

**Smithers Pellet Limited Partnership  
Smithers, BC**

**Permit 06099  
April 9, 2026**

Our Job Number: ME2627-017

Report Author: Matt McCall  
McCall Environmental



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April 28, 2026

Smithers Pellet Limited Partnership  
1723 Dahlie Rd  
PO Box 699  
Smithers BC  
V0J 2N0

**Attention:** Joel Martens/Wayne Kooy  
**RE:** Air Emission Testing April 9, 2026  
RA-6099, ME2526-017

As requested our firm provided a series of air emission tests at your facility in Smithers, B.C. The purpose of these tests was to satisfy testing requirements as stated in your permit RA-6099.

Testing Parameters

- Total Particulate and Condensable Organics (4 Sources)
  - o State of Oregon Method

Key Personnel

- Report Generation: Matt McCall 250-542-5118
- Sr Field Tech: Dave Brandle, Dan Lawrence 250-301-5712
- Plant Personnel: Joel Martens 250-847-1431

All stacks have been examined for cyclonic flow and determined to be tested as laminar in nature.

Test results are summarized immediately following this cover letter.

Lab analysis for condensable organic fractions was carried out by Element Labs in Surrey, B.C. A copy of their report is included in the Appendix of this report.

If you have any questions or concerns please don't hesitate to contact us at your earliest convenience.

Sincerely,

MCCALL ENVIRONMENTAL

Matt McCall

## Summary of Test Results

Parameter	Average of Triplicate Tests					Permit	Prev Test
	Stack 1	Stack2	Stack 3	Stack 4	Avg/ Comb		2025-04-16
Test Date	2026-04-09	2026-04-09	2026-04-09	2026-04-09	N/A		N/A
Gas Temperature (°C)	25.8	31.2	29.9	35.3	30.5		27.84
% Moisture	2.49	2.70	1.64	0.54	1.84		1.99
Velocity (m/sec)	10.11	10.92	10.65	11.28	10.74		9.67
ACFM	66021	71317	69531	73671	280541		252604
Std. Dry Flow Rate (m <sup>3</sup> /sec)	<b>28.42</b>	<b>30.08</b>	<b>29.77</b>	<b>31.35</b>	119.61	*132	109.32
Tot Part. Dry Basis ref. Cond. (mg/m <sup>3</sup> )	10.30	15.02	13.09	15.58	<b>13.57</b>	15.00	10.82
Front Half Particulate (mg/m <sup>3</sup> )	8.78	11.36	11.58	13.84	11.39		9.00
Back Half Condensibles (mg/m <sup>3</sup> )	1.53	3.66	1.51	1.74	2.11		1.81
Mass Emission Rate (kg/hr)	1.05	1.63	1.40	1.76	<b>5.85</b>	7.67	4.26

\* Note: ACFM, m<sup>3</sup>/sec, and kg/hr, are combined as opposed to averaged.

\* Permitted flow rate is 33.0 m<sup>3</sup>/sec per stack, combined flow rate of 132

\* Standard reference conditions are on a dry basis, 20 deg C and pressure at sea level 29.92 inches Hg.

\*\*Average Total Particulate across the four stacks is weighted against individual stack flow

## Discussion of Test Results

Test results from the last set of compliance testing was performed in April of 2025. Those results are included in the summary tables above for comparison purposes.

Field personnel didn't notice any abnormalities during testing. To the best of our knowledge the plant was operating normally during testing.

Plant production data is included in this report.

All stacks are non-cyclonic and are tested with standard testing methodology.

**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 1**  
**Smithers BC**

**2026-04-09**

**Permit Number: RA-6099**

**AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	78 ° F	26 ° C
Moisture Content (by volume):	2.49 %	
Average Stack Gas Velocity:	33.2 ft/sec	10.1 m/sec
Total Actual Gas Flow Rate:	66021 ACFM	
Dry Gas flow Rate at Reference Conditions:	60214 SCFM	28.4 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.005 gr/ft <sup>3</sup>	10.30 mg/m <sup>3</sup>
Front Half Particulate	0.004 gr/ft <sup>3</sup>	8.8 mg/m <sup>3</sup>
Back Half Condensibles	0.001 gr/ft <sup>3</sup>	1.5 mg/m <sup>3</sup>
Mass Emission Rate	2.32 lbs/hr	1.05 kg/hr

**SUMMARY OF AIR EMISSION TESTS**

**TEST 1:**

Gas Temperature:	78 ° F	25 ° C
Moisture Content (by volume):	1.9 %	
Average Stack Gas Velocity:	33.1 ft/sec	10.1 m/sec
Total Actual Gas Flow Rate:	65900 ACFM	
Dry Gas flow Rate at Reference Conditions:	60539 SCFM	28.6 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.005 gr/ft <sup>3</sup>	10.8 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	9.1 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.7 mg/m <sup>3</sup>
Mass Emission Rate	2.45 lbs/hr	1.11 kg/hr

**TEST 2:**

Gas Temperature:	78 ° F	26 ° C
Moisture Content (by volume):	3.0 %	
Average Stack Gas Velocity:	33.1 ft/sec	10.1 m/sec
Total Actual Gas Flow Rate:	65927 ACFM	
Dry Gas flow Rate at Reference Conditions:	59825 SCFM	28.2 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.004 gr/ft <sup>3</sup>	9.8 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	8.6 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.2 mg/m <sup>3</sup>
Mass Emission Rate	2.20 lbs/hr	1.00 kg/hr

**TEST 3:**

Gas Temperature:	79 ° F	26 ° C
Moisture Content (by volume):	2.5 %	
Average Stack Gas Velocity:	33.3 ft/sec	10.1 m/sec
Total Actual Gas Flow Rate:	66238 ACFM	
Dry Gas flow Rate at Reference Conditions:	60277 SCFM	28.4 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.004 gr/ft <sup>3</sup>	10.3 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	8.6 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.7 mg/m <sup>3</sup>
Mass Emission Rate	2.32 lbs/hr	1.05 kg/hr

## DATA FOR TESTS 1 TO 3

**Client:** Pinnacle Renewable Energy Inc  
**Plant Location:** Smithers BC  
**Process:** Dryer1 Stack 1  
**Permit Number:** RA-6099  
**Job Number:** ME2627-010  
**Pollution Control Permit:** 15.0 mg/m3 49.5 m3/sec  
**Number of Tests:** 3 tests  
**Minutes per Point:** 2.5 minutes

**Filter Number:**  
**Date of Test:**  
**Start Time:**  
**Stop Time:**  
**On-line Sampling Time:**  
**Testing Personnel:**  
**Sampler Model:**  
**Barometric Pressure("Hg):**  
**Static Pressure("H<sub>2</sub>O):**  
**%CO<sub>2</sub>:**  
**%O<sub>2</sub>:**  
**%CO:**  
**%N<sub>2</sub>:**  
**Diameter of Nozzle(inches):**  
**Meter Factor:**  
**Type-S Pitot Tube Coefficient:**  
**Cross Sectional Area of Stack(ft<sup>2</sup>):**  
**Impinger Condensate(g):**  
**Weight of Moisture in Silica Gel(g):**  
**Weight of Filter Particulate(g):**  
**Weight of Probe Washings(g):**  
**Weight of Impinger Content Organic(g):**  
**Total Weight of Particulate(g):**

TEST 1	TEST 2	TEST 3
B54	B55	B56
2026-04-09	2026-04-09	2026-04-09
11:13	12:42	14:03
12:15	13:45	15:06
60	60	60
DB/CB	DB/CB	DB/CB
980	980	980
28.55	28.55	28.55
-0.20	-0.20	-0.20
0.0	0.0	0.0
21.0	21.0	21.0
0.0	0.0	0.0
79.0	79.0	79.0
0.265	0.265	0.265
1.0018	1.0018	1.0018
0.84182	0.84182	0.84182
33.18	33.18	33.18
16	27	22
1.0	1.0	1.0
0.0001	0.0002	0.0002
0.0105	0.0101	0.0100
0.0020	0.0014	0.0020
0.0126	0.0117	0.0122

Sampling Data for - *TEST 1*  
 Pinnacle Renewable Energy Inc  
 Dryer1 Stack 1  
 Smithers BC

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.38	1.66	51	51	77	49.70	0.98
A-11	0.38	1.71	74	57	75	51.58	1.04
A-10	0.35	1.58	75	57	76	53.63	0.99
A-9	0.33	1.47	77	59	83	55.51	0.99
A-8	0.32	1.44	77	59	80	57.32	0.98
A-7	0.28	1.26	77	58	78	59.10	1.05
A-6	0.29	1.32	79	61	76	60.89	0.97
A-5	0.29	1.31	81	62	79	62.58	1.06
A-4	0.29	1.32	81	63	77	64.42	1.03
A-3	0.30	1.37	86	64	77	66.21	1.00
A-2	0.31	1.42	85	64	77	68.00	1.00
A-1	0.31	1.41	85	67	81	69.81	1.09
B-12	0.37	1.69	87	69	77	71.79	0.90
B-11	0.38	1.75	87	70	77	73.59	0.96
B-10	0.38	1.76	92	71	78	75.52	0.94
B-9	0.35	1.63	93	78	78	77.43	0.90
B-8	0.33	1.53	93	74	78	79.20	0.98
B-7	0.32	1.49	92	75	77	81.06	0.91
B-6	0.28	1.29	90	74	78	82.76	1.03
B-5	0.29	1.35	94	75	77	84.55	1.04
B-4	0.29	1.35	96	76	77	86.41	0.96
B-3	0.30	1.69	92	76	78	88.12	0.92
B-2	0.31	1.45	94	77	77	89.79	0.97
B-1	0.31	1.44	93	77	77	91.59	0.92
						93.28	

**Sampling Data for - TEST 2**  
**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 1**  
**Smithers BC**

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
B-12	0.38	1.80	77	76	77	94.69	1.07
B-11	0.38	1.79	77	71	77	96.82	0.98
B-10	0.37	1.75	82	72	78	98.77	1.01
B-9	0.35	1.66	84	72	78	100.76	0.99
B-8	0.32	1.52	87	72	78	102.66	1.04
B-7	0.28	1.34	89	73	78	104.58	1.05
B-6	0.28	1.34	89	73	78	106.39	1.04
B-5	0.29	1.39	91	74	78	108.19	0.96
B-4	0.29	1.39	90	74	77	109.88	1.07
B-3	0.31	1.49	95	76	78	111.77	1.08
B-2	0.31	1.49	95	77	78	113.75	0.96
B-1	0.30	1.45	95	78	77	115.51	0.96
A-12	0.37	1.78	95	78	78	117.24	0.96
A-11	0.38	1.83	96	78	78	119.17	0.94
A-10	0.38	1.84	97	80	78	121.07	1.02
A-9	0.34	1.65	97	80	78	123.15	1.05
A-8	0.33	1.60	98	82	78	125.17	0.93
A-7	0.32	1.56	100	82	78	126.94	1.01
A-6	0.28	1.36	100	83	79	128.83	1.07
A-5	0.29	1.41	100	82	79	130.71	1.06
A-4	0.29	1.42	102	85	78	132.60	1.04
A-3	0.30	1.46	102	85	79	134.46	1.05
A-2	0.29	1.41	102	86	80	136.37	1.10
A-1	0.28	1.37	102	86	79	138.34	0.96
						140.03	

Sampling Data for - *TEST 3*  
 Pinnacle Renewable Energy Inc  
 Dryer1 Stack 1  
 Smithers BC

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.39	1.80	81	83	78	42.05	1.00
A-11	0.38	1.76	87	81	79	44.10	1.00
A-10	0.38	1.78	95	81	78	46.13	1.01
A-9	0.35	1.64	96	82	79	48.20	1.08
A-8	0.33	1.54	96	81	80	50.31	0.92
A-7	0.29	1.36	97	82	78	52.06	0.96
A-6	0.28	1.30	97	82	82	53.78	1.03
A-5	0.29	1.36	99	84	79	55.58	1.03
A-4	0.29	1.36	99	83	79	57.42	0.99
A-3	0.31	1.45	100	82	79	59.20	1.06
A-2	0.32	1.51	101	84	79	61.16	0.96
A-1	0.3	1.42	102	86	79	62.97	1.03
B-12	0.37	1.75	103	88	79	64.86	0.99
B-11	0.38	1.80	104	87	80	66.87	0.94
B-10	0.39	1.84	104	88	80	68.82	0.96
B-9	0.34	1.61	105	89	81	70.82	1.05
B-8	0.33	1.56	106	89	80	72.87	1.01
B-7	0.31	1.47	107	89	80	74.83	1.00
B-6	0.28	1.33	106	90	79	76.70	0.99
B-5	0.29	1.37	102	90	79	78.47	0.98
B-4	0.29	1.37	102	90	79	80.24	1.03
B-3	0.31	1.47	103	91	79	82.11	0.94
B-2	0.30	1.42	102	91	80	83.87	1.07
B-1	0.28	1.32	103	90	81	85.83	1.07
						87.73	



**Pinnacle Renewable Energy Inc  
 Dryer1 Stack 1  
 Pinnacle Renewable Energy Inc**

**Data for TEST 1**

**OVERALL ISOKINETICS - TEST 1 0.984**

<b>Delta P:</b>	<b>0.322 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>33.10 ft/sec</b>
<b>Delta H:</b>	<b>1.487</b>	<b>ACFM:</b>	<b>65900 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>535.9 °R</b>	<b>SDCFM:</b>	<b>60539 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>537.7 °R</b>	<b>Vm std:</b>	<b>41.20 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.019</b>	<b>Vm corr:</b>	<b>43.66 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>43.58 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.63</b>	<b>MF:</b>	<b>1.0018</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>10.80 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.66 "Hg</b>	<b>ERAT:</b>	<b>1.11 kg/hr</b>
<b>Ps:</b>	<b>28.54 "Hg</b>		

**Data for TEST 2**

**OVERALL ISOKINETICS - TEST 2 1.017**

<b>Delta P:</b>	<b>0.320 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>33.12 ft/sec</b>
<b>Delta H:</b>	<b>1.546</b>	<b>ACFM:</b>	<b>65927 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>545.8 °R</b>	<b>SDCFM:</b>	<b>59825 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>538.1 °R</b>	<b>Vm std:</b>	<b>42.10 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.030</b>	<b>Vm corr:</b>	<b>45.42 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>45.34 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.51</b>	<b>MF:</b>	<b>1.0018</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>9.81 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.66 "Hg</b>	<b>ERAT:</b>	<b>1.00 kg/hr</b>
<b>Ps:</b>	<b>28.54 "Hg</b>		

**Data for TEST 3**

**OVERALL ISOKINETICS - TEST 3 1.004**

<b>Delta P:</b>	<b>0.323 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>33.27 ft/sec</b>
<b>Delta H:</b>	<b>1.525</b>	<b>ACFM:</b>	<b>66238 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>552.9 °R</b>	<b>SDCFM:</b>	<b>60277 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>539.4 °R</b>	<b>Vm std:</b>	<b>41.86 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.025</b>	<b>Vm corr:</b>	<b>45.76 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>45.68 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.57</b>	<b>MF:</b>	<b>1.0018</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>10.29 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.66 "Hg</b>	<b>ERAT:</b>	<b>1.05 kg/hr</b>
<b>Ps:</b>	<b>28.54 "Hg</b>		

