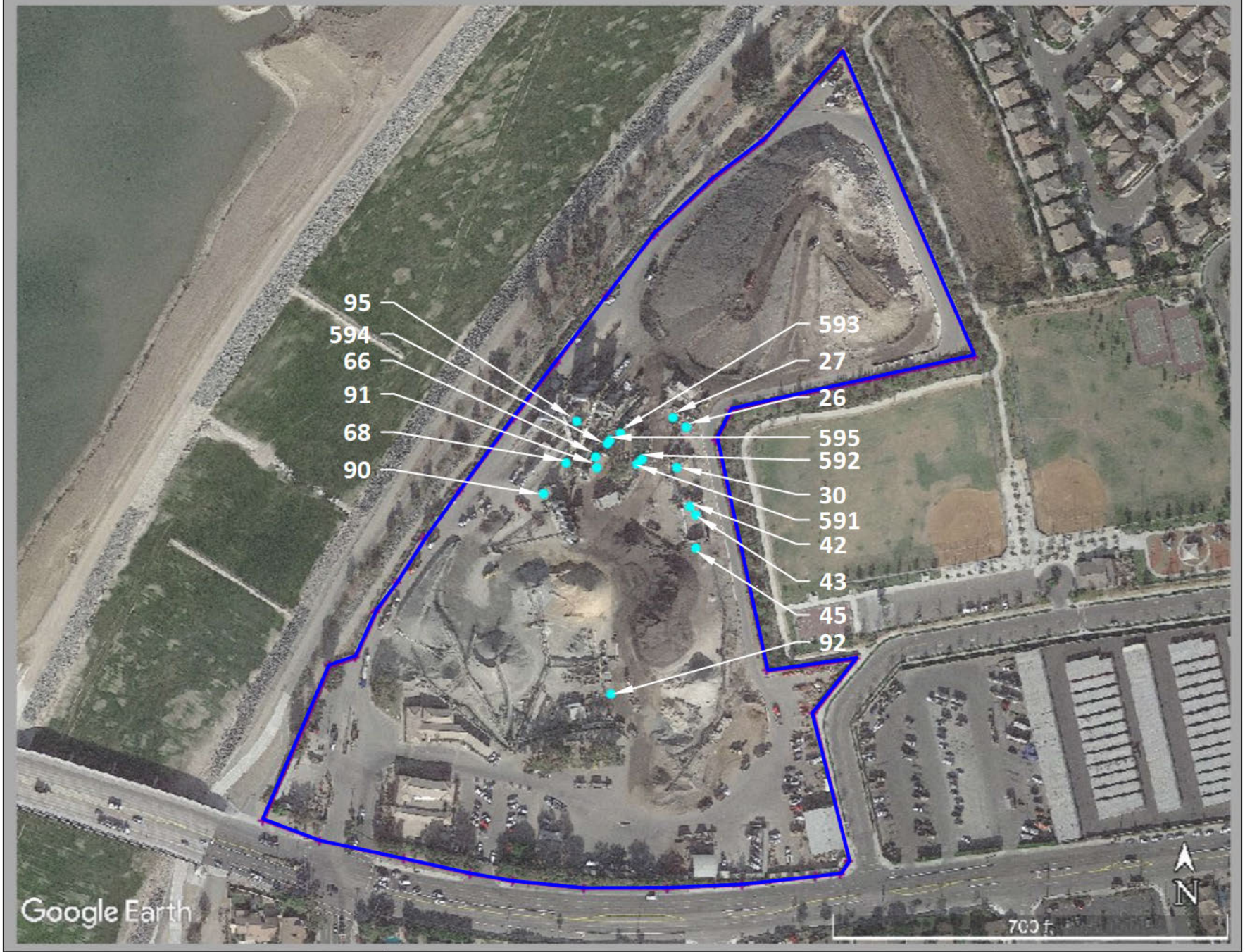
DESCRIPTION:

R.J. NOBLE COMPANY
ORANGE
HOT MIX ASPHALT PLANT
VICINITY MAP WITH RECEPTOR LOCATIONS

JOB NO.
RJNOB-17-2286

DATE
11/10/2022

DWG. NO.
Figure 1



TAYLOR ENVIRONMENTAL SERVICES, INC.

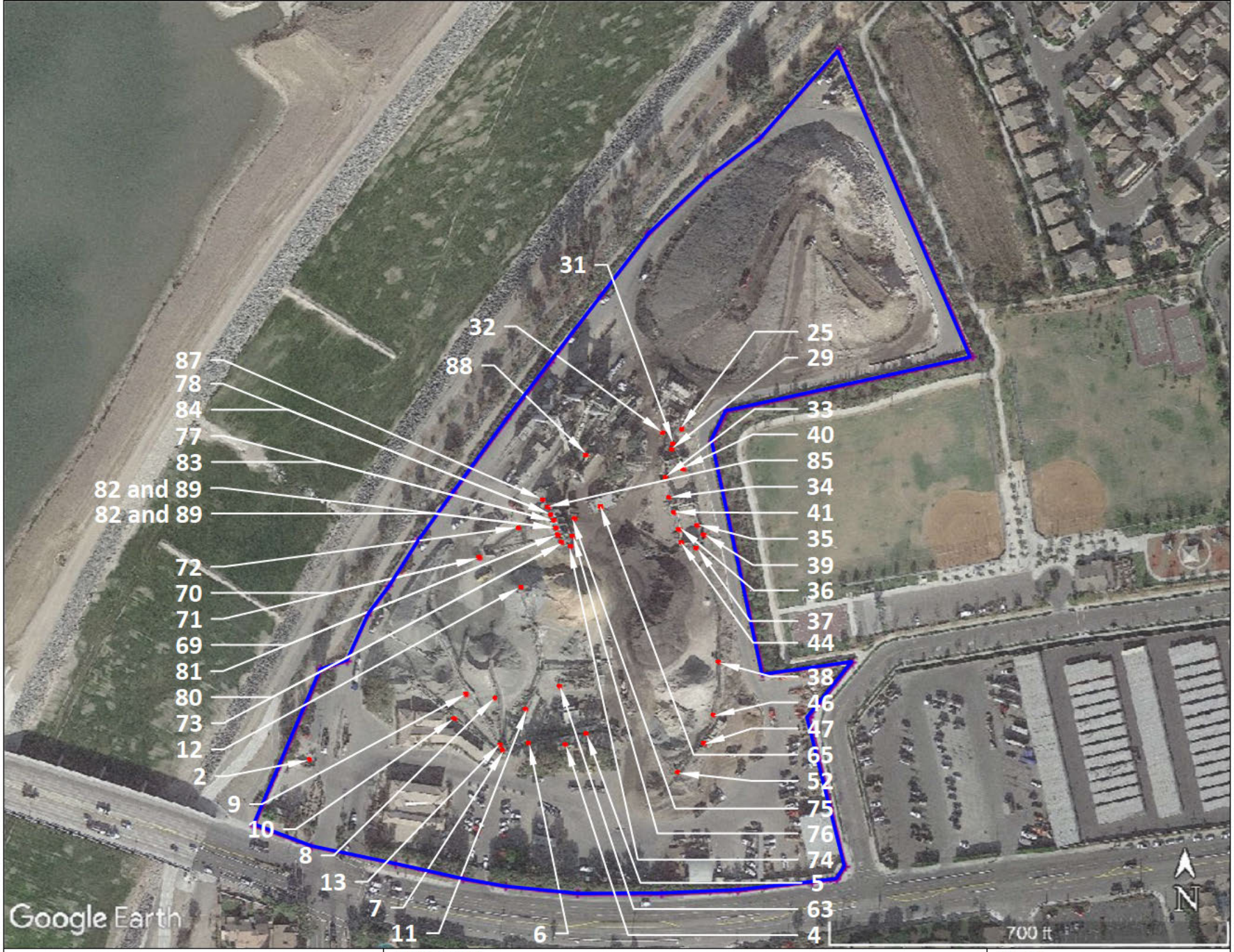
DESCRIPTION:

R.J. NOBLE COMPANY
ORANGE
HOT MIX ASPHALT PLANT
POINT SOURCE MAP WITH RELEASE ID'S

JOB NO
RJNOB-17-2286

DATE
11/10/2022

DWG NO
Figure 2



TAYLOR ENVIRONMENTAL SERVICES, INC.

DESCRIPTION:

R.J. NOBLE COMPANY
ORANGE
HOT MIX ASPHALT PLANT
VOLUME SOURCE MAP WITH RELEASE ID'S

JOB NO
RJNOB-17-2268

DATE
11/10/2022

DWG NO
Figure 3



TAYLOR ENVIRONMENTAL SERVICES, INC.

DESCRIPTION:

R.J. NOBLE COMPANY
ORANGE
HOT MIX ASPHALT PLANT
AREA SOURCE MAP WITH RELEASE ID'S

JOB NO
RJNOB-17-2286

DATE
11/10/2022

DWG NO
Figure 4

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT "B"

PROCESS FLOW DIAGRAM

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT "C"

TOXIC EMISSION FACTORS



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PM_4 Crystalline Silica Emission Factors and Ambient Concentrations at Aggregate-Producing Sources in California

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ABSTRACT

The California Construction and Industrial Minerals Association and the National Stone, Sand, & Gravel Association have sponsored tests at three sand and gravel plants in California to compile crystalline silica emission factors for particulate matter (PM) of aerodynamic diameter of 4 μm or less (PM_4) and ambient concentration data. This information is needed by industrial facilities to evaluate compliance with the Chronic Reference Exposure Level (REL) for ambient crystalline silica adopted in 2005 by the California Office of Environmental Health Hazard Assessment. The REL applies to PM_4 respirable PM. Air Control Techniques, P.C. sampled for PM_4 crystalline silica using a conventional sampler for PM of aerodynamic diameter of 2.5 μm or less ($PM_{2.5}$), which met the requirements of 40 *Code of Federal Regulations* Part 50, Appendix L. The sample flow rate was adjusted to modify the 50% cut size to 4 μm instead of 2.5 μm. The filter was also changed to allow for crystalline silica analyses using National Institute for Occupational Safety and Health (NIOSH) Method 7500. The particle size-capture efficiency curve for the modified Appendix L instrument closely matched the performance curve of NIOSH Method 0600 for PM_4 crystalline silica and provided a minimum detection limit well below the levels attainable with NIOSH Method 0600. The results of the tests indicate that PM_4 crystalline silica emissions range from 0.000006 to 0.000110 lb/t for screening operations, tertiary crushers, and conveyor transfer points. The PM_4 crystalline silica emission factors were proportional to the crystalline silica content of the material handled in the process equipment. Measured ambient concentrations ranged from 0 (below detectable limit) to 2.8 μg/m³. All values measured above 2 μg/m³ were at locations upwind of the facilities being tested. The ambient PM_4 crystalline silica concentrations measured during this study were below the California REL of 3 μg/m³. The measured ambient concentrations in the PM_4 size range are consistent with previously published ambient crystalline silica data applicable to the $PM_{2.5}$ and PM of aerodynamic diameter of 10 μm or less (PM_{10}) size ranges.

IMPLICATIONS

Mineral processing facilities need PM_4 crystalline silica emission factor data to evaluate compliance with the 3 μg/m³ Chronic REL for PM_4 ambient crystalline silica adopted in 2005 by the California Office of Environmental Health Hazard Assessment. Emission tests at three sand and gravel plants have provided PM_4 crystalline silica data for screens, crushers, and conveyors. Mineral processing facilities can use the emission factor data to evaluate compliance with the stringent ambient PM_4 crystalline silica limit.

INTRODUCTION

Crystalline Silica Emission Factors of Particulate Matter of Aerodynamic Diameter of 4 μm or Less

There are no previously published data concerning particulate matter (PM) of aerodynamic diameter of 4 μm or less (PM_4) crystalline silica emissions from aggregate producing plants or other mineral industry sources. The PM_4 crystalline silica emission factors can be estimated based on published data concerning emission factors for PM of aerodynamic diameter of 10 μm (PM_{10}) or 2.5 μm ($PM_{2.5}$) or less for aggregate producing plants.[1–9] The U.S. Environmental Protection Agency (EPA) AP42 Section 11.19-2 emission factors for tertiary crushers, screens, and conveyor transfer points indicate that the $PM_{2.5}$ emissions range from 0.000013 to 0.000100 lb/t of stone. The AP42 Section 11.19-2 PM_{10} emission factors for these three types of processing equipment range from 0.000046 to 0.00074 lb/t.

These emission factors provide a starting point for evaluating possible PM_4 crystalline silica emission factors. It is reasonable to expect the PM_4 total emission factors to be between the $PM_{2.5}$ and PM_{10} emission factors. The PM_4

crystalline silica emission factors will depend on the crystalline silica content of the PM_4 total PM.

Ambient Crystalline Silica Concentrations

No PM_4 ambient concentration or emission factor data have been published. All previous crystalline silica ambient concentration data applied to the $PM_{2.5}$, PM_{10}, and/or PM of 15-μm or less (PM_{15}) size ranges.

One of the first studies of ambient crystalline silica concentrations was conducted by Davis et al.[10] This study focused on urban areas. Ambient crystalline silica concentrations were measured in 22 urban areas using dichotomous samplers that separate ambient PM into the 0- to 2.5-μm range ("fine PM") and the 2.5- to 15-μm range (termed here as "coarse/supercoarse PM"). Davis et al. measured mean 24-hr average ambient crystalline silica concentrations ranging from 0.9 to 8 $\mu g/M^3$ in the coarse/supercoarse size range. Crystalline silica was 1–9% of the coarse/supercoarse PM and 0–2.6% of the fine (<2.5 μm) PM.

EPA[11] used the data of Davis et al. to derive estimates of the annual average crystalline silica levels in urban areas. The city-specific crystalline silica content values were multiplied by annual average PM_{10} concentrations in these areas to estimate the annual average PM_{10} crystalline silica levels. EPA also calculated an annual average of 1.9 $\mu g/m^3$ with a range of 0.8–5 $\mu g/m^3$ in the PM_{10} size range. The crystalline silica content in the $PM_{2.5}$ size range was consistently less than 1 $\mu g/m^3$ because of the low crystalline silica content of the $PM_{2.5}$ PM and the low total concentration of $PM_{2.5}$ PM.

In 2000, the National Stone, Sand, & Gravel Association (NSSGA) sponsored upwind-downwind studies of ambient crystalline silica concentrations at four stone crushing plants processing high-quartz-content rock.[12] Air Control Techniques, P.C. used Rupprecht & Patashnick Co, Inc. Federal Reference Method (FRM)-2000 samplers that fully met the stringent design and operating specifications of 40 *Code of Federal Regulations* (CFR) Part 50, Appendix L.[13] The measured 8-hr working-shift PM_{10} crystalline silica concentrations at the collocated downwind PM_{10} samplers ranged from 1 to 10.9 $\mu g/m^3$. These values are similar to the range of mean 24-hr concentration values of 0.9–8 $\mu g/m^3$ for 24-hr concentrations measured by Davis et al. in the coarse/supercoarse size range. The measured upwind and downwind concentrations were similar. The crystalline silica levels of 5.07–6.24% by weight of the PM_{10} were similar to the 4.9 ± 2.3% levels in coarse/supercoarse PM reported by Davis et al.

Various other studies have provided limited data for urban, rural, and industrial areas. Puledda[14] measured PM_{10} crystalline silica levels in Rome, Italy of 0.11–2.27 $\mu g/m^3$. These levels were 1.7–3.4% of the measured PM_{10}. Norton and Gunter[15] measured PM_{10} crystalline silica levels averaging 10% in Moscow, ID. They also extracted PM from PM_{10} samples from numerous areas throughout Idaho and estimated crystalline silica levels to be between 7 and 16% of PM_{10} in various urban and rural areas in Idaho. Various other studies described by EPA[11] at urban, rural, and industrial areas indicated 24-hr average crystalline silica levels and crystalline silica contents in PM_{10} that were similar to those in Davis et al.,[10] Air Control Techniques, P.C.,[12] Puledda,[14] and Norton and Gunter.[15] These other studies include Schipper,[16] Goldsmith,[17] Chow et al.,[18] Chow,[19] and Chow.[20] Only the study of Shakari and Holmen[21] reported crystalline silica levels and PM_{10} crystalline silica contents outside of the range of the various papers summarized above. There are insufficient data in Shakari and Holmen to identify the possible reasons for the differences between their data and other studies.

On the basis of the available ambient crystalline silica data, the study participants concluded that there was a need for a monitoring technique having a minimum detectable limit of 0.3 $\mu g/m^3$. This is at or below the concentrations anticipated in this project. This minimum detectable concentration is also 10% of the California Relative Exposure Limit. An evaluation of National Institute for Occupational Safety and Health (NIOSH) Method 0600 used for in-plant industrial hygiene tests indicated that this method was not sufficiently precise at the necessary detection limit. Accordingly, the California Construction and Industrial Minerals Association (CalCIMA) and NSSGA sponsored the development of a more accurate and precise PM_4 crystalline silica monitoring method for this project. Information concerning the development of the PM_4 crystalline silica monitoring method on the basis of the validated $PM_{2.5}$ test method is described in the project report.[22]

TEST LOCATIONS AND PROCEDURES

PM_4 Crystalline Silica Measurement Test Locations

Study participants selected facilities for testing on the basis of (1) the representativeness of a vibrating screen, tertiary crusher, and conveyor transfer point of other California plants; (2) the representativeness of the crystalline silica content of the minerals processed; (3) the accessibility of the equipment for testing; (4) the capability to isolate the process unit tested from adjacent process units; and (5) the geographical location. The plants included the Service Rock Products, Inc. plant in Barstow; the Vulcan Materials, Inc. Carroll Canyon plant near San Diego; and the Teichert Aggregates, Inc. Vernalis plant near Tracy. These plants had crystalline silica levels ranging from 16.5 to 35.3% by weight in the minerals being processed.

PM_{10} data were compiled to provide a comparison of measured PM_4 crystalline silica emissions with measured PM_{10} emissions. The scope of the programs at each of these three facilities included PM_{10} emission factor tests on the crushers, vibrating screens, and conveyor transfer points.

The specific sources tested at Barstow included (1) a 16- by 5-ft flat vibrating screening operation, (2) a shorthead crusher, and (3) a conveyor transfer point. The equipment tested at Carroll Canyon included (1) a 16- by 8-ft flat vibrating screen, (2) a set of two cone crushers, and (3) a conveyor transfer point. The sources tested at Vernalis included (1) a 20- by 8-ft triple deck sloped vibrating screen, (2) a set of two cone crushers, and (3) a conveyor transfer point. Water sprays controlled all of the units with the exception of the Carroll Canyon cone

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crushers. A fabric filter supplemented wet suppression control at the Carroll Canyon cone crushers.

PM_4 Crystalline Silica Measurement Procedures

The PM_4 crystalline silica emission concentrations were measured using TECO Model 2000 FRMs modified to have a 50% cut point of 4 μm rather than 2.5 μm. This monitoring method was developed for CalCIMA and NSSGA by Air Control Techniques, P.C. in accordance with a protocol submitted to the California Air Resources Board in July 2005. The authors consider this method to be an extension of the $PM_{2.5}$ ambient monitoring procedures specified by EPA in 40 CFR Part 50, Appendix L because of the use of identical sampling equipment, sampling procedures, and quality assurance procedures.

The main adjustment necessary to an Appendix L qualifying instrument is a change in the 50% cut size of this instrument from $PM_{2.5}$ to PM_4. The 50% cut size was adjusted by reducing the sample airflow rate into the TECO sharp cut cyclone to 11.1 L/min from the 16.67 L/min used for $PM_{2.5}$ monitoring. The adequacy of the cut size was confirmed using National Institute for Standards and Technology (NIST) traceable microspheres.

A calculated sampling time of 1–3 hr was required to meet the minimum detection limits of NIOSH 7500 for crystalline silica during tests on the process equipment. These sampling time estimates were based on (1) the NIOSH Method 7500 detection limit of 5 μg, (2) the TECO FRM 2000 sample gas flow rate of 11.1 L/min that was used to collect PM_4, and (3) the estimated crystalline silica content of the stone material being processed. Crystalline silica was detected in all but one filter sample, which confirmed the adequacy of the 1- to 3-hr sampling periods used in the study. The filter samples were weighted at R.J. Lee Group, Inc. using a microbalance and analyzed for crystalline silica using NIOSH Method 7500.

The fugitive PM_{10} PM emissions from the process equipment sources tested in Barstow were measured using a TECO tapered element oscillating microbalance (TEOM) in accordance with EPA Reference Method IO-3. For the tests at Carroll Canyon and Vernalis, the fugitive PM_{10} PM emissions were measured using TECO Model 2000 FRMs modified for PM_{10}.

Sampling arrays designed based on EPA Method 5D (40 CFR Part 60, Appendix A) captured process equipment PM_4 crystalline silica emissions. The mass fluxes

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Figure 1. Side view of the sampling array on the downwind side of the vibrating sizing screen at the Barstow plant.



Figure 2. South-side view of sampling array on downwind side of the conveyor transfer point at the Barstow plant.

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of PM_4 and PM_{10} fugitive PM through the arrays were calculated by multiplying the total area of the array by the ambient wind speed and the measured PM_4 and PM_{10} concentrations.

The arrays for the vibrating screens, tertiary crushers, and conveyor transfer points were mounted within 5 ft of the locations of PM entrainment by ambient air. Because of this close spacing of the arrays to the source, the "plume" did not have time to substantially disperse in the horizontal or vertical direction. Accordingly, the dispersing PM was captured from the sources even as the ambient winds shifted direction within an angle of approximately 90°.

Each sampling array had more than 100 sampling points. This substantially exceeds the 30 sampling points specified in EPA Method 5D for testing open-top sources. The area monitored by the sampling array exceeded the area subject to dispersion of the PM on the downwind side of the process unit being tested. Each array consisted of manifolds having equally spaced nozzles for air sampling. The gas transport velocities through all sampling tubes and ductwork were above a minimum of 3200 ft/min to prevent any gravitational settling of dust. The sampling manifolds and ductwork were visually inspected after each test run. Following each set of emission tests, the sampling array piping and flex ducts were disassembled and checked for solids deposits. No deposits were present in any sections of the sampling system. Wind speed data and wind direction data demonstrated that each test run was consistent with study requirements.

Each of the array sampling manifolds was ducted together to yield a single sample gas stream. This gas stream flowed through a round duct 12 in. in diameter with sampling ports for a TECO FRM 2000 (modified for PM_4) sampling head and a PM_{10} sampling head. This duct size was the minimum necessary to accommodate the relatively large inlet heads for the TECO FRM 2000 and the TEOM. The gas velocity through the portion of the duct with the sampling ports for the monitoring instruments was less than 10 mph to be consistent with typical ambient wind velocities.

The actual sample gas flow rates through the sampling arrays provided near-isokinetic sampling velocities in the nozzles of the sampling arrays. The nozzles provided isokinetic sampling velocities equal to or lower than 110% at an average ambient wind speed of 5 mph. At isokinetic sampling rates below 100%, there is a slight bias to higher-than-true PM_4 concentrations because of the inertia of the PM_4 particles; however, this isokinetic effect is small for PM_4 particles because of their extremely low mass. Figures 1–3 show the sampling array arrangements.

The ambient airflow rate through each array was calculated based on the area of the array and the measured ambient wind speed. The tests were conducted only when the ambient winds were moving across the process being tested and through the downwind array. The adequacy of fugitive dust capture by the array was documented on a continuous basis using visible wind direction indicators and on an intermittent basis using a nephelometer continuous PM concentration analyzer inside and outside of the array.



Figure 3. Close-up view of the sampling orifices in the conveyor transfer point array at the Carroll Canyon plant.

As part of this testing program, meteorological monitoring stations were installed to measure the following parameters during the process equipment test programs.

- Average and peak wind speeds
- Wind direction
- Ambient temperature

The sample gas velocities and volumetric flow rates through the main sampling duct during the PM_4 and PM_{10} tests were determined according to the procedures outlined in EPA Reference Method 2.

The authors believe that this fugitive dust capture technique provides the most accurate means possible to quantify fugitive dust emissions without affecting the rate of fugitive dust emissions and without interfering with safe plant operations.

PM_4 Emission Factor Test Program Process Data

During each of the test runs, study participants compiled data concerning the process operating conditions and the characteristics of the materials being handled.

- Crystalline silica content of aggregate being processed through the tested units
- Material moisture content (% wt)
- Material particle size distribution (sieve analyses)
- Material throughput (t/hr)

Ambient PM_4 Crystalline Silica Measurements

The PM_4 crystalline silica ambient concentrations were measured using TECO Model 2000 FRMs adjusted for PM_4 monitoring. Two Model 2000 FRMs were located

Table 1. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Barstow.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent[b]	Emission Factor
Vibrating screen	PM_{10}	0.000167[a,c]	NA[c]	0.000167[a,c]
	PM_4	0.000079[c]	NA[c]	0.000079[c]
	PM_4 crystalline silica	0.000006[c]	NA[c]	0.000006[c]
Crusher	PM_{10}	0.002753	0.000172	0.002581
	PM_4	0.001442	0.000172	0.001270
	PM_4 crystalline silica	0.000111	0.000028	0.000083
Conveyor transfer point	PM_{10}	0.000625	0.000050	0.000575
	PM_4	0.000402	0.000050	0.000352
	PM_4 crystalline silica	0.000035	0.000006	0.000029

Notes: [a]PM_{10} emission factors were calculated based on TEOM data. [b]Ambient levels of PM_4 PM and PM_4 crystalline silica upwind of the units tested were subtracted from the emission factors to account for material not emitted by the source. [c]Ambient levels of PM and crystalline silica upwind of the vibrating screens were not subtracted because the upwind samplers were below the elevation of the screens; therefore, the air quality at this elevation was not necessarily representative of air quality on the inlet side of the screen.

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Table 2. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Carroll Canyon.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent	Emission Factor
Vibrating screen	PM_{10}	0.000930	0.000100	0.000831
	PM_4	0.000386	0.000029	0.000356
	PM_4 crystalline silica	0.000048	0.000001	0.000046
Crusher	PM_{10}	0.001271	0.000039	0.001232
	PM_4	0.000611	0.000017	0.000593
	PM_4 crystalline silica	0.000099	0.000002	0.000098
Conveyor transfer point	PM_{10}	0.000552	0.000026	0.000525
	PM_4	0.000245	0.000009	0.000236
	PM_4 crystalline silica	0.000031	0.00000	0.000031

Table 3. PM_{10}, PM_4, and PM_4 crystalline silica emission factors at Vernalis.

Equipment Tested	Emission Factor	Emission Factor Values (lb/t) of Stone Throughput		
		Measured Value	Ambient Upwind Equivalent	Emission Factor
Vibrating screen	PM_{10}	0.001754	0.000061	0.001693
	PM_4	0.000888	0.000006	0.000882
	PM_4 crystalline silica	0.000083	0.000002	0.000081
Crusher	PM_{10}	0.001767	0.000089	0.001677
	PM_4	0.000788	0.000021	0.000767
	PM_4 crystalline silica	0.000110	0.000001	0.000110
Conveyor transfer point	PM_{10}	0.001193	0.000103	0.001090
	PM_4	0.000476	0.000019	0.000457
	PM_4 crystalline silica	0.000088	0.000003	0.000085

Table 4. Comparison of measured PM_{10} PM emission factors and PM_4 crystalline silica emission factors.

Source	Plant	PM_{10} Emission Factors (lb/t)	Crystalline Silica PM_4 Factors (lb/t)	Ratio, Percent PM_4 Crystalline Silica to PM_{10}
Screen	Barstow	0.000167	0.000006	3.59
	Carroll Canyon	0.000831	0.000046	5.54
	Vernalis	0.001693	0.000081	4.78
Crusher	Barstow	0.002581	0.000083	3.21
	Carroll Canyon	0.001232	0.000098	7.95
	Vernalis	0.001677	0.00011	6.56
Conveyor transfer point	Barstow	0.000575	0.000029	5.04
	Carroll Canyon	0.000525	0.000031	5.90
	Vernalis	0.00109	0.000085	7.80

on the downwind side of the facility at a location immediately adjacent to the plant fence line. A single upwind Model 2000 FRM was located on the upwind side of the facility.

These instruments were operated for 24 hr and obtained sample volumes of 16 m^3. R.J. Lee Group, Inc. (RJL) weighed the filter samples using a microbalance and analyzed for crystalline silica using NIOSH Method 7500.

RESULTS

Emission Factor Test Results

The PM_{10}, PM_4, and PM_4 crystalline silica emission factors for the equipment sources measured at the three facilities are presented in Tables 1–3. The emission factors presented in the column on the right were calculated by subtracting the measured downwind concentrations from the measured upwind (ambient) concentrations.

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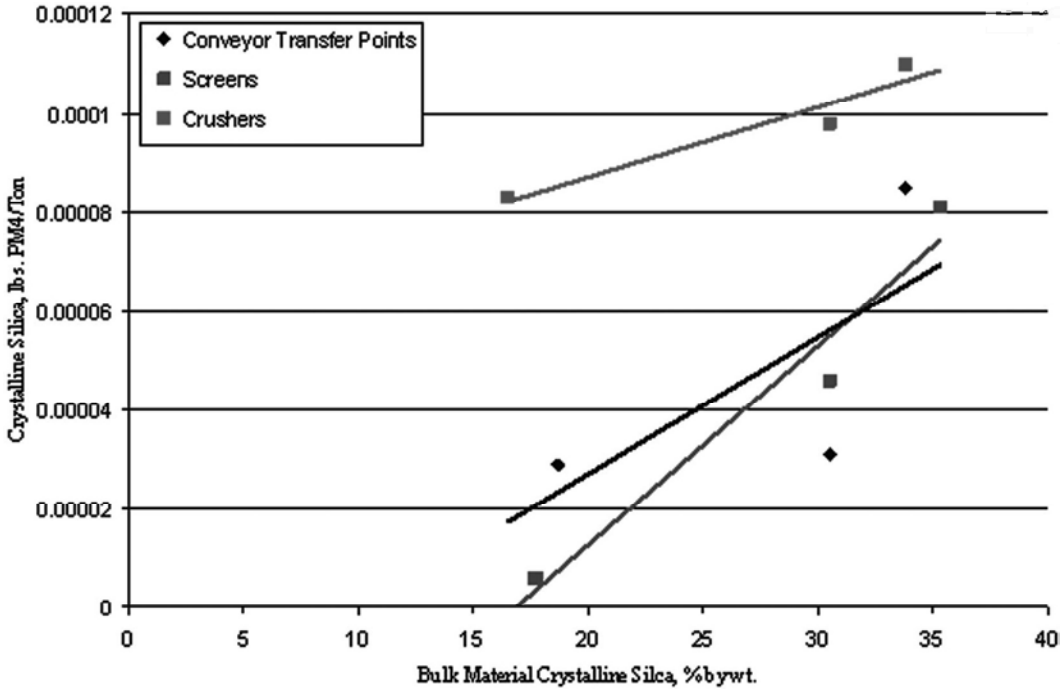


Figure 4. Relationship between bulk material crystalline silica content and the PM_4 crystalline silica emission factor.

As indicated in Table 4, the crystalline silica PM_4 emission factors range from 3.21 to 7.95% of the PM_{10} emission factors. This is a useful ratio because it compares the PM_4 crystalline silica emissions with PM_{10} emissions for which data are often available.

The plant-to-plant differences in PM_4 crystalline silica emission factors are primarily due to the crystalline silica content of the material being handled. As indicated in Figure 4, the bulk material crystalline silica content is responsible for most of the variance in the data. However, it is important to note that because of the small number of test values (three), it is not possible to demonstrate that the relationship between PM_4 crystalline silica emission factors and bulk crystalline silica content is significant at the 90% confidence level.

A less consistent relationship was observed for the conveyor transfer point tests. The reduced emission factor value for the Carroll Canyon plant (30.5% crystalline silica point) is probably due to the high aggregate throughput of this unit. It is theorized that at very high throughputs, some of the stone in the flowing material stream is shielded from attrition and, therefore, does not contribute to emissions. Despite this one test value, there appears to be a relationship between PM_4 crystalline silica emission factors and the crystalline silica content of the bulk material.

An alternative approach for summarizing the PM_4 crystalline silica concentrations is to compile average values for the datasets for the crushers, screens, and conveyor transfer points tested. Table 5 includes average values based on the data from the three plants provided in Tables 1–3.

Table 6 summarizes the crystalline silica fraction of the total PM_4. These data demonstrate that the crystalline silica content of the PM_4 material is considerably lower than the crystalline silica content measured in the bulk samples recovered from each unit tested. On the basis of an average of the tests at the three plants, the PM_4 crystalline silica content is 44% of the bulk material crystalline silica content. It is apparent that the crystalline silica content of the rock is not as prone to attrition size reduction as other constituents in the aggregate.

The process equipment PM_4 crystalline silica emission factors summarized in Tables 1–6 are consistent with previously published emission factors for $PM_{2.5}$ and PM_{10} from similar process units. The PM_4 crystalline silica emission factors are intended for use as input data to dispersion models to evaluate annual average PM_4 concentrations at plant fence lines.

Ambient PM_4 Crystalline Silica Concentrations

Ambient concentrations of PM_4 crystalline silica were measured during 3 consecutive 24-hr periods at the

Table 5. Average emission factors from Barstow, Carroll Canyon, and Vernalis: combined dataset.

