Source Test Report

TEICHERT AGGREGATES
Truckee, CA

Asphalt Batch Plant
NOx, CO, TOG and PM_{10}, Emission Results
Permit# 88-36-08

Test Date: August 17, 2022

Report Date: September 16, 2022

Performed and Reported by:
BEST ENVIRONMENTAL
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Livermore, CA 94551
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Prepared For:
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For Submittal To:
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REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program. If this report is submitted for compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please call the Team Leader or Reviewer at (925) 455-9474.

Suhail Asfour

Sr. Project Manager

Reviewer:

I have reviewed this report for presentation and accuracy of content, and hereby certify that to the best of my knowledge the information is complete and correct.

Basim (Bobby) Asfour

Principal

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Source Test Information

Source Owner:	Teichert Aggregates 3500 American River Drive Sacramento, CA 95851
Source Location:	Teichert Aggregates Martis Valley Facility 13879 Joerger Road Truckee, California.
Source Description:	One Hot Mix Asphalt Plant with Rotary Dryer and Baghouse
Permit:	Permit #88-36-08

Test Parameters & Limits:	Average Test Results
NOx: 10.85 tons/year	6.79 tons/year
CO: 70.70 tons/year	14.49 tons/year
TOG: 17.85 tons/year	17.85 tons/year
TSP: 0.04 gr/dscf	0.027 gr/dscf
TSP 0.1gr/DSCF @ 12% CO_2	0.10 gr/dscf
TSP: 6.27 tons/year	0.115 tons/year

Source Testing Firm:	BEST ENVIRONMENTAL 339 Stealth Court Livermore, CA 94551
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Contact:	Bobby Asfour
Testing Date(s):	August 17, 2022
Analytical Laboratories:	Best Environmental (Particulate**)** 339 Stealth Court Livermore, CA 94551

SECTION 1. INTRODUCTION

1.1. Test Purpose

Best Environmental (BE) was contracted by Teichert Aggregates to perform NOx, CO, TOG and PM_{10} emissions testing on one natural gas fired Asphalt Batch Plant to comply with NSAQMD and the Permit to Operate (PTO) #88-36-08. The test parameters were Total Suspended Particulate (TSP), Oxide of Nitrogen (NOx), Carbon Monoxide (CO), Total Organic Gases (TOG), Oxygen (O_2) and Carbon Dioxide (CO_2). TSP is commonly referred to as Particulate Matter. A copy of the permit is included in the appendices.

1.2. Test Location

The testing was conducted at the baghouse exhaust outlet, which is located at the Teichert Aggregates, Martis Valley Facility, 13879 Joerger Road, Truckee, California.

1.3. Test Date

Testing was conducted on August 17, 2022

1.4. Test Parameters and Methods

The following emission parameters were measured:

Parameter	Monitoring & Analytical Protocols
NOx, CO, & O_2	EPA Methods 7E, 10 & 3A
TOG	EPA Method 18
Volumetric Flow Rate	CARB Methods 1-4
TSP	CARB Method 5

1.5. Sampling and Observing Personnel

Sampling was performed by Suhail Asfour and Burt Kusich of BE. Although notified of the test date the Northern Sierra Air Quality Management District (NSAQMD) was not present during the test.

SECTION 2. SUMMARY OF RESULTS

2.1. Average Test Results

Table 2.1 summarizes the Baghouse Average Test Results. Triplicate 67.5-minute runs were performed for the particulate matter test. Triplicate 30-minute runs were performed for the gaseous emissions test parameters. Testing was conducted according to approved CARB and Environmental Protection Agency (EPA) test methods. Individual particulate matter and gaseous test results are presented in Tables 1 and 2 respectively on pages 7 & 8.

Table 2.1.: Average Test Results
Baghouse
Permit 88-36-08

Parameter	Average	Permit Limits
NOx, tons/year	6.79	**10.85**
CO, tons/year	14.49	**70.70**
TOG, tons/year	<0.12	**17.85**
TSP. gr/DSCF	0.027	**0.04**
TSP, gr/DSCF @ 12% CO_2)	0.10	**0.1**
TSP, tons/year	0.115	**6.27**

2.2. Allowable Emissions

See Table 2.1 above. The test results show that all emissions are with-in the emission limits shown in the Permit to Operate.

2.3. Comments: Discussion of Quality Assurance and Errors

Quality assurance procedures listed in the above referenced test methods and referenced in the Source Test Plan are performed and documented. The QA/QC procedures are described in Section 4.3 of the report. Documentation of the QA/QC is provided in Appendix A, B, E & F.

TOG is defined as non-methane, non-ethane organic compounds. TSP is defined as total particulate (particulate collected in the front and back half of the sample train).

The tons/year emission rates were calculated based on 2000 hours of yearly production.

SECTION 3. SOURCE OPERATION

3.1. Process Description

The Asphalt Batch Plant is equipped with a 135 MMBtu/hr Natural gas burner. As the plant demands product, rock is injected into the drum/dryer mixer to begin the asphalt production process. The air and emissions are filtered and pulled into the bag house where vacuum-style bags filter out the particulate. The emissions were then drawn through a fan, which draws a negative static all the way back to the burner and exits the stack.

3.2. Process and Control Operating Parameters

The plant produced an average of ~270 tons per hour of asphalt during the test program. Tons per hour readings were taken from a digital read-out in the control room.. The dryer burner was operated at ~44% of rated capacity. The product produced during the testing was 1/2" and 3/4" aggregate fiber asphalt using PG 64-28 asphalt oil.

3.3. Normal Operating Parameters

The asphalt plant produces product on demand normally 12 hours per day for up to 2000 hours per year.

3.4. Testing or Process Interruptions and Changes

There were no delay or interruptions during testing.

SECTION 4. SAMPLING AND ANALYSIS PROCEDURES

4.1. Port Location

Emissions from the baghouse were sampled through three 4-inch ports on the rectangular stack; the ports are located 5 stack diameters downstream and <1 stack diameter upstream from the stack silencer.

The dimensional cross section of the stack is 36.25 X 53.75-inches (Area SQFT =13.531)

4.2. Point Description/Labeling – Ports/Stack

The CEM and particulate testing was performed using three ports with nine sample points per port.

4.3. Method Description, Equipment, Sampling, Analysis, and QA/QC

Sampling and analytical procedures of the performed sample methods were followed as published in the CARB Stationary Source Test Methods Volume I and the EPA "Quality Assurance Handbook for Air Pollution Measurement Systems" Volume III, US EPA 600/4-77-027b.

The following is an overview of the Testing Performed

Parameter	Location	Method(s)	Duration	# of Runs
NO_x, CO, CO_2 & O_2	Exhaust	EPA Methods 7E, 10 & 3A	40 mins	3
TOG	Exhaust	EPA Method 18	40 mins	3
Flow Rate, DSCFM	Exhaust	CARB Methods 1-4	67.5 mins	3
PM	Exhaust	CARB Method 5	67.5mins	3

EPA Method 7E, 10 & 3A were used to monitor O_2, CO, and NOx, respectively. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample, and analyzing it by continuous monitoring gas analyzers. The sampling system consists of a stainless steel sample probe, Teflon® sample line, glass-fiber particulate filter, glass moisture-knockout condensers in ice, Teflon® sample transfer tubing, diaphragm pump and a stainless steel/Teflon® manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 PSI was provided to each analyzer to avoid pressure variable response differences. The entire sampling system was leak checked prior to and at the end of the sampling program.

The BE sampling and analytical system was checked for linearity with zero, mid and high span calibrations, and was checked for system bias at the beginning and end of the test day. System bias was determined by pulling calibration gas through the entire sampling system. Individual test run calibrations were performed externally to eliminate bias corrections, and they used the calibration gas that most closely matches the stack gas effluent. The calibration gases were selected to fall approximately within the following instrument ranges; 80 to 90 percent for the high

calibration, 40-60 percent for the mid range and zero. Zero, calibration and bias drift values are determined for each test and the results are corrected for analyzer drift.

EPA Methods 7E, 10 & 3A met the following QA/QC method requirements:

System Criteria

Instrument Linearity	≤2% Calibration Span or ±0.5 diff.
Instrument Bias	≤5% Calibration Span or ±0.5 diff.
NO_2 Converter Efficiency	≥90%
System Response Time	≤2 minutes

Test Criteria

Instrument Zero Drift	≤3% Calibration Span or ±0.5 diff.
Instrument Span Drift	≤3% Calibration Span or ±0.5 diff.

The following reference method continuous monitoring analyzers were used:

Parameter	**Make**	**Model**	**Principle**
O_2	CAI	200	Paramagnetic
CO_2	CAI	200	Paramagnetic
NO_x	CAI	600CLD	Chemiluminescence
CO	TECO	48i	NDIR

All BE calibration gases are EPA Protocol #1. The analyzer data recording system consists of a computer data acquisition system (DAS) and a strip chart recorder. A NO_x converter efficiency test showed that the converter was >90% efficient.

EPA Method 18 is used to determine carbon speciated compounds (C_1 to C_6+) emissions by gas chromatograph / Flame Ionization Detection (GC/FID). Gaseous emissions are drawn through a Teflon sample line to a tedlar bag located in a rigid leak proof bag container. Sample is drawn into the bag by evacuating the container to stack gas pressure to allow sample flow without using a pump to avoid contamination. Negative pressure is adjusted to maintain an integrated sample flow between 20 to 60 minutes. The bag samples are taken to a laboratory and analyzed within 72 hours. The results are reported as methane with a detection limit of 0.5 ppm for non-methane non-ethane organic compounds.

CARB Method 1 This method is used to determine the duct or stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements. The point selection is made based on the type of test (particulate or velocity), the stack diameter and port location distance from flow disturbance.

CARB Method 2 is used to determine stack gas velocity using a standard or S-type pitot tube and inclined manometer or magnahelic. Temperature is monitored using a K-type thermocouple and calibrated Omega temperature meter. Leak checks are performed before and after each traverse to validate the results. Thermometer calibrations are performed using an Omega

Model CL-300 calibrator. Geometric calibrations of S-type pitots are performed and records are submitted with the report.

CARB Method 3 is used to determine the molecular weight of the stack gas. The $\%O_2$ and $\%CO_2$ concentrations are used and are measured with EPA Method 3A.

CARB Method 4 is used to determine the moisture content in the gas stream by extracting a sample and condensing the moisture in the impingers and the silica gel trap of the Method 5 sample trains. The moisture gained is determined volumetrically and gravimetrically. Results are recorded on the field data sheet. A sample is pulled using a leak tight pump. Volume is measured with a calibrated dry gas meter. Pre-and post-test leak checks are performed for each run.

CARB Method 5 is used to determine the filterable and condensable Particulate emissions. The sampling equipment consists of a stainless steal nozzle, a BE constructed heated stainless steal probe w/stainless steal liner, heated filter box and filter holder with glass fiber filter, followed by a Teflon line and umbilical to four Greenburg-Smith impingers, a pump and a meter control module. The first and second impingers are filled with 100 mL of DI water. A third impinger is left empty and the fourth impinger contains silica gel desiccant to dry the gas before the pump and gas meter. The entire system must be leak free before pulling stack gas though at a rate suitable for the stack flow rate. Following sampling, the filters are collected and sent to the BE laboratory for analysis. Filterable particulate is determined gravimetrically from the probe/nozzle acetone rinse and filter, following evaporation and desiccation of these fractions. Condensable gaseous particulate emissions that pass through the filter (rated at 99.95% efficient for 0.3µm particulates) are collected and recovered from the sample line and back-half of the filter holder and from the first two impingers containing de-ionized water. The organic condensable particulate fraction is separated using a dichloromethane rinse, which is evaporated desiccated and weighed. The remaining aqueous fraction is also evaporated, desiccated, and weighed to determine the inorganic condensable particulate fraction.

Sampling QA/QC: consists of pitot leak checks per CARB Method 2. Sampling system leak checks are performed before and after each test run. The sampling system leak checks are performed per CARB Method 4. The impingers are kept in ice to maintain the temperature of the gas exiting the last impinger to below 68°F. The dry gas meter, pitot, thermocouples, gauges, and nozzles are all calibrated according to the methods and with a frequency of between 6 to 12 months as specified in CARB QA/QC Volume VI, Table 3. Nozzles are calibrated to within 0.001" diameter and are inspected for damage prior to each test. Reagent blanks are collected using the same lot reagents, same proportions and techniques as the test samples. Analytical QA/QC consisted of a reagent blank. All gravimetric work is performed on calibrated analytical balances.

TABLE #1

Teichert Aggregate - Truckee
NOx, CO and TNMHC Emissions Results
Asphalt Batch Plant-Baghouse Outlet
PTO #88-36-08

TEST	1	2	3	AVERAGE	LIMIT
Test Date	08/17/22	08/17/22	08/17/22		
Test Start Time	0725-0808	0948-1036	1141-1225		
Standard Temp., °F	68	68	68		
Asphalt Production, tons/hr	250	280	280	270	
Production Limit, hrs/year	2,000	2,000	2,000		
Production Limit, tons/year	700,000	700,000	700,000		
Flow Rate, DSCFM (Method 5)	38,223	36,123	37,468	37,272	
Outlet Emissions					
O_2, %	15.41	14.67	15.35	15.14	
CO_2, %	2.73	3.74	3.44	3.30	
NOx, ppm	20.85	29.35	25.05	25.08	
NOx, lbs/hr	5.80	7.72	6.84	6.79	
NOx, lbs/day	69.63	92.66	82.03	81.44	
NOx, lbs/ton	0.023	0.028	0.024	0.025	
NOx, lbs/MMBtu	0.082	0.102	0.098	0.094	
NOx, Tons/year	5.80	7.72	6.84	**6.79**	**10.85**
CO, ppm	57.85	108.87	97.68	88.13	
CO, lbs/hr	9.80	17.43	16.22	14.49	
CO, lbs/day	117.62	209.18	194.69	173.83	
CO, lbs/ton	0.039	0.062	0.058	0.053	
CO, lbs/MMBtu	0.139	0.231	0.232	0.201	
CO, Tons/year	9.80	17.43	16.22	**14.49**	**70.70**
TOG, ppm	<1.00	<1.00	1.90	<1.30	
TOG, lbs/hr	<0.10	<0.09	0.18	<0.12	
TOG, lbs/day	<1.16	<1.10	2.16	<1.47	
TOG, lbs/ton	<0.0004	<0.0003	<0.0006	<0.0005	
TOG, lbs/MMBtu	<0.001	<0.001	<0.003	<0.002	
TOG, Tons/year	<0.10	<0.09	0.18	**<0.12**	**17.85**

Note: lbs/day is based on a 12 hour day

MW = Molecular Weight
DSCFM = Dry Standard Cubic Feet Per Minute
ppm = Parts Per Million Concentration
lbs/hr = Pound Per Hour Emission Rate
lbs/hr = pounds per hour
lbs/day = pounds per 12 hour day
lbs/ton = pounds per ton of asphalt produced
tons/year = tons per year
CO = Carbon Monoxide (MW = 28)
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
TOG = Total Non-Methane, non-ethane organic compounds (MW = 16)
lbs/MMBtu = Pounds per million BTU

CALCULATIONS:

Emission Rate, lbs/hr = ppm * MW * DSCFM * 60 / 379E6
Emission Factor, lbs/ton = (lbs/hr) / (tons/hr)
Emission Rate, tons/year = [(lbs/hr) * (hrs/year limit)] / 2000
Emission Rate, lbs/day = lbs/hr * 12
lbs/MMBtu = Fd * M.W.* ppm * 2.59E-9 * (20.9 / 20.9-%O_2))
Fd = 8710

TABLE #2

Tiechiert Truckee
Baghouse
TSP Emissions Results
PTO #88-36-08

RUN #	1	2	3	AVERAGE	LIMITS
TEST DATE	08/17/22	08/17/22	08/17/22		
TEST TIME	740-856	948-1059	1134-1250		
PRODUCTION LIMIT, TPY	7,000	7,000	7,000		
PRODUCTION RATE, TPH	250	280	280	270	
SAMPLE VOLUME (DSCF)	43.163	43.008	42.134	42.769	
ISOKINETIC (%)	101.7	107.2	101.3	103.4	
DUCT TEMP., (°F)	191.0	191.0	191.0	191.0	
VELOCITY (ft/sec)	95.45	95.37	95.63	95.48	
FLOW RATE (ACFM)	77,494	77,429	77,637	77,520	
FLOW RATE (DSCFM)	38,223	36,123	37,468	37,272	
H_2O (volume %)	25.39	29.43	27.00	27.27	
O_2 (volume %)	15.41	14.67	15.35	15.14	
CO_2 (volume %)	2.73	3.74	3.44	3.30	
TSP Emissions					
Total F.H. Particulate Conc. (gr/DSCF)	0.028	0.022	0.020	0.023	
Total F.H. Particulate Emissions (Lbs/hr)	9.254	6.745	6.542	7.514	
Organic Particulate Conc. (gr/DSCF)	0.0007	0.0010	0.0008	0.0008	
Organic Particulate Emissions (Lbs/hr)	0.238	0.322	0.248	0.269	
Inorganic Particulate Conc. (gr/DSCF)	0.0029	0.0029	0.0035	0.0031	
Inorganic Particulate Emissions (Lbs/hr)	0.944	0.911	1.119	0.991	
Tot. Particulate Conc. (gr/DSCF)	0.032	0.026	0.025	**0.027**	**0.04**
Tot. Particulate Conc.(gr/DSCF)@12%CO_2	0.14	0.08	0.09	**0.10**	**0.1**
Tot. Particulate Conc. (mg/DSCM)	72.90	58.97	56.36	62.74	
Tot. Particulate Emissions (Lbs/hr)	10.436	7.978	7.909	8.774	
Tot. Particulate Emissions (Lbs/day)	104.36	79.78	79.09	87.74	
Tot. Particulate Emissions (tons/year)	0.146	0.100	0.099	**0.115**	**6.27**
Tot. Particulate Emission Factor (Lbs/ton)	0.042	0.028	0.028	0.033	

WHERE

DSCF = Sample Volume in Dry Standard Cubic Feet
ACFM = Actual Cubic Feet per Minute
DSCFM = Dry Standard Cubic Feet per Minute
H_2O, volume % = Stack gas percent water vapor
gr/DSCF = Particulate concentration in grains per DSCF
F.H. Particulate = Filterable Particulates
Organic Particulate = Condensible Organic Particulate (solvent extract)
Inorganic Particulate = Condensible Inorganic Particulate (Acids & Sulfates)
TPH = Tons per Hour

CALCULATIONS

Lbs/hr Emission Rate = 0.00857 * gr/DSCF * DSCFM
Lbs/ton Emission Factor = lbs/hr / TPH
Tot. Particulate Concentration (@ 12% CO2) = gr/DSCF * 12/Co2%
Emission Rate, lbs/day = lbs/hr * 12
Emission Rate, tons/year = [(lbs/ton) * (tons/year limit)] / 2000

APPENDICES

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APPENDIX A
CALCULATIONS & NOMENCLATURE

Standard Abbreviations for Reports

Unit	Abbreviation	Unit	Abbreviation
		microgram	ug
Brake horsepower	bhp	milligram	mg
Brake horsepower hour	bhp-hr	milliliter	ml
British Thermal Unit	Btu	million	MM
capture efficiency	CE	minute	min
destruction efficiency	DE	Molecular Weight	M
Dry Standard Cubic Feet	DSCF	nanogram	ng
Dry Standard Cubic Feet per Minute	DSCFM	Parts per Billion	ppb
Dry Standard Cubic Meter	DSCM	Parts per Million	ppm
grains per dry standard cubic foot	gr/DSCF	pound	lb
gram	g	pounds per hour	lbs/hr
grams per Brake horsepower hour	g/bhp-hr	pounds per million Btu	lbs/MMBtu
kilowatt	kW	second	sec
liter	l	Specific Volume, ft^3/lb-mole	SV
Megawatts	MW	Thousand	K

Common Conversions / Calculations / Constants

1 gram = 15.432 grains

1 pound = 7000 grains

grams per pound = 453.6

bhp = 1.411 * Engine kW, (where Engine kW = Generator kW output / 0.95) @ 95% efficiency

g/bhp-hr = 453*ppm*(MW / (385E6))* 0.00848 * f-factor * (20.9 / (20.9-O_2)); **CARB**

g/bhp-hr = lbs/hr * 453.6 / bhp

2.59E-9 = Conversion factor for ppm to lbs/scf; **EPA 40CFR60.45 @ 68°F**

Correction Multiplier for Standard Temperature = (460 + $T_{std.}$ °F) / 528

F factor: dscf / MMBTU @ **60°F = 8579,** @ **68°F = 8710**. @ 70° F = **8743** for natural gas

