

# **Volume 3**

## **VTD Emissions Sampling Data**

# **Appendix D**

## **Field Data Sheets**

<b>Project Information</b>				<b>Sampling Conditions</b>				<b>ALT 011</b>																					
Date <u>3/26/24</u> Project # <u>031381</u>				Static Pressure, in. H <sub>2</sub> O <u>-2.8</u> Ambient Temp, °F <u>62°</u>				TC ID: Ambient °F Ref. °F																					
Customer/Facility <u>Permatite</u>				Barometric Pressure, in. Hg <u>29.95</u> Ref. Barometer ID <u>NWSL</u>				Stack																					
Unit ID/Sample Location				Wind Speed / Direction <u>7 mph NW</u> Precipitation, Y / N type				Probe <u>SEE</u>																					
Run # <u>1</u> Operator <u>Jordan</u>				Probe / Filter Temp Range, °F <u>248 ± 25</u>				Filter Box <u>East</u>																					
<b>Sampling Equipment IDs</b>				<b>Calibration</b>				<b>Equipment Checks</b>																					
Meterbox ID <u>24</u>				Meterbox Y <u>1.000</u>				<table border="1"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><u>+</u></td> <td><u>1</u></td> <td><u>+</u></td> </tr> <tr> <td><u>+</u></td> <td><u>1</u></td> <td><u>+</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>0.001 @ 14</u></td> <td><u>@</u></td> <td><u>@</u></td> </tr> </table>				Pre	Mid	Post	<u>+</u>	<u>1</u>	<u>+</u>	<u>+</u>	<u>1</u>	<u>+</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>0.001 @ 14</u>	<u>@</u>	<u>@</u>
Pre	Mid	Post																											
<u>+</u>	<u>1</u>	<u>+</u>																											
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<u>0.001 @ 14</u>	<u>@</u>	<u>@</u>																											
Umbilical ID				Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u>				Pitot (+), in. @ 0/15sec.																					
Pitot / Probe ID				Pitot coefficient, Cp <u>.94</u>				Pitot (-), in. @ 0/15sec.																					
Nozzle ID <u>302</u>				Nozzle diameter, Dn, in.				Pitot visual inspection																					
Manometer ID <u>29</u>				Manometer zero and level <input checked="" type="checkbox"/> yes				Nozzle visual inspection																					
Sensitivity <u>0.01/0.1</u>				K-Factor				Meter, cfm @ in. Hg																					
				Intermediate leak check volume, ft <sup>3</sup>				Notes: <u>2AD</u>																					

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
1	0	0925	0.0000		1.0	1.0	<del>67</del>	250	252	248	67	67	67	46 3.5
	15		8.3640		1.0	1.0	<del>46</del>	248	248	250	46	73	73	45 3.5
	30		16.7070		1.0	1.0		249	248	249	47	73	73	45 3.5
	45		24.7268		1.0	1.0		250	248	248	47	73	73	45 3.5
	60		32.9163		1.0	1.0		250	250	249	48	75	75	45 3.5
	75		41.1390		1.0	1.0		250	250	250	48	75	75	45 3.5
	90		48.1998		<del>1.0</del>	<del>1.0</del>		250	250	250	49	76	76	47 3.5
	105		54.9962		.7	.7		250	250	250	49	76	76	49 3.0
	120		61.8590		.7	.7		250	250	250	49	76	76	46 3.0
	135		68.7383		.7	.7		249	249	250	51	76	76	46 3.0
	150		75.5582		.7	.7		250	249	248	54	77	77	48 3.0
	165		82.4402		.7	.7		250	250	250	53	78	78	46 3.0
	180		89.2891		.7	.7		250	250	250	53	77	77	47 3.0
	195		96.0325		.7	.7		249	250	249	53	77	77	48 3.0
	210		103.4665		.7	.7		250	251	249	53	77	77	48 3.0
	225		109.5643		.7	.7		250	250	250	56	77	77	51 3.0
	240		116.3142		.7	.7		250	250	250	58	78	76	51 3.5
	255		123.7631		.7	.7		250	250	249	60	76	76	52 3.5
	270		129.8423		.7	.7		249	249	250	56	77	77	46 3.5
	285		136.6319		.7	.7		249	249	250	56	77	77	46 3.0
	300		143.9126		.7	.7		250	250	250	53	79	79	46 3.0
	315		150.2438		.7	.7		250	250	250	53	79	79	46 3.0
	330		157.0222		.7	.7		248	249	249	55	80	80	49 3.0
	345	1219	163.9842		.7	.7		251	251	251	59	79	79	51 3.0
	360		171.3617		.8	.8		250	250	249	52	79	79	59 3.0
	375		178.8324		.8	.8		250	250	250	52	79	79	61 3.5
Averages														

silica change →

Project Information				Sampling Conditions				ALT 011				TC ID:		Ambient °F		Ref. °F									
Date <u>3/26/24</u> Project # <u>031381</u>				Static Pressure, in. H <sub>2</sub> O <u>-2.8</u> Ambient Temp, °F <u>62°</u>				Stack <u>See</u>																	
Customer/Facility <u>Perm active</u>				Barometric Pressure, in. Hg <u>29.95</u> Ref. Barometer ID <u>N46</u>				Probe <u>Last</u>																	
Unit ID/Sample Location <u>UTD/ C60</u>				Wind Speed / Direction <u>2 mph NW</u> Precipitation, Y / N <u>0</u> type <u>—</u>				Filter Box <u>Run</u>																	
Run # <u>1</u> Operator <u>Jordan / KE</u>				Probe / Filter Temp Range, °F <u>248 ± 25</u>				Filter Exit																	
Sampling Equipment IDs				Calibration				Equipment Checks																	
Meterbox ID <u>24</u>				Meterbox Y <u>1.000</u>				Pitot (+), in. @ 0/15sec.				Pre Mid Post													
Umbilical ID <u>—</u>				Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u>				Pitot (-), in. @ 0/15sec.																	
Pitot / Probe ID <u>—</u>				Pitot coefficient, Cp <u>-.99</u>				Pitot visual inspection																	
Nozzle ID <u>302</u>				Nozzle diameter, Dn, in. <u>—</u>				Nozzle visual inspection																	
Manometer ID <u>24</u>				Manometer zero and level <input checked="" type="checkbox"/> yes				Meter, cfm @ in. Hg <u>0.001 @ 14</u>																	
Sensitivity <u>0.01/0.1</u>				K-Factor				Intermediate leak check volume, ft <sup>3</sup>																	
Traverse Point #		Elapsed Time		Clock Time 24hr		DGM Reading, Vm, ft <sup>3</sup>		Velocity Head, ΔP in H <sub>2</sub> O		Orifice Pressure Differential, ΔH		Stack Temp, °F		Probe Temp, °F		Filter Temp, °F		Impinger Exit Temp, °F		Dry Gas Meter Temp, °F		Trap		Pump Vacuum, in. Hg	
										Target Actual						Box Exit				Inlet Outlet					
		390		1556		186.1048				.8 .8				248		248 250		59		81 81		48		3.5	
		405				193.9922				.8 .8				250		250 250		57		81 81		47		3.5	
		420				200.9814				.8 .8				250		250 250		57		81 81		47		3.5	
		435				208.3944				.8 .8				248		249 249		53		81 81		47		3.5	
		450				215.8061				.8 .8				248		248 248		55		82 82		49		3.5	
		465				223.2615				.8 .8				250		250 250		54		82 82		48		3.5	
		480				230.6925				.8 .8				249		249 249		55		83 83		48		3.5	
		495				238.2217				.8 .8				250		250 250		55		82 82		48		3.5	
		510				245.6021				.8 .8				250		249 249		54		82 82		49		3.5	
		525				253.0235				.8 .8				250		250 250		59		82 82		51		3.5	
		540				260.5346				.8 .8				250		250 248		59		82 82		48		3.5	
		555				267.9320				.8 .8				248		249 250		54		82 82		47		3.5	
		570				275.675				.8 .8				248		248 249		57		82 82		44		3.5	
		585				282.930				.8 .8				250		249 252		59		81 81		48		4.0	
		600				289.646								250		252 250		60		81 81		49		4.0	
		615				296.540								251		250 253		60		81 81		49		4.0	
		630				304.270								252		251 253		61		81 81		49		4.0	
		645				311.940								251		250 248		61		81 81		50		4.0	
		660				319.460								250		251 249		60		80 80		51		4.0	
		675				326.840								250		249 250		60		80 80		51		4.0	
		690				334.230								249		250 249		60		80 80		52		4.0	
		705				341.660								250		251 250		60		79 79		50		4.0	
		720				348.990								249		248 251		61		79 79		50		4.0	
		735				356.385								250		250 252		58		78 78		46		4.0	
		750				363.765								249		250 250		56		78 78		47		4.0	
		765				371.240								250		247 251		57		77 77		40		4.0	
Averages																									



[illegible]



M16

## Field Data Sheet

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4. PS 3/24/24

<b>Project Information</b> Date <u>3/27/2024</u> Project # <u>PROJ-031301</u> Customer/Facility <u>PEUMA-FIVE PL.</u> Unit ID/Sample Location <u>VTD / C60</u> Run # <u>2</u> Operator <u>KC</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>- 3.2</u> Ambient Temp, °F <u>-</u> Barometric Pressure, in. Hg <u>29.93</u> Ref. Barometer ID <u>NWS</u> Wind Speed / Direction <u>-</u> Precipitation, Y / N, type <u>-</u> Probe / Filter Temp Range, °F <u>24.87- 25</u>				ALT 011 TC ID: Ambient °F Ref. °F Stack <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Probe <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Filter Box <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Filter Exit <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Meter Outlet <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Impinger Exit <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Other <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Ref. Thermometer ID <u> </u> Continuity w/ Proper Polarity <input checked="" type="checkbox"/> Notes: <u> </u>																	
<b>Sampling Equipment IDs</b> Meterbox ID <u>24</u> Umbilical ID <u>-</u> Pitot / Probe ID <u>-</u> Nozzle ID <u>302</u> Manometer ID <u>24</u> Sensitivity <u>0.01</u>		<b>Calibration</b> Meterbox Y <u>1.000</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u> Pitot coefficient, Cp <u> </u> Nozzle diameter, Dn, in. <u> </u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor <u> </u>		<b>Equipment Checks</b> Pitot (+), in. @ 0/15sec. <u> </u> Pitot (-), in. @ 0/15sec. <u> </u> Pitot visual inspection <u> </u> Nozzle visual inspection <u> </u> Meter, cfm @ in. Hg <u> </u> Intermediate leak check volume, ft <sup>3</sup> <u> </u>		<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><u>/</u></td> <td><u>/</u></td> <td><u>/</u></td> </tr> <tr> <td><u>/</u></td> <td><u>/</u></td> <td><u>/</u></td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td><u>@</u></td> <td><u>@</u></td> <td><u>@</u></td> </tr> </table>		Pre	Mid	Post	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<u>@</u>	<u>@</u>	<u>@</u>
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Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	390		202.430		0.9	0.9		250	250	246	52	72	45	5.0
	405		210.140					248	252	245	52	72	44	5.0
	420		217.990					249	250	246	52	72	43	5.0
	435		225.780					250	248	250	53	73	43	5.0
	450		233.530					251	244	246	53	73	43	5.0
	465		240.980					252	250	242	53	74	44	5.0
	480		248.590					250	248	244	54	74	44	5.0
	495		256.830					249	248	246	54	73	45	5.0
	510		264.650					248	250	245	54	73	44	5.0
	525		272.480					250	249	250	54	73	44	5.0
	540		279.460					247	249	251	55	72	45	5.0
	555		288.010					249	250	246	55	73	45	5.0
	570		296.130					250	250	243	56	73	45	5.0
	585		303.960					249	249	242	56	74	44	5.0
	600		311.920					250	250	243	56	74	44	5.0
	615		319.210					249	252	246	55	74	43	5.0
	630		327.760					250	250	245	57	74	44	5.0
	645		335.510					250	247	246	58	75	45	5.0
	660		343.360					249	251	245	58	75	44	5.0
	675		351.040					250	250	247	59	75	45	5.0
	690		359.160					249	248	246	58	75	44	5.0
	705		366.970					250	249	245	58	74	46	5.0
	720		374.850					249	252	244	60	74	48	5.0
	735		382.645					250	250	243	59	74	49	5.0
	750		390.495					248	247	246	59	74	49	5.0
	765		398.640					244	249	247	60	74	49	5.0
Averages														



QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Data Custodian mtk

Project Information				Sampling Conditions				ALT 011 TC ID: Ambient °F Ref. °F																																											
Date <u>3/28/24</u>	Project # <u>031381</u>			Static Pressure, in. H <sub>2</sub> O <u>-3.2</u>	Ambient Temp, °F <u>-</u>		Stack <u>Sec</u>																																												
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Unit ID/Sample Location <u>UTO/CGD</u>			Wind Speed / Direction <u>-</u>	Precipitation, Y/N type <u>-</u>		Filter Box <u>Run</u>																																													
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Pitot / Probe ID <u>-</u>			Pitot coefficient, Cp <u>-</u>			Continuity w/ Proper Polarity <input type="checkbox"/>																																													
Nozzle ID <u>322</u>			Nozzle diameter, Dn, in. <u>-</u>			Notes:																																													
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					Target	Actual			Box	Exit		Inlet	Outlet																																						
	0		0.000		.9	.9		248	250	249	53	70	70	240	3.0																																				
	15		7.8420		.9	.9		250	249	250	46	71	71	42	3.0																																				
	30		15.6120		.9	.9		249	250	250	46	71	71	46	3.0																																				
	45		23.4620		.9	.9		250	250	250	47	72	72	42	3.0																																				
	60		31.2320		.9	.9		251	250	250	47	72	72	42	2.0																																				
	75		39.2820		.9	.9		250	250	250	47	72	72	43	3.0																																				
	90		46.9620		.9	.9		251	250	249	47	72	72	43	3.0																																				
	105		54.8620		.9	.9		250	251	250	47	74	74	43	3.0																																				
	120		62.7320		.9	.9		250	251	250	48	74	74	44	3.0																																				
	135		70.6020		.9	.9		250	249	249	49	74	74	46	3.0																																				
	150		78.5020		.9	.9		250	250	250	52	74	74	44	3.0																																				
	165		86.4020		.9	.9		250	250	250	53	74	74	45	3.0																																				
	180		94.2620		.9	.9		250	250	249	53	75	75	46	3.0																																				
	195		102.2920		.9	.9		250	250	250	56	76	76	47	3.0																																				
	210		109.9020		.9	.9		250	252	250	54	76	76	44	3.0																																				
	225		117.7520		.9	.9		250	249	249	55	75	75	45	3.0																																				
	240		125.6220		.9	.9		250	252	251	52	76	76	44	3.0																																				
	255		133.4720		.9	.9		250	251	250	51	77	77	44	3.0																																				
	270		139.0820		.9	.9		250	252	252	52	77	77	46	3.0																																				
	285		147.1520		.9	.9		249	249	249	52	78	78	46	4.0																																				
	300		155.2820		.9	.9		250	251	251	52	74	74	46	4.5																																				
	315		163.2920		.9	.9		250	249	249	53	73	73	44	4.5																																				
	330		171.1220		.9	.9		250	250	250	52	74	74	44	4.5																																				
	345		179.6420		.9	.9		250	250	250	52	74	74	44	4.5																																				
	360		188.1820		.9	.9		250	251	251	53	74	74	45	4.5																																				
	375		196.2120		.9	.9		251	251	251	53	78	78	45	4.5																																				
Averages																																																			

4.5  
4.5

<b>Project Information</b>			<b>Sampling Conditions</b>			<b>ALT 011</b>			<b>TC ID:</b>			<b>Ambient °F</b>			<b>Ref. °F</b>		
Date <u>3/28/24</u> Project # <u>031381</u>			Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F <u>-</u>			Stack											
Customer/Facility <u>Parma, OH</u>			Barometric Pressure, in. Hg <u>-</u> Ref. Barometer ID <u>NWS</u>			Probe											
Unit ID/Sample Location <u>UTO/C6A</u>			Wind Speed / Direction <u>-</u> Precipitation, Y/N/Type <u>-</u>			Filter Box											
Run # <u>3</u> Operator <u>Brown/K</u>			Probe / Filter Temp Range, °F <u>248-25</u>			Filter Exit											
<b>Sampling Equipment IDs</b>			<b>Calibration</b>			<b>Equipment Checks</b>			<b>Pre</b>			<b>Mid</b>			<b>Post</b>		
Meterbox ID <u>24</u>			Meterbox Y <u>1000</u>			Pitot (+), in. @ 0/15sec. <u>-</u>			<u>=</u>			<u>1</u>			<u>1</u>		
Umbilical ID <u>-</u>			Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u>			Pitot (-), in. @ 0/15sec. <u>-</u>			<u>=</u>			<u>1</u>			<u>1</u>		
Pitot / Probe ID <u>-</u>			Pitot coefficient, Cp <u>-</u>			Pitot visual inspection <u>pass</u>			<u>pass</u>			<u>pass</u>			<u>pass</u>		
Nozzle ID <u>302</u>			Nozzle diameter, Dn, in. <u>-</u>			Nozzle visual inspection <u>pass</u>			<u>pass</u>			<u>pass</u>			<u>pass</u>		
Manometer ID <u>24</u>			Manometer zero and level <u>yes</u>			Meter, cfm @ in. Hg <u>0.001 @ 14</u>			<u>@</u>			<u>@</u>			<u>@</u>		
Sensitivity <u>0.01/0.1</u>			K-Factor <u>-</u>			Intermediate leak check volume, ft <sup>3</sup> <u>-</u>			<u>-</u>			<u>-</u>			<u>-</u>		
<b>Notes:</b>																	

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg	
					Target	Actual			Box	Exit		Inlet	Outlet		
	390		203.6720		.9	.9		250	251	251	53	78	78	45	4.5
	405		211.7020		.9	.9		250	250	250	54	78	78	46	4.5
	420		219.6820		.9	.9		250	250	250	54	79	79	46	4.5
	435		227.5320		.9	.9		250	250	250	55	79	79	47	4.5
	450		235.9120		.9	.9		250	251	249	54	78	78	49	4.5
	465		243.7620		.9	.9		249	249	250	53	77	77	44	4.5
	480		251.7620		.9	.9		250	250	250	53	77	77	44	4.5
	495		260.0620		.9	.9		250	250	250	53	78	78	44	4.5
	510		267.9050		.9	.9		251	249	249	53	78	78	44	4.5
	525		275.8020		.9	.9		250	250	249	54	78	78	48	4.5
	540	1740	283.6920		.9	.9		250	252	251	56	80	80	51	4.5
	555		291.6320		.90	.90		250	252	251	63	79	79	46	4.5
	570		299.2420		.9	.9		250	249	249	57	73	73	44	5.0
	585		307.2620		.9	.9		250	250	250	53	76	76	44	5.0
	600		315.3020		.9	.9		250	250	250	53	74	74	44	5.0
	615		323.760					249	250	249	54	75	75	46	5.0
	630		330.920					250	249	250	54	77	77	47	5.0
	645		338.680					250	248	249	54	76	76	47	5.0
	660		446.320					249	247	250	56	75	75	48	5.0
	675		354.170					250	248	246	57	75	75	49	5.0
	690		362.085					249	250	247	58	75	75	50	5.0
	705		369.820					250	248	246	56	75	75	51	5.0
	720		377.675					249	250	252	56	74	74	53	5.0
	735		385.590					249	246	245	54	74	74	52	5.0
	750		393.440					250	249	247	55	74	74	53	5.0
	765		401.160					254	243	242	56	74	74	52	5.0
Averages															

Price Change →

<b>Project Information</b> Date <u>3/28-29/24</u> Project # <u>PA05-</u> Customer/Facility <u>PELMA-Fix FI</u> Unit ID/Sample Location <u>UTD/C6A</u> Run # <u>3</u> Operator <u>ICC</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F <u>-</u> Barometric Pressure, in. Hg <u>-</u> Ref. Barometer ID <u>NWS</u> Wind Speed / Direction <u>-</u> Precipitation, Y / N, type <u>N</u> Probe / Filter Temp Range, °F <u>248-25</u>				<b>ALT 011</b> TC ID: <u>-</u> Ambient °F <u>-</u> Ref. °F <u>-</u> Stack <u>-</u> Probe <u>-</u> Filter Box <u>-</u> Filter Exit <u>-</u> Meter Outlet <u>-</u> Impinger Exit <u>-</u> Other <u>-</u> Ref. Thermometer ID <u>-</u> Continuity w/ Proper Polarity <input checked="" type="checkbox"/> Notes: <u>-</u>											
<b>Sampling Equipment IDs</b> Meterbox ID <u>24</u> Umbilical ID <u>-</u> Pitot / Probe ID <u>-</u> Nozzle ID <u>302</u> Manometer ID <u>24</u> Sensitivity <u>0.01</u>		<b>Calibration</b> Meterbox Y <u>1.000</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u> Pitot coefficient, Cp <u>-</u> Nozzle diameter, Dn, in. <u>-</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor <u>-</u>		<b>Equipment Checks</b> Pitot (+), in. @ 0/15sec. <u>-</u> Pitot (-), in. @ 0/15sec. <u>-</u> Pitot visual inspection <input checked="" type="checkbox"/> pass Nozzle visual inspection <input checked="" type="checkbox"/> pass Meter, cfm @ in. Hg <u>@</u> Intermediate leak check, ft³/min <u>-</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>@</u></td> <td><u>@</u></td> <td><u>@</u></td> </tr> </table>		Pre	Mid	Post	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>@</u>	<u>@</u>	<u>@</u>
Pre	Mid	Post																	
<u>pass</u>	<u>pass</u>	<u>pass</u>																	
<u>pass</u>	<u>pass</u>	<u>pass</u>																	
<u>@</u>	<u>@</u>	<u>@</u>																	
Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft³	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH Target      Actual	Static Temp, °F	Probe Temp, °F	Filter Temp, °F Box      Exit		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F Inlet      Outlet		Pump Vacuum, in. Hg						
	780		409.120		0.90 0.90		247	249	243	51		73	45	5.0					
	795		417.230				250	250	244	52		73	46	5.0					
	810		425.010				248	251	247	51		73	46	5.0					
	825		432.675				250	250	246	52		73	46	5.0					
	840		439.760				249	250	247	54		73	47	5.0					
	855		447.540				250	252	246	55		72	47	5.0					
	870		455.460				252	250	247	56		72	46	5.0					
	885		462.915				250	246	250	56		72	46	5.0					
	900		480.645				249	245	246	56		71	46	5.0					
	915		478.390				250	248	248	57		71	46	5.0					
	930		486.590				253	250	250	56		71	47	5.0					
	945		494.320				250	251	249	56		71	47	5.0					
	960		501.980				250	250	248	56		71	48	5.0					
	975		509.890				251	249	250	57		71	48	5.0					
	990		517.680				252	247	251	59		70	49	5.0					
	1005		525.860				250	251	249	58		70	49	5.0					
	1020		533.880				249	249	250	58		70	48	5.0					
	1035		541.960				250	248	249	57		70	49	5.0					
	1050		549.845				250	249	245	58		70	49	5.0					
	1065		557.970				248	247	246	55		70	46	5.0					
	1080		565.635				250	249	247	55		70	46	5.0					
	1095		573.470				249	250	248	56		70	45	5.0					
	1110		582.020				250	249	247	56		70	45	5.0					
	1125		589.340				249	247	246	57		70	46	5.0					
	1140	0333	592.2589																
Averages	19.0		592.2589		0.9							74							

<b>Project Information</b>				<b>Sampling Conditions</b>				<b>ALT 011</b>				TC ID:		Ambient °F		Ref. °F											
Date <u>3/29/24</u> Project # <u>031381</u>				Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F <u>67.49</u>				Stack																			
Customer/Facility <u>Permco TX</u>				Barometric Pressure, in. Hg <u>30.14</u> Ref. Barometer ID <u>W915</u>				Probe																			
Unit ID/Sample Location <u>UTD / C60</u>				Wind Speed / Direction <u>5 mi</u> Precipitation, Y / N type <u>---</u>				Filter Box																			
Run # <u>U</u> Operator <u>Jordan</u>				Probe / Filter Temp Range, °F <u>248-25</u>				Filter Exit																			
<b>Sampling Equipment IDs</b>				<b>Calibration</b>				<b>Equipment Checks</b>				<b>Pre</b>				<b>Mid</b>				<b>Post</b>							
Meterbox ID <u>24</u>				Meterbox Y <u>1.000</u>				Pitot (+), in. @ 0/15sec. <u>---</u>				Pitot (-), in. @ 0/15sec. <u>---</u>				Pitot visual inspection <u>pass</u>				Pitot visual inspection <u>pass</u>				Pitot visual inspection <u>pass</u>			
Umbilical ID <u>---</u>				Meterbox ΔH@, in. H <sub>2</sub> O <u>1.993</u>				Pitot coefficient, Cp <u>---</u>				Nozzle visual inspection <u>pass</u>				Nozzle visual inspection <u>pass</u>				Nozzle visual inspection <u>pass</u>							
Pitot / Probe ID <u>---</u>				Pitot diameter, Dn, in. <u>---</u>				Manometer zero and level <u>yes</u>				Meter, cfm @ in. Hg <u>0.001 @ 13</u>				Meter, cfm @ in. Hg <u>0.004 @ 12</u>				Meter, cfm @ in. Hg <u>0.004 @ 12</u>							
Nozzle ID <u>303</u>				K-Factor				Intermediate leak check volume, ft <sup>3</sup> <u>---</u>				Intermediate leak check volume, ft <sup>3</sup> <u>---</u>				Intermediate leak check volume, ft <sup>3</sup> <u>---</u>				Intermediate leak check volume, ft <sup>3</sup> <u>---</u>							
Manometer ID <u>24</u>																											
Sensitivity <u>0.01/0.1</u>																											
Traversal Point #		Elapsed Time		Clock Time 24hr		DGM Reading, Vm, ft <sup>3</sup>		Velocity Head, ΔP in H <sub>2</sub> O		Orifice Pressure Differential, ΔH		Stack Temp, °F		Probe Temp, °F		Filter Temp, °F		Impinger Exit Temp, °F		Dry Gas Meter Temp, °F		ZAD		Pump Vacuum, in. Hg			
										Target Actual						Box Exit				Inlet Outlet							
		0		0900		0.0000				-9 -9				250		249 249		62		66 66		58		30.2.0			
		15				7.7820				-9 -9				250		251 251		48		68 68		47		2.0			
		30				15.2820				-9 -9				250		250 250		48		68 68		43		2.0			
		45				23.2920				-9 -9				250		249 249		49		70 70		44		2.0			
		60				30.5820				-9 -9				250		250 250		48		72 72		43		2.0			
		75				37.3420				-9 -9				250		249 249		49		72 72		44		2.0			
		90				46.0520				-9 -9				250		250 250		50		73 73		44		2.0			
		105				53.7920				-9 -9				250		250 250		51		73 73		44		2.0			
		120				61.5420				-9 -9				249		250 250		51		73 73		44		2.0			
		135				69.2420				-9 -9				250		251 251		51		74 74		44		2.5			
		150				77.3420				-9 -9				250		250 250		52		74 74		45		2.5			
		165				84.7720				-9 -9				250		250 250		52		75 75		45		3.0			
		180				92.4420				-9 -9				250		250 242		52		74 74		45		3.0			
		195				99.8220				-9 -9				249		250 250		53		75 75		46		3.0			
		210				106.4820				-9 -9				250		250 250		52		74 74		44		3.0			
		225				114.6320				-9 -9				250		250 250		52		74 74		41		3.0			
		240				123.3420				-9 -9				250		250 250		52		74 74		41		3.0			
		255				131.3020				-9 -9				250		250 250		52		74 74		41		3.0			
		270				138.6420				-9 -9				250		250 250		51		76 76		43		3.0			
		285				146.9520				-9 -9				250		251 251		52		74 74		44		3.0			
		300				154.8320				-9 -9				250		250 250		52		74 74		44		3.0			
		315				162.4620				-9 -9				250		251 251		51		72 72		43		3.0			
		330				170.3220				-9 -9				250		249 249		51		73 73		43		3.0			
		345				178.3020				-9 -9				250		249 249		52		75 75		44		3.0			
		360				186.2020				-9 -9				250		250 250		52		73 73		44		3.0			
		375				193.0920				-9 -9				250		250 250		52		73 73		44		3.0			
Averages																											



<b>Project Information</b> Date <u>3/29/24</u> Project # <u>031381</u> Customer/Facility <u>Permatix</u> Unit ID/Sample Location <u>UTD / CGO</u> Run # <u>1</u> Operator <u>Jordan</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>JEE</u> Ambient Temp, °F <u>-</u> Barometric Pressure, in. Hg <u>Doge</u> Ref. Barometer ID <u>NWS</u> Wind Speed / Direction <u>1</u> Precipitation, Y/N, type <u>N</u> Probe / Filter Temp Range, °F <u>248 to 25</u>				<b>ALT 011</b> TC ID: Ambient °F Ref. °F Stack <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Probe <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Filter Box <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Filter Exit <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Meter outlet <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Impinger Exit <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Other <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Ref. Thermometer ID <table border="1" style="width:100%;"><tr><td> </td><td> </td></tr></table> Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes:																			
<b>Sampling Equipment IDs</b> Meterbox ID <u>24</u> Umbilical ID <u>-</u> Nozzle ID <u>302</u> Pitot / Probe ID <u>-</u> Manometer ID <u>24</u> Sensitivity <u>0.01</u>		<b>Calibration</b> Meterbox Y <u>1.000</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>1.933</u> Nozzle diameter, Dn, in. <u>-</u> Pitot coefficient, Cp <u>-</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor <u>-</u>		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ Pitot (-), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ Pitot visual inspection <input checked="" type="checkbox"/> pass Nozzle visual inspection <input checked="" type="checkbox"/> pass Meter, cfm @ in. Hg <input checked="" type="checkbox"/> @ Intermediate leak check volume, ft³ <u>1</u>		<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> </table>		Pre	Mid	Post	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @		
Pre	Mid	Post																									
<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @																									
<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @																									
<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass																									
<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass																									
<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @																									

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft³	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg	
					Target	Actual			Box	Exit		Inlet	Outlet		
	390		200.7520		.9	.9		250	250	249	52	74	74	44	3.0
	405		208.4520		.9	.9		250	249	249	52	75	75	45	3.0
	420		216.1120		.9	.9		250	249	249	52	75	75	45	3.0
	435		224.2520		.9	.9		250	250	250	54	74	74	47	3.0
	450		231.7420		.9	.9		250	250	250	56	75	75	48	3.0
	465	512	239.1920		.9	.9		250	250	250	54	75	75	45	3.0
	480		246.4320		.9	.9		249	249	249	58	77	77	50	3.0
	495		255.1620		.9	.9		250	251	251	65	76	76	46	3.0
	510		262.3820		.9	.9		250	250	250	52	76	76	45	3.0
	525		270.0820		.9	.9		251	250	250	52	76	76	45	3.0
	540		277.8320		.9	.9		250	250	250	51	77	77	45	3.0
	555		285.5720		.9	.9		250	249	249	51	76	76	49	3.0
	570		293.475		.9	.9		250	251	251	51	76	76	49	3.0
	585		301.280					250	251	249	51	77	77	45	4.0
	600		308.870					250	249	248	51	78	78	46	4.0
	615		316.505					249	248	249	52	78	78	48	4.0
	630		323.210					250	250	247	53	76	76	48	4.0
	645		331.905					248	251	248	54	75	75	48	4.0
	660		339.540					250	251	249	55	74	74	48	4.0
	675		347.120					249	249	246	55	74	74	49	4.0
	690		354.980					250	247	245	55	73	73	49	4.0
	705		362.625					250	249	246	54	73	73	45	4.0
	720		370.470					250	251	248	51	73	73	43	4.0
	735		378.965					251	254	249	51	71	71	45	4.0
	750		386.675					249	252	250	51	71	71	45	4.0
Averages															

QA/QC Check Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader WGR

\* = 12 3/29/24 @



## Field Data Sheet

Page 3 of 3

[illegible]

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By Tia Data Custodian WTK

001AS-QMS-FM-225R1



Project Information		Equipment Identification	
Date <u>3/25/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer _____	
Customer / Facility <u>Perma-Fix FL/Gainesville FL</u>		Hygrometer _____	
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA2831554</u>	
Run # <u>1-3</u>	Operator <u>MJK</u>	Check Weights <u>3115</u>	
		Calipers _____	

Balance Audit (Field balance must be within 0.5g of check weight mass)				Ambient Conditions (Mobile Lab)	
Date	<u>3/25/2024</u>	<u>3/26/2024</u>	<u>3/27/2024</u>	Relative humidity, %	_____
Standard mass, g	<u>1000.00</u>	<u>1000.0</u>	<u>1000.0</u>	Temperature, °F	_____
Field balance mass, g	<u>999.8</u>	<u>999.7</u>	<u>999.9</u>	Mobile lab #	_____

Moisture Determination										
		Run 1			Run 2			Run 3		
	Contents	Initial	Final	Net	Initial	Final	Net	Initial	Final	Net
Knockout	MT	366.1	393.0	26.9	347.2	370.5	23.3	367.3	505.9	138.6
Impinger 1	H <sub>2</sub> O	715.1	695.1	-20.0	673.9	667.5	-6.4	707.4	693.2	-14.2
Impinger 2	H <sub>2</sub> O	696.0	682.6	-13.4	625.6	624.8	-0.8	686.4	611.3	-75.1
Impinger 3	H <sub>2</sub> O	702.7	710.7	8.0	686.0	686.0	0.0	683.1	626.9	-56.2
Impinger 4										
Impinger 5										
Impinger 6										
Impinger 7										
Impinger 8				1.5			16.1			-16.9
Silica Gel	SiGel	889.8	928.2	38.4	852.2	882.2	30.0	844.6	890.7	46.1
Line Rinse		905.0	915.8	70.8	906.0	966.1	60.1	896.2	955.2	59.0
Train Net Gain (Vlc)				110.7			106.2			98.2

Nozzle Measurements (Difference between any two measurements must not be more than 0.004 in (0.1 mm))								
Nozzle 1 diameters	<u>0.302</u>	D1	<u>0.301</u>	D2	<u>0.302</u>	D3	<u>0.302</u>	Average
Nozzle 2 diameters		D1		D2		D3		Average
Nozzle 3 diameters		D1		D2		D3		Average
Nozzle Material	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> titanium <input type="checkbox"/> inconel <input type="checkbox"/> other							
Probe Type	<input checked="" type="checkbox"/> heated <input type="checkbox"/> unheated <input type="checkbox"/> air-cooled <input type="checkbox"/> water-cooled <input type="checkbox"/> other							
Probe Liner	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> Teflon <input type="checkbox"/> other							

Filter Information			
Front Half:	<input checked="" type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other		
Filter Number:	Run 1: _____ Run 2: _____ Run 3: _____	Run _____:	
Back Half:	<input type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other		

Reagent Information		Sample Observations
Type	Lot Number	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒Checked by: Tu Team Leader: MJK

001AS-QMS-FM-226



Project Information		Equipment Identification	
Date <u>3/28/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer _____	
Customer / Facility <u>Perma-Fix FL/Gainesville FL</u>		Hygrometer _____	
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA283/554</u>	
Run # <u>4</u>	Operator <u>MTK</u>	Check Weights <u>3115</u>	
		Calipers _____	

Balance Audit (Field balance must be within 0.5g of check weight mass)			Ambient Conditions (Mobile Lab)	
Date <u>3/28/2024</u>	<u>3/29/2024</u>	<u>3/30/2024</u>	Relative humidity, % _____	
Standard mass, g <u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>	Temperature, °F _____	
Field balance mass, g <u>999.8</u>	<u>1000.0</u>	<u>1000.0</u>	Mobile lab # _____	

Moisture Determination									
	Run 4			Run 2			Run 3		
Contents	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g
Knockout	MT	352.1	362.1	10.0					
Impinger 1	H <sub>2</sub> O	648.2	685.6	37.4					
Impinger 2	H <sub>2</sub> O	641.5	633.8	-7.7					
Impinger 3	H <sub>2</sub> O	665.6	657.0	-8.6					
Impinger 4									
Impinger 5									
Impinger 6									
Impinger 7									
Impinger 8									
Line Rinse			31.1						
Impinger Net Gain, Wwc									
Silica Gel, Wwsg	914.5	943.6	29.1						
Train Net Gain, Wc	914.6	962.3	47.7	107.9 total					

Nozzle Measurements (Difference between any two measurements must not be more than 0.004 in (0.1 mm))									
Nozzle 1 diameters	D1 _____	D2 _____	D3 _____	Average _____					
Nozzle 2 diameters	D1 _____	D2 _____	D3 _____	Average _____					
Nozzle 3 diameters	D1 _____	D2 _____	D3 _____	Average _____					
Nozzle Material	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> titanium	<input type="checkbox"/> inconel	<input type="checkbox"/> other _____			
Probe Type	<input checked="" type="checkbox"/> heated	<input type="checkbox"/> unheated	<input type="checkbox"/> air-cooled	<input type="checkbox"/> water-cooled	<input type="checkbox"/> other _____				
Probe Liner	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> Teflon	<input type="checkbox"/> other _____				

Filter Information									
Front Half:	<input checked="" type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other _____				
Filter Number:	Run 1: _____	Run 2: _____	Run 3: _____	Run _____					
Back Half:	<input type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other _____				

Reagent Information		Sample Observations
Type _____	Lot Number _____	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒Checked by: TU Data Custodian: MTK

<b>RUN I.D.</b>	<b>PFF-M0010-R1</b>	<b>PFF-M0010-R2</b>	<b>PFF-M0010-R3</b>
<b>DATE</b>	3/26-27/2024	3/27-28/2024	3/28-29/2024
<b>TIME STARTED</b>	9:25	9:25	8:40
<b>TIME ENDED</b>	3:10	4:17	3:33

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**SAMPLING PARAMETERS**

Metered Volume (dcf)	520.232	563.933	592.259
Corrected Volume (dscf)	512.078	559.016	587.487
Total Test Time (min)	1065	1080	1140
Isokinetics (%)	96.1	98.6	102.3

**GAS PARAMETERS**

Gas Temperature (°F)	75	72	70
Oxygen (%)	18.9	19.0	19.0
Carbon Dioxide (%)	0.1	0.2	0.1
Moisture (%)	1.0	0.9	0.8

**GAS FLOW RATE**

Velocity (ft/sec)	17.27	18.01	17.23
Actual Volume (acfm)	51	53	51
Standard Volume (dscfm)	49	52	50

<b>RUN I.D.</b>	<b>PFF-M0010-R4</b>
<b>DATE</b>	<b>3/29-30/2024</b>
<b>TIME STARTED</b>	<b>9:25</b>
<b>TIME ENDED</b>	<b>3:12</b>

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**SAMPLING PARAMETERS**

Metered Volume (dcf)	580.562
Corrected Volume (dscf)	580.616
Total Test Time (min)	1071
Isokinetics (%)	109.0

**GAS PARAMETERS**

Gas Temperature (°F)	71
Oxygen (%)	19.3
Carbon Dioxide (%)	0.2
Moisture (%)	0.9

**GAS FLOW RATE**

Velocity (ft/sec)	16.94
Actual Volume (acfm)	50
Standard Volume (dscfm)	49



<b>Project Information</b>		<b>Sampling Conditions</b>		<b>ALT 011</b>	
Date <u>3-26-24</u>	Project # <u>031381</u>	Static Pressure, in. H <sub>2</sub> O <u>-2.8</u>	Ambient Temp, °F _____	TC ID: _____	Ambient °F _____ Ref. °F _____
Customer/Facility <u>Perma-Fin Gainesville FL</u>		Barometric Pressure, in. Hg <u>29.95</u>	Ref. Barometer ID <u>WTK Watch</u>	Stack _____	_____
Unit ID/Sample Location <u>UTD Combined Gas Puct</u>		Wind Speed / Direction _____	Precipitation, Y / N, type _____	Probe _____	_____
Run # <u>1</u>	Operator <u>DF</u>	Probe / Filter Temp Range, °F _____		Filter Box _____	_____
<b>Sampling Equipment IDs</b>		<b>Calibration</b>		<b>Equipment Checks</b>	
Meterbox ID <u>EIS</u>	Meterbox Y <u>0.993</u>	Pitot (+), in. @ 0/15sec. <u>✓</u>		Pre <u>✓</u>	Mid <u>/</u>
Umbilical ID <u>UMDSO</u>	Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u>	Pitot (-), in. @ 0/15sec. <u>✓</u>		Mid <u>/</u>	Post <u>/</u>
Pitot / Probe ID _____	Pitot coefficient, Cp <u>—</u>	Pitot visual inspection <u>pass</u>		Pre <u>pass</u>	Mid <u>pass</u>
Nozzle ID _____	Nozzle diameter, Dn, in. _____	Nozzle visual inspection <u>pass</u>		Mid <u>pass</u>	Post <u>pass</u>
Manometer ID <u>EIS</u>	Manometer zero and level <u>yes</u>	Meter, cfm @ in. Hg <u>0.001 @ 14"</u>		Post <u>@</u>	Post <u>@</u>
Sensitivity <u>0.01 / 0.1</u>	K-Factor <u>—</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>		Meter Outlet _____	
				Impinger Exit _____	
				Other _____	
				Ref. Thermometer ID _____	
				Continuity w/ Proper Polarity <u>✓</u>	
				Notes: _____	

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
0		0925	465.169		1.0	1.0		265	260	278	49		70	3
15			470.26					266	261	279	48		78	3
30			478.82					263	264	279	50		75	3
45			486.70					266	264	285	52		78	3
60			494.53					263	264	285	54		79	3
75			502.35					263	263	284	54		81	3
90			510.36		0.7	0.7		264	264	283	55		82	3
105			516.83					264	263	283	55		82	3
120			523.44					264	263	289	47		82	3
135			530.26					263	263	290	48		83	3
150			536.62					262	264	293	48		84	3
165			542.46					264	264	291	49		84	3
180			549.87					261	263	293	48		84	3
195			557.19					263	264	291	48		84	3
210			563.44					264	263	290	49		84	3
225			569.65					264	264	289	50		85	3
240			576.43					261	264	293	47		84	3
255			582.88					263	263	291	47		84	3
270			589.52					264	263	293	47		85	3
285			596.23					262	264	293	47		85	3
300			602.77					263	263	292	47		85	3
315			609.93					263	264	291	48		85	3
330			616.23		0.7	0.7		264	264	289	48		85	3
345			623.750		0.7	0.7		264	264	293	48		86	3
360			629.15		0.8	0.8		264	264	290	49		86	3
375			636.63					264	263	290	49		86	3
Averages			643.77					263	262	291	47		86	3



<b>Project Information</b> Date <u>3-26-24</u> Project # <u>031381</u> Customer/Facility <u>Perma-Fix Gainsville FL</u> Unit ID/Sample Location <u>VTD Combined Gas Duct</u> Run # <u>1</u> Operator <u>DF; JAM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp. °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>See PG</u> Precipitation Y / N, type _____ Probe / Filter Temp Range, °F _____				ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter Outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity w/ Proper Polarity <input checked="" type="checkbox"/> _____ Notes: _____														
<b>Sampling Equipment IDs</b> Meterbox ID <u>EIS</u> Umbilical ID <u>UMB50</u> Pitot / Probe ID _____ Nozzle ID _____ Manometer ID <u>EIS</u> Sensitivity <u>0.01/0.1</u>		<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Pitot coefficient, Cp _____ Nozzle diameter, Dn, in. _____ Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), in. @ 0/15sec. _____ Pitot (-), in. @ 0/15sec. _____ Pitot visual inspection _____ Nozzle visual inspection _____ Meter, cfm @ in. Hg _____ Intermediate leak check volume, ft <sup>3</sup> _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: center;">Pre</th> <th style="text-align: center;">Mid</th> <th style="text-align: center;">Post</th> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">pass</td> <td style="text-align: center;">pass</td> <td style="text-align: center;">pass</td> </tr> <tr> <td style="text-align: center;">pass</td> <td style="text-align: center;">pass</td> <td style="text-align: center;">pass</td> </tr> <tr> <td style="text-align: center;">@</td> <td style="text-align: center;">@</td> <td style="text-align: center;">@</td> </tr> </table>		Pre	Mid	Post	1	1	1	pass	pass	pass	pass	pass	pass	@	@	@
Pre	Mid	Post																				
1	1	1																				
pass	pass	pass																				
pass	pass	pass																				
@	@	@																				

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	405		651.04		0.8	0.8		264	264	287	45		89	3
	420		658.07					263	264	291	45		90	3
	435		665.08					264	263	291	46		91	3
	450		672.86					264	264	293	46		90	3
	465		679.35					265	264	291	47		90	3
	480		687.01					262	263	293	45		90	3
	495		693.76					264	264	291	46		90	3
	510		700.61					264	264	293	46		90	3
	525		707.78					261	264	291	47		90	3
	540		714.84					265	264	288	48		91	3
	555		721.75					266	263	287	48		91	3
	570		728.90					260	264	267	44		92	3
	585		736.30					266	260	263	45		94	3
	600		743.04					262	260	262	47		92	3
	615		750.30					263	260	260	47		94	3
	630		757.71					263	260	261	47		91	3
	645		764.35					264	261	262	48		91	3
	660		771.40					264	262	260	48		91	3
	675		778.49					263	261	259	48		91	3
	690		785.53					266	260	259	49		91	3
	705		792.63					260	260	259	49		91	3
	720		799.62					263	260	259	51		90	3
	735		806.70					265	261	258	53		90	3
	750		813.80					266	263	260	52		90	3
	765		820.90					265	263	262	52		90	3
	780		827.95					263	262	260	53		89	3
Averages	795		835.15					264	259	263	53		89	3

<b>Project Information</b> Date <u>3/26/2024</u> Project # <u>031381</u> Customer/Facility <u>PERMA-FIX</u> Unit ID/Sample Location <u>CAINSEVILLE, RL</u> Run # <u>1</u> Operator <u>JM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y/N, type _____ Probe / Filter Temp Range, °F _____				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>ALT 011</td> <td>TC ID:</td> <td>Ambient °F</td> <td>Ref. °F</td> </tr> <tr> <td>Stack</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Probe</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Filter Box</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Filter Exit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Meter outlet</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Impinger Exit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Ref. Thermometer ID _____</td> </tr> <tr> <td colspan="4">Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity</td> </tr> <tr> <td colspan="4">Notes: _____</td> </tr> </table>				ALT 011	TC ID:	Ambient °F	Ref. °F	Stack				Probe				Filter Box				Filter Exit				Meter outlet				Impinger Exit				Other				Ref. Thermometer ID _____				Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity				Notes: _____			
ALT 011	TC ID:	Ambient °F	Ref. °F																																																				
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Notes: _____																																																							
<b>Sampling Equipment IDs</b> Meterbox ID <u>E15</u> Umbilical ID <u>UMB-50</u> Nozzle ID <u>300</u> Pitot / Probe ID _____ Manometer ID <u>E15</u> Sensitivity <u>0.01/0.1" H<sub>2</sub>O</u>				<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Nozzle diameter, Dn, in. <u>0.300</u> Pitot coefficient, Cp _____ Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____				<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), pass @ in. H<sub>2</sub>O</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td>Pitot (-), pass @ in. H<sub>2</sub>O</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td>Pitot visual inspection</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Nozzle visual inspection</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td colspan="4">Intermediate leak check volume, ft<sup>3</sup> _____</td> </tr> </table>					Pre	Mid	Post	Pitot (+), pass @ in. H <sub>2</sub> O	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	Pitot (-), pass @ in. H <sub>2</sub> O	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	Pitot visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Nozzle visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Meter, cfm @ in. Hg	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	Intermediate leak check volume, ft <sup>3</sup> _____																			
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Pitot visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass																																																				
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Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg																																										
					Target Actual			Box	Exit		Inlet	Outlet																																											
	810		842.25		0.8 0.8		263	237	255	55		90	3																																										
	825		849.37				265	257	260	55		90	3																																										
	840		856.40				262	247	261	52		89	3																																										
	855		863.58				263	256	265	55		90	3																																										
	870		870.66				266	259	264	53		89	3																																										
	885		877.77				263	250	267	54		89	3																																										
	900		884.80				265	263	259	57		89	3																																										
	915		891.98				265	263	255	60		89	3																																										
	930		898.94				268	263	255	55		89	3																																										
	945		905.99				263	263	255	52		90	3																																										
	960		913.22				264	262	254	51		88	3																																										
	975		920.28				265	263	255	51		88	3																																										
	990	927.30	927.30				263	263	255	52		87	3																																										
	1005		934.50				264	263	256	54		87	3																																										
	1020		941.64				265	264	255	54		87	3																																										
	1035		948.60				266	264	254	53		88	3																																										
	1050		955.70				266	264	255	48		88	3																																										
	1065		962.83				260	264	254	48		88	3																																										
	1080	0310																																																					
	1095																																																						
	1100																																																						
	1115																																																						
	1130																																																						
	1145	HRS																																																					
	1160	17.75																																																					
Averages			497.667		0.8							87																																											

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader MTK

497.661

<b>Project Information</b>		<b>Sampling Conditions</b>		<b>ALT 011 TC ID: Ambient °F Ref. °F</b>																			
Date <u>3/27/24</u>	Project # <u>031391</u>	Static Pressure, in. H <sub>2</sub> O <u>-3.2</u>	Ambient Temp, °F <u>    </u>	Stack																			
Customer/Facility <u>Perma-Fix Gainsville FL</u>		Barometric Pressure, in. Hg <u>29.93</u>	Ref. Barometer ID <u>Wackh</u>	Probe																			
Unit ID/Sample Location <u>VTD Combined Gas Duct</u>		Wind Speed / Direction <u>    </u>	Precipitation, Y / N, type <u>    </u>	Filter Box																			
Run # <u>2</u>	Operator <u>DF</u>	Probe / Filter Temp Range, °F <u>    </u>		Filter Exit																			
<b>Sampling Equipment IDs</b>		<b>Calibration</b>		<b>Equipment Checks</b>																			
Meterbox ID <u>E15</u>	Meterbox Y <u>0.943</u>	Pitot (+), pass @ in. H <sub>2</sub> O <u>    </u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td><u>0.00 @ 16"</u></td> <td><u>@</u></td> <td><u>0.00 @ 5</u></td> </tr> </table>		Pre	Mid	Post	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<u>0.00 @ 16"</u>	<u>@</u>	<u>0.00 @ 5</u>
Pre	Mid	Post																					
<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @																					
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<u>0.00 @ 16"</u>	<u>@</u>	<u>0.00 @ 5</u>																					
Umbilical ID <u>UMB50</u>	Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u>	Pitot (-), pass @ in. H <sub>2</sub> O <u>    </u>																					
Nozzle ID <u>    </u>	Nozzle diameter, Dn, in. <u>    </u>	Pitot visual inspection <u>    </u>																					
Pitot / Probe ID <u>    </u>	Pitot coefficient, Cp <u>    </u>	Nozzle visual inspection <u>    </u>		Ref. Thermometer ID <u>    </u>																			
Manometer ID <u>E15</u>	Manometer zero and level <input checked="" type="checkbox"/> yes	Meter, cfm @ in. Hg <u>    </u>		Continuity Check <input type="checkbox"/> Continuity w/ Proper Polarity																			
Sensitivity <u>0.01/0.1</u>	K-Factor <u>    </u>	Intermediate leak check volume, ft <sup>3</sup> <u>    </u>		Notes: <u>Note pause</u>																			

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	0		964.773		0.9	0.9		263	264	255	64		73	3
	15		972.03					265	269	259	50		73	3
	30		979.66					263	266	263	50		75	3
	45		987.03					264	266	268	50		76	3
	60		994.53					264	260	263	44		78	3
	75		1002.01					264	259	261	46		79	3
	90		9.42					265	261	258	43		80	3
	105		16.83					264	263	259	43		81	3
	120		24.28					265	259	259	42		79	3
	135	Pause	31.87					263	261	259	43		79	3
	150	runat	39.36					262	259	258	40		77	3
	165	11:50	46.81					264	260	259	41		78	3
	180	12:15	54.24					264	260	260	41		80	3
	195	Restart	61.68					263	259	258	42		81	3
	210		69.12					264	260	259	43		81	3
	225		76.54					263	261	258	44		81	3
	240		83.98					264	262	258	45		82	3
	255		91.41					263	262	257	45		82	3
	270		98.84					264	261	258	42		82	3
	285		106.27					264	259	257	42		82	3
	300		113.76					263	258	259	42		82	3
	315		120.89					264	262	260	42		82	3
	330		128.53					261	261	259	43		81	3
	345		136.01					263	263	259	43		81	3
	360		143.69					262	260	258	43		81	3
Averages														

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader MTK

<b>Project Information</b> Date <u>3/27/24</u> Project # <u>031391</u> Customer/Facility <u>Perma-Fix Gainesville FL</u> Unit ID/Sample Location <u>UTP Combined Gas Duct</u> Run # <u>2</u> Operator <u>DFJ/mm</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y/N, type _____ Probe / Filter Temp Range, °F _____				<b>ALT 011</b> TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																							
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID _____ Nozzle ID _____ Pitot / Probe ID _____ Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y _____ Meterbox ΔH@, in. H <sub>2</sub> O _____ Nozzle diameter, Dn, in. _____ Pitot coefficient, Cp _____ Manometer zero and level <input type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot (-), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot visual inspection <input type="checkbox"/> pass _____ Nozzle visual inspection <input type="checkbox"/> pass _____ Meter, cfm @ in. Hg _____ Intermediate leak check volume, ft <sup>3</sup> _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td>Pitot (-), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td>Pitot visual inspection</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> </tr> <tr> <td>Nozzle visual inspection</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td>@ _____</td> <td>@ _____</td> <td>@ _____</td> </tr> </table>			Pre	Mid	Post	Pitot (+), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	Pitot (-), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	Pitot visual inspection	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	Nozzle visual inspection	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	Meter, cfm @ in. Hg	@ _____	@ _____	@ _____
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					Target Actual			Box	Exit		Inlet	Outlet																			
1	375		151.12		0.9 0.9		263	260	258	45		80	3																		
	390		159.36				264	261	258	45		82	3																		
	405		166.84				264	262	259	46		80	3																		
	420		178.94				263	264	260	46		80	3																		
	435		181.75				264	261	258	46		80	3																		
	450		189.04				265	264	259	46		80	3																		
	465		197.53				265	264	258	46		79	3																		
	480		205.13				264	263	259	46		79	3																		
	495		211.36				265	264	259	46		79	3																		
	510		218.52				265	263	259	48		80	3																		
	525		225.95				264	263	249	48		82	3																		
	540		233.60				258	266	250	49		82	3																		
	555		241.27				259	264	251	49		82	3																		
	570		248.48				263	259	250	46		84	3																		
	585		255.89				264	263	251	49		84	3																		
	600		263.53				263	264	250	49		84	3																		
	615		271.05				263	261	249	46		84	3																		
	630		278.72				262	261	249	47		86	3																		
	645		286.20				263	262	249	47		84	3																		
	660		293.67				265	259	249	48		85	3																		
	675		301.18				264	262	250	48		85	3																		
	690		308.72				266	260	250	50		84	3																		
	705		316.30				266	267	250	50		85	3																		
	720		323.80				264	259	250	45		84	3																		
	735		331.38				265	263	250	45		84	3																		
Averages																															

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader WTK

<b>Project Information</b> Date <u>3/27/2004</u> Project # <u>031381</u> Customer/Facility <u>PERMA-FIX GAINESVILLE, FL</u> Unit ID/Sample Location <u>VTP COMBINED GAS DUCT</u> Run # <u>2</u> Operator <u>PM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y/N, type _____ Probe / Filter Temp Range, °F _____				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>ALT 011</th> <th>TC ID:</th> <th>Ambient °F</th> <th>Ref. °F</th> </tr> <tr> <td>Stack</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Probe</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Filter Box</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Filter Exit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Meter outlet</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Impinger Exit</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">Ref. Thermometer ID _____</td> </tr> <tr> <td colspan="4">Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity</td> </tr> <tr> <td colspan="4">Notes: _____</td> </tr> </table>				ALT 011	TC ID:	Ambient °F	Ref. °F	Stack				Probe				Filter Box				Filter Exit				Meter outlet				Impinger Exit				Other				Ref. Thermometer ID _____				Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity				Notes: _____																																																																																																																																																																																																																																																																																																																																																																																																															
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<b>Sampling Equipment IDs</b> Meterbox ID <u>E15</u> Umbilical ID <u>UMB-50</u> Nozzle ID _____ Pitot / Probe ID _____ Manometer ID _____ Sensitivity <u>0.01/0.10 "/H<sub>2</sub>O</u>		<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Nozzle diameter, Dn, in. _____ Pitot coefficient, Cp _____ Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td>Pitot (-), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td>Pitot visual inspection</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td>Nozzle visual inspection</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td>@</td> <td>@</td> <td><u>0.006 @ 5</u></td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup></td> <td><u>1</u></td> <td><u>1</u></td> <td><u>1</u></td> </tr> </table>							Pre	Mid	Post	Pitot (+), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	Pitot (-), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	Pitot visual inspection	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	Nozzle visual inspection	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	Meter, cfm @ in. Hg	@	@	<u>0.006 @ 5</u>	Intermediate leak check volume, ft <sup>3</sup>	<u>1</u>	<u>1</u>	<u>1</u>																																																																																																																																																																																																																																																																																																																																																																																																																														
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	<u>855</u>		<u>392.48</u>						<u>265</u>	<u>261</u>	<u>250</u>	<u>49</u>		<u>84</u>	<u>3</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	<u>885</u>		<u>406.82</u>						<u>265</u>	<u>260</u>	<u>251</u>	<u>49</u>		<u>84</u>	<u>3</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	<u>900</u>		<u>414.42</u>						<u>264</u>	<u>262</u>	<u>250</u>	<u>49</u>		<u>84</u>	<u>3</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	<u>915</u>		<u>421.95</u>						<u>265</u>	<u>260</u>	<u>250</u>	<u>48</u>		<u>84</u>	<u>3</u>																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader MARK

1 18.0 HRS

0.9

<b>Project Information</b> Date <u>3/28/24</u> Project # <u>031381</u> Customer/Facility <u>Perma-Fix Gainesville FL</u> Unit ID/Sample Location <u>VTD Combined Gas Duct</u> Run # <u>3</u> Operator <u>DF</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F _____ Barometric Pressure, in. Hg <u>29.95</u> Ref. Barometer ID <u>Watch</u> Wind Speed / Direction _____ Precipitation, Y / N, type _____ Probe / Filter Temp Range, °F _____				<b>ALT 011</b> TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet <u>EIS</u> Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																																																																																																																																																																																																																																																																																																																																																																													
<b>Sampling Equipment IDs</b> Meterbox ID <u>EIS</u> Umbilical ID <u>UMBSCO</u> Nozzle ID _____ Pitot / Probe ID _____ Manometer ID <u>EIS</u> Sensitivity <u>0.01/0.1</u>		<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Nozzle diameter, Dn, in. _____ Pitot coefficient, Cp _____ Manometer zero and level <u>ET</u> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ _____ Pitot (-), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ _____ Pitot visual inspection <u>pass</u> Nozzle visual inspection <u>pass</u> Meter, cfm @ in. Hg <u>0.000 @ 15"</u> Intermediate leak check volume, ft <sup>3</sup> <u>1</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> </table>		Pre	Mid	Post	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>																																																																																																																																																																																																																																																																																																																																																															
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Hg						Target Actual			Box Exit		Inlet Outlet		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>1</td> <td>0</td> <td>0840</td> <td>505.906</td> <td></td> <td>0.9 0.9</td> <td></td> <td>265</td> <td>263 259</td> <td>45</td> <td></td> <td>72</td> <td>3</td> </tr> <tr><td></td><td>15</td><td></td><td>513.38</td><td></td><td></td><td></td><td>262</td><td>263 261</td><td>45</td><td></td><td>71</td><td>3</td></tr> <tr><td></td><td>30</td><td></td><td>520.83</td><td></td><td></td><td></td><td>265</td><td>261 259</td><td>46</td><td></td><td>72</td><td>3</td></tr> <tr><td></td><td>45</td><td></td><td>528.36</td><td></td><td></td><td></td><td>265</td><td>263 258</td><td>43</td><td></td><td>74</td><td>3</td></tr> <tr><td></td><td>60</td><td></td><td>535.55</td><td></td><td></td><td></td><td>265</td><td>264 259</td><td>43</td><td></td><td>75</td><td>3</td></tr> <tr><td></td><td>75</td><td></td><td>542.96</td><td></td><td></td><td></td><td>264</td><td>263 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	315		663.25				265	263 259	49		79	3																																																																																																																																																																																																																																																																																																																																																																									
	330		670.63				263	260 260	49		79	3																																																																																																																																																																																																																																																																																																																																																																									
	345		678.01				264	261 261	50		79	3																																																																																																																																																																																																																																																																																																																																																																									
	360		685.39				265	263 259	47		79	3																																																																																																																																																																																																																																																																																																																																																																									
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QA/QC Check Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader WJK

<b>Project Information</b> Date <u>3/28/24</u> Project # <u>031381</u> Customer/Facility <u>Pecma - Fm Gainesville FL</u> Unit ID/Sample Location <u>VTD Combined Gas Dist</u> Run # <u>3</u> Operator <u>DF</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y, N, type _____ Probe / Filter Temp Range, °F _____				<b>ALT 011</b> TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																	
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID _____ Nozzle ID _____ Pitot / Probe ID _____ Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y _____ Meterbox ΔH @ in. H <sub>2</sub> O _____ Nozzle diameter, D <sub>n</sub> , in _____ Pitot coefficient, C <sub>p</sub> _____ Manometer zero and level <input type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot (-), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot visual inspection <input type="checkbox"/> pass _____ Nozzle visual inspection <input type="checkbox"/> pass _____ Meter, cfm @ in. Hg _____ Intermediate leak check volume, ft <sup>3</sup> _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> </tr> <tr> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> <td><input type="checkbox"/> pass _____</td> </tr> <tr> <td>@ _____</td> <td>@ _____</td> <td>@ _____</td> </tr> </table>		Pre	Mid	Post	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	@ _____	@ _____	@ _____
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<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____																							
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<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____	<input type="checkbox"/> pass _____																							
@ _____	@ _____	@ _____																							

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	375		692.71		0.9	0.9		249	263	258	53		82	3
	390		700.15					265	264	259	53		83	3
	405		707.53					264	265	260	53		84	3
	420		715.63					264	264	258	53		84	3
	435		723.01					263	263	258	54		84	3
	450		730.53					264	264	259	54		84	3
	465		737.98					264	263	259	54		84	3
	480		745.48					265	263	258	54		84	3
	495		752.97					263	264	259	55		85	3
	510		760.47					265	262	259	55		85	3
	525		767.97					263	264	258	51		85	3
	540		775.48					264	265	259	51		85	3
	555		782.99					264	264	258	50		85	3
	570		790.58					263	264	259	43		84	3
	585		797.91					264	263	260	42		83	3
	600		805.43					265	263	269	43		81	3
	615		813.06					265	259	249	44		83	3
	630		820.43					266	261	249	44		85	3
	645		827.93					265	260	249	45		85	3
	660		835.21					266	260	249	45		85	3
	675		843.03					266	259	249	46		87	3
	690		850.60					264	260	250	47		86	3
	705		858.15					265	260	251	47		86	3
	720		865.70					264	259	250	48		86	3
	735		873.25					264	260	250	48		85	3
Averages														

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TJ Team Leader WJK



<b>Project Information</b> Date <u>3/28/24</u> Project # <u>031381</u> Customer/Facility <u>PERMA-FIX GAINESVILLE, FL</u> Unit ID/Sample Location <u>VTD CONTAINED GAS DUCT</u> Run # _____ Operator <u>JM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y / N, type _____ Probe / Filter Temp Range, °F _____				ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																							
<b>Sampling Equipment IDs</b> Meterbox ID <u>EIS</u> Umbilical ID <u>UMB-50</u> Nozzle ID _____ Pitot / Probe ID _____ Manometer ID _____ Sensitivity <u>0.01/0.10 in H<sub>2</sub>O</u>		<b>Calibration</b> Meterbox Y _____ Meterbox ΔH@, in. H <sub>2</sub> O _____ Nozzle diameter, D <sub>n</sub> , in. _____ Pitot coefficient, C <sub>p</sub> _____ Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot (-), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ _____ Pitot visual inspection <input type="checkbox"/> pass <input type="checkbox"/> fail Nozzle visual inspection <input type="checkbox"/> pass <input type="checkbox"/> fail Meter, cfm @ in. Hg _____ Intermediate leak check volume, ft <sup>3</sup> _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td>Pitot (-), pass @ in. H<sub>2</sub>O</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> <td><input type="checkbox"/> @ _____</td> </tr> <tr> <td>Pitot visual inspection</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> </tr> <tr> <td>Nozzle visual inspection</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> <td><input type="checkbox"/> pass <input type="checkbox"/> fail</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td>@ _____</td> <td>@ _____</td> <td>@ _____</td> </tr> </table>			Pre	Mid	Post	Pitot (+), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	Pitot (-), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	Pitot visual inspection	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	Nozzle visual inspection	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	Meter, cfm @ in. Hg	@ _____	@ _____	@ _____
	Pre	Mid	Post																												
Pitot (+), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____																												
Pitot (-), pass @ in. H <sub>2</sub> O	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____	<input type="checkbox"/> @ _____																												
Pitot visual inspection	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail																												
Nozzle visual inspection	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail	<input type="checkbox"/> pass <input type="checkbox"/> fail																												
Meter, cfm @ in. Hg	@ _____	@ _____	@ _____																												

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	750		880.86		0.90	0.90		263	259	249	50		85	3
	765		888.36					264	260	249	51		85	3
	780		896.01					265	263	250	54		85	3
	795		903.57					265	262	259	56		85	3
	810		911.13					264	263	260	56		85	3
	825		918.69					263	263	259	57		85	3
	840		926.10					263	261	259	49		84	3
	855		933.65					266	258	249	50		84	3
	870		941.10					264	257	249	50		83	3
	885		948.65					263	259	249	49		83	3
	900		956.23					265	259	250	50		82	3
	915		963.74					264	259	251	50		80	3
	930		971.37					264	260	250	51		79	3
	945		978.90					265	261	249	51		78	3
	960		986.26					264	258	247	52		76	3
	975		993.83					265	259	249	53		77	3
	990		1001.35					265	260	248	53		73	3
	1005		1008.92					264	261	250	53		73	3
	1020		1016.25					265	260	251	55		73	3
	1035		1023.60					264	262	248	55		73	3
	1050		1031.00					265	258	248	56		73	3
	1065		1038.50					265	254	248	56		73	3
	1080		1045.91					265	258	248	56		73	3
	1095		1053.33					263	259	248	57		73	3
	1110		1060.89					264	260	250	57		73	3
Averages														





<b>Project Information</b> Date <u>3/29/24</u> Project # <u>031381</u> Customer/Facility <u>PermaFix - Gainesville FL</u> Unit ID/Sample Location <u>UTD Combined Gas Duct</u> Run # <u>4</u> Operator <u>DF</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F _____ Barometric Pressure, in. Hg <u>30.14</u> Ref. Barometer ID <u>Wateh</u> Wind Speed / Direction _____ Precipitation, Y/N type <u>N/A</u> Probe / Filter Temp Range, °F _____				<b>ALT 011</b> TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____														
<b>Sampling Equipment IDs</b> Meterbox ID <u>EIS</u> Umbilical ID <u>UMB50</u> Nozzle ID <u>300</u> Pitot / Probe ID _____ Manometer ID <u>EIS</u> Sensitivity <u>0.01/0.1</u>		<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Nozzle diameter, Dn, in. <u>300</u> Pitot coefficient, Cp <u>-</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ _____ Pitot (-), pass @ in. H <sub>2</sub> O <input checked="" type="checkbox"/> @ _____ Pitot visual inspection <input checked="" type="checkbox"/> pass _____ Nozzle visual inspection <input checked="" type="checkbox"/> pass _____ Meter, cfm @ in. Hg <u>0.001 @ 14"</u> Intermediate leak check volume, ft <sup>3</sup> <u>1</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> <td><input checked="" type="checkbox"/> @ _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass _____</td> <td><input checked="" type="checkbox"/> pass _____</td> <td><input checked="" type="checkbox"/> pass _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> pass _____</td> <td><input checked="" type="checkbox"/> pass _____</td> <td><input checked="" type="checkbox"/> pass _____</td> </tr> </table>		Pre	Mid	Post	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> @ _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____
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<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____	<input checked="" type="checkbox"/> pass _____																				
<b>Traverse Point #</b>	<b>Elapsed Time</b>	<b>Clock Time 24hr</b>	<b>DGM Reading, Vm, ft<sup>3</sup></b>	<b>Velocity Head, ΔP in H<sub>2</sub>O</b>	<b>Orifice Pressure Differential, ΔH</b> <div style="display: flex; justify-content: space-between;"> <span>Target</span> <span>Actual</span> </div>	<b>Stack Temp, °F</b>	<b>Probe Temp, °F</b>	<b>Filter Temp, °F</b> <div style="display: flex; justify-content: space-between;"> <span>Box</span> <span>Exit</span> </div>		<b>Impinger Exit Temp, °F</b>	<b>Dry Gas Meter Temperature, °F</b> <div style="display: flex; justify-content: space-between;"> <span>Inlet</span> <span>Outlet</span> </div>		<b>Pump Vacuum, in. Hg</b>									
Single Point	0	0900	72.114		0.9 0.9		265	264	258	60		65	2									
	15	0905	79.58				263	263	259	47		68	2									
	30	0925	86.92				263	262	259	46		71	2									
	45	0945	94.43				265	263	259	46		74	2									
	60	Start	101.88				263	263	258	46		76	2									
	75		108.13				264	263	259	48		77	2									
	90		116.90				263	263	259	49		78	2									
	105		124.58				264	263	258	49		79	2									
	120		132.27				263	263	259	50		79	2									
	135		139.95				264	264	259	51		79	2									
	150		147.63				263	263	259	52		79	2									
	165		155.31				264	263	258	53		80	2									
	180		162.99				264	264	259	46		80	2									
	195		170.67				263	263	260	43		81	2									
	210		178.35				263	263	258	43		81	2									
	225		186.03				264	262	259	43		81	2									
	240		193.71				264	263	258	44		81	2									
	255		201.39				264	262	251	45		81	2									
	270		209.07				263	263	257	45		81	2									
	285		216.75				263	264	258	45		81	2									
	300		223.16				264	263	259	46		81	2									
	315		230.36				264	264	259	46		81	2									
	330		238.04				264	263	259	46		81	2									
	345		245.72				264	263	259	47		81	2									
	360		253.41				264	263	259	47		81	2									
Averages																						

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader WTK

<b>Project Information</b> Date <u>3/29/24</u> Project # <u>031381</u> Customer/Facility <u>Perma-Fix Gainsville FL</u> Unit ID/Sample Location <u>VTD Combined Gas Puch</u> Run # <u>4</u> Operator <u>DF/M</u>			<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>See Pg 1</u> Precipitation, Y/N, type _____ Probe / Filter Temp Range, °F _____			ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																													
<b>Sampling Equipment IDs</b> Meterbox ID <u>See</u> Umbilical ID <u>See</u> Nozzle ID <u>See</u> Pitot / Probe ID <u>PB</u> Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y <u>See</u> Meterbox ΔH@, in. H <sub>2</sub> O _____ Nozzle diameter, Dn, in. _____ Pitot coefficient, Cp <u>Pg</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> </thead> <tbody> <tr> <td>Pitot (+), pass @ in. H<sub>2</sub>O</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td>Pitot (-), pass @ in. H<sub>2</sub>O</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> <td><input checked="" type="checkbox"/> @</td> </tr> <tr> <td>Pitot visual inspection</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Nozzle visual inspection</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> <td><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td>@</td> <td>@</td> <td>@</td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Pre	Mid	Post	Pitot (+), pass @ in. H <sub>2</sub> O	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	Pitot (-), pass @ in. H <sub>2</sub> O	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	<input checked="" type="checkbox"/> @	Pitot visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Nozzle visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Meter, cfm @ in. Hg	@	@	@	Intermediate leak check volume, ft <sup>3</sup>			
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Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	375		261.08		0.9	0.9		264	263	259	47		79	2
	390		269.13					263	264	258	47		79	2
	405		276.18					264	263	259	47		79	2
	420		283.86					265	263	258	47		79	2
	435		291.54					264	263	257	47		79	2
	450		299.22					264	264	258	48		80	2
	465		306.90					264	262	257	48		80	2
	480		315.84					264	263	259	45		81	2
	495		321.96					265	263	259	45		81	2
	510		329.26					265	264	259	45		81	2
	525		337.62					264	263	259	46		81	2
	540		344.55					263	262	258	46		81	2
	555		351.94					263	260	254	46		81	2
	570		359.02					263	260	253	45		81	2
	585		366.67					263	259	253	42		81	2
	600		374.13					263	259	252	42		81	2
	615		381.75					263	260	252	44		81	2
	630		389.39					265	268	253	44		81	2
	645		396.93					264	260	253	43		81	2
	660		404.49					265	261	253	43		79	2
	675		412.05					264	260	252	42		79	2
	690		419.67					265	260	252	45		79	2
	705		427.23					265	261	251	44		78	2
	720		434.65					264	260	253	44		78	2
	735		442.34					265	261	252	44		78	2
Averages														

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader JK

<b>Project Information</b> Date <u>3/29-30/24</u> Project # <u>031381</u> Customer/Facility <u>PERMA-FIX GAINESVILLE, FL</u> Unit ID/Sample Location <u>VTD COMBINED GAS DUCT</u> Run # <u>4</u> Operator <u>JRM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F _____ Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction _____ Precipitation, Y / N, type _____ Probe / Filter Temp Range, °F _____				ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input checked="" type="checkbox"/> Continuity w/ Proper Polarity Notes: _____																	
<b>Sampling Equipment IDs</b> Meterbox ID <u>E15</u> Umbilical ID <u>UMB-50</u> Nozzle ID <u>0-300</u> Pitot / Probe ID _____ Manometer ID <u>E15</u> Sensitivity <u>0.01/0.10" H<sub>2</sub>O</u>		<b>Calibration</b> Meterbox Y <u>0.993</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>2.021</u> Nozzle diameter, Dn, in. <u>0.300</u> Pitot coefficient, Cp <u>0.84</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ Pitot (-), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ Pitot visual inspection <input type="checkbox"/> pass Nozzle visual inspection <input type="checkbox"/> pass Meter, cfm @ in. Hg _____ Intermediate leak check volume, ft <sup>3</sup> _____		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td>@</td> <td>@</td> <td>@</td> </tr> </table>		Pre	Mid	Post	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	@	@	@
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Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	750		449.65		0.90	0.90		263	260	253	49		77	2
	765		457.20					264	261	252	48		77	2
	780		464.85					265	259	251	47		78	2
	795		472.20					264	259	253	47		77	2
	810		479.76					265	258	252	47		77	2
	825		487.31					265	259	251	47		77	2
	840		494.88					265	260	252	48		77	2
	855		502.45					265	259	251	48		77	2
	870		510.13					264	260	252	48		77	2
	885		517.80					264	259	253	42		77	2
	900		525.30					263	259	254	42		77	2
	915		532.95					263	259	254	42		76	2
	930		540.51					265	258	254	44		76	2
	945		548.08					265	258	253	44		76	2
	960		555.55					263	260	254	44		76	2
	975		563.10					265	259	254	44		76	2
	990		570.60					265	260	254	44		76	2
	1005		578.10					263	259	253	44		76	2
	1020		585.66					265	260	254	44		76	2
	1035		593.03					265	261	253	44		76	2
	1050		600.70					264	260	252	44		76	2
	1065		608.20					264	260	253	45		76	2
	1080	0312	611.686											
	1095	HRS												
	1110	17.85												
Averages			539.572										79	

QA/QC Check Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader MSK

<b>Project Information</b>		<b>Equipment Identification</b>	
Date <u>3/25/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer _____	
Customer / Facility <u>Perma-Fix FL/Gainesville FL</u>		Hygrometer _____	
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA2831554</u>	
Run # <u>1-3</u>	Operator <u>WJK</u>	Check Weights <u>3115</u>	
		Calipers _____	

<b>Balance Audit</b> (Field balance must be within 0.5g of check weight mass)		<b>Ambient Conditions (Mobile Lab)</b>	
Date <u>3/25/2024</u>	<u>3/26/2024</u>	<u>3/27/2024</u>	<u>3/28/2024</u>
Standard mass, g <u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>
Field balance mass, g <u>999.8</u>	<u>999.7</u>	<u>999.9</u>	<u>999.8</u>
Relative humidity, % _____		Temperature, °F _____	
Mobile lab # _____			

<b>Moisture Determination</b>										
	Run1			Run 2			Run 3			
Contents	Initial	Final	Net	Initial	Final	Net	Initial	Final	Net	
Knockout										
Impinger 1	<u>H<sub>2</sub>SO<sub>4</sub></u>	<u>696.7</u>	<u>684.8</u>	<u>-11.9</u>	<u>681.1</u>	<u>671.1</u>	<u>-10.0</u>	<u>690.1</u>	<u>656.8</u>	<u>-33.3</u>
Impinger 2	<u>H<sub>2</sub>SO<sub>4</sub></u>	<u>705.5</u>	<u>755.5</u>	<u>50.0</u>	<u>722.6</u>	<u>767.2</u>	<u>44.6</u>	<u>706.0</u>	<u>756.4</u>	<u>50.4</u>
Impinger 3	<u>MT</u>	<u>612.2</u>	<u>619.1</u>	<u>6.9</u>	<u>599.8</u>	<u>606.7</u>	<u>6.9</u>	<u>613.4</u>	<u>624.1</u>	<u>10.7</u>
Impinger 4	<u>NaOH</u>	<u>722.2</u>	<u>728.2</u>	<u>6.0</u>	<u>724.6</u>	<u>727.6</u>	<u>3.0</u>	<u>716.8</u>	<u>719.3</u>	<u>2.5</u>
Impinger 5	<u>NaOH</u>	<u>724.9</u>	<u>724.8</u>	<u>-0.1</u>	<u>779.4</u>	<u>781.0</u>	<u>1.6</u>	<u>714.8</u>	<u>715.3</u>	<u>0.5</u>
Impinger 6										
Impinger 7										
Impinger 8			<u>50.9</u>			<u>46.1</u>			<u>30.8</u>	
Silica Gel	<u>SiGel</u>	<u>853.1</u>	<u>882.4</u>	<u>29.3</u>	<u>857.1</u>	<u>885.0</u>	<u>27.9</u>	<u>883.7</u>	<u>920.9</u>	<u>37.2</u>
Line Rinse		<u>903.5</u>	<u>953.1</u>	<u>49.6</u>	<u>882.1</u>	<u>938.8</u>	<u>56.7</u>	<u>889.0</u>	<u>930.9</u>	<u>41.9</u>
Train Net Gain (Vlc)			<u>129.8</u>			<u>130.7</u>			<u>109.9</u>	

<b>Nozzle Measurements</b> (Difference between any two measurements must not be more than 0.004 in (0.1 mm))						
Nozzle 1 diameters	<u>0.301</u>	D1	<u>0.300</u>	D2	<u>0.299</u>	D3 <u>0.300</u> Average
Nozzle 2 diameters		D1		D2		D3 _____ Average
Nozzle 3 diameters		D1		D2		D3 _____ Average
Nozzle Material	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> titanium <input type="checkbox"/> inconel <input type="checkbox"/> other _____					
Probe Type	<input checked="" type="checkbox"/> heated <input type="checkbox"/> unheated <input type="checkbox"/> air-cooled <input type="checkbox"/> water-cooled <input type="checkbox"/> other _____					
Probe Liner	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> Teflon <input type="checkbox"/> other _____					