**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 2**  
**Smithers BC**

**2026-04-09**

**Permit Number: RA-6099**

**AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	88 ° F	31 ° C
Moisture Content (by volume):	2.70 %	
Average Stack Gas Velocity:	35.8 ft/sec	10.9 m/sec
Total Actual Gas Flow Rate:	71317 ACFM	
Dry Gas flow Rate at Reference Conditions:	63735 SCFM	30.1 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.007 gr/ft <sup>3</sup>	15.0 mg/m <sup>3</sup>
Front Half Particulate	0.005 gr/ft <sup>3</sup>	11.4 mg/m <sup>3</sup>
Back Half Condensibles	0.002 gr/ft <sup>3</sup>	3.7 mg/m <sup>3</sup>
Mass Emission Rate	3.60 lbs/hr	1.63 kg/hr

**SUMMARY OF AIR EMISSION TESTS**

**TEST 1:**

Gas Temperature:	88 ° F	31 ° C
Moisture Content (by volume):	2.3 %	
Average Stack Gas Velocity:	36.1 ft/sec	11.0 m/sec
Total Actual Gas Flow Rate:	71865 ACFM	
Dry Gas flow Rate at Reference Conditions:	64597 SCFM	30.5 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.010 gr/ft <sup>3</sup>	22.3 mg/m <sup>3</sup>
Front Half Particulate	.007 gr/ft <sup>3</sup>	15.0 mg/m <sup>3</sup>
Back Half Condensibles	.003 gr/ft <sup>3</sup>	7.3 mg/m <sup>3</sup>
Mass Emission Rate	5.39 lbs/hr	2.44 kg/hr

**TEST 2:**

Gas Temperature:	88 ° F	31 ° C
Moisture Content (by volume):	2.9 %	
Average Stack Gas Velocity:	36.0 ft/sec	11.0 m/sec
Total Actual Gas Flow Rate:	71640 ACFM	
Dry Gas flow Rate at Reference Conditions:	63897 SCFM	30.2 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.005 gr/ft <sup>3</sup>	10.9 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	9.1 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.8 mg/m <sup>3</sup>
Mass Emission Rate	2.61 lbs/hr	1.19 kg/hr

**TEST 3:**

Gas Temperature:	89 ° F	32 ° C
Moisture Content (by volume):	2.9 %	
Average Stack Gas Velocity:	35.4 ft/sec	10.8 m/sec
Total Actual Gas Flow Rate:	70446 ACFM	
Dry Gas flow Rate at Reference Conditions:	62713 SCFM	29.6 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.005 gr/ft <sup>3</sup>	11.9 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	10.0 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.9 mg/m <sup>3</sup>
Mass Emission Rate	2.79 lbs/hr	1.27 kg/hr

**DATA FOR TESTS 1 TO 3**

**Client:** Pinnacle Renewable Energy Inc  
**Plant Location:** Smithers BC  
**Process:** Dryer1 Stack 2  
**Permit Number:** RA-6099  
**Job Number:**  
**Pollution Control Permit:** 15.0 mg/m3 49.5 m3/sec  
**Number of Tests:** 3 tests  
**Minutes per Point:** 2.5 minutes

**Filter Number:**  
**Date of Test:**  
**Start Time:**  
**Stop Time:**  
**On-line Sampling Time:**  
**Testing Personnel:**  
**Sampler Model:**  
**Barometric Pressure("Hg):**  
**Static Pressure("H<sub>2</sub>O):**  
**%CO<sub>2</sub>:**  
**%O<sub>2</sub>:**  
**%CO:**  
**%N<sub>2</sub>:**  
**Diameter of Nozzle(inches):**  
**Meter Factor:**  
**Type-S Pitot Tube Coefficient:**  
**Cross Sectional Area of Stack(ft<sup>2</sup>):**  
**Impinger Condensate(g):**  
**Weight of Moisture in Silica Gel(g):**  
**Weight of Filter Particulate(g):**  
**Weight of Probe Washings(g):**  
**Weight of Impinger Content Organic(g):**  
**Total Weight of Particulate(g):**

TEST 1	TEST 2	TEST 3
B37	B38	B39
2026-04-09	2026-04-09	2026-04-09
11:12	12:41	14:03
12:13	13:43	15:05
60	60	60
DB/CB	DB/CB	DB/CB
1021	1021	1021
28.55	28.55	28.55
-0.25	-0.25	-0.25
0.0	0.0	0.0
21.0	21.0	21.0
0.0	0.0	0.0
79.0	79.0	79.0
0.245	0.245	0.245
1.0128	1.0128	1.0128
0.83867	0.83867	0.83867
33.18	33.18	33.18
18	24	23
1.0	1.0	1.0
0.0005	0.0007	0.0007
0.0159	0.0094	0.0099
0.0080	0.0020	0.0020
0.0244	0.0121	0.0126

**Sampling Data for - TEST 1**  
**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 2**  
**Smithers BC**

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.34	1.45	51	51	88	15.50	1.01
A-11	0.35	1.49	54	51	87	17.02	1.00
A-10	0.39	1.67	55	52	87	18.56	0.99
A-9	0.39	1.67	60	54	87	20.17	1.02
A-8	0.40	1.74	66	57	88	21.84	1.01
A-7	0.40	1.75	70	60	88	23.52	1.04
A-6	0.41	1.79	71	61	87	25.27	1.02
A-5	0.39	1.72	73	62	87	27.00	0.99
A-4	0.39	1.72	74	63	87	28.65	1.00
A-3	0.40	1.76	75	64	88	30.32	1.01
A-2	0.40	1.76	76	65	88	32.03	1.00
A-1	0.39	1.73	77	66	88	33.72	1.00
B-12	0.33	1.47	78	68	88	35.40	1.03
B-11	0.35	1.56	79	69	88	37.00	1.00
B-10	0.38	1.70	80	69	87	38.60	1.00
B-9	0.39	1.74	81	70	87	40.27	1.02
B-8	0.40	1.79	82	71	87	42.00	1.00
B-7	0.40	1.79	83	71	87	43.72	1.02
B-6	0.40	1.79	84	72	88	45.47	1.01
B-5	0.39	1.75	85	73	89	47.20	1.06
B-4	0.39	1.75	85	73	87	49.00	0.99
B-3	0.35	1.58	85	74	87	50.69	1.02
B-2	0.32	1.44	86	74	88	52.34	1.00
B-1	0.33	1.49	87	75	87	53.88	1.04
						55.51	

**Sampling Data for - TEST 2**  
**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 2**  
**Smithers BC**

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
B-12	0.33	1.51	74	75	86	56.41	1.10
B-11	0.34	1.55	79	76	87	58.11	0.98
B-10	0.37	1.71	80	77	87	59.66	1.04
B-9	0.39	1.80	81	78	88	61.38	1.02
B-8	0.40	1.84	82	79	89	63.11	1.05
B-7	0.40	1.85	84	81	90	64.92	1.08
B-6	0.40	1.85	87	82	90	66.78	1.09
B-5	0.39	1.81	88	83	90	68.67	1.01
B-4	0.39	1.82	89	84	88	70.39	1.07
B-3	0.39	1.82	90	85	88	72.22	1.04
B-2	0.38	1.78	90	85	88	74.00	1.04
B-1	0.38	1.78	91	85	88	75.76	1.04
A-12	0.34	1.59	90	84	87	77.52	1.01
A-11	0.35	1.64	90	84	87	79.14	1.02
A-10	0.37	1.78	90	85	87	80.80	1.06
A-9	0.39	1.83	91	86	88	82.57	0.99
A-8	0.40	1.87	91	86	88	84.28	1.05
A-7	0.40	1.88	92	86	88	86.11	0.99
A-6	0.40	1.88	93	87	88	87.84	1.02
A-5	0.39	1.83	93	88	88	89.62	1.02
A-4	0.37	1.74	94	88	88	91.38	1.02
A-3	0.36	1.70	94	88	88	93.10	1.01
A-2	0.33	1.55	94	89	88	94.78	1.05
A-1	0.33	1.55	95	89	89	96.45	1.04
						98.10	

Sampling Data for - *TEST 3*  
 Pinnacle Renewable Energy Inc  
 Dryer1 Stack 2  
 Smithers BC

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.32	1.43	85	84	90	0.23	1.00
A-11	0.34	1.52	86	84	89	1.78	0.99
A-10	0.36	1.62	87	84	89	3.36	1.01
A-9	0.39	1.76	87	85	87	5.02	1.03
A-8	0.4	1.81	88	86	87	6.78	1.01
A-7	0.4	1.82	90	86	87	8.54	1.01
A-6	0.39	1.76	91	87	87	10.30	1.01
A-5	0.37	1.67	91	87	88	12.05	1.03
A-4	0.36	1.63	92	88	90	13.78	1.01
A-3	0.34	1.54	93	89	90	15.45	1.04
A-2	0.32	1.45	94	89	91	17.12	1.01
A-1	0.32	1.46	95	90	90	18.70	1.00
B-12	0.33	1.50	95	90	89	20.27	1.08
B-11	0.33	1.50	95	90	89	22.00	1.01
B-10	0.34	1.55	96	91	89	23.61	1.01
B-9	0.37	1.69	95	92	89	25.24	1.00
B-8	0.40	1.82	95	92	90	26.93	0.96
B-7	0.40	1.83	96	91	90	28.62	1.02
B-6	0.39	1.78	96	92	89	30.41	1.01
B-5	0.39	1.78	97	92	89	32.16	1.00
B-4	0.37	1.70	97	92	89	33.90	1.00
B-3	0.36	1.65	97	93	89	35.59	0.97
B-2	0.35	1.60	97	93	90	37.22	1.04
B-1	0.34	1.55	97	94	90	38.94	0.98
						40.53	



Pinnacle Renewable Energy Inc  
 Dryer1 Stack 2  
 Pinnacle Renewable Energy Inc

Data for **TEST 1**

OVERALL ISOKINETICS - TEST 1 1.012

Delta P:	0.378 "H <sub>2</sub> O	Us avg:	36.10 ft/sec
Delta H:	1.671	ACFM:	71865 ft <sup>3</sup> /min
Tm avg:	530.0 °R	SDCFM:	64597 ft <sup>3</sup> /min
Ts avg:	547.5 °R	Vm std:	38.68 ft <sup>3</sup>
Bwo:	0.023	Vm corr:	40.52 ft <sup>3</sup>
Md:	28.84	Vm:	40.01 ft <sup>3</sup>
Ms:	28.60	MF:	1.0128
Pb:	28.55 "Hg	PCON:	22.28 mg/m <sup>3</sup>
Pm:	28.67 "Hg	ERAT:	2.44 kg/hr
Ps:	28.53 "Hg		

Data for **TEST 2**

OVERALL ISOKINETICS - TEST 2 1.035

Delta P:	0.374 "H <sub>2</sub> O	Us avg:	35.99 ft/sec
Delta H:	1.748	ACFM:	71640 ft <sup>3</sup> /min
Tm avg:	546.1 °R	SDCFM:	63897 ft <sup>3</sup> /min
Ts avg:	548.0 °R	Vm std:	39.13 ft <sup>3</sup>
Bwo:	0.029	Vm corr:	42.22 ft <sup>3</sup>
Md:	28.84	Vm:	41.69 ft <sup>3</sup>
Ms:	28.52	MF:	1.0128
Pb:	28.55 "Hg	PCON:	10.92 mg/m <sup>3</sup>
Pm:	28.68 "Hg	ERAT:	1.19 kg/hr
Ps:	28.53 "Hg		

Data for **TEST 3**

OVERALL ISOKINETICS - TEST 3 1.010

Delta P:	0.361 "H <sub>2</sub> O	Us avg:	35.39 ft/sec
Delta H:	1.643	ACFM:	70446 ft <sup>3</sup> /min
Tm avg:	551.1 °R	SDCFM:	62713 ft <sup>3</sup> /min
Ts avg:	549.0 °R	Vm std:	37.47 ft <sup>3</sup>
Bwo:	0.029	Vm corr:	40.82 ft <sup>3</sup>
Md:	28.84	Vm:	40.30 ft <sup>3</sup>
Ms:	28.52	MF:	1.0128
Pb:	28.55 "Hg	PCON:	11.87 mg/m <sup>3</sup>
Pm:	28.67 "Hg	ERAT:	1.27 kg/hr
Ps:	28.53 "Hg		

**AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	86 ° F	30 ° C
Moisture Content (by volume):	1.64 %	
Average Stack Gas Velocity:	34.9 ft/sec	10.6 m/sec
Total Actual Gas Flow Rate:	69531 ACFM	
Dry Gas flow Rate at Reference Conditions:	63079 SCFM	29.8 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.006 gr/ft <sup>3</sup>	13.1 mg/m <sup>3</sup>
Front Half Particulate	0.005 gr/ft <sup>3</sup>	11.6 mg/m <sup>3</sup>
Back Half Condensibles	0.001 gr/ft <sup>3</sup>	1.5 mg/m <sup>3</sup>
Mass Emission Rate	3.09 lbs/hr	1.40 kg/hr

**SUMMARY OF AIR EMISSION TESTS**
**TEST 1:**

Gas Temperature:	82 ° F	28 ° C
Moisture Content (by volume):	1.1 %	
Average Stack Gas Velocity:	34.8 ft/sec	10.6 m/sec
Total Actual Gas Flow Rate:	69258 ACFM	
Dry Gas flow Rate at Reference Conditions:	63563 SCFM	30.0 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.006 gr/ft <sup>3</sup>	13.7 mg/m <sup>3</sup>
Front Half Particulate	.005 gr/ft <sup>3</sup>	12.2 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.5 mg/m <sup>3</sup>
Mass Emission Rate	3.26 lbs/hr	1.48 kg/hr

**TEST 2:**

Gas Temperature:	85 ° F	30 ° C
Moisture Content (by volume):	1.7 %	
Average Stack Gas Velocity:	34.8 ft/sec	10.6 m/sec
Total Actual Gas Flow Rate:	69270 ACFM	
Dry Gas flow Rate at Reference Conditions:	62871 SCFM	29.7 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.006 gr/ft <sup>3</sup>	14.5 mg/m <sup>3</sup>
Front Half Particulate	.006 gr/ft <sup>3</sup>	13.0 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.5 mg/m <sup>3</sup>
Mass Emission Rate	3.41 lbs/hr	1.55 kg/hr

**TEST 3:**

Gas Temperature:	90 ° F	32 ° C
Moisture Content (by volume):	2.1 %	
Average Stack Gas Velocity:	35.2 ft/sec	10.7 m/sec
Total Actual Gas Flow Rate:	70063 ACFM	
Dry Gas flow Rate at Reference Conditions:	62802 SCFM	29.6 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.005 gr/ft <sup>3</sup>	11.1 mg/m <sup>3</sup>
Front Half Particulate	.004 gr/ft <sup>3</sup>	9.6 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.5 mg/m <sup>3</sup>
Mass Emission Rate	2.61 lbs/hr	1.18 kg/hr

## DATA FOR TESTS 1 TO 3

**Client:** Pinnacle Renewable Energy Inc  
**Plant Location:** Smithers BC  
**Process:** Dryer1 Stack 3  
**Permit Number:** RA-6099  
**Job Number:** ME2627-010  
**Pollution Control Permit:** 15.0 mg/m3 49.5 m3/sec  
**Number of Tests:** 3 tests  
**Minutes per Point:** 2.5 minutes

