

Internal Use Only	
APP ID: APCD	-APP/CER-
SITE ID: APCD	-SITE-

GENERAL PERMIT OR REGISTRATION APPLICATION FORM



Submittal of this application does not grant permission to construct or to operate equipment except as specified in Rule 24(c).

REASON FOR SUBMITTAL OF APPLICATION:

- | | | |
|--|--|--|
| ☐ New Installation | ☐ Existing Unpermitted Equipment or Rule 11 Change | ☐ Modification of Existing Permitted Equipment |
| ☐ Amendment to Existing Authority to Construct or Application | ☐ Change of Equipment Location | ☐ Change of Equipment Ownership (please provide proof of ownership) |
| ☐ Change of Permit Conditions | ☐ Change Permit to Operate Status to Inactive | ☐ Banking Emissions |
| ☐ Registration of Portable Equipment | ☒ Other (Specify) <u>Source testing for nickel emissions</u> | |

List affected APP/PTO Record ID(s): 982505

APPLICANT INFORMATION

Name of Business (DBA) SUPERIOR READY MIX CONCRETE, L.P.

Does this organization own or operate any other APCD permitted equipment at this or any other adjacent locations? ☒ Yes ☐ No

If yes, list assigned Site Record IDs listed on your Permits ⁴⁶²⁸

Name of Legal Owner (if different from DBA) SAME

Equipment Owner	Authority to Construct Mailing Address
Name: <u>SUPERIOR READY MIX CONCRETE, L.P.</u>	Name: <u>SAME AS EQUIPMENT OWNER</u>
Mailing Address: <u>1564 W. Mission Rd, Escondido, CA. 92029</u>	Mailing Address:
City: _____ State: _____ Zip: _____	City: _____ State: _____ Zip: _____
Phone: () <u>(760) 745-0556</u>	Phone: () _____
E-Mail Address: <u>smendoza@superiorm.com</u>	E-Mail Address:

Permit To Operate Mailing Address	Invoice Mailing Address
Name: <u>SAME AS EQUIPMENT OWNER</u>	Name: <u>SAME AS EQUIPMENT OWNER</u>
Mailing Address:	Mailing Address:
City: _____ State: _____ Zip: _____	City: _____ State: _____ Zip: _____
Phone: () _____	Phone: () _____
E-Mail Address:	E-Mail Address:

EQUIPMENT/PROCESS INFORMATION: Type of Equipment: ☒ Stationary ☐ Portable, *if portable please enter below the equipment storage address.* If portable, will operation exceed 12 consecutive months at the same location ☐ Yes ☐ No

Equipment Location Address 500 N. Tulip st. City Escondido State: CA

Parcel No. _____ Zip _____ Phone () _____ E-mail: smendoza@superiorm.com

Site Contact Mike Garcia Phone () _____

General Description of Equipment/Process Source testing baghouse to determine site specific nickel emissions.

Application Submitted by ☒ Owner ☐ Operator ☐ Contractor ☐ Consultant Affiliation _____

EXPEDITED APPLICATION PROCESSING: ☐ I hereby request Expedited Application Processing and understand that:

a) Expedited processing will incur additional fees and permits will not be issued until the additional fees are paid in full (see Rule 40(d)(8)(iv) for details) b) Expedited processing is contingent on the availability of qualified staff c) Once engineering review has begun this request cannot be cancelled d) Expedited processing does not guarantee action by any specific date nor does it guarantee permit approval.

☐ **This application contains trade secret or confidential information (see reverse for instructions)**

I hereby certify that all information provided on this application is true and correct.

SIGNATURE _____

Date November 7, 2022

Print Name Shawn Mendoza

Company Superior Ready Mix Concrete, L.P.

Phone () 760-745-0556

E-mail Address smendoza@superiorm.com

Internal Use Only

Date _____	Staff Initials: _____	Amt Rec'd \$ _____	Fee Schedule _____
RNP: _____	EMF: _____	NBF: _____	TA: _____

GEN_APP_Form_Rev Date: Aug.

10124 Old Grove Rd. – San Diego - California 92131-1649 – (858) 586-2600

www.sdapcd.org

**SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT
APPLICATION FEE ESTIMATE**

Applicant Site ID/EIF ID:	APCD2002-SITE-04628	APCD2009-PTO-982505
Applicant DBA:	Superior Ready Mix	Fee Schedule: 4A
		Reason for Submittal: Risk Reduction
APCD Engineer:	Camqui Nguyen	Existing Site? Yes
Equipment Description:	Risk Reduction Plan (RRP) Modification to Permit 982505 for a hot mix asphalt plant by performing nickel testing and using the test result to adjust the hourly production rate while maintaining risk below Rule 1210 thresholds.	
		Estimate Date: 10/17/2022

ACTIVITY	EMPLOYEE CLASSIFICATION	LABOR HOURS	COST	SUBTOTAL
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Initial Evaluation Fee - T&M (Rule 40(d)(3)(i))

Authority to Construct	Engineering Services	18.0	\$4,284.00		ETM
Permit to Operate	Engineering Services	5.0	\$1,190.00	\$5,474.00	ETM

T&M Application - No Fixed Fee, see above

Authority to Construct/Permit to Operate	N/A	T+M	\$0.00		ETM
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Additional Evaluation and Processing Fees (Rule 40(d)(5))

New Source Review	Engineering Services		\$0.00	\$0.00	NSR
	Monitoring Services		\$0.00	\$0.00	AQI
Prev. Significant Deterioration	Engineering Services		\$0.00	\$0.00	PSD
Toxics New Source Review (Health Risk Assessment)	Engineering Services		\$0.00		
	Monitoring Services		\$0.00		
	HRA Base Estimate	Standard	\$2,536.00	\$2,536.00	TNS
Title V	Engineering Services		\$0.00	\$0.00	TIV
NESHAPS/ATCM/NSPS	Engineering Services		\$0.00	\$0.00	HAP
CEQA	Engineering Services		\$0.00	\$0.00	CEQ
AB 3205 Notice	Engineering Services		\$0.00		
	Public Notice Costs		\$0.00	\$0.00	AB3
Equipment subject to Rule 11(a)(3)	Engineering Services		\$0.00	\$0.00	R51
H&SC 42301(e)	Engineering Services		\$0.00	\$0.00	HSC
Testing or Test Witness	Engineering Services		\$0.00		
	Source Testing Services	18.0	\$2,952.00		STF
Fixed Test Fee Sched.	NA	Fixed Testing Fees	\$0.00	\$2,952.00	ad-hoc

Miscellaneous Fees

Processing Fee (Rule 40(d)(1)(ii))	1.0	\$98	\$98.00	EFX
Renewal Fee (Rule 40(e)(2)(ii))	N/A	N/A	\$0.00	REN
Emissions Fee (Rule 40(e)(2)(iv))		N/A	\$0.00	EMF

NOTES:

ESTIMATE TOTAL: \$11,060.00

- (1) To avoid possible processing delays, this document should be submitted with your application forms.
- (2) The fees contained in this estimate are based on APCD Rule 40. Final fee may be more or less than this estimate (see Rule 40(d)(1)(iii)).
- (3) Emissions determined to be greater than 5 tons per year will be charged a emission fee on a ton per year basis. (see Rule 40 (e)(2)(iv)(A))
- (4) Fees paid by credit card will be assessed a 2.19% processing fee (see Rule 40(c)(5))
- (5) Federal government payments made through DFAS. Please reference the above listed Site ID Record number in your DFAS submittal.
- (6) This estimate is valid only for applications received by the District by June 30, 2023

SESPE

CONSULTING, INC.

A Trinity Consultants Company

3990 Old Town Ave, Suite A203 • San Diego, CA 92110
Office (619) 894-8669 • Fax (805) 667-8104

November 3, 2022

Mr. John Annicchiarico
San Diego APCD
10124 Old Grove Road
San Diego, CA 92131

Re: Nickel Source Testing
Escondido Asphalt (FID 10158)

Dear John,

Thank you for your email on September 7, 2022, regarding the subject source test. Enclosed with this letter is a source test protocol for District review and approval. In addition, the following clarifications and/or expectations should be agreed upon before testing occurs. The current production limit on the permit is based on the specific nickel emission factor from the 2014 HRA. When the new emission factor is determined from the source test, the same model can be used to calculate the impact at different throughput rates to demonstrate health risks are less than Rule 1210 thresholds.

1.0 NICKEL IS THE METAL IDENTIFIED BY APCD

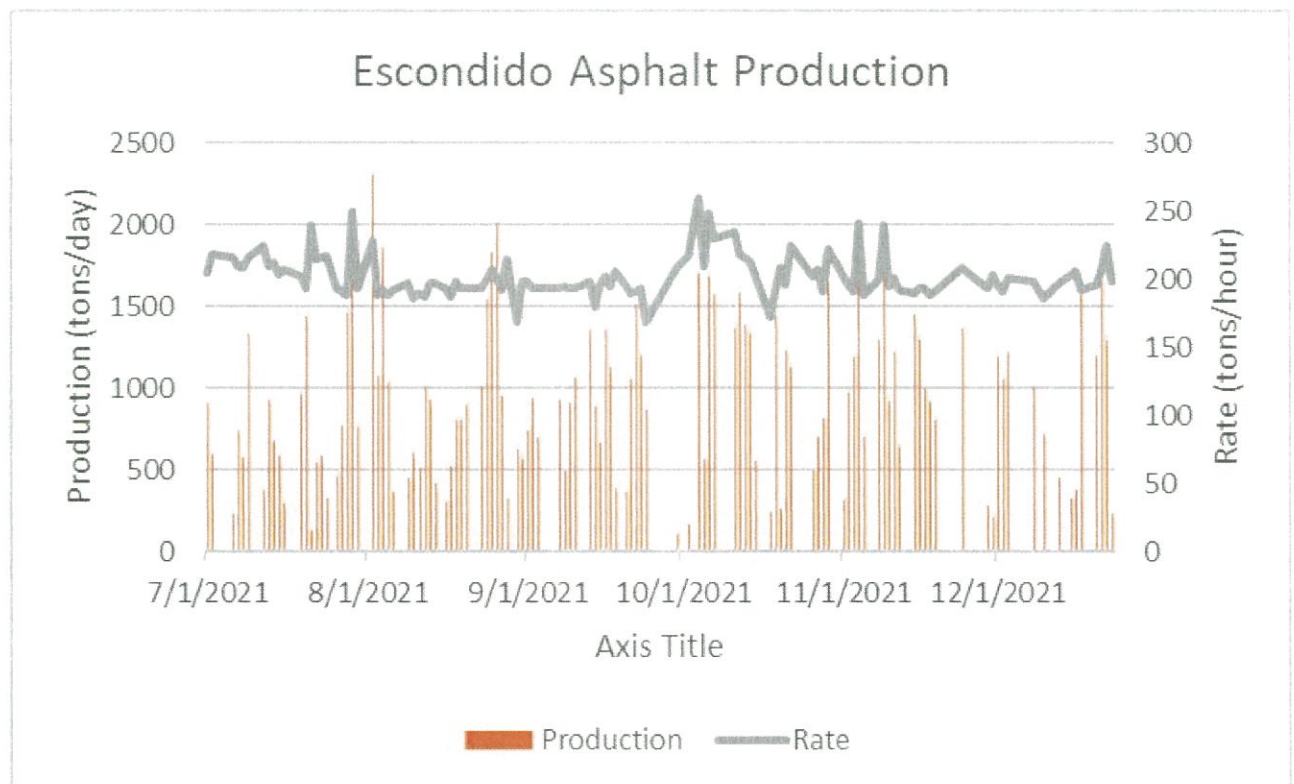
As discussed in the Review of Escondido Materials AB2588 Health Risk Assessment (APCD, 3/2/2022), the facility emissions result in acute health hazard index greater than 1.0 H.I. Other health risks are less than the significance levels. Nickel accounts for 96% of the acute health risk and the asphalt dryer stack accounts for 95% of the health risk. Thus, nickel emissions from the asphalt dryer stack are proposed to be tested.