Btu/ft^3: **1040**

lb/hr Part. Emission Rate = 0.00857 * gr/dscf * dscfm; **EPA Method 5**

lbs/hr = ppm * dscfm * MW * 0.00008223 / (Std Temp + 460)

Correction to 12% CO_2 = gr/dscf * 12% / stack CO_2%; **EPA Method 5**

Correction to 3% O_2 = ppm * 17.9 / (20.9 - stack O_2 %); **CARB Method 100**

Correction to 15% O_2 = ppm * 5.9 / (20.9 - stack O_2 %); **CARB Method 100**

dscfm = Gas Fd * MMBtu/min * 20.9 / (20.9 - stack O_2 %); **EPA Method 19**

Lb/MMBtu @ **60°F** = Fd * M * ppm * **2.64E-9** * 20.9 / (20.9 - stack O_2 %);
@ **68°F** = Fd * M * ppm * **2.59E-9** * 20.9 /(20.9 - stack O_2 %);
@**70F** = Fd * M * ppm * **2.58-9** * 20.9 / (20.9 - stack O_2 %)

Standard Temperatures by District

EPA	68 °F	NSAPCD - Northern Sonoma	68 °F
CARB	68 °F	PCAPCD - Placer	68 °F
BAAQMD - Bay Area	70 °F	SLOCAPCD - San Luis Obispo	60 °F
SJVUAPCD - San Joaquin	60 °F	SMAQMD - Sacramento	68°F de facto
SCAQMD - South Coast	60 °F	SCAQMD - Shasta County	68 °F
MBUAPCD - Monterey Bay	68 °F	YSAPCD - Yolo-Solano	68 °F
FRAQMD – Feather River	68 °F	AADBAPC – Amador County	68 °F

BEST ENVIRONMENTAL

CEM BIAS SYSTEM TEST SUMMARY SHEET (EPA)

Facility: Teichert Aggregate - Truckee **Date:** 8/17/2022 **Personnel:** SA/BK

Location: Baghouse Outlet

	O_2	CO2	NOx	CO			Comments
Analyzer	200	200	600	48i			Drift Calcs.
Range	21.01	12.04	95.30	468.40			Per EPA Method 7E
Zero Value (N2)	0.00	0.00	0.00	0.00			
Cal Value (mid)	8.94	6.98	44.6	264.3			
Cyl. #	DT45735	CC90096	CC99627	CC193527			
Exp Date	6/6/30	7/19/29	1/27/25	1/31/30			
Cal Value (Hi)	21.01	12.04	95.3	468.4			
Cyl. #	CC90096	DT45735	CC181599	SA17431			
Exp Date	7/19/29	6/6/30	9/7/29	8/30/29			

CALIBRATION ERROR CHECK

Zero cal (int)	0.01	-0.02	0.04	0.08			
% Linearity	**0.0**	**-0.2**	**0.0**	**0.0**			**<2% or +/- 0.5 diff.**
mid cal (int)	8.93	6.83	44.60	263.39			
% Linearity	**0.0**	**-1.3**	**0.0**	**-0.2**			**<2% or +/- 0.5 diff.**
high cal (int)	20.97	12.12	94.22	465.89			
% Linearity	**-0.2**	**0.6**	**-1.1**	**-0.5**			**<2% or +/- 0.5 diff.**

SYSTEM BIAS & DRIFT

Zero (int)	0.01	-0.02	0.04	0.08			
Zero (ext)(i)	0.15	0.06	0.02	-0.33			
bias, % High Cal	**0.68**	**0.62**	**-0.02**	**-0.09**			**Limit (±5%)**
Cal (int)	20.97	6.83	44.60	263.39			
Cal (ext) 1(i)	21.01	6.94	45.02	261.88			
bias, % High Cal	**-0.20**	**-0.90**	**-0.45**	**0.32**			**Limit (±5%)**
Zero (ext) 1(f)	0.14	0.08	0.05	-0.51			**0725-0808**
Cal (ext) 1(f)	21.05	6.93	44.19	263.70			**Run 1**
Zero % Drift	-0.1	0.2	0.0	0.0			**Limit (±3%) or +/-0.5diff.**
Cal % Drift	0.2	-0.1	-0.9	0.4			**Limit (±3%) or +/-0.5diff.**
Zero % Bias	0.6	0.8	0.0	-0.1			**Limit (±5%) or +/-0.5diff.**
Cal % Bias	0.4	0.8	-0.4	0.1			**Limit (±5%) or +/-0.5diff.**
Average	15.47	2.75	20.87	57.19			
Corr. Average	**15.41**	**2.73**	**20.85**	**57.85**			
Zero (ext) 2(f)	0.12	0.18	0.06	-1.16			**0948-1036**
Cal (ext) 2(f)	20.83	6.87	44.34	263.07			**Run 2**
Zero % Drift	-0.1	0.9	0.0	-0.1			**Limit (±3%) or +/-0.5diff.**
Cal % Drift	-1.1	-0.5	0.2	-0.1			**Limit (±3%) or +/-0.5diff.**
Zero % Bias	0.5	1.7	0.0	-0.3			**Limit (±5%) or +/-0.5diff.**
Cal % Bias	-0.6	0.3	-0.3	-0.1			**Limit (±5%) or +/-0.5diff.**
Average	14.66	3.75	29.15	108.00			
Corr. Average	**14.67**	**3.74**	**29.35**	**108.87**			
Zero (ext) 3(f)	0.13	0.13	0.05	-0.29			**1141-1225**
Cal (ext) 3(f)	20.91	6.96	44.16	261.78			**Run 3**
Zero % Drift	0.0	-0.4	0.0	0.2			**Limit (±3%) or +/-0.5diff.**
Cal % Drift	0.4	0.7	-0.2	-0.3			**Limit (±3%) or +/-0.5diff.**
Zero % Bias	0.6	1.3	0.0	-0.1			**Limit (±5%) or +/-0.5diff.**
Cal % Bias	-0.3	1.1	-0.5	-0.3			**Limit (±5%) or +/-0.5diff.**
Average	15.28	3.48	24.88	96.53			
Corr. Average	**15.35**	**3.44**	**25.05**	**97.68**			

SYSTEM RESPONSE TIME = 60 SEC

System Drift (Limit ± 3%) = 100 * External final cal - External Initial cal / Calibration Span

System Bias (Limit ± 5%) = 100 * External cal - Internal cal / Calibration Span

% Linearity (Limit ± 2%) = 100 * Span Value - Internal cal / Calibration Span

Corrected Average = [Test Avg. - ((Zi+Zf) / 2)] * Span Gas Value / [((Si+Sf) / 2)-((Zi+Zf) / 2)]

NO_2 Converter Test

NO_2 Cal Gas	NO_2 Value	% of Efficiency	Cyl. #	Cyl. Exp. Date
6.585	5.97	90.68%	CC500632	07/08/24

FACILITY:	Tiechiert Truckee	DATE:	8/17/2022	METER BOX NO.:	LSI 1
UNIT:	Baghouse	TIME:	740-856	PROBE NO.:	197
CONDITION:	250 TPH	TEST NO.:	1	NOZZLE NO.:	25

Pitot Factor,	C_p	0.84	Meter Temp., °F	T_m	72	Total H_2O Condensed,	V_w	312.0
Barometric Press., "Hg	P_b	24.35	Meter Press.,"H_2O	ΔH	2.100	F.H. Particulate Rinse,	mg	6.13
Static Pressure, "H_2O	P_{stat}	0.50	Average $\sqrt{\Delta P}$., "H_2O	$\sqrt{\Delta P}$	1.318	F.H. Particulate Filter,	mg	72.90
Stack Pressure, "Hg	P_s	24.39	Stack Area, Ft^2	A_s	13.531	B.H. Organics,	mg	2.03
Stack Temp., °F	T_s	191	Nozzle Dia., Inches	D_n	0.202	B.H. Inorganics,	mg	8.06
Sample Time, mins	Θ	67.5	Meter Factor,	Y_d	0.9650	Stack Gas O_2,	O_2 %	15.41
Std. Temp., °F	T_{std}	68	Sample Volume, Ft^3	V_m	55.028	Stack Gas CO_2,	CO_2 %	2.73
						Stack Gas N_2,	N_2 %	81.9

A) Gas Volume $(V_m)_{std} = (T_{std}+460)*V_m*Y_d*(P_b+\Delta H/13.6)/((T_m+460)*29.92) =$ 43.163 DSCF

B) Volume H_2O collected $(V_w)_{std} = 8.9148E\text{-}5*(T_{std}+460)*V_w =$ 14.686 SCF

C) Total Sample Volume $(V_t)_{std} = (V_m)_{std} + (V_w)_{std} =$ 57.849 SCF

D) Moisture Content $(\%H_2O) = 100 * (V_w)_{std} / (V_t)_{std} =$ 25.386 %

E) Stack Gas Velocity $(Vs) = 85.49\ C_p\ \sqrt{(\Delta P)}\ (T_s + 460/MW_s\ P_s) =$ 95.452 ft/sec

F) Stack Gas Molecular Wt.$= ((CO_2\%*0.44+O_2\%*0.32+N_2\%*0.28)(1-H_2O\%/100))+18(H_2O\%/100) =$ 26.247 g/g-mole

G) % Isokinetic $(I) = 9142.88(V_t)(T_s+460)/((D_n^2)(\Theta)(P_s)(V_s)(T_{std}+460)) =$ 101.71 %

H) $ACFM = (V_s)(A_s)60 =$ 77,494 ACFM

I) Stack Gas Vol. Flow Rate, $DSCFM = (V_s)(A_s)((T_{std}+460)/(T_s+460))(P_s)(1-\%H_2O/100)*2.005 =$ 38,223 DSCFM

J) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0022 gr/DSCF

K) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 0.718 Lbs/hr

L) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0261 gr/DSCF

M) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 8.537 Lbs/hr

N) B.H. Organics Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = 0.0007 gr/DSCF

O) B.H. Organics Emission Rate = 0.00857 * gr/DSCF * DSCFM = 0.238 Lbs/hr

P) B.H. Inorganic Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = 0.0029 gr/DSCF

Q) B.H. Inorganic Emission Rate = 0.00857 * gr/DSCF* DSCFM = 0.944 Lbs/hr

R) Tot. Particulate Concentration (gr/dscf) = $mg/(V_m)_{std}$ * 0.01543 = 0.0319 gr/DSCF

S) Tot. Particulate Concentration (@ 12% CO_2) = gr/DSCF * 12 / CO_2% = 0.1402 gr/DSCF

T) Tot. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 10.436 Lbs/hr

FACILITY:	Tiechiert Truckee	DATE:	8/17/2022	METER BOX NO.:	LSI 1
UNIT:	Baghouse	TIME:	948-1059	PROBE NO.:	197
CONDITION:	280 TPH	TEST NO.:	2	NOZZLE NO.:	25

Pitot Factor,	C_p	0.84	Meter Temp., °F	T_m	72	Total H_2O Condensed,	V_w	381.0
Barometric Press., "Hg	P_b	24.35	Meter Press.,"H_2O	ΔH	2.100	F.H. Particulate Rinse,	mg	6.83
Static Pressure, "H_2O	P_{stat}	0.50	Average √ΔP., "H_2O	√ΔP	1.308	F.H. Particulate Filter,	mg	53.90
Stack Pressure, "Hg	P_s	24.39	Stack Area, Ft^2	A_s	13.531	B.H. Organics,	mg	2.90
Stack Temp., °F	T_s	191	Nozzle Dia., Inches	D_n	0.202	B.H. Inorganics,	mg	8.20
Sample Time, mins	Θ	67.5	Meter Factor,	Y_d	0.9650	Stack Gas O_2,	O_2 %	14.67
Std. Temp., °F	T_{std}	68	Sample Volume, Ft^3	V_m	54.830	Stack Gas CO_2,	CO_2 %	3.74
						Stack Gas N_2,	N_2 %	81.6

A) Gas Volume $(V_m)_{std} = (T_{std}+460)*V_m*Y_d*(P_b+\Delta H/13.6)/((T_m+460)*29.92) =$ 43.008 DSCF

B) Volume H_2O collected $(V_w)_{std} = 8.9148E\text{-}5*(T_{std}+460)*V_w =$ 17.934 SCF

C) Total Sample Volume $(V_t)_{std} = (V_m)_{std} + (V_w)_{std} =$ 60.942 SCF

D) Moisture Content $(\%H_2O) = 100 * (V_w)_{std} / (V_t)_{std} =$ 29.428 %

E) Stack Gas Velocity $(Vs) = 85.49\ C_p\ \sqrt{(\Delta P)}\ (T_s + 460/MW_s\ P_s) =$ 95.372 ft/sec

F) Stack Gas Molecular Wt.= $((CO_2\%*0.44+O_2\%*0.32+N_2\%*0.28)(1-H_2O\%/100))+18(H_2O\%/100) =$ 25.893 g/g-mole

G) % Isokinetic $(I) = 9142.88(V_t)(T_s+460)/((D_n^2)(\Theta)(P_s)(V_s)(T_{std}+460)) =$ 107.24 %

H) $ACFM = (V_s)(A_s)60 =$ 77,429 ACFM

I) Stack Gas Vol. Flow Rate, $DSCFM = (V_s)(A_s)((T_{std}+460)/(T_s+460))(P_s)(1-\%H_2O/100)*2.005 =$ 36,123 DSCFM

J) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0025 gr/DSCF

K) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 0.759 Lbs/hr

L) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0193 gr/DSCF

M) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 5.986 Lbs/hr

N) B.H. Organics Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = 0.0010 gr/DSCF

O) B.H. Organics Emission Rate = 0.00857 * gr/DSCF * DSCFM = 0.322 Lbs/hr

P) B.H. Inorganic Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = 0.0029 gr/DSCF

Q) B.H. Inorganic Emission Rate = 0.00857 * gr/DSCF* DSCFM = 0.911 Lbs/hr

R) Tot. Particulate Concentration (gr/dscf) = $mg/(V_m)_{std}$ * 0.01543 = 0.0258 gr/DSCF

S) Tot. Particulate Concentration (@ 12% CO_2) = gr/DSCF * 12 / CO_2% = 0.0828 gr/DSCF

T) Tot. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 7.978 Lbs/hr

FACILITY:	Tiechiert Truckee	DATE:	8/17/2022	METER BOX NO.:	LSI 1
UNIT:	Baghouse	TIME:	1134-1250	PROBE NO.:	197
CONDITION:	280 TPH	TEST NO.:	3	NOZZLE NO.:	18

Pitot Factor,	C_p	0.84	Meter Temp., °F	T_m	72	Total H_2O Condensed,	V_w	331.0
Barometric Press., "Hg	P_b	24.35	Meter Press.,"H_2O	ΔH	2.100	F.H. Particulate Rinse,	mg	1.53
Static Pressure, "H_2O	P_{stat}	0.50	Average $\sqrt{\Delta P}$., "H_2O	$\sqrt{\Delta P}$	1.318	F.H. Particulate Filter,	mg	54.10
Stack Pressure, "Hg	P_s	24.39	Stack Area, Ft^2	A_s	13.531	B.H. Organics,	mg	2.11
Stack Temp., °F	T_s	191	Nozzle Dia., Inches	D_n	0.202	B.H. Inorganics,	mg	9.52
Sample Time, mins	Θ	67.5	Meter Factor,	Y_d	0.9650	Stack Gas O_2,	O_2 %	15.35
Std. Temp., °F	T_{std}	68	Sample Volume, Ft^3	V_m	53.716	Stack Gas CO_2,	CO_2 %	3.44
						Stack Gas N_2,	N_2 %	81.2

A) Gas Volume $(V_m)_{std} = (T_{std}+460)*V_m*Y_d*(P_b+\Delta H/13.6)/((T_m+460)*29.92)$ = 42.134 DSCF

B) Volume H_2O collected $(V_w)_{std} = 8.9148E\text{-}5*(T_{std}+460)*V_w$ = 15.580 SCF

C) Total Sample Volume $(V_t)_{std} = (V_m)_{std} + (V_w)_{std}$ = 57.715 SCF

D) Moisture Content $(\%H_2O) = 100 * (V_w)_{std} / (V_t)_{std}$ = 26.995 %

E) Stack Gas Velocity $(Vs) = 85.49\ C_p \sqrt{(\Delta P)}\ (T_s + 460/MW_s\ P_s)$ = 95.628 ft/sec

F) Stack Gas Molecular Wt.= $((CO_2\%*0.44+O_2\%*0.32+N_2\%*0.28)(1-H_2O\%/100))+18(H_2O\%/100)$ = 26.150 g/g-mole

G) % Isokinetic $(I) = 9142.88(V_t)(T_s+460)/((D_n^2)(\Theta)(P_s)(V_s)(T_{std}+460))$ = 101.29 %

H) $ACFM = (V_s)(A_s)60$ = 77,637 ACFM

I) Stack Gas Vol. Flow Rate, $DSCFM = (V_s)(A_s)((T_{std}+460)/(T_s+460))(P_s)(1-\%H_2O/100)*2.005$ = 37,468 DSCFM

J) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0006 gr/DSCF

K) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 0.180 Lbs/hr

L) F.H. Particulate Concentration (gr/DSCF) = mg/Vmstd * 0.01543 = 0.0198 gr/DSCF

M) F.H. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 6.362 Lbs/hr

N) B.H. Organics Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = <0.0008 gr/DSCF

O) B.H. Organics Emission Rate = 0.00857 * gr/DSCF * DSCFM = <0.2481 Lbs/hr

P) B.H. Inorganic Concentration (gr/DSCF) = $mg/(V_m)_{std}$ * 0.01543 = 0.0035 gr/DSCF

Q) B.H. Inorganic Emission Rate = 0.00857 * gr/DSCF* DSCFM = 1.119 Lbs/hr

R) Tot. Particulate Concentration (gr/dscf) = $mg/(V_m)_{std}$ * 0.01543 = 0.0246 gr/DSCF

S) Tot. Particulate Concentration (@ 12% CO_2) = gr/DSCF * 12 / CO_2% = 0.0860 gr/DSCF

T) Tot. Particulate Emission Rate = 0.00857 * gr/DSCF * DSCFM = 7.909 Lbs/hr

APPENDIX B
LAB REPORTS

BEST ENVIRONMENTAL
339 Stealth Court
Livermore, California 94551
(925) 455-9474 FAX (925) 455-9479
bestair@best-enviro.com

September 10, 2022

Subject: On August 17, 2022 Best Environmental collected three outlet samples from the Teichert Martis Valley Source Test.

CLIENT: Teichert Aggregates
PROJECT NAME: Teichert Martis Valley Source Test
BE PROJECT NO: 333
ANALYSIS DATE: 8/19/22

Sample ID	Lab Sample Number
Run 1 Outlet	9567
Run 2 Outlet	9568
Run 3 Outlet	9569

The samples were analyzed in accordance with EPA Method 18 (CH_4 & VOC).

The following pages present the outlet VOC analytical results. A chain of custody can also be found in this report. This lab report contains a total of 4 pages.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. No problems were encountered during receiving, preparation, and/or analysis of these samples.

If you have any questions concerning these results, or if Best Environmental can be of any further assistance, please contact me at (925) 455-9474 x 103.

Submitted by,

Bobby Asfour
Lab Director

EPA Method 18

Facility: Teichert Martis Valley Source: HMA

Test Date: 8/17/22 Lab Personnel: BA

Analysis Date: 8/19/22 Project #: 333

CH4 & VOC Analysis (M18)

Lab ID	Time	Outlet Run #	ppm CH4	ppm C2 as CH4	ppm VOC	Dup.			
9567	725	Run 1	9.1	2.9	**ND**	(8.8)	(3.1)	ND	
9568	948	Run 2	4.4	3.0	**ND**	3.4	-8.8	NA	<1ppm or 15%
9569	1141	Run 3	4.5	7.1	**1.9**				

All concentrations reported as C1-carbon.