Source	Analyte	Emissions (lb/t)
Vibrating screen	PM_{10}	0.00090 PM10 cs = 0.00009 lb/t
	PM_4	0.00044
	PM_4 crystalline silica	0.000044 PM4 cs = 10% of PM4
Crusher	PM_{10}	0.00183 PM10 cs = 0.0002 lb/t
	PM_4	0.00088
	PM_4 crystalline silica	0.000097 PM4 cs = 11% of PM4
Conveyor transfer point	PM_{10}	0.00073
	PM_4	0.00035
	PM_4 crystalline silica	0.000048

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Table 6. Crystalline silica fraction of PM_4 PM.

Plant	Source	Crystalline Silica Content (percent weight of total PM_4)	Crystalline Silica Content (percent weight of material samples)
Barstow	Screen	7.5	17.7
	Crusher	6.5	16.5
	Conveyor transfer point	8.3	18.7
	Average	6.9	17.3
Carroll Canyon	Screen	12.5	30.5
	Crusher	15.4	30.4
	Conveyor transfer point	12.8	30.6
	Average	13.6	30.5
Vernalis	Screen	9.6	35.3
	Crusher	21.9	33.9
	Conveyor transfer point	18.4	33.8
	Average	16.6	34.3

Carroll Canyon and Vernalis plants. Two collocated TECO FRM samplers modified for PM_4 crystalline silica measurement operated at a location downwind of the quarry and processing equipment. A single TECO FRM instrument for PM_4 crystalline silica monitoring operated at a location upwind of the entire facility being tested. Meteorological monitoring stations were placed at the upwind and downwind locations. The results of the ambient monitoring tests demonstrated that the plants operated at levels well below the 3-$\mu g/m^3$ REL value. Tables 7 and 8 summarize the results for the Carroll Canyon and Vernalis plants, respectively.

The differences between the upwind and downwind ambient PM_4 crystalline silica concentrations are small. The slightly higher upwind values observed during several of the test days are due to emissions from unpaved roads near the upwind monitoring sites.

Quality Assurance/Quality Control Procedures for PM_4 and PM_{10} Sampling

All of the PM_4 crystalline silica concentration tests conducted with modified Appendix L samplers included quality assurance (QA)/quality control (QC) procedures established by EPA for IO-1.3 (TEOMs) and 40 CFR Part 50, Appendix L (TECO FRM 2000s). The QA/QC data indicated that the TECO PM_4 samplers, the TECO PM_{10} samplers, and the TECO TEOM monitor used for PM_4 and PM_{10} monitoring performed extremely well throughout the three test programs.

All of the PM_4 concentration samplers used for emission factor testing and ambient air monitoring met all of the pre- and post-test requirements concerning filter temperature, ambient temperature, barometric pressure, sample flow, and sample gas stream leak rates.

A TEOM monitor was used during the tests at Barstow for the emission factor tests of the tertiary crusher, the vibrating screen, and the conveyor transfer point. The TEOM monitor satisfied the pre- and post-test QA requirements concerning ambient temperature, barometric pressure, sample flow, and sample gas stream leak rates.

SUMMARY

PM_4 crystalline silica emission factors measured using an Appendix L-based filter sampler ranged from 0.000006 to 0.000110 lb/t of stone processed in vibrating screens, tertiary crushers, and conveyor transfer points. The measured PM_4 crystalline silica emissions ranged from 3.21 to 7.95% of the simultaneously measured PM_{10} emission factors. The PM_4 crystalline silica emissions measured in this study appeared to be related to the crystalline silica content of the mineral being handled. The concentration of crystalline silica in PM_4 PM averaged 44% of the crystalline silica content of the bulk mineral.

Ambient concentrations of PM_4 crystalline silica were measured upwind and downwind of the facilities during the emission factor test programs. The measured ambient concentrations of PM_4 crystalline silica ranged from below the detectable limit of 0.3 $\mu g/m^3$ to 2.8 $\mu g/m^3$. These concentrations are well below the California REL of 3 $\mu g/m^3$.

Table 7. Plant upwind-downwind ambient monitoring at Carroll Canyon.

	PM_4 Crystalline Silica ($\mu g/m^3$)		
Date	Upwind	Downwind (primary)	Downwind (collocated)
September 17	1.3	1.1	1.0
September 18	1.4	0.7	0.8
September 19	0.6	0.5	0.4

Table 8. Plant upwind-downwind ambient monitoring at Vernalis.

	PM_4 Crystalline Silica ($\mu g/m^3$)		
Date	Upwind	Downwind (primary)	Downwind (collocated)
September 24	0.8	0.6	0.9
September 25	2.8	0.9	0.8
September 26	2.5	0.0	1.2

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AIRx Testing Services, Inc.

Dates Tested:	January 11-13, 2022
Dates Tested:	January 18-21, 2022
Date Issued:	March 7, 2022
Revision Number:	0

SOURCE EMISSION TEST REPORT
RJ NOBLE COMPANY
ASPHALT PLANT- ORANGE, CALIFORNIA FACILITY
ONE (1) ROTARY DRYER BAGHOUSE

Facility No. 019167
Application No. 559511

Source Location:
RJ NOBLE COMPANY
15505 EAST LINCOLN AVENUE
ORANGE, CALIFORNIA

Submitted to:
Same as Above

Attention: Scott Fraser

For Submittal to:
South Coast Air Quality Management District
21854 Copley Drive
Diamond Bar, California 91765-4178

Prepared By:
AIRx Testing Services, Inc.
2472 Eastman Avenue Unit #34
Ventura, CA 93003

Job Number
18031

Laboratory Report Number
222-007

Test Team Leader
Ken Kennepohl



Tom Porter, Vice President of Testing Services

Ken Kennepohl, Project Engineer

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1.0 SUMMARY

Source Tested:	RJ Noble Company Rotary Dryer Baghouse - Asphalt Plant
Test Location:	RJ Noble Company 15505 East Lincoln Avenue Orange, California 92865
Test Requested by:	SCAQMD
Test Objectives	Toxics testing for emission factor reporting: Health Risk Assessment.
Test Performed by:	AIRx Testing Services, Inc.
Personnel:	Ken Kennepohl, Wesley Hart, Ferodie Torres & Jacob Thompson
Test Methodology:	O2 & CO2: SCAQMD Method 100.1 Multiple Metals: CARB Method 436 Toxic Organics: EPA TO-15 PAHs: CARB Method 429 Total & Hexavalent Chromium: CARB Method 425 Formaldehyde/Acetaldehyde: CARB Method 430, EPA 0011/8315A Stack Gas Moisture %: SCAQMD Method 4.1 Stack Gas Flow Rate: SCAQMD Methos 1.1/2.1
Test Observed by:	--
Plant Contact:	Scott Fraser
Facility ID Number:	019167
SCAQMD Application Number:	559511
SCAQMD Permit Number:	N/A

2.0 INTRODUCTION

Air pollutant emissions from stationary sources in the Los Angeles Basin (Los Angeles, Orange, Riverside, and the non-desert portion of San Bernardino County) are regulated by the South Coast Air Quality Management District (SCAQMD). AIRx Testing Services, Inc. was contracted by RJ Noble Company to conduct source emission testing to determine emission factors for the facility Health Risk Assessment. The rotary dryer baghouse exhaust testing was conducted for Formaldehyde, Acetaldehyde, PAH, Total Chromium, Hexavalent Chromium, Multiple Metals, Toxic Organics, Exhaust Gas Flow Rate, Exhaust Gas Moisture Percentage, O2 and CO2.

Source testing was conducted by AIRx Testing Services personnel on January 11-13, 2022 and January 18-21, 2022, to measure gaseous toxic emissions from one (1) baghouse attached to a natural gas fired rotary dryer baghouse. Testing was conducted while operating at a normal load condition.

AIRx personnel directly involved with this test program were Ryan Yanagihara, Ferodie Torres, Ken Kennepohl, Jacob Thompson, Wesley Hart and Tom Porter. The contact for RJ Noble Company for this project was Scott Fraser.

The baghouse is equipped with a round stack 54" in diameter. The two, 3-inch male sample ports are located 0.6 diameters upstream and 3.0 downstream from a flow disturbance. Two (2) male sample ports were accessed from a platform around the stack circumference. A total of 24 traverse points (12 per port) were utilized used for the flow rate and concentration sampling. A stack diagram with traverse points is included in the attachments.

The Rotary Dryer fuel usage was recorded every 30 minutes for all test runs. Plant production in tons per hour was recorded every 30 minutes during all testing. Results for all detected pollutants are reported in concentration (ppmv or ppbv), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million Btu (lb/MMBtu).

The Rotary Dryer (ID No. D127) and Baghouse (C101) (A/N 559511) are identified as follows:

Dryer, Rotary, Astec, Double-Barrel Drum, Natural gas with Low NOx Burner, 100 MMBTU/Hr. Burner: Natural gas Astec, Model Phoenix, With Low NOx Burner, 100 MMBTU/Hr.

Baghouse, Astec Industries, Model RBH-85W, 1280 Bags, Aromid Bags, 15499 square feet, 300 horsepower, pulse jet cleaning type, with Goyen, Model EMP6, Bag leak detection system, AN 559511

3.0 PROCESS DESCRIPTION

The facility produces asphalt by using virgin aggregate material and RAP material. The testing was conducted. While the plant was producing mix that included 5% to 35% RAP. The plant was producing mix that includes asphalt binder which has a range of 0% to 20% rubber.

The particulate emissions are controlled with a fabric baghouse attached to the Astec rotary drum dryer. The subject test was conducted determine the mass emissions of the required pollutants from the existing baghouse exhaust stack.

COMMENTS:

At the conclusion of the first day of sampling (January 11, 2022), it was determined that the baghouse had developed an issue. The first day of sampling consisted of an eight (8) hour test run for Multiple Metals and PAH. An additional three (3) test runs were conducted for Multiple Metals and PAH. The first test run results have been included in this test report and is labeled as sample A. The following three (3) sample runs were designated Runs 1-3. Please note that only runs 1 through 3 were averaged for pollutant reporting, since run A is not indicative of normal operation for this unit.

This report also includes an CD with four videos of the rotary dryer and baghouse. The four (4) videos are from different test dates and were taken concurrently while sampling was being performed. These videos have been supplied as per the request of the SCAQMD to show if any fugitive emissions were escaping the process. The four (4) videos do not show any evidence of fugitive emissions being present.

The Rotary Dryer fuel usage and plant production in tons per hour was recorded every 30 minutes for all test runs. Results for all detected pollutants are reported in concentration (ppmv or ppbv), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU (lb/MMBtu).

4.0 TEST PROCEDURES

Formaldehyde & Acetaldehyde CARB Method 430/EPA Method 0011/SW846:

Aldehyde concentrations were determined in triplicate according to a Modified CARB Method 430/EPA Method 0011/SW846. Sampling was conducted isokinetically for 120 minutes for each of three test runs. Three (3) test runs were conducted. The sample train consists of a glass nozzle, a glass probe attached to three (3) full sized impingers, each containing approximately 100 ml of fresh acidic DNPH solution. (NOTE: The third impinger, with the appropriate solutions, is added to avoid possible formaldehyde breakthrough). The 12" transfer Teflon line to the impingers is not heated as the entire line is rinsed into the first impinger after the end of each test run.

The acidic DNPH solution was supplied by Atmospheric Analysis and Consulting (AAC) of Ventura, California and was used within 48 hours following preparation.

Four (4) DNPH reagent blanks were analyzed for contamination prior to use in the field as per Section 3, page 4 of CARB Method 430. As per Section 4.2.2 the sample/field blank ratio shall be equal to or greater than five (5) as calculated per Section 11.9.

The samples were kept on ice and then returned to the laboratory for recovery and delivery to AAC for analysis by HPLC with a UV detection system. The recovered samples and field blanks were kept refrigerated or kept on ice prior delivery to AAC. The samples were delivered to AAC within 24-48 hours after the sampling. As per the method the samples were extracted within seven (7) days and the extract analyzed within 30 days

The appropriate field blanks were submitted for analysis along with the samples. Each impinger was weighed prior to submission for analysis. Each impinger was analyzed separately as per Section 8.4 – Analytical procedures (Warning #2) and the results are reported in ug/sample. The resulting concentrations (ug/dscm) from each analysis are added together to obtain the total weight of the aldehydes for each test run. The final results are reported in ppmv, pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

The following procedures are to be followed for Modified Method 430 (with the addition of toluene) /EPA Method 0011/SW846:

i. Fields Blanks: Taken by AIRx. Three (3) field blanks were taken by using Teflon tubing the same length as our sample line attached to one (1) impinger. Two (2) ml of DNPH solution is flushed through the tubing followed by one (1) ml of DI water. The vials are capped and labeled as field blanks 1-3. A spiked field blank was taken for Acrolein by adding a known amount of Acrolein to an empty vial in the laboratory and the DNPH was added in the field and then recovered as a field blank.

ii: Matrix Spike: The first impinger from one (1) of the test runs was spiked with a know amount of acrolein prior to delivery to the field. The DNPH and the Toluene is added in the field. The results are reported as percent recovery with the difference being the amount in the gas stream.

TEST PROCEDURES (cont)

Formaldehyde & Acetaldehyde CARB Method 430 EPA Method 0011/SW846/ (cont):

i: Reagent Blank: Conducted by AAC in house. An analysis is conducted on the DNPH solution returning from the field.
ii: Laboratory Spikes: Conducted by AAC in house. One (1) 10 ml portion of the DNPH solution returning from the field will be spiked with the three (3) constituents and the percent recovery reported.
iii: The QA on the stock DNPH solution: Conducted by AAC in house. Four (4) samples of the fresh DNPH solution will be analyzed prior to delivery to AIRx. The values have been reported in the final report.

Formaldehyde and Acetaldehyde results are reported in ppmv, ug/sample, lb/hr, lb/ton and lb/MMBtu.

NOTE: The Modified CARB 430/EPA Method 011/8315 was utilized due to prior discussions with the SCAQMD on an identical asphalt plant process. The modification in sampling replaces the midget impingers with full sized impingers but includes the QA/QC procedures required by CARB Method 430.

TEST PROCEDURES (cont)

Total & Hexavalent Chromium CARB Method 425:

California Air Resources Board Method (CARB) 425 was used to determine the emission rates of total and hexavalent chromium. The sample train consists of a glass nozzle, a glass probe and a flexible Teflon line followed by four impingers in series. The first two (2) impingers are Greenberg-Smith type and contain 100 ml of sodium bicarbonate (NaHCO3) solution. The third impinger is a modified type and is empty. A 47-millimeter, Teflon Coated glass fiber filter is placed between the third and fourth impingers. The fourth impinger contains approximately 200 grams of Silica Gel desiccant.

The samples were collected isokinetically for three (3) 360 minutes (6 hours) runs by using 24 traverse points. The impinger solutions was checked for sufficiently high pH (>8) upon recovery.

As directed in Section 13.3.2 of CARB Method 425 (Lower Concentrations), the sample train was recovered as follows:

The probe and nozzle rinse is placed into container #1. The contents of impinger #1 and rinses were placed into container #2. Impinger #2 solution and rinses were placed into container #3. The 47mm filter were placed into container #2. The resulting samples were refrigerated until delivery to Chester Labnet located in Tigard Oregon.

The three (3) fractions were each analyzed for total and hexavalent Chromium. Analysis for Hexavalent Chromium was performed using ion chromatography.

A schematic of the CARB Method 425 train is provided in the attachments.

NOTE: Prior to use of the sample train, the probe was prewashed with the NaHCO3 solution. A sample of the probe prewash will be submitted to the laboratory for Hexavalent Chromium analysis to assure the absence of Hexavalent Chromium.

As per CARB Method 425, section 21.2 "Alternative Test Methods", NaHCO3 impinger solution may be utilized provided that at all times during sampling and transport of samples, the pH of the impinger solutions be maintained above a pH of 8.0 as determined by the use of a clean rod and color indicating paper for pH. This alternative is highly recommended by the analytical laboratory.

NOTE: The stack moisture was determined gravimetrically using the CARB Method 425 sample train. The four (4) impingers were pre-weighed prior to the sampling and then reweighed after completion of the sampling.

TEST PROCEDURES (cont)

Total & Hexavalent Chromium CARB Method 425 (cont):

California Air Resources Board Method 425 requires pretest calculations to determine the minimum sample volume and sampling duration to meet the detection limits necessary to demonstrate compliance with applicable standards.

1) Section 3.4.2; Equation 425.2 – Reporting Limit (RL)

RL = LOD*220 = 0.2 ng/ml*220 ml = 44 ng

2) Section 3.5.2; Equation 425.3 – Minimum Sample Volume

MSV = RL*1/STC = 44*1/10ng/dscm = 4.4 dscm (155 cfm)

3) Section 3.5.3; Equation 425.4 – Minimum Sampling Time (MST)

MST = MSV/VSR = 4.4/45 dscf/hr or 1.27 dscm/hr = 3.5 hr

4) Section 3.5.4; Equation 425.6 – Planned Sample Volume (PSV)

PSV = PST*VSR = 8*1.0 = 8.0 dscm (282 cf)

Section 3.5.6 Equation 425-8 – Source Reporting Limit (SRL)

SRL = RL/PSV = 44/8.0 = 5.5 ng/dscm = 0.0055 mg/dscm

A blank train was prepared, transported to the site, recovered and analyzed in the same manner as the actual sample trains. All requirements established in CARB Method 425 were be adhered to.

All analyses conformed to the requirements of CARB Method 425 and all applicable QA/QC measures included in the final report.

Total and Hexavalent Chromium results are reported in gr/dscf, lb/hr, lb/ton and lb/MMBtu.

TEST PROCEDURES (cont)

Multiple Metals, CARB Method 436:

The Multiple Metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Phosphorous, Selenium, Silver, Thallium, Vanadium and Zinc) has been reported as pounds per hour. The sampling was conducted according to CARB Method 436, a description of which can be found in the Attachments. Three (3) 480-minute isokinetic samples were taken from the baghouse exhaust stack. The Multiple Metals samples were refrigerated until delivery to Chester Labnet located in Tigard Oregon.

The Multiple Metals sampling train consists of a glass nozzle, heated probe, heated filter, a series of six impingers immersed in an ice bath and a silica gel impinger.

The following system was used for the condensation and collection of gaseous metals and for determining the moisture content of the stack gas:

The impinger train consisted of six (6) impingers. Impingers are connected in series with leak-free ground glass fittings or other leak-free, non-contaminating fittings and immersed in an ice bath. The first impinger is utilized as a water knockout trap for use during test conditions where high stack gas moisture content might result in considerable dilution of the impinger solutions.

The impingers utilized in the multiple metals train are described as follows:

The first impinger was used as a water knockout, it was of the Greenburg-Smith design modified to have either a short or long stem, appropriately sized for the expected moisture catch and installed empty. The second impinger was of the Greenburg-Smith design modified to have a long stem as described for the first impinger in ARB Method 5, Section 2.1.7 and contain 100 ml of 5%HNO/10% H2O2 solution. The third impinger (or the impinger used as the second HNO/H2O2 impinger) was of the Greenburg-Smith design with the standard tip as described for the second impinger in ARB Method 5, Paragraph 2.1.7 and contain 100 ml of 5%HNO/10% H2O2 solution. The fourth impinger was installed empty and was of the Greenburg-Smith design modified to have a short stem. The function of the fourth impinger was to prevent commingling of the solution in the second and third impingers with the solution in the fifth and sixth impingers. The fifth and sixth impingers was of the Greenburg-Smith design modified to have a long stem and shall each contain 100 ml of acidic potassium permanganate (4% KMnO4/10%4H2SO4) solution. A thermometer capable of measuring to within 1C (2F) was placed at the outlet of the last impinger

Each of the multiple metals are reported in grains per dry standard cubic feet (gr/dscf), pounds per hour (lb/hr), pounds per ton of asphalt produced (lbs/ton) and pounds per million BTU (lb/MMBtu).

TEST PROCEDURES (cont)

Toxic Organics, EPA Method TO-15:

The toxic organics were sampled in duplicate from the dryer outlet for each of the three (3) 60-minute test runs. Summa passivated canisters were utilized to sample for the toxic organics. The Summa canisters were equipped with preset calibrated mass flow controllers. The sampling was integrated over each 60-minute test run. The samples were submitted to Atmospheric Analysis and Consulting (AAC) for analyses by GC/MS (TO-15).

The analyses followed EPA Method TO-15 methodology. The reported detection limit is 0.001 ppmv or 1 ppbv. The sample is cryogenically pre-concentrated in a series of multi-bed traps, with water and CO2 management protocols, and finally cryofocused before desorption into the gas chromatograph.

Upon separation in the Gas Chromatograph, the sample is introduced into the mass spectrometer. The HAPs characteristic retention time and mass spectra qualitatively identify compounds. The results have been reported in ppbv, lb/hr and lbs/ton of asphalt.

The TO-15 results are reported in ppbv, pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

TEST PROCEDURES (cont)

PAH, CARB Method 429:

PAH concentrations were determined in triplicate according CARB Method 429. Sampling was conducted isokinetically for 480 minutes. The sample train consists of a quartz sample probe with the appropriate nozzle, an "s" type pitot tube, a Teflon filter, a spiral condenser, a spiked sorbent module, two (2) preweighed Greensburg-Smith impingers containing 100 ml of 3mM Sodium bicarbonate/2.4 mM Sodium Carbonate, a third dry preweighed impinger and a fourth preweighed impinger containing silica get

The samples were sealed and returned to the laboratory for recovery. The recovery includes rinsing the nozzle, probe and top half of the filter holder three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Front half rinses'. The filter is removed from holder and placed into a petri dish. The bottom half of the filter holder, connector connection and the spiral condenser is rinsed three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Back half rinses". The rinses may be combined with the "front half rinses" container. The impingers are reweighed then the solution transferred to a container labeled "Impinger contents". The impingers are then rinsed three (3) times with acetone, hexane and methylene chloride with the rinses placed into a glass container labeled as "Impinger rinses". The rinses may be combined with the container labeled as "Impinger contents". The silica get impinger is reweighed. The field blank will be recovered and submitted for analysis along with the samples.

The cleaned XAD resin and filters were supplied by Vista Analytical located in El Dorado Hill. The samples sent to VISTA Analytical for analysis according to procedures outlined in CARB Method 429.

The PAH results are reported in nanogram per sample (ng/sample), pounds per hour (lb/hr), pounds per ton of produced asphalt (lb/ton) and pounds per million BTU.

TEST PROCEDURES (cont)

Stack Gas Oxygen, Carbon Dioxide, SCAQMD Method 100.1:

The CEM sampling system consists of a stainless-steel probe, a heated Teflon sample line and a sample gas conditioner that cools the gas to <60°F entering a gas conditioner prior to distribution to the analyzers. The conditioner dries the gas to <37°F. The stack gas was extracted from the stack with a pump into the sample gas conditioner and transported under positive pressure to the flowpanel, which distributes the dry conditioned gas to the appropriate analyzers. A traverse was conducted on the exhaust stack to determine the presence or absence of stratification of a pollutant. A bias (probe tip) check was made at the beginning and end of each run to determine sample system integrity. EPA Protocol quality calibration gases were used for calibrating the analyzers. The stack was initially traversed utilizing sampling utilizing half the number of points dictated for a particulate traverse to determine the presence of stratification. No stratification was observed (<10% of average) thus a single representative sample point will be utilized. Data was continuously collected with a DAS and on a 10" strip chart recorder.

5.0 TEST RESULTS AND DISCUSSION

A summary of the emissions results has been provided on pages 5-2 thru 5-17

We are evaluating re-performing the Formaldehyde sampling due to the third run anomaly that yielded suspect high results and re-performing the Multiple Metals sampling due to the suspect high Aluminum results.

AIR TESTING SERVICES, INC.

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) SUMMARY

CARB 429

Client : RJ Noble
Site : Orange, CA
Unit : Baghouse

T std: 60 °F

Date : 1/11/2022
Job #: 18031
Lab #: 222-007

RUN A

Compound Name	lb/hr	lb/ton	lb/mmbtu
Acenaphthene	**0.0000059**	**0.000000015**	**0.00000011**
Acenaphthylene	**0.000024**	**0.000000064**	**0.00000044**
Anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benz(a)anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(a)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(e)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(b)fluoranthene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(g,h,i)perylene	< 0.000000083	< 0.00000000022	< 0.0000000015
Benzo(k)fluoranthene	< 0.000000083	< 0.00000000022	< 0.0000000015
Chrysene	**0.00000044**	**0.0000000012**	**0.0000000079**
Dibenz(a,h)anthracene	< 0.000000083	< 0.00000000022	< 0.0000000015
Fluoranthene	**0.0000028**	**0.0000000074**	**0.000000051**
Fluorene	**0.000023**	**0.000000061**	**0.00000042**
Indeno(1,2,3-cd)pyrene	< 0.000000083	< 0.00000000022	< 0.0000000015
2-Methylnaphthalene	**0.00070**	**0.0000018**	**0.000013**
Naphthalene	**0.0020**	**0.0000053**	**0.000036**
Perylene	< 0.000000083	< 0.00000000022	< 0.0000000015
Phenanthrene	**0.000029**	**0.000000076**	**0.00000052**
Pyrene	**0.0000019**	**0.0000000051**	**0.000000035**

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

AIR TESTING SERVICES, INC.

POLYCYCLIC AROMATIC HYDROCARBONS (PAH) SUMMARY

CARB 429

Client : RJ Noble
Site : Orange, CA
Unit : Baghouse

T std: 60 °F

Date : 1/12, 1/18 & 1/19/22
Job # 18031
Lab #: 222-007

RESULTS in lb/hr

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.000017**	**0.000089**	**0.00013**	**0.000075**
Acenaphthylene	**0.000068**	**0.00029**	**0.00050**	**0.00029**
Anthracene	< 0.00000013	**0.0000082**	**0.0000083**	**0.0000055**
Benz(a)anthracene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(a)pyrene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(e)pyrene	**0.00000016**	< 0.000000084	< 0.00000011	**0.000000085**
Benzo(b)fluoranthene	**0.00000013**	< 0.000000084	< 0.00000011	**0.000000076**
Benzo(g,h,i)perylene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Benzo(k)fluoranthene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Chrysene	**0.0000011**	**0.00000023**	**0.00000037**	**0.00000056**
Dibenz(a,h)anthracene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Fluoranthene	**0.000016**	**0.0000081**	**0.0000059**	**0.0000101**
Fluorene	**0.000047**	**0.000099**	**0.00015**	**0.000098**
Indeno(1,2,3-cd)pyrene	< 0.00000013	< 0.000000084	< 0.00000011	< 0.00000011
2-Methylnaphthalene	**0.0011**	**0.0021**	**0.0041**	**0.0024**
Naphthalene	**0.0028**	**0.0089**	**0.015**	**0.0089**
Perylene	< 0.00000013	< 0.000000084	< 0.00000011	**< 0.00000011**
Phenanthrene	**0.000061**	**0.00014**	**0.00017**	**0.00013**
Pyrene	**0.000024**	**0.0000032**	**0.0000049**	**0.0000108**

RESULTS in lb/ton

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.000000050**	**0.00000038**	**0.00000056**	**0.00000033**
Acenaphthylene	**0.00000020**	**0.0000012**	**0.0000021**	**0.0000012**
Anthracene	< 0.00000000038	**0.000000035**	**0.000000035**	**0.000000023**
Benz(a)anthracene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(a)pyrene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(e)pyrene	**0.00000000048**	< 0.00000000035	< 0.00000000044	**0.00000000029**
Benzo(b)fluoranthene	**0.00000000040**	< 0.00000000035	< 0.00000000044	**0.00000000026**
Benzo(g,h,i)perylene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Benzo(k)fluoranthene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Chrysene	**0.0000000032**	**0.0000000010**	**0.0000000015**	**0.0000000019**
Dibenz(a,h)anthracene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000037**
Fluoranthene	**0.000000048**	**0.000000034**	**0.000000025**	**0.000000036**
Fluorene	**0.00000014**	**0.00000042**	**0.00000062**	**0.00000039**
Indeno(1,2,3-cd)pyrene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
2-Methylnaphthalene	**0.0000033**	**0.0000090**	**0.000017**	**0.0000097**
Naphthalene	**0.0000083**	**0.000037**	**0.000063**	**0.000036**
Perylene	< 0.00000000038	< 0.00000000035	< 0.00000000044	**< 0.00000000039**
Phenanthrene	**0.00000018**	**0.00000061**	**0.00000073**	**0.00000051**
Pyrene	**0.000000072**	**0.000000013**	**0.000000020**	**0.000000035**

PAH RESULTS in lb/MMBtu

Compound Name	RUN # 1	2	3	AVERAGE
Acenaphthene	**0.00000021**	**0.0000017**	**0.0000025**	**0.00000147**
Acenaphthylene	**0.00000085**	**0.0000056**	**0.0000093**	**0.0000053**
Anthracene	< 0.0000000016	**0.00000016**	**0.00000015**	**0.00000010**
Benz(a)anthracene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(a)pyrene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(e)pyrene	**0.0000000020**	< 0.0000000016	< 0.0000000020	**0.0000000013**
Benzo(b)fluoranthene	**0.0000000017**	< 0.0000000016	< 0.0000000020	**0.0000000011**
Benzo(g,h,i)perylene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Benzo(k)fluoranthene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Chrysene	**0.000000014**	**0.0000000044**	**0.0000000068**	**0.0000000083**
Dibenz(a,h)anthracene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Fluoranthene	**0.00000020**	**0.00000016**	**0.00000011**	**0.00000016**
Fluorene	**0.00000059**	**0.0000019**	**0.0000028**	**0.0000018**
Indeno(1,2,3-cd)pyrene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
2-Methylnaphthalene	**0.000014**	**0.000041**	**0.000075**	**0.000043**
Naphthalene	**0.000035**	**0.00017**	**0.00028**	**0.00016**
Perylene	< 0.0000000016	< 0.0000000016	< 0.0000000020	**< 0.0000000017**
Phenanthrene	**0.00000076**	**0.0000028**	**0.0000032**	**0.0000023**
Pyrene	**0.00000030**	**0.000000062**	**0.000000090**	**0.00000015**

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 436

	Run A
Aluminum Weight (g)	0.254
Aluminum Emissions (grain/Dscf)	0.0119
Aluminum Flow Rate (lb/hr)	2.24
Aluminum (lb/ton)	0.0059
Aluminum (lb/mmbtu)	0.043
Antimony Weight (g)	0.0000768
Antimony Emissions (grain/Dscf)	0.00000360
Antimony Flow Rate (lb/hr)	0.00068
Antimony (lb/ton)	0.0000018
Antimony (lb/mmbtu)	0.000013
Arsenic Weight (g)	< 0.00000315
Arsenic Emissions (grain/Dscf)	< 0.000000148
Arsenic Flow Rate (lb/hr)	< 0.000028
Arsenic (lb/ton)	< 0.000000073
Arsenic (lb/mmbtu)	< 0.00000054
Barium Weight (g)	0.00191
Barium Emissions (grain/Dscf)	0.0000895
Barium Flow Rate (lb/hr)	0.017
Barium (lb/ton)	0.000044
Barium (lb/mmbtu)	0.00032
Beryllium Weight (g)	0.00000415
Beryllium Emissions (grain/Dscf)	0.000000194
Beryllium Flow Rate (lb/hr)	0.000037
Beryllium (lb/ton)	0.000000096
Beryllium (lb/mmbtu)	0.00000070
Cadmium Weight (g)	0.0000183
Cadmium Emissions (grain/Dscf)	0.000000857
Cadmium Flow Rate (lb/hr)	0.00016
Cadmium (lb/ton)	0.00000042
Cadmium (lb/mmbtu)	0.0000031
Chromium Weight (g)	0.000131
Chromium Emissions (grain/Dscf)	0.00000614
Chromium Flow Rate (lb/hr)	0.0012
Chromium (lb/ton)	0.0000030
Chromium (lb/mmbtu)	0.000022
Cobalt Weight (g)	0.0000553
Cobalt Emissions (grain/Dscf)	0.00000259
Cobalt Flow Rate (lb/hr)	0.00049
Cobalt (lb/ton)	0.0000013
Cobalt (lb/mmbtu)	0.0000094
Copper Weight (g)	0.0000546
Copper Emissions (grain/Dscf)	0.00000256
Copper Flow Rate (lb/hr)	0.00048
Copper (lb/ton)	0.0000013
Copper (lb/mmbtu)	0.0000093
Lead Weight (g)	< 0.0000753
Lead Emissions (grain/Dscf)	< 0.00000353
Lead Flow Rate (lb/hr)	< 0.00066
Lead (lb/ton)	< 0.0000017
Lead (lb/mmbtu)	< 0.000013
Manganese Weight (g)	0.00285
Manganese Emissions (grain/Dscf)	0.00013
Manganese Flow Rate (lb/hr)	0.025
Manganese (lb/ton)	0.000066
Manganese (lb/mmbtu)	0.00048

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

CALCULATED EMISSION RESULTS CARB METHOD 436 (Continued)

	Run A
Mercury Weight (g)	< 0.00000667
Mercury Emissions (grain/Dscf)	< 0.00000031
Mercury Flow Rate (lb/hr)	< 0.000059
Mercury (lb/ton)	< 0.00000015
Mercury (lb/mmbtu)	< 0.0000011
Nickel Weight (g)	0.0000685
Nickel Emissions (grain/Dscf)	0.00000321
Nickel Flow Rate (lb/hr)	0.00060
Nickel (lb/ton)	0.000063
Nickel (lb/mmbtu)	0.000012
Phosphorous Weight (g)	0.00256
Phosphorous Emissions (grain/Dsc	0.000120
Phosphorous Flow Rate (lb/hr)	0.023
Phosphorous (lb/ton)	0.000059
Phosphorous (lb/mmbtu)	0.00043
Selenium Weight (g)	< 0.00003380
Selenium Emissions (grain/Dscf)	< 0.00000158
Selenium Flow Rate (lb/hr)	< 0.00030
Selenium (lb/ton)	< 0.00000078
Selenium (lb/mmbtu)	< 0.0000057
Silver Weight (g)	< 0.000000900
Silver Emissions (grain/Dscf)	< 0.0000000422
Silver Flow Rate (lb/hr)	< 0.0000079
Silver (lb/ton)	< 0.000000021
Silver (lb/mmbtu)	< 0.00000015
Thallium Weight (g)	< 0.00002250
Thallium Emissions (grain/Dscf)	< 0.00000105
Thallium Flow Rate (lb/hr)	< 0.00020
Thallium (lb/ton)	< 0.00000052
Thallium (lb/mmbtu)	<0.0000038
Vanadium Weight (g)	0.0003270
Vanadium missions (grain/Dscf)	0.0000153
Vanadium Flow Rate (lb/hr)	0.0029
Vanadium (lb/ton)	0.0000076
Vanadium (lb/mmbtu)	0.000056
Zinc Weight (g)	0.000721
Zinc Emissions (grain/Dscf)	0.0000338
Zinc Flow Rate (lb/hr)	0.0064
Zinc Flow (lb/ton)	0.000017
Zinc Flow (lb/mmbtu)	0.00012

Note: This test run was not averaged into the final results due to the discovery of a baghouse malfunction - See Section 3.0 Comments.