Emissions of other metals are calculated using AP-42 default emissions factors which are developed to be conservatively high. Furthermore, the AP-42 emissions factors were measured during testing performed in the 1990s on plants that did not have the benefit of current control technologies (e.g., more efficient fabric filter materials). As has been claimed in the past, the same controls that have controlled PM₁₀ to levels well below those in AP-42, it will be demonstrated, have a similar effect on the nickel emissions.

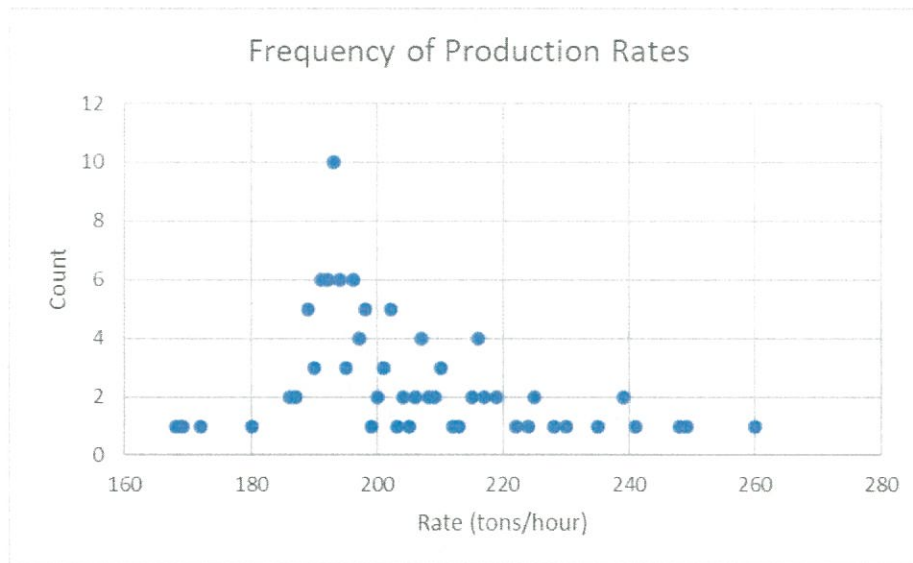
2.0 HOURLY RATE DURING TESTING

The September 7 email stated, “the operation during the source test be representative of the plan’s maximum requested operation.” We agree and observe that APCD determined that testing between 200 and 220 tons per hour was representative for the June 2022 particulate matter source test (Nathan Gutzwiller, 6/28/2022).

The production rate was determined by APCD after extended discussions on the matter. Operations remain consistent with those used to make the determination (July 1, 2021 through December 31, 2021 daily production and operating hours). The asphalt plant operated on 115 of the 184 days in the period or 63.5% of possible days.



The graphic below represents the production rate frequency distribution. The average rate during the period was 202 tph and the standard deviation of the distribution is 15.7. The proposed window of production rate (200 to 220 tph) roughly represents one standard deviation above the mean. The maximum rate that has been sustained over a day of production was 260 tph.



The email suggests that the potential to emit rate being requested (i.e., 400 tph) should be the rate of the source test. There are many reasons why the asphalt plant operates at rates lower than the manufacturer's maximum rate and why it would be impossible to schedule a source test for the plant operating near the maximum rate including the following:

- Mix design.
- Moisture content.
- Storage capacity.
- Job size and scheduling.
- Trucking capacity and logistics.
- Breakdowns and other interruptions.

At 400 tons per hour, three (3) ninety-minute tests would require continuous operation for a period of at least six (6) hours and total daily production of at least 2,400 tons. This minimal production requirement did not occur in the period analyzed which had a maximum daily production of 2,300 tons. On that day (8/2/21), the plant operated at a rate of 228 tph.

At 200 tons per hour, three (3) ninety-minute tests would require continuous operation for a period of at least six (6) hours and total daily production of at least 1,200 tons. This minimal production requirement occurred on 34 days or about half the days that operation occurred. This condition can be met with the modest amount certainty needed to schedule and execute a source test.

Moreover, nickel emissions per ton of material produced will be the same at rates above 200 tph. The aggregates being dried are the primary source of particulate matter and components including nickel. Variations in the amount of aggregate dried are accounted for because the result of source testing will be an emission factor in pounds per ton of asphalt concrete produced (lb/ton).

The test would collect a mass of particulate matter and volume of exhaust. The sample media would be analyzed to determine the mass fraction of nickel in the particulate matter sample collected during each test run. Mass of nickel and production rate of each test run will be used to determine the mass of nickel emitted per ton produced for each test run. The three (3) test run nickel emissions factors (lb/ton) will then be averaged to obtain the nickel emission factor for the plant, and which will be used for each future emissions inventory prepared for the facility.

In summary, we propose to test for nickel while producing at a rate greater than 200 tons per hour (i.e., as fast as the plant and job will allow) and use the resulting emissions factor (lb/ton) to calculate the emissions at the actual maximum rate.

3.0 APPLICATION HRA CONTENT

The email states, "since this permit limit was part of the risk reduction for the whole facility, the application would also require a health risk evaluation on the whole plant to determine whether the health risk based on a modified production rate will be below Rule 1210 significant thresholds for risk reduction." It is clear from the HRA approval letter that the asphalt dryer stack is the only source that matters in this case. In addition, review of the emissions inventory shows that the hourly rates of other sources on-site (e.g., stockpiles, haul roads, recycle plant rate) are independent from the hourly rate of the asphalt plant. Thus, we question whether additional HRA is necessary in this case.

To start this process, Superior Ready Mix is submitting a check for the application fee amount estimated by APCD which includes time for staff to work on the HRA. However, further discussion and consideration is needed to determine what HRA is needed, if any. Please explain what other source emissions were taken into account when determining the hourly rate currently on the permit. If other sources' emissions were reduced to match the reduced emissions and rate of the asphalt dryer stack, then we agree that HRA would be needed to prove the health impacts remain less than the Rule 1210 thresholds. However, if APCD determined the current rate based on the reduction of emissions/risk from the asphalt dryer stack only, then no such HRA is warranted.

4.0 BAGHOUSE FINES SAMPLING

We continue to believe that the concentration of nickel by weight in the baghouse fines is representative of the concentration of nickel by weight in filterable particulates that are emitted. Three (3) samples will be taken after the source test. Samples will be packaged and transported to an accredited laboratory for nickel analysis using EPA SW846 Method 6010D. The bulk sample results will then be compared to the source test sample results in correspondence transmitting those results to APCD.

Nickel Source Testing
Escondido Asphalt

November 3, 2022

Thank you for your time and consideration in this matter. Please call me at (619) 300-1880 or Shawn Mendoza of Superior Ready Mix at (760) 497-6958 if there are questions or additional information is needed.

Respectfully submitted,



Scott D. Cohen, P.E., C.I.H.
Principal Engineer
Sespe Consulting, Inc.

Attachments Application Form
 Fee Estimate
 Check for fee amount
 Nickel Source Test Protocol



TOTAL AIR ANALYSIS, INC.

**COMPLIANCE
SOURCE TEST PROTOCOL
*ONE ASPHALT DRUM MIX PLANT***

Prepared For:

Superior Ready Mix

500 Tulip Street N
Escondido, CA 92025

Site Record ID: APCD2002-SITE-04628

Application Record ID: APCD2020-APP-006565

Prepared By:

Total Air Analysis, Inc.

1210 East 223rd Street, Suite 314
Carson, CA 90745

Mr. Russ P. Logan, President

Protocol Identification No: SR-221893

Protocol Date: August 24, 2022

Submitted To:

San Diego Air Pollution Control District

Northern Region
10124 Old Grove Road
San Diego, CA 92131

TABLE OF CONTENTS

Page

1.0	Contact Summary	
2.0	Introduction	
3.0	Process Description	
4.0	Rule/Compliance Requirements	
5.0	Test Description.....	
5.1	<i>Test Requirements and Locations</i>	
5.2	<i>Operating Parameters.....</i>	
6.0	Sampling and Analytical Procedures	
6.1	<i>SDAPCD Method 1 – Sampling and Velocity Traverse for Stationary Sources</i>	
6.2	<i>SDAPCD Method 2 – Velocity and Volumetric Flow Rate</i>	
6.3	<i>SDAPCD Method 3 – Gas Analysis for Dry Molecular Weight and Excess Air.....</i>	
6.4	<i>SDAPCD Method 4 – Stack Gas Moisture Content Determination</i>	
6.5	<i>SDAPCD Method 100 – Continuous Gaseous Emissions Determination</i>	
6.6	<i>EPA Method 29 – Determination of Nickel Emissions</i>	
7.0	Report Format.....	
8.0	Quality Assurance and Quality Control.....	
8.1	<i>QA/QC Overview.....</i>	
8.2	<i>QA/QC Equipment Calibration Procedures.....</i>	

LIST OF APPENDICES

Appendix A - Estimated Results and Field Data Sheets.....	
Appendix B - Quality Assurance/Quality Control Sample Data.....	
Appendix C - San Diego Air Pollution Control District Permit to Operate	

1.0 Contact Summary

Contracting Firm:

Superior Ready Mix
500 Tulip Street N
Escondido, CA 92025
Contact: Mr. Shawn Mendoza

760/745-0556

Site and Equipment Location:

500 Tulip Street N
Escondido, CA 92025

Source Testing Firm:

Total Air Analysis, Inc.
1210 East 223rd Street, Suite 314
Carson, CA 90745-4240
Contact: Mr. Russ P. Logan

310/518-5133

Regulatory Agency:

San Diego Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131
Contact: Mr. Nathan Gutzwiler

858/964-8164

2.0 Introduction

Total Air Analysis, Inc. has been contracted by Superior Ready Mix to perform an emissions test for nickel on an asphalt drum mix plant at their facility in Escondido, California. The purpose of the test is to determine nickel emission levels and Stack Gas Flow Rate.

3.0 Process Description

ONE (1): Hot Mix Asphalt Plant consisting of: one dryer drum, Astec, S/N 16-153-304892-3-1, natural gas fired, with a low-NOx burner rated at 75 MMBtu/hr, and with a twin shaft coater/mixer (72"x130"); four 150-ton asphalt storage silos; one baghouse, Maxam Kleen Aire, Model 32/14.5, 60,000 cfm capacity, 10,629 ft² cloth area, equipped with a knockout box, venting the dryer drum and other supporting equipment.

Application source testing shall be performed at a district approved tonnage rate at or above 225 tons per hour (tph).

4.0 Rule/Compliance Requirements

The asphalt drum mix plant is being tested to ascertain nickel emissions factors.

5.0 Test Description

5.1 *Testing Requirements and Locations*

The testing will be performed at the outlet of the Baghouse. These compliance tests will be conducted in accordance with the applicable SDAPCD and EPA test methodologies. Table 1 shows the test methods, locations, duration, and number of tests. A stack diagram showing sampling locations and dimensions is shown on the following page.