ND=	DL	
CH4	<1	ppm/%
C2	<1	ppm
C3+ as methane	<1	ppm

GC/FID/FPD/TCD: SRI 8610C
Column: 3 foot Haysep D, 60M capillary, 12' 13x Packed column
Chromatic integration: Peak444 Peaksimple by SRI
Gas Standards: C1-C6 n-alkane in N2 & Propane in air

BEST ENVIRONMENTAL Livermore, CA 925 455-9474

Gas Chromotography QA/QC Results

Facility: Teichert Martis Valley **Source:** HMA

Test Date: 8/17/22 **Lab Personnel:** BA

Analysis Date: 8/19/22

Cal Curve Date: 8/3/22

	Daily Blank & R.T.			limit
	C1/CH4	C2/ethane	C3+/NMNEHC	DL
He Gas	ND	ND	ND	
C1-C6 gas	2.96	4.46	5.75	

* C1-C6 gas used to determine retention times

	initial cal propane as methane			
conc.	92.1	867	8970	
area ct.	20.3	200.1	2013.5	

	3 point Cal-3 injections each (area ct)			limit
	20.3	200.1	2013.5	
	20.9	201.5	2010.3	
	21	203.2	2016.2	
average	20.73	201.60	2013.33	
Deviation	0.38	1.55	2.95	
% diff	**1.83**	**0.77**	**0.15**	**<5**

	post cal-Mid			limit
		867		
		861		
% diff		**0.69**		**<15%**

Best Environmental Ph (925) 455-9474; Fx (925) 455-9479

Project ID: Teichert - Truckee / Baghouse Outlet **SAMPLE CHAIN OF CUSTODY** **BE PROJECT MANAGER:** **SA**

Analyical Lab: Best Environmental

#	DATE	TIME	SAMPLE ID Run#/Method/Fraction/Source	CONTAINER size / type	Volume	Storage Temp °F	SAMPLE DESCRIPTION	ANALYSIS	TAT
1	8/17/22	7:25	Run 1 / Outlet 9567	5L/Tedlar		Amb.	Outlet Gas	M-18	Normal
2									
3	8/17/22	9:48	Run 2 / Outlet 9568	5L/Tedlar		Amb.	Outlet Gas	M-18	Normal
4									
5	8/17/22	11:41	Run 3 / Outlet 9569	5L/Tedlar		Amb.	Outlet Gas	M-18	Normal
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									

SPECIAL INSTRUCTIONS: Record & Report all liquid sample volumes.

~~Natural Gas~~

333

Submit Results to: Attn: Suhail Asfour BEST ENVIRONMENTAL 339 STEALTH COURT. LIVERMORE CA. 94551

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

SAMPLE CONDITION AS RECEIVED: OK or not OK

Method 5(CARB) for Particulate
Analytical report

Job Name: Teichert - Truckee
Sample Date: 8/17/2022
Request by: S. Asfour
Date of Analysis: 8/25/22 to 9/7/22
Source: Baghouse Outlet

Analyst: R. Mariano
Signature: Mariano

Lab ID Number	Sample (ml)	Aliquot (ml)	Net Weight gain, (mg)		Tot. Sample wt. (mg)
R1M5 (Probe/Nozzle rinse)	60.0ml	60.0ml	6.20mg		6.13mg
R1M5 (Filter)	N/A	N/A	72.90mg		72.90mg
R1M5 (H_2O fraction)	500.0ml	220.0ml	3.9mg		8.06mg
R1M5 (Organic fraction)	500.0ml	220.0ml	1.2mg		2.03mg
R2M5 (Probe/Nozzle rinse)	60.0ml	60.0ml	6.90mg		6.83mg
R2M5 (Filter)	N/A	N/A	53.90mg		53.90mg
R2M5 (H_2O fraction)	566.0ml	220.0ml	3.5mg		8.20mg
R2M5 (Organic fraction)	566.0ml	220.0ml	1.4mg		2.90mg
R3M5 (Probe/Nozzle rinse)	60.0ml	60.0ml	1.60mg		1.53mg
R3M5 (Filter)	N/A	N/A	54.10mg		54.10mg
R3M5 (H_2O fraction)	516.0ml	220.0ml	4.4mg		9.52mg
R3M5 (Organic fraction)	516.0ml	220.0ml	1.2mg		2.11mg
R4M5 (Acetone blank)	86.0ml	86.0ml	0.10mg		
R4M5 (Filter blank)	N/A	N/A	0.00mg		
R4M5 (DI H_2O blank),(Mb_{H_2O})	200.0ml	200.0ml	0.8mg		
R4M5 (Meth. Chlor. blank),(Mb_{org})	150.0ml	150.0ml	0.7mg		

Comments: <0.5 mg = Not detected

% Acetone residue =	0.0001%
% DI water residue =	0.0004%
% Meth. Chloride residue =	0.0003%

Blank Correction is on the Gravimetric Sample Worksheet.

Calculations:

Blank corrected Probe/Nozzle rinse = Net weight - ((acetone blank wt./(vol. actone blank)*vol. acetone catch)

%Acetone residue = (Net weight gain mg) /(Density of acetone mg/ml * Total sample volume ml)*100

%DI Water residue = (Net weight gain mg)/(Density of water mg/ml * Total sample volume ml)*100

%Meth. Chloride residue = (Net weight gain mg)/(Density of Meth. Chloride mg/ml * Total extraction volume ml)*100

Tolerance Limits:

% Acetone residue = 0.001% wt.

% DI Water residue = 0.001% wt.

% Meth. Chloride residue = 0.001% wt.

Particulate weight = 1% of net wt., ±0.5 mg or ±0.2 mg depending upon precision

GRAVIMETRIC SAMPLE WORKSHEET

Project/Client Teichert - Truckee
Test Date(s) 8/17/2022
Source Baghouse Outlet
Analysis Date(s) 8/25/22 to 9/7/22

Probe/Nozzle Weights

Run #	Tin #	Net Wt. gain (mg)	Sample Vol. (ml) Vaw	Acetone Blank Wt. (mg) Ma	Acetone Blank Vol. (ml) Va	Acetone Blank Correction Wt. (mg) Wa	Tot. Sample Wt. (mg)
R1	16	6.20	60.0	0.10	86.00	0.07	6.13
R2	17	6.90	60.0	0.10	86.00	0.07	6.83
R3	18	1.60	60.0	0.10	86.00	0.07	1.53
R4	19	0.10	86.0				

Acetone Blank Correction Wt. Wa = Ma * Vaw / Va
Tot. Sample Wt. (mg) = Net Wt. gain (mg) - Blank Correction Wt.

Filter Weights

Run #	Filter #		Tare Wt. (g)		Gross Wt. (g)		Net Wt. gain (mg)
R 1	Q178		0.4682		0.5411		72.9
R 2	Q179		0.4709		0.5248		53.9
R 3	Q180		0.4711		0.5252		54.1

Back-Half (H_2O) Condensible Fraction

Run #	Container Type/#	Total Sample Volume (ml) Vt	Aliquot Volume (ml) Va	Aliquot Dry Wt. (mg) Mal	Calculated Total Sample Dry Wt. (mg) Ms	Blank Correction Wt. (mg) Mb	Tot. Sample Wt. (mg)
R 1	105	500	220	3.90	8.86	0.80	8.06
R 2	110	566	220	3.50	9.00	0.80	8.20
R 3	111	516	220	4.40	10.32	0.80	9.52
R 4	112	200	200	0.80			

Total Sample Dry Weight (Ms) = (Vt/Va) * Mal
Blank Correction Wt. (Mb)
Tot. Sample Wt. = Ms - Mb

Back-Half (Organic) Condensible Fraction

Run #	Container Type/#	Total Sample Volume (ml) Vt	Aliquot Volume (ml) Va	Aliquot Dry Wt. (mg) Mal	Calculated Total Sample Dry Wt. (mg) Ms	Blank Correction Wt. (mg) Mb	Tot. sample Wt. (mg)
R 1	101	500	220	1.20	2.73	0.70	2.03
R 2	102	566	220	1.40	3.60	0.70	2.90
R 3	103	516	220	1.20	2.81	0.70	2.11
R 4	104	150	150	0.70			

Total Sample Dry Weight (Ms) = (Vt/Va) * Mal
Blank Correction Wt. (Mb)
Tot. Sample Wt. = Ms - Mb

BEST ENVIRONMENTAL

GRAVIMETRIC SAMPLE RECORD

Project/Client: TEICHERT - TRUCKEE
Test Date(s): 8-17-22
Analysis Date(s): 8-25-22 TO 9-7-22

Source: BAGHOUSE OUTLET
Method: M5

Project Sample ID	Lab Container Type/#	Tare Wt. (g) from Tare Sheet	Gross Wt. (g)	Date	Time	Net Wt. gain (mg)	Initial
R1M5-F-H		Date	2.2381	8-30-22	15:37		RM
	TIN	8-7-22	2.2382	8-31-22	16:10		RM
	016						
		Wt.					
		(2.2320)	(2.2382)			6.2	
R2M5-F-H		Date	2.2363	8-30-22	15:43		RM
	TIN	8-7-22	2.2362	8-31-22	16:16		RM
	017						
		Wt.					
		(2.2293)	(2.2362)			6.9	
R3M5-F-H		Date	2.2208	8-30-22	15:49		RM
	TIN	8-7-22	2.2207	8-31-22	16:22		RM
	018						
		Wt.					
		(2.2192)	(2.2208)			1.6	
R4M5-F-H		Date	2.2249	8-30-22	15:55		RM
	TIN	8-7-22	2.2248	8-31-22	16:28		RM
BLANK	019						
		Wt.					
		(2.2248)	(2.2249)			0.1	
R1M5-FILTER		Date	0.5412	8-29-22	15:31		RM
		10-26-21	0.5410	8-30-22	16:12		RM
	Q178						
		Wt.					
		(0.4682)	(0.5411)			72.9	
R2M-FILTER		Date	0.5248	8-29-22	15:37		RM
		10-28-21	0.5247	8-30-22	16:18		RM
	Q179						
		Wt.					
		(0.4709)	(0.5248)			53.9	
R3M5-FILTER		Date	0.5253	8-29-22	15:43		RM
		10-28-21	0.5251	8-30-22	16:24		RM
	Q180						
		Wt.					
		(0.4711)	(0.5252)			54.1	
R1M5-B-H		Date	28.7155	9-1-22	16:20		RM
ORGANIC FRACTION	50ml	7-1-22	28.7154	9-2-22	16:32		RM
	BEAKER						
	101	Wt.					
		(28.7143)	(28.7155)			1.2	

TARE to 0.00001 ± 5Δ
Final Wt. to either ± 0.00005Δ or 0.0005Δ or ± 4% Δ of Net Wt. g

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BEST ENVIRONMENTAL

GRAVIMETRIC SAMPLE RECORD

Project/Client TEICHERT - TRUCKEE
Test Date(s) 8-17-22
Analysis Date(s) 8-25-22 TO 9-7-22

Source BAGHOUSE OUTLET
Method M5

Project Sample ID	Lab Container Type/#	Tare Wt. (g) from Tare Sheet	Gross Wt. (g)	Date	Time	Net Wt. gain (mg)	Initial
R2M5-B-H.		Date	29.0996	9-1-22	16:26		RM
ORGANIC FRACTION	50ml	7-1-22	29.0995	9-2-22	16:38		RM
	BEAKER						
	102	Wt.					
		(29.0982)	(29.0996)			1.4	
R3M5-B-H.		Date	29.0171	9-1-22	16:32		RM
ORGANIC FRACTION	50ml	7-1-22	29.0169	9-2-22	16:44		RM
	BEAKER						
	103	Wt.					
		(29.0158)	(29.0170)			1.2	
R4M5-B-H.		Date	28.7699	9-1-22	16:38		RM
ORGANIC FRACTION	50ml	7-1-22	28.7699	9-2-22	16:50		RM
	BEAKER						
BLANK	104	Wt.					
		(28.7692)	(28.7699)			0.7	
R1M5-B-H.		Date	29.2978	9-2-22	18:30		RM
H2O FRACTION	50ml	7-1-22	29.2980	9-6-22	18:12		RM
	BEAKER						
	105	Wt.					
		(29.2940)	(29.2979)			3.9	
R2M5-B-H.		Date	28.6979	9-2-22	18:36		RM
H2O FRACTION	50ml	7-6-22	28.6978	9-6-22	18:18		RM
	BEAKER						
	110	Wt.					
		(28.6944)	(28.6979)			3.5	
R3M5-B-H.		Date	29.3680	9-2-22	18:42		RM
H2O FRACTION	50ml	7-6-22	29.3678	9-6-22	18:24		RM
	BEAKER						
	111	Wt.					
		(29.3635)	(29.3679)			4.4	
R4M5-B-H.		Date	29.0841	9-2-22	18:48		RM
H2O FRACTION	50ml	7-6-22	29.0840	9-6-22	18:30		RM
	BEAKER						
BLANK	112	Wt.					
		(29.0833)	(29.0841)			0.8	
		Date					
		Wt.					

TARE to 0.00001 ± 5Δ
Final Wt. to either ± 0.00005Δ or 0.0005Δ or ± 4% Δ of Net Wt. g

Best Environmental Ph (925) 455-9474; Fx (925) 455-9479

Project ID: Teichert-Truckee/ Baghouse Outlet **SAMPLE CHAIN OF CUSTODY** **BE PROJECT MANAGER: SA**

Analyical Lab: Best Environmental

#	DATE	TIME	SAMPLE ID Run#/Method/Fraction/Source	CONTAINER size / type	Volume	Storage Temp °F	SAMPLE DESCRIPTION	ANALYSIS	TAT
1	08/17/22	7:40	Run 1 M 5 F.H/ NOZZLE RINSE	250 ML/ Glass	60ml		D.I. WATER RINSE	P.M.	NORMAL
2	08/17/22	7:40	Run 1 M 5 F.H/ FILTER #	Q178	—		QUARTZ FILTER	P.M.	NORMAL
3	08/17/22	7:40	Run 1 M 5 B.H/ IMPINGER CATCH	500 ML/HDPE	500 ML		D.I. WATER	P.M.	NORMAL
4									NORMAL
5									
6	08/17/22	9:48	Run 2 M 5 F.H/ NOZZLE RINSE	250 ML/ Glass	60ml		D.I. WATER RINSE	P.M.	NORMAL
7	08/17/22	9:48	Run 2 M 5 F.H/ FILTER #	Q179	—		QUARTZ FILTER	P.M.	NORMAL
8	08/17/22	9:48	Run 2 M 5 B.H/ IMPINGER CATCH	500 ML/HDPE	566 ML		D.I. WATER	P.M.	NORMAL
9									
10									
11	08/17/22	11:34	Run 3 M 5 F.H/ NOZZLE RINSE	250 ML/ Glass	60ml		D.I. WATER RINSE	P.M.	NORMAL
12	08/17/22	11:34	Run 3 M 5 F.H/ FILTER #	Q180	—		QUARTZ FILTER	P.M.	NORMAL
13	08/17/22	11:34	Run 3 M 5 B.H/ IMPINGER CATCH	500 ML/HDPE	516 ML		D.I. WATER	P.M.	NORMAL
14									
15									
16					86ml		ACETONE BLANK		
17	08/17/22		R4/ BLANK		—		QUARTZ FILTER	P.M.	
18	08/17/22		R4/ BLANK	500 ML/HDPE	200ml		D.I. WATER	P.M.	
19									
20									
21									

SPECIAL INSTRUCTIONS: Record & Report all liquid sample volumes.

Submit Results to: Attn: Suhail Asfour BEST ENVIRONMENTAL 339 STEALTH COURT. LIVERMORE CA. 94551

Relinquished by: Suhail 8-17-22 Received by: Adriana Date: 8-23-22 Time: 3:15 PM

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

Relinquished by:_____ Received by:_____ Date:_____ Time:_____

SAMPLE CONDITION AS RECEIVED: OK or not OK

B-10

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APPENDIX C
FIELD DATA SHEETS

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility:	**Teichert Aggregate - Truckee**	**Run #:**	**CEC**	**Date:**	**08/17/22**
Location:	**Baghouse Outlet**	**Barometric:**	**24.35**	**Leak ✔ :**	***OK***
Observers:		**Personnel:**	**SA/BK**	**Strat.✔ :**	***OK***
Expected Run Time =	**40 min**	**Std. Temp:**	**68**		

Cylinder #s:

Analyte		**O2**	**CO2**	**NOx**	**CO**					
Analyzer		200	200	600	48i					
Range		21.01	15	95.30	468.40					
Span Value		21.01	6.98	44.60	264.30					
	Time									**Comments:**
	6:28	0.01	-0.03	0.05	-0.20					
	6:29	0.01	-0.02	0.05	0.15					***Unit #***
	6:30	**0.01**	**-0.02**	**0.04**	**0.08**					
	6:31	0.85	0.96	0.08	2.32					
	6:32	8.86	12.00	0.05	39.32					***Operating Conditions***
	6:33	8.96	12.09	0.03	43.27					
	6:34	8.96	12.10	0.02	43.22					
	6:35	**8.93**	**12.12**	0.11	42.17					***Fuel***
	6:36	19.56	6.49	0.05	18.76					
	6:37	20.95	6.96	0.02	15.83					
	6:38	20.96	6.86	0.01	12.03					
	6:39	**20.97**	**6.83**	0.01	15.32					
	6:40	13.83	4.36	0.06	107.64					
	6:41	1.57	0.23	0.01	254.58					
	6:42	1.52	0.16	0.01	261.69					
	6:43	0.72	0.13	0.01	261.81					
	6:44	0.40	0.21	0.05	**263.39**					
	6:45	1.17	0.18	0.01	418.94					
	6:46	0.12	0.09	0.02	465.17					
	6:47	0.12	0.08	0.02	465.52					
	6:48	0.11	0.07	0.01	465.61					
	6:49	0.12	0.07	0.02	**465.89**					
	6:50	0.23	0.08	32.08	189.25					
	6:51	0.19	0.07	44.67	-0.23					
	6:52	0.19	0.06	44.64	-0.28					
	6:53	0.18	0.06	**44.60**	-0.28					
	6:54	0.40	0.19	35.58	81.64					
	6:55	0.12	0.07	94.80	0.84					
	6:56	0.12	0.06	94.22	-0.65					
	6:57	0.12	0.06	**94.22**	-0.28					
	6:58	0.15	0.06	87.40	-0.46					
	6:59	0.19	0.05	44.28	-1.17					
	7:00	0.19	0.04	44.73	-0.50					
	7:01	0.19	0.05	44.79	-1.91					
	7:02	0.31	0.05	29.15	-0.41					
	7:03	0.25	0.04	5.96	3.32					
	7:04	0.25	0.05	**5.97**	41.60					**NOx Converter**

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility:	Teichert Aggregate - Truckee	**Run #:**	1	**Date:**	08/17/22
Location:	Baghouse Outlet	**Barometric:**	24.35	**Leak ✔ :**	*OK*
Observers:		**Personnel:**	SA/BK	**Strat.✔ :**	*OK*
Expected Run Time =	40 min	**Std. Temp:**	68		
Cylinder #s:					

Analyte		O2	CO2	NOx	CO	THC	SO2	Timer		
Analyzer		200	200	600	48i					
Range		21.01	12.04	95.30	468.40					
Span Value		21.01	6.98	44.60	264.30					
	Time									Comments:
	7:25	15.17	3.02	22.61	49.55					
	7:26	15.17	3.01	22.56	49.21					*Unit #*
	7:27	15.18	3.00	22.47	47.87					
	7:28	15.18	2.99	22.41	48.18					
	7:29	15.17	2.99	22.57	48.38					*Operating Conditions*
	7:30	15.16	2.98	22.72	48.03					
	7:31	15.15	2.98	22.86	47.61					
	7:32	15.14	2.98	22.92	48.61					*Fuel*
	7:33	15.18	2.99	22.30	48.61					
	7:34	15.42	2.84	21.02	52.48					
	7:35	15.50	2.80	20.73	60.09					
	7:36	15.50	2.78	20.89	64.67					
	7:37	15.46	2.80	20.98	66.36					
	7:38	15.46	2.79	20.94	65.77					
	7:39	16.59	2.29	17.33	52.87					
	7:40	15.49	2.75	20.52	87.97					
	7:41	15.45	2.74	20.36	102.56					
	7:42	15.44	2.78	20.59	84.68					
	7:43	15.46	2.76	20.84	55.03					
	7:44	15.46	2.76	20.76	62.30					
	7:45	15.45	2.75	20.63	60.31					
	7:46	15.46	2.74	20.53	58.07					
	7:47	15.47	2.70	20.71	57.07					
	7:48	15.47	2.69	20.81	57.55					
	7:49	15.45	2.69	20.86	58.52					
	7:50	15.45	2.69	20.81	58.16					
	7:51	15.45	2.69	20.69	57.64					
	7:52	15.46	2.68	20.73	56.79					
	7:53	16.77	2.15	16.81	42.21					
	7:54	15.49	2.66	20.64	55.60					
	7:55	15.48	2.67	20.70	56.43					
	7:56	15.47	2.68	20.63	55.99					
	7:57	15.55	2.63	20.30	54.81					
	7:58	15.49	2.67	20.58	55.30					
	7:59	15.49	2.67	20.60	52.16					
	8:00	15.46	2.68	20.59	52.48					
	8:01	15.48	2.67	20.43	53.14					
	8:02	15.48	2.67	20.41	53.41					
	8:03	15.49	2.67	20.45	54.06					
	8:04	15.50	2.66	20.38	53.68					
	8:05	15.51	2.66	20.20	54.62					
	8:06	15.51	2.66	20.25	54.14					
	8:07	15.50	2.68	20.21	56.14					
ZERO I	*7:17*	***0.15***	***0.06***	***0.02***	***-0.33***					
SPAN I	*7:19*	***21.01***	***6.94***	***45.02***	***261.88***					
Average		***15.47***	***2.75***	***20.87***	***57.19***					
ZERO f	*8:17*	***0.14***	***0.08***	***0.05***	***-0.51***					
SPAN f	*8:18*	***21.05***	***6.93***	***44.19***	***263.70***					
Zero Drift %		***-0.1%***	***0.2%***	***0.0%***	***0.0%***					
Span Drift %		***0.2%***	***-0.1%***	***-0.9%***	***0.4%***					
Corr. Avg.		***15.41***	***2.73***	***20.85***	***57.85***					