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 436

	Run 1	Run 2	Run 3	Average (3 Runs)
Aluminum Weight (g)	0.0742	0.00819	0.00122	0.02787
Aluminum Emissions (grain/Dscf)	0.003879	0.000432	0.0000798	0.00146
Aluminum Flow Rate (lb/hr)	1.03	0.086	0.017	0.38
Aluminum (lb/ton)	0.0031	0.00036	0.000070	0.0012
Aluminum (lb/mmbtu)	0.018	0.0010	0.00032	0.0064
Antimony Weight (g)	0.0000248	0.00000813	0.00000495	0.00001263
Antimony Emissions (grain/Dscf)	0.00000130	0.000000429	0.000000324	0.000000683
Antimony Flow Rate (lb/hr)	0.00034	0.000085	0.000068	0.00017
Antimony (lb/ton)	0.0000010	0.00000036	0.00000028	0.00000056
Antimony (lb/mmbtu)	0.0000060	0.0000010	0.0000013	0.0000028
Arsenic Weight (g)	< 0.00000315	0.00000349	0.00000315	<0.00000326
Arsenic Emissions (grain/Dscf)	< 0.000000165	0.000000184	0.000000206	< 0.000000185
Arsenic Flow Rate (lb/hr)	< 0.000044	0.000037	0.000043	< 0.000041
Arsenic (lb/ton)	< 0.00000013	0.00000015	0.00000018	< 0.00000016
Arsenic (lb/mmbtu)	< 0.00000076	0.00000045	0.00000083	<0.00000068
Barium Weight (g)	0.000594	0.0000761	0.0000136	0.0002279
Barium Emissions (grain/Dscf)	0.0000311	0.00000402	0.000000889	0.0000120
Barium Flow Rate (lb/hr)	0.0083	0.00080	0.00019	0.0031
Barium (lb/ton)	0.000025	0.0000034	0.00000078	0.0000096
Barium (lb/mmbtu)	0.00014	0.0000097	0.0000036	0.000052
Beryllium Weight (g)	0.0000012	< 0.00000045	< 0.000000090	< 0.000000580
Beryllium Emissions (grain/Dscf)	0.0000000627	< 0.0000000238	< 0.00000000588	< 0.0000000308
Beryllium Flow Rate (lb/hr)	0.000017	< 0.0000047	< 0.0000012	< 0.0000076
Beryllium (lb/ton)	0.000000050	< 0.000000020	< 0.000000052	< 0.000000025
Beryllium (lb/mmbtu)	0.00000029	< 0.000000058	< 0.000000024	< 0.00000012
Cadmium Weight (g)	0.00000695	0.00000135	0.00000039	0.000002898
Cadmium Emissions (grain/Dscf)	0.000000363	0.000000071	0.0000000258	0.000000153
Cadmium Flow Rate (lb/hr)	0.000097	0.000014	0.0000054	0.000039
Cadmium (lb/ton)	0.00000029	0.000000060	0.000000023	0.00000012
Cadmium (lb/mmbtu)	0.0000017	0.00000017	0.00000010	0.00000065
Chromium Weight (g)	0.0000457	0.0000142	0.00000355	0.00002115
Chromium Emissions (grain/Dscf)	0.00000239	0.000000750	0.000000232	0.00000112
Chromium Flow Rate (lb/hr)	0.00064	0.00015	0.000049	0.00028
Chromium (lb/ton)	0.0000019	0.00000063	0.00000020	0.00000091
Chromium (lb/mmbtu)	0.000011	0.0000018	0.00000094	0.0000046
Cobalt Weight (g)	0.0000191	0.00000269	0.00000075	0.00000751
Cobalt Emissions (grain/Dscf)	0.000000998	0.000000142	0.0000000488	0.000000396
Cobalt Flow Rate (lb/hr)	0.00027	0.000028	0.000010	0.00010
Cobalt (lb/ton)	0.00000079	0.00000012	0.000000043	0.00000032
Cobalt (lb/mmbtu)	0.0000046	0.00000034	0.00000020	0.0000017
Copper Weight (g)	0.0000209	0.0000071	0.00000406	0.00001068
Copper Emissions (grain/Dscf)	0.00000109	0.000000374	0.000000265	0.000000577
Copper Flow Rate (lb/hr)	0.00029	0.000074	0.000056	0.00014
Copper (lb/ton)	0.00000086	0.00000031	0.00000023	0.00000047
Copper (lb/mmbtu)	0.0000050	0.00000091	0.0000011	0.0000023
Lead Weight (g)	0.0000272	0.00000825	0.00000661	0.00001402
Lead Emissions (grain/Dscf)	0.00000142	0.000000436	0.000000432	0.000000763
Lead Flow Rate (lb/hr)	0.00038	0.000087	0.000091	0.00019
Lead (lb/ton)	0.0000011	0.00000037	0.00000038	0.00000062
Lead (lb/mmbtu)	0.0000065	0.0000011	0.0000017	0.0000031
Manganese Weight (g)	0.000971	0.000112	0.00004530	0.0003761
Manganese Emissions (grain/Dscf)	0.0000508	0.00000591	0.00000296	0.0000199
Manganese Flow Rate (lb/hr)	0.014	0.0012	0.00062	0.0051
Manganese (lb/ton)	0.000040	0.0000050	0.0000026	0.000016
Manganese (lb/mmbtu)	0.00023	0.000014	0.000012	0.000087

CALCULATED EMISSION RESULTS CARB METHOD 436 (Continued)

	Run 1	Run 2	Run 3	Average (3 Runs)
Mercury Weight (g)	0.0000042	0.0000093	0.0000028	0.00000542
Mercury Emissions (grain/Dscf)	0.000000220	0.000000490	0.000000180	0.000000297
Mercury Flow Rate (lb/hr)	0.000059	0.000097	0.000038	0.000065
Mercury (lb/ton)	0.00000017	0.00000041	0.00000016	0.00000025
Mercury (lb/mmbtu)	0.0000010	0.0000012	0.00000073	0.00000098
Nickel Weight (g)	0.0000249	0.0000099	0.0000055	0.0000134
Nickel Emissions (grain/Dscf)	0.00000130	0.000000521	0.000000361	0.000000728
Nickel Flow Rate (lb/hr)	0.00035	0.00010	0.000076	0.00018
Nickel (lb/ton)	0.0000010	0.00000044	0.0000080	0.0000031
Nickel (lb/mmbtu)	0.0000060	0.0000013	0.0000015	0.0000029
Phosphorous Weight (g)	0.000670	0.000066	0.0000275	0.0002544
Phosphorous Emissions (grain/Dsc	0.0000350	0.00000346	0.00000180	0.0000134
Phosphorous Flow Rate (lb/hr)	0.0093	0.00069	0.00038	0.0035
Phosphorous (lb/ton)	0.000028	0.0000029	0.0000016	0.000011
Phosphorous (lb/mmbtu)	0.00016	0.0000084	0.0000072	0.000059
Selenium Weight (g)	< 0.00000675	0.0000068	0.0000108	< 0.0000081
Selenium Emissions (grain/Dscf)	< 0.000000353	0.000000356	0.000000706	< 0.000000472
Selenium Flow Rate (lb/hr)	< 0.000094	0.000071	0.00015	< 0.00010
Selenium (lb/ton)	< 0.00000028	0.00000030	0.00000062	< 0.00000040
Selenium (lb/mmbtu)	< 0.0000016	0.00000086	0.0000028	< 0.0000018
Silver Weight (g)	< 0.00000090	< 0.00000090	< 0.00000090	< 0.00000090
Silver Emissions (grain/Dscf)	< 0.0000000470	< 0.0000000475	< 0.0000000588	< 0.0000000511
Silver Flow Rate (lb/hr)	< 0.000013	< 0.0000094	< 0.000012	< 0.000011
Silver (lb/ton)	< 0.000000037	< 0.000000040	< 0.000000052	< 0.000000043
Silver (lb/mmbtu)	< 0.00000022	< 0.00000012	< 0.00000024	< 0.00000019
Thallium Weight (g)	< 0.0000225	< 0.0000045	< 0.00000450	< 0.0000105
Thallium Emissions (grain/Dscf)	< 0.00000118	< 0.000000238	< 0.000000294	< 0.000000569
Thallium Flow Rate (lb/hr)	< 0.00031	< 0.000047	< 0.000062	< 0.00014
Thallium (lb/ton)	< 0.00000093	< 0.00000020	< 0.00000026	< 0.00000046
Thallium (lb/mmbtu)	< 0.0000054	<0.00000058	< 0.0000012	< 0.0000024
Vanadium Weight (g)	0.000104	0.0000124	0.0000017	0.00003937
Vanadium missions (grain/Dscf)	0.00000544	0.000000655	0.000000111	0.00000207
Vanadium Flow Rate (lb/hr)	0.0014	0.00013	0.000023	0.00053
Vanadium (lb/ton)	0.0000043	0.00000055	0.000000098	0.0000016
Vanadium (lb/mmbtu)	0.000025	0.0000016	0.00000045	0.00000901
Zinc Weight (g)	0.000195	0.000148	0.0000181	0.0001204
Zinc Emissions (grain/Dscf)	0.0000102	0.00000782	0.0000012	0.00000640
Zinc Flow Rate (lb/hr)	0.0027	0.0016	0.00025	0.0015
Zinc Flow (lb/ton)	0.0000080	0.0000066	0.0000010	0.0000052
Zinc Flow (lb/mmbtu)	0.000047	0.000019	0.0000048	0.000024

AIR TESTING SERVICES, INC.

EPA TO-15 Average Results

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1 - 3

Test Date : 1/20/2022
Job #: 18031
Lab #: 222-007

Q std: 24,361 dscfm (Average)
Production Rate: 277 TPH (Average)

Compound Name	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	0.12	0.00044	0.0023	42.08
Chlorodifluoromethane	< 0.0039	< 0.000015	< 0.000080	86.47
Dichlorodifluoromethane	< 0.0047	< 0.000018	< 0.000095	102.92
Chloromethane	0.0024	0.0000088	0.000048	50.50
1,2 Dichloro-1,1,2,2-Tetrafluoroethane	< 0.0078	< 0.000029	< 0.00016	170.92
Vinyl Chloride	< 0.0028	< 0.000011	< 0.000058	62.50
1,3-Butadiene	0.055	0.00020	0.0011	54.09
Bromomethane	< 0.0045	< 0.000017	< 0.000091	94.94
Methanol	0.054	0.00022	0.0012	32.04
Chloroethane	< 0.0029	< 0.000011	< 0.000059	64.50
Dichlorofluoromethane	< 0.0047	< 0.000018	< 0.000095	102.92
Ethanol	0.0061	0.000032	0.00018	46.07
Vinyl Bromide	0.0049	< 0.000018	< 0.000099	106.96
Trichlorofluoromethane	0.0058	< 0.000022	< 0.00012	127.50
Acetone	0.047	0.00017	0.00089	58.08
Isopropyl Alcohol	< 0.011	< 0.000041	< 0.00022	60.10
Allyl Chloride	< 0.0069	< 0.000026	< 0.00014	76.53
1,1-Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.00
Acrylonitrile	< 0.0096	< 0.000036	< 0.00020	53.06
Methylene Chloride	< 0.0089	< 0.000033	< 0.00018	98.00
Carbon Disulfide	0.0079	0.000052	0.00028	76.14
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 0.0085	< 0.000032	< 0.00017	187.40
trans-1,2- Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.94
1,1- Dichloroethane	< 0.0045	< 0.000017	< 0.000090	98.00
MTBE	< 0.016	< 0.000060	< 0.00033	88.15
Vinyl Acetate	< 0.0078	< 0.000029	< 0.00016	86.09
MEK	0.0065	0.000027	0.00015	72.11
cis-1,2- Dichloroethene	< 0.0044	< 0.000016	< 0.000089	96.00
Hexane	0.0041	0.000015	0.000083	86.18
Chloroform	< 0.0054	< 0.000020	< 0.00011	119.50
Ethyl Acetate	< 0.0040	< 0.000015	< 0.000081	88.11
Tetrahydrofuran	< 0.0033	< 0.000012	< 0.000067	72.11
1,2-Dichloroethane	< 0.0045	< 0.000017	< 0.000090	98.00
Benzene	0.061	0.00023	0.0012	78.11
Cyclohexane	< 0.0071	< 0.000027	< 0.00015	84.16
Heptane	< 0.0046	< 0.000017	< 0.000092	100.21
Toluene	0.025	0.000091	0.00047	92.14
Carbon Tetrachloride	< 0.0070	< 0.000026	< 0.00014	153.24
1,2-Dichloropropane	< 0.0059	< 0.000022	< 0.00012	112.99
Bromodichloromethane	< 0.0074	< 0.000028	< 0.00015	163.83
1,4-Dioxane	< 0.0085	< 0.000031	< 0.00017	88.11
Trichloroethene	< 0.0060	< 0.000022	< 0.00012	131.40
2,2,4-Trimethylpentane	< 0.0052	< 0.000019	< 0.00011	114.23
cis-1,3-Dichloropropene	< 0.0050	< 0.000019	< 0.00010	110.97
4-Methyl-2-Pentanone (MiBK)	< 0.018	< 0.000068	< 0.00037	100.16
t-1,3-Dichloropropene	< 0.0088	< 0.000032	< 0.00018	110.97
1,1,2-Trichloroethane	< 0.0061	< 0.000023	< 0.00012	133.40
2-Hexanone	< 0.061	< 0.000229	< 0.0012	134.60
Dibromochloromethane	< 0.0095	< 0.000035	< 0.00019	208.28
1,2-Dibromomethane	< 0.0085	< 0.000032	< 0.00017	187.88
Tetrachloroethylene	< 0.0075	< 0.000028	< 0.00015	165.83
Chlorobenzene	< 0.0051	< 0.000019	< 0.00010	112.56
Ethylbenzene	< 0.0089	< 0.000034	< 0.00018	106.16
m & p-Xylenes	0.011	0.000045	0.00024	106.16
Bromoform	< 0.011	< 0.000043	< 0.00023	252.72
Styrene	0.019	0.000071	0.00038	104.14
1,1,2,2-Tetrachloroethane	< 0.0076	< 0.000029	< 0.00016	167.85
o-Xylene	< 0.0092	< 0.000035	< 0.00019	106.16
4-Ethyltoluene	< 0.010	< 0.000039	< 0.00021	120.19
1,3,5-Trimethylbenzene	< 0.010	< 0.000038	< 0.00021	112.99
1,2,4-Trimethylbenzene	< 0.010	< 0.000041	< 0.00022	120.19
Benzyl Chloride	< 0.018	< 0.000068	< 0.00037	126.59
1,3-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.00
1,4-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.01
1,2-Dichlorobenzene	< 0.0067	< 0.000025	< 0.00014	147.01
1,2,4-Trichlorobenzene	< 0.082	< 0.00031	< 0.0017	181.45
Hexachlorobutadiene	< 0.012	< 0.000044	< 0.00024	260.76
1,1,1-Trichloroethene	< 0.0060	< 0.000022	< 0.00012	131.40

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 54

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1

Test Date : 1/20/2022
Job #: 18031
Lab #: 222-007

Q std: 24,108 dscfm (Method 425)
Production Rate: 250 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	1090	0.17	0.00070	0.0034	42.08
Chlorodifluoromethane	< 8.7	<0.0029	< 0.000012	< 0.000056	86.47
Dichlorodifluoromethane	< 8.7	<0.0034	< 0.000014	< 0.000067	102.92
Chloromethane	< 8.7	<0.0017	< 0.0000067	< 0.000033	50.50
1,2 Dichloro-1,1,2,2-Tetrafluoroethane	< 8.7	<0.0057	< 0.000023	< 0.00011	170.92
Vinyl Chloride	< 8.7	<0.0021	< 0.0000083	< 0.000041	62.50
1,3-Butadiene	411	0.085	0.00034	0.0017	54.09
Bromomethane	< 8.7	<0.0032	< 0.000013	< 0.000062	94.94
Methanol	292	0.036	0.00014	0.00070	32.04
Chloroethane	< 8.7	<0.0021	< 0.0000086	< 0.000042	64.50
Dichlorofluoromethane	< 8.7	<0.0034	< 0.000014	< 0.000067	102.92
Ethanol	< 35.0	< 0.0061	< 0.000025	< 0.00012	46.07
Vinyl Bromide	< 8.7	<0.0036	< 0.000014	< 0.000070	106.96
Trichlorofluoromethane	< 8.7	<0.0042	< 0.000017	< 0.000083	127.50
Acetone	267	0.059	0.00024	0.0012	58.08
Isopropyl Alcohol	< 35.0	<0.0080	< 0.000032	< 0.00016	60.10
Allyl Chloride	< 17.5	<0.0051	< 0.000020	< 0.00010	76.53
1,1-Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.000063	96.00
Acrylonitrile	< 35.0	<0.0071	< 0.000028	< 0.00014	53.06
Methylene Chloride	< 17.5	<0.0065	< 0.000026	< 0.00013	98.00
Carbon Disulfide	< 35.0	<0.010	< 0.000041	< 0.00020	76.14
1,1,2-Trichloro-1,2,2-Trifluoroethane	< 8.7	<0.0062	< 0.000025	< 0.00012	187.40
trans-1,2- Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.000063	96.94
1,1- Dichloroethane	< 8.7	<0.0033	< 0.000013	< 0.00006	98.00
MTBE	< 35.0	<0.0118	< 0.000047	< 0.00023	88.15
Vinyl Acetate	< 17.5	<0.006	< 0.000023	< 0.00011	86.09
MEK	<17.5	< 0.0048	< 0.000019	< 0.000094	72.11
cis-1,2- Dichloroethene	< 8.7	<0.0032	< 0.000013	< 0.00006	96.00
Hexane	10.8	0.0035	0.000014	0.000070	86.18
Chloroform	< 8.7	<0.0040	< 0.000016	< 0.00008	119.50
Ethyl Acetate	< 8.7	<0.0029	< 0.000012	< 0.000058	88.11
Tetrahydrofuran	< 8.7	<0.0024	< 0.000010	< 0.000047	72.11
1,2-Dichloroethane	< 8.7	<0.0033	< 0.000013	< 0.00006	98.00
Benzene	323	0.0962	0.00038	0.00189	78.11
Cyclohexane	< 17.5	<0.0056	<0.000022	< 0.000110	84.16
Heptane	< 8.7	<0.0033	<0.000013	< 0.00007	100.21
Toluene	114	0.0400	0.00016	0.000785	92.14
Carbon Tetrachloride	< 8.7	<0.0051	<0.000020	< 0.00010	153.24
1,2-Dichloropropane	< 8.7	<0.0038	<0.000015	< 0.00007	112.99
Bromodichloromethane	< 8.7	<0.0055	<0.000022	< 0.00011	163.83
1,4-Dioxane	< 8.7	<0.0029	<0.000012	< 0.00006	88.11
Trichloroethene	< 8.7	<0.0044	<0.000018	< 0.00009	131.40
2,2,4-Trimethylpentane	< 8.7	<0.0038	<0.000015	< 0.00007	114.23
cis-1,3-Dichloropropene	< 8.7	<0.0037	<0.000015	< 0.00007	110.97
4-Methyl-2-Pentanone (MiBK)	< 35.0	<0.013	<0.000053	< 0.00026	100.16
t-1,3-Dichloropropene	< 17.5	<0.0074	<0.000030	< 0.00015	110.97
1,1,2-Trichloroethane	< 8.7	<0.0044	<0.000018	< 0.00009	133.40
2-Hexanone	< 87.4	<0.045	<0.00018	< 0.00088	134.60
Dibromochloromethane	< 8.7	<0.007	<0.000028	< 0.00014	208.28
1,2-Dibromomethane	< 8.7	<0.006	<0.000025	< 0.00012	187.88
Tetrachloroethlene	< 8.7	<0.0055	<0.000022	< 0.00011	165.83
Chlorobenzene	< 8.7	<0.0037	<0.000015	< 0.00007	112.56
Ethylbenzene	< 17.5	<0.0071	<0.000028	< 0.00014	106.16
m & p-Xylenes	32.2	0.0130	0.000052	0.000255	106.16
Bromoform	< 8.7	<0.008	<0.000034	< 0.00017	252.72
Styrene	< 35.0	< 0.0139	< 0.00006	< 0.00027	104.14
1,1,2,2-Tetrachloroethane	< 8.7	<0.0056	<0.000022	< 0.00011	167.85
o-Xylene	< 17.5	<0.0071	<0.000028	< 0.00014	106.16
4-Ethyltoluene	< 17.5	<0.0080	<0.000032	< 0.00016	120.19
1,3,5-Trimethylbenzene	< 17.5	<0.0075	<0.000030	< 0.00015	112.99
1,2,4-Trimethylbenzene	< 17.5	<0.008	<0.000032	< 0.00016	120.19
Benzyl Chloride	< 35	<0.017	<0.00007	< 0.0003	126.59
1,3-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.00
1,4-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.01
1,2-Dichlorobenzene	< 8.7	<0.0049	<0.000020	< 0.00010	147.01
1,2,4-Trichlorobenzene	< 87.4	<0.060	<0.00024	< 0.00118	181.45
Hexachlorobutadiene	< 8.7	<0.009	<0.00003	< 0.0002	260.76
1,1,1-Trichloroethene	< 8.7	<0.0044	<0.000018	< 0.00009	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 14

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 1A

Date : 1/20/2022
Job #: 18031
Lab #: 222-007

O std: 24,108 dscfm (Method 425)
Production Rate: 250 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	1000	0.16	0.00064	0.0031	42.08
Chlorodifluoromethane	< 8.6	< 0.0028	< 0.000011	< 0.000055	86.47
Dichlorodifluoromethane	< 8.6	< 0.0034	< 0.000013	< 0.000066	102.92
Chloromethane	< 8.6	< 0.0016	< 0.0000066	< 0.000032	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 8.6	< 0.0056	< 0.000022	< 0.00011	170.92
Vinyl Chloride	< 8.6	< 0.0020	< 0.0000082	< 0.000040	62.50
1.3-Butadiene	301	0.062	0.00025	0.0012	54.09
Bromomethane	< 8.6	< 0.0031	< 0.000012	< 0.000061	94.94
Methanol	< 85.6	< 0.010	< 0.000042	< 0.000205	32.04
Chloroethane	< 8.6	< 0.0021	< 0.0000084	< 0.000041	64.50
Dichlorofluoromethane	< 8.6	< 0.0034	< 0.000013	< 0.000066	102.92
Ethanol	< 34.2	< 0.0060	< 0.000024	< 0.00012	46.07
Vinyl Bromide	< 8.6	< 0.0035	< 0.000014	< 0.000068	106.96
Trichlorofluoromethane	< 8.6	< 0.0042	< 0.000017	< 0.000082	127.50
Acetone	248	0.055	0.00022	0.0011	58.08
Isopropyl Alcohol	< 34.2	< 0.0078	< 0.000031	< 0.00015	60.10
Allyl Chloride	< 17.1	< 0.0050	< 0.000020	< 0.000098	76.53
1.1-Dichloroethene	< 8.6	< 0.0031	< 0.000013	< 0.000061	96.00
Acrylonitrile	< 34.2	< 0.0069	< 0.000028	< 0.00014	53.06
Methylene Chloride	< 17.1	< 0.0064	< 0.000026	< 0.00013	98.00
Carbon Disulfide	< 34.2	< 0.0099	< 0.000040	< 0.00019	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 8.6	< 0.0061	< 0.000024	< 0.00012	187.40
trans-1.2- Dichloroethene	< 8.6	< 0.0032	< 0.000013	< 0.000062	96.94
1.1- Dichloroethane	< 8.6	< 0.0032	< 0.000013	< 0.000063	98.00
MTBE	< 34.2	< 0.0115	< 0.000046	< 0.000225	88.15
Vinyl Acetate	< 17.1	< 0.0056	< 0.000022	< 0.00011	86.09
MEK	20.2	0.0056	0.000022	0.00011	72.11
cis-1.2- Dichloroethene	< 8.6	< 0.0031	< 0.000013	< 0.000061	96.00
Hexane	10.1	< 0.0033	< 0.000013	< 0.000065	86.18
Chloroform	< 8.6	< 0.0039	< 0.000016	< 0.000076	119.50
Ethyl Acetate	< 8.6	< 0.0029	< 0.000011	< 0.000056	88.11
Tetrahydrofuran	< 8.6	< 0.0024	< 0.0000094	< 0.000046	72.11
1.2-Dichloroethane	< 8.6	< 0.0032	< 0.000013	< 0.000063	98.00
Benzene	308	0.092	0.00037	0.0018	78.11
Cyclohexane	< 17.1	<0.0055	<0.000022	< 0.00011	84.16
Heptane	< 8.6	<0.0033	<0.000013	< 0.000064	100.21
Toluene	111	0.039	0.00016	0.00076	92.14
Carbon Tetrachloride	< 8.6	<0.0050	<0.000020	< 0.000098	153.24
1.2-Dichloropropane	< 8.6	<0.0037	<0.000015	< 0.000072	112.99
Bromodichloromethane	< 8.6	<0.0053	<0.000021	< 0.00010	163.83
1.4-Dioxane	< 8.6	<0.0029	<0.000011	< 0.000056	88.11
Trichloroethene	< 8.6	<0.0043	<0.000017	< 0.000084	131.40
2.2.4-Trimethylpentane	< 8.6	<0.0037	<0.000015	< 0.000073	114.23
cis-1.3-Dichloropropene	< 8.6	<0.0036	<0.000014	< 0.000071	110.97
4-Methyl-2-Pentanone (MiBK)	< 34.2	<0.013	<0.000052	< 0.00026	100.16
t-1.3-Dichloropropene	< 17.1	<0.0072	<0.000029	< 0.00014	110.97
1.1.2-Trichloroethane	< 8.6	<0.0044	<0.000017	< 0.000085	133.40
2-Hexanone	< 85.6	<0.044	<0.00018	< 0.00086	134.60
Dibromochloromethane	< 8.6	<0.0068	<0.000027	< 0.00013	208.28
1.2-Dibromomethane	< 8.6	<0.0061	<0.000025	< 0.00012	187.88
Tetrachloroethylene	< 8.6	<0.0054	<0.000022	< 0.00011	165.83
Chlorobenzene	< 8.6	<0.0037	<0.000015	< 0.00007	112.56
Ethylbenzene	< 17.1	<0.0069	<0.000028	< 0.00014	106.16
m & p-Xylenes	26.4	0.011	0.000043	0.00021	106.16
Bromoform	< 8.6	<0.0082	<0.000033	< 0.00016	252.72
Styrene	< 34.2	< 0.014	< 0.000054	< 0.00027	104.14
1.1.2.2-Tetrachloroethane	< 8.6	<0.0055	<0.000022	< 0.00011	167.85
o-Xylene	< 17.1	<0.0069	<0.000028	< 0.00014	106.16
4-Ethyltoluene	< 17.1	<0.0078	<0.000031	< 0.00015	120.19
1.3.5-Trimethylbenzene	< 17.1	<0.0074	<0.000029	< 0.00014	112.99
1.2.4-Trimethylbenzene	< 17.1	< 0.0078	< 0.000031	< 0.00015	120.19
Benzyl Chloride	< 34.2	<0.017	<0.000066	< 0.00032	126.59
1.3-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.00
1.4-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.01
1.2-Dichlorobenzene	< 8.6	<0.0048	<0.000019	< 0.000094	147.01
1.2.4-Trichlorobenzene	< 85.6	<0.059	<0.00024	< 0.0012	181.45
Hexachlorobutadiene	< 8.6	<0.0085	<0.000034	< 0.00017	260.76
1.1.1-Trichloroethene	< 8.6	<0.0043	<0.000017	< 0.000084	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 503

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 2

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

Q std: 27,674 dscfm (Method 425)
Production Rate: 330 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	995	**0.18**	**0.00056**	**0.0031**	42.08
Chlorodifluoromethane	< 9.3	< 0.0035	< 0.000011	< 0.000060	86.47
Dichlorodifluoromethane	< 9.3	< 0.0042	< 0.000013	< 0.000071	102.92
Chloromethane	11.1	**0.0025**	**0.0000074**	**0.000042**	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 9.3	< 0.0069	< 0.000021	< 0.00012	170.92
Vinyl Chloride	< 9.3	< 0.0025	< 0.0000077	< 0.000043	62.50
1.3-Butadiene	405	**0.096**	**0.00029**	**0.0016**	54.09
Bromomethane	< 12.0	< 0.0050	< 0.000015	< 0.000085	94.94
Methanol	512	**0.072**	**0.00022**	**0.0012**	32.04
Chloroethane	< 9.3	< 0.0026	< 0.0000079	< 0.000045	64.50
Dichlorofluoromethane	< 9.3	< 0.0042	< 0.000013	< 0.000071	102.92
Ethanol	< 37.1	< 0.0075	< 0.000023	< 0.00013	46.07
Vinyl Bromide	< 9.3	< 0.0043	< 0.000013	< 0.000074	106.96
Trichlorofluoromethane	< 9.3	< 0.0052	< 0.000016	< 0.000088	127.50
Acetone	337	**0.086**	**0.00026**	**0.0015**	58.08
Isopropyl Alcohol	< 37.1	< 0.0098	< 0.000030	< 0.00017	60.10
Allyl Chloride	< 18.5	< 0.0062	< 0.000019	< 0.00011	76.53
1.1-Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000066	96.00
Acrylonitrile	< 37.1	< 0.0086	< 0.000026	< 0.00015	53.06
Methylene Chloride	< 18.5	< 0.0079	< 0.000024	< 0.00014	98.00
Carbon Disulfide	< 37.1	< 0.012	< 0.000037	< 0.00021	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 9.3	< 0.0076	< 0.000023	< 0.00013	187.40
trans-1.2- Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000067	96.94
1.1- Dichloroethane	< 9.3	< 0.0040	< 0.000012	< 0.000068	98.00
MTBE	< 37.1	< 0.014	< 0.000043	< 0.00024	88.15
Vinyl Acetate	< 18.5	< 0.0070	< 0.000021	< 0.00012	86.09
MEK	31.7	**0.010**	**0.000030**	**0.00017**	72.11
cis-1.2- Dichloroethene	< 9.3	< 0.0039	< 0.000012	< 0.000066	96.00
Hexane	< 9.3	< 0.0035	< 0.000011	< 0.000060	86.18
Chloroform	< 9.3	< 0.0048	< 0.000015	< 0.000083	119.50
Ethyl Acetate	< 9.3	< 0.0036	< 0.000011	< 0.000061	88.11
Tetrahydrofuran	< 9.3	< 0.0029	< 0.0000089	< 0.000050	72.11
1.2-Dichloroethane	< 9.3	< 0.0040	< 0.000012	< 0.000068	98.00
Benzene	250	**0.085**	**0.00026**	**0.0015**	78.11
Cyclohexane	< 9.3	<0.0034	<0.000010	< 0.000058	84.16
Heptane	< 9.3	<0.0041	<0.000012	< 0.000069	100.21
Toluene	105	**0.042**	**0.00013**	**0.00072**	92.14
Carbon Tetrachloride	< 9.3	<0.0062	<0.000019	< 0.00011	153.24
1.2-Dichloropropane	< 9.3	<0.0046	<0.000014	< 0.000078	112.99
Bromodichloromethane	< 9.3	<0.0066	<0.000020	< 0.00011	163.83
1.4-Dioxane	< 47.9	<0.018	<0.000056	< 0.00032	88.11
Trichloroethene	< 9.3	<0.0053	<0.000016	< 0.000091	131.40
2.2.4-Trimethylpentane	< 9.3	<0.0046	<0.000014	< 0.000079	114.23
cis-1.3-Dichloropropene	< 9.3	<0.0045	<0.000014	< 0.000077	110.97
4-Methyl-2-Pentanone (MiBK)	< 37.1	<0.016	<0.000049	< 0.00028	100.16
t-1.3-Dichloropropene	< 18.5	<0.0090	<0.000027	< 0.00015	110.97
1.1.2-Trichloroethane	< 9.3	<0.0054	<0.000016	< 0.000092	133.40
2-Hexanone	< 92.6	<0.055	<0.00017	< 0.00093	134.60
Dibromochloromethane	< 9.3	<0.0084	<0.000026	< 0.00014	208.28
1.2-Dibromomethane	< 9.3	<0.0076	<0.000023	< 0.00013	187.88
Tetrachloroethylene	< 9.3	<0.0067	<0.000020	< 0.00011	165.83
Chlorobenzene	< 9.3	<0.0046	<0.000014	< 0.000078	112.56
Ethylbenzene	< 9.3	<0.0043	<0.000013	< 0.000073	106.16
m &.p-Xylenes	28.3	**0.013**	**0.000040**	**0.00022**	106.16
Bromoform	< 9.3	<0.010	<0.000031	< 0.00017	252.72
Styrene	< 37.1	< 0.017	< 0.000051	< 0.00029	104.14
1.1.2.2-Tetrachloroethane	< 9.3	<0.0068	<0.000021	< 0.00012	167.85
o-Xylene	< 18.5	<0.0086	<0.000026	< 0.00015	106.16
4-Ethyltoluene	< 18.5	<0.0097	<0.000029	< 0.00017	120.19
1.3.5-Trimethylbenzene	< 18.5	<0.0091	<0.000028	< 0.00016	112.99
1.2.4-Trimethylbenzene	< 18.5	<0.0097	<0.000029	< 0.00017	120.19
Benzyl Chloride	< 37.1	<0.021	<0.000062	< 0.00035	126.59
1.3-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.00
1.4-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.01
1.2-Dichlorobenzene	< 9.3	<0.0060	<0.000018	< 0.00010	147.01
1.2.4-Trichlorobenzene	< 92.6	<0.074	<0.00022	< 0.0013	181.45
Hexachlorobutadiene	< 9.3	<0.011	<0.000032	< 0.00018	260.76
1.1.1-Trichloroethene	< 9.3	<0.0053	<0.000016	< 0.000091	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIR TESTING SERVICES, INC.