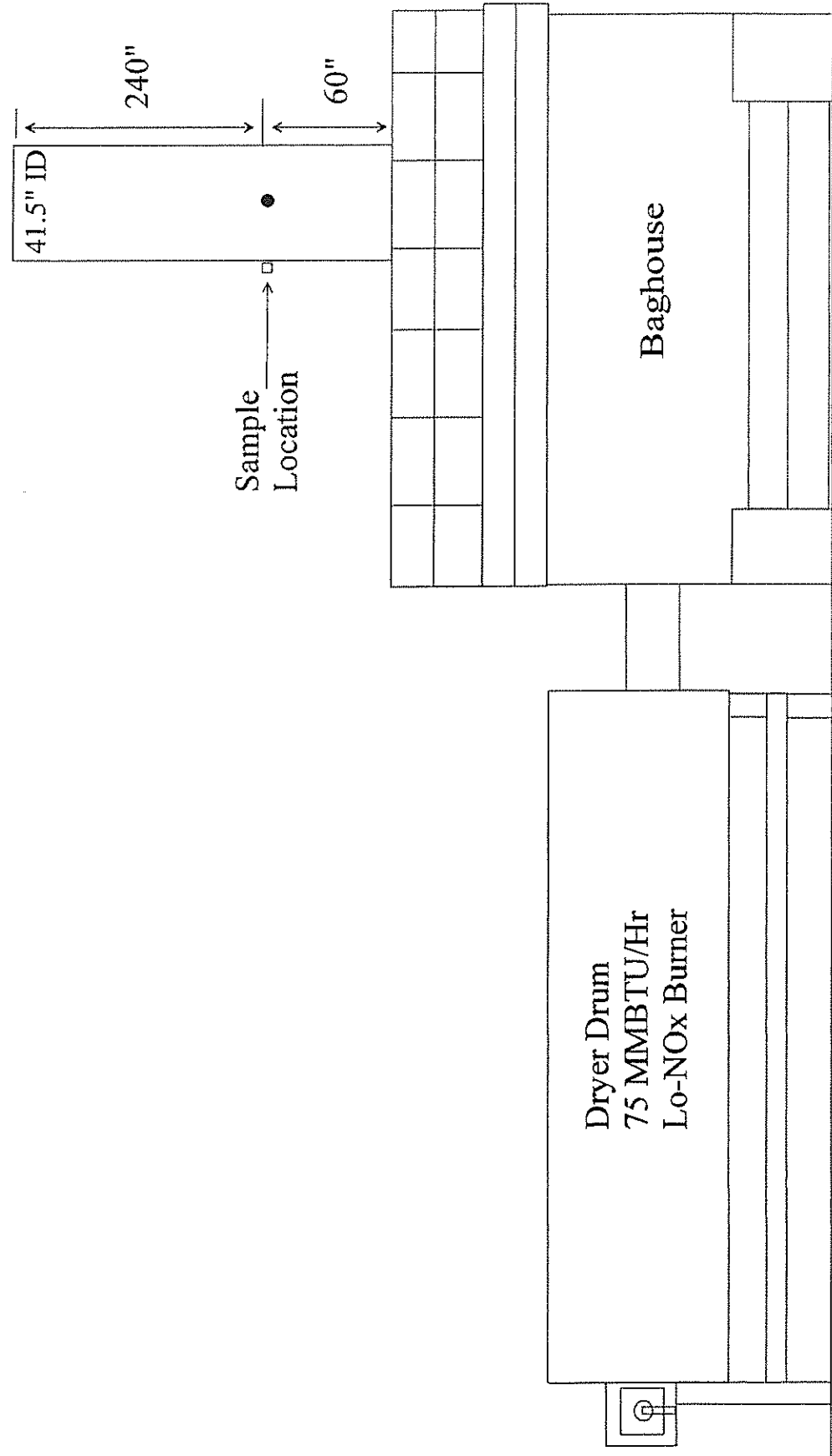
TABLE 1
Testing Location and Requirements

<i>Parameter</i>	<i>Test Methods</i>	<i>Test Location</i>	<i>Test Duration per Run</i>	<i>Number of Tests</i>
<i>O₂, CO₂</i>	SDAPCD 100	Outlet	60 min	Triplicate
<i>Nickel (Ni)</i>	EPA 29	Outlet	90 min	Trip
<i>Flue Gas Flow Rate</i>	SDAPCD 1 – 4	Outlet	90 min	Trip

5.2 *Operating Parameters*

Operating and documentation of process conditions are performed using existing monitoring instruments. These conditions and parameters (TPH, Asphalt Temp °F, Baghouse-pressure) will be included in the final source test report.

Superior ReadyMix - Escondido
Asphalt Drum Mix Plant



6.0 Sampling and Analytical Procedures

6.1 SDAPCD Method 1 - Sampling and Velocity Traverse for Stationary Sources

A preliminary source test site assessment is performed prior to the source test in order to determine applicable testing port locations and sample point traverse locations. The stack diameter and the distance upstream and downstream from sample ports to disturbances, i.e., bends, flanges, etc. are measured. This information is utilized to determine the minimum number of sampling points per traverse and the distance from the inner stack wall to each sample point location. Additionally, this method takes into account cyclonic flow patterns and in-situ stratified pollutant concentrations.

6.2 SDAPCD Method 2 - Velocity and Volumetric Flow Rate

The velocity of the gas stream will be determined using an "S" type pitot tube, an inclined manometer and type "K" thermocouple with a digital temperature measuring device. The calibrated Pitot tube will be connected to the inclined manometer and leak checked. A temperature and delta P will be obtained at each traverse point, and the duct static pressure is measured. The dry volumetric flow rate will be determined from the gas velocity data, stack pressure, stack gas moisture content, stack gas molecular weight, and cross-sectional area of duct.

Calculations:

$$\text{Velocity (Vs)} = 85.49 * C_p * \text{Avg sq. rt. dP} * \frac{(T_s \text{ Avg})}{(P_s * MW_w)}^{0.5}$$
$$\text{Volume Flow Rate (DSCFM)} = 60 (1 - B_{ws}) V_s * A_s * \frac{T_{std} * P_s}{T_s(\text{avg}) * P_{std}}$$

Where: V_s = Velocity of Stack Gas

C_p = Pitot Tube Coefficient (Std = 0.84)

$\sqrt{\Delta P}$ = Avg. Delta P inches H_2O

T_s = Avg. Absolute Stack Gas Temp ($^{\circ}F$ actual + 460)

P_s = Absolute Stack Gas Pressure $P_{bar} + [(P_{static}/13.6)]$

A_s = Area of Stack, ft^2

T_{std} = 528 $^{\circ}F$ (68 $^{\circ}F$ + 460)

P_{std} = 29.92, Barometric Pressure

6.3 SDAPCD Method 3 – Gas Analysis for Dry Molecular Weight and Excess Air

Carbon Dioxide (CO_2) and Oxygen (O_2) is determined in accordance with SDAPCD Method 100. The sample is collected utilizing continuous emissions analyzers, which are operated in accordance with the specified method and any approved deviations. Nitrogen is determined by difference: $100 - (\%O_2 + \%CO_2)$.

Calculations:

$$MW_D = 0.44 * (\%CO_2) + 0.32 * (\%O_2) + 0.28 * (\%N_2 + \%CO)$$

$$MW_W = MW_D * (1 - b_{ws}) + 18 * (b_{ws})$$

Where:

MW_D = Dry Molecular Weight of exhaust gas, lb/lb-mole

MW_W = wet Molecular Weight of exhaust gas, lb/lb-mole

6.4 SDAPCD Method 4 - Stack Gas Moisture Content Determination

Moisture content is determined using a sampling train consisting of a stainless steel probe, Teflon line, four impingers in an ice-water bath, a leak-free pump, a vacuum gauge, and a temperature compensated dry gas meter. Prior to sampling, a leak check of the sampling train is performed to ensure system integrity. Additionally, tare weights of the charged individual impingers are recorded using an electronic balance capable of weighing to the nearest 0.1 grams. The sample rate will be adjusted to approximately 0.75 cubic feet per minute and sampled for a minimum of 23 dscf.

Calculations:

$$\text{Moisture (bw}_s\text{)} = \text{Vwstd}/(\text{Vmstd} + \text{Vwstd})$$

Where:

$$\text{Vwstd} = 0.04707 \text{ ft}^3/\text{ml} \times \text{Vol. H}_2\text{O collected (mL)}$$

$$\text{Vmstd} = 17.647 \times \text{Ym} \times \text{Vm} \times \text{Pm}/\text{Tm}$$

Where:

$$0.04158 = \text{volume of water vapor @ 68°F/ml of water (0.04707 @ 60°F)}$$

$$17.647 = 528^\circ\text{R}/29.92 \text{ in. Hg}$$

$$\text{Ym} = \text{meter correction factor}$$

$$\text{Vm} = \text{sample gas volume collected}$$

$$\text{Pm} = \text{sample gas pressure in Hga}$$

$$\text{Tm} = \text{sample gas temperature in } ^\circ\text{R at meter}$$

6.5 SDAPCD Method 100 - Continuous Gaseous Emissions Sampling

A continuous gas sample will be extracted from the stack through a coarse filter, heated stainless steel probe, and Teflon line attached to an electronic thermal cooler followed by our iced sample conditioner. The sample is then drawn via 3/8" Teflon line into the climate controlled Mobile Emission Laboratory and delivered to the analyzers through the manifold, dedicated valves, and pressure indicators. One minute averaged data will be collected by the DAS and utilized for test results

Prior to beginning of testing, a system leak check, calibration error, and system bias check is performed. The leak check is accomplished by plugging the probe tip and drawing at least 20" Hg vacuum on the entire sampling system. When all flow meters indicate 0.0 SCFH flow, the system is proven to be free of any leaks.

The calibration error check is performed as follows: After zeroing all analyzers, EPA Protocol No. 1 gases are used to calibrate each analyzer within 80-100% of full scale of the selected range. Then a 40%-60% of the selected range gas is introduced to each analyzer. Additionally, a system bias calibration check is performed by passing EPA protocol I zero and calibration gases through the entire sampling system using a three-way valve located at the probe tip. Sampling system bias checks are determined by comparing the external calibration values to that of the values when introduced directly to each instrument.

