

Test ID	FNSB 19048
Date	1/22/20

Module 1			
Variable	Description	Value	Units
	final volume module 1	158.425	cubic feet
	initial volume module 1	53.408	cubic feet
V_{tot}	total gas volume collected (module 1)	105.017	cubic feet
Average ΔH	average delta H over entirety of run	0.18	in water
T_m	average gas meter temperature	71	°F
P_{bar}	barometric pressure	30.1	in Hg
Y	DGM calibration factor	1.006	unitless
K_1	volume corrected to standard conditions	17.64	R/(in Hg)
V_{std}	volume gas sampled (corrected to standard conditions)	105.660334	dscf
Total Catch	total catch (raw data)	2.42	mg
C_1	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	2.2904E-05	g/dscf

Module 2			
Variable	Description	Value	Units
	final volume module 2	637.180	cubic feet
	initial volume module 2	529.808	cubic feet
V_{tot}	total gas volume collected (module 2)	107.372	cubic feet
Average ΔH	average delta H over entirety of run	0.22	in water
T_m	average gas meter temperature	72	°F
P_{bar}	barometric pressure	30.1	in Hg
Y	DGM calibration factor	1.003	unitless
K_1	volume corrected to standard conditions	17.64	°F/(in Hg)
V_{std}	volume gas sampled (corrected to standard conditions)	107.6325143	dscf
Total Catch	total catch (raw data)	0.72	mg
C_1	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	6.69067E-06	g/dscf

Ambient			
Variable	Description	Value	Units
	final volume ambient		cubic meters
	initial volume ambient		cubic meters
V_{tot}	total gas volume collected (ambient)	0.0000	cubic feet
Average ΔH	average delta H over entirety of run	7.06	in water
T_m	average gas meter temperature	#REF1	°F
P_{bar}	barometric pressure	30.1	in Hg
Y	DGM calibration factor	1.002	unitless
K_1	volume corrected to standard conditions	17.64	°F/(in Hg)
V_{std}	volume gas sampled (corrected to standard conditions)	#REF1	dscf
Total Catch	total catch (raw data)	0	mg
C_2	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	#REF1	g/dscf

Pre ESP			
C_1	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	2.2904E-05	g/dscf
C_2	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	0	g/dscf
Q_{dil}	average gas flow rate through dilution tunnel	30.91	dscf/min
B_{dil}	water vapor in gas stream (assumed) (proportion by volume)	0.02	unitless
v_t	average velocity of gas through dilution tunnel	#DIV/0!	ft/s
A	cross-sectional area of dilution tunnel	0.349	square ft
T_c	average gas temperature in dilution tunnel	681.284489	R
T_{std}	absolute average gas temperature in dilution tunnel	528	R
P_1	average gas static pressure in dilution tunnel	30.1	in Hg
P_{std}	standard absolute pressure	29.92	in Hg
F_p	adjustment factor for center of tunnel pitot tube placement	#DIV/0!	unitless
V_{duty}	average gas velocity after multi point pitot traverse	0	ACFM
V_{corr}	average gas velocity at center of dilution tunnel calculated after pitot tube traverse	0	ACFM
K_p	pitot tube constant	85.49	$\frac{ft/sec((lb/ft^3) * 144)}{max((lb/ft^3) * 144) * 29.92}$
C_p	pitot tube coefficient	0.99	unitless
ΔP_{pg}	average velocity pressure in dilution tunnel		in H ₂ O
M_a	dilution tunnel dry gas MW (assumed)	29	lb/(lb-mol)
Θ	total sampling time	420.00	min
E_1	total particulate emissions	0.29773887	g

Post ESP			
C_1	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	6.69067E-06	g/dscf
C_2	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	0	g/dscf
Q_{dil}	average gas flow rate through dilution tunnel	30.91	dscf/min
B_{dil}	water vapor in gas stream (assumed) (proportion by volume)	0.02	unitless
v_t	average velocity of gas through dilution tunnel	#DIV/0!	ft/s
A	cross-sectional area of dilution tunnel	0.349	square ft
T_c	average gas temperature in dilution tunnel	#N/A	R
T_{std}	absolute average gas temperature in dilution tunnel	528	R
P_1	average gas static pressure in dilution tunnel	0	in Hg
P_{std}	standard absolute pressure	29.92	in Hg
F_p	adjustment factor for center of tunnel pitot tube placement	#DIV/0!	unitless
V_{duty}	average gas velocity after multi point pitot traverse	0	ACFM
V_{corr}	average gas velocity at center of dilution tunnel calculated after pitot tube traverse	0	ACFM
K_p	pitot tube constant	85.49	$\frac{ft/sec((lb/ft^3) * 144)}{max((lb/ft^3) * 144) * 29.92}$
C_p	pitot tube coefficient	0.99	unitless
ΔP_{pg}	average velocity pressure in dilution tunnel		in H ₂ O
M_a	dilution tunnel dry gas MW (assumed)	29	lb/(lb-mol)
Θ	total sampling time	420.00	min
E_1	total particulate emissions	0.086459638	g

Signature *Kelli O'Brien*
Quality Review *Kelli O'Brien*