<b>Filter Information</b>			
Front Half:	<input checked="" type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other _____		
Filter Number:	Run 1: <u>QEH 1950</u> Run 2: <u>QEH 1949</u> Run 3: <u>QEH 957</u> Run _____		
Back Half:	<input type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other _____		

<b>Reagent Information</b>		<b>Sample Observations</b>
Type	Lot Number	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒Checked by: TU Team Leader: WJK

001AS-QMS-FM-226

<b>Project Information</b>		<b>Equipment Identification</b>	
Date <u>3/28/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer	
Customer / Facility <u>Pennix Fix/Gainesville FL</u>		Hygrometer	
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA283/554</u>	
Run # <u>4</u>	Operator <u>MTK</u>	Check Weights <u>3115</u>	
		Calipers	

<b>Balance Audit</b> (Field balance must be within 0.5g of check weight mass)			<b>Ambient Conditions</b> (Mobile Lab)		
Date	<u>3/28/2024</u>	<u>3/29/2024</u>	<u>3/30/2024</u>	Relative humidity, %	
Standard mass, g	<u>1000.00</u>	<u>1000.00</u>	<u>1000.0</u>	Temperature, °F	
Field balance mass, g	<u>999.8</u>	<u>1000.0</u>	<u>1000.0</u>	Mobile lab #	

<b>Moisture Determination</b>									
	Run 4			Run 2			Run 3		
Contents	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g
Knockout									
Impinger 1	H <sub>2</sub> SO <sub>4</sub>	703.7	666.6	-37.1					
Impinger 2	H <sub>2</sub> SO <sub>4</sub>	713.2	754.9	41.7					
Impinger 3	MT	598.6	604.7	6.1					
Impinger 4	NaOH	796.3	798.8	2.5					
Impinger 5	NaOH	715.0	714.0	-1.0					
Impinger 6									
Impinger 7									
Impinger 8				12.2					
Line Rinse									
Impinger Net Gain, Vwc			885.7						
Silica Gel, Vwsc	853.0	943.6	37.7						
Train Net Gain, Vic	905.4	941.9	36.5	= 81.4 total					

<b>Nozzle Measurements</b> (Difference between any two measurements must not be more than 0.004 in (0.1 mm))							
Nozzle 1 diameters	D1	D2	D3	Average			
Nozzle 2 diameters	D1	D2	D3	Average			
Nozzle 3 diameters	D1	D2	D3	Average			
Nozzle Material	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> titanium	<input type="checkbox"/> inconel	<input type="checkbox"/> other	
Probe Type	<input checked="" type="checkbox"/> heated	<input type="checkbox"/> unheated	<input type="checkbox"/> air-cooled	<input type="checkbox"/> water-cooled	<input type="checkbox"/> other		
Probe Liner	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> Teflon	<input type="checkbox"/> other		

<b>Filter Information</b>						
Front Half:	<input checked="" type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other	
Filter Number:	Run 4 <u>QEH 954</u>	Run 2:	Run 3:	Run		
Back Half:	<input type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other	

<b>Reagent Information</b>		<b>Sample Observations</b>
Type	Lot Number	

 QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒

 Checked by: Tu Data Custodian: MTK

RUN I.D.	PFF-M5/26A-R1	PFF-M5/26A-R2	PFF-M5/26A-R3
DATE	3/26-27/2024	3/27-28/2024	3/28-29/2024
TIME STARTED	9:25	9:25	8:40
TIME ENDED	3:10	4:17	3:33

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#### SAMPLING PARAMETERS

Metered Volume (dcf)	497.661	540.895	565.075
Corrected Volume (dscf)	478.428	524.567	549.396
Total Test Time (min)	1065	1080	1140
Isokinetics (%)	91.2	94.0	97.0

#### GAS PARAMETERS

Gas Temperature (°F)	75	72	70
Oxygen (%)	18.9	19.0	19.0
Carbon Dioxide (%)	0.1	0.2	0.1
Moisture (%)	1.3	1.2	0.9

#### GAS FLOW RATE

Velocity (ft/sec)	17.27	18.01	17.23
Actual Volume (acfm)	51	53	51
Standard Volume (dscfm)	49	52	50

<b>RUN I.D.</b>	<b>PFF-M5/26A-R4</b>
<b>DATE</b>	<b>3/29-30/2024</b>
<b>TIME STARTED</b>	<b>9:25</b>
<b>TIME ENDED</b>	<b>3:12</b>

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**SAMPLING PARAMETERS**

Metered Volume (dcf)	539.572
Corrected Volume (dscf)	529.881
Total Test Time (min)	1071
Isokinetics (%)	100.6

**GAS PARAMETERS**

Gas Temperature (°F)	71
Oxygen (%)	19.3
Carbon Dioxide (%)	0.2
Moisture (%)	0.7

**GAS FLOW RATE**

Velocity (ft/sec)	16.94
Actual Volume (acfm)	50
Standard Volume (dscfm)	49





<b>Project Information</b> Date <u>03/26/2024</u> Project # <u>Proj - 031381</u> Customer/Facility <u>Perma-Fix Gainesville FL</u> Unit ID/Sample Location <u>BTD Combined Gas Duct</u> Run # <u>1</u> Operator <u>JTS</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>-2.8</u> Ambient Temp, °F <u>68°</u> Barometric Pressure, in. Hg <u>29.95</u> Ref. Barometer ID <u>Watch</u> Wind Speed / Direction <u>N/A</u> Precipitation, Y (N) type <u></u> Probe / Filter Temp Range, °F <u>250 ± 25</u>				ALT 011 TC ID: Ambient °F Ref. °F Stack <u>SEE</u> Probe <u>SEE</u> Filter Box <u>LAST</u> Filter Exit <u>RUN</u> Meter Outlet <u></u> Impinger Exit <u></u> Other <u></u> Ref. Thermometer ID <u></u> Continuity w/ Proper Polarity <input type="checkbox"/> Notes: <u>Single Point, post</u> <u>leak check on last page</u>																	
<b>Sampling Equipment IDs</b> Meterbox ID <u>2602</u> Umbilical ID <u>UMB-B</u> Pitot / Probe ID <u>New-2</u> Nozzle ID <u></u> Manometer ID <u>2602</u> Sensitivity <u>0.00 - 0.02</u>		<b>Calibration</b> Meterbox Y <u>0.997</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>1.874</u> Pitot coefficient, Cp <u></u> Nozzle diameter, Dn, in. <u>0.302</u> Manometer zero and level <input checked="" type="checkbox"/> yes K-Factor <u></u>		<b>Equipment Checks</b> Pitot (+), in. @ 0/15sec. <u></u> Pitot (-), in. @ 0/15sec. <u></u> Pitot visual inspection <u>pass</u> Nozzle visual inspection <u>pass</u> Meter, cfm @ in. Hg <u>0.010 @ 15</u> Intermediate leak check volume, ft <sup>3</sup> <u>/</u>		<table border="1"> <thead> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> </thead> <tbody> <tr> <td><u>/</u></td> <td><u>/</u></td> <td><u>/</u></td> </tr> <tr> <td><u>/</u></td> <td><u>/</u></td> <td><u>/</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td><u>0.010 @ 15</u></td> <td><u>@</u></td> <td><u>@</u></td> </tr> </tbody> </table>		Pre	Mid	Post	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>pass</u>	<u>0.010 @ 15</u>	<u>@</u>	<u>@</u>
Pre	Mid	Post																							
<u>/</u>	<u>/</u>	<u>/</u>																							
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<u>pass</u>	<u>pass</u>	<u>pass</u>																							
<u>pass</u>	<u>pass</u>	<u>pass</u>																							
<u>0.010 @ 15</u>	<u>@</u>	<u>@</u>																							
Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH	Stack Temp, °F	Probe Temp, °F	Filter Temp, °F	Impinger Exit Temp, °F	Dry Gas Meter Temp, °F	Pump Vacuum, in. Hg														
					Target Actual			Box Exit		Inlet Outlet															
		<u>09:25</u>	<u>209.397</u>	<u>1.0</u>	<u>1.00</u> <u>1.00</u>	<u>1.0</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>														
	<u>15</u>		<u>218.140</u>		<u>1.0</u> <u>1.0</u>		<u>258</u>	<u>259</u>	<u>257</u>	<u>46</u>	<u>73</u>														
	<u>30</u>		<u>226.670</u>		<u>1.0</u> <u>1.0</u>		<u>260</u>	<u>259</u>	<u>258</u>	<u>47</u>	<u>74</u>														
	<u>45</u>		<u>234.921</u>		<u>1.0</u> <u>1.0</u>		<u>260</u>	<u>261</u>	<u>260</u>	<u>48</u>	<u>76</u>														
	<u>60</u>		<u>243.395</u>		<u>1.0</u> <u>1.0</u>		<u>259</u>	<u>258</u>	<u>258</u>	<u>50</u>	<u>77</u>														
	<u>75</u>		<u>251.802</u>		<u>1.0</u> <u>1.0</u>		<u>261</u>	<u>260</u>	<u>259</u>	<u>50</u>	<u>78</u>														
	<u>90</u>		<u>260.284</u>		<u>0.70</u> <u>0.70</u>		<u>259</u>	<u>261</u>	<u>260</u>	<u>51</u>	<u>79</u>														
	<u>105</u>		<u>267.325</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>43</u>	<u>79</u>														
	<u>120</u>		<u>274.395</u>		<u>0.70</u> <u>0.70</u>		<u>259</u>	<u>262</u>	<u>261</u>	<u>44</u>	<u>80</u>														
	<u>135</u>		<u>281.490</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>44</u>	<u>81</u>														
	<u>150</u>		<u>288.631</u>		<u>0.70</u> <u>0.70</u>		<u>259</u>	<u>260</u>	<u>260</u>	<u>45</u>	<u>81</u>														
	<u>165</u>		<u>295.702</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>259</u>	<u>259</u>	<u>45</u>	<u>82</u>														
	<u>180</u>		<u>302.856</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>261</u>	<u>260</u>	<u>46</u>	<u>81</u>														
	<u>195</u>		<u>309.902</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>46</u>	<u>82</u>														
	<u>210</u>		<u>316.951</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>47</u>	<u>82</u>														
	<u>225</u>		<u>324.097</u>		<u>0.70</u> <u>0.70</u>		<u>258</u>	<u>260</u>	<u>259</u>	<u>48</u>	<u>82</u>														
	<u>240</u>		<u>331.105</u>		<u>0.70</u> <u>0.70</u>		<u>261</u>	<u>260</u>	<u>260</u>	<u>46</u>	<u>82</u>														
	<u>255</u>		<u>338.102</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>261</u>	<u>261</u>	<u>46</u>	<u>82</u>														
	<u>270</u>		<u>345.675</u>		<u>0.70</u> <u>0.70</u>		<u>261</u>	<u>260</u>	<u>260</u>	<u>48</u>	<u>83</u>														
	<u>285</u>		<u>352.401</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>259</u>	<u>260</u>	<u>48</u>	<u>83</u>														
	<u>300</u>		<u>359.436</u>		<u>0.70</u> <u>0.70</u>		<u>259</u>	<u>260</u>	<u>261</u>	<u>49</u>	<u>83</u>														
	<u>315</u>		<u>365.981</u>		<u>0.70</u> <u>0.70</u>		<u>261</u>	<u>260</u>	<u>259</u>	<u>50</u>	<u>83</u>														
	<u>330</u>		<u>373.690</u>		<u>0.70</u> <u>0.70</u>		<u>262</u>	<u>260</u>	<u>259</u>	<u>50</u>	<u>83</u>														
	<u>345</u>		<u>381.042</u>		<u>0.70</u> <u>0.70</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>51</u>	<u>84</u>														
	<u>360</u>		<u>388.301</u>		<u>0.80</u> <u>0.80</u>		<u>260</u>	<u>260</u>	<u>260</u>	<u>51</u>	<u>84</u>														
	<u>375</u>	<u>15:40</u>	<u>395.895</u>		<u>0.80</u> <u>0.80</u>		<u>261</u>	<u>260</u>	<u>259</u>	<u>55</u>	<u>84</u>														
Averages																									

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Data Custodian WJK

001AS-QMS-FM-225R1

\* JTC 03/26/24

<b>Project Information</b>		<b>Sampling Conditions</b>		<b>ALT 011 TC ID:</b> Ambient °F Ref. °F																						
Date <u>03/26/2024</u> Project # <u>Proj-031381</u>		Static Pressure, in. H <sub>2</sub> O <u>—</u> Ambient Temp, °F <u>68°</u>		Stack <u>SEE</u>																						
Customer/Facility <u>Perma-Fix Gainesville FL</u>		Barometric Pressure, in. Hg <u>—</u> Ref. Barometer ID <u>—</u>		Probe <u>LAST</u>																						
Unit ID/Sample Location <u>BTD Combined Gas Duct</u>		Wind Speed / Direction <u>N/A</u> Precipitation, Y/N type <u>—</u>		Filter Box <u>RUN</u>																						
Run # <u>1</u> Operator <u>JTS/PDM</u>		Probe / Filter Temp Range, °F <u>250 ± 25</u>		Filter Exit <u>—</u>																						
<b>Sampling Equipment IDs</b>		<b>Calibration</b>		<b>Equipment Checks</b>																						
Meterbox ID <u>2602</u>		Meterbox Y <u>0.997</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> </tr> <tr> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> </tr> <tr> <td>Pitot visual inspection <u>pass</u></td> <td>Pitot visual inspection <u>pass</u></td> <td>Pitot visual inspection <u>pass</u></td> </tr> <tr> <td>Nozzle visual inspection <u>pass</u></td> <td>Nozzle visual inspection <u>pass</u></td> <td>Nozzle visual inspection <u>pass</u></td> </tr> <tr> <td>Meter, cfm @ in. Hg <u>—</u></td> <td>Meter, cfm @ in. Hg <u>—</u></td> <td>Meter, cfm @ in. Hg <u>—</u></td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup> <u>—</u></td> <td>Intermediate leak check volume, ft<sup>3</sup> <u>—</u></td> <td>Intermediate leak check volume, ft<sup>3</sup> <u>—</u></td> </tr> </table>		Pre	Mid	Post	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot visual inspection <u>pass</u>	Pitot visual inspection <u>pass</u>	Pitot visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Meter, cfm @ in. Hg <u>—</u>	Meter, cfm @ in. Hg <u>—</u>	Meter, cfm @ in. Hg <u>—</u>	Intermediate leak check volume, ft <sup>3</sup> <u>—</u>	Intermediate leak check volume, ft <sup>3</sup> <u>—</u>	Intermediate leak check volume, ft <sup>3</sup> <u>—</u>
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Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>																								
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Umbilical ID <u>UMB-B</u>		Meterbox ΔH@, in. H <sub>2</sub> O <u>1.874</u>		Meter Outlet <u>—</u>																						
Pitot / Probe ID <u>New-2</u>		Pitot coefficient, Cp <u>—</u>		Impinger Exit <u>—</u>																						
Nozzle ID <u>—</u>		Nozzle diameter, Dn, in. <u>—</u>		Other <u>—</u>																						
Manometer ID <u>2602</u>		Manometer zero and level <input checked="" type="checkbox"/> yes		Ref. Thermometer ID <u>—</u>																						
Sensitivity <u>0.00 - 00.0</u>		K-Factor <u>—</u>		Continuity w/ Proper Polarity <input type="checkbox"/>																						
Notes: <u>Pre leak check on page 1</u>																										

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
	390	15:56	403512		0.80	0.80		259	261	260	59		85	2
	405		411075		0.80	0.80		259	260	260	46		86	2
	420		418702		0.80	0.80		260	261	260	45		86	2
	435		426.350		0.80	0.80		260	260	260	46		86	2
	450		434.123		0.80	0.80		260	259	260	46		86	2
	465		441.598		0.80	0.80		260	261	260	49		86	2
	480		449.176		0.80	0.80		260	260	260	49		86	2
	495		456.801		0.80	0.80		261	259	258	50		87	2
	510		464.321		0.80	0.80		260	260	259	50		87	2
	525		472.011		0.80	0.80		259	260	258	51		87	2
	540		479.505		0.80	0.80		260	260	260	51		87	2
	555		487.103		0.80	0.80		259	261	261	44		88	2
	570		494.813		0.80	0.80		260	260	260	44		88	2
	585		502.411		0.80	0.80		261	260	259	46		88	2
	600		510.015		0.80	0.80		261	259	258	48		88	2
	615		517.579		0.80	0.80		261	260	259	49		88	2
	630		525.115		0.80	0.80		262	261	260	49		88	2
	645		532.624		0.80	0.80		261	261	260	49		88	2
	660		540.127		0.80	0.80		262	261	260	49		87	2
	675		547.614		0.80	0.80		262	260	260	50		87	2
	690		555.264		0.80	0.80		262	260	260	50		87	2
	705		562.883		0.80	0.80		261	259	259	51		87	2
	720		570.494		0.80	0.80		262	258	258	51		87	2
	735		578.110		0.80	0.80		263	259	259	51		86	2
	750		585.695		0.80	0.80		263	260	259	51		87	2
	765		593.214		0.80	0.80		263	260	260	51		86	2
Averages														

001AS-QMS-FM-225

<b>Project Information</b> Date <u>03/27/24</u> Project # <u>Proj - 031381</u> Customer/Facility <u>PermaFix Grainville OH</u> Unit ID/Sample Location <u>VTD Combined Gas Duct</u> Run # <u>2</u> Operator <u>JTS</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O <u>29.93</u> Ambient Temp, °F <u>65</u> Barometric Pressure, in. Hg <u>29.93</u> Ref. Barometer ID <u>Uckh</u> Wind Speed / Direction <u>N/A</u> Precipitation, Y/N type <u>0</u> Probe / Filter Temp Range, °F <u>260 ± 25</u>				ALT 011 TC ID: Ambient °F Ref. °F Stack <u>SEE</u> Probe <u>LAST</u> Filter Box <u>RUN</u> Filter Exit Meter Outlet Impinger Exit Other Ref. Thermometer ID Continuity w/ Proper Polarity <input type="checkbox"/> Notes: <u>Leak check on last sheet (Post)</u>																																																																																																																																																																																																																																																																																																																																																																																																																																		
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<tr><td></td><td>60</td><td></td><td>781.104</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>259</td><td>259</td><td>46</td><td>75</td><td>—</td><td>2</td></tr> <tr><td></td><td>75</td><td></td><td>788.905</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>261</td><td>46</td><td>75</td><td>—</td><td>2</td></tr> <tr><td></td><td>90</td><td></td><td>796.842</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>260</td><td>46</td><td>77</td><td>—</td><td>2</td></tr> <tr><td></td><td>105</td><td></td><td>804.125</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>260</td><td>47</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>120</td><td></td><td>812.875</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>261</td><td>47</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>135</td><td>Pause run</td><td>820.125</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>261</td><td>55</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>150</td><td>@ 11:50</td><td>828.831</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>259</td><td>47</td><td>77</td><td>—</td><td>2</td></tr> <tr><td></td><td>165</td><td>resume</td><td>836.041</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>259</td><td>47</td><td>77</td><td>—</td><td>2</td></tr> <tr><td></td><td>180</td><td>run 12:40</td><td>843.951</td><td></td><td>0.90</td><td>0.90</td><td></td><td>261</td><td>261</td><td>259</td><td>48</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>195</td><td></td><td>852.604</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>259</td><td>259</td><td>48</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>210</td><td></td><td>860.425</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>257</td><td>49</td><td>78</td><td>—</td><td>2</td></tr> <tr><td></td><td>225</td><td></td><td>868.731</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>259</td><td>49</td><td>79</td><td>—</td><td>2</td></tr> <tr><td></td><td>240</td><td></td><td>876.950</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>259</td><td>260</td><td>50</td><td>80</td><td>—</td><td>2</td></tr> <tr><td></td><td>255</td><td></td><td>884.721</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>259</td><td>260</td><td>50</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>270</td><td></td><td>893.041</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>259</td><td>50</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>285</td><td></td><td>902.124</td><td></td><td>0.90</td><td>0.90</td><td></td><td>261</td><td>259</td><td>259</td><td>48</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>300</td><td></td><td>909.567</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>260</td><td>45</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>315</td><td></td><td>918.805</td><td></td><td>0.90</td><td>0.90</td><td></td><td>261</td><td>260</td><td>261</td><td>44</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>330</td><td></td><td>928.004</td><td></td><td>0.90</td><td>0.90</td><td></td><td>260</td><td>260</td><td>260</td><td>44</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>345</td><td></td><td>938.910</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>260</td><td>44</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>360</td><td></td><td>949.301</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>260</td><td>45</td><td>81</td><td>—</td><td>2</td></tr> <tr><td></td><td>375</td><td></td><td>955.692</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>260</td><td>45</td><td>81</td><td>—</td><td>2</td></tr> <tr><td>Averages</td><td>390</td><td>16:45</td><td>959.704</td><td></td><td>0.90</td><td>0.90</td><td></td><td>259</td><td>260</td><td>260</td><td>46</td><td>82</td><td>—</td><td>2</td></tr> </tbody> </table>	Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg	Target	Actual	Box	Exit	Inlet	Outlet		0	09:25	749.110		0.90	0.90		—	—	—	—	—	—	—		15		757.002		0.90	0.90		259	259	260	54	71	—	2		30		765022		0.90	0.90		260	261	260	53	73	—	2		45		773.013		0.90	0.90		259	260	260	47	74	—	2		60		781.104		0.90	0.90		259	259	259	46	75	—	2		75		788.905		0.90	0.90		260	260	261	46	75	—	2		90		796.842		0.90	0.90		259	260	260	46	77	—	2		105		804.125		0.90	0.90		260	260	260	47	78	—	2		120		812.875		0.90	0.90		260	260	261	47	78	—	2		135	Pause run	820.125		0.90	0.90		259	260	261	55	78	—	2		150	@ 11:50	828.831		0.90	0.90		260	260	259	47	77	—	2		165	resume	836.041		0.90	0.90		260	260	259	47	77	—	2		180	run 12:40	843.951		0.90	0.90		261	261	259	48	78	—	2		195		852.604		0.90	0.90		260	259	259	48	78	—	2		210		860.425		0.90	0.90		260	260	257	49	78	—	2		225		868.731		0.90	0.90		260	260	259	49	79	—	2		240		876.950		0.90	0.90		260	259	260	50	80	—	2		255		884.721		0.90	0.90		260	259	260	50	81	—	2		270		893.041		0.90	0.90		260	260	259	50	81	—	2		285		902.124		0.90	0.90		261	259	259	48	81	—	2		300		909.567		0.90	0.90		260	260	260	45	81	—	2		315		918.805		0.90	0.90		261	260	261	44	81	—	2		330		928.004		0.90	0.90		260	260	260	44	81	—	2		345		938.910		0.90	0.90		259	260	260	44	81	—	2		360		949.301		0.90	0.90		259	260	260	45	81	—	2		375		955.692		0.90	0.90		259	260	260	45	81	—	2	Averages	390	16:45	959.704		0.90	0.90		259	260	260	46	82	—	2
Traverse Point #						Elapsed Time	Clock Time 24hr			DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O		Orifice Pressure Differential, ΔH			Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg																																																																																																																																																																																																																																																																																																																																																																																																																			
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Note  
pause

<b>Project Information</b> Date <u>03/27/24</u> Project # <u>Proj-03B81</u> Customer/Facility <u>Perma-Fix Gainesville FL</u> Unit ID/Sample Location <u>VTD Combined Gas Duct</u> Run # <u>2</u> Operator <u>JTS/DDM</u>		<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F <u>69°</u> Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>N/A</u> Precipitation, Y/N type _____ Probe / Filter Temp Range, °F <u>260 ± 25</u>		ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack <u>SEG</u> Probe <u>LAST</u> Filter Box <u>RUN</u> Filter Exit _____ Meter Outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity w/ Proper Polarity <input type="checkbox"/> Notes: _____																													
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID _____ Pitot / Probe ID <u>see page 1</u> Nozzle ID _____ Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y <u>see</u> Meterbox ΔH@, in. H <sub>2</sub> O <u>page 1</u> Pitot coefficient, Cp _____ Nozzle diameter, Dn, in. _____ Manometer zero and level <input type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> </thead> <tbody> <tr> <td>Pitot (+), in. @ 0/15sec.</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> </tr> <tr> <td>Pitot (-), in. @ 0/15sec.</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> </tr> <tr> <td>Pitot visual inspection</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> </tr> <tr> <td>Nozzle visual inspection</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> <td style="text-align: center;"><input type="checkbox"/> pass</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td style="text-align: center;">@</td> <td style="text-align: center;">@</td> <td style="text-align: center;">@</td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup></td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> </tr> </tbody> </table>			Pre	Mid	Post	Pitot (+), in. @ 0/15sec.	/	/	/	Pitot (-), in. @ 0/15sec.	/	/	/	Pitot visual inspection	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	Nozzle visual inspection	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	Meter, cfm @ in. Hg	@	@	@	Intermediate leak check volume, ft <sup>3</sup>	/	/	/
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Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
405	400	17:00	964.792		0.90	0.90		261	260	260	46		80	2
420	405		972.904		0.90	0.90		260	260	259	46		80	2
	435		978.020		0.90	0.90		260	261	260	46		80	2
	450		986.875		0.90	0.90		259	259	259	47		80	2
	465		992.729		0.90	0.90		260	259	260	48		80	2
	480		000.945		0.90	0.90		261	259	259	48		80	2
	495		012.643		0.90	0.90		259	260	260	48		80	2
	510		020.720		0.90	0.90		260	260	259	48		81	2
	525		028.725		0.90	0.90		261	261	260	49		81	2
	540		036.614		0.90	0.90		260	261	259	49		80	2
	555		044.801		0.90	0.90		261	260	259	46		81	2
	570		052.797		0.90	0.90		260	260	259	46		81	2
	585		060.511		0.90	0.90		261	260	260	46		81	2
	600		068.791		0.90	0.90		261	261	259	47		81	2
	615		076.795		0.90	0.90		261	260	260	47		81	2
	630		084.911		0.90	0.90		261	260	259	47		81	2
	645		092.846		0.90	0.90		262	261	260	47		81	2
	660		101.013		0.90	0.90		261	261	260	47		82	2
	675		109.141		0.90	0.90		261	259	259	47		82	2
	690		117.230		0.90	0.90		261	261	260	49		81	2
	705		124.882		0.90	0.90		261	260	260	50		81	2
	720		132.803		0.90	0.90		262	261	260	48		81	2
	735		140.786		0.90	0.90		262	261	261	48		81	2
	750		148.615		0.90	0.90		262	260	259	47		81	2
	765		156.498		0.90	0.90		262	260	259	47		81	2
	780		164.379		0.90	0.90		261	260	259	47		81	2
Averages	795		172.264		0.90	0.90		262	260	259	48		81	2

 QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Data Custodian MSK

001AS-QMS-FM-225R1

JTS 03/27/24



<b>Project Information</b>		<b>Sampling Conditions</b>		<b>ALT 011</b>	
Date <u>03/28/24</u>	Project # <u>Proj-031381</u>	Static Pressure, in. H <sub>2</sub> O <u>-3.2</u>	Ambient Temp, °F <u>68°</u>	TC ID:	Ambient °F Ref. °F
Customer/Facility <u>Perma-Fix Gainesville FL</u>		Barometric Pressure, in. Hg <u>29.95</u>	Ref. Barometer ID <u>Watch</u>	Stack <u>SEE</u>	
Unit ID/Sample Location <u>VTD Combined Gas Duct</u>		Wind Speed / Direction <u>N/A</u>	Precipitation, Y <u>N</u> type	Probe <u>CAST</u>	
Run # <u>3</u>	Operator <u>JTS</u>	Probe / Filter Temp Range, °F <u>260 ± 25</u>		Filter Box <u>RUN</u>	
<b>Sampling Equipment IDs</b>		<b>Calibration</b>		<b>Equipment Checks</b>	
Meterbox ID <u>2602</u>	Meterbox Y <u>0.997</u>	Pitot (+), in. @ 0/15sec.		Pre	Mid
Umbilical ID <u>UMB-B</u>	Meterbox ΔH@, in. H <sub>2</sub> O <u>1.874</u>	Pitot (-), in. @ 0/15sec.			
Pitot / Probe ID <u>NEW-2</u>	Pitot coefficient, Cp	Pitot visual inspection		<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass
Nozzle ID	Nozzle diameter, Dn, in. <u>0.302</u>	Nozzle visual inspection		<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass
Manometer ID <u>2602</u>	Manometer zero and level <input checked="" type="checkbox"/> yes	Meter, cfm @ in. Hg <u>0.004 @ 15</u>		<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass
Sensitivity <u>0.00 - 00.0</u>	K-Factor	Intermediate leak check volume, ft <sup>3</sup>			
				Notes: <u>Post Leak check on</u>	

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
Single Point	15	08:40	325960		0.90	0.90								
	30		333795		0.90	0.90		259	260	260	45		69	2
	45		341705*		0.90	0.90		259	259	261	46		71	2
	60		349902		0.90	0.90		260	260	261	47		72	2
	75		357562		0.90	0.90		259	261	260	48		73	2
	90		365420		0.90	0.90		260	260	260	47		74	2
	105		373604		0.90	0.90		260	260	259	47		74	2
	120		381450		0.90	0.90		259	261	260	47		75	2
	135		389260		0.90	0.90		259	261	260	47		75	2
	150		397734		0.90	0.90		260	261	260	47		76	2
	165		405378		0.90	0.90		259	260	259	47		77	2
	180		413402		0.90	0.90		259	259	260	48		77	2
	195		421568		0.90	0.90		260	259	260	48		77	2
	210		429750		0.90	0.90		260	260	259	48		78	2
	225		437918		0.90	0.90		260	260	260	49		78	2
	240		445705		0.90	0.90		259	260	259	49		78	2
	255		453168		0.90	0.90		261	260	260	49		79	2
	270		461025		0.90	0.90		260	259	260	49		79	2
	285		469420		0.90	0.90		261	260	259	50		79	2
	300		477926		0.90	0.90		259	259	261	44		78	2
	315		484951		0.90	0.90		260	260	260	44		78	2
	330		492208		0.90	0.90		261	261	260	44		78	2
	345		500762		0.90	0.90		260	261	260	45		78	2
	360		508434		0.90	0.90		260	259	261	45		78	2
	375		516598		0.90	0.90		261	259	259	45		79	2
	390	15:10	524807		0.90	0.90		258	260	260	46		79	2
Averages			532800		0.90	0.90		259	259	259	46		79	2

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Data Custodian WJK

001AS-QMS-FM-225R1

410

↓ JTS  
03/28/24



<b>Project Information</b> Date _____ Project # <u>SEE PAGE 1</u> Customer/Facility _____ Unit ID/Sample Location _____ Run # _____ Operator <u>JTS/DDM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F <u>70°</u> Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>N/A</u> Precipitation, Y / <input checked="" type="checkbox"/> type _____ Probe / Filter Temp Range, °F <u>260 ± 25</u>				ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack <u>SEE</u> Probe <u>LAST</u> Filter Box <u>RUN</u> Filter Exit _____ Meter Outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity w/ Proper Polarity <input type="checkbox"/> Notes: _____																		
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID _____ Pitot / Probe ID <u>SEE PAGE 1</u> Nozzle ID <u>PAGE 1</u> Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y _____ Meterbox ΔH@, in. H <sub>2</sub> O <u>SEE PAGE 1</u> Pitot coefficient, Cp <u>SEE PAGE 1</u> Nozzle diameter, Dn, in. _____ Manometer zero and level <input type="checkbox"/> yes K-Factor _____		<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> </tr> <tr> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> </tr> <tr> <td>Pitot visual inspection <u>pass</u></td> <td>Pitot visual inspection <u>pass</u></td> <td>Pitot visual inspection <u>pass</u></td> </tr> <tr> <td>Nozzle visual inspection <u>pass</u></td> <td>Nozzle visual inspection <u>pass</u></td> <td>Nozzle visual inspection <u>pass</u></td> </tr> <tr> <td>Meter, cfm @ in. Hg <u>@</u></td> <td>Meter, cfm @ in. Hg <u>@</u></td> <td>Meter, cfm @ in. Hg <u>@</u></td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup> <u>/</u></td> <td>Intermediate leak check volume, ft<sup>3</sup> <u>/</u></td> <td>Intermediate leak check volume, ft<sup>3</sup> <u>/</u></td> </tr> </table>		Pre	Mid	Post	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (+), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	Pitot visual inspection <u>pass</u>	Pitot visual inspection <u>pass</u>	Pitot visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Nozzle visual inspection <u>pass</u>	Meter, cfm @ in. Hg <u>@</u>	Meter, cfm @ in. Hg <u>@</u>	Meter, cfm @ in. Hg <u>@</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>
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Meter, cfm @ in. Hg <u>@</u>	Meter, cfm @ in. Hg <u>@</u>	Meter, cfm @ in. Hg <u>@</u>																								
Intermediate leak check volume, ft <sup>3</sup> <u>/</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>	Intermediate leak check volume, ft <sup>3</sup> <u>/</u>																								

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
Single Point	405	15:25	540906		0.90	0.90		260	261	260	47		80	2
	420		548720		↑	↑		260	261	260	47		80	2
	435		556543					260	259	260	48		80	2
	450		564022					260	259	260	49		81	2
	465		572156					260	259	260	50		81	2
	480		580493					260	259	261	50		81	2
	495		588750					260	260	261	50		81	2
	510		596525					260	260	261	50		81	2
	525		604903					260	260	260	51		81	2
	540		613100					259	261	261	51		81	2
	555		621956					260	260	259	52		82	2
	570		630721					260	259	259	52		82	2
	585		638604					260	260	260	52		82	2
	600		646920					260	260	260	53		82	2
	615		655211					260	260	259	52		82	2
	630		661115					262	262	261	43		82	2
	645		669035					261	260	260	43		82	2
	660		677141					261	261	260	43		82	2
	675		684971					260	259	258	43		82	2
	690		692861					261	260	258	43		82	2
	705		700214					261	259	259	43		82	2
	720		708863					263	260	259	45		81	2
	735		716801					261	260	259	45		81	2
	750		724764					260	260	259	45		81	2
	765		732604					261	260	258	45		81	2
	780		740726					262	260	259	47		81	2
Averages	795		748806		U	U		261	260	260	47		81	2

<b>Project Information</b> Date _____ Project # <u>See page 1</u> Customer/Facility _____ Unit ID/Sample Location _____ Run # _____ Operator _____			<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp. °F <u>64°</u> Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>NA</u> Precipitation, Y / N, type _____ Probe / Filter Temp Range, °F <u>260° ± 25°</u>			ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack _____ Probe _____ Filter Box _____ Filter Exit _____ Meter outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity Check <input type="checkbox"/> Continuity w/ Proper Polarity _____ Notes: _____																			
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID _____ Nozzle ID _____ Pitot / Probe ID <u>See Page 1</u> Manometer ID _____ Sensitivity _____		<b>Calibration</b> Meterbox Y _____ Meterbox ΔH <sub>0</sub> , in. H <sub>2</sub> O _____ Nozzle diameter, D <sub>n</sub> , in. <u>See</u> Pitot coefficient, C <sub>p</sub> <u>Page 1</u> Manometer zero and level <input type="checkbox"/> yes K Factor _____		<b>Equipment Checks</b> Pitot (+), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ Pitot (-), pass @ in. H <sub>2</sub> O <input type="checkbox"/> @ Pitot visual inspection <input type="checkbox"/> pass Nozzle visual inspection <input type="checkbox"/> pass Meter, cfm @ in. Hg @ Intermediate leak check volume, ft <sup>3</sup> / /		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> <td><input type="checkbox"/> @</td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> <td><input type="checkbox"/> pass</td> </tr> <tr> <td>@</td> <td>@</td> <td>@</td> </tr> </table>		Pre	Mid	Post	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass	@	@	@
Pre	Mid	Post																							
<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @																							
<input type="checkbox"/> @	<input type="checkbox"/> @	<input type="checkbox"/> @																							
<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass																							
<input type="checkbox"/> pass	<input type="checkbox"/> pass	<input type="checkbox"/> pass																							
@	@	@																							

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temperature, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
Single Point	810	2010	756.911		0.90	0.90		260	260	258	48		80	2
	825		764.927		0.90	0.90		259	260	259	49		80	2
	840		772.741		0.90	0.90		261	259	258	49		80	2
	855		780.469		0.90	0.90		260	260	259	49		79	2
	870		788.533		0.90	0.90		261	260	259	49		79	2
	885		796.422		0.90	0.90		261	261	260	50		79	2
	900		804.238		0.90	0.90		261	260	259	46		79	2
	915		812.198		0.90	0.90		260	260	259	47		79	2
	930		820.007		0.90	0.90		260	259	258	47		79	2
	945		828.116		0.90	0.90		261	260	259	47		79	2
	960		836.003		0.90	0.90		262	261	259	47		79	2
	975		843.910		0.90	0.90		260	260	258	48		79	2
	990		851.812		0.90	0.90		259	260	259	49		79	2
	1005		859.671		0.90	0.90		258	260	259	49		79	2
	1020		867.413		0.90	0.90		260	260	258	51		79	2
	1035		875.312		0.90	0.90		261	260	259	47		79	2
	1050		883.411		0.90	0.90		260	260	258	47		77	2
	1065		891.267		0.90	0.90		261	259	259	47		77	2
	1080		899.204		0.90	0.90		261	260	258	47		76	2
	1095		907.109		0.90	0.90		261	260	258	48		76	2
	1110		914.991		0.90	0.90		260	260	258	48		75	2
	1125		922.890		0.90	0.90		259	259	258	49		75	2
	1130	0333	925.868		0.90	0.90		260						
	HRS													
	19.0													
Averages			599.908			0.9							79	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TU Team Leader KCJ

<b>Project Information</b>				<b>Sampling Conditions</b>				<b>ALT 011 TC ID: Ambient °F Ref. °F</b>																					
Date <u>03/29/24</u> Project # <u>Proj-031381</u>				Static Pressure, in. H <sub>2</sub> O <u>-3.2</u> Ambient Temp, °F <u>65°</u>				Stack <u>—</u> <u>—</u> <u>—</u>																					
Customer/Facility <u>Perma-Fix Gainesville FL</u>				Barometric Pressure, in. Hg <u>30.14</u> Ref. Barometer ID <u>batch</u>				Probe <u>TC:02</u> <u>70°</u> <u>69°</u>																					
Unit ID/Sample Location <u>VTD Combined Gas Duct</u>				Wind Speed / Direction <u>N/A</u> Precipitation, Y/N/type <u>0</u>				Filter Box <u>TC:03</u> <u>68</u> <u>69</u>																					
Run # <u>4</u> Operator <u>JTS</u>				Probe / Filter Temp Range, °F <u>260 ± 25</u>				Filter Exit <u>TC:04</u> <u>70</u> <u>70</u>																					
<b>Sampling Equipment IDs</b>				<b>Calibration</b>				<b>Equipment Checks</b>																					
Meterbox ID <u>2602</u>				Meterbox Y <u>0.997</u>				<table border="1"> <tr> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> <tr> <td>Pitot (+), in. @ 0/15sec. <u>—</u></td> <td><u>—</u></td> <td><u>—</u></td> </tr> <tr> <td>Pitot (-), in. @ 0/15sec. <u>—</u></td> <td><u>—</u></td> <td><u>—</u></td> </tr> <tr> <td>Pitot visual inspection <u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td>Nozzle visual inspection <u>pass</u></td> <td><u>pass</u></td> <td><u>pass</u></td> </tr> <tr> <td>Meter, cfm @ in. Hg <u>0.008 @ 16</u></td> <td><u>—</u></td> <td><u>—</u></td> </tr> </table>				Pre	Mid	Post	Pitot (+), in. @ 0/15sec. <u>—</u>	<u>—</u>	<u>—</u>	Pitot (-), in. @ 0/15sec. <u>—</u>	<u>—</u>	<u>—</u>	Pitot visual inspection <u>pass</u>	<u>pass</u>	<u>pass</u>	Nozzle visual inspection <u>pass</u>	<u>pass</u>	<u>pass</u>	Meter, cfm @ in. Hg <u>0.008 @ 16</u>	<u>—</u>	<u>—</u>
Pre	Mid	Post																											
Pitot (+), in. @ 0/15sec. <u>—</u>	<u>—</u>	<u>—</u>																											
Pitot (-), in. @ 0/15sec. <u>—</u>	<u>—</u>	<u>—</u>																											
Pitot visual inspection <u>pass</u>	<u>pass</u>	<u>pass</u>																											
Nozzle visual inspection <u>pass</u>	<u>pass</u>	<u>pass</u>																											
Meter, cfm @ in. Hg <u>0.008 @ 16</u>	<u>—</u>	<u>—</u>																											
Umbilical ID <u>UMB-B</u>				Meterbox ΔH@, in. H <sub>2</sub> O <u>1.874</u>				Intermediate leak check volume, ft <sup>3</sup> <u>—</u>																					
Pitot / Probe ID <u>New-2</u>				Pitot coefficient, Cp <u>—</u>				Ref. Thermometer ID <u>—</u>																					
Nozzle ID <u>—</u>				Nozzle diameter, Dn, in. <u>0.302</u>				Continuity w/ Proper Polarity <input checked="" type="checkbox"/>																					
Manometer ID <u>2602</u>				Manometer zero and level <input checked="" type="checkbox"/> yes				Notes: <u>constant ΔH, Post</u>																					
Sensitivity <u>0.00 00.0</u>				K-Factor <u>—</u>				Leak check on last page																					
Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Ramp Vacuum, in. Hg															
					Target	Actual			Box	Exit		Inlet	Outlet																
Single	—	09:00	926.251		0.90	0.90		—	—	—	—	—	—	—															
Pitot	15	pause	934095		↑	↑		260	260	259	47		66	2															
↑	30	09:25	942026		↑	↑		260	260	261	47		67	2															
	45	resume	9419701		↑	↑		260	260	260	47		67	2															
	60	09:45	957640		↑	↑		261	260	260	49		69	2															
	75		965407		↑	↑		260	261	260	50		70	2															
	90		973500		↑	↑		260	260	260	51		72	2															
	105		981956		↑	↑		261	260	260	51		73	2															
	120		989114		↑	↑		260	260	260	52		75	2															
	135		997828		↑	↑		260	260	261	53		76	2															
	150		005605		↑	↑		261	260	261	54		76	2															
	165		013570		↑	↑		260	260	260	55		77	2															
	180		021489		↑	↑		260	261	259	55		77	2															
	195		029542		↑	↑		260	260	260	45		77	2															
	210		037690		↑	↑		260	260	261	41		78	2															
	225		045987		↑	↑		260	261	260	41		78	2															
	240		053130		↑	↑		261	261	261	43		78	2															
	255		061824		↑	↑		261	260	260	44		79	2															
	270		069951		↑	↑		260	261	261	45		79	2															
	285		079502		↑	↑		259	261	259	45		79	2															
	300		080738		↑	↑		260	261	261	46		79	2															
	315		095124		↑	↑		260	262	266	46		79	2															
	330		103342		↑	↑		260	260	260	47		79	2															
	345		111065		↑	↑		261	261	260	48		80	2															
	360		118978		↑	↑		260	260	261	49		80	2															
↓	375		125104		↓	↓		261	260	261	50		80	2															
Averages	390		12133780		↓	↓		260	260	260	50		81	2															

note  
pause

<b>Project Information</b> Date _____ Project # <u>SEE</u> Customer/Facility <u>PAGE 1</u> Unit ID/Sample Location _____ Run # _____ Operator <u>JTS / DM</u>				<b>Sampling Conditions</b> Static Pressure, in. H <sub>2</sub> O _____ Ambient Temp, °F <u>70°</u> Barometric Pressure, in. Hg _____ Ref. Barometer ID _____ Wind Speed / Direction <u>N/A</u> Precipitation, Y <input checked="" type="checkbox"/> type _____ Probe / Filter Temp Range, °F <u>260 ± 25</u>				ALT 011 TC ID: _____ Ambient °F _____ Ref. °F _____ Stack <u>SEG</u> Probe <u>Page 1</u> Filter Box _____ Filter Exit _____ Meter Outlet _____ Impinger Exit _____ Other _____ Ref. Thermometer ID _____ Continuity w/ Proper Polarity <input type="checkbox"/> Notes: _____																															
<b>Sampling Equipment IDs</b> Meterbox ID _____ Umbilical ID <u>SEE</u> Pitot / Probe ID <u>PAGE 1</u> Nozzle ID _____ Manometer ID _____ Sensitivity _____				<b>Calibration</b> Meterbox Y _____ Meterbox ΔH@, in. H <sub>2</sub> O <u>SEE</u> Pitot coefficient, C <sub>p</sub> <u>PAGE</u> Nozzle diameter, D <sub>n</sub> , in. <u>1</u> Manometer zero and level <input type="checkbox"/> yes K-Factor _____				<b>Equipment Checks</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Pre</th> <th>Mid</th> <th>Post</th> </tr> </thead> <tbody> <tr> <td>Pitot (+), in. @ 0/15sec.</td> <td style="text-align: center;">— / —</td> <td style="text-align: center;">— / —</td> <td style="text-align: center;">— / —</td> </tr> <tr> <td>Pitot (-), in. @ 0/15sec.</td> <td style="text-align: center;">— / —</td> <td style="text-align: center;">— / —</td> <td style="text-align: center;">— / —</td> </tr> <tr> <td>Pitot visual inspection</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Nozzle visual inspection</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> <td style="text-align: center;"><input checked="" type="checkbox"/> pass</td> </tr> <tr> <td>Meter, cfm @ in. Hg</td> <td style="text-align: center;">— @ —</td> <td style="text-align: center;">— @ —</td> <td style="text-align: center;">— @ —</td> </tr> <tr> <td>Intermediate leak check volume, ft<sup>3</sup></td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> </tr> </tbody> </table>					Pre	Mid	Post	Pitot (+), in. @ 0/15sec.	— / —	— / —	— / —	Pitot (-), in. @ 0/15sec.	— / —	— / —	— / —	Pitot visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Nozzle visual inspection	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	<input checked="" type="checkbox"/> pass	Meter, cfm @ in. Hg	— @ —	— @ —	— @ —	Intermediate leak check volume, ft <sup>3</sup>	/	/	/
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Meter, cfm @ in. Hg	— @ —	— @ —	— @ —																																				
Intermediate leak check volume, ft <sup>3</sup>	/	/	/																																				

  

Traverse Point #	Elapsed Time	Clock Time 24hr	DGM Reading, Vm, ft <sup>3</sup>	Velocity Head, ΔP in H <sub>2</sub> O	Orifice Pressure Differential, ΔH		Stack Temp, °F	Probe Temp, °F	Filter Temp, °F		Impinger Exit Temp, °F	Dry Gas Meter Temp, °F		Pump Vacuum, in. Hg
					Target	Actual			Box	Exit		Inlet	Outlet	
Single Point	405		141.420		0.90	0.90		260	260	259	50		80	2
↑	420		149.568		↑	↑		260	260	260	50		80	2
	435		157.795					260	260	261	50		79	2
	450		165.806					260	261	260	50		79	2
	465		173.550					260	261	261	50		79	2
	480		181.420					261	260	260	51		79	2
	495		189.605					261	260	260	51		79	2
	510		197.957					261	260	260	52		79	2
	525		205.858					260	260	260	52		79	2
	540		213.911					261	259	260	52		79	2
	555		220.403					260	260	259	53		79	2
	570		228.750					261	261	260	53		79	2
	585		237.165					260	259	258	48		80	2
	600		245.200					260	260	259	46		80	2
	615		253.191					260	260	259	45		80	2
	630		261.089					261	260	259	47		80	2
	645		269.025					261	260	260	47		80	2
	660		277.113					261	260	259	46		80	2
	675		285.041					260	260	258	46		80	2
	690		293.025					261	260	259	47		80	2
	705		301.027					261	260	260	46		79	2
	720		309.101					260	261	259	47		79	2
	735		317.091					260	260	259	48		78	2
	750		325.234					260	259	259	49		77	2
	765		332.830					260	260	259	47		77	2
	780		340.755					260	259	258	47		76	2
Averages	795		348.678											

 QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒ Checked By TJA Data Custodian ILW

[illegible]

<b>Project Information</b>		<b>Equipment Identification</b>	
Date <u>3/25/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer	
Customer / Facility <u>Perma-Fix FL/Gainesville FL</u>		Hygrometer	
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA 2831554</u>	
Run # <u>1-3</u>	Operator <u>MSK</u>	Check Weights <u>3115</u>	
		Calipers	

<b>Balance Audit</b> (Field balance must be within 0.5g of check weight mass)				<b>Ambient Conditions (Mobile Lab)</b>	
Date	<u>3/25/2024</u>	<u>3/26/2024</u>	<u>3/27/2024</u>	<u>3/28/2024</u>	Relative humidity, %
Standard mass, g	<u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>	Temperature, °F
Field balance mass, g	<u>999.8</u>	<u>999.7</u>	<u>999.9</u>	<u>999.8</u>	Mobile lab #

Moisture Determination										
		Run1			Run 2			Run 3		
	Contents	Initial	Final	Net	Initial	Final	Net	Initial	Final	Net
Knockout										
Impinger 1	HNO <sub>3</sub> /H <sub>2</sub> O	736.3	728.9	-7.4	714.9	711.7	-3.2	708.0	690.0	-18.0
Impinger 2	HNO <sub>3</sub> /H <sub>2</sub> O	724.5	718.0	53.5	741.1	790.4	49.3	711.4	766.2	54.8
Impinger 3	MT	602.2	609.3	7.1	600.0	603.3	3.3	603.6	606.3	2.7
Impinger 4	H <sub>2</sub> SO <sub>4</sub> /KMnO <sub>4</sub>	721.8	728.3	6.5	743.2	751.9	8.7	746.3	753.3	7.0
Impinger 5	H <sub>2</sub> SO <sub>4</sub> /KMnO <sub>4</sub>	718.2	718.7	0.5	746.0	750.6	4.6	742.9	743.3	0.4
Impinger 6										
Impinger 7										
Impinger 8				60.2			62.7			46.9
Silica Gel	SiGel	862.7	891.9	29.2	824.9	851.8	26.9	847.1	882.1	35.0
Line Rinse		881.4	929.7	48.3	902.8	950.6	47.8	908.4	947.3	38.9
Train Net Gain (Vic)				137.7			137.4			120.8

<b>Nozzle Measurements</b> (Difference between any two measurements must not be more than 0.004 in (0.1 mm))								
Nozzle 1 diameters	<u>0.302</u>	D1	<u>0.302</u>	D2	<u>0.302</u>	D3	<u>0.302</u>	Average
Nozzle 2 diameters		D1		D2		D3		Average
Nozzle 3 diameters		D1		D2		D3		Average
Nozzle Material	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> titanium	<input type="checkbox"/> inconel	<input type="checkbox"/> other		
Probe Type	<input checked="" type="checkbox"/> heated	<input type="checkbox"/> unheated	<input type="checkbox"/> air-cooled	<input type="checkbox"/> water-cooled	<input type="checkbox"/> other			
Probe Liner	<input type="checkbox"/> quartz	<input checked="" type="checkbox"/> glass	<input type="checkbox"/> steel	<input type="checkbox"/> Teflon	<input type="checkbox"/> other			

<b>Filter Information</b>					
Front Half:	<input checked="" type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other
Filter Number:	Run 1: <u>m29-1</u>	Run 2: <u>m29-2</u>	Run 3: _____	Run _____	
Back Half:	<input type="checkbox"/> quartz fiber	<input type="checkbox"/> glass fiber	<input type="checkbox"/> Teflon	<input type="checkbox"/> Teflon/quartz	<input type="checkbox"/> other

<b>Reagent Information</b>		<b>Sample Observations</b>
Type	Lot Number	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒Checked by: TU Team Leader: MSK



<b>Project Information</b>		<b>Equipment Identification</b>
Date <u>3/28/2024</u>	Project # <u>PROJ-031381</u>	Ref. Thermometer _____
Customer / Facility <u>Perma-Fix FL/Gainesville FL</u>		Hygrometer _____
Unit ID / Sample Location <u>VTD/Combined Gas Duct</u>		Field Balance <u>SA 2831554</u>
Run # <u>4</u>	Operator <u>MJK</u>	Check Weights <u>3115</u>
		Calipers _____

<b>Balance Audit</b> (Field balance must be within 0.5g of check weight mass)			<b>Ambient Conditions</b> (Mobile Lab)
Date <u>3/28/2024</u>	<u>3/29/2024</u>	<u>3/30/2024</u>	Relative humidity, % _____
Standard mass, g <u>1000.0</u>	<u>1000.0</u>	<u>1000.0</u>	Temperature, °F _____
Field balance mass, g <u>999.8</u>	<u>1000.0</u>	<u>1000.0</u>	Mobile lab # _____

<b>Moisture Determination</b>									
	Run <u>4</u>			Run 2			Run 3		
Contents	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g	Initial, g	Final, g	Net, g
Knockout									
Impinger 1 <u>HNO<sub>3</sub>/H<sub>2</sub>O<sub>2</sub></u>	<u>684.1</u>	<u>656.7</u>	<u>-27.4</u>						
Impinger 2 <u>HNO<sub>3</sub>/H<sub>2</sub>O<sub>2</sub></u>	<u>741.8</u>	<u>780.9</u>	<u>39.1</u>						
Impinger 3 <u>MT</u>	<u>599.7</u>	<u>605.4</u>	<u>5.7</u>						
Impinger 4 <u>H<sub>2</sub>SO<sub>4</sub>/K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub></u>	<u>697.3</u>	<u>702.9</u>	<u>5.6</u>						
Impinger 5 <u>H<sub>2</sub>SO<sub>4</sub>/K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub></u>	<u>708.6</u>	<u>710.7</u>	<u>2.1</u>						
Impinger 6									
Impinger 7									
Impinger 8			<u>25.1</u>						
Line Rinse									
Impinger Net Gain, Vwsg									
Silica Gel, Vwsg	<u>x 852.2</u>	<u>893.2</u>	<u>41.0</u>						
Train Net Gain, Vlc	<u>922.5</u>	<u>159.1</u>	<u>36.6</u>	<u>102.7</u>	<u>total</u>				

<b>Nozzle Measurements</b> (Difference between any two measurements must not be more than 0.004 in (0.1 mm))						
Nozzle 1 diameters	D1 _____	D2 _____	D3 _____	Average _____		
Nozzle 2 diameters	D1 _____	D2 _____	D3 _____	Average _____		
Nozzle 3 diameters	D1 _____	D2 _____	D3 _____	Average _____		
Nozzle Material	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> titanium <input type="checkbox"/> inconel <input type="checkbox"/> other _____					
Probe Type	<input checked="" type="checkbox"/> heated <input type="checkbox"/> unheated <input type="checkbox"/> air-cooled <input type="checkbox"/> water-cooled <input type="checkbox"/> other _____					
Probe Liner	<input type="checkbox"/> quartz <input checked="" type="checkbox"/> glass <input type="checkbox"/> steel <input type="checkbox"/> Teflon <input type="checkbox"/> other _____					

<b>Filter Information</b>			
Front Half:	<input checked="" type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other _____		
Filter Number:	Run 1: _____	Run 2: _____	Run 3: _____
Back Half:	<input type="checkbox"/> quartz fiber <input type="checkbox"/> glass fiber <input type="checkbox"/> Teflon <input type="checkbox"/> Teflon/quartz <input type="checkbox"/> other _____		

<b>Reagent Information</b>	<b>Sample Observations</b>
Type _____ Lot Number _____	

QA/QC Check: Completeness ☒ Legibility ☒ Accuracy ☒ Specifications ☒Checked by: Tu Data Custodian: MJK

001AS-QMS-FM-226R1

RUN I.D.	PFF-M29-R1	PFF-M29-R2	PFF-M29-R3
DATE	3/26-27/2024	3/27-28/2024	3/28-29/2024
TIME STARTED	9:25	9:25	8:40
TIME ENDED	3:10	4:17	3:33

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**SAMPLING PARAMETERS**

Metered Volume (dcf)	536.234	576.530	599.908
Corrected Volume (dscf)	521.400	563.458	587.785
Total Test Time (min)	1065	1080	1140
Isokinetics (%)	98.1	99.7	102.5

**GAS PARAMETERS**

Gas Temperature (°F)	75	72	70
Oxygen (%)	18.9	19.0	19.0
Carbon Dioxide (%)	0.1	0.2	0.1
Moisture (%)	1.2	1.1	1.0

**GAS FLOW RATE**

Velocity (ft/sec)	17.27	18.01	17.23
Actual Volume (acfm)	51	53	51
Standard Volume (dscfm)	49	52	50



<b>RUN I.D.</b>	<b>PFF-M29-R4</b>
<b>DATE</b>	<b>3/29-30/2024</b>
<b>TIME STARTED</b>	<b>9:25</b>
<b>TIME ENDED</b>	<b>3:12</b>

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**SAMPLING PARAMETERS**

Metered Volume (dcf)	568.870
Corrected Volume (dscf)	562.992
Total Test Time (min)	1071
Isokinetics (%)	105.6

**GAS PARAMETERS**

Gas Temperature (°F)	71
Oxygen (%)	19.3
Carbon Dioxide (%)	0.2
Moisture (%)	0.9

**GAS FLOW RATE**

Velocity (ft/sec)	16.94
Actual Volume (acfm)	50
Standard Volume (dscfm)	49



Train Leak Check - Initial: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Train Leak Check - Final: Vac. 10 in. Hg 0.00 Δ in. Hg 60 sec.

STOP

NA = Not Applicable  
Rev. 2 (5/2007)

Checked By: WJ Kim 3/26/2024 (Project Manager or QA Manager - sign and date)

Project No.	PROJ-031381	Date	3/26/2024
Client	Perma-Fix FL	Operator	MJK
Facility	Gainesville FL	Flow Rate (L/min)	0.5
Source	VTD Combined Gas Duct	DGM Y at L/min	0.9929
Sampling Location	CGD	Barometric Pressure (in. Hg)	29.95
Condition	Normal	Run No.	1 Set 2
Sample Point Location	Part CGD	Point:	

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac.	in. Hg	$\Delta$ in. Hg	sec.
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[illegible]

Sample Tube IDs	Comments:
<b>Field Blanks</b>	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
<b>Sample</b>	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

Project No.	PROJ- 031381	Date	3/26/24
Client	PERMA -Fix FI	Operator	KC
Facility	CLAINESVILLE FI.	Flow Rate (L/min)	0.5
Source	VTD Combined GAS OUCT	DGM Y at L/min	0.9929
Sampling Location	C6A	Barometric Pressure (in. Hg)	29.95
Condition	Normal	Run No.	1 Set 3
Sample Point Location	Port: C6A	Point:	

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac.	in. Hg	$\Delta$ in. Hg	sec.
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Clock Time (24-hr)	Sampling Time (min.)	Rotameter Reading (L/min.)	Gas Sample Volume (liters)	1st Cond. Outlet Temp. (°F)	Gas Sample Temp. (°F)		Probe Temp. (°F)	Pump Vacuum (in. Hg)
					Inlet	Outlet		
1450	0	0.5	7719.73	54.1		90		3
2050	60	0.5	7760.20	57.2		81		3
2150	120	0.5	7798.50	55.3		78		3
2250	180	0.5	7838.85	53.6		78		3
2350	240	0.5	7879.30	60.6		77		3
0050	300	0.5	7920.05	58.6		77		3
150	360	0.5	7959.15	59.4		76		3
250	420	0.5	7998.90	57.8		75		3
310		0.5	8013.40					
			293.67					

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

Project No.	PR0T-031381	Date	3/27/2024
Client	Perma-Fix FL	Operator	MJK
Facility	Gainesville FL	Flow Rate (L/min)	0.5
Source	VTD Combined Gas Duct	DGM Y at L/min	0.9929
Sampling Location	CGD	Barometric Pressure (in. Hg)	29.
Condition	Normal	Run No.	2 Set 1
Sample Point Location	Port: CGD	Point:	1

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac. 10 in. Hg 0.00 Δ in. Hg 60 sec.

[illegible]

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

Project No.	PROJ-031381	Date	3/27/2024
Client	Perma-Fix FL	Operator	MJK
Facility	Gainesville FL	Flow Rate (L/min)	0.5
Source	VTD Combined Gas Duct	DGM Y at L/min	0.9929
Sampling Location	CGD	Barometric Pressure (in. Hg)	29.
Condition	Normal	Run No.	2 Set 2
Sample Point Location	Port: CGD	Point:	1

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac. 10 in. Hg 0.00 Δ in. Hg 60 sec.

[illegible]

Sample Tube IDs	Comments:
<b>Field Blanks</b>	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
<b>Sample</b>	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

# SW-846 Method 0031 – VOST Data Sheet

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Project No. <b>PROJ - 031381</b>		Date <b>3/27/2024</b>
Client <b>PERMA - Fix FI.</b>		Operator <b>KL</b>
Facility	Flow Rate (L/min) <b>0.5</b>	
Source	DGM Y at L/min <b>0.9929</b>	
Sampling Location	Barometric Pressure (in. Hg) <b>29.93</b>	
Condition <b>Normal</b>	Run No. <b>2 Set 3</b>	
Sample Point Location	Port: <b>C6A</b>	Point:

Train Leak Check - Initial: Vac. \_\_\_\_\_ in. Hg \_\_\_\_\_ Δ in. Hg \_\_\_\_\_ sec.

Train Leak Check - Final: Vac. \_\_\_\_\_ in. Hg \_\_\_\_\_ Δ in. Hg \_\_\_\_\_ sec.

Clock Time (24-hr)	Sampling Time (min.)	Rotameter Reading (L/min.)	Gas Sample Volume (liters)	1st Cond. Outlet Temp. (°F)	Gas Sample Temp. (°F)		Probe Temp. (°F)	Pump Vacuum (in. Hg)
					Inlet	Outlet		
1910	0	0.5	8302.41	55.2		72		3
2010	60		8330.80	56.3		73		3
2110	120		8358.81	52.2		75		3
2210	180		8385.50	59.6		74		3
2310	240		8412.55	60.3		74		3
0010	300		8440.70	56.5		74		3
0110	360		8467.90	59.2		73		3
0210	420		8495.60	62.1		73		3
0310	480		8524.25	59.8		73		3
0410	540		8551.45	59.2		73		3
417			8554.55					
			252.14					

<b>Sample Tube IDs</b> <b>Field Blanks</b> Tenex 1: Tenex 2: Anasorb 747: <b>Sample</b> Tenex 1: Tenex 2: Anasorb 747:	<b>Comments:</b>
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Project No.	PROJ-031381	Date	3/28/2024
Client	Perma-Fix FL	Operator	MJK
Facility	Gainesville FL	Flow Rate (L/min)	0.5
Source	VTD	DGM Y at L/min	0.9929
Sampling Location	Combined Gas Duct	Barometric Pressure (in. Hg)	
Condition	Normal	Run No.	3 Set 2
Sample Point Location	Port: CGD	Point:	1

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac. 10 in. Hg 0.00 Δ in. Hg 60 sec.

[illegible]

STOP

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

# SW-846 Method 0031 - VOST Data Sheet

Page 1 of 1

Project No. <b>P105- 031381</b>		Date <b>3/28-29/24</b>
Client <b>Palm-Fix FI.</b>		Operator <b>KL</b>
Facility <b>GAINESVILLE FI</b>	Flow Rate (L/min) <b>0.5</b>	
Source <b>UTO COMBINED GAS DET</b>	DGM Y at L/min <b>0.9929</b>	
Sampling Location <b>CGD</b>	Barometric Pressure (in. Hg)	
Condition <b>Normal</b>	Run No. <b>3 Set 3</b>	
Sample Point Location	Port: <b>CGD</b>	Point: <b>1</b>

Train Leak Check - Initial: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Train Leak Check - Final: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Clock Time (24-hr)	Sampling Time (min.)	Rotameter Reading (L/min.)	Gas Sample Volume (liters)	1st Cond. Outlet Temp. (°F)	Gas Sample Temp. (°F)		Probe Temp. (°F)	Pump Vacuum (in. Hg)
					Inlet	Outlet		
1715	0	0.5	8807.97	60		75		3
1815	60	0.5	8842.11	49		76		3
1915	120	0.5	<del>8883.45</del> 51.8			75		3
2015	180	0.5	8924.80	49.2		75		3
2115	240	0.5	9963.40	50.5		74		3
2215	300	0.5	9001.25	56.1		73		3
2315	360	0.5	9039.70	54.7		72		3
0015	420	0.5	9075.85	51.8		71		3
0115	480	0.5	9113.33	52.9		70		3
0215	540	0.5	9149.60	56.5		70		3
0315	600	0.5	9186.30	59.9		70		3
0333		0.5	9197.00					
				389.03				

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

Train Leak Check - Initial: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Train Leak Check - Final: Vac. 10 in. Hg 0.00 Δ in. Hg 60 sec.

STOP

NA = Not Applicable  
Rev. 2 (5/2007)

Checked By: BWJR 3/29/2024 (Project Manager or QA Manager - sign and date)

Project No.	PROJ-03/381	Date	3/29/2024
Client	Perma-Fix FL	Operator	MJK
Facility	Gainesville FL	Flow Rate (L/min)	0.5
Source	VTD Combined Gas Duct	DGM Y at L/min	0.9929
Sampling Location	CGD	Barometric Pressure (in. Hg)	
Condition	Normal	Run No.	4 Set 2
Sample Point Location	Port: CGD	Point:	1

Train Leak Check - Initial: Vac. 25 in. Hg 0.00  $\Delta$  in. Hg 60 sec.

Train Leak Check - Final: Vac. \_\_\_\_\_ in. Hg 0.00 Δ in. Hg 60 sec.

[illegible]

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

# SW-846 Method 0031 - VOST Data Sheet

Page 1 of 1

Project No. <b>PROJ-031381</b>		Date <b>3/29/2024</b>
Client <b>Perma-Fix FL</b>		Operator <b>MSK/KC</b>
Facility <b>Gainesville FL</b>	Flow Rate (L/min) <b>0.5</b>	
Source <b>YTD Combined Gas Duct</b>	DGM Y at L/min <b>0.9929</b>	
Sampling Location <b>CGD</b>	Barometric Pressure (in. Hg)	
Condition <b>Normal</b>	Run No. <b>4 Set 3</b>	
Sample Point Location	Port: <b>C60</b>	Point:

Train Leak Check - Initial: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Train Leak Check - Final: Vac. 25 in. Hg 0.00 Δ in. Hg 60 sec.

Clock Time (24-hr)	Sampling Time (min.)	Rotameter Reading (L/min.)	Gas Sample Volume (liters)	1st Cond. Outlet Temp. (°F)	Gas Sample Temp. (°F)		Probe Temp. (°F)	Pump Vacuum (in. Hg)
					Inlet	Outlet		
0	1750	0.5	9419.66	57		73		3
1850	60	0.5	9452.40	54.8		75		3
1950	120	0.5	4432.80	57.6		74		3
2050	180	0.5	9513.30	52.9		73		3
2150	240	0.5	9545.70	56.7		71		3
2250	300	0.5	9576.10	61.1		72		3
2350	360	0.5	9607.60	56.3		71		3
0050	420	0.5	9639.40	58.9		70		3
0150	480	0.5	9671.20	60.1		70		3
0250	540	0.5	9702.50	63.0		70		3
0312		0.5	9714.30			-		
			294.64					

Sample Tube IDs	Comments:
Field Blanks	
Tenex 1:	
Tenex 2:	
Anasorb 747:	
Sample	
Tenex 1:	
Tenex 2:	
Anasorb 747:	

**Appendix E**

**Combined Gas/Process Vent Gas**

**Dilution Factor Data**

# Process Gas Run 1

1/3



Form #: 012AS-ADMIN-FM-10

Revision: 0

Issue Date: 01.12.2018

Issued by: QA/QC Mgr

## EPA METHOD 2 DATA SHEET

Page 1 of 1

### GENERAL INFORMATION

PLANT NAME	Permafix	
LOCATION	Gainesville FL	
RUN NUMBER	1	
TECHNICIAN	DF	
DATE	3-26-24	
START TIME	0925	
END TIME		
TEST TIME		
BAROMETRIC		
METER BOX #		
PITOT #		Cp=
PROBE ID		
SYSTEM ID		

### PITOT LEAK CHECK

PRE-TEST	
POST-TEST	

### METHOD 2 DATA

0925 start

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	Pt/min DELTA P (in. WC)
	0	68	-3.3 H <sub>2</sub> O	190
	15	67.8		184
	30	72.7		252
	45	73.3		247
	60	72.8		255
	75	73.1		253
	90	73.3		256
	105	73.1		249
	120	72.4		221
	135	75.1		241
	150	75.1		258
	165	74.8		253
	180	74.5		248
	195	74.1		243
	210	75.3		246
	225	75.1		249
	240	76.5		218
	255	77.6		210
	270	78.6		200
	285	79.1		210
	300	79.7		243
	315	79.3		240
	330	79.1		233
	345	79.3		241
	360	78.4		245



Process Gas Run 1

2/3

**EPA METHOD 2 DATA SHEET**

Page \_\_ of \_\_

**GENERAL INFORMATION**

PLANT NAME	Perma-Fix
LOCATION	Gainesville FL
RUN NUMBER	1
TECHNICIAN	DF
DATE	3/26/24
START TIME	0925
END TIME	
TEST TIME	
BAROMETRIC	
METER BOX #	
PITOT #	Cp=
PROBE ID	
SYSTEM ID	

**PITOT LEAK CHECK**

PRE-TEST	
POST-TEST	

**METHOD 2 DATA**

1N

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	ft/min DELTA P (in. WC)
3	375	81.4	-3.3	237
	390	81.6		226
	405	80.4		230
	420	81.3		234
	435	80.3		213
	450	80.4		224
	465	79.5		221
	480	79.9		216
	495	79.6		224
	510	78.9		231
	525	78.9		237
	540	79.3		241
	555	78.6		238
	570	83.5		244
	585	82.5		237
	600	83.2		239
	615	78.9		240
	630	85.5		250
	645	80.9		240
	660	79.8		231
	675	75.3		200
	690	78.0		170
	705	79.7		213
	720	77.7		251
	735	74.0		207

*PROCESS GAS Run 1*  
**EPA METHOD 2 DATA SHEET**

Page \_\_\_ of \_\_\_

**GENERAL INFORMATION**

PLANT NAME	PERMA-FIX	
LOCATION	GAINSEVILLE, FL	
RUN NUMBER	1	
TECHNICIAN	JM	
DATE	3/26/24	
START TIME	0925	
END TIME	0310	
TEST TIME		
BAROMETRIC		
METER BOX #		
PITOT #		Cp=
PROBE ID		
SYSTEM ID		

**PITOT LEAK CHECK**

PRE-TEST	
POST-TEST	

**METHOD 2 DATA**

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	<i>ft/min</i> <del>DELTA P</del> (in. WC)
	750	76.1		190
	765	76.9		261
	780	77.2		242
	795	79.9		283
	810	78.5		265
	825	76.5		506
	840	77.0		512
	855	80.1		581
	870	77.1		570
	885	83.3		644
	900	78.0		547
	915	79.8		600
	930	81.1		650
	945	79.8		612
	960	77.0		555
	975	80.0		605
	990	76.6		581
	1005	70.8		572
	1020	70.0		551
	1035	78.0		579
	1050	78.0		623
	1065			
	1080			
	1095			
	1100			

# Combined Gas Run 1

1/3



Form #: 012AS-ADMIN-FM-10

Revision: 0

Issue Date: 01.12.2018

Issued by: QA/QC Mgr

## EPA METHOD 2 DATA SHEET

Page \_\_ of \_\_

### GENERAL INFORMATION

PLANT NAME	Perma-Fix
LOCATION	Gainesville FL
RUN NUMBER	
TECHNICIAN	DF
DATE	3-26-24
START TIME	0925
END TIME	
TEST TIME	
BAROMETRIC	
METER BOX #	
PITOT #	Cp=
PROBE ID	
SYSTEM ID	

### PITOT LEAK CHECK

PRE-TEST	
POST-TEST	

### METHOD 2 DATA

0925 start

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	<del>Ft/min</del> DELTA P (in. WC)
	0	74.5	-2.80" #20	1009
	15	74.6		1006
	30	71.7		1084
	45	72.2		1073
	60	71.9		1059
	75	72.1		1069
	90	72.3		1018
	105	73.6		1023
	120	73.3		1048
	135	74.9		1009
	150	74.8		966
	165	74.7		984
	180	75.1		994
	195	75.1		995
	210	74.3		986
	225	74.6		1003
	240	74.5		990
	255	74.3		996
	270	75.1		980
	285	76.0		981
	300	75.1		1003
	315	75.3		976
	330	75.8		989
	345	74.9		1007
	360	75.3		1009

Combined Gas Run 1

**EPA METHOD 2 DATA SHEET**

Page \_\_ of \_\_

**GENERAL INFORMATION**

PLANT NAME	Permafix	
LOCATION	Gainesville FL	
RUN NUMBER	1	
TECHNICIAN	DF	
DATE	3/26/24	
START TIME	0925	
END TIME		
TEST TIME		
BAROMETRIC		
METER BOX #		
PITOT #		Cp=
PROBE ID		
SYSTEM ID		

**PITOT LEAK CHECK**

PRE-TEST	
POST-TEST	

**METHOD 2 DATA**

Out

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	DELTA P (in. WC)
	375	76.6	-2.8	946
	390	76.7		945
	405	76.8		908
	420	76.7		898
	435	76.3		910
	450	76.9		974
	465	76.5		958
	480	76.4		960
	495	76.5		954
	510	76.4		967
	525	77.5		981
	540	76.9		957
	555	77.5		984
	570	75.5		945
	585	76.3		984
	600	76.9		967
	615	78.0		981
	630	75.5		947
	645	79.2		949
	660	77.0		889
	675	77.0		875
	690	78.0		846
	705	75.1		947
	720	73.4		1035
	735	74.5		964

*COMBINED GAS Run 1*  
**EPA METHOD 2 DATA SHEET**

Page \_\_\_ of \_\_\_

**GENERAL INFORMATION**

PLANT NAME	PERMA-FIX	
LOCATION	GAINESVILLE, FL	
RUN NUMBER	1	
TECHNICIAN	gm	
DATE	3/26/24	
START TIME	0925	
END TIME	0310	
TEST TIME		
BAROMETRIC		
METER BOX #		
PITOT #	Cp=	
PROBE ID		
SYSTEM ID		

**PITOT LEAK CHECK**

PRE-TEST	
POST-TEST	

**METHOD 2 DATA**

PORT/POINT	TIME	STACK TEMP. (Deg F)	STATIC (in. WC)	<i>ft/min</i> DELTA P <del>(in. WC)</del>
	750	73.4	-2.8	763
	765	74.1		1137
	780	73.6		1109
	795	73.8		1035
	810	73.5		1058
	825	74.0		1047
	840	73.7		1348
	855	72.4		1470
	870	74.4		1292
	885	74.0		1135
	900	73.8		1201
	915	73.7		1114
	930	74.6		1183
	945	73.5		1135
	960	72.8		1255
	975	71.5		1170
	990	73.6		1150
	1005	71.10		1416
	1020	71.8		1333
	1035	73.5		1165
	1050	72.3		1145
<i>end</i>	✓1065			
	1080			
	1095			
	1100			

Process Gas				3/26/2024	Combined Gas				3/26/2024
R1					R1				
Run 1	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min	Run 1	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	9:25	68	190		0	9:25	74.5	1009
	15	9:40	67.8	184		15	9:40	74.6	1006
	30	9:55	72.7	252		30	9:55	71.6	1084
	45	10:10	73.3	247		45	10:10	72.2	1073
	60	10:25	72.8	255		60	10:25	71.9	1059
	75	10:40	73.1	253		75	10:40	72.1	1069
	90	10:55	73.3	256		90	10:55	72.3	1018
	105	11:10	73.1	249		105	11:10	73.6	1023
	120	11:25	72.9	231		120	11:25	75.3	1048
	135	11:40	75.1	241		135	11:40	74.9	1009
	150	11:55	75.1	238		150	11:55	74.8	956
	165	12:10	74.8	253		165	12:10	74.7	984
	180	12:25	74.5	248		180	12:25	75.1	994
	195	12:40	74.1	243		195	12:40	75.1	995
	210	12:55	75.3	246		210	12:55	74.3	986
	225	13:10	75.1	249		225	13:10	74.6	1003
	240	13:25	76.8	218		240	13:25	74.5	990
	255	13:40	77.6	210		255	13:40	74.3	996
	270	13:55	78.6	200		270	13:55	75.1	980
	285	14:10	79.1	210		285	14:10	76	981
	300	14:25	79.7	243		300	14:25	75.1	1003
	315	14:40	79.3	240		315	14:40	75.3	976
	330	14:55	79.1	233		330	14:55	75.8	989
	345	15:10	79.3	241		345	15:10	74.9	1007
	360	15:25	78.4	245		360	15:25	75.3	1009
	375	15:40	81.4	237		375	15:40	76.6	946
	390	15:55	81.6	226		390	15:55	76.7	915
	405	16:10	80.4	230		405	16:10	76.8	908
	420	16:25	81.3	234		420	16:25	76.7	898
	435	16:40	80.3	213		435	16:40	76.3	910
	450	16:55	80.4	224		450	16:55	76.9	974
	465	17:10	79.5	221		465	17:10	76.5	958
	480	17:25	79.9	216		480	17:25	76.4	960
	495	17:40	79.6	224		495	17:40	76.5	954
	510	17:55	78.9	231		510	17:55	76.4	967
	525	18:10	78.9	237		525	18:10	77.5	981
	540	18:25	79.3	241		540	18:25	76.9	957
	555	18:40	78.6	238		555	18:40	77.5	984
	570	18:55	83.5	214		570	18:55	75.5	945
	585	19:10	82.5	237		585	19:10	76.3	984
	600	19:25	83.2	239		600	19:25	76.9	967
	615	19:40	78.9	240		615	19:40	78	981
	630	19:55	85.5	250		630	19:55	75.5	947
	645	20:10	80.9	240		645	20:10	79.2	949
	660	20:25	79	231		660	20:25	77	889
	675	20:40	75.3	200		675	20:40	77	875
	690	20:55	78	170		690	20:55	78	846
	705	21:10	79.7	213		705	21:10	75.1	947
	720	21:25	77.7	251		720	21:25	73.4	1035
	735	21:40	74	207		735	21:40	74.5	964
	750	21:55	76.1	190		750	21:55	73.4	763
	765	22:10	76.9	261		765	22:10	74.1	1137
	780	22:25	77.2	242		780	22:25	73.6	1109
	795	22:40	79.9	283		795	22:40	73.8	1035
	810	22:55	78.5	265		810	22:55	73.5	1058
	825	23:10	76.5	506		825	23:10	74	1047
	840	23:25	77	512		840	23:25	73.7	1348
	855	23:40	80.1	581		855	23:40	72.4	1478
	870	23:55	77.1	570		870	23:55	74.4	1292
	885	0:00	83.3	644		885	0:00	74	1135
	900	0:10	78	547		900	0:10	73.8	1201
	915	0:25	79.8	600		915	0:25	73.7	1114
	930	0:40	81.1	650		930	0:40	74.6	1183
	945	0:55	79.8	612		945	0:55	73.5	1135
	960	1:10	77	555		960	1:10	72.8	1255
	975	1:25	80	605		975	1:25	71.5	1170
	990	1:40	76.6	581		990	1:40	73.6	1150
	1005	1:55	70.8	572		1005	1:55	71.1	1416
	1020	2:10	70	551		1020	2:10	71.8	1333
	1035	2:25	78	579		1035	2:25	73.5	1165
	1050	2:40	78	623		1050	2:40	72.3	1145
R1 AVG			77.59	310.82				74.8	1036.01
				0.02538					0.05796
			7.888612						60.04714
							Dilution Factor		7.6118



# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: Perma-Fix

Barometric Pressure (In. of Hg): \_\_\_\_\_

Source: VTD Combined Gas Duct

Ambient Temperature (°F): 75

Project No.: 031381

Process Gas Duct

Stack ID (Inches): \_\_\_\_\_

Date: 3/27/24

Pitot I.D.: \_\_\_\_\_

Wet Bulb: \_\_\_\_\_

Pitot C<sub>p</sub>: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Process Gas

Combined Gas

Run No.: <u>2</u> Time <u>0925-</u>				Run No.: <u>2</u> Time <u>0925-</u>				Run No.: _____ Time _____				
Time Port/ Point	Flow ΔP, in. H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port/ Point	Flow ΔP, in. H <sub>2</sub> O	Temp. °F	Port/ Point	ΔP, in. H <sub>2</sub> O	Temp. °F	Port/ Point	ΔP, in. H <sub>2</sub> O	Temp. °F
0	220	74.7		0	1080	72.9						
5	223	73.4		15	1069	72.6						
30	221	73.6		30	1056	73.1						
45	209	73.6		45	1038	74.3						
60	218	73.9		60	1045	72.9						
75	231	72.3		75	948	71.6						
90	215	72.7		90	1034	71.8						
105	234	73.2		105	1006	72.1						
120	230	72.6		120	981	71.2						
135	245	72.6		135	1038	72.4						
150	231	73.2		150	980	74.6						
165	236	73.6		165	1010	73.1						
180	210	73.8		180	1034	71.4						
195	195	72.8		195	968	71.2						
210	210	72.5		210	949	72.6						
225	208	72.3		225	1043	73.3						
240	215	73.1		240	945	74.0						
255	230	72.6		255	1013	71.4						
270	218	73.4		270	1006	72.3						
285	198	73.1		285	943	72.1						
300	216	74.3		300	961	72.6						
315	200	73.7		315	944	71.9						
330	215	74.4		330	1013	73.2						
345	223	73.8		345	965	74.1						
360	215	73.6		360	1004	73.6						
375	198	74.1		375	966	73.2						
390	210	72.2		390	978	73.3						
405	236	74.1		405	943	74.4						
420				420								
AVG				AVG	<u>10</u>		AVG					
Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)				
Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)	
Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	
Performed By: _____ (Signature / Date)												



# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: PERMA-FIX

Barometric Pressure (In. of Hg): \_\_\_\_\_

Source: VTD COMBINED GAS DIET

Ambient Temperature (°F): \_\_\_\_\_

Project No.: 031381

Stack ID (Inches): \_\_\_\_\_

Date: 3/27 - /24

Pitot I.D.: \_\_\_\_\_

Wet Bulb: \_\_\_\_\_

Pitot C<sub>p</sub>: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Process Gas				Combined Gas							
Run No.:	Time			Run No.:	Time			Run No.:	Time		
Time Port / Point	ft/min AP, in.H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	ft/min AP, in.H <sub>2</sub> O	Temp. °F		Port / Point	AP, in.H <sub>2</sub> O	Temp. °F	
435	234	72.4		435	1001	73.4					
450	249	74.3		450	1024	73.1					
465	234	74.5		465	1010	72.1					
480	238	74.6		480	969	74.6					
495	239	75.1		495	938	73.1					
510	248	74.6		510	1036	72.9					
525	218	72.5		525	1105	73.1					
540	243	75.3		540	1005	73.3					
555	245	73.6		555	1025	72.5					
570	242	73.9		570	1035	70.5					
585	282	74.4		585	1027	71.8					
600	120	71.4		600	1047	73.1					
615	218	73.4		615	1215	69.9					
630	277	72.0		630	1130	71.0					
645	212	71.2		645	1125	71.1					
660	566	75.2		660	912	68.1					
675	237	68.2		675	1085	75.5					
690	210	70.4		690	918	71.7					
705	202	72.5		705	981	69.5					
720	178	71.0		720	995	69.1					
735	218	71.8		735	1014	69.6					
750	243	71.6		750	978	70.2					
765	201	70.5		765	995	68.5					
780	380	69.5		780	993	71.5					
795	448	70.1		795	995	69.3					
810	390	70.9		810	996	71.1					
825	435	69.5		825	955	75.1					
840	412	70.7		840	1446	70.1					
AVG				AVG				AVG			
Pitot Leak Check (in. of H <sub>2</sub> O)		O <sub>2</sub> (%)		Pitot Leak Check (in. of H <sub>2</sub> O)		O <sub>2</sub> (%)		Pitot Leak Check (in. of H <sub>2</sub> O)		O <sub>2</sub> (%)	
Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)
Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure
Performed By: (Signature / Date)											

# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: PERMA-FIX

Barometric Pressure (In. of Hg): \_\_\_\_\_

Source: VTD COMBINED GAS DUCT

Ambient Temperature (°F): \_\_\_\_\_

Project No.: 031381

Stack ID (Inches): \_\_\_\_\_

Date: 3/27/2024

Pitot I.D.: \_\_\_\_\_

Wet Bulb: \_\_\_\_\_

Pitot C<sub>p</sub>: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

PROCESS GAS

COMBINED GAS

Run No.: <u>2</u> Time				Run No.: <u>2</u> Time				Run No.: Time			
Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F		Port / Point	AP, in. H <sub>2</sub> O	Temp. °F	
855	240	70.9		855	1530	69.0					
870	345	68.0		870	1724	71.2					
885	376	69.8		885	1704	70.3					
900	455	77.7		900	1529	69.5					
915	402	70.2		915	1570	70.4					
930	380	67.3		930	1529	71.1					
945	417	72.0		945	1396	69.3					
960	370	71.1		960	1375	69.0					
975	356	73.0		975	1160	71.3					
990	406	73.3		990	1008	71.1					
1005	387	74.0		1005	952	67.8					
1020	428	72.0		1020	1077	69.0					
1035	413	73.0		1035	956	68.1					
1050	422	73.0		1050	967	68.2					
1065	377	74.0		1065	1165	69.1					
1080	375	73.2		1080	1125	69.0					
1095				1095							
1110				1110							
1125				1125							
1140				1140							
1155				1155							
1170				1170							
1185				1185							
1200				1200							
1215				1215							
1230				1230							
1245				1245							
1260				1260							
AVG				AVG				AVG			

  

Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)		Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)		Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)	
Pre Test	P	N	CO <sub>2</sub> (%)		Pre Test	P	N	CO <sub>2</sub> (%)		Pre Test	P	N	CO <sub>2</sub> (%)	
Post Test	P	N	Static Pressure		Post Test	P	N	Static Pressure		Post Test	P	N	Static Pressure	

Performed By: \_\_\_\_\_  
(Signature / Date)

Process Gas 3/27/2024					Combined Gas 3/27/2024				
R2					R2				
Run 2	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min	Run 2	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	9:25	74.7	220		0	9:25	72.9	1080
	15	9:40	73.4	223		15	9:40	72.6	1069
	30	9:55	73.6	221		30	9:55	73.1	1056
	45	10:10	73.9	209		45	10:10	74.3	1038
	60	10:25	72.3	218		60	10:25	72.9	1045
	75	10:40	72.7	231		75	10:40	71.6	948
	90	10:55	73.2	215		90	10:55	71.8	1034
	105	11:10	72.6	236		105	11:10	72.1	1006
	120	11:25	72.6	230		120	11:25	72.4	981
	135	11:40	72.6	245		135	11:40	74.6	1038
	150	11:55	73.2	231		150	11:55	73.1	980
	165	12:10	73.6	236		165	12:10	71.4	1010
	180	12:25	73.8	210		180	12:25	71.2	1034
	195	12:40	72.8	195		195	12:40	72.6	968
	210	12:55	72.5	210		210	12:55	73.3	999
	225	13:10	72.3	208		225	13:10	74	1043
	240	13:25	73.1	215		240	13:25	71.4	945
	255	13:40	72.6	250		255	13:40	71.4	1013
	270	13:55	73.4	218		270	13:55	72.3	1006
	285	14:10	73.1	198		285	14:10	72.1	943
	300	14:25	74.3	216		300	14:25	72.6	961
	315	14:40				315	14:40		
	330	14:55	73.7	200		330	14:55	71.9	944
	345	15:10	74.9	215		345	15:10	73.2	1013
	360	15:25	73.8	223		360	15:25	74.1	965
	375	15:40	73.6	215		375	15:40	71.6	1004
	390	15:55	74.1	198		390	15:55	73.2	966
	405	16:10	72.2	210		405	16:10	73.3	978
	420	16:25	74.1	236		420	16:25	74.4	943
	435	16:40	72.4	234		435	16:40	73.4	1001
	450	16:55	74.3	249		450	16:55	73.1	1084
	465	17:10	74.5	236		465	17:10	72.1	1010
	480	17:25	74.6	238		480	17:25	74.6	969
	495	17:40	75.1	239		495	17:40	72.9	938
	510	17:55	74.6	248		510	17:55	72.9	1036
	525	18:10	72.5	218		525	18:10	73.1	1105
	540	18:25	75.3	243		540	18:25	73.3	1005
	555	18:40	73.6	245		555	18:40	72.5	1025
	570	18:55	73.9	242		570	18:55	70.5	1035
	585	19:10	74.4	282		585	19:10	71.8	1027
	600	19:25	71.4	120		600	19:25	73.1	1047
	615	19:40	73.4	218		615	19:40	69.9	1215
	630	19:55	72	277		630	19:55	71	1130
	645	20:10	71.2	212		645	20:10	71.1	1125
	660	20:25	75.2	566		660	20:25	68.1	912
	675	20:40	68.2	237		675	20:40	75.5	1085
	690	20:55	70.4	210		690	20:55	71.7	928
	705	21:10	72.5	202		705	21:10	69.5	981
	720	21:25	71	178		720	21:25	69.1	995
	735	21:40	71.8	218		735	21:40	69.6	993
	750	21:55	71.6	243		750	21:55	70.2	995
	765	22:10	70.5	201		765	22:10	68.5	996
	780	22:25	69.5	380		780	22:25	71.5	993
	795	22:40	70.1	448		795	22:40	69.3	995
	810	22:55	70.9	390		810	22:55	71.1	996
	825	23:10	69.5	435		825	23:10	75.1	955
	840	23:25	70.7	412		840	23:25	70.1	1446
	855	23:40	70.9	240		855	23:40	69	1530
	870	23:55	68	395		870	23:55	71.2	1724
	885	0:00	69.8	376		885	0:00	70.3	1704
	900	0:10	77.7	455		900	0:10	69.5	1529
	915	0:25	70.2	402		915	0:25	70.4	1570
	930	0:40	67.3	380		930	0:40	71.1	1529
	945	0:55	72	417		945	0:55	69.3	1396
	960	1:10	71.1	370		960	1:10	69	1375
	975	1:25	73	356		975	1:25	71.3	1160
	990	1:40	73.3	406		990	1:40	71.1	1008
	1005	1:55	74	387		1005	1:55	67.8	952
	1020	2:10	72	428		1020	2:10	69	1075
	1035	2:25	73	413		1035	2:25	68.1	956
	1050	2:40	73	422		1050	2:40	68.2	967
	1065	2:55	74	377		1065	2:55	69.1	1165
	1080	3:10	73.2	375		1080	3:10	69	1125
R2 AVG			72.64	277.11				71.58	1080.51
				0.02538					0.05796
				7.03308					62.62659
					Dilution Factor 8.90457				



# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: Pecma-Fix

Source: UTD Combined Gas Duct

Project No.: 031381

Date.: 3/28/2024

Wet Bulb: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Barometric Pressure (in. of Hg): \_\_\_\_\_

Ambient Temperature (°F): \_\_\_\_\_

Stack ID (Inches): \_\_\_\_\_

Pitot I.D.: \_\_\_\_\_

Pitot Cp: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Page 1 of 1

Inlet Process Gas

Outlet Combined Gas

Run No.: <u>3</u> Time <u>0840 -</u>				Run No.: <u>3</u> Time <u>0840 -</u>				Run No.: _____ Time _____			
Time Port / Point	FI/ AP, in. H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	FI/ AP, in. H <sub>2</sub> O	Temp. °F		Port / Point	AP, in. H <sub>2</sub> O	Temp. °F	
0	220	71		0	1010	66					
15	221	70		15	1030	66					
30	223	71		30	1028	66					
45	220	71		45	1036	67					
60	236	70		60	1043	67					
75	241	71		75	1004	68					
90	231	71		90	1007	68					
105	213	71		105	1036	68					
120	217	72		120	1049	69					
135	220	72		135	1004	70					
150	246	72		150	1036	70					
165	247	72		165	1015	71					
180	240	73		180	1012	72					
195	231	74		195	949	72					
210	238	74		210	969	72					
225	237	75		225	986	73					
240	234	75		240	1010	72					
255	199	75		255	1007	72					
270	210	75		270	1037	73					
285	256	75		285	984	73					
300	247	76		300	953	73					
315	233	75		315	1016	74					
330	235	75		330	1033	74					
345	236	75		345	107	74					
360	231	75		360	994	74					
375	213	74		375	1065	74					
390	199	74		390	1019	74					
405	216	75		405	1004	73					
AVG				AVG				AVG			
Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)			
Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)
Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure
Performed By: _____ (Signature / Date)											

# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: Permatix

Barometric Pressure (in. of Hg): \_\_\_\_\_

Source: UTD Combined Gas Duct

Ambient Temperature (°F): \_\_\_\_\_

Project No.: 031801

Stack ID (Inches): \_\_\_\_\_

Date: 3/28/2024

Pitot I.D.: \_\_\_\_\_

Wet Bulb: \_\_\_\_\_

Pitot C<sub>p</sub>: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Page 2 of

Inlet Process Gas

Combined Gas

Run No.: <u>3</u> Time <u>0840</u>				Run No.: <u>3</u> Time <u>0840</u>				Run No.: _____ Time _____			
Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F	Port / Point	AP, in. H <sub>2</sub> O	Temp. °F		
420	233	75		420	110	73					
435	246	75		435	1021	73					
450	243	75		450	961	73					
465	241	75		465	1010	74					
480	236	75		480	1038	73					
495	244	74		495	1040	72					
510	239	74		510	976	72					
525	198	74		525	984	72					
540	210	74		540	961	72					
555	230	74		555	943	70					
570	215	74		570	951	73					
585	210	74		585	1001	73					
600	212	74		600	1006	73					
615	145	78		615	1040	72					
630	127	75		630	1105	71.1					
645	174	74		645	1043	72.2					
660	125	73		660	1030	71					
675	195	72.5		675	993	70.9					
690	478	75		690	978	70.4					
705	170	74		705	1120	70					
720	205	74		720	1065	71					
735	210	75		735	1002	73					
750	301	72		750	1110	76					
765	181	68.0		765	1028	68.0					
780	225	69.0		780	1001	68.0					
795	237	69.1		795	1021	68.2					
810	249	70.1		810	1027	69.3					
825	274	68		825	1203	68					
AVG				AVG			AVG				
Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)			
Pre Test	P	N	O <sub>2</sub> (%)	Pre Test	P	N	Pre Test	P	N	O <sub>2</sub> (%)	
Post Test	P	N	CO <sub>2</sub> (%)	Post Test	P	N	Post Test	P	N	CO <sub>2</sub> (%)	
Static Pressure				Static Pressure				Static Pressure			
Performed By: (Signature / Date)											

## Method 2 - Velocity w/ Cyclonic Flow Verification

**Temperature Device I.D.:**

Revision 02 - February 9, 2017 - KMR

Process Gas 3/28/2024				
Run 3	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	8:40	71	220
	15	8:55	70	221
	30	9:10	71	225
	45	9:25	71	220
	60	9:40	70	236
	75	9:55	71	241
	90	10:10	71	231
	105	10:25	71	213
	120	10:40	72	217
	135	10:55	72	220
	150	11:10	72	246
	165	11:25	72	246
	180	11:40	73	240
	195	11:55	74	231
	210	12:10	74	238
	225	12:25	75	237
	240	12:40	75	239
	255	12:55	75	199
	270	13:10	75	210
	285	13:25	75	256
	300	13:40	76	247
	315	13:55	75	233
	330	14:10	75	235
	345	14:25	75	236
	360	14:40	75	231
	375	14:55	74	215
	390	15:10	74	189
	405	15:25	75	216
	420	15:40	75	235
	435	15:55	75	246
	450	16:10	75	243
	465	16:25	75	241
	480	16:40	75	236
	495	16:55	74	244
	510	17:10	74	239
	525	17:25	74	198
	540	17:40	74	210
	555	17:55	74	230
	570	18:10	74	215
	585	18:25	74	210
	600	18:40	74	212
	615	18:55	78	145
	630	19:10	75	127
	645	19:25	74	174
	660	19:40	73	125
	675	19:55	72.5	195
	690	20:10	75	478
	705	20:25	74	170
	720	20:40	74	205
	735	20:55	75	210
	750	21:10	72	301
	765	21:25	68	181
	780	21:40	69	225
	795	21:55	69.1	237
	810	22:10	70.1	249
	825	22:25	68	274
	840	22:40	71	341
	855	22:55	71	326
	870	23:10	72	324
	885	23:25	71	327
	900	23:40	71	347
	915	23:55	70	369
	930	0:10	70	363
	945	0:25	71	339
	960	0:40	71	389
	975	0:55	71	324
	990	1:10	71	334
	1005	1:25	70	362
	1020	1:40	70	347
	1035	1:55	72	386
	1050	2:10	71	346
	1065	2:25	69	297
	1080	2:40	70	348
	1095	2:55	69	353
	1110	3:10	69	349
	1125	3:25	69	325
R3 AVG			72.52	257.09
				0.02538
				6.524998

Combined Gas 3/28/2024				
Run 3	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	8:40	66	1018
	15	8:55	66	1050
	30	9:10	66	1088
	45	9:25	67	1036
	60	9:40	67	1045
	75	9:55	68	1004
	90	10:10	68	1007
	105	10:25	68	1036
	120	10:40	69	1049
	135	10:55	70	1006
	150	11:10	70	1036
	165	11:25	71	1015
	180	11:40	72	1018
	195	11:55	72	949
	210	12:10	72	969
	225	12:25	73	986
	240	12:40	72	1010
	255	12:55	72	1007
	270	13:10	73	1037
	285	13:25	73	984
	300	13:40	73	953
	315	13:55	74	1016
	330	14:10	74	1033
	345	14:25	74	1017
	360	14:40	74	994
	375	14:55	74	1065
	390	15:10	74	1019
	405	15:25	73	1004
	420	15:40	73	1010
	435	15:55	73	1021
	450	16:10	73	961
	465	16:25	74	1010
	480	16:40	73	1038
	495	16:55	72	1046
	510	17:10	72	976
	525	17:25	72	984
	540	17:40	72	961
	555	17:55	72	943
	570	18:10	73	951
	585	18:25	73	1001
	600	18:40	73	1006
	615	18:55	72	1040
	630	19:10	71.1	1105
	645	19:25	72.2	1043
	660	19:40	71	1030
	675	19:55	70.9	993
	690	20:10	70.4	978
	705	20:25	70	1120
	720	20:40	71	1065
	735	20:55	73	1008
	750	21:10	76	1110
	765	21:25	68	1028
	780	21:40	68	1001
	795	21:55	68.2	1021
	810	22:10	69.3	1027
	825	22:25	68	1203
	840	22:40	67	1138
	855	22:55	68	1068
	870	23:10	68	1159
	885	23:25	68	1124
	900	23:40	69	1019
	915	23:55	69	1107
	930	0:10	69	1080
	945	0:25	69	1071
	960	0:40	68	970
	975	0:55	69	1184
	990	1:10	69	1041
	1005	1:25	70	1164
	1020	1:40	70	1107
	1035	1:55	66	969
	1050	2:10	66	957
	1065	2:25	67	1043
	1080	2:40	67	1147
	1095	2:55	67	1029
	1110	3:10	67	1037
	1125	3:25	66	1004
			70.37	1033.54
				0.05796
				59.90395

Dilution Factor 9.18069





# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: Perma-Fix

Source: UTD Combined Gas Duct

Project No.: 031381

Date: 3/29/24

Wet Bulb: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Barometric Pressure (In. of Hg): \_\_\_\_\_

Ambient Temperature (°F): \_\_\_\_\_

Stack ID (Inches): \_\_\_\_\_

Pitot I.D.: \_\_\_\_\_

Pitot C<sub>p</sub>: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Process Gas				Combined Gas							
Run No.: <u>4</u>		Time <u>0900-0312</u>		Run No.: <u>4</u>		Time <u>0900-0312</u>		Run No.:		Time	
Time Port / Point	FT/ AP, in.H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	FT/ AP, in.H <sub>2</sub> O	Temp. °F		Port / Point	ΔP, in.H <sub>2</sub> O	Temp. °F	
0	236	74		0	1013	72					
15	241	74		15	1016	72					
30	255	74		30	1059	72					
45	253	74		45	1063	72					
60	260	74		60	1044	72					
75	215	74		75	1058	72					
90	220	74		90	1013	73					
105	240	74		105	1007	73					
120	241	74		120	1062	73					
135	243	75		135	1071	73					
150	216	75		150	1038	73					
165	219	75		165	1018	73					
180	198	75		180	959	73					
195	215	75		195	1000	73					
210	230	75		210	1010	73					
225	231	75		225	1036	73					
240	215	75		240	1028	73					
255	218	75		255	1045	73					
270	241	75		270	1031	73					
285	207	75		285	984	73					
300	198	75		300	1010	73					
315	220	75		315	1007	73					
330	224	75		330	1041	73					
345	216	75		345	1043	73					
360	219	75		360	1021	73					
375	241	75		375	1028	73					
390	237	75		390	946	73					
405	236	75		405	983	73					
AVG				AVG				AVG			
Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)	Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)	Pitot Leak Check (in. of H <sub>2</sub> O)			O <sub>2</sub> (%)
Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)	Pre Test	P	N	CO <sub>2</sub> (%)
Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure
Performed By:				Performed By:				Performed By:			
(Signature / Date)				(Signature / Date)				(Signature / Date)			

# Montrose Air Quality Services

## Method 2 - Velocity w/ Cyclonic Flow Verification

Client: Perma-Fix

Source: VTD Combined Gas Duct

Project No.: 031381

Date.: 3/29/24

Wet Bulb: \_\_\_\_\_

Dry Bulb: \_\_\_\_\_

Barometric Pressure (in. of Hg): \_\_\_\_\_

Ambient Temperature (°F): \_\_\_\_\_

Stack ID (Inches): \_\_\_\_\_

Pitot I.D.: \_\_\_\_\_

Pitot Cp: \_\_\_\_\_

Temperature Device I.D.: \_\_\_\_\_

Process Gas

Combined Gas  
Process Gas

Run No.: <u>4</u> Time <u>0900-0312</u>				Run No.: <u>4</u> Time <u>0900-0312</u>				Run No.: _____ Time _____			
Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F	Deg. from 90° to Null	Time Port / Point	Flow AP, in. H <sub>2</sub> O	Temp. °F		Port / Point	AP, in. H <sub>2</sub> O	Temp. °F	
420	231	73		420	1000	73					
435	218	75		435	1031	73					
450	241	75		450	1026	73					
465	195	75		465	1045	73					
480	230	75		480	1010	73					
495	241	75		495	1004	73					
510	240	75		510	981	73					
525	231	75		525	980	73					
540	233	75		540	1010	73					
555	216	75		555	1031	73					
570	220	75		570	1027	73					
585	232	75		585	1021	73					
600	168	79		600	1030	79					
615	209	74		615	954	70.2					
630	170	74		630	951	72					
645	205	74		645	1019	73					
660	231	75		660	987	74					
675	246	74		675	1141	73					
690	253	74		690	1030	73					
705	195	73		705	981	73					
720	220	74		720	995	73					
735	245	74		735	1009	73					
750	284	71		750	943	66					
765	165	70		765	985	68					
780	175	69.5		780	966	66.8					
795	180	69.5		795	1010	66.5					
810	195	69		810	959	69					
825	190	68		825	895	66					
AVG				AVG				AVG			
Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)				Pitot Leak Check (in. of H <sub>2</sub> O)			
Pre Test	P	N	O <sub>2</sub> (%)	Pre Test	P	N	O <sub>2</sub> (%)	Pre Test	P	N	O <sub>2</sub> (%)
Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure	Post Test	P	N	Static Pressure
Performed By: (Signature / Date)											

## Method 2 - Velocity w/ Cyclonic Flow Verification

Temperature Device I.D.:

### Combined Gas

Run No.:	Time
----------	------

Process Gas 3/29/2024				
R4				
Run 4	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	9:00	74	236
	15	9:15	74	241
	30	9:30	74	255
	45	9:45	74	253
	60	10:00	74	260
	75	10:15	74	215
	90	10:30	74	220
	105	10:45	74	240
	120	11:00	74	241
	135	11:15	75	243
	150	11:30	75	216
	165	11:45	75	219
	180	12:00	75	198
	195	12:15	75	215
	210	12:30	75	230
	225	12:45	75	231
	240	13:00	75	215
	255	13:15	75	218
	270	13:30	75	241
	285	13:45	75	207
	300	14:00	75	198
	315	14:15	75	220
	330	14:30	75	224
	345	14:45	75	216
	360	15:00	75	219
	375	15:15	75	241
	390	15:30	75	237
	405	15:45	75	236
	420	16:00	75	231
	435	16:15	75	218
	450	16:30	75	241
	465	16:45	75	195
	480	17:00	75	230
	495	17:15	75	241
	510	17:30	75	240
	525	17:45	75	231
	540	18:00	75	233
	555	18:15	75	216
	570	18:30	75	220
	585	18:45	75	232
	600	19:00	79	168
	615	19:15	74	209
	630	19:30	74	170
	645	19:45	74	205
	660	20:00	75	231
	675	20:15	74	246
	690	20:30	74	253
	705	20:45	73	197
	720	21:00	74	220
	735	21:15	74	245
	750	21:30	71	284
	765	21:45	70	165
	780	22:00	69.5	175
	795	22:15	69.5	180
	810	22:30	69	195
	825	22:45	68	190
	840	23:00	74	220
	855	23:15	69	190
	870	23:30	69	247
	885	23:45	69	244
	900	0:00	67	220
	915	0:15	66.5	187
	930	0:30	67	249
	945	0:45	67	223
	960	1:00	68	199
	975	1:15	69	194
	990	1:30	76	192
	1005	1:45	69	190
	1020	2:00	67	105
	1035	2:15	70	197
	1050	2:30	67	178
	1065	2:45	67	175
R4 AVG			72.98	217.44
				0.02538
				5.51874

Combined Gas 3/29/2024				
R4				
Run 4	Elapsed Time	Time (24 Hour)	Stack Temp.	Ft/Min
	0	9:00	72	1013
	15	9:15	72	1016
	30	9:30	72	1059
	45	9:45	72	1063
	60	10:00	72	1044
	75	10:15	72	1058
	90	10:30	73	1013
	105	10:45	73	1007
	120	11:00	73	1062
	135	11:15	73	1071
	150	11:30	73	1038
	165	11:45	73	1018
	180	12:00	73	959
	195	12:15	73	1000
	210	12:30	73	1010
	225	12:45	73	1036
	240	13:00	73	1028
	255	13:15	73	1045
	270	13:30	73	1031
	285	13:45	73	984
	300	14:00	73	1010
	315	14:15	73	1007
	330	14:30	73	1041
	345	14:45	73	1043
	360	15:00	73	1021
	375	15:15	73	1028
	390	15:30	73	946
	405	15:45	73	983
	420	16:00	73	1000
	435	16:15	73	1031
	450	16:30	73	1026
	465	16:45	73	1045
	480	17:00	73	1010
	495	17:15	73	1004
	510	17:30	73	981
	525	17:45	73	902
	540	18:00	73	1010
	555	18:15	73	1031
	570	18:30	73	1027
	585	18:45	73	1021
	600	19:00	79	1030
	615	19:15	70.2	954
	630	19:30	72	951
	645	19:45	73	1019
	660	20:00	74	987
	675	20:15	73	1141
	690	20:30	73	1038
	705	20:45	73	981
	720	21:00	73	995
	735	21:15	73	1009
	750	21:30	66	443
	765	21:45	68	985
	780	22:00	66.8	966
	795	22:15	66.5	1010
	810	22:30	69	959
	825	22:45	66	895
	840	23:00	74	1177
	855	23:15	68	958
	870	23:30	67	1105
	885	23:45	68	1117
	900	0:00	66	1010
	915	0:15	65.5	1150
	930	0:30	65	1109
	945	0:45	66	1108
	960	1:00	68	1109
	975	1:15	65.8	938
	990	1:30	68	1050
	1005	1:45	65	984
	1020	2:00	67	952
	1035	2:15	66	996
	1050	2:30	66	1165
	1065	2:45	65	1148
			71.11	1016.13
				0.05796
				58.89461
Dilution Factor			10.6717	



**NIST Traceable  
Calibration Report**

REPORT NUMBER

**1747434**

Reference Number: 157424600

PO Number: PO058428

**Montrose Air Quality Services, LLC**5075 Hollins Road  
Roanoke, VA 24019 United States

**Manufacturer:** Digi-Sense  
**Model Number:** 20250-16  
**Description:** Air Velocity, Hot Wire Anemometer  
**Asset Number:** 01221999  
**Serial Number:** 140518512  
**Procedure:** DS Digi-Sense 20250-16

**Calibration Date:** 01/29/2024  
**Calibration Due Date:** 01/29/2025  
**Condition As Found:** In Tolerance  
**Condition As Left:** In Tolerance, No adjustment

**Remarks:**

NIST-traceable calibration performed on the unit referenced above in accordance with customer requirements, published specifications and the lab's standard operating procedures. Unit was received out-of-tolerance as indicated in the as-found data; adjustments were successful in bringing unit within specifications. As-left data reflects measurements taken after adjustments.

**Standards Used**

Standard ID	Manufacturer	Model Number	Description	Cal Date	Due Date
CP105979	Kanomax	X5602	Air Velocity, Wind Tunnel, Open Jet	6/06/2023	6/30/2024
CP142969	Fluke Corporation	1551A EX	Temperature, Stick Thermometer	8/22/2023	8/31/2024

**Calibration Data**

Function Tested	Nominal / Reference Value	Measured Value	OOT	Calibration Tolerance <i>g = Guard Banding Applied</i>	TUR	EMU
<b>Air Velocity Accuracy</b>	5.00 m/s					
As Found	5.00	6.86	X	4.74 to 5.26 m/s	6.2:1	± 0.042 m/s
As Left	5.00	5.02		4.74 to 5.26 m/s	6.2:1	± 0.042 m/s
10.00 m/s						
As Found	10.00	12.29	X	9.49 to 10.51 m/s	11:1	± 0.045 m/s
As Left	10.00	9.89		9.49 to 10.51 m/s	11:1	± 0.045 m/s
15.00 m/s						
As Found	15.00	17.32	X	14.24 to 15.76 m/s	8.1:1	± 0.094 m/s
As Left	15.00	15.25		14.24 to 15.76 m/s	8.1:1	± 0.094 m/s
20.00 m/s						
As Found	20.00	21.67	X	18.99 to 21.01 m/s	8.1:1	± 0.12 m/s
As Left	20.00	19.65		18.99 to 21.01 m/s	8.1:1	± 0.12 m/s
25.00 m/s						
As Found	25.00	26.01		23.74 to 26.26 m/s	8.1:1	± 0.16 m/s
As Left	25.00	24.78		23.74 to 26.26 m/s	8.1:1	± 0.16 m/s
<b>Temperature Accuracy</b>	25.0 °C					
As Found	25.0	25.7		24.0 to 26.0 °C	13:1	± 0.077 °C
As Left	25.0	25.2		24.0 to 26.0 °C	13:1	± 0.077 °C

**Temperature:** 22 °C  
**Humidity:** 26 %RH  
**Rpt. No.:** 1747434

Calibration Performed By:		Quality Reviewer:	
Mike Kuzmanich	Technician, Metrology	Jennifer Sittinger	1/30/2024
Name	Title	Name	Date

This report may not be reproduced, except in full, without written permission of Innocal. The results stated in this report relate only to the items tested or calibrated. Measurements reported herein are traceable to SI units via national standards maintained by NIST and were performed in compliance with MIL-STD-45662A, ANSI/NCSL Z540-1-1994, 10CFR50, Appendix B, ISO 9002-94, and ISO 17025:2017. Conformance based on Simple Acceptance as defined in ILAC G8 with a < 50% PFA. The estimated measurement uncertainty (EMU), if reported on this certificate, is being reported at a confidence level of 95% or K=2 unless otherwise noted in the remarks section.

**Cole-Parmer****Traceable®****DIGI-SENSE**  
THE STANDARD IN PRECISION MEASUREMENT**OAKTON®**  
INSTRUMENTS

# **Appendix F**

## **Combined Gas/Process Vent Gas**

### **CEMS**



<b>Project Information</b>		Notes: _____
Date <u>3/12/2024</u>	Project # <u>:031381</u>	
Customer / Facility <u>PermaFix</u>		
Unit ID / Sample Location <u>CA-3 Thermal Oxidizer</u>		
Operator <u>DC</u>		

<b>Equipment Information</b>	
Calibration gas diluter ID/SN <u>EnviroNics 2020/6281</u>	Calibration expiration date <u>6/6/2024</u>
Audited dilution device (DD) <input type="checkbox"/> DD1 <input type="checkbox"/> DD2 <input type="checkbox"/> DD3 <input type="checkbox"/> DD4 <input type="checkbox"/> DD5 <input type="checkbox"/> DD6 <input type="checkbox"/> DD7 <input type="checkbox"/> DD8	
DDs used to generate cal gases <input type="checkbox"/> DD1 <input type="checkbox"/> DD2 <input type="checkbox"/> DD3 <input type="checkbox"/> DD4 <input type="checkbox"/> DD5 <input type="checkbox"/> DD6 <input type="checkbox"/> DD7 <input type="checkbox"/> DD8	
Total flow rate, LPM <u>5</u>	Analyzer ID/SN <u>CAI 700 / 1705008</u> Analyte <u>O2</u> Span value <u>22.83</u>

Calibration Gas Information					
	Tag Value	Units (ppm or %)	Cylinder ID	Pressure (PSI)	Expiration Date
Dilution Level 1 Cylinder	22.83	%	CC216635	800	2/4/2028
Dilution Level 2 Cylinder					
Direct Inject Cylinder*	12.04	%	CC156507	600	7/2/2027

Performance Data									
	Predicted Diluted Value**	Units (ppm or %)	Analyzer Response						
			Time	Injection 1	Time	Injection 2	Time	Injection 3	Average
Dilution Level 1	18.26	%	00:00	18.17	00:00	18.17	00:00	18.17	18.17
Dilution Level 2	11.42	%	00:00	11.32	00:00	11.35	00:00	11.32	11.33
Direct Inject Gas	12.04	%	00:00	12.24	00:00	12.24	00:00	12.23	12.24

Calculations			
DI			
	Injection 1	Injection 2	Injection 3
Dilution Level 1	0.00%	0.00%	0.00%
Dilution Level 2	0.09%	0.18%	0.09%
Direct Inject	0.03%	0.03%	0.05%
DL			
Dilution Level 1	Dilution Level 2	Direct Inject	
0.51%	0.74%	1.63%	

DI - Difference of each injection from the average analyzer response

$DI\% = (I - R / I) * 100$

DL - Difference from predicted for each dilution level

$DL\% = (P - R / P) * 100$

I - Each individual injection

R - Average Response

P - Predicted diluted value

DI must be within 2% of the average instrument response for that dilution.

DL must be within 2% of predicted value.

\* The Direct Inject Gas must be independent of the Dilution Level gases.

\*\* One of the Dilution Levels must be within 10% of the Direct Inject gas tag value

All injection responses must be within 2% of the average instrument response for that dilution.

For each level of dilution the average concentration output from the analyzer must be within 2% of the predicted value.

 QA/QC Check: Completeness X    Legibility X    Accuracy X    Specifications X

 Checked by: \_\_\_\_\_ Team Leader: Tony Underwood

001AS-QMS-WB-EPA205

		O2	Combo	CO	O2	Process	CO
		CAI	CO2	CAI	CAI	CO2	CAI
		700 LX NDIR	700 LX NDIR	700 LX NDIR	700 NDIR	700 NDIR	Thermo
		2310043	2310043	2310043	1705008	1705008	48i HL
		Serial Number					1125748722
SPAN	Calibration Gas Value	22.83%	22.37%	80.09 ppm	22.83%	22.37%	2034 ppm
	Cylinder ID	CC216635	CC216635	CC483619	CC216635	CC216635	CC365236
	Exp. Date	6/5/2028	6/5/2028	3/4/2027	6/5/2028	6/5/2028	4/16/2026
MID	Calibration Gas Value	12.06%	12.01%	44.96 ppm	12.06%	12.01%	920.7 ppm
	Cylinder ID	CC709790	CC709790	AAL073072	CC709790	CC709790	CC496504
	Exp. Date	11/14/2031	11/14/2031	7/26/2030	11/14/2031	11/14/2031	4/3/2026

Facility ID: PermaFix  
Source ID: VTD  
Date: 3/26/24-3/27/24

Run 1

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	2034
Zero Ref Cyl	0	0	0
Zero Avg	0.01	0.01	-5.54
Zero Error%	0.0	0.0	-0.3
Mid Ref Cyl	12.06	12.01	920.7
Mid Avg	11.99	12.16	914.98
Mid Error%	-0.3	0.7	-0.3
High Ref Cyl	22.83	22.37	2034
High Avg	22.84	22.36	2030.44
High Error%	0.0	0.0	-0.2

Initial Bias Check

Zero Avg	-0.03	0.16	-3.43
Zero Bias%	-0.18	0.67	0.10
Span Avg	12.04	11.82	911.59
Span Bias%	0.22	-1.52	-0.17

Final Bias Check

Zero Avg	0.01	0.29	1.35
Zero Bias%	0.00	1.25	0.34
Zero Drift%	0.18	0.58	0.24
Span Avg	11.96	11.93	918.62
Span Bias%	-0.13	-1.03	0.18
Span Drift%	0.35	0.49	0.35

Ini Zero Avg	-0.03	0.16	-3.43
Ini Span Avg	12.04	11.82	911.59
Run 1 Avg	2.08	0.46	313.5
Co	-0.010	0.225	-1.040
Cm	12.000	11.875	915.105

Cgas Run 1	2.10	0.24	316.1
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Facility ID: PermaFix  
Source ID: VTD  
Date: 3/26/24-3/27/24

Run 1

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	80.4
Zero Ref Cyl	0	0	0
Zero Avg	0	0	-0.1
Zero Error%	0.0	0.0	-0.1
Mid Ref Cyl	12.06	12.01	44.6
Mid Avg	12.02	12.08	44.81
Mid Error%	-0.2	0.3	0.3
High Ref Cyl	22.83	22.37	80.4
High Avg	22.84	22.38	80.33
High Error%	0.0	0.0	-0.1

Initial Bias Check

Zero Avg	0.49	0.06	-2.05
Zero Bias%	2.15	0.27	-2.43
Span Avg	12.18	11.72	44.43
Span Bias%	0.70	-1.61	-0.47

Final Bias Check

Zero Avg	0.36	0.09	-1.31
Zero Bias%	1.58	0.40	-1.50
Zero Drift%	0.57	0.13	0.92
Span Avg	12.03	11.99	43.4
Span Bias%	0.04	-0.40	-1.75
Span Drift%	0.66	1.21	1.28

Ini Zero Avg	0.49	0.06	-2.05
Ini Span Avg	12.18	11.72	44.43
Run 1 Avg	18.87	0.14	31.0
Co	0.425	0.075	-1.680
Cm	12.105	11.855	43.915
Cgas Run 1	19.05	0.07	32.0

DASYLab 2022 - 2022

Worksheet name: David Default

Recording date : 3 7:05:48 AM

Block length : 1

Delta : 60 sec.

Number of channels : 12

Date	Time	O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]	
3/26/2024	7:04:48	20.58	0.13	1.1	20.67	-0.42	-6.01	
3/26/2024	7:05:48	20.58	0.13	0.95	20.67	-0.42	-5.98	
3/26/2024	7:06:48	6.54	0.09	0.91	20.66	-0.41	-5.95	
3/26/2024	7:07:48	0.01	0	0.86	20.66	-0.41	-5.95	
3/26/2024	7:08:48	0	-0.01	0.82	20.66	-0.41	-5.72	
3/26/2024	7:09:48	0	0	0.14	20.66	-0.41	-5.73	
3/26/2024	7:10:48	0	0	-0.1	20.6	-0.41	-5.7	
3/26/2024	7:11:48	15.34	13.84	0.13	20.52	-0.41	-5.47	
3/26/2024	7:12:48	22.82	21.99	-0.22	20.52	-0.42	-5.4	
3/26/2024	7:13:48	22.85	22.03	-0.72	20.51	-0.41	-5.32	
3/26/2024	7:14:48	22.86	22.05	-0.76	20.51	-0.41	-5.3	
3/26/2024	7:15:48	22.86	22.22	-0.84	20.51	-0.41	-5.28	
3/26/2024	7:16:48	22.84	22.38	-0.78	20.51	-0.41	-5.25	
3/26/2024	7:17:48	13.37	13.26	-2.23	20.51	-0.41	-5.25	
3/26/2024	7:18:48	12.02	12.09	-3.02	20.5	-0.41	-5.23	
3/26/2024	7:19:48	12.02	12.08	-3.04	20.5	-0.41	-5.23	
3/26/2024	7:20:48	19.16	2.19	-2.7	20.5	-0.41	-5.22	
3/26/2024	7:21:48	11.24	0.16	31.65	16.39	-0.43	-5.29	
3/26/2024	7:22:48	0.02	0.03	78.54	-0.07	-0.54	-5.54	
3/26/2024	7:23:48	0.01	0.01	79.06	-0.08	-0.55	-5.54	
3/26/2024	7:24:48	0	0.01	79.14	-0.01	-0.1	-5.56	
3/26/2024	7:25:48	0	0	79.14	0.01	0.01	-5.8	
3/26/2024	7:26:48	0	0.01	79.24	0.01	0.01	-5.54	
3/26/2024	7:27:48	0	0.01	79.25	9.71	9.46	-5.99	
3/26/2024	7:28:48	0	0.01	80.33	22.93	21.81	-9.2	
3/26/2024	7:29:48	7.49	0.02	67.97	22.94	21.82	-8.78	
3/26/2024	7:30:48	0.21	0.04	36.79	22.95	21.83	-8.61	
3/26/2024	7:31:48	0	0.01	44.81	22.9	22.11	-8.7	
3/26/2024	7:32:48	16.06	0.06	20.26	22.84	22.36	-8.5	
3/26/2024	7:33:48	20.59	0.13	0.06	22.84	22.36	-8.68	
3/26/2024	7:34:48	20.57	0.15	-0.11	18.21	17.61	-8.4	
3/26/2024	7:35:48	20.55	0.15	-0.1	12.03	11.71	-7.94	
3/26/2024	7:36:48	17.79	0.19	0.09	6.52	6.14	-7.53	
3/26/2024	7:37:48	19.39	0.17	-0.01	12.93	12.92	-6.59	
3/26/2024	7:38:48	20.35	0.15	0.04	15.75	15.19	-8.37	
3/26/2024	7:39:48	20.59	0.14	0.17	12.03	11.7	-7.51	
3/26/2024	7:40:48	20.64	0.13	0.17	12.03	12.01	-7.27	
3/26/2024	7:41:48	20.65	0.15	0.09	14.02	8.9	-7.27	
3/26/2024	7:42:48	20.64	0.16	0	20.42	0.22	-6.36	
3/26/2024	7:43:48	20.65	0.16	-0.03	3.03	0.25	690.86	
3/26/2024	7:44:48	20.66	0.15	0	0.03	0.09	1972.41	
3/26/2024	7:45:48	20.67	0.14	0.05	0.03	0.08	1987.25	
3/26/2024	7:46:48	20.68	0.13	0.21	0.04	0.09	2004.86	
3/26/2024	7:47:48	20.68	0.13	0.15	0.03	0.09	990.75	
3/26/2024	7:48:48	20.68	0.13	0.26	0.03	0.09	-2.04	
3/26/2024	7:49:48	20.68	0.13	0.29	0.11	0.16	115.04	
3/26/2024	7:50:48	20.68	0.13	0.29	0.03	0.09	1455.96	
3/26/2024	7:51:48	20.68	0.13	0.18	0.03	0.08	2079.56	
3/26/2024	7:52:48	16.19	4.66	-0.81	0.03	0.08	2056.77	
3/26/2024	7:53:48	12.82	10.39	-2.11	0.04	0.08	2030.44	direct
3/26/2024	7:54:48	12.33	11.44	-2.26	7.74	0.13	1774.96	
3/26/2024	7:55:48	12.21	11.66	-2.18	0.12	0.1	598.39	
3/26/2024	7:56:48	12.19	11.71	-2.13	0.03	0.1	911.84	
3/26/2024	7:57:48	12.18	11.72	-2.05	0.02	0.1	913.71	
3/26/2024	7:58:48	12.08	11.68	-2.05	0.03	0.09	914.98	direct
3/26/2024	7:59:48	4.76	4.36	17.11	14.25	0.16	746.12	
3/26/2024	8:00:48	1.16	0.96	38.02	20.64	0.19	28.93	
3/26/2024	8:01:48	0.68	0.28	42.33	20.5	0.22	-0.96	
3/26/2024	8:02:48	0.58	0.14	43.58	13.93	8.66	20.7	
3/26/2024	8:03:48	0.58	0.11	44.05	12.89	10.6	-1.37	
3/26/2024	8:04:48	0.8	0.09	44.04	12.04	11.81	-3.19	
3/26/2024	8:05:48	0.67	0.08	43.94	12.04	11.82	-3.43	
3/26/2024	8:06:48	0.65	0.08	44.35	14.62	6.36	-0.99	
3/26/2024	8:07:48	0.66	0.07	44.43	14.24	0.23	137.16	
3/26/2024	8:08:48	8.55	0.09	34.77	0.31	0.17	606.01	
3/26/2024	8:09:48	18.89	0.12	7.79	-0.03	0.16	906.19	

Direct Cals

Pretest Bias Cals

3/26/2024	8:10:48	10.09	0.11	2.79	-0.03	0.16	910.36
3/26/2024	8:11:48	1.88	0.08	0.27	-0.03	0.16	911.59
3/26/2024	8:12:48	0.87	0.07	2.06	15.58	0.2	678.29
3/26/2024	8:13:48	0.72	0.06	2.07	20.61	0.22	27.76
3/26/2024	8:14:48	0.67	0.07	2.22	20.62	0.23	3.81
3/26/2024	8:15:48	0.66	0.07	2.31	20.62	0.23	3.36
3/26/2024	8:16:48	0.63	0.07	2.32	20.62	0.24	3.34
3/26/2024	8:17:48	0.61	0.07	2.38	20.62	0.24	3.56
3/26/2024	8:18:48	0.49	0.06	2.51	20.62	0.24	3.58
3/26/2024	8:19:48	0.18	0.04	1.37	20.62	0.24	3.36
3/26/2024	8:20:48	5.86	0.07	0.26	20.63	0.24	3.39
3/26/2024	8:21:48	18.21	0.12	0.16	20.63	0.25	3.44
3/26/2024	8:22:48	20.16	0.13	0.05	20.63	0.25	3.4
3/26/2024	8:23:48	20.54	0.14	0.2	20.63	0.25	3.41
3/26/2024	8:24:48	20.62	0.13	0.28	20.63	0.25	3.65
3/26/2024	8:25:48	20.65	0.13	0.42	20.63	0.25	3.69
3/26/2024	8:26:48	20.66	0.14	0.58	20.64	0.26	3.49
3/26/2024	8:27:48	20.66	0.14	0.63	20.64	0.26	3.98
3/26/2024	8:28:48	20.67	0.14	0.69	20.64	0.27	3.54
3/26/2024	8:29:48	20.67	0.14	0.71	20.64	0.27	4
3/26/2024	8:30:48	20.67	0.14	0.77	20.63	0.27	3.77
3/26/2024	8:31:48	20.67	0.14	0.71	20.64	0.27	3.74
3/26/2024	8:32:48	20.67	0.14	0.87	20.64	0.28	3.51
3/26/2024	8:33:48	20.67	0.15	1.05	20.64	0.28	3.75
3/26/2024	8:34:48	20.67	0.15	0.95	20.64	0.29	3.51
3/26/2024	8:35:48	20.67	0.15	1.08	20.64	0.29	3.78
3/26/2024	8:36:48	20.68	0.15	1.19	20.63	0.29	3.52
3/26/2024	8:37:48	20.68	0.15	1.13	20.64	0.3	4
3/26/2024	8:38:48	20.67	0.15	1.23	20.64	0.3	3.76
3/26/2024	8:39:48	20.68	0.14	1.31	20.64	0.3	3.49
3/26/2024	8:40:48	20.68	0.14	1.4	20.64	0.3	3.73
3/26/2024	8:41:48	20.68	0.14	1.52	20.64	0.29	3.47
3/26/2024	8:42:48	20.68	0.14	1.75	20.64	0.29	3.71
3/26/2024	8:43:48	20.68	0.14	1.73	20.65	0.3	3.95
3/26/2024	8:44:48	20.68	0.15	1.84	20.65	0.3	3.71
3/26/2024	8:45:48	20.68	0.15	1.85	20.65	0.3	3.94
3/26/2024	8:46:48	20.68	0.15	1.92	20.65	0.31	3.74
3/26/2024	8:47:48	20.68	0.15	1.98	20.63	0.33	3.72
3/26/2024	8:48:48	20.68	0.16	1.98	20.64	0.33	3.72
3/26/2024	8:49:48	20.68	0.15	1.92	20.64	0.32	3.72
3/26/2024	8:50:48	20.68	0.15	1.79	20.64	0.31	3.95
3/26/2024	8:51:48	16.83	0.15	1.91	20.65	0.31	3.5
3/26/2024	8:52:48	-0.11	0.07	1.89	20.65	0.32	3.72
3/26/2024	8:53:48	12.19	0.08	0.66	20.65	0.32	3.46
3/26/2024	8:54:48	20.46	0.15	0.32	20.65	0.32	3.66
3/26/2024	8:55:48	20.62	0.15	0.19	20.64	0.32	3.49
3/26/2024	8:56:48	20.67	0.15	0.05	20.64	0.31	0.97
3/26/2024	8:57:48	20.67	0.15	0.01	20.65	0.31	0.98
3/26/2024	8:58:48	20.67	0.15	0.05	20.65	0.31	1.18
3/26/2024	8:59:48	20.68	0.15	-0.06	20.65	0.31	1.01
3/26/2024	9:00:48	20.68	0.15	0.01	20.65	0.3	1.24
3/26/2024	9:01:48	20.68	0.14	0.01	20.65	0.29	1.21
3/26/2024	9:02:48	20.68	0.14	0.19	20.65	0.3	1.21
3/26/2024	9:03:48	20.68	0.14	-0.05	20.57	0.3	2.15
3/26/2024	9:04:48	20.67	0.15	0.23	20.45	0.29	7.46
3/26/2024	9:05:48	20.64	0.14	0.48	15.37	0.29	5.47
3/26/2024	9:06:48	19.93	0.14	0.4	9.27	0.29	2.88
3/26/2024	9:07:48	19.17	0.14	0.17	12.6	0.28	2.86
3/26/2024	9:08:48	19.52	0.14	0.01	16.71	0.28	2.18
3/26/2024	9:09:48	20.08	0.14	-0.17	17.77	0.28	1.95
3/26/2024	9:10:48	20.3	0.14	-0.16	17.37	0.27	1.71
3/26/2024	9:11:48	20.24	0.13	-0.26	16.42	0.27	1.24
3/26/2024	9:12:48	20.08	0.13	-0.14	15.77	0.27	0.82
3/26/2024	9:13:48	20.13	0.13	-0.18	20.01	0.29	1.04
3/26/2024	9:14:48	20.57	0.13	-0.14	20.26	0.29	1.02
3/26/2024	9:15:48	20.66	0.14	-0.13	19.43	0.28	0.56
3/26/2024	9:16:48	20.6	0.13	0	17.65	0.28	0.59
3/26/2024	9:17:48	20.45	0.14	-0.04	14.91	0.27	0.81
3/26/2024	9:18:48	20.15	0.14	-0.04	12.27	0.27	1.01
3/26/2024	9:19:48	19.55	0.14	-0.07	10.05	0.27	0.99
3/26/2024	9:20:48	19.01	0.13	-0.16	7.11	0.27	1.01
3/26/2024	9:21:48	18.53	0.13	-0.28	5.1	0.27	1.04
3/26/2024	9:22:48	18.49	0.13	-0.03	4.54	0.27	0.99

3/26/2024	9:23:48	19.13	0.14	0	4.21	0.28	0.78
3/26/2024	9:24:48	19.21	0.14	-0.01	5.56	0.29	0.58
3/26/2024	9:25:48	19.43	0.14	-0.01	7.32	0.29	0.58
3/26/2024	9:26:48	19.63	0.14	-0.16	3.46	0.28	0.79
3/26/2024	9:27:48	19.26	0.14	-0.19	10.3	0.29	0.55
3/26/2024	9:28:48	19.82	0.14	-0.04	12.09	0.29	0.57
3/26/2024	9:29:48	17.8	0.14	-0.05	9.18	0.28	0.56
3/26/2024	9:30:48	19.31	0.14	-0.13	4.01	0.27	0.77
3/26/2024	9:31:48	19.3	0.13	-0.04	4.36	0.27	0.54
3/26/2024	9:32:48	19.29	0.13	-0.02	4.91	0.26	0.98
3/26/2024	9:33:48	19.32	0.13	0.22	5.08	0.27	1.67
3/26/2024	9:34:48	19.31	0.13	0.32	4.87	0.26	2.37
3/26/2024	9:35:48	19.33	0.13	0.27	4.44	0.26	2.99
3/26/2024	9:36:48	19.3	0.13	0.21	4.08	0.26	2.14
3/26/2024	9:37:48	19.26	0.13	0.23	3.84	0.26	1.9
3/26/2024	9:38:48	19.23	0.13	0.14	3.7	0.26	1.21
3/26/2024	9:39:48	19.22	0.13	0.01	3.62	0.26	1
3/26/2024	9:40:48	19.21	0.13	0	3.57	0.25	0.94
3/26/2024	9:41:48	19.21	0.13	0.1	3.55	0.24	0.74
3/26/2024	9:42:48	19.2	0.13	0.12	3.54	0.24	0.29
3/26/2024	9:43:48	19.19	0.13	0.17	3.54	0.25	0.31
3/26/2024	9:44:48	19.16	0.13	0.18	3.54	0.25	0.57
3/26/2024	9:45:48	19.18	0.13	0.06	3.54	0.24	0.78
3/26/2024	9:46:48	19.19	0.12	0.1	3.54	0.23	0.71
3/26/2024	9:47:48	19.19	0.12	0.24	3.54	0.23	0.52
3/26/2024	9:48:48	19.17	0.13	0.33	3.54	0.23	0.55
3/26/2024	9:49:48	19.16	0.13	0.18	3.54	0.24	0.58
3/26/2024	9:50:48	19.17	0.12	0.2	3.54	0.23	0.53
3/26/2024	9:51:48	19.16	0.12	0.33	3.55	0.22	0.32
3/26/2024	9:52:48	19.14	0.12	0.31	3.56	0.22	0.55
3/26/2024	9:53:48	19.15	0.12	0.39	3.58	0.22	0.55
3/26/2024	9:54:48	19.15	0.12	0.45	3.6	0.23	0.53
3/26/2024	9:55:48	19.15	0.12	0.37	3.62	0.23	0.33
3/26/2024	9:56:48	19.14	0.12	0.22	3.66	0.23	0.57
3/26/2024	9:57:48	19.13	0.12	0.35	3.69	0.23	0.36
3/26/2024	9:58:48	19.15	0.12	0.28	3.72	0.23	0.75
3/26/2024	9:59:48	19.15	0.12	0.25	3.76	0.23	0.55
3/26/2024	10:00:48	19.15	0.12	0.34	3.79	0.22	0.75
3/26/2024	10:01:48	19.13	0.12	0.36	5.41	0.21	0.72
3/26/2024	10:02:48	19.15	0.11	0.52	3.87	0.22	0.54
3/26/2024	10:03:48	19.15	0.12	0.53	3.82	0.22	0.78
3/26/2024	10:04:48	19.15	0.12	0.52	3.83	0.23	0.98
3/26/2024	10:05:48	19.14	0.12	0.45	3.85	0.23	1.43
3/26/2024	10:06:48	19.14	0.11	0.41	3.87	0.22	1.65
3/26/2024	10:07:48	19.15	0.11	0.62	3.88	0.21	1.41
3/26/2024	10:08:48	19.16	0.11	0.73	3.88	0.22	1.64
3/26/2024	10:09:48	19.15	0.11	0.67	3.89	0.22	2.12
3/26/2024	10:10:48	19.15	0.12	0.77	3.9	0.23	2.33
3/26/2024	10:11:48	19.14	0.12	0.83	3.91	0.23	2.74
3/26/2024	10:12:48	19.15	0.11	0.9	3.91	0.22	3.13
3/26/2024	10:13:48	19.16	0.11	1	3.92	0.21	3.34
3/26/2024	10:14:48	19.15	0.12	0.94	3.92	0.22	3.4
3/26/2024	10:15:48	19.15	0.12	1.03	3.93	0.23	4.04
3/26/2024	10:16:48	19.14	0.12	1.09	3.93	0.23	4.25
3/26/2024	10:17:48	19.15	0.12	1.18	3.93	0.22	4.7
3/26/2024	10:18:48	19.16	0.11	1.18	3.92	0.21	5.13
3/26/2024	10:19:48	19.15	0.11	1.33	3.91	0.21	5.36
3/26/2024	10:20:48	19.14	0.12	1.27	3.91	0.22	5.79
3/26/2024	10:21:48	19.13	0.12	1.23	3.91	0.23	4.78
3/26/2024	10:22:48	19.15	0.12	1.32	3.9	0.22	5.48
3/26/2024	10:23:48	19.15	0.11	1.32	3.89	0.21	5.92
3/26/2024	10:24:48	19.15	0.11	1.47	3.89	0.21	6.36
3/26/2024	10:25:48	19.15	0.12	1.77	3.9	0.22	6.8
3/26/2024	10:26:48	19.13	0.12	1.96	3.9	0.23	7.02
3/26/2024	10:27:48	19.14	0.12	1.99	3.89	0.23	7.88
3/26/2024	10:28:48	19.15	0.12	1.83	3.88	0.22	8.76
3/26/2024	10:29:48	19.15	0.11	1.86	3.88	0.21	9.41
3/26/2024	10:30:48	19.15	0.11	2.06	5.17	0.22	9.61
3/26/2024	10:31:48	19.14	0.11	2.2	4.29	0.22	9.59
3/26/2024	10:32:48	19.12	0.12	2.34	3.86	0.23	10.52
3/26/2024	10:33:48	19.13	0.12	2.31	3.85	0.22	11.87
3/26/2024	10:34:48	19.15	0.12	2.34	3.84	0.22	12.28
3/26/2024	10:35:48	19.14	0.12	2.53	3.82	0.22	13.15

START RUN 1

3/26/2024	10:36:48	19.13	0.12	2.61	3.8	0.22	13.61
3/26/2024	10:37:48	19.14	0.12	2.52	3.79	0.22	14.64
3/26/2024	10:38:48	19.14	0.12	2.64	3.78	0.22	15.45
3/26/2024	10:39:48	19.12	0.11	2.73	3.78	0.21	16.35
3/26/2024	10:40:48	19.12	0.11	2.85	3.77	0.21	17.11
3/26/2024	10:41:48	19.13	0.11	3.02	3.75	0.22	17.99
3/26/2024	10:42:48	19.14	0.12	3.07	3.73	0.22	19.09
3/26/2024	10:43:48	19.13	0.12	3.15	3.71	0.22	20.41
3/26/2024	10:44:48	19.12	0.11	3.17	3.7	0.21	21.53
3/26/2024	10:45:48	19.12	0.11	3.33	3.68	0.21	22.8
3/26/2024	10:46:48	19.13	0.11	3.57	3.67	0.21	24.14
3/26/2024	10:47:48	19.14	0.11	3.69	3.67	0.21	25.51
3/26/2024	10:48:48	19.1	0.12	3.95	3.65	0.21	26.88
3/26/2024	10:49:48	19.1	0.11	4.13	3.63	0.21	28.2
3/26/2024	10:50:48	19.12	0.11	4.13	3.61	0.2	29.43
3/26/2024	10:51:48	19.11	0.11	4.27	3.6	0.2	31.2
3/26/2024	10:52:48	19.12	0.11	4.6	3.59	0.2	33.63
3/26/2024	10:53:48	19.13	0.11	4.79	3.58	0.21	34.93
3/26/2024	10:54:48	19.13	0.11	4.95	3.57	0.21	36.47
3/26/2024	10:55:48	19.12	0.11	5.1	3.55	0.2	38.41
3/26/2024	10:56:48	19.12	0.11	5.26	3.53	0.21	40.39
3/26/2024	10:57:48	19.12	0.11	5.6	3.5	0.21	42.18
3/26/2024	10:58:48	19.13	0.11	5.77	3.48	0.21	44.36
3/26/2024	10:59:48	19.13	0.11	6	3.46	0.21	46.68
3/26/2024	11:00:48	19.07	0.11	6.46	3.92	0.2	49.42
3/26/2024	11:01:48	19.13	0.11	6.5	4.86	0.2	49.19
3/26/2024	11:02:48	19.14	0.11	6.69	3.67	0.21	50.52
3/26/2024	11:03:48	19.16	0.11	6.92	3.64	0.21	55.96
3/26/2024	11:04:48	19.15	0.11	7.21	3.62	0.2	58.63
3/26/2024	11:05:48	19.14	0.1	7.54	3.59	0.2	61.47
3/26/2024	11:06:48	19.15	0.1	7.92	3.52	0.19	63.9
3/26/2024	11:07:48	19.12	0.1	8.32	3.43	0.19	67.1
3/26/2024	11:08:48	19.04	0.1	9.09	3.36	0.19	70.09
3/26/2024	11:09:48	19.12	0.11	9.11	3.3	0.2	74.3
3/26/2024	11:10:48	19.13	0.1	9.28	3.23	0.19	78.3
3/26/2024	11:11:48	19.15	0.1	9.58	3.16	0.19	82.46
3/26/2024	11:12:48	19.13	0.1	10.17	3.11	0.19	86.45
3/26/2024	11:13:48	19.14	0.11	10.54	3.05	0.2	90.04
3/26/2024	11:14:48	19.14	0.11	10.85	2.97	0.2	93.72
3/26/2024	11:15:48	19.08	0.11	11.51	2.9	0.2	97.42
3/26/2024	11:16:48	19.1	0.1	11.73	2.84	0.19	102.19
3/26/2024	11:17:48	19.12	0.1	12.16	2.77	0.19	106.98
3/26/2024	11:18:48	19.11	0.1	12.63	2.71	0.2	111.88
3/26/2024	11:19:48	19.11	0.11	13.07	2.66	0.21	116.92
3/26/2024	11:20:48	19.13	0.11	13.45	2.62	0.21	122.61
3/26/2024	11:21:48	19.12	0.11	13.69	2.57	0.2	127.44
3/26/2024	11:22:48	19.12	0.1	14.21	2.51	0.2	132.29
3/26/2024	11:23:48	19.11	0.1	14.76	2.46	0.2	137.9
3/26/2024	11:24:48	19.11	0.11	15.29	3.9	0.21	139.62
3/26/2024	11:25:48	19.08	0.11	15.97	2.23	0.21	141.37
3/26/2024	11:26:48	19.06	0.11	16.57	2.17	0.2	156.99
3/26/2024	11:27:48	19.11	0.1	16.65	2.12	0.2	163.96
3/26/2024	11:28:48	19.11	0.1	17.09	2.08	0.19	169
3/26/2024	11:29:48	19.13	0.1	17.44	2.05	0.19	174.03
3/26/2024	11:30:48	19.12	0.1	17.97	2.04	0.19	179.32
3/26/2024	11:31:48	19.1	0.11	18.6	2.01	0.19	183.46
3/26/2024	11:32:48	19.1	0.11	18.98	1.98	0.19	188.29
3/26/2024	11:33:48	19.1	0.11	19.24	1.93	0.19	193.6
3/26/2024	11:34:48	19.03	0.11	20.68	1.9	0.19	198.68
3/26/2024	11:35:48	19.1	0.1	20.45	1.87	0.18	204.18
3/26/2024	11:36:48	19.12	0.1	20.94	1.84	0.18	209.19
3/26/2024	11:37:48	19.12	0.1	21.39	1.81	0.19	214.41
3/26/2024	11:38:48	19.12	0.11	21.91	1.79	0.19	220.05
3/26/2024	11:39:48	19.13	0.11	22.38	1.79	0.2	224.62
3/26/2024	11:40:48	19.12	0.11	22.95	1.76	0.2	229.6
3/26/2024	11:41:48	19.1	0.11	23.48	1.74	0.2	233.99
3/26/2024	11:42:48	19.12	0.11	23.99	1.72	0.21	239.03
3/26/2024	11:43:48	19.12	0.11	24.48	1.69	0.21	244.88
3/26/2024	11:44:48	19.06	0.11	25.81	1.67	0.21	250.41
3/26/2024	11:45:48	19.07	0.11	26.22	1.66	0.21	255.99
3/26/2024	11:46:48	19.12	0.1	25.89	1.65	0.2	260.84
3/26/2024	11:47:48	19.13	0.1	26.46	1.63	0.2	265.8
3/26/2024	11:48:48	19.14	0.11	26.98	1.63	0.22	270.5



3/26/2024	11:49:48	19.13	0.11	27.63	1.63	0.22	275.76
3/26/2024	11:50:48	19.12	0.11	28.31	1.63	0.22	280.14
3/26/2024	11:51:48	19.11	0.11	28.71	1.61	0.21	285.16
3/26/2024	11:52:48	19.12	0.11	29.24	1.59	0.21	290.25
3/26/2024	11:53:48	19.05	0.11	31.39	1.57	0.22	296.37
3/26/2024	11:54:48	19.11	0.11	31.09	1.56	0.22	302.43
3/26/2024	11:55:48	19.13	0.11	31.34	1.55	0.23	308.08
3/26/2024	11:56:48	19.13	0.11	31.92	1.54	0.23	314.02
3/26/2024	11:57:48	19.13	0.11	32.19	1.54	0.23	319.68
3/26/2024	11:58:48	19.12	0.11	33.26	1.55	0.23	324.73
3/26/2024	11:59:48	19.12	0.11	34.17	1.54	0.23	329.9
3/26/2024	12:00:48	19.12	0.11	34.89	2.85	0.24	333.95
3/26/2024	12:01:48	19.06	0.11	36.79	1.44	0.24	329.29
3/26/2024	12:02:48	19.09	0.11	37.03	1.4	0.24	349.45
3/26/2024	12:03:48	19.12	0.11	37.17	1.39	0.24	359.39
3/26/2024	12:04:48	19.13	0.11	38.04	1.38	0.25	366.86
3/26/2024	12:05:48	19.13	0.11	38.79	1.38	0.26	374.85
3/26/2024	12:06:48	19.13	0.11	39.53	1.4	0.26	382.66
3/26/2024	12:07:48	19.13	0.11	40.13	1.4	0.26	389.75
3/26/2024	12:08:48	19.12	0.11	41.12	1.38	0.26	397.61
3/26/2024	12:09:48	19.12	0.11	42.13	1.38	0.26	406.68
3/26/2024	12:10:48	19.13	0.11	42.89	1.36	0.28	416.24
3/26/2024	12:11:48	19.08	0.11	45.37	1.35	0.29	426.97
3/26/2024	12:12:48	19.11	0.11	45.24	1.34	0.29	435.79
3/26/2024	12:13:48	19.14	0.11	44.86	1.34	0.29	441.1
3/26/2024	12:14:48	19.15	0.11	44.78	1.33	0.29	438.61
3/26/2024	12:15:48	19.16	0.11	43.4	1.34	0.31	426.43
3/26/2024	12:16:48	19.15	0.12	41.8	1.37	0.32	405.89
3/26/2024	12:17:48	19.13	0.11	39.97	1.38	0.32	380.97
3/26/2024	12:18:48	19.13	0.11	37.17	1.37	0.32	356.84
3/26/2024	12:19:48	19.1	0.11	35.13	1.37	0.33	333.04
3/26/2024	12:20:48	19.09	0.12	32.74	1.37	0.34	308.97
3/26/2024	12:21:48	19.15	0.12	29.14	1.37	0.35	286.68
3/26/2024	12:22:48	19.15	0.12	26.67	1.37	0.36	266.03
3/26/2024	12:23:48	19.14	0.12	24.72	1.38	0.35	246.78
3/26/2024	12:24:48	19.14	0.11	22.85	1.4	0.36	230.12
3/26/2024	12:25:48	19.14	0.12	21.38	1.41	0.36	216.55
3/26/2024	12:26:48	19.14	0.12	20.54	1.41	0.37	208.14
3/26/2024	12:27:48	19.14	0.12	20.14	1.41	0.38	203.77
3/26/2024	12:28:48	19.14	0.12	19.92	1.4	0.38	203.53
3/26/2024	12:29:48	19.13	0.12	20.19	1.39	0.39	206.59
3/26/2024	12:30:48	19.08	0.12	21.4	2.57	0.38	212.45
3/26/2024	12:31:48	19.09	0.12	22.29	3.05	0.38	208.07
3/26/2024	12:32:48	19.15	0.12	22.23	2.51	0.4	214.12
3/26/2024	12:33:48	19.15	0.13	23.03	1.78	0.41	224.55
3/26/2024	12:34:48	19.18	0.13	22.92	1.32	0.43	234.85
3/26/2024	12:35:48	19.16	0.13	23.19	1.35	0.43	239.68
3/26/2024	12:36:48	19.14	0.13	22.91	1.36	0.44	235.1
3/26/2024	12:37:48	19.14	0.13	22.37	1.36	0.44	227.53
3/26/2024	12:38:48	19.11	0.13	21.67	1.36	0.45	218.72
3/26/2024	12:39:48	19.07	0.13	21.13	1.35	0.44	207.65
3/26/2024	12:40:48	19.14	0.13	18.95	1.35	0.44	196.27
3/26/2024	12:41:48	19.15	0.13	17.95	1.35	0.44	185.25
3/26/2024	12:42:48	19.15	0.13	17.1	1.35	0.45	175.14
3/26/2024	12:43:48	19.16	0.13	16.24	1.38	0.45	166.79
3/26/2024	12:44:48	19.14	0.13	15.95	1.39	0.45	161.64
3/26/2024	12:45:48	19.14	0.13	15.88	1.39	0.45	161.2
3/26/2024	12:46:48	19.14	0.13	16.26	1.39	0.45	164.17
3/26/2024	12:47:48	19.06	0.13	17.58	1.38	0.45	171.6
3/26/2024	12:48:48	19.12	0.14	17.8	1.37	0.45	180.61
3/26/2024	12:49:48	19.15	0.13	18.32	1.37	0.45	190.31
3/26/2024	12:50:48	19.17	0.13	18.96	1.36	0.44	199.8
3/26/2024	12:51:48	19.18	0.13	19.51	1.36	0.44	206.34
3/26/2024	12:52:48	19.15	0.13	20.29	1.39	0.44	209.39
3/26/2024	12:53:48	19.15	0.13	20.37	1.4	0.44	208.57
3/26/2024	12:54:48	19.13	0.13	20.02	1.39	0.45	204.39
3/26/2024	12:55:48	19.05	0.13	20.41	1.39	0.44	197.89
3/26/2024	12:56:48	19.14	0.13	18.54	1.39	0.43	188.99
3/26/2024	12:57:48	19.15	0.13	17.68	1.39	0.44	179.99
3/26/2024	12:58:48	19.18	0.13	16.54	1.39	0.44	169.66
3/26/2024	12:59:48	19.16	0.13	15.83	1.41	0.44	159.66
3/26/2024	13:00:48	19.14	0.13	15.26	1.43	0.44	149.84
3/26/2024	13:01:48	19.14	0.13	14.58	1.44	0.44	143.11

3/26/2024	13:02:48	19.11	0.13	14.45	1.43	0.43	139.68
3/26/2024	13:03:48	19.08	0.14	14.73	1.42	0.44	139.69
3/26/2024	13:04:48	19.15	0.13	14.46	1.42	0.44	143.32
3/26/2024	13:05:48	19.15	0.13	14.89	1.41	0.43	150.57
3/26/2024	13:06:48	19.17	0.13	15.53	1.41	0.42	159.26
3/26/2024	13:07:48	19.17	0.13	16.41	1.44	0.43	170.54
3/26/2024	13:08:48	19.15	0.13	17.47	1.44	0.43	180.68
3/26/2024	13:09:48	19.14	0.13	18.32	1.44	0.43	187.89
3/26/2024	13:10:48	19.13	0.13	18.75	1.44	0.42	191.65
3/26/2024	13:11:48	19.05	0.13	19.69	1.43	0.42	191.86
3/26/2024	13:12:48	19.14	0.13	18.47	1.43	0.42	188.15
3/26/2024	13:13:48	19.15	0.13	17.83	1.42	0.42	182.66
3/26/2024	13:14:48	19.15	0.13	17.23	1.42	0.43	174.99
3/26/2024	13:15:48	19.16	0.13	16.38	1.45	0.42	166.17
3/26/2024	13:16:48	19.16	0.13	15.66	1.47	0.41	156.46
3/26/2024	13:17:48	19.15	0.13	15.12	1.47	0.42	147.69
3/26/2024	13:18:48	19.14	0.14	14.5	1.47	0.42	139.89
3/26/2024	13:19:48	19.14	0.14	13.95	1.47	0.43	133.78
3/26/2024	13:20:48	19.08	0.14	14.13	1.47	0.42	130.06
3/26/2024	13:21:48	19.11	0.14	13.66	1.47	0.42	129
3/26/2024	13:22:48	19.15	0.13	13.47	1.47	0.42	131.3
3/26/2024	13:23:48	19.15	0.13	13.86	1.46	0.41	137.1
3/26/2024	13:24:48	19.18	0.14	14.29	1.51	0.49	145.3
3/26/2024	13:25:48	17.49	0.14	15.54	10.78	10.92	142.8
3/26/2024	13:26:48	4.55	0.11	32.73	11.8	12.07	43.62
3/26/2024	13:27:48	1.08	0.07	42.23	11.8	12.08	-0.15
3/26/2024	13:28:48	0.63	0.07	43.64	11.8	12.08	-3.01
3/26/2024	13:29:48	0.53	0.07	43.86	11.8	12.08	-3.26
3/26/2024	13:30:48	0.49	0.07	43.76	11.8	12.1	-3.68
3/26/2024	13:31:48	0.44	0.07	43.93	11.82	12.12	-3.68
3/26/2024	13:32:48	0.43	0.07	43.75	4.5	4.54	21.58
3/26/2024	13:33:48	4.2	3.72	35.5	-0.03	0.28	416.92
3/26/2024	13:34:48	10.91	10.12	5.74	-0.04	0.26	712.15
3/26/2024	13:35:48	11.85	11.23	-0.45	-0.04	0.26	742.62
3/26/2024	13:36:48	12.05	11.45	-1.29	-0.04	0.26	743.55
3/26/2024	13:37:48	12.09	11.5	-1.55	-0.04	0.27	876.32
3/26/2024	13:38:48	12.09	11.51	-1.51	-0.04	0.27	918.48
3/26/2024	13:39:48	12.1	11.86	-1.47	-0.04	0.27	918.02
3/26/2024	13:40:48	13.14	10.19	-0.9	1.21	0.41	838.92
3/26/2024	13:41:48	17.8	2.4	6.51	1.54	0.46	378.54
3/26/2024	13:42:48	18.83	0.68	11.22	1.56	0.46	180.28
3/26/2024	13:43:48	19.07	0.27	13.4	1.56	0.46	171.95
3/26/2024	13:44:48	19.09	0.19	14.89	1.55	0.46	184.41
3/26/2024	13:45:48	19.07	0.17	16.25	1.55	0.46	196.74
3/26/2024	13:46:48	19.12	0.15	16.56	1.55	0.46	205.49
3/26/2024	13:47:48	19.17	0.15	16.46	1.55	0.46	210.06
3/26/2024	13:48:48	19.18	0.14	16.57	1.54	0.46	209.63
3/26/2024	13:49:48	19.16	0.14	16.68	1.56	0.47	205.67
3/26/2024	13:50:48	19.15	0.15	16.5	1.57	0.47	200.02
3/26/2024	13:51:48	19.13	0.14	16.19	1.57	0.47	192.97
3/26/2024	13:52:48	19.09	0.14	16.19	1.57	0.47	185.49
3/26/2024	13:53:48	19.11	0.14	15.42	1.57	0.47	176.45
3/26/2024	13:54:48	19.14	0.14	14.68	1.58	0.47	168.1
3/26/2024	13:55:48	19.16	0.14	13.86	1.59	0.47	159.72
3/26/2024	13:56:48	19.18	0.14	13.23	1.6	0.47	152.05
3/26/2024	13:57:48	19.15	0.14	13.21	1.62	0.47	146.75
3/26/2024	13:58:48	19.14	0.14	13.14	1.76	0.47	143.3
3/26/2024	13:59:48	19.14	0.14	13.03	2.97	0.46	139.4
3/26/2024	14:00:48	19.1	0.14	13.66	1.59	0.47	137.42
3/26/2024	14:01:48	19.08	0.14	14.2	1.56	0.47	150.29
3/26/2024	14:02:48	19.13	0.14	14.3	1.54	0.47	160.37
3/26/2024	14:03:48	19.17	0.14	14.64	1.52	0.47	170.1
3/26/2024	14:04:48	19.16	0.14	15.33	1.5	0.47	180.62
3/26/2024	14:05:48	19.15	0.14	16.14	1.51	0.47	189.16
3/26/2024	14:06:48	19.13	0.14	16.62	1.51	0.48	194.77
3/26/2024	14:07:48	19.14	0.14	16.74	1.5	0.48	196.49
3/26/2024	14:08:48	19.08	0.14	17.23	1.48	0.48	194.63
3/26/2024	14:09:48	19.11	0.14	16.84	1.47	0.48	190.26
3/26/2024	14:10:48	19.13	0.14	16.31	1.47	0.49	184.66
3/26/2024	14:11:48	19.03	0.14	16.99	1.44	0.49	181.69
3/26/2024	14:12:48	18.74	0.14	19.67	1.45	0.49	183.26
3/26/2024	14:13:48	18.77	0.14	19.81	1.45	0.48	189.86
3/26/2024	14:14:48	18.89	0.14	19.77	1.4	0.47	202.86