**Filter Number:**  
**Date of Test:**  
**Start Time:**  
**Stop Time:**  
**On-line Sampling Time:**  
**Testing Personnel:**  
**Sampler Model:**  
**Barometric Pressure("Hg):**  
**Static Pressure("H<sub>2</sub>O):**  
**%CO<sub>2</sub>:**  
**%O<sub>2</sub>:**  
**%CO:**  
**%N<sub>2</sub>:**  
**Diameter of Nozzle(inches):**  
**Meter Factor:**  
**Type-S Pitot Tube Coefficient:**  
**Cross Sectional Area of Stack(ft<sup>2</sup>):**  
**Impinger Condensate(g):**  
**Weight of Moisture in Silica Gel(g):**  
**Weight of Filter Particulate(g):**  
**Weight of Probe Washings(g):**  
**Weight of Impinger Content Organic(g):**  
**Total Weight of Particulate(g):**

TEST 1	TEST 2	TEST 3
B41	B42	B43
2026-04-09	2026-04-09	2026-04-09
11:13	12:42	14:03
12:15	13:44	15:05
60	60	60
CB/VD	CB/VD	CB/VD
1039	1039	1039
28.55	28.55	28.55
-0.26	-0.26	-0.26
0.0	0.0	0.0
21.0	21.0	21.0
0.0	0.0	0.0
79.0	79.0	79.0
0.275	0.275	0.275
1.0055	1.0055	1.0055
0.83365	0.83365	0.83365
33.18	33.18	33.18
10	16	20
1.4	1.2	1.2
0.0006	0.0008	0.0011
0.0153	0.0163	0.0118
0.0020	0.0020	0.0020
0.0179	0.0191	0.0149

**Sampling Data for - TEST 1**  
**Pinnacle Renewable Energy Inc**  
**Dryer1 Stack 3**  
**Smithers BC**

09-Apr-26

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.33	1.38	59	59	92	2.44	0.92
A-11	0.34	1.46	66	63	84	4.20	0.96
A-10	0.36	1.53	66	60	86	6.10	1.01
A-9	0.37	1.60	78	61	85	8.15	0.96
A-8	0.40	1.74	81	62	82	10.15	0.97
A-7	0.39	1.71	86	65	82	12.26	0.96
A-6	0.39	1.71	88	65	81	14.34	0.97
A-5	0.41	1.81	92	67	83	16.45	0.96
A-4	0.36	1.59	94	69	83	18.60	0.99
A-3	0.33	1.47	96	71	82	20.68	1.04
A-2	0.33	1.47	99	73	82	22.78	0.99
A-1	0.35	1.57	100	76	82	24.79	0.94
B-12	0.34	1.53	102	77	81	26.76	0.95
B-11	0.33	1.49	104	79	82	28.73	0.95
B-10	0.36	1.63	105	80	83	30.68	0.98
B-9	0.36	1.64	107	82	80	32.79	0.97
B-8	0.37	1.70	108	84	79	34.88	1.00
B-7	0.37	1.70	109	90	80	37.08	0.93
B-6	0.38	1.74	110	87	81	39.13	0.94
B-5	0.38	1.74	111	88	82	41.23	0.97
B-4	0.36	1.65	112	89	82	43.40	1.05
B-3	0.35	1.61	113	91	81	45.69	0.94
B-2	0.35	1.62	114	92	79	47.71	0.98
B-1	0.34	1.57	113	93	81	49.83	1.01
						51.98	

Sampling Data for - *TEST 2*  
 Pinnacle Renewable Energy Inc  
 Dryer1 Stack 3  
 Smithers BC

09-Apr-26

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
B-12	0.32	1.39	73	75	93	53.01	0.97
B-11	0.33	1.47	84	81	91	54.88	0.96
B-10	0.35	1.57	90	80	87	56.79	1.00
B-9	0.38	1.73	94	82	84	58.85	0.98
B-8	0.41	1.90	97	80	82	60.98	0.96
B-7	0.40	1.84	99	81	81	63.14	1.01
B-6	0.38	1.75	102	81	81	65.40	1.04
B-5	0.40	1.83	104	82	82	67.68	0.98
B-4	0.36	1.67	106	84	79	69.88	1.02
B-3	0.34	1.58	107	85	80	72.08	1.02
B-2	0.33	1.52	108	86	84	74.21	1.05
B-1	0.34	1.58	109	87	82	76.38	0.96
A-12	0.33	1.54	110	89	81	78.40	1.05
A-11	0.34	1.58	110	90	82	80.57	1.00
A-10	0.35	1.64	112	90	82	82.67	1.03
A-9	0.37	1.73	112	91	81	84.88	0.94
A-8	0.38	1.78	114	91	82	86.95	0.94
A-7	0.38	1.78	114	93	85	89.06	0.96
A-6	0.37	1.72	113	93	86	91.20	1.00
A-5	0.37	1.71	114	95	91	93.39	1.01
A-4	0.35	1.61	114	95	92	95.60	1.00
A-3	0.34	1.56	115	95	93	97.74	1.08
A-2	0.34	1.57	115	96	93	100.00	0.94
A-1	0.33	1.52	115	96	92	101.98	0.94
						103.94	

Sampling Data for - *TEST 3*  
 Pinnacle Renewable Energy Inc  
 Dryer1 Stack 3  
 Smithers BC

09-Apr-26

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.33	1.44	81	81	89	4.70	1.06
A-11	0.34	1.53	92	89	82	6.80	1.02
A-10	0.36	1.65	101	87	83	8.90	1.05
A-9	0.37	1.71	103	87	84	11.15	0.97
A-8	0.42	1.93	106	88	85	13.25	0.97
A-7	0.41	1.86	108	88	85	15.50	0.96
A-6	0.39	1.76	110	88	90	17.69	1.01
A-5	0.39	1.76	112	90	92	19.94	1.06
A-4	0.37	1.68	113	90	91	22.30	1.02
A-3	0.35	1.58	115	93	92	24.51	1.03
A-2	0.34	1.55	116	93	91	26.70	1.07
A-1	0.33	1.51	117	95	90	28.94	1.07
B-12	0.32	1.47	117	102	90	31.15	1.02
B-11	0.33	1.51	118	100	92	33.25	0.98
B-10	0.36	1.64	118	103	95	35.29	0.95
B-9	0.38	1.74	119	98	93	37.35	0.96
B-8	0.39	1.79	120	99	92	39.48	1.01
B-7	0.39	1.79	121	100	92	41.76	0.94
B-6	0.38	1.74	121	100	92	43.88	1.07
B-5	0.37	1.70	121	101	93	46.27	0.96
B-4	0.36	1.65	122	101	93	48.39	1.03
B-3	0.35	1.61	122	102	92	50.63	1.08
B-2	0.35	1.61	121	103	93	52.95	1.00
B-1	0.32	1.47	121	106	92	55.10	1.06
						57.28	



**Pinnacle Renewable Energy Inc  
 Dryer1 Stack 3  
 Pinnacle Renewable Energy Inc**

**Data for TEST 1**

**OVERALL ISOKINETICS - TEST 1 0.973**

<b>Delta P:</b>	<b>0.360 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>34.79 ft/sec</b>
<b>Delta H:</b>	<b>1.611</b>	<b>ACFM:</b>	<b>69258 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>546.2 °R</b>	<b>SDCFM:</b>	<b>63563 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>542.3 °R</b>	<b>Vm std:</b>	<b>46.14 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.011</b>	<b>Vm corr:</b>	<b>49.81 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>49.54 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.72</b>	<b>MF:</b>	<b>1.0055</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>13.70 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.67 "Hg</b>	<b>ERAT:</b>	<b>1.48 kg/hr</b>
<b>Ps:</b>	<b>28.53 "Hg</b>		

**Data for TEST 2**

**OVERALL ISOKINETICS - TEST 2 0.993**

<b>Delta P:</b>	<b>0.357 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>34.80 ft/sec</b>
<b>Delta H:</b>	<b>1.649</b>	<b>ACFM:</b>	<b>69270 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>556.4 °R</b>	<b>SDCFM:</b>	<b>62871 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>545.3 °R</b>	<b>Vm std:</b>	<b>46.56 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.017</b>	<b>Vm corr:</b>	<b>51.21 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>50.93 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.65</b>	<b>MF:</b>	<b>1.0055</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>14.49 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.67 "Hg</b>	<b>ERAT:</b>	<b>1.55 kg/hr</b>
<b>Ps:</b>	<b>28.53 "Hg</b>		

**Data for TEST 3**

**OVERALL ISOKINETICS - TEST 3 1.013**

<b>Delta P:</b>	<b>0.362 "H<sub>2</sub>O</b>	<b>Us avg:</b>	<b>35.19 ft/sec</b>
<b>Delta H:</b>	<b>1.653</b>	<b>ACFM:</b>	<b>70063 ft<sup>3</sup>/min</b>
<b>Tm avg:</b>	<b>564.1 °R</b>	<b>SDCFM:</b>	<b>62802 ft<sup>3</sup>/min</b>
<b>Ts avg:</b>	<b>550.1 °R</b>	<b>Vm std:</b>	<b>47.42 ft<sup>3</sup></b>
<b>Bwo:</b>	<b>0.021</b>	<b>Vm corr:</b>	<b>52.87 ft<sup>3</sup></b>
<b>Md:</b>	<b>28.84</b>	<b>Vm:</b>	<b>52.58 ft<sup>3</sup></b>
<b>Ms:</b>	<b>28.62</b>	<b>MF:</b>	<b>1.0055</b>
<b>Pb:</b>	<b>28.55 "Hg</b>	<b>PCON:</b>	<b>11.10 mg/m<sup>3</sup></b>
<b>Pm:</b>	<b>28.67 "Hg</b>	<b>ERAT:</b>	<b>1.18 kg/hr</b>
<b>Ps:</b>	<b>28.53 "Hg</b>		

**Pinnacle Renewable Energy Inc.**  
**Dryer1 Stack 4**  
**Smithers BC**

**2026-04-09**

**Permit Number: RA-6099**

**AVERAGE OF AIR EMISSION TESTS 1 TO 3**

Gas Temperature:	95 ° F	35 ° C
Moisture Content (by volume):	0.54 %	
Average Stack Gas Velocity:	37.0 ft/sec	11.3 m/sec
Total Actual Gas Flow Rate:	73671 ACFM	
Dry Gas flow Rate at Reference Conditions:	66423 SCFM	31.3 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	0.007 gr/ft <sup>3</sup>	15.6 mg/m <sup>3</sup>
Front Half Particulate	0.006 gr/ft <sup>3</sup>	13.8 mg/m <sup>3</sup>
Back Half Condensibles	0.001 gr/ft <sup>3</sup>	1.7 mg/m <sup>3</sup>
Mass Emission Rate	3.88 lbs/hr	1.76 kg/hr

**SUMMARY OF AIR EMISSION TESTS**

**TEST 1:**

Gas Temperature:	101 ° F	38 ° C
Moisture Content (by volume):	.5 %	
Average Stack Gas Velocity:	37.4 ft/sec	11.4 m/sec
Total Actual Gas Flow Rate:	74372 ACFM	
Dry Gas flow Rate at Reference Conditions:	66428 SCFM	31.4 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.006 gr/ft <sup>3</sup>	13.3 mg/m <sup>3</sup>
Front Half Particulate	.005 gr/ft <sup>3</sup>	11.6 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.8 mg/m <sup>3</sup>
Mass Emission Rate	3.32 lbs/hr	1.51 kg/hr

**TEST 2:**

Gas Temperature:	94 ° F	34 ° C
Moisture Content (by volume):	.7 %	
Average Stack Gas Velocity:	37.0 ft/sec	11.3 m/sec
Total Actual Gas Flow Rate:	73733 ACFM	
Dry Gas flow Rate at Reference Conditions:	66556 SCFM	31.4 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.007 gr/ft <sup>3</sup>	15.5 mg/m <sup>3</sup>
Front Half Particulate	.006 gr/ft <sup>3</sup>	13.7 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.7 mg/m <sup>3</sup>
Mass Emission Rate	3.85 lbs/hr	1.75 kg/hr

**TEST 3:**

Gas Temperature:	91 ° F	33 ° C
Moisture Content (by volume):	.5 %	
Average Stack Gas Velocity:	36.6 ft/sec	11.2 m/sec
Total Actual Gas Flow Rate:	72909 ACFM	
Dry Gas flow Rate at Reference Conditions:	66287 SCFM	31.3 m <sup>3</sup> /sec
Total Particulate Concentration:		
Dry Basis Actual at Reference Conditions	.008 gr/ft <sup>3</sup>	17.9 mg/m <sup>3</sup>
Front Half Particulate	.007 gr/ft <sup>3</sup>	16.2 mg/m <sup>3</sup>
Back Half Condensibles	.001 gr/ft <sup>3</sup>	1.7 mg/m <sup>3</sup>
Mass Emission Rate	4.45 lbs/hr	2.02 kg/hr

## DATA FOR TESTS 1 TO 3

**Client:** Pinnacle Renewable Energy Inc.  
**Plant Location:** Smithers BC  
**Process:** Dryer1 Stack 4  
**Permit Number:** RA-6099  
**Job Number:**  
**Pollution Control Permit:** 15.0 mg/m3 49.5 m3/sec  
**Number of Tests:** 3 tests  
**Minutes per Point:** 2.5 minutes

**Filter Number:**  
**Date of Test:**  
**Start Time:**  
**Stop Time:**  
**On-line Sampling Time:**  
**Testing Personnel:**  
**Sampler Model:**  
**Barometric Pressure("Hg):**  
**Static Pressure("H<sub>2</sub>O):**  
**%CO<sub>2</sub>:**  
**%O<sub>2</sub>:**  
**%CO:**  
**%N<sub>2</sub>:**  
**Diameter of Nozzle(inches):**  
**Meter Factor:**  
**Type-S Pitot Tube Coefficient:**  
**Cross Sectional Area of Stack(ft<sup>2</sup>):**  
**Impinger Condensate(g):**  
**Weight of Moisture in Silica Gel(g):**  
**Weight of Filter Particulate(g):**  
**Weight of Probe Washings(g):**  
**Weight of Impinger Content Organic(g):**  
**Total Weight of Particulate(g):**

TEST 1	TEST 2	TEST 3
B44	B45	B46
2026-04-09	2026-04-09	2026-04-09
11:13	12:42	14:03
12:15	13:44	15:06
60	60	60
KS/CB	KS/CB	KS/CB
955	955	955
28.55	28.55	28.55
-0.23	-0.23	-0.23
0.0	0.0	0.0
21.0	21.0	21.0
0.0	0.0	0.0
79.0	79.0	79.0
0.250	0.250	0.250
1.0094	1.0094	1.0094
0.85654	0.85654	0.85654
33.18	33.18	33.18
3	5	3
1.0	1.0	1.0
0.0012	0.0010	0.0009
0.0118	0.0149	0.0179
0.0020	0.0020	0.0020
0.0150	0.0179	0.0208