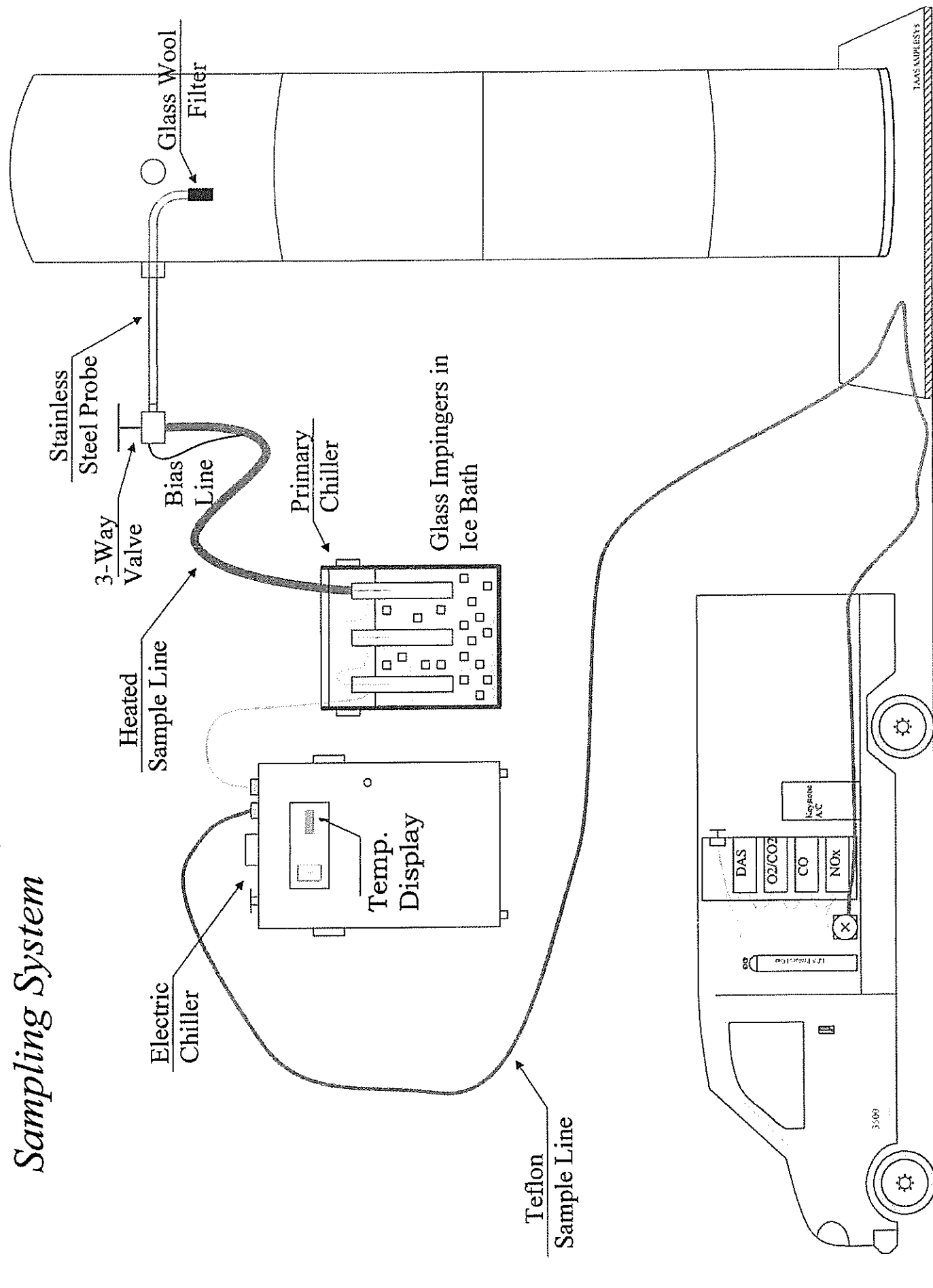
The specifications of the instruments used for the SDAPCD 100 sampling are as follows:

<i>CO₂ ANALYZER, NON-DISPERSIVE INFRARED (NDIR)</i>	<i>SERVOMEX, MODEL 1400 B Serial No. 4363</i>
Ranges	0%-25%, single range
Output	0-1 V or 4-20 mA (isolated)
Linearity	+/- 1% of full scale
Operating Temperature	0 to 40°C
Detection Limit	0.1%
Response Time (0%-90%)	<30 Seconds
Accuracy	+/- 1% of full scale
Repeatability	+/- 1% of full scale
Drift	<1% of full scale per 24 hours
Sample Flow Rate	0.5 – 1 li./min

<i>O₂ ANALYZER, PARAMAGNETIC</i>	<i>SERVOMEX, MODEL 1400</i>
Ranges	Selectable from 0%-1% up to 0%-100%
Output	0-1 V
Linearity	+/- 1% of full scale
Operating Temperature	5 to 50°C
Detection Limit	0.1%
Response Time (0%-90%)	<15 Seconds
Accuracy	+/- 0.1%
Repeatability	+/- 0.1%
Drift	<0.1%
Sample Flow Rate	1-2 li./min

<i>THERMAL ELECTRIC SAMPLE COOLER</i>	<i>BALDWIN TESTER CHOICE MODEL NO. 5210</i>
Maximum Inlet Gas Temperature	+ 450 °F
Maximum Inlet Gas Dewpoint	+138 °F
Maximum Inlet Water Concentration	30% by volume
Maximum Ambient Temperature	+104 °F
Maximum Inlet Pressure	50 psig
Maximum Sample Gas Flow Rate	8 li/min (12.9 scfh)
Ambient Temperature Range	+40 to 104 °F
Outlet Sample Gas Dewpoint	<36 °F +/- 1 °F
Power	740 Watts
Water Removal	Peristaltic Drain Pump

TOTAL AIR ANALYSIS, INC. Sampling System



<i>STRIP CHART RECORDER</i>	<i>YOKOGAWA MODEL HR 2400</i>
Scan Cycle Time	1-60 Seconds
Scanning Rate	60 ms/Channel
Input Bias	Less than 10mA
Chart Speed	1-15,000 mm/hr
Maximum Allowable Input Voltage	60 VDC
Recording Accuracy	+/- 0.1 of effective range
Chart Speed Accuracy	+/- 0.1% recordings greater than 1 m
Data Acquisition System	Varilink Digital Software

<i>MOBILE EMISSIONS LABORATORY</i>	<i>SPRINTER 3500 VAN</i>
Insulation	Fully Insulated
Air Conditioning	1 Portable Keystone Air Conditioner
Computer	IBM Compatible System

6.6 EPA Method 29 - Determination of Nickel Emissions

All glassware in contact with the sample will be cleaned by soaking in Alconox solution overnight, dipped in 10% HNO₃ solution for six (6) hours, rinsed with distilled water and allowed to air dry.

A series of preliminary measurements are conducted prior to conducting the test. EPA Methods 1, 2, and 3 are performed to determine location and number of traverse points. Percent moisture is estimated and the nozzle size is determined for isokinetic sampling.

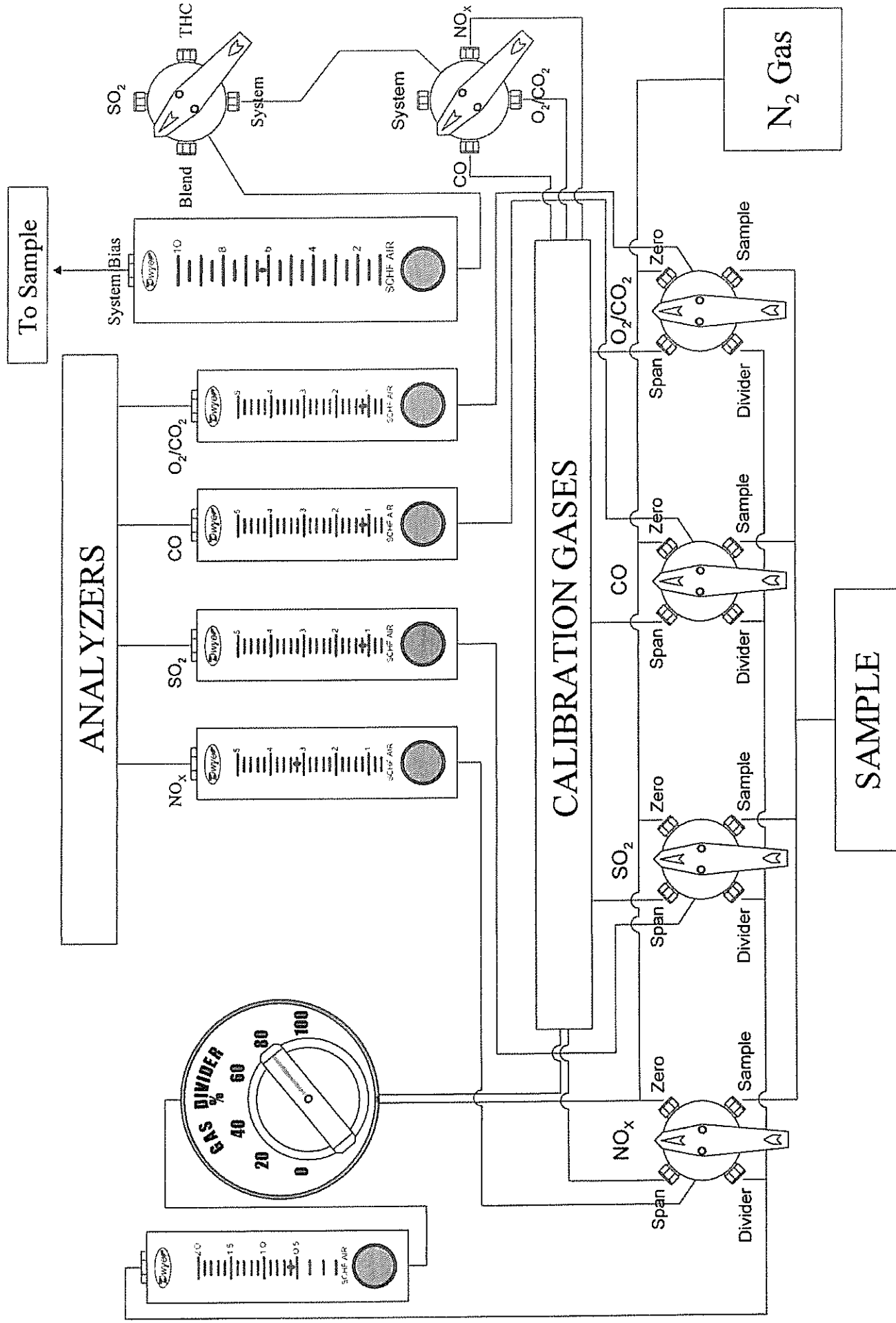
The sampling train is prepared on-site in our mobile emissions laboratory. The first two impingers are charged with 100 ml of HNO₃/ H₂O₂ (5%/10%), the third impinger is empty, and the fourth impinger contains approximately 300 gram of silica gel. The probe is brushed and rinsed with DI H₂O and the pre-weighed filter is placed in the heater filter holder. The sampling apparatus is sealed and transported to the sampling locations where it is assembled and leak checked at 15-in. mercury vacuum.

The test is started when the nozzle is positioned into the gas flow, the vacuum pump started, and the dH adjusted to obtain an isokinetic sampling rate. A complete traverse is performed while sampling at three minutes per sample point.

Upon completion of the sampling run, the apparatus is leak checked at a vacuum greater than the highest observed vacuum during the test. The probe and the filter are removed from the train and sealed, then the train is transported to the mobile laboratory for recovery.

The filter and loose particulate are carefully removed from the filter holder with tweezers and placed into a labeled petri dish. The nozzle, probe, and the front half of the filter housing are rinsed and brushed at least three times with acetone and placed into a sample bottle labeled "Front Half Rinse." The impingers' solution is measured and placed into a sample bottle labeled "Impingers Catch." The impingers, all connecting tubes, and the back half of the filter housing are rinsed at least three times with HNO₃ until no visible particulate is present; the rinses are added to the bottle labeled "Impingers Catch". An additional three rinses are conducted with water and acetone and discarded. The samples are transported to Expert Chemical Analysis, Inc (ECA) for ICP-MS analysis with a 0.1 ng/ml detection limit.

MANIFOLD SCHEMATIC



All samples will be combined at the laboratory for one analysis per run. A field blank will be analyzed every three (3) runs.

7.0 Report Format

The final source test report will contain:

- ✎ Summary (site name, application number, date of test)
- ✎ Summary of Results with comparison of test results to rule limits.
- ✎ Introduction
- ✎ Equipment Process Description
- ✎ Test Procedures
- ✎ Test Results and Discussion
- ✎ Quality Assurance/Quality Control
- ✎ Appendices contain spreadsheets, field data sheets, laboratory analysis, colored strip charts, calibrations, and gas certificate sheets.