Corrected Average = [Test Avg. - ((Zi+Zf) / 2)] * Span Gas Value / [((Si+Sf) / 2)-((Zi+Zf) / 2)]
Zero Drift % = 100 * (Zf - Zi)/Intrument Range
Span Drift % = 100 * (Sf - Si)/Instrument Range

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility:	Teichert Aggregate - Truckee	**Run #:**	2	**Date:**	08/17/22
Location:	Baghouse Outlet	**Barometric:**	24.35	**Leak ✔ :**	*OK*
Observers:		**Personnel:**	SA/BK	**Strat.✔ :**	*OK*
Expected Run Time =	40 min	**Std. Temp:**	68		
Cylinder #s:					

Analyte		O2	CO2	NOx	CO	THC	SO2	Timer		
Analyzer		200	200	600	48i					
Range		21.01	12.04	95.30	468.40					
Span Value		21.01	6.98	44.60	264.30					
	Time									Comments:
	9:48	14.83	3.62	28.73	93.95					
	9:49	14.83	3.61	28.82	96.17					*Unit #*
	9:50	14.82	3.61	29.01	97.04					
	9:51	14.82	3.63	29.03	97.37					
	9:52	14.91	3.56	28.71	90.76					*Operating Conditions*
	9:53	14.61	3.73	29.04	132.10					
	9:54	14.56	3.75	29.19	151.96					
	9:55	14.53	3.77	29.06	171.81					*Fuel*
	9:56	14.60	3.76	28.75	174.40					
	9:57	14.51	3.78	29.17	43.71					
	9:58	14.51	3.78	29.25	60.42					
	9:59	14.51	3.77	29.28	197.80					
	10:00	14.48	3.79	29.19	138.13					
	10:01	14.41	3.83	28.93	93.41					
	10:02	14.53	3.75	27.96	104.40					
	10:03	14.35	3.85	27.95	131.32					
	10:04	14.27	3.90	28.38	132.13					
	10:05	14.27	3.91	28.40	129.00					
	10:06	14.27	3.92	28.43	135.06					
	10:07	14.28	3.93	28.65	123.60					
	10:08	14.74	3.69	26.93	97.41					
	10:09	14.39	3.87	29.36	175.26					
	10:10	14.43	3.87	29.53	73.33					
	10:11	14.52	3.87	29.78	62.57					
	10:12	14.64	3.79	29.83	51.42					
	10:13	14.69	3.73	29.83	46.03					
	10:14	14.80	3.68	29.66	72.10					
	10:15	14.79	3.68	29.75	90.98					
	10:16	14.78	3.68	29.77	93.50					
	10:17	14.80	3.68	29.68	95.03					
	10:18	14.80	3.71	29.65	92.73					
	10:19	14.81	3.73	29.51	95.18					
	10:20	14.73	3.74	29.46	117.89					
	10:21	14.72	3.75	29.56	133.83					
	10:22	15.08	3.58	27.80	107.38					
	10:23	14.83	3.69	28.67	112.22					
	10:24	14.64	3.81	29.44	130.25					
	10:25	14.63	3.82	29.45	130.16					
	10:26	14.64	3.83	29.60	123.12					
	10:27	14.68	3.80	29.80	113.33					
	10:28	14.76	3.79	29.69	102.38					
	10:29	14.83	3.78	29.42	86.95					
	10:30	14.83	3.74	29.43	87.71					
	10:31	14.83	3.72	29.60	94.66					
	10:32	14.83	3.72	29.58	99.39					
	10:33	14.83	3.73	29.57	100.35					
	10:34	14.83	3.72	29.51	101.19					
	10:35	14.84	3.71	29.53	102.98					
ZERO I	8:17	*0.14*	*0.08*	*0.05*	*-0.51*					
SPAN I	8:18	*21.05*	*6.93*	*44.19*	*263.70*					
Average		*14.66*	*3.75*	*29.15*	*108.00*					
ZERO f	10:46	*0.12*	*0.18*	*0.06*	*-1.16*					
SPAN f	10:47	*20.83*	*6.87*	*44.34*	*263.07*					
Zero Drift %		*-0.1%*	*0.9%*	*0.0%*	*-0.1%*					
Span Drift %		*-1.1%*	*-0.5%*	*0.2%*	*-0.1%*					
Corr. Avg.		*14.67*	*3.74*	*29.35*	*108.87*					

Corrected Average = [Test Avg. - ((Zi+Zf) / 2)] * Span Gas Value / [((Si+Sf) / 2)-((Zi+Zf) / 2)]
Zero Drift % = 100 * (Zf - Zi)/Intrument Range
Span Drift % = 100 * (Sf - Si)/Instrument Range

DAS CONTINUOUS EMISSIONS MONITORING DATA SHEET

Facility:	Teichert Aggregate - Truckee	**Run #:**	3	**Date:**	08/17/22
Location:	Baghouse Outlet	**Barometric:**	24.35	**Leak ✔ :**	*OK*
Observers:		**Personnel:**	SA/BK	**Strat.✔ :**	*OK*
Expected Run Time =	40 min	**Std. Temp:**	68		
Cylinder #s:					

Analyte		O2	CO2	NOx	CO	THC	SO2	Timer		
Analyzer		200	200	600	48i					
Range		21.01	12.04	95.30	468.40					
Span Value		21.01	6.98	44.60	264.30					
	Time									Comments:
	11:41	15.35	3.42	24.45	115.50					
	11:42	15.21	3.49	24.67	149.76					*Unit #*
	11:43	15.20	3.53	24.83	140.67					
	11:44	15.11	3.54	24.88	156.80					
	11:45	15.05	3.56	24.93	161.67					*Operating Conditions*
	11:46	15.03	3.57	25.12	155.95					
	11:47	15.00	3.59	25.43	155.38					
	11:48	15.18	3.50	25.14	119.89					*Fuel*
	11:49	15.26	3.47	25.04	108.16					
	11:50	15.26	3.47	24.96	103.40					
	11:51	15.31	3.45	24.84	101.20					
	11:52	15.59	3.30	24.26	74.92					
	11:53	15.72	3.21	23.92	60.61					
	11:54	15.35	3.41	24.87	82.75					
	11:55	15.11	3.55	25.36	110.88					
	11:56	15.36	3.40	24.30	96.41					
	11:57	15.16	3.50	25.00	92.52					
	11:58	15.02	3.58	25.71	93.05					
	11:59	14.97	3.62	25.91	84.55					
	12:00	14.95	3.65	25.86	79.51					
	12:01	14.96	3.64	25.89	78.45					
	12:02	14.98	3.69	25.83	77.69					
	12:03	14.98	3.66	26.23	68.23					
	12:04	15.15	3.55	26.12	48.68					
	12:05	15.16	3.53	25.98	44.47					
	12:06	15.13	3.54	25.95	43.90					
	12:07	15.14	3.54	25.85	45.63					
	12:08	15.15	3.54	25.67	49.17					
	12:09	15.42	3.41	24.89	45.99					
	12:10	15.78	3.23	23.38	42.82					
	12:11	15.36	3.48	24.80	54.94					
	12:12	15.57	3.35	23.79	80.42					
	12:13	15.72	3.35	22.72	113.78					
	12:14	15.67	3.27	23.12	102.14					
	12:15	15.49	3.40	24.27	102.38					
	12:16	15.37	3.45	24.78	113.16					
	12:17	15.39	3.47	24.93	116.96					
	12:18	15.40	3.48	24.74	110.64					
	12:19	15.41	3.47	24.36	114.67					
	12:20	15.41	3.50	24.42	121.45					
	12:21	15.42	3.55	24.35	117.68					
	12:22	15.41	3.44	24.38	108.31					
	12:23	15.39	3.50	24.35	99.53					
	12:24	15.39	3.47	24.43	102.74					
ZERO I	10:46	*0.12*	*0.18*	*0.06*	*-1.16*					
SPAN I	10:47	*20.83*	*6.87*	*44.34*	*263.07*					
Average		*15.28*	*3.48*	*24.88*	*96.53*					
ZERO f	12:39	*0.13*	*0.13*	*0.05*	*-0.29*					
SPAN f	12:40	*20.91*	*6.96*	*44.16*	*261.78*					
Zero Drift %		*0.0%*	*-0.4%*	*0.0%*	*0.2%*					
Span Drift %		*0.4%*	*0.7%*	*-0.2%*	*-0.3%*					
Corr. Avg.		*15.35*	*3.44*	*25.05*	*97.68*					

Corrected Average = [Test Avg. - ((Zi+Zf) / 2)] * Span Gas Value / [((Si+Sf) / 2)-((Zi+Zf) / 2)]
Zero Drift % = 100 * (Zf - Zi)/Intrument Range
Span Drift % = 100 * (Sf - Si)/Instrument Range

DATE: 8-17-22	FACILITY: Teichert - Truckee	UNIT: Bashouse outlet

UNITS	Check or Record Data	PROCEDURE
	✓	Leak Check CEM system (set sample to 6 PSI then close off all but one rotameter and watch drop to zero)
	✓	Determine Traverse Points (4, 6, or 8 per diameter use Figure 1-2 in CARB 1) & mark the CEM Probe
	✓	Linearity Check - set internal zero (Ca) and cal gas (Ca) closest to stack gas, then check other cal gas
	✓	Bias Check - external zero (Cib) and cal gas (Cib) closest to stack gas - no analyzer adjustments allowed
secs	60	Response Time (RT) Check (time from ext zero to ext cal 95% response for slowest analyzer)
	✓	Perform NOx Converter Check
		1/2" ϕ 3/4". 44%
"Hg	24.35	**Barometric Press Barometric Pressure**
Time	07:25	**Start Run #1** 250 TPH
VOLTS	120	Supply Voltage to the Van
°F	265	Heated Line Temp >248°F 3.1 W.C
°F	48	Knock-Out exit Temp <60°F or 20°F less than ambient
°F	63	Ambient Temp (Ta) 1/2" ϕ 3/4" PG 64-28
secs/cf		Fuel meter - seconds/revolution
PSI A or G		Fuel Pressure
°F		Fuel Temp
	08:08	**End Run #1**
Time	09:48	**Start Run #2**
secs/cf		Fuel meter - seconds/revolution
PSI A or G		Fuel Pressure 280 TPH
°F		Fuel Temp
	10:36	**End Run #2** 3.1 W.C 1/2"
Time	11:41	**Start Run #3**
secs/cf		Fuel meter - seconds/revolution
PSI A or G		Fuel Pressure
°F		Fuel Temp 280 TPH
	12:29	**End Run #3** 3/4"

	O_2	CO_2	NOx	CO	THC	NO2
Analyzer	200	200	600	48		
Range	21.01	15	95.3	468.4		
Span Value (low)	0	0	0	0		
Cal Value (low)						
Cyl. #						
Exp Date						
Cal Value (mid)	8.94	6.98	44.6	264.3		
Cyl. #	DT45735	CC90096	CC99627	CC193527		
Exp Date	6-6-30	7-19-29	1-27-25	1-31-30		
Cal Value (Hi)	21.01	12.04	95.3	468.4		6.585
Cyl. #	CC90096	DT45735	CC181599	SA17431		CC500632
Exp Date	7-19-29	6-6-30	9-7-29	8-30-29		7-8-24

SYSTEM RESPONSE TIME (secs) - 60 | 60

BEST ENVIRONMENTAL — Livermore, CA 925-455-9474

Isokinetic Sampling Data Sheet (Method 5)

Facility: Tickert Tulare Date: 8-17-22 Run #: 1 Personnel: BKH

Facility Information	Equipment Information	Sampling Information
Location: Bypass Duct	Meter #: CSI #1 Pitot #: 11197	Pbar: 24.35
Port Dia.: 3 Depth: 5.5/5/3.5	Yd: 2.30 .965 Cp: .84	Pstatic: .5
Fitting: Length:	ΔH@: .965 2.30 Noz. #: 25	% O_2: 15.4
Port Height from deck:	Filter Box #: 8 D_n: 0.202	% CO_2: 2.3
Stack Dia: 36.25/33.5 Area: 13531	Filter #: 128 Mag. #:	% H_2O: 29
Upstream from disturbance:	Probe #: 81197 Umb. #:	Run Mins 67.5
Downstream from disturbance:	Pyrometer #:	

Initial LC: .003 Final LC: .001 Pitot LC: ✓

CFM @ 20 "Hg CFM @ 20 "Hg Cyclonic Flow Check: ✓

Point	Time	Gas Meter Vol, Ft^3	Meter Temp, °F In	Meter Temp, °F Out	Stack Temp, °F	ΔP	ΔH	Meter ACFM	SQRT ΔP	Temp, °F Probe	Temp, °F Filter	Temp, °F Imp.	Vac., "Hg	Notes
1	7:40	847.050	63	64	197	2.0	2.41	.87	1.414	238	245	60	5	
2	2.5		65	64	191	1.9	2.31	.86	1.378				5	
3	5	850.5	66	64	191	1.8	2.14	.84	1.342				5	
4	7.5		67	64	190	1.75	2.14	.83	1.323				5	
5	10	854.6	68	64	190	1.7	2.08	.81	1.304				5	
6	12.5	9566	69	65	190	1.7	2.08	.82	1.304				5	
7	15	858.7	71	65	189	1.6	1.97	.79	1.265				5	
8	17.5	860.7	72	65	188	1.5	1.85	.77	1.225				4	
9	20	862.7	73	66	188	1.5	1.88	.77	1.225				4	
10	22.5	864.633	—	—					↓					
1	2.5	864633	73	67	191	2.0	2.46	.89	1.414	238	245	60	6	
2	2.5	866.7	73	67	190	2.0	2.46	.89	1.414				6	
3	5	869.0	74	67	191	1.9	2.34	.87	1.378				6	
4	7.5	871.2	75	68	189	1.7	2.10	.82	1.304				6	
5	10	873.2	76	68	190	1.7	2.10	.82	1.304				6	
6	12.5	875.3	76	68	190	1.7	2.10	.82	1.304				6	
7	15	877.3	78	69	190	1.7	2.11	.83	1.304				6	
8	17.5	879.5	79	69	190	1.7	2.11	.83	1.304				6	
9	20	881.5	80	70	190	1.6	1.99	.80	1.263				5.5	
10	22.5	883.556	—	—	—	↓	↓	—	↓					
1	0	883.556	78	71	191	1.8	2.23	.85	1.342	238	245	60	5	
2	2.5	885.6	78	71	192	1.8	2.23	.85	1.342				5	
3	5	887.6	79	72	192	1.7	2.11	.83	1.304				5	
4	7.5	889.7	80	72	194	1.7	2.10	.83	1.304				5	
5	10	891.9	81	73	194	1.7	2.11	.83	1.304				5	
6	12.5	893.9	82	73	194	1.8	2.11	.83	1.304				5	
7	15	896.0	83	74	195	1.8	2.23	.85	1.342				5	
8	17.5	898.1	84	74	195	1.7	2.11	.83	1.304				5	
	20	900.12	84	75	197	1.6	1.98	.81	1.265				3	
	22.5	902.078												
08:56		55.028	72		191		2.10		1.318					

Moisture Data	Initial	Final	Net	Rinse
Impinger #1	100	384	284	
Impinger #2	100	116	16	
Impinger(s) #				
Impinger(s) #				
Silica Gel:	734	746	12	
Total Net / Rinse:			312	
Total Sample Volume:				

Stack Information		
Electricity	YES	NO
Probe Stand	YES	NO
Port Threads	YES	NO
Platform Ht.		

Field Calculations	
Sample Vol., dscf:	
% H_2O:	
MWs:	
Stack Vel, ft/s:	
Flow rate, acfm:	
Flow rate, dsfcm:	
% Isokinetics:	

BEST ENVIRONMENTAL — Livermore, CA 925-455-9474

Isokinetic Sampling Data Sheet (Method 5)

Facility: Fiechert Tourbec Date: 8 17 22 Run #: 2 Personnel: BK SG

Facility Information	Equipment Information	Sampling Information
Location: Dublin	Meter #: 481-11	Pitot #: PD197
Port Dia.: 3	Yd: 1.005	Cp: .84
Depth: 5/5/5.5	ΔH@: 2.30	Noz. #: 25
Fitting:	Filter Box #: 8	D_n: .202
Length:	Filter #: 179	Mag. #:
Port Height from deck:	Probe #: P0197	Umb. #
Stack Dia: 36 25 KC 3.75	Pyrometer #:	Pbar: 29.35
Area: 13531		Pstatic: .5
Upstream from disturbance:		% O_2: 14
Downstream from disturbance:		% CO_2: 3.7 / 2.5
		% H_2O: 2.5
		Run Mins 60

14.67

Initial LC: .000 Final LC: .000 Pitot LC: —

CFM @ 14 "Hg CFM @ 13 "Hg Cyclonic Flow Check:

Point	Time	Gas Meter Vol, Ft³	Meter Temp, °F In	Meter Temp, °F Out	Stack Temp, °F	ΔP	ΔH	Meter ACFM	SQRT ΔP	Temp, °F Probe	Temp, °F Filter	Temp, °F Imp.	Vac, "Hg	Notes
1	91.42	907.803	81	84	199	1.9	2.20	.85	1.378	228	245	60	5	
2	2.5	909.8	82	81	201	1.9	2.20	.85	1.378				5	
3	5	912.0	83	80	202	1.8	2.08	.83	1.342				5	
4	7.5	914.1	84	81	202	1.8	2.09	.83	1.342				5	
5	10	916.2	87	81	202	1.7	1.98	.81	1.304				5	
6	12.5	918.2	89	81	202	1.7	1.98	.81	1.304				5	
7	15	920.2	91	82	204	1.7	1.98	.81	1.304				5	
8	17.5	922.2	92	82	203	1.6	1.87	.79	1.265					
9	20	924.2	93	83	205	1.6	1.86	.79	1.265					
SF	22.5	926.268	—	—										
1	0	926.268	93	86	205	1.9	2.22	.86	1.378	228	245	60	5	
2	2.5	928.2	92	86	205	1.9	2.22	.86	1.378				5	
3	5	930.4	93	86	204	1.8	2.11	.84	1.342				5	
4	7.5	932.6	93	87	204	1.7	1.99	.82	1.304				5	
5	10	934.5	95	87	203	1.7	2.00	.83	1.304				5	
6	12.5	936.5	96	87	203	1.7	2.00	.82	1.304				5	
7	15	938.5	97	88	204	1.6	1.88	.80	1.265				5	
8	17.5	940.4	98	89	204	1.6	1.89	.80	1.265				5	
9	20	942.4	99	89	204	1.6	1.89	.80	1.265				5	
SF	22.5	944.343	—	—	—		—	—						
1	0	944.343	96	90	203	1.9	2.24	.87	1.378	228	245	60	5	
2	2.5	946.3	96	90	204	1.8	2.12	.84	1.342				5	
3	5	948.5	96	90	205	1.7	2.00	.82	1.304					
4	7.5	950.5	96	91	205	1.7	2.00	.82	1.304					
5	10	952.5	97	91	205	1.7	2.00	.82	1.304					
6	12.5	954.5	98	91	205	1.7	2.00	.82	1.304					
7	15	956.7	99	91	203	1.7	2.01	.82	1.304					
8	17.5	958.7	100	92	203	1.6	1.90	.80	1.265					
9	20	960.6	101	92	202	1.6	1.90	.80	1.265					
SF	22.5	962.633												
10:59		54.83	72		191		2.10		1.318					

Moisture Data	Initial	Final	Net	Rinse
Impinger #1	100	381	281	
Impinger #2	100	175	0	
Impinger(s) #		446	346	
Impinger(s) #		120	20	
Silica Gel:	746	761	15	
Total Net / Rinse:			381	
Total Sample Volume:				

Stack Information		
Electricity	YES	NO
Probe Stand	YES	NO
Port Threads	YES	NO
Platform Ht.		