EPA TO-15
Tank 62

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 2A

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

O std: 27,674 dscfm (Method 425)
Production Rate: 330 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/MMBtu	MW
Propene	416	**0.077**	**0.00023**	**0.0013**	42.08
Chlorodifluoromethane	< 6.1	< 0.0023	< 0.0000070	< 0.000039	86.47
Dichlorodifluoromethane	< 6.1	< 0.0027	< 0.0000083	< 0.000047	102.92
Chloromethane	< 6.1	< 0.0013	< 0.0000041	< 0.000023	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 6.1	< 0.0046	< 0.000014	< 0.000078	170.92
Vinyl Chloride	< 6.1	< 0.0017	< 0.0000051	< 0.000028	62.50
1.3-Butadiene	144	**0.034**	**0.00010**	**0.00058**	54.09
Bromomethane	< 6.1	< 0.0025	< 0.0000077	< 0.000043	94.94
Methanol	509	**0.071**	**0.00022**	**0.0012**	32.04
Chloroethane	< 6.1	< 0.0017	< 0.0000052	< 0.000029	64.50
Dichlorofluoromethane	< 6.1	< 0.0027	< 0.0000083	< 0.000047	102.92
Ethanol	35.0	**0.0071**	**0.000021**	**0.00012**	46.07
Vinyl Bromide	< 6.1	< 0.0029	< 0.0000087	< 0.000049	106.96
Trichlorofluoromethane	< 6.1	< 0.0034	< 0.000010	< 0.000058	127.50
Acetone	159	**0.040**	**0.00012**	**0.00069**	58.08
Isopropyl Alcohol	< 24.4	< 0.0064	< 0.000019	< 0.00011	60.10
Allyl Chloride	< 12.2	< 0.0041	< 0.000012	< 0.000070	76.53
1.1-Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.00
Acrylonitrile	< 24.4	< 0.0057	< 0.000017	< 0.000097	53.06
Methylene Chloride	< 12.2	< 0.0052	< 0.000016	< 0.000089	98.00
Carbon Disulfide	< 24.4	< 0.0081	< 0.000025	< 0.00014	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 6.1	< 0.0050	< 0.000015	< 0.000085	187.40
trans-1.2- Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.94
1.1- Dichloroethane	< 6.1	< 0.0026	< 0.0000079	< 0.000045	98.00
MTBE	< 24.4	< 0.0094	< 0.000029	< 0.00016	88.15
Vinyl Acetate	< 12.2	< 0.0046	< 0.000014	< 0.000078	86.09
MEK	< 12.2	< 0.0038	< 0.000012	< 0.000066	72.11
cis-1.2- Dichloroethene	< 6.1	< 0.0026	< 0.0000078	< 0.000044	96.00
Hexane	< 6.1	< 0.0023	< 0.0000070	< 0.000039	86.18
Chloroform	< 6.1	< 0.0032	< 0.0000097	< 0.000054	119.50
Ethyl Acetate	< 6.1	< 0.0024	< 0.0000071	< 0.000040	88.11
Tetrahydrofuran	< 6.1	< 0.0019	< 0.0000058	< 0.000033	72.11
1.2-Dichloroethane	< 6.1	< 0.0026	< 0.0000079	< 0.000045	98.00
Benzene	84.4	**0.029**	**0.000087**	**0.00049**	78.11
Cyclohexane	< 12.2	< 0.0045	<0.000014	< 0.000077	84.16
Heptane	< 6.1	< 0.0027	<0.0000081	< 0.000046	100.21
Toluene	35.1	**0.014**	**0.000043**	**0.00024**	92.14
Carbon Tetrachloride	< 6.1	<0.0041	<0.000012	< 0.000070	153.24
1.2-Dichloropropane	< 15.6	<0.0077	<0.000023	< 0.00013	112.99
Bromodichloromethane	< 6.1	<0.0044	<0.000013	< 0.000075	163.83
1.4-Dioxane	< 6.1	<0.0024	<0.0000071	< 0.000040	88.11
Trichloroethene	< 6.1	<0.0035	<0.000011	< 0.000060	131.40
2.2.4-Trimethylpentane	< 6.1	<0.0030	<0.0000092	< 0.000052	114.23
cis-1.3-Dichloropropene	< 6.1	<0.0030	<0.0000090	< 0.000051	110.97
4-Methyl-2-Pentanone (MiBK)	< 24.4	<0.011	<0.000032	< 0.00018	100.16
t-1.3-Dichloropropene	< 12.2	<0.0059	<0.000018	< 0.00010	110.97
1.1.2-Trichloroethane	< 6.1	<0.0036	<0.000011	< 0.000061	133.40
2-Hexanone	< 61.0	<0.036	<0.00011	< 0.00061	134.60
Dibromochloromethane	< 6.1	<0.0056	<0.000017	< 0.000095	208.28
1.2-Dibromomethane	< 6.1	<0.0050	<0.000015	< 0.000086	187.88
Tetrachloroethylene	< 6.1	<0.0044	<0.000013	< 0.000076	165.83
Chlorobenzene	< 6.1	<0.0030	<0.000009	< 0.000051	112.56
Ethylbenzene	< 12.2	<0.0057	<0.000017	< 0.000097	106.16
m & p-Xylenes	< 12.2	< 0.0057	< 0.0000	< 0.000097	106.16
Bromoform	< 6.1	<0.0067	<0.000020	< 0.00012	252.72
Styrene	< 24.4	< 0.0111	< 0.0000	< 0.0002	104.14
1.1.2.2-Tetrachloroethane	< 6.1	<0.0045	<0.000014	< 0.000076	167.85
o-Xylene	< 6.1	<0.0028	<0.000009	< 0.000048	106.16
4-Ethyltoluene	< 6.1	<0.0032	<0.0000097	< 0.000055	120.19
1.3.5-Trimethylbenzene	< 12.2	<0.0060	<0.000018	< 0.00010	112.99
1.2.4-Trimethylbenzene	< 12.2	<0.0064	<0.000019	< 0.00011	120.19
Benzyl Chloride	< 24	<0.014	<0.000041	< 0.00023	126.59
1.3-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.00
1.4-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.01
1.2-Dichlorobenzene	< 6.1	<0.0039	<0.000012	< 0.000067	147.01
1.2.4-Trichlorobenzene	< 61.0	<0.048	<0.00015	< 0.00083	181.45
Hexachlorobutadiene	< 6.1	<0.0070	<0.000021	< 0.00012	260.76
1.1.1-Trichloroethene	< 6.1	<0.0035	<0.000011	< 0.000060	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIR TESTING SERVICES, INC.

EPA TO-15
Tank 328

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 3

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

Q std: 21,301 dscfm (Method 425)
Production Rate: 252 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	496	0.070	0.00028	0.0016	42.08
Chlorodifluoromethane	< 20.2	<0.0059	< 0.000023	<0.00013	86.47
Dichlorodifluoromethane	< 20.2	<0.0070	< 0.000028	<0.00016	102.92
Chloromethane	< 20.2	<0.0034	< 0.000014	<0.000076	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 20.2	<0.012	< 0.000046	<0.00026	170.92
Vinyl Chloride	< 20.2	<0.0043	< 0.000017	<0.000094	62.50
1.3-Butadiene	151	0.028	0.00011	0.00061	54.09
Bromomethane	< 20.2	<0.0065	< 0.000026	<0.00014	94.94
Methanol	891	0.096	0.00038	0.0021	32.04
Chloroethane	< 20.2	<0.0044	< 0.000017	<0.000097	64.50
Dichlorofluoromethane	< 20.2	<0.0070	< 0.000028	<0.00016	102.92
Ethanol	< 80.6	<0.013	< 0.000050	<0.00028	46.07
Vinyl Bromide	< 20.2	<0.0073	< 0.000029	<0.00016	106.96
Trichlorofluoromethane	< 20.2	<0.0087	< 0.000034	<0.00019	127.50
Acetone	118	0.023	0.000092	0.00051	58.08
Isopropyl Alcohol	< 80.6	<0.016	< 0.000065	<0.00036	60.10
Allyl Chloride	< 40.3	<0.010	< 0.000041	<0.00023	76.53
1.1-Dichloroethene	< 20.2	<0.0065	< 0.000026	<0.00014	96.00
Acrylonitrile	< 80.6	<0.014	< 0.000057	<0.00032	53.06
Methylene Chloride	< 40.3	<0.013	< 0.000053	<0.00030	98.00
Carbon Disulfide	< 80.6	<0.021	< 0.000082	<0.00046	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 20.2	<0.013	< 0.000051	<0.00028	187.40
trans-1.2- Dichloroethene	< 20.2	<0.0066	< 0.000026	<0.00015	96.94
1.1- Dichloroethane	< 20.2	<0.0067	< 0.000026	<0.00015	98.00
MTBE	< 80.6	<0.024	< 0.000095	<0.00053	88.15
Vinyl Acetate	< 40.3	<0.012	< 0.000046	<0.00026	86.09
MEK	< 40.3	< 0.0098	< 0.000039	< 0.00022	72.11
cis-1.2- Dichloroethene	< 20.2	<0.0065	< 0.000026	<0.00014	96.00
Hexane	< 20.2	<0.0059	< 0.000023	<0.00013	86.18
Chloroform	< 20.2	<0.0081	< 0.000032	<0.00018	119.50
Ethyl Acetate	< 20.2	<0.0060	< 0.000024	<0.00013	88.11
Tetrahydrofuran	< 20.2	<0.0049	< 0.000019	<0.00011	72.11
1.2-Dichloroethane	< 20.2	<0.0067	< 0.000026	<0.00015	98.00
Benzene	129	0.034	0.00013	0.00075	78.11
Cyclohexane	< 40.3	<0.011	<0.000045	<0.00025	84.16
Heptane	< 20.2	<0.0068	<0.000027	<0.00015	100.21
Toluene	26.2	0.0081	0.000032	0.00018	92.14
Carbon Tetrachloride	< 20.2	<0.010	<0.000041	<0.00023	153.24
1.2-Dichloropropane	< 20.2	<0.0077	<0.000031	<0.00017	112.99
Bromodichloromethane	< 20.2	<0.011	<0.000044	<0.00025	163.83
1.4-Dioxane	< 40.3	<0.012	<0.000047	<0.00027	88.11
Trichloroethene	< 20.2	<0.0089	<0.000035	<0.00020	131.40
2.2.4-Trimethylpentane	< 20.2	<0.0078	<0.000031	<0.00017	114.23
cis-1.3-Dichloropropene	< 20.2	<0.0075	<0.000030	<0.00017	110.97
4-Methyl-2-Pentanone (MiBK)	< 80.6	<0.027	<0.00011	<0.00060	100.16
t-1.3-Dichloropropene	< 40.3	<0.015	<0.000060	<0.00033	110.97
1.1.2-Trichloroethane	< 20.2	<0.0091	<0.000036	<0.00020	133.40
2-Hexanone	< 202	<0.092	<0.00036	<0.0020	134.60
Dibromochloromethane	< 20.2	<0.014	<0.000056	<0.00031	208.28
1.2-Dibromomethane	< 20.2	<0.013	<0.000051	<0.00028	187.88
Tetrachloroethylene	< 20.2	<0.011	<0.000045	<0.00025	165.83
Chlorobenzene	< 20.2	<0.0077	<0.000030	<0.00017	112.56
Ethylbenzene	< 40.3	<0.014	<0.000057	<0.00032	106.16
m & p-Xylenes	< 40.3	< 0.014	< 0.000057	< 0.00032	106.16
Bromoform	< 20.2	<0.017	<0.000068	<0.00038	252.72
Styrene	< 80.6	< 0.028	< 0.00011	< 0.00063	104.14
1.1.2.2-Tetrachloroethane	< 20.2	<0.011	<0.000045	<0.00025	167.85
o-Xylene	< 40.3	<0.014	<0.000057	<0.00032	106.16
4-Ethyltoluene	< 40.3	<0.016	<0.000065	<0.00036	120.19
1.3.5-Trimethylbenzene	< 40.3	<0.015	<0.000061	<0.00034	112.99
1.2.4-Trimethylbenzene	< 40.3	<0.016	<0.000065	<0.00036	120.19
Benzyl Chloride	< 80.6	<0.034	<0.00014	<0.00076	126.59
1.3-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.00
1.4-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.01
1.2-Dichlorobenzene	< 20.2	<0.010	<0.000040	<0.00022	147.01
1.2.4-Trichlorobenzene	< 202	<0.12	<0.00049	<0.0027	181.45
Hexachlorobutadiene	< 20.2	<0.018	<0.000070	<0.00039	260.76
1.1.1-Trichloroethene	< 20.2	<0.0089	<0.000035	<0.00020	131.40

lb/hr = (ppb/1000) * Qstd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Qstd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

AIRX TESTING SERVICES, INC.

EPA TO-15
Tank 204

Client : RJ Noble
Site : Orange, CA
Unit : Rotary Dryer Baghouse

T std: 60 °F
Run No.: 3A

Date : 1/21/2022
Job #: 18031
Lab #: 222-007

O std: 21,301 dscfm (Method 425)
Production Rate: 252 TPH

Compound Name	Lab Results ppb	lb/hr	lb/Ton	lb/Mmbtu	MW
Propene	437	**0.062**	**0.00025**	**0.0014**	42.08
Chlorodifluoromethane	< 21.2	< 0.0062	< 0.000024	<0.00014	86.47
Dichlorodifluoromethane	< 21.2	< 0.0073	< 0.000029	<0.00016	102.92
Chloromethane	< 21.2	< 0.0036	< 0.000014	<0.000080	50.50
1.2 Dichloro-1.1.2.2-Tetrafluoroethane	< 21.2	< 0.012	< 0.00005	<0.00027	170.92
Vinyl Chloride	< 21.2	< 0.0045	< 0.000018	<0.000099	62.50
1.3-Butadiene	149	**0.027**	**0.00011**	**0.00060**	54.09
Bromomethane	< 21.2	< 0.0068	< 0.000027	<0.00015	94.94
Methanol	725	**0.078**	**0.00031**	**0.0017**	32.04
Chloroethane	< 21.2	< 0.0046	< 0.000018	<0.00010	64.50
Dichlorofluoromethane	< 21.2	< 0.0073	< 0.000029	<0.00016	102.92
Ethanol	< 84.8	< 0.013	< 0.000052	<0.00029	46.07
Vinyl Bromide	< 21.2	< 0.0076	< 0.000030	<0.00017	106.96
Trichlorofluoromethane	< 21.2	< 0.0091	< 0.000036	<0.00020	127.50
Acetone	95.8	**0.019**	**0.000074**	**0.00042**	58.08
Isopropyl Alcohol	< 84.8	< 0.017	< 0.000068	<0.00038	60.10
Allyl Chloride	< 42.4	< 0.011	< 0.000043	<0.00024	76.53
1.1-Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.00
Acrylonitrile	< 84.8	< 0.015	< 0.000060	<0.00034	53.06
Methylene Chloride	< 42.4	< 0.014	< 0.000056	<0.00031	98.00
Carbon Disulfide	< 84.8	< 0.022	< 0.000086	<0.00048	76.14
1.1.2-Trichloro-1.2.2-Trifluoroethane	< 21.2	< 0.013	< 0.000053	<0.00030	187.40
trans-1.2- Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.94
1.1- Dichloroethane	< 21.2	< 0.0070	< 0.000028	<0.00016	98.00
MTBE	< 84.8	< 0.025	< 0.00010	<0.00056	88.15
Vinyl Acetate	< 42.4	< 0.012	< 0.000049	<0.00027	86.09
MEK	< 42.4	< 0.010	< 0.000041	<0.00023	72.11
cis-1.2- Dichloroethene	< 21.2	< 0.0069	< 0.000027	<0.00015	96.00
Hexane	< 21.2	< 0.0062	< 0.000024	<0.00014	86.18
Chloroform	< 21.2	< 0.0085	< 0.000034	<0.00019	119.50
Ethyl Acetate	< 21.2	< 0.0063	< 0.000025	<0.00014	88.11
Tetrahydrofuran	< 21.2	< 0.0051	< 0.000020	<0.00011	72.11
1.2-Dichloroethane	< 21.2	< 0.0070	< 0.000028	<0.00016	98.00
Benzene	117	**0.031**	**0.00012**	**0.00068**	78.11
Cyclohexane	< 42.4	<0.012	<0.000048	<0.00027	84.16
Heptane	< 21.2	<0.0072	<0.000028	<0.00016	100.21
Toluene	21.6	**<0.0067**	**0.000027**	**0.00015**	92.14
Carbon Tetrachloride	< 21.2	<0.011	<0.000043	<0.00024	153.24
1.2-Dichloropropane	< 21.2	<0.0081	<0.000032	<0.00018	112.99
Bromodichloromethane	< 21.2	<0.012	<0.000046	<0.00026	163.83
1.4-Dioxane	< 42.4	<0.013	<0.000050	<0.00028	88.11
Trichloroethene	< 21.2	<0.0094	<0.000037	<0.00021	131.40
2.2.4-Trimethylpentane	< 21.2	<0.0082	<0.000032	<0.00018	114.23
cis-1.3-Dichloropropene	< 21.2	<0.0079	<0.000031	<0.00018	110.97
4-Methyl-2-Pentanone (MiBK)	< 84.8	<0.029	<0.00011	<0.00063	100.16
t-1.3-Dichloropropene	< 21.2	<0.0079	<0.000031	<0.00018	110.97
1.1.2-Trichloroethane	< 21.2	<0.0095	<0.000038	<0.00021	133.40
2-Hexanone	< 212	<0.096	<0.00038	<0.0021	134.60
Dibromochloromethane	< 21.2	<0.015	<0.00006	<0.0003	208.28
1.2-Dibromomethane	< 21.2	<0.013	<0.000053	<0.00030	187.88
Tetrachloroethylene	< 21.2	<0.012	<0.000047	<0.00026	165.83
Chlorobenzene	< 21.2	<0.008	<0.000032	<0.00018	112.56
Ethylbenzene	< 42.4	<0.015	<0.000060	<0.00034	106.16
m & p-Xylenes	< 42.4	<0.015	<0.000060	<0.00034	106.16
Bromoform	< 21.2	<0.018	<0.000072	<0.00040	252.72
Styrene	< 84.8	< 0.030	< 0.00012	<0.00066	104.14
1.1.2.2-Tetrachloroethane	< 21.4	<0.012	<0.000048	<0.00027	167.85
o-Xylene	< 42.4	<0.015	<0.000060	<0.00034	106.16
4-Ethyltoluene	< 42.4	<0.017	<0.000068	<0.00038	120.19
1.3.5-Trimethylbenzene	< 42.4	<0.016	<0.000064	<0.00036	112.99
1.2.4-Trimethylbenzene	< 42.4	<0.017	<0.000068	<0.00038	120.19
Benzyl Chloride	< 21.2	<0.0090	<0.000036	<0.00020	126.59
1.3-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.00
1.4-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.01
1.2-Dichlorobenzene	< 21.2	<0.010	<0.000042	<0.00023	147.01
1.2.4-Trichlorobenzene	< 212	<0.13	<0.00051	<0.0029	181.45
Hexachlorobutadiene	< 21.2	<0.019	<0.000074	<0.00041	260.76
1.1.1-Trichloroethene	< 21.2	<0.0094	<0.000037	<0.00021	131.40

lb/hr = (ppb/1000) * Ostd * MW * 0.0000001581
lb/MMBtu = F-Factor (8710)*lb/hr/(60*Ostd)*20.9/(20.9-O2)
lb/ton = lb/hr/tons/hr

RJ NOBLE COMPANY ORANGE 222-007 CALCULATED EMISSION RESULTS EPA METHOD 0011				
	Run 1	**Run 2**	**Run 3**	**Average (3 Runs)**
Formaldehyde (HCHO)				
HCHO Conc. (ppmv)	0.6	0.6	6.0	2.4
HCHO Weight (ug/sample)	1980	2150	21100	8410
HCHO Flow Rate (lb/hr)	0.075	0.080	0.75	0.30
HCHO Flow Rate (lb/Ton)	0.00030	0.00032	0.0030	0.0012
HCHO Flow Rate (lb/MMbtu)	0.0014	0.0016	0.010	0.0045
Acetaldehyde (CH3CHO)				
CH3CHO Conc. (ppmv)	0.1	0.1	0.2	0.1
CH3CHO Weight (ug/sample)	328	692	1040	687
CH3CHO Flow Rate (lb/hr)	0.012	0.026	0.037	0.025
CH3CHO Flow Rate (lb/Ton)	0.000050	0.00010	0.00015	0.00010
CH3CHO Flow Rate (lb/MMbtu)	0.00023	0.00051	0.00052	0.00042

RJ NOBLE COMPANY ORANGE 222-007
CALCULATED EMISSION RESULTS CARB METHOD 425

	Run 1	Run 2	Run 3	Average (3 Runs)
Probe Rinse CR+6 Weight (g)	0.000000018	0.000000081	0.0000000076	0.000000036
Impinger #1 CR+6 Weight (g)	0.000000037	0.000000071	0.000000028	0.000000045
Impinger #2 CR+6 Weight (g)	0.0000000036	0.000000013	0.000000111	0.000000042
Total CR+6 Weight (g)	0.0000000585	0.000000158	0.000000146	0.000000121
Cr+6 Emissions (grain/Dscf)	0.0000000033	0.0000000091	0.0000000090	0.0000000071
Cr+6 Flow Rate (lb/hr)	0.00000067	0.0000022	0.0000016	0.0000015
Cr+6 Flow Rate (lb/ton)	0.0000000027	0.0000000065	0.0000000065	0.0000000052
Cr+6 Flow Rate (lb/MMBtu)	0.00000001	0.00000032	0.00000035	0.00000023

6.0 QUALITY ASSURANCE

Quality control procedures used in the test program followed SCAQMD, EPA & CARB procedures. Calibration methods and frequency follow the specifications of the SCAQMD Source Test Manual.

Quality control procedures used in continuous emissions monitoring follow SCAQMD Method 100.1 procedures. All method performance checks conducted during the subject test program were within allowable tolerances.

The analyzers used for the continuous emissions monitoring of CO2 and O2 have been approved by the California Air Resources Board for such use.

Acquired data is reduced using computer spreadsheets and validated using sound criteria by an individual familiar with the field procedures used. Results are reviewed by a second individual to prevent data reduction and reporting errors.

EPA Method TO-15, 0011/SW846, CARB Methods 425, 436 and 429 followed each agencies published procedures and the approved test protocol.

Leak checks on the CEM sampling system and all sampling trains were performed as per the published methods.

Calibration documentation for the equipment utilized in this sampling series have been provided in the attachments.

AIRx Testing Services, Inc.

CONFLICT OF INTEREST NEGATIVE DECLARATION

AIRx Testing is an independent emissions testing contractor.

AIRx Testing maintains that no conflict of interest exists between the partners and employees of AIRx Testing, and the partners, employees or interests involved in the facility detailed in this report.

INDEPENDENT CONTRACTOR

Tom Porter

Signature

Tom Porter – Vice President

03/08/2022

Date of Signature

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

MONITORING & ANALYSIS DIVISION * SOURCE TEST ENGINEERING BRANCH

SOURCE TEST REPORT EVALUATION

S/T ID: **PR21193**

SOUTH COAST AQMD ID: *FACILITY ID NO.* **19167** *A/N:* **559511**
COMPANY: **R. J. Noble Company, Orange**
EQUIPMENT: **Rotary Dryer (D127)**
Baghouse (C101)

LOCATION: **15505 E Lincoln Ave., Orange, CA 92865**

REQUESTED BY: **Matthew Lee (Memo Dated March 16, 2022)**
TYPE OF TEST: **PERFORMANCE/COMPLIANCE REPORT**
DOCUMENT DATE: **March 7, 2022**
REASON FOR TEST: *(TESTING SUBJECT TO THE FOLLOWING RULE, PERMIT, OR SPECIFIED CONDITIONS):*
- AB2588

REQUESTED EVAL: **PAHs, Metals, Toxic Organics, Hexavalent Chromium, Aldehydes**
TEST DATE: **January 11-13, 18-21, 2022**
TEST FIRM: **AIRx Testing Services**

STE EVALUATOR: **Peter Ko** *EXT:* **2545** *REVIEW DATE:* **June 7, 2022**

SOURCE TEST REPORT EVALUATION

OVERVIEW OF EVALUATION:

OVERALL CONFIDENCE IN REPORTED TEST RESULTS:	☐ **ACCEPTABLE** ☒ **CONDITIONALLY ACCEPTABLE** ☐ **UNACCEPTABLE**
RESTRICTIONS FOR USE OF REPORTED RESULTS:	• **All** 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.
COMPLIANCE DETERMINATION:	• **All** emissions, as adjusted (see next section of this evaluation), are in compliance by an acceptable margin[1] with the Rules/Permit Compliance Limits specified above.

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

DETAILED REVIEW

This source test report has been reviewed by the Source Test Engineering 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 test report stated that the rotary dryer was tested under normal operating conditions. AB2588 staff should verify whether the process rates and other process parameters represented normal operating conditions. The operating data is presented in Appendix F of the report.
- The protocol evaluation dated August 4, 2021, required PTE field verification. However, no PTE verification data was submitted with the report. Page 3-1 of the report indicated that videos taken do not show any evidence of fugitive emissions. AB2588 should determine if this is acceptable of if PTE verification is required.

RULE/PERMIT FULFILLMENT

Testing must satisfy the following Rule/Permit requirements:

- AB2588

SAMPLING & ANALYTICAL METHODS / RESULTS

- Pages 153 and 154 of the report labeled the lab results in µg. These results should be in the units of ng.
- The 1,4-Dioxane concentration on pages 301 and 303 should be <17.5 ppb and <18.5 ppb, respectively. The calculated results based on these concentrations are presented below:

1,4-Dioxane	Lb/hr	Lb/ton	Lb/MMBtu
Run No. 1 (pg. 301)	<0.0058	<0.000024	<0.00012
Run No. 2 (pg. 303)	<0.0071	<0.000022	<0.00012
Run No. 3 (no change)	<0.012	<0.000047	<0.00027
Avg	<0.0083	<0.000031	<0.00017

- All lb/MMBtu results presented in the report were based on a F_d of 8710 scf/MMBtu which is for 68 ^{0}F. Since the flow rates were corrected to a standard temperature of 60

^{0}F, the F_d should be 8578 scf/MMBtu. If the lb/MMBtu results are to be used, they should be all be adjusted by a factor of 0.985 (520/528).

- The average hexavalent chromium result should be $2.6x10^{-7}$ lb/MMBtu instead of $2.3x10^{-7}$.
- The formaldehyde and acetaldehyde results presented on pages 332 and 333 were not correct. The corrected results are tabulated below:

Formaldehyde	Lb/hr	Lb/ton
Run No. 1	0.067	0.00027
Run No. 2	0.069	0.00027
Run No. 3	0.94	0.00376
Avg	0.36	0.014
Acetaldehyde		
Run No. 1	0.011	0.000044
Run No. 2	0.022	0.000088
Run No. 3	0.047	0.000185
Avg	0.027	0.00011

- Page 5-1 of the report indicated that the facility is considering retesting for formaldehyde since the third run result was more than 10 times the first two runs results. In addition, since the aluminum results from CARB Method 436 were very high, the facility is also considering retesting for multiple metals.

QUALITY ASSURANCE

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

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number:	466163
Report Level:	II
Report Date:	08/03/2022

Analytical Report *prepared for:*

Scott Fraser
RJ Noble Company
15505 E. Lincoln Ave.
P.O. Box 620
Orange, CA 92856

Authorized for release by:



David Tripp, Project Manager
david.tripp@enthalpy.com

Th s data package has been rev ewed for techn ca correctness and comp eteness. Re ease of th s data has been author zed by the Laboratory Manager or the Manager's des gnee, as ver f ed by the above s gnature wh ch app es to th s PDF f e as we as any assoc ated e ectron c data de verab e f es. The resu ts conta ned n th s report meet a requ rements of NELAP and perta n on y to those samp es wh ch were subm tted for ana ys s. Th s report may be reproduced on y n ts ent rety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Analysis Results for 466163

Sample ID:	Lab ID: 466163-005	Collected: 07/22/22 13:55
50% ROCKDUST 50% SAND	Matrix: Miscell.	

466163-005 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Ant mony	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
Arsen c	**6.5**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Bar um	**300**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Bery um	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Cadm um	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Chrom um	**42**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Coba t	**14**		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Copper	**36**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Lead	**12**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Mo ybdenum	**1.7**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
N cke	**17**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Se en um	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
S ver	ND		mg/Kg	0.50	0.99	293703	07/25/22	07/26/22	SBW
Tha um	ND		mg/Kg	3.0	0.99	293703	07/25/22	07/26/22	SBW
Vanad um	**71**		mg/Kg	0.99	0.99	293703	07/25/22	07/26/22	SBW
Z nc	**98**		mg/Kg	5.0	0.99	293703	07/25/22	07/26/22	SBW
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.14	1	293738	07/26/22	07/26/22	ECM

Resu ts for any subcontracted ana yses are not nc uded n th s sect on.

ENTHALPY ANALYTICAL

Analysis Results for 466163

Sample ID: 100% RAP DUST	Lab ID: 466163-006	Collected: 07/22/22 17:00
	Matrix: Miscell.	

466163-006 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Antimony	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Arsenic	**6.4**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Barium	**140**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Beryllium	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Cadmium	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Chromium	**40**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Cobalt	**14**		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Copper	**74**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Lead	**68**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Molybdenum	**2.7**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Nickel	**44**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Selenium	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Silver	ND		mg/Kg	0.54	1.1	293703	07/25/22	07/26/22	SBW
Thallium	ND		mg/Kg	3.2	1.1	293703	07/25/22	07/26/22	SBW
Vanadium	**60**		mg/Kg	1.1	1.1	293703	07/25/22	07/26/22	SBW
Zinc	**420**		mg/Kg	5.4	1.1	293703	07/25/22	07/26/22	SBW
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.16	1.2	293738	07/26/22	07/26/22	ECM

ND Not Detected

Results for any subcontracted analyses are not included in this section.

Enthalpy Analytical
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Lab Job Number: 489941
Report Level: II
Report Date: 08/14/2023

Analytical Report *prepared for:*

Scott Fraser
RJ Noble Company
15505 E. Lincoln Ave.
P.O. Box 620
Orange, CA 92856

Authorized for release by:



Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

Th s data package has been rev ewed for techn ca correctness and comp eteness. Re ease of th s data has been author zed by the Laboratory Manager or the Manager's des gnee, as ver f ed by the above s gnature wh ch app es to th s PDF f e as we as any assoc ated e ectron c data de verab e f es. The resu ts conta ned n th s report meet a requ rements of NELAP and perta n on y to those samp es wh ch were subm tted for ana ys s. Th s report may be reproduced on y n ts ent rety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Analysis Results for 489941

Sample ID: 56-401-808-1	Lab ID: 489941-002	Collected: 08/08/23 09:00
	Matrix: Miscell.	