8.0 Quality Assurance and Quality Control

Total Air Analysis, Inc. applies stringent quality control and quality assurance procedures to ensure the validity of measurements for all projects. Total Air Analysis QA/QC procedures are documented in detailed Quality Assurance Project Plans similar to those used by the EPA, CARB, SCAQMD, and SDAPCD.

8.1 QA/QC Overview

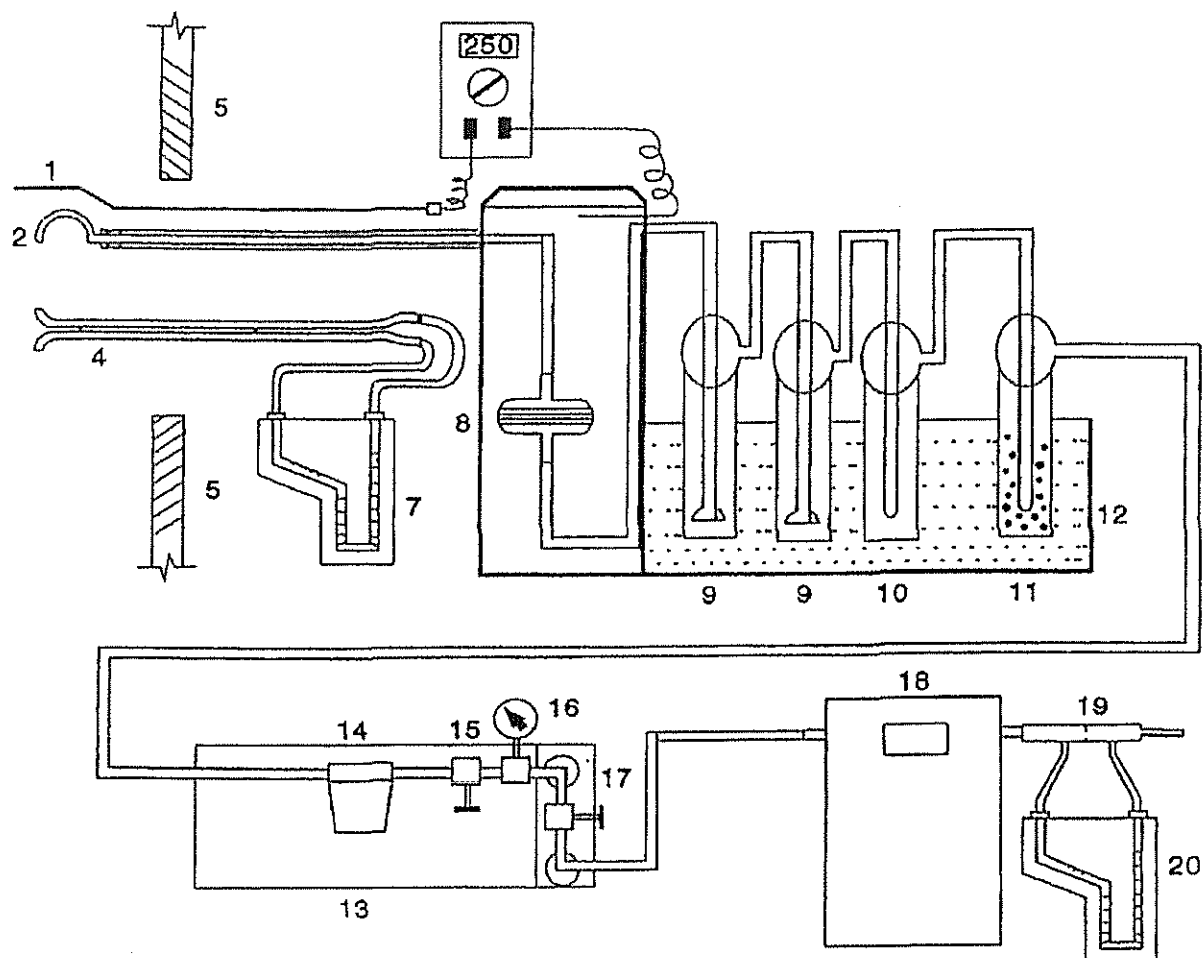
Total Air Analysis QA/QC procedures follow guidelines in *Quality Assurance Handbook for Air Pollution Measurement Systems*, Volumes I through III. These procedures outline pretest preparation and calibrations of sampling equipment, post-test sample handling, and post-test calibrations. Standardized, written procedures, calculator programs, and spreadsheets are used for test planning, pre-surveys, equipment checklists, preliminary calculations, data and sample collection, sample tracking, data analysis, and reporting. Pre-test preparations and maintenance include organization of the following equipment:

- ✎ Calibrated pitots, balances, TCs, control boxes, sampling train specific for moisture, sample probes suitable for type of sampling to be done, and support equipment such as tools, safety gear, radios, and spares.

Test procedures follow applicable SCAQMD or other approved test methods. For non-continuous sampling systems (moisture train, etc.), these procedures specify the following:

- ✎ Pre-test and post-test leak checks on both pitot connections and moisture trains.
- ✎ Maintenance of pitot tube in a horizontal attitude by employment of special rail systems or jigs.
- ✎ Proper configuration of moisture train.
- ✎ Sample and velocity traverses, number and location of sampling points, check for cyclonic flow; stratification checks.
- ✎ Minimum sample time and volume for moisture determination.
- ✎ Required temperature limitations.
- ✎ Other test method-specific procedures.

EPA Method 29



- | | |
|---|---|
| 1. Temperature Sensor | 11. Bubbler with Silica Gel |
| 2. Nozzle | 12. Ice Bath |
| 3. Glass lined Stainless Steel Probe-Heated | 13. Sealed Pump (Leak Free) |
| 4. S-type Pitot Tube | 14. Filter for Pump |
| 5. Stack Wall | 15. Metering Valve |
| 6. Temperature Sensor Meter | 16. Vacuum Gauge |
| 7. Pitot Tube Inclined Manometer | 17. By-pass Valve |
| 8. Heated Box with Filter | 18. Temperature Compensated Dry Gas Meter |
| 9. Impinger with 100 ml | 19. Orifice |
| 10. Empty Bubbler | 20. Orifice Inclined Manometer |

8.2 QA/QC Equipment Calibration Procedures

Table 2 contains the specific QA/QC equipment calibration requirements that are strictly followed by Total Air Analysis personnel.

TABLE 2
Quality Assurance / Quality Control Calibration Table

<i>Component</i>	<i>Frequency of Calibration</i>	<i>Requirements of Calibration</i>	<i>Limits of Calibration</i>
<i>Pitots</i>	Prior to each source testing program and semiannually	Visual inspection and measurements of angles and distances	C_p is assumed to be 0.84 if all measurements are within specification
<i>Temperature Sensors</i>	Bimonthly	Jofra 600 S Temperature Calibrator	$\pm 1.5\%$ deviation from referenced mercury in-glass thermometer
<i>Barometer</i>	Semiannual	Comparison to mercury in-glass barometer	± 0.1 inches from deviation from referenced mercury in-glass thermometer
<i>Reference Test Meter</i>	Semiannual	Calibrated against an NBS traceable orifice or NBS laminar flow element	$Y_{rm} = 1.00 \pm 0.05$
<i>Analyzer Linearity Checks</i>	Daily Per Site	3 points – 0%, 40% or 60% and 80% of full scale	Analyzer linearity = $\pm 2\%$ from actual value
<i>Gas Divider Verification</i>	Daily Per Site	6 point linearity check followed by internal calibration	Gas divider = $\pm 2\%$ from verification cylinder value
<i>NO₂ Conversion Efficiency</i>	Daily Per Site	NO ₂ calibration gas direct to NO _x analyzer	Greater than 90% conversion efficiency

Appendix A

Estimated Results and Field Data Sheets

EPA Method 29 - Nickel

Facility: Superior Ready Mix
 Unit: Baghouse
 Load: Normal Operation
 Test Date: Estimate

Data Entry	Symbol	Units	Data	Data
Run Number	-	-	1	2
Round Stack, Diameter	ds	inches	41.50	41.50
Rectangular Stack, Length	L	inches		
Width	W	inches		
Nozzle Diameter	dn	inches	0.235	0.235
Average Stack Temperature	Fs	degrees F	237.00	237.00
Average Meter Temperature	Fm	degrees F	85.00	85.00
Barometric Pressure	Pbar	in. Hg	29.40	29.40
Stack Static Pressure	Pg	in. H2O	-0.25	-0.25
Avg. Delta H	dH	in. H2O	1.75	1.75
Avg. Velocity Head	dP	in. H2O	0.90	0.90
Pitot Coefficient	Cp	-	0.84	0.84
Gas Sample Volume	Vm	cubic ft.	65.00	65.00
Meter Calibration Factor	Y	-	1.0368	1.0368
Total Sampling Time	min	minutes	96	96
Stack Gas Oxygen Content	Co2,m	%	13.00	13.00
Stack Gas Carbon Dioxide Content	Cco2,m	%	4.50	4.50
Total Impinger Gain	Ww	grams	375.0	375.0

Total Metals Catch					
Nickel	detection Limit		ng/ml	0.10	1.50
Nickel		As	ug/sample	0.08	1.13
Sample Volume		Vol	mL	750	750

Calculated Data	Symbol	Units	Data	Data
Run Number	-	-	1	2
Nozzle Area, $A_n = 3.14(dn)^2/4$	A_n	sq. in.	0.04	0.04
Stack Area, $A_s = 3.14(ds)^2/576$ (Round) $= L * W/144$ (Rectangular)	A_s	sq. feet	9.39	9.39
			0.00	0.00
Avg. Stack Temperature, $T_s = F_s + 460$	T_s	degrees R	697.00	697.00
Avg. Meter Temperature, $T_m = F_m + 460$	T_m	degrees R	545.00	545.00
Gas Sample Volume @ Standard Conditions, $V_{mStd} = (528/29.92) * Y * (V_m * P_{bar} * dH/13.6) / T_m$	V_{mStd}	cubic ft.	64.16	64.16
Volume of Water Vapor, $V_{wStd} = 0.04707 * W_w$	V_{wStd}	cubic ft.	17.65	17.65
Moist. Fraction, $B_{ws} = V_{wStd} / (V_{mStd} + V_{wStd})$	B_{ws}	-	0.216	0.216
Dry Stack Gas Mol. Weight, $M_d = 0.32(Co_{2,m}) + 0.44(Cco_{2,m}) + 0.28(100 - (Co_{2,m}) - (Cco_{2,m}))$	M_d	g/g-mole	29.24	29.24
Wet Stack Gas Molecular Weight, $M_w = M_d(1 - B_{ws}) + 18.0(B_{ws})$	M_w	g/g-mole	26.81	26.81
Absolute Stack Pressure, $P_s = P_{bar} + P_g/13.6$	P_s	in. Hg	29.38	29.38
Stack Gas Velocity $v_s = 85.49 C_p \{ \sqrt{(dP * T_s) / (P_s * M_w)} \}$ $v_m = 0.3048 * v_s$	v_s	ft/s	64.08	64.08
	v_{sm}	m/s	19.53	19.53
Actual Stack Gas Flow Rate, $Q = 60 * v_s * A_s$	Q	acft/min	36,114	36,114
Dry Gas Stack Flowrate (Dry, STD) $Q_{sd} = (528/29.92) * Q * (1 - B_{ws}) * (P_s / T_s)$	Q_{sd}	dscf/min	20,750	20,750
$Q_{sdm} = Q_{sd}/35.32$	Q_{sdm}	dscm/min	587.48	587.48
Isokinetic Rate, $I = 13.61 * T_s * V_{mStd} / [P_s * v_s * A_n * \min(1 - B_{ws})]$	I	%	99.00	99.00

Metals Concentration					
Nickel		As	gr/dscf	1.80E-08	2.71E-07

Field Data Sheet

Facility:		Test Number:	
Date:		Barometric Pressure:	
Job #		Ambient Temperature:	

Unit					
Time					
Rated RPM					
% Load					
Fuel Temperature					
Fuel Pressure					
Fuel Usage					
Fuel Meter Type					
Combustion Chamber Temp					
VOC Material Used					
Process Weight					
Line Speed					
Coverage %					
NO_x, ppm					
NO_x, 15% O₂					
CO, ppm					
CO, 15% O₂					
O₂, %					
CO₂, %					

Comments:

TOTAL AIR ANALYSIS, INC

Sample Point Location

Facility	Superior Asphalt	
Project No.		
Date	TBD	
Stack Dimensions L =		
Stack Dimensions W =		
Stack Dimensions H =		
Upstream Distance	60.0'	
Downstream Distance	240.0"	
# of Sampling Points	24	
Stack Diameter	41.5"	
Protrusion Distance		

Sample Point #	% of Stack Diameter	Distance from Wall (inches)	Distance from Sample Port (inches)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

4 min/pt - Total 96 minutes

TOTAL AIR ANALYSIS, INC.