Field Calculations	
Sample Vol., dscf:	
% H_2O:	
MWs:	
Stack Vel, ft/s:	
Flow rate, acfm:	
Flow rate, dsfcm:	
% Isokinetics:	

BEST ENVIRONMENTAL — Livermore, CA 925-455-9474

Isokinetic Sampling Data Sheet (Method 5)

Facility: Tesla Tribe — Date: 8/17/22 — Run #: 3 — Personnel: AK SA

Facility Information	Equipment Information	Sampling Information
Location: outlet	Meter #: 251 AH	Pitot #: PA197
Port Dia.: 3 — Depth: 5.5/5/3.5	Yd: .965	Cp: .84
Fitting: — Length:	ΔH@: 2.30	Noz. #: 25
Port Height from deck:	Filter Box #: 8	D_n: .202
Stack Dia: 36.25/45.375 — Area: 13.531	Filter #: 180	Mag. #:
Upstream from disturbance:	Probe #: PA197	Umb. #:
Downstream from disturbance:	Pyrometer #:	

Pbar: 24.35 — Pstatic: -.5 — % O_2: 15.35 — 3.4% CO_2: 2.70 — % H_2O: 28 — Run Mins: 675

Initial LC: .002 — CFM @ 14 "Hg — Final LC: .001 — CFM @ 14 "Hg — Pitot LC: ✓ — Cyclonic Flow Check: ✓

Point	Time	Gas Meter Vol, ft^3	Meter Temp, °F In	Meter Temp, °F Out	Stack Temp, °F	ΔP	ΔH	Meter ACFM	SQRT ΔP	Temp, °F Probe	Temp, °F Filter	Temp, °F Imp.	Vac., "Hg	Notes
1	1134	962.900	94	94	203	2.0	2.20	.86	1.414	228	226	60	4	
2	2.5	965.3	93	93	203	1.9	2.08	.84	1.378				4	
3	5		94	93	203	1.8	1.98	.82	1.342				4	
4	7.5	970.2	96	93	204	1.8	1.98	.82	1.342				4	
5	10	972.7	96	93	204	1.7	1.87	.79	1.304				4	
6	12.5	973.6	98	93	205	1.7	1.87	.79	1.304				4	
7	15	975.6	99	94	207	1.7	1.87	.79	1.304				4	
8	17.8	977.6	100	94	206	1.6	1.76	.77	1.265				4	
9	20	979.5	101	94	206	1.6	1.76	.77	1.265					
4	22.8	981.375	—		—		—	—	—	—	—	—		
1	1159	981.375	101	94	213	1.9	2.07	.84	1.378	228	226	60	4	
2	2.5	983.4	100	95	214	1.9	2.07	.84	1.378				4	
3	5	985.4	100	98	216	1.8	1.95	.81	1.342				4	
4	7.5	987.6	100	96	217	1.8	1.95	.81	1.342				4	
5	10	989.5	100	96	218	1.7	1.85	.79	1.304				4	
6	12.5	991.4	100	95	214	1.7	1.85	.79	1.304				4	
7	15	993.4	101	95	209	1.7	1.87	.80	1.304				4	
8	17.5	995.3	101	95	206	1.6	1.76	.77	1.265				3	
9	20	997.1	102	95	206	1.6	1.77	.77	1.265				3	
4	22.5	999.057	—		—	—	—	—	—	—	—	—		
1	00	999.057	100	95	203	1.9	2.10	.84	1.378	235	226	60	4	
2	2.5	0010	98	95	202	1.8	1.99	.82	1.342				4	
3	5	0031	99	95	203	1.8	1.99	.82	1.342				4	
4	7.5	0052	100	96	200	1.7	1.89	.80	1.304				4	
5	10	0072	101	96	200	1.7	1.89	.80	1.304				4	
6	12.5	0090	102	96	202	1.7	1.89	.80	1.304				4	
7	15	0110	103	96	206	1.7	1.89	.80	1.304				4	
8	17.5	0130	104	96	208	1.6	1.78	.77	1.265				3	
9	20	0149	104	96	207	1.6	1.77	.78	1.265				3	
5	22.5	1016.616												
12:50		53.916	72		191		2.1		1.312					

Moisture Data	Initial	Final	Net	Rinse
Impinger #1	100	302	202	
Impinger #2	100	124	24	
Impinger(s) #				
Impinger(s) #				
Silica Gel:	761	776	15	
Total Net / Rinse:			331	
Total Sample Volume:				

Stack Information		
Electricity	YES	NO
Probe Stand	YES	NO
Port Threads	YES	NO
Platform Ht.		

Field Calculations	
Sample Vol., dscf:	
% H_2O:	
MWs:	
Stack Vel, ft/s:	
Flow rate, acfm:	
Flow rate, dsfcm:	
% Isokinetics:	

APPENDIX D
STRIP CHART RECORDS


WINDAQ - Teichert-Truckee.WDH
File Edit View Search Scaling Transform XY Options Help
25.0000
.5341
1=1 O2
-2.5000
Run1
Run2
Run3
15.0000
-.0084
2=2 CO2
-1.5000
Run1
Run2
Run3
100.000
.105
3=3 NOx
-10.000
Run1
Run2
Run3
500.00
16.49
4=4 CO
Run1
Run2
Run3
MID 160.0 SEC(TBF) off SEC(TM) 0.7 %EOF C: 08-17-22 06:26:46 400.0 SEC/DIV

APPENDIX E
CALIBRATION GAS CERTIFICATES

Making our world more productive

DocNumber: 476403

Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 06/08/2022
Linde Order Number: 69448537
Part Number: NI CD12CO35E-AS
Customer PO Number: 46

Fill Date: 05/25/2022
Lot Number: 70086214507
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	06/06/2030	NIST Traceable
Cylinder Number:	DT0045735	Expanded Uncertainty
12.04 %	Carbon dioxide	± 0.06 %
44.9 ppm	Carbon monoxide	± 0.4 ppm
8.94 %	Oxygen	± 0.05 %
Balance	Nitrogen	

Certification Information:

Certification Date: 06/06/2022 Term: 96 Months Expiration Date: 06/06/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO responses have been corrected for CO2 interference. CO responses have been corrected for O2 interference. CO2 responses have been corrected for Oxygen IR Broadening effect. O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. **Component:** Carbon dioxide

Requested Concentration: 12 %
Certified Concentration: 12.04 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 06/06/2022

First Analysis Data:						Date	06/06/2022
Z:	0	R:	14.26	C:	12.06	Conc:	12.04
R:	14.29	Z:	0	C:	12.07	Conc:	12.05
Z:	0	C:	12.06	R:	14.31	Conc:	12.04
UOM:	%			Mean Test Assay:		12.04	%

Reference Standard: Type / Cylinder #: GMIS / CC176580
Concentration / Uncertainty: 14.26 % ±0.03 %
Expiration Date: 01/21/2030
Traceable to: SRM # / Sample # / Cylinder #: NTRM / N/A / CC726055
SRM Concentration / Uncertainty: 19.34% / ±0.03%
SRM Expiration Date: 01/12/2027

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%			Mean Test Assay:			%

2. **Component:** Carbon monoxide

Requested Concentration: 45 ppm
Certified Concentration: 44.9 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 06/06/2022

First Analysis Data:						Date	06/06/2022
Z:	0	R:	100.1	C:	44.9	Conc:	44.9
R:	100.2	Z:	0	C:	44.9	Conc:	44.9
Z:	0	C:	44.9	R:	100.1	Conc:	44.9
UOM:	ppm			Mean Test Assay:		44.9	ppm

Reference Standard: Type / Cylinder #: NTRM / CC78493
Concentration / Uncertainty: 100.1 ppm ±0.8 ppm
Expiration Date: 07/09/2027
Traceable to: SRM # / Sample # / Cylinder #: NTRM / 190703 / CC8737
SRM Concentration / Uncertainty: 100.1 ppm / ±0.8 ppm
SRM Expiration Date: 07/09/2027

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	ppm			Mean Test Assay:			ppm

3. **Component:** Oxygen

Requested Concentration: 9 %
Certified Concentration: 8.94 %
Instrument Used: Siemens Oxymat 6E S/N 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 06/06/2022

First Analysis Data:						Date	06/06/2022
Z:	0	R:	9.875	C:	8.922	Conc:	8.94
R:	9.881	Z:	0	C:	8.927	Conc:	8.94
Z:	0	C:	8.921	R:	9.822	Conc:	8.94
UOM:	%			Mean Test Assay:		8.94	%

Reference Standard: Type / Cylinder #: NTRM / DT0010262
Concentration / Uncertainty: 9.875 % ±0.040 %
Expiration Date: 11/18/2022
Traceable to: SRM # / Sample # / Cylinder #: NTRM / 170701 / DT0010262
SRM Concentration / Uncertainty: 9.875% / ±0.040%
SRM Expiration Date: 11/18/2022

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%			Mean Test Assay:			%

Analyzed By: Courtney Zielke

Certified By: Nelson Ma

PRAXAIR
Making our planet more productive

DocNumber: 424168

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 07/20/2021
Praxair Order Number: 45384969
Part Number: NI CD7CO8E-AS
Customer PO Number: 17

Fill Date: 06/16/2021
Lot Number: 70086116702
Cylinder Style & Outlet: AS CGA 590
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	07/19/2029	NIST Traceable
Cylinder Number:	CC90096	Expanded Uncertainty
6.98 %	Carbon dioxide	± 0.02 %
16.9 ppm	Carbon monoxide	± 0.2 ppm
21.01 %	Oxygen	± 0.03 %
Balance	Nitrogen	

Certification Information:

Certification Date: 07/19/2021 *Term:* 96 Months *Expiration Date:* 07/19/2029

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO2 responses have been corrected for Oxygen IR Broadening effect. CO responses have been corrected for CO2 interference. O2 responses have been corrected for CO2 interference.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. ***Component:*** **Carbon dioxide**

Requested Concentration: 7 %
Certified Concentration: 6.98 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 06/21/2021

Reference Standard: Type / Cylinder #: GMIS / CC256638
Concentration / Uncertainty: 6.99 % ±0.02 %
Expiration Date: 05/24/2027
Traceable to: SRM # / Sample # / Cylinder #: SRM 1674b / 7-H-07 / FF10631
SRM Concentration (enter with units) / Uncertainty: 6.944% / ±0.013%
SRM Expiration Date: 06/17/2019

First Analysis Data:						Date	07/19/2021
Z:	0	R:	6.99	C:	6.98	Conc:	6.98
R:	6.99	Z:	0	C:	6.98	Conc:	6.98
Z:	0	C:	6.99	R:	7	Conc:	6.99
UOM:	%			Mean Test Assay:		6.98	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%			Mean Test Assay:			%

2. ***Component:*** **Carbon monoxide**

Requested Concentration: 17 ppm
Certified Concentration: 16.9 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 07/02/2021

Reference Standard: Type / Cylinder #: GMIS / CC707385
Concentration / Uncertainty: 24.51 ppm ±0.04 ppm
Expiration Date: 10/09/2027
Traceable to: SRM # / Sample # / Cylinder #: SRM 2635a / 58-E-34 / FF10666
SRM Concentration (enter with units) / Uncertainty: 24.512 ppm / ±0.029 ppm
SRM Expiration Date: 03/28/2021

First Analysis Data:						Date	07/19/2021
Z:	0	R:	24.5	C:	16.9	Conc:	16.9
R:	24.5	Z:	0	C:	16.9	Conc:	16.9
Z:	0	C:	16.9	R:	24.6	Conc:	16.9
UOM:	ppm			Mean Test Assay:		16.9	ppm

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	ppm			Mean Test Assay:			ppm

3. ***Component:*** **Oxygen**

Requested Concentration: 21 %
Certified Concentration: 21.01 %
Instrument Used: 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 07/14/2021

Reference Standard: Type / Cylinder #: GMIS / ND29287
Concentration / Uncertainty: 20.90 % ±0.02 %
Expiration Date: 09/01/2028
Traceable to: SRM # / Sample # / Cylinder #: SRM 2659a / 71-E-19 / FF22331
SRM Concentration (enter with units) / Uncertainty: 20.863% / ±0.021%
SRM Expiration Date: 08/23/2021

First Analysis Data:						Date	07/19/2021
Z:	0	R:	20.9	C:	21.01	Conc:	21.01
R:	20.9	Z:	0	C:	21.01	Conc:	21.01
Z:	0	C:	21.02	R:	20.91	Conc:	21.02
UOM:	%			Mean Test Assay:		21.01	%

Second Analysis Data:						Date	
Z:	0	R:	0	C:	0	Conc:	0
R:	0	Z:	0	C:	0	Conc:	0
Z:	0	C:	0	R:	0	Conc:	0
UOM:	%			Mean Test Assay:			%

Analyzed By: Jose Vasquez

Certified By: Leeanna Flores

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DocNumber: 446059

Linde Gas & Equipment Inc.
5700 S. Alameda Street
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Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 01/27/2022
Linde Order Number: 61107518
Part Number: NI NO45ME-AS
Customer PO Number: 34

Fill Date: 01/10/2022
Lot Number: 70086201011
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	01/27/2025	NIST Traceable
Cylinder Number:	CC99627	Expanded Uncertainty
44.4 ppm	Nitric oxide	± 0.2 ppm
Balance	Nitrogen	

For Reference Only: NOx 44.6 ppm

Certification Information: *Certification Date:* 01/27/2022 *Term:* 36 Months *Expiration Date:* 01/27/2025

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. *Component:* Nitric oxide

Requested Concentration: 45 ppm
Certified Concentration: 44.4 ppm
Instrument Used: Thermo Electron 42i-LS S/N 1030645077
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 01/14/2022

Reference Standard: Type / Cylinder #: GMIS / DT0037626
Concentration / Uncertainty: 48.7 ppm ±0.2 ppm
Expiration Date: 11/17/2024
Traceable to: SRM # / Sample # / Cylinder #: PRM / C1765710.01 / APEX1324323
SRM Concentration / Uncertainty: 50.04 ppm / ±0.20 ppm
SRM Expiration Date: 12/09/2022

First Analysis Data:							Date	01/17/2022
Z:	0	R:	48.7	C:	44.3	Conc:	44.3	
R:	48.7	Z:	0	C:	44.4	Conc:	44.4	
Z:	0	C:	44.4	R:	48.6	Conc:	44.4	
UOM:	ppm				Mean Test Assay:		44.4	ppm

Second Analysis Data:							Date	01/27/2022
Z:	0	R:	48.7	C:	44.3	Conc:	44.4	
R:	48.6	Z:	0	C:	44.2	Conc:	44.3	
Z:	0	C:	44.3	R:	48.6	Conc:	44.4	
UOM:	ppm				Mean Test Assay:		44.3	ppm

Analyzed By Henry Koung

Certified By Lissette Morales

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DocNumber: 426716

Praxair Distribution, Inc.
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PGVP ID: F22021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 09/07/2021
Praxair Order Number: 49216246
Part Number: NI NO95ME-AS
Customer PO Number: 19

Fill Date: 08/18/2021
Lot Number: 70086123002
Cylinder Style & Outlet: AS CGA 660
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

Expiration Date:	**09/07/2029**	NIST Traceable
Cylinder Number:	**CC181599**	Expanded Uncertainty
95.1 ppm	**Nitric oxide**	**± 0.6 ppm**
Balance	**Nitrogen**	

For Reference Only: NOx 95.3 ppm

Certification Information: *Certification Date:* 09/07/2021 *Term:* 96 Months *Expiration Date:* 09/07/2029

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. ***Component:*** **Nitric oxide**

Requested Concentration: 95 ppm
Certified Concentration: 95.1 ppm
Instrument Used: Thermo Electron 42i S/N 0726024326
Analytical Method: Chemiluminescence
Last Multipoint Calibration: 08/20/2021

Reference Standard: Type / Cylinder #: GMIS / CC724422
Concentration / Uncertainty: 96.8 ppm ±0.5 ppm
Expiration Date: 01/15/2028
Traceable to: SRM # / Sample # / Cylinder #: 44-T-20 / 1684b / FF6010
SRM Concentration (enter with units) / 99.75 ppm / ±0.50 ppm
SRM Expiration Date: 01/25/2020

First Analysis Data:						Date	08/31/2021
Z: 0	R: 96.8	C: 95	Conc: 95				
R: 96.8	Z: 0	C: 95.2	Conc: 95.2				
Z: 0	C: 95	R: 96.8	Conc: 95				
UOM: ppm			Mean Test Assay:	95.1	ppm		

Second Analysis Data:						Date	09/07/2021
Z: 0	R: 96.8	C: 95.1	Conc: 95.1				
R: 96.8	Z: 0	C: 94.9	Conc: 94.9				
Z: 0	C: 95.1	R: 96.8	Conc: 95.1				
UOM: ppm			Mean Test Assay:	95	ppm		

Analyzed By Nelson Ma — Nelson Ma

Certified By Jose Vasquez — Jose Vasquez

Airgas
an Air Liquide company

Airgas Specialty Gases
Airgas USA, LLC
11711 S. Alameda Street
Los Angeles, CA 90059
Airgas.com

CERTIFICATE OF ANALYSIS

Grade of Product: EPA Protocol

Part Number:	E02NI99E15WC004	Reference Number:	48-402146897-1
Cylinder Number:	CC500632	Cylinder Volume:	144.0 CF
Laboratory:	124 - Los Angeles (SAP) - CA	Cylinder Pressure:	2015 PSIG
PGVP Number:	B32021	Valve Outlet:	660
Gas Code:	NO2,BALN	Certification Date:	Jul 08, 2021

Expiration Date: Jul 08, 2024

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 mole/mole 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
NITROGEN DIOXIDE	6.000 PPM	6.585 PPM	G1	+/- 2.3% NIST Traceable	06/28/2021, 07/08/2021
NITROGEN	Balance				

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
GMIS	401206803104	CC511311	9.690 PPM NITROGEN DIOXIDE/NITROGEN	+/- 2.1%	May 02, 2022
PRM	12386	D685025	9.91 PPM NITROGEN DIOXIDE/AIR	+/- 2.0%	Feb 20, 2020

The SRM, PRM or RGM noted above is only in reference to the GMIS used in the assay and not part of the analysis.