**Sampling Data for - TEST 1**  
**Pinnacle Renewable Energy Inc.**  
**Dryer1 Stack 4**  
**Smithers BC**

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.37	1.48	48	48	102	48.32	0.92
A-11	0.36	1.44	52	47	105	49.85	0.92
A-10	0.36	1.44	58	48	106	51.37	0.92
A-9	0.40	1.62	63	49	104	52.89	1.00
A-8	0.41	1.66	66	50	107	54.65	0.97
A-7	0.41	1.66	67	51	108	56.39	1.00
A-6	0.42	1.73	71	53	102	58.17	0.92
A-5	0.40	1.65	73	53	101	59.86	0.91
A-4	0.39	1.61	77	54	103	61.49	0.97
A-3	0.38	1.58	79	56	100	63.21	1.02
A-2	0.38	1.59	81	58	101	65.00	0.92
A-1	0.31	1.30	84	60	99	66.63	0.96
B-12	0.36	1.53	86	62	97	68.17	0.97
B-11	0.37	1.56	87	61	99	69.86	1.02
B-10	0.37	1.57	89	63	100	71.65	0.95
B-9	0.39	1.66	90	64	98	73.33	0.94
B-8	0.42	1.78	91	64	100	75.04	1.04
B-7	0.42	1.80	92	65	97	77.01	1.05
B-6	0.41	1.76	93	65	98	79.00	1.03
B-5	0.39	1.67	95	66	99	80.92	0.97
B-4	0.38	1.64	94	68	98	82.69	0.97
B-3	0.37	1.59	94	68	99	84.44	1.00
B-2	0.37	1.58	96	68	100	86.23	0.96
B-1	0.32	1.36	93	68	103	87.95	0.91
						89.46	

**Sampling Data for - TEST 2**  
**Pinnacle Renewable Energy Inc.**  
**Dryer1 Stack 4**  
**Smithers BC**

2026-04-09

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
B-12	0.38	1.57	52	52	99	90.38	1.05
B-11	0.37	1.57	66	53	91	92.18	1.04
B-10	0.37	1.58	74	55	92	93.97	1.04
B-9	0.39	1.68	78	58	93	95.78	1.00
B-8	0.42	1.81	81	59	94	97.58	0.97
B-7	0.42	1.81	84	60	97	99.39	0.94
B-6	0.40	1.72	87	62	100	101.14	0.98
B-5	0.39	1.69	88	61	96	102.93	0.99
B-4	0.38	1.65	90	62	94	104.72	1.00
B-3	0.37	1.62	91	63	92	106.51	1.01
B-2	0.37	1.62	92	65	93	108.31	0.97
B-1	0.32	1.40	93	67	93	110.04	0.93
A-12	0.37	1.63	95	64	92	111.58	1.06
A-11	0.38	1.67	94	66	92	113.48	0.95
A-10	0.37	1.63	96	67	94	115.20	1.04
A-9	0.40	1.77	97	68	93	117.07	1.03
A-8	0.41	1.80	95	68	96	119.00	0.98
A-7	0.42	1.84	96	68	96	120.84	0.95
A-6	0.40	1.76	97	69	95	122.65	0.98
A-5	0.38	1.68	97	69	94	124.48	0.98
A-4	0.37	1.63	97	69	93	126.27	1.04
A-3	0.36	1.59	97	69	92	128.13	1.00
A-2	0.36	1.59	98	69	92	129.90	0.94
A-1	0.31	1.37	98	69	93	131.57	1.07
						133.33	

Sampling Data for - TEST 3

2026-04-09

Pinnacle Renewable Energy Inc.

Dryer1 Stack 4

Smithers BC

SAMPLE POINT	VELOCITY HEAD ("H <sub>2</sub> O)	ORIFICE PRESSURE ("H <sub>2</sub> O)	DRY GAS METER		STACK GAS TEMP (° F)	GAS SAMPLE VOLUME (ft <sup>3</sup> )	ISOKINETICS
			TEMP IN (° F)	TEMP OUT (° F)			
A-12	0.39	1.67	58	57	83	35.81	1.06
A-11	0.38	1.63	63	59	85	37.70	0.99
A-10	0.37	1.61	77	61	87	39.45	1.05
A-9	0.4	1.74	81	61	88	41.30	0.98
A-8	0.41	1.79	83	62	89	43.11	0.96
A-7	0.41	1.80	90	63	89	44.90	0.94
A-6	0.39	1.72	92	65	88	46.67	1.00
A-5	0.38	1.68	94	66	91	48.51	0.95
A-4	0.37	1.63	96	68	92	50.23	0.99
A-3	0.36	1.59	97	68	92	52.01	1.00
A-2	0.36	1.59	98	68	93	53.78	1.01
A-1	0.31	1.38	104	69	90	55.58	1.05
B-12	0.38	1.68	102	69	96	57.33	0.99
B-11	0.37	1.64	103	70	95	59.14	0.96
B-10	0.36	1.60	104	71	95	60.88	0.99
B-9	0.39	1.72	102	71	96	62.65	1.04
B-8	0.40	1.78	102	72	93	64.57	0.91
B-7	0.41	1.84	103	73	90	66.28	0.97
B-6	0.39	1.74	102	73	91	68.13	1.00
B-5	0.37	1.65	102	73	93	70.00	1.02
B-4	0.36	1.60	102	73	95	71.85	1.05
B-3	0.35	1.56	103	73	94	73.73	1.06
B-2	0.35	1.56	103	73	93	75.61	1.08
B-1	0.30	1.30	103	73	93	77.52	1.03
						79.21	



Pinnacle Renewable Energy Inc.  
 Dryer1 Stack 4  
 Pinnacle Renewable Energy Inc.

Data for **TEST 1**

OVERALL ISOKINETICS - TEST 1 0.968

Delta P:	0.381 "H <sub>2</sub> O	Us avg:	37.36 ft/sec
Delta H:	1.594	ACFM:	74372 ft <sup>3</sup> /min
Tm avg:	529.3 °R	SDCFM:	66428 ft <sup>3</sup> /min
Ts avg:	561.1 °R	Vm std:	39.69 ft <sup>3</sup>
Bwo:	0.005	Vm corr:	41.53 ft <sup>3</sup>
Md:	28.84	Vm:	41.14 ft <sup>3</sup>
Ms:	28.79	MF:	1.0094
Pb:	28.55 "Hg	PCON:	13.35 mg/m <sup>3</sup>
Pm:	28.67 "Hg	ERAT:	1.51 kg/hr
Ps:	28.53 "Hg		

Data for **TEST 2**

OVERALL ISOKINETICS - TEST 2 0.998

Delta P:	0.379 "H <sub>2</sub> O	Us avg:	37.04 ft/sec
Delta H:	1.653	ACFM:	73733 ft <sup>3</sup> /min
Tm avg:	536.4 °R	SDCFM:	66556 ft <sup>3</sup> /min
Ts avg:	554.0 °R	Vm std:	40.90 ft <sup>3</sup>
Bwo:	0.007	Vm corr:	43.35 ft <sup>3</sup>
Md:	28.84	Vm:	42.95 ft <sup>3</sup>
Ms:	28.77	MF:	1.0094
Pb:	28.55 "Hg	PCON:	15.46 mg/m <sup>3</sup>
Pm:	28.67 "Hg	ERAT:	1.75 kg/hr
Ps:	28.53 "Hg		

Data for **TEST 3**

OVERALL ISOKINETICS - TEST 3 1.004

Delta P:	0.373 "H <sub>2</sub> O	Us avg:	36.62 ft/sec
Delta H:	1.646	ACFM:	72909 ft <sup>3</sup> /min
Tm avg:	541.1 °R	SDCFM:	66287 ft <sup>3</sup> /min
Ts avg:	551.3 °R	Vm std:	40.96 ft <sup>3</sup>
Bwo:	0.005	Vm corr:	43.81 ft <sup>3</sup>
Md:	28.84	Vm:	43.40 ft <sup>3</sup>
Ms:	28.79	MF:	1.0094
Pb:	28.55 "Hg	PCON:	17.93 mg/m <sup>3</sup>
Pm:	28.67 "Hg	ERAT:	2.02 kg/hr
Ps:	28.53 "Hg		

## **Air Emission Monitoring Procedure** **State Of Oregon Method 7**

### **Particulate Sampling (Napp-Baldwin Model 31 Sampler)**

Particulate sampling and gas velocity measurements were conducted using a Napp-Baldwin Model 31 stack sampler in accordance with the methods specified in State of Oregon Method 7 (See Figure 1). The State of Oregon Method 7 sampling train is a modified Method 5 sample train with the addition of a non heated filter in-between the third and fourth impinger.

The air discharge was sampled isokinetically at the centroid of a series of equal area segments across the duct or stack. The stack gas velocity and temperature were recorded during the sample collection period with a calibrated pitot tube and thermocouple mounted on the sampling probe. The sample was delivered from the probe to a cyclone and a filter holder containing a 110mm Type A glass fiber filter. The gas sample was then drawn in through a series of four glass impingers which condensed and absorbed the water from the gas. A leakless vacuum pump carried the sampled gas through a dry gas test meter where the volume, temperature, and pressure were measured; and finally through a flow indicating orifice which allowed for the rapid adjustment to isokinetic sampling rates.

At the end of each test, the probe interior, cyclone and connecting tubing from the probe to the filter housing were rinsed with distilled water and acetone. These washings were evaporated to dryness and the resulting solids were weighed. The weight of the cyclone flask and the filter was used together with the weight of solids in the washings to calculate the filterable particulate concentration. The moisture content of the stack gas was determined from the quantity of water condensed in the impingers and absorbed in the silica gel.

Condensable Organics are collected in the impinger train and a rinsing procedure is employed utilizing solvents such as Hexane or Methylene Chloride in between tests. The rinsings and condensate are forwarded to a laboratory accredited to perform the analysis in accordance with the method and a copy of that report is included in the Appendix of any report issued.

### **O<sub>2</sub>, CO<sub>2</sub>, CO (where applicable)**

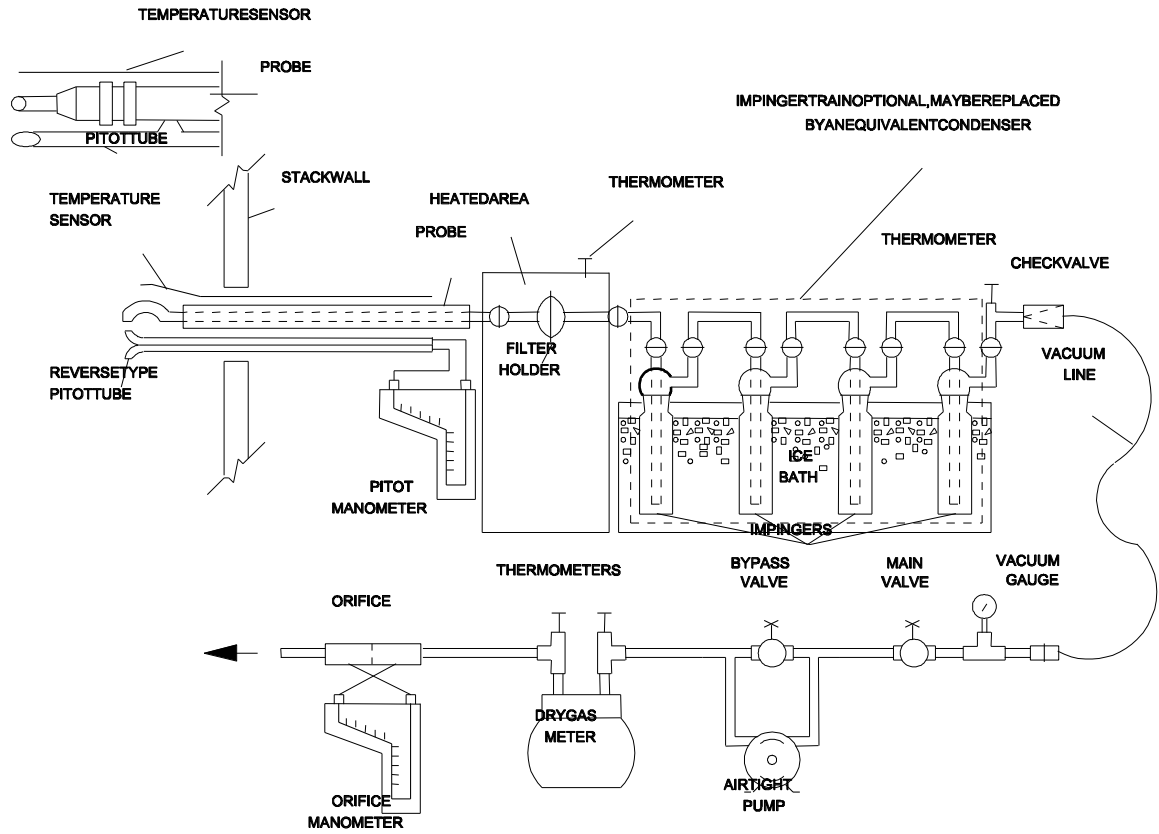
O<sub>2</sub>, CO<sub>2</sub>, and CO were found using either Fuji Analytical Analyzer by means of infrared and paramagnetic technology (EPA 3A) or by fyrite (EPA Method 3).

### **NO<sub>x</sub> (where applicable)**

NO<sub>x</sub> was found using and API Model 252 NO<sub>x</sub> analyzer that utilizes chemiluminescent technology. Stack gas was Samples were taken over a minimum period of three hours.

### **VOC's (where applicable)**

Hydrocarbons were measured in accordance with EPA method 25A. Samples were drawn in one hour test runs using a total hydrocarbon analyzer that utilizes Flame Ionization Technology.



Modified EPA Method 5 Diagram (State of Oregon Method 7)- Figure 1

## GENERAL CALCULATIONS

Carry out calculations, retaining at least one extra decimal figure beyond that of the acquired data. Round off figures after the final calculation. Other forms of the equations may be used as long as they give equivalent results.