MOISTURE & VELOCITY TRAVERSE DATA SHEET

Facility: _____

Source: _____

Load: _____

Start Date: _____

Start Time: _____

Operator: _____

Pbarr: _____

Meter Box No.: _____

Meter Gamma: _____

Meter dH @ _____

Pitot No.: _____

Pitot Factor: _____

Static Pressure (Pg): _____

Stack Diam (in.): _____

Run Number: _____

Sampling Train Leak Test: _____

Before: _____

After: _____

Pitot Leak Check: _____

Before: _____

After: _____

Port	Traverse Point	Time (h/m)	Vel Head dP, in. H ₂ O	Stack Temp. T _s (deg. F)	Null Angle (Angle deg)	Cyc. Flow (Angle deg)	Port	Traverse Point	Time (h/m)	Vel Head dP, in. H ₂ O	Stack Temp. T _s (deg. F)	Null Angle (Angle deg)	Cyc. Flow (Angle deg)
	1							1					
	2							2					
	3							3					
	4							4					
	5							5					
	6							6					
	7							7					
	8							8					
	9							9					
	10							10					
	11							11					
	12							12					
Average:													

Time

Orif. Pres. dH (in. H₂O)

Meter Vol. V_m (cu. ft.)

Meter Yacc.

Dry Gas Meter Temp. In (deg. F)

Dry Gas Meter Temp. Out (deg. F)

Imp Out Temp. (deg. F)

Imp Inger No.

Final Weight (g)

Initial Weight (g)

Net Weight (g)

1

2

3

4

Total:

Average:

Total (g):

Method 5 Field Data Sheet

Pitot Coef./No.:

Aj

[illegible]

.....

Ambient

Temp.:

Figure 1

1

Abstract

[illegible]

Laboratory: _____

TOTAL AIR ANALYSIS, INC.

1210 East 223 rd Street, # 314 Carson, CA 90745 (310) 518 5133 Fax: (310) 518 5107

CHAIN OF CUSTODY

Page: _____ of: _____

Client:														
Contact Person:														
tel:														
fax:														
Total Air ID #	Client Sample ID	Summa Canister #	Date	Type of Sample	Lab ID Number	Analysis								Turnaround Time:
														☐ Same Day ☐ 24 Hours ☐ 48 Hours ☐ Normal
Relinquished by: (signature)						Received by: (signature)						Date/time		
Relinquished by: (signature)						Received by: (signature)						Date/time		

Appendix B

Quality Assurance/Quality Control Sample Data

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E03NI69E15A5537	Reference Number:	48-401630538-1
Cylinder Number:	CC109039	Cylinder Volume:	151.6 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32019	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Oct 22, 2019

Expiration Date: Oct 22, 2027

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.

Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	9.000 %	9.054 %	G1	+/- 0.5% NIST Traceable	10/22/2019
OXYGEN	22.00 %	21.95 %	G1	+/- 0.5% NIST Traceable	10/21/2019
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	06010537	K004892	7.018 % CARBON DIOXIDE/NITROGEN	+/- 0.5%	Jan 13, 2022
NTRM	16060508	CC446539	23.204 % OXYGEN/NITROGEN	+/- 0.5%	Dec 24, 2021

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS 6E CO2	NDIR	Oct 22, 2019
SIEMENS OXYMAT 8	PARAMAGNETIC	Oct 03, 2019

Triad Data Available Upon Request



[Redacted Signature]
Approved for Release



WestAir Gases & Equipment, Inc.
3001 E. Miraloma Avenue
Anaheim, CA 92806
Telephone: (714) 860-4830
ISO 17025:2017 Accredited Company
EPA PGVP ID# W12022

EPA PROTOCOL

CERTIFICATE OF ANALYSIS

CUSTOMER NAME: Total Air Analysis
ADDRESS: 230 E. 223rd STE 314
Carson, CA 90745

DATE ISSUED: 5/4/2022
ORDER NUMBER: 1941905
CYLINDER SIZE: 150A
VALVE CONNECTION: CGA 590
VOLUME: 150 scf
LOT NUMBER: 00042922C50
FILL PRESSURE: 2015 psig at 70° F.
PART NUMBER: NI 15E2-DA
BARCODE: WGE000129219

PURCHASE ORDER #: RUSS-EMAIL 4/27
CERTIFIED DATE: 5/3/2022
EXPIRATION DATE: 5/4/2030
SHELF LIFE (YEARS): 8

ANALYSIS RESULTS					
ANALYZED CYLINDER SERIAL NUMBER	COMPONENT	REQUESTED CONCENTRATION	CERTIFIED CONCENTRATION	EXPANDED UNCERTAINTY	ASSAY DATES
EB0144375	Carbon Dioxide	18 %	17.95 %	±0.170 % Abs.	05/03/2022
	Oxygen	9 %	9.00 %	±0.100 % Abs.	05/03/2022
	Nitrogen	BALANCE	BALANCE	—	—

Method: This standard was analyzed according to EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards, EPA 600/R-12/531, May 2012, Procedure G1.

DO NOT USE THIS STANDARD WHEN CYLINDER PRESSURE IS BELOW 100 PSIG.

REFERENCE STANDARDS

TYPE / SRM, GMIS, PRM	STANDARD	SERIAL NO.	CONCENTRATION	LOT NO.	EXPIRATION
GMIS	Carbon Dioxide	CC720807	18.07 % ±0.028 % Abs.	—	10/25/2027
GMIS	Oxygen	CC720741	20.979 % ±0.043 % Abs.	—	7/24/2027
GMIS TRACEABLE TO:					
PRM	Carbon Dioxide	O791384	18.023 % ±0.018 % Abs.	C1688310.04	5/29/2024
SRM 2659a	Oxygen	FF60997	20.753 % ±0.021 % Abs.	71-F-38	7/27/2026

INSTRUMENTATION INFORMATION

INSTRUMENT / MODEL	SERIAL NUMBER	CALIBRATION DATE	ANALYTICAL PRINCIPLE
Hortba VA-5001	ECLG4BAU	4/26/2022	NDIR
Hortba VA-5006	NU3PUVL2	4/26/2022	Paramagnetic

PRINCIPAL ANALYST:

Eliza Gomez

SIGNATURE

DATE

The product furnished under the stated reference lot number has been tested and found to contain the component concentrations listed above. All values are reported in mol/mol basis gas phase. WestAir Gases & Equipment, Inc. warrants that the above product conforms, at the time of shipment, to the above description. WestAir Gases & Equipment, Inc. liability does not exceed the value of the product purchased. Specifications are reviewed annually and are subject to change without notice. This certificate of analysis applies only to the item described and shall not be reproduced, other than in full, without written approval from WestAir Gases & Equipment, Inc. Please do not use cylinder below 50 psig. Note: ppm = µmol/mol.

DRY GAS METER CALIBRATION DATA SHEET

Control Console I.D.: Apex 6
 Reference Meter Y: 0.9979633
 Date: 1/27/2022
 Pbar 30.01
 Ambient Temp.: 63

Calibration Frequency: Semi-Annual
 Standard Temp 60

Rate (CFM)	dH	Field Dry Gas Meter			Reference Dry Gas Meter			Yfm	dH@ 1.02
		Temp Out (°F)	Meter Reading (CF)	Time	Temp (°F)	Meter Reading (CF)			
0.25	start	63	0.000	0	63	790.383		1.0333	2.457
	end	63	8.098	30	60	798.744			
	avg/total	63	8.098	30	61.5	8.361			
0.25	start	63	0.000	0	60	798.744		1.0268	2.436
	end	68	8.204	30	62	807.113			
	avg/total	65.5	8.204	30	61	8.369			
0.25	start	68	0.000	0	62	807.113		1.0246	2.451
	end	70	8.225	30	62	815.446			
	avg/total	69	8.225	30	62	8.333			
0.5	start	70	0.000	0	62	815.446		1.0325	1.976
	end	72	9.017	20	62	824.617			
	avg/total	71	9.017	20	62	9.171			
0.5	start	72	0.000	0	62	824.617		1.0287	1.982
	end	72	9.045	20	63	833.774			
	avg/total	72	9.045	20	62.5	9.157			
0.5	start	72	0.000	0	63	833.774		1.0275	1.977
	end	72	9.067	20	63	842.951			
	avg/total	72	9.067	20	63	9.177			
0.75	start	72	0.000	0	63	842.951		1.0370	1.816
	end	72	6.629	10	64	849.729			
	avg/total	72	6.629	10	63.5	6.778			
0.75	start	72	0.000	0	64	849.729		1.0395	1.821
	end	73	6.607	10	63	856.495			
	avg/total	72.5	6.607	10	63.5	6.766			
0.75	start	73	0.000	0	63	856.495		1.0402	1.818
	end	74	6.614	10	63	863.253			
	avg/total	73.5	6.614	10	63	6.758			
1.00	start	74	0.000	0	63	863.253		1.0510	1.765
	end	76	9.090	10	63	872.611			
	avg/total	75	9.090	10	63	9.358			
1.00	start	76	0.000	0	63	872.611		1.0485	1.729
	end	77	9.218	10	63	882.052			
	avg/total	76.5	9.218	10	63	9.441			
1.00	start	77	0.000	0	63	882.052		1.0521	1.719
	end	78	9.222	10	63	891.512			
	avg/total	77.5	9.222	10	63	9.460			