489941-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Ant mony	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
Arsen c	**8.4**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Bar um	**150**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Bery um	**0.48**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Cadm um	**0.56**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Chrom um	**45**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Coba t	**11**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Copper	**42**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Lead	**26**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Mo ybdenum	**2.6**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
N cke	**29**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Se en um	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
S ver	**0.95**		mg/Kg	0.48	0.96	319849	08/08/23	08/10/23	SBW
Tha um	ND		mg/Kg	2.9	0.96	319849	08/08/23	08/10/23	SBW
Vanad um	**65**		mg/Kg	0.96	0.96	319849	08/08/23	08/10/23	SBW
Z nc	**100**		mg/Kg	4.8	0.96	319849	08/08/23	08/10/23	SBW
Method: EPA 7196A									
Hexava ent Chrom um	ND		mg/Kg	0.80	1	320143	08/10/23 13:00	08/11/23 12:47	WWC
Method: EPA 7471A Prep Method: METHOD									
Mercury	ND		mg/Kg	0.16	1.1	319833	08/08/23	08/08/23	KAM

Resu ts for any subcontracted ana yses are not nc uded n th s sect on.

Mineral

Aggregate Batch Plant

District Toxic Profile ID	39
Description	Aggregate Batch Plant
Source	The emission factors are from the table, "DEFAULT VALUES - TRACE METAL CONCENTRATIONS" in the November 1998 San Diego Air Pollution Control District document, Aggregate Crushing Operations.

Pollutant Name	Emission Factor	Emission Factor Units	CAS#
Aluminum	1.50E-02	lb/lb PM10	7429905
Arsenic	2.20E-05	lb/lb PM10	7440382
Barium	2.25E-04	lb/lb PM10	7440393
Beryllium	1.00E-06	lb/lb PM10	7440417
Cadmium	1.00E-06	lb/lb PM10	7440439
Chromium	2.80E-05	lb/lb PM10	7440473
Chromium, hexavalent (& compounds)	1.40E-06	lb/lb PM10	18540299
Cobalt	1.10E-05	lb/lb PM10	7440484
Copper	3.70E-05	lb/lb PM10	7440508
Lead	5.00E-05	lb/lb PM10	7439921
Manganese	5.30E-04	lb/lb PM10	7439965
Nickel	2.80E-05	lb/lb PM10	7440020
Selenium	1.00E-06	lb/lb PM10	7782492
Silica, crystalline	6.38E-02	lb/lb PM 10	1175
Zinc	9.90E-05	lb/lb PM10	7440666

Table 11.1-14. PREDICTIVE EMISSION FACTOR EQUATIONS FOR LOAD-OUT AND SILO FILLING OPERATIONS[a]

EMISSION FACTOR RATING: C

Source	Pollutant	Equation
Drum mix or batch mix plant load-out (SCC 3-05-002-14)	Total PM[b]	$EF = 0.000181 + 0.00141(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	Organic PM[c]	$EF = 0.00141(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	TOC[d]	$EF = 0.0172(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	CO	$EF = 0.00558(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
Silo filling (SCC 3-05-002-13)	Total PM[b]	$EF = 0.000332 + 0.00105(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	Organic PM[c]	$EF = 0.00105(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	TOC[d]	$EF = 0.0504(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$
	CO	$EF = 0.00488(-V)e^{((0\ 0251)(T + 460) - 20\ 43)}$

[a] Emission factor units are lb/ton of HMA produced. SCC = Source Classification Code. To convert from lb/ton to kg/Mg, multiply by 0.5. EF = emission factor; V = asphalt volatility, as determined by ASTM Method D2872-88 "Effects of Heat and Air on a Moving Film of Asphalt (Rolling Thin Film Oven Test - RTFOT)," where a 0.5 percent loss-on-heating is expressed as "-0.5." Regional- or site-specific data for asphalt volatility should be used, whenever possible; otherwise, a default value of -0.5 should be used for V in these equations. T = HMA mix temperature in °F. Site-specific temperature data should be used, whenever possible; otherwise a default temperature of 325°F can be used. Reference 1, Tables 4-27 through 4-31, 4-34 through 4-36, and 4-38 through 4-41.

[b] Total PM, as measured by EPA Method 315 (EPA Method 5 plus the extractable organic particulate from the impingers). Total PM is assumed to be predominantly PM-2.5 since emissions consist of condensed vapors.

[c] Extractable organic PM, as measured by EPA Method 315 (methylene chloride extract of EPA Method 5 particulate plus methylene chloride extract of impinger particulate).

[d] TOC as propane, as measured with an EPA Method 25A sampling train or equivalent sampling train.

Table 11.1-15. SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS–ORGANIC PARTICULATE-BASED COMPOUNDS

EMISSION FACTOR RATING: C

Pollutant	CASRN[a]	Speciation Profile for Load-out and Yard Emissions[b] Compound/Organic PM[c]	Speciation Profile for Silo Filling and Asphalt Storage Tank Emissions Compound/Organic PM[c]
PAH HAPs			
Acenaphthene	83-32-9	0.26%	0.47%
Acenaphthylene	208-96-8	0.028%	0.014%
Anthracene	120-1207	0.070%	0.13%
Benzo(a)anthracene	56-55-3	0.019%	0.056%
Benzo(b)fluoranthene	205-99-2	0.0076%	ND[d]
Benzo(k)fluoranthene	207-08-9	0.0022%	ND[d]
Benzo(g,h,i)perylene	191-24-2	0.0019%	ND[d]
Benzo(a)pyrene	50-32-8	0.0023%	ND[d]
Benzo(e)pyrene	192-97-2	0.0078%	0.0095%
Chrysene	218-01-9	0.103%	0.21%
Dibenz(a,h)anthracene	53-70-3	0.00037%	ND[d]
Fluoranthene	206-44-0	0.050%	0.15%
Fluorene	86-73-7	0.77%	1.01%
Indeno(1,2,3-cd)pyrene	193-39-5	0.00047%	ND[d]
2-Methylnaphthalene	91-57-6	2.38%	5.27%
Naphthalene	91-20-3	1.25%	1.82%
Perylene	198-55-0	0.022%	0.030%
Phenanthrene	85-01-8	0.81%	1.80%
Pyrene	129-00-0	0.15%	0.44%
Total PAH HAPs		5.93%	11.40%
Other semi-volatile HAPs			
Phenol		1.18%	ND[d]

[a] Chemical Abstract Service Registry Number.
[b] Emissions from loaded trucks during the period between load-out and the time the truck departs the plant.
[c] Emission factor for compound is determined by multiplying the percentage presented for the compound by the emission factor for extractable organic particulate (organic PM) as determined from Table 11.1-14.
[d] ND = Measured data below detection limits.

Table 11.1-16. SPECIATION PROFILES FOR LOAD-OUT, SILO FILLING, AND ASPHALT STORAGE EMISSIONS–ORGANIC VOLATILE-BASED COMPOUNDS

EMISSION FACTOR RATING: C

Pollutant	CASRN	Speciation Profile for Load-Out and Yard Emissions Compound/TOC[a]	Speciation Profile for Silo Filling and Asphalt Storage Tank Emissions Compound/TOC (%)[a]
VOC[b]		94%[b]	100%
<u>Non-VOC/non-HAPs</u>			
Methane	74-82-8	6.5%	0.26%
Acetone	67-64-1	0.046%	0.055%
Ethylene	74-85-1	0.71%	1.1%
Total non-VOC/non-HAPS		7.3%	1.4%
<u>Volatile organic HAPS</u>			
Benzene	71-43-2	0.052%	0.032%
Bromomethane	74-83-9	0.0096%	0.0049%
2-Butanone	78-93-3	0.049%	0.039%
Carbon Disulfide	75-15-0	0.013%	0.016%
Chloroethane	75-00-3	0.00021%	0.0040%
Chloromethane	74-87-3	0.015%	0.023%
Cumene	92-82-8	0.11%	ND[c]
Ethylbenzene	100-41-4	0.28%	0.038%
Formaldehyde	50-00-0	0.088%	0.69%
n-Hexane	100-54-3	0.15%	0.10%
Isooctane	540-84-1	0.0018%	0.00031%
Methylene Chloride	75-09-2	0.0%[d]	0.00027%
MTBE	596899	0.0%[d]	ND[c]
Styrene	100-42-5	0.0073%	0.0054%
Tetrachloroethene	127-18-4	0.0077%	ND[c]
Toluene	100-88-3	0.21%	0.062%
1,1,1-Trichloroethane	71-55-6	0.0%[d]	ND[c]
Trichloroethene	79-01-6	0.0%[d]	ND[c]
Trichlorofluoromethane	75-69-4	0.0013%	ND[c]
m-/p-Xylene	1330-20-7	0.41%	0.2%
o-Xylene	95-47-6	0.08%	0.057%
Total volatile organic HAPs		1.5%	1.3%

Table 11.1-16 (cont.)

[a] Emission factor for compound is determined by multiplying the percentage presented for the compound by the emission factor for total organic compounds (TOC) as determined from Table 11.1-14.

[b] The VOC percentages are equal to 100 percent of TOC minus the methane, acetone, methylene chloride, and 1,1,1-trichloroethane percentages.

[c] ND = Measured data below detection limits. Additional compounds that were not detected are: acrylonitrile, allyl chloride, bromodichloromethane, bromoform, 1,3-butadiene, carbon tetrachloride, chlorobenzene, chloroform, dibromochloromethane, 1,2-dibromoethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,2-dichloropropane, cis-1,3-dichloropropene, trans-1,3-dichloropropene, 1,2-epoxybutane, ethyl acrylate, 2-hexanone, iodomethane, methyl methacrylate, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, vinyl acetate, vinyl bromide, and vinyl chloride

[d] Values presented as 0.0% had background concentrations higher than the capture efficiency-corrected measured concentration.

TAYLOR ENVIRONMENTAL SERVICES, INC.

Unpaved Haul Road Emission Factors

CARB Toxic Profile ID	416
Description	CARB Particulate Matter Speciation Profile 416: Windblown Dust Unpaved Road/Area
Source	California Air Resources Board. *Speciation Profiles Used in CARB Modeling*. https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling

Pollutant	Emission Factor	Emission Factor Units	CAS#
Aluminum	0.078902	lb/lb PM	7429905
Antimony	0.000007	lb/lb PM	7440360
Arsenic	0.000015	lb/lb PM	7440382
Barium	0.000952	lb/lb PM	7440393
Bromine	0.000021	lb/lb PM	7726956
Cadmium	0.000025	lb/lb PM	7440439
Chromium	0.000245	lb/lb PM	7440473
Cobalt	0.000149	lb/lb PM	7440484
Copper	0.000087	lb/lb PM	7440508
Chlorine	0.001302	lb/lb PM	7782505
Lead	0.000901	lb/lb PM	7439921
Manganese	0.001051	lb/lb PM	7439965
Nickel	0.000063	lb/lb PM	7440020
Mercury	0.000015	lb/lb PM	7439976
Phosphorus	0.001602	lb/lb PM	7723140
Selenium	0.000001	lb/lb PM	7782492
Vanadium (Fume Or Dust)	0.000312	lb/lb PM	7440622
Silver	0.000009	lb/lb PM	7440224
Zinc	0.000622	lb/lb PM	7440666

Table 12.19-2. HAZARDOUS AIR POLLUTANT (HAP) EMISSION FACTORS FOR WELDING OPERATIONS[a]

Welding Process	Electrode Type (With Last 2 Digits Of SCC)		HAP Emission Factor (10^{-1} g/kg [10^{-1} lb/10^{3} lb] Of Electrode Consumed)[b]						EMISSION FACTOR RATING
			Cr	Cr(VI)	Co	Mn	Ni	Pb	
SMAW[c]	14Mn-4Cr	(-04)	13.9	ND	ND	232	17.1	ND	C
(SCC 3-09-051)	E11018	(-08)[h]	ND	ND	ND	13.8	ND	ND	C
	E308	(-12)[j]	3.93	3.59	0.01	2.52	0.43	ND	D
	E310	(-16)[k]	25.3	18.8	ND	22.0	1.96	0.24	C
	E316	(-20)[m]	5.22	3.32	ND	5.44	0.55	ND	D
	E410	(-24)[n]	ND	ND	ND	6.85	0.14	ND	C
	E6010	(-28)	0.03	0.01	ND	9.91	0.04	ND	B
	E6011	(-32)	0.05	ND	0.01	9.98	0.05	ND	C
	E6012	(-36)	ND	ND	ND	ND	ND	ND	ND
	E6013	(-40)	0.04	ND	< 0.01	9.45	0.02	ND	B
	E7018	(-44)	0.06	ND	< 0.01	10.3	0.02	ND	C
	E7024	(-48)	0.01	ND	ND	6.29	ND	ND	C
	E7028	(-52)	0.13	ND	ND	8.4612	ND	1.62	C
	E8018	(-56)[p]	0.17	ND	ND	0.3	0.51	ND	C
	E9016	(-60)	ND	ND	ND	ND	ND	ND	ND
	E9018	(-64)[q]	2.12	ND	ND	7.83	0.13	ND	C
	ECoCr	(-68)	ND	ND	ND	ND	ND	ND	ND
	ENi-Cl	(-72)	ND	ND	ND	0.39	8.90	ND	C
	ENiCrMo	(-76)[r]	4.20	ND	ND	0.43	2.47	ND	C
	ENi-Cu-2	(-80)[s]	ND	ND	ND	2.12	4.23	ND	C
GMAW[d,e]	E308	(-12)[t]	5.24	ND	< 0.01	3.46	1.84	ND	C
(SCC 3-09-052)	E70S	(-54)[u]	0.01	ND	< 0.01	3.18	0.01	ND	A
	ER1260	(-10)	0.04	ND	ND	ND	ND	ND	D
	ER5154	(-26)	0.10	ND	ND	0.34	ND	ND	D
	ER316	(-20)[v]	5.28	0.10	ND	2.45	2.26	ND	D
	ERNiCrMo	(-76)[w]	3.53	ND	ND	0.70	12.5	ND	B
	ERNiCu	(-80)[x]	< 0.01	ND	ND	0.22	4.51	ND	C

Particulate Matter (PM) Emission Factors For Processes/Equipment at Asphalt, Cement, Concrete, and Aggregate Product Plants

December 2014

This document provides emission factors for estimating **total suspended particulate matter (PM) emissions (not PM_{10})** for **individual** emission source at aggregate (sand and gravel), brick and tile, hot mix asphalt, cement, concrete batch plants. These factors are also applicable to emission sources other than processes identified in recently adopted Rules 1156 and 1157.

The factors and equations are extracted from the US EPA AP-42 document. Some of the complex equations are simplified with either default settings or assumptions that are applicable to the conditions and operations existing in the South Coast Air Basin as shown in the Reference column of the attached table. Emission factors with an asterisk (*) are not published in the EPA AP-42. These emission factors are determined using the agreed control efficiencies that were established during rule development and also are listed in the Reference column.

Facility is encouraged to apply specific parameters that are applicable to its operations to calculate emissions from the equipment/processes including the results from approved source tests and efficiencies of the add-on control equipment. Supporting documents must be submitted with the annual emission report to show the use of such parameters or source test results in calculating annual emissions.

In the absence of specific parameters and/or source tests, facility can calculate its annual emissions using the factors provided in the attached table and the following equation.

$$E = TP \times EF$$

Where: E = Emission (tons/year)

TP = Annual Throughput

EF = Emission Factor

The unit for TP in this equation must be consistent with the unit of EF. For example, if EF is in pound per ton of material transferred (lb/ton), then TP must be tons of transferred material. For unique emission sources, additional data must be used in determining the factor (EF or TP) before it can be used in emission calculation as discussed in the following notes:

Note 1: For mining/quarrying, **<u>emission factor</u>** is expressed in pound per blast (lb/blast) and is calculated as:

$$EF = 0.000014 \times A^{1.5}$$

Where: A = Total horizontal blasted area in squared foot (ft^2), provided that the blast depth is less than 70 ft.

In this case, the throughput (TP) is number of blast per year.

Note 2: For road emissions (E) caused by vehicle traffic, the **throughput** is expressed in annual vehicle miles traveled (VMT) as follows:

$$\text{TP} = \text{VMT} = \text{Road Length} \times \left(\frac{\#\,\text{Truck Trips}}{\text{Day}}\right) \times \left(\frac{\#\,\text{Days}}{\text{Year}}\right) \times \left(\frac{1\,\text{Mile}}{5{,}280\,\text{ft}}\right)$$

Where: Road Length = One-way distance in feet (ft) of paved or unpaved road within the facility, used by haul trucks and non-haul trucks.

\# Truck Trips = the number of roundtrips the vehicle made.

Definitions: Haul Road: an unpaved road used by haul trucks to carry materials from the quarry to the unloading/processing area within the facility.

Non-Haul Road: unpaved and/or paved road used by non-haul trucks to carry materials from one location to another location within the facility, usually between the facility's entrance/exit to loading/unloading/processing areas.

Note 3: In addition to PM emissions, VOC emissions are also expected from asphalt product during loading out and silo filling operations. **Emission factor** (lb/ton of product loaded) is expressed in as follows:

ASPHALT LOAD-OUT

$$\text{EF}_{\text{PM}} = 0.000181 + 0.00141(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$
$$\text{EF}_{\text{VOC}} = 0.0172(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$

SILO FILLING

$$\text{EF}_{\text{PM}} = 0.000332 + 0.00105(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$
$$\text{EF}_{\text{VOC}} = 0.0504(-\text{V})e^{((0.0251)\times(T+460)-20.43)}$$

Where: V = Asphalt Volatility (in negative %); (Example -2.5%)

T = Asphalt Product Mix Temperature (degree F)

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
ROAD EMISSIONS FROM VEHICLE TRAFFIC • **PAVED ROAD** $E = VMT \times k \times \left(\frac{sL}{2}\right)^a \times \left(\frac{W}{3}\right)^b$ Where: E = PM emissions TP = VMT = annual vehicle mile traveled (see **Note 2**) $EF = k \times \left(\frac{sL}{2}\right)^a \times \left(\frac{W}{3}\right)^b$ k = particle size multiplier a, b = constants sL = road surface silt loading (g/m^2) W = average weight (tons) of the vehicle	**Aggregate / Crushed Material Plants** EF = 11.65 *EF = 2.33** lb/VMT **Hot Mix Asphalt Plants** EF = 14.73 *EF = 2.95** lb/VMT **Concrete Batching** EF = 4.91 *EF = 0.98** lb/VMT **Cement/Other Plants** EF = 4.19 *EF = 0.84** lb/VMT		Chapter 13.2.1, Equation 1 Assumptions: k = 0.082, a = 0.65, b = 1.5 Aggregate / Crushed Material sL = 53 g/m^2 Hot Mix Asphalt sL = 76 g/m^2 Cement / Concrete / Others sL = 11 g/m^2 W_{Loaded} = 30 tons $W_{Unloaded}$ = 5 tons $W_{Unloaded\ for\ concrete\ Batching}$ = 12 tons Control Efficiency for chemical stabilizer = 80%

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
• **UNPAVED ROAD** $E = VMT \times k \times \left(\frac{S}{12}\right)^a \times \left(\frac{W}{3}\right)^b$ Where: E = PM emissions TP = VMT = annual vehicle mile traveled (see **Note 2**) $EF = k \times \left(\frac{S}{12}\right)^a \times \left(\frac{W}{3}\right)^b$ k = particle size multiplier a, b = constants S = surface material silt content (%) W = average weight (tons) of the vehicle	**Aggregate Plants** HAUL VEHICLE EF = 16.36 *EF = 3.27** lb/VMT NON-HAUL VEHICLE EF = 8.79 *EF = 1.76** lb/VMT **Other Plant** HAUL VEHICLE EF = 14.66 *EF = 2.93** lb/VMT NON-HAUL VEHICLE EF = 5.26 *EF =1.05** lb/VMT		Assumptions: k = 4.9, a = 0.7, b = 0.45 HAUL W_{Loaded} = 120 tons $W_{Unloaded}$ = 45 tons $S_{Aggregate}$ = 8.3% S_{Others} = 7.1% NON-HAUL W_{Loaded} = 30 tons $W_{Unloaded}$ = 5 tons $S_{Aggregate}$ = 10% S_{Others} = 4.8 % Control Efficiency for chemical stabilizer = 80%
OPEN STORAGE PILE TP = annual tonnage of stored material = amount of material loaded into, or out of, the pile	EF = 0.33 *EF = 0.0165**	lb/ton	Chapter 11.19.1, Final Report, Table 4-1 Control Efficiency = 95%

Operation/Emission Sources	Emission Factor UNCONTROLLED *CONTROLLED*	Unit	References And Assumptions
MINING/QUARRYING			
• **DRILLING** TP = number of hole drilled	EF = 1.3	lb/hole	Chapter 11.9, Table 11.9-4
• **BLASTING** (see **Note 1**) TP = number of blast	EF = 0.000014 (A) $^{1.5}$	lb/blast	Chapter 11.9, Table 11.9-1
LOADING / UNLOADING			
• **CONVEYOR TRANSFER POINT** For a system of multiple transfer points, this EF must be multiplied by the number of transfer points (where materials drop from one point to another). Refer to Rule 1157 definition for more detail.	**Aggregate/Crushed Miscellaneous Base/ Asphalt Plants** EF = 0.003 *EF = 0.00014*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
	Concrete Batching and Others SAND: EF = 0.0021 *EF = 0.00011**	lb/ton	Chapter 11.12, Table 11.12-2 Control Efficiency = 95%
	AGGREGATE: EF = 0.0069 *EF = 0.00035**	lb/ton	

Operation/Emission Sources	Emission Factor UNCONTROLLED	 *CONTROLLED*	Unit	References And Assumptions
• **WEIGHT HOPPER / SURGE BIN**	EF = 0.0051	*EF = 0.00026**	lb/ton	Chapter 11.12, Table 11.12-2 Control Efficiency = 95%
• **SILOS**				
Cement	EF = 0.72	*EF = 0.00099*	lb/ton	Chapter 11.12, Table 11.12-2
Cement Supplements (Fly Ash)	EF = 3.14	*EF = 0.0089*	lb/ton	
• **CONCRETE LOADING (Truck Mix)**	EF = 0.995	*EF = 0.0568*	lb/ton	Chapter 11.12, Table 11.12-2
• **CONCRETE LOADING (Central Mix)**	EF = 0.544	*EF = 0.0173*	lb/ton	Chapter 11.12, Table 11.12-2
• **ASPHALT PRODUCTS LOAD OUT** (see **Note 3)**		**PM:** *EF = 0.00052* **VOC:** *EF = 0.0042*	lb/ton lb/ton	Chapter 11.1, Table 11.1-14 V=-0.5, T=325 ^{o}F
• **ASPHALT SILO FILLING** (see **Note 3)**		**PM:** *EF = 0.00059* **VOC:** *EF = 0.0122*	lb/ton lb/ton	Chapter 11.1, Table 11.1-14 V=-0.5, T=325 ^{o}F

Operation/Emission Sources	Emission Factor UNCONTROLLED	 *CONTROLLED*	Unit	References And Assumptions
CRUSHING				
• **PRIMARY CRUSHER**	EF = 0.014*	*EF = 0.00031*	lb/ton	Chapter 11.6, Table 11.6-4 Control Efficiency = 97.8%
• **TERTIARY CRUSHER**	EF = 0.0054	*EF = 0.0012*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **FINE CRUSHER**	EF = 0.039	*EF = 0.003*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
SCREENING				
• **COARSE**	EF = 0.025	*EF = 0.0022*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **FINE**	EF = 0.30	*EF = 0.0036*	lb/ton	Chapter 11.19.2, Table 11.19.2-2
• **SAND**	EF = 0.21*	*EF = 0.0083*	lb/ton	Chapter 11.19.1, Table 11.19.1-1 Control Efficiency = 96.1%

Operation/Emission Sources	Emission Factor		Unit	References And Assumptions
	UNCONTROLLED	*CONTROLLED*		
GRINDING	EF = 8.5	*EF = 0.0062*	lb/ton	Chapter 11.3, Table 11.3-2
CEMENT MILLING				
Raw Mill	EF = 1.2*	*EF = 0.012*	lb/ton	Chapter 11.6, Table 11.6-4
Finish Grinding Mill	EF = 0.8*	*EF = 0.008*	lb/ton	Control Efficiency = 99%
OTHER PROCESS/EQUIPMENT				
• **DRYER**				
SAND and GRAVEL	EF = 2.0	*EF = 0.039*	lb/ton	Chapter 11.19.1, Table 11.19.1-1
BATCH MIX ASPHALT	EF = 32	*EF = 0.042*	lb/ton	Chapter 11.1, Table 11.1-1
DRUM MIX ASPHALT	EF = 28	*EF = 0.033*	lb/ton	Chapter 11.1, Table 11.1-3
BRICK MANUFACTURING	EF = 0.187		lb/ton	Chapter 11.3., Table 11.3-1
• **KILNS**				
BRICK	EF = 0.96		lb/ton	Chapter 11.3., Table 11.3-1
CEMENT	EF = 109*	*EF = 1.09*	lb/ton	Chapter 11.6, Table 11.6-2
CLINKER COOLER	EF = 14.7 *	*EF = 0.147*	lb/ton	Control Efficiency = 99%

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ATTACHMENT "D"

HAUL ROAD AND STORAGE PILE EMISSIONS CALCULATIONS

TAYLOR ENVIRONMENTAL SERVICES, INC.

Paved Haul Roads (S0072-S0082)

Paved Haul Road PM Emission Factors

	EF = k* (sL)^a * (W)^b			
	$PM_{2.5}$	PM_{10}	PM	
k	0.00054	0.0022	0.011	**PM2.5 =** 5.9632E-03 lbs/vmt
a	0.91	0.91	0.91	**PM10 =** 2.4295E-02 lbs/vmt
b	1.02	1.02	1.02	**PM =** 1.2147E-01 lbs/vmt
sL (g/m^2)	2.00	2.00	2.00	
w (weight [tons])	27.50	27.50	27.50	
c (control ef)	80.00%	80.00%	80.00%	
1. AP-42, Jan 2011 Chapter13.2.1.3, Equation 1				

Pollutant	CAS #	Annual Throughput (VMT)	×	Emission Factor* (lbs/VMT)	÷	11 Haul Road Segments	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Aluminum	7429905	6,815.84		9.58E-03		11		5.94E+00		3193		1.86E-03
Antimony	7440360	6,815.84		8.50E-07		11		5.27E-04		3193		1.65E-07
Arsenic	7440382	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Barium	7440393	6,815.84		1.16E-04		11		7.17E-02		3193		2.24E-05
Bromine	7726956	6,815.84		2.55E-06		11		1.58E-03		3193		4.95E-07
Cadmium	7440439	6,815.84		3.04E-06		11		1.88E-03		3193		5.89E-07
Chlorine	7782505	6,815.84		1.58E-04		11		9.80E-02		3193		3.07E-05
Chromium	7440473	6,815.84		2.98E-05		11		1.84E-02		3193		5.78E-06
Cobalt	7440484	6,815.84		1.81E-05		11		1.12E-02		3193		3.51E-06
Copper	7440508	6,815.84		1.06E-05		11		6.55E-03		3193		2.05E-06
Lead	7439921	6,815.84		1.09E-04		11		6.78E-02		3193		2.12E-05
Manganese	7439965	6,815.84		1.28E-04		11		7.91E-02		3193		2.48E-05
Mercury	7439976	6,815.84		1.82E-06		11		1.13E-03		3193		3.54E-07
Nickel	7440020	6,815.84		7.65E-06		11		4.74E-03		3193		1.49E-06
Phosphorus	7723140	6,815.84		1.95E-04		11		1.21E-01		3193		3.78E-05
Selenium	7782492	6,815.84		1.21E-07		11		7.53E-05		3193		2.36E-08
Silver	7440224	6,815.84		1.09E-06		11		6.77E-04		3193		2.12E-07
Vanadium (Fume Or Dust)	7440622	6,815.84		3.79E-05		11		2.35E-02		3193		7.35E-06
Zinc	7440666	6,815.84		7.56E-05		11		4.68E-02		3193		1.47E-05
*CARB Profile 416.												

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Storage Pile (S0038)

Stockpile PM Emission Factor

$E = k(0.0032)\dfrac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$	k= 0.74 U= 8.15 M= 1.4
E = emission factor k = particle size multipler (dimensionless) U = mean wind speed, meters per second (m/s) (miles per hour [mph]) M= material moisture content (%)	EF = 0.007363568 (lbs PM/ton)
1. AP42 13.2.4 - Aggregate Handling and Storage Piles	

Pollutant	CAS #	Annual Throughput (tons)	×	Emission Factor (lbs/ton)	=	Toxic Emissions (lbs/yr)	÷	Operating Schedule (hours/yr)	=	Hourly Emission Rate (lb/hr)
Arsenic *	7440382	1,001,077.00		6.19E-08		6.19E-02		8760		7.07E-06
Silica, Crystalline **	1175	1,001,077.00		2.18E-04		2.18E+02		8760		2.49E-02
Copper *	7440508	1,001,077.00		3.09E-07		3.10E-01		8760		3.53E-05
Cr (VI)*	18540299	1,001,077.00		0.00E+00		0.00E+00		8760		0.00E+00
Lead*	7439921	1,001,077.00		1.91E-07		1.92E-01		8760		2.19E-05
Nickel *	7440020	1,001,077.00		2.14E-07		2.14E-01		8760		2.44E-05
Beryllium*	7440417	1,001,077.00		3.53E-09		3.54E-03		8760		4.04E-07
Cadmium*	7440439	1,001,077.00		4.12E-09		4.13E-03		8760		4.71E-07
Barium*	7440393	1,001,077.00		1.10E-06		1.11E+00		8760		1.26E-04
Chromium*	7440473	1,001,077.00		3.31E-07		3.32E-01		8760		3.79E-05
Cobalt*	7440484	1,001,077.00		8.10E-08		8.11E-02		8760		9.26E-06
Zinc*	7440666	1,001,077.00		7.36E-07		7.37E-01		8760		8.41E-05
Silver*	7440224	1,001,077.00		7.00E-09		7.00E-03		8760		7.99E-07
Vanadium*	7440622	1,001,077.00		4.79E-07		4.79E-01		8760		5.47E-05

*Enthalpy Analytic Report 08-14-23

** Based on Air and Waste Journal, January 2012

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT "E"

UNPERMITTED PROCESSES EMISSIONS CALCULATIONS

R.J. Noble Company

RECLAIM EMISSIONS CALCULATION WORKSHEET

Facility I.D. # 019167 - Cycle 2

January - March **Year of:** 2017

Various Locations Equipment

Description	Source Type	January Fuel Usage mcf/month	+	February Fuel Usage mcf/month	+	March Fuel Usage mcf/month	=	Quarterly Fuel Usage mcf/month	x	Conversion Factor mmcf/mcf	x	Emission Factor lb/mmcf	=	Total Emissions (lbs/qtr)	
Heater, **Natural Gas, (Rental)** Crumb Rubber Plant Application No. 517323	NOx: Various Locations	640 00		227.40		318 30		1,185.70		0 001		130		**154.14**	NVF

Equipment Without Permit for the Months of Jan-March of: 2017

Various Location Emissions 154.14 NTQ

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	=	NOx Emissions (lb/qtr)
IC Engine, **Diesel** Fuel Sand Plant, Registration No. 110470 1999, Tier 1	122	0.00		6.9		122		454		0 00

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	=	NOx Emissions (lb/qtr)
IC Engine, **Diesel** Fuel Screen plant, Registration No. 105723 1997, Tier 1	155	0.00		6.9		155		454		0 00

Total Equipment with no permit Emissions (lbs/quarter) 0.00 NUQ and NWF

219 Equipment for the Months of

Description	HP	Source Type	January Hour Usage hour/month	+	February Hour Usage hour/month	+	March Hour Usage hour/month	=	Quarterly Fuel Usage hours/quarter	x	Conversion Factor (mmBTU/hour)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)
Portable Light Tower #816, and #817 **Diesel** Fuel	8 04=6*1.34 kW	NOx: Rule 219	34.60		23 60		43.90		102.10		0 08185		137		469		**28.61**

Description	Source Type	Quarterly Fuel Usage gal/quarter	x	Conversion Factor (mgal/gal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)
Torches, **Propane**	NOx: Rule 219	95.00		0 00100		12 8		**1.22**

Description	Source Type	January Usage hours/month		February Usage hours/month		March Usage hours/month	=	Quarterly Usage hours/quarter	x	Conversion Factor (mgal/gal)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)
Welder, **Gasoline**	NOx: Rule 219	24.40		19 80		37.80		82.00		0 23414		130		102		**15.06**

Diesel Rule 219 Emissions (lbs/quarter) 28.61 NRF
Propane Rule 219 Emissions (lbs/quarter) 1.22 NRF
Gasoline Rule 219 Emissions (lbs/quarter) 15.06 NRF

Total Various Locations Emissions (lbs/quarter) 154.14 NTQ(Dup)
Total Equipment with no Permit (lbs/quarter) 0.00 NUQ(Dup)
Total Rule 219 Emissions (lbs/quarter) 44.89 NXQ
[1] Major Source Emissions (lbs/quarter) 957.36 NMQ(AETC)
Total Facility Emissions (lbs/quarter) 1,156.39

TAYLOR ENVIRONMENTAL SERVICES, INC.