### Nomenclature.

- $A_n$  = Cross-sectional area of nozzle,  $m^2$  ( $ft^2$ ).  
 $B_{ws}$  = Water vapor in the gas stream, proportion by volume.  
 $C_a$  = Acetone blank residue concentration,  $mg/g$ .  
 $c_s$  = Concentration of particulate matter in stack gas, dry basis, corrected to standard conditions,  $g/dscf$  ( $g/dscf$ ).  
 $I$  = Percent of isokinetic sampling.  
 $L_a$  = Maximum acceptable leakage rate for either a pretest leak check or for a leak check following a component change; equal to  $0.00057 m^3/min$  ( $0.02 cfm$ ) or 4 percent of the average sampling rate, whichever is less.  
 $L_i$  = Individual leakage rate observed during the leak check conducted prior to the " $i^{th}$ " component change ( $i = 1, 2, 3...n$ ),  $m^3/min$  ( $cfm$ ).  
 $L_p$  = Leakage rate observed during the post-test leak check,  $m^3/min$  ( $cfm$ ).  
 $m_a$  = Mass of residue of acetone after evaporation,  $mg$ .  
 $m_n$  = Total amount of particulate matter collected,  $mg$ .  
 $M_w$  = Molecular weight of water,  $18.0 g/g\text{-mole}$  ( $18.0 lb/lb\text{-mole}$ ).  
 $P_{bar}$  = Barometric pressure at the sampling site,  $mm Hg$  ( $in. Hg$ ).  
 $P_s$  = Absolute stack gas pressure,  $mm Hg$  ( $in. Hg$ ).  
 $P_{std}$  = Standard absolute pressure,  $760 mm Hg$  ( $29.92 in. Hg$ ).  
 $R$  = Ideal gas constant,  $0.06236 \frac{[(mmHg)(m^3)]}{[(^{\circ}K)(g\text{-mole})]}$   
 $\{21.85 \frac{[(in. Hg)(ft^3)]}{[(^{\circ}R)(lb\text{-mole})]}\}$ .  
 $T_m$  = Absolute average DGM temperature (see Figure 5-2),  $^{\circ}K$  ( $^{\circ}R$ ).  
 $T_s$  = Absolute average stack gas temperature (see Figure 5-2),  $^{\circ}K$  ( $^{\circ}R$ ).  
 $T_{std}$  = Standard absolute temperature,  $293^{\circ}K$  ( $528^{\circ}R$ ).  
 $V_a$  = Volume of acetone blank,  $ml$ .  
 $V_{aw}$  = Volume of acetone used in wash,  $ml$ .  
 $V_{lc}$  = Total volume liquid collected in impingers and silica gel (see Figure 5-3),  $ml$ .  
 $V_m$  = Volume of gas sample as measured by dry gas meter,  $dcm$  ( $dcf$ ).  
 $V_{m(std)}$  = Volume of gas sample measured by the dry gas meter, corrected to standard conditions,  $dscm$  ( $dscf$ ).  
 $V_{w(std)}$  = Volume of water vapor in the gas sample, corrected to standard conditions,  $scm$  ( $scf$ ).  
 $v_s$  = Stack gas velocity, calculated by Method 2, Equation 2-9, using data obtained from Method 5,  $m/sec$  ( $ft/sec$ ).  
 $W_a$  = Weight of residue in acetone wash,  $mg$ .  
 $Y$  = Dry gas meter calibration factor.  
 $\Delta H$  = Average pressure differential across the orifice meter (see Figure 5-2),  $mm H_2O$  ( $in. H_2O$ ).  
 $\rho_a$  = Density of acetone,  $mg/ml$  (see label on bottle).  
 $\rho_w$  = Density of water,  $0.9982 g/ml$  ( $0.002201 lb/ml$ ).  
 $\theta$  = Total sampling time,  $min$ .  
 $\theta_1$  = Sampling time interval, from the beginning of a run until the first component change,  $min$ .  
 $\theta_i$  = Sampling time interval, between two successive component changes, beginning with the interval between the first and second changes,  $min$ .  
 $\theta_p$  = Sampling time interval, from the final ( $n^{th}$ ) component change until the end of the sampling run,  $min$ .  
 $13.6$  = Specific gravity of mercury.  
 $60$  =  $Sec/min$ .  
 $100$  = Conversion to percent.

**Average Dry Gas Meter Temperature and Average Orifice Pressure Drop.**

**Dry Gas Volume.** Correct the sample volume measured by the dry gas meter to standard conditions (20°C, 760 mm Hg or 68°F, 29.92 in. Hg) by using Equation 5-1.

$$V_{m(\text{std})} = V_m Y \left( \frac{T_{\text{std}}}{T_m} \right) \left[ \frac{P_{\text{bar}} + \frac{\Delta H}{13.6}}{P_{\text{std}}} \right] \quad \text{Eq. 5-1}$$

$$= K_1 V_m Y \frac{P_{\text{bar}} + \left( \frac{\Delta H}{13.6} \right)}{T_m}$$

where:

$$K_1 = 0.3858 \text{ } ^\circ\text{K/mm Hg for metric units,}$$

$$= 17.64 \text{ } ^\circ\text{R/in. Hg for English units.}$$

**NOTE:** Equation 5-1 can be used as written unless leakage rate observed during any of the mandatory leak checks (i.e., the post-test leak check or leak checks conducted prior to component changes) exceeds  $L_a$ . If  $L_p$  or  $L_i$  exceeds  $L_a$ , Equation 5-1 must be modified as follows:

(a) Case I. No component changes made during sampling run. In this case, replace  $V_m$  in Equation 5-1 with the expression:

$$[V_m - (L_p - L_a) \theta]$$

(b) Case II. One or more component changes made during the sampling run. In this case, replace  $V_m$  in Equation 5-1 by the expression:

$$\left[ V_m - (L_1 - L_a) \theta_1 - \sum_{i=2}^n (L_i - L_a) \theta_i - (L_p - L_a) \theta_p \right]$$

and substitute only for those leakage rates ( $L_i$  or  $L_p$ ) which exceed  $L_a$ .

**Volume of Water Vapor.**

$$V_{w(\text{std})} = \frac{V_{lc} \rho_w R T_{\text{std}}}{M_w P_{\text{std}}} = K_2 V_{lc} \quad \text{Eq. 5-2}$$

where:

$$K_2 = 0.001333 \text{ m}^3/\text{ml for metric units,}$$

$$= 0.04707 \text{ ft}^3/\text{ml for English units.}$$

**Moisture Content.**

$$B_{ws} = \frac{V_{w(std)}}{V_{m(std)} + V_{w(std)}} \quad \text{Eq. 5-3}$$

**Acetone Blank Concentration.**

$$C_a = \frac{m_a}{V_a \rho_a} \quad \text{Eq. 5-4}$$

**Acetone Wash Blank.**

$$W_a = C_a V_{aw} \rho_a \quad \text{Eq. 5-5}$$

**Total Particulate Weight.** Determine the total particulate matter catch from the sum of the weights obtained from Containers 1 and 2 less the acetone blank (see Figure 5-3).

**Particulate Concentration.**

$$C_s = (0.001 \text{ g/mg})(m_n / V_{m(std)}) \quad \text{Eq. 5-6}$$

**Conversion Factors:**

<u>From</u>	<u>To</u>	<u>Multiply by</u>
scf	m <sup>3</sup>	0.02832
g/ft <sup>3</sup>	gr/ft <sup>3</sup>	15.43
g/ft <sup>3</sup>	lb/ft <sup>3</sup>	2.205 x 10 <sup>-3</sup>
g/ft <sup>3</sup>	g/m <sup>3</sup>	35.31

**Isokinetic Variation.**

**Calculation from Raw Data.**

$$I = \frac{100 T_s [K_3 V_{1c} + (V_m Y / T_m)(P_{bar} + \Delta H / 13.6)]}{60 \theta V_s P_s A_n} \quad \text{Eq. 5-7}$$

where:

$$\begin{aligned} K_3 &= 0.003454 [(\text{mm Hg})(\text{m}^3)]/[(\text{ml})(^\circ\text{K})] \text{ for metric units,} \\ &= 0.002669 [(\text{in. Hg})(\text{ft}^3)]/[(\text{ml})(^\circ\text{R})] \text{ for English units.} \end{aligned}$$

**Calculation from Intermediate Values.**

$$I = \frac{100 T_s V_{m(\text{std})} P_{\text{std}}}{60 T_{\text{std}} v_s \theta A_n P_s (1 - B_{\text{ws}})} \quad \text{Eq.5-8}$$

$$= \frac{K_4 T_s V_{m(\text{std})}}{P_s v_s A_n \theta (1 - B_{\text{ws}})}$$

where:

$K_4 = 4.320$  for metric units,

$= 0.09450$  for English units.

**Acceptable Results.** If 90 percent  $\leq I \leq 110$  percent, the results are acceptable. If the PM results are low in comparison to the standard, and "I" is over 110 percent or less than 90 percent, the Administrator may opt to accept the results. Citation 4 in the Bibliography may be used to make acceptability judgments. If "I" is judged to unacceptable, reject the results, and repeat the test.

**Average Stack Gas Velocity.**

$$v_s = K_p C_p (\sqrt{\Delta p})_{\text{avg}} \sqrt{\frac{T_{s(\text{avg})}}{P_s M_s}}$$

**Average Stack Gas Dry Volumetric Flow Rate.**

$$Q_{\text{sd}} = 3,600(1 - B_{\text{ws}}) v_s A \frac{T_{\text{std}}}{T_{s(\text{avg})}} \frac{P_s}{P_{\text{std}}}$$

where:

- A = Cross-sectional area of stack, m<sup>2</sup> (ft<sup>2</sup>).
- B<sub>ws</sub> = Water vapor in the gas stream (from Method 5 or Reference Method 4), proportion by volume.
- C<sub>p</sub> = Pitot tube coefficient, dimensionless.
- K<sub>p</sub> = Pitot tube constant,
- M<sub>d</sub> = Molecular weight of stack gas, dry basis (see Section 3.6), g/gmole (lb/lb-mole).
- M<sub>s</sub> = Molecular weight of stack gas, wet basis, g/g-mole (lb/lb-mole).

$$= M_d (1 - B_{\text{ws}}) + 18.0 B_{\text{ws}} \quad \text{Eq. 2-5}$$

- P<sub>bar</sub> = Barometric pressure at measurement site, mm Hg (in. Hg).
- P<sub>g</sub> = Stack static pressure, mm Hg (in. Hg).
- P<sub>s</sub> = Absolute stack pressure, mm Hg (in. Hg),

$$= P_{\text{bar}} + P_g$$

- P<sub>std</sub> = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).
- Q<sub>sd</sub> = Dry volumetric stack gas flow rate corrected to standard conditions, dsm<sup>3</sup>/hr (dscf/hr).
- t<sub>s</sub> = Stack temperature, °C (°F).
- T<sub>s</sub> = Absolute stack temperature, °K (°R).

## Calibration Certificate for S-Type Pitot Tube

Date: 2026-01-19 Barometric Pressure ("Hg): 29.9  
Pitot I.D.: **107** Wind Tunnel Temperature ( $^{\circ}$ F): 66.0  
Nozzle: 0.250

Wind Velocity (ft/sec)	Ref.Pitot ("H <sub>2</sub> O)	S-Type Pitot ("H <sub>2</sub> O)	Pitot Factor
11.72	0.03161	0.04242	0.85459
26.28	0.15880	0.22190	0.83748
42.45	0.41433	0.57741	0.83863
58.04	0.77446	1.06033	0.84609
82.87	1.57900	2.18794	0.84102
98.54	2.23250	3.15269	0.83309

Average= 0.84182

*Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.*

Calibrating Technician Signature:



## Calibration Certificate for S-Type Pitot Tube

Date: 2026-01-19 Barometric Pressure ("Hg): 29.78  
Pitot I.D.: **217** Wind Tunnel Temperature ( $^{\circ}$ F): 70.0  
Nozzle: 0.250

Wind Velocity (ft/sec)	Ref.Pitot ("H <sub>2</sub> O)	S-Type Pitot ("H <sub>2</sub> O)	Pitot Factor
13.51	0.04147	0.05467	0.86230
19.93	0.09031	0.12262	0.84962
41.60	0.39339	0.54073	0.84442
62.13	0.87726	1.25293	0.82840
79.94	1.45249	2.09036	0.82524
101.14	2.32467	3.37170	0.82204

Average= 0.83867

*Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.*

Calibrating Technician Signature:



## Calibration Certificate for S-Type Pitot Tube

Date: 2026-01-19 Barometric Pressure ("Hg): 29.78  
Pitot I.D.: **200** Wind Tunnel Temperature ( $^{\circ}$ F): 70.0  
Nozzle: 0.250

Wind Velocity (ft/sec)	Ref.Pitot ("H <sub>2</sub> O)	S-Type Pitot ("H <sub>2</sub> O)	Pitot Factor
17.53	0.06982	0.10114	0.82249
41.78	0.39667	0.56684	0.82817
50.67	0.58346	0.81271	0.83883
60.32	0.82699	1.14880	0.83997
86.08	1.68407	2.38761	0.83144
101.99	2.36401	3.27573	0.84102

Average= 0.83365

*Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.*

Calibrating Technician Signature:



## Calibration Certificate for S-Type Pitot Tube

Date: 2026-01-19 Barometric Pressure ("Hg): 30  
Pitot I.D.: **301** Wind Tunnel Temperature ( $^{\circ}$ F): 65.0  
Nozzle: 0.250

Wind Velocity (ft/sec)	Ref.Pitot ("H <sub>2</sub> O)	S-Type Pitot ("H <sub>2</sub> O)	Pitot Factor
11.91	0.03274	0.04425	0.85196
19.94	0.09188	0.12337	0.85433
41.25	0.39334	0.52395	0.85777
62.08	0.89073	1.16706	0.86489
81.83	1.54787	2.07196	0.85568
102.58	2.43231	3.26403	0.85461

Average= 0.85654

*Note: The new pitot tip should be installed so that the serial number engraved is aligned directly into the gas stream.*

Calibrating Technician Signature:



**CALIBRATION CERTIFICATE  
DRY GAS METER**

DATE: 19-Jan-26  
 CONSOLE MANUF.: NAPP MODEL 31  
 CONSOLE I.D.: C-955

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	68.0	68.0	68.0
P=Pres. Differential at WTM ("Hg)	0.0713	0.1287	0.1692
Pb= Atmospheric Pressure ("Hg)	27.93	27.93	27.93
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6901	0.6901	0.6901
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	89.0	82.0	96.0
To= Dry Test Meter Outlet Temp. (oF.)	66.0	64.0	70.0
Ri= Initial Dry Test volume (ft3)	38.55	32.81	46.24
Rf= Final Dry Test Volume (ft3)	43.33	37.60	51.18
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	27.8587	27.8013	27.7608
Pd= Pb + (^H/13.59) "Hg	28.0036	28.0772	28.1508
Tw= Ta +460 (oR.)	528.0	528.0	528.0
Td= [(Ti + To)/2] + 460 (oR.)	537.5	533.0	543.0
Bw= Pv/Pb ("Hg)	0.0247	0.0247	0.0247
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
(Calculated Y Value)(WTMF)	1.0251	1.0097	0.9933
Y (MEAN)(WTMF) =	1.0094		

MCCALL ENVIRONMENTAL

Calibrating Technician Signature:



ORIFICE METER CALIBRATION

DATE: 2026-01-06

CONSOLE I.D. C-955

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0251	1.0251	1.0097
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	52	54.15	57.8
Rf=final gas meter vol.	53.93	56.94	61.27
min. samp	5	5	5
$Q_m=Y(R_f-R_i)/\Delta T(FT^3/MIN)$	0.395689	0.572006	0.700732
To=meter outlet Temp (oF)	70	70	70
Tm=meter out temp. (oR)	530	530	530
$P_m=P_b + \Delta H$	27.96679	28.00358	28.04038
$SQRT(T_m/P_m \cdot H/M_d)$	0.571939	0.808313	0.989327
Ko=orifice const.	0.691837	0.707654	0.708291

Ko MEAN : 0.7025941

$Ko \cdot 4 \cdot 144 = 404.69421$

McCALL ENVIRONMENTAL LTD.



Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: 2026-01-06

CONSOLE I.D. C-955

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0097	0.9933	0.9933
Delta H=	2	2.5	3
Ri=int. gas meter vol.	61.74	66.03	70.9
Rf=final gas meter vol.	65.72	70.5	75.8
min. samp	5	5	5
Qm=Y(Rf-Ri)^T(FT3/MIN)	0.803721	0.88801	0.973434
Tm=meter out temp. (oF)	72	72	72
Tm=meter out temp. (oR.)	532	532	532
Pm=Pb + ^H	28.07717	28.11396	28.15075
SQRT(Tm/Pm*H/Md)	1.14378	1.277948	1.399006
Ko=orifice const.	0.702689	0.694872	0.695804

Ko MEAN : 0.6977882

Ko\*4\*144= 401.92603

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:



**CALIBRATION CERTIFICATE  
DRY GAS METER**

DATE: 2026-01-19

CONSOLE MANUF.: NAPP MODEL 31

CONSOLE I.D.: C-980

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	68.0	68.0	68.0
P=Pres. Differential at WTM ("Hg)	0.0809	0.1471	0.2060
Pb= Atmospheric Pressure ("Hg)	27.93	27.93	27.93
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6901	0.6901	0.6901
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	95.0	95.0	104.0
To= Dry Test Meter Outlet Temp. (oF.)	77.0	72.0	80.0
Ri= Initial Dry Test volume (ft3)	9.88	98.09	17.84
Rf= Final Dry Test Volume (ft3)	14.83	102.98	22.86
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	27.8491	27.7829	27.7240
Pd= Pb + (^H/13.59) "Hg	28.0036	28.0772	28.1508
Tw= Ta +460 (oR.)	528.0	528.0	528.0
Td= [(Ti + To)/2] + 460 (oR.)	546.0	543.5	552.0
Bw= Pv/Pb ("Hg)	0.0247	0.0247	0.0247
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
ated Y Value)(WTMF)	1.0052	1.0078	0.9924

Y (MEAN)(WTMF) = 1.0018

N.R. MCCALL & ASSOCIATES LTD.

Calibrating Technician Signature:



ORIFICE METER CALIBRATION

DATE: Jan 6 2026

CONSOLE I.D. C-980

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0052	1.0052	1.0078
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	26.5	29.8	33.5
Rf=final gas meter vol.	28.66	32.92	37.3
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.4342464	0.6272448	0.765928
To=meter outlet Temp (oF)	82	82	82
Tm=meter out temp. (oR)	542	542	542
Pm=Pb + ^H	27.966792	28.0035835	28.0403753
SQRT(Tm/Pm*H/Md)	0.5783777	0.81741213	1.00046431
Ko=orifice const.	0.7508007	0.76735441	0.76557253

Ko MEAN = 0.7612425

Ko\*4\*144= 438.47571

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Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: Jan 6 2026

CONSOLE I.D. C-980

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0078	0.9924	0.9924
Delta H=	2	2.5	3
Ri=int. gas meter vol.	37.7	42.6	48
Rf=final gas meter vol.	42.04	47.48	53.3
min. samp	5	5	5
$Q_m=Y(R_f-R_i)/\Delta T(FT^3/MIN)$	0.8747704	0.9685824	1.051944
Tm=meter out temp. (oF)	83	84	84
Tm=meter out temp. (oR.)	543	544	544
$P_m=P_b + \Delta H$	28.077167	28.113959	28.150751
$SQRT(T_m/P_m \cdot H/M_d)$	1.1555441	1.2922802	1.4146967
Ko=orifice const.	0.7570204	0.7495142	0.7435827

Ko MEAN = 0.7500391

$Ko^4 \cdot 144 = 432.02253$

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:



**CALIBRATION CERTIFICATE  
DRY GAS METER**

DATE: 2026-01-19  
 CONSOLE MANUF.: NAPP MODEL 31  
 CONSOLE I.D.: C-1021

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	68.0	68.0	68.0
P=Pres. Differential at WTM ("Hg)	0.0596	0.1259	0.1618
Pb= Atmospheric Pressure ("Hg)	27.40	27.40	27.40
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6901	0.6901	0.6901
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	96.0	82.0	100.0
To= Dry Test Meter Outlet Temp. (oF.)	95.0	73.0	96.0
Ri= Initial Dry Test volume (ft3)	38.12	0.80	44.08
Rf= Final Dry Test Volume (ft3)	43.07	5.59	49.13
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	27.3404	27.2741	27.2382
Pd= Pb + (^H/13.59) "Hg	27.4736	27.5472	27.6208
Tw= Ta +460 (oR.)	528.0	528.0	528.0
Td= [(Ti + To)/2] + 460 (oR.)	555.5	537.5	558.0
Bw= Pv/Pb ("Hg)	0.0252	0.0252	0.0252
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
(Calculated Y Value)(WTMF)	1.0229	1.0176	0.9980
Y (MEAN)(WTMF) =	1.0128		

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Calibrating Technician Signature:



ORIFICE METER CALIBRATION

DATE: 2026-01-07

CONSOLE I.D. C-1021

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.4	27.4	27.4
Y=gas meter factor	1.0229	1.0229	1.0176
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	64.1	66.61	69.5
Rf=final gas meter vol.	65.97	69.25	72.73
min. samp	5	5	5
Qm=Y(Rf-Ri)/^T(FT3/MIN)	0.3825646	0.5400912	0.6573696
To=meter outlet Temp (oF)	98	98	98
Tm=meter out temp. (oR)	558	558	558
Pm=Pb + ^H	27.436792	27.473584	27.510375
SQRT(Tm/Pm*H/Md)	0.5924936	0.8373513	1.0248557
Ko=orifice const.	0.6456856	0.6449996	0.6414265

Ko MEAN = 0.6440372

Ko\*4\*144= 370.96544

McCALL ENVIRONMENTAL LTD.



Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: 2026-01-07

CONSOLE I.D. C-1021

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.4	27.4	27.4
Y=gas meter factor	1.0176	0.9980	0.9980
Delta H=	2	2.5	3
Ri=int. gas meter vol.	73.5	81.1	85.8
Rf=final gas meter vol.	77.26	85.3	90.42
min. samp	5	5	5
$Q_m = Y(R_f - R_i) \sqrt{T(FT^3/MIN)}$	0.7652352	0.83832	0.922152
To=meter outlet Temp (oF)	99	99	100
Tm=meter out temp. (oR)	559	559	560
$P_m = P_b + \Delta H$	27.547167	27.583959	27.620751
$SQRT(T_m/P_m * H/M_d)$	1.1836701	1.3225005	1.4490559
Ko=orifice const.	0.6464937	0.6338901	0.6363812

Ko MEAN = 0.6389217

$K_o * 4 * 144 = 368.01888$

McCALL ENVIRONMENTAL LTD.

Calibrating Technician Signature:



**CALIBRATION CERTIFICATE  
DRY GAS METER**

DATE: 2026-01-20

CONSOLE MANUF.: NAPP MODEL 31

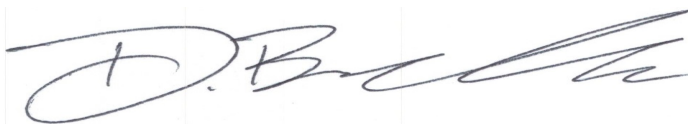
CONSOLE I.D.: C-1039

PARAMETER SUMMARY	RUN #1	RUN #2	RUN #3
Ta = Ambient (WTM) Temperature (oF.)	68.0	68.0	68.0
P=Pres. Differential at WTM ("Hg)	0.0883	0.1618	0.2354
Pb= Atmospheric Pressure ("Hg)	27.93	27.93	27.93
Pv= Vapour Pressure Water at Temp. Ta ("Hg)	0.6901	0.6901	0.6901
H=Pres. Differential at Orifice	1.0	2.0	3.0
Ti= Dry Test Meter Inlet Temp. (oF.)	100.0	101.0	104.0
To= Dry Test Meter Outlet Temp. (oF.)	86.0	87.0	88.0
Ri= Initial Dry Test volume (ft3)	39.05	30.16	45.92
Rf= Final Dry Test Volume (ft3)	44.00	35.14	50.98
Vi= Initial Wet Test Volume (ft3)	0.0	0.0	0.0
Vf= Final Wet Test Volume (ft3)	5.000	5.000	5.000
Pw= Pb - (^P/13.59) "Hg	27.8417	27.7682	27.6946
Pd= Pb + (^H/13.59) "Hg	28.0036	28.0772	28.1508
Tw= Ta +460 (oR.)	528.0	528.0	528.0
Td= [(Ti + To)/2] + 460 (oR.)	553.0	554.0	556.0
Bw= Pv/Pb ("Hg)	0.0247	0.0247	0.0247
WET TEST METER FACTOR (WTMF)	0.9922	0.9922	0.9922
ated Y Value)(WTMF)	1.0178	1.0082	0.9906

Y (MEAN)(WTMF) = 1.0055

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Calibrating Technician Signature:



ORIFICE METER CALIBRATION

DATE: 06-Jan-26

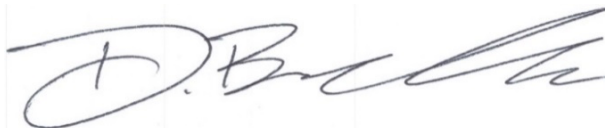
CONSOLE I.D. C-1039

	RUN 1	RUN 2	RUN 3
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0178	1.0178	1.0082
Delta H=	0.5	1	1.5
Ri=int. gas meter vol.	82	84.8	92.8
Rf=final gas meter vol.	84.36	88.13	96.84
min. samp	5	5	5
$Q_m=Y(R_f-R_i)/^T(FT^3/MIN)$	0.4804016	0.6778548	0.8146256
Tm=meter out temp. (oF)	86	87	87
Tm=meter out temp. (oR.)	546	547	547
$P_m=P_b + ^H$	27.966792	28.003584	28.040375
$SQRT(T_m/P_m*H/M_d)$	0.580508	0.8211738	1.0050684
Ko=orifice const.	0.8275537	0.8254705	0.8105176

Ko MEAN = 0.8211806

$Ko^4*144= 473.00003$

McCALL ENVIRONMENTAL



Calibrating Technician Signature:

ORIFICE METER CALIBRATION

DATE: 06-Jan-26

CONSOLE I.D. C-1039

	RUN 4	RUN 5	RUN 6
MD= mol. wt. dry air	28.967	28.967	28.967
Pb=bar. pressure "Hg	27.93	27.93	27.93
Y=gas meter factor	1.0082	0.9906	0.9906
Delta H=	2	2.5	3
Ri=int. gas meter vol.	97.8	104.1	109.8
Rf=final gas meter vol.	102.41	109.26	115.45
min. samp	5	5	5
$Qm=Y(Rf-Ri)/^T(FT^3/MIN)$	0.9295604	1.0222992	1.119378
Tm=meter out temp. (oF)	86	86	90
Tm=meter out temp. (oR.)	546	546	550
$Pm=Pb + ^H$	28.077167	28.113959	28.150751
$SQRT(Tm/Pm*H/Md)$	1.1587318	1.2946535	1.4224769
Ko=orifice const.	0.8022222	0.7896315	0.7869217

Ko MEAN = 0.7929252

$Ko^4 * 144 = 456.72489$

McCALL ENVIRONMENTAL



Calibrating Technician Signature:

**Analytical Report**

Bill To: McCall Environmental 6733 Buchanan Road Coldstream, BC, Canada V1B 3C5	Project ID: Project Name: Drax Smithers Project Location: LSD: P.O.:	Lot ID: <b>1887515</b> Control Number: Date Received: Apr 13, 2026 Date Reported: Apr 15, 2026 Report Number: 3255423 Report Type: Final Report
Attn: Accounts Payable Sampled By: Company: McCall	Proj. Acct. code:	


Reference Number	1887515-1	1887515-2	1887515-3
Sample Date	Apr 09, 2026	Apr 09, 2026	Apr 09, 2026
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Dryer Stack 3 Test 1 / 14.8 °C / Filter B41	Dryer Stack 3 Test 2 / 14.8 °C / Filter B42	Dryer Stack 3 Test 3 / 14.8 °C / Filter B43
Matrix	Water	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
<b>Aggregate Organic Constituents</b>					
Oil and Grease	Total	mg/sample	<2	<2	<2
Volume	Sample volume	mL	321	324	331
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes

**Analytical Report**

Bill To: McCall Environmental 6733 Buchanan Road Coldstream, BC, Canada V1B 3C5	Project ID: Project Name: Drax Smithers Project Location: LSD: P.O.:	Lot ID: <b>1887515</b> Control Number: Date Received: Apr 13, 2026 Date Reported: Apr 15, 2026 Report Number: 3255423 Report Type: Final Report
Attn: Accounts Payable Sampled By: Company: McCall	Proj. Acct. code:	

	Reference Number	1887515-4	1887515-5	1887515-6	
	Sample Date	Apr 09, 2026	Apr 09, 2026	Apr 09, 2026	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	Dryer Stack 4 Test 1 / 14.8 °C / Filter B44	Dryer Stack 4 Test 2 / 14.8 °C / Filter B45	Dryer Stack 4 Test 3 / 14.8 °C / Filter B46	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
<b>Aggregate Organic Constituents</b>					
Oil and Grease	Total	mg/sample	<2	<2	2
Volume	Sample volume	mL	312	318	317
pH adjustment	required prior to O&G extraction	Yes	Yes	Yes	

Approved by:   
 Reena Sharma  
 Operations Chemist

**Analytical Report**

Bill To: McCall Environmental 6733 Buchanan Road Coldstream, BC, Canada V1B 3C5	Project ID: Project Name: Drax Smithers Project Location: LSD: P.O.:	Lot ID: <b>1887510</b> Control Number: Date Received: Apr 13, 2026 Date Reported: Apr 15, 2026 Report Number: 3255418 Report Type: Final Report
Attn: Accounts Payable Sampled By: Company: McCall	Proj. Acct. code:	

Reference Number	1887510-1	1887510-2	1887510-3
Sample Date	Apr 09, 2026	Apr 09, 2026	Apr 09, 2026
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Stack 1 T1 / 14.8 °C / Filter B54	Stack 1 T2 / 14.8 °C / Filter B55	Stack 1 T3 / 14.8 °C / Filter B56
Matrix	Water	Water	Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
<b>Aggregate Organic Constituents</b>					
Oil and Grease	Total	mg/sample	2	4	<2
Volume	Sample volume	mL	311	331	305
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes

## Analytical Report

Bill To: McCall Environmental 6733 Buchanan Road Coldstream, BC, Canada V1B 3C5	Project ID: Project Name: Drax Smithers Project Location: LSD: P.O.:	Lot ID: <b>1887510</b> Control Number: Date Received: Apr 13, 2026 Date Reported: Apr 15, 2026 Report Number: 3255418 Report Type: Final Report
Attn: Accounts Payable	Proj. Acct. code:	
Sampled By:		
Company: McCall		

Reference Number	1887510-4	1887510-5	1887510-6
Sample Date	Apr 09, 2026	Apr 09, 2026	Apr 09, 2026
Sample Time	NA	NA	NA
Sample Location			
Sample Description	Drax Stack 2 Test 1 / 14.8 °C / Filter B37	Drax Stack 2 Test 2 / 14.8 °C / Filter B38	Stack 2 Test 3 / 14.8 °C / Filter B39
Matrix	Water	Water	Water


Analyte	Units	Results	Results	Results	Nominal Detection Limit
<b>Aggregate Organic Constituents</b>					
Oil and Grease	Total	mg/sample	8	2	<2
Volume	Sample volume	mL	321	327	326
pH adjustment	required prior to O&G extraction		Yes	Yes	Yes

**Analytical Report**

Bill To: McCall Environmental 6733 Buchanan Road Coldstream, BC, Canada V1B 3C5	Project ID: Project Name: Drax Smithers Project Location: LSD: P.O.:	Lot ID: <b>1887510</b> Control Number: Date Received: Apr 13, 2026 Date Reported: Apr 15, 2026 Report Number: 3255418 Report Type: Final Report
Attn: Accounts Payable	Proj. Acct. code:	
Sampled By: Company: McCall		