BIAS/DRIFT CALS

back on stack gas

3/26/2024	14:15:48	18.9	0.14	20.92	1.35	0.47	219.96
3/26/2024	14:16:48	18.92	0.14	22.34	1.35	0.48	239.22
3/26/2024	14:17:48	18.94	0.14	24	1.38	0.48	260.17
3/26/2024	14:18:48	18.95	0.14	26.05	1.42	0.48	283.4
3/26/2024	14:19:48	18.95	0.14	28.58	1.46	0.47	309.12
3/26/2024	14:20:48	18.96	0.13	31.05	1.49	0.47	335.37
3/26/2024	14:21:48	18.97	0.13	33.69	1.5	0.46	360.9
3/26/2024	14:22:48	18.96	0.13	36.5	1.52	0.47	384.3
3/26/2024	14:23:48	18.95	0.14	39.03	1.53	0.47	406.49
3/26/2024	14:24:48	18.95	0.14	41.27	1.54	0.47	428.01
3/26/2024	14:25:48	18.95	0.13	43.8	1.55	0.47	447.95
3/26/2024	14:26:48	18.95	0.13	46.23	1.57	0.46	467.71
3/26/2024	14:27:48	18.94	0.13	48.91	1.59	0.45	488.53
3/26/2024	14:28:48	18.95	0.13	51.52	1.6	0.45	515.24
3/26/2024	14:29:48	18.95	0.13	54.08	1.61	0.45	542.86
3/26/2024	14:30:48	18.95	0.13	56.79	1.61	0.46	572.57
3/26/2024	14:31:48	18.95	0.13	59.45	1.61	0.45	602.61
3/26/2024	14:32:48	18.96	0.13	62	1.6	0.45	631.61
3/26/2024	14:33:48	18.95	0.12	64.65	1.6	0.45	659.77
3/26/2024	14:34:48	18.96	0.12	66.94	1.59	0.44	687.66
3/26/2024	14:35:48	18.96	0.12	69.12	1.57	0.44	713
3/26/2024	14:36:48	18.96	0.12	71.17	1.57	0.44	737.01
3/26/2024	14:37:48	18.96	0.12	72.97	1.56	0.45	758.82
3/26/2024	14:38:48	18.97	0.12	74.8	1.55	0.45	778.23
3/26/2024	14:39:48	18.97	0.12	76.27	1.54	0.45	796.47
3/26/2024	14:40:48	18.97	0.12	77.45	1.53	0.45	809.41
3/26/2024	14:41:48	18.96	0.12	78.66	1.52	0.45	820.96
3/26/2024	14:42:48	18.96	0.12	79.78	1.5	0.45	830.72
3/26/2024	14:43:48	18.96	0.12	80.97	1.49	0.45	840.2
3/26/2024	14:44:48	18.96	0.12	81.74	1.47	0.45	848.34
3/26/2024	14:45:48	18.96	0.12	82.23	1.45	0.46	853.56
3/26/2024	14:46:48	18.97	0.13	82.77	1.44	0.48	856.27
3/26/2024	14:47:48	18.96	0.13	83.74	1.43	0.49	859.59
3/26/2024	14:48:48	18.96	0.13	84.31	1.41	0.5	861.06
3/26/2024	14:49:48	18.95	0.13	84.63	1.39	0.5	860.38
3/26/2024	14:50:48	18.95	0.13	85.01	1.38	0.51	857.79
3/26/2024	14:51:48	18.95	0.13	84.69	1.37	0.52	853.02
3/26/2024	14:52:48	18.94	0.13	85.12	1.37	0.53	843.57
3/26/2024	14:53:48	18.99	0.14	82.69	1.39	0.55	821.76
3/26/2024	14:54:48	19.05	0.14	79.58	1.4	0.57	799.91
3/26/2024	14:55:48	19.07	0.14	79.04	1.4	0.58	786.66
3/26/2024	14:56:48	19.09	0.14	77.85	1.41	0.59	780.07
3/26/2024	14:57:48	19.11	0.14	76.6	1.4	0.6	774.39
3/26/2024	14:58:48	19.11	0.14	75.68	1.4	0.61	766
3/26/2024	14:59:48	19.11	0.14	74.05	1.39	0.62	753.63
3/26/2024	15:00:48	19.11	0.14	72.56	1.39	0.63	739.32
3/26/2024	15:01:48	19.11	0.14	71.13	1.37	0.64	724.71
3/26/2024	15:02:48	19.11	0.14	69.72	1.37	0.65	709.07
3/26/2024	15:03:48	19.08	0.15	70.52	1.36	0.66	695.27
3/26/2024	15:04:48	19.06	0.15	70.8	1.35	0.68	685.24
3/26/2024	15:05:48	19.06	0.15	70.66	1.34	0.69	678.36
3/26/2024	15:06:48	19.06	0.15	70.43	1.33	0.69	673.57
3/26/2024	15:07:48	19.06	0.15	70.42	1.32	0.69	670.74
3/26/2024	15:08:48	19.06	0.15	70.43	1.32	0.7	669.46
3/26/2024	15:09:48	19.07	0.15	70.53	1.31	0.72	667.89
3/26/2024	15:10:48	19.06	0.15	71.07	1.31	0.73	667.17
3/26/2024	15:11:48	19.07	0.15	71.48	1.3	0.73	668.98
3/26/2024	15:12:48	19.07	0.15	71.24	1.29	0.74	671.86
3/26/2024	15:13:48	19.06	0.15	72.42	1.29	0.74	675.67
3/26/2024	15:14:48	19.06	0.15	72.72	1.28	0.74	679.32
3/26/2024	15:15:48	19.07	0.15	73.44	1.28	0.76	681.65
3/26/2024	15:16:48	19.05	0.16	74.28	1.27	0.76	684.5
3/26/2024	15:17:48	19.05	0.16	74.5	1.27	0.77	687.38
3/26/2024	15:18:48	19.04	0.16	75.58	1.26	0.77	690.5
3/26/2024	15:19:48	19.05	0.16	75.61	1.26	0.77	693.97
3/26/2024	15:20:48	19.05	0.16	75.66	1.25	0.76	697.6
3/26/2024	15:21:48	19.05	0.16	75.99	1.25	0.76	698.52
3/26/2024	15:22:48	19.05	0.16	76.36	1.24	0.77	692.93
3/26/2024	15:23:48	19.05	0.16	76.89	1.24	0.77	685.43
3/26/2024	15:24:48	19.06	0.16	76.97	1.23	0.78	687.53
3/26/2024	15:25:48	19.06	0.16	77.43	1.23	0.77	690.92
3/26/2024	15:26:48	19.06	0.16	77.27	1.23	0.77	692.52
3/26/2024	15:27:48	19.06	0.16	77.6	1.22	0.76	693.58

3/26/2024	15:28:48	19.05	0.16	77.79	1.22	0.76	693.39
3/26/2024	15:29:48	19.06	0.16	77.66	1.21	0.78	692.04
3/26/2024	15:30:48	19.05	0.16	77.82	1.21	0.78	692.01
3/26/2024	15:31:48	19.04	0.16	78.47	1.2	0.77	691.4
3/26/2024	15:32:48	19.05	0.16	78.17	1.2	0.77	692.22
3/26/2024	15:33:48	19.05	0.16	78.13	1.2	0.76	691.58
3/26/2024	15:34:48	19.06	0.16	78.01	1.19	0.76	690.75
3/26/2024	15:35:48	19.05	0.16	78.19	1.19	0.77	688.55
3/26/2024	15:36:48	19.05	0.16	77.91	1.19	0.78	687.8
3/26/2024	15:37:48	19.05	0.16	78.32	1.19	0.78	687.03
3/26/2024	15:38:48	19.05	0.16	78.32	1.19	0.77	686.49
3/26/2024	15:39:48	19.05	0.15	78.31	1.19	0.77	684.44
3/26/2024	15:40:48	19.05	0.16	77.94	1.18	0.77	683.59
3/26/2024	15:41:48	19.04	0.16	77.71	1.18	0.78	681.44
3/26/2024	15:42:48	19.04	0.16	77.46	1.17	0.79	680.78
3/26/2024	15:43:48	19.03	0.16	77.47	1.17	0.78	679.75
3/26/2024	15:44:48	19.04	0.16	77.58	1.17	0.78	678.89
3/26/2024	15:45:48	19.04	0.15	77.7	1.17	0.77	677.88
3/26/2024	15:46:48	19.04	0.16	77.94	1.17	0.78	677.57
3/26/2024	15:47:48	19.03	0.16	78.13	1.16	0.79	676.62
3/26/2024	15:48:48	19.02	0.16	78.08	1.16	0.79	677.13
3/26/2024	15:49:48	19.03	0.16	77.77	1.16	0.79	676.25
3/26/2024	15:50:48	19.03	0.16	77.49	1.16	0.78	676.43
3/26/2024	15:51:48	19.03	0.15	77.3	1.16	0.78	674.55
3/26/2024	15:52:48	19.03	0.16	77.02	1.16	0.79	672.76
3/26/2024	15:53:48	19.02	0.16	76.86	1.16	0.8	671.92
3/26/2024	15:54:48	19.03	0.16	76.57	1.16	0.8	671.22
3/26/2024	15:55:48	19.03	0.16	76.15	1.16	0.8	669.76
3/26/2024	15:56:48	19.03	0.16	75.87	1.16	0.8	669.22
3/26/2024	15:57:48	19.03	0.16	75.92	1.16	0.8	667.3
3/26/2024	15:58:48	19.03	0.16	75.73	1.16	0.81	665.77
3/26/2024	15:59:48	19.03	0.16	75.49	1.16	0.81	666.2
3/26/2024	16:00:48	19.01	0.16	76.3	1.16	0.81	666
3/26/2024	16:01:48	19.01	0.16	75.97	1.16	0.81	665.36
3/26/2024	16:02:48	19.02	0.16	74.81	1.16	0.81	663.86
3/26/2024	16:03:48	19.02	0.16	73.59	1.16	0.81	662.98
3/26/2024	16:04:48	19.03	0.16	71.84	1.16	0.82	660.18
3/26/2024	16:05:48	19.03	0.17	70.63	1.16	0.82	656.77
3/26/2024	16:06:48	19.04	0.16	69.43	1.17	0.82	653.33
3/26/2024	16:07:48	19.03	0.16	68	1.17	0.82	649.01
3/26/2024	16:08:48	19.04	0.16	65.54	1.17	0.81	644.32
3/26/2024	16:09:48	19.04	0.17	62.94	1.18	0.82	638.14
3/26/2024	16:10:48	19.03	0.17	60.24	1.18	0.83	630.93
3/26/2024	16:11:48	19.03	0.17	57.72	1.19	0.83	623.15
3/26/2024	16:12:48	19.04	0.17	55.48	1.2	0.83	612.41
3/26/2024	16:13:48	19.04	0.17	53.2	1.2	0.83	601.58
3/26/2024	16:14:48	19.04	0.17	51.29	1.21	0.82	590.56
3/26/2024	16:15:48	19.04	0.17	50.06	1.21	0.82	578.51
3/26/2024	16:16:48	19.02	0.17	49.37	1.21	0.83	565.44
3/26/2024	16:17:48	19.01	0.17	48.79	1.21	0.76	554.9
3/26/2024	16:18:48	19.04	0.17	47.79	1.61	0.82	543.84
3/26/2024	16:19:48	19.04	0.17	47.19	1.43	0.82	531.38
3/26/2024	16:20:48	19.04	0.17	46.92	1.43	0.81	520.34
3/26/2024	16:21:48	19.04	0.17	46.94	1.43	0.81	512.21
3/26/2024	16:22:48	19.04	0.17	46.62	1.44	0.82	504.83
3/26/2024	16:23:48	19.04	0.18	46.21	1.44	0.82	499.26
3/26/2024	16:24:48	19.04	0.17	45.58	1.44	0.82	494.93
3/26/2024	16:25:48	19.05	0.17	44.74	1.45	0.8	490.47
3/26/2024	16:26:48	19.04	0.17	44.08	1.44	0.8	485.59
3/26/2024	16:27:48	19.05	0.17	43.51	1.45	0.8	480.81
3/26/2024	16:28:48	19.04	0.17	42.99	1.45	0.79	476.62
3/26/2024	16:29:48	19.04	0.17	42.15	1.45	0.79	472.93
3/26/2024	16:30:48	19.04	0.17	41.32	1.45	0.79	468.78
3/26/2024	16:31:48	19.04	0.17	40.79	1.46	0.77	464.38
3/26/2024	16:32:48	19.04	0.17	40.29	1.46	0.76	459.94
3/26/2024	16:33:48	19.04	0.17	40.35	1.46	0.75	455.14
3/26/2024	16:34:48	19.04	0.17	40.2	1.46	0.75	450.2
3/26/2024	16:35:48	19.04	0.17	39.94	1.46	0.75	446.45
3/26/2024	16:36:48	19.03	0.17	39.94	1.46	0.74	443.06
3/26/2024	16:37:48	19.05	0.16	39.65	1.47	0.73	439.92
3/26/2024	16:38:48	19.05	0.16	39.4	1.47	0.71	437.54
3/26/2024	16:39:48	19.05	0.16	39.36	1.47	0.71	434.18
3/26/2024	16:40:48	19.05	0.16	39.04	1.47	0.7	432.38



3/26/2024	16:41:48	19.04	0.16	38.74	1.47	0.7	428.96
3/26/2024	16:42:48	19.04	0.16	38.28	1.47	0.69	427.37
3/26/2024	16:43:48	19.04	0.16	37.58	1.47	0.68	425.21
3/26/2024	16:44:48	19.04	0.16	36.98	1.47	0.68	422.21
3/26/2024	16:45:48	19.04	0.16	36.54	1.47	0.68	420.29
3/26/2024	16:46:48	19.03	0.16	36.37	1.48	0.68	416.81
3/26/2024	16:47:48	19.04	0.16	35.84	1.48	0.68	413.31
3/26/2024	16:48:48	19.04	0.16	35.48	1.48	0.68	409.27
3/26/2024	16:49:48	19.04	0.17	35.52	1.48	0.67	405.52
3/26/2024	16:50:48	19.04	0.16	35.38	1.48	0.67	402.96
3/26/2024	16:51:48	19.04	0.16	35.65	1.48	0.66	400.4
3/26/2024	16:52:48	19.04	0.16	35.96	1.48	0.65	398.07
3/26/2024	16:53:48	19.04	0.16	36.25	1.48	0.65	395.89
3/26/2024	16:54:48	19.03	0.16	36.56	1.48	0.65	393.68
3/26/2024	16:55:48	19.03	0.16	36.35	1.48	0.65	391.9
3/26/2024	16:56:48	19.04	0.16	36.3	1.48	0.65	391.25
3/26/2024	16:57:48	19.04	0.16	35.88	1.49	0.64	390.83
3/26/2024	16:58:48	19.04	0.15	35.74	1.48	0.63	389.76
3/26/2024	16:59:48	19.04	0.15	35.37	1.49	0.62	388.65
3/26/2024	17:00:48	19.04	0.15	35.29	1.49	0.62	387.58
3/26/2024	17:01:48	19.04	0.15	34.9	1.49	0.62	384.51
3/26/2024	17:02:48	19.04	0.15	34.47	1.49	0.61	382.59
3/26/2024	17:03:48	19.04	0.15	34.11	1.49	0.6	381.05
3/26/2024	17:04:48	19.05	0.15	33.73	1.49	0.59	378.89
3/26/2024	17:05:48	19.03	0.15	33.57	1.49	0.59	376.68
3/26/2024	17:06:48	19.04	0.15	33.29	1.49	0.59	374.22
3/26/2024	17:07:48	19.04	0.15	33.22	1.5	0.59	371.38
3/26/2024	17:08:48	19.05	0.15	33.08	1.49	0.58	368.77
3/26/2024	17:09:48	19.05	0.14	33.05	1.49	0.58	365.51
3/26/2024	17:10:48	19.04	0.14	33.18	1.49	0.57	363.33
3/26/2024	17:11:48	19.05	0.14	33.12	1.49	0.57	360.5
3/26/2024	17:12:48	19.04	0.14	32.86	1.49	0.57	358.51
3/26/2024	17:13:48	19.03	0.15	32.63	1.49	0.58	356.55
3/26/2024	17:14:48	19.03	0.15	32.32	1.49	0.57	354.56
3/26/2024	17:15:48	19.04	0.14	31.96	1.49	0.56	351.15
3/26/2024	17:16:48	19.04	0.14	31.57	1.49	0.56	348.93
3/26/2024	17:17:48	19.04	0.14	31.33	1.5	0.56	347.01
3/26/2024	17:18:48	19.03	0.15	31.06	1.5	0.56	344.68
3/26/2024	17:19:48	19.03	0.15	30.63	1.5	0.56	342.11
3/26/2024	17:20:48	19.04	0.15	30.29	1.5	0.56	340.59
3/26/2024	17:21:48	19.04	0.14	30.09	1.5	0.55	335.42
3/26/2024	17:22:48	19.04	0.14	30.11	1.5	0.55	330.67
3/26/2024	17:23:48	19.04	0.14	30.02	1.5	0.55	328.35
3/26/2024	17:24:48	19.04	0.14	29.97	1.5	0.54	325.53
3/26/2024	17:25:48	19.04	0.14	30.15	1.5	0.54	323.17
3/26/2024	17:26:48	19.04	0.14	30.1	1.5	0.54	321.18
3/26/2024	17:27:48	19.04	0.14	30.32	1.5	0.54	317.87
3/26/2024	17:28:48	19.04	0.14	30.59	1.5	0.54	315.71
3/26/2024	17:29:48	19.04	0.14	30.83	1.5	0.54	314.3
3/26/2024	17:30:48	19.04	0.14	31.18	1.5	0.53	312.21
3/26/2024	17:31:48	19.04	0.14	31.68	3.03	0.51	312.43
3/26/2024	17:32:48	19.05	0.14	31.8	1.8	0.52	313.05
3/26/2024	17:33:48	19.04	0.14	32.51	1.32	0.53	328.09
3/26/2024	17:34:48	19.03	0.14	33.29	1.3	0.53	337.53
3/26/2024	17:35:48	19.03	0.15	34.08	1.3	0.53	343.35
3/26/2024	17:36:48	19.03	0.15	34.73	1.3	0.52	350.59
3/26/2024	17:37:48	19.03	0.15	35.3	1.3	0.51	358.99
3/26/2024	17:38:48	19.03	0.14	36.15	1.29	0.5	366.21
3/26/2024	17:39:48	18.86	0.4	36.66	0.72	0.42	370.99
3/26/2024	17:40:48	14.26	8.09	17.32	1.25	0.5	375.19
3/26/2024	17:41:48	12.48	11.05	2.8	0.07	0.32	381.93
3/26/2024	17:42:48	12.18	11.7	0.75	-0.04	0.3	400.09
3/26/2024	17:43:48	12.12	11.8	0.39	-0.04	0.29	419.32
3/26/2024	17:44:48	12.1	11.82	0.41	0.02	0.25	449.24
3/26/2024	17:45:48	12.1	11.84	0.34	0.04	0.23	489.74
3/26/2024	17:46:48	13.37	5.85	13.33	9.88	9.98	530.13
3/26/2024	17:47:48	18.02	1.21	35.37	4.75	4.35	546.62
3/26/2024	17:48:48	18.72	0.39	42.47	11.22	11.48	539.55
3/26/2024	17:49:48	18.8	0.22	46.52	11.83	12.17	512.7
3/26/2024	17:50:48	16.33	0.2	48.17	11.83	12.17	468.11
3/26/2024	17:51:48	3.88	0.16	46.21	11.83	12.18	413.84
3/26/2024	17:52:48	0.97	0.11	45.59	11.83	12.2	346.75
3/26/2024	17:53:48	0.58	0.1	45.58	11.83	12.21	264.38

BIAS/DRIFT CALS

3/26/2024	17:54:48	0.49	0.09	45.46	11.83	12.2	197.04
3/26/2024	17:55:48	0.47	0.09	45.44	11.83	12.18	143.54
3/26/2024	17:56:48	0.46	0.09	45.62	11.83	12.18	102.27
3/26/2024	17:57:48	0.45	0.09	45.68	11.84	12.19	71.74
3/26/2024	17:58:48	0.45	0.09	45.7	11.85	12.2	49.47
3/26/2024	17:59:48	0.45	0.09	45.65	11.9	12.22	18.72
3/26/2024	18:00:48	0.56	0.09	45.56	11.9	12.22	-4.11
3/26/2024	18:01:48	11.61	0.12	51	4.61	4.72	1.34
3/26/2024	18:02:48	17.66	0.15	58.62	0.02	0.32	285.67
3/26/2024	18:03:48	18.49	0.15	60.81	0.01	0.3	767.35
3/26/2024	18:04:48	18.7	0.15	62.08	0.01	0.3	897.87
3/26/2024	18:05:48	18.75	0.16	62.81	0.01	0.3	910.21
3/26/2024	18:06:48	18.76	0.16	63.41	0.41	0.37	911.07
3/26/2024	18:07:48	18.84	0.16	61.2	1.25	0.51	859.25
3/26/2024	18:08:48	18.97	0.15	57.65	1.25	0.52	690.77
3/26/2024	18:09:48	19	0.15	57.8	1.25	0.53	622.07
3/26/2024	18:10:48	19.01	0.16	58.55	1.25	0.53	609.75
3/26/2024	18:11:48	19.01	0.16	59.33	1.24	0.54	604.58
3/26/2024	18:12:48	19.01	0.16	60.03	1.24	0.54	599.93
3/26/2024	18:13:48	19.01	0.16	60.68	1.24	0.55	597.75
3/26/2024	18:14:48	19.03	0.15	61.41	1.23	0.55	596.97
3/26/2024	18:15:48	19.02	0.15	61.88	1.23	0.55	597.3
3/26/2024	18:16:48	19.03	0.15	61.87	1.23	0.57	597.65
3/26/2024	18:17:48	19.03	0.15	61.7	1.23	0.58	598.43
3/26/2024	18:18:48	19.03	0.15	61.07	1.23	0.59	597.96
3/26/2024	18:19:48	19.04	0.15	60.25	1.23	0.59	597.16
3/26/2024	18:20:48	19.04	0.15	59.47	1.23	0.59	594.34
3/26/2024	18:21:48	19.03	0.15	58.97	1.23	0.6	590.41
3/26/2024	18:22:48	19.03	0.15	58.13	1.23	0.61	585.47
3/26/2024	18:23:48	19.03	0.15	57.17	1.23	0.62	579.71
3/26/2024	18:24:48	19.03	0.15	56.06	1.24	0.63	574.23
3/26/2024	18:25:48	19.04	0.15	54.96	1.22	0.63	567.81
3/26/2024	18:26:48	19.04	0.15	54.16	1.19	0.63	562.45
3/26/2024	18:27:48	19.04	0.15	53.47	1.2	0.64	557.52
3/26/2024	18:28:48	19.04	0.15	52.92	1.24	0.66	547.52
3/26/2024	18:29:48	19.03	0.16	52.56	1.24	0.66	544.49
3/26/2024	18:30:48	19.04	0.16	52.2	1.24	0.67	539.13
3/26/2024	18:31:48	19.04	0.15	52.08	1.24	0.67	535.59
3/26/2024	18:32:48	19.04	0.15	52.01	1.22	0.67	533.91
3/26/2024	18:33:48	19.04	0.15	52.27	1.18	0.68	534.01
3/26/2024	18:34:48	19.03	0.16	52.53	1.24	0.69	518.79
3/26/2024	18:35:48	19.03	0.16	52.65	1.24	0.7	512.45
3/26/2024	18:36:48	19.03	0.16	52.68	1.24	0.7	517.46
3/26/2024	18:37:48	19.03	0.16	52.45	1.19	0.7	524.33
3/26/2024	18:38:48	19.04	0.16	52.04	1.19	0.69	515.54
3/26/2024	18:39:48	19.03	0.16	51.75	1.22	0.69	503.3
3/26/2024	18:40:48	19.03	0.16	51.32	1.25	0.7	489.12
3/26/2024	18:41:48	19.03	0.16	50.97	1.25	0.7	490.43
3/26/2024	18:42:48	19.03	0.16	50.51	1.25	0.7	497.7
3/26/2024	18:43:48	19.04	0.16	49.96	1.25	0.69	504.44
3/26/2024	18:44:48	19.04	0.16	49.44	1.26	0.68	510.24
3/26/2024	18:45:48	19.04	0.16	49.29	1.26	0.68	512.87
3/26/2024	18:46:48	19.04	0.15	49.14	1.26	0.67	513.31
3/26/2024	18:47:48	19.04	0.15	49.14	1.26	0.67	513.76
3/26/2024	18:48:48	19.04	0.15	49.01	1.26	0.67	512.71
3/26/2024	18:49:48	19.04	0.15	49.19	1.26	0.66	510.49
3/26/2024	18:50:48	19.04	0.15	49.3	1.26	0.65	510.69
3/26/2024	18:51:48	19.04	0.15	49.5	1.26	0.65	510.46
3/26/2024	18:52:48	19.04	0.15	49.47	1.27	0.65	509.87
3/26/2024	18:53:48	19.03	0.15	49.38	1.28	0.65	507.15
3/26/2024	18:54:48	19.03	0.15	49.39	1.28	0.65	510.19
3/26/2024	18:55:48	19.03	0.15	48.98	1.28	0.64	510.88
3/26/2024	18:56:48	19.04	0.15	48.34	1.28	0.64	510.1
3/26/2024	18:57:48	19.04	0.15	48.07	1.28	0.64	508.25
3/26/2024	18:58:48	19.02	0.15	48.15	1.28	0.65	506.37
3/26/2024	18:59:48	19.04	0.15	48.21	1.29	0.65	504.59
3/26/2024	19:00:48	19.05	0.15	48.37	1.28	0.64	503.4
3/26/2024	19:01:48	19.04	0.15	48.81	1.28	0.63	502.82
3/26/2024	19:02:48	19.04	0.15	49	1.29	0.62	503.84
3/26/2024	19:03:48	19.04	0.14	49.31	1.28	0.62	505.69
3/26/2024	19:04:48	19.05	0.14	49.77	1.28	0.61	507.76
3/26/2024	19:05:48	19.04	0.14	50.31	1.28	0.61	508.72
3/26/2024	19:06:48	19.03	0.14	50.73	1.28	0.61	511.15

back on stack gas

3/26/2024	19:07:48	19.03	0.15	51.02	1.28	0.62	513.18
3/26/2024	19:08:48	19.03	0.15	51.31	1.28	0.62	515.97
3/26/2024	19:09:48	19.02	0.15	51.28	1.28	0.62	519.3
3/26/2024	19:10:48	19.03	0.16	50.89	1.29	0.61	521.45
3/26/2024	19:11:48	19.03	0.16	50.91	1.28	0.61	523.04
3/26/2024	19:12:48	18.99	0.16	52.13	4.29	0.58	523.66
3/26/2024	19:13:48	18.99	0.16	51.82	4.83	0.57	523.87
3/26/2024	19:14:48	19.03	0.17	50.52	2.14	0.6	523.08
3/26/2024	19:15:48	19.03	0.17	49.69	1.26	0.61	510.55
3/26/2024	19:16:48	19.02	0.17	49.31	1.26	0.6	498.11
3/26/2024	19:17:48	19.01	0.17	49.1	1.25	0.6	494.37
3/26/2024	19:18:48	19	0.18	49.38	1.25	0.61	496.67
3/26/2024	19:19:48	18.99	0.19	49.38	1.25	0.61	502.88
3/26/2024	19:20:48	18.98	0.19	48.62	1.25	0.62	508.64
3/26/2024	19:21:48	18.98	0.19	47.03	1.26	0.62	511.8
3/26/2024	19:22:48	18.98	0.19	45.48	1.27	0.61	511.17
3/26/2024	19:23:48	18.99	0.19	44.19	1.27	0.61	508.24
3/26/2024	19:24:48	18.99	0.19	43.78	1.26	0.61	502.01
3/26/2024	19:25:48	19	0.19	44.12	1.26	0.61	495.22
3/26/2024	19:26:48	19	0.18	44.47	1.26	0.6	488.57
3/26/2024	19:27:48	19	0.18	44.56	1.26	0.6	484.41
3/26/2024	19:28:48	19.01	0.17	44.06	1.27	0.58	483.24
3/26/2024	19:29:48	19.02	0.17	43.18	1.27	0.58	482.82
3/26/2024	19:30:48	19.02	0.16	42.44	1.28	0.58	481.23
3/26/2024	19:31:48	19.03	0.16	42.04	1.28	0.58	477.93
3/26/2024	19:32:48	19.02	0.16	42.42	1.27	0.58	473.64
3/26/2024	19:33:48	19.02	0.16	43.07	1.56	0.57	470.16
3/26/2024	19:34:48	19.01	0.15	43.68	12.25	0.41	467.9
3/26/2024	19:35:48	19.03	0.15	42.8	4.51	0.51	466.79
3/26/2024	19:36:48	19.04	0.15	42.18	1.33	0.56	450.42
3/26/2024	19:37:48	19	0.16	42.71	1.25	0.57	421.05
3/26/2024	19:38:48	19.01	0.15	42.64	1.25	0.57	408.87
3/26/2024	19:39:48	19.01	0.15	42.91	1.25	0.56	416.98
3/26/2024	19:40:48	19.02	0.15	43.29	1.25	0.56	430.4
3/26/2024	19:41:48	19.02	0.15	43.24	1.24	0.56	443.73
3/26/2024	19:42:48	19.02	0.15	42.83	1.25	0.56	454.32
3/26/2024	19:43:48	19.02	0.15	42.02	1.25	0.56	461.74
3/26/2024	19:44:48	19.03	0.15	40.78	1.25	0.56	465.1
3/26/2024	19:45:48	19.03	0.15	40.51	6.73	0.49	465.3
3/26/2024	19:46:48	19.02	0.15	41.4	12.46	0.41	463.47
3/26/2024	19:47:48	19.05	0.15	40.91	2.38	0.53	455.37
3/26/2024	19:48:48	19.03	0.15	41.32	1.78	0.55	425.37
3/26/2024	19:49:48	19.02	0.15	41.47	4.88	0.52	394.33
3/26/2024	19:50:48	19.02	0.15	40.76	5.9	0.5	389.89
3/26/2024	19:51:48	19.04	0.16	39.63	2.15	0.55	398.49
3/26/2024	19:52:48	19.03	0.16	39.93	1.53	0.56	398.33
3/26/2024	19:53:48	19.01	0.16	40.84	1.53	0.56	396.79
3/26/2024	19:54:48	19.02	0.15	41.14	1.53	0.56	403.24
3/26/2024	19:55:48	19.02	0.15	41.31	1.53	0.55	415.71
3/26/2024	19:56:48	19.02	0.15	40.87	1.54	0.55	428.02
3/26/2024	19:57:48	19.03	0.15	40.18	1.54	0.55	437.7
3/26/2024	19:58:48	19.03	0.15	39.61	1.54	0.55	443.93
3/26/2024	19:59:48	19.03	0.15	39.4	1.54	0.54	446.38
3/26/2024	20:00:48	19.03	0.15	39.6	1.54	0.54	445.93
3/26/2024	20:01:48	19.03	0.14	40.28	7.69	0.47	444.29
3/26/2024	20:02:48	19.04	0.14	39.92	3.1	0.51	443.71
3/26/2024	20:03:48	19.02	0.14	39.73	1.64	0.52	437.13
3/26/2024	20:04:48	19.03	0.14	38.92	1.64	0.52	422.18
3/26/2024	20:05:48	19.04	0.14	38.28	1.64	0.52	414.5
3/26/2024	20:06:48	19.04	0.14	38.14	1.64	0.52	414.38
3/26/2024	20:07:48	19.03	0.14	38.74	1.64	0.51	417.89
3/26/2024	20:08:48	19.03	0.14	39.32	1.64	0.51	421.11
3/26/2024	20:09:48	19.03	0.14	39.63	1.64	0.51	425.19
3/26/2024	20:10:48	19.03	0.15	39.38	1.64	0.51	428.9
3/26/2024	20:11:48	19.03	0.15	38.64	1.64	0.52	431.92
3/26/2024	20:12:48	19.04	0.15	38.1	1.64	0.52	434.21
3/26/2024	20:13:48	19.03	0.15	37.99	1.64	0.51	435.07
3/26/2024	20:14:48	19.03	0.15	38.16	1.63	0.51	433.38
3/26/2024	20:15:48	19.03	0.15	38.24	1.63	0.51	431.75
3/26/2024	20:16:48	19.01	0.15	39.12	1.64	0.51	431.28
3/26/2024	20:17:48	19.01	0.15	38.54	1.64	0.51	431.55
3/26/2024	20:18:48	19.02	0.15	37.54	1.64	0.51	432.37
3/26/2024	20:19:48	19.03	0.15	36.74	1.64	0.51	432.13

3/26/2024	20:20:48	19.03	0.15	36.63	1.64	0.51	430.21
3/26/2024	20:21:48	19.03	0.15	37.06	1.64	0.51	427.62
3/26/2024	20:22:48	19.03	0.14	37.5	1.64	0.5	425.53
3/26/2024	20:23:48	19.04	0.14	37.53	1.64	0.5	423.89
3/26/2024	20:24:48	19.05	0.14	37.28	1.64	0.5	423.51
3/26/2024	20:25:48	19.04	0.14	36.9	1.65	0.5	424.37
3/26/2024	20:26:48	19.04	0.14	36.26	1.65	0.49	423.92
3/26/2024	20:27:48	19.04	0.14	36.33	1.64	0.49	423.5
3/26/2024	20:28:48	19.04	0.14	37.04	1.64	0.49	421.15
3/26/2024	20:29:48	19.03	0.14	37.8	1.64	0.49	420.07
3/26/2024	20:30:48	19.03	0.14	38.23	1.64	0.5	419.65
3/26/2024	20:31:48	19.04	0.14	37.54	1.65	0.5	420.08
3/26/2024	20:32:48	19.04	0.14	36.53	3.67	0.48	421.97
3/26/2024	20:33:48	19.04	0.14	35.6	6.77	0.44	422.57
3/26/2024	20:34:48	19.05	0.14	35.27	2.96	0.48	421.35
3/26/2024	20:35:48	19.04	0.14	35.92	1.7	0.49	411.42
3/26/2024	20:36:48	19.02	0.14	36.78	1.7	0.49	396.23
3/26/2024	20:37:48	19.03	0.14	36.86	1.7	0.49	388.24
3/26/2024	20:38:48	19.04	0.14	36.32	1.7	0.49	389.49
3/26/2024	20:39:48	19.05	0.14	35.54	1.7	0.48	394.87
3/26/2024	20:40:48	19.05	0.13	34.8	1.71	0.48	400.09
3/26/2024	20:41:48	19.05	0.14	34.88	1.7	0.48	402.98
3/26/2024	20:42:48	19.04	0.13	35.52	1.7	0.48	405.12
3/26/2024	20:43:48	19.04	0.13	36.3	1.7	0.48	405.12
3/26/2024	20:44:48	19.04	0.13	36.41	3.58	0.46	406.02
3/26/2024	20:45:48	19.03	0.13	36.3	5.5	0.44	407.92
3/26/2024	20:46:48	19.06	0.14	34.99	2.82	0.47	408.42
3/26/2024	20:47:48	19.05	0.14	34.52	1.67	0.48	402.76
3/26/2024	20:48:48	19.04	0.14	34.74	1.68	0.48	393.74
3/26/2024	20:49:48	19.04	0.14	35.02	1.67	0.48	387.73
3/26/2024	20:50:48	19.04	0.14	35.36	1.67	0.48	386.7
3/26/2024	20:51:48	19.04	0.14	35.49	1.68	0.48	389.92
3/26/2024	20:52:48	19.04	0.14	34.9	1.68	0.47	393.93
3/26/2024	20:53:48	19.05	0.14	33.88	1.68	0.47	397.44
3/26/2024	20:54:48	19.04	0.14	33.38	1.68	0.48	399.54
3/26/2024	20:55:48	19.04	0.14	33.59	1.67	0.48	400
3/26/2024	20:56:48	19.04	0.14	34.28	1.67	0.47	399.39
3/26/2024	20:57:48	19.03	0.13	35.3	1.66	0.47	397.58
3/26/2024	20:58:48	19.04	0.13	35.21	1.67	0.46	397.44
3/26/2024	20:59:48	19.04	0.13	34.94	3.58	0.45	398.5
3/26/2024	21:00:48	19.04	0.13	34.08	7.73	0.41	400.39
3/26/2024	21:01:48	19.07	0.13	32.81	3.96	0.45	401.02
3/26/2024	21:02:48	19.06	0.13	32.88	1.87	0.46	395.19
3/26/2024	21:03:48	19.04	0.13	33.75	1.63	0.46	382.19
3/26/2024	21:04:48	19.03	0.14	34.54	1.63	0.47	371.48
3/26/2024	21:05:48	19.04	0.14	34.61	1.63	0.47	368.02
3/26/2024	21:06:48	19.04	0.14	34.43	1.63	0.47	372.05
3/26/2024	21:07:48	19.04	0.14	34.25	1.63	0.47	378.65
3/26/2024	21:08:48	19.04	0.14	34.3	1.63	0.47	385.48
3/26/2024	21:09:48	19.03	0.14	34.53	1.63	0.47	389.65
3/26/2024	21:10:48	19.03	0.14	34.66	1.62	0.47	392.72
3/26/2024	21:11:48	19.02	0.14	34.78	1.62	0.47	395.86
3/26/2024	21:12:48	19.03	0.14	34.8	1.62	0.47	398.73
3/26/2024	21:13:48	19.03	0.14	34.46	4.19	0.45	400.84
3/26/2024	21:14:48	19.05	0.14	33.33	4.41	0.44	402.08
3/26/2024	21:15:48	19.04	0.14	32.5	3.14	0.45	401.41
3/26/2024	21:16:48	19.04	0.14	32.21	1.71	0.47	395.83
3/26/2024	21:17:48	19.01	0.14	33.21	1.71	0.47	387.49
3/26/2024	21:18:48	19.04	0.14	33.33	1.7	0.47	379.84
3/26/2024	21:19:48	19.04	0.14	33.68	1.71	0.46	376.6
3/26/2024	21:20:48	19.05	0.14	33.45	1.72	0.47	377.29
3/26/2024	21:21:48	19.04	0.14	32.61	1.72	0.47	380.23
3/26/2024	21:22:48	19.04	0.14	31.8	1.71	0.48	383.39
3/26/2024	21:23:48	19.03	0.14	31.58	1.72	0.48	384.5
3/26/2024	21:24:48	19.04	0.14	31.94	1.71	0.48	385.37
3/26/2024	21:25:48	19.03	0.14	32.57	1.71	0.48	382.76
3/26/2024	21:26:48	19.03	0.14	33.12	1.71	0.48	381.02
3/26/2024	21:27:48	19.03	0.15	33.05	1.72	0.48	380.64
3/26/2024	21:28:48	19.04	0.15	32.32	1.72	0.48	381.66
3/26/2024	21:29:48	19.04	0.14	31.56	1.72	0.48	382.6
3/26/2024	21:30:48	19.05	0.14	31.5	1.95	0.48	384.08
3/26/2024	21:31:48	19.02	0.14	32.62	6.4	0.44	382.85
3/26/2024	21:32:48	19.06	0.14	32.68	1.69	0.48	381.38



3/26/2024	21:33:48	19.05	0.14	33.07	1.37	0.48	378.21
3/26/2024	21:34:48	19.05	0.14	33.05	1.38	0.48	372.12
3/26/2024	21:35:48	19.05	0.14	32.37	1.38	0.48	369.5
3/26/2024	21:36:48	19.05	0.14	31.79	1.38	0.48	371.23
3/26/2024	21:37:48	19.04	0.15	31.49	1.38	0.48	374.72
3/26/2024	21:38:48	19.04	0.15	31.82	1.38	0.48	377.35
3/26/2024	21:39:48	19.04	0.15	32.19	1.38	0.48	378.9
3/26/2024	21:40:48	19.04	0.15	32.07	1.38	0.48	379.38
3/26/2024	21:41:48	19.05	0.15	31.55	1.39	0.48	380.27
3/26/2024	21:42:48	19.05	0.14	30.83	1.39	0.48	381.63
3/26/2024	21:43:48	19.03	0.15	30.58	1.39	0.48	382.29
3/26/2024	21:44:48	19.04	0.15	31.28	1.38	0.48	381.2
3/26/2024	21:45:48	19.03	0.15	32.27	1.38	0.48	379.93
3/26/2024	21:46:48	19.03	0.15	32.93	1.38	0.48	379.1
3/26/2024	21:47:48	19.03	0.14	33.02	3.72	0.46	378.87
3/26/2024	21:48:48	19.05	0.14	32.25	1.73	0.48	380.44
3/26/2024	21:49:48	19.03	0.14	31.61	1.72	0.48	382.76
3/26/2024	21:50:48	19.04	0.14	30.9	1.72	0.48	382.45
3/26/2024	21:51:48	19.04	0.14	31.26	1.72	0.48	380.14
3/26/2024	21:52:48	19.04	0.14	31.41	1.71	0.47	379.56
3/26/2024	21:53:48	19.04	0.14	32.4	1.71	0.47	376.65
3/26/2024	21:54:48	19.04	0.14	32.76	1.71	0.47	376
3/26/2024	21:55:48	19.04	0.15	33.17	1.71	0.47	376.01
3/26/2024	21:56:48	19.04	0.14	34.02	1.71	0.46	377.95
3/26/2024	21:57:48	19.04	0.14	36.02	1.71	0.46	379.99
3/26/2024	21:58:48	19.04	0.14	37.42	1.7	0.46	381.82
3/26/2024	21:59:48	19.04	0.14	38.51	1.7	0.46	387.78
3/26/2024	22:00:48	19.04	0.14	39.09	1.7	0.45	394.81
3/26/2024	22:01:48	19.03	0.14	39.81	4.06	0.43	402.96
3/26/2024	22:02:48	19.01	0.14	40.04	3.12	0.43	411.19
3/26/2024	22:03:48	19.04	0.14	38.09	1.59	0.44	420.51
3/26/2024	22:04:48	19.03	0.14	38.12	1.58	0.45	421.8
3/26/2024	22:05:48	19.04	0.14	37.82	1.58	0.45	421.16
3/26/2024	22:06:48	19.04	0.14	37.52	1.58	0.45	422
3/26/2024	22:07:48	19.03	0.14	37.98	1.58	0.44	423.21
3/26/2024	22:08:48	19.04	0.15	37.8	1.59	0.47	423.72
3/26/2024	22:09:48	19.02	0.15	37.61	5.35	4.48	426.29
3/26/2024	22:10:48	18.99	0.15	37.63	2.07	0.93	427.83
3/26/2024	22:11:48	19.02	0.15	36.58	5.81	5.04	426.34
3/26/2024	22:12:48	19.01	0.14	36.76	6.43	5.66	416.05
3/26/2024	22:13:48	19.22	0.14	31.95	6.91	6.16	403.84
3/26/2024	22:14:48	19.45	0.14	27.31	8.76	8.34	382.27
3/26/2024	22:15:48	19.51	0.14	25.67	10.1	9.93	355.37
3/26/2024	22:16:48	19.5	0.13	25.02	6.89	6.07	318.25
3/26/2024	22:17:48	19.65	0.13	21.25	1.96	0.45	264.41
3/26/2024	22:18:48	19.84	0.13	16.75	2.03	0.43	214.19
3/26/2024	22:19:48	19.88	0.14	15.88	2.12	0.43	197.88
3/26/2024	22:20:48	19.8	0.16	16.64	2.2	0.43	218.34
3/26/2024	22:21:48	14.67	7.42	9	2.17	0.43	257.51
3/26/2024	22:22:48	12.47	11.11	-0.72	2.09	0.44	305.38
3/26/2024	22:23:48	12.14	11.81	-2.7	2.21	0.44	352.28
3/26/2024	22:24:48	12.11	11.88	-2.64	1.89	0.44	391.31
3/26/2024	22:25:48	12.09	11.91	-2.7	6.18	0.4	436.86
3/26/2024	22:26:48	11.83	11.7	-2.83	5.52	0.41	487.11
3/26/2024	22:27:48	4.09	3.88	18.31	1.3	0.44	524.23
3/26/2024	22:28:48	0.98	0.91	37.07	1.12	0.44	531.36
3/26/2024	22:29:48	0.57	0.27	40.88	2.05	0.43	511.57
3/26/2024	22:30:48	0.47	0.15	41.43	9.86	0.37	477.25
3/26/2024	22:31:48	0.44	0.12	42.21	2.24	0.43	435.75
3/26/2024	22:32:48	0.45	0.11	42.17	1.01	0.45	395.77
3/26/2024	22:33:48	0.44	0.1	42.04	1	0.44	353.95
3/26/2024	22:34:48	0.45	0.09	42.13	1	0.44	305.52
3/26/2024	22:35:48	6.67	0.11	38.33	0.88	0.7	270.91
3/26/2024	22:36:48	16.23	0.15	28.59	0.02	0.25	248.77
3/26/2024	22:37:48	17.18	0.16	31.33	-0.1	0.25	251.23
3/26/2024	22:38:48	17.35	0.17	32.4	-0.22	0.26	439.23
3/26/2024	22:39:48	17.37	0.17	31.63	-0.2	0.26	363.62
3/26/2024	22:40:48	17.39	0.16	29.16	-0.19	0.27	299.17
3/26/2024	22:41:48	17.39	0.16	27.48	-0.17	0.28	733.3
3/26/2024	22:42:48	17.4	0.17	26.46	-0.15	0.3	905.51
3/26/2024	22:43:48	17.4	0.16	25.93	-0.14	0.31	920.54
3/26/2024	22:44:48	17.4	0.16	25.5	-0.12	0.31	921.18
3/26/2024	22:45:48	17.38	0.16	25.54	-0.11	0.32	919.64

BIAS/DRIFT CALS

3/26/2024	22:46:48	17.32	0.16	25.71	-0.09	0.33	918.77
3/26/2024	22:47:48	17.45	0.16	24.04	-0.08	0.34	920.57
3/26/2024	22:48:48	17.61	0.16	23.25	-0.07	0.35	801.71
3/26/2024	22:49:48	17.69	0.16	22.66	0.74	5.96	398.95
3/26/2024	22:50:48	17.71	0.16	22.52	6.63	10.77	139.15
3/26/2024	22:51:48	18.37	0.16	20.61	12.98	7.68	33.54
3/26/2024	22:52:48	18.17	0.15	14.24	18.84	10.24	15.23
3/26/2024	22:53:48	15.6	0.17	38.72	14.98	11	9.72
3/26/2024	22:54:48	15.99	0.16	40.62	12.85	11	9.63
3/26/2024	22:55:48	17.24	0.15	28.22	11.98	11.01	9.59
3/26/2024	22:56:48	17.53	0.15	25.95	11.69	11.02	8.49
3/26/2024	22:57:48	17.58	0.15	26.02	11.56	11.04	8.07
3/26/2024	22:58:48	17.59	0.15	27.13	16.72	4.67	7.42
3/26/2024	22:59:48	17.63	0.15	27.4	20.36	0.42	7.41
3/26/2024	23:00:48	17.66	0.15	27.71	18.94	0.42	6.97
3/26/2024	23:01:48	17.67	0.15	28.36	10.94	0.4	36.72
3/26/2024	23:02:48	17.68	0.16	29.22	10.92	0.4	77.91
3/26/2024	23:03:48	17.67	0.16	29.94	10.99	0.39	92.56
3/26/2024	23:04:48	17.7	0.15	30.32	11.01	0.39	97.65
3/26/2024	23:05:48	17.7	0.15	31.34	11.04	0.38	99.55
3/26/2024	23:06:48	17.71	0.16	32.09	11.05	0.38	101.71
3/26/2024	23:07:48	17.72	0.15	32.24	11.05	0.38	104.35
3/26/2024	23:08:48	17.72	0.15	32.78	11.06	0.37	104.96
3/26/2024	23:09:48	17.72	0.15	32.98	11.12	0.37	105.38
3/26/2024	23:10:48	17.74	0.15	33.22	11.14	0.37	105.74
3/26/2024	23:11:48	17.74	0.15	33.23	11.14	0.37	106.02
3/26/2024	23:12:48	17.75	0.16	33.75	11.14	0.38	106.69
3/26/2024	23:13:48	17.75	0.16	33.9	11.13	0.37	107.12
3/26/2024	23:14:48	17.75	0.16	33.65	11.16	0.37	107.33
3/26/2024	23:15:48	17.76	0.16	33.86	11.16	0.37	106.68
3/26/2024	23:16:48	17.76	0.16	33.64	11.18	0.37	106.49
3/26/2024	23:17:48	17.77	0.16	33.34	11.19	0.37	106.02
3/26/2024	23:18:48	17.77	0.15	33.16	11.17	0.37	105.75
3/26/2024	23:19:48	17.76	0.15	33.2	11.21	0.37	105.55
3/26/2024	23:20:48	17.78	0.15	32.87	11.27	0.36	104.25
3/26/2024	23:21:48	17.79	0.15	32.32	11.27	0.37	103.56
3/26/2024	23:22:48	17.8	0.15	32.42	11.27	0.37	102.71
3/26/2024	23:23:48	17.79	0.15	32.32	11.29	0.36	102.26
3/26/2024	23:24:48	17.8	0.15	31.71	11.31	0.36	101.86
3/26/2024	23:25:48	17.81	0.15	31.84	11.34	0.36	100.35
3/26/2024	23:26:48	17.83	0.15	31.66	11.36	0.36	99.91
3/26/2024	23:27:48	17.84	0.15	31.2	11.36	0.37	98.57
3/26/2024	23:28:48	17.85	0.15	30.35	11.39	0.36	98.4
3/26/2024	23:29:48	17.86	0.15	30.26	12.18	0.36	96.73
3/26/2024	23:30:48	18.08	0.15	27.5	8.71	0.37	95.02
3/26/2024	23:31:48	17.95	0.15	28.13	9.12	0.38	91.26
3/26/2024	23:32:48	17.76	0.15	30.21	11.34	0.37	81.05
3/26/2024	23:33:48	17.83	0.16	29.11	11.52	0.37	72.62
3/26/2024	23:34:48	17.89	0.15	27.6	11.47	0.37	69.77
3/26/2024	23:35:48	17.89	0.15	26.95	11.43	0.38	70.58
3/26/2024	23:36:48	17.87	0.16	27.41	2.43	0.7	73.93
3/26/2024	23:37:48	17.81	0.15	28.35	-0.01	0.28	130.41
3/26/2024	23:38:48	17.78	0.15	28.33	-0.01	0.28	283.28
3/26/2024	23:39:48	17.8	0.15	28.28	-0.01	0.28	429
3/26/2024	23:40:48	17.81	0.15	27.92	-0.01	0.28	526.71
3/26/2024	23:41:48	17.81	0.15	27.28	-0.01	0.28	591.5
3/26/2024	23:42:48	17.81	0.15	26.74	-0.01	0.28	630.78
3/26/2024	23:43:48	17.81	0.15	26.55	-0.01	0.28	654.93
3/26/2024	23:44:48	17.8	0.15	26.47	-0.01	0.28	667.67
3/26/2024	23:45:48	17.79	0.15	25.97	-0.01	0.28	676.73
3/26/2024	23:46:48	17.79	0.15	25.72	-0.01	0.28	681.8
3/26/2024	23:47:48	17.79	0.15	25.25	0	0.28	680.28
3/26/2024	23:48:48	17.69	0.15	25.41	0.01	0.27	695.96
3/26/2024	23:49:48	17.64	0.15	25.97	0.01	0.27	713.74
3/26/2024	23:50:48	17.55	0.16	26.46	0.01	0.28	738.35
3/26/2024	23:51:48	17.53	0.15	26.25	1.51	0.37	757.22
3/26/2024	23:52:48	17.65	0.15	24.41	1.9	0.39	748.98
3/26/2024	23:53:48	17.7	0.15	23.58	1.89	0.39	624.29
3/26/2024	23:54:48	17.7	0.15	23.25	1.87	0.39	501.96
3/26/2024	23:55:48	17.7	0.15	22.47	1.88	0.4	411.39
3/26/2024	23:56:48	17.7	0.15	22.57	1.88	0.39	289.22
3/26/2024	23:57:48	17.69	0.15	22.14	1.89	0.39	170.08
3/26/2024	23:58:48	17.7	0.15	21.59	1.91	0.39	100.5

3/26/2024	23:59:48	17.7	0.16	21.18	1.91	0.4	87.84
3/27/2024	0:00:48	17.71	0.16	20.94	1.92	0.4	101.76
3/27/2024	0:01:48	17.71	0.16	20.52	1.92	0.39	118.38
3/27/2024	0:02:48	17.7	0.15	20.06	7.54	0.37	128.73
3/27/2024	0:03:48	17.78	0.15	19.71	11.45	0.36	131.21
3/27/2024	0:04:48	17.87	0.15	18.71	11.5	0.36	124.59
3/27/2024	0:05:48	17.89	0.15	17.97	11.51	0.36	106.54
3/27/2024	0:06:48	17.9	0.15	17.93	11.5	0.35	87.23
3/27/2024	0:07:48	17.89	0.15	17.83	4.18	0.38	72.72
3/27/2024	0:08:48	17.78	0.16	18.25	1.88	0.39	64.72
3/27/2024	0:09:48	17.72	0.16	18.04	1.88	0.39	67.11
3/27/2024	0:10:48	17.72	0.16	18.12	1.88	0.39	79.26
3/27/2024	0:11:48	17.71	0.16	17.88	1.89	0.39	92.65
3/27/2024	0:12:48	17.72	0.16	17.21	1.89	0.39	102.42
3/27/2024	0:13:48	17.71	0.16	17.34	1.89	0.39	106.58
3/27/2024	0:14:48	17.7	0.16	17.16	1.89	0.39	107.46
3/27/2024	0:15:48	17.67	0.16	16.69	1.89	0.39	107.22
3/27/2024	0:16:48	17.66	0.16	16.47	6.94	0.37	105.7
3/27/2024	0:17:48	17.79	0.16	15.8	5.48	0.37	103.26
3/27/2024	0:18:48	17.78	0.15	15.6	8.01	0.36	98.96
3/27/2024	0:19:48	17.82	0.15	14.8	11.52	0.35	91.54
3/27/2024	0:20:48	17.89	0.15	14.48	11.53	0.34	83.34
3/27/2024	0:21:48	17.91	0.15	14.18	11.53	0.34	71.85
3/27/2024	0:22:48	17.91	0.15	13.78	11.51	0.35	61.64
3/27/2024	0:23:48	17.9	0.15	13.72	11.51	0.35	53.28
3/27/2024	0:24:48	17.9	0.15	13.7	11.52	0.35	47.74
3/27/2024	0:25:48	17.9	0.15	13.43	8.35	0.35	44.59
3/27/2024	0:26:48	17.85	0.15	13.25	2.37	0.37	43.27
3/27/2024	0:27:48	17.7	0.15	14.04	1.98	0.37	42.38
3/27/2024	0:28:48	17.68	0.15	13.99	1.99	0.37	47.74
3/27/2024	0:29:48	17.71	0.15	13.25	1.99	0.37	57.79
3/27/2024	0:30:48	17.72	0.15	13.24	1.99	0.37	66.45
3/27/2024	0:31:48	17.71	0.15	13.16	1.99	0.36	72.53
3/27/2024	0:32:48	17.72	0.15	12.98	1.99	0.37	74.91
3/27/2024	0:33:48	17.72	0.15	12.57	1.99	0.36	75.79
3/27/2024	0:34:48	17.72	0.15	12.62	1.99	0.36	75.56
3/27/2024	0:35:48	17.72	0.15	12.55	1.99	0.36	74.68
3/27/2024	0:36:48	17.72	0.15	11.97	2	0.36	74.01
3/27/2024	0:37:48	17.71	0.15	12.07	2	0.36	72.68
3/27/2024	0:38:48	17.72	0.15	11.8	2	0.36	71.35
3/27/2024	0:39:48	17.72	0.15	11.4	2.01	0.36	70.28
3/27/2024	0:40:48	17.71	0.15	11.3	2.01	0.36	69.01
3/27/2024	0:41:48	17.7	0.15	11.33	2.01	0.36	67.3
3/27/2024	0:42:48	17.66	0.15	11.19	2.47	0.36	66.46
3/27/2024	0:43:48	17.7	0.15	10.6	2.49	0.36	65.82
3/27/2024	0:44:48	17.73	0.15	10.64	2.01	0.35	64.54
3/27/2024	0:45:48	17.72	0.14	10.56	2.01	0.35	62.77
3/27/2024	0:46:48	17.72	0.15	9.95	2.01	0.35	61.41
3/27/2024	0:47:48	17.71	0.15	10.09	2.01	0.35	60.54
3/27/2024	0:48:48	17.72	0.14	9.89	2.01	0.35	60.13
3/27/2024	0:49:48	17.72	0.14	9.73	2.02	0.35	59.22
3/27/2024	0:50:48	17.72	0.14	9.51	2.02	0.35	58.77
3/27/2024	0:51:48	17.71	0.14	9.72	2.02	0.35	56.96
3/27/2024	0:52:48	17.7	0.15	9.51	2.02	0.35	55.91
3/27/2024	0:53:48	17.71	0.14	8.97	2.02	0.35	55.91
3/27/2024	0:54:48	17.71	0.14	9.16	2.02	0.35	54.62
3/27/2024	0:55:48	17.71	0.15	9.07	2.02	0.34	53.33
3/27/2024	0:56:48	17.72	0.15	8.77	2.02	0.35	52.68
3/27/2024	0:57:48	17.71	0.14	8.48	2.03	0.35	52
3/27/2024	0:58:48	17.72	0.14	8.63	2.03	0.34	50.9
3/27/2024	0:59:48	17.72	0.14	8.53	8.7	0.34	50.22
3/27/2024	1:00:48	17.82	0.14	7.65	4.67	0.34	49.84
3/27/2024	1:01:48	17.77	0.14	8.09	2	0.33	47.69
3/27/2024	1:02:48	17.7	0.14	8.18	1.93	0.33	44.17
3/27/2024	1:03:48	17.71	0.14	7.8	1.93	0.32	41.74
3/27/2024	1:04:48	17.71	0.14	7.82	1.93	0.33	41.48
3/27/2024	1:05:48	17.7	0.14	7.91	1.94	0.33	41.94
3/27/2024	1:06:48	17.71	0.14	7.68	1.94	0.33	43.05
3/27/2024	1:07:48	17.71	0.14	7.12	1.94	0.33	43.62
3/27/2024	1:08:48	17.72	0.14	7.32	1.94	0.33	43.27
3/27/2024	1:09:48	17.72	0.14	7.27	1.94	0.33	42.63
3/27/2024	1:10:48	17.72	0.14	6.87	1.94	0.33	42.41
3/27/2024	1:11:48	17.72	0.14	6.91	1.94	0.33	41.98

back on stack gas

3/27/2024	1:12:48	17.72	0.14	6.84	1.95	0.33	41.33
3/27/2024	1:13:48	17.73	0.14	6.65	1.95	0.32	40.67
3/27/2024	1:14:48	17.73	0.14	6.28	1.95	0.32	40
3/27/2024	1:15:48	17.71	0.14	6.5	1.95	0.32	39.33
3/27/2024	1:16:48	17.68	0.14	6.47	1.95	0.31	38.68
3/27/2024	1:17:48	17.67	0.13	6.07	3.55	0.3	38.05
3/27/2024	1:18:48	17.73	0.13	6.2	2.79	0.3	37.85
3/27/2024	1:19:48	17.73	0.14	6.15	2.07	0.31	36.51
3/27/2024	1:20:48	17.72	0.14	5.87	2.07	0.3	35.58
3/27/2024	1:21:48	17.72	0.14	5.64	2.07	0.3	34.92
3/27/2024	1:22:48	17.71	0.14	5.8	2.07	0.29	34.08
3/27/2024	1:23:48	17.72	0.14	5.75	2.07	0.29	33.85
3/27/2024	1:24:48	17.73	0.14	5.18	2.07	0.29	34.27
3/27/2024	1:25:48	17.72	0.14	5.56	2.08	0.29	33.21
3/27/2024	1:26:48	17.72	0.14	5.44	2.08	0.29	32.96
3/27/2024	1:27:48	17.71	0.14	5.27	2.08	0.29	32.56
3/27/2024	1:28:48	17.71	0.13	5.25	2.08	0.29	31.88
3/27/2024	1:29:48	17.72	0.14	5.38	4.14	0.29	31.01
3/27/2024	1:30:48	17.76	0.14	5.28	4.69	0.29	30.76
3/27/2024	1:31:48	17.74	0.14	4.81	1.96	0.29	30.57
3/27/2024	1:32:48	17.66	0.14	5.36	1.96	0.29	28.83
3/27/2024	1:33:48	17.7	0.14	5.19	1.96	0.29	27.51
3/27/2024	1:34:48	17.71	0.14	4.86	1.96	0.29	27.31
3/27/2024	1:35:48	17.71	0.14	4.8	1.96	0.29	27.52
3/27/2024	1:36:48	17.71	0.14	4.96	1.96	0.29	27.49
3/27/2024	1:37:48	17.71	0.14	4.97	1.96	0.29	27.71
3/27/2024	1:38:48	17.71	0.14	4.57	1.97	0.29	27.7
3/27/2024	1:39:48	17.71	0.14	4.92	1.97	0.3	26.37
3/27/2024	1:40:48	17.72	0.14	4.77	1.97	0.3	26.15
3/27/2024	1:41:48	17.72	0.14	4.41	1.97	0.29	26.17
3/27/2024	1:42:48	17.72	0.14	4.76	1.97	0.29	26.41
3/27/2024	1:43:48	17.71	0.14	4.76	1.97	0.3	25.23
3/27/2024	1:44:48	17.72	0.14	4.63	1.97	0.3	24.85
3/27/2024	1:45:48	17.7	0.14	4.31	1.97	0.3	24.64
3/27/2024	1:46:48	17.68	0.14	4.64	8.3	0.3	23.72
3/27/2024	1:47:48	17.82	0.14	4.47	6.82	0.3	23.77
3/27/2024	1:48:48	17.82	0.14	4.12	2.04	0.3	23.13
3/27/2024	1:49:48	17.73	0.14	4.61	2.01	0.3	21.15
3/27/2024	1:50:48	17.72	0.14	4.61	2.01	0.3	19.37
3/27/2024	1:51:48	17.72	0.14	4.55	2.01	0.3	19.36
3/27/2024	1:52:48	17.73	0.13	4.27	2.01	0.3	19.76
3/27/2024	1:53:48	17.72	0.14	4.58	2.01	0.3	20.02
3/27/2024	1:54:48	17.72	0.14	4.55	2.02	0.3	20.45
3/27/2024	1:55:48	17.73	0.14	4.11	2.02	0.3	20.68
3/27/2024	1:56:48	17.73	0.14	4.49	2.02	0.3	20.24
3/27/2024	1:57:48	17.73	0.13	4.35	2.02	0.3	19.99
3/27/2024	1:58:48	17.42	0.15	4.63	2.02	0.3	19.77
3/27/2024	1:59:48	11.63	0.19	12.3	2.02	0.31	19.78
3/27/2024	2:00:48	2.22	0.12	36.98	4.84	0.31	19.57
3/27/2024	2:01:48	0.85	0.09	42.23	2.07	0.31	19.11
3/27/2024	2:02:48	3.03	0.09	38.76	2.01	0.3	18.7
3/27/2024	2:03:48	7.11	0.1	29.92	2.02	0.3	17.57
3/27/2024	2:04:48	2.95	0.1	9.54	2.21	0.59	17.34
3/27/2024	2:05:48	0.74	0.08	1.87	10.16	10.01	17.56
3/27/2024	2:06:48	0.45	0.08	0.86	11.2	11.29	18.03
3/27/2024	2:07:48	0.38	0.08	0.87	11.53	11.72	18.46
3/27/2024	2:08:48	0.37	0.08	0.82	11.7	11.93	16.21
3/27/2024	2:09:48	0.36	0.08	0.47	11.9	12.18	12.24
3/27/2024	2:10:48	0.36	0.08	0.87	11.9	12.18	7.59
3/27/2024	2:11:48	0.36	0.08	0.92	11.9	12.18	3.75
3/27/2024	2:12:48	0.36	0.08	0.66	11.9	12.18	0.75
3/27/2024	2:13:48	0.36	0.08	0.95	11.17	11.33	-1.04
3/27/2024	2:14:48	0.36	0.09	0.86	1.75	0.7	-2.32
3/27/2024	2:15:48	0.36	0.09	0.99	0.27	0.33	0.77
3/27/2024	2:16:48	0.36	0.09	0.59	0.02	0.3	37.41
3/27/2024	2:17:48	1.66	0.09	0.9	0.01	0.3	132.17
3/27/2024	2:18:48	13.28	0.12	4.01	0.01	0.3	317.46
3/27/2024	2:19:48	16.76	0.13	5.26	0.01	0.3	465.35
3/27/2024	2:20:48	17.33	0.14	5.6	0.01	0.3	562.89
3/27/2024	2:21:48	17.59	0.13	5.44	0.01	0.3	623.26
3/27/2024	2:22:48	13.82	0.13	4.85	0.01	0.3	672.55
3/27/2024	2:23:48	2.87	0.09	1.63	0.01	0.3	700.77
3/27/2024	2:24:48	3.8	3.14	0.48	0.01	0.3	715.17

BIAS/DRIFT CALS

3/27/2024	2:25:48	10.61	10.2	-1.2	0.01	0.3	723.97
3/27/2024	2:26:48	11.72	11.5	-1.63	0.01	0.3	729.68
3/27/2024	2:27:48	11.97	11.84	-1.39	0.01	0.3	731.42
3/27/2024	2:28:48	12.01	11.91	-1.41	0.01	0.3	733.21
3/27/2024	2:29:48	13.54	8.85	-1.26	0.01	0.31	734.46
3/27/2024	2:30:48	16.93	1.86	0.85	0.01	0.3	735.72
3/27/2024	2:31:48	17.49	0.54	3.56	0.01	0.3	735.56
3/27/2024	2:32:48	17.58	0.24	4.54	2.06	0.32	737.08
3/27/2024	2:33:48	17.67	0.18	3.3	2.34	0.33	736.12
3/27/2024	2:34:48	17.7	0.16	3.35	2.34	0.33	680.82
3/27/2024	2:35:48	17.71	0.15	3.27	2.34	0.33	561.02
3/27/2024	2:36:48	17.71	0.14	3.09	2.34	0.33	426.82
3/27/2024	2:37:48	17.72	0.14	3.1	2.34	0.33	284.78
3/27/2024	2:38:48	17.72	0.14	3.37	2.34	0.33	158.23
3/27/2024	2:39:48	17.71	0.14	3.27	2.34	0.33	89.1
3/27/2024	2:40:48	17.72	0.14	2.94	2.34	0.33	54.82
3/27/2024	2:41:48	17.72	0.14	3.27	2.34	0.33	36.89
3/27/2024	2:42:48	17.72	0.14	3.27	2.35	0.33	27.9
3/27/2024	2:43:48	17.73	0.14	3.2	2.35	0.33	23.04
3/27/2024	2:44:48	17.73	0.14	2.97	2.35	0.33	20.67
3/27/2024	2:45:48	17.73	0.14	3.17	2.35	0.33	18.67
3/27/2024	2:46:48	17.73	0.14	3.21	2.35	0.33	17.35
3/27/2024	2:47:48	17.72	0.14	2.94	5.09	0.33	16.74
3/27/2024	2:48:48	17.76	0.14	3.15	5	0.34	15.5
3/27/2024	2:49:48	17.76	0.14	3.08	2.23	0.33	14.47
3/27/2024	2:50:48	17.69	0.14	2.85	2.21	0.33	13.62
3/27/2024	2:51:48	17.72	0.14	2.78	2.21	0.33	13.16
3/27/2024	2:52:48	17.74	0.14	3.09	2.21	0.33	12.3
3/27/2024	2:53:48	17.75	0.14	2.94	2.21	0.33	11.9
3/27/2024	2:54:48	17.75	0.13	2.49	2.21	0.33	11.45
3/27/2024	2:55:48	17.75	0.13	2.9	2.22	0.33	10.96
3/27/2024	2:56:48	17.75	0.13	2.83	2.22	0.32	10.75
3/27/2024	2:57:48	17.74	0.14	2.68	2.22	0.33	10.74
3/27/2024	2:58:48	17.74	0.14	2.76	2.22	0.33	10.26
3/27/2024	2:59:48	17.74	0.14	2.86	4.87	0.33	9.63
3/27/2024	3:00:48	17.77	0.13	2.8	7.87	0.33	9.4
3/27/2024	3:01:48	17.84	0.13	2.52	3.53	0.32	9.42
3/27/2024	3:02:48	17.75	0.13	2.97	2.37	0.32	8.36
3/27/2024	3:03:48	17.67	0.13	2.82	2.38	0.32	8.1
3/27/2024	3:04:48	17.74	0.13	2.4	2.39	0.31	7.9
3/27/2024	3:05:48	17.75	0.13	2.67	2.39	0.31	7.24
3/27/2024	3:06:48	17.75	0.13	2.7	2.39	0.31	7.46
3/27/2024	3:07:48	17.75	0.13	2.76	2.39	0.32	7.04
3/27/2024	3:08:48	17.76	0.13	2.43	2.39	0.31	7.9
3/27/2024	3:09:48	17.75	0.13	2.74	2.39	0.31	7.26
3/27/2024	3:10:48	17.73	0.13	2.78	2.38	0.31	7.07

AVERAGES

O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
18.90	0.14	31.04	2.08	0.46	313.88

END RUN 1

3/27/2024	3:11:48	17.72	0.13	2.33	2.39	0.31	7.26
3/27/2024	3:12:48	17.74	0.13	2.67	2.38	0.32	6.8
3/27/2024	3:13:48	17.75	0.13	2.66	2.39	0.32	6.8
3/27/2024	3:14:48	17.75	0.14	2.54	10.01	0.33	6.6
3/27/2024	3:15:48	19.12	0.13	1.77	19.88	0.34	6.83
3/27/2024	3:16:48	20.33	0.14	1.4	20.03	0.34	5.94
3/27/2024	3:17:48	20.57	0.14	1.23	20.4	0.34	4.8
3/27/2024	3:18:48	20.61	0.14	0.86	20.54	0.34	3.45
3/27/2024	3:19:48	20.62	0.14	1.04	20.61	0.34	1.9
3/27/2024	3:20:48	20.59	0.16	1.16	12.48	0.32	1.06
3/27/2024	3:21:48	12.71	1.09	0.12	2.75	0.6	-0.08
3/27/2024	3:22:48	10.59	0.32	0.65	9.7	8.99	-0.06
3/27/2024	3:23:48	15.1	0.17	1.36	9.97	9.53	0.84
3/27/2024	3:24:48	9.77	0.14	1.91	10.12	9.53	5.01
3/27/2024	3:25:48	2.95	0.11	27.5	10.12	9.53	7.03
3/27/2024	3:26:48	0.73	0.09	41.67	10.08	9.53	6.1
3/27/2024	3:27:48	0.44	0.09	43.49	10.05	9.53	3.52
3/27/2024	3:28:48	0.36	0.09	43.4	2.14	2.02	1.78
3/27/2024	3:29:48	0.36	0.09	43.34	0.02	0.3	1.35
3/27/2024	3:30:48	10.4	0.69	28.64	0.01	0.29	47.03
3/27/2024	3:31:48	12.62	8.68	5.54	0.01	0.29	221.82
3/27/2024	3:32:48	12.1	11.21	-0.26	0.01	0.29	413.61

POST TEST  
BIAS/DRIFT CALS

3/27/2024	3:33:48	12.03	11.78	-0.83	0.01	0.29	533.8
3/27/2024	3:34:48	12.02	11.88	-1.06	0.01	0.29	605.21
3/27/2024	3:35:48	12.03	11.9	-1.31	0.01	0.29	659.57
3/27/2024	3:36:48	15.16	6.59	-0.9	0.02	0.29	694.84
3/27/2024	3:37:48	18.26	1.34	1.6	0.02	0.29	711.73
3/27/2024	3:38:48	18.74	0.42	3.21	0.01	0.29	721.6
3/27/2024	3:39:48	18.91	0.22	3.2	0.01	0.28	726.19
3/27/2024	3:40:48	18.94	0.18	3.05	0.01	0.29	728.56
3/27/2024	3:41:48	18.95	0.17	2.84	0.66	0.3	731.16
3/27/2024	3:42:48	19	0.16	2.5	2.74	0.31	733.81
3/27/2024	3:43:48	19.1	0.16	2.09	2.73	0.31	1004.88
3/27/2024	3:44:48	19.15	0.16	2.1	2.7	0.31	771.29
3/27/2024	3:45:48	20.33	0.16	1.37	2.67	0.31	513.53
3/27/2024	3:46:48	20.46	0.19	0.87	2.64	0.31	375.76
3/27/2024	3:47:48	20.36	0.19	1.24	2.61	0.31	230.61
3/27/2024	3:48:48	20.32	0.2	1.28	2.59	0.31	125.61
3/27/2024	3:49:48	19.57	0.19	1.41	2.56	0.31	71.14
3/27/2024	3:50:48	19.08	0.19	1.89	2.54	0.31	43.4
3/27/2024	3:51:48	19.03	0.19	1.97	2.52	0.31	29.67
3/27/2024	3:52:48	19.04	0.18	1.81	7.68	0.33	22.37
3/27/2024	3:53:48	19.04	0.18	1.61	20.29	0.39	18.84
3/27/2024	3:54:48	19.04	0.18	2.01	20.08	0.41	16.15
3/27/2024	3:55:48	19.03	0.18	1.94	20.27	0.41	14.85
3/27/2024	3:56:48	19.04	0.18	1.54	20.14	0.42	14.29
3/27/2024	3:57:48	19.05	0.17	1.86	20.35	0.4	13.41
3/27/2024	3:58:48	19.05	0.17	1.93	20.32	0.41	12.34
3/27/2024	3:59:48	19.05	0.17	1.7	20.3	0.41	11.23
3/27/2024	4:00:48	19.05	0.17	1.51	20.22	0.42	10.14
3/27/2024	4:01:48	19.05	0.18	1.85	20.26	0.42	8.63
3/27/2024	4:02:48	19.06	0.18	1.69	20.26	0.42	7.58
3/27/2024	4:03:48	19.07	0.17	1.36	17.38	0.42	7.12
3/27/2024	4:04:48	19.07	0.17	1.79	2.28	0.34	5.54
3/27/2024	4:05:48	19.07	0.17	1.72	2.26	0.34	4.34
3/27/2024	4:06:48	19.06	0.18	1.57	4.18	0.35	3.47



Facility ID: PermaFix  
Source ID: VTD  
Date: 3/27/24-3/28/24  
Run 2

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	2034
Zero Ref Cyl	0	0	0
Zero Avg	-0.01	-0.07	0.49
Zero Error%	0.0	-0.3	0.0
Mid Ref Cyl	12.06	12.01	920.7
Mid Avg	11.99	12.16	914.98
Mid Error%	-0.3	0.7	-0.3
High Ref Cyl	22.83	22.37	2034
High Avg	22.83	22.39	2030.44
High Error%	0.0	0.1	-0.2

Initial Bias Check

Zero Avg	-0.04	0.3	2.2
Zero Bias%	-0.13	1.65	0.08
Span Avg	11.96	11.93	918.62
Span Bias%	-0.13	-1.03	0.18

Final Bias Check

Zero Avg	-0.04	0.1	3.42
Zero Bias%	-0.13	0.76	0.14
Zero Drift%	0.00	0.89	0.06
Span Avg	11.52	11.58	920.39
Span Bias%	-2.06	-2.59	0.27
Span Drift%	1.93	1.56	0.09

Ini Zero Avg	-0.04	0.3	2.2
Ini Span Avg	11.96	11.93	918.62
Run 2 Avg	1.74	0.45	287.1
Co	-0.040	0.200	2.810
Cm	11.740	11.755	919.505
Cgas Run 2	1.82	0.26	285.5



Facility ID: PermaFix  
Source ID: VTD  
Date: 3/27/24-3/28/24

Run 2

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	80.4
Zero Ref Cyl	0	0	0
Zero Avg	0	0	-0.1
Zero Error%	0.0	0.0	-0.1
Mid Ref Cyl	12.06	12.01	44.6
Mid Avg	12.02	12.08	44.81
Mid Error%	-0.2	0.3	0.3
High Ref Cyl	22.83	22.37	80.4
High Avg	22.84	22.38	80.33
High Error%	0.0	0.0	-0.1

Initial Bias Check

Zero Avg	0.41	0.15	-1.87
Zero Bias%	1.80	0.67	-2.20
Span Avg	11.93	11.88	42.61
Span Bias%	-0.39	-0.89	-2.74

Final Bias Check

Zero Avg	0.5	0.12	-3.66
Zero Bias%	2.19	0.54	-4.43
Zero Drift%	0.39	0.13	2.23
Span Avg	12.13	12.09	40.93
Span Bias%	0.48	0.04	-4.83
Span Drift%	0.88	0.94	2.09

Ini Zero Avg	0.41	0.15	-1.87
Ini Span Avg	11.93	11.88	42.61
Run 2 Avg	18.96	0.19	23.1
Co	0.455	0.135	-2.765
Cm	12.030	11.985	41.770
Cgas Run 2	19.28	0.05	25.9

DASYLab 2022 - 2022

Worksheet name: David Default

Recording date 6:55:38 AM

Block length : 1

Delta : 60 sec.