R.J. Noble Company

RECLAIM EMISSIONS CALCULATION WORKSHEET

Facility I.D. # 019167 - Cycle 2

April -June **Year of** **2017**

Various Locations Equipment

Description	Source Type	April Fuel Usage mcf/month	+	May Fuel Usage mcf/month	+	June Fuel Usage mcf/month	=	Quarterly Fuel Usage mcf/month	x	Conversion Factor mmcf/mcf	x	Emission Factor lb/mmcf	=	Total Emissions (lbs/qtr)	
Heater, **Natural Gas, (Rental)** Crumb Rubber Plant Application No. 517323	NOx: Various Locations	600.20		638.70		503.60		1,742.50		0.001		130		226.53	**NVF NAT GAS**

Total Various Locations Emissions (lbs/quarter) 226.53 **NTQ**

Equipment Without Permit for the Months of April-June of: 2017

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	=	NOx Emissions (lb/qtr)	
IC Engine, **Diesel** Fuel Sand Plant, Registration No. 110470 1999, Tier 1	122	0.00		6.9		122		454		0.00	
IC Engine, **Diesel** Fuel Screen plant, Registration No. 105723 1997, Tier 1	155	0.00		6.9		155		454		0.00	**NWF**

Total Equipment with no permit Emissions (lbs/quarter) 0.00 **NWF Diesel NUQ**

219 Equipment for the Months of

Description	HP	Source Type	April Fuel Usage gallons/month	+	May Fuel Usage gallons/month	+	June Fuel Usage gallons/month	=	Quarterly Fuel Usage gals/quarter	x	Conversion Factor (mmBTU/hour)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Portable Light Towers #816 and #817, **Diesel** Fuel	8.04=6*1.34 kW	NOx:	16.20		0.00		75.00		91.20		0.08185		137		469	**Diesel**	25.55	

Description	Source Type	Quarterly Fuel Usage gal/quarter	x	Conversion Factor (mgal/gal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Torches, **Propane**	NOx: Rule 219	125.00		0.00100		12.8		1.60	**Propane**

Description	Source Type	April Usage hours/month	May Usage hours/month	June Usage hours/month	=	Quarterly Usage hours/quarter	x	Conversion Factor (mgal/gal)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Welder, **Gasoline**	NOx: Rule 219	50.50	11.70	11.60		73.80		0.23414		130		102	**Gasoline**	13.56	

Diesel Rule 219 Emissions (lbs/quarter)	25.55	NRF
Propane Rule 219 Emissions (lbs/quarter)	1.60	NRF
Gasoline Rule 219 Emissions (lbs/quarter)	13.56	NRF

Total Various Locations Emissions (lbs/quarter)	226.53	NTQ
Total Rule 219 Emissions (lbs/quarter)	40.71	NXQ
Total No Permit Emissions (lbs/quarter)	0.00	NUQ
Major Source Emissions (lbs/quarter)	1,735.05	NMQ
Total Facility Emissions (lbs/quarter)	2,002.29	

TAYLOR ENVIRONMENTAL SERVICES, INC.

R.J. Noble Company

RECLAIM EMISSIONS CALCULATION WORKSHEET

Facility I.D. # 019167 - Cycle 2

July - September Year of: 2017

Various Locations Equipment

Description	Source Type	July Fuel Usage mcf/month	+	August Fuel Usage mcf/month	+	September Fuel Usage mcf/month	=	Quarterly Fuel Usage mcf/quarter	x	Conversion Factor mmcf/mcf	x	Emission Factor lb/mmcf	=	Total Emissions (lbs/qtr)	
Heater, **Natural Gas, (Rental)**															
Crumb Rubber Plant	NOx:	628 50		481 40		296 60		1,406 50		0 001		130		**182.85**	NVF
Application No 517323	Various Locations														
												Various Location Emissions		182.85	NTQ

Equipment Without Permit for the Months of: Jul-Sept of: 2017

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	=	NOx Emissions (lb/qtr)	
IC Engine, **Diesel** Fuel	122	0 00		6 9		122		454		0 00	NWF
Sand Plant, Registration No 110470											
1999, Tier 1											

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	=	NOx Emissions (lb/qtr)	
IC Engine, **Diesel** Fuel	155	0 00		6 9		155		454		0 00	NWF
Screen plant, Registration No 105723										**Total Equipment with no permit Emissions (lbs/quarter)**	0.00 NUQ and NWF
1997, Tier 1											

219 Equipment for the Months of: Jul-Sept of: 2017

Description	HP	Source Type	July Hours Used (hr/month)	+	August Hours Used (hr/month)	+	September Hours Used (hr/month)	=	Quarterly Hours Used (hrs/qrtr)	x	Conversion Factor (mmBTU/hour)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Portable Light Tower #816, and #817 **Diesel** Fuel	8 04=6*1 34 kW	NOx:	10 20		35 70		46 70		92 60		0 08185		137		469		**25.95**	
															Total Diesel 219 Emissions (lbs/qtr)		**25.95**	NRF

Description	Source Type	Quarterly Fuel Usage gal/quarter	x	Conversion Factor (mgal/gal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Torches, **Propane**	NOx: Rule 219	110 00		0 00100		12 8		**1.41**	**Total Propane 219 Emissions (lbs/qtr)** NRF

Description	Source Type	July Usage hours/month	August Usage hours/month	September Usage hours/month	=	Quarterly Usage hours/quarter	x	Conversion Factor (mgal/gal)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	=	Total Emissions (lbs/qtr)	
Welder, **Gasoline**	NOx: Rule 219	8 40	26 30	47 70		82 40		0 23414		130		102		**15.14**	
													Gasoline Rule 219 Emissions (lbs/quarter)		**15.14**	NRF

Total Various Locations Emissions (lbs/quarter)	182.85	NTQ(D
Total Equipment with no Permit (lbs/quarter)	0.00	NUQ(D
Total Rule 219 Emissions (lbs/quarter)	42.49	NXQ
Major Source Emissions (lbs/quarter)	1,947.62	NMQ(D
Total Facility Emissions (lbs/quarter)	2,172.96	

RECLAIM EMISSIONS CALCULATION WORKSHEET

Facility I.D. # 019167 - Cycle 2

October - December **Year of:** 2017

Various Locations Equipment

Description	Source Type	October Fuel Usage mcf/month	+	November Fuel Usage mcf/month	+	December Fuel Usage mcf/month	Quarterly Fuel Usage mcf/month	x	Conversion Factor mmcf/mcf	x	Emission Factor lb/mmcf	Total Emissions (lbs/qtr)	
Heater **Natural Gas, (Rental)**													
Crumb Rubber Plant	NOx	567.60		658.80		540.50	1 766.90		0.001		130	**229.70**	NVF
Application No. 517323	Various Locations												

Equipment Without Permit for the Months of: Oct-Dec Year of 2017

Various Location Emissions 229.70 NTQ

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	NOx Emissions (lb/qtr)
IC Engine **Diesel** Fuel	122	0.00		6.9		122		454	0.00
Sand Plant Registration No. 110470									
1999 Tier 1									

Description		Quarterly Hour Usage (hr/qtr)	x	Emission Factor (g/bhp-hr)	x	Horsepower (HP)	÷	Conversion Factor (g/lbs)	NOx Emissions (lb/qtr)
IC Engine **Diesel** Fuel	155	0.00		6.9		155		454	0.00
Screen plant Registration No. 105723									
1997 Tier 1									

Total Equipment with no permit Emissions (lbs/quarter) 0.00 NUQ and NWF

219 Equipment

Description	HP	Source Type	October Hours Used (hr/month)	+	November Hours Used (hr/month)	+	December Hours Used (hr/month)	Quarterly Hours Used (hrs/qrtr)	x	Conversion Factor (mmBTU/hour)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	Total Emissions (lbs/qtr)
Portable Light Tower #816 and #817 **Diesel** Fuel	.	NOx	187.40		86.90		202.90	477.20		0.08185		137		469	**133.71**

Description	Source Type	Quarterly Fuel Usage gal/quarter	x	Conversion Factor (mgal/gal)	x	Emission Factor (lbs/mgal)	Total Emissions (lbs/qtr)
Torches **Propane**	NOx Rule 219	105.00		0.00100		12.8	**1.34**

Description	Source Type	October Usage hours/month	November Usage hours/month	December Usage hours/month	Quarterly Usage hours/quarter	x	Conversion Factor (mmbtu/hr)	÷	Heating Value (mmBTU/mgal)	x	Emission Factor (lbs/mgal)	Total Emissions (lbs/qtr)
Welder **Gasoline**	NOx Rule 219	8.50	25.50	15.10	49.10		0.23414		130		102	**9.02**

Diesel Rule 219 Emissions (lbs/quarter) 133.71 NRF
Propane Rule 219 Emissions (lbs/quarter) 1.34 NRF
Gasoline Rule 219 Emissions (lbs/quarter) 9.02 NRF

Total Various Locations Emissions (lbs/quarter) 229.70 NTQ (Dup)
Total Equipment with no Permit (lbs/quarter) 0.00 NUQ (Dup)
Total Rule 219 Emissions (lbs/quarter) 144.07 NXQ
Major Source Emissions (lbs/quarter) 1,682.81 NMQ (AETC)
Total Facility Emissions (lbs/quarter) 2,056.58

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT “F”

TANKS SUMMARIES

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	RJNOB-17-2268
City:	Corona
State:	California
Company:	R. J. Noble
Type of Tank:	Vertical Fixed Roof Tank
Description:	35,000 gallon AST

Tank Dimensions

Shell Height (ft):	42.00
Diameter (ft):	12.00
Liquid Height (ft) :	40.00
Avg. Liquid Height (ft):	30.00
Volume (gallons):	35,000.00
Turnovers:	85.96
Net Throughput(gal/yr):	3,008,759.08
Is Tank Heated (y/n):	Y

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	12.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Los Angeles C.O., California (Avg Atmospheric Pressure = 14 67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RJNOB-17-2268 - Vertical Fixed Roof Tank
Corona, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Residual oil no. 6	All	350.00	300.00	400.00	400.00	0.0002	0.0002	0.0002	190.0000			387.00	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RJNOB-17-2268 - Vertical Fixed Roof Tank
Corona, California

Annual Emission Calcaulations	
Standing Losses (lb)	0.2716
Vapor Space Volume (cu ft)	1,450.2568
Vapor Density (lb/cu ft)	0.0000
Vapor Space Expansion Factor	0.1235
Vented Vapor Saturation Factor	0.9999
Tank Vapor Space Volume	
Vapor Space Volume (cu ft)	1,450.2568
Tank Diameter (ft)	12.0000
Vapor Space Outage (ft)	12.8231
Tank Shell Height (ft)	42.0000
Average Liquid Height (ft)	30.0000
Roof Outage (ft)	0.8231
Roof Outage (Dome Roof)	
Roof Outage (ft)	0.8231
Dome Radius (ft)	12.0000
Shell Radius (ft)	6.0000
Vapor Density	
Vapor Density (lb/cu ft)	0.0000
Vapor Molecular Weight (lb/lb-mole)	190.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0.0002
Daily Avg. Liquid Surface Temp. (deg. R)	809.6700
Daily Average Ambient Temp. (deg. F)	65.9667
Ideal Gas Constant R (psia cuft / (lb-mol-deg R))	10.731
Liquid Bulk Temperature (deg. R)	859.6700
Tank Paint Solar Absorptance (Shell)	0.1700
Tank Paint Solar Absorptance (Roof)	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day)	1,567.1816
Vapor Space Expansion Factor	
Vapor Space Expansion Factor	0.1235
Daily Vapor Temperature Range (deg. R)	100.0000
Daily Vapor Pressure Range (psia)	0.0000
Breather Vent Press. Setting Range(psia)	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0.0002
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia)	0.0002
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia)	0.0002
Daily Avg. Liquid Surface Temp. (deg R)	809.6700
Daily Min. Liquid Surface Temp. (deg R)	759.6700
Daily Max. Liquid Surface Temp. (deg R)	859.6700
Daily Ambient Temp. Range (deg. R)	18.3167
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor	0.9999
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0.0002
Vapor Space Outage (ft)	12.8231
Working Losses (lb)	1.3335
Vapor Molecular Weight (lb/lb-mole)	190.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0.0002
Annual Net Throughput (gal/yr.)	3,008,759.0750
Annual Turnovers	85.9645
Turnover Factor	0.5156
Maximum Liquid Volume (gal)	35,000.0000
Maximum Liquid Height (ft)	40.0000
Tank Diameter (ft)	12.0000
Working Loss Product Factor	1.0000
Total Losses (lb)	1.6051

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

RJNOB-17-2268 - Vertical Fixed Roof Tank
Corona, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Residual oil no. 6	1.33	0.27	1.61

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	RJNOB-17-2268 20,000
City:	Orange
State:	California
Company:	R. J. Noble
Type of Tank:	Horizontal Tank
Description:	Asphalt Oil Storage 20000gal

Tank Dimensions

Shell Length (ft):	34.40
Diameter (ft):	11.13
Volume (gallons):	20,000.00
Turnovers:	150.44
Net Throughput(gal/yr):	3,008,759.08
Is Tank Heated (y/n):	Y
Is Tank Underground (y/n):	Y

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Los Angeles AP, California (Avg Atmospheric Pressure = 14.67 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

RJNOB-17-2268 20,000 - Horizontal Tank
Orange, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Residual oil no. 6	All	350.00	300.00	400.00	350.00	0.0002	0.0002	0.0002	190.0000			387.00	

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

RJNOB-17-2268 20,000 - Horizontal Tank
Orange, California

Annual Emission Calcaulations	
No Standing Losses: Underground Tank	
Working Losses (lb):	0.9467
Vapor Molecular Weight (lb/lb-mole):	190.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0002
Annual Net Throughput (gal/yr.):	3,008,759.0800
Annual Turnovers:	150.4380
Turnover Factor:	0.3661
Tank Diameter (ft):	11.1250
Working Loss Product Factor:	1.0000
Total Losses (lb):	1.3456

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

RJNOB-17-2268 20,000 - Horizontal Tank
Orange, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Residual oil no. 6	0.95	0.40	1.35

TAYLOR
ENVIRONMENTAL
SERVICES, INC.

ATTACHMENT "G"

TOXIC CALCULATIONS BY SOURCE AND SUBSTANCE

HRA Source ID	Release Name	CAS	Pollutant Name	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	g/s
S0001	GASOLINE DISPENSING	71432	Benzene	1.189728	0.000135814	1.71122E-05
S0067	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0068	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0069	STORAGE TANK	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07

		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
		71432	Benzene	0.000399	4.56E-08	5.7455E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
		75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
		75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
		75150	CS2	0.0002	2.28E-08	2.87275E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000487	5.56E-08	7.00548E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
		85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
		86737	Fluorene	0.000356	4.06E-08	5.11551E-09
		91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
		91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
		95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
		100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
		100425	Styrene	0.0000674	7.69E-09	9.68923E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.0025	0.000000285	3.59094E-08
		108883	Toluene	0.000774	8.83E-08	1.11256E-08
		110543	Hexane	0.00125	0.000000142	1.78917E-08
		120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000155	1.77E-08	2.23016E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.0000106	1.21E-09	1.52457E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
		218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0070	STORAGE TANK	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
		71432	Benzene	0.000337	3.85E-08	4.85091E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
		75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
		75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
		75150	CS2	0.000168	1.92E-08	2.41916E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000411	4.69E-08	5.9093E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
		85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
		86737	Fluorene	0.0003	3.42E-08	4.30912E-09
		91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
		91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
		95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
		100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
		100425	Styrene	0.0000569	6.49E-09	8.17726E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.00211	0.00000024	3.02395E-08
		108883	Toluene	0.000653	7.45E-08	9.38683E-09
		110543	Hexane	0.00105	0.00000012	1.51197E-08
		120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000131	1.49E-08	1.87737E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.00000891	1.02E-09	1.28518E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
		218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0071	STORAGE TANK	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
		50328	B[a]P	0	0	0
		53703	D[a,h]anthracen	0	0	0
		56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
		71432	Benzene	0.000337	3.85E-08	4.85091E-09
		71556	1,1,1-TCA	0	0	0
		74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10

		75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
		75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
		75150	CS2	0.000168	1.92E-08	2.41916E-09
		76131	CFC-113	0	0	0
		78933	MEK	0.000411	4.69E-08	5.9093E-09
		79016	TCE	0	0	0
		83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
		85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
		86737	Fluorene	0.0003	3.42E-08	4.30912E-09
		91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
		91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
		95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
		100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
		100425	Styrene	0.0000569	6.49E-09	8.17726E-10
		106423	p-Xylene	0	0	0
		108383	m-Xylene	0.00211	0.00000024	3.02395E-08
		108883	Toluene	0.000653	7.45E-08	9.38683E-09
		110543	Hexane	0.00105	0.00000012	1.51197E-08
		120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
		127184	Perc	0	0	0
		129000	Pyrene	0.000131	1.49E-08	1.87737E-09
		191242	B[g,h,i]perylen	0	0	0
		192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
		193395	In[1,2,3-cd]pyr	0	0	0
		198550	Perylene	0.00000891	1.02E-09	1.28518E-10
		205992	B[b]fluoranthen	0	0	0
		206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
		207089	B[k]fluoranthen	0	0	0
		208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
		218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0042	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0043	Hopper	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0044	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0045	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09

		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0046	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0047	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0048	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0049	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0050	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0051	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08

		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0052	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0061	Hopper	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
		7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
		7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
		1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
		7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
		7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
		7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
		7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
		7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
		7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
		7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
		7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0053	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0054	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0055	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08

S0056	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0057	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0058	Conveyor Belt	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
		7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
		7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
		1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
		7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
		7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
		7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
		7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
		7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
		7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
		7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
		7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0059	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0060	Conveyor Belt	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0062	Screen	7440382	Arsenic	0.018499958	5.79391E-06	7.3002E-07
		7440508	Copper	0.092499792	2.89696E-05	3.6501E-06
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.057261776	1.79335E-05	2.25959E-06
		7440020	Nickel	0.063868904	2.00028E-05	2.52031E-06
		1175	Silica, Crystln	50.35248201	0.015769647	0.00198694
		7440417	Beryllium	0.00105714	3.31081E-07	4.17154E-08
		7440439	Cadmium	0.001233331	3.86261E-07	4.8668E-08
		7440393	Barium	0.3303564	0.000103463	1.30361E-05
		7440473	Chromium	0.09910692	3.10388E-05	3.91082E-06

		7440484	Cobalt	0.024226136	7.58726E-06	9.55978E-07
		7440666	Zinc	0.2202376	6.89751E-05	8.69071E-06
		7440224	Silver	0.002092257	6.55264E-07	8.25618E-08
		7440622	Vanadium	0.14315444	4.48338E-05	5.64896E-06
S0062	Screen	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0063	Dryer Baghouse	107028	Acrolein	0.537	0.000168	2.11676E-05
		7664417	NH3	637	0.199	0.025073558
S0065	Asphalt Silo Loadout	91576	2MeNaphthalene	0.864	0.000271	3.41454E-05
		83329	Acenaphthene	0.0944	0.0000296	3.72953E-06
		208968	Acenaphthylene	0.0102	0.00000318	4.00673E-07
		120127	Anthracene	0.0254	0.00000796	1.00294E-06
		56553	B[a]anthracene	0.0069	0.00000216	2.72155E-07
		50328	B[a]P	0.000835	0.000000262	3.30114E-08
		205992	B[b]fluoranthen	0.00276	0.000000864	1.08862E-07
		192972	B[e]pyrene	0.00283	0.000000887	1.1176E-07
		191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
		207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
		71432	Benzene	0.611	0.000191	2.40656E-05
		76131	CFC-113	0.0153	0.00000478	6.02269E-07
		218019	Chrysene	0.0374	0.0000117	1.47417E-06
		53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
		100414	Ethyl Benzene	3.29	0.00103	0.000129778
		206440	Fluoranthene	0.0182	0.00000569	7.16927E-07
		86737	Fluorene	0.28	0.0000877	1.105E-05
		50000	Formaldehyde	1.03	0.000324	4.08233E-05
		110543	Hexane	1.76	0.000552	6.95508E-05
		193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
		108383	m-Xylene	4.82	0.00151	0.000190257
		91203	Naphthalene	0.454	0.000142	1.78917E-05
		95476	o-Xylene	0.94	0.000294	3.70433E-05
		198550	Perylene	0.00799	0.0000025	3.14994E-07
		85018	Phenanthrene	0.294	0.0000921	1.16044E-05
		106423	p-Xylene	0	0	0
		129000	Pyrene	0.0545	0.0000171	2.15456E-06
		100425	Styrene	0.0858	0.0000269	3.38934E-06
		108883	Toluene	2.47	0.000773	9.73963E-05
S0066	ASPHALT SILO FILLING	91576	2MeNaphthalene	1.42	0.000446	5.6195E-05
		83329	Acenaphthene	0.127	0.0000398	5.01471E-06
		208968	Acenaphthylene	0.00379	0.00000119	1.49937E-07
		120127	Anthracene	0.0352	0.000011	1.38598E-06
		56553	B[a]anthracene	0.0151	0.00000474	5.97229E-07
		50328	B[a]P	0	0	0
		205992	B[b]fluoranthen	0	0	0
		192972	B[e]pyrene	0.00257	0.000000804	1.01302E-07
		191242	B[g,h,i]perylen	0	0	0
		207089	B[k]fluoranthen	0	0	0
		71432	Benzene	0.909	0.000285	3.59094E-05
		76131	CFC-113	0	0	0
		218019	Chrysene	0.0568	0.0000178	2.24276E-06
		53703	D[a,h]anthracen	0	0	0
		100414	Ethyl Benzene	1.08	0.000338	4.25872E-05
		206440	Fluoranthene	0.0406	0.0000127	1.60017E-06
		86737	Fluorene	0.274	0.0000858	1.08106E-05
		50000	Formaldehyde	19.6	0.00614	0.000773626
		110543	Hexane	2.84	0.000889	0.000112012
		193395	In[1,2,3-cd]pyr	0	0	0
		74873	Methyl Chloride	0.035	0.000011	1.38598E-06
		108383	m-Xylene	5.68	0.00178	0.000224276
		91203	Naphthalene	0.492	0.000154	1.94037E-05
		95476	o-Xylene	1.62	0.000507	6.38809E-05
		198550	Perylene	0.00811	0.00000254	3.20034E-07
		85018	Phenanthrene	0.487	0.000153	1.92777E-05
		106423	p-Xylene	0	0	0
		129000	Pyrene	0.119	0.0000373	4.69972E-06
		100425	Styrene	0.153	0.000048	6.04789E-06
		108883	Toluene	1.76	0.000551	6.94248E-05
S0063	Dryer Baghouse	106990	1,3-Butadiene	199.8347628	0.062585269	0.007885605

		91576	2MeNaphthalene	9.739520041	0.003050272	0.000384328
		83329	Acenaphthene	0.328789223	0.000102972	1.29742E-05
		208968	Acenaphthylene	1.176402851	0.000368432	4.64216E-05
		75070	Acetaldehyde	100.1076829	0.031352234	0.003950312
		7429905	Aluminum	1166.259727	0.36525516	0.046021339
		120127	Anthracene	0.023165673	7.25514E-06	9.14132E-07
		7440360	Antimony	0.556523866	0.000174295	2.19608E-05
		7440382	Arsenic	0.155315079	4.86424E-05	6.12883E-06
		7440393	Barium	9.565461577	0.00299576	0.000377459
		71432	Benzene	225.9974493	0.070779032	0.008918001
		205992	B[b]fluoranthen	0.000264682	8.28944E-08	1.04445E-08
		192972	B[e]pyrene	0.000291324	9.12383E-08	1.14958E-08
		7440417	Beryllium	0.024898425	7.79782E-06	9.82507E-07
		7440439	Cadmium	0.123209869	3.85875E-05	4.86194E-06
		75150	CS2	51.84092399	0.016235805	0.002045675
		74873	Methyl Chloride	8.805401159	0.00275772	0.000347467
		7440473	Chromium	0.907178252	0.000284115	3.57978E-05
		218019	Chrysene	0.001914837	5.99698E-07	7.55607E-08
		7440484	Cobalt	0.317102415	9.93117E-05	1.25131E-05
		7440508	Copper	0.470242035	0.000147273	1.8556E-05
		206440	Fluoranthene	0.035680238	1.11745E-05	1.40796E-06
		86737	Fluorene	0.393799855	0.000123332	1.55396E-05
		50000	Formaldehyde	1401.507561	0.438931275	0.055304365
		110543	Hexane	15.4651297	0.004843448	0.000610264
		18540299	Cr(VI)	0.005249736	1.64414E-06	2.07158E-07
		1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
		1330207	Xylenes	44.91087159	0.014065415	0.001772211
		7439965	Manganese	15.89557194	0.004978256	0.000627249
		78933	MEK	27.21477044	0.00852326	0.001073912
		7439976	Mercury	0.248020895	7.76764E-05	9.78706E-06
		67561	Methanol	218.585628	0.06845776	0.008625526
		91203	Naphthalene	36.24474036	0.011351312	0.00143024
		7440020	Nickel	3.145702806	0.000985187	0.000124131
		85018	Phenanthrene	0.506607075	0.000158662	1.9991E-05
		7723140	Phosphorus	10.72355235	0.003358457	0.000423158
		115071	Propylene	442.5962152	0.138614537	0.017465124
		129000	Pyrene	0.03541179	1.10904E-05	1.39737E-06
		7782492	Selenium	0.399697696	0.000125179	1.57723E-05
		100425	Styrene	70.90509357	0.022206418	0.002797959
		108883	Toluene	91.11106331	0.028534627	0.0035953
		7440622	Vanadium	1.648057569	0.000516147	6.50334E-05
		7440666	Zinc	5.218470875	0.001634347	0.000205924
S0012	Hopper	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
		7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
		7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
		1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
		7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
		7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
		7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
		7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
		7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0012	Hopper	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
		7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
		7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
		1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
		7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
		7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
		7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
		7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
		7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0013	Feeder	7440382	Arsenic	0.00029792	9.33041E-08	1.17561E-08
		7440508	Copper	0.0034447	1.07883E-06	1.3593E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0031654	9.91356E-07	1.24909E-07
		7440020	Nickel	0.0020482	6.41466E-07	8.08233E-08
		1175	Silica, Crystln	1.064	0.000333229	4.19861E-05
		7440393	Barium	0.006517	2.04103E-06	2.57165E-07
		7440473	Chromium	0.001862	5.83151E-07	7.34757E-08
		7440484	Cobalt	0.0006517	2.04103E-07	2.57165E-08
		7440622	Vanadium	0.002793	8.74726E-07	1.10214E-07
		7440666	Zinc	0.019551	6.12308E-06	7.71495E-07
S0014	Crusher	7440382	Arsenic	0.000383032	1.1996E-07	1.51147E-08
		7440508	Copper	0.004428811	1.38704E-06	1.74764E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.004069718	1.27458E-06	1.60594E-07
		7440020	Nickel	0.002633347	8.24725E-07	1.03914E-07

		1175	Silica, Crystln	1.368311145	0.000428535	5.39944E-05
		7440393	Barium	0.008378832	2.62413E-06	3.30634E-07
		7440473	Chromium	0.002393952	7.4975E-07	9.44668E-08
		7440484	Cobalt	0.000837883	2.62413E-07	3.30634E-08
		7440622	Vanadium	0.003590928	1.12463E-06	1.417E-07
		7440666	Zinc	0.025136496	7.87238E-06	9.91902E-07
S0014	Crusher	7440382	Arsenic	4.46871E-05	1.39953E-08	1.76338E-09
		7440508	Copper	0.000516695	1.61821E-07	2.03891E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0004748	1.487E-07	1.87359E-08
		7440020	Nickel	0.000307224	9.62179E-08	1.21232E-08
		1175	Silica, Crystln	0.1595968	4.99833E-05	6.29779E-06
		7440393	Barium	0.00097753	3.06148E-07	3.8574E-08
		7440473	Chromium	0.000279294	8.74708E-08	1.10211E-08
		7440484	Cobalt	9.7753E-05	3.06148E-08	3.8574E-09
		7440622	Vanadium	0.000418942	1.31206E-07	1.65317E-08
		7440666	Zinc	0.002932591	9.18444E-07	1.15722E-07
S0015	Conveyor Belt	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0016	CONVEYOR BELT	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0017	Screen	7440382	Arsenic	0.001170386	3.66547E-07	4.61842E-08
		7440508	Copper	0.013532587	4.2382E-06	5.34004E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.01243535	3.89457E-06	4.90707E-07
		7440020	Nickel	0.008046403	2.52001E-06	3.17516E-07
		1175	Silica, Crystln	4.1811372	0.00130947	0.00016499
		7440393	Barium	0.025602192	8.01822E-06	1.01028E-06
		7440473	Chromium	0.007314912	2.29092E-06	2.88651E-07
		7440484	Cobalt	0.002560219	8.01822E-07	1.01028E-07
		7440622	Vanadium	0.010972368	3.43638E-06	4.32977E-07
		7440666	Zinc	0.076806576	2.40547E-05	3.03084E-06
S0017	Screen	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
		7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
		7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
		1175	Silica, Crystln	2.659968	0.000833062	0.000104964
		7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
		7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
		7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
		7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
		7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0018	CONVEYOR BELT	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
		7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
		7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
		1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
		7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
		7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
		7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
		7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
		7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0019	CONVEYOR BELT	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
		7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
		7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
		1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
		7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
		7440473	Chromium	0.000931	2.91575E-07	3.67378E-08

		7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
		7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
		7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0020	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0021	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0022	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0023	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0024	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0025	CONVEYOR BELT	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
		7440508	Copper	0.00602838	1.888E-06	2.37884E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
		7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
		1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
		7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
		7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
		7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
		7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
		7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0026	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07

S0027	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0028	HOPPER	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0029	CONVEYOR BELT	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0030	CRUSHER	7440382	Arsenic	9.57619E-05	2.99912E-08	3.77883E-09
		7440508	Copper	0.001107247	3.46773E-07	4.36927E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00101747	3.18657E-07	4.015E-08
		7440020	Nickel	0.000658363	2.0619E-07	2.59794E-08
		1175	Silica, Crystln	0.3416506	0.000107	1.34817E-05
		7440393	Barium	0.002094792	6.56058E-07	8.26618E-08
		7440473	Chromium	0.000598512	1.87445E-07	2.36177E-08
		7440484	Cobalt	0.000209479	6.56058E-08	8.26618E-09
		7440622	Vanadium	0.000897768	2.81168E-07	3.54265E-08
		7440666	Zinc	0.006284376	1.96817E-06	2.47985E-07
S0030	CRUSHER	7440382	Arsenic	1.11722E-05	3.49897E-09	4.40863E-10
		7440508	Copper	0.000129179	4.04569E-08	5.09748E-09
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000118705	3.71766E-08	4.68417E-09
		7440020	Nickel	7.6809E-05	2.40554E-08	3.03093E-09
		1175	Silica, Crystln	0.0399008	1.24963E-05	1.57451E-06
		7440393	Barium	0.000244392	7.65401E-08	9.64388E-09
		7440473	Chromium	6.98264E-05	2.18686E-08	2.75539E-09
		7440484	Cobalt	2.44392E-05	7.65401E-09	9.64388E-10
		7440622	Vanadium	0.00010474	3.28029E-08	4.13309E-09
		7440666	Zinc	0.000733177	2.2962E-07	2.89316E-08
S0031	CONVEYOR BELT	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0032	SCREEN	7440382	Arsenic	0.000175564	5.49839E-08	6.92785E-09
		7440508	Copper	0.002029953	6.35751E-07	8.01032E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.001865362	5.84204E-07	7.36084E-08
		7440020	Nickel	0.001206999	3.78014E-07	4.76289E-08
		1175	Silica, Crystln	0.6271907	0.000196427	2.47493E-05
		7440393	Barium	0.003840452	1.20277E-06	1.51547E-07
		7440473	Chromium	0.001097272	3.43649E-07	4.3299E-08
		7440484	Cobalt	0.000384045	1.20277E-07	1.51547E-08
		7440622	Vanadium	0.001645908	5.15474E-07	6.49486E-08
		7440666	Zinc	0.011521356	3.60832E-06	4.5464E-07
S0032	SCREEN	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
		7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
		18540299	Cr(VI)	0	0	0

		7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
		7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
		1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
		7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
		7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
		7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
		7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
		7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0033	CONVEYOR BELT	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
		7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
		7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
		1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
		7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
		7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
		7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
		7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
		7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0034	CONVEYOR BELT	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
		7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
		7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
		1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
		7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
		7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
		7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
		7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
		7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0035	CONVEYOR BELT	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
		7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
		7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
		1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
		7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
		7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
		7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
		7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
		7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0038	STORAGE PILE	7440382	Arsenic	0.061920592	7.06856E-06	8.90623E-07
		1175	Silica, Crystln	217.9088821	0.024875443	0.003134251
		7440508	Copper	0.309602958	3.53428E-05	4.45311E-06
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.191658974	2.18789E-05	2.75669E-06
		7440020	Nickel	0.213773471	2.44034E-05	3.07477E-06
		7440417	Beryllium	0.00353832	4.03918E-07	5.08927E-08
		7440439	Cadmium	0.004128039	4.71237E-07	5.93749E-08
		7440393	Barium	1.105724851	0.000126224	1.5904E-05
		7440473	Chromium	0.331717455	3.78673E-05	4.77119E-06
		7440484	Cobalt	0.081086489	9.25645E-06	1.16629E-06
		7440666	Zinc	0.7371499	8.41495E-05	1.06027E-05
		7440224	Silver	0.007002924	7.99421E-07	1.00725E-07
		7440622	Vanadium	0.479147435	5.46972E-05	6.89173E-06
S0002	HOPPER	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0002	HOPPER	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08