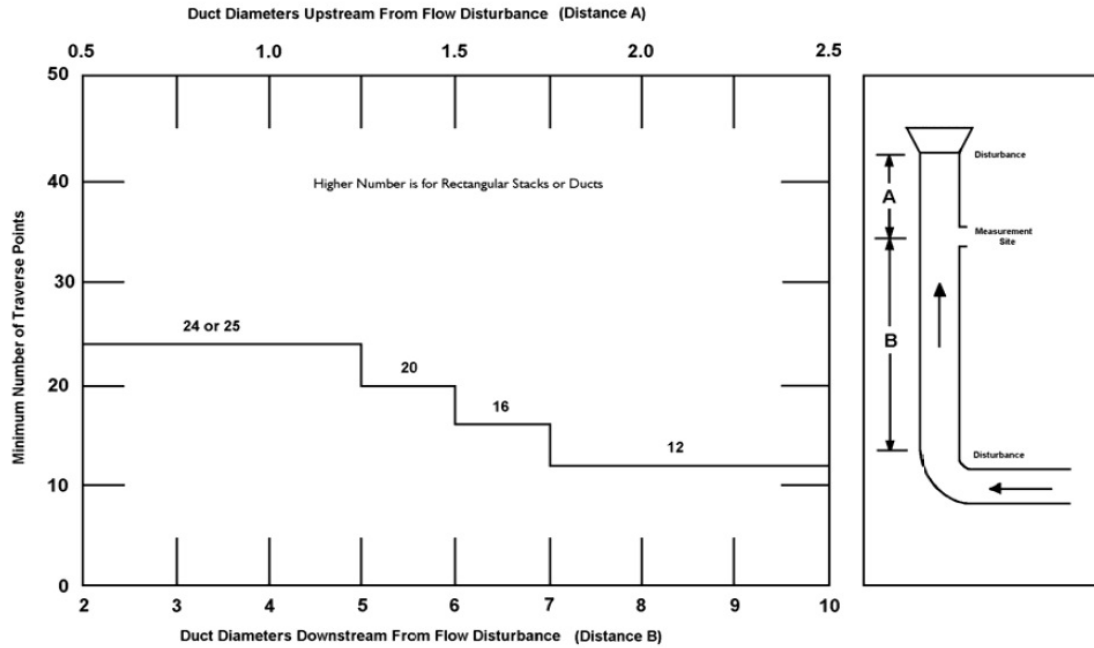
**Reference Number** 1887510-7  
**Sample Date** Apr 09, 2026  
**Sample Time** NA  
**Sample Location**  
**Sample Description** Water Blank - Blank  
 H2O / 14.8 °C  
**Matrix** Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
<b>Aggregate Organic Constituents</b>					
Oil and Grease	Total	mg/sample	<2		2
Volume	Sample volume	mL	299		
pH adjustment	required prior to O&G extraction		Yes		

Approved by:   
 Reena Sharma  
 Operations Chemist



Site Diagram & Sample Point Selection



Client: Pinnacle Pellet Smithers  
 Source: Dryer Stackls 1-4  
 Pollution Abatement Equipment:  
 Duct Diameters Up (A): >2  
 Duct Diameters Down (B): 4  
 Area of Stack (ft): 33.18  
 Stack Diameter (in): 78  
 Zero (in): 4  
 Number of Points: 24

Traverse Points (in):	
PT-1	1.64
PT-2	5.22
PT-3	9.21
PT-4	13.8
PT-5	19.5
PT-6	27.69
PT-7	50.31
PT-8	58.5
PT-9	64.19
PT-10	68.8
PT-11	70.7
PT-12	76.36

Cyclonic Angle: 5°



*Smithers Pellet Limited Partnership*

Production rate during stack test (April 9, 2026)

12.1 MT/hr

Average for the previous calendar month

10.6 MT/hr

90<sup>th</sup> percentile production rate

13.8 MT/hr

Average hourly dryer exit temperature during testing:

Included in report

Client Name: Max Smithers  
 Process: Dryer Stack 1  
 Test Number: 1  
 Date: April 9/26  
 Start Time: 11:13  
 Finish Time: 12:15  
 Starting Vol.: 300  
 Final Vol.: 316  
 Flask: B-54  
 Console: C-980  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN .265  
 CP .84182  
 MF 1.0019  
 Moist. 3%  
 PM 28.66  
 AS \_\_\_\_\_  
 Ko .7500  
 Pitot 107  
 Port \_\_\_\_\_  
 Static -.20  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters  
 Up-Stream \_\_\_\_\_  
 Duct Diameters  
 Downstream \_\_\_\_\_  
 Mean Yaw Angle \_\_\_\_\_

Personnel: DB/CB

Leakage Rate @ 15 inches \_\_\_\_\_

Start: 0.05 Finish: 0.07

Load: \_\_\_\_\_

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A-12	.38	1.66	51	51	77	49.70		270	Feed	0
11	.38	1.71	74	57	75	51.58				2.5
10	.35	1.58	75	57	76	53.63				5
9	.33	1.47	77	59	83	55.51				7.5
8	.32	1.44	77	59	80	57.82				10
7	.28	1.26	77	58	78	59.70				12.5
6	.29	1.32	79	61	76	60.89	3			15
5	.29	1.31	81	63	79	62.58				17.5
4	.29	1.32	81	63	77	64.43				20
3	.30	1.37	80	64	77	66.21				22.5
2	.31	1.42	85	64	77	68.02				25
1	.31	1.41	85	67	81	69.81				27.5
B-12	.37	1.69	81	69	77	71.79	3			30
11	.38	1.75	87	70	77	73.59				32.5
10	.38	1.76	92	71	78	75.52				35
9	.35	1.63	93	78	78	77.43				37.5
8	.33	1.55	93	74	78	79.20				40
7	.32	1.49	92	75	77	81.06				42.5
6	.28	1.29	90	74	78	82.76	3			45
5	.24	1.35	94	75	77	84.55				47.5
4	.24	1.35	96	76	77	86.41				50
3	.30	1.39	92	79	78	88.12				52.5
2	.31	1.45	94	77	77	89.79				55
1	.31	1.44	93	77	77	91.59				57.5
						93.28				60

Client Name: Drax Smithers

Process: Stack 1

Test Number: 12

Date: Apr. 9/2026

Start Time: 12:42 pm

Finish Time: 1:45 pm

Starting Vol.: 700ml

Final Vol.: 327ml

Flask: B55

Console: 980

Stack Diameter

BP 28.55

DN 205

CP 0.84182

MF 1.0018

Moist. 10%

PM 28.66

AS ~

Ko 0.7500

Pitot 107

Port ✓

Static -0.20

PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters

Up-Stream

Duct Diameters

Downstream

Personnel: CO/CP / DC/VO/MS

Mean Yaw Angle

Leakage Rate @ 15 inches

Start: 0.05 Finish: 0.08

Load:

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A12	0.38	1.80	77	76	77	94.69		270	Iced	
11	0.38	1.79	77	71	77	96.82				
10	0.37	1.75	82	72	78	98.77				
9	0.35	1.66	84	72	78	100.76				
8	0.32	1.52	87	72	78	102.66				
7	0.28	1.34	89	73	78	104.58				
6	0.26	1.34	89	73	78	106.39	3			
5	0.29	1.39	91	74	78	108.19				
4	0.29	1.39	90	74	77	109.88				
3	0.31	1.49	95	76	78	111.77				
2	0.31	1.49	95	77	78	113.75				
1	0.30	1.45	95	78	77	115.51				
B12	0.37	1.78	95	78	78	117.24	3			
11	0.38	1.83	96	78	78	119.17				
10	0.38	1.84	97	80	78	121.07				
9	0.34	1.65	97	80	78	123.15				
8	0.33	1.60	98	82	78	125.17				
7	0.32	1.56	100	82	78	126.94				
6	0.28	1.36	100	83	79	128.83	3			45
5	0.29	1.41	100	82	79	130.71				47.5
4	0.29	1.42	102	85	78	132.60				50
3	0.30	1.46	102	85	79	134.46				52.5
2	0.29	1.41	102	86	80	136.37				55
1	0.28	1.37	102	86	79	138.34				57.5
						140.03				60

Client Name: Orav Smithers

Process: stack1

Test Number: T3

Date: April 9/2026

Start Time: 2:03

Finish Time: 3:06

Starting Vol. 300NL

Final Vol. 322

Flask: B56

Console: 980

Stack Diameter

BP 28.55

DN 0.265

CP 0.84182

MF 1.0018

Moist. 3%

PM 28.66

AS ~

Ko .7500

Pitot 107

Port

Static -0.20

PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters

Up-Stream

Duct Diameters

Downstream

Personnel: CS/CS/AB/VA/KS Mean Yaw Angle

Leakage Rate @ 15 inches

Start: 0.03

Finish: 0.06

Load:

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A12	0.39	1.80	81	83	78	42.05				0
11	0.38	1.76	87	81	79	44.10				2.5
10	0.39	1.78	95	81	74	46.13				5
9	0.35	1.64	96	82	79	48.20				7.5
8	0.33	1.54	96	81	80	50.31				10
7	0.29	1.36	97	82	78	52.06				12.5
6	0.28	1.30	97	82	82	53.78	3			15
5	0.29	1.36	99	84	79	55.58				
4	0.29	1.36	99	83	81	57.42				
3	0.31	1.45	100	82	79	59.20				
2	0.32	1.51	101	84	79	61.16				
1	0.30	1.42	102	86	79	62.97				
B12	0.37	1.75	103	88	79	64.86	3			
11	0.38	1.80	104	87	80	66.87				
10	0.39	1.84	104	88	80	68.82				
9	0.34	1.61	105	89	81	70.82				
8	0.33	1.56	106	89	80	72.87				
7	0.31	1.47	107	89	80	74.83				
6	0.28	1.33	108	90	79	76.75	3			
5	0.29	1.37	107	90	79	78.47				
4	0.29	1.37	102	90	79	80.24				
3	0.31	1.47	103	91	79	82.11				
2	0.30	1.42	102	91	80	83.87				
1	0.28	1.32	103	90	81	85.83				
						87.73				

Client Name: Drax  
Smithers  
 Process: Dryer Stack 2  
 Test Number: 1  
 Date: April 9/26  
 Start Time: 11:12  
 Finish Time: 12:13  
 Starting Vol.: 300  
 Final Vol.: 318ml  
 Flask: B-37  
 Console: C-1021  
 Stack Diameter

BP 28.55  
 DN .245  
 CP 83867  
 MF 1.0128  
 Moist. 2.51  
 PM 28.66  
 AS  
 Ko .6440  
 Pitot 217  
 Port  
 Static -.25  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters  
 Up-Stream

Duct Diameters  
 Downstream

Personnel: 28/1CB

Mean Yaw Angle

Leakage Rate @ 15 inches

Start: .002 Finish: .003

Load:

83

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A-12	.34	1.45	51	51	88	15.50	0	270	11CED	
11	.35	1.49	54	51	87	17.02				
10	.39	1.67	55	52	87	18.56	1			
9	.39	1.67	60	58	87	20.17				
8	.40	1.74	66	57	88	21.84				
7	.40	1.75	70	60	88	23.52				
6	.41	1.79	71	61	87	25.27				
5	.39	1.72	73	62	87	27.00				
4	.39	1.72	74	63	87	28.65				
3	.40	1.76	75	64	88	30.32	1			
2	.40	1.76	76	65	88	32.03				
1	.39	1.73	77	66	89	33.72				
B-12	.33	1.47	78	68	88	35.40				
11	.35	1.56	79	69	88	37.00				
10	.38	1.70	80	69	87	38.60				
9	.39	1.74	81	70	87	40.27				
8	.40	1.79	82	71	87	42.00	1			
7	.40	1.79	83	71	87	43.72				
6	.40	1.79	84	72	89	45.47				
5	.39	1.75	85	73	89	47.20				
4	.39	1.75	85	73	87	49.00				
3	.35	1.58	85	74	87	50.69	1	4270	41CED	
2	.32	1.44	86	74	88	52.34				
1	.33	1.49	87	75	87	53.88				
						55.51				

Client Name: Drax  
Smithers  
 Process: Dryer Stackd  
 Test Number: 2  
 Date: April 9/26  
 Start Time: 12:41  
 Finish Time: 1:43  
 Starting Vol.: 300ml  
 Final Vol.: 324ml  
 Flask: B-38  
 Console: C-1021  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN 245  
 CP .83867  
 MF 1.0128  
 Moist. 1%  
 PM 28.66  
 AS \_\_\_\_\_  
 Ko .6440  
 Pitot 217  
 Port \_\_\_\_\_  
 Static -.25  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters  
 Up-Stream \_\_\_\_\_  
 Duct Diameters  
 Downstream \_\_\_\_\_  
 Mean Yaw Angle \_\_\_\_\_

Personnel: DB/CB  
 Leakage Rate @ 15 inches \_\_\_\_\_ Start: .001 Finish: .002

Load: \_\_\_\_\_

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A-12	.33	1.51	74	75	86	56.41	0	270	11CED	
11	.34	1.55	79	76	87	58.11				
10	.37	1.71	80	77	87	59.86	1			
9	.39	1.80	81	78	88	61.38				
8	.40	1.84	82	79	89	63.11				
7	.40	1.85	84	81	90	64.92				
6	.40	1.85	87	82	90	66.73				
5	.39	1.81	88	83	90	68.67				
4	.39	1.82	89	84	90	70.39				
3	.39	1.82	90	85	90	72.22				
2	.38	1.78	90	85	88	74.00				
1	.38	1.78	91	85	88	75.76	1			
B-12	.34	1.59	90	84	87	77.52				
11	.35	1.64	90	84	87	79.14				
10	.38	1.79	90	85	87	80.80				
9	.39	1.83	91	86	88	82.57				
8	.40	1.87	91	86	88	84.28	1			
7	.40	1.88	92	86	88	86.11				
6	.40	1.89	93	87	88	87.94				
5	.39	1.83	93	88	88	89.62				
4	.37	1.74	94	88	88	91.38				
3	.36	1.70	94	88	88	93.10	1			
2	.33	1.55	94	89	89	94.78				
1	.33	1.55	95	89	89	96.45	1	270	11CED	
						98.10				

Client Name: Drax  
Smithers  
 Process: Dryer Stack A  
 Test Number: 3  
 Date: April 9/26  
 Start Time: 2:03  
 Finish Time: 3:05  
 Starting Vol.: 300 ml  
 Final Vol.: 323  
 Flask: B-39  
 Console: C-1021  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN .245  
 CP .83867  
 MF 1.0128  
 Moist. 3%  
 PM 28.66  
 AS ~  
 Ko .6440  
 Pitot 217  
 Port ~  
 Static -.25  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	21		

Duct Diameters  
 Up-Stream

Duct Diameters  
 Downstream

Personnel: EB/CB

Mean Yaw Angle

Leakage Rate @ 15 inches

Start: .002 Finish: .002

Load:

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A-12	.32	1.43	85	84	86	0.25	0	270	ICED	
11	.34	1.52	86	84	89	1.78				
10	.36	1.62	87	84	89	3.36				
9	.39	1.76	87	85	87	5.02	1			
8	.40	1.81	88	86	87	6.78				
7	.40	1.82	90	86	87	8.54	1			
6	.39	1.76	91	87	88	10.30				
5	.37	1.67	91	87	90	12.05				
4	.36	1.63	92	89	90	13.78				
3	.34	1.54	93	89	91	15.45				
2	.32	1.45	94	89	90	17.12	1			
1	.32	1.46	95	90	89	18.70				
B-12	.33	1.50	95	90	89	20.27				
11	.33	1.50	95	90	89	22.00				
10	.34	1.55	96	91	89	23.61	1			
9	.37	1.69	95	92	90	25.24				
8	.40	1.82	95	92	90	26.93				
7	.40	1.83	96	91	89	28.62				
6	.39	1.78	96	92	89	30.41				
5	.39	1.78	97	92	89	32.16				
4	.37	1.70	97	92	89	33.90				
3	.36	1.65	97	93	89	35.59	1			
2	.35	1.60	97	93	90	37.22				
1	.34	1.55	97	94	90	38.94	1	270	ICED	
						40.57				

Client Name: Drax Smithers  
 Process: Dryer Stack 3  
 Test Number: 1  
 Date: Apr 9/26  
 Start Time: 11:39  
 Finish Time: 12:15 p  
 Starting Vol.: 300  
 Final Vol.: 310  
 Flask: B41  
 Console: 1039  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN 275 1280  
 CP 83365  
 MF 1.0055  
 Moist. 2%  
 PM 26.66  
 AS \_\_\_\_\_  
 Ko 0.6212  
 Pitot 200  
 Port \_\_\_\_\_  
 Static -0.26 719  
 PS 29.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		

Duct Diameters  
 Up-Stream  
 Duct Diameters  
 Downstream

Personnel: CB/KS/VD  
 Leakage Rate @ 15 inches  
 Start: .004 Finish: .007

Load: \_\_\_\_\_  
 B41 B42 B43

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A12	.33	1.38	59	59	92	2.44	3	240	TCE	
11	.34	1.46	66	63	84	4.20				
10	.36	1.53	66	60	86	6.10				
9	.37	1.60	78	61	85	8.15				
8	.40	1.74	81	62	82	10.15				
7	.39	1.71	86	65	82	12.26				
6	.39	1.71	89	65	81	14.34	3			
5	.41	1.81	92	67	83	16.43				
4	.36	1.59	94	69	83	18.60				
3	.33	1.47	96	71	82	20.68				
2	.33	1.47	99	73	82	22.78				
1	.35	1.57	100	76	92	24.74				
B12	.34	1.53	102	77	81	26.76	3			
11	.33	1.49	104	79	82	28.73				
10	.36	1.63	105	86	83	30.68				
9	.36	1.64	107	82	80	32.79				
8	.37	1.70	108	84	79	34.88				
7	.37	1.70	109	90	80	37.08				
6	.38	1.74	110	87	81	39.13				
5	.38	1.74	111	88	82	41.23				
4	.36	1.65	112	89	82	43.40				
3	.35	1.61	113	91	81	45.69				
2	.35	1.62	114	92	79	47.71				
1	.34	1.57	113	93	81	49.83				
						51.98				

Client Name: Dross  
Smelters  
 Process: Dryer Stack 3  
 Test Number: 2  
 Date: April 9, 2026  
 Start Time 12:42  
 Finish Time 1:44  
 Starting Vol. 300  
 Final Vol. 316  
 Flask: B42  
 Console: 1039  
 Stack Diameter

BP 28.55  
 DN 275  
 CP 8765  
 MF 1.055  
 Moist. 1%  
 PM 28.66  
 AS  
 Ko 0.8212  
 Pitot 200  
 Port  
 Static - .26  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		

Duct Diameters  
 Up-Stream  
 Duct Diameters  
 Downstream

Personnel: CB / KS / VD

Mean Yaw Angle

Leakage Rate @ 15 inches

Start: .004 Finish: .005

Load:

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A 12	.32	1.39	73	75	93	53.01	3	270	ICED	
11	.33	1.47	84	81	91	54.88				
10	.35	1.57	90	80	87	56.79				
9	.38	1.73	94	82	84	58.85				
8	.41	1.90	97	80	82	60.98				
7	.40	1.84	99	81	81	63.14				
6	.38	1.75	102	81	81	65.40	4			
5	.40	1.83	104	82	82	67.68				
4	.36	1.67	106	84	79	69.88				
3	.34	1.58	107	85	80	72.08				
2	.33	1.82	108	86	84	74.21				
1	.34	1.58	109	87	82	76.38				
B 12	.33	1.54	110	89	81	78.40	4			
11	.34	1.58	110	90	82	80.57				
10	.35	1.64	112	90	82	82.67				
9	.37	1.73	112	91	81	84.88				
8	.38	1.78	114	91	82	86.95				
7	.38	1.78	114	93	85	89.06				
6	.37	1.72	113	93	86	91.20				
5	.37	1.71	114	95	91	93.39	3			
4	.35	1.61	114	95	92	95.60				
3	.34	1.56	115	95	93	97.74				
2	.34	1.57	115	96	93	100.00				
1	.33	1.52	115	96	92	101.98				
						103.96				

Client Name: Dray  
Smithers  
 Process: Dryer Stack 3  
 Test Number: 3  
 Date: April 9/26  
 Start Time: 2.03  
 Finish Time: 3.05  
 Starting Vol.: 300  
 Final Vol.: 320  
 Flask: B43  
 Console: 1039  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN .275  
 CP 0.83365  
 MF 1.0055  
 Moist. 27.  
 PM 28.66  
 AS \_\_\_\_\_  
 Ko 0.8212  
 Pitot 200  
 Port \_\_\_\_\_  
 Static -.26  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		
0	20.9		
0	20.9		
0	20.9		

Duct Diameters  
 Up-Stream \_\_\_\_\_  
 Duct Diameters  
 Downstream \_\_\_\_\_

Personnel: KSICB/VB

Mean Yaw Angle \_\_\_\_\_

Leakage Rate @ 15 inches \_\_\_\_\_

Start: 004 Finish: .006

Load: \_\_\_\_\_

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A12	.33	1.44	81	81	89	4.70	3	276	ICED	0
11	.34	1.53	92	89	82	6.80				2.5
10	.36	1.65	101	87	83	8.90				5
9	.37	1.71	103	87	84	11.15				7.5
8	.42	1.93	106	88	85	13.25				10
7	.41	1.86	108	88	85	15.50				12.5
6	.39	1.76	110	88	90	17.69	3			15
5	.39	1.76	112	90	92	19.94				17.5
4	.37	1.68	113	90	91	22.30				20
3	.35	1.58	115	93	92	24.51				22.5
2	.34	1.55	116	93	91	26.70				25
1	.33	1.51	117	95	90	28.94				27.5
B12	.32	1.47	117	102	90	31.15	3			30
11	.33	1.51	118	100	92	33.25				32.5
10	.36	1.64	118	103	95	35.29				35
9	.38	1.74	119	98	93	37.35				37.5
8	.39	1.79	120	99	92	39.48				40
7	.39	1.79	121	100	92	41.76				42.5
6	.38	1.74	121	100	92	43.88	5			45
5	.37	1.70	121	101	93	46.27				47.5
4	.36	1.65	122	101	93	48.39				50
3	.35	1.61	122	102	92	50.63				52.5
2	.35	1.61	121	103	93	52.95				55
1	.32	1.47	121	106	92	55.10				57.5
						57.28				

Client Name: Dray  
Smithers  
 Process: Dryer Stack 4  
 Test Number: 1  
 Date: April 9 1986  
 Start Time: 11.13  
 Finish Time: 12.15  
 Starting Vol.: 300  
 Final Vol.: 303  
 Flask: B 44  
 Console: 955  
 Stack Diameter

BP 28.55  
 DN 250 .275  
 CP .85654  
 MF 1.0094  
 Moist. 2 %  
 PM 08.66  
 AS  
 Ko 0.6977  
 Pitot 301  
 Port  
 Static -123  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		

Duct Diameters  
 Up-Stream  
 Duct Diameters  
 Downstream

Personnel: KS ICB / 110

Mean Yaw Angle

Leakage Rate @ 15 inches

Start: .003 Finish: .005

Load:

45-46

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A 12	.37	1.48	48	48	102	48.32	4	270	±LED	0
11	.36	1.44	52	47	105	49.85				2.5
10	.36	1.44	58	48	106	51.37				5
9	.40	1.62	63	49	104	52.89				7.5
8	.41	1.66	66	50	107	54.65				10
7	.41	1.66	67	51	108	56.39				12.5
6	.42	1.73	71	53	102	58.17	3			15
5	.40	1.65	73	53	101	59.86				17.5
4	.39	1.61	77	54	103	61.49				20
3	.38	1.58	79	56	100	63.21				22.5
2	.38	1.59	81	58	101	65.00				25
1	.31	1.30	84	60	99	66.63	4			27
B 12	.36	1.53	86	62	97	68.17				30
11	.37	1.56	87	61	99	69.86				32.5
10	.37	1.57	89	63	100	71.65				35
9	.39	1.66	90	64	98	73.33				37.5
8	.42	1.78	91	64	100	75.04				40
7	.42	1.80	92	65	97	77.01				42.5
6	.41	1.76	93	65	98	79.00	4			45
5	.39	1.67	95	66	99	80.97				47.5
4	.38	1.64	94	68	98	82.69				50
3	.37	1.59	94	68	99	84.44				52.5
2	.37	1.58	96	68	100	86.23				55
1	.32	1.36	93	68	103	87.95				57.5
						89.46				60

Client Name: Oray  
Smithers  
 Process: Dryer Stack 4  
 Test Number: 2  
 Date: April 9 12 6  
 Start Time 12.42  
 Finish Time 1.44  
 Starting Vol. 300  
 Final Vol. 305  
 Flask: B45  
 Console: 955  
 Stack Diameter \_\_\_\_\_

BP 28.55  
 DN .250  
 CP 0.85654  
 MF 1.0094  
 Moist. 1%  
 PM 28.66  
 AS \_\_\_\_\_  
 Ko 0.6977  
 Pitot 301  
 Port \_\_\_\_\_  
 Static -.23  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		

Duct Diameters  
 Up-Stream \_\_\_\_\_  
 Duct Diameters  
 Downstream \_\_\_\_\_

Personnel: KS / CB / VD

Mean Yaw Angle \_\_\_\_\_

Leakage Rate @ 15 inches \_\_\_\_\_

Start: .004 Finish: .006

Load: \_\_\_\_\_

Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
A0	.38	1.57	52	52	90	90.38	3	270	ICED	0
11	.37	1.57	66	53	91	92.18				2.5
10	.37	1.58	74	55	92	93.97				5
9	.39	1.68	75	58	93	95.78				7.5
8	.42	1.81	81	59	94	97.58				10
7	.42	1.81	84	60	97	99.39				12.5
6	.40	1.72	87	62	100	101.14	3			15
5	.39	1.69	88	61	96	102.93				17.5
4	.38	1.65	90	62	94	104.72				20
3	.37	1.62	91	63	92	106.51				22.5
2	.37	1.62	92	65	93	108.31				25
1	.32	1.40	93	67	93	110.04				27.5
B0	.37	1.63	95	64	92	111.58	2			30
11	.38	1.67	94	66	92	113.48				32.5
10	.37	1.63	96	67	94	115.20				35
9	.40	1.77	97	68	93	117.07				37.5
8	.41	1.80	95	68	96	119.00				40
7	.42	1.84	96	68	96	120.86				42.5
6	.40	1.76	97	69	95	122.65	3			45
5	.38	1.68	97	69	94	124.48				47.5
4	.37	1.63	97	69	93	126.27				50
3	.36	1.59	97	69	92	128.13				52.5
2	.36	1.59	98	69	92	129.90				55
1	.31	1.37	98	69	93	131.57				57.5
						133.33				

Client Name: Drax  
Smithers  
 Process: Dryer Stack 4  
 Test Number: 3  
 Date: April 9/26  
 Start Time: 2.03  
 Finish Time: 3.06  
 Starting Vol.: 300  
 Final Vol.: 323  
 Flask: B46  
 Console: 955  
 Stack Diameter: \_\_\_\_\_

BP 28.55  
 DN 0.250  
 CP 0.85654  
 MF 1.0094  
 Moist. 1%  
 PM 28.66  
 AS \_\_\_\_\_  
 Ko 0.6977  
 Pitot 301  
 Port \_\_\_\_\_  
 Static -0.23  
 PS 28.53

CO <sub>2</sub>	O <sub>2</sub>	CO	N <sub>2</sub>
0	20.9		

Duct Diameters  
 Up-Stream \_\_\_\_\_  
 Duct Diameters  
 Downstream \_\_\_\_\_

Personnel: KS/CB/VI

Mean Yaw Angle \_\_\_\_\_

Leakage Rate @ 15 inches \_\_\_\_\_

Start: 1007 Finish: 1009

Load: \_\_\_\_\_


Sample Points	Delta P	Delta H	Temp. In	Temp. Out	Stack Temp.	Gas Volume	Pump Vacuum	Box Temp.	Last Imp. Temp.	Points
12	.39	1.67	58	57	83	35.81	3	270	ULED	0
11	.38	1.63	63	59	85	37.70				2.5
10	.37	1.61	77	61	87	39.45				5
9	.40	1.74	81	61	88	41.30				7.5
8	.41	1.79	83	62	89	43.11				10
7	.41	1.80	90	63	89	44.90				12.5
6	.39	1.72	92	65	88	46.67	2			15
5	.39	1.68	94	66	91	48.51				17.5
4	.37	1.63	96	68	92	50.23				20
3	.36	1.59	97	68	92	52.01				22.5
2	.36	1.59	98	68	93	53.78				25
1	.31	1.38	104	69	90	55.58				27.5
12	.38	1.68	102	69	96	57.33	1			30
11	.37	1.64	103	70	95	59.14				32.5
10	.36	1.60	104	71	95	60.88				35
9	.39	1.72	102	71	96	62.65				37.5
8	.40	1.78	102	72	93	64.57				40
7	.41	1.84	103	73	90	66.28				42.5
6	.39	1.74	102	73	91	68.13	1			45
5	.37	1.65	102	73	93	70.00				47.5
4	.36	1.60	102	73	95	71.85				50
3	.35	1.56	103	73	94	73.73				52.5
2	.35	1.56	103	73	93	75.61				55
1	.30	1.30	103	73	93	77.52				57.5
						79.21				60




This is to verify that  
**Matthew McCall**  
has successfully completed  
a course of study in  
**Source Testing for Particulates**  
(35 hours)

*Endorsed by*  
The B.C. Ministry of Environment

Dated at Burnaby, British Columbia, Canada  
December 14, 1990

  
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*David Brandle*

has successfully completed

The program of studies and is awarded the certificate in

**STACK SAMPLING**

**May 3 – May 7, 2004**

May, 2004  
Date

*Doreen Brandle*  
Dean  
Faculty of Continuing Education and Extension

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Faculty of Continuing Education and Extension

**Chris Bodden**

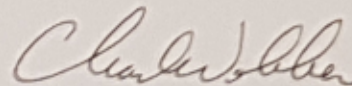
has successfully completed

**Stack Sampling Seminar**

35 Hours / 2017

June 23, 2017

*Date*



*Dean*

*Faculty of Continuing Education and Extension*



# MOUNT ROYAL UNIVERSITY

Faculty of Continuing Education and Extension

Kiefer Stauber

has successfully completed

Stack Sampling  
Certificate of Completion

35 Hours / 2022

October 2022

Date



Dean

Faculty of Continuing Education and Extension