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
MKS FTIR NO2 018335821	FTIR	Jul 01, 2021

Triad Data Available Upon Request

Approved for Release

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Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
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PGVP ID: F22022

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 02/01/2022
Linde Order Number: 61107518
Part Number: NI CO260E-AS
Customer PO Number: 34

Fill Date: 01/24/2022
Lot Number: 70086202405
Cylinder Style & Outlet: AS CGA 350
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

ProSpec EZ Cert

		NIST Traceable Expanded Uncertainty
Expiration Date:	01/31/2030	
Cylinder Number:	CC193527	
264.3 ppm	Carbon monoxide	± 1.2 ppm
Balance	Nitrogen	

Certification Information:

Certification Date: 01/31/2022 Term: 96 Months Expiration Date: 01/31/2030

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component: Carbon monoxide

Requested Concentration: 260 ppm
Certified Concentration: 264.3 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 01/21/2022

Reference Standard: Type / Cylinder #: GMIS / CC120294
Concentration / Uncertainty: 497.5 ppm ±2.0 ppm
Expiration Date: 04/26/2025
Traceable to: SRM # / Sample # / Cylinder #: SRM 1680b / 2-J-15 / CAL018072
SRM Concentration / Uncertainty: 490.4 ppm / ±2.0 ppm
SRM Expiration Date: 09/20/2021

First Analysis Data:						Date	01/31/2022
Z: 0	R: 497.5	C: 264.2				Conc:	264.2
R: 497.5	Z: 0	C: 264.5				Conc:	264.5
Z: 0	C: 264.4	R: 497.7				Conc:	264.4
UOM: ppm			Mean Test Assay:				264.3 ppm

Second Analysis Data:						Date	
Z: 0	R: 0	C: 0				Conc:	0
R: 0	Z: 0	C: 0				Conc:	0
Z: 0	C: 0	R: 0				Conc:	0
UOM: ppm			Mean Test Assay:				ppm

Analyzed By: Jose Vasquez

Certified By: Nelson Ma

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DocNumber: 426976

Praxair Distribution, Inc.
5700 S. Alameda Street
Los Angeles CA 90058
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PGVP ID: F22021

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

BEST ENVIRONMENTAL SERVICES
339 STEALTH CT
LIVERMORE CA 94551

Certificate Issuance Date: 08/30/2021
Praxair Order Number: 49216246
Part Number: NI CO460E-AS
Customer PO Number: 19

Fill Date: 08/23/2021
Lot Number: 70086123504
Cylinder Style & Outlet: AS CGA 350
Cylinder Pressure and Volume: 2000 psig 140 ft3

Certified Concentration

Expiration Date:	08/30/2029	NIST Traceable
Cylinder Number:	SA17431	Expanded Uncertainty
468.4 ppm	Carbon monoxide	± 2.0 ppm
Balance	Nitrogen	

ProSpec EZ Cert

Certification Information:

Certification Date: 08/30/2021 *Term:* 96 Months *Expiration Date:* 08/30/2029

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. ***Component:*** **Carbon monoxide**

Requested Concentration: 460 ppm
Certified Concentration: 468.4 ppm
Instrument Used: Horiba VIA-510 S/N 576876015
Analytical Method: NDIR
Last Multipoint Calibration: 08/02/2021

Reference Standard: Type / Cylinder #: GMIS / CC120294
Concentration / Uncertainty: 497.5 ppm ±2.0 ppm
Expiration Date: 04/26/2025
Traceable to: SRM # / Sample # / Cylinder #: SRM 1680b / 2-J-15 / CAL018072
SRM Concentration (enter with units) / 490.4 ppm / ±2.0 ppm
SRM Expiration Date: 09/20/2021

First Analysis Data:							Date	08/30/2021
Z:	0	R:	497.5	C:	468.5	Conc:	468.6	
R:	497.4	Z:	0	C:	468.3	Conc:	468.4	
Z:	0	C:	468.2	R:	497.4	Conc:	468.3	
UOM:	ppm				Mean Test Assay:		468.4	ppm

Second Analysis Data:							Date	
Z:	0	R:	0	C:	0	Conc:	0	
R:	0	Z:	0	C:	0	Conc:	0	
Z:	0	C:	0	R:	0	Conc:	0	
UOM:	ppm				Mean Test Assay:			ppm

Analyzed By: Lissette Morales

Certified By: Jose Vasquez

APPENDIX F
EQUIPMENT CALIBRATION RECORDS

BEST ENVIRONMENTAL METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	LSI 1
Console Serial Number	
DGM Model Number	
DGM Serial Number	

Calibration Conditions			
Date	Time	July 6, 2022	1300
Barometric Pressure		29.8	in Hg
Theoretical Critical Vacuum[1]		14.1	in Hg
Calibration Technician		Burt Kuscih	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3 \cdot {}^oR^{1/2})/(in.Hg \cdot min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
18.15	0.40	599.800	605.500	73	75	SF40	0.2323	74	74	20
11.08	0.80	605.500	610.500	75	76	SF48	0.3349	74	75	18
8.26	1.30	610.500	615.512	76	77	SF55	0.4442	75	75	16
6.23	2.30	615.512	620.497	77	78	SF63	0.5883	75	75	14
4.47	4.20	620.497	625.357	78	78	SF73	0.8043	75	75	11

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
5.619	0.310	5.437	0.300	0.968	0.00	0.300	2.476	0.18
4.920	0.444	4.783	0.432	0.972	0.01	0.432	2.383	0.08
4.929	0.597	4.727	0.572	0.959	-0.01	0.572	2.204	-0.09
4.905	0.787	4.722	0.758	0.963	0.00	0.758	2.230	-0.07
4.800	1.074	4.632	1.036	0.965	0.00	1.036	2.197	-0.10
				0.965	Y Average		2.298	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

Note: For Calibration Factor dHa, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.2.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 535476, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature: Burt Kusich

Date: 7/6/2022

LSI 1

Yd = 0.965

dHa = 2.30

Cal Date: 07/06/22

LSI 1

Yd = 0.965

dHa = 2.30

Cal Date: 7/6/2022

TYPE K THERMOCOUPLE READOUT CALIBRATION

Meter Box: LSI 1

Technician: Burt Kusich

Date: 7/6/2022

Next Cal Due: 1/6/2023

Test T/C °F	Ref. T/C °F	Difference °F	% Difference	Results
102	100	-2	-2	**Pass**
204	200	-4	-2	**Pass**
302	300	-2	-1	**Pass**
398	400	2	1	**Pass**
498	500	2	0	**Pass**
599	600	1	0	**Pass**
700	700	0	0	**Pass**
904	900	-4	0	**Pass**

Comments: Referance Omega tc simulator. CL300-2100f s/n 710

Equipment Condition: (●) Good ( ) Fair ( ) Poor ( ) Repaired

Reference Thermometer. ASTM mercury in glass.

Method Reference: EPA QA Handbook Vol. III: Stationary Source Specific Methods, Sect. 3.5.2.2

Tolerance Limits: ±4 °F at ≤400oF, ±1.5% at ≥400oF.

Calibration Frequency: 6 Months

The results submitted herein are true to the best of my knowledge.

Technicians Signature: On File

Pre Cal: ☑

Post Cal: ☐

NIST Pyrometer:	T223406
ASTM Thermometer:	3304RM
NIST Thermocouple:	OM121120934

Differential Pressure Gauge Calibration

Meter Box: LSI 1
Technician: Burt Kusich
Date: 7/6/2022
ID No. **W38URH**
Next Cal Due: 1/6/2023

Scale: 1
Electronic ☐
Magnahelic ☑
dP Mag

+/-	Guage ΔP	Ref. Manometer	Difference ΔP	% Difference	Results
+	0.39	0.37	-0.02	2.0	**Pass**
+	0.8	0.77	-0.03	3.0	**Pass**
+	0.98	0.95	-0.03	3.0	**Pass**

Comments:

Equipment Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Acceptance limit: Agree within 5% of inclined manometer
Method Reference: Code of Regulations,40 PT60,App. A, Method 2
Calibration Frequency: 6 Months

Pre Cal: ☑
Post Cal: ☐

STD Used: 0-10" Manometer

The results submitted herein are true to the best of my knowledge.

Technicians Signature: Burt Kusich

Differential Pressure Gauge Calibration

Meter Box: LSI 1
Technician: Burt Kusich
Date: 7/6/2022
ID No. **R01081230N10**
Next Cal Due: 1/6/2023

Scale: 3
Electronic ☐
Magnahelic ☑
dP Mag

+/-	Guage ΔP	Ref. Manometer	Difference ΔP	% Difference	Results
+	0.70	0.60	-0.10	3.3	**Pass**
+	1.60	1.60	0.00	0.0	**Pass**
+	2.50	2.50	0.00	0.0	**Pass**

Comments:

Equipment Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Acceptance limit: Agree within 5% of inclined manometer
Method Reference: Code of Regulations,40 PT60,App. A, Method 2
Calibration Frequency: 6 Months

Pre Cal: ☑
Post Cal: ☐

STD Used: 0-10" Manometer

The results submitted herein are true to the best of my knowledge.

Technicians Signature: Burt Kusich

Differential Pressure Gauge Calibration

Meter Box: LSI 1
Technician: Burt Kusich
Date: 7/6/2022
ID No. **W37VYF**
Next Cal Due: 1/6/2023

Scale: 5
Electronic ☐
Magnahelic ☐
dH Mag

+/-	Guage ΔP	Ref. Manometer	Difference ΔP	% Difference	Results
+	0.50	0.50	0.00	0.0	**Pass**
+	1.50	1.50	0.00	0.0	**Pass**
+	4.00	4.00	0.00	0.0	**Pass**

Comments:

Equipment Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Acceptance limit: Agree within 5% of inclined manometer
Method Reference: Code of Regulations,40 PT60,App. A, Method 2
Calibration Frequency: 6 Months

Pre Cal: ☑
Post Cal: ☐

STD Used: 0-10" Manometer

The results submitted herein are true to the best of my knowledge.

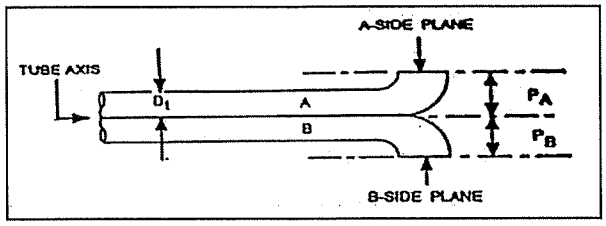
Technicians Signature: Bust Kusich

S-Type Pitot Tube Geometric Calibration Data Sheet

Technician:	Burt Kusich	Probe No.:	197
Date:	7/15/2022	Probe Length:	88
Next Cal Due:	1/15/2023	Probe Type:	M5

Level Pitot Assembly

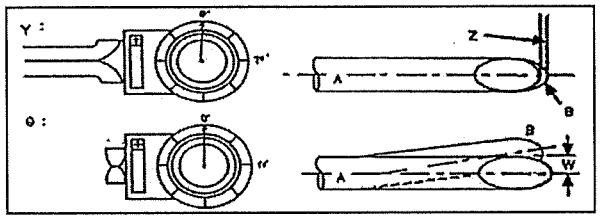
D_t=	0.368	in.
P_A=	0.441	in.
P_B=	0.443	in.



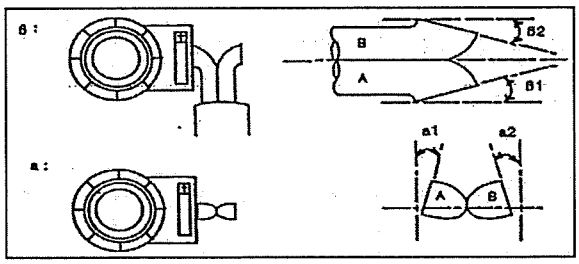
$P=(P_A+P_B)/2$ 0.4420

P/D_t= 1.201 in. $(1.05 \leq P/D_t \leq 1.50)$

$A=P_A+P_B$=	0.884	in.	
Y=	1	°	
Z=A * sinY	0.015	in.	(<0.125 in.)
Θ=	1	°	
W=A * sin Θ=	0.015	in.	(<0.031 in.)



β1=	1	°	(<5°)
β2=	1	°	(<5°)
a1=	2	°	(<10°)
a2=	2	°	(<10°)



Comments:

Pitot Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Pitot tube meets or exceeds all specifications, criteria and/or applicable design features and is hereby assigned a pitot tube certification factor of 0.84. As per 40 CFR Pt. 60 App. A, Reference Method 2

a1 & a2 (<10°), b1 & b2 (<5°). Z < 0.125 in. & W < 0.031 in.

Tolerance limits from:

1. Standards of Performance for New Stationary sources, Federal Register 36 (247) December 233,1971.
2. Valbra, R.F., "The Effects of Impact Opening Misalignment on the Value of the Type-S Pitot Coefficie Emission Measurement Branch, Research Triangle Park, NC, October 1976.

The results submitted herein are true to the best of my knowledge.

Technicians Signature: On File

TYPE K THERMOCOUPLE CALIBRATION

Technician: Burt Kusich
Date: 7/15/2022

Next Cal Due: 1/15/2023

Pitot No.: 197
Pitot Length: 88
Probe Type: Pitot

Test T/C °F	Ref. T/C °F	Difference °F	% Difference	Results
60	60	0.0	0.0	**Pass**
215	214	-1.0	-0.5	**Pass**
340	342	2.0	0.6	**Pass**

Comments:

Equipment Condition: (●) Good ( ) Fair ( ) Poor ( ) Repaired

Reference Thermometer. ASTM mercury in glass. Pre Cal: ☑
Method Reference: EPA QA Handbook Vol. III: Stationary Source Specific Meth Post Cal: ☐
Tolerance Limits: ±4 °F at ≤400oF, ±1.5% at ≥400oF.
Calibration Frequency: 6 Months
The results submitted herein are true to the best of my knowledge.

NIST Pyrometer: T223406
ASTM Thermometer: 3304RM
NIST Thermocouple: OM121120934

Technicians Signature: On File

BEST ENVIRONMENTAL

PROBE HEATER THERMOCOUPLE CALIBRATION

Technician: Burt Kusich
Date: 7/15/2022

Next Cal Due: 1/15/2023

Pitot No.: 197
Pitot Length: 88
Probe Type: Pitot

Test T/C °F	Ref. T/C °F	Difference °F	% Difference	Results
85	85	0.0	0.0	**Pass**
200	200	0.0	0.0	**Pass**
275	277	2.0	0.7	**Pass**

Comments:

Equipment Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Reference Thermometer. ASTM mercury in glass. ☑
Method Reference: EPA QA Handbook Vol. III: Stationary Source Specific Metho☐ Sect. 3.5.2.2
Tolerance Limits: ±4 °F at ≤400oF, ±1.5% at ≥400oF.
Calibration Frequency: 6 Months
The results submitted herein are true to the best of my knowledge.

Technicians Signature: On File

METHOD 5 FILTER OVEN THERMOCOUPLE CALIBRATION

Technician: Burt Kusich
Date: 7/15/2022
ID No. **8**
Next Cal Due: 1/15/2023

Test T/C °F	Ref. T/C °F	Difference °F	% Difference	Results
75	76	1.0	1.3	**Pass**
180	180	0.0	0.0	**Pass**
280	281	1.0	0.4	**Pass**

Comments: Bottom or 90° Style

Equipment Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Reference Thermometer. ASTM mercury in glass. Pre Cal: ☑
Method Reference: EPA QA Handbook Vol. III: Stationary Source Specific Metho Post Cal: ☐
Tolerance Limits: ±5.4 °F at ambient temperature and in hot water bath.
Calibration Frequency: 6 Months
The results submitted herein are true to the best of my knowledge.

NIST Pyrometer:	T223406
ASTM Thermometer:	3304RM
NIST Thermocouple:	OM121120934

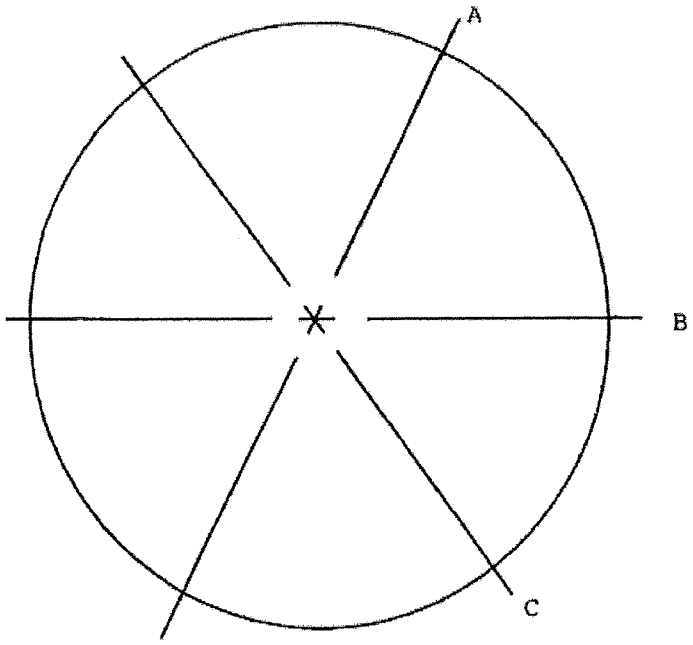
Technicians Signature: On File

Nozzle Geometric Calibration Data Sheet

Nozzle Type: Method 5

Technician: Burt Kusich
Date: 1/11/2022
Nozzle No. 25
Nozzle Diameter: 0.202
Next Cal Due: 1/11/2023

Stainless Steel ☑
Glass ☐
Quartz ☐
Inconel ☐



A	0.202
B	0.203
C	0.202
Average:	**0.202**
Range:	0.001

Comments:

Nozzle Condition: ◉ Good ○ Fair ○ Poor ○ Repaired

Reference Method: EPA 5 (section 5.1)
Acceptance Limit <0.004" range of 3 measurements
Calibration Frequency: 12 Months

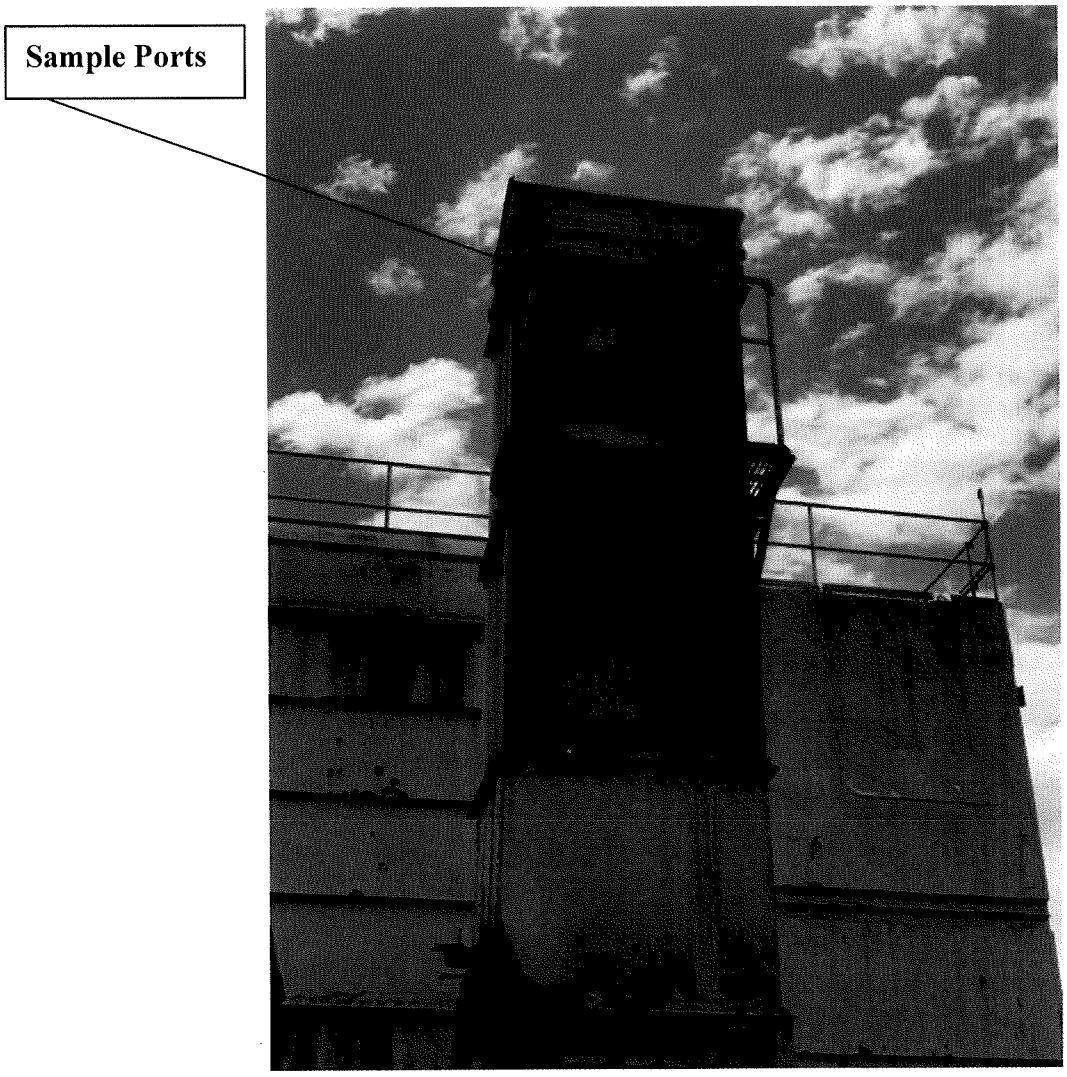
The results submitted herein are true to the best of my knowledge.