		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0003	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0004	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0005	AGGREGATE BIN	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0006	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0011	CONVEYOR BELT	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
		7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
		7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
		1175	Silica, Crystln	3.203456	0.001003275	0.00012641
		7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
		7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
		7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
		7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
		7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
		7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
		7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
		7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0007	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10

		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0008	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0009	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0010	CONVEYOR BELT	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
		7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
		18540299	Cr(VI)	0	0	0
		7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
		7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
		1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
		7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
		7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
		7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
		7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
		7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
		7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
		7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
		7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0072	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0073	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06

		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0074	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0075	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0076	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0077	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09

		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0078	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0079	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0080	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0081	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346
		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0082	PAVED ROAD	7429905	Aluminum	5.938736254	0.001859924	0.000234346

		7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
		7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
		7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
		7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
		7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
		7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
		7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
		7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
		7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
		7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
		7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
		7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
		7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
		7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
		7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
		7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
		7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
		7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0036	UNPAVED ROAD	7429905	Aluminum	57.47605144	0.018000642	0.002268041
		7440360	Antimony	0.00509914	1.59697E-06	2.01215E-07
		7440382	Arsenic	0.010926729	3.42209E-06	4.31176E-07
		7440393	Barium	0.693483067	0.000217189	2.73653E-05
		7726956	Bromine	0.015297421	4.79092E-06	6.03646E-07
		7440439	Cadmium	0.018211215	5.70348E-06	7.18626E-07
		7782505	Chlorine	0.948440077	0.000297037	3.7426E-05
		7440473	Chromium	0.178469907	5.58941E-05	7.04253E-06
		7440484	Cobalt	0.108538841	3.39927E-05	4.28301E-06
		7440508	Copper	0.063375028	1.98481E-05	2.50082E-06
		7439921	Lead	0.656332189	0.000205553	2.58993E-05
		7439965	Manganese	0.765599479	0.000239774	3.0211E-05
		7439976	Mercury	0.010926729	3.42209E-06	4.31176E-07
		7440020	Nickel	0.045892262	1.43728E-05	1.81094E-06
		7723140	Phosphorus	1.166974657	0.000365479	4.60496E-05
		7782492	Selenium	0.000728449	2.28139E-07	2.8745E-08
		7440224	Silver	0.006556037	2.05325E-06	2.58705E-07
		7440622	Vanadium	0.227275963	7.11794E-05	8.96845E-06
		7440666	Zinc	0.453095029	0.000141903	1.78794E-05
S0037	DIESEL STORAGE	71432	Benzene	0.006	0.000000685	8.63085E-08
		110543	Hexane	0.000751	8.57E-08	1.0798E-08
		108883	Toluene	0.24	0.0000274	3.45234E-06
		100414	Ethyl Benzene	0.0976	0.0000111	1.39858E-06
		108383	m-Xylene	2.18	0.000249	3.13734E-05
		95636	1,2,4TriMeBenze	7.51	0.000857	0.00010798
S0039	Electrode Usage for Welder	7440473	Chromium	0.0006	3.125E-07	3.93743E-08
		7440484	Cobalt	0.00005	2.60417E-08	3.28119E-09
		7439965	Manganese	0.103	5.36458E-05	6.75926E-06
		7440020	Nickel	0.0002	1.04167E-07	1.31248E-08
S0040	Propane Torches	75070	Acetaldehyde	0.0001672	6.96667E-07	8.77785E-08
		107028	Acrolein	0.0001056	0.00000044	5.5439E-08
		7664417	NH3	0.132	0.00055	6.92988E-05
		71432	Benzene	0.0003124	1.30167E-06	1.64007E-07
		100414	Ethyl Benzene	0.0003696	0.00000154	1.94037E-07
		50000	Formaldehyde	0.0006644	2.76833E-06	3.48804E-07
		110543	Hexane	0.0002464	1.02667E-06	1.29358E-07
		1151	PAHs-w/o	0.0000176	7.33333E-08	9.23984E-09
		108883	Toluene	0.00143	5.95833E-06	7.50737E-07
		1330207	Xylenes	0.0010604	4.41833E-06	5.567E-07
S0041	Welding- Gasoline	95636	1,2,4TriMeBenze	0.724932	0.002520626	0.000317593
		106990	1,3-Butadiene	0.477516	0.001660348	0.0002092
		75070	Acetaldehyde	0.431496	0.001500334	0.000189039
		107028	Acrolein	0.103584	0.000360167	4.53802E-05
		71432	Benzene	1.979172	0.006881683	0.000867077
		7782505	Chlorine	0.2366	0.00082267	0.000103655
		7440508	Copper	0.001716	5.96662E-06	7.51781E-07
		100414	Ethyl Benzene	0.862992	0.003000668	0.000378077
		50000	Formaldehyde	1.79504	0.006241446	0.000786408
		110543	Hexane	0.753688	0.002620612	0.000330191
		7439965	Manganese	0.001716	5.96662E-06	7.51781E-07
		67561	Methanol	0.40274	0.001400348	0.000176441
		78933	MEK	0.034528	0.000120056	1.51267E-05
		1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
		108383	m-Xylene	2.56022	0.008902017	0.001121634
		91203	Naphthalene	0.074776	0.00026	3.27594E-05
		7440020	Nickel	0.00169	5.87622E-06	7.4039E-07
		95476	o-Xylene	0.891748	0.003100654	0.000390675
		100425	Styrene	0.074776	0.00026	3.27594E-05
		108883	Toluene	3.9065	0.013583102	0.001711441
S0064	LIGHT TOWERS	106990	1,3-Butadiene	0.09911266	0.000129882	1.63648E-05
		75070	Acetaldehyde	0.35710647	0.000467968	5.89629E-05
		107028	Acrolein	0.01545501	2.02529E-05	2.55182E-06

		7664417	NH3	0.63826	0.000836404	0.000105385
		7440382	Arsenic	0.00072944	9.5589E-07	1.2044E-07
		71432	Benzene	0.08493417	0.000111301	1.40237E-05
		7440439	Cadmium	0.00068385	8.96147E-07	1.12913E-07
		7440508	Copper	0.00186919	2.44947E-06	3.08628E-07
		100414	Ethyl Benzene	0.00496931	6.512E-06	8.20498E-07
		50000	Formaldehyde	0.78692899	0.001031227	0.000129932
		110543	Hexane	0.01226371	1.60709E-05	2.0249E-06
		18540299	Cr(VI)	0.00004559	5.97432E-08	7.5275E-09
		7647010	HCl	0.08493417	0.000111301	1.40237E-05
		7439921	Lead	0.00378397	4.95868E-06	6.24783E-07
		7439965	Manganese	0.00141329	1.85204E-06	2.33353E-07
		7439976	Mercury	0.0009118	1.19486E-06	1.5055E-07
		91203	Naphthalene	0.00898123	1.17694E-05	1.48292E-06
		7440020	Nickel	0.00177801	2.32998E-06	2.93573E-07
		1151	PAHs-w/o	0.01650358	2.1627E-05	2.72496E-06
		7782492	Selenium	0.00100298	1.31435E-06	1.65605E-07
		108883	Toluene	0.04805186	6.29693E-05	7.93399E-06
		1330207	Xylenes	0.01933016	2.53311E-05	3.19166E-06
		9901	DieselExhPM	15.27265	0.020013956	0.002521714

HRA Source ID	CAS	Pollutant Name	Annual Emissions (lbs/yr)	Hourly Emissions (lbs/hr)	g/s
S0067	71556	1,1,1-TCA	0	0	0
S0068	71556	1,1,1-TCA	0	0	0
S0069	71556	1,1,1-TCA	0	0	0
S0070	71556	1,1,1-TCA	0	0	0
S0071	71556	1,1,1-TCA	0	0	0
S0037	95636	1,2,4TriMeBenze	7.51	0.000857	0.00010798
S0041	95636	1,2,4TriMeBenze	0.724932	0.002520626	0.000317593
S0063	106990	1,3-Butadiene	199.8347628	0.062585269	0.007885605
S0041	106990	1,3-Butadiene	0.477516	0.001660348	0.0002092
S0064	106990	1,3-Butadiene	0.09911266	0.000129882	1.63648E-05
S0067	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0068	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0069	91576	2MeNaphthalene	0.00186	0.000000212	2.67115E-08
S0070	91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
S0071	91576	2MeNaphthalene	0.00157	0.000000179	2.25536E-08
S0065	91576	2MeNaphthalene	0.864	0.000271	3.41454E-05
S0066	91576	2MeNaphthalene	1.42	0.000446	5.6195E-05
S0063	91576	2MeNaphthalene	9.739520041	0.003050272	0.000384328
S0067	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0068	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0069	83329	Acenaphthene	0.000165	1.89E-08	2.38136E-09
S0070	83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
S0071	83329	Acenaphthene	0.00014	1.59E-08	2.00336E-09
S0065	83329	Acenaphthene	0.0944	0.0000296	3.72953E-06
S0066	83329	Acenaphthene	0.127	0.0000398	5.01471E-06
S0063	83329	Acenaphthene	0.328789223	0.000102972	1.29742E-05
S0067	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0068	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0069	208968	Acenaphthylene	0.00000493	5.63E-10	7.09367E-11
S0070	208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
S0071	208968	Acenaphthylene	0.00000416	4.75E-10	5.98489E-11
S0065	208968	Acenaphthylene	0.0102	0.00000318	4.00673E-07
S0066	208968	Acenaphthylene	0.00379	0.00000119	1.49937E-07
S0063	208968	Acenaphthylene	1.176402851	0.000368432	4.64216E-05
S0063	75070	Acetaldehyde	100.1076829	0.031352234	0.003950312
S0040	75070	Acetaldehyde	0.0001672	6.96667E-07	8.77785E-08
S0041	75070	Acetaldehyde	0.431496	0.001500334	0.000189039
S0064	75070	Acetaldehyde	0.35710647	0.000467968	5.89629E-05
S0063	107028	Acrolein	0.537	0.000168	2.11676E-05
S0040	107028	Acrolein	0.0001056	0.00000044	5.5439E-08
S0041	107028	Acrolein	0.103584	0.000360167	4.53802E-05
S0064	107028	Acrolein	0.01545501	2.02529E-05	2.55182E-06
S0063	7429905	Aluminum	1166.259727	0.36525516	0.046021339
S0072	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0073	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0074	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0075	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0076	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0077	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0078	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0079	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0080	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0081	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0082	7429905	Aluminum	5.938736254	0.001859924	0.000234346
S0036	7429905	Aluminum	57.47605144	0.018000642	0.002268041

S0067	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0068	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0069	120127	Anthracene	0.0000458	5.22E-09	6.57708E-10
S0070	120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
S0071	120127	Anthracene	0.0000386	4.41E-09	5.5565E-10
S0065	120127	Anthracene	0.0254	0.00000796	1.00294E-06
S0066	120127	Anthracene	0.0352	0.000011	1.38598E-06
S0063	120127	Anthracene	0.023165673	7.25514E-06	9.14132E-07
S0063	7440360	Antimony	0.556523866	0.000174295	2.19608E-05
S0072	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0073	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0074	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0075	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0076	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0077	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0078	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0079	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0080	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0081	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0082	7440360	Antimony	0.000526871	1.65008E-07	2.07906E-08
S0036	7440360	Antimony	0.00509914	1.59697E-06	2.01215E-07
S0042	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0043	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0044	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0045	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0046	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0047	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0048	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0049	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0050	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0051	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0052	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0061	7440382	Arsenic	0.000131251	4.1106E-08	5.17926E-09
S0053	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0054	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0055	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0056	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0057	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0058	7440382	Arsenic	0.000196883	6.16608E-08	7.76913E-09
S0059	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0060	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0062	7440382	Arsenic	0.018499958	5.79391E-06	7.3002E-07
S0062	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0063	7440382	Arsenic	0.155315079	4.86424E-05	6.12883E-06
S0012	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
S0012	7440382	Arsenic	0.000595831	1.86605E-07	2.35119E-08
S0013	7440382	Arsenic	0.00029792	9.33041E-08	1.17561E-08
S0014	7440382	Arsenic	0.000383032	1.1996E-07	1.51147E-08
S0014	7440382	Arsenic	4.46871E-05	1.39953E-08	1.76338E-09
S0015	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0016	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0017	7440382	Arsenic	0.001170386	3.66547E-07	4.61842E-08
S0017	7440382	Arsenic	0.000744791	2.33257E-07	2.93899E-08
S0018	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
S0019	7440382	Arsenic	0.00014896	4.66521E-08	5.87805E-09
S0020	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0021	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0022	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08

S0023	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0024	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0025	7440382	Arsenic	0.000521373	1.63286E-07	2.05737E-08
S0026	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0027	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0028	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0029	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0030	7440382	Arsenic	9.57619E-05	2.99912E-08	3.77883E-09
S0030	7440382	Arsenic	1.11722E-05	3.49897E-09	4.40863E-10
S0031	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0032	7440382	Arsenic	0.000175564	5.49839E-08	6.92785E-09
S0032	7440382	Arsenic	0.000111722	3.49897E-08	4.40863E-09
S0033	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
S0034	7440382	Arsenic	3.72378E-05	1.16623E-08	1.46943E-09
S0035	7440382	Arsenic	7.44755E-05	2.33246E-08	2.93885E-09
S0038	7440382	Arsenic	0.061920592	7.06856E-06	8.90623E-07
S0002	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0002	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0003	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0004	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0005	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0006	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0011	7440382	Arsenic	0.001181274	3.69958E-07	4.66138E-08
S0007	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0008	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0009	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0010	7440382	Arsenic	0.000294317	9.21756E-08	1.16139E-08
S0072	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0073	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0074	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0075	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0076	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0077	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0078	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0079	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0080	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0081	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0082	7440382	Arsenic	0.001129009	3.53589E-07	4.45514E-08
S0036	7440382	Arsenic	0.010926729	3.42209E-06	4.31176E-07
S0064	7440382	Arsenic	0.00072944	9.5589E-07	1.2044E-07
S0067	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0068	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0069	56553	B[a]anthracene	0.0000197	2.25E-09	2.83495E-10
S0070	56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
S0071	56553	B[a]anthracene	0.0000166	1.9E-09	2.39396E-10
S0065	56553	B[a]anthracene	0.0069	0.00000216	2.72155E-07
S0066	56553	B[a]anthracene	0.0151	0.00000474	5.97229E-07
S0067	50328	B[a]P	0	0	0
S0068	50328	B[a]P	0	0	0
S0069	50328	B[a]P	0	0	0
S0070	50328	B[a]P	0	0	0
S0071	50328	B[a]P	0	0	0
S0065	50328	B[a]P	0.000835	0.000000262	3.30114E-08
S0066	50328	B[a]P	0	0	0
S0067	205992	B[b]fluoranthen	0	0	0
S0068	205992	B[b]fluoranthen	0	0	0
S0069	205992	B[b]fluoranthen	0	0	0
S0070	205992	B[b]fluoranthen	0	0	0

S0071	205992	B[b]fluoranthen	0	0	0
S0065	205992	B[b]fluoranthen	0.00276	0.000000864	1.08862E-07
S0066	205992	B[b]fluoranthen	0	0	0
S0063	205992	B[b]fluoranthen	0.000264682	8.28944E-08	1.04445E-08
S0067	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0068	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0069	192972	B[e]pyrene	0.00000334	3.82E-10	4.81312E-11
S0070	192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
S0071	192972	B[e]pyrene	0.00000282	3.22E-10	4.05713E-11
S0065	192972	B[e]pyrene	0.00283	0.000000887	1.1176E-07
S0066	192972	B[e]pyrene	0.00257	0.000000804	1.01302E-07
S0063	192972	B[e]pyrene	0.000291324	9.12383E-08	1.14958E-08
S0067	191242	B[g,h,i]perylen	0	0	0
S0068	191242	B[g,h,i]perylen	0	0	0
S0069	191242	B[g,h,i]perylen	0	0	0
S0070	191242	B[g,h,i]perylen	0	0	0
S0071	191242	B[g,h,i]perylen	0	0	0
S0065	191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
S0066	191242	B[g,h,i]perylen	0	0	0
S0067	207089	B[k]fluoranthen	0	0	0
S0068	207089	B[k]fluoranthen	0	0	0
S0069	207089	B[k]fluoranthen	0	0	0
S0070	207089	B[k]fluoranthen	0	0	0
S0071	207089	B[k]fluoranthen	0	0	0
S0065	207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
S0066	207089	B[k]fluoranthen	0	0	0
S0042	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0043	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0044	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0045	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0046	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0047	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0048	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0049	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0050	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0051	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0052	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0061	7440393	Barium	0.00233583	7.31547E-07	9.21733E-08
S0053	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0054	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0055	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0056	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0057	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0058	7440393	Barium	0.00350385	1.09735E-06	1.38264E-07
S0059	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0060	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0062	7440393	Barium	0.3303564	0.000103463	1.30361E-05
S0062	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0063	7440393	Barium	9.565461577	0.00299576	0.000377459
S0012	7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
S0012	7440393	Barium	0.013033804	4.08199E-06	5.14322E-07
S0013	7440393	Barium	0.006517	2.04103E-06	2.57165E-07
S0014	7440393	Barium	0.008378832	2.62413E-06	3.30634E-07
S0014	7440393	Barium	0.00097753	3.06148E-07	3.8574E-08
S0015	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
S0016	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07
S0017	7440393	Barium	0.025602192	8.01822E-06	1.01028E-06
S0017	7440393	Barium	0.016292304	5.10251E-06	6.42905E-07

S0018	7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
S0019	7440393	Barium	0.0032585	1.02051E-06	1.28582E-07
S0020	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0021	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0022	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0023	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0024	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0025	7440393	Barium	0.011405044	3.57189E-06	4.5005E-07
S0026	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0027	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0028	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0029	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0030	7440393	Barium	0.002094792	6.56058E-07	8.26618E-08
S0030	7440393	Barium	0.000244392	7.65401E-08	9.64388E-09
S0031	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0032	7440393	Barium	0.003840452	1.20277E-06	1.51547E-07
S0032	7440393	Barium	0.002443924	7.65401E-07	9.64388E-08
S0033	7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
S0034	7440393	Barium	0.000814576	2.55113E-07	3.21437E-08
S0035	7440393	Barium	0.001629152	5.10226E-07	6.42874E-08
S0038	7440393	Barium	1.105724851	0.000126224	1.5904E-05
S0002	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0002	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0003	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0004	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0005	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0006	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0011	7440393	Barium	0.02102268	6.58399E-06	8.29568E-07
S0007	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0008	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0009	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0010	7440393	Barium	0.005255653	1.64599E-06	2.07391E-07
S0072	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0073	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0074	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0075	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0076	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0077	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0078	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0079	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0080	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0081	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0082	7440393	Barium	0.071654418	2.24411E-05	2.82753E-06
S0036	7440393	Barium	0.693483067	0.000217189	2.73653E-05
S0001	71432	Benzene	1.189728	0.000135814	1.71122E-05
S0067	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0068	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0069	71432	Benzene	0.000399	4.56E-08	5.7455E-09
S0070	71432	Benzene	0.000337	3.85E-08	4.85091E-09
S0071	71432	Benzene	0.000337	3.85E-08	4.85091E-09
S0065	71432	Benzene	0.611	0.000191	2.40656E-05
S0066	71432	Benzene	0.909	0.000285	3.59094E-05
S0063	71432	Benzene	225.9974493	0.070779032	0.008918001
S0037	71432	Benzene	0.006	0.000000685	8.63085E-08
S0040	71432	Benzene	0.0003124	1.30167E-06	1.64007E-07
S0041	71432	Benzene	1.979172	0.006881683	0.000867077
S0064	71432	Benzene	0.08493417	0.000111301	1.40237E-05
S0042	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10

S0043	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0044	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0045	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0046	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0047	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0048	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0049	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0050	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0051	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0052	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0061	7440417	Beryllium	7.47466E-06	2.34095E-09	2.94955E-10
S0053	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0054	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0055	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0056	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0057	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0058	7440417	Beryllium	1.12123E-05	3.51153E-09	4.42445E-10
S0059	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0060	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0062	7440417	Beryllium	0.00105714	3.31081E-07	4.17154E-08
S0062	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0063	7440417	Beryllium	0.024898425	7.79782E-06	9.82507E-07
S0038	7440417	Beryllium	0.00353832	4.03918E-07	5.08927E-08
S0002	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0002	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0003	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0004	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0005	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0006	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0011	7440417	Beryllium	6.72726E-05	2.10688E-08	2.65462E-09
S0007	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0008	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0009	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0010	7440417	Beryllium	1.68181E-05	5.26718E-09	6.63652E-10
S0072	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0073	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0074	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0075	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0076	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0077	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0078	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0079	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0080	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0081	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0082	7726956	Bromine	0.001580612	4.95024E-07	6.23719E-08
S0036	7726956	Bromine	0.015297421	4.79092E-06	6.03646E-07
S0042	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0043	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0044	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0045	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0046	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0047	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0048	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0049	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0050	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0051	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0052	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10
S0061	7440439	Cadmium	8.72043E-06	2.73111E-09	3.44114E-10

S0053	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0054	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0055	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0056	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0057	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0058	7440439	Cadmium	1.3081E-05	4.09679E-09	5.16186E-10
S0059	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0060	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0062	7440439	Cadmium	0.001233331	3.86261E-07	4.8668E-08
S0062	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0063	7440439	Cadmium	0.123209869	3.85875E-05	4.86194E-06
S0038	7440439	Cadmium	0.004128039	4.71237E-07	5.93749E-08
S0002	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0002	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0003	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0004	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0005	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0006	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0011	7440439	Cadmium	7.84847E-05	2.45802E-08	3.09705E-09
S0007	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0008	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0009	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0010	7440439	Cadmium	1.96211E-05	6.14504E-09	7.74261E-10
S0072	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0073	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0074	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0075	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0076	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0077	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0078	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0079	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0080	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0081	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0082	7440439	Cadmium	0.001881681	5.89314E-07	7.42523E-08
S0036	7440439	Cadmium	0.018211215	5.70348E-06	7.18626E-07
S0064	7440439	Cadmium	0.00068385	8.96147E-07	1.12913E-07
S0067	76131	CFC-113	0	0	0
S0068	76131	CFC-113	0	0	0
S0069	76131	CFC-113	0	0	0
S0070	76131	CFC-113	0	0	0
S0071	76131	CFC-113	0	0	0
S0065	76131	CFC-113	0.0153	0.00000478	6.02269E-07
S0066	76131	CFC-113	0	0	0
S0072	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0073	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0074	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0075	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0076	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0077	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0078	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0079	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0080	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0081	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0082	7782505	Chlorine	0.097997954	3.06915E-05	3.86706E-06
S0036	7782505	Chlorine	0.948440077	0.000297037	3.7426E-05
S0041	7782505	Chlorine	0.2366	0.00082267	0.000103655
S0042	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0043	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07

S0044	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0045	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0046	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0047	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0048	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0049	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0050	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0051	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0052	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0061	7440473	Chromium	0.000700749	2.19464E-07	2.7652E-08
S0053	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0054	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0055	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0056	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0057	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0058	7440473	Chromium	0.001051155	3.29206E-07	4.14792E-08
S0059	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0060	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0062	7440473	Chromium	0.09910692	3.10388E-05	3.91082E-06
S0062	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0063	7440473	Chromium	0.907178252	0.000284115	3.57978E-05
S0012	7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
S0012	7440473	Chromium	0.003723944	1.16628E-06	1.46949E-07
S0013	7440473	Chromium	0.001862	5.83151E-07	7.34757E-08
S0014	7440473	Chromium	0.002393952	7.4975E-07	9.44668E-08
S0014	7440473	Chromium	0.000279294	8.74708E-08	1.10211E-08
S0015	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0016	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0017	7440473	Chromium	0.007314912	2.29092E-06	2.88651E-07
S0017	7440473	Chromium	0.004654944	1.45786E-06	1.83687E-07
S0018	7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
S0019	7440473	Chromium	0.000931	2.91575E-07	3.67378E-08
S0020	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0021	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0022	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0023	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0024	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0025	7440473	Chromium	0.003258584	1.02054E-06	1.28586E-07
S0026	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0027	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0028	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0029	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0030	7440473	Chromium	0.000598512	1.87445E-07	2.36177E-08
S0030	7440473	Chromium	6.98264E-05	2.18686E-08	2.75539E-09
S0031	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0032	7440473	Chromium	0.001097272	3.43649E-07	4.3299E-08
S0032	7440473	Chromium	0.000698264	2.18686E-07	2.75539E-08
S0033	7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
S0034	7440473	Chromium	0.000232736	7.28894E-08	9.18391E-09
S0035	7440473	Chromium	0.000465472	1.45779E-07	1.83678E-08
S0038	7440473	Chromium	0.331717455	3.78673E-05	4.77119E-06
S0002	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0002	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0003	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0004	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0005	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0006	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07
S0011	7440473	Chromium	0.006306804	1.9752E-06	2.4887E-07

S0007	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0008	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0009	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0010	7440473	Chromium	0.001576696	4.93798E-07	6.22174E-08
S0072	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0073	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0074	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0075	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0076	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0077	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0078	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0079	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0080	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0081	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0082	7440473	Chromium	0.018440475	5.77528E-06	7.27673E-07
S0036	7440473	Chromium	0.178469907	5.58941E-05	7.04253E-06
S0039	7440473	Chromium	0.0006	3.125E-07	3.93743E-08
S0067	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0068	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0069	218019	Chrysene	0.0000739	8.44E-09	1.06342E-09
S0070	218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0071	218019	Chrysene	0.0000624	7.12E-09	8.97104E-10
S0065	218019	Chrysene	0.0374	0.0000117	1.47417E-06
S0066	218019	Chrysene	0.0568	0.0000178	2.24276E-06
S0063	218019	Chrysene	0.001914837	5.99698E-07	7.55607E-08
S0042	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0043	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0044	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0045	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0046	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0047	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0048	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0049	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0050	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0051	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0052	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0061	7440484	Cobalt	0.000171294	5.36468E-08	6.75938E-09
S0053	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0054	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0055	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0056	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0057	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0058	7440484	Cobalt	0.000256949	8.04726E-08	1.01394E-08
S0059	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0060	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0062	7440484	Cobalt	0.024226136	7.58726E-06	9.55978E-07
S0062	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0063	7440484	Cobalt	0.317102415	9.93117E-05	1.25131E-05
S0012	7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
S0012	7440484	Cobalt	0.00130338	4.08199E-07	5.14322E-08
S0013	7440484	Cobalt	0.0006517	2.04103E-07	2.57165E-08
S0014	7440484	Cobalt	0.000837883	2.62413E-07	3.30634E-08
S0014	7440484	Cobalt	9.7753E-05	3.06148E-08	3.8574E-09
S0015	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0016	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0017	7440484	Cobalt	0.002560219	8.01822E-07	1.01028E-07
S0017	7440484	Cobalt	0.00162923	5.10251E-07	6.42905E-08
S0018	7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08

S0019	7440484	Cobalt	0.00032585	1.02051E-07	1.28582E-08
S0020	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0021	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0022	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0023	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0024	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0025	7440484	Cobalt	0.001140504	3.57189E-07	4.5005E-08
S0026	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0027	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0028	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0029	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0030	7440484	Cobalt	0.000209479	6.56058E-08	8.26618E-09
S0030	7440484	Cobalt	2.44392E-05	7.65401E-09	9.64388E-10
S0031	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0032	7440484	Cobalt	0.000384045	1.20277E-07	1.51547E-08
S0032	7440484	Cobalt	0.000244392	7.65401E-08	9.64388E-09
S0033	7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
S0034	7440484	Cobalt	8.14576E-05	2.55113E-08	3.21437E-09
S0035	7440484	Cobalt	0.000162915	5.10226E-08	6.42874E-09
S0038	7440484	Cobalt	0.081086489	9.25645E-06	1.16629E-06
S0002	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0002	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0003	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0004	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0005	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0006	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0011	7440484	Cobalt	0.001541663	4.82826E-07	6.0835E-08
S0007	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0008	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0009	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0010	7440484	Cobalt	0.000385415	1.20706E-07	1.52087E-08
S0072	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0073	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0074	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0075	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0076	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0077	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0078	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0079	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0080	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0081	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0082	7440484	Cobalt	0.01121482	3.51231E-06	4.42544E-07
S0036	7440484	Cobalt	0.108538841	3.39927E-05	4.28301E-06
S0039	7440484	Cobalt	0.00005	2.60417E-08	3.28119E-09
S0042	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0043	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0044	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0045	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0046	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0047	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0048	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0049	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0050	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0051	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0052	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0061	7440508	Copper	0.000654032	2.04833E-07	2.58085E-08
S0053	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0054	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08

S0055	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0056	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0057	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0058	7440508	Copper	0.000981078	3.07259E-07	3.8714E-08
S0059	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0060	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0062	7440508	Copper	0.092499792	2.89696E-05	3.6501E-06
S0062	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0063	7440508	Copper	0.470242035	0.000147273	1.8556E-05
S0012	7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
S0012	7440508	Copper	0.006889296	2.15762E-06	2.71856E-07
S0013	7440508	Copper	0.0034447	1.07883E-06	1.3593E-07
S0014	7440508	Copper	0.004428811	1.38704E-06	1.74764E-07
S0014	7440508	Copper	0.000516695	1.61821E-07	2.03891E-08
S0015	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0016	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0017	7440508	Copper	0.013532587	4.2382E-06	5.34004E-07
S0017	7440508	Copper	0.008611646	2.69704E-06	3.39821E-07
S0018	7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
S0019	7440508	Copper	0.00172235	5.39414E-07	6.7965E-08
S0020	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0021	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0022	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0023	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0024	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0025	7440508	Copper	0.00602838	1.888E-06	2.37884E-07
S0026	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0027	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0028	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0029	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0030	7440508	Copper	0.001107247	3.46773E-07	4.36927E-08
S0030	7440508	Copper	0.000129179	4.04569E-08	5.09748E-09
S0031	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0032	7440508	Copper	0.002029953	6.35751E-07	8.01032E-08
S0032	7440508	Copper	0.001291788	4.04569E-07	5.09748E-08
S0033	7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
S0034	7440508	Copper	0.000430562	1.34845E-07	1.69902E-08
S0035	7440508	Copper	0.000861123	2.69691E-07	3.39805E-08
S0038	7440508	Copper	0.309602958	3.53428E-05	4.45311E-06
S0002	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0002	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0003	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0004	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0005	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0006	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0011	7440508	Copper	0.00588635	1.84352E-06	2.32279E-07
S0007	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0008	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0009	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0010	7440508	Copper	0.001471583	4.60878E-07	5.80696E-08
S0072	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0073	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0074	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0075	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0076	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0077	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0078	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0079	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07

S0080	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0081	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0082	7440508	Copper	0.00654825	2.05081E-06	2.58398E-07
S0036	7440508	Copper	0.063375028	1.98481E-05	2.50082E-06
S0041	7440508	Copper	0.001716	5.96662E-06	7.51781E-07
S0064	7440508	Copper	0.00186919	2.44947E-06	3.08628E-07
S0042	18540299	Cr(VI)	0	0	0
S0043	18540299	Cr(VI)	0	0	0
S0044	18540299	Cr(VI)	0	0	0
S0045	18540299	Cr(VI)	0	0	0
S0046	18540299	Cr(VI)	0	0	0
S0047	18540299	Cr(VI)	0	0	0
S0048	18540299	Cr(VI)	0	0	0
S0049	18540299	Cr(VI)	0	0	0
S0050	18540299	Cr(VI)	0	0	0
S0051	18540299	Cr(VI)	0	0	0
S0052	18540299	Cr(VI)	0	0	0
S0061	18540299	Cr(VI)	0	0	0
S0053	18540299	Cr(VI)	0	0	0
S0054	18540299	Cr(VI)	0	0	0
S0055	18540299	Cr(VI)	0	0	0
S0056	18540299	Cr(VI)	0	0	0
S0057	18540299	Cr(VI)	0	0	0
S0058	18540299	Cr(VI)	0	0	0
S0059	18540299	Cr(VI)	0	0	0
S0060	18540299	Cr(VI)	0	0	0
S0062	18540299	Cr(VI)	0	0	0
S0062	18540299	Cr(VI)	0	0	0
S0063	18540299	Cr(VI)	0.005249736	1.64414E-06	2.07158E-07
S0012	18540299	Cr(VI)	0	0	0
S0012	18540299	Cr(VI)	0	0	0
S0013	18540299	Cr(VI)	0	0	0
S0014	18540299	Cr(VI)	0	0	0
S0014	18540299	Cr(VI)	0	0	0
S0015	18540299	Cr(VI)	0	0	0
S0016	18540299	Cr(VI)	0	0	0
S0017	18540299	Cr(VI)	0	0	0
S0017	18540299	Cr(VI)	0	0	0
S0018	18540299	Cr(VI)	0	0	0
S0019	18540299	Cr(VI)	0	0	0
S0020	18540299	Cr(VI)	0	0	0
S0021	18540299	Cr(VI)	0	0	0
S0022	18540299	Cr(VI)	0	0	0
S0023	18540299	Cr(VI)	0	0	0
S0024	18540299	Cr(VI)	0	0	0
S0025	18540299	Cr(VI)	0	0	0
S0026	18540299	Cr(VI)	0	0	0
S0027	18540299	Cr(VI)	0	0	0
S0028	18540299	Cr(VI)	0	0	0
S0029	18540299	Cr(VI)	0	0	0
S0030	18540299	Cr(VI)	0	0	0
S0030	18540299	Cr(VI)	0	0	0
S0031	18540299	Cr(VI)	0	0	0
S0032	18540299	Cr(VI)	0	0	0
S0032	18540299	Cr(VI)	0	0	0
S0033	18540299	Cr(VI)	0	0	0
S0034	18540299	Cr(VI)	0	0	0
S0035	18540299	Cr(VI)	0	0	0