Rate (CFM)	Run No	Reference Dry Gas Meter			Field Dry Gas Meter			Coefficient Y(1+/-0.05)	Average Y	Average dH@	dH@ (±0.15)	0.984(X/D) ± 0.02
		Rate Qm (cfm)	Avg. Meter Temp.	Corr. Rate (scfm)	Rate Qm (cfm)	Avg. Meter Temp.	Corr. Rate (scfm)					
0.25	1	0.2787	61.5	0.2768	0.2699	63.0	0.2674	1.0333	1.0283	2.448	0.453	0.9918
	2	0.2790	61.0	0.2774	0.2735	65.5	0.2696	1.0268				
	3	0.2778	62.0	0.2756	0.2742	69.0	0.2685	1.0246				
0.5	1	0.4585	62	0.4546	0.4509	71	0.4394	1.0325	1.0295	1.979	0.017	0.9930
	2	0.4579	62.5	0.4535	0.4523	72	0.4399	1.0287				
	3	0.4589	63	0.4540	0.4534	72	0.4410	1.0275				
0.75	1	0.6778	63.5	0.6688	0.6629	72	0.6436	1.0370	1.0389	1.818	0.177	1.0020
	2	0.6766	63.5	0.6676	0.6607	72.5	0.6409	1.0395				
	3	0.6758	63	0.6675	0.6614	73.5	0.6404	1.0402				
1.00	1	0.9358	63	0.9213	0.9090	75	0.8749	1.0510	1.0505	1.738	0.258	1.0132
	2	0.9441	63	0.9295	0.9218	76.5	0.8847	1.0485				
	3	0.9441	63	0.9295	0.9218	77.5	0.8831	1.0521				

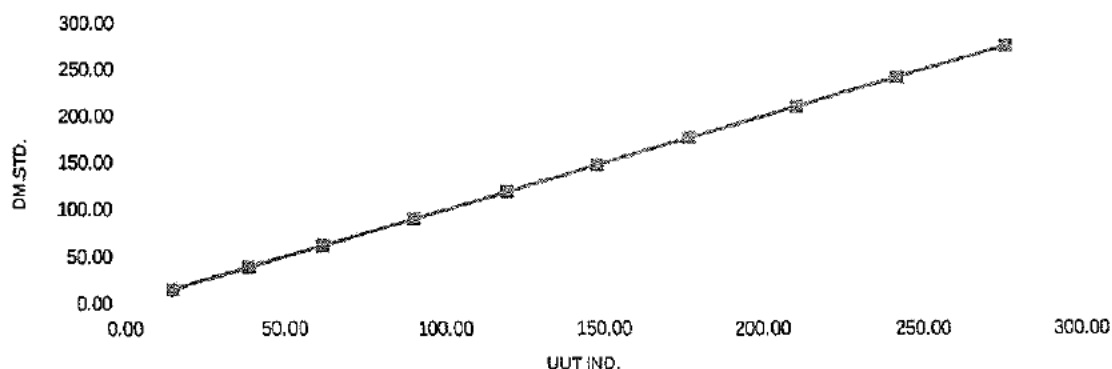
Overall Averages
 $dH@ = 1.996$ $Y = 1.0368$



CERTIFICATE OF CALIBRATION

CUSTOMER:	TOTAL AIR ANALYSIS CARSON CA	CALIBRATION DATE:	10/29/21
PO NUMBER:		CALIBRATION DUE:	10/29/22
INST. MANUFACTURER:	EQUIMETER	PROCEDURE:	NAVAIR 17-20MG-02
INST. DESCRIPTION:	P.D. METER	CALIBRATION FLUID:	AIR @ 14.7 PSIA
MODEL NUMBER:	R-275	STANDARD(S) USED:	A5, A24 DUE 05-2022
SERIAL NUMBER:	2909692	NIST TRACE # 'S:	1329407628, 89576, 1617259390
RATED ACCURACY:	+/- .5 % RD.	AMBIENT CONDITIONS:	761 mm HGA 54 % RH 73 F
UNCERTAINTY GIVEN:	TOTAL measurement uncertainty: +/- 190 % RD. K=2		
NOTES:	AS RECEIVED/ AS LEFT WITHIN SPECS. METER TESTED WITHOUT OUTLET FITTING. DECISION RULE: NO PFA % TAKEN		

TEST POINT NUMBER	UUT INDICATED	DM.STD. ACTUAL	CORRECTION FACTOR
	SCFM	SCFM	
1	14.98	14.94	0.99748
2	38.79	38.70	0.99768
3	61.53	61.38	0.99758
4	89.94	89.76	0.99798
5	118.83	118.56	0.99773
6	147.51	147.24	0.99820
7	176.55	176.28	0.99848
8	210.15	209.82	0.99842
9	241.35	240.90	0.99815
10	275.49	274.92	0.99792
AVERAGE=			0.9979633



All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) and the Unit Under Test (UUT) is a minimum of 4:1, unless otherwise noted. Calibration has been performed according to the shown procedure. The use of IAS/ILAC logo indicates calibrations are in accordance to ISO/IEC 17025:2017.

Dick Munns Company • 11133 Winners Circle, Los Alamitos, CA 90720
Phone: 714-827-1215 • www.dickmunns.com

This Calibration Certificate shall not be reproduced except, in full, without approval by Dick Munns Company. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Issuing Date:

Approved By:

Cal. Technician:

Calibrated at: ☒ Lab

☐ On-Site (Customer's)

Page 1 of 1

10/29/2021

TOTAL AIR ANALYSIS, INC.
Temperature Sensor Calibration

TC I.D #: **TC-68**
 Date: **5/31/2022**
 Calibrator: **Jofra 600S S/N 54005**
 Calibrated By: **James Festa**

Note: Calibrated with Apex # 4

<i>100 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
100	101	-1.00	-0.18
100	101	-1.00	-0.18
100	101	-1.00	-0.18

<i>300 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
301	305	-1.33	-0.53
301	305	-1.33	-0.53
301	304	-1.00	-0.39

<i>900 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
900	909	-1.00	-0.66
900	910	-1.11	-0.74
900	910	-1.11	-0.74

TOTAL AIR ANALYSIS, INC.
Temperature Sensor Calibration

TC I.D #: **TC-Showerhead 1**
 Date: **5/31/2022**
 Calibrator: **Jofra 600S S/N 54005**
 Calibrated By: **James Festa**

Note: Calibrated with Apex # 4

<i>100 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
100	102	-2.00	-0.36
100	102	-2.00	-0.36
100	102	-2.00	-0.36

<i>300 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
301	305	-1.33	-0.53
301	305	-1.33	-0.53
301	304	-1.00	-0.39

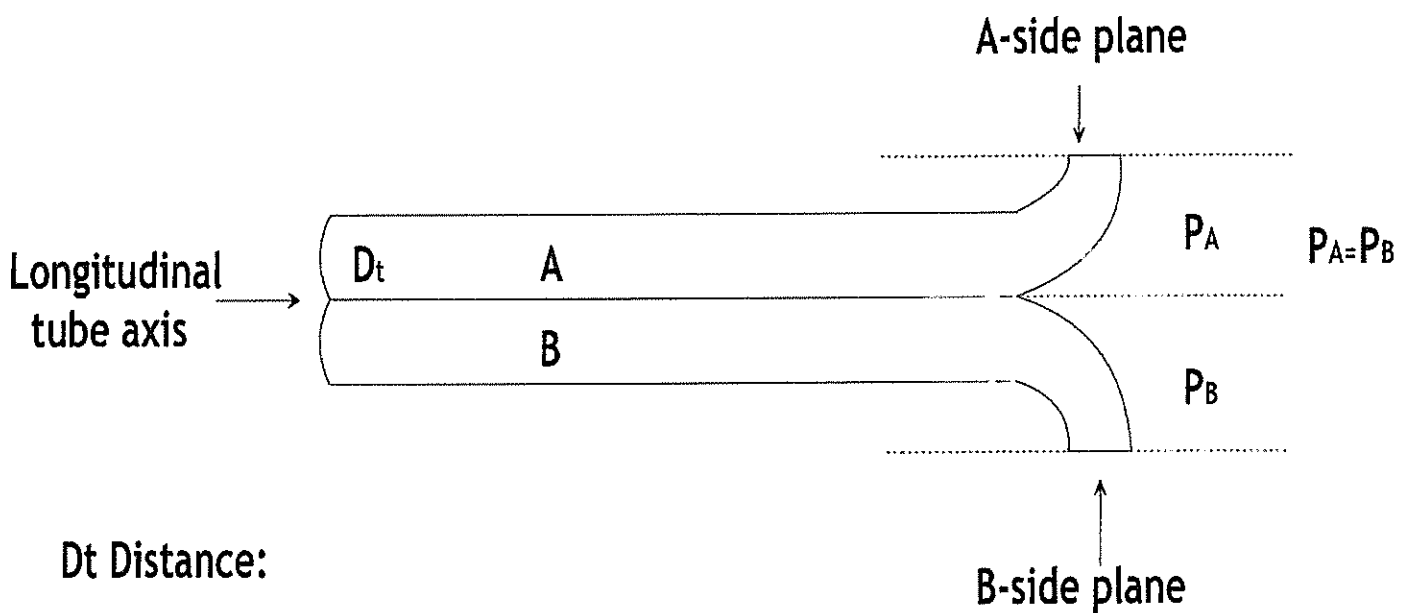
<i>900 ° F</i>			
<i>Ref. Thermometer, (° F)</i>	<i>Field TC, (° F)</i>	<i>Absolute Difference</i>	<i>Difference, (° Rankin)</i>
900	908	-0.89	-0.59
900	908	-0.89	-0.59
900	908	-0.89	-0.59

Pre Test Pitot Tube Calibration Sheet

Pitot Tube I.D. #: PT-68

Date: August 24, 2022

Pitot Tube Visual Alignment Check: OK X or Misaligned__



D_t Distance:

P_A Distance:

P_B Distance:

$$1.05 D_t \leq P \leq 1.50 D_t$$

$1.05 D_t \leq P \leq 1.50 D_t$: YES X NO__

COMMENTS: $C_p=0.84$

Appendix C

**San Diego Air Pollution Control District
Permit to Operate**



COUNTY OF SAN DIEGO, AIR POLLUTION CONTROL DISTRICT
10124 OLD GROVE ROAD, SAN DIEGO, CA 92131
PHONE (858) 586-2600 Fax (858) 586-2601
www.sdapcd.org

Sectors: 2, D
Site Record ID: APCD2002-SITE-04628
Application Record ID: APCD2020-APP-006565

10124 OLD GROVE ROAD, SAN DIEGO, CA 92131

Startup Authorization Expires:
No Date Entered

Superior Ready Mix LP
Owner Manager
1508 Mission Road
Escondido CA 92029

EQUIPMENT ADDRESS

Superior Ready Mix LP
Gary Balok
500 N Tulip St
Escondido CA 92025

DRAFT STARTUP AUTHORIZATION

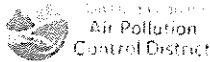
After examination of your Application APCD2020-APP-006565 for an Air Pollution Control District (hereinafter referred to as "the District") Authority to Construct and Permit to Operate for equipment located at 500 N Tulip St Escondido CA 92025 in San Diego County, the District has decided on the following actions:

This Startup Authorization is granted pursuant to Rule 21 of the Air Pollution Control District Rules and Regulations for equipment to consist of:

Hot Mix Asphalt Plant consisting of: one dryer drum, Astec, S/N 16-153-304892-3-1, natural gas fired, with a low-NOx burner rated at 75 MMBtu/hr, and with a twin shaft coater/mixer (72"x130");
• one main drag slat conveyor with three upper inclined drag slat conveyors;
• four 150 ton asphalt storage silos;
• one baghouse, Maxam Kleen Aire, Model 32/14.5, 60,000 cfm capacity, 10,629 ft² cloth area, equipped with a knockout box, venting the dryer drum;
• one drive over receiving grizzly and hopper with five receiving conveyors (one each 30"x16', 30"x86', 30"x140', 30"x175', 30"x50');
• five aggregate compartment bins (two 15'x33', two 20'x 33', one 30'x33'),
• five belt feeders (each 30"x10'3"), three feed conveyors (one each 30"x200', 30"x60', 30"x14');
• one cold feed single deck screen (4'x12'); -
• four screw conveyors;
• two 30,000 gallon asphalt oil storage tanks and one 12,000 gallon asphalt oil tank, with a shared 1.5 MMBtu/hr natural gas fired heater and surface condensers for blue smoke control;
• load-out and asphaltic concrete storage silos controlled by a blue smoke control system, Model 6S16C, rated at 32,000 scfm with 6 stages of filter media;
• two Recycled Asphalt Pavement (RAP) receiving hoppers (each 10'x14'8"),
• two RAP belt feeders (each 42"x10');
• one RAP scale conveyor (24"x10');
• one RAP screen (4'x8');
• one RAP belt conveyor (30"x60');
• one 5400 gallon asphalt emulsion storage tank;
• one 7500 gallon sealer storage tank; and
• one 1500 gallon mixing tank.