Technicians Signature: On File

APPENDIX G
STACK DIAGRAMS

Teichert Aggregates
Truckee, CA

Martis Valley-Hot Mix Asphalt Plant
Baghouse Outet (Permit #88-36-08)



Stack i.d.	**53.75" X 36.25"**
Port Upstream Disturbance	**<1 Stack Diameter**
Port Downstream Disturbance	**5 stack Diameters**

APPENDIX H
SAMPLING SYSTEM DIAGRAMS

EPA METHOD 1

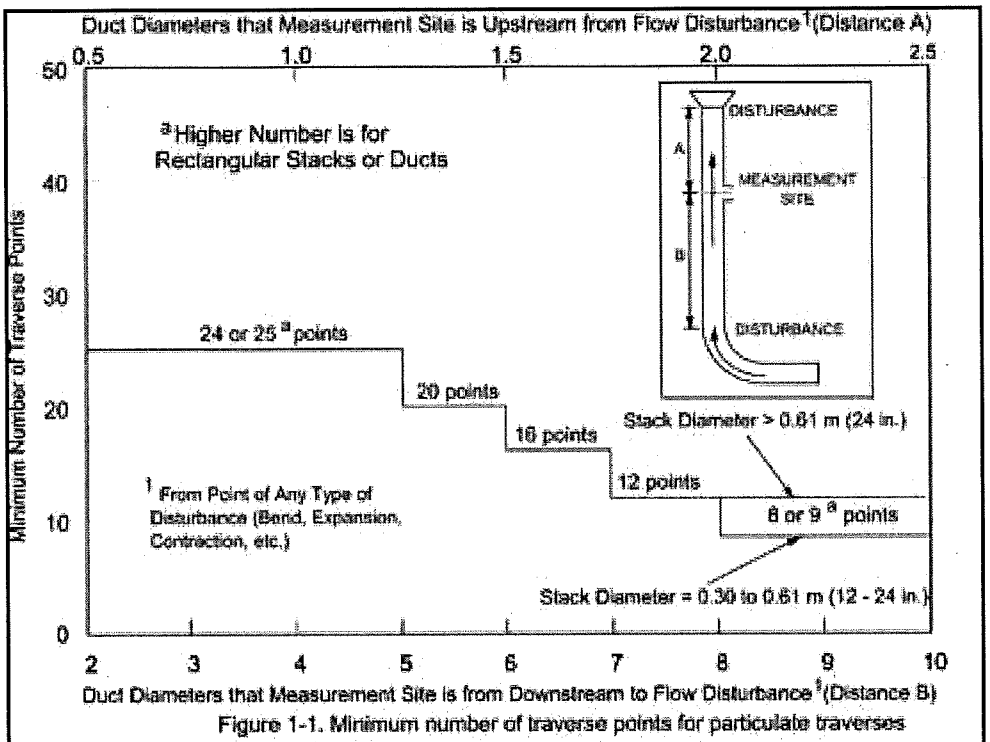


Figure 1-1. Minimum number of traverse points for particulate traverses

* * * * *

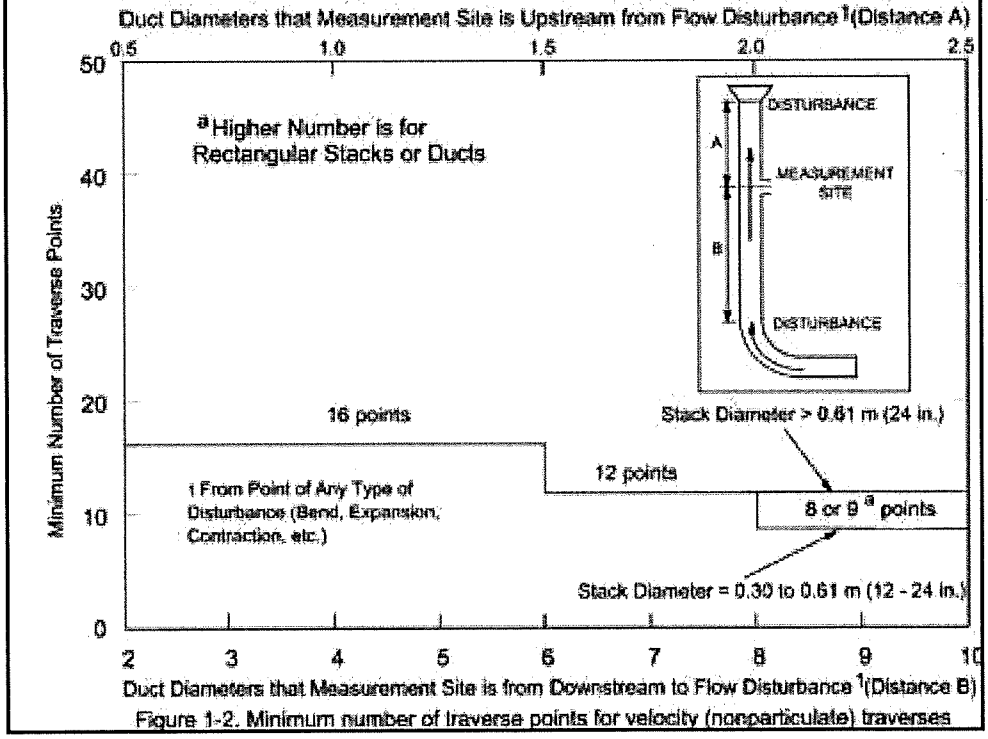


Figure 1-2. Minimum number of traverse points for velocity (nonparticulate) traverses

EPA METHOD 1

TABLE 1-1 CROSS-SECTION LAYOUT FOR RECTANGULAR STACKS

Number of tranverse points layout	Matrix
9	3×3
12	4×3
16	4×4
20	5×4
25	5×5
30	6×5
36	6×6
42	7×6
49	7×7

TABLE 1-2—LOCATION OF TRAVERSE POINTS IN CIRCULAR STACKS

[Percent of stack diameter from inside wall to traverse point]

Traverse point number on a diameter	Number of traverse points on a diameter											
	2	4	6	8	10	12	14	16	18	20	22	24
1	14.6	6.7	4.4	3.2	2.6	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	85.4	25.0	14.6	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3		75.0	29.6	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4		93.3	70.4	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5			85.4	67.7	34.2	25.0	20.1	16.9	14.6	12.9	11.6	10.5
6			95.6	80.6	65.8	35.6	26.9	22.0	18.8	16.5	14.6	13.2
7				89.5	77.4	64.4	36.6	28.3	23.6	20.4	18.0	16.1
8				96.8	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9					91.8	82.3	73.1	62.5	38.2	30.6	26.2	23.0
10					97.4	88.2	79.9	71.7	61.8	38.8	31.5	27.2
11						93.3	85.4	78.0	70.4	61.2	39.3	32.3
12						97.9	90.1	83.1	76.4	69.4	60.7	39.8
13							94.3	87.5	81.2	75.0	68.5	60.2
14							98.2	91.5	85.4	79.6	73.8	67.7
15								95.1	89.1	83.5	78.2	72.8
16								98.4	92.5	87.1	82.0	77.0
17									95.6	90.3	85.4	80.6
18									98.6	93.3	88.4	83.9
19										96.1	91.3	86.8
20										98.7	94.0	89.5
21											96.5	92.1
22											98.9	94.5
23												96.8
24												98.9

EPA METHOD 1

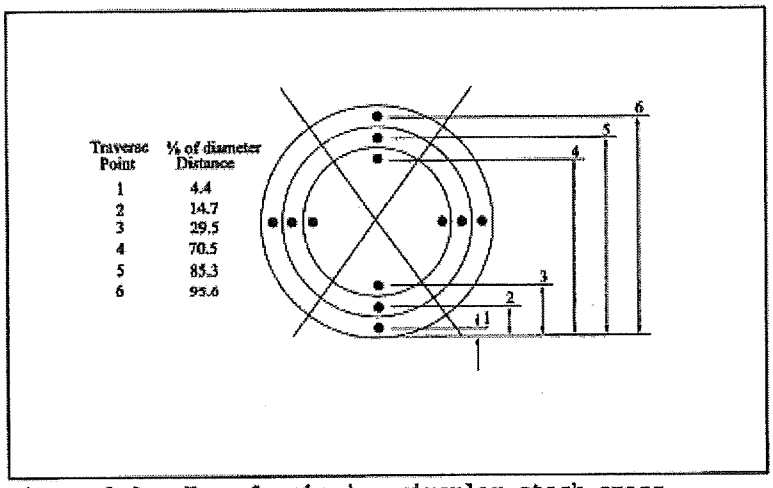


Figure 1-3. Example showing circular stack cross section divided into 12 equal areas, with location of traverse points.

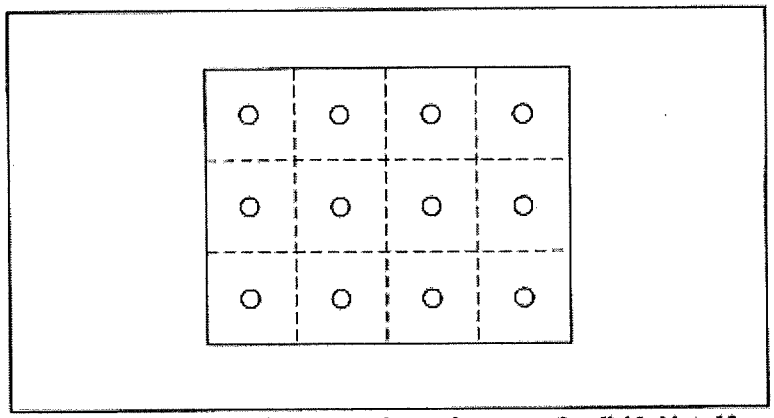
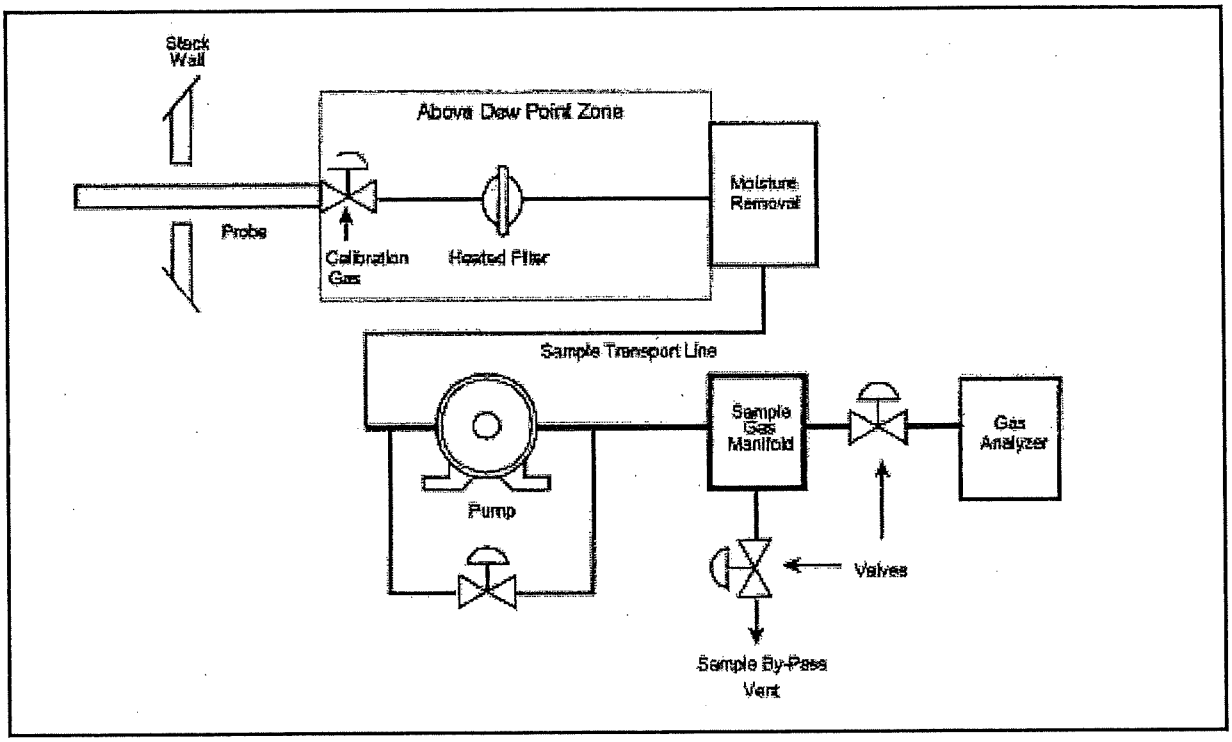


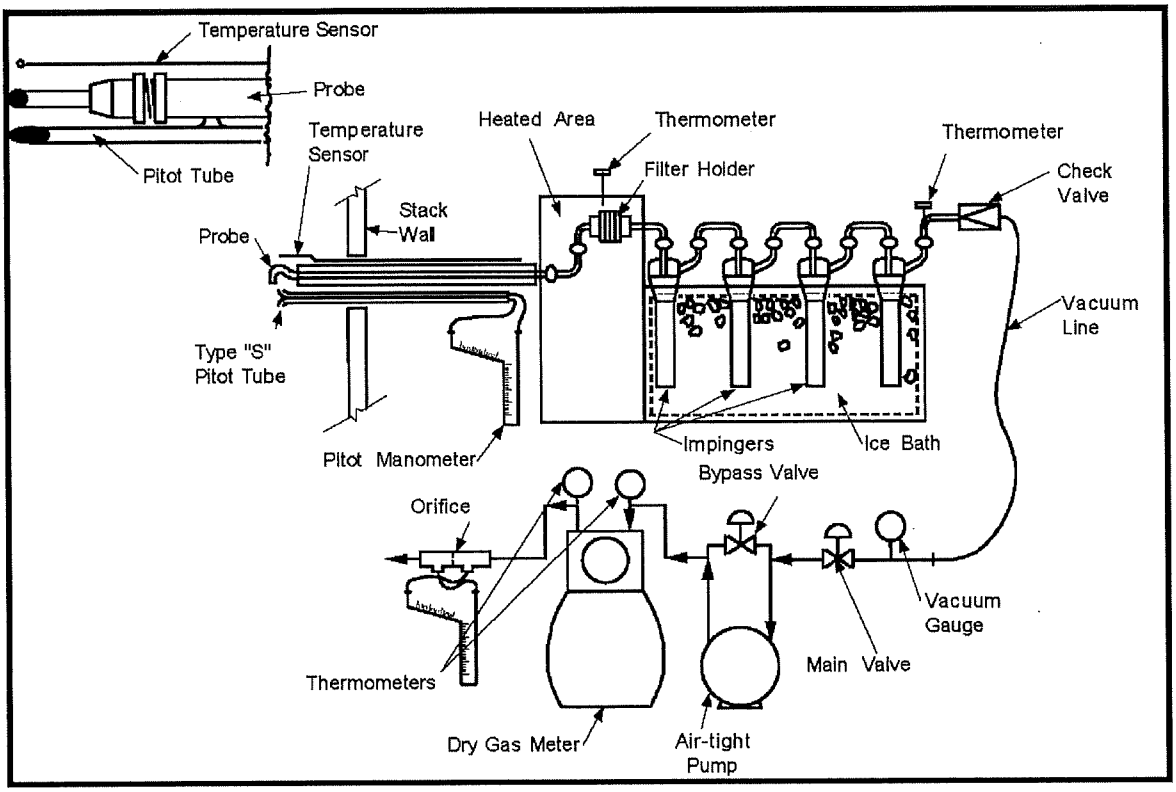
Figure 1-4. Example showing rectangular stack cross section divided into 12 equal areas, with traverse points at centroid of each area.

EPA Methods 3A, 6C, 7E & 10



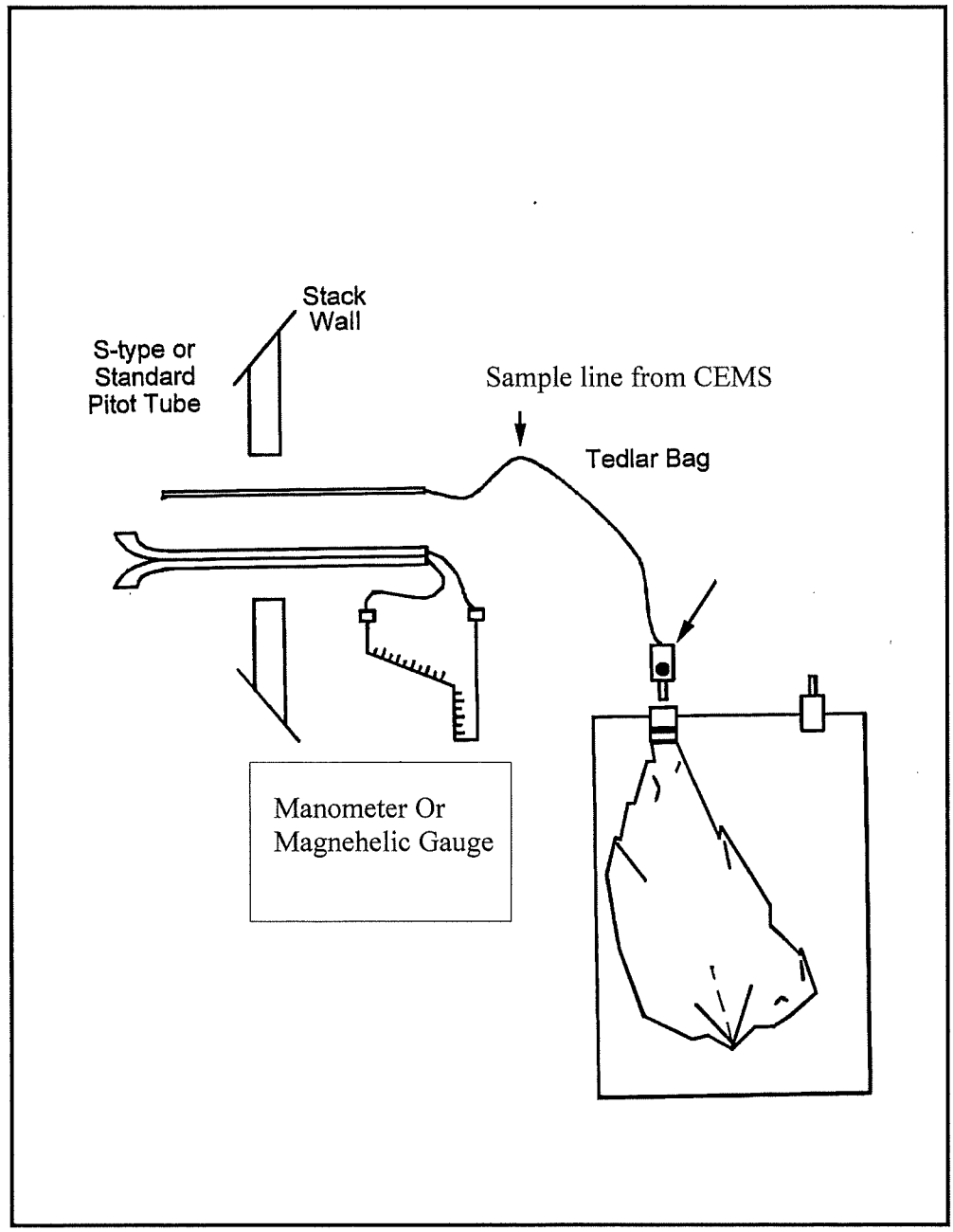
CEM Sampling Train

CARB Method 5



Total Particulate Sampling Train

EPA Method 18



Positive Pressure Sampling Train

APPENDIX I
SOURCE TEST PLAN

Source Test Protocol

Teichert Aggregates
Martis Valley-Asphalt Batch Plant
PTO #88-36-08

Prepared For:
Teichert Aggregates
3500 American River Drive
Sacramento, CA 95851
Attn: Nic Armstrong
Email: NArmstrong@teichert.com

Submitted To:
Northern Sierra AQMD
200 Litton Drive Suite 320
Grass Valley, CA 95945
Attn: Sam Longmire
Email: sam@myairdistrict.com

Prepared By:
BEST ENVIRONMENTAL
339 Stealth Court
Livermore, CA 94551
Phone (925) 455-9474
Fax (925) 455-9479
Attn: Bobby Asfour
Email: bestair@best-enviro.com

Date Issued: June 16, 2022

SUMMARY INFORMATION

Source Test Information

General Information

Source Owner:	Teichert Aggregates 3500 American River Drive Sacramento, CA 95851
Source Location:	Martis Valley 13879 Joerger Road Truckee, CA 96160
Phone: Contact:	(916) 484-3326 Nic Armstrong
Source Description:	One Propane Fired Batch Mix Asphalt Plant
Permit ID:	88-36-08
Test Parameters & Limits:	PM: 0.04 gr/dscf TSP: 6.27 tons/year & 0.1 gr/dscf @ 12% CO_2 NOx: 10.85 tons/year CO: 70.70 tons/year TOG: 17.85 tons/year
Source Testing Firm:	**BEST ENVIRONMENTAL (BE)** 339 Stealth Court Livermore, CA 94551
Phone: Fax: Contact:	(925) 455-9474 (925) 455-9479 Bobby Asfour
Proposed Testing Dates:	July 13, 2022
Analytical Laboratories:	**BEST ENVIRONMENTAL (BE)** 339 Stealth Court Livermore, CA 94551 Phone: (925) 455-9474 ext. 105 Attn: Ron Mariano (Particulate & TOG)

1.0 Introduction:

The Source testing program objective is to determine compliance with respect to Northern Sierra Air Quality Management District (NSAQMD) monitoring and emission requirements. Meeting these objectives will require Continuous Emissions Monitoring (CEM) of O_2, CO_2, NOx & CO. Additionally, samples will be collected and analyzed for TOG and PM_{10}.