Number of channels : 12

Date	Time	O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
3/27/2024	6:54:37	19.05	0.17	1.21	2.75	0.26	18.64
3/27/2024	6:55:37	19.03	0.17	1.22	2.69	0.26	16.61
3/27/2024	6:56:37	9.05	0.51	14.98	2.64	0.27	15.43
3/27/2024	6:57:37	8.57	0.24	23.51	2.59	0.27	14.15
3/27/2024	6:58:37	12.14	0.17	21.45	2.55	0.28	12.87
3/27/2024	6:59:37	8.72	0.17	23.6	2.35	0.28	11.96
3/27/2024	7:00:37	1.52	0.14	41.65	1.37	0.27	382.3
3/27/2024	7:01:37	0.66	0.14	42.2	2.79	0.27	905.24
3/27/2024	7:02:37	0.53	0.14	42.29	3.22	0.28	914.16
3/27/2024	7:03:37	0.49	0.14	42.28	3.56	0.28	917.17
3/27/2024	7:04:37	0.48	0.14	42.07	4.03	0.28	919.14
3/27/2024	7:05:37	0.42	0.14	42.6	2.85	0.29	917.87
3/27/2024	7:06:37	0.41	0.15	42.61	0.08	0.29	1049.68
3/27/2024	7:07:37	0.44	0.15	42.16	-0.04	0.29	1136.37
3/27/2024	7:08:37	3.93	3.4	35.51	-0.04	0.29	1136.88
3/27/2024	7:09:37	10.74	10.4	6.03	-0.04	0.29	969.71
3/27/2024	7:10:37	11.74	11.64	-0.82	-0.04	0.3	918.62
3/27/2024	7:11:37	11.93	11.88	-1.87	5.95	0.31	907.96
3/27/2024	7:12:37	15.61	6.92	-2.07	15.98	5.27	337.03
3/27/2024	7:13:37	19.71	1.32	-1.83	13.23	10.11	29.39
3/27/2024	7:14:37	20.31	0.44	-0.87	12.19	11.55	3.37
3/27/2024	7:15:37	20.42	0.27	0.35	12.01	11.78	2.22
3/27/2024	7:16:37	20.45	0.24	0.58	11.96	11.93	2.2
3/27/2024	7:17:37	20.47	0.23	0.37	19.88	1.05	2.71
3/27/2024	7:18:37	20.48	0.22	0.54	20.57	0.37	4
3/27/2024	7:19:37	20.48	0.22	0.74	20.57	0.37	4.34
3/27/2024	7:20:37	20.48	0.22	0.91	20.58	0.37	4.31
3/27/2024	7:21:37	20.48	0.22	0.41	20.57	0.37	4.75
3/27/2024	7:22:37	20.48	0.22	0.76	20.57	0.37	4.33
3/27/2024	7:23:37	20.48	0.22	0.84	20.57	0.37	4.56
3/27/2024	7:24:37	20.48	0.21	0.71	19.58	0.36	4.35
3/27/2024	7:25:37	20.46	0.22	0.89	20.08	0.37	4.8
3/27/2024	7:26:37	20.47	0.22	0.93	20.48	0.38	4.59
3/27/2024	7:27:37	20.48	0.22	0.94	20.57	0.37	4.48
3/27/2024	7:28:37	20.49	0.21	0.52	20.57	0.37	4.36
3/27/2024	7:29:37	20.48	0.22	0.95	20.58	0.38	4.37
3/27/2024	7:30:37	20.48	0.22	1.06	20.58	0.39	4.17
3/27/2024	7:31:37	20.48	0.22	0.66	20.58	0.39	4.37
3/27/2024	7:32:37	20.48	0.22	0.98	20.57	0.39	4.37
3/27/2024	7:33:37	20.48	0.22	1.14	20.58	0.39	4.14
3/27/2024	7:34:37	20.48	0.22	1.07	20.57	0.39	4.01
3/27/2024	7:35:37	20.48	0.22	0.69	20.57	0.4	4.18
3/27/2024	7:36:37	20.47	0.22	1.12	20.57	0.4	4.19
3/27/2024	7:37:37	20.47	0.22	1.13	20.57	0.4	3.98
3/27/2024	7:38:37	20.47	0.22	0.72	20.57	0.39	4.37
3/27/2024	7:39:37	20.47	0.22	1.07	20.58	0.4	4.14
3/27/2024	7:40:37	20.47	0.22	1.22	20.57	0.4	4.07
3/27/2024	7:41:37	20.48	0.22	1.05	20.58	0.4	4.17
3/27/2024	7:42:37	20.47	0.21	0.96	20.58	0.4	4.4
3/27/2024	7:43:37	20.47	0.22	1.33	20.58	0.4	4.17
3/27/2024	7:44:37	20.48	0.22	1.33	20.57	0.4	4.15
3/27/2024	7:45:37	20.47	0.22	0.77	20.57	0.4	4.35
3/27/2024	7:46:37	20.47	0.22	1.24	20.57	0.4	4.37
3/27/2024	7:47:37	20.47	0.22	1.19	20.57	0.4	4.13
3/27/2024	7:48:37	20.47	0.21	1.25	20.58	0.4	4.12
3/27/2024	7:49:37	20.47	0.21	0.91	20.58	0.41	3.72
3/27/2024	7:50:37	20.47	0.21	1.28	20.58	0.41	3.94
3/27/2024	7:51:37	20.47	0.21	1.38	20.58	0.4	3.94
3/27/2024	7:52:37	20.47	0.21	0.82	20.58	0.4	4.04
3/27/2024	7:53:37	20.47	0.21	1.28	20.57	0.4	3.94
3/27/2024	7:54:37	20.47	0.21	1.4	20.57	0.41	3.72
3/27/2024	7:55:37	20.47	0.21	1.29	20.58	0.41	3.74
3/27/2024	7:56:37	20.47	0.21	1.06	20.57	0.4	4.15
3/27/2024	7:57:37	20.47	0.21	1.37	20.57	0.4	4.14
3/27/2024	7:58:37	20.46	0.21	1.42	20.57	0.41	3.88

PRE TEST  
BIAS CALS

3/27/2024	7:59:37	20.47	0.21	1.04	20.57	0.41	3.74
3/27/2024	8:00:37	20.47	0.21	1.53	20.58	0.41	3.91
3/27/2024	8:01:37	20.47	0.21	1.44	20.57	0.41	3.91
3/27/2024	8:02:37	20.47	0.21	1.23	20.57	0.4	4.17
3/27/2024	8:03:37	20.46	0.21	1.21	20.57	0.41	3.94
3/27/2024	8:04:37	20.46	0.21	1.46	20.57	0.41	3.76
3/27/2024	8:05:37	20.46	0.21	1.49	20.58	0.41	3.74
3/27/2024	8:06:37	20.47	0.21	1.06	20.58	0.41	3.96
3/27/2024	8:07:37	20.47	0.21	1.46	20.58	0.41	3.95
3/27/2024	8:08:37	20.47	0.21	1.51	20.58	0.41	3.96
3/27/2024	8:09:37	20.46	0.21	1.21	20.58	0.42	3.82
3/27/2024	8:10:37	20.47	0.21	1.25	20.58	0.41	3.73
3/27/2024	8:11:37	20.48	0.21	1.44	20.58	0.41	3.95
3/27/2024	8:12:37	20.47	0.21	1.5	20.58	0.41	3.86
3/27/2024	8:13:37	20.47	0.21	1.17	20.58	0.41	3.97
3/27/2024	8:14:37	20.46	0.22	1.56	20.58	0.42	3.74
3/27/2024	8:15:37	20.47	0.21	1.53	20.58	0.41	3.98
3/27/2024	8:16:37	20.47	0.21	1.27	20.58	0.41	3.72
3/27/2024	8:17:37	20.47	0.21	1.45	20.58	0.41	3.7
3/27/2024	8:18:37	20.47	0.21	1.5	20.58	0.41	3.5
3/27/2024	8:19:37	20.47	0.21	1.56	20.57	0.41	3.72
3/27/2024	8:20:37	20.47	0.21	1.11	20.58	0.41	4.12
3/27/2024	8:21:37	20.47	0.21	1.5	20.57	0.4	3.71
3/27/2024	8:22:37	20.47	0.21	1.48	20.58	0.41	3.53
3/27/2024	8:23:37	20.46	0.21	1.09	20.57	0.41	3.94
3/27/2024	8:24:37	20.46	0.21	1.54	20.57	0.41	3.82
3/27/2024	8:25:37	20.46	0.21	1.4	20.57	0.41	3.95
3/27/2024	8:26:37	20.46	0.21	1.25	20.57	0.4	3.94
3/27/2024	8:27:37	20.46	0.2	0.94	20.57	0.4	3.63
3/27/2024	8:28:37	20.47	0.21	1.44	20.57	0.4	3.56
3/27/2024	8:29:37	20.47	0.2	1.43	20.58	0.4	3.7
3/27/2024	8:30:37	20.46	0.2	1.02	20.58	0.39	3.73
3/27/2024	8:31:37	20.46	0.2	1.5	20.58	0.39	3.84
3/27/2024	8:32:37	20.46	0.2	1.6	20.58	0.39	3.88
3/27/2024	8:33:37	20.46	0.2	1.48	20.57	0.39	3.68
3/27/2024	8:34:37	20.46	0.2	1.18	20.57	0.39	3.89
3/27/2024	8:35:37	20.46	0.2	1.59	20.57	0.39	3.9
3/27/2024	8:36:37	20.46	0.2	1.66	20.57	0.39	4.12
3/27/2024	8:37:37	20.46	0.2	1.22	20.57	0.39	4.38
3/27/2024	8:38:37	20.46	0.2	1.67	20.58	0.39	4.16
3/27/2024	8:39:37	20.46	0.2	1.71	20.58	0.38	4.14
3/27/2024	8:40:37	20.46	0.2	1.58	20.58	0.38	4.24
3/27/2024	8:41:37	20.46	0.2	1.28	20.58	0.38	4.38
3/27/2024	8:42:37	20.46	0.2	1.82	20.58	0.38	4.17
3/27/2024	8:43:37	20.47	0.2	1.87	20.58	0.38	3.97
3/27/2024	8:44:37	20.46	0.2	1.39	20.58	0.38	4.17
3/27/2024	8:45:37	20.46	0.19	1.69	20.58	0.38	4.41
3/27/2024	8:46:37	20.46	0.2	1.74	20.58	0.38	4.15
3/27/2024	8:47:37	20.46	0.2	1.79	20.58	0.38	4.39
3/27/2024	8:48:37	20.46	0.2	1.72	20.59	0.39	4.19
3/27/2024	8:49:37	20.46	0.2	1.98	20.58	0.38	4.81
3/27/2024	8:50:37	20.46	0.2	2.2	20.58	0.38	4.8
3/27/2024	8:51:37	20.46	0.2	1.88	20.58	0.38	4.79
3/27/2024	8:52:37	20.45	0.2	2.42	20.58	0.38	4.81
3/27/2024	8:53:37	20.45	0.2	2.53	20.58	0.38	4.87
3/27/2024	8:54:37	20.45	0.2	2.59	20.59	0.38	4.88
3/27/2024	8:55:37	20.46	0.2	2.35	20.58	0.37	4.86
3/27/2024	8:56:37	20.46	0.2	2.79	20.58	0.37	4.85
3/27/2024	8:57:37	20.46	0.2	2.88	20.58	0.37	4.84
3/27/2024	8:58:37	20.46	0.2	2.39	20.59	0.37	4.83
3/27/2024	8:59:37	20.45	0.2	2.75	20.59	0.36	4.83
3/27/2024	9:00:37	20.45	0.2	2.84	20.59	0.36	4.82
3/27/2024	9:01:37	20.45	0.2	2.6	20.58	0.35	4.83
3/27/2024	9:02:37	20.45	0.2	2.67	20.59	0.35	4.82
3/27/2024	9:03:37	20.45	0.2	2.73	20.59	0.35	4.83
3/27/2024	9:04:37	20.45	0.2	2.74	20.59	0.35	4.81
3/27/2024	9:05:37	20.45	0.2	2.35	20.59	0.35	5.33
3/27/2024	9:06:37	20.45	0.2	2.66	20.6	0.35	4.86
3/27/2024	9:07:37	20.45	0.21	2.55	20.58	0.35	4.86
3/27/2024	9:08:37	20.46	0.2	2.02	20.55	0.34	4.83
3/27/2024	9:09:37	20.45	0.2	2.22	20.57	0.33	4.86
3/27/2024	9:10:37	20.45	0.2	2.16	20.59	0.34	4.85

3/27/2024	9:11:37	20.45	0.2	2.14	20.57	0.34	4.83
3/27/2024	9:12:37	20.44	0.2	1.67	17.37	0.32	5.17
3/27/2024	9:13:37	19.28	0.2	2.66	9.65	0.31	9.72
3/27/2024	9:14:37	17.51	0.2	3.65	8.15	0.3	11.06
3/27/2024	9:15:37	16.84	0.2	3.37	11.76	0.31	11.31
3/27/2024	9:16:37	17.48	0.2	4.28	15.64	0.3	12.9
3/27/2024	9:17:37	18.56	0.19	4.36	15.24	0.3	11.96
3/27/2024	9:18:37	18.67	0.19	3.89	13.38	0.3	10.91
3/27/2024	9:19:37	18.27	0.19	3.24	11.51	0.3	11.4
3/27/2024	9:20:37	17.81	0.2	3.65	9.74	0.3	11.62
3/27/2024	9:21:37	17.55	0.2	3.98	17.84	0.33	11.25
3/27/2024	9:22:37	19.68	0.21	1.9	20.59	0.34	4.97
3/27/2024	9:23:37	20.3	0.21	1.58	16.89	0.33	4.5
3/27/2024	9:24:37	19.06	0.21	2.08	7.54	0.3	10.09
3/27/2024	9:25:37	17.44	0.21	3.4	6.4	0.31	13.81
3/27/2024	9:26:37	17.12	0.21	3.34	5.66	0.31	14.18
3/27/2024	9:27:37	16.97	0.21	3.59	4.09	0.31	13.45
3/27/2024	9:28:37	16.32	0.21	3.38	5.79	0.31	10.92
3/27/2024	9:29:37	17.6	0.21	2.03	6.44	0.32	7.63
3/27/2024	9:30:37	16.86	0.21	1.84	4.74	0.32	6.66
3/27/2024	9:31:37	18.05	0.21	1.47	2.52	0.3	5.54
3/27/2024	9:32:37	17.94	0.21	1.37	2.75	0.31	6.61
3/27/2024	9:33:37	18.25	0.21	1.09	2.78	0.29	7.57
3/27/2024	9:34:37	18.89	0.22	1.38	2.5	0.31	7.57
3/27/2024	9:35:37	18.93	0.22	1.27	2.28	0.31	7.05
3/27/2024	9:36:37	18.93	0.21	0.79	2.18	0.3	6.28
3/27/2024	9:37:37	18.92	0.22	1.15	2.18	0.3	5.94
3/27/2024	9:38:37	18.91	0.22	1.13	2.19	0.31	4.82
3/27/2024	9:39:37	18.92	0.22	1.1	2.18	0.31	4.82
3/27/2024	9:40:37	18.9	0.22	0.63	2.2	0.31	4.85
3/27/2024	9:41:37	18.9	0.22	1.07	2.23	0.31	4.82
3/27/2024	9:42:37	18.91	0.22	0.91	2.26	0.31	4.39
3/27/2024	9:43:37	18.91	0.22	0.44	2.28	0.32	4.39
3/27/2024	9:44:37	18.91	0.22	0.83	2.31	0.31	4.4
3/27/2024	9:45:37	18.92	0.22	0.84	3.31	0.32	4.19
3/27/2024	9:46:37	18.93	0.22	0.63	2.12	0.31	4.09
3/27/2024	9:47:37	18.93	0.22	0.44	1.92	0.32	3.92
3/27/2024	9:48:37	18.93	0.22	0.82	1.94	0.33	3.93
3/27/2024	9:49:37	18.92	0.23	0.75	1.95	0.32	3.96
3/27/2024	9:50:37	18.91	0.22	0.29	1.96	0.32	4.19
3/27/2024	9:51:37	18.91	0.23	0.8	1.96	0.32	4.18
3/27/2024	9:52:37	18.92	0.23	0.84	1.96	0.33	3.97
3/27/2024	9:53:37	18.92	0.23	0.79	1.95	0.33	4
3/27/2024	9:54:37	18.91	0.23	0.52	1.94	0.33	4.2
3/27/2024	9:55:37	18.92	0.23	0.84	1.94	0.33	4
3/27/2024	9:56:37	18.89	0.23	1.06	1.93	0.34	4.02
3/27/2024	9:57:37	18.91	0.24	0.72	1.92	0.35	4.1
3/27/2024	9:58:37	18.92	0.24	1.2	1.9	0.36	3.97
3/27/2024	9:59:37	18.92	0.24	1.26	1.88	0.36	3.95
3/27/2024	10:00:37	18.92	0.24	1.15	1.86	0.37	4.16
3/27/2024	10:01:37	18.92	0.24	1.04	1.85	0.38	4.35
3/27/2024	10:02:37	18.91	0.25	1.32	1.83	0.39	4.17
3/27/2024	10:03:37	18.91	0.25	1.3	1.8	0.39	4.81
3/27/2024	10:04:37	18.92	0.25	0.79	1.78	0.39	4.79
3/27/2024	10:05:37	18.91	0.25	1.39	1.76	0.39	4.79
3/27/2024	10:06:37	18.92	0.25	1.2	1.75	0.4	4.77
3/27/2024	10:07:37	18.94	0.25	1.19	1.73	0.41	4.76
3/27/2024	10:08:37	18.94	0.25	0.96	1.72	0.42	4.75
3/27/2024	10:09:37	18.94	0.26	1.31	1.71	0.42	4.74
3/27/2024	10:10:37	18.93	0.26	1.38	1.7	0.43	4.77
3/27/2024	10:11:37	18.92	0.26	1.02	1.69	0.44	5.27
3/27/2024	10:12:37	18.91	0.26	1.36	1.68	0.44	5.11
3/27/2024	10:13:37	18.88	0.26	1.37	1.67	0.44	5.24
3/27/2024	10:14:37	18.89	0.26	1.15	1.66	0.44	4.98
3/27/2024	10:15:37	18.89	0.26	1.07	1.64	0.45	5.17
3/27/2024	10:16:37	18.9	0.26	1.38	1.63	0.45	4.75
3/27/2024	10:17:37	18.89	0.27	1.3	1.62	0.45	4.76
3/27/2024	10:18:37	18.9	0.26	0.94	1.61	0.46	4.75
3/27/2024	10:19:37	18.9	0.27	1.43	1.6	0.47	4.74
3/27/2024	10:20:37	18.89	0.27	1.41	1.59	0.47	4.78
3/27/2024	10:21:37	18.89	0.27	1.24	1.59	0.47	4.81
3/27/2024	10:22:37	18.89	0.27	1.15	1.58	0.47	4.85

START RUN 2

3/27/2024	10:23:37	18.88	0.27	1.45	1.57	0.47	5.33
3/27/2024	10:24:37	18.87	0.27	1.44	1.56	0.48	5.16
3/27/2024	10:25:37	18.86	0.27	0.95	1.55	0.48	6.05
3/27/2024	10:26:37	18.85	0.27	1.46	1.55	0.48	6.28
3/27/2024	10:27:37	18.86	0.27	1.53	1.54	0.49	6.26
3/27/2024	10:28:37	18.86	0.27	1.17	1.53	0.49	6.25
3/27/2024	10:29:37	18.87	0.27	1.41	1.55	0.49	6.77
3/27/2024	10:30:37	18.87	0.26	1.53	1.55	0.48	7.34
3/27/2024	10:31:37	18.85	0.26	1.64	1.56	0.48	7.51
3/27/2024	10:32:37	18.87	0.25	1.21	1.55	0.48	8.21
3/27/2024	10:33:37	18.86	0.25	1.76	1.56	0.48	8.47
3/27/2024	10:34:37	18.86	0.25	1.83	1.56	0.47	8.85
3/27/2024	10:35:37	18.89	0.24	1.63	1.56	0.47	9.57
3/27/2024	10:36:37	18.96	0.22	1.74	1.56	0.47	10.14
3/27/2024	10:37:37	19	0.2	2.04	1.56	0.46	10.69
3/27/2024	10:38:37	19.05	0.19	2.19	1.56	0.46	11.5
3/27/2024	10:39:37	19.07	0.18	1.82	1.55	0.46	12.03
3/27/2024	10:40:37	19.06	0.18	2.41	1.56	0.45	12.87
3/27/2024	10:41:37	19.11	0.17	2.42	1.55	0.45	14.09
3/27/2024	10:42:37	19.1	0.17	2.34	1.54	0.45	14.17
3/27/2024	10:43:37	19.12	0.17	2.35	1.54	0.44	15.35
3/27/2024	10:44:37	19.1	0.17	2.72	1.54	0.44	15.36
3/27/2024	10:45:37	19.13	0.17	2.77	1.54	0.43	15.37
3/27/2024	10:46:37	19.13	0.16	2.38	1.54	0.43	15.39
3/27/2024	10:47:37	19.13	0.16	2.68	1.54	0.43	15.31
3/27/2024	10:48:37	19.14	0.16	2.63	1.54	0.42	14.12
3/27/2024	10:49:37	19.14	0.16	2.28	1.54	0.42	14.14
3/27/2024	10:50:37	19.14	0.16	2.59	1.54	0.42	12.93
3/27/2024	10:51:37	19.14	0.16	2.47	1.53	0.42	12.81
3/27/2024	10:52:37	19.11	0.16	2.2	1.53	0.41	11.63
3/27/2024	10:53:37	19.14	0.16	1.78	1.53	0.41	11.29
3/27/2024	10:54:37	19.14	0.16	2.32	1.52	0.41	10.52
3/27/2024	10:55:37	19.15	0.16	2.21	1.52	0.41	9.65
3/27/2024	10:56:37	19.14	0.16	1.64	1.52	0.4	9.32
3/27/2024	10:57:37	19.15	0.16	2.1	1.53	0.39	8.89
3/27/2024	10:58:37	19.15	0.16	2.06	1.53	0.4	8.59
3/27/2024	10:59:37	19.14	0.16	1.96	1.53	0.39	8
3/27/2024	11:00:37	19.12	0.16	1.6	1.53	0.39	7.56
3/27/2024	11:01:37	19.14	0.16	1.88	1.53	0.39	7.55
3/27/2024	11:02:37	19.15	0.16	1.89	1.53	0.38	7.53
3/27/2024	11:03:37	19.16	0.15	1.33	1.53	0.38	7.11
3/27/2024	11:04:37	19.15	0.16	1.8	1.52	0.38	6.41
3/27/2024	11:05:37	19.12	0.16	1.8	1.54	0.38	6.28
3/27/2024	11:06:37	19.14	0.15	1.55	1.54	0.37	6.27
3/27/2024	11:07:37	19.14	0.15	1.33	1.54	0.37	6.27
3/27/2024	11:08:37	19.15	0.15	1.69	1.54	0.37	6.06
3/27/2024	11:09:37	19.16	0.15	1.59	1.55	0.37	5.96
3/27/2024	11:10:37	19.17	0.15	1.08	1.56	0.37	5.8
3/27/2024	11:11:37	19.17	0.15	1.52	1.56	0.37	5.31
3/27/2024	11:12:37	19.17	0.15	1.57	1.56	0.37	5.57
3/27/2024	11:13:37	19.17	0.15	1.38	1.56	0.37	5.32
3/27/2024	11:14:37	19.16	0.15	1.25	1.56	0.37	4.8
3/27/2024	11:15:37	19.16	0.15	1.48	1.56	0.36	4.81
3/27/2024	11:16:37	19.17	0.15	1.57	1.55	0.36	4.79
3/27/2024	11:17:37	19.17	0.15	1.06	1.55	0.37	4.78
3/27/2024	11:18:37	19.16	0.15	1.54	1.55	0.37	4.78
3/27/2024	11:19:37	19.16	0.15	1.48	1.55	0.37	4.78
3/27/2024	11:20:37	19.14	0.16	1.27	1.55	0.36	4.8
3/27/2024	11:21:37	19.07	0.18	1.09	1.55	0.37	4.81
3/27/2024	11:22:37	19.06	0.18	1.3	1.55	0.37	4.78
3/27/2024	11:23:37	19.06	0.18	1.39	1.55	0.37	4.78
3/27/2024	11:24:37	19.07	0.18	0.84	1.55	0.37	4.76
3/27/2024	11:25:37	19.06	0.18	1.36	1.55	0.37	4.78
3/27/2024	11:26:37	19.07	0.17	1.27	1.55	0.37	4.74
3/27/2024	11:27:37	19.09	0.18	1.18	1.55	0.37	4.75
3/27/2024	11:28:37	19.1	0.18	1.03	1.55	0.37	4.78
3/27/2024	11:29:37	19.1	0.17	1.36	1.56	0.37	4.75
3/27/2024	11:30:37	19.11	0.17	1.29	1.56	0.37	4.78
3/27/2024	11:31:37	19.11	0.17	0.87	1.57	0.37	4.76
3/27/2024	11:32:37	19.12	0.17	1.27	1.58	0.37	4.76
3/27/2024	11:33:37	19.12	0.17	1.24	1.57	0.36	4.76
3/27/2024	11:34:37	19.11	0.17	1.11	1.57	0.37	4.79

3/27/2024	11:35:37	19.11	0.17	1.04	1.58	0.36	4.8
3/27/2024	11:36:37	19.11	0.17	1.31	1.58	0.37	4.81
3/27/2024	11:37:37	19.09	0.17	1.27	1.57	0.37	4.79
3/27/2024	11:38:37	19.09	0.17	0.76	1.57	0.36	4.81
3/27/2024	11:39:37	19.08	0.17	1.23	1.57	0.36	4.82
3/27/2024	11:40:37	19.06	0.17	1.28	1.57	0.36	4.8
3/27/2024	11:41:37	19.09	0.17	0.95	1.56	0.36	4.8
3/27/2024	11:42:37	19.09	0.17	1.08	1.56	0.36	4.78
3/27/2024	11:43:37	19.09	0.17	1.26	1.56	0.36	4.75
3/27/2024	11:44:37	19.08	0.17	1.3	2.63	0.36	4.75
3/27/2024	11:45:37	19.07	0.17	0.81	2.1	0.37	4.77
3/27/2024	11:46:37	19.03	0.17	1.14	1.71	0.37	4.76
3/27/2024	11:47:37	19.08	0.17	1.25	1.71	0.36	4.76
3/27/2024	11:48:37	19.09	0.17	0.71	1.7	0.37	5.32
3/27/2024	11:49:37	19.08	0.17	1.24	1.71	0.38	5.24
3/27/2024	11:50:37	19.1	0.17	1.25	3.22	0.38	5.71
3/27/2024	11:51:37	19.26	0.17	1.24	16.26	0.4	4.6
3/27/2024	11:52:37	18.65	0.17	0.9	1.66	0.38	5.23
3/27/2024	11:53:37	15.48	0.17	1.95	3.59	0.39	7.4
3/27/2024	11:54:37	14.53	0.17	2.52	1.06	0.39	8.29
3/27/2024	11:55:37	9.43	0.16	4.18	0.91	0.39	10.16
3/27/2024	11:56:37	8.51	0.16	5.32	8.7	0.4	9.27
3/27/2024	11:57:37	15.3	0.16	3.29	0.95	0.39	8.17
3/27/2024	11:58:37	15.12	0.17	3.04	0.85	0.4	9.99
3/27/2024	11:59:37	15.89	0.17	2.42	0.94	0.4	10.17
3/27/2024	12:00:37	16.06	0.17	2.81	1.11	0.4	10.36
3/27/2024	12:01:37	16.12	0.17	2.92	1.19	0.4	10.57
3/27/2024	12:02:37	16.21	0.17	2.54	1.26	0.4	10.59
3/27/2024	12:03:37	16.22	0.17	2.89	1.32	0.4	10.12
3/27/2024	12:04:37	16.21	0.17	2.8	1.37	0.4	9.9
3/27/2024	12:05:37	16.22	0.17	2.66	1.41	0.4	8.9
3/27/2024	12:06:37	16.26	0.17	2.23	1.45	0.4	8.8
3/27/2024	12:07:37	16.27	0.17	2.7	1.47	0.4	8.79
3/27/2024	12:08:37	16.28	0.17	2.73	1.5	0.4	8.79
3/27/2024	12:09:37	16.3	0.16	2.21	1.51	0.4	8.79
3/27/2024	12:10:37	16.31	0.16	2.68	1.53	0.4	8.8
3/27/2024	12:11:37	16.31	0.16	2.75	1.53	0.4	8.79
3/27/2024	12:12:37	16.32	0.16	2.76	1.54	0.4	8.78
3/27/2024	12:13:37	16.36	0.16	2.3	1.54	0.4	8.79
3/27/2024	12:14:37	16.35	0.17	2.56	1.54	0.4	8.69
3/27/2024	12:15:37	16.35	0.16	2.56	1.53	0.4	8.1
3/27/2024	12:16:37	16.42	0.16	2.16	1.53	0.4	7.9
3/27/2024	12:17:37	16.45	0.16	2.56	1.52	0.4	7.46
3/27/2024	12:18:37	16.45	0.16	2.6	1.51	0.41	7.45
3/27/2024	12:19:37	16.46	0.16	2.36	1.5	0.41	7.43
3/27/2024	12:20:37	16.46	0.16	2.25	1.5	0.4	7.4
3/27/2024	12:21:37	16.47	0.16	2.36	1.5	0.41	7.22
3/27/2024	12:22:37	16.46	0.17	2.48	1.5	0.41	7.03
3/27/2024	12:23:37	16.44	0.17	1.87	1.5	0.41	6.76
3/27/2024	12:24:37	16.4	0.17	2.39	1.5	0.41	6.5
3/27/2024	12:25:37	16.43	0.17	2.42	1.5	0.41	6.19
3/27/2024	12:26:37	16.45	0.17	2.48	1.5	0.41	6.2
3/27/2024	12:27:37	16.46	0.17	1.99	1.5	0.42	6.19
3/27/2024	12:28:37	16.46	0.17	2.33	1.5	0.41	6.18
3/27/2024	12:29:37	16.46	0.17	2.29	1.5	0.41	6.21
3/27/2024	12:30:37	16.46	0.17	1.93	1.5	0.41	6.21
3/27/2024	12:31:37	16.47	0.17	2.32	1.5	0.42	6.22
3/27/2024	12:32:37	16.46	0.17	2.36	1.49	0.42	5.96
3/27/2024	12:33:37	16.39	0.18	2.18	1.49	0.41	5.93
3/27/2024	12:34:37	16.39	0.17	2.05	1.48	0.41	6.21
3/27/2024	12:35:37	16.45	0.17	2.4	9.54	0.43	5.6
3/27/2024	12:36:37	17.24	0.17	2.33	2.22	0.42	4.82
3/27/2024	12:37:37	14.5	0.17	2.22	8.64	0.43	4.86
3/27/2024	12:38:37	17.83	0.17	2.28	1.6	0.42	5.05
3/27/2024	12:39:37	17.57	0.17	2.31	1.74	0.42	5.2
3/27/2024	12:40:37	17.44	0.17	2.2	1.9	0.42	6.21
3/27/2024	12:41:37	17.38	0.17	2.29	2	0.43	6.91
3/27/2024	12:42:37	17.5	0.17	2.6	1.96	0.43	7.47
3/27/2024	12:43:37	17.49	0.17	2.7	1.81	0.42	7.49
3/27/2024	12:44:37	17.45	0.17	2.26	1.7	0.42	7.5
3/27/2024	12:45:37	17.45	0.17	2.76	1.64	0.43	7.19
3/27/2024	12:46:37	17.41	0.17	2.54	1.61	0.43	6.2

PLANT LOST POWER  
TESTING PAUSED

RESUME

3/27/2024	12:47:37	17.39	0.17	2.03	1.59	0.42	6.18
3/27/2024	12:48:37	17.41	0.17	2.19	1.57	0.42	6.17
3/27/2024	12:49:37	17.4	0.17	2.43	1.56	0.42	5.86
3/27/2024	12:50:37	17.37	0.17	2.41	3.32	2.4	5.34
3/27/2024	12:51:37	7.8	0.56	17.47	10.88	11.15	5.69
3/27/2024	12:52:37	4.55	0.23	34.7	11.55	11.98	2.14
3/27/2024	12:53:37	1.83	0.15	39.54	11.37	11.7	1.45
3/27/2024	12:54:37	0.65	0.13	43.4	0.49	0.84	317.56
3/27/2024	12:55:37	0.48	0.13	44.24	-0.04	0.41	895.29
3/27/2024	12:56:37	0.72	0.4	44.3	-0.04	0.4	915.51
3/27/2024	12:57:37	8.27	8.05	21.16	0.25	0.41	912.66
3/27/2024	12:58:37	11.45	11.09	2.57	1.68	0.43	414.5
3/27/2024	12:59:37	11.91	11.77	0.39	1.7	0.44	10.8
3/27/2024	13:00:37	12.02	11.89	-0.12	1.7	0.44	6.26
3/27/2024	13:01:37	15.64	5.93	-0.98	1.7	0.44	6.26
3/27/2024	13:02:37	18.48	1.24	-0.18	1.71	0.43	7.43
3/27/2024	13:03:37	18.96	0.41	1.26	1.71	0.43	7.54
3/27/2024	13:04:37	19.05	0.25	2	1.72	0.43	8.49
3/27/2024	13:05:37	19.07	0.21	1.96	1.72	0.43	9.56
3/27/2024	13:06:37	19.04	0.2	2.46	1.73	0.43	10.64
3/27/2024	13:07:37	19.07	0.19	2.55	1.73	0.42	11.98
3/27/2024	13:08:37	19.08	0.18	2.31	1.73	0.42	13.27
3/27/2024	13:09:37	19.09	0.18	2.81	1.72	0.42	14.65
3/27/2024	13:10:37	19.1	0.18	3.06	1.72	0.42	16.62
3/27/2024	13:11:37	19.1	0.18	3.15	1.72	0.42	18.21
3/27/2024	13:12:37	19.1	0.17	2.91	1.72	0.41	20.76
3/27/2024	13:13:37	19.07	0.17	3.62	1.72	0.42	23.06
3/27/2024	13:14:37	19.09	0.17	3.78	1.71	0.42	25.7
3/27/2024	13:15:37	19.08	0.17	3.64	1.71	0.41	28.15
3/27/2024	13:16:37	19.09	0.17	4.25	1.7	0.41	30.99
3/27/2024	13:17:37	19.07	0.17	4.5	1.71	0.41	34.18
3/27/2024	13:18:37	19.06	0.17	4.72	1.71	0.41	37.41
3/27/2024	13:19:37	19.06	0.17	4.61	1.71	0.41	40.73
3/27/2024	13:20:37	19.1	0.17	5.28	1.68	0.41	44.25
3/27/2024	13:21:37	19.02	0.17	5.8	1.71	0.41	47.92
3/27/2024	13:22:37	19.12	0.16	5.45	1.7	0.41	51.47
3/27/2024	13:23:37	19.09	0.17	6.11	1.71	0.41	55.41
3/27/2024	13:24:37	19.1	0.17	6.43	1.69	0.41	58.76
3/27/2024	13:25:37	19.11	0.17	6.8	1.69	0.41	62.64
3/27/2024	13:26:37	19.05	0.17	6.9	1.7	0.4	67.09
3/27/2024	13:27:37	19.06	0.17	7.68	1.7	0.41	71.29
3/27/2024	13:28:37	19.11	0.17	7.9	1.69	0.41	75.47
3/27/2024	13:29:37	19.1	0.17	7.77	1.68	0.41	80.47
3/27/2024	13:30:37	19.09	0.17	8.45	1.67	0.4	85.12
3/27/2024	13:31:37	19.09	0.17	9.1	1.68	0.4	90.15
3/27/2024	13:32:37	19.09	0.17	9.41	1.67	0.41	95.04
3/27/2024	13:33:37	19.09	0.17	9.57	1.66	0.41	100.54
3/27/2024	13:34:37	19.03	0.17	10.64	1.65	0.4	106.81
3/27/2024	13:35:37	19.06	0.17	11.03	1.64	0.4	112.65
3/27/2024	13:36:37	19.09	0.16	10.87	1.63	0.4	118.93
3/27/2024	13:37:37	19.06	0.17	11.94	1.63	0.4	124.49
3/27/2024	13:38:37	19.08	0.17	12.25	1.63	0.4	130.91
3/27/2024	13:39:37	19.09	0.17	12.67	1.64	0.4	137.34
3/27/2024	13:40:37	19.11	0.16	12.81	1.63	0.39	143.82
3/27/2024	13:41:37	19.1	0.16	13.78	1.61	0.4	150.63
3/27/2024	13:42:37	19.07	0.16	14.73	1.62	0.4	157.51
3/27/2024	13:43:37	19.06	0.16	14.92	1.63	0.4	165.47
3/27/2024	13:44:37	19.08	0.16	15.67	1.62	0.39	172.92
3/27/2024	13:45:37	19.12	0.16	16.09	1.6	0.4	180.83
3/27/2024	13:46:37	19.08	0.16	16.94	1.6	0.4	189.06
3/27/2024	13:47:37	19.1	0.16	17.17	1.59	0.4	198.02
3/27/2024	13:48:37	19.06	0.16	18.52	1.6	0.4	205.87
3/27/2024	13:49:37	19.06	0.16	19.18	1.6	0.39	214.23
3/27/2024	13:50:37	19.08	0.16	19.23	1.6	0.39	223.54
3/27/2024	13:51:37	19.1	0.16	20.14	1.58	0.4	232.51
3/27/2024	13:52:37	19.09	0.17	21.06	1.58	0.4	242.13
3/27/2024	13:53:37	19.07	0.16	21.91	1.59	0.4	252.3
3/27/2024	13:54:37	19.09	0.16	22.39	1.58	0.4	262.29
3/27/2024	13:55:37	19.09	0.17	23.65	1.58	0.4	273.05
3/27/2024	13:56:37	19.07	0.17	24.73	1.57	0.41	284.54
3/27/2024	13:57:37	19.08	0.17	25.01	1.58	0.41	296.29
3/27/2024	13:58:37	19.09	0.17	26.2	1.57	0.4	307.72

BIAS/DRIFT CALS  
11.81/12.09

back on stack gas

3/27/2024	13:59:37	19.09	0.16	26.9	1.57	0.4	318.81
3/27/2024	14:00:37	19.05	0.17	28.35	1.56	0.41	331.1
3/27/2024	14:01:37	19.05	0.17	29.36	1.56	0.41	343.57
3/27/2024	14:02:37	19.09	0.17	29.75	1.56	0.4	355.1
3/27/2024	14:03:37	19.08	0.16	30.85	1.54	0.4	367.77
3/27/2024	14:04:37	19.1	0.16	31.27	1.53	0.41	380.64
3/27/2024	14:05:37	19.09	0.16	32.91	1.53	0.41	392.88
3/27/2024	14:06:37	19.09	0.17	33.75	1.52	0.41	405.64
3/27/2024	14:07:37	19.07	0.17	35.03	1.53	0.41	419.35
3/27/2024	14:08:37	19.08	0.16	35.97	1.53	0.41	433.27
3/27/2024	14:09:37	19.09	0.17	36.75	1.51	0.42	446.7
3/27/2024	14:10:37	19.09	0.17	38.21	1.51	0.42	461.21
3/27/2024	14:11:37	19.09	0.17	38.71	1.51	0.43	475.8
3/27/2024	14:12:37	19.09	0.17	40.32	1.5	0.43	490.58
3/27/2024	14:13:37	19.08	0.17	41.71	1.49	0.43	505.38
3/27/2024	14:14:37	19.11	0.17	41.99	1.48	0.44	519.31
3/27/2024	14:15:37	19.11	0.17	42.96	1.49	0.44	530.33
3/27/2024	14:16:37	19.11	0.17	43.73	1.48	0.45	531.65
3/27/2024	14:17:37	19.11	0.17	43.43	1.48	0.45	522.5
3/27/2024	14:18:37	19.11	0.17	41.95	1.49	0.45	503.05
3/27/2024	14:19:37	19.1	0.17	40.92	1.51	0.46	474.86
3/27/2024	14:20:37	19.11	0.17	38.67	1.51	0.47	441.93
3/27/2024	14:21:37	19.11	0.17	36	1.51	0.48	409.65
3/27/2024	14:22:37	19.12	0.17	33.15	1.51	0.48	377.6
3/27/2024	14:23:37	19.13	0.17	30.76	1.51	0.48	347.33
3/27/2024	14:24:37	19.13	0.18	28.57	1.52	0.5	319.76
3/27/2024	14:25:37	19.11	0.18	26.31	1.55	0.5	293.77
3/27/2024	14:26:37	19.12	0.18	24.76	1.56	0.51	270.08
3/27/2024	14:27:37	19.13	0.18	22.87	1.55	0.51	250.16
3/27/2024	14:28:37	19.13	0.18	21.16	1.55	0.52	232.02
3/27/2024	14:29:37	19.12	0.18	19.81	1.56	0.53	215.77
3/27/2024	14:30:37	19.09	0.18	18.93	1.57	0.54	200.6
3/27/2024	14:31:37	19.1	0.18	17.86	1.58	0.55	187.56
3/27/2024	14:32:37	19.11	0.18	16.22	1.59	0.55	175.76
3/27/2024	14:33:37	19.11	0.18	15.79	1.59	0.56	164.42
3/27/2024	14:34:37	19.12	0.18	14.98	1.6	0.57	155.01
3/27/2024	14:35:37	19.1	0.18	13.94	1.61	0.58	146.78
3/27/2024	14:36:37	19.11	0.18	13.52	1.61	0.58	141.06
3/27/2024	14:37:37	19.12	0.18	13.21	1.62	0.59	138.1
3/27/2024	14:38:37	19.13	0.19	13.02	1.62	0.6	137.82
3/27/2024	14:39:37	19.13	0.19	12.56	1.62	0.61	140.6
3/27/2024	14:40:37	19.12	0.19	13.26	1.63	0.61	145.24
3/27/2024	14:41:37	19.12	0.19	13.75	1.63	0.61	152.46
3/27/2024	14:42:37	19.12	0.19	13.99	1.63	0.61	161.55
3/27/2024	14:43:37	19.11	0.19	15	1.63	0.62	171.76
3/27/2024	14:44:37	19.12	0.19	15.81	1.63	0.62	182.29
3/27/2024	14:45:37	19.12	0.19	16.51	1.63	0.62	190.71
3/27/2024	14:46:37	19.12	0.19	16.9	1.63	0.62	195.32
3/27/2024	14:47:37	19.12	0.19	17.5	1.63	0.63	195.85
3/27/2024	14:48:37	19.13	0.19	17.44	1.63	0.63	193.16
3/27/2024	14:49:37	19.14	0.19	16.82	1.63	0.63	188.15
3/27/2024	14:50:37	19.11	0.19	16.84	1.64	0.62	181.56
3/27/2024	14:51:37	19.13	0.19	16.31	1.64	0.62	174.02
3/27/2024	14:52:37	19.15	0.2	15.55	1.67	0.63	166.55
3/27/2024	14:53:37	19.14	0.2	14.61	1.66	0.63	158.99
3/27/2024	14:54:37	19.13	0.2	14.45	1.67	0.63	152.07
3/27/2024	14:55:37	19.13	0.2	13.9	1.7	0.63	145.5
3/27/2024	14:56:37	19.13	0.2	13.14	1.69	0.63	138.81
3/27/2024	14:57:37	19.12	0.21	13	1.69	0.64	133.27
3/27/2024	14:58:37	19.11	0.21	12.63	1.72	0.64	128.35
3/27/2024	14:59:37	19.13	0.22	12.12	1.7	0.64	124.68
3/27/2024	15:00:37	19.13	0.21	11.47	1.72	0.63	123.56
3/27/2024	15:01:37	19.13	0.22	11.99	1.72	0.64	124.1
3/27/2024	15:02:37	19.13	0.22	12.05	1.72	0.64	127.14
3/27/2024	15:03:37	19.15	0.22	11.84	1.71	0.64	131.98
3/27/2024	15:04:37	19.12	0.22	12.85	1.74	0.63	138.97
3/27/2024	15:05:37	19.11	0.22	13.64	1.73	0.63	147.25
3/27/2024	15:06:37	19.13	0.22	14.01	1.7	0.64	156.24
3/27/2024	15:07:37	19.13	0.22	14.51	1.73	0.64	165.24
3/27/2024	15:08:37	19.13	0.22	15.55	1.72	0.63	171.11
3/27/2024	15:09:37	19.14	0.22	15.87	1.7	0.63	173.73
3/27/2024	15:10:37	19.13	0.22	15.5	1.71	0.64	173.61



3/27/2024	15:11:37	19.09	0.23	16.15	1.71	0.64	170.88
3/27/2024	15:12:37	19.1	0.23	15.83	1.7	0.64	167.5
3/27/2024	15:13:37	19.12	0.23	15.54	1.73	0.63	165.02
3/27/2024	15:14:37	19.12	0.23	15.02	1.72	0.63	165.29
3/27/2024	15:15:37	19.12	0.23	15.62	1.7	0.64	168.02
3/27/2024	15:16:37	19.12	0.23	15.94	1.72	0.64	173.77
3/27/2024	15:17:37	19.11	0.23	16.21	1.7	0.63	182.15
3/27/2024	15:18:37	19.09	0.23	17.33	1.71	0.63	192.52
3/27/2024	15:19:37	19.09	0.23	18.34	1.71	0.63	204.9
3/27/2024	15:20:37	19.12	0.23	19	1.67	0.63	218.21
3/27/2024	15:21:37	19.12	0.23	19.75	1.68	0.63	233.53
3/27/2024	15:22:37	19.09	0.23	21.69	1.64	0.63	249.93
3/27/2024	15:23:37	19.1	0.23	22.92	1.67	0.63	266.12
3/27/2024	15:24:37	19.1	0.23	23.79	1.65	0.63	284.47
3/27/2024	15:25:37	19.11	0.23	25.44	1.63	0.63	303.04
3/27/2024	15:26:37	19.07	0.23	27.48	1.62	0.63	322.34
3/27/2024	15:27:37	19.08	0.22	28.69	1.53	0.62	342.7
3/27/2024	15:28:37	18.78	0.22	35.97	1.55	0.62	368.05
3/27/2024	15:29:37	18.81	0.22	37.95	1.54	0.62	392.24
3/27/2024	15:30:37	18.84	0.22	39.52	1.5	0.62	416.75
3/27/2024	15:31:37	18.89	0.22	40.41	1.47	0.61	443.43
3/27/2024	15:32:37	18.92	0.22	42.37	1.47	0.61	470.46
3/27/2024	15:33:37	18.92	0.22	44.8	1.48	0.62	499.32
3/27/2024	15:34:37	18.93	0.22	47.21	1.51	0.62	527.69
3/27/2024	15:35:37	18.93	0.22	49.36	1.53	0.61	556.29
3/27/2024	15:36:37	18.93	0.21	52.48	1.55	0.61	584.79
3/27/2024	15:37:37	18.93	0.21	54.94	1.56	0.61	611.18
3/27/2024	15:38:37	18.93	0.21	56.98	1.58	0.61	635.56
3/27/2024	15:39:37	18.94	0.21	59.46	1.6	0.61	656.9
3/27/2024	15:40:37	18.94	0.21	61.56	1.61	0.6	677.54
3/27/2024	15:41:37	18.94	0.21	63.63	1.62	0.6	698.8
3/27/2024	15:42:37	18.95	0.2	64.84	1.63	0.6	719.52
3/27/2024	15:43:37	18.94	0.21	67.34	1.63	0.61	741.33
3/27/2024	15:44:37	18.95	0.21	69.09	1.63	0.61	762.51
3/27/2024	15:45:37	18.95	0.2	70.46	1.63	0.61	785.06
3/27/2024	15:46:37	18.96	0.2	72.23	1.62	0.61	805.91
3/27/2024	15:47:37	18.96	0.2	74.32	1.61	0.61	825.89
3/27/2024	15:48:37	18.95	0.2	76.17	1.6	0.62	842.97
3/27/2024	15:49:37	18.95	0.2	77.38	1.6	0.62	858
3/27/2024	15:50:37	18.96	0.2	78.43	1.58	0.62	870.11
3/27/2024	15:51:37	18.96	0.2	79.83	1.57	0.62	882.8
3/27/2024	15:52:37	18.96	0.2	80.5	1.56	0.63	895.9
3/27/2024	15:53:37	18.96	0.2	81.8	1.55	0.64	906.13
3/27/2024	15:54:37	18.96	0.2	82.45	1.54	0.65	914.66
3/27/2024	15:55:37	18.97	0.2	82.81	1.53	0.65	922.99
3/27/2024	15:56:37	18.96	0.2	83.19	1.52	0.66	931.27
3/27/2024	15:57:37	18.95	0.2	84.27	1.51	0.67	936.88
3/27/2024	15:58:37	18.95	0.2	84.92	1.5	0.68	940.02
3/27/2024	15:59:37	18.95	0.2	84.38	1.48	0.69	940.98
3/27/2024	16:00:37	18.95	0.2	84.92	1.48	0.7	939.87
3/27/2024	16:01:37	18.95	0.2	84.36	1.46	0.71	935.85
3/27/2024	16:02:37	18.93	0.21	84.41	1.45	0.72	929.92
3/27/2024	16:03:37	18.91	0.21	84.22	1.45	0.72	923.01
3/27/2024	16:04:37	18.93	0.21	83.1	1.45	0.73	915.16
3/27/2024	16:05:37	18.94	0.21	82.09	1.45	0.74	904.9
3/27/2024	16:06:37	18.93	0.21	80.61	1.47	0.75	883.7
3/27/2024	16:07:37	18.94	0.21	78.96	1.48	0.76	865.63
3/27/2024	16:08:37	18.95	0.21	77.96	1.49	0.77	863.27
3/27/2024	16:09:37	18.98	0.21	76.42	1.49	0.78	859.06
3/27/2024	16:10:37	19.01	0.21	74.05	1.49	0.78	845.97
3/27/2024	16:11:37	19.01	0.21	72.84	1.5	0.79	826.48
3/27/2024	16:12:37	19.04	0.21	69.99	1.51	0.81	804.2
3/27/2024	16:13:37	19.07	0.21	66.52	1.5	0.82	778.96
3/27/2024	16:14:37	19.06	0.21	65.19	1.5	0.83	753.73
3/27/2024	16:15:37	19.07	0.21	63.07	1.5	0.83	730.86
3/27/2024	16:16:37	19.08	0.21	60.74	1.5	0.84	710.14
3/27/2024	16:17:37	19.08	0.21	58.83	1.49	0.85	692.77
3/27/2024	16:18:37	19.09	0.22	57.56	1.49	0.86	677.78
3/27/2024	16:19:37	19.09	0.22	56.42	1.48	0.87	666.75
3/27/2024	16:20:37	19.09	0.22	55.17	1.48	0.87	657.16
3/27/2024	16:21:37	19.09	0.22	54.94	1.48	0.88	648.98
3/27/2024	16:22:37	19.09	0.22	54.33	1.47	0.88	642.33

3/27/2024	16:23:37	19.09	0.22	53.79	1.47	0.89	638.42
3/27/2024	16:24:37	19.08	0.22	53.06	1.47	0.88	635.99
3/27/2024	16:25:37	19.08	0.22	53.35	1.47	0.89	635.92
3/27/2024	16:26:37	19.08	0.22	53.48	1.46	0.89	638.08
3/27/2024	16:27:37	19.09	0.22	53.29	1.46	0.9	641.81
3/27/2024	16:28:37	19.09	0.22	54.03	1.45	0.89	646.6
3/27/2024	16:29:37	19.09	0.22	54.45	1.45	0.89	652.11
3/27/2024	16:30:37	19.08	0.22	54.9	1.45	0.89	657.3
3/27/2024	16:31:37	19.08	0.22	54.86	1.45	0.89	662.11
3/27/2024	16:32:37	19.09	0.22	55.49	1.45	0.89	665.98
3/27/2024	16:33:37	19.09	0.22	55.91	1.45	0.88	669.93
3/27/2024	16:34:37	19.08	0.22	55.8	1.45	0.88	673.19
3/27/2024	16:35:37	19.07	0.22	56.62	1.44	0.88	675.88
3/27/2024	16:36:37	19.09	0.22	56.61	1.44	0.88	678.08
3/27/2024	16:37:37	19.09	0.22	56.78	1.44	0.88	680.51
3/27/2024	16:38:37	19.08	0.22	56.61	1.44	0.87	682.57
3/27/2024	16:39:37	19.08	0.22	57.1	1.44	0.87	683.48
3/27/2024	16:40:37	19.09	0.22	57.17	1.44	0.87	684.34
3/27/2024	16:41:37	19.09	0.22	56.85	1.45	0.86	685.68
3/27/2024	16:42:37	19.09	0.22	57.38	1.44	0.86	685.82
3/27/2024	16:43:37	19.09	0.22	57.48	1.44	0.85	685.88
3/27/2024	16:44:37	19.09	0.22	57.32	1.44	0.85	685.51
3/27/2024	16:45:37	19.08	0.22	57.17	1.44	0.85	684.68
3/27/2024	16:46:37	19.08	0.22	57.37	1.44	0.85	683.37
3/27/2024	16:47:37	19.08	0.22	57.22	1.44	0.84	681.81
3/27/2024	16:48:37	19.08	0.21	56.53	1.44	0.83	680.76
3/27/2024	16:49:37	19.09	0.21	56.9	1.44	0.83	680.58
3/27/2024	16:50:37	19.09	0.21	56.76	1.44	0.83	679.05
3/27/2024	16:51:37	19.09	0.21	56.37	1.45	0.83	677.23
3/27/2024	16:52:37	19.1	0.21	55.75	1.44	0.82	676.33
3/27/2024	16:53:37	19.08	0.21	56.75	1.45	0.82	675.34
3/27/2024	16:54:37	19.07	0.21	56.97	1.45	0.83	672.92
3/27/2024	16:55:37	19.08	0.21	56.19	1.45	0.83	669.72
3/27/2024	16:56:37	19.08	0.21	56.06	1.34	0.81	664.97
3/27/2024	16:57:37	16.78	4.03	44.7	-0.01	0.38	773.93
3/27/2024	16:58:37	12.88	10.39	8.74	-0.05	0.36	911.25
3/27/2024	16:59:37	12.25	11.59	0.97	-0.05	0.36	913.98
3/27/2024	17:00:37	12.1	11.85	-0.03	0.41	0.51	910.49
3/27/2024	17:01:37	12.58	11.07	0.66	2.46	2.06	750.01
3/27/2024	17:02:37	11.82	3.73	28.4	11.57	11.98	370.59
3/27/2024	17:03:37	2.45	1.01	40.41	11.78	12.22	9.55
3/27/2024	17:04:37	0.76	0.32	42.92	11.79	12.23	1.47
3/27/2024	17:05:37	0.52	0.19	43.77	4.24	3.68	100.82
3/27/2024	17:06:37	0.44	0.16	43.77	1.47	0.84	604.86
3/27/2024	17:07:37	0.42	0.14	44.21	1.47	0.83	656.62
3/27/2024	17:08:37	6	0.15	45.85	1.47	0.84	654.99
3/27/2024	17:09:37	16.73	0.21	52.23	1.47	0.84	654.48
3/27/2024	17:10:37	18.54	0.22	54.02	1.47	0.84	654.65
3/27/2024	17:11:37	18.95	0.22	54.31	1.47	0.83	655.38
3/27/2024	17:12:37	19.04	0.22	54.34	1.48	0.83	655.82
3/27/2024	17:13:37	19.07	0.22	54.09	1.47	0.83	652.36
3/27/2024	17:14:37	19.08	0.22	53.97	1.48	0.84	643.97
3/27/2024	17:15:37	19.08	0.22	53.08	1.48	0.83	631.52
3/27/2024	17:16:37	19.08	0.22	51.78	1.49	0.83	616.84
3/27/2024	17:17:37	19.08	0.22	50.6	1.49	0.83	599.26
3/27/2024	17:18:37	19.09	0.22	49.02	1.5	0.84	581.22
3/27/2024	17:19:37	19.1	0.22	47.3	1.51	0.84	562.57
3/27/2024	17:20:37	19.1	0.22	45.51	1.51	0.84	545.31
3/27/2024	17:21:37	19.1	0.22	44.4	1.52	0.83	528.4
3/27/2024	17:22:37	19.1	0.22	43.3	1.53	0.84	512.82
3/27/2024	17:23:37	19.09	0.22	41.82	1.53	0.84	497.79
3/27/2024	17:24:37	19.09	0.22	41	1.54	0.84	483.35
3/27/2024	17:25:37	19.09	0.22	39.88	1.55	0.83	469.96
3/27/2024	17:26:37	19.09	0.22	38.57	1.55	0.83	458.02
3/27/2024	17:27:37	19.09	0.22	37.74	1.56	0.83	448.59
3/27/2024	17:28:37	19.1	0.22	37.17	1.56	0.83	441.27
3/27/2024	17:29:37	19.1	0.22	36.63	1.56	0.83	436.25
3/27/2024	17:30:37	19.1	0.21	35.98	1.57	0.82	432.9
3/27/2024	17:31:37	19.09	0.21	36.25	1.57	0.82	429.71
3/27/2024	17:32:37	19.09	0.21	36.16	1.57	0.81	428.38
3/27/2024	17:33:37	19.09	0.21	35.87	1.57	0.81	427.92
3/27/2024	17:34:37	19.09	0.21	35.61	1.57	0.81	427.93

BIAS/DRIFT CALS

3/27/2024	17:35:37	19.09	0.21	35.75	1.57	0.8	427.69
3/27/2024	17:36:37	19.1	0.21	35.63	1.58	0.79	426.09
3/27/2024	17:37:37	19.1	0.21	35.11	1.58	0.79	422.66
3/27/2024	17:38:37	19.1	0.21	35.14	1.58	0.78	417.64
3/27/2024	17:39:37	19.1	0.21	34.69	1.59	0.77	411.17
3/27/2024	17:40:37	19.09	0.21	34.06	1.59	0.76	404.52
3/27/2024	17:41:37	19.09	0.21	33.64	1.59	0.76	397.14
3/27/2024	17:42:37	19.09	0.21	33.28	1.59	0.75	389.81
3/27/2024	17:43:37	19.09	0.21	32.73	1.6	0.74	382.16
3/27/2024	17:44:37	19.09	0.21	31.64	1.6	0.73	375.39
3/27/2024	17:45:37	19.09	0.2	31.38	1.6	0.73	368.98
3/27/2024	17:46:37	19.09	0.2	31.09	1.6	0.72	364.7
3/27/2024	17:47:37	19.09	0.2	30.65	1.61	0.72	361.48
3/27/2024	17:48:37	19.09	0.2	30.29	1.61	0.71	359.41
3/27/2024	17:49:37	19.09	0.2	30.42	1.61	0.7	359.25
3/27/2024	17:50:37	19.09	0.2	30.34	1.61	0.7	359.32
3/27/2024	17:51:37	19.09	0.2	30.16	1.61	0.7	360.86
3/27/2024	17:52:37	19.09	0.21	30.64	1.61	0.69	362.5
3/27/2024	17:53:37	19.09	0.21	30.7	1.61	0.69	363.95
3/27/2024	17:54:37	19.1	0.2	30.52	1.61	0.68	363.86
3/27/2024	17:55:37	19.1	0.2	30.55	1.61	0.68	362.84
3/27/2024	17:56:37	19.1	0.2	30.54	1.61	0.68	359.68
3/27/2024	17:57:37	19.09	0.21	30.28	2.82	0.66	353.78
3/27/2024	17:58:37	19.1	0.2	29.27	1.96	0.66	323.31
3/27/2024	17:59:37	19.1	0.2	29.38	1.39	0.66	347.39
3/27/2024	18:00:37	19.09	0.2	29.18	1.39	0.66	344.31
3/27/2024	18:01:37	19.09	0.2	28.68	1.39	0.66	338.8
3/27/2024	18:02:37	19.1	0.2	28.11	1.39	0.65	333.72
3/27/2024	18:03:37	19.1	0.2	27.99	1.39	0.64	329.34
3/27/2024	18:04:37	19.09	0.2	27.54	1.39	0.64	325.96
3/27/2024	18:05:37	19.09	0.2	27.15	1.39	0.63	324.43
3/27/2024	18:06:37	19.1	0.2	27.41	1.4	0.63	323.83
3/27/2024	18:07:37	19.1	0.2	27.37	1.4	0.63	324.18
3/27/2024	18:08:37	19.09	0.2	27.23	1.4	0.63	325.07
3/27/2024	18:09:37	19.09	0.2	27.16	1.39	0.62	326.38
3/27/2024	18:10:37	19.09	0.2	27.6	1.39	0.61	328.11
3/27/2024	18:11:37	19.09	0.2	27.8	1.39	0.61	329.46
3/27/2024	18:12:37	19.09	0.2	27.43	1.39	0.61	330.17
3/27/2024	18:13:37	19.09	0.2	27.79	1.39	0.6	329.37
3/27/2024	18:14:37	19.09	0.2	27.79	1.39	0.6	327.84
3/27/2024	18:15:37	19.09	0.2	27.52	1.39	0.6	325.22
3/27/2024	18:16:37	19.09	0.2	27.11	1.39	0.6	322.04
3/27/2024	18:17:37	19.08	0.2	27.2	1.39	0.59	318.37
3/27/2024	18:18:37	19.08	0.2	27.04	1.39	0.59	314.87
3/27/2024	18:19:37	19.07	0.2	26.55	1.39	0.58	310.93
3/27/2024	18:20:37	19.08	0.2	26.67	1.4	0.58	307.31
3/27/2024	18:21:37	19.08	0.2	26.42	1.4	0.59	304.47
3/27/2024	18:22:37	19.08	0.2	26.09	1.4	0.58	302.54
3/27/2024	18:23:37	19.08	0.2	25.94	1.4	0.58	301.33
3/27/2024	18:24:37	19.08	0.2	26.07	1.4	0.58	301.14
3/27/2024	18:25:37	19.08	0.2	26.17	1.4	0.58	301.92
3/27/2024	18:26:37	19.08	0.2	25.8	1.4	0.58	303.76
3/27/2024	18:27:37	19.08	0.2	26.44	1.4	0.57	306.15
3/27/2024	18:28:37	19.07	0.2	26.64	1.39	0.57	308.52
3/27/2024	18:29:37	19.07	0.2	26.82	1.39	0.57	310.87
3/27/2024	18:30:37	19.07	0.2	26.79	1.39	0.57	311.88
3/27/2024	18:31:37	19.08	0.2	27.15	1.39	0.57	311.1
3/27/2024	18:32:37	19.07	0.2	27.1	1.39	0.57	310.06
3/27/2024	18:33:37	19.07	0.2	26.67	1.39	0.57	307.99
3/27/2024	18:34:37	19.07	0.2	26.81	1.39	0.56	305.05
3/27/2024	18:35:37	19.07	0.2	26.66	1.39	0.57	302.06
3/27/2024	18:36:37	19.08	0.2	26.28	1.39	0.56	300.2
3/27/2024	18:37:37	19.07	0.2	26.13	1.39	0.55	299.41
3/27/2024	18:38:37	19.06	0.2	26.46	1.39	0.56	299.38
3/27/2024	18:39:37	19.06	0.2	26.63	1.39	0.56	299.45
3/27/2024	18:40:37	19.06	0.2	26.28	1.39	0.56	300.99
3/27/2024	18:41:37	19.06	0.2	26.78	1.39	0.56	301.84
3/27/2024	18:42:37	19.06	0.2	26.92	1.39	0.55	303.45
3/27/2024	18:43:37	19.05	0.2	27.1	1.38	0.56	305.9
3/27/2024	18:44:37	19.05	0.21	27.45	1.38	0.56	309.5
3/27/2024	18:45:37	19.04	0.21	28.02	1.38	0.56	314.39
3/27/2024	18:46:37	19.04	0.21	28.33	1.37	0.56	319.11

3/27/2024	18:47:37	19.04	0.21	28.48	1.37	0.56	324
3/27/2024	18:48:37	19.03	0.22	29.35	1.36	0.56	329.04
3/27/2024	18:49:37	19.02	0.22	29.73	1.36	0.57	333.19
3/27/2024	18:50:37	19.03	0.22	29.84	1.36	0.56	337.5
3/27/2024	18:51:37	19.03	0.21	30.12	1.36	0.56	342.22
3/27/2024	18:52:37	19.03	0.21	30.64	1.36	0.55	347.18
3/27/2024	18:53:37	19.03	0.21	31.19	1.36	0.55	353.45
3/27/2024	18:54:37	19.04	0.2	31.1	1.35	0.54	361.52
3/27/2024	18:55:37	19.03	0.2	31.96	1.35	0.54	368.75
3/27/2024	18:56:37	19.03	0.2	32.49	1.35	0.53	376.58
3/27/2024	18:57:37	19.03	0.2	33.02	1.34	0.52	383.6
3/27/2024	18:58:37	19.03	0.19	33.26	1.34	0.52	390.75
3/27/2024	18:59:37	19.02	0.19	34.29	1.34	0.52	397.13
3/27/2024	19:00:37	19.03	0.19	34.67	5.33	0.5	379.41
3/27/2024	19:01:37	19.02	0.19	34.9	12.52	0.43	251.4
3/27/2024	19:02:37	19.04	0.19	35.41	1.59	0.51	271.19
3/27/2024	19:03:37	19.04	0.19	35.94	1.36	0.51	426.75
3/27/2024	19:04:37	19.03	0.19	36.67	1.35	0.52	437.72
3/27/2024	19:05:37	19.02	0.19	37.15	1.35	0.52	446.85
3/27/2024	19:06:37	19.03	0.19	38.1	1.34	0.51	454.87
3/27/2024	19:07:37	19.03	0.19	38.56	1.34	0.5	462.52
3/27/2024	19:08:37	19.02	0.19	38.86	1.34	0.51	470.46
3/27/2024	19:09:37	19.01	0.19	39.97	1.34	0.51	477.28
3/27/2024	19:10:37	19.01	0.19	40.46	1.33	0.51	485.67
3/27/2024	19:11:37	19.02	0.19	41.01	1.33	0.5	495.71
3/27/2024	19:12:37	19.03	0.19	41.41	1.32	0.5	505.96
3/27/2024	19:13:37	19.02	0.19	42.45	1.32	0.5	514.87
3/27/2024	19:14:37	19.01	0.19	43.11	1.31	0.51	523.15
3/27/2024	19:15:37	19.02	0.19	43.38	1.31	0.51	531.13
3/27/2024	19:16:37	19.02	0.19	44.18	1.3	0.5	537.75
3/27/2024	19:17:37	19.02	0.19	44.78	1.3	0.5	543.29
3/27/2024	19:18:37	19.01	0.19	45.29	1.3	0.51	550.18
3/27/2024	19:19:37	19.01	0.19	45.7	3.01	0.5	559.14
3/27/2024	19:20:37	19	0.19	46.91	5.75	0.48	445.86
3/27/2024	19:21:37	19.02	0.19	47.28	1.44	0.51	520.87
3/27/2024	19:22:37	19	0.19	48.27	1.43	0.52	588.24
3/27/2024	19:23:37	19.01	0.19	49.21	1.43	0.52	597.65
3/27/2024	19:24:37	19.01	0.19	49.78	1.42	0.52	603.64
3/27/2024	19:25:37	19.01	0.19	50.25	1.42	0.52	607.81
3/27/2024	19:26:37	19.01	0.19	50.18	1.42	0.52	614.04
3/27/2024	19:27:37	19.01	0.19	51.12	1.42	0.53	624.63
3/27/2024	19:28:37	19.02	0.19	52.07	1.41	0.54	636.85
3/27/2024	19:29:37	19	0.2	52.91	1.4	0.55	648.97
3/27/2024	19:30:37	18.98	0.21	53.99	1.4	0.56	658.43
3/27/2024	19:31:37	19.01	0.2	54.75	1.39	0.57	663.64
3/27/2024	19:32:37	19.05	0.19	54.93	1.39	0.57	662.76
3/27/2024	19:33:37	19.09	0.17	54.5	1.4	0.58	657.78
3/27/2024	19:34:37	19.1	0.17	54.36	1.4	0.58	651.58
3/27/2024	19:35:37	19.11	0.17	53.84	1.4	0.58	646.06
3/27/2024	19:36:37	19.12	0.17	52.74	1.4	0.57	639.24
3/27/2024	19:37:37	19.11	0.17	52.69	1.4	0.58	629.6
3/27/2024	19:38:37	19.12	0.17	51.79	1.41	0.6	618.58
3/27/2024	19:39:37	19.13	0.17	50.77	1.41	0.61	606.69
3/27/2024	19:40:37	19.13	0.17	49.42	1.41	0.61	595.24
3/27/2024	19:41:37	19.12	0.17	49.01	1.42	0.62	583.77
3/27/2024	19:42:37	19.13	0.17	48.11	1.42	0.62	574.89
3/27/2024	19:43:37	19.13	0.17	47.07	1.42	0.63	566.6
3/27/2024	19:44:37	19.14	0.17	46.49	1.42	0.62	558.88
3/27/2024	19:45:37	19.13	0.17	46.05	1.42	0.63	552.07
3/27/2024	19:46:37	19.14	0.17	45.41	1.42	0.64	546.45
3/27/2024	19:47:37	19.14	0.17	44.78	1.43	0.64	540.95
3/27/2024	19:48:37	19.14	0.18	44.61	1.43	0.65	537.19
3/27/2024	19:49:37	19.14	0.18	44.36	1.43	0.65	536.94
3/27/2024	19:50:37	19.13	0.18	44.15	1.41	0.64	540.56
3/27/2024	19:51:37	19.05	0.18	46.78	1.41	0.65	544.14
3/27/2024	19:52:37	19.02	0.18	47.99	1.41	0.65	546.66
3/27/2024	19:53:37	19.02	0.18	48.12	1.41	0.64	546.93
3/27/2024	19:54:37	19.02	0.18	47.56	1.41	0.62	544.32
3/27/2024	19:55:37	19.04	0.17	46.99	1.41	0.62	540.17
3/27/2024	19:56:37	19.02	0.17	47.06	1.41	0.61	537.05
3/27/2024	19:57:37	19.03	0.17	46.59	1.41	0.62	536.77
3/27/2024	19:58:37	19.03	0.18	46.79	1.41	0.61	534.69

3/27/2024	19:59:37	19.03	0.18	46.57	1.42	0.61	531.27
3/27/2024	20:00:37	19.05	0.18	45.74	1.43	0.6	527.66
3/27/2024	20:01:37	19.11	0.17	43.31	1.44	0.6	522.99
3/27/2024	20:02:37	19.13	0.18	42.76	2.94	0.56	514.95
3/27/2024	20:03:37	19.12	0.17	42.32	3.54	0.54	441.11
3/27/2024	20:04:37	19.15	0.17	41.18	1.3	0.57	489.25
3/27/2024	20:05:37	19.14	0.17	41.86	1.29	0.56	515.43
3/27/2024	20:06:37	19.14	0.17	41.97	1.29	0.56	517.6
3/27/2024	20:07:37	19.14	0.17	42.11	1.29	0.56	519.19
3/27/2024	20:08:37	19.14	0.17	42.03	1.29	0.56	520.87
3/27/2024	20:09:37	19.14	0.17	41.94	1.29	0.55	520.13
3/27/2024	20:10:37	19.14	0.17	41.82	1.29	0.54	517.46
3/27/2024	20:11:37	19.15	0.17	41.63	1.29	0.55	515.82
3/27/2024	20:12:37	19.14	0.17	41.62	1.29	0.55	516.56
3/27/2024	20:13:37	19.27	0.16	38.04	7.35	0.45	503.33
3/27/2024	20:14:37	19.59	0.16	29.5	13.3	0.36	282.18
3/27/2024	20:15:37	19.91	0.15	20.9	3.87	0.49	223.01
3/27/2024	20:16:37	19.75	0.15	24.84	1.43	0.53	493.52
3/27/2024	20:17:37	19.53	0.16	30.67	1.5	0.53	508.64
3/27/2024	20:18:37	19.54	0.16	30.56	1.65	0.52	518.39
3/27/2024	20:19:37	19.55	0.16	32.08	1.79	0.52	581.35
3/27/2024	20:20:37	19.56	0.15	37.7	1.8	0.51	710.04
3/27/2024	20:21:37	19.55	0.16	44.93	1.76	0.51	816.88
3/27/2024	20:22:37	19.54	0.16	48.88	1.73	0.51	829.7
3/27/2024	20:23:37	19.53	0.16	48.37	1.71	0.51	788.8
3/27/2024	20:24:37	19.52	0.16	45.73	1.7	0.51	738.92
3/27/2024	20:25:37	19.53	0.16	42.86	1.68	0.5	694.57
3/27/2024	20:26:37	19.53	0.16	40.46	1.68	0.5	658.49
3/27/2024	20:27:37	19.54	0.16	38.44	1.67	0.5	635.18
3/27/2024	20:28:37	19.55	0.16	37.45	1.67	0.5	625.72
3/27/2024	20:29:37	19.54	0.16	37.06	1.66	0.5	624.23
3/27/2024	20:30:37	19.55	0.16	36.93	1.65	0.5	623.18
3/27/2024	20:31:37	19.55	0.16	36.92	1.65	0.49	619.59
3/27/2024	20:32:37	19.55	0.16	36.62	1.66	0.49	611.41
3/27/2024	20:33:37	19.55	0.16	36.19	1.66	0.5	599.84
3/27/2024	20:34:37	19.55	0.16	35.47	1.66	0.5	591.12
3/27/2024	20:35:37	19.55	0.16	35.04	1.65	0.5	587.21
3/27/2024	20:36:37	19.53	0.16	35.21	1.64	0.5	587.18
3/27/2024	20:37:37	19.51	0.15	36.05	1.64	0.5	586.59
3/27/2024	20:38:37	19.53	0.16	35.68	1.65	0.5	584.66
3/27/2024	20:39:37	19.54	0.16	34.88	4.81	0.46	546.69
3/27/2024	20:40:37	19.54	0.16	34.63	2.79	0.49	483.91
3/27/2024	20:41:37	19.55	0.16	33.89	1.49	0.51	560.39
3/27/2024	20:42:37	19.55	0.16	33.54	1.49	0.51	568.62
3/27/2024	20:43:37	19.55	0.16	33.75	1.49	0.51	573.03
3/27/2024	20:44:37	19.55	0.16	34.05	1.48	0.52	577.68
3/27/2024	20:45:37	19.55	0.16	34.33	1.48	0.52	579.47
3/27/2024	20:46:37	19.55	0.16	34.29	1.48	0.52	577.88
3/27/2024	20:47:37	19.55	0.16	34.07	1.48	0.52	571.8
3/27/2024	20:48:37	19.56	0.16	33.66	1.48	0.52	562.89
3/27/2024	20:49:37	19.56	0.16	33.25	1.47	0.53	558.32
3/27/2024	20:50:37	19.56	0.16	33.08	2.83	0.51	556.28
3/27/2024	20:51:37	19.55	0.16	33.5	4.49	0.48	489.62
3/27/2024	20:52:37	19.55	0.16	33.58	1.47	0.53	505.59
3/27/2024	20:53:37	19.55	0.16	33.54	1.43	0.53	557.35
3/27/2024	20:54:37	19.55	0.16	33.32	1.43	0.54	552.46
3/27/2024	20:55:37	19.55	0.16	32.74	1.43	0.53	543.87
3/27/2024	20:56:37	19.55	0.16	32.15	1.43	0.53	537.31
3/27/2024	20:57:37	19.55	0.16	31.92	1.42	0.53	536.65
3/27/2024	20:58:37	19.56	0.16	32.03	1.42	0.53	540.42
3/27/2024	20:59:37	19.55	0.16	32.27	1.42	0.54	544.87
3/27/2024	21:00:37	19.55	0.16	32.46	1.41	0.54	547.6
3/27/2024	21:01:37	19.55	0.16	32.52	1.41	0.54	547.23
3/27/2024	21:02:37	19.56	0.16	32.36	1.41	0.54	540.94
3/27/2024	21:03:37	19.56	0.16	32.09	1.41	0.54	534.68
3/27/2024	21:04:37	19.55	0.16	31.93	1.41	0.54	532.75
3/27/2024	21:05:37	19.55	0.16	31.86	5.58	0.48	524.92
3/27/2024	21:06:37	19.53	0.16	32.65	7.71	0.44	357.24
3/27/2024	21:07:37	19.54	0.16	32.49	1.48	0.53	430.1
3/27/2024	21:08:37	19.55	0.16	32.18	1.44	0.53	533.07
3/27/2024	21:09:37	19.55	0.16	31.89	1.44	0.53	527.57
3/27/2024	21:10:37	19.55	0.16	31.36	1.44	0.53	518.99



3/27/2024	21:11:37	19.55	0.16	30.79	1.44	0.52	514.52
3/27/2024	21:12:37	19.56	0.16	30.72	1.44	0.52	515.64
3/27/2024	21:13:37	19.55	0.16	30.9	1.43	0.52	518.15
3/27/2024	21:14:37	19.56	0.16	31.16	1.43	0.52	519.7
3/27/2024	21:15:37	19.56	0.16	31.12	1.44	0.51	519.44
3/27/2024	21:16:37	19.55	0.16	31.07	1.44	0.51	517.1
3/27/2024	21:17:37	19.56	0.16	30.77	1.44	0.51	511.79
3/27/2024	21:18:37	19.56	0.16	30.33	1.44	0.51	508.15
3/27/2024	21:19:37	19.56	0.16	30.21	1.44	0.51	509.05
3/27/2024	21:20:37	19.56	0.16	30.35	1.43	0.5	513.33
3/27/2024	21:21:37	19.54	0.16	30.87	2.9	0.48	516.23
3/27/2024	21:22:37	19.52	0.16	31.46	6.43	0.42	401.85
3/27/2024	21:23:37	19.54	0.16	30.88	1.88	0.49	448.7
3/27/2024	21:24:37	19.55	0.16	30.45	1.87	0.49	495.66
3/27/2024	21:25:37	19.55	0.16	30.02	1.89	0.49	489.31
3/27/2024	21:26:37	19.55	0.16	29.67	1.88	0.49	486.68
3/27/2024	21:27:37	19.55	0.16	29.73	1.89	0.48	488.17
3/27/2024	21:28:37	19.55	0.16	29.91	1.89	0.48	490.37
3/27/2024	21:29:37	19.55	0.16	29.95	1.88	0.48	491.69
3/27/2024	21:30:37	19.56	0.16	29.93	1.89	0.48	490.69
3/27/2024	21:31:37	19.55	0.16	29.74	1.88	0.48	486.17
3/27/2024	21:32:37	19.56	0.16	29.33	1.88	0.48	480.1
3/27/2024	21:33:37	19.56	0.16	29.08	1.89	0.48	477.07
3/27/2024	21:34:37	19.56	0.16	28.93	3.64	0.46	477.85
3/27/2024	21:35:37	19.55	0.16	29.32	1.86	0.48	436.97
3/27/2024	21:36:37	19.55	0.16	29.51	1.4	0.48	496.95
3/27/2024	21:37:37	19.55	0.16	29.71	1.4	0.48	501.05
3/27/2024	21:38:37	19.56	0.16	29.45	1.4	0.48	497.95
3/27/2024	21:39:37	19.56	0.16	29.25	1.4	0.48	492.08
3/27/2024	21:40:37	19.57	0.16	28.81	1.4	0.48	487.08
3/27/2024	21:41:37	19.57	0.16	28.53	1.4	0.47	486.63
3/27/2024	21:42:37	19.57	0.16	28.69	1.4	0.47	489.27
3/27/2024	21:43:37	19.57	0.16	28.88	1.39	0.48	491.82
3/27/2024	21:44:37	19.57	0.16	29.12	1.39	0.48	492.82
3/27/2024	21:45:37	19.56	0.16	29	1.4	0.47	490.34
3/27/2024	21:46:37	19.56	0.16	28.87	1.4	0.47	485.12
3/27/2024	21:47:37	19.56	0.16	28.64	1.4	0.47	478.32
3/27/2024	21:48:37	19.57	0.16	28.25	1.39	0.47	476.55
3/27/2024	21:49:37	19.56	0.16	28.29	6.58	0.41	426.99
3/27/2024	21:50:37	19.54	0.16	28.97	5.37	0.42	331.86
3/27/2024	21:51:37	19.55	0.16	28.78	1.65	0.46	454.1
3/27/2024	21:52:37	19.55	0.16	29.03	1.65	0.46	479.7
3/27/2024	21:53:37	19.56	0.16	28.61	1.66	0.46	476.15
3/27/2024	21:54:37	19.56	0.16	28.41	1.65	0.47	469.77
3/27/2024	21:55:37	19.56	0.16	28.07	1.65	0.47	466.45
3/27/2024	21:56:37	19.56	0.16	28.16	1.65	0.47	468.75
3/27/2024	21:57:37	19.55	0.16	28.29	1.65	0.47	472.18
3/27/2024	21:58:37	19.55	0.16	28.4	1.65	0.47	473.5
3/27/2024	21:59:37	19.55	0.16	28.37	1.65	0.48	473.24
3/27/2024	22:00:37	19.55	0.16	28.19	1.65	0.47	468.95
3/27/2024	22:01:37	19.55	0.16	27.8	1.66	0.47	461.58
3/27/2024	22:02:37	19.56	0.16	27.31	1.66	0.46	455.05
3/27/2024	22:03:37	19.56	0.16	27.13	1.66	0.47	453.68
3/27/2024	22:04:37	19.56	0.16	27.12	1.65	0.47	456.67
3/27/2024	22:05:37	19.54	0.16	27.73	8.66	0.38	397.97
3/27/2024	22:06:37	19.52	0.16	28.37	7.33	0.39	257.91
3/27/2024	22:07:37	19.57	0.16	27.59	1.43	0.46	419.36
3/27/2024	22:08:37	19.56	0.16	27.62	1.43	0.47	465.22
3/27/2024	22:09:37	19.56	0.16	27.33	1.43	0.47	458.73
3/27/2024	22:10:37	19.56	0.16	26.99	8.3	8.08	392.85
3/27/2024	22:11:37	18.07	0.21	29.25	11.82	12.05	52.5
3/27/2024	22:12:37	5.43	0.3	37.11	11.82	12.06	2.7
3/27/2024	22:13:37	1.3	0.13	41.69	11.82	12.07	2.1
3/27/2024	22:14:37	0.68	0.1	42.58	11.82	12.07	2.12
3/27/2024	22:15:37	0.55	0.1	42.63	4.38	4.15	72.58
3/27/2024	22:16:37	0.51	0.1	42.75	-0.03	0.22	756.7
3/27/2024	22:17:37	0.5	0.1	42.66	-0.04	0.2	917.99
3/27/2024	22:18:37	9.54	0.35	39.66	-0.04	0.2	918.65
3/27/2024	22:19:37	12.64	7.92	16.62	0.41	0.27	913.55
3/27/2024	22:20:37	12.17	11.07	0.69	10.54	0.37	573.14
3/27/2024	22:21:37	12.11	11.79	-1.67	4.63	0.42	235.05
3/27/2024	22:22:37	12.11	11.92	-2.2	2.31	0.45	418.76