S0038	18540299	Cr(VI)	0	0	0
S0002	18540299	Cr(VI)	0	0	0
S0002	18540299	Cr(VI)	0	0	0
S0003	18540299	Cr(VI)	0	0	0
S0004	18540299	Cr(VI)	0	0	0
S0005	18540299	Cr(VI)	0	0	0
S0006	18540299	Cr(VI)	0	0	0
S0011	18540299	Cr(VI)	0	0	0
S0007	18540299	Cr(VI)	0	0	0
S0008	18540299	Cr(VI)	0	0	0
S0009	18540299	Cr(VI)	0	0	0
S0010	18540299	Cr(VI)	0	0	0
S0064	18540299	Cr(VI)	0.00004559	5.97432E-08	7.5275E-09
S0067	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0068	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0069	75150	CS2	0.0002	2.28E-08	2.87275E-09
S0070	75150	CS2	0.000168	1.92E-08	2.41916E-09
S0071	75150	CS2	0.000168	1.92E-08	2.41916E-09
S0063	75150	CS2	51.84092399	0.016235805	0.002045675
S0067	53703	D[a,h]anthracen	0	0	0
S0068	53703	D[a,h]anthracen	0	0	0
S0069	53703	D[a,h]anthracen	0	0	0
S0070	53703	D[a,h]anthracen	0	0	0
S0071	53703	D[a,h]anthracen	0	0	0
S0065	53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
S0066	53703	D[a,h]anthracen	0	0	0
S0064	9901	DieselExhPM	15.27265	0.020013956	0.002521714
S0067	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0068	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0069	100414	Ethyl Benzene	0.000474	5.41E-08	6.81648E-09
S0070	100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
S0071	100414	Ethyl Benzene	0.0004	4.57E-08	5.7581E-09
S0065	100414	Ethyl Benzene	3.29	0.00103	0.000129778
S0066	100414	Ethyl Benzene	1.08	0.000338	4.25872E-05
S0037	100414	Ethyl Benzene	0.0976	0.0000111	1.39858E-06
S0040	100414	Ethyl Benzene	0.0003696	0.00000154	1.94037E-07
S0041	100414	Ethyl Benzene	0.862992	0.003000668	0.000378077
S0064	100414	Ethyl Benzene	0.00496931	6.512E-06	8.20498E-07
S0067	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0068	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0069	75003	Ethyl Chloride	0.0000499	5.7E-09	7.18187E-10
S0070	75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
S0071	75003	Ethyl Chloride	0.0000421	4.81E-09	6.06049E-10
S0067	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0068	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0069	206440	Fluoranthene	0.0000528	6.03E-09	7.59767E-10
S0070	206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
S0071	206440	Fluoranthene	0.0000446	5.09E-09	6.41329E-10
S0065	206440	Fluoranthene	0.0182	0.00000569	7.16927E-07
S0066	206440	Fluoranthene	0.0406	0.0000127	1.60017E-06
S0063	206440	Fluoranthene	0.035680238	1.11745E-05	1.40796E-06
S0067	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0068	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0069	86737	Fluorene	0.000356	4.06E-08	5.11551E-09
S0070	86737	Fluorene	0.0003	3.42E-08	4.30912E-09
S0071	86737	Fluorene	0.0003	3.42E-08	4.30912E-09
S0065	86737	Fluorene	0.28	0.0000877	1.105E-05
S0066	86737	Fluorene	0.274	0.0000858	1.08106E-05

S0063	86737	Fluorene	0.393799855	0.000123332	1.55396E-05
S0067	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0068	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0069	50000	Formaldehyde	0.00861	0.000000983	1.23856E-07
S0070	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
S0071	50000	Formaldehyde	0.00727	0.000000829	1.04452E-07
S0065	50000	Formaldehyde	1.03	0.000324	4.08233E-05
S0066	50000	Formaldehyde	19.6	0.00614	0.000773626
S0063	50000	Formaldehyde	1401.507561	0.438931275	0.055304365
S0040	50000	Formaldehyde	0.0006644	2.76833E-06	3.48804E-07
S0041	50000	Formaldehyde	1.79504	0.006241446	0.000786408
S0064	50000	Formaldehyde	0.78692899	0.001031227	0.000129932
S0064	7647010	HCl	0.08493417	0.000111301	1.40237E-05
S0067	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0068	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0069	110543	Hexane	0.00125	0.000000142	1.78917E-08
S0070	110543	Hexane	0.00105	0.00000012	1.51197E-08
S0071	110543	Hexane	0.00105	0.00000012	1.51197E-08
S0065	110543	Hexane	1.76	0.000552	6.95508E-05
S0066	110543	Hexane	2.84	0.000889	0.000112012
S0063	110543	Hexane	15.4651297	0.004843448	0.000610264
S0037	110543	Hexane	0.000751	8.57E-08	1.0798E-08
S0040	110543	Hexane	0.0002464	1.02667E-06	1.29358E-07
S0041	110543	Hexane	0.753688	0.002620612	0.000330191
S0064	110543	Hexane	0.01226371	1.60709E-05	2.0249E-06
S0067	193395	In[1,2,3-cd]pyr	0	0	0
S0068	193395	In[1,2,3-cd]pyr	0	0	0
S0069	193395	In[1,2,3-cd]pyr	0	0	0
S0070	193395	In[1,2,3-cd]pyr	0	0	0
S0071	193395	In[1,2,3-cd]pyr	0	0	0
S0065	193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
S0066	193395	In[1,2,3-cd]pyr	0	0	0
S0042	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0043	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0044	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0045	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0046	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0047	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0048	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0049	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0050	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0051	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0052	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0061	7439921	Lead	0.000404877	1.26802E-07	1.59767E-08
S0053	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0054	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0055	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0056	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0057	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0058	7439921	Lead	0.000607334	1.90208E-07	2.39658E-08
S0059	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0060	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0062	7439921	Lead	0.057261776	1.79335E-05	2.25959E-06
S0062	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0012	7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
S0012	7439921	Lead	0.006330705	1.98268E-06	2.49814E-07
S0013	7439921	Lead	0.0031654	9.91356E-07	1.24909E-07
S0014	7439921	Lead	0.004069718	1.27458E-06	1.60594E-07

S0014	7439921	Lead	0.0004748	1.487E-07	1.87359E-08
S0015	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0016	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0017	7439921	Lead	0.01243535	3.89457E-06	4.90707E-07
S0017	7439921	Lead	0.007913405	2.47836E-06	3.12268E-07
S0018	7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
S0019	7439921	Lead	0.0015827	4.95678E-07	6.24543E-08
S0020	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0021	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0022	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0023	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0024	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0025	7439921	Lead	0.005539593	1.73492E-06	2.18596E-07
S0026	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0027	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0028	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0029	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0030	7439921	Lead	0.00101747	3.18657E-07	4.015E-08
S0030	7439921	Lead	0.000118705	3.71766E-08	4.68417E-09
S0031	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0032	7439921	Lead	0.001865362	5.84204E-07	7.36084E-08
S0032	7439921	Lead	0.001187049	3.71766E-07	4.68417E-08
S0033	7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
S0034	7439921	Lead	0.000395651	1.23912E-07	1.56126E-08
S0035	7439921	Lead	0.000791302	2.47824E-07	3.12253E-08
S0038	7439921	Lead	0.191658974	2.18789E-05	2.75669E-06
S0002	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0002	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0003	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0004	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0005	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0006	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0011	7439921	Lead	0.003643931	1.14122E-06	1.43792E-07
S0007	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0008	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0009	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0010	7439921	Lead	0.00091098	2.85305E-07	3.59478E-08
S0072	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0073	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0074	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0075	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0076	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0077	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0078	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0079	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0080	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0081	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0082	7439921	Lead	0.067815789	2.12389E-05	2.67605E-06
S0036	7439921	Lead	0.656332189	0.000205553	2.58993E-05
S0064	7439921	Lead	0.00378397	4.95868E-06	6.24783E-07
S0063	1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
S0063	7439965	Manganese	15.89557194	0.004978256	0.000627249
S0072	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0073	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0074	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0075	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0076	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0077	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06

S0078	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0079	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0080	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0081	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0082	7439965	Manganese	0.079105876	2.47748E-05	3.12157E-06
S0036	7439965	Manganese	0.765599479	0.000239774	3.0211E-05
S0039	7439965	Manganese	0.103	5.36458E-05	6.75926E-06
S0041	7439965	Manganese	0.001716	5.96662E-06	7.51781E-07
S0064	7439965	Manganese	0.00141329	1.85204E-06	2.33353E-07
S0041	1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
S0067	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0068	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0069	78933	MEK	0.000487	5.56E-08	7.00548E-09
S0070	78933	MEK	0.000411	4.69E-08	5.9093E-09
S0071	78933	MEK	0.000411	4.69E-08	5.9093E-09
S0063	78933	MEK	27.21477044	0.00852326	0.001073912
S0041	78933	MEK	0.034528	0.000120056	1.51267E-05
S0063	7439976	Mercury	0.248020895	7.76764E-05	9.78706E-06
S0072	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0073	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0074	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0075	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0076	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0077	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0078	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0079	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0080	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0081	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0082	7439976	Mercury	0.001129009	3.53589E-07	4.45514E-08
S0036	7439976	Mercury	0.010926729	3.42209E-06	4.31176E-07
S0064	7439976	Mercury	0.0009118	1.19486E-06	1.5055E-07
S0063	67561	Methanol	218.585628	0.06845776	0.008625526
S0041	67561	Methanol	0.40274	0.001400348	0.000176441
S0067	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0068	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0069	74839	Methyl Bromide	0.0000612	6.98E-09	8.79464E-10
S0070	74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
S0071	74839	Methyl Bromide	0.0000516	5.89E-09	7.42127E-10
S0066	74873	Methyl Chloride	0.035	0.000011	1.38598E-06
S0063	74873	Methyl Chloride	8.805401159	0.00275772	0.000347467
S0067	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0068	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0069	75092	Methylene Chlor	0.00000337	3.85E-10	4.85091E-11
S0070	75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
S0071	75092	Methylene Chlor	0.00000284	3.25E-10	4.09493E-11
S0067	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0068	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0069	108383	m-Xylene	0.0025	0.000000285	3.59094E-08
S0070	108383	m-Xylene	0.00211	0.00000024	3.02395E-08
S0071	108383	m-Xylene	0.00211	0.00000024	3.02395E-08
S0065	108383	m-Xylene	4.82	0.00151	0.000190257
S0066	108383	m-Xylene	5.68	0.00178	0.000224276
S0037	108383	m-Xylene	2.18	0.000249	3.13734E-05
S0041	108383	m-Xylene	2.56022	0.008902017	0.001121634
S0067	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0068	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0069	91203	Naphthalene	0.000641	7.31E-08	9.21044E-09
S0070	91203	Naphthalene	0.000541	6.17E-08	7.77406E-09

S0071	91203	Naphthalene	0.000541	6.17E-08	7.77406E-09
S0065	91203	Naphthalene	0.454	0.000142	1.78917E-05
S0066	91203	Naphthalene	0.492	0.000154	1.94037E-05
S0063	91203	Naphthalene	36.24474036	0.011351312	0.00143024
S0041	91203	Naphthalene	0.074776	0.00026	3.27594E-05
S0064	91203	Naphthalene	0.00898123	1.17694E-05	1.48292E-06
S0063	7664417	NH3	637	0.199	0.025073558
S0040	7664417	NH3	0.132	0.00055	6.92988E-05
S0064	7664417	NH3	0.63826	0.000836404	0.000105385
S0042	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0043	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0044	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0045	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0046	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0047	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0048	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0049	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0050	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0051	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0052	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0061	7440020	Nickel	0.000451594	1.41432E-07	1.78202E-08
S0053	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0054	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0055	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0056	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0057	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0058	7440020	Nickel	0.000677411	2.12155E-07	2.67311E-08
S0059	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0060	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0062	7440020	Nickel	0.063868904	2.00028E-05	2.52031E-06
S0062	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0063	7440020	Nickel	3.145702806	0.000985187	0.000124131
S0012	7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
S0012	7440020	Nickel	0.004096338	1.28291E-06	1.61644E-07
S0013	7440020	Nickel	0.0020482	6.41466E-07	8.08233E-08
S0014	7440020	Nickel	0.002633347	8.24725E-07	1.03914E-07
S0014	7440020	Nickel	0.000307224	9.62179E-08	1.21232E-08
S0015	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0016	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0017	7440020	Nickel	0.008046403	2.52001E-06	3.17516E-07
S0017	7440020	Nickel	0.005120438	1.60364E-06	2.02056E-07
S0018	7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
S0019	7440020	Nickel	0.0010241	3.20733E-07	4.04116E-08
S0020	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0021	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0022	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0023	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0024	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0025	7440020	Nickel	0.003584442	1.12259E-06	1.41444E-07
S0026	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0027	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0028	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0029	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
S0030	7440020	Nickel	0.000658363	2.0619E-07	2.59794E-08
S0030	7440020	Nickel	7.6809E-05	2.40554E-08	3.03093E-09
S0031	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08
S0032	7440020	Nickel	0.001206999	3.78014E-07	4.76289E-08
S0032	7440020	Nickel	0.00076809	2.40554E-07	3.03093E-08

S0033	7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
S0034	7440020	Nickel	0.00025601	8.01784E-08	1.01023E-08
S0035	7440020	Nickel	0.000512019	1.60357E-07	2.02046E-08
S0038	7440020	Nickel	0.213773471	2.44034E-05	3.07477E-06
S0002	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0002	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0003	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0004	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0005	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0006	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0011	7440020	Nickel	0.004064385	1.2729E-06	1.60383E-07
S0007	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0008	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0009	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0010	7440020	Nickel	0.001016093	3.18225E-07	4.00957E-08
S0072	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0073	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0074	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0075	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0076	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0077	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0078	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0079	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0080	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0081	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0082	7440020	Nickel	0.004741837	1.48507E-06	1.87116E-07
S0036	7440020	Nickel	0.045892262	1.43728E-05	1.81094E-06
S0039	7440020	Nickel	0.0002	1.04167E-07	1.31248E-08
S0041	7440020	Nickel	0.00169	5.87622E-06	7.4039E-07
S0064	7440020	Nickel	0.00177801	2.32998E-06	2.93573E-07
S0067	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0068	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0069	95476	o-Xylene	0.000474	5.41E-08	6.81648E-09
S0070	95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
S0071	95476	o-Xylene	0.0006	6.85E-08	8.63085E-09
S0065	95476	o-Xylene	0.94	0.000294	3.70433E-05
S0066	95476	o-Xylene	1.62	0.000507	6.38809E-05
S0041	95476	o-Xylene	0.891748	0.003100654	0.000390675
S0040	1151	PAHs-w/o	0.0000176	7.33333E-08	9.23984E-09
S0064	1151	PAHs-w/o	0.01650358	2.1627E-05	2.72496E-06
S0067	127184	Perc	0	0	0
S0068	127184	Perc	0	0	0
S0069	127184	Perc	0	0	0
S0070	127184	Perc	0	0	0
S0071	127184	Perc	0	0	0
S0067	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0068	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0069	198550	Perylene	0.0000106	1.21E-09	1.52457E-10
S0070	198550	Perylene	0.00000891	1.02E-09	1.28518E-10
S0071	198550	Perylene	0.00000891	1.02E-09	1.28518E-10
S0065	198550	Perylene	0.00799	0.0000025	3.14994E-07
S0066	198550	Perylene	0.00811	0.00000254	3.20034E-07
S0067	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0068	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0069	85018	Phenanthrene	0.000634	7.23E-08	9.10964E-09
S0070	85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
S0071	85018	Phenanthrene	0.000535	0.000000061	7.68586E-09
S0065	85018	Phenanthrene	0.294	0.0000921	1.16044E-05

S0066	85018	Phenanthrene	0.487	0.000153	1.92777E-05
S0063	85018	Phenanthrene	0.506607075	0.000158662	1.9991E-05
S0063	7723140	Phosphorus	10.72355235	0.003358457	0.000423158
S0072	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0073	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0074	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0075	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0076	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0077	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0078	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0079	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0080	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0081	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0082	7723140	Phosphorus	0.120578128	3.77633E-05	4.75809E-06
S0036	7723140	Phosphorus	1.166974657	0.000365479	4.60496E-05
S0063	115071	Propylene	442.5962152	0.138614537	0.017465124
S0067	106423	p-Xylene	0	0	0
S0068	106423	p-Xylene	0	0	0
S0069	106423	p-Xylene	0	0	0
S0070	106423	p-Xylene	0	0	0
S0071	106423	p-Xylene	0	0	0
S0065	106423	p-Xylene	0	0	0
S0066	106423	p-Xylene	0	0	0
S0067	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0068	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0069	129000	Pyrene	0.000155	1.77E-08	2.23016E-09
S0070	129000	Pyrene	0.000131	1.49E-08	1.87737E-09
S0071	129000	Pyrene	0.000131	1.49E-08	1.87737E-09
S0065	129000	Pyrene	0.0545	0.0000171	2.15456E-06
S0066	129000	Pyrene	0.119	0.0000373	4.69972E-06
S0063	129000	Pyrene	0.03541179	1.10904E-05	1.39737E-06
S0063	7782492	Selenium	0.399697696	0.000125179	1.57723E-05
S0072	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0073	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0074	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0075	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0076	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0077	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0078	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0079	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0080	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0081	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0082	7782492	Selenium	7.52672E-05	2.35726E-08	2.97009E-09
S0036	7782492	Selenium	0.000728449	2.28139E-07	2.8745E-08
S0064	7782492	Selenium	0.00100298	1.31435E-06	1.65605E-07
S0042	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0043	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0044	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0045	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0046	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0047	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0048	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0049	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0050	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0051	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0052	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0061	1175	Silica, Crystln	0.355936	0.000111474	1.40455E-05
S0053	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05

S0054	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0055	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0056	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0057	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0058	1175	Silica, Crystln	0.53392	0.000167216	2.10688E-05
S0059	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0060	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0062	1175	Silica, Crystln	50.35248201	0.015769647	0.00198694
S0062	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0012	1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
S0012	1175	Silica, Crystln	2.127968	0.000666448	8.39709E-05
S0013	1175	Silica, Crystln	1.064	0.000333229	4.19861E-05
S0014	1175	Silica, Crystln	1.368311145	0.000428535	5.39944E-05
S0014	1175	Silica, Crystln	0.1595968	4.99833E-05	6.29779E-06
S0015	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0016	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0017	1175	Silica, Crystln	4.1811372	0.00130947	0.00016499
S0017	1175	Silica, Crystln	2.659968	0.000833062	0.000104964
S0018	1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
S0019	1175	Silica, Crystln	0.532	0.000166614	2.09931E-05
S0020	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0021	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0022	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0023	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0024	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0025	1175	Silica, Crystln	1.862048	0.000583166	7.34776E-05
S0026	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0027	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0028	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0029	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0030	1175	Silica, Crystln	0.3416506	0.000107	1.34817E-05
S0030	1175	Silica, Crystln	0.0399008	1.24963E-05	1.57451E-06
S0031	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0032	1175	Silica, Crystln	0.6271907	0.000196427	2.47493E-05
S0032	1175	Silica, Crystln	0.399008	0.000124963	1.57451E-05
S0033	1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
S0034	1175	Silica, Crystln	0.132992	4.16511E-05	5.24795E-06
S0035	1175	Silica, Crystln	0.265984	8.33022E-05	1.04959E-05
S0038	1175	Silica, Crystln	217.9088821	0.024875443	0.003134251
S0002	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0002	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0003	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0004	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0005	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0006	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0011	1175	Silica, Crystln	3.203456	0.001003275	0.00012641
S0007	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0008	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0009	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0010	1175	Silica, Crystln	0.800861463	0.000250818	3.16025E-05
S0042	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0043	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0044	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0045	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0046	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0047	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0048	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0049	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10

S0050	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0051	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0052	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0061	7440224	Silver	1.47936E-05	4.63313E-09	5.83764E-10
S0053	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0054	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0055	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0056	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0057	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0058	7440224	Silver	2.21911E-05	6.94991E-09	8.75673E-10
S0059	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0060	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0062	7440224	Silver	0.002092257	6.55264E-07	8.25618E-08
S0062	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0038	7440224	Silver	0.007002924	7.99421E-07	1.00725E-07
S0002	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0002	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0003	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0004	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0005	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0006	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0011	7440224	Silver	0.000133144	4.16986E-08	5.25393E-09
S0007	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0008	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0009	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0010	7440224	Silver	3.32858E-05	1.04246E-08	1.31348E-09
S0072	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0073	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0074	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0075	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0076	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0077	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0078	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0079	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0080	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0081	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0082	7440224	Silver	0.000677405	2.12153E-07	2.67308E-08
S0036	7440224	Silver	0.006556037	2.05325E-06	2.58705E-07
S0067	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0068	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0069	100425	Styrene	0.0000674	7.69E-09	9.68923E-10
S0070	100425	Styrene	0.0000569	6.49E-09	8.17726E-10
S0071	100425	Styrene	0.0000569	6.49E-09	8.17726E-10
S0065	100425	Styrene	0.0858	0.0000269	3.38934E-06
S0066	100425	Styrene	0.153	0.000048	6.04789E-06
S0063	100425	Styrene	70.90509357	0.022206418	0.002797959
S0041	100425	Styrene	0.074776	0.00026	3.27594E-05
S0067	79016	TCE	0	0	0
S0068	79016	TCE	0	0	0
S0069	79016	TCE	0	0	0
S0070	79016	TCE	0	0	0
S0071	79016	TCE	0	0	0
S0067	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0068	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0069	108883	Toluene	0.000774	8.83E-08	1.11256E-08
S0070	108883	Toluene	0.000653	7.45E-08	9.38683E-09
S0071	108883	Toluene	0.000653	7.45E-08	9.38683E-09
S0065	108883	Toluene	2.47	0.000773	9.73963E-05

S0066	108883	Toluene	1.76	0.000551	6.94248E-05
S0063	108883	Toluene	91.11106331	0.028534627	0.0035953
S0037	108883	Toluene	0.24	0.0000274	3.45234E-06
S0040	108883	Toluene	0.00143	5.95833E-06	7.50737E-07
S0041	108883	Toluene	3.9065	0.013583102	0.001711441
S0064	108883	Toluene	0.04805186	6.29693E-05	7.93399E-06
S0042	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0043	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0044	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0045	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0046	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0047	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0048	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0049	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0050	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0051	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0052	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0061	7440622	Vanadium	0.001012193	3.17004E-07	3.99418E-08
S0053	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0054	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0055	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0056	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0057	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0058	7440622	Vanadium	0.001518335	4.7552E-07	5.99144E-08
S0059	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0060	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0062	7440622	Vanadium	0.14315444	4.48338E-05	5.64896E-06
S0062	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0063	7440622	Vanadium	1.648057569	0.000516147	6.50334E-05
S0012	7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
S0012	7440622	Vanadium	0.005585916	1.74943E-06	2.20424E-07
S0013	7440622	Vanadium	0.002793	8.74726E-07	1.10214E-07
S0014	7440622	Vanadium	0.003590928	1.12463E-06	1.417E-07
S0014	7440622	Vanadium	0.000418942	1.31206E-07	1.65317E-08
S0015	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0016	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0017	7440622	Vanadium	0.010972368	3.43638E-06	4.32977E-07
S0017	7440622	Vanadium	0.006982416	2.18679E-06	2.75531E-07
S0018	7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
S0019	7440622	Vanadium	0.0013965	4.37363E-07	5.51068E-08
S0020	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0021	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0022	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0023	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0024	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0025	7440622	Vanadium	0.004887876	1.53081E-06	1.92879E-07
S0026	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0027	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0028	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08
S0029	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0030	7440622	Vanadium	0.000897768	2.81168E-07	3.54265E-08
S0030	7440622	Vanadium	0.00010474	3.28029E-08	4.13309E-09
S0031	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0032	7440622	Vanadium	0.001645908	5.15474E-07	6.49486E-08
S0032	7440622	Vanadium	0.001047396	3.28029E-07	4.13309E-08
S0033	7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
S0034	7440622	Vanadium	0.000349104	1.09334E-07	1.37759E-08
S0035	7440622	Vanadium	0.000698208	2.18668E-07	2.75517E-08

S0038	7440622	Vanadium	0.479147435	5.46972E-05	6.89173E-06
S0002	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0002	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0003	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0004	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0005	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0006	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0011	7440622	Vanadium	0.009109828	2.85306E-06	3.5948E-07
S0007	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0008	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0009	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0010	7440622	Vanadium	0.00227745	7.13263E-07	8.98696E-08
S0072	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0073	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0074	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0075	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0076	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0077	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0078	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0079	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0080	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0081	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0082	7440622	Vanadium	0.023483381	7.35464E-06	9.26669E-07
S0036	7440622	Vanadium	0.227275963	7.11794E-05	8.96845E-06
S0063	1330207	Xylenes	44.91087159	0.014065415	0.001772211
S0040	1330207	Xylenes	0.0010604	4.41833E-06	5.567E-07
S0064	1330207	Xylenes	0.01933016	2.53311E-05	3.19166E-06
S0042	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0043	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0044	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0045	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0046	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0047	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0048	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0049	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0050	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0051	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0052	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0061	7440666	Zinc	0.00155722	4.87698E-07	6.14489E-08
S0053	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0054	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0055	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0056	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0057	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0058	7440666	Zinc	0.0023359	7.31569E-07	9.21761E-08
S0059	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0060	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0062	7440666	Zinc	0.2202376	6.89751E-05	8.69071E-06
S0062	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0063	7440666	Zinc	5.218470875	0.001634347	0.000205924
S0012	7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0012	7440666	Zinc	0.039101412	1.2246E-05	1.54297E-06
S0013	7440666	Zinc	0.019551	6.12308E-06	7.71495E-07
S0014	7440666	Zinc	0.025136496	7.87238E-06	9.91902E-07
S0014	7440666	Zinc	0.002932591	9.18444E-07	1.15722E-07
S0015	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0016	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0017	7440666	Zinc	0.076806576	2.40547E-05	3.03084E-06

S0017	7440666	Zinc	0.048876912	1.53075E-05	1.92871E-06
S0018	7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0019	7440666	Zinc	0.0097755	3.06154E-06	3.85747E-07
S0020	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0021	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0022	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0023	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0024	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0025	7440666	Zinc	0.034215132	1.07157E-05	1.35015E-06
S0026	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0027	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0028	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0029	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0030	7440666	Zinc	0.006284376	1.96817E-06	2.47985E-07
S0030	7440666	Zinc	0.000733177	2.2962E-07	2.89316E-08
S0031	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0032	7440666	Zinc	0.011521356	3.60832E-06	4.5464E-07
S0032	7440666	Zinc	0.007331772	2.2962E-06	2.89316E-07
S0033	7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0034	7440666	Zinc	0.002443728	7.65339E-07	9.6431E-08
S0035	7440666	Zinc	0.004887456	1.53068E-06	1.92862E-07
S0038	7440666	Zinc	0.7371499	8.41495E-05	1.06027E-05
S0002	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0002	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0003	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0004	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0005	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0006	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0011	7440666	Zinc	0.01401512	4.38933E-06	5.53045E-07
S0007	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0008	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0009	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0010	7440666	Zinc	0.003503769	1.09733E-06	1.38261E-07
S0072	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0073	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0074	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0075	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0076	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0077	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0078	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0079	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0080	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0081	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0082	7440666	Zinc	0.046816227	1.46621E-05	1.8474E-06
S0036	7440666	Zinc	0.453095029	0.000141903	1.78794E-05

Facility Totals

Cas#	Pollutant Name	Lbs/yr	lbs/hr	g/s
71556	1,1,1-TCA	0	0	0
95636	1,2,4TriMeBenze	8.234932	0.003377626	0.000425573
106990	1,3-Butadiene	200.4113915	0.064375498	0.00811117
91576	2MeNaphthalene	12.03224004	0.003768266	0.000474793
83329	Acenaphthene	0.550964223	0.00017246	2.17296E-05
208968	Acenaphthylene	1.190415961	0.000372804	4.69725E-05
75070	Acetaldehyde	100.8964526	0.033321232	0.004198401
107028	Acrolein	0.65614461	0.00054886	6.91551E-05
7429905	Aluminum	1289.061878	0.403714963	0.050867188
120127	Anthracene	0.083980273	2.62396E-05	3.30613E-06
7440360	Antimony	0.567418584	0.000177707	2.23907E-05
7440382	Arsenic	0.288445551	7.87402E-05	9.9211E-06
56553	B[a]anthracene	0.0220923	6.91055E-06	8.70714E-07
50328	B[a]P	0.000835	0.000000262	3.30114E-08
205992	B[b]fluoranthen	0.003024682	9.46894E-07	1.19307E-07
192972	B[e]pyrene	0.005706984	1.78403E-06	2.24784E-07
191242	B[g,h,i]perylen	0.00069	0.000000216	2.72155E-08
207089	B[k]fluoranthen	0.000799	0.00000025	3.14994E-08
7440393	Barium	13.03261203	0.003861548	0.000486546
71432	Benzene	230.7794669	0.078386031	0.009876466
7440417	Beryllium	0.030570247	8.86991E-06	1.11759E-06
7726956	Bromine	0.032684154	1.02362E-05	1.28974E-06
7440439	Cadmium	0.169420552	5.29204E-05	6.66785E-06
76131	CFC-113	0.0153	0.00000478	6.02269E-07
7782505	Chlorine	2.263017576	0.001457314	0.000183618
7440473	Chromium	1.881690815	0.00052342	6.59498E-05
218019	Chrysene	0.096461337	3.01393E-05	3.79748E-06
7440484	Cobalt	0.70033597	0.000203207	2.56036E-05
7440508	Copper	1.218116072	0.000327169	4.12225E-05
18540299	Cr(VI)	0.005295326	1.70388E-06	2.14685E-07
75150	CS2	51.84185999	0.016235911	0.002045689
53703	D[a,h]anthracen	0.000134	4.21E-08	5.30451E-09
9901	DieselExhPM	15.27265	0.020013956	0.002521714
100414	Ethyl Benzene	5.33815291	0.004388073	0.000552887
75003	Ethyl Chloride	0.0002339	2.672E-08	3.36666E-09
206440	Fluoranthene	0.094727838	2.95928E-05	3.72863E-06
86737	Fluorene	0.949467855	0.000297022	3.74242E-05
50000	Formaldehyde	1424.760564	0.452675323	0.057036085
7647010	HCl	0.08493417	0.000111301	1.40237E-05
110543	Hexane	20.83792881	0.008922909	0.001124267
193395	In[1,2,3-cd]pyr	0.000171	5.34E-08	6.72828E-09
7439921	Lead	1.816782555	0.000534617	6.73605E-05
1128	Lead cmp(inorg)	0.62320235	0.000195178	2.4592E-05
7439965	Manganese	17.63746534	0.005552018	0.000699542
1634044	Me t-ButylEther	1.070108	0.003720821	0.000468815
78933	MEK	27.25158144	0.008643577	0.001089071

7439976	Mercury	0.27227852	8.61829E-05	1.08589E-05
67561	Methanol	218.988368	0.069858108	0.008801966
74839	Methyl Bromide	0.0002868	3.272E-08	4.12265E-09
74873	Methyl Chloride	8.840401159	0.00276872	0.000348853
75092	Methylene Chlor	0.00001579	1.805E-09	2.27426E-10
108383	m-Xylene	15.25194	0.012442352	0.001567709
91203	Naphthalene	37.27750259	0.011919424	0.001501821
7664417	NH3	637.77026	0.200386404	0.025248242
7440020	Nickel	3.657046398	0.001109947	0.000139851
95476	o-Xylene	3.45437	0.003901953	0.000491637
1151	PAHs-w/o	0.01652118	2.17004E-05	2.7342E-06
127184	Perc	0	0	0
198550	Perylene	0.01614962	5.04567E-06	6.35743E-07
85018	Phenanthrene	1.290579075	0.000404101	5.09158E-05
7723140	Phosphorus	13.21688642	0.004139332	0.000521547
115071	Propylene	442.5962152	0.138614537	0.017465124
106423	p-Xylene	0	0	0
129000	Pyrene	0.20963879	6.55733E-05	8.2621E-06
7782492	Selenium	0.402257064	0.000126981	1.59993E-05
1175	Silica, Crystln	354.2975412	0.067590338	0.008516232
7440224	Silver	0.025232975	6.5088E-06	8.20094E-07
100425	Styrene	71.21898557	0.022541354	0.002840161
79016	TCE	0	0	0
108883	Toluene	99.54067317	0.04353847	0.00548575
7440622	Vanadium	2.993006124	0.000842	0.00010609
1330207	Xylenes	44.93126215	0.014095165	0.001775959
7440666	Zinc	8.007247439	0.002361036	0.000297485