The plant should be operated at a load acceptable to the NSAQMD.

2.0 Emission Source Information:

Teichert Aggregates operates a Propane Gas Fired 135MMBtu/hr Drum Mix Burner used to provide heat for drying asphalt. As the plant demands product, rock is injected into the drum dryer/mixer to begin the asphalt production process. The air and emissions are filtered and pulled into the baghouse where vacuum-style bags filter out the particulate. The emissions are then drawn through a 30HP exhaust fan, which draws a negative static all the way back to the burner and exits the stack. (Permit # 88-36-08)

Emissions will be sampled from the three 4-inch ports located on the 53.75" X 36.25" rectangular stack outlet. The sampling ports are located 5 equivalent stack diameters downstream from any points of flow disturbance and less than 1 diameter upstream from the exit. The ports will be accessed using a man-lift.

PTO #	Description	Limits
88-36-08	Asphalt Plant	PM 0.04 gr/dscf, TSP 6.27 tons/year & 0.1 gr/dscf @ 12% CO_2, NOx 10.85 tons/year, CO 70.70 tons/year, TOG 17.85 tons/year

3.0 Source Testing Program Description:

Triplicate test runs will be performed on the exhaust for O_2, CO_2, NOx, CO, THC & PM_{10}. During each test run all relevant data (fuel flow, process rate and dryer temperature) will be monitored and recorded. The exhaust flow rate will be determined from the Method 1-4 flow measurements and will be used to calculate mass emission rates

Overview of Sampling-Drum Mix Asphalt Plant PTO #88-36-08

Parameter	Location	Methods	Duration	# of Runs
Flow Rate	Exhaust	CARB Methods 1-4	60 mins	3
PM_{10}	Exhaust	CARB Method 5	60 mins	3
NOx, CO and O_2	Exhaust	EPA Methods 7E, 10 & 3A	40 mins	3
TOG	Exhaust	EPA Method 18	40 mins	3
Flow Rate	Exhaust	EPA Method 19	40 mins	3

The Method 1-4 flow rates will be used to determine the gaseous (NOx, CO & TOG) emission rates of the dryer. TOG will be assumed equal to total non-methane/ethane hydrocarbons as methane. The Method 1-4 flow rates will be used to determine the PM/PM_{10} emission rates emitted from the baghouse. TSP will be assumed equal to filterable particulate and total particulate matter will be assumed PM_{10}.

Due to high moisture content (>10% H2O) in the exhaust, EPA Method 25a is not recommended for the TOG sampling. EPA Method 18 will be used in lieu of EPA Method 25a.

4.0 Source Testing Procedures:

This section is intended to provide an overview of the sampling strategy and does not attempt to summarize the sampling procedures, which are described in detail in the reference methods.

EPA Methods 7E (NO_x), 10 (CO), 18 (THC), 3A (O_2 & CO_2), CARB Methods 1-5 (Filterable and Condensable Particulate & DSCFM) will be used to determine emission compliance.

CARB Method 1. This method is used to determine the duct of stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements. The point selection is made based on the type of test (particulate or velocity), the stack diameter and port location distance from flow disturbance.

CARB Method 2 is used to determine stack gas velocity using a standard or S-type Pitot tube and inclined manometer. Temperature is monitored using a K-type thermocouple and calibrated Omega

temperature meter. Leak checks are performed before and after each traverse to validate the results. Thermometer calibrations are performed using an Omega Model CL-300 calibrator. Geometric calibrations of S-type pitots are performed and records are submitted with the report.

CARB Method 3 is used to determine the molecular weight of the stack gas. The $\%O_2$ and $\%CO_2$ concentrations are measured by fyrite apparatus or CEM.

CARB Method 4 is used to determine the moisture content in the gas stream by extracting a sample and condensing the moisture in the impingers and the silica gel trap of the Method 5 sample trains. The moisture gained is determined volumetrically and gravimetrically. Results are recorded on the field data sheet. A sample is pulled using a leak tight pump. Volume is measured with a calibrated dry gas meter. Pre-and post-test leak checks are performed for each run.

CARB Method 5 is used to determine the filterable and condensable Particulate emissions. The sampling equipment consists of a stainless steal nozzle, a BE constructed heated stainless steal probe w/stainless steal liner, heated filter box and filter holder with glass fiber filter, followed by a Teflon line and umbilical to four Greenburg-Smith impingers, a pump and a meter control module. The first and second impingers are filled with 100 mL of DI water. A third impinger is left empty and the fourth impinger contains silica gel desiccant to dry the gas before the pump and gas meter. The entire system must be leak free before pulling stack gas though at a rate suitable for the stack flow rate. Following sampling, the filters are collected and sent to the BE laboratory for analysis. Filterable particulate was determined gravimetrically from the probe/nozzle acetone rinse and filter, following evaporation and desiccation of these fractions. Condensable gaseous particulate emissions that pass through the filter (rated at 99.95% efficient for 0.3µm particulates) are collected and recovered from the sample line and back-half of the filter holder and from the first two impingers containing de-ionized water. The organic condensable particulate fraction is separated using a dichloromethane rinse, which is evaporated desiccated and weighed. The remaining aqueous fraction is also evaporated, desiccated and weighed to determine the inorganic condensable particulate fraction.

Sampling QA/QC: consists of pitot leak checks per CARB Method 2. Sampling system leak checks are performed before and after each test run. The sampling system leak checks are performed per CARB Method 4. The impingers are kept in ice to maintain the temperature of the gas exiting the last impinger to below 68°F. No silicone grease is used in the components of the sampling train. The dry gas meter, pitot, thermocouples, gauges and nozzles are all calibrated according to the methods and with a frequency of between 6 to 12 months as specified in CARB QA/QC Volume VI, Table 3.

Nozzles are calibrated to within 0.001" diameter and are inspected for damage prior to each test. Reagent blanks were collected using the same lot reagents, same proportions and techniques as the test samples. Analytical QA/QC consisted of a reagent blank. All gravimetric work is performed on calibrated analytical balances.

For the Continuous Emission Monitoring procedures (EPA Methods 7E, 10 & 3A), a sample is extracted from the exhaust stack conditioned and analyzed by continuous monitoring gas analyzers in a test van. The sampling system consists of a stainless steel sample probe, heated Teflon sample line, glass-fiber particulate filter, glass moisture-condensation knockouts, Teflon sample transfer tubing, diaphragm pump and a stainless steel/Teflon manifold and flow control system. A constant sample and calibration gas supply pressure of 5 PSI is provided to each analyzer to avoid pressure variable response errors. The entire sampling system is leak checked before and after the sampling program. The BE sampling and analytical system is checked for linearity with zero, mid and high span calibrations, and is checked for system bias at the beginning and end of each test run. System bias is determined by pulling calibration gas through the entire sampling system. Individual test run calibrations will use the calibration gas that most closely matches the stack gas effluent. The calibration gases will be selected to fall approximately within the following instrument ranges; 80 to 90 percent for the high calibration, 40 to 60 percent for the mid range, and zero. Zero and calibration drift values and system bias will be determined for each test run. A stratification check is performed on the source during the first test run.

The following system and test criteria will be monitored (EPA Methods 7E, 3A, & 10):

Parameter	Limits
System Criteria	
Instrument Linearity	± 2% Calibration Span or ± 0.5 diff.
System Bias	± 5% Calibration Span or ± 0.5 diff.
Calibration Gas	± 2% Value
NO_x converter efficiency	>90%
Test Criteria	
Instrument Zero Drift	± 3% Calibration Span or ± 0.5 diff.
Instrument Span Drift	± 3% Calibration Span or ± 0.5 diff.

All calibration gases are EPA Protocol #1 rated or are traceable to the National Institute of Standards and Technology. Calibration gas certificates will be included in the final test report. The analyzer data recording system consists of computer Data Acquisition System (DAS) and a multi channel strip chart recorder.

The following continuous monitoring analyzers or equivalents will be used:

Parameter	Make Model	Principle
NO_x	CAI 600CLD	Chemiluminescence
O_2	CAI 110P	Paramagnetic
CO_2	CAI 100	NDIR
CO	TECO 48i	IR
THC	CAI 300M	FID

The following expected concentrations and calibration ranges are proposed for the Propane Burner. Certain gases may be substituted depending on availability at the time of testing.

	Expected	
O_2	10-15%	Range 0-25
CO_2	4-8%	Range 0-15
NO_x	35 ppm	Range 0-100
CO	350ppm	Range 0-1000
THC	150ppm	Range 0-300 or 0-1000

EPA Method 18 is used to determine carbon speciated hydrocarbons (C_1, C_2 & C_3+) emissions by gas chromatograph / Flame Ionization Detection (GC/FID). Gaseous emissions are drawn through a Teflon sample line to a tedlar bag located in a rigid leak proof bag container. Sample is drawn into the bag by evacuating the container to stack gas pressure to allow sample flow without using a pump to avoid contamination. Negative pressure is adjusted to maintain an integrated sample flow between 20 to 60 minutes. The bag samples are taken to a laboratory and analyzed within 72 hours. The results are reported as methane with a detection limit of 0.5 ppm for non-methane non-ethane organic compounds (C_3+).

5.0 Project Organization/Key Personnel:

The table below lists the positions and responsibilities of the personnel potentially assigned to this project.

Project Organization

Position	Responsibilities
Project Manager	Project Overview, Collection of all field data and operational data, Data reduction and Report Writing
Source Test Technician	Sample collection, Chain of Custody
N/A	Receipt of Samples, Sample analysis, Lab report production

The Project Manager is the primary person responsible for the outcome of this project. He leads the sampling team in the field, interacts with the client during testing and is responsible for gathering all data necessary for completing the report. Upon the completion of the fieldwork, he completes any Chain of Custody documentation and submits samples to the laboratory for analysis. He then reduces the data and prepares the report.

The Source Test Technicians are responsible for performing the actual field emissions tests. They are responsible for performing the emissions tests as per the approved test methods.

The Laboratory Supervisor is responsible for receipt, analysis and disposition of samples. He is also responsible for all laboratory method specific QA/QC procedures.

BE is an approved independent contractor for the California Air Resources Board (CARB), which is a national leader in the development and implementation of progressive emissions monitoring and documentation programs.

6.0 QA & QC Procedures:

QA/QC Program All quality assurance and quality control procedures will be followed as prescribed in the appropriate methods and technical guidance manuals.

Adherence to QA/QC procedures during field test preparation and field sampling will be the responsibility of the QA/QC Officer and/or Project Manager. This test program would include all QA/QC procedures specified in the test methods (equipment calibration, field data recording, contamination control and record keeping). Analytical QA/QC protocol will be the responsibility of the Analytical Liaison, and the laboratory manager and QA/QC coordinator assigned to this program by the laboratory we have subcontracted. Any deviations from stated protocols not mentioned herein would be discussed with the appropriate individuals prior to implementation.

Chain of Custody: A sample is considered to be under a person's custody if (1) if in a person's physical possession, (2) in view of the person after he has taken possession, (3) secured by that person that no one can tamper with the sample, or (4) secured by that person in an area which is restricted to authorized personnel. The following steps are taken to ensure sample identification and integrity:

1) Sample labels (identity, #, date, time)
2) C.O.C. seals (with sample #)
3) Field sample log book and field notes
4) C.O.C. record and analysis request sheet
5) Shipping papers (Courier, Fed. Ex.)
6) Receiving/Log-in (signed receipt of samples and their condition)

Once the sample has been received in the laboratory and the status of the sample integrity has been determined, the lab QA/QC supervisor is responsible for care and custody. The lab should be prepared to testify to the possession and security of the sample until analysis is complete.

In addition to the QA/QC procedures mentioned, BE uses EPA Protocol or 1% NIST Traceable calibration gases.

7.0 Source Test Report:

Data reduction/reporting procedures: All data reduction is performed using Excel spreadsheet programs developed by BE. The report will be written by a senior project manager and will be reviewed by his peers. All supporting documentation, field data sheets, lab reports, lab and field QA/QC reports, emission calculations, etc., will be included in the final report. Calculations are contained in the referenced methods and in the APCD/AQMD source Test Procedure Guidelines where applicable. **All standard units shall be reported pursuant to District policy, i.e. 68°F and 29.92 inches of mercury column.** The expected date for a final report is approximately two weeks after the analytical work is completed. The analytical turnaround time is approximately two to three weeks.

The technical report meeting the requirements of the NSAQMD will be submitted to the Teichert Materials within four weeks of the completion of the test program.

All ancillary information will be included with the report; process information, field data sheets, strip charts, calculations, lab reports, equipment calibrations.

Submitted by,

Bobby Asfour
Principal QSTI

cc: Nic Armstrong, Teichert Materials

APPENDIX J
PERMIT TO OPERATE

NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT Gretchen Bennitt, Executive Director

DISTRICT HEADQUARTERS
200 Litton Drive, Suite 320
P.O. Box 2509
Grass Valley, CA 95945
(530) 274-9360 / FAX: (530) 274-7546
email: office@myairdistrict.com or www.myairdistrict.com

EASTERN FIELD OFFICE
13450 Donner Pass Rd., Ste. B, Truckee, CA 96161
Mailing Address: P.O. Box 9766, Truckee, CA 96162
(530) 550-7872 / FAX: (530) 587-2623
email: ryan@myairdistrict.com

NORTHERN FIELD OFFICE
270 County Hospital Road, Suite 127
P.O. Box 3981, Quincy, CA 95971
(530) 283-4654 / FAX: (530) 283-0699

PERMIT TO OPERATE

Issued on: October 24, 2012

Permit No.#88-36-08

Valid from: November 5, 2012 to November 4, 2013

By: Gretchen Bennitt
Gretchen Bennitt, Executive Director

GRANTED TO: Teichert Aggregates
P.O. Box 447
Truckee, CA 96160

FACILITY LOCATION: Martis Valley, Joerger Road
Truckee, CA 96160

Under the provisions of District Regulation V, authorization is hereby granted to operate the following equipment subject to the conditions on the following page(s):

ASPHALT BATCH PLANT

Consisting of the items on Page 2:

POST IN A CONSPICUOUS PLACE

1. AGGREGATE BINS
2. TUNNEL CONVEYOR BELT
3. BYPASS CONVEYOR BELT
4. ROTARY DRUM CONVEYOR BELT
5. "MINI" CONVEYOR
6. DRAG SLAT CONVEYER
7. CONVEYOR: LEADS MATERIAL INTO CORRECT SILO
8. GENCOR ULTRA FLAME 135 VAPORIZED NATURAL GAS BURNER (BTU:135,000,000/HOUR)-ON ROTARY DRUM
9. TWO CYCLONES
10. STANDARD HAVENS BAGHOUSE AND ASSOCIATED DUCT WORK

THIS PERMIT HAS BEEN ISSUED, SUBJECT TO THE FOLLOWING CONDITIONS. COMMENCING WORK UNDER THIS PERMIT SHALL BE DEEMED ACCEPTANCE OF THE CONDITIONS SO SPECIFIED.

Permit conditions 1 through 20 of Permit No. 88-36-01 shall also apply to this permit, in their entirety, unless otherwise stated in the permit conditions listed for this permit.

PERMIT CONDITIONS SPECIFIC TO ASPHALT BATCH PLANTS

21. In the event of changes of ownership, or control of the facilities herein permitted, this Permit to Operate shall be binding upon all subsequent owners and operators. The operator shall notify the succeeding owner and operator of the existence of this Permit to Operate and its conditions by letter, a copy of which shall be forwarded to the Air Pollution Control Officer. District notification shall occur a minimum of thirty (30) days prior to the actual transfer date.

22. Production Limits: Unless prior approval has been granted by the APCO, the following production limits apply to the asphalt batch plant. The maximum hourly process rate allowed under this permit shall not exceed 350 tons per hour. The maximum annual process rate allowed under this permit shall be not exceed 700,000 tons of product per year. Total plant hours shall not exceed 2,000 hours per year over a maximum of 190 days per year.

23. Emission Limits: Total annual actual emissions allowed under this Permit to Operate shall be limited to below the following maximum emissions:

Total Suspended Particulate (TSP):	6.27 tons/yr, and
Grain Loading	0.1 gr./dscf @ 12% CO2
Nitrogen Oxides (NOx):	10.85 tons/yr
Sulfur Oxides (SOx):	1.75 tons/yr
Total Organic Gases (TOG):	17.85 tons/yr
Carbon Monoxide (CO):	70.70 tons/yr

The TSP limit is based on the District limit of 0.1 gr/dscf, this facility should be aware that they are required to comply with NSPS Regulations in 40CFR Part 60, Subpart I which limits particulate matter to 0.04 gr/dscf. The District is not delegated to enforce NSPS. The NSPS regulations are enforced by EPA.

24. The permittee shall not process through the asphalt batch plant any soil or other material that is contaminated with hydrocarbons without prior written approval from the Air Pollution Control Officer. No soil or other material that is hazardous shall be allowed to be processed through the asphalt batch plant at any time.

25. Record keeping: The applicant shall maintain daily records of plant operating hours, hourly asphalt concrete production rate in tons per hour (TPH), tons of product produced per day (TPD), natural gas fuel usage, asphalt batch plant dryer-related diesel fuel usage, and number of operating days. Maintenance records shall be maintained showing the date of inspections, findings and repairs made. All of these records shall be maintained for a period of five (5) years, and made available to District inspectors upon request.

26. Fugitive dust emissions shall be controlled at all times such that a public nuisance is not created at any point beyond the facility property lines pursuant to California Health and Safety Code Section 41700.

27. Fugitive dust emissions generated from feed hoppers, conveyor transfer points, conveyors, screens, etc. shall be controlled at all times by the use of dust suppression techniques that shall include but are not limited to the following methods:
    a. Aggregate feed in bins and on conveyor belts shall be maintained at a minimum moisture content of 1% by either natural moisture or by the use of spray bars, nozzles, or water foggers that effectively deliver a water spray to material being processed when the facility is active.
    b. Spray bars, nozzles, or water foggers may be used at other emission points.
    c. Minimize aggregate feed material free fall distances, as much as is practical.
    d. Provide enclosures that effectively contain fugitive dust emissions and duct emission to control equipment, where practical.

28. Fugitive dust emissions generated from access roads, internal driveways, yards, and stockpiles, equipment use areas, parking areas, etc. shall be controlled at all times by the use of dust suppression techniques that shall include, but are not limited to the following methods:
    a. Watering: 6 to 8 times per day, or as needed to maintain dampness;
    b. Reduced driving speeds: all vehicle speeds within the facility property lines shall be restricted below 15 miles per hour, except in the case of an emergency.

29. Liquified petroleum gas (LPG) shall be the primary fuel used to fire the aggregate dryer unless written notice is provided to the APCO. When diesel fuel is used, then only No. 2 Diesel (or better) having a sulphur content of 0.05% (500 parts per million) or less, per section 2281 of Title 13, California Code of Regulations (CCR), and an aromatic hydrocarbon content of less than 10% by volume, per section 2282 of Title 13, CCR.

PERMIT CONDITIONS SPECIFIC TO BAGHOUSES

30. Collected particulate matter shall be disposed of in a manner which prevents entrainment of the material into the ambient air. The particulate load-out area shall be maintained clean to prevent entrainment of the particulates into the ambient air, causing nuisance and reduced air quality.

31. A spare set of new bags, numbering at least 10% of the total required, shall be maintained on the premises at all times.

32. The baghouse shall be equipped with a pressure differential gauge to indicate pressure drop across the bags. The gauge shall be maintained in good working condition at all times.

33. Maintenance procedures shall be implemented to provide regular monthly inspections of ducts, baghouse seams, and bags to prevent leaks from going undetected. All leaks in the system shall be repaired when they are discovered. A copy of these maintenance procedures shall be provided to the District if requested.

34. Source Test Requirements: A source test shall be performed on the asphalt batch plant baghouse stack every third year (in the years 2005, 2008 and so forth), or after any major modification to the equipment of process. In addition, the following conditions apply:

a. The source test shall be conducted per 40 CFR, Part 60, Appendix A, for sample and velocity traverse (Method 1), stack gas velocity and volumetric flow rate (Method 2), particulate matter (Use ARB modified method 5 - includes back half of impinger train), nitrogen oxides (Method 7E), carbon monoxide (Method 10), and total hydrocarbons (Method 25A), or equivalent test methods approved by the Executive Officer of the Air Resources Board and the Air Pollution Control Officer. Results must provide emissions rates in pounds per hour and pounds per ton of asphalt produced.

b. Submit a source test plan and protocol to the Air Pollution Control Officer for approval at least 30 days before the source test is to be performed.