BIAS/DRIFT CALS

3/27/2024	22:23:37	12.3	11.68	-2.21	2.31	0.45	427.72
3/27/2024	22:24:37	17.1	4.07	10.01	2.32	0.45	421.91
3/27/2024	22:25:37	19.02	1.06	21.72	2.31	0.45	421.26
3/27/2024	22:26:37	19.43	0.37	24.55	2.31	0.45	424.97
3/27/2024	22:27:37	19.51	0.23	25.73	2.3	0.45	429.36
3/27/2024	22:28:37	19.53	0.2	26.35	2.3	0.45	431.73
3/27/2024	22:29:37	19.53	0.19	26.52	2.3	0.45	432.2
3/27/2024	22:30:37	19.54	0.19	26.46	2.31	0.45	428.13
3/27/2024	22:31:37	19.54	0.18	26.11	2.31	0.45	421.68
3/27/2024	22:32:37	19.55	0.18	25.72	2.31	0.45	416.68
3/27/2024	22:33:37	19.55	0.18	25.54	2.31	0.45	417.39
3/27/2024	22:34:37	19.55	0.18	25.67	2.31	0.44	420.7
3/27/2024	22:35:37	19.55	0.17	25.83	2.31	0.43	422.83
3/27/2024	22:36:37	19.56	0.17	25.87	2.31	0.42	422.67
3/27/2024	22:37:37	19.56	0.17	25.99	2.31	0.43	419.36
3/27/2024	22:38:37	19.56	0.17	25.63	2.31	0.43	412.92
3/27/2024	22:39:37	19.56	0.18	25.39	2.31	0.43	407.57
3/27/2024	22:40:37	19.56	0.18	24.89	2.31	0.42	407.88
3/27/2024	22:41:37	19.56	0.17	25.13	2.31	0.42	411.62
3/27/2024	22:42:37	19.56	0.17	25.25	2.31	0.42	415.57
3/27/2024	22:43:37	19.56	0.18	25.63	2.31	0.42	417.56
3/27/2024	22:44:37	19.56	0.17	25.34	2.31	0.41	417.2
3/27/2024	22:45:37	19.56	0.18	25.35	2.31	0.41	413.66
3/27/2024	22:46:37	19.56	0.17	25.01	2.31	0.4	407.75
3/27/2024	22:47:37	19.56	0.17	24.86	2.31	0.4	404.59
3/27/2024	22:48:37	19.56	0.17	24.68	2.31	0.4	406.52
3/27/2024	22:49:37	19.55	0.17	24.89	2.3	0.4	410.31
3/27/2024	22:50:37	19.56	0.17	25.05	2.3	0.4	412.26
3/27/2024	22:51:37	19.57	0.17	25.11	2.3	0.4	411.89
3/27/2024	22:52:37	19.57	0.17	24.92	2.31	0.4	408.18
3/27/2024	22:53:37	19.57	0.17	24.58	2.31	0.4	400.84
3/27/2024	22:54:37	19.57	0.17	24.13	2.32	0.39	394.81
3/27/2024	22:55:37	19.56	0.17	23.91	2.32	0.38	393.2
3/27/2024	22:56:37	19.56	0.17	23.84	2.31	0.38	395.94
3/27/2024	22:57:37	19.55	0.17	23.95	2.31	0.37	399.26
3/27/2024	22:58:37	19.56	0.17	24.2	2.31	0.38	401.07
3/27/2024	22:59:37	19.55	0.17	24.2	2.31	0.38	399.73
3/27/2024	23:00:37	19.56	0.17	24.1	2.31	0.37	396.07
3/27/2024	23:01:37	19.56	0.17	23.85	2.31	0.37	390.8
3/27/2024	23:02:37	19.56	0.17	23.53	2.31	0.37	389.73
3/27/2024	23:03:37	19.56	0.17	23.63	2.31	0.37	393.17
3/27/2024	23:04:37	19.57	0.17	23.72	2.31	0.36	397.88
3/27/2024	23:05:37	19.56	0.17	24.12	2.29	0.36	401.04
3/27/2024	23:06:37	19.54	0.17	24.52	6.5	0.31	377.98
3/27/2024	23:07:37	19.55	0.17	24.28	13.24	0.25	252.46
3/27/2024	23:08:37	19.55	0.17	23.89	15.51	0.23	128.68
3/27/2024	23:09:37	19.55	0.17	23.36	15.51	0.23	108.21
3/27/2024	23:10:37	19.55	0.17	23.14	15.51	0.23	108.17
3/27/2024	23:11:37	19.55	0.17	23.21	15.5	0.23	109.49
3/27/2024	23:12:37	19.55	0.17	23.36	15.51	0.23	110.31
3/27/2024	23:13:37	19.54	0.17	23.48	15.52	0.22	110.09
3/27/2024	23:14:37	19.54	0.18	23.44	15.52	0.23	109.63
3/27/2024	23:15:37	19.54	0.18	23.25	15.52	0.23	108.76
3/27/2024	23:16:37	19.54	0.18	22.88	15.53	0.22	107.06
3/27/2024	23:17:37	19.54	0.17	22.66	15.54	0.21	106.82
3/27/2024	23:18:37	19.55	0.17	22.85	15.13	0.22	108.35
3/27/2024	23:19:37	19.41	0.18	25.87	11.26	0.25	137.64
3/27/2024	23:20:37	18.71	0.18	41.42	10.55	0.26	229.77
3/27/2024	23:21:37	18.25	0.19	51.1	4.33	0.31	218.15
3/27/2024	23:22:37	18.03	0.19	49.1	0.88	0.34	300.79
3/27/2024	23:23:37	17.73	0.19	39.98	0.79	0.34	224.31
3/27/2024	23:24:37	17.58	0.19	31.71	0.75	0.34	183.71
3/27/2024	23:25:37	17.54	0.2	27.54	0.75	0.33	168.58
3/27/2024	23:26:37	17.6	0.19	25.13	0.75	0.32	163.82
3/27/2024	23:27:37	17.68	0.19	24.28	0.78	0.32	165.75
3/27/2024	23:28:37	17.7	0.19	24.41	0.8	0.32	168.72
3/27/2024	23:29:37	17.69	0.19	24.89	0.82	0.32	171.94
3/27/2024	23:30:37	17.69	0.19	25.41	0.84	0.32	174.81
3/27/2024	23:31:37	17.69	0.19	25.79	0.86	0.32	178.4
3/27/2024	23:32:37	17.7	0.19	26.19	0.88	0.31	180.63
3/27/2024	23:33:37	17.7	0.19	26.59	0.89	0.3	183.71
3/27/2024	23:34:37	17.61	0.19	27.79	0.9	0.29	185.94

PORT OPEN

3/27/2024	23:35:37	17.74	0.19	26.99	2.06	0.27	186.97	
3/27/2024	23:36:37	18.01	0.18	24.38	5.35	0.25	154.69	
3/27/2024	23:37:37	18.13	0.18	23.09	1.11	0.27	165.97	
3/27/2024	23:38:37	18.12	0.18	23.3	1.13	0.26	188.51	
3/27/2024	23:39:37	18.12	0.18	23.97	1.16	0.25	195.34	
3/27/2024	23:40:37	18.12	0.18	24.71	1.17	0.24	200.04	
3/27/2024	23:41:37	18.12	0.18	25.25	1.17	0.24	202.24	
3/27/2024	23:42:37	18.12	0.18	25.37	1.18	0.24	202.71	
3/27/2024	23:43:37	18.13	0.18	25.32	1.18	0.24	202.18	
3/27/2024	23:44:37	18.13	0.18	25.17	1.19	0.24	201.02	
3/27/2024	23:45:37	18.13	0.18	25.02	1.19	0.23	199.67	
3/27/2024	23:46:37	18.13	0.18	24.9	1.19	0.23	199.01	
3/27/2024	23:47:37	18.14	0.18	24.68	1.19	0.23	197.94	
3/27/2024	23:48:37	18.14	0.18	24.56	1.19	0.23	196.68	
3/27/2024	23:49:37	18.14	0.18	24.3	1.64	0.22	194.61	
3/27/2024	23:50:37	18.14	0.18	24	5.14	0.19	181.77	PORT OPEN
3/27/2024	23:51:37	18.17	0.18	23.46	2.58	0.2	148.85	
3/27/2024	23:52:37	18.14	0.18	23.51	1.07	0.22	187.75	
3/27/2024	23:53:37	18.12	0.18	23.48	1.08	0.22	189.6	
3/27/2024	23:54:37	18.14	0.18	23.04	1.08	0.22	188.23	
3/27/2024	23:55:37	18.14	0.18	22.92	1.07	0.2	187.26	
3/27/2024	23:56:37	18.14	0.17	22.62	1.07	0.2	185.64	
3/27/2024	23:57:37	18.14	0.17	22.54	1.07	0.21	182.98	
3/27/2024	23:58:37	18.14	0.17	22.25	1.07	0.21	179.83	
3/27/2024	23:59:37	18.14	0.18	21.84	1.07	0.21	176.86	
3/28/2024	0:00:37	18.15	0.18	21.45	1.09	0.21	174.84	
3/28/2024	0:01:37	18.16	0.18	21.1	1.11	0.21	174.63	
3/28/2024	0:02:37	18.16	0.18	21.03	1.12	0.2	174.86	
3/28/2024	0:03:37	18.16	0.17	21.12	1.11	0.2	175.74	
3/28/2024	0:04:37	18.16	0.17	21.18	1.09	0.2	175.72	
3/28/2024	0:05:37	18	0.18	22.65	1.09	0.2	175.32	
3/28/2024	0:06:37	17.98	0.18	22.65	1.08	0.2	174.38	
3/28/2024	0:07:37	17.97	0.18	22.78	1.78	0.2	175.08	
3/28/2024	0:08:37	17.97	0.18	22.8	9.69	0.16	149.08	
3/28/2024	0:09:37	18.05	0.18	22.2	6.88	0.16	92.81	PORT OPEN
3/28/2024	0:10:37	18.08	0.18	22.1	1.17	0.18	158.41	
3/28/2024	0:11:37	18	0.18	23.04	1.19	0.18	180.96	
3/28/2024	0:12:37	17.99	0.18	23.42	1.22	0.18	182.6	
3/28/2024	0:13:37	17.98	0.18	23.69	1.25	0.19	184.18	
3/28/2024	0:14:37	18	0.18	23.78	1.28	0.18	184.97	
3/28/2024	0:15:37	17.99	0.18	24.01	1.3	0.18	186.16	
3/28/2024	0:16:37	18	0.17	24.33	1.33	0.17	187.66	
3/28/2024	0:17:37	18.01	0.17	24.38	1.36	0.17	188.25	
3/28/2024	0:18:37	18.02	0.17	24.26	1.39	0.18	188.8	
3/28/2024	0:19:37	18.03	0.17	24.34	1.42	0.18	189.39	
3/28/2024	0:20:37	18.11	0.18	23.58	1.45	0.17	190.05	
3/28/2024	0:21:37	18.22	0.18	22.55	1.46	0.17	190.04	
3/28/2024	0:22:37	18.23	0.18	22.27	1.48	0.17	189.57	
3/28/2024	0:23:37	18.23	0.18	22.19	1.49	0.17	188.64	
3/28/2024	0:24:37	18.24	0.18	22.02	1.5	0.17	187.81	
3/28/2024	0:25:37	18.24	0.18	21.8	1.52	0.18	187.82	
3/28/2024	0:26:37	18.25	0.18	21.73	1.53	0.18	187.51	
3/28/2024	0:27:37	18.51	0.18	19.16	1.55	0.18	186.23	
3/28/2024	0:28:37	18.63	0.18	17.81	1.56	0.18	184.94	
3/28/2024	0:29:37	18.67	0.18	17.43	2.23	0.18	182.93	
3/28/2024	0:30:37	18.74	0.18	16.64	2.49	0.18	169.88	
3/28/2024	0:31:37	18.77	0.18	16.1	1.6	0.18	178	
3/28/2024	0:32:37	18.77	0.18	15.94	1.61	0.19	178.46	
3/28/2024	0:33:37	18.76	0.18	16.02	1.61	0.19	177.1	PORT OPEN
3/28/2024	0:34:37	18.76	0.18	15.68	1.62	0.19	175.71	
3/28/2024	0:35:37	18.76	0.18	15.52	8.15	0.16	161.69	
3/28/2024	0:36:37	18.77	0.18	15.33	9.13	0.15	96.48	
3/28/2024	0:37:37	18.78	0.18	14.99	5.86	0.17	123.66	
3/28/2024	0:38:37	18.76	0.18	14.92	1.79	0.18	141.33	
3/28/2024	0:39:37	18.7	0.18	15.36	1.73	0.18	165.24	
3/28/2024	0:40:37	18.68	0.18	15.26	1.74	0.19	163.14	
3/28/2024	0:41:37	18.76	0.18	14.41	1.74	0.19	161.49	
3/28/2024	0:42:37	18.79	0.18	13.93	1.74	0.19	160.17	
3/28/2024	0:43:37	18.79	0.18	13.81	1.74	0.19	158.91	
3/28/2024	0:44:37	18.8	0.18	13.56	1.74	0.18	156.54	
3/28/2024	0:45:37	18.81	0.18	13.36	1.74	0.18	154.71	
3/28/2024	0:46:37	18.81	0.18	13.23	1.74	0.19	152.34	



3/28/2024	0:47:37	18.81	0.18	13.02	1.74	0.19	149.99
3/28/2024	0:48:37	18.81	0.18	12.83	1.74	0.19	147.49
3/28/2024	0:49:37	18.81	0.18	12.48	1.74	0.19	145.79
3/28/2024	0:50:37	18.81	0.18	12.35	1.74	0.19	143.55
3/28/2024	0:51:37	18.81	0.18	12.2	1.75	0.18	142.15
3/28/2024	0:52:37	18.81	0.17	11.91	1.75	0.18	139.96
3/28/2024	0:53:37	18.81	0.17	11.71	1.75	0.18	138.21
3/28/2024	0:54:37	18.81	0.17	11.73	1.75	0.18	135.88
3/28/2024	0:55:37	18.82	0.17	11.44	1.75	0.18	134.34
3/28/2024	0:56:37	18.82	0.17	11.26	1.76	0.18	132.74
3/28/2024	0:57:37	18.82	0.17	11.06	1.76	0.18	130.78
3/28/2024	0:58:37	18.83	0.18	10.91	1.76	0.18	129.34
3/28/2024	0:59:37	18.82	0.18	10.63	1.76	0.18	127.34
3/28/2024	1:00:37	18.82	0.17	10.61	7.13	0.16	113.98
3/28/2024	1:01:37	18.82	0.18	10.41	10.67	0.15	81.61
3/28/2024	1:02:37	18.79	0.18	10.36	10.91	0.15	65.69
3/28/2024	1:03:37	18.8	0.18	10.27	11.03	0.15	63.95
3/28/2024	1:04:37	18.82	0.18	9.87	11.03	0.16	62.6
3/28/2024	1:05:37	18.83	0.18	9.66	11.05	0.15	62.25
3/28/2024	1:06:37	18.84	0.18	9.49	11.03	0.15	61.1
3/28/2024	1:07:37	18.83	0.18	9.37	11.08	0.15	60.23
3/28/2024	1:08:37	18.83	0.18	9.33	11.09	0.15	59.68
3/28/2024	1:09:37	18.83	0.18	9.21	11.09	0.15	58.52
3/28/2024	1:10:37	18.83	0.18	8.98	11.08	0.15	57.51
3/28/2024	1:11:37	18.83	0.18	8.83	11.08	0.15	57.19
3/28/2024	1:12:37	18.82	0.18	8.75	11.05	0.15	56.28
3/28/2024	1:13:37	18.82	0.18	8.56	11.05	0.15	55.92
3/28/2024	1:14:37	18.84	0.18	8.39	11.04	0.14	54.95
3/28/2024	1:15:37	18.83	0.17	8.21	11.08	0.14	54.16
3/28/2024	1:16:37	18.83	0.17	7.97	11.07	0.14	53.47
3/28/2024	1:17:37	18.83	0.17	7.93	11.08	0.14	52.65
3/28/2024	1:18:37	18.83	0.17	7.82	11.08	0.14	52.11
3/28/2024	1:19:37	18.83	0.17	7.63	11.08	0.14	51.02
3/28/2024	1:20:37	18.84	0.18	7.59	10.97	0.14	50.64
3/28/2024	1:21:37	18.8	0.17	7.39	10.18	0.14	50.74
3/28/2024	1:22:37	18.81	0.17	7.31	2.95	0.16	65.13
3/28/2024	1:23:37	18.81	0.17	7.23	1.72	0.16	90.11
3/28/2024	1:24:37	18.8	0.17	7.15	1.72	0.16	90.26
3/28/2024	1:25:37	18.8	0.17	7.09	1.72	0.16	89.01
3/28/2024	1:26:37	18.81	0.17	6.81	1.72	0.16	87.71
3/28/2024	1:27:37	18.81	0.17	6.79	1.72	0.17	86.42
3/28/2024	1:28:37	18.82	0.17	6.72	1.72	0.16	85.32
3/28/2024	1:29:37	18.82	0.17	6.57	1.72	0.16	84.01
3/28/2024	1:30:37	18.82	0.17	6.54	1.72	0.16	82.71
3/28/2024	1:31:37	18.82	0.17	6.46	1.72	0.16	81.64
3/28/2024	1:32:37	18.81	0.17	6.31	1.75	0.16	80.84
3/28/2024	1:33:37	18.81	0.17	6.21	4.67	0.16	72.22
3/28/2024	1:34:37	18.83	0.17	5.95	1.87	0.16	73.29
3/28/2024	1:35:37	18.8	0.17	5.95	1.86	0.16	76.13
3/28/2024	1:36:37	18.78	0.17	5.94	1.86	0.16	75.58
3/28/2024	1:37:37	18.86	0.17	5.54	1.85	0.16	74.49
3/28/2024	1:38:37	18.89	0.17	5.36	1.85	0.16	73.16
3/28/2024	1:39:37	18.9	0.17	5.28	1.86	0.16	72.07
3/28/2024	1:40:37	18.9	0.17	5.23	1.86	0.16	71.3
3/28/2024	1:41:37	18.9	0.17	5.08	1.86	0.16	70.37
3/28/2024	1:42:37	18.89	0.17	4.97	1.86	0.16	69.28
3/28/2024	1:43:37	18.89	0.17	4.74	1.86	0.16	68.19
3/28/2024	1:44:37	18.88	0.17	4.79	1.86	0.16	67.2
3/28/2024	1:45:37	18.89	0.17	4.65	1.86	0.16	66.49
3/28/2024	1:46:37	18.9	0.17	4.59	1.86	0.17	65.38
3/28/2024	1:47:37	18.9	0.17	4.51	1.86	0.17	64.31
3/28/2024	1:48:37	18.9	0.17	4.27	1.86	0.17	63.57
3/28/2024	1:49:37	18.91	0.17	4.25	1.86	0.17	62.78
3/28/2024	1:50:37	18.9	0.17	4.18	5.12	0.17	58.93
3/28/2024	1:51:37	18.89	0.17	4.15	1.96	0.18	54.37
3/28/2024	1:52:37	18.8	0.17	4.26	1.72	0.18	60.22
3/28/2024	1:53:37	18.78	0.17	4.25	1.72	0.18	59.12
3/28/2024	1:54:37	18.79	0.17	4.14	1.72	0.18	58.59
3/28/2024	1:55:37	18.79	0.17	4.02	1.72	0.17	57.81
3/28/2024	1:56:37	18.79	0.17	3.95	1.72	0.17	57.11
3/28/2024	1:57:37	18.79	0.17	3.95	1.72	0.17	56.4
3/28/2024	1:58:37	18.79	0.17	3.83	1.72	0.17	55.33

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3/28/2024	1:59:37	18.79	0.17	3.73	1.73	0.17	54.74
3/28/2024	2:00:37	18.8	0.17	3.7	1.72	0.17	53.75
3/28/2024	2:01:37	18.79	0.17	3.61	1.72	0.17	53.16
3/28/2024	2:02:37	18.79	0.17	3.6	1.73	0.16	52.38
3/28/2024	2:03:37	18.79	0.17	3.44	1.73	0.16	51.56
3/28/2024	2:04:37	18.8	0.16	3.45	1.73	0.16	51.07
3/28/2024	2:05:37	18.79	0.16	3.32	1.73	0.15	49.97
3/28/2024	2:06:37	18.77	0.16	3.43	5.34	0.15	47.74
3/28/2024	2:07:37	18.79	0.17	3.24	2.06	0.15	41.58
3/28/2024	2:08:37	18.8	0.17	3.17	1.75	0.15	47.8
3/28/2024	2:09:37	18.8	0.17	3.17	1.75	0.15	47.4
3/28/2024	2:10:37	18.79	0.17	2.92	1.74	0.14	46.73
3/28/2024	2:11:37	18.79	0.17	2.91	1.74	0.14	46.46
3/28/2024	2:12:37	18.79	0.17	2.83	1.74	0.14	45.49
3/28/2024	2:13:37	18.79	0.17	2.78	1.74	0.14	45.43
3/28/2024	2:14:37	18.8	0.17	2.71	1.75	0.14	44.41
3/28/2024	2:15:37	18.8	0.17	2.65	1.75	0.14	43.88
3/28/2024	2:16:37	18.8	0.17	2.61	1.75	0.14	43.11
3/28/2024	2:17:37	18.8	0.17	2.6	1.75	0.14	42.56
3/28/2024	2:18:37	18.8	0.17	2.43	1.75	0.14	41.97
3/28/2024	2:19:37	18.79	0.17	2.44	2.26	0.13	41.5
3/28/2024	2:20:37	18.8	0.17	2.42	8.3	0.13	37.03
3/28/2024	2:21:37	18.8	0.17	2.33	11.03	0.12	24.9
3/28/2024	2:22:37	18.78	0.17	2.27	10.86	0.12	23.17
3/28/2024	2:23:37	18.74	0.17	2.35	10.97	0.12	22.67
3/28/2024	2:24:37	18.75	0.17	2.26	10.74	0.12	22.78
3/28/2024	2:25:37	18.67	0.17	2.25	10.75	0.12	22.56
3/28/2024	2:26:37	18.66	0.17	2.25	11.6	0.12	21.58
3/28/2024	2:27:37	18.48	0.17	2.43	12.06	0.12	20.24
3/28/2024	2:28:37	18.31	0.17	2.67	12.05	0.11	19.51
3/28/2024	2:29:37	18.28	0.17	2.83	12.05	0.11	19.31
3/28/2024	2:30:37	18.27	0.17	2.66	12.03	0.11	19.28
3/28/2024	2:31:37	18.27	0.17	2.58	12.02	0.12	19.28
3/28/2024	2:32:37	18.24	0.2	2.6	2.47	0.14	196.11
3/28/2024	2:33:37	14.58	7.17	-0.22	-0.03	0.08	873.08
3/28/2024	2:34:37	12.55	11.12	-3.23	-0.04	0.07	922.07
3/28/2024	2:35:37	12.21	11.9	-3.58	-0.03	0.07	921.58
3/28/2024	2:36:37	12.15	12.04	-3.75	0.55	0.08	916.89
3/28/2024	2:37:37	12.14	12.06	-3.84	5.12	3.19	397.4
3/28/2024	2:38:37	6.19	5.63	10.1	10.54	10.27	45.4
3/28/2024	2:39:37	1.37	1.18	34.01	10.56	10.3	7.51
3/28/2024	2:40:37	0.72	0.36	39.22	10.61	10.36	6.94
3/28/2024	2:41:37	0.6	0.19	40.49	11.36	11.29	5.71
3/28/2024	2:42:37	0.57	0.15	40.89	11.49	11.46	3.89
3/28/2024	2:43:37	0.56	0.14	41.11	11.48	11.46	3.64
3/28/2024	2:44:37	0.55	0.13	41.18	6.36	5.18	5.28
3/28/2024	2:45:37	0.55	0.13	41.24	1.89	0.14	24.41
3/28/2024	2:46:37	6.4	0.14	34.1	1.89	0.12	28.69
3/28/2024	2:47:37	16.16	0.17	8.92	1.89	0.12	28.37
3/28/2024	2:48:37	17.68	0.17	2.94	1.89	0.11	28.28
3/28/2024	2:49:37	18.01	0.17	2.11	1.89	0.11	27.64
3/28/2024	2:50:37	18.07	0.17	1.9	3.7	0.11	27.07
3/28/2024	2:51:37	18.1	0.17	1.74	5.27	0.11	22.45
3/28/2024	2:52:37	18.08	0.18	1.72	1.86	0.11	25.79
3/28/2024	2:53:37	18	0.18	1.74	1.86	0.1	26.38
3/28/2024	2:54:37	18.09	0.17	1.57	1.86	0.1	26.03
3/28/2024	2:55:37	18.11	0.17	1.31	1.86	0.1	25.69
3/28/2024	2:56:37	18.11	0.17	1.38	1.86	0.09	25.73
3/28/2024	2:57:37	18.11	0.17	1.33	1.86	0.09	25.51
3/28/2024	2:58:37	18.12	0.17	1.2	1.87	0.09	25.11
3/28/2024	2:59:37	18.11	0.17	1.15	1.87	0.08	24.81
3/28/2024	3:00:37	18.12	0.17	1.19	1.87	0.08	24.47
3/28/2024	3:01:37	18.12	0.17	1.21	1.87	0.08	24.47
3/28/2024	3:02:37	18.13	0.17	1.26	1.87	0.08	23.84
3/28/2024	3:03:37	18.12	0.17	1.3	1.87	0.08	23.51
3/28/2024	3:04:37	18.13	0.17	1.4	1.87	0.08	23.14
3/28/2024	3:05:37	18.13	0.17	1.17	1.87	0.08	23.11
3/28/2024	3:06:37	18.12	0.17	1.12	5.86	0.09	20.91
3/28/2024	3:07:37	18.29	0.17	0.9	3.45	0.08	19.05
3/28/2024	3:08:37	18.33	0.17	0.66	1.88	0.08	21.68
3/28/2024	3:09:37	18.32	0.17	0.63	1.88	0.07	21.81
3/28/2024	3:10:37	18.34	0.17	0.58	1.88	0.07	21.81

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3/28/2024	3:11:37	18.35	0.17	0.52	1.88	0.07	21.32
3/28/2024	3:12:37	18.36	0.17	0.44	1.89	0.07	20.77
3/28/2024	3:13:37	18.37	0.17	0.4	1.89	0.07	20.36
3/28/2024	3:14:37	18.38	0.17	0.27	1.88	0.08	20.37
3/28/2024	3:15:37	18.38	0.17	0.19	1.89	0.08	20.37
3/28/2024	3:16:37	18.39	0.17	0.11	1.89	0.07	20.37
3/28/2024	3:17:37	18.27	0.17	0.04	4.99	0.07	19.38
3/28/2024	3:18:37	18.16	0.17	0.24	2.42	0.07	17.49
3/28/2024	3:19:37	18.12	0.17	0.17	1.8	0.07	19.13
3/28/2024	3:20:37	18.09	0.17	0.14	1.8	0.07	19.1
3/28/2024	3:21:37	18.09	0.17	0.06	1.8	0.08	19.08
3/28/2024	3:22:37	18.1	0.17	0.01	1.8	0.08	19.11
3/28/2024	3:23:37	18.1	0.17	-0.07	1.8	0.08	18.44
3/28/2024	3:24:37	18.11	0.17	-0.1	1.8	0.08	18.18
3/28/2024	3:25:37	18.11	0.17	-0.16	1.81	0.08	17.8
3/28/2024	3:26:37	18.12	0.17	-0.18	1.81	0.08	17.82
3/28/2024	3:27:37	18.12	0.17	-0.37	1.81	0.08	17.77
3/28/2024	3:28:37	18.11	0.17	-0.32	1.81	0.08	17.79
3/28/2024	3:29:37	18.1	0.17	-0.27	1.81	0.08	17.79
3/28/2024	3:30:37	18.11	0.17	-0.17	1.81	0.08	17.15
3/28/2024	3:31:37	18.11	0.17	-0.3	1.81	0.09	16.85
3/28/2024	3:32:37	18.12	0.17	-0.38	5.96	0.09	16.48
3/28/2024	3:33:37	18.15	0.17	-0.44	5.22	0.1	13.76
3/28/2024	3:34:37	18.17	0.17	-0.39	1.82	0.09	15.64
3/28/2024	3:35:37	18.1	0.17	-0.45	1.81	0.08	16.57
3/28/2024	3:36:37	18.1	0.17	-0.42	1.81	0.09	16.55
3/28/2024	3:37:37	18.11	0.17	-0.41	1.81	0.09	16.21
3/28/2024	3:38:37	18.12	0.17	-0.51	1.81	0.1	15.96
3/28/2024	3:39:37	18.12	0.17	-0.55	1.81	0.1	15.86
3/28/2024	3:40:37	18.11	0.17	-0.44	1.81	0.1	15.87
3/28/2024	3:41:37	18.11	0.17	-0.37	1.81	0.1	15.54
3/28/2024	3:42:37	18.11	0.17	-0.55	1.81	0.1	15.52
3/28/2024	3:43:37	18.1	0.17	-0.6	1.81	0.1	15.52
3/28/2024	3:44:37	18.12	0.17	-0.56	1.81	0.1	15.49
3/28/2024	3:45:37	18.12	0.17	-0.57	1.82	0.11	15.09
3/28/2024	3:46:37	18.12	0.17	-0.59	1.82	0.11	14.85
3/28/2024	3:47:37	18.09	0.17	-0.5	2.5	0.11	14.8
3/28/2024	3:48:37	18.08	0.17	-0.58	2.78	0.11	14.27
3/28/2024	3:49:37	18.12	0.17	-0.58	1.82	0.11	14.24
3/28/2024	3:50:37	18.1	0.17	-0.59	1.82	0.11	14.25
3/28/2024	3:51:37	18.1	0.17	-0.54	1.82	0.11	14.26
3/28/2024	3:52:37	18.11	0.17	-0.65	1.82	0.11	14.26
3/28/2024	3:53:37	18.11	0.17	-0.69	1.82	0.11	14.25
3/28/2024	3:54:37	18.11	0.17	-0.73	1.82	0.11	14.26
3/28/2024	3:55:37	18.11	0.16	-0.78	1.82	0.11	13.6
3/28/2024	3:56:37	18.12	0.16	-0.71	1.82	0.11	13.35
3/28/2024	3:57:37	18.11	0.17	-0.7	1.82	0.12	13.27
3/28/2024	3:58:37	18.11	0.17	-0.7	1.82	0.12	12.93
3/28/2024	3:59:37	18.11	0.17	-0.73	1.82	0.11	12.92
3/28/2024	4:00:37	18.11	0.16	-0.7	1.82	0.11	12.91
3/28/2024	4:01:37	18.11	0.16	-0.6	1.82	0.11	12.95
3/28/2024	4:02:37	18.11	0.16	-0.67	1.82	0.11	12.96
3/28/2024	4:03:37	18.11	0.17	-0.67	1.83	0.12	12.92
3/28/2024	4:04:37	18.12	0.17	-0.75	1.83	0.12	12.93
3/28/2024	4:05:37	18.11	0.17	-0.63	1.83	0.12	12.94
3/28/2024	4:06:37	18.11	0.17	-0.72	1.83	0.11	12.96
3/28/2024	4:07:37	18.11	0.17	-0.73	1.83	0.11	12.31
3/28/2024	4:08:37	18.12	0.17	-0.78	1.83	0.12	12.13
3/28/2024	4:09:37	18.11	0.17	-0.74	1.83	0.12	12.01
3/28/2024	4:10:37	18.11	0.17	-0.77	4.83	0.12	11.86
3/28/2024	4:11:37	18.13	0.17	-0.82	3.12	0.12	10.76
3/28/2024	4:12:37	18.13	0.17	-0.9	4.55	0.12	11.04
3/28/2024	4:13:37	18.08	0.17	-0.81	2.27	0.12	11.71
3/28/2024	4:14:37	18.04	0.17	-0.81	2.29	0.13	11.69
3/28/2024	4:15:37	18.09	0.17	-0.81	2.29	0.13	11.71
3/28/2024	4:16:37	18.12	0.17	-0.84	2.29	0.13	11.22
3/28/2024	4:17:37	18.12	0.17	-0.84	2.29	0.13	10.97

PORT OPEN

PORT OPEN

PORT OPEN

AVERAGES

O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
19.04	0.19	23.19	1.75	0.45	288.37

END RUN 2

3/28/2024	4:18:37	18.11	0.17	-0.9	2.29	0.12	10.96
3/28/2024	4:19:37	18.09	0.17	-0.91	2.29	0.12	10.98
3/28/2024	4:20:37	18.1	0.17	-1.03	2.29	0.12	10.9
3/28/2024	4:21:37	16.99	1.16	-0.58	1.89	0.47	21.9
3/28/2024	4:22:37	13.03	9.25	-1.44	-0.03	0.12	608.3
3/28/2024	4:23:37	12.31	11.51	-3.66	-0.04	0.11	918.41
3/28/2024	4:24:37	12.15	12.01	-4.05	-0.04	0.1	920.55
3/28/2024	4:25:37	12.13	12.09	-4.17	-0.04	0.1	920.39
3/28/2024	4:26:37	11.94	11.96	-4.06	5.15	4.88	792.08
3/28/2024	4:27:37	4.43	4.25	16.13	11.54	11.57	105.86
3/28/2024	4:28:37	1.05	0.97	35.7	11.53	11.59	3.62
3/28/2024	4:29:37	0.63	0.31	39.54	11.52	11.58	3.42
3/28/2024	4:30:37	0.53	0.18	40.47	4.97	3.53	3.81
3/28/2024	4:31:37	0.51	0.15	40.62	1.94	0.13	8.61
3/28/2024	4:32:37	0.5	0.13	40.93	1.94	0.13	9.67
3/28/2024	4:33:37	0.49	0.13	40.85	1.94	0.13	10.07
3/28/2024	4:34:37	0.5	0.12	40.93	1.94	0.13	9.7
3/28/2024	4:35:37	10.28	0.15	26.62	1.94	0.13	9.69
3/28/2024	4:36:37	18.87	0.19	2.88	1.93	0.13	9.47
3/28/2024	4:37:37	20.17	0.21	-1.18	1.95	0.13	9.51
3/28/2024	4:38:37	20.08	0.22	-1.24	2.06	0.13	9.54
3/28/2024	4:39:37	20.01	0.22	-1.09	2.06	0.13	9.07
3/28/2024	4:40:37	19.87	0.23	-1.01	2.06	0.13	8.93
3/28/2024	4:41:37	20.07	0.23	-0.92	2.06	0.13	8.96
3/28/2024	4:42:37	19.92	0.23	-0.99	2.07	0.13	8.94
3/28/2024	4:43:37	20.01	0.23	-0.98	2.07	0.12	8.93
3/28/2024	4:44:37	20.23	0.23	-1.04	2.07	0.11	8.97
3/28/2024	4:45:37	20.25	0.23	-0.94	2.07	0.11	8.97
3/28/2024	4:46:37	19.82	0.23	-0.86	2.07	0.12	8.98
3/28/2024	4:47:37	19.79	0.23	-0.78	2.07	0.11	8.99
3/28/2024	4:48:37	19.86	0.23	-0.9	2.17	0.11	8.97
3/28/2024	4:49:37	19.95	0.23	-0.95	2.32	0.11	8.98
3/28/2024	4:50:37	20.31	0.23	-0.87	2.32	0.1	8.99
3/28/2024	4:51:37	20.35	0.23	-0.92	2.32	0.1	8.94

POST TEST  
BIAS/DRIFT CALS



Facility ID: PermaFix  
Source ID: VTD  
Date: 3/28/24-3/29/24

Run 3

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	2034
Zero Ref Cyl	0	0	0
Zero Avg	-0.01	-0.07	0.49
Zero Error%	0.0	-0.3	0.0
Mid Ref Cyl	12.06	12.01	920.7
Mid Avg	11.99	12.16	914.98
Mid Error%	-0.3	0.7	-0.3
High Ref Cyl	22.83	22.37	2034
High Avg	22.83	22.39	2030.44
High Error%	0.0	0.1	-0.2

Initial Bias Check

Zero Avg	-0.04	0	3.44
Zero Bias%	-0.13	0.31	0.15
Span Avg	12.26	12.03	922.98
Span Bias%	1.18	-0.58	0.39

Final Bias Check

Zero Avg	-0.17	-0.39	1.55
Zero Bias%	-0.70	-1.43	0.05
Zero Drift%	0.57	1.74	0.09
Span Avg	11.73	11.77	924.96
Span Bias%	-1.14	-1.74	0.49
Span Drift%	2.32	1.16	0.10

Ini Zero Avg	-0.04	0	3.44
Ini Span Avg	12.26	12.03	922.98
Run 3 Avg	1.61	0.15	328.6
Co	-0.105	-0.195	2.495
Cm	11.995	11.900	923.970
Cgas Run 3	1.71	0.34	325.8

Facility ID: PermaFix  
Source ID: VTD  
Date: 3/28/24-3/29/24

Run 3

Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	80.4
Zero Ref Cyl	0	0	0
Zero Avg	0	0	-0.1
Zero Error%	0.0	0.0	-0.1
Mid Ref Cyl	12.06	12.01	44.6
Mid Avg	12.02	12.08	44.81
Mid Error%	-0.2	0.3	0.3
High Ref Cyl	22.83	22.37	80.4
High Avg	22.84	22.38	80.33
High Error%	0.0	0.0	-0.1

Initial Bias Check

Zero Avg	0.54	0.18	-2.68
Zero Bias%	2.37	0.80	-3.21
Span Avg	12.11	12.16	41.96
Span Bias%	0.39	0.36	-3.54

Final Bias Check

Zero Avg	0.54	0.08	-2.6
Zero Bias%	2.37	0.36	-3.11
Zero Drift%	0.00	0.45	0.10
Span Avg	12.11	12.16	42.5
Span Bias%	0.39	0.36	-2.87
Span Drift%	0.00	0.00	0.67

Ini Zero Avg	0.54	0.18	-2.68
Ini Span Avg	12.11	12.16	41.96
Run 3 Avg	19.02	0.14	23.6
Co	0.540	0.130	-2.640
Cm	12.110	12.160	42.230
Cgas Run 3	19.26	0.01	26.1

DASYLab 2022 - 2022

Worksheet name: David Default

3/28/2024 7:01:19 AM

Block length : 1

Delta : 60 sec.

Number of channels : 12

Date	Time	O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
3/28/2024	7:00:19	20.48	0.22	-0.29	20.6	-0.16	6.13
3/28/2024	7:01:19	20.48	0.22	-0.22	20.6	-0.16	6.18
3/28/2024	7:02:19	20.49	0.21	-0.1	20.6	-0.16	6.34
3/28/2024	7:03:19	20.49	0.22	-0.14	20.6	-0.16	6.52
3/28/2024	7:04:19	20.49	0.22	-0.03	13.71	9.16	6.95
3/28/2024	7:05:19	20.48	0.23	-0.07	14.1	8.41	4.41
3/28/2024	7:06:19	18.48	2.51	0.39	5.05	0.27	148.37
3/28/2024	7:07:19	13.13	10.57	-1.45	-0.03	-0.02	853.69
3/28/2024	7:08:19	12.28	12.18	-2.45	-0.04	0	922.98
3/28/2024	7:09:19	12.11	12.16	-2.68	-0.04	-0.01	923.27
3/28/2024	7:10:19	12.78	11.09	-2.89	9.82	7.91	738.3
3/28/2024	7:11:19	6.32	2.61	14.52	12.25	11.37	65.2
3/28/2024	7:12:19	1.36	0.66	36.73	12.26	12.01	3.52
3/28/2024	7:13:19	0.74	0.32	40.75	12.26	12.02	3.52
3/28/2024	7:14:19	0.63	0.22	41.62	12.26	12.03	3.44
3/28/2024	7:15:19	0.59	0.2	41.86	18.67	2.58	3.56
3/28/2024	7:16:19	0.57	0.19	42.01	20.58	0.09	5.46
3/28/2024	7:17:19	0.56	0.18	41.95	20.58	0.09	5.71
3/28/2024	7:18:19	0.56	0.18	41.93	20.58	0.09	5.52
3/28/2024	7:19:19	0.55	0.18	41.97	20.58	0.09	5.76
3/28/2024	7:20:19	0.54	0.18	41.96	20.57	0.1	5.51
3/28/2024	7:21:19	0.54	0.18	41.94	20.57	0.1	5.5
3/28/2024	7:22:19	4.58	0.19	38.04	20.57	0.12	5.89
3/28/2024	7:23:19	17.07	0.22	10.36	20.58	0.12	5.97
3/28/2024	7:24:19	19.77	0.23	0.95	20.58	0.12	5.94
3/28/2024	7:25:19	20.31	0.23	-0.54	20.58	0.13	5.88
3/28/2024	7:26:19	20.44	0.23	-0.72	20.57	0.13	5.91
3/28/2024	7:27:19	20.48	0.23	-0.8	20.57	0.14	5.9
3/28/2024	7:28:19	20.49	0.24	-0.85	20.57	0.15	6.01
3/28/2024	7:29:19	20.5	0.24	-0.92	20.59	0.15	5.98
3/28/2024	7:30:19	20.54	0.23	-0.92	20.61	0.14	6.04
3/28/2024	7:31:19	20.63	0.2	-1.05	20.61	0.14	6.32
3/28/2024	7:32:19	20.67	0.18	-1.23	20.61	0.14	6.37
3/28/2024	7:33:19	20.68	0.18	-0.93	18.2	3.66	6.53
3/28/2024	7:34:19	20.69	0.17	-0.95	13.38	10.15	4.38
3/28/2024	7:35:19	20.7	0.17	-0.83	20.5	0.26	4.64
3/28/2024	7:36:19	20.7	0.17	-0.74	20.6	0.14	6.02
3/28/2024	7:37:19	20.7	0.17	-0.72	20.6	0.14	6.39
3/28/2024	7:38:19	20.7	0.17	-0.69	20.61	0.15	6.61
3/28/2024	7:39:19	20.71	0.17	-0.72	20.61	0.15	6.34
3/28/2024	7:40:19	20.71	0.17	-0.66	20.61	0.15	6.14
3/28/2024	7:41:19	20.71	0.17	-0.62	20.61	0.15	6.11
3/28/2024	7:42:19	20.71	0.17	-0.52	20.61	0.15	6.34
3/28/2024	7:43:19	20.71	0.17	-0.49	20.61	0.16	6.09
3/28/2024	7:44:19	20.71	0.17	-0.43	20.61	0.15	6.34
3/28/2024	7:45:19	20.71	0.17	-0.5	20.62	0.15	6.38
3/28/2024	7:46:19	20.72	0.17	-0.38	20.62	0.14	6.65
3/28/2024	7:47:19	20.72	0.17	-0.28	20.61	0.15	6.45
3/28/2024	7:48:19	20.71	0.17	-0.15	20.61	0.15	6.17
3/28/2024	7:49:19	20.71	0.17	-0.22	20.62	0.16	6.39
3/28/2024	7:50:19	20.71	0.17	-0.11	20.62	0.16	6.24
3/28/2024	7:51:19	20.71	0.17	-0.06	20.62	0.16	5.98
3/28/2024	7:52:19	20.71	0.17	-0.28	20.39	0.16	6.24
3/28/2024	7:53:19	20.59	0.16	0.64	12.96	0.13	14.68
3/28/2024	7:54:19	17.95	0.15	3.6	8.82	0.12	17.84
3/28/2024	7:55:19	16.85	0.15	4.15	15.52	0.12	17.82
3/28/2024	7:56:19	18.66	0.15	4.15	16.3	0.12	15.82
3/28/2024	7:57:19	18.97	0.15	4.02	14.37	0.12	14.94
3/28/2024	7:58:19	18.38	0.15	3.53	11.43	0.12	13.1
3/28/2024	7:59:19	17.28	0.15	2.94	8.89	0.12	11.3
3/28/2024	8:00:19	16.23	0.15	2.41	6.94	0.13	10.45
3/28/2024	8:01:19	15.45	0.15	2.61	5.63	0.13	10.99
3/28/2024	8:02:19	14.96	0.15	2.85	4.74	0.13	11.82
3/28/2024	8:03:19	14.84	0.15	3.19	13.53	0.15	12.14
3/28/2024	8:04:19	18.63	0.16	2.14	11.38	0.15	7.54
3/28/2024	8:05:19	18.4	0.16	1.72	13.88	0.16	10.49
3/28/2024	8:06:19	19.58	0.16	1.33	20.48	0.18	7.34
3/28/2024	8:07:19	20.49	0.17	0.98	20.62	0.18	5.6
3/28/2024	8:08:19	20.67	0.17	0.82	15.46	0.18	5.98
3/28/2024	8:09:19	19.78	0.17	1.07	4.23	0.15	10.6
3/28/2024	8:10:19	18.27	0.16	1.91	3.96	0.15	13.07
3/28/2024	8:11:19	17.93	0.16	2.11	4.11	0.15	13.01
3/28/2024	8:12:19	17.89	0.16	2.24	4.39	0.15	13.02
3/28/2024	8:13:19	17.93	0.16	2.11	4.16	0.15	12.29

PRE TEST  
BIAS CALS



3/28/2024	8:14:19	17.9	0.16	2.04	3.7	0.15	11.6
3/28/2024	8:15:19	17.81	0.16	1.91	3.34	0.16	10.34
3/28/2024	8:16:19	17.74	0.16	1.8	3.1	0.16	9.16
3/28/2024	8:17:19	17.66	0.16	1.62	2.96	0.17	8.93
3/28/2024	8:18:19	17.66	0.16	1.57	3.06	0.17	7.73
3/28/2024	8:19:19	18.36	0.17	1.49	3.33	0.18	7.72
3/28/2024	8:20:19	19.14	0.17	1.23	3.2	0.19	7.72
3/28/2024	8:21:19	19.2	0.17	1.24	3.21	0.19	7.71
3/28/2024	8:22:19	19.29	0.17	1.24	3.26	0.19	7.52
3/28/2024	8:23:19	19.34	0.17	1.21	3.11	0.19	7.51
3/28/2024	8:24:19	19.35	0.17	1.26	3.19	0.19	7.32
3/28/2024	8:25:19	19.34	0.17	1.35	3.18	0.19	7.74
3/28/2024	8:26:19	19.36	0.17	1.45	3.11	0.2	9.03
3/28/2024	8:27:19	19.35	0.17	1.54	3.18	0.2	10.35
3/28/2024	8:28:19	19.34	0.17	1.65	3.1	0.21	10.33
3/28/2024	8:29:19	19.34	0.17	1.69	3.65	0.22	10.32
3/28/2024	8:30:19	19.48	0.17	1.72	13.89	0.24	8.75
3/28/2024	8:31:19	19.41	0.17	1.51	3.73	0.22	8.34
3/28/2024	8:32:19	18.44	0.17	1.91	8.93	0.23	8.46
3/28/2024	8:33:19	19.61	0.17	1.66	3.08	0.22	8.79
3/28/2024	8:34:19	19.38	0.17	1.73	2.83	0.23	9.08
3/28/2024	8:35:19	19.28	0.17	1.84	2.94	0.23	9.56
3/28/2024	8:36:19	19.3	0.17	1.88	2.96	0.23	11.24
3/28/2024	8:37:19	19.34	0.17	2.01	8.8	0.25	12.89
3/28/2024	8:38:19	19.21	0.17	1.98	3.24	0.25	10.37
3/28/2024	8:39:19	17.38	0.16	2.79	9.55	0.26	10.5
3/28/2024	8:40:19	19.43	0.16	2.07	2.83	0.25	9.03
3/28/2024	8:41:19	19.33	0.17	2	2.76	0.25	10.33
3/28/2024	8:42:19	19.25	0.17	2.07	2.63	0.25	11.47
3/28/2024	8:43:19	19.21	0.16	2.22	2.82	0.25	14.11
3/28/2024	8:44:19	19.29	0.16	2.45	2.79	0.25	15.61
3/28/2024	8:45:19	19.28	0.16	2.44	2.85	0.26	14.41
3/28/2024	8:46:19	19.29	0.16	2.42	2.74	0.26	12.97
3/28/2024	8:47:19	19.26	0.16	2.32	2.82	0.26	10.87
3/28/2024	8:48:19	19.27	0.17	2.26	2.73	0.27	10.3
3/28/2024	8:49:19	19.26	0.17	2.05	2.81	0.27	9.16
3/28/2024	8:50:19	19.27	0.16	2.08	2.73	0.27	9.01
3/28/2024	8:51:19	19.27	0.16	2.14	2.82	0.28	8.35
3/28/2024	8:52:19	19.28	0.16	2.07	2.73	0.28	8.06
3/28/2024	8:53:19	19.27	0.16	2.04	2.83	0.27	7.72
3/28/2024	8:54:19	19.27	0.16	2	2.73	0.27	7.72
3/28/2024	8:55:19	19.26	0.16	2.08	2.82	0.28	7.69
3/28/2024	8:56:19	19.27	0.16	2.14	2.71	0.28	7.7
3/28/2024	8:57:19	19.23	0.16	2.21	2.79	0.28	7.63
3/28/2024	8:58:19	19.26	0.16	2.16	2.75	0.28	7.63
3/28/2024	8:59:19	19.26	0.16	2.16	2.8	0.29	7.64
3/28/2024	9:00:19	19.28	0.16	2.2	2.73	0.29	7.67
3/28/2024	9:01:19	19.26	0.16	2.19	2.81	0.29	7.68
3/28/2024	9:02:19	19.27	0.16	2.2	2.71	0.29	7.68
3/28/2024	9:03:19	19.26	0.16	2.08	2.81	0.29	7.7
3/28/2024	9:04:19	19.25	0.16	2.25	2.7	0.29	7.7
3/28/2024	9:05:19	19.26	0.16	2.25	2.82	0.29	7.73
3/28/2024	9:06:19	19.27	0.16	2.25	2.77	0.29	7.74
3/28/2024	9:07:19	19.3	0.16	2.28	2.75	0.29	7.72
3/28/2024	9:08:19	19.29	0.16	2.24	2.8	0.29	7.68
3/28/2024	9:09:19	19.27	0.16	2.25	2.71	0.3	7.67
3/28/2024	9:10:19	19.3	0.16	2.3	2.8	0.3	7.68
3/28/2024	9:11:19	19.29	0.16	2.29	2.79	0.3	7.67
3/28/2024	9:12:19	19.31	0.16	2.33	2.73	0.3	7.91
3/28/2024	9:13:19	19.31	0.16	2.35	2.8	0.3	8.13
3/28/2024	9:14:19	19.3	0.16	2.38	2.76	0.3	8.66
3/28/2024	9:15:19	19.3	0.15	2.41	2.7	0.3	8.68
3/28/2024	9:16:19	19.28	0.15	2.48	2.77	0.3	8.79
3/28/2024	9:17:19	19.28	0.15	2.5	2.69	0.3	8.82
3/28/2024	9:18:19	19.28	0.15	2.47	2.72	0.3	8.58
3/28/2024	9:19:19	19.26	0.15	2.61	2.73	0.3	8.14
3/28/2024	9:20:19	19.28	0.15	2.59	2.66	0.3	8.34
3/28/2024	9:21:19	19.27	0.15	2.63	2.73	0.3	8.1
3/28/2024	9:22:19	19.26	0.15	2.57	2.64	0.3	7.67
3/28/2024	9:23:19	19.27	0.15	2.57	2.69	0.3	7.89
3/28/2024	9:24:19	19.26	0.15	2.49	2.71	0.3	7.71
3/28/2024	9:25:19	19.27	0.15	2.45	2.6	0.3	7.68
3/28/2024	9:26:19	19.27	0.15	2.59	2.7	0.29	7.92
3/28/2024	9:27:19	19.26	0.14	2.58	2.66	0.29	8.16
3/28/2024	9:28:19	19.27	0.14	2.57	2.6	0.29	8.41
3/28/2024	9:29:19	19.25	0.14	2.63	2.68	0.29	8.49
3/28/2024	9:30:19	19.25	0.14	2.73	2.61	0.3	8.62
3/28/2024	9:31:19	19.26	0.14	2.73	2.62	0.3	9.07
3/28/2024	9:32:19	19.25	0.14	2.86	2.64	0.3	9.03
3/28/2024	9:33:19	19.23	0.14	2.92	2.56	0.3	9.44
3/28/2024	9:34:19	19.24	0.15	2.96	2.64	0.3	9.74

START RUN 3

3/28/2024	9:35:19	19.24	0.15	2.82	2.6	0.3	10.29
3/28/2024	9:36:19	19.26	0.14	2.9	2.56	0.3	10.91
3/28/2024	9:37:19	19.25	0.14	3	2.63	0.3	11.21
3/28/2024	9:38:19	19.25	0.14	3.15	2.54	0.3	11.71
3/28/2024	9:39:19	19.25	0.14	3.16	2.59	0.3	12.28
3/28/2024	9:40:19	19.24	0.14	3.15	2.61	0.3	13
3/28/2024	9:41:19	19.25	0.14	3.21	2.54	0.3	13.53
3/28/2024	9:42:19	19.26	0.15	3.32	2.57	0.3	14.28
3/28/2024	9:43:19	19.25	0.15	3.33	2.59	0.3	14.79
3/28/2024	9:44:19	19.26	0.15	3.34	2.56	0.31	15.54
3/28/2024	9:45:19	19.27	0.15	3.37	2.52	0.3	15.96
3/28/2024	9:46:19	19.26	0.14	3.53	3.49	0.31	16.54
3/28/2024	9:47:19	19.27	0.14	3.6	1.84	0.3	17.09
3/28/2024	9:48:19	19.28	0.14	3.65	1.71	0.3	18.36
3/28/2024	9:49:19	19.29	0.14	3.75	1.71	0.3	19.15
3/28/2024	9:50:19	19.3	0.14	3.8	1.71	0.31	19.12
3/28/2024	9:51:19	19.29	0.14	3.75	1.71	0.31	19.11
3/28/2024	9:52:19	19.29	0.15	3.68	1.71	0.31	18.12
3/28/2024	9:53:19	19.29	0.15	3.66	1.71	0.31	17.81
3/28/2024	9:54:19	19.29	0.15	3.58	1.71	0.3	16.84
3/28/2024	9:55:19	19.29	0.14	3.55	1.71	0.3	15.82
3/28/2024	9:56:19	19.29	0.14	3.57	1.7	0.3	15.1
3/28/2024	9:57:19	19.3	0.14	3.6	1.7	0.3	14.57
3/28/2024	9:58:19	19.3	0.14	3.48	1.69	0.31	13.47
3/28/2024	9:59:19	19.3	0.14	3.37	1.69	0.31	12.93
3/28/2024	10:00:19	19.3	0.15	3.4	1.7	0.31	12.15
3/28/2024	10:01:19	19.31	0.15	3.29	1.69	0.31	11.64
3/28/2024	10:02:19	19.31	0.14	3.22	1.69	0.31	10.96
3/28/2024	10:03:19	19.3	0.14	3.24	1.68	0.31	10.6
3/28/2024	10:04:19	19.3	0.14	3.21	1.68	0.31	10.28
3/28/2024	10:05:19	19.29	0.14	3.24	1.68	0.32	10.07
3/28/2024	10:06:19	19.3	0.14	3.15	1.68	0.32	9.61
3/28/2024	10:07:19	19.3	0.15	3.17	1.68	0.32	9.32
3/28/2024	10:08:19	19.3	0.15	3.15	1.68	0.33	8.99
3/28/2024	10:09:19	19.3	0.15	3.02	1.67	0.32	8.98
3/28/2024	10:10:19	19.31	0.15	3.12	1.67	0.32	9.01
3/28/2024	10:11:19	19.31	0.14	3.04	1.67	0.32	8.58
3/28/2024	10:12:19	19.3	0.14	3.07	1.67	0.32	8.22
3/28/2024	10:13:19	19.3	0.15	3.02	1.67	0.32	8.11
3/28/2024	10:14:19	19.29	0.15	3	1.67	0.33	7.65
3/28/2024	10:15:19	19.29	0.15	3.01	1.67	0.33	7.66
3/28/2024	10:16:19	19.31	0.15	3.02	1.67	0.33	7.67
3/28/2024	10:17:19	19.31	0.15	2.91	1.67	0.33	7.69
3/28/2024	10:18:19	19.31	0.15	2.99	1.67	0.33	7.68
3/28/2024	10:19:19	19.3	0.15	2.98	1.67	0.33	7.65
3/28/2024	10:20:19	19.31	0.15	2.97	1.67	0.33	7.66
3/28/2024	10:21:19	19.31	0.15	3.03	1.67	0.33	7.64
3/28/2024	10:22:19	19.31	0.15	3.01	1.67	0.34	7.65
3/28/2024	10:23:19	19.31	0.15	2.98	1.67	0.34	7.66
3/28/2024	10:24:19	19.31	0.15	2.98	1.67	0.34	7.66
3/28/2024	10:25:19	19.31	0.15	2.93	1.67	0.33	7.65
3/28/2024	10:26:19	19.3	0.15	3.02	1.67	0.33	7.46
3/28/2024	10:27:19	19.3	0.15	2.95	1.67	0.33	7.25
3/28/2024	10:28:19	19.3	0.15	3.07	1.67	0.34	7.17
3/28/2024	10:29:19	19.29	0.15	3.02	1.67	0.34	7.04
3/28/2024	10:30:19	19.29	0.15	3	1.67	0.34	7.04
3/28/2024	10:31:19	19.29	0.15	2.97	1.67	0.34	7.04
3/28/2024	10:32:19	19.29	0.15	3.04	1.67	0.34	7.25
3/28/2024	10:33:19	19.28	0.15	3.1	1.67	0.34	7.04
3/28/2024	10:34:19	19.28	0.15	3.12	1.67	0.34	7.23
3/28/2024	10:35:19	19.28	0.15	3.18	1.67	0.35	7.07
3/28/2024	10:36:19	19.29	0.15	3.2	1.67	0.36	7.08
3/28/2024	10:37:19	19.29	0.15	3.05	1.67	0.36	7.06
3/28/2024	10:38:19	19.29	0.16	3.21	1.67	0.36	6.84
3/28/2024	10:39:19	19.29	0.16	3.18	1.68	0.36	7.28
3/28/2024	10:40:19	19.3	0.15	3.25	1.68	0.36	7.31
3/28/2024	10:41:19	19.3	0.15	3.25	1.69	0.37	7.66
3/28/2024	10:42:19	19.28	0.15	3.31	1.69	0.38	7.42
3/28/2024	10:43:19	19.28	0.16	3.37	1.69	0.39	7.3
3/28/2024	10:44:19	19.26	0.16	3.44	1.69	0.39	7.63
3/28/2024	10:45:19	19.28	0.16	3.32	1.69	0.4	7.73
3/28/2024	10:46:19	19.28	0.16	3.35	1.68	0.39	7.75
3/28/2024	10:47:19	19.27	0.16	3.31	1.68	0.4	7.73
3/28/2024	10:48:19	19.27	0.16	3.45	1.68	0.4	7.74
3/28/2024	10:49:19	19.27	0.16	3.49	1.68	0.41	7.74
3/28/2024	10:50:19	19.27	0.16	3.56	1.69	0.42	7.75
3/28/2024	10:51:19	19.26	0.16	3.51	1.7	0.42	7.74
3/28/2024	10:52:19	19.25	0.16	3.55	1.7	0.42	7.75
3/28/2024	10:53:19	19.25	0.16	3.52	1.71	0.42	7.77
3/28/2024	10:54:19	19.26	0.16	3.68	1.71	0.43	7.76
3/28/2024	10:55:19	19.25	0.16	3.75	1.71	0.44	8.53

3/28/2024	10:56:19	19.25	0.16	3.91	1.71	0.44	9.13
3/28/2024	10:57:19	19.25	0.16	4.02	1.71	0.45	9.62
3/28/2024	10:58:19	19.25	0.16	4.14	1.71	0.45	10.17
3/28/2024	10:59:19	19.24	0.16	4.31	1.71	0.45	11.15
3/28/2024	11:00:19	19.24	0.16	4.49	1.71	0.45	12.28
3/28/2024	11:01:19	19.25	0.16	4.63	1.71	0.46	13.37
3/28/2024	11:02:19	19.25	0.16	4.74	1.7	0.47	14.68
3/28/2024	11:03:19	19.25	0.16	4.93	1.71	0.46	16.03
3/28/2024	11:04:19	19.25	0.16	5.02	1.7	0.46	17.15
3/28/2024	11:05:19	19.24	0.16	5.14	1.7	0.47	18.98
3/28/2024	11:06:19	19.23	0.16	5.43	1.7	0.48	21.07
3/28/2024	11:07:19	19.23	0.17	5.48	1.7	0.48	22.73
3/28/2024	11:08:19	19.23	0.17	5.68	1.7	0.48	25
3/28/2024	11:09:19	19.25	0.16	5.78	1.69	0.48	27.36
3/28/2024	11:10:19	19.24	0.16	6.02	1.69	0.48	29.55
3/28/2024	11:11:19	19.25	0.16	6.21	1.69	0.48	32.44
3/28/2024	11:12:19	19.24	0.16	6.52	1.69	0.48	34.83
3/28/2024	11:13:19	19.24	0.16	6.86	1.69	0.48	37.84
3/28/2024	11:14:19	19.23	0.16	7.07	1.68	0.48	40.97
3/28/2024	11:15:19	19.23	0.15	7.29	1.68	0.48	43.88
3/28/2024	11:16:19	19.23	0.15	7.56	1.67	0.48	46.63
3/28/2024	11:17:19	19.25	0.15	7.87	1.67	0.48	49.86
3/28/2024	11:18:19	19.25	0.15	8.01	1.66	0.47	53.05
3/28/2024	11:19:19	19.22	0.15	8.37	1.66	0.47	56.43
3/28/2024	11:20:19	19.24	0.15	8.66	1.65	0.47	59.75
3/28/2024	11:21:19	19.24	0.14	8.81	1.65	0.47	63.34
3/28/2024	11:22:19	19.24	0.14	9.23	1.65	0.47	66.71
3/28/2024	11:23:19	19.23	0.15	9.51	1.64	0.47	70.57
3/28/2024	11:24:19	19.24	0.14	9.73	1.64	0.47	74.65
3/28/2024	11:25:19	19.23	0.14	10.15	1.64	0.46	79.13
3/28/2024	11:26:19	19.22	0.14	10.52	1.64	0.46	83.54
3/28/2024	11:27:19	19.24	0.14	10.79	1.63	0.46	87.8
3/28/2024	11:28:19	19.23	0.14	11.17	1.63	0.46	92.05
3/28/2024	11:29:19	19.24	0.14	11.45	1.62	0.46	96.77
3/28/2024	11:30:19	19.24	0.14	11.95	1.62	0.46	101.93
3/28/2024	11:31:19	19.21	0.14	12.48	1.61	0.46	106.86
3/28/2024	11:32:19	19.24	0.14	12.73	1.61	0.46	111.57
3/28/2024	11:33:19	19.24	0.14	13.09	1.61	0.46	116.84
3/28/2024	11:34:19	19.24	0.14	13.48	1.6	0.46	122.24
3/28/2024	11:35:19	19.25	0.13	13.86	1.6	0.46	127.54
3/28/2024	11:36:19	19.24	0.13	14.4	1.59	0.46	132.67
3/28/2024	11:37:19	19.21	0.14	15	1.59	0.46	138.07
3/28/2024	11:38:19	19.25	0.13	15.14	1.59	0.46	144.08
3/28/2024	11:39:19	19.24	0.13	15.78	1.57	0.46	150.13
3/28/2024	11:40:19	19.25	0.13	16.16	1.58	0.46	156.65
3/28/2024	11:41:19	19.26	0.13	16.63	1.57	0.46	162.96
3/28/2024	11:42:19	19.22	0.13	17.39	1.56	0.46	169.48
3/28/2024	11:43:19	19.23	0.13	17.74	1.56	0.46	176.27
3/28/2024	11:44:19	19.26	0.13	18.03	1.56	0.46	182.88
3/28/2024	11:45:19	19.25	0.13	18.79	1.54	0.46	190.19
3/28/2024	11:46:19	19.25	0.13	19.28	1.54	0.46	197.43
3/28/2024	11:47:19	19.25	0.13	19.74	1.53	0.46	204.73
3/28/2024	11:48:19	19.23	0.13	20.65	1.53	0.46	212.36
3/28/2024	11:49:19	19.25	0.13	21	1.52	0.45	220.12
3/28/2024	11:50:19	19.24	0.13	21.79	1.51	0.46	228.24
3/28/2024	11:51:19	19.26	0.13	22.17	1.51	0.46	236.29
3/28/2024	11:52:19	19.26	0.13	22.74	1.5	0.46	244.67
3/28/2024	11:53:19	19.23	0.13	23.83	1.5	0.46	253.23
3/28/2024	11:54:19	19.23	0.13	24.51	1.49	0.46	262.14
3/28/2024	11:55:19	19.25	0.13	25.03	1.48	0.47	271.78
3/28/2024	11:56:19	19.24	0.13	25.79	1.47	0.47	281.78
3/28/2024	11:57:19	19.25	0.13	26.52	1.47	0.47	292.02
3/28/2024	11:58:19	19.25	0.13	27.21	1.46	0.46	302.97
3/28/2024	11:59:19	19.24	0.13	28.19	1.46	0.46	314.17
3/28/2024	12:00:19	19.24	0.13	29.01	1.45	0.47	326.32
3/28/2024	12:01:19	19.25	0.13	29.83	1.44	0.47	337.88
3/28/2024	12:02:19	19.26	0.13	30.51	1.42	0.47	349.44
3/28/2024	12:03:19	19.25	0.13	31.48	1.41	0.47	361.6
3/28/2024	12:04:19	19.23	0.13	32.92	1.41	0.47	373.93
3/28/2024	12:05:19	19.21	0.13	34.22	1.4	0.48	386.73
3/28/2024	12:06:19	19.25	0.13	34.23	1.39	0.48	399.52
3/28/2024	12:07:19	19.26	0.13	35.06	1.38	0.48	412.86
3/28/2024	12:08:19	19.26	0.13	36.14	1.35	0.48	426.34
3/28/2024	12:09:19	19.2	0.13	38.57	1.35	0.48	440.16
3/28/2024	12:10:19	19.27	0.13	37.83	1.34	0.49	453.68
3/28/2024	12:11:19	19.24	0.13	39.66	1.33	0.49	468.02
3/28/2024	12:12:19	19.25	0.12	40.48	1.32	0.49	482.61
3/28/2024	12:13:19	19.24	0.13	41.61	1.32	0.5	497.83
3/28/2024	12:14:19	19.26	0.13	42.33	1.3	0.5	513.31
3/28/2024	12:15:19	19.25	0.13	43.71	1.29	0.51	527.22
3/28/2024	12:16:19	19.24	0.12	44.92	1.28	0.51	533.84

3/28/2024	12:17:19	19.23	0.12	45.28	1.28	0.51	527.16
3/28/2024	12:18:19	19.24	0.12	44.33	1.28	0.52	508
3/28/2024	12:19:19	19.25	0.13	42.09	1.28	0.52	479.15
3/28/2024	12:20:19	19.24	0.13	40.06	1.28	0.53	445.19
3/28/2024	12:21:19	19.24	0.12	37.75	1.29	0.53	409.6
3/28/2024	12:22:19	19.24	0.13	35.14	1.29	0.54	374.9
3/28/2024	12:23:19	19.22	0.13	33.11	1.3	0.55	342.21
3/28/2024	12:24:19	19.24	0.13	30.49	1.3	0.56	313.15
3/28/2024	12:25:19	19.26	0.13	27.97	1.3	0.56	287.26
3/28/2024	12:26:19	19.27	0.13	26.11	1.3	0.56	264.06
3/28/2024	12:27:19	19.25	0.13	24.69	1.31	0.57	243.7
3/28/2024	12:28:19	19.24	0.14	23.4	1.31	0.58	225.41
3/28/2024	12:29:19	19.23	0.14	22.09	1.31	0.59	208.68
3/28/2024	12:30:19	19.26	0.14	20.48	1.31	0.59	193.44
3/28/2024	12:31:19	19.1	0.14	19.71	9.57	10.34	143.93
3/28/2024	12:32:19	8.65	0.15	30.55	11.6	12.76	16.23
3/28/2024	12:33:19	1.9	0.1	44.65	11.82	12.62	4.79
3/28/2024	12:34:19	0.81	0.08	47.18	11.85	12	2.18
3/28/2024	12:35:19	0.62	0.08	47.7	4.41	4.57	87.08
3/28/2024	12:36:19	4.51	4.12	38.75	-0.03	0.38	795.84
3/28/2024	12:37:19	10.79	10.36	10.75	-0.04	0	916.48
3/28/2024	12:38:19	11.82	11.64	4.26	0.42	0.05	903.13
3/28/2024	12:39:19	12.07	11.93	2.56	1.34	0.14	378.7
3/28/2024	12:40:19	12.12	11.99	-0.03	1.34	0.15	159.68
3/28/2024	12:41:19	12.69	11.11	0.09	1.35	0.15	169.56
3/28/2024	12:42:19	17.37	3.28	7.16	1.34	0.15	181.22
3/28/2024	12:43:19	18.46	1.48	12.21	1.33	0.14	192.69
3/28/2024	12:44:19	11.8	1.22	19.97	1.33	0.14	200.51
3/28/2024	12:45:19	2.49	0.45	38.5	1.33	0.15	203.31
3/28/2024	12:46:19	0.9	0.18	43.35	1.33	0.15	201.21
3/28/2024	12:47:19	0.65	0.12	44.39	1.33	0.14	195.38
3/28/2024	12:48:19	0.57	0.11	44.71	1.33	0.14	187.15
3/28/2024	12:49:19	0.53	0.1	44.72	1.33	0.13	177.83
3/28/2024	12:50:19	0.58	0.09	44.76	1.33	0.13	168.06
3/28/2024	12:51:19	10.72	0.12	33.59	1.33	0.13	158.44
3/28/2024	12:52:19	17.78	0.15	17.47	1.33	0.13	149.21
3/28/2024	12:53:19	18.83	0.15	13.94	1.33	0.13	140.88
3/28/2024	12:54:19	19.12	0.15	12.81	1.33	0.13	132.65
3/28/2024	12:55:19	19.19	0.15	12.23	1.33	0.13	125.92
3/28/2024	12:56:19	19.21	0.15	11.61	1.34	0.13	119.3
3/28/2024	12:57:19	19.22	0.15	11.07	1.34	0.13	114.08
3/28/2024	12:58:19	19.22	0.15	10.79	1.35	0.12	110.93
3/28/2024	12:59:19	19.21	0.15	10.74	1.36	0.11	110.35
3/28/2024	13:00:19	19.22	0.15	10.8	1.37	0.11	112.65
3/28/2024	13:01:19	19.23	0.15	10.87	1.38	0.11	117.03
3/28/2024	13:02:19	19.24	0.15	11.33	1.38	0.11	123.6
3/28/2024	13:03:19	19.24	0.14	11.86	1.38	0.1	133.05
3/28/2024	13:04:19	19.24	0.14	12.55	1.38	0.1	142.74
3/28/2024	13:05:19	19.23	0.14	13.38	1.38	0.1	152.75
3/28/2024	13:06:19	19.23	0.14	14.13	1.38	0.1	160.1
3/28/2024	13:07:19	19.23	0.14	14.57	1.38	0.1	163.59
3/28/2024	13:08:19	19.23	0.15	14.91	1.37	0.1	163.73
3/28/2024	13:09:19	19.24	0.15	14.78	1.37	0.1	160.81
3/28/2024	13:10:19	19.23	0.15	14.52	1.37	0.1	155.56
3/28/2024	13:11:19	19.22	0.15	14.2	1.37	0.1	149.73
3/28/2024	13:12:19	19.22	0.15	13.82	1.37	0.1	144.06
3/28/2024	13:13:19	19.23	0.15	13.28	1.36	0.1	139.98
3/28/2024	13:14:19	19.23	0.14	13.04	1.38	0.1	138.44
3/28/2024	13:15:19	19.24	0.14	12.96	1.39	0.1	139.97
3/28/2024	13:16:19	19.23	0.14	13.16	1.39	0.1	144.56
3/28/2024	13:17:19	19.22	0.14	13.67	1.39	0.1	152.69
3/28/2024	13:18:19	19.22	0.14	14.49	1.39	0.09	163.15
3/28/2024	13:19:19	19.23	0.14	15.28	1.39	0.09	175.03
3/28/2024	13:20:19	19.23	0.14	16.29	1.38	0.09	189
3/28/2024	13:21:19	19.23	0.14	17.29	1.38	0.09	203.51
3/28/2024	13:22:19	19.23	0.14	18.39	1.38	0.08	219.41
3/28/2024	13:23:19	19.22	0.13	19.77	1.37	0.08	236.01
3/28/2024	13:24:19	19.21	0.13	21.26	1.36	0.08	253.31
3/28/2024	13:25:19	19.21	0.13	22.45	1.36	0.08	271.86
3/28/2024	13:26:19	19.22	0.14	23.73	1.35	0.07	291.24
3/28/2024	13:27:19	19.22	0.13	25.25	1.34	0.07	311.78
3/28/2024	13:28:19	19.21	0.13	26.92	1.33	0.07	331.76
3/28/2024	13:29:19	18.91	0.13	33.96	1.32	0.07	357.44
3/28/2024	13:30:19	18.97	0.14	35.04	1.3	0.07	381.75
3/28/2024	13:31:19	18.88	0.13	38.95	1.28	0.07	407.94
3/28/2024	13:32:19	19.02	0.13	38.33	1.24	0.07	433.55
3/28/2024	13:33:19	19	0.13	40.86	1.24	0.07	459.83
3/28/2024	13:34:19	19.05	0.13	41.82	1.26	0.07	486.77
3/28/2024	13:35:19	19.06	0.13	44.07	1.29	0.07	515.39
3/28/2024	13:36:19	19.07	0.13	46.36	1.32	0.07	546.75
3/28/2024	13:37:19	19.06	0.13	49.28	1.35	0.06	579.51

BIAS/DRIFT CALS

back on stack gas

3/28/2024	13:38:19	19.08	0.13	51.54	1.37	0.06	609.49
3/28/2024	13:39:19	19.07	0.13	54.17	1.38	0.07	635.69
3/28/2024	13:40:19	19.07	0.13	56.72	1.38	0.07	659.97
3/28/2024	13:41:19	19.06	0.13	58.86	1.39	0.07	682.23
3/28/2024	13:42:19	19.07	0.13	60.49	1.39	0.07	702.82
3/28/2024	13:43:19	19.07	0.13	62.17	1.39	0.07	723.52
3/28/2024	13:44:19	19.07	0.13	63.83	1.39	0.07	743.38
3/28/2024	13:45:19	19.07	0.13	65.84	1.38	0.08	764.94
3/28/2024	13:46:19	19.08	0.13	67.35	1.38	0.08	787.3
3/28/2024	13:47:19	19.09	0.13	68.63	1.38	0.08	808.12
3/28/2024	13:48:19	19.09	0.13	70.3	1.37	0.09	827.62
3/28/2024	13:49:19	19.08	0.13	72.34	1.37	0.1	849.07
3/28/2024	13:50:19	19.08	0.13	74.1	1.37	0.1	868.65
3/28/2024	13:51:19	19.08	0.13	75.68	1.37	0.1	886.8
3/28/2024	13:52:19	19.08	0.13	77.05	1.36	0.11	902.57
3/28/2024	13:53:19	19.09	0.14	77.94	1.35	0.12	916.79
3/28/2024	13:54:19	19.09	0.14	79.21	1.35	0.13	930.04
3/28/2024	13:55:19	19.1	0.14	79.29	1.34	0.14	940.85
3/28/2024	13:56:19	19.06	0.14	82.29	1.33	0.15	947.45
3/28/2024	13:57:19	19.09	0.14	81.04	1.32	0.16	952.4
3/28/2024	13:58:19	19.07	0.14	82.38	1.31	0.17	955.51
3/28/2024	13:59:19	19.06	0.14	82.74	1.3	0.18	955.09
3/28/2024	14:00:19	19.06	0.14	82.47	1.29	0.18	950.1
3/28/2024	14:01:19	19.07	0.14	81.73	1.29	0.2	945.31
3/28/2024	14:02:19	19.07	0.14	81.51	1.28	0.21	942.18
3/28/2024	14:03:19	19.07	0.14	81.51	1.27	0.22	941.22
3/28/2024	14:04:19	19.07	0.15	81.49	1.27	0.23	941.02
3/28/2024	14:05:19	19.06	0.15	81.96	1.27	0.23	939.2
3/28/2024	14:06:19	19.06	0.15	81.36	1.27	0.24	933.6
3/28/2024	14:07:19	19.06	0.15	80.83	1.27	0.25	925.98
3/28/2024	14:08:19	19.06	0.15	80.05	1.29	0.26	910.62
3/28/2024	14:09:19	19.08	0.15	77.56	1.3	0.26	893.77
3/28/2024	14:10:19	19.12	0.15	75.17	1.3	0.27	889.06
3/28/2024	14:11:19	19.15	0.15	73.08	1.31	0.28	880.46
3/28/2024	14:12:19	19.14	0.15	72.75	1.31	0.29	861.04
3/28/2024	14:13:19	19.16	0.16	70.34	1.31	0.29	834.52
3/28/2024	14:14:19	19.16	0.15	67.65	1.31	0.29	805.51
3/28/2024	14:15:19	19.18	0.15	64.98	1.31	0.29	779.04
3/28/2024	14:16:19	19.19	0.15	62.84	1.3	0.3	756.42
3/28/2024	14:17:19	19.17	0.15	61.75	1.3	0.31	739.23
3/28/2024	14:18:19	19.18	0.16	60.16	1.29	0.32	726.18
3/28/2024	14:19:19	19.18	0.16	59.06	1.29	0.33	714.55
3/28/2024	14:20:19	19.18	0.16	58.14	1.28	0.33	704.85
3/28/2024	14:21:19	19.19	0.16	57.18	1.28	0.33	697.97
3/28/2024	14:22:19	19.19	0.16	56.65	1.27	0.32	694.71
3/28/2024	14:23:19	19.19	0.16	56.36	1.27	0.32	691.84
3/28/2024	14:24:19	19.19	0.16	56.32	1.27	0.33	689.15
3/28/2024	14:25:19	19.19	0.17	56.11	1.26	0.33	686.58
3/28/2024	14:26:19	19.18	0.17	55.94	1.26	0.32	684.69
3/28/2024	14:27:19	19.18	0.17	55.67	1.26	0.31	685.21
3/28/2024	14:28:19	19.19	0.17	55.71	1.25	0.31	685.67
3/28/2024	14:29:19	19.19	0.16	55.83	1.25	0.31	686.72
3/28/2024	14:30:19	19.18	0.17	55.8	1.25	0.31	688.53
3/28/2024	14:31:19	19.18	0.17	56.02	1.25	0.31	691.59
3/28/2024	14:32:19	19.19	0.17	56.13	1.24	0.3	695.65
3/28/2024	14:33:19	19.19	0.16	56.51	1.24	0.28	699.38
3/28/2024	14:34:19	19.19	0.16	56.88	1.24	0.28	703.8
3/28/2024	14:35:19	19.19	0.16	57.38	1.24	0.27	708.17
3/28/2024	14:36:19	19.19	0.16	57.57	1.24	0.27	712.79
3/28/2024	14:37:19	19.19	0.16	57.8	1.24	0.26	717.01
3/28/2024	14:38:19	19.18	0.16	58.1	1.24	0.25	721.25
3/28/2024	14:39:19	19.18	0.16	58.33	1.23	0.25	723.9
3/28/2024	14:40:19	19.18	0.16	58.65	1.23	0.24	726.9
3/28/2024	14:41:19	19.18	0.16	58.86	1.23	0.24	729.77
3/28/2024	14:42:19	19.18	0.16	59.03	1.23	0.24	732.18
3/28/2024	14:43:19	19.18	0.16	59.4	1.23	0.22	734.9
3/28/2024	14:44:19	19.18	0.16	59.6	1.23	0.21	735.96
3/28/2024	14:45:19	19.18	0.16	59.61	1.22	0.21	736.77
3/28/2024	14:46:19	19.17	0.16	59.53	1.22	0.21	737.42
3/28/2024	14:47:19	19.18	0.16	59.6	1.22	0.21	738.49
3/28/2024	14:48:19	19.19	0.16	59.6	1.22	0.2	739.92
3/28/2024	14:49:19	19.19	0.16	59.76	1.22	0.19	740.62
3/28/2024	14:50:19	19.18	0.16	59.81	1.22	0.19	740.76
3/28/2024	14:51:19	19.18	0.16	59.81	1.22	0.19	741.22
3/28/2024	14:52:19	19.18	0.16	59.92	1.22	0.18	740.97
3/28/2024	14:53:19	19.18	0.16	59.87	1.22	0.18	740.63
3/28/2024	14:54:19	19.18	0.16	59.74	1.22	0.17	739.97
3/28/2024	14:55:19	19.18	0.16	59.66	1.22	0.18	739.66
3/28/2024	14:56:19	19.18	0.16	59.68	1.22	0.18	739.82
3/28/2024	14:57:19	19.18	0.16	59.56	1.22	0.18	739.4
3/28/2024	14:58:19	19.19	0.16	59.49	1.22	0.18	740.27

