

Test ID	ADEC
Date	3/3/20

Module 1			
Variable	Description	Value	Units
	final volume module 1	1075.385	cubic feet
	initial volume module 1	1012.342	cubic feet
$V_{m1}$	total gas volume collected (module 1)	63.043	cubic feet
Average $\Delta H$	average delta H over entirety of run	0.03	in water
$T_m$	average gas meter temperature	68	°F
$P_{bar}$	barometric pressure	29.4	in Hg
Y	DGM calibration factor	1.003	unitless
$K_1$	volume corrected to standard conditions	17.64	R/(in Hg)
$V_{mstd}$	volume gas sampled (corrected to standard conditions)	62.1173316	dscf
Total Catch	total catch (raw data)	21.525	mg
$C_1$	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	0.00034652	g/dscf

Module 2			
Variable	Description	Value	Units
	final volume module 2	663.735	cubic feet
	initial volume module 2	592.943	cubic feet
$V_{m2}$	total gas volume collected (module 2)	70.792	cubic feet
Average $\Delta H$	average delta H over entirety of run	0.03	in water
$T_m$	average gas meter temperature	69	°F
$P_{bar}$	barometric pressure	29.4	in Hg
Y	DGM calibration factor	1.003	unitless
$K_1$	volume corrected to standard conditions	17.64	°F/(in Hg)
$V_{mstd}$	volume gas sampled (corrected to standard conditions)	69.63742475	dscf
Total Catch	total catch (raw data)	23.015	mg
$C_1$	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	0.000330498	g/dscf

Ambient			
Variable	Description	Value	Units
	final volume ambient	135.4228	cubic meters
	initial volume ambient	134.2269	cubic meters
$V_{m3}$	total gas volume collected (ambient)	42.2328	cubic feet
Average $\Delta H$	average delta H over entirety of run	6.14	in water
$T_m$	average gas meter temperature	65.9	°F
$P_{bar}$	barometric pressure	29.4	in Hg
Y	DGM calibration factor	1.002	unitless
$K_1$	volume corrected to standard conditions	17.64	°F/(in Hg)
$V_{mstd}$	volume gas sampled (corrected to standard conditions)	42.39714737	dscf
Total Catch	total catch (raw data)	0.07	mg
$C_6$	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	1.65105E-06	g/dscf

Total Particulate Matter (based on ISS-2 and AS-1 data)			
$C_1$	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	0.00033851	g/dscf
$C_6$	concentration of PM in tunnel gas (dry basis, corrected to standard conditions)	1.6511E-06	g/dscf
$Q_{d1}$	average gas flow rate through dilution tunnel	526.099016	dscf/min
$B_{d1}$	water vapor in gas stream (assumed) (proportion by volume)	0.02	unitless
$V_1$	average velocity of gas through dilution tunnel	26.523076	ft/s
A	cross-sectional area of dilution tunnel	0.349	square ft
$T_1$	average gas temperature in dilution tunnel	536.69128	R
$T_{d1}$	absolute average gas temperature in dilution tunnel	528	R
$P_1$	average gas static pressure in dilution tunnel	29.3963259	in Hg
$P_{d1}$	standard absolute pressure	29.92	in Hg
$F_p$	adjustment factor for center of tunnel pitot tube placement	0.93	unitless
$V_{d1av}$	average gas velocity after multi point pitot traverse	530	ACFM
$V_{d1std}$	average gas velocity at center of dilution tunnel calculated after pitot tube traverse	570	ACFM
$K_p$	pilot tube constant	85.49	$\frac{K_1 \times 10^6 (R/T_m) \times (P_{d1}/P_1)}{V_{d1std} \times (P_1/P_{d1})}$
$C_p$	pilot tube coefficient	0.99	unitless
$\Delta P_{pg}$	average velocity pressure in dilution tunnel	0.18043103	in H <sub>2</sub> O
$M_1$	dilution tunnel dry gas MW (assumed)	29	lb/(lb-mol)
$\theta$	total sampling time	577.00	min
$E_1$	total particulate emissions	102.256491	g

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