This Startup Authorization is issued with the following conditions:

1. At no time shall the subject equipment cause or contribute to a public nuisance as specified in District Rule 51. If compliance with Rule 51 cannot be demonstrated to the satisfaction of the District, the permittee will take whatever corrective action necessary to meet applicable requirements. If corrective action requires any physical change or modification to the subject equipment the permittee shall apply for and obtain an Authority to Construct for all such modifications prior to making any physical change. [Rule 51]
2. Street sweeping to suppress road dust shall be conducted within 30 feet of the entrance and exit of vehicles at least once a week. Records of sweeping shall be maintained on-site for the last three years and made available to



COUNTY OF SAN DIEGO, AIR POLLUTION CONTROL DISTRICT

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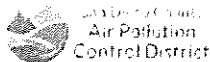
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Sectors: 2, D
Site Record ID: APCD2002-SITE-04628
Application Record ID: APCD2020-APP-006565

10/15/2020 10:10:10 AM

Startup Authorization Expires:
No Date Entered

- the District upon request.
(Rules 50/51)
3. The operator shall operate in such a way that there shall be no visible emissions (0% opacity), including haul road emissions, beyond the property line.
 4. A visible sign shall be posted in the Plant advising truckers entering or leaving the Plant to cover or protect the trucks to prevent spills or blowout of material from occurring. (Rule 51)
 5. Only natural gas shall be burned in the dryer. The maximum natural gas consumption for the rotary dryer over any 12 month rolling period shall not exceed 98,040,000 SCF. The dryer shall use no more than 1,052,000 SCF of natural gas per calendar day .
[Rule 20.2, Rule 1200]
 6. A non-resettable totalizing fuel meter shall be installed in the fuel line to measure the volumetric flow rate of fuel to this equipment. This meter shall be properly calibrated, maintained and kept in good operating condition at all times. A record of the calibration shall be maintained on site, unless calibrated by the gas utility, and made available to District personnel upon request.
 7. The fuel meter to this equipment shall either be self-correcting to standard pressure (14.7 psia) or the permittee shall determine the normal operating pressure of the fuel line at the inlet of the meter. A record of the fuel line pressure shall be posted at the fuel meter or shall be maintained with the equipment and made available to District personnel upon request.
 8. Readings from the fuel meter shall be taken and recorded at the beginning of each day the plant is operated or as soon as practicable after 12:00 AM if the plant is in operation at this time. Readings shall be maintained on site and made available to District personnel upon request. Daily gas usage shall be computed as the difference of two consecutive beginning of the day readings. Calibration of the Flow Meter by a qualified third party shall be conducted at least once every three calendar years. The most recent calibration report shall be maintained on-site and available for inspection. [Rule 20.2]
 9. The asphalt plant maximum hourly production rate shall not exceed 280 tons during any clock hour period. The daily maximum production rate shall not exceed 4,000 tons and the annual total production rate (measured over any 12-month rolling period) shall not exceed 360,000 tons. Hourly, daily, monthly and calendar year production records shall be kept and maintained on site for the last three years of operation and made available to District personnel upon request. [Rule 1210, 20.2, Rule 1200, CEQA]
 10. Production shall be calculated and recorded using the Aggregate Belt Scale reading (TPH) multiplied by the Belt operation time. Tickets showing daily asphalt truck dispatches shall be kept on-site. The production measured by the Belt Scale plus the amount of asphalt transferred from the Hopper shall not deviate from the Dispatch Scale ticketed amount, by more than 12.5% in any 30 day period.
 11. When processing recycled asphalt pavement, transfers from the hopper into the Plant shall be recorded. The records shall include tonnage and date and shall be maintained on site and made available to District personnel upon request.
(NSR)
 12. The owner or operator shall maintain records on site for all deliveries of rubberized asphalt received and made available to District personnel upon request. The records shall include at a minimum:
 - tonnage
 - date
 - vendor
 - Material Safety Data Sheet.[Rule 20.2]
 13. The total Particulate Matter concentration in the Stack shall not exceed 0.020 grain/DSCF. Baghouse visible emissions shall not exceed 10% opacity except for non-repeatable momentary readings. Opacity and Particulate Matter Stack concentration shall be evaluated using San Diego APCD approved Test Methods. (Rule 1200)
 14. A differential pressure gauge shall be installed across the filter media and maintained in good working order at all times to measure the pressure drop across the dryer baghouse filters. A final pressure drop range shall be



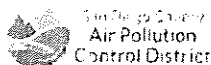
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established for inclusion on the permit to operate. The pressure drop shall be recorded upon initial installation with clean filters, each day of equipment use, and immediately prior to filter replacement. Records shall be maintained on site and made available to District personnel upon request. The maximum allowable pressure drop may also be provided by the manufacturer.

15. A differential pressure gauge shall be maintained in good operating conditions at all times to measure the differential pressure across the blue smoke control filters. Differential pressure shall be recorded from this gauge at least once per day during normal Plant operations and maintained on site. Filter inspection and cleaning, shall be performed at least every other calendar month and shall be recorded. Records shall be maintained on site and made available to District personnel upon request. Differential pressure shall be maintained between 0.5 and 8.0 inches of water.
16. Material drying, conveying, screening, storage, mixing, and weighing equipment after the rotary dryer inlet shall be enclosed and vented to the Air Pollution Control equipment. There shall be no leakage of air contaminants prior to treatment in the control equipment.
17. All drop zones shall be sufficiently controlled so as not to allow the visible emissions to exceed 40% opacity for more than an aggregate total of three minutes in any period of 60 consecutive minutes.
18. Dryer Oxides of Nitrogen emission concentration, measured at the Baghouse Exhaust Stack shall not exceed 33 PPMV., on a dry basis corrected to 3% Oxygen.
(NSR)
19. Dryer Carbon Monoxide emission concentration, measured at the Baghouse Exhaust Stack shall not exceed 1,434 PPMV, on a dry basis corrected to 3% Oxygen.
(NSR)
20. The Operator shall keep records for each load of asphaltic cement received. The records shall include grade of asphalt, load volume, date, and vendor. Records shall be maintained on site and made available to District personnel upon request.
(NSR)
21. Only Natural Gas shall be burned in the Asphaltic Cement Storage Tank heaters. The reference NOx emission of the Burner shall be available on site in the manufacturer literature and is not to be higher than 0.10 lbs/MMBTU. The Burner shall be operated in accordance with manufacturer's instructions which shall be readily available on-site. (NSR)
22. The material from the dryer shall not exceed 340 degrees Fahrenheit, except for transient conditions not to exceed 3 minutes in any 60 consecutive minute period.
23. Dryer Temperature Controller shall be operational at all times and temperature recorded at least twice a day. Records shall be maintained on site and made available to District personnel upon request.(NSR)
24. The Blue Smoke Control Blower associated with the Baghouse shall be operated at all times when the Dryer is in operation and as necessary after the Dryer main burner shuts down to preclude violating the visible emission limits of District Rule 50.
25. The Blue Smoke Control Blower associated with the Silos shall be operated at all times either when the Dryer is in operation or when product is dispatched.
26. The Vapor Surface Condensers associated with each asphalt cement tank shall be operational at all times when a tank is being heated, transferring or receiving product.
(Rule 50, 1200)
27. Aggregate rock and sand materials in receiving and storage areas and in the raw material feed to the rotary dryer shall contain sufficient naturally or added moisture to prevent dust emissions from exceeding 20% opacity at any time during unloading, stacking, storage, hopper loading and conveying.
28. Except for non-repeatable momentary readings, opacity at conveyor transfer points and screens shall not exceed 10 percent at any time. [Rule 20.2]
29. Trucks shall exit the facility through the water pool in order to wash dirt from the tires. (Rule 50, 51)



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30. Vehicles at the site and on the haul roads shall not exceed speeds of 10 miles per hour. All unpaved haul roads and areas at the site subject to vehicle traffic, excluding areas inaccessible to treatment by water trucks, shall be kept visibly moist or treated with a chemical binder to minimize dust emissions. Paved haul roads shall be wet swept a minimum of once every week in order to minimize dust emissions from vehicle traffic. Wet-sweeping records shall be maintained on site and made available to District personnel upon request. [Rule 1210]
31. The Plant shall not process in excess of 50% by weight of recycled asphalt pavement at any one time. (Rule 1200)
32. No asphalt concrete additives containing Toxic Air Contaminants per District Rule 1200 shall be used except those approved in writing by the APCD. (Rule 1200)
33. This equipment shall be source tested once each permit year (annual source test) to demonstrate compliance with the emission standards contained in this permit. For the purposes of this permit, a permit year is the 12-month period ending on the last day of the permit expiration month. It is the responsibility of the permittee to schedule the source test with the District. The source test shall be performed or witnessed by the District. Each annual source test shall be separated by at least 90 days from any annual source test performed in a different permit year.
34. Plant Source Tests shall be conducted using rubberized asphalt every other year if rubberized asphalt production comprises at least 20% of the total production.
35. The facility shall keep daily records of:
 - a. the tons of recycled asphalt used
 - b. total daily tons produced and hours of operation during day
 - c. all liquid asphalt loads received in tons
 - d. grade and daily amount of liquid asphalt used
 - e. housekeeping and maintenance performed

These records shall be kept onsite for a minimum of three years and made available to the District upon request.
36. Access, facilities, utilities and any necessary safety equipment for source testing and inspection shall be provided upon request of the Air Pollution Control District.
37. This Air Pollution Control District Permit does not relieve the holder from obtaining permits or authorizations required by other governmental agencies.
38. The permittee shall, upon determination of applicability and written notification by the District, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.)



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This authorization is for temporary operation of the above-specified equipment. This temporary Permit to Operate will remain in effect, unless withdrawn or modified by the District or a Permit to Operate is granted or denied.

This Startup Authorization shall be posted on or within 25 feet of the described equipment or maintained readily available at all times on the operating premises.

This Startup Authorization does not relieve the holder from obtaining permits or authorizations, which may be required by other governmental agencies. This Startup Authorization is not an authorization to exceed any applicable emission standard established by this District or any other governmental agency. This authorization is subject to cancellation if any emission standard or condition is violated.

Within 30 days after receipt of this Startup Authorization, the applicant may petition the Hearing Board for a hearing on any conditions imposed herein in accordance with Rule 25.

This Startup Authorization will expire on No Date Entered, unless an extension is granted in writing.

If you have any questions regarding this action, please contact me at (858) 586 2741 or via email at arthur.carbonell@sdapcd.org.

Arthur Carbonell

Associate Engineer

CC: Compliance Division