3/28/2024	14:59:19	19.18	0.16	59.56	1.23	0.18	740.6
3/28/2024	15:00:19	19.18	0.17	59.78	1.23	0.18	740.05
3/28/2024	15:01:19	19.18	0.17	59.74	1.23	0.18	740.05
3/28/2024	15:02:19	19.18	0.17	59.72	1.23	0.18	739.53
3/28/2024	15:03:19	19.18	0.17	59.58	1.23	0.17	738.51
3/28/2024	15:04:19	19.18	0.17	59.77	1.23	0.17	737.92
3/28/2024	15:05:19	19.18	0.17	59.69	1.23	0.18	737.06
3/28/2024	15:06:19	19.18	0.17	59.55	1.24	0.18	736.41
3/28/2024	15:07:19	19.18	0.17	59.35	1.24	0.18	736.59
3/28/2024	15:08:19	19.18	0.17	59.32	1.24	0.18	735.61
3/28/2024	15:09:19	19.18	0.17	59.35	2.76	0.16	717.12
3/28/2024	15:10:19	19.18	0.17	59.1	1.23	0.18	692.58
3/28/2024	15:11:19	19.18	0.18	59.04	1.22	0.19	732.13
3/28/2024	15:12:19	19.18	0.18	58.94	1.22	0.19	731.45
3/28/2024	15:13:19	19.18	0.18	58.63	1.22	0.19	726.98
3/28/2024	15:14:19	19.18	0.18	58.31	1.22	0.19	719.19
3/28/2024	15:15:19	19.19	0.18	57.46	1.22	0.2	707.58
3/28/2024	15:16:19	19.19	0.18	56.51	1.23	0.2	693.09
3/28/2024	15:17:19	19.19	0.18	55.46	1.23	0.2	677.32
3/28/2024	15:18:19	19.19	0.18	54.22	1.24	0.2	660.27
3/28/2024	15:19:19	19.19	0.18	53.06	1.24	0.2	642.04
3/28/2024	15:20:19	19.18	0.18	51.83	1.25	0.21	624.23
3/28/2024	15:21:19	19.18	0.18	50.28	1.26	0.21	607.56
3/28/2024	15:22:19	19.18	0.18	48.84	1.26	0.2	590.85
3/28/2024	15:23:19	19.18	0.18	47.51	1.27	0.19	574.26
3/28/2024	15:24:19	19.18	0.18	46.3	1.28	0.19	557.08
3/28/2024	15:25:19	19.18	0.18	44.96	1.28	0.19	541.49
3/28/2024	15:26:19	19.19	0.18	43.85	1.28	0.19	526.68
3/28/2024	15:27:19	19.19	0.18	42.66	1.29	0.19	513.95
3/28/2024	15:28:19	19.19	0.18	41.64	1.3	0.19	503.32
3/28/2024	15:29:19	19.18	0.18	41.03	1.3	0.19	494.51
3/28/2024	15:30:19	19.18	0.18	40.52	1.3	0.19	487.12
3/28/2024	15:31:19	19.18	0.18	39.75	1.3	0.19	481.46
3/28/2024	15:32:19	19.18	0.18	39.31	1.3	0.18	475.88
3/28/2024	15:33:19	19.19	0.18	38.8	1.3	0.18	471.64
3/28/2024	15:34:19	19.19	0.18	38.51	1.3	0.18	468.23
3/28/2024	15:35:19	19.19	0.18	38.21	1.3	0.18	466.12
3/28/2024	15:36:19	19.19	0.18	38.08	1.3	0.18	463.01
3/28/2024	15:37:19	19.18	0.18	37.75	1.3	0.18	458.35
3/28/2024	15:38:19	19.18	0.18	37.38	1.3	0.17	451.9
3/28/2024	15:39:19	19.18	0.18	37.02	1.31	0.17	445.41
3/28/2024	15:40:19	19.18	0.18	36.55	1.31	0.17	438
3/28/2024	15:41:19	19.19	0.18	35.77	1.32	0.17	430.28
3/28/2024	15:42:19	19.19	0.18	35.06	1.32	0.15	422.09
3/28/2024	15:43:19	19.19	0.18	34.51	1.32	0.15	413.28
3/28/2024	15:44:19	19.18	0.17	33.9	1.33	0.14	404.16
3/28/2024	15:45:19	19.19	0.17	33.15	1.33	0.12	396.97
3/28/2024	15:46:19	19.19	0.16	32.51	1.34	0.1	390.65
3/28/2024	15:47:19	19.19	0.16	32.08	1.35	0.09	386.04
3/28/2024	15:48:19	19.18	0.16	31.97	1.35	0.09	382.3
3/28/2024	15:49:19	19.19	0.15	31.61	1.35	0.08	379.93
3/28/2024	15:50:19	19.19	0.15	31.22	1.35	0.08	378.09
3/28/2024	15:51:19	19.19	0.15	31.18	1.35	0.07	377.45
3/28/2024	15:52:19	19.19	0.15	31.02	1.35	0.06	376.48
3/28/2024	15:53:19	19.19	0.14	30.99	1.35	0.05	376.37
3/28/2024	15:54:19	19.2	0.14	31.05	1.35	0.05	375.81
3/28/2024	15:55:19	19.2	0.14	31.02	1.35	0.04	374.48
3/28/2024	15:56:19	19.19	0.14	30.96	1.35	0.04	372.2
3/28/2024	15:57:19	19.19	0.13	30.88	1.35	0.03	369.41
3/28/2024	15:58:19	19.2	0.13	30.72	1.35	0.03	366.09
3/28/2024	15:59:19	19.21	0.13	30.34	1.35	0.02	361.95
3/28/2024	16:00:19	19.21	0.12	30.09	1.35	0.01	356.45
3/28/2024	16:01:19	19.22	0.12	29.7	1.36	0.01	351.56
3/28/2024	16:02:19	19.22	0.12	29.37	1.36	0.01	346.83
3/28/2024	16:03:19	19.22	0.12	28.96	1.37	0	341.63
3/28/2024	16:04:19	19.22	0.12	28.58	1.37	-0.01	337.73
3/28/2024	16:05:19	19.21	0.12	28.32	1.37	-0.02	335.47
3/28/2024	16:06:19	19.21	0.12	28.15	1.36	-0.02	334.1
3/28/2024	16:07:19	19.21	0.12	28.17	1.36	-0.03	332.82
3/28/2024	16:08:19	19.21	0.12	28.07	1.36	-0.04	332.21
3/28/2024	16:09:19	19.21	0.11	28.05	1.36	-0.05	332.45
3/28/2024	16:10:19	19.21	0.11	28.12	1.36	-0.05	332.79
3/28/2024	16:11:19	19.22	0.11	28.21	1.36	-0.05	333.34
3/28/2024	16:12:19	19.22	0.11	28.32	1.36	-0.06	334.08
3/28/2024	16:13:19	19.21	0.11	28.32	1.36	-0.07	334.91
3/28/2024	16:14:19	19.22	0.11	28.41	1.36	-0.07	334.91
3/28/2024	16:15:19	19.22	0.11	28.24	1.36	-0.08	334.56
3/28/2024	16:16:19	19.22	0.11	28.24	1.36	-0.09	333.25
3/28/2024	16:17:19	19.22	0.11	27.93	1.36	-0.09	330.95
3/28/2024	16:18:19	19.22	0.11	27.71	1.37	-0.1	327.7
3/28/2024	16:19:19	19.22	0.11				323.91



3/28/2024	16:20:19	19.22	0.11	27.39	1.37	-0.1	319.73
3/28/2024	16:21:19	19.22	0.11	27.04	1.37	-0.11	317.14
3/28/2024	16:22:19	19.21	0.11	27.14	1.37	-0.12	314.77
3/28/2024	16:23:19	19.22	0.11	26.88	1.37	-0.12	312.86
3/28/2024	16:24:19	19.22	0.11	26.74	1.36	-0.12	311.75
3/28/2024	16:25:19	19.22	0.11	26.64	1.36	-0.12	310.65
3/28/2024	16:26:19	19.21	0.11	26.7	1.36	-0.13	310.92
3/28/2024	16:27:19	19.22	0.11	26.7	1.37	-0.13	311.06
3/28/2024	16:28:19	19.22	0.11	26.64	1.37	-0.14	311.03
3/28/2024	16:29:19	19.22	0.11	26.7	1.36	-0.14	312.31
3/28/2024	16:30:19	19.23	0.11	26.77	1.36	-0.15	315.19
3/28/2024	16:31:19	19.23	0.11	26.99	1.36	-0.15	317.26
3/28/2024	16:32:19	19.22	0.11	27.16	1.36	-0.15	317.78
3/28/2024	16:33:19	19.23	0.11	27.06	1.36	-0.15	317.13
3/28/2024	16:34:19	19.22	0.11	27.04	1.36	-0.16	315.79
3/28/2024	16:35:19	19.23	0.11	26.89	1.36	-0.17	313.45
3/28/2024	16:36:19	19.22	0.11	26.71	1.36	-0.17	310.81
3/28/2024	16:37:19	19.22	0.11	26.57	1.37	-0.17	308.88
3/28/2024	16:38:19	19.22	0.11	26.44	1.36	-0.18	308.42
3/28/2024	16:39:19	19.22	0.11	26.45	1.36	-0.18	308.63
3/28/2024	16:40:19	19.21	0.11	26.53	1.36	-0.18	309.87
3/28/2024	16:41:19	19.22	0.11	26.62	1.36	-0.19	311.65
3/28/2024	16:42:19	19.22	0.11	26.76	1.36	-0.19	313.88
3/28/2024	16:43:19	19.22	0.11	26.97	1.36	-0.19	316.19
3/28/2024	16:44:19	18.62	0.78	26.69	0.42	-0.22	413.98
3/28/2024	16:45:19	13.85	8.69	10.83	-0.04	-0.34	874.63
3/28/2024	16:46:19	12.54	11.24	1.56	-0.04	-0.34	919.78
3/28/2024	16:47:19	12.26	11.85	0.17	-0.04	0	920.37
3/28/2024	16:48:19	12.21	11.97	-0.26	1.23	0.13	729.4
3/28/2024	16:49:19	11.51	11.33	0.23	8.39	7.79	319.33
3/28/2024	16:50:19	3.77	3.43	23.7	11.85	11.39	43.45
3/28/2024	16:51:19	1.13	0.89	39.83	11.84	12	2.82
3/28/2024	16:52:19	0.74	0.26	43.25	11.65	11.7	2.81
3/28/2024	16:53:19	0.64	0.13	44.34	2.09	0.84	117.59
3/28/2024	16:54:19	0.61	0.09	44.59	1.34	0.16	356.54
3/28/2024	16:55:19	0.6	0.08	44.73	1.33	0.15	374.23
3/28/2024	16:56:19	0.59	0.07	44.79	1.33	0.14	381.28
3/28/2024	16:57:19	0.59	0.07	44.74	1.33	0.14	388.75
3/28/2024	16:58:19	0.6	0.06	44.83	1.32	0.14	395.67
3/28/2024	16:59:19	9.42	0.08	41.38	1.32	0.14	402.66
3/28/2024	17:00:19	17.59	0.11	35.15	1.32	0.13	408.97
3/28/2024	17:01:19	18.78	0.12	34.42	1.32	0.13	416.05
3/28/2024	17:02:19	19.09	0.12	34.68	1.31	0.13	423.25
3/28/2024	17:03:19	5.73	0.07	40.97	1.31	0.13	432.97
3/28/2024	17:04:19	20.28	0.08	10.26	1.31	0.13	442.42
3/28/2024	17:05:19	20.62	0.11	2.19	1.3	0.13	451.98
3/28/2024	17:06:19	20.61	0.11	2.03	1.3	0.13	460.98
3/28/2024	17:07:19	20.6	0.12	2.01	1.29	0.13	469
3/28/2024	17:08:19	20.61	0.12	2.1	1.29	0.13	476.3
3/28/2024	17:09:19	20.61	0.11	2.04	1.29	0.13	483.71
3/28/2024	17:10:19	20.62	0.11	1.97	1.29	0.13	492.53
3/28/2024	17:11:19	19.8	0.12	11.2	1.28	0.13	503.59
3/28/2024	17:12:19	19.11	0.13	36.6	1.28	0.13	515.22
3/28/2024	17:13:19	19.15	0.12	41.1	1.27	0.13	524.62
3/28/2024	17:14:19	19.16	0.12	42.57	1.27	0.13	533.9
3/28/2024	17:15:19	19.16	0.11	43.46	1.26	0.13	542.31
3/28/2024	17:16:19	19.15	0.11	44.12	1.27	0.13	549.58
3/28/2024	17:17:19	19.16	0.11	44.68	1.26	0.13	556.91
3/28/2024	17:18:19	19.16	0.11	45.29	1.26	0.14	565.49
3/28/2024	17:19:19	19.16	0.11	46.06	1.25	0.13	577
3/28/2024	17:20:19	19.17	0.11	46.85	1.25	0.13	588.89
3/28/2024	17:21:19	19.17	0.11	47.64	1.24	0.13	599.16
3/28/2024	17:22:19	19.17	0.11	48.49	1.24	0.13	608.82
3/28/2024	17:23:19	19.16	0.11	49.16	1.24	0.13	616.14
3/28/2024	17:24:19	19.16	0.11	49.85	1.24	0.13	621.85
3/28/2024	17:25:19	19.16	0.11	50.3	1.23	0.13	628.7
3/28/2024	17:26:19	19.17	0.11	50.89	1.23	0.13	638.59
3/28/2024	17:27:19	19.18	0.12	51.62	1.22	0.13	651.83
3/28/2024	17:28:19	19.17	0.12	52.46	1.22	0.14	663.98
3/28/2024	17:29:19	19.17	0.12	53.37	1.21	0.14	673.37
3/28/2024	17:30:19	19.17	0.12	54.12	1.2	0.14	679.27
3/28/2024	17:31:19	19.17	0.12	54.27	1.2	0.14	680.58
3/28/2024	17:32:19	19.17	0.12	54.21	1.2	0.15	677.31
3/28/2024	17:33:19	19.18	0.12	54.23	1.2	0.15	674.81
3/28/2024	17:34:19	19.19	0.12	53.61	1.2	0.15	674.31
3/28/2024	17:35:19	19.17	0.12	54.02	1.2	0.15	674
3/28/2024	17:36:19	19.17	0.12	53.82	1.2	0.16	670.66
3/28/2024	17:37:19	19.17	0.12	53.32	1.2	0.15	663.49
3/28/2024	17:38:19	19.17	0.12	52.79	1.2	0.16	660.78
3/28/2024	17:39:19	19.17	0.12	52.88	1.21	0.16	662.39
3/28/2024	17:40:19	19.17	0.13	52.89	1.21	0.17	661.11

BIAS/DRIFT CALS

back on stack gas

3/28/2024	17:41:19	19.17	0.13	52.62	1.21	0.17	658.42
3/28/2024	17:42:19	19.16	0.13	52.53	1.21	0.17	653.87
3/28/2024	17:43:19	19.16	0.13	52.26	1.21	0.17	648.26
3/28/2024	17:44:19	19.16	0.13	51.74	1.22	0.18	641.85
3/28/2024	17:45:19	19.17	0.13	51.23	1.22	0.18	634.98
3/28/2024	17:46:19	19.17	0.13	50.48	1.22	0.19	627.73
3/28/2024	17:47:19	19.17	0.13	49.82	1.23	0.19	621.26
3/28/2024	17:48:19	19.17	0.13	49.35	1.23	0.19	619.4
3/28/2024	17:49:19	19.18	0.13	49.21	1.23	0.19	620.41
3/28/2024	17:50:19	19.18	0.13	49.39	1.22	0.19	621.34
3/28/2024	17:51:19	19.17	0.13	49.71	1.23	0.2	622.63
3/28/2024	17:52:19	19.24	0.13	47.45	1.24	0.2	622.43
3/28/2024	17:53:19	19.72	0.13	31.8	1.25	0.19	621.35
3/28/2024	17:54:19	19.91	0.12	25.57	1.25	0.19	619.51
3/28/2024	17:55:19	19.95	0.12	24.36	1.25	0.19	617.5
3/28/2024	17:56:19	19.96	0.12	24	1.26	0.19	615.92
3/28/2024	17:57:19	19.96	0.12	23.91	1.34	0.19	618.86
3/28/2024	17:58:19	19.96	0.12	24.32	1.48	0.19	648.38
3/28/2024	17:59:19	19.96	0.12	26.13	1.62	0.19	730.79
3/28/2024	18:00:19	19.97	0.12	29.77	1.74	0.18	845.76
3/28/2024	18:01:19	19.98	0.12	34.03	1.83	0.18	961.05
3/28/2024	18:02:19	19.98	0.12	37.7	1.89	0.18	1047.16
3/28/2024	18:03:19	19.98	0.12	40.31	1.95	0.18	1095.7
3/28/2024	18:04:19	19.99	0.12	41.43	1.98	0.19	1115.1
3/28/2024	18:05:19	19.99	0.12	41.87	2	0.19	1121.01
3/28/2024	18:06:19	19.99	0.12	42.22	2.02	0.18	1124.63
3/28/2024	18:07:19	20	0.12	42.31	2.03	0.18	1131.12
3/28/2024	18:08:19	20	0.12	42.32	2.03	0.18	1136.85
3/28/2024	18:09:19	20	0.12	42.56	2.04	0.18	1138.28
3/28/2024	18:10:19	20.01	0.12	42.36	2.05	0.18	1129.28
3/28/2024	18:11:19	20	0.12	41.82	2.05	0.18	1110.05
3/28/2024	18:12:19	20	0.12	41.1	2.05	0.18	1090.06
3/28/2024	18:13:19	20.01	0.12	40.65	2.05	0.18	1079.91
3/28/2024	18:14:19	20.01	0.12	40.44	2.04	0.18	1079.82
3/28/2024	18:15:19	20.01	0.12	40.47	2.04	0.18	1086.4
3/28/2024	18:16:19	20.01	0.12	40.58	2.04	0.18	1089.91
3/28/2024	18:17:19	20.01	0.12	40.49	2.04	0.18	1083.33
3/28/2024	18:18:19	20.01	0.12	39.94	2.04	0.18	1063.25
3/28/2024	18:19:19	20.01	0.12	39.36	2.04	0.18	1040.18
3/28/2024	18:20:19	20	0.12	38.87	2.04	0.18	1023.61
3/28/2024	18:21:19	20	0.12	38.54	2.04	0.18	1019.87
3/28/2024	18:22:19	20.01	0.12	38.41	2.03	0.19	1022.17
3/28/2024	18:23:19	20.01	0.12	38.43	2.03	0.19	1023.58
3/28/2024	18:24:19	20	0.12	38.44	2.03	0.19	1018.5
3/28/2024	18:25:19	20.01	0.12	37.81	2.04	0.2	1000.35
3/28/2024	18:26:19	20.01	0.12	37.24	2.04	0.2	978.97
3/28/2024	18:27:19	20	0.12	36.78	2.03	0.21	965.98
3/28/2024	18:28:19	20	0.12	36.71	2.03	0.22	965.9
3/28/2024	18:29:19	20	0.12	36.76	2.02	0.22	974.69
3/28/2024	18:30:19	20.01	0.12	36.91	2.02	0.23	984.48
3/28/2024	18:31:19	20.01	0.12	37.23	2.02	0.24	984.94
3/28/2024	18:32:19	20.01	0.12	36.92	2.02	0.24	972.21
3/28/2024	18:33:19	20.01	0.12	36.36	2.02	0.25	954.06
3/28/2024	18:34:19	20	0.12	36.24	2.02	0.26	944.29
3/28/2024	18:35:19	20	0.12	36.03	2.01	0.27	945.56
3/28/2024	18:36:19	19.99	0.12	36.24	2.01	0.27	952.14
3/28/2024	18:37:19	20	0.12	36.63	2.01	0.28	958.77
3/28/2024	18:38:19	20	0.12	36.65	2.01	0.29	954.2
3/28/2024	18:39:19	20	0.12	36.14	2.01	0.3	937.51
3/28/2024	18:40:19	20	0.12	35.45	2.01	0.31	914.88
3/28/2024	18:41:19	20	0.12	34.85	2.01	0.31	899.35
3/28/2024	18:42:19	20	0.13	34.58	2.01	0.33	895.61
3/28/2024	18:43:19	20	0.13	34.46	2	0.34	899.52
3/28/2024	18:44:19	20	0.13	34.68	2	0.35	904.79
3/28/2024	18:45:19	19.99	0.13	34.65	2.01	0.36	903.13
3/28/2024	18:46:19	20	0.13	34.57	2.01	0.36	890.62
3/28/2024	18:47:19	20	0.13	33.95	2	0.37	873.79
3/28/2024	18:48:19	19.99	0.13	33.68	2	0.38	864.12
3/28/2024	18:49:19	19.99	0.14	33.56	1.99	0.39	866.22
3/28/2024	18:50:19	19.99	0.14	33.72	1.99	0.4	875.85
3/28/2024	18:51:19	19.99	0.14	33.92	1.98	0.4	889.06
3/28/2024	18:52:19	19.99	0.13	34.45	1.98	0.4	896.03
3/28/2024	18:53:19	20	0.13	34.55	1.98	0.4	890.36
3/28/2024	18:54:19	19.99	0.14	34.23	1.99	0.41	874.61
3/28/2024	18:55:19	19.99	0.14	33.77	1.98	0.42	859.91
3/28/2024	18:56:19	19.98	0.14	33.51	1.98	0.43	854.67
3/28/2024	18:57:19	19.98	0.14	33.48	1.97	0.44	859.53
3/28/2024	18:58:19	19.98	0.15	33.57	1.98	0.44	868.67
3/28/2024	18:59:19	19.99	0.14	33.73	1.98	0.45	872.81
3/28/2024	19:00:19	19.99	0.14	33.73	1.98	0.44	865.05
3/28/2024	19:01:19	20	0.14	33.16	3.92	0.41	845.33

SHIFT CHANGE: DW



3/28/2024	19:02:19	19.97	0.14	33.82	9.25	0.31	579.75
3/28/2024	19:03:19	19.95	0.14	34.14	11.65	0.28	545.68
3/28/2024	19:04:19	19.93	0.15	34.83	10.72	0.29	311.45
3/28/2024	19:05:19	19.97	0.14	33.5	1.99	0.46	661.89
3/28/2024	19:06:19	18.99	0.14	33	1.97	0.46	851.96
3/28/2024	19:07:19	19.99	0.14	32.99	1.97	0.46	849.82
3/28/2024	19:08:19	20	0.14	32.55	1.97	0.46	836.45
3/28/2024	19:09:19	19.99	0.14	32.14	1.96	0.47	822.61
3/28/2024	19:10:19	19.99	0.15	32.08	1.96	0.47	817.67
3/28/2024	19:11:19	19.98	0.15	31.96	1.96	0.48	823.46
3/28/2024	19:12:19	19.98	0.15	32.19	1.96	0.48	833.26
3/28/2024	19:13:19	19.99	0.14	32.52	1.96	0.48	838.74
3/28/2024	19:14:19	19.99	0.14	32.54	1.96	0.47	832.96
3/28/2024	19:15:19	19.99	0.14	32.09	1.96	0.47	816.47
3/28/2024	19:16:19	19.99	0.14	31.57	1.96	0.48	798.8
3/28/2024	19:17:19	19.99	0.14	31.07	1.96	0.48	790.07
3/28/2024	19:18:19	19.99	0.14	30.77	1.96	0.48	791.39
3/28/2024	19:19:19	20	0.14	30.86	1.95	0.47	800.08
3/28/2024	19:20:19	20	0.14	31.17	1.95	0.48	807.31
3/28/2024	19:21:19	19.99	0.14	31.45	1.95	0.48	804.68
3/28/2024	19:22:19	19.98	0.14	31.4	5.07	0.42	766.38
3/28/2024	19:23:19	19.98	0.14	31.19	2.06	0.48	673.66
3/28/2024	19:24:19	19.99	0.14	30.3	1.99	0.48	770.12
3/28/2024	19:25:19	19.99	0.14	30.22	1.99	0.48	776.23
3/28/2024	19:26:19	19.99	0.14	30.41	1.99	0.48	786.03
3/28/2024	19:27:19	19.99	0.14	30.77	1.99	0.48	794.83
3/28/2024	19:28:19	20	0.14	31	1.99	0.48	795.24
3/28/2024	19:29:19	20	0.14	30.77	1.99	0.49	783.37
3/28/2024	19:30:19	20	0.14	30.35	1.99	0.49	768.25
3/28/2024	19:31:19	19.99	0.14	30.09	1.99	0.49	759.59
3/28/2024	19:32:19	19.98	0.14	29.88	1.99	0.48	760.42
3/28/2024	19:33:19	19.98	0.14	29.91	1.98	0.49	767.87
3/28/2024	19:34:19	19.99	0.14	30.2	1.99	0.49	775.1
3/28/2024	19:35:19	20	0.14	30.21	1.99	0.49	774.3
3/28/2024	19:36:19	20.01	0.14	29.87	1.99	0.49	763.01
3/28/2024	19:37:19	20	0.14	29.39	1.99	0.49	746.85
3/28/2024	19:38:19	19.99	0.14	28.97	1.99	0.49	735.42
3/28/2024	19:39:19	19.99	0.14	28.78	1.98	0.48	734.37
3/28/2024	19:40:19	19.99	0.14	29.01	1.98	0.49	740.41
3/28/2024	19:41:19	19.99	0.14	29.13	1.98	0.49	749.07
3/28/2024	19:42:19	19.99	0.14	29.53	6.18	0.41	702.97
3/28/2024	19:43:19	19.98	0.14	29.82	2.04	0.48	630.77
3/28/2024	19:44:19	19.99	0.14	28.92	1.95	0.48	732.88
3/28/2024	19:45:19	19.92	0.13	31.05	1.93	0.48	723
3/28/2024	19:46:19	19.69	0.14	40.08	1.93	0.48	723.15
3/28/2024	19:47:19	19.61	0.14	43.25	1.93	0.48	733.05
3/28/2024	19:48:19	19.6	0.14	43.9	1.88	0.48	734.2
3/28/2024	19:49:19	19.6	0.14	43.33	1.76	0.48	712.9
3/28/2024	19:50:19	19.6	0.14	41.63	1.61	0.47	671.65
3/28/2024	19:51:19	19.59	0.14	39.29	1.51	0.47	629.13
3/28/2024	19:52:19	19.58	0.14	36.99	28.97	28.54	592.72
3/28/2024	19:53:19	19.58	0.14	35.06	37.7	44.48	559.2
3/28/2024	19:54:19	19.58	0.14	33.15	17.88	24.02	526.75
3/28/2024	19:55:19	19.58	0.14	31.37	49.49	50	495.93
3/28/2024	19:56:19	19.58	0.14	29.72	20.23	30.06	472.1
3/28/2024	19:57:19	19.57	0.14	28.65	48.18	48.49	458.46
3/28/2024	19:58:19	19.57	0.14	28.25	35.34	41.03	459.03
3/28/2024	19:59:19	19.57	0.14	28.46	43.73	47.81	467.45
3/28/2024	20:00:19	19.57	0.14	28.89	16.09	23.77	474.63
3/28/2024	20:01:19	19.57	0.14	29.21	45.59	46.18	478
3/28/2024	20:02:19	19.57	0.14	29.24	41.88	46.71	477.92
3/28/2024	20:03:19	19.57	0.14	29.01	47.45	49.52	473.47
3/28/2024	20:04:19	19.56	0.14	28.9	45.05	48.51	419.65
3/28/2024	20:05:19	19.56	0.14	28.85	49.69	50	433.59
3/28/2024	20:06:19	19.56	0.14	28.93	17.03	25.01	468.69
3/28/2024	20:07:19	19.55	0.14	29.1	1.53	1.36	469.97
3/28/2024	20:08:19	19.56	0.14	28.87	1.16	5.25	469.46
3/28/2024	20:09:19	19.57	0.15	28.71	36.99	36.8	466.37
3/28/2024	20:10:19	19.57	0.15	28.44	45.35	47.96	461.27
3/28/2024	20:11:19	19.57	0.14	28.07	9.36	8.64	456.85
3/28/2024	20:12:19	19.58	0.15	27.62	1.28	0.39	455.73
3/28/2024	20:13:19	19.58	0.15	27.06	1.29	0.38	460.54
3/28/2024	20:14:19	19.57	0.15	27.75	1.29	0.37	466.15
3/28/2024	20:15:19	19.57	0.15	28.65	1.29	0.37	469.86
3/28/2024	20:16:19	19.57	0.15	28.7	1.29	0.37	470.42
3/28/2024	20:17:19	19.57	0.15	28.73	1.29	0.36	467.01
3/28/2024	20:18:19	19.58	0.15	28.51	1.29	0.36	461.66
3/28/2024	20:19:19	19.58	0.15	28.27	1.3	0.36	459.19
3/28/2024	20:20:19	19.58	0.15	28.17	1.3	0.36	460.55
3/28/2024	20:21:19	19.58	0.15	28.33	1.3	0.35	465.11
3/28/2024	20:22:19	19.57	0.15	28.62	1.3	0.35	468

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OPEN PORT

3/28/2024	20:23:19	19.57	0.15	28.81	1.3	0.34	468.75	
3/28/2024	20:24:19	19.57	0.15	28.77	1.3	0.34	465.96	
3/28/2024	20:25:19	19.57	0.15	28.63	1.3	0.34	459.6	
3/28/2024	20:26:19	19.57	0.15	28.35	1.31	0.33	454.41	
3/28/2024	20:27:19	19.57	0.15	27.91	1.31	0.33	453.84	
3/28/2024	20:28:19	19.57	0.15	27.98	1.31	0.32	457.26	
3/28/2024	20:29:19	19.57	0.14	28.09	1.31	0.32	460.95	
3/28/2024	20:30:19	19.57	0.15	28.31	1.31	0.32	462.94	
3/28/2024	20:31:19	19.57	0.15	28.54	3.2	0.3	461.68	
3/28/2024	20:32:19	19.55	0.15	29.07	14.29	0.18	310.32	
3/28/2024	20:33:19	19.54	0.15	28.86	15.4	0.17	129.96	
3/28/2024	20:34:19	19.56	0.15	28.4	15.39	0.17	123.69	OPEN PORT
3/28/2024	20:35:19	19.56	0.15	28.59	15.42	0.16	124.77	
3/28/2024	20:36:19	19.56	0.14	28.77	15.31	0.15	125.36	
3/28/2024	20:37:19	19.57	0.14	28.55	2.84	0.27	221.18	
3/28/2024	20:38:19	19.59	0.14	28.03	1.32	0.29	450.23	
3/28/2024	20:39:19	19.58	0.14	27.95	1.32	0.28	456.5	
3/28/2024	20:40:19	19.58	0.14	27.78	1.32	0.28	454.86	
3/28/2024	20:41:19	19.58	0.14	27.8	1.32	0.27	457.37	
3/28/2024	20:42:19	19.57	0.14	27.98	1.32	0.26	459.54	
3/28/2024	20:43:19	19.58	0.14	28.09	1.32	0.26	461.44	
3/28/2024	20:44:19	19.59	0.14	28.07	1.32	0.26	460.29	
3/28/2024	20:45:19	19.59	0.14	27.87	1.33	0.26	456.69	
3/28/2024	20:46:19	19.59	0.14	27.52	34.91	33.38	450.82	
3/28/2024	20:47:19	19.58	0.14	27.65	15.6	7.63	302.89	OPEN PORT
3/28/2024	20:48:19	19.59	0.14	27.29	1.44	0.24	334.18	
3/28/2024	20:49:19	19.58	0.14	27.56	1.38	0.24	450.91	
3/28/2024	20:50:19	19.58	0.14	27.53	1.37	0.24	456.25	
3/28/2024	20:51:19	19.58	0.14	27.73	1.38	0.23	459.45	
3/28/2024	20:52:19	19.58	0.14	27.6	1.38	0.23	459.08	
3/28/2024	20:53:19	19.59	0.14	27.47	1.38	0.23	455.21	
3/28/2024	20:54:19	19.59	0.14	27.18	1.39	0.22	449.63	
3/28/2024	20:55:19	19.59	0.14	26.93	1.39	0.21	447.47	
3/28/2024	20:56:19	19.59	0.14	26.89	1.39	0.22	449.91	
3/28/2024	20:57:19	19.59	0.14	27.1	1.39	0.21	452.81	
3/28/2024	20:58:19	19.58	0.14	27.25	1.38	0.21	454.97	
3/28/2024	20:59:19	19.58	0.14	27.23	1.38	0.21	453.68	
3/28/2024	21:00:19	19.59	0.14	26.74	19.21	18.46	449.92	
3/28/2024	21:01:19	19.58	0.14	26.61	44.18	48.48	443.81	
3/28/2024	21:02:19	19.58	0.14	26.31	12.33	18.2	440.11	OPEN PORT
3/28/2024	21:03:19	19.58	0.14	26.08	12.34	5.54	440.77	
3/28/2024	21:04:19	19.58	0.14	26.23	1.36	0.25	444.3	
3/28/2024	21:05:19	19.58	0.14	26.63	1.38	0.19	448.13	
3/28/2024	21:06:19	19.58	0.14	26.8	1.38	0.18	449.59	
3/28/2024	21:07:19	19.58	0.14	26.74	1.38	0.18	449.43	
3/28/2024	21:08:19	19.58	0.14	26.52	1.38	0.18	445.35	
3/28/2024	21:09:19	19.55	0.14	26.41	0.63	0.34	515.22	
3/28/2024	21:10:19	15.06	6.54	17.81	-0.13	-0.03	885.26	
3/28/2024	21:11:19	12.62	11	1.89	-0.13	-0.03	921.92	
3/28/2024	21:12:19	12.24	11.85	-0.63	-0.13	-0.03	921.97	
3/28/2024	21:13:19	12.17	12.02	-1.06	-0.13	-0.03	921.3	
3/28/2024	21:14:19	12.29	11.43	-0.86	7.01	6.59	763.26	
3/28/2024	21:15:19	5.22	3.55	20.67	9.34	8.74	151.1	
3/28/2024	21:16:19	1.25	0.87	38.62	8.6	7.77	121.04	
3/28/2024	21:17:19	0.71	0.27	42.37	7.95	6.91	150.21	
3/28/2024	21:18:19	0.6	0.15	43.37	7.36	6.15	176.81	
3/28/2024	21:19:19	0.57	0.11	43.65	6.83	5.47	202.69	
3/28/2024	21:20:19	0.79	0.1	43.76	6.36	4.88	225.41	
3/28/2024	21:21:19	12.47	0.13	36.57	5.95	4.36	246.48	
3/28/2024	21:22:19	18.36	0.15	28.86	5.54	3.86	263.76	
3/28/2024	21:23:19	19.2	0.15	27.67	11.04	11.25	203.57	
3/28/2024	21:24:19	19.34	0.16	28.73	11.77	12.23	14.59	OPEN PORT
3/28/2024	21:25:19	19.36	0.16	29.06	11.77	12.23	3.53	
3/28/2024	21:26:19	19.38	0.16	28.94	11.77	12.24	3.53	
3/28/2024	21:27:19	19.39	0.16	29.14	6.02	4.55	39.6	
3/28/2024	21:28:19	19.48	0.15	27.8	2.42	0.18	357.48	
3/28/2024	21:29:19	19.56	0.15	26.17	2.42	0.17	416.1	
3/28/2024	21:30:19	19.58	0.15	25.88	2.42	0.17	414.11	
3/28/2024	21:31:19	19.58	0.15	25.56	2.43	0.16	408.43	
3/28/2024	21:32:19	19.57	0.15	25.19	2.43	0.16	402.48	
3/28/2024	21:33:19	19.57	0.15	24.97	2.43	0.16	401.02	
3/28/2024	21:34:19	19.57	0.15	24.87	2.42	0.16	402.4	
3/28/2024	21:35:19	19.57	0.15	24.86	2.59	0.16	405.23	
3/28/2024	21:36:19	19.56	0.15	25.2	7.9	0.11	326.61	
3/28/2024	21:37:19	19.58	0.15	24.84	1.4	0.16	364.11	
3/28/2024	21:38:19	19.45	0.15	27.43	1.37	0.16	422.44	
3/28/2024	21:39:19	18.71	0.16	43.11	1.34	0.16	415.1	
3/28/2024	21:40:19	18.23	0.16	53.23	1.05	0.16	407.27	
3/28/2024	21:41:19	18.06	0.16	51.37	0.79	0.16	327.68	
3/28/2024	21:42:19	18	0.16	39.56	0.71	0.16	234.53	
3/28/2024	21:43:19	17.98	0.16	30.69	0.7	0.16	195.8	

3/28/2024	21:44:19	18.04	0.16	26.59	0.71	0.16	186.42
3/28/2024	21:45:19	18.13	0.16	24.85	0.73	0.16	185.01
3/28/2024	21:46:19	18.13	0.16	24.67	0.77	0.16	186.51
3/28/2024	21:47:19	18.14	0.16	24.73	0.8	0.16	188.91
3/28/2024	21:48:19	18.15	0.16	25.08	0.83	0.15	191.71
3/28/2024	21:49:19	18.15	0.16	25.57	0.86	0.15	195.18
3/28/2024	21:50:19	18.15	0.16	26.1	0.9	0.15	198.81
3/28/2024	21:51:19	18.16	0.16	26.49	0.93	0.14	202.95
3/28/2024	21:52:19	18.17	0.16	26.93	0.97	0.14	207.14
3/28/2024	21:53:19	18.18	0.15	27.25	1.01	0.14	210.78
3/28/2024	21:54:19	18.19	0.15	27.61	1.04	0.13	214.63
3/28/2024	21:55:19	18.21	0.15	28.08	1.08	0.12	219.05
3/28/2024	21:56:19	18.21	0.15	28.69	1.11	0.12	224
3/28/2024	21:57:19	18.21	0.15	29.3	1.13	0.12	227.76
3/28/2024	21:58:19	18.21	0.15	29.82	1.16	0.11	230.91
3/28/2024	21:59:19	18.21	0.15	29.99	1.17	0.11	232.7
3/28/2024	22:00:19	18.22	0.15	30.16	1.2	0.11	233.27
3/28/2024	22:01:19	18.22	0.15	30.08	1.23	0.1	234.36
3/28/2024	22:02:19	18.23	0.15	30.1	1.25	0.1	235.32
3/28/2024	22:03:19	18.24	0.15	30.19	3.76	0.09	234.89
3/28/2024	22:04:19	18.25	0.15	30.13	6.82	0.07	170.76
3/28/2024	22:05:19	18.32	0.14	29.45	1.31	0.09	206.92
3/28/2024	22:06:19	18.24	0.14	30.32	1.3	0.09	238.1
3/28/2024	22:07:19	18.23	0.14	30.51	1.31	0.09	238.14
3/28/2024	22:08:19	18.23	0.15	30.52	1.33	0.09	238.18
3/28/2024	22:09:19	18.24	0.15	30.34	1.34	0.09	236.67
3/28/2024	22:10:19	18.25	0.15	30.12	1.36	0.09	235.58
3/28/2024	22:11:19	18.26	0.14	30.05	1.37	0.08	234.9
3/28/2024	22:12:19	18.26	0.15	30.06	1.38	0.08	233.79
3/28/2024	22:13:19	18.26	0.15	29.66	1.38	0.09	231.86
3/28/2024	22:14:19	18.25	0.15	29.53	1.38	0.09	229.17
3/28/2024	22:15:19	18.24	0.15	29.24	1.39	0.08	226.61
3/28/2024	22:16:19	18.24	0.15	28.76	1.4	0.08	223.71
3/28/2024	22:17:19	18.25	0.15	28.39	1.42	0.08	220.8
3/28/2024	22:18:19	18.26	0.15	27.89	1.43	0.08	217.52
3/28/2024	22:19:19	18.27	0.15	27.47	1.43	0.08	215.48
3/28/2024	22:20:19	18.27	0.15	27.14	1.43	0.08	213.38
3/28/2024	22:21:19	18.27	0.15	26.66	1.43	0.08	210.78
3/28/2024	22:22:19	18.27	0.15	26.36	1.43	0.08	208.24
3/28/2024	22:23:19	18.28	0.15	26.08	1.42	0.08	206.39
3/28/2024	22:24:19	18.14	0.15	27.15	1.41	0.08	203.36
3/28/2024	22:25:19	18.1	0.15	27.2	1.41	0.08	200.78
3/28/2024	22:26:19	18.09	0.15	26.86	1.4	0.08	198.87
3/28/2024	22:27:19	18.09	0.15	26.59	1.41	0.08	197.6
3/28/2024	22:28:19	18.1	0.15	26.46	1.41	0.08	196.81
3/28/2024	22:29:19	18.1	0.15	26.36	1.42	0.08	196.3
3/28/2024	22:30:19	18.1	0.15	26.24	1.43	0.08	195.3
3/28/2024	22:31:19	18.1	0.15	26	1.43	0.09	194.77
3/28/2024	22:32:19	18.1	0.15	25.94	1.44	0.08	192.91
3/28/2024	22:33:19	18.09	0.15	25.75	1.44	0.08	191.52
3/28/2024	22:34:19	18.08	0.15	25.61	1.46	0.08	189.9
3/28/2024	22:35:19	18.1	0.15	25.25	1.47	0.08	188
3/28/2024	22:36:19	18.11	0.15	24.92	1.58	0.08	185.69
3/28/2024	22:37:19	18.12	0.15	24.53	9.1	0.05	159.81
3/28/2024	22:38:19	18.19	0.15	23.74	11.72	0.03	102.06
3/28/2024	22:39:19	18.21	0.15	23.28	11.86	0.03	87.98
3/28/2024	22:40:19	18.26	0.15	22.62	11.86	0.03	86.36
3/28/2024	22:41:19	18.26	0.15	22.27	11.85	0.03	85.3
3/28/2024	22:42:19	18.26	0.15	21.98	11.86	0.03	84.21
3/28/2024	22:43:19	18.27	0.15	21.65	11.87	0.03	83.4
3/28/2024	22:44:19	18.27	0.15	21.24	11.89	0.03	81.78
3/28/2024	22:45:19	18.28	0.15	20.93	11.9	0.03	80.96
3/28/2024	22:46:19	18.28	0.15	20.58	11.89	0.03	80.07
3/28/2024	22:47:19	18.29	0.15	20.41	11.89	0.03	79.53
3/28/2024	22:48:19	18.29	0.15	20.19	9.99	0.04	78.92
3/28/2024	22:49:19	18.27	0.15	20.28	1.82	0.07	121.48
3/28/2024	22:50:19	18.17	0.15	20.93	1.75	0.07	157.52
3/28/2024	22:51:19	18.14	0.15	20.68	1.75	0.07	155.21
3/28/2024	22:52:19	18.14	0.15	20.38	1.75	0.07	153.48
3/28/2024	22:53:19	18.12	0.15	20.29	1.75	0.07	152.5
3/28/2024	22:54:19	18.12	0.15	20.19	3.48	0.06	150.38
3/28/2024	22:55:19	18.15	0.16	19.62	1.81	0.06	135.33
3/28/2024	22:56:19	18.15	0.16	19.22	1.56	0.06	147.62
3/28/2024	22:57:19	18.15	0.15	19.01	1.54	0.06	146.06
3/28/2024	22:58:19	18.14	0.15	18.93	1.53	0.06	143.6
3/28/2024	22:59:19	18.14	0.15	18.7	1.53	0.05	142.7
3/28/2024	23:00:19	18.14	0.15	18.52	1.52	0.05	140.86
3/28/2024	23:01:19	18.13	0.15	18.24	1.52	0.05	138.31
3/28/2024	23:02:19	18.14	0.15	18	1.52	0.05	136.75
3/28/2024	23:03:19	18.15	0.15	17.73	1.52	0.05	135.36
3/28/2024	23:04:19	18.15	0.15	17.42	1.53	0.04	133.95

OPEN PORT

3/28/2024	23:05:19	18.15	0.15	17.26	1.53	0.04	132.57
3/28/2024	23:06:19	18.15	0.15	17.14	1.53	0.04	130.79
3/28/2024	23:07:19	18.15	0.14	16.98	1.53	0.04	129.13
3/28/2024	23:08:19	18.15	0.14	16.75	1.52	0.04	127.84
3/28/2024	23:09:19	18.16	0.14	16.58	1.52	0.04	126.45
3/28/2024	23:10:19	18.16	0.14	16.31	1.52	0.03	123.93
3/28/2024	23:11:19	18.16	0.14	16.04	1.51	0.03	122.13
3/28/2024	23:12:19	18.17	0.14	15.7	1.51	0.03	120.68
3/28/2024	23:13:19	18.17	0.14	15.51	1.51	0.03	119.48
3/28/2024	23:14:19	18.17	0.14	15.32	1.51	0.03	118.44
3/28/2024	23:15:19	18.17	0.14	15.07	1.51	0.03	116.56
3/28/2024	23:16:19	18.16	0.14	14.85	1.51	0.02	114.45
3/28/2024	23:17:19	18.16	0.14	14.55	1.51	0.02	113.12
3/28/2024	23:18:19	18.17	0.14	14.35	1.52	0.02	111.63
3/28/2024	23:19:19	18.16	0.14	14.18	1.52	0.03	110.26
3/28/2024	23:20:19	18.17	0.14	14.03	1.51	0.03	108.82
3/28/2024	23:21:19	18.18	0.14	13.85	1.51	0.02	107.27
3/28/2024	23:22:19	18.17	0.14	13.62	3.38	0.02	105.94
3/28/2024	23:23:19	18.18	0.14	13.37	2.72	0.02	92.01
3/28/2024	23:24:19	18.17	0.14	13.28	1.58	0.02	101.59
3/28/2024	23:25:19	18.16	0.15	13.02	1.57	0.02	101.48
3/28/2024	23:26:19	18.16	0.15	12.9	1.58	0.02	100.72
3/28/2024	23:27:19	18.15	0.14	12.82	1.58	0.02	99.54
3/28/2024	23:28:19	18.16	0.14	12.58	1.58	0.01	98.23
3/28/2024	23:29:19	18.17	0.14	12.4	1.57	0.01	96.44
3/28/2024	23:30:19	18.17	0.14	12.15	1.58	0.02	95.12
3/28/2024	23:31:19	18.17	0.14	11.94	1.58	0.02	94.07
3/28/2024	23:32:19	18.16	0.14	11.9	1.61	0.02	93
3/28/2024	23:33:19	18.16	0.14	11.69	1.62	0.02	91.68
3/28/2024	23:34:19	18.17	0.14	11.49	1.6	0.02	90.6
3/28/2024	23:35:19	18.16	0.14	11.39	1.6	0.01	89.35
3/28/2024	23:36:19	18.17	0.14	11.38	1.6	0.01	88.13
3/28/2024	23:37:19	18.17	0.14	11.15	1.6	0.01	86.79
3/28/2024	23:38:19	18.18	0.14	10.87	1.6	0.01	85.51
3/28/2024	23:39:19	18.17	0.14	10.78	1.6	0.01	84.73
3/28/2024	23:40:19	18.16	0.15	10.55	1.6	0.01	83.7
3/28/2024	23:41:19	18.16	0.15	10.46	1.6	0.01	82.95
3/28/2024	23:42:19	18.15	0.15	10.41	1.6	0	82.19
3/28/2024	23:43:19	18.16	0.15	10.3	1.6	0	80.9
3/28/2024	23:44:19	18.16	0.15	10.13	1.6	0	79.88
3/28/2024	23:45:19	18.16	0.15	9.96	1.6	0	78.58
3/28/2024	23:46:19	18.16	0.15	9.82	1.61	0	77.83
3/28/2024	23:47:19	18.16	0.15	9.73	1.6	0	76.68
3/28/2024	23:48:19	18.17	0.15	9.57	1.6	0	75.34
3/28/2024	23:49:19	18.18	0.15	9.45	1.61	0	74.49
3/28/2024	23:50:19	18.18	0.15	9.35	1.61	-0.01	73.82
3/28/2024	23:51:19	18.18	0.15	9.22	1.61	-0.01	60.01
3/28/2024	23:52:19	18.18	0.15	9.03	1.61	-0.01	64.63
3/28/2024	23:53:19	18.19	0.14	8.84	1.62	-0.01	71.28
3/28/2024	23:54:19	18.19	0.14	8.74	1.62	-0.02	70.11
3/28/2024	23:55:19	18.19	0.14	8.68	1.62	-0.02	69.85
3/28/2024	23:56:19	18.18	0.14	8.65	17.8	-0.05	55.06
3/28/2024	23:57:19	18.08	0.14	8.81	20.42	-0.04	9.86
3/28/2024	23:58:19	18.02	0.14	8.94	12.17	-0.05	9.21
3/28/2024	23:59:19	18.08	0.14	8.62	1.58	-0.04	51.93
3/29/2024	0:00:19	18.17	0.14	8.22	15.22	-0.05	58.73
3/29/2024	0:01:19	18.19	0.14	8.11	2.36	-0.14	14.26
3/29/2024	0:13:22	18.06	0.12	6.57	1.48	-0.09	42.54
3/29/2024	0:14:22	18.06	0.12	6.5	1.48	-0.09	51.53
3/29/2024	0:15:22	18.06	0.12	6.36	1.49	-0.09	50.65
3/29/2024	0:16:22	18.07	0.12	6.17	1.49	-0.1	50.28
3/29/2024	0:17:22	18.06	0.12	6.17	1.49	-0.1	49.34
3/29/2024	0:18:22	18.06	0.12	6.07	1.49	-0.11	48.92
3/29/2024	0:19:22	18.06	0.12	5.98	1.49	-0.11	48.57
3/29/2024	0:20:22	18.06	0.12	5.73	1.49	-0.11	48.06
3/29/2024	0:21:22	18.06	0.12	5.69	1.49	-0.11	47.22
3/29/2024	0:22:22	18.06	0.12	5.75	1.49	-0.12	46.73
3/29/2024	0:23:22	18.07	0.12	5.64	1.49	-0.12	46.12
3/29/2024	0:24:22	18.07	0.12	5.48	1.5	-0.12	45.65
3/29/2024	0:25:22	18.07	0.12	5.56	3.72	-0.12	43.91
3/29/2024	0:26:22	18.09	0.12	5.38	1.75	-0.12	40.76
3/29/2024	0:27:22	18.08	0.12	5.31	1.5	-0.12	43.84
3/29/2024	0:28:22	18.07	0.12	5.16	1.5	-0.12	43.32
3/29/2024	0:29:22	18.07	0.12	5.14	1.51	-0.12	42.83
3/29/2024	0:30:22	18.06	0.12	5.14	1.51	-0.12	42.31
3/29/2024	0:31:22	18.07	0.12	4.99	1.5	-0.12	42.08
3/29/2024	0:32:22	18.06	0.12	4.89	1.51	-0.12	41.67
3/29/2024	0:33:22	18.06	0.12	4.81	1.51	-0.13	41.05
3/29/2024	0:34:22	18.07	0.12	4.71	1.51	-0.13	40.71
3/29/2024	0:35:22	18.07	0.12	4.71	1.51	-0.13	40.42
3/29/2024	0:36:22	18.06	0.12	4.65	1.51	-0.13	39.37

OPEN PORT

analyzer malfunction + DASyLab restart

3/29/2024	0:37:22	18.05	0.12	4.58	1.51	-0.13	39.07
3/29/2024	0:38:22	18.04	0.12	4.55	1.51	-0.13	39.11
3/29/2024	0:39:22	18.04	0.12	4.38	1.51	-0.14	37.9
3/29/2024	0:40:22	18.04	0.12	4.31	1.51	-0.14	37.85
3/29/2024	0:41:22	18.04	0.12	4.24	1.52	-0.14	37.86
3/29/2024	0:42:22	18.05	0.12	4.26	1.52	-0.14	36.56
3/29/2024	0:43:22	18.05	0.12	4.17	1.52	-0.14	36.47
3/29/2024	0:44:22	18.05	0.12	4.1	1.52	-0.15	36.34
3/29/2024	0:45:22	18.05	0.12	3.97	1.52	-0.15	35.64
3/29/2024	0:46:22	18.04	0.12	3.99	1.52	-0.15	35.22
3/29/2024	0:47:22	18.04	0.12	3.89	1.69	-0.15	35.1
3/29/2024	0:48:22	18.05	0.12	3.91	2.64	-0.14	32.98
3/29/2024	0:49:22	18.07	0.12	3.82	1.53	-0.15	33.62
3/29/2024	0:50:22	18.04	0.12	3.79	1.52	-0.15	33.82
3/29/2024	0:51:22	18.05	0.12	3.75	1.52	-0.15	33.57
3/29/2024	0:52:22	18.05	0.12	3.74	1.52	-0.15	33.39
3/29/2024	0:53:22	18.05	0.12	3.54	1.52	-0.15	32.7
3/29/2024	0:54:22	18.05	0.12	3.49	1.52	-0.15	32.66
3/29/2024	0:55:22	18.05	0.12	3.54	1.53	-0.15	31.98
3/29/2024	0:56:22	18.06	0.12	3.52	1.53	-0.15	31.72
3/29/2024	0:57:22	18.06	0.12	3.42	1.53	-0.15	31.27
3/29/2024	0:58:22	18.05	0.12	3.4	1.53	-0.15	31.07
3/29/2024	0:59:22	18.05	0.12	3.36	2.86	-0.15	29.51
3/29/2024	1:00:22	18.07	0.12	3.21	1.55	-0.15	29.74
3/29/2024	1:01:22	18.05	0.12	3.17	1.55	-0.16	30.03
3/29/2024	1:02:22	18.06	0.12	3.15	1.55	-0.16	30.05
3/29/2024	1:03:22	18.06	0.12	3.06	1.56	-0.16	29.43
3/29/2024	1:04:22	18.06	0.12	3.08	1.55	-0.17	28.68
3/29/2024	1:05:22	18.06	0.12	3.04	1.55	-0.17	28.68
3/29/2024	1:06:22	18.06	0.12	3.05	1.56	-0.17	28.46
3/29/2024	1:07:22	18.06	0.12	2.9	1.56	-0.17	27.91
3/29/2024	1:08:22	18.06	0.12	2.89	1.56	-0.17	27.63
3/29/2024	1:09:22	18.06	0.12	2.81	1.56	-0.17	27.39
3/29/2024	1:10:22	18.06	0.12	2.9	1.56	-0.17	27.42
3/29/2024	1:11:22	18.06	0.12	2.82	1.56	-0.17	27.19
3/29/2024	1:12:22	18.06	0.12	2.8	1.56	-0.17	26.56
3/29/2024	1:13:22	18.06	0.12	2.71	1.56	-0.17	26.03
3/29/2024	1:14:22	18.06	0.12	2.63	1.56	-0.18	26.03
3/29/2024	1:15:22	18.07	0.12	2.57	1.56	-0.18	26.04
3/29/2024	1:16:22	18.06	0.12	2.58	1.57	-0.18	25.88
3/29/2024	1:17:22	18.05	0.12	2.58	1.57	-0.18	24.76
3/29/2024	1:18:22	18.06	0.12	2.56	1.57	-0.18	24.73
3/29/2024	1:19:22	18.07	0.12	2.48	1.57	-0.18	24.73
3/29/2024	1:20:22	18.07	0.12	2.44	1.57	-0.18	24.75
3/29/2024	1:21:22	18.07	0.11	2.46	1.57	-0.19	24.61
3/29/2024	1:22:22	18.07	0.11	2.38	1.57	-0.19	23.88
3/29/2024	1:23:22	18.07	0.11	2.42	1.57	-0.19	23.67
3/29/2024	1:24:22	18.06	0.12	2.31	1.57	-0.19	23.44
3/29/2024	1:25:22	18.06	0.11	2.16	1.57	-0.19	23.44
3/29/2024	1:26:22	18.07	0.11	2.19	1.57	-0.2	23.31
3/29/2024	1:27:22	18.07	0.11	2.12	1.57	-0.2	22.97
3/29/2024	1:28:22	18.07	0.11	2.11	1.58	-0.2	22.6
3/29/2024	1:29:22	18.06	0.11	2.02	1.58	-0.2	22.18
3/29/2024	1:30:22	18.06	0.11	2.1	1.58	-0.21	22.17
3/29/2024	1:31:22	18.07	0.11	2.04	1.97	-0.21	22.15
3/29/2024	1:32:22	18.07	0.11	2.08	2.61	-0.21	20.46
3/29/2024	1:33:22	18.07	0.11	2.08	1.6	-0.21	21.14
3/29/2024	1:34:22	18.06	0.11	1.98	1.6	-0.21	21.2
3/29/2024	1:35:22	18.07	0.11	1.97	1.59	-0.21	20.77
3/29/2024	1:36:22	18.07	0.11	1.9	1.6	-0.21	20.75
3/29/2024	1:37:22	18.06	0.11	1.91	1.6	-0.21	20.76
3/29/2024	1:38:22	18.06	0.11	1.81	1.6	-0.21	20.75
3/29/2024	1:39:22	18.07	0.11	1.84	1.6	-0.21	20.11
3/29/2024	1:40:22	18.07	0.11	1.87	1.6	-0.22	20.1
3/29/2024	1:41:22	18.07	0.11	1.76	1.61	-0.22	19.7
3/29/2024	1:42:22	18.08	0.11	1.73	1.61	-0.22	19.46
3/29/2024	1:43:22	18.08	0.11	1.72	1.6	-0.22	19.47
3/29/2024	1:44:22	18.07	0.11	1.68	1.6	-0.23	19.49
3/29/2024	1:45:22	18.07	0.11	1.66	1.61	-0.23	19.46
3/29/2024	1:46:22	18.07	0.11	1.46	1.6	-0.23	19.45
3/29/2024	1:47:22	18.07	0.11	1.57	1.61	-0.23	18.8
3/29/2024	1:48:22	18.07	0.11	1.51	1.61	-0.23	18.57
3/29/2024	1:49:22	18.01	0.12	1.75	6.53	5.7	18.67
3/29/2024	1:50:22	18	0.12	1.59	11.73	11.91	7.55
3/29/2024	1:51:22	17.92	0.12	1.7	11.74	11.92	1.57
3/29/2024	1:52:22	17.91	0.12	1.64	11.74	11.93	1.58
3/29/2024	1:53:22	17.91	0.12	1.58	9.9	9.76	2.04
3/29/2024	1:54:22	12.51	0.33	16.75	0.01	-0.11	404.9
3/29/2024	1:55:22	15.7	0.21	17.52	-0.16	-0.26	912.79
3/29/2024	1:56:22	17.43	0.13	6.23	-0.16	-0.26	923.4
3/29/2024	1:57:22	10.24	0.12	16.84	-0.17	-0.26	923.53

3/29/2024	1:58:22	2.03	0.08	37.89	0.75	-0.26	866.54
3/29/2024	1:59:22	0.81	0.07	41.4	1.61	-0.25	169.28
3/29/2024	2:00:22	0.62	0.07	41.96	1.61	-0.25	17.23
3/29/2024	2:01:22	0.56	0.07	42.04	1.62	-0.25	16.83
3/29/2024	2:02:22	0.54	0.07	42	1.62	-0.25	16.81
3/29/2024	2:03:22	1.46	0.41	41.33	1.62	-0.25	16.01
3/29/2024	2:04:22	9.27	8.47	15.03	1.62	-0.26	15.99
3/29/2024	2:05:22	11.55	11.48	-0.58	1.62	-0.26	15.56
3/29/2024	2:06:22	11.9	12.14	-2.75	1.62	-0.26	15.58
3/29/2024	2:07:22	12.41	11.43	-3.29	1.62	-0.26	15.58
3/29/2024	2:08:22	16.56	3.15	-2.79	1.62	-0.26	15.62
3/29/2024	2:09:22	17.74	0.8	-1.09	1.63	-0.26	15.58
3/29/2024	2:10:22	18	0.27	0.04	1.63	-0.27	15.4
3/29/2024	2:11:22	18.07	0.17	0.33	1.63	-0.27	15.14
3/29/2024	2:12:22	18.07	0.14	0.51	1.62	-0.27	15.16
3/29/2024	2:13:22	18.07	0.13	0.62	1.59	-0.28	14.91
3/29/2024	2:14:22	18.06	0.12	0.68	3.4	-0.28	14.08
3/29/2024	2:15:22	18.1	0.12	0.67	1.65	-0.28	13.73
3/29/2024	2:16:22	18.1	0.11	0.7	1.59	-0.28	14.29
3/29/2024	2:17:22	18.09	0.11	0.77	1.59	-0.28	14.27
3/29/2024	2:18:22	18.09	0.11	0.77	1.59	-0.29	14.24
3/29/2024	2:19:22	18.1	0.11	0.76	1.59	-0.29	14.25
3/29/2024	2:20:22	18.1	0.1	0.8	1.59	-0.29	14.23
3/29/2024	2:21:22	18.1	0.1	0.76	1.59	-0.29	13.84
3/29/2024	2:22:22	18.1	0.11	0.81	1.59	-0.3	13.77
3/29/2024	2:23:22	18.1	0.1	0.73	1.59	-0.29	13.34
3/29/2024	2:24:22	18.1	0.1	0.74	1.59	-0.3	13.15
3/29/2024	2:25:22	18.1	0.1	0.73	1.58	-0.3	12.9
3/29/2024	2:26:22	18.1	0.1	0.76	1.59	-0.3	12.9
3/29/2024	2:27:22	18.1	0.1	0.75	1.59	-0.31	12.91
3/29/2024	2:28:22	18.1	0.1	0.76	1.6	-0.31	12.89
3/29/2024	2:29:22	18.1	0.1	0.74	1.6	-0.32	12.95
3/29/2024	2:30:22	18.11	0.1	0.73	1.6	-0.32	12.98
3/29/2024	2:31:22	18.11	0.1	0.71	3.09	-0.32	12.75
3/29/2024	2:32:22	18.12	0.1	0.77	6.14	-0.31	10.55
3/29/2024	2:33:22	18.15	0.1	0.69	1.64	-0.32	11.37
3/29/2024	2:34:22	18.11	0.1	0.72	1.61	-0.32	12.07
3/29/2024	2:35:22	18.1	0.1	0.7	1.61	-0.32	11.89
3/29/2024	2:36:22	18.11	0.1	0.61	1.62	-0.32	11.68
3/29/2024	2:37:22	18.11	0.1	0.69	1.62	-0.32	11.65
3/29/2024	2:38:22	18.11	0.1	0.71	1.62	-0.32	11.68
3/29/2024	2:39:22	18.11	0.1	0.73	1.62	-0.33	11.68
3/29/2024	2:40:22	18.11	0.1	0.66	1.62	-0.33	11.71
3/29/2024	2:41:22	18.1	0.1	0.61	1.62	-0.33	11.7
3/29/2024	2:42:22	18.1	0.1	0.62	1.62	-0.33	11.54
3/29/2024	2:43:22	18.11	0.1	0.64	1.62	-0.33	11.38
3/29/2024	2:44:22	18.11	0.1	0.58	1.62	-0.33	11.2
3/29/2024	2:45:22	18.12	0.09	0.54	1.62	-0.33	11.35
3/29/2024	2:46:22	18.12	0.09	0.69	1.62	-0.33	10.78
3/29/2024	2:47:22	18.12	0.09	0.62	1.63	-0.33	10.73
3/29/2024	2:48:22	18.11	0.09	0.7	1.63	-0.34	10.7
3/29/2024	2:49:22	18.1	0.09	0.62	1.63	-0.33	10.72
3/29/2024	2:50:22	18.11	0.09	0.67	1.63	-0.33	10.69
3/29/2024	2:51:22	18.12	0.1	0.65	1.63	-0.33	10.72
3/29/2024	2:52:22	18.13	0.09	0.62	1.63	-0.33	10.7
3/29/2024	2:53:22	18.12	0.1	0.63	1.63	-0.34	10.69
3/29/2024	2:54:22	18.12	0.09	0.67	1.63	-0.33	10.48
3/29/2024	2:55:22	18.13	0.09	0.58	1.63	-0.33	10.73
3/29/2024	2:56:22	18.12	0.1	0.57	1.63	-0.33	10.55
3/29/2024	2:57:22	18.11	0.09	0.58	1.63	-0.33	10.24
3/29/2024	2:58:22	18.11	0.09	0.63	1.64	-0.33	10.03
3/29/2024	2:59:22	18.13	0.09	0.57	1.63	-0.33	9.59
3/29/2024	3:00:22	18.13	0.09	0.51	1.64	-0.33	9.81
3/29/2024	3:01:22	18.12	0.09	0.52	1.64	-0.34	9.4
3/29/2024	3:02:22	18.11	0.09	0.57	1.64	-0.33	9.4
3/29/2024	3:03:22	18.12	0.09	0.5	1.64	-0.34	9.6
3/29/2024	3:04:22	18.12	0.09	0.51	1.64	-0.34	9.37
3/29/2024	3:05:22	18.11	0.09	0.55	1.64	-0.34	9.37
3/29/2024	3:06:22	18.11	0.09	0.6	1.64	-0.34	9.34
3/29/2024	3:07:22	18.12	0.09	0.68	1.64	-0.34	9.34
3/29/2024	3:08:22	18.12	0.09	0.46	1.64	-0.33	9.34
3/29/2024	3:09:22	18.11	0.09	0.56	1.64	-0.34	9.34
3/29/2024	3:10:22	18.11	0.09	0.52	1.65	-0.34	9.32
3/29/2024	3:11:22	18.12	0.09	0.51	1.65	-0.34	9.33
3/29/2024	3:12:22	18.12	0.09	0.54	1.65	-0.35	9.13
3/29/2024	3:13:22	18.13	0.09	0.61	1.65	-0.34	9.34
3/29/2024	3:14:22	18.12	0.09	0.66	1.65	-0.34	9.36
3/29/2024	3:15:22	18.12	0.09	0.66	1.65	-0.35	8.91
3/29/2024	3:16:22	18.13	0.09	0.62	1.65	-0.35	9.11
3/29/2024	3:17:22	18.13	0.09	0.69	1.65	-0.35	8.52
3/29/2024	3:18:22	18.13	0.09	0.59	1.65	-0.35	8.63

3/29/2024	3:19:22	18.13	0.09	0.59	1.65	-0.36	8.56
3/29/2024	3:20:22	18.13	0.09	0.69	1.65	-0.36	8.5
3/29/2024	3:21:22	18.14	0.09	0.49	1.65	-0.36	8.3
3/29/2024	3:22:22	18.13	0.09	0.58	1.66	-0.36	8.29
3/29/2024	3:23:22	18.13	0.09	0.6	1.66	-0.37	8.31
3/29/2024	3:24:22	18.13	0.09	0.55	1.66	-0.38	8.07
3/29/2024	3:25:22	18.13	0.09	0.59	1.66	-0.38	8.07
3/29/2024	3:26:22	18.12	0.09	0.67	1.66	-0.38	8.06
3/29/2024	3:27:22	18.14	0.09	0.66	1.66	-0.38	8.06
3/29/2024	3:28:22	18.14	0.09	0.71	1.66	-0.38	8.05
3/29/2024	3:29:22	18.13	0.09	0.65	1.67	-0.37	8.05
3/29/2024	3:30:22	18.13	0.09	0.72	1.67	-0.38	8.03

		O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
<b>AVERAGES</b>		<b>19.02</b>	<b>0.14</b>	<b>23.57</b>	<b>1.61</b>	<b>0.15</b>	<b>328.57</b>

END RUN 3

3/29/2024	3:31:22	18.12	0.09	0.57	1.72	-0.37	8.09
3/29/2024	3:32:22	18.12	0.09	0.58	1.96	-0.38	8.07
3/29/2024	3:33:22	18.12	0.09	0.38	3.59	-0.37	7.69
3/29/2024	3:34:22	18.15	0.09	0.45	1.96	-0.38	7.56
3/29/2024	3:35:22	18.14	0.09	0.37	1.96	-0.38	7.94
3/29/2024	3:36:22	18.13	0.09	0.28	1.61	-0.34	11.52
3/29/2024	3:37:22	17.09	2.09	-0.08	-0.12	-0.39	467.14
3/29/2024	3:38:22	13.27	9.63	-2.32	-0.17	-0.39	916.18
3/29/2024	3:39:22	12.36	11.62	-2.55	-0.17	-0.39	924.96
3/29/2024	3:40:22	12.11	12.16	-2.6	1.4	-0.38	754.58
3/29/2024	3:41:22	12.06	12.28	-2.68	3.58	1.77	71.84
3/29/2024	3:42:22	9.33	9.4	2.41	11.62	11.6	25.83
3/29/2024	3:43:22	2.54	2.39	28.87	11.74	11.76	2.78
3/29/2024	3:44:22	0.95	0.73	38.55	11.73	11.77	1.55
3/29/2024	3:45:22	0.65	0.24	41.18	3.84	1.69	2.49
3/29/2024	3:46:22	0.55	0.12	42.1	26.41	16.61	5.74
3/29/2024	3:47:22	0.54	0.08	42.5	20.5	-0.34	4.1
3/29/2024	3:48:22	8.72	0.08	29.63	20.54	-0.34	4.06
3/29/2024	3:49:22	16.11	0.1	7.03	20.51	-0.33	4.09
3/29/2024	3:50:22	17.45	0.1	1.84	20.54	-0.33	4.09
3/29/2024	3:51:22	17.85	0.1	0.84	20.54	-0.33	4.09
3/29/2024	3:52:22	17.95	0.1	0.62	20.54	-0.33	3.93





Facility ID: PermaFix  
Source ID: VTD  
Date: 3/29/24-3/30/24  
Run 4

#### Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	2034
Zero Ref Cyl	0	0	0
Zero Avg	-0.02	-0.02	0.49
Zero Error%	-0.1	-0.1	0.0
Mid Ref Cyl	12.06	12.01	2034
Mid Avg	11.99	12.16	2030.44
Mid Error%	-0.3	0.7	-0.2
High Ref Cyl	22.83	22.37	2034
High Avg	22.78	22.23	2030.44
High Error%	-0.2	-0.6	-0.2

#### Initial Bias Check

Zero Avg	-0.07	0.35	-2.17
Zero Bias%	-0.22	1.65	-0.13
Span Avg	12.06	12.16	2030.44
Span Bias%	0.31	0.00	0.00

#### Final Bias Check

Zero Avg	0.13	-0.01	1.17
Zero Bias%	0.66	0.04	0.03
Zero Drift%	0.88	1.61	0.16
Span Avg	11.8	12.24	2018.99
Span Bias%	-0.83	0.36	-0.56
Span Drift%	1.14	0.36	0.56

Ini Zero Avg	-0.07	0.35	-2.17
Ini Span Avg	12.06	12.16	2030.44
Run 4 Avg	1.79	0.22	330.7
Co	0.030	0.170	-0.500
Cm	11.930	12.200	2024.715
Cgas Run 4	1.78	0.05	332.6

Facility ID: PermaFix  
Source ID: VTD  
Date: 3/29/24-3/30/24  
Run 4

#### Calibration Error

Analyte	O <sub>2</sub>	CO <sub>2</sub>	CO
Units	%(d)	%(d)	ppmv(d)
CS	22.83	22.37	80.4
Zero Ref Cyl	0	0	0
Zero Avg	-0.08	0.01	0.8
Zero Error%	-0.4	0.0	1.0
Mid Ref Cyl	11.4	11.2	44.6
Mid Avg	11.08	11.06	44.81
Mid Error%	-1.4	-0.6	0.3
High Ref Cyl	22.83	22.37	80.4
High Avg	22.8	22.25	80.33
High Error%	-0.1	-0.5	-0.1

#### Initial Bias Check

Zero Avg	0.44	0.1	0
Zero Bias%	2.28	0.40	-1.00
Span Avg	11.10	10.72	42.46
Span Bias%	0.09	-1.52	-2.92

#### Final Bias Check

Zero Avg	0.45	0.19	4.36
Zero Bias%	2.32	0.80	4.43
Zero Drift%	0.04	0.40	5.42
Span Avg	11.98	11.37	46.24
Span Bias%	3.94	1.39	1.78
Span Drift%	3.85	2.91	4.70

Ini Zero Avg	0.44	0.1	0
Ini Span Avg	11.1	10.72	42.46
Run 4 Avg	19.32	0.22	19.7
Co	0.445	0.145	2.180
Cm	11.540	11.045	44.350
Cgas Run 4	19.39	0.08	18.5

DASYLab 2022 - 2022

Worksheet name: David Default

3/29/2024 6:56:58 AM

Block length : 1

Delta : 60 sec.

Number of channels : 12

Date	Time	O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
3/29/2024	6:55:58	20.5	0.09	3.14	20.63	-0.28	3.96
3/29/2024	6:56:58	20.51	0.09	3.09	20.63	-0.29	4.01
3/29/2024	6:57:58	20.51	0.09	2.96	20.62	-0.28	4.04
3/29/2024	6:58:58	20.51	0.09	2.8	20.62	-0.29	4.04
3/29/2024	6:59:58	20.51	0.1	2.72	18.56	-0.29	4.05
3/29/2024	7:00:58	20.11	0.1	2.66	-0.08	-0.38	4.07
3/29/2024	7:01:58	20.37	0.1	2.63	-0.07	-0.39	4.07
3/29/2024	7:02:58	20.29	0.1	2.58	-0.07	-0.39	4.07
3/29/2024	7:03:58	20.36	0.1	2.54	-0.04	-0.14	1.86
3/29/2024	7:04:58	20.07	0.1	2.5	-0.02	-0.02	-3.81
3/29/2024	7:05:58	20.38	0.1	2.4	19.41	0.1	-3.82
3/29/2024	7:06:58	20.46	0.1	2.23	20.32	0.13	-3.8
3/29/2024	7:07:58	20.52	0.1	2.05	19.89	0.1	-3.81
3/29/2024	7:08:58	20.53	0.11	2.15	20.58	0.09	-3.89
3/29/2024	7:09:58	8.48	0.08	2.48	18.22	0.09	67.71
3/29/2024	7:10:58	-0.15	0.02	2.07	19.83	0.11	36.24
3/29/2024	7:11:58	-0.16	0.01	1.85	20.42	0.11	12.93
3/29/2024	7:12:58	-0.08	0.01	-0.24	20.36	0.12	-0.75
3/29/2024	7:13:58	14.56	0.05	-0.3	20.45	0.13	-4.54
3/29/2024	7:14:58	21.83	18.63	0.61	20.62	0.28	-4.73
3/29/2024	7:15:58	22.64	23.07	-0.7	20.65	0.56	-5.15
3/29/2024	7:16:58	22.66	22.43	-1.04	20.64	0.37	-5.1
3/29/2024	7:17:58	22.7	22.24	-1.21	20.65	0.53	-5.09
3/29/2024	7:18:58	22.8	22.25	-1.31	20.64	0.47	-5.05
3/29/2024	7:19:58	21.96	12.33	-2.18	20.61	0.24	-5.06
3/29/2024	7:20:58	20.86	0.66	-2.63	20.6	0.18	-5.07
3/29/2024	7:21:58	20.72	0.18	-1.42	19.25	7.16	11.95
3/29/2024	7:22:58	20.71	0.16	-1.27	22.78	23.31	93.52
3/29/2024	7:23:58	20.71	0.26	-1.6	22.78	23.34	-6.02
3/29/2024	7:24:58	20.71	0.4	-1.94	22.69	22.24	-7.73
3/29/2024	7:25:58	20.71	0.46	-2	22.69	22.21	-7.74
3/29/2024	7:26:58	20.68	0.34	-2.1	22.7	22.22	-7.74
3/29/2024	7:27:58	20.68	0.18	-1.57	22.7	22.22	-7.7
3/29/2024	7:28:58	20.7	0.36	-1.94	22.78	22.23	-7.68
3/29/2024	7:29:58	20.69	0.32	-1.95	21.68	9.54	-7.66
3/29/2024	7:30:58	20.68	0.16	-1.7	20.76	0.25	-5.86
3/29/2024	7:31:58	20.69	0.15	-1.66	20.59	0.28	-5.12
3/29/2024	7:32:58	20.58	0.17	-1.69	13.37	7.52	-5.4
3/29/2024	7:33:58	20.64	0.19	-1.94	14.46	11.58	-6.65
3/29/2024	7:34:58	20.66	0.27	-2.19	22.3	16.74	-7.38
3/29/2024	7:35:58	20.68	0.16	-1.97	20.74	0.43	-7.13
3/29/2024	7:36:58	20.64	0.2	-2.03	12.97	9.98	-5.89
3/29/2024	7:37:58	20.56	0.29	-2.44	11.67	10.57	-6.52
3/29/2024	7:38:58	20.63	0.21	-2.32	11.68	10.91	-6.62
3/29/2024	7:39:58	20.65	0.19	-2.27	11.33	11.04	-6.42
3/29/2024	7:40:58	19.21	1.85	-2.6	14.36	7.57	-6.42
3/29/2024	7:41:58	11.41	10.98	-4.22	5.13	0.29	143.23
3/29/2024	7:42:58	11.11	11.01	-4.79	-0.02	0.24	839.38
3/29/2024	7:43:58	11.08	11.06	-4.85	-0.01	0.24	891.67
3/29/2024	7:44:58	11.08	11.06	-5.05	-0.01	0.24	899.48
3/29/2024	7:45:58	12.08	4.39	1.26	-0.01	0.24	911.42
3/29/2024	7:46:58	0.15	0.26	39.8	-0.01	0.25	921.26
3/29/2024	7:47:58	1.85	0.34	41.61	13.69	0.3	826.37
3/29/2024	7:48:58	7.26	0.42	21.91	21.08	0.34	100.32
3/29/2024	7:49:58	0.1	0.17	42.36	21.09	0.35	9.39
3/29/2024	7:50:58	0.06	0.12	42.46	21.09	0.35	0.18
3/29/2024	7:51:58	13.25	0.1	23.53	21.07	0.36	-1.27
3/29/2024	7:52:58	20.36	0.16	-2.34	21.09	0.36	-1.28
3/29/2024	7:53:58	15.91	0.23	2.08	21.09	0.36	-1.24
3/29/2024	7:54:58	3.97	0.18	29.35	21.09	0.37	-1.23
3/29/2024	7:55:58	1.24	0.12	38.36	21.08	0.37	-1.29
3/29/2024	7:56:58	0.75	0.1	40.11	20.91	0.37	-1.28
3/29/2024	7:57:58	0.62	0.1	40.43	7.91	0.36	46.55
3/29/2024	7:58:58	0.58	0.1	40.43	-0.05	0.34	707.21
3/29/2024	7:59:58	0.44	0.1	40.48	-0.07	0.35	905.02
3/29/2024	8:00:58	0.43	0.1	40.35	-0.07	0.35	906
3/29/2024	8:01:58	0.49	0.1	40.36	0.87	0.35	905.47
3/29/2024	8:02:58	6.47	3.38	26.06	6.57	0.36	457.58
3/29/2024	8:03:58	10.18	8.96	1.37	5.46	0.37	12.6

DIRECT CALS

PRE TEST  
BIAS/DRIFT CALS

3/29/2024	8:04:58	10.84	10.24	-4.31	13.96	0.39	4.74
3/29/2024	8:05:58	11.04	10.57	-5.36	6.51	0.38	4.29
3/29/2024	8:06:58	23.35	10.65	-5.7	6.36	0.38	5.58
3/29/2024	8:07:58	11.1	10.7	-5.76	6.31	0.39	5.52
3/29/2024	8:08:58	11.1	10.72	-5.7	9.18	0.4	5.35
3/29/2024	8:09:58	6.38	6.14	-6.07	19.11	0.42	3.13
3/29/2024	8:10:58	1.55	1.57	-5.66	19.19	0.43	1.52
3/29/2024	8:11:58	0.68	0.54	-4.35	19.19	0.43	1.5
3/29/2024	8:12:58	0.5	0.28	-3.56	19.19	0.44	1.45
3/29/2024	8:13:58	0.44	0.21	-2.99	19.83	0.44	1.46
3/29/2024	8:14:58	0.42	0.19	-1.84	21	0.45	1.43
3/29/2024	8:15:58	0.41	0.18	-0.06	20.98	0.46	1.13
3/29/2024	8:16:58	1.62	0.51	-0.22	14.84	6.45	3.21
3/29/2024	8:17:58	14.26	0.99	-1.34	14.33	7.49	-1.99
3/29/2024	8:18:58	19.11	0.52	-1.01	14.33	7.51	-2.82
3/29/2024	8:19:58	20	0.42	-0.75	14.29	7.58	-3.04
3/29/2024	8:20:58	20.25	0.39	-0.61	14.07	7.9	-3.25
3/29/2024	8:21:58	20.25	0.34	-0.33	14.29	7.59	-3.02
3/29/2024	8:22:58	20.3	0.37	-0.33	18.29	3.47	-3.03
3/29/2024	8:23:58	20.25	0.34	0.04	13.75	8.28	-3.02
3/29/2024	8:24:58	20.18	0.28	0.35	13.65	8.37	-2.98
3/29/2024	8:25:58	19.77	0.78	0.68	13.32	8.37	-3.17
3/29/2024	8:26:58	18.65	2.78	-1.38	15.87	4.74	-2.8
3/29/2024	8:27:58	15.96	5.41	-1.84	17.35	2.48	-1.4
3/29/2024	8:28:58	14	7.41	-2.13	12.79	8.31	-2.12
3/29/2024	8:29:58	18.71	2.25	-2.17	13.22	8.37	-2.25
3/29/2024	8:30:58	19.87	0.89	-1.03	13.69	8.27	-3.15
3/29/2024	8:31:58	20.06	0.53	-0.26	13.3	6.26	-2.98
3/29/2024	8:32:58	18.52	0.45	0.49	10.92	7.25	-2.35
3/29/2024	8:33:58	18.3	0.36	1.06	12.46	3.13	-0.93
3/29/2024	8:34:58	18.62	0.29	1.49	11.52	5.2	0.04
3/29/2024	8:35:58	18.57	0.76	1.44	18.06	1.63	-0.94
3/29/2024	8:36:58	13.61	7.31	-0.66	21.03	0.51	-1.05
3/29/2024	8:37:58	11.64	9.78	-1.21	21.03	0.5	-1.04
3/29/2024	8:38:58	11.22	10.48	-1.13	21.02	0.51	-1.05
3/29/2024	8:39:58	11.41	10.36	-1.06	14.67	6.33	-1.99
3/29/2024	8:40:58	16.71	3.99	-1.46	11.74	7.55	-2.01
3/29/2024	8:41:58	18.66	1.34	-0.13	11.43	7.55	-1.87
3/29/2024	8:42:58	19.11	0.61	0.96	11.09	7.56	-1.88
3/29/2024	8:43:58	19.59	0.45	1.28	10.84	8.16	-2.15
3/29/2024	8:44:58	19.21	0.42	1.68	10.66	8.29	-2.3
3/29/2024	8:45:58	18.92	0.42	1.88	10.59	8.39	-2.31
3/29/2024	8:46:58	18.83	0.41	2.02	10.87	9.89	-2.32
3/29/2024	8:47:58	18.81	0.38	2.05	8.08	4.81	-2.7
3/29/2024	8:48:58	18.91	0.3	2.31	2.88	0.49	0.13
3/29/2024	8:49:58	18.79	0.31	2.42	4.84	0.46	0.75
3/29/2024	8:50:58	18.82	0.28	2.5	10.55	10.09	0.66
3/29/2024	8:51:58	19.06	0.25	2.64	6.43	6.69	26.52
3/29/2024	8:52:58	19.56	0.25	2.96	-0.05	0.42	675.56
3/29/2024	8:53:58	19.66	0.24	3.78	6.52	6.62	836.49
3/29/2024	8:54:58	19.36	0.24	3.62	12.06	12.14	148.94
3/29/2024	8:55:58	18.79	0.25	3.37	12.06	12.16	-2.17
3/29/2024	8:56:58	18.65	0.25	3.23	6.98	3.47	-2.54
3/29/2024	8:57:58	18.75	0.24	3.28	17.41	0.03	0.85
3/29/2024	8:58:58	19.65	0.24	3.25	21.01	0.04	-0.99
3/29/2024	8:59:58	20.31	0.24	3.14	26.81	10.03	-1.25
3/29/2024	9:00:58	20.43	0.24	3.16	45.53	42.48	-1.71
3/29/2024	9:01:58	20.45	0.24	3.19	33.8	28.19	-1.81
3/29/2024	9:02:58	20.46	0.24	3.38	14.35	9.07	-1.95
3/29/2024	9:03:58	20.46	0.24	3.43	16.33	15.01	-3.76
3/29/2024	9:04:58	20.46	0.24	3.49	22.7	23.86	-4.88
3/29/2024	9:05:58	20.45	0.24	3.68	22.69	23.24	-5.08
3/29/2024	9:06:58	20.45	0.24	3.66	22.71	23.24	-5.1
3/29/2024	9:07:58	20.46	0.24	3.81	22.72	23.79	-4.67
3/29/2024	9:08:58	20.46	0.24	3.81	22.72	23.28	-4.69
3/29/2024	9:09:58	20.46	0.24	3.84	22.97	23	-4.44
3/29/2024	9:10:58	20.22	0.24	3.92	22.79	24.1	-4.47
3/29/2024	9:11:58	18.05	0.23	4.57	22.69	25.66	-4.51
3/29/2024	9:12:58	18.18	0.15	4.69	22.65	25.23	-4.76
3/29/2024	9:13:58	17.49	0.18	4.92	21.67	19.56	-4.5
3/29/2024	9:14:58	17.89	0.18	5.14	11.05	9.89	-4.42
3/29/2024	9:15:58	18.85	0.18	5.51	11	10.39	-3.85
3/29/2024	9:16:58	19.63	0.18	5.33	16.22	3.89	-3.35
3/29/2024	9:17:58	20.29	0.19	4.65	16.36	4.42	-0.5
3/29/2024	9:18:58	20.43	0.19	4.61	11.8	9.71	8.77
3/29/2024	9:19:58	20.44	0.2	4.64	11.81	12.37	19.08

\*\*different mid for process O2/CO2

3/29/2024	9:20:58	20.42	0.21	4.69	11.97	11.95	-3.86
3/29/2024	9:21:58	20.41	0.21	4.74	17.89	0.83	-2.59
3/29/2024	9:22:58	20.45	0.2	4.76	18.53	0.19	0.07
3/29/2024	9:23:58	20.47	0.2	4.89	18.49	0.18	0.08
3/29/2024	9:24:58	20.47	0.2	4.99	18.52	0.18	0.1
3/29/2024	9:25:58	20.47	0.19	5.08	18.47	0.17	0.09
3/29/2024	9:26:58	20.44	0.19	5.1	19.96	0.26	-0.31
3/29/2024	9:27:58	19.64	0.17	6.12	19.18	0.2	-2.14
3/29/2024	9:28:58	19.1	0.16	6.77	16.65	0.14	-0.62
3/29/2024	9:29:58	19.46	0.17	5.96	16.02	1.67	0.03
3/29/2024	9:30:58	19.81	0.2	5.53	11.73	7.49	-1.88
3/29/2024	9:31:58	19.76	0.19	5.59	11.32	8.01	-3.39
3/29/2024	9:32:58	19.89	0.2	5.53	10.49	0.18	-1.44
3/29/2024	9:33:58	20.34	0.28	5.14	10.37	0.12	1.24
3/29/2024	9:34:58	20.45	0.34	4.99	10.28	0.12	1.41
3/29/2024	9:35:58	20.43	0.36	5.01	10.24	0.11	1.39
3/29/2024	9:36:58	20.33	0.35	5.14	10.23	0.11	1.36
3/29/2024	9:37:58	20.37	0.36	5.03	14	0.13	1.36
3/29/2024	9:38:58	20.42	0.29	5.27	10.2	0.1	1.81
3/29/2024	9:39:58	20.42	0.3	5.37	11.28	0.1	1.86
3/29/2024	9:40:58	19.55	0.29	5.86	16.01	0.1	1.4
3/29/2024	9:41:58	19.37	0.29	6.21	18.33	0.1	0.05
3/29/2024	9:42:58	19.86	0.28	6.2	15.01	0.09	-0.64
3/29/2024	9:43:58	19.78	0.26	6.36	9.91	0.09	0.1
3/29/2024	9:44:58	19.42	0.23	6.51	8.01	0.08	1.32
3/29/2024	9:45:58	19.51	0.22	6.63	6.9	0.08	1.38
3/29/2024	9:46:58	19.38	0.2	6.72	6.52	0.08	1.39
3/29/2024	9:47:58	19.35	0.18	6.9	5.55	0.08	1.1
3/29/2024	9:48:58	17.61	0.14	7.2	4.6	0.08	0.03
3/29/2024	9:49:58	17.32	0.13	7.34	4.01	0.08	-1.27
3/29/2024	9:50:58	18.74	0.15	7.21	3.74	0.08	-1.28
3/29/2024	9:51:58	15.69	0.25	6.91	3.56	0.08	-0.53
3/29/2024	9:52:58	0.68	0.1	7.02	3.55	0.08	0.08
3/29/2024	9:53:58	0.03	0.04	5.58	3.57	0.08	0.95
3/29/2024	9:54:58	5.92	0.32	14.84	3.34	0.08	0.76
3/29/2024	9:55:58	11.86	0.07	26.56	3.02	0.08	0.13
3/29/2024	9:56:58	19.21	0.14	-0.14	2.78	0.08	-0.21
3/29/2024	9:57:58	19.18	0.12	-0.28	2.61	0.08	-1.27
3/29/2024	9:58:58	19.16	0.11	-0.2	2.5	0.08	-1.32
3/29/2024	9:59:58	19.14	0.11	-0.27	2.41	0.08	-1.68
3/29/2024	10:00:58	19.14	0.11	-0.3	2.35	0.08	-1.87
3/29/2024	10:01:58	19.13	0.11	-0.25	2.29	0.08	-2.3
3/29/2024	10:02:58	19.13	0.11	-0.3	2.25	0.09	-2.51
3/29/2024	10:03:58	19.13	0.11	-0.34	2.21	0.09	-2.49
3/29/2024	10:04:58	19.12	0.11	-0.47	2.18	0.09	-2.51
3/29/2024	10:05:58	19.12	0.11	-0.48	2.15	0.09	-2.48
3/29/2024	10:06:58	19.11	0.11	-0.5	2.13	0.09	-2.49
3/29/2024	10:07:58	19.11	0.12	-0.6	2.11	0.09	-2.52
3/29/2024	10:08:58	19.11	0.12	-0.56	2.1	0.09	-2.49
3/29/2024	10:09:58	19.11	0.12	-0.55	2.08	0.09	-2.47
3/29/2024	10:10:58	19.11	0.12	-0.54	2.07	0.1	-2.48
3/29/2024	10:11:58	19.11	0.12	-0.66	2.06	0.1	-2.49
3/29/2024	10:12:58	19.11	0.12	-0.73	2.05	0.1	-2.49
3/29/2024	10:13:58	19.08	0.12	-0.72	2.03	0.1	-2.49
3/29/2024	10:14:58	19.08	0.12	-0.85	2.02	0.1	-2.51
3/29/2024	10:15:58	19.09	0.12	-0.81	2.01	0.1	-2.49
3/29/2024	10:16:58	19.1	0.12	-0.73	2	0.1	-2.51
3/29/2024	10:17:58	19.1	0.13	-0.78	2	0.1	-2.53
3/29/2024	10:18:58	19.11	0.13	-0.86	1.99	0.1	-2.53
3/29/2024	10:19:58	19.12	0.13	-0.97	1.99	0.11	-2.52
3/29/2024	10:20:58	19.12	0.13	-0.85	1.98	0.11	-2.54
3/29/2024	10:21:58	19.12	0.13	-0.96	1.97	0.11	-2.26
3/29/2024	10:22:58	19.11	0.13	-0.85	1.97	0.1	-2.11
3/29/2024	10:23:58	19.11	0.13	-0.87	1.96	0.1	-2.09
3/29/2024	10:24:58	19.11	0.13	-0.98	1.95	0.1	-1.89
3/29/2024	10:25:58	19.11	0.13	-1.02	1.93	0.11	-1.93
3/29/2024	10:26:58	19.11	0.13	-1.06	1.93	0.11	-1.93
3/29/2024	10:27:58	19.11	0.13	-1.05	1.92	0.11	-1.91
3/29/2024	10:28:58	19.1	0.13	-1.11	1.91	0.11	-2.11
3/29/2024	10:29:58	19.09	0.13	-1.14	1.9	0.11	-1.92
3/29/2024	10:30:58	19.08	0.14	-1.24	1.88	0.11	-2.15
3/29/2024	10:31:58	19.09	0.14	-1.22	1.87	0.11	-2.36
3/29/2024	10:32:58	19.09	0.14	-1.27	1.86	0.12	-2.36
3/29/2024	10:33:58	19.09	0.14	-1.41	1.86	0.12	-2.13
3/29/2024	10:34:58	19.09	0.14	-1.41	1.86	0.12	-2.2
3/29/2024	10:35:58	19.08	0.14	-1.33	1.86	0.12	-2.48

START RUN 4

3/29/2024	10:36:58	19.07	0.14	-1.32	1.85	0.12	-2.34
3/29/2024	10:37:58	19.07	0.14	-1.41	4.65	0.13	-1.98
3/29/2024	10:38:58	19.09	0.14	-1.42	1.89	0.12	-2.49
3/29/2024	10:39:58	19.09	0.14	-1.41	1.84	0.12	-1.89
3/29/2024	10:40:58	19.08	0.14	-1.41	1.84	0.12	-1.48
3/29/2024	10:41:58	19.07	0.14	-1.37	1.84	0.12	-1.25
3/29/2024	10:42:58	19.06	0.14	-1.39	1.83	0.12	-1.25
3/29/2024	10:43:58	19.07	0.14	-1.46	1.83	0.12	-1.25
3/29/2024	10:44:58	19.08	0.14	-1.33	1.82	0.12	-1.26
3/29/2024	10:45:58	19.07	0.14	-1.39	1.82	0.12	-0.95
3/29/2024	10:46:58	19.08	0.14	-1.42	1.82	0.11	0.12
3/29/2024	10:47:58	19.08	0.14	-1.36	1.81	0.11	0.11
3/29/2024	10:48:58	19.08	0.14	-1.35	1.81	0.11	0.11
3/29/2024	10:49:58	19.09	0.14	-1.37	1.81	0.11	0.82
3/29/2024	10:50:58	19.09	0.14	-1.3	1.81	0.11	1.38
3/29/2024	10:51:58	19.09	0.14	-1.23	1.8	0.11	1.34
3/29/2024	10:52:58	19.09	0.14	-1.22	1.8	0.12	2.51
3/29/2024	10:53:58	19.09	0.13	-1.16	1.8	0.12	2.66
3/29/2024	10:54:58	19.09	0.13	-1.18	1.79	0.12	2.67
3/29/2024	10:55:58	19.09	0.13	-1.21	1.75	0.1	2.69
3/29/2024	10:56:58	19.09	0.13	-1.28	1.67	0.02	2.67
3/29/2024	10:57:58	19.1	0.13	-1.24	1.66	0.02	2.67
3/29/2024	10:58:58	19.1	0.13	-1.21	1.65	0.02	2.6
3/29/2024	10:59:58	19.1	0.13	-1.28	1.65	0.02	2.03
3/29/2024	11:00:58	19.09	0.13	-1.27	1.64	0.02	1.34
3/29/2024	11:01:58	19.09	0.13	-1.25	1.64	0.02	1.36
3/29/2024	11:02:58	19.09	0.13	-1.37	1.63	0.02	1.34
3/29/2024	11:03:58	19.09	0.13	-1.44	1.62	0.02	0.93
3/29/2024	11:04:58	19.1	0.13	-1.39	1.61	0.02	0.45
3/29/2024	11:05:58	19.1	0.13	-1.44	1.6	0.02	0.09
3/29/2024	11:06:58	19.09	0.13	-1.35	1.6	0.02	0.09
3/29/2024	11:07:58	19.09	0.13	-1.49	1.59	0.02	0.06
3/29/2024	11:08:58	19.09	0.13	-1.58	1.59	0.02	-0.65
3/29/2024	11:09:58	19.09	0.13	-1.48	1.58	0.02	-0.42
3/29/2024	11:10:58	19.1	0.13	-1.63	1.58	0.02	-1.16
3/29/2024	11:11:58	19.1	0.13	-1.58	1.57	0.02	-1.3
3/29/2024	11:12:58	19.1	0.13	-1.81	1.57	0.02	-1.31
3/29/2024	11:13:58	19.1	0.13	-1.61	1.56	0.02	-1.31
3/29/2024	11:14:58	19.1	0.13	-1.67	1.56	0.02	-1.31
3/29/2024	11:15:58	19.1	0.12	-1.65	1.55	0.02	-1.27
3/29/2024	11:16:58	19.09	0.12	-1.73	1.55	0.02	-1.31
3/29/2024	11:17:58	19.09	0.12	-1.72	1.55	0.02	-1.92
3/29/2024	11:18:58	19.08	0.12	-1.8	1.55	0.02	-1.92
3/29/2024	11:19:58	19.07	0.12	-1.71	1.54	0.02	-1.95
3/29/2024	11:20:58	19.08	0.13	-1.73	1.54	0.02	-1.92
3/29/2024	11:21:58	19.08	0.13	-1.74	1.53	0.02	-2.14
3/29/2024	11:22:58	19.08	0.13	-1.76	1.53	0.02	-2.23
3/29/2024	11:23:58	19.09	0.13	-1.8	1.53	0.02	-2.57
3/29/2024	11:24:58	19.08	0.12	-1.86	1.52	0.02	-2.15
3/29/2024	11:25:58	19.07	0.12	-1.83	1.53	0.02	-2.15
3/29/2024	11:26:58	19.08	0.12	-1.94	1.53	0.02	-2.35
3/29/2024	11:27:58	19.07	0.12	-1.9	1.54	0.01	-2.57
3/29/2024	11:28:58	19.08	0.12	-1.92	1.54	0.01	-2.55
3/29/2024	11:29:58	19.08	0.12	-1.88	1.54	0.01	-2.33
3/29/2024	11:30:58	19.08	0.12	-1.82	1.54	0.01	-2.13
3/29/2024	11:31:58	19.07	0.12	-1.87	1.54	0.01	-2.57
3/29/2024	11:32:58	19.07	0.12	-1.78	1.54	0.01	-2.38
3/29/2024	11:33:58	19.08	0.12	-1.77	1.53	0.01	-2.15
3/29/2024	11:34:58	19.08	0.12	-1.78	1.53	0.01	-2.14
3/29/2024	11:35:58	19.08	0.12	-1.81	1.53	0.01	-2.29
3/29/2024	11:36:58	19.08	0.12	-1.77	1.52	0.01	-2.31
3/29/2024	11:37:58	19.07	0.12	-1.84	1.52	0.01	-2.3
3/29/2024	11:38:58	19.07	0.12	-1.76	1.52	0.01	-2.52
3/29/2024	11:39:58	19.08	0.12	-1.8	1.51	0.01	-2.32
3/29/2024	11:40:58	19.08	0.12	-1.74	1.51	0.01	-2.53
3/29/2024	11:41:58	19.08	0.12	-1.76	1.51	0.01	-2.55
3/29/2024	11:42:58	19.08	0.12	-1.75	1.5	0.01	-2.54
3/29/2024	11:43:58	19.07	0.12	-1.68	1.51	0.01	-2.55
3/29/2024	11:44:58	19.07	0.12	-1.76	1.5	0.01	-2.57
3/29/2024	11:45:58	19.07	0.13	-1.75	1.5	0.01	-2.55
3/29/2024	11:46:58	19.08	0.13	-1.74	1.5	0.01	-2.52
3/29/2024	11:47:58	19.08	0.13	-1.69	1.49	0.01	-2.5
3/29/2024	11:48:58	19.07	0.13	-1.7	1.49	0.01	-2.52
3/29/2024	11:49:58	19.06	0.13	-1.71	1.49	0.01	-2.51
3/29/2024	11:50:58	19.05	0.13	-1.75	1.49	0.01	-2.52
3/29/2024	11:51:58	19.05	0.13	-1.73	1.49	0.02	-2.54

3/29/2024	11:52:58	19.05	0.13	-1.77	1.49	0.02	-2.56
3/29/2024	11:53:58	19.05	0.13	-1.76	1.48	0.02	-2.54
3/29/2024	11:54:58	19.05	0.13	-1.73	1.48	0.02	-2.56
3/29/2024	11:55:58	19.05	0.13	-1.64	1.48	0.02	-2.57
3/29/2024	11:56:58	19.05	0.13	-1.67	1.48	0.01	-2.56
3/29/2024	11:57:58	19.03	0.13	-1.63	1.48	0.01	-2.54
3/29/2024	11:58:58	19.03	0.13	-1.69	1.47	0.01	-2.53
3/29/2024	11:59:58	19.03	0.13	-1.58	1.47	0.01	-2.52
3/29/2024	12:00:58	19.04	0.13	-1.63	1.47	0.01	-2.7
3/29/2024	12:01:58	19.04	0.13	-1.63	1.48	0.01	-2.5
3/29/2024	12:02:58	19.03	0.13	-1.53	1.48	0.01	-2.53
3/29/2024	12:03:58	19.02	0.13	-1.66	1.48	0.01	-2.53
3/29/2024	12:04:58	19.03	0.14	-1.59	1.48	0.01	-2.53
3/29/2024	12:05:58	19.04	0.13	-1.65	1.48	0.01	-2.56
3/29/2024	12:06:58	19.04	0.13	-1.66	1.49	0.01	-2.5
3/29/2024	12:07:58	19.04	0.13	-1.68	1.49	0.01	-2.14
3/29/2024	12:08:58	19.03	0.13	-1.66	1.49	0.01	-1.28
3/29/2024	12:09:58	19.02	0.13	-1.57	1.5	0.01	-1.28
3/29/2024	12:10:58	19.03	0.13	-1.49	1.5	0	-0.98
3/29/2024	12:11:58	19.03	0.13	-1.5	1.5	0	0.09
3/29/2024	12:12:58	19.03	0.12	-1.42	1.5	0	0.34
3/29/2024	12:13:58	19.02	0.12	-1.26	1.5	0	1.41
3/29/2024	12:14:58	19.02	0.12	-1.23	1.5	0	2.66
3/29/2024	12:15:58	19.03	0.12	-1.27	1.5	0	3.76
3/29/2024	12:16:58	19.03	0.11	-1.05	1.5	-0.01	4.95
3/29/2024	12:17:58	19.03	0.12	-0.89	1.5	-0.01	6.29
3/29/2024	12:18:58	19.04	0.12	-0.75	1.5	-0.01	7.61
3/29/2024	12:19:58	19.03	0.12	-0.62	1.5	-0.01	9.09
3/29/2024	12:20:58	19.03	0.12	-0.41	1.49	0	10.72
3/29/2024	12:21:58	19.03	0.12	-0.24	1.49	-0.01	12.83
3/29/2024	12:22:58	19.03	0.12	-0.16	1.49	0	14.38
3/29/2024	12:23:58	19.03	0.12	0.06	1.48	0	16.36
3/29/2024	12:24:58	19.03	0.12	0.29	1.48	0	18.61
3/29/2024	12:25:58	19.03	0.12	0.46	1.48	0	21.03
3/29/2024	12:26:58	18.97	0.12	0.83	1.47	0	23.61
3/29/2024	12:27:58	19.05	0.12	0.9	1.47	0	26.07
3/29/2024	12:28:58	19.06	0.12	1.06	1.46	0	29.11
3/29/2024	12:29:58	19.04	0.12	1.35	1.46	0	31.48
3/29/2024	12:30:58	19.03	0.12	1.65	1.48	0	34.62
3/29/2024	12:31:58	19.04	0.12	1.78	1.48	0	37.8
3/29/2024	12:32:58	19.05	0.12	1.95	1.47	0	40.69
3/29/2024	12:33:58	19.06	0.11	2.21	1.46	0	44.12
3/29/2024	12:34:58	19.07	0.11	2.43	1.45	0	47.29
3/29/2024	12:35:58	19.07	0.11	2.79	1.45	0	50.67
3/29/2024	12:36:58	19.07	0.11	3.14	1.44	0	54.17
3/29/2024	12:37:58	19.08	0.11	3.38	1.44	0	57.71
3/29/2024	12:38:58	19.08	0.11	3.61	1.43	0	61.6
3/29/2024	12:39:58	19.08	0.11	3.89	1.43	0	65.78
3/29/2024	12:40:58	19.07	0.11	4.33	1.43	0	69.76
3/29/2024	12:41:58	19.07	0.11	4.54	1.42	0	73.7
3/29/2024	12:42:58	19.08	0.11	4.95	1.42	0	78.26
3/29/2024	12:43:58	19.08	0.11	5.31	1.42	0	82.6
3/29/2024	12:44:58	19.08	0.11	5.67	1.42	0	87.25
3/29/2024	12:45:58	19.07	0.11	6	1.41	0	91.74
3/29/2024	12:46:58	19.08	0.11	6.34	1.41	0	96.49
3/29/2024	12:47:58	19.08	0.1	6.74	1.4	-0.01	101.03
3/29/2024	12:48:58	19.09	0.1	7.25	1.4	-0.01	106.08
3/29/2024	12:49:58	19.08	0.1	7.54	1.39	-0.01	110.92
3/29/2024	12:50:58	19.09	0.1	7.96	1.39	-0.01	116.15
3/29/2024	12:51:58	19.09	0.1	8.46	1.39	-0.01	120.9
3/29/2024	12:52:58	19.09	0.1	8.69	1.38	-0.01	126.19
3/29/2024	12:53:58	19.09	0.11	9.11	1.38	-0.01	131.31
3/29/2024	12:54:58	19.08	0.1	9.73	1.38	-0.01	136.54
3/29/2024	12:55:58	19.07	0.11	10.18	1.37	0	142.07
3/29/2024	12:56:58	19.07	0.11	10.63	1.37	0	147.78
3/29/2024	12:57:58	19.08	0.11	10.99	1.36	0	153.84
3/29/2024	12:58:58	19.07	0.11	11.53	1.36	0	159.93
3/29/2024	12:59:58	19.06	0.11	12.04	1.36	0	166.41
3/29/2024	13:00:58	19.06	0.11	12.58	1.36	0	172.95
3/29/2024	13:01:58	19.07	0.11	13.04	1.35	0	179.51
3/29/2024	13:02:58	19.07	0.11	13.54	1.34	0	186.28
3/29/2024	13:03:58	19.06	0.11	14.07	1.34	0	193.6
3/29/2024	13:04:58	19.05	0.11	14.81	1.33	0	201.22
3/29/2024	13:05:58	19.05	0.11	15.37	1.32	0	208.55
3/29/2024	13:06:58	18.49	0.75	15.37	0.7	0.36	315.3
3/29/2024	13:07:58	13.47	7.08	4.13	-0.06	-0.02	838.58

BIAS/DRIFT CALS

3/29/2024	13:08:58	11.73	9.38	-2.22	-0.06	-0.02	894.87
3/29/2024	13:09:58	11.34	10.08	-3.29	-0.04	-0.02	894.26
3/29/2024	13:10:58	11.23	10.24	-3.54	0	-0.02	883.18
3/29/2024	13:11:58	11.21	10.28	-3.76	0	-0.02	871.22
3/29/2024	13:12:58	11.2	10.31	-3.85	0.03	-0.02	879.46
3/29/2024	13:13:58	11.2	10.38	-3.82	0.17	-0.02	836.16
3/29/2024	13:14:58	11.2	10.39	-3.87	0.3	-0.01	774.53
3/29/2024	13:15:58	11.2	10.39	-3.94	0.66	0	715.83
3/29/2024	13:16:58	11.39	9.28	-2.65	1.26	0.01	448.49
3/29/2024	13:17:58	4.66	3.18	19.31	1.25	0.02	327.37
3/29/2024	13:18:58	1.46	1.09	34.88	1.25	0.02	333.06
3/29/2024	13:19:58	0.85	0.44	38.79	7.7	7.57	309.76
3/29/2024	13:20:58	1.59	0.29	39.81	11.7	12.24	56.53
3/29/2024	13:21:58	2.35	0.24	22.36	11.71	12.24	4.87
3/29/2024	13:22:58	0.96	0.22	3.47	11.71	12.24	3.97
3/29/2024	13:23:58	0.71	0.21	-0.43	11.81	12.23	3.97
3/29/2024	13:24:58	0.64	0.2	-0.94	11.81	12.21	4.01
3/29/2024	13:25:58	1.77	0.2	-0.24	3.25	2.06	50.92
3/29/2024	13:26:58	8.95	0.23	9.89	1.45	0.04	194.87
3/29/2024	13:27:58	2.71	0.22	31.56	1.45	0.03	189.5
3/29/2024	13:28:58	1.04	0.2	39.55	1.45	0.03	172.58
3/29/2024	13:29:58	0.74	0.19	41.12	1.46	0.03	156.99
3/29/2024	13:30:58	0.64	0.19	41.59	1.46	0.02	144.78
3/29/2024	13:31:58	0.5	0.19	41.49	1.45	0.02	136.07
3/29/2024	13:32:58	0.49	0.19	41.55	1.46	0.02	129.85
3/29/2024	13:33:58	1.96	0.19	40.9	1.47	0.04	127.31
3/29/2024	13:34:58	13.64	0.22	22.71	1.47	0.04	127.22
3/29/2024	13:35:58	17.82	0.24	11.76	1.46	0.04	130.28
3/29/2024	13:36:58	18.66	0.24	9.64	1.45	0.04	135.98
3/29/2024	13:37:58	18.54	0.24	9.64	1.45	0.04	142.44
3/29/2024	13:38:58	18.97	0.24	10.27	1.45	0.07	149.13
3/29/2024	13:39:58	18.99	0.24	10.77	1.45	0.07	154.43
3/29/2024	13:40:58	19.02	0.24	10.95	1.45	0.07	155.91
3/29/2024	13:41:58	19.04	0.24	10.79	1.44	0.07	154.13
3/29/2024	13:42:58	19.04	0.24	10.62	1.45	0.07	149.67
3/29/2024	13:43:58	19.04	0.24	10.28	1.47	0.07	143.73
3/29/2024	13:44:58	19.03	0.24	9.82	1.47	0.08	137.02
3/29/2024	13:45:58	19.03	0.24	9.22	1.48	0.08	129.46
3/29/2024	13:46:58	19.03	0.24	8.66	1.47	0.08	122.2
3/29/2024	13:47:58	19.03	0.24	8.07	1.47	0.08	115.02
3/29/2024	13:48:58	19.04	0.24	7.31	1.47	0.08	109.28
3/29/2024	13:49:58	19.05	0.24	6.91	1.47	0.09	104.43
3/29/2024	13:50:58	19.04	0.24	6.64	1.47	0.09	102
3/29/2024	13:51:58	19.04	0.24	6.4	1.47	0.08	102.08
3/29/2024	13:52:58	19.05	0.24	6.28	1.47	0.08	104.79
3/29/2024	13:53:58	19.05	0.24	6.54	1.46	0.09	109.03
3/29/2024	13:54:58	19.05	0.24	6.95	1.46	0.09	115.33
3/29/2024	13:55:58	19.05	0.24	7.43	1.46	0.09	122.57
3/29/2024	13:56:58	19.04	0.24	8.06	1.46	0.08	128.44
3/29/2024	13:57:58	19.04	0.24	8.43	1.46	0.08	131.88
3/29/2024	13:58:58	19.05	0.24	8.71	1.46	0.09	133.01
3/29/2024	13:59:58	19.05	0.24	8.59	1.46	0.08	131.81
3/29/2024	14:00:58	19.05	0.24	8.34	1.46	0.08	128.39
3/29/2024	14:01:58	19.04	0.24	8.17	1.47	0.09	123.6
3/29/2024	14:02:58	19.04	0.24	7.84	1.47	0.09	117.99
3/29/2024	14:03:58	19.04	0.24	7.31	1.47	0.09	112.31
3/29/2024	14:04:58	19.03	0.24	6.73	1.47	0.08	106.74
3/29/2024	14:05:58	19.03	0.24	6.32	1.47	0.08	101.53
3/29/2024	14:06:58	19.03	0.24	6.01	1.47	0.08	96.65
3/29/2024	14:07:58	19.04	0.24	5.61	1.47	0.08	93.36
3/29/2024	14:08:58	19.04	0.24	5.2	1.47	0.08	91.7
3/29/2024	14:09:58	19.04	0.24	5.04	1.47	0.08	91.98
3/29/2024	14:10:58	19.05	0.24	5.18	1.46	0.08	94.16
3/29/2024	14:11:58	19.03	0.24	5.39	1.46	0.07	98.6
3/29/2024	14:12:58	19.03	0.24	5.72	1.46	0.07	104.27
3/29/2024	14:13:58	19.04	0.24	6.12	1.46	0.07	110.94
3/29/2024	14:14:58	19.04	0.24	6.57	1.45	0.07	117.7
3/29/2024	14:15:58	19.04	0.24	7.23	1.45	0.06	125.15
3/29/2024	14:16:58	19.04	0.24	7.74	1.44	0.06	132.79
3/29/2024	14:17:58	19.03	0.24	8.55	1.44	0.06	141.37
3/29/2024	14:18:58	19.03	0.24	9.19	1.43	0.06	151.26
3/29/2024	14:19:58	19.04	0.24	9.98	1.43	0.05	162.39
3/29/2024	14:20:58	19.04	0.24	10.75	1.42	0.05	174.01
3/29/2024	14:21:58	19.04	0.24	11.69	1.41	0.05	187.18
3/29/2024	14:22:58	19.03	0.24	12.92	1.41	0.05	199.78
3/29/2024	14:23:58	19.03	0.24	13.97	1.4	0.05	209.27

back on stack gas



3/29/2024	14:24:58	19.04	0.24	15.15	1.39	0.06	224.77
3/29/2024	14:25:58	18.86	0.24	18.49	1.38	0.07	243.54
3/29/2024	14:26:58	18.72	0.24	22.06	1.37	0.07	264.51
3/29/2024	14:27:58	18.71	0.24	24.28	1.35	0.08	286.05
3/29/2024	14:28:58	18.82	0.24	24.59	1.3	0.09	307.79
3/29/2024	14:29:58	18.86	0.25	25.77	1.3	0.09	329.81
3/29/2024	14:30:58	18.88	0.25	27.26	1.31	0.1	353.94
3/29/2024	14:31:58	18.88	0.24	29.38	1.37	0.1	380.29
3/29/2024	14:32:58	18.9	0.25	31.52	1.41	0.11	409.47
3/29/2024	14:33:58	18.88	0.25	34.65	1.46	0.11	441.11
3/29/2024	14:34:58	18.89	0.25	36.92	1.49	0.12	470.88
3/29/2024	14:35:58	18.89	0.25	39.41	1.52	0.12	497.26
3/29/2024	14:36:58	18.89	0.25	41.67	1.55	0.12	520.1
3/29/2024	14:37:58	18.89	0.25	43.68	1.57	0.13	540.66
3/29/2024	14:38:58	18.9	0.25	45.4	1.59	0.13	559.21
3/29/2024	14:39:58	18.9	0.25	47.15	1.6	0.13	578.31
3/29/2024	14:40:58	18.91	0.25	48.73	1.62	0.14	596.01
3/29/2024	14:41:58	18.92	0.25	50.04	1.63	0.15	613.79
3/29/2024	14:42:58	19.06	0.25	47.01	1.64	0.16	628.92
3/29/2024	14:43:58	19.18	0.25	43.84	1.66	0.16	643.69
3/29/2024	14:44:58	19.22	0.25	43.36	1.78	0.17	656.91
3/29/2024	14:45:58	19.24	0.25	43.89	1.94	0.17	667.48
3/29/2024	14:46:58	19.25	0.25	44.64	2.09	0.18	683.73
3/29/2024	14:47:58	19.26	0.25	45.87	2.19	0.18	717.66
3/29/2024	14:48:58	19.27	0.25	48.62	2.26	0.19	773
3/29/2024	14:49:58	19.28	0.25	52.29	2.29	0.2	833.63
3/29/2024	14:50:58	19.29	0.25	56.06	2.3	0.2	888.38
3/29/2024	14:51:58	19.28	0.25	59.73	2.3	0.21	933.19
3/29/2024	14:52:58	19.29	0.25	62.29	2.28	0.21	968.79
3/29/2024	14:53:58	19.28	0.25	65.05	2.25	0.22	997.74
3/29/2024	14:54:58	19.3	0.25	66.17	2.21	0.23	1021.79
3/29/2024	14:55:58	19.29	0.25	68.13	2.16	0.23	1043.89
3/29/2024	14:56:58	19.29	0.25	69.1	2.13	0.24	1063.56
3/29/2024	14:57:58	19.29	0.25	70.15	2.08	0.25	1080.77
3/29/2024	14:58:58	19.29	0.25	71.38	2.04	0.25	1095.36
3/29/2024	14:59:58	19.29	0.25	72.42	2.01	0.26	1105.63
3/29/2024	15:00:58	19.29	0.25	72.5	1.99	0.27	1112.25
3/29/2024	15:01:58	19.3	0.25	72.56	1.99	0.28	1115.63
3/29/2024	15:02:58	19.3	0.25	72.32	2.03	0.29	1113.96
3/29/2024	15:03:58	19.31	0.25	72.11	2.08	0.3	1106.11
3/29/2024	15:04:58	19.31	0.25	71.34	2.11	0.31	1093.36
3/29/2024	15:05:58	19.32	0.25	70.12	2.13	0.32	1081.02
3/29/2024	15:06:58	19.33	0.25	69.08	2.15	0.33	1066.51
3/29/2024	15:07:58	19.34	0.25	68.1	2.16	0.34	1051.2
3/29/2024	15:08:58	19.34	0.25	66.89	2.18	0.35	1034.36
3/29/2024	15:09:58	19.34	0.25	65.54	2.18	0.36	1015.24
3/29/2024	15:10:58	19.34	0.25	64.18	2.19	0.37	994.32
3/29/2024	15:11:58	19.34	0.25	63.03	2.19	0.38	974.96
3/29/2024	15:12:58	19.35	0.25	61.83	2.2	0.39	957.74
3/29/2024	15:13:58	19.35	0.25	60.59	2.19	0.4	941.52
3/29/2024	15:14:58	19.35	0.25	59.51	2.19	0.41	927.58
3/29/2024	15:15:58	19.35	0.24	58.57	2.2	0.42	914.76
3/29/2024	15:16:58	19.36	0.24	57.99	2.21	0.43	904.95
3/29/2024	15:17:58	19.36	0.24	57.32	2.22	0.44	898.62
3/29/2024	15:18:58	19.36	0.25	56.81	2.23	0.45	893.88
3/29/2024	15:19:58	19.36	0.25	56.44	2.25	0.46	887.08
3/29/2024	15:20:58	19.37	0.25	55.91	2.27	0.46	877.88
3/29/2024	15:21:58	19.37	0.25	55.4	2.28	0.47	870.61
3/29/2024	15:22:58	19.37	0.25	54.76	2.29	0.48	864.96
3/29/2024	15:23:58	19.37	0.25	54.36	2.3	0.48	859.47
3/29/2024	15:24:58	19.37	0.25	54.09	2.31	0.49	853.54
3/29/2024	15:25:58	19.37	0.25	53.77	2.31	0.49	848.67
3/29/2024	15:26:58	19.4	0.25	52.33	2.32	0.5	843.88
3/29/2024	15:27:58	19.44	0.25	50.03	2.31	0.5	839.15
3/29/2024	15:28:58	19.43	0.25	50.43	2.36	0.5	835.11
3/29/2024	15:29:58	19.39	0.25	52.02	2.46	0.5	829.88
3/29/2024	15:30:58	19.38	0.25	52.16	2.49	0.5	822.19
3/29/2024	15:31:58	19.39	0.25	51.63	2.41	0.5	811.5
3/29/2024	15:32:58	19.37	0.25	51.5	2.35	0.5	796.91
3/29/2024	15:33:58	19.37	0.25	50.23	2.28	0.5	781.19
3/29/2024	15:34:58	19.39	0.25	47.98	2.09	0.5	769.89
3/29/2024	15:35:58	19.41	0.24	46.42	1.88	0.5	769.3
3/29/2024	15:36:58	19.43	0.24	45.09	1.75	0.5	780.67
3/29/2024	15:37:58	19.42	0.24	45.94	1.7	0.49	803.98
3/29/2024	15:38:58	19.41	0.24	48.04	1.69	0.49	839.41
3/29/2024	15:39:58	19.4	0.24	50.35	1.69	0.49	875.35

3/29/2024	15:40:58	19.41	0.24	52.33	1.68	0.49	899.59
3/29/2024	15:41:58	19.4	0.24	53.49	1.66	0.49	905.63
3/29/2024	15:42:58	19.39	0.24	54.05	1.64	0.48	898.13
3/29/2024	15:43:58	19.35	0.24	55.86	1.62	0.48	885.13
3/29/2024	15:44:58	19.35	0.24	55.25	1.61	0.48	874.65
3/29/2024	15:45:58	19.37	0.24	53.55	1.61	0.48	869.31
3/29/2024	15:46:58	19.42	0.24	51.25	1.59	0.48	868.21
3/29/2024	15:47:58	19.42	0.25	50.96	1.59	0.47	873.17
3/29/2024	15:48:58	19.41	0.25	52.1	1.59	0.48	888.42
3/29/2024	15:49:58	19.4	0.25	53.4	1.6	0.48	912.59
3/29/2024	15:50:58	19.4	0.25	54.83	1.6	0.48	932.56
3/29/2024	15:51:58	19.39	0.25	56.13	1.6	0.48	935.81
3/29/2024	15:52:58	19.35	0.25	58.22	1.59	0.48	923.64
3/29/2024	15:53:58	19.34	0.25	57.54	1.58	0.49	906.78
3/29/2024	15:54:58	19.37	0.25	54.91	1.58	0.49	894.73
3/29/2024	15:55:58	19.41	0.25	52.38	1.57	0.49	888.04
3/29/2024	15:56:58	19.41	0.25	52.54	1.56	0.49	891.04
3/29/2024	15:57:58	19.4	0.25	53.29	1.57	0.5	906.17
3/29/2024	15:58:58	19.39	0.25	54.49	1.57	0.5	928.23
3/29/2024	15:59:58	19.38	0.25	56.34	1.57	0.5	943.71
3/29/2024	16:00:58	19.35	0.26	58.86	1.57	0.51	941.55
3/29/2024	16:01:58	19.35	0.26	58.29	1.57	0.51	928.41
3/29/2024	16:02:58	19.39	0.25	55.52	1.56	0.51	916.33
3/29/2024	16:03:58	19.41	0.25	53.51	1.55	0.51	909.67
3/29/2024	16:04:58	19.4	0.25	53.83	1.54	0.52	912.5
3/29/2024	16:05:58	19.39	0.26	54.76	1.55	0.52	928.45
3/29/2024	16:06:58	19.38	0.26	56.15	1.55	0.52	948.32
3/29/2024	16:07:58	19.35	0.26	59.03	1.55	0.53	956.7
3/29/2024	16:08:58	19.36	0.26	58.54	1.55	0.53	947.41
3/29/2024	16:09:58	19.41	0.26	55.71	1.54	0.53	928.44
3/29/2024	16:10:58	19.41	0.26	54.34	1.53	0.54	907.65
3/29/2024	16:11:58	19.4	0.26	53.73	1.53	0.54	891.24
3/29/2024	16:12:58	19.38	0.26	53.67	1.54	0.54	881.51
3/29/2024	16:13:58	19.35	0.26	54.72	1.54	0.54	871.28
3/29/2024	16:14:58	19.37	0.26	53.35	1.54	0.55	849.06
3/29/2024	16:15:58	19.4	0.26	49.86	1.54	0.55	817.75
3/29/2024	16:16:58	19.41	0.26	47.75	1.53	0.55	785.12
3/29/2024	16:17:58	19.39	0.26	46.48	1.53	0.55	759.23
3/29/2024	16:18:58	19.36	0.26	46.17	1.54	0.56	742.69
3/29/2024	16:19:58	19.35	0.26	46.16	1.55	0.56	729.6
3/29/2024	16:20:58	19.38	0.26	43.82	1.56	0.57	712.85
3/29/2024	16:21:58	19.4	0.26	41.95	1.55	0.57	692.58
3/29/2024	16:22:58	19.39	0.26	41.03	1.55	0.57	675.94
3/29/2024	16:23:58	19.36	0.26	41.11	1.55	0.57	668.69
3/29/2024	16:24:58	19.35	0.26	41.21	1.56	0.57	668.71
3/29/2024	16:25:58	19.38	0.26	39.92	1.56	0.58	668.42
3/29/2024	16:26:58	19.4	0.26	39.18	1.56	0.58	662.32
3/29/2024	16:27:58	19.39	0.26	39.26	1.56	0.58	653.73
3/29/2024	16:28:58	19.36	0.26	39.73	1.56	0.58	648.5
3/29/2024	16:29:58	19.36	0.27	39.3	1.57	0.58	646.71
3/29/2024	16:30:58	19.4	0.27	37.97	1.57	0.58	640.78
3/29/2024	16:31:58	19.4	0.26	37.5	1.56	0.58	627.68
3/29/2024	16:32:58	19.37	0.27	37.8	1.57	0.58	613.54
3/29/2024	16:33:58	19.36	0.27	37.14	1.57	0.57	602.8
3/29/2024	16:34:58	19.39	0.26	35.56	1.58	0.57	594.61
3/29/2024	16:35:58	19.4	0.27	34.83	1.58	0.57	583.9
3/29/2024	16:36:58	19.38	0.26	34.83	1.58	0.56	571.28
3/29/2024	16:37:58	19.37	0.26	34.44	1.59	0.56	563.91
3/29/2024	16:38:58	19.38	0.26	33.34	1.6	0.55	560.1
3/29/2024	16:39:58	19.4	0.27	32.83	1.59	0.55	556.36
3/29/2024	16:40:58	19.39	0.26	32.86	1.59	0.54	550.05
3/29/2024	16:41:58	19.37	0.26	32.8	1.6	0.53	547.08
3/29/2024	16:42:58	19.39	0.26	32.24	1.6	0.53	547
3/29/2024	16:43:58	19.4	0.26	31.87	1.59	0.52	545.17
3/29/2024	16:44:58	19.39	0.26	32.1	1.59	0.51	540.86
3/29/2024	16:45:58	19.38	0.26	31.98	1.59	0.5	533.98
3/29/2024	16:46:58	19.38	0.26	31.63	1.6	0.5	528.69
3/29/2024	16:47:58	19.39	0.25	31.08	1.6	0.49	521.73
3/29/2024	16:48:58	19.39	0.25	30.49	1.6	0.48	512.26
3/29/2024	16:49:58	19.37	0.25	30.17	1.6	0.48	502.03
3/29/2024	16:50:58	19.38	0.26	29.71	1.61	0.47	494.09
3/29/2024	16:51:58	19.38	0.25	29.24	1.61	0.46	487.67
3/29/2024	16:52:58	19.39	0.25	28.72	1.62	0.46	480.69
3/29/2024	16:53:58	19.38	0.25	28.28	1.62	0.45	474.18
3/29/2024	16:54:58	19.38	0.25	28.01	1.62	0.45	469.69
3/29/2024	16:55:58	19.38	0.25	27.96	1.63	0.44	466.72

3/29/2024	16:56:58	19.39	0.25	27.48	1.63	0.44	463.87	
3/29/2024	16:57:58	19.38	0.25	27.54	1.62	0.43	460.69	
3/29/2024	16:58:58	19.38	0.25	27.26	1.62	0.42	458.46	
3/29/2024	16:59:58	19.38	0.25	27.22	1.62	0.42	455.7	
3/29/2024	17:00:58	19.38	0.25	27.11	1.62	0.42	452.45	
3/29/2024	17:01:58	19.38	0.25	26.93	1.62	0.41	447.68	
3/29/2024	17:02:58	19.38	0.25	26.52	1.62	0.41	441.76	
3/29/2024	17:03:58	19.38	0.25	26.29	1.63	0.41	434.6	
3/29/2024	17:04:58	19.38	0.25	25.95	1.63	0.4	427.96	
3/29/2024	17:05:58	19.37	0.25	25.47	1.63	0.39	420.41	
3/29/2024	17:06:58	19.37	0.25	24.99	1.64	0.39	412.59	
3/29/2024	17:07:58	19.37	0.24	24.56	1.64	0.39	404.58	
3/29/2024	17:08:58	19.38	0.25	24.2	1.65	0.38	398.41	
3/29/2024	17:09:58	19.37	0.24	23.79	1.65	0.38	393.19	
3/29/2024	17:10:58	19.38	0.24	23.51	1.65	0.37	390.15	
3/29/2024	17:11:58	19.38	0.24	23.23	1.66	0.37	387.16	
3/29/2024	17:12:58	19.38	0.24	23.14	1.66	0.36	384.59	
3/29/2024	17:13:58	19.38	0.24	23.09	1.66	0.36	383.52	
3/29/2024	17:14:58	19.37	0.24	23.06	1.65	0.36	382.92	
3/29/2024	17:15:58	19.37	0.24	23.05	1.65	0.35	382.01	
3/29/2024	17:16:58	19.38	0.24	22.92	1.65	0.35	380.11	
3/29/2024	17:17:58	19.37	0.24	22.84	1.65	0.34	377.65	
3/29/2024	17:18:58	19.38	0.24	22.48	1.65	0.34	374.34	
3/29/2024	17:19:58	19.37	0.24	22.33	1.65	0.33	370.47	
3/29/2024	17:20:58	19.38	0.24	22.2	1.66	0.33	366.12	
3/29/2024	17:21:58	19.38	0.24	21.89	1.85	0.65	361.87	
3/29/2024	17:22:58	19.36	0.24	21.87	0.8	0.17	514.11	
3/29/2024	17:23:58	14.26	0.28	25.04	1.01	0.19	647.42	
3/29/2024	17:24:58	3.69	0.23	36.39	1.66	0.31	474.09	BIAS/DRIFT CALS
3/29/2024	17:25:58	1.27	0.18	40.55	0.37	0.06	685.5	
3/29/2024	17:26:58	0.81	0.18	41.36	0.12	0	1906.57	
3/29/2024	17:27:58	0.69	0.17	41.44	0.12	0	1993.54	
3/29/2024	17:28:58	0.65	0.17	41.53	0.12	0	1996.58	
3/29/2024	17:29:58	0.59	0.17	41.6	0.12	0	2006.45	**ran out of CO mid, shot span instead
3/29/2024	17:30:58	0.55	0.17	42.02	2.44	2.39	1998.03	
3/29/2024	17:31:58	0.55	0.17	41.99	11.67	12.21	857.42	
3/29/2024	17:32:58	1.28	0.17	41.92	11.79	12.35	33.67	
3/29/2024	17:33:58	8.9	3.12	29.19	11.79	12.36	4.09	
3/29/2024	17:34:58	10.57	8.45	5.27	11.8	12.37	-0.75	
3/29/2024	17:35:58	11.01	9.89	-1.37	4.95	4.12	43.12	
3/29/2024	17:36:58	11.14	10.3	-2.76	1.69	0.3	320.32	
3/29/2024	17:37:58	11.17	10.4	-3.11	1.68	0.29	364.11	
3/29/2024	17:38:58	11.18	10.44	-3.22	1.68	0.28	367.47	
3/29/2024	17:39:58	11.19	10.45	-3.32	1.68	0.28	370.88	
3/29/2024	17:40:58	14.48	6.4	2.03	1.68	0.27	375.45	
3/29/2024	17:41:58	18.22	1.84	15.72	1.68	0.27	381.63	
3/29/2024	17:42:58	19.03	0.69	20.62	1.68	0.27	387.4	
3/29/2024	17:43:58	19.28	0.38	22.54	1.67	0.26	393.39	back on stack gas
3/29/2024	17:44:58	19.34	0.29	23.58	1.67	0.26	399.55	
3/29/2024	17:45:58	19.36	0.27	24.14	1.67	0.26	406.13	
3/29/2024	17:46:58	19.45	0.25	22.95	1.69	0.25	413.14	
3/29/2024	17:47:58	19.89	0.24	13.51	1.67	0.25	417.79	
3/29/2024	17:48:58	19.68	0.24	18.39	1.66	0.25	423.94	
3/29/2024	17:49:58	19.45	0.24	24.28	1.69	0.25	432.55	
3/29/2024	17:50:58	19.39	0.24	26.25	1.82	0.24	450.31	
3/29/2024	17:51:58	19.38	0.23	28.11	1.88	0.24	511.69	
3/29/2024	17:52:58	19.39	0.24	32.27	1.84	0.24	581.48	
3/29/2024	17:53:58	19.39	0.23	35.56	1.77	0.24	599.97	
3/29/2024	17:54:58	19.38	0.23	36.29	1.73	0.24	583.08	
3/29/2024	17:55:58	19.38	0.23	35.21	1.7	0.24	560.6	
3/29/2024	17:56:58	19.38	0.23	34.25	1.68	0.24	546.94	
3/29/2024	17:57:58	19.37	0.23	33.6	1.67	0.24	543.36	
3/29/2024	17:58:58	19.38	0.23	33.36	1.66	0.24	546.66	
3/29/2024	17:59:58	19.37	0.23	33.75	1.65	0.24	554.8	
3/29/2024	18:00:58	19.37	0.22	34.22	1.64	0.24	565.78	
3/29/2024	18:01:58	19.37	0.22	35.15	1.64	0.24	579.91	
3/29/2024	18:02:58	19.37	0.23	35.94	1.63	0.24	594.56	
3/29/2024	18:03:58	19.37	0.22	36.9	1.63	0.24	609.19	
3/29/2024	18:04:58	19.37	0.22	37.98	1.63	0.24	624.81	
3/29/2024	18:05:58	19.37	0.22	38.99	1.62	0.24	640.2	
3/29/2024	18:06:58	19.37	0.22	39.76	1.61	0.25	654.95	
3/29/2024	18:07:58	19.37	0.23	40.92	1.61	0.25	670.43	
3/29/2024	18:08:58	19.37	0.22	41.85	1.61	0.26	684.84	
3/29/2024	18:09:58	19.37	0.23	42.9	1.61	0.26	699.96	
3/29/2024	18:10:58	19.37	0.23	43.96	1.6	0.26	715.53	
3/29/2024	18:11:58	19.37	0.23	44.95	1.6	0.26	730.64	

3/29/2024	18:12:58	19.37	0.23	45.95	1.59	0.27	746.3
3/29/2024	18:13:58	19.36	0.23	46.9	1.59	0.27	761.97
3/29/2024	18:14:58	19.37	0.23	47.69	1.58	0.28	778.59
3/29/2024	18:15:58	19.37	0.23	48.66	1.58	0.29	793.66
3/29/2024	18:16:58	19.37	0.22	49.4	1.57	0.29	808.46
3/29/2024	18:17:58	19.37	0.23	50.36	1.57	0.3	822.96
3/29/2024	18:18:58	19.38	0.23	51.17	1.56	0.3	836.24
3/29/2024	18:19:58	19.38	0.23	51.98	1.56	0.31	845.15
3/29/2024	18:20:58	19.37	0.22	52.53	1.55	0.32	850.85
3/29/2024	18:21:58	19.37	0.23	52.73	1.55	0.32	851.93
3/29/2024	18:22:58	19.38	0.23	52.75	1.55	0.33	848.7
3/29/2024	18:23:58	19.38	0.23	52.64	1.55	0.34	841.88
3/29/2024	18:24:58	19.38	0.23	52.15	1.54	0.35	831.66
3/29/2024	18:25:58	19.37	0.23	51.52	1.55	0.35	819
3/29/2024	18:26:58	19.38	0.23	50.78	1.55	0.36	804.63
3/29/2024	18:27:58	19.38	0.23	49.94	1.55	0.37	788.44
3/29/2024	18:28:58	19.37	0.23	48.96	1.55	0.38	772.38
3/29/2024	18:29:58	19.37	0.23	47.95	1.56	0.39	755.66
3/29/2024	18:30:58	19.38	0.24	46.92	1.56	0.4	741.21
3/29/2024	18:31:58	19.37	0.24	46.08	1.56	0.41	729.62
3/29/2024	18:32:58	19.37	0.24	45.16	1.56	0.42	719.78
3/29/2024	18:33:58	19.37	0.24	44.73	1.56	0.43	712.26
3/29/2024	18:34:58	19.38	0.24	44.22	1.56	0.44	706.56
3/29/2024	18:35:58	19.38	0.24	43.88	1.56	0.44	703.39
3/29/2024	18:36:58	19.37	0.24	43.72	1.56	0.45	701.97
3/29/2024	18:37:58	19.37	0.24	43.51	1.55	0.46	700.81
3/29/2024	18:38:58	19.38	0.25	43.43	1.55	0.46	699.56
3/29/2024	18:39:58	19.37	0.25	43.44	1.55	0.47	699.23
3/29/2024	18:40:58	19.37	0.25	43.32	1.56	0.47	699.78
3/29/2024	18:41:58	19.38	0.25	43.27	1.56	0.48	699.34
3/29/2024	18:42:58	19.38	0.25	43.32	1.56	0.48	696.66
3/29/2024	18:43:58	19.37	0.25	43.26	1.56	0.48	692.21
3/29/2024	18:44:58	19.37	0.25	43.1	1.56	0.49	685.71
3/29/2024	18:45:58	19.36	0.25	42.54	1.57	0.48	678.44
3/29/2024	18:46:58	19.36	0.25	41.96	1.57	0.49	669.72
3/29/2024	18:47:58	19.36	0.25	41.47	1.57	0.48	663.74
3/29/2024	18:48:58	19.37	0.25	41.13	1.57	0.48	660.81
3/29/2024	18:49:58	19.37	0.25	40.82	1.57	0.48	659.72
3/29/2024	18:50:58	19.37	0.26	40.85	1.57	0.48	659.58
3/29/2024	18:51:58	19.37	0.25	40.84	1.57	0.48	659.64
3/29/2024	18:52:58	19.37	0.25	40.85	1.57	0.48	659.75
3/29/2024	18:53:58	19.37	0.25	40.82	1.57	0.47	658.78
3/29/2024	18:54:58	19.37	0.25	40.79	1.57	0.47	656.63
3/29/2024	18:55:58	19.37	0.25	40.59	1.57	0.47	656.16
3/29/2024	18:56:58	19.37	0.25	40.67	1.57	0.46	656.32
3/29/2024	18:57:58	19.37	0.25	40.62	1.58	0.46	656.7
3/29/2024	18:58:58	19.37	0.25	40.33	1.58	0.45	654.99
3/29/2024	18:59:58	19.37	0.25	40.6	1.58	0.45	651.31
3/29/2024	19:00:58	19.37	0.25	40.42	1.58	0.45	646.91
3/29/2024	19:01:58	19.37	0.25	40.15	1.58	0.44	641
3/29/2024	19:02:58	19.37	0.24	39.71	1.59	0.44	634.45
3/29/2024	19:03:58	19.37	0.24	39.19	1.59	0.43	627.33
3/29/2024	19:04:58	19.37	0.24	38.77	1.59	0.43	624.07
3/29/2024	19:05:58	19.37	0.24	38.63	1.59	0.42	623.92
3/29/2024	19:06:58	19.37	0.24	38.68	1.58	0.42	624.81
3/29/2024	19:07:58	19.37	0.24	38.92	1.58	0.41	626.33
3/29/2024	19:08:58	19.37	0.24	39.08	1.58	0.41	626.63
3/29/2024	19:09:58	19.37	0.24	38.95	1.58	0.4	626.34
3/29/2024	19:10:58	19.37	0.24	38.71	1.58	0.4	624.65
3/29/2024	19:11:58	19.37	0.24	38.56	1.58	0.4	620.91
3/29/2024	19:12:58	19.37	0.24	38.39	1.59	0.4	617.93
3/29/2024	19:13:58	19.37	0.24	38.18	1.58	0.39	618.6
3/29/2024	19:14:58	19.37	0.24	38.19	1.58	0.39	618.68
3/29/2024	19:15:58	19.37	0.24	38.18	1.58	0.39	616.98
3/29/2024	19:16:58	19.37	0.24	38	1.58	0.39	613.35
3/29/2024	19:17:58	19.37	0.25	37.63	1.58	0.39	609.6
3/29/2024	19:18:58	19.37	0.25	37.2	1.59	0.38	603.82
3/29/2024	19:19:58	19.38	0.25	36.87	1.59	0.38	597.15
3/29/2024	19:20:58	19.38	0.24	36.47	1.59	0.38	591.86
3/29/2024	19:21:58	19.38	0.25	36.17	1.59	0.37	590.36
3/29/2024	19:22:58	19.39	0.24	36.09	1.59	0.37	592.19
3/29/2024	19:23:58	19.38	0.24	36.17	1.58	0.37	594.31
3/29/2024	19:24:58	19.38	0.24	36.16	1.58	0.37	595.63
3/29/2024	19:25:58	19.38	0.24	36.38	3.09	0.34	593.54
3/29/2024	19:26:58	19.37	0.24	36.57	6.79	0.28	507.39
3/29/2024	19:27:58	19.37	0.24	36.38	2.97	0.34	447.91

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3/29/2024	19:28:58	19.37	0.24	36.32	1.94	0.36	570.54
3/29/2024	19:29:58	19.38	0.24	36.03	1.95	0.36	577.55
3/29/2024	19:30:58	19.38	0.24	35.61	1.96	0.36	576.57
3/29/2024	19:31:58	19.38	0.24	35.6	1.98	0.36	575.75
3/29/2024	19:32:58	19.38	0.24	35.55	1.96	0.36	573.04
3/29/2024	19:33:58	19.38	0.24	35.48	1.98	0.35	569.69
3/29/2024	19:34:58	19.38	0.24	35.18	1.96	0.35	565.2
3/29/2024	19:35:58	19.38	0.24	34.84	1.98	0.35	560.11
3/29/2024	19:36:58	19.38	0.24	34.42	1.99	0.35	554.66
3/29/2024	19:37:58	19.38	0.24	34.33	1.99	0.35	552.54
3/29/2024	19:38:58	19.39	0.24	34.32	1.97	0.35	554.67
3/29/2024	19:39:58	19.38	0.24	34.52	1.92	0.35	558.07
3/29/2024	19:40:58	19.36	0.24	35.26	9.31	0.24	522.22
3/29/2024	19:41:58	19.34	0.24	35.78	15.29	0.15	228.99
3/29/2024	19:42:58	19.37	0.24	34.95	15.3	0.15	153.8
3/29/2024	19:43:58	19.37	0.24	34.64	15.11	0.15	152.53
3/29/2024	19:44:58	19.39	0.24	34.02	4.55	0.3	263.49
3/29/2024	19:45:58	19.38	0.24	34.21	3.75	0.31	490.12
3/29/2024	19:46:58	19.37	0.24	34.76	3.73	0.31	498.91
3/29/2024	19:47:58	19.36	0.24	34.64	3.72	0.31	498.82
3/29/2024	19:48:58	19.36	0.24	34.78	3.69	0.31	498.31
3/29/2024	19:49:58	19.36	0.24	34.75	3.75	0.31	495.3
3/29/2024	19:50:58	19.37	0.24	34.64	3.03	0.31	504.63
3/29/2024	19:51:58	19.36	0.24	34.65	3.62	0.3	497.84
3/29/2024	19:52:58	19.36	0.24	34.24	1.97	0.32	504.74
3/29/2024	19:53:58	19.37	0.24	34.2	1.75	0.32	536.52
3/29/2024	19:54:58	19.38	0.24	34.07	1.68	0.32	541.22
3/29/2024	19:55:58	19.38	0.24	34.27	1.68	0.32	544.48
3/29/2024	19:56:58	19.38	0.24	34.54	1.69	0.32	546.5
3/29/2024	19:57:58	19.38	0.24	34.68	1.69	0.32	548.23
3/29/2024	19:58:58	19.38	0.24	34.79	1.7	0.32	548.45
3/29/2024	19:59:58	19.38	0.24	34.67	1.72	0.32	546.33
3/29/2024	20:00:58	19.38	0.24	34.41	1.74	0.32	543.7
3/29/2024	20:01:58	19.37	0.24	34.23	1.74	0.32	539.57
3/29/2024	20:02:58	19.37	0.24	33.92	1.74	0.32	537.27
3/29/2024	20:03:58	19.37	0.24	33.88	1.75	0.31	536.41
3/29/2024	20:04:58	19.37	0.24	33.7	1.76	0.31	535.14
3/29/2024	20:05:58	19.37	0.24	33.75	1.76	0.31	533.82
3/29/2024	20:06:58	19.37	0.24	33.5	1.76	0.31	531.55
3/29/2024	20:07:58	19.37	0.24	33.42	1.77	0.31	529.89
3/29/2024	20:08:58	19.37	0.24	33.16	1.78	0.31	527.45
3/29/2024	20:09:58	19.37	0.24	33.02	2.75	0.3	522.42
3/29/2024	20:10:58	19.37	0.24	32.82	2.16	0.31	488.79
3/29/2024	20:11:58	19.37	0.24	32.93	1.69	0.31	523.96
3/29/2024	20:12:58	19.37	0.24	32.98	1.69	0.31	529.27
3/29/2024	20:13:58	19.37	0.24	33.09	1.69	0.31	530.74
3/29/2024	20:14:58	19.37	0.24	33.13	1.69	0.31	531.53
3/29/2024	20:15:58	19.37	0.24	33.12	1.68	0.31	530.82
3/29/2024	20:16:58	19.37	0.24	33.05	1.69	0.31	528.56
3/29/2024	20:17:58	19.37	0.23	32.75	1.69	0.31	524.94
3/29/2024	20:18:58	19.37	0.23	32.44	1.69	0.31	520.9
3/29/2024	20:19:58	19.38	0.23	32.15	1.69	0.31	518.6
3/29/2024	20:20:58	19.38	0.23	32.02	1.69	0.31	517.7
3/29/2024	20:21:58	19.37	0.23	32.08	1.69	0.3	516.84
3/29/2024	20:22:58	19.38	0.23	32.02	1.69	0.3	516.21
3/29/2024	20:23:58	19.38	0.23	31.88	1.69	0.3	514.58
3/29/2024	20:24:58	19.38	0.23	31.67	1.69	0.3	512.21
3/29/2024	20:25:58	19.38	0.23	31.61	1.69	0.3	510.09
3/29/2024	20:26:58	19.38	0.23	31.43	1.69	0.3	509.98
3/29/2024	20:27:58	19.38	0.23	31.44	1.69	0.3	511.19
3/29/2024	20:28:58	19.39	0.23	31.4	1.69	0.3	511.84
3/29/2024	20:29:58	19.39	0.23	31.47	1.69	0.3	510.98
3/29/2024	20:30:58	19.39	0.23	31.39	1.69	0.3	510.96
3/29/2024	20:31:58	19.39	0.23	31.48	1.69	0.3	511.91
3/29/2024	20:32:58	19.39	0.23	31.47	1.69	0.3	512.01
3/29/2024	20:33:58	19.39	0.24	31.38	1.68	0.3	509.97
3/29/2024	20:34:58	19.39	0.24	31.29	1.68	0.3	507.53
3/29/2024	20:35:58	19.39	0.24	31.2	1.69	0.3	505.56
3/29/2024	20:36:58	19.39	0.24	30.99	1.68	0.3	504.48
3/29/2024	20:37:58	19.39	0.23	30.81	1.68	0.3	503.84
3/29/2024	20:38:58	19.39	0.23	30.71	1.67	0.3	502.38
3/29/2024	20:39:58	19.39	0.23	30.68	1.67	0.3	499.89
3/29/2024	20:40:58	19.38	0.23	30.38	1.67	0.3	497.52
3/29/2024	20:41:58	19.38	0.23	30.22	1.67	0.3	494.27
3/29/2024	20:42:58	19.38	0.23	29.9	1.67	0.3	493.35
3/29/2024	20:43:58	19.39	0.23	29.99	1.67	0.3	495.06

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3/29/2024	20:44:58	19.39	0.23	29.93	1.66	0.3	496.88
3/29/2024	20:45:58	19.39	0.23	30.16	1.66	0.3	499.24
3/29/2024	20:46:58	19.39	0.23	30.14	1.66	0.3	500.21
3/29/2024	20:47:58	19.39	0.23	30.2	1.66	0.3	499.68
3/29/2024	20:48:58	19.39	0.23	30.11	1.67	0.3	497.4
3/29/2024	20:49:58	19.39	0.23	29.93	1.67	0.3	494.02
3/29/2024	20:50:58	19.38	0.23	29.78	1.68	0.3	491.16
3/29/2024	20:51:58	19.38	0.23	29.67	1.67	0.3	488.64
3/29/2024	20:52:58	19.39	0.23	29.43	1.67	0.3	488.16
3/29/2024	20:53:58	19.39	0.23	29.45	1.66	0.3	487.67
3/29/2024	20:54:58	19.39	0.23	29.16	1.65	0.3	486.59
3/29/2024	20:55:58	19.39	0.23	29.28	1.64	0.3	486.09
3/29/2024	20:56:58	19.39	0.23	29.11	1.64	0.3	484.96
3/29/2024	20:57:58	19.39	0.23	29.03	1.64	0.3	482.32
3/29/2024	20:58:58	19.39	0.23	28.8	1.63	0.31	479.55
3/29/2024	20:59:58	19.39	0.23	28.65	1.63	0.31	478.74
3/29/2024	21:00:58	19.39	0.23	28.7	1.63	0.31	479.74
3/29/2024	21:01:58	19.39	0.23	28.75	1.63	0.31	482.1
3/29/2024	21:02:58	19.39	0.24	28.7	1.63	0.31	482.89
3/29/2024	21:03:58	19.39	0.24	28.85	1.63	0.31	483.63
3/29/2024	21:04:58	19.39	0.24	28.73	1.63	0.31	483.12
3/29/2024	21:05:58	19.39	0.24	28.7	1.63	0.31	481.93
3/29/2024	21:06:58	19.4	0.24	28.42	1.64	0.31	479.28
3/29/2024	21:07:58	19.4	0.24	28.41	1.65	0.31	475.71
3/29/2024	21:08:58	19.39	0.24	28.1	4.88	0.27	466.76
3/29/2024	21:09:58	19.38	0.24	28.21	2.12	0.3	389.09
3/29/2024	21:10:58	19.39	0.24	27.91	5.15	0.27	407.95
3/29/2024	21:11:58	19.4	0.24	27.67	1.78	0.31	436.99
3/29/2024	21:12:58	19.39	0.24	27.75	1.77	0.31	467.55
3/29/2024	21:13:58	19.4	0.24	27.56	1.76	0.31	467.46
3/29/2024	21:14:58	19.4	0.24	27.4	1.77	0.3	465.67
3/29/2024	21:15:58	19.4	0.24	27.43	1.77	0.3	463.71
3/29/2024	21:16:58	19.4	0.24	27.18	1.77	0.3	462.94
3/29/2024	21:17:58	19.4	0.24	27.09	1.76	0.3	463.63
3/29/2024	21:18:58	19.4	0.24	26.92	1.76	0.3	464.93
3/29/2024	21:19:58	19.4	0.24	27.01	1.76	0.3	465.65
3/29/2024	21:20:58	19.42	0.23	27.12	1.76	0.3	466.29
3/29/2024	21:21:58	19.42	0.23	27.09	1.76	0.3	466.28
3/29/2024	21:22:58	19.42	0.23	27.09	1.76	0.3	464.2
3/29/2024	21:23:58	19.42	0.23	27.03	1.76	0.3	460.83
3/29/2024	21:24:58	19.42	0.23	26.7	1.76	0.3	457.51
3/29/2024	21:25:58	19.42	0.23	26.49	1.76	0.3	454.84
3/29/2024	21:26:58	19.42	0.23	26.33	1.76	0.3	453.58
3/29/2024	21:27:58	19.42	0.23	26.26	1.76	0.3	454.26
3/29/2024	21:28:58	19.43	0.23	26.23	1.76	0.29	454.47
3/29/2024	21:29:58	19.43	0.23	26.28	1.76	0.29	454.47
3/29/2024	21:30:58	19.42	0.23	26.38	1.76	0.29	454.44
3/29/2024	21:31:58	19.42	0.23	26.31	1.75	0.29	453.58
3/29/2024	21:32:58	19.42	0.23	26.12	1.75	0.29	452.52
3/29/2024	21:33:58	19.42	0.23	26.03	1.75	0.29	451.93
3/29/2024	21:34:58	19.43	0.23	25.9	1.75	0.29	452.24
3/29/2024	21:35:58	19.42	0.23	25.92	1.75	0.29	453.48
3/29/2024	21:36:58	19.42	0.23	26	1.75	0.29	454.35
3/29/2024	21:37:58	19.42	0.24	26.14	1.75	0.29	454.35
3/29/2024	21:38:58	19.42	0.24	26.07	1.75	0.29	453.43
3/29/2024	21:39:58	19.42	0.24	25.82	1.75	0.29	451.34
3/29/2024	21:40:58	19.42	0.24	25.64	1.76	0.29	447.71
3/29/2024	21:41:58	19.42	0.24	25.3	1.76	0.29	444.1
3/29/2024	21:42:58	19.42	0.24	25.07	1.76	0.29	441.77
3/29/2024	21:43:58	19.41	0.24	25.2	5.52	0.26	423.27
3/29/2024	21:44:58	19.4	0.24	25.35	2.11	0.28	364.34
3/29/2024	21:45:58	19.42	0.24	24.96	1.73	0.28	441.52
3/29/2024	21:46:58	19.42	0.24	25.06	1.73	0.28	444.24
3/29/2024	21:47:58	19.42	0.24	24.97	1.73	0.28	444.91
3/29/2024	21:48:58	19.42	0.24	24.88	1.72	0.28	444
3/29/2024	21:49:58	19.42	0.24	24.89	1.73	0.28	442.56
3/29/2024	21:50:58	19.42	0.24	24.64	1.73	0.28	441.05
3/29/2024	21:51:58	19.42	0.24	24.67	1.73	0.28	440.47
3/29/2024	21:52:58	19.42	0.24	24.61	1.73	0.28	441.59
3/29/2024	21:53:58	19.42	0.24	24.54	1.73	0.28	441.9
3/29/2024	21:54:58	19.42	0.24	24.52	1.72	0.28	441.53
3/29/2024	21:55:58	19.42	0.24	24.52	1.72	0.28	441.08
3/29/2024	21:56:58	19.42	0.24	24.39	1.72	0.28	439.92
3/29/2024	21:57:58	19.41	0.24	24.28	1.72	0.28	437.46
3/29/2024	21:58:58	19.41	0.24	24.16	1.73	0.28	434.41
3/29/2024	21:59:58	19.41	0.24	23.96	1.74	0.28	431.88

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3/29/2024	22:00:58	19.42	0.24	23.71	1.73	0.28	431.56
3/29/2024	22:01:58	19.42	0.24	23.69	1.73	0.28	432.13
3/29/2024	22:02:58	19.42	0.24	23.86	1.72	0.28	433.88
3/29/2024	22:03:58	19.42	0.24	23.85	1.72	0.28	435.45
3/29/2024	22:04:58	19.42	0.24	23.96	1.73	0.28	436.49
3/29/2024	22:05:58	19.41	0.24	24.08	1.73	0.28	436.47
3/29/2024	22:06:58	19.41	0.24	24.1	1.73	0.28	435.82
3/29/2024	22:07:58	19.41	0.24	23.85	1.73	0.27	434.33
3/29/2024	22:08:58	19.47	0.24	22.6	3.04	0.26	419.69
3/29/2024	22:09:58	19.78	0.24	15.18	2.06	0.26	415.48
3/29/2024	22:10:58	19.62	0.24	18.77	6.91	0.22	392.93
3/29/2024	22:11:58	19.6	0.24	19.25	2.18	0.26	345.57
3/29/2024	22:12:58	19.6	0.24	19.29	2.17	0.25	425.83
3/29/2024	22:13:58	19.61	0.24	19.21	2.24	0.25	424.69
3/29/2024	22:14:58	19.61	0.24	18.95	2.28	0.25	415.26
3/29/2024	22:15:58	19.62	0.24	18.14	2.35	0.24	399.19
3/29/2024	22:16:58	19.62	0.24	17.14	2.41	0.24	378.24
3/29/2024	22:17:58	19.61	0.24	16.11	2.39	0.24	359.05
3/29/2024	22:18:58	19.62	0.24	15.17	2.51	0.23	344.47
3/29/2024	22:19:58	19.61	0.24	14.6	2.54	0.23	331.05
3/29/2024	22:20:58	19.61	0.24	13.93	2.57	0.22	322.61
3/29/2024	22:21:58	19.62	0.24	13.59	2.57	0.22	315.53
3/29/2024	22:22:58	19.63	0.24	13.31	2.5	0.22	310.27
3/29/2024	22:23:58	19.63	0.24	13	2.49	0.22	307.84
3/29/2024	22:24:58	19.62	0.25	12.67	2.65	0.23	303.9
3/29/2024	22:25:58	19.61	0.25	12.58	3.35	0.22	297.84
3/29/2024	22:26:58	19.59	0.25	12.87	4.29	0.22	269.93
3/29/2024	22:27:58	19.61	0.25	12.24	2.93	0.23	275.78
3/29/2024	22:28:58	19.62	0.25	11.85	3.09	0.23	280.81
3/29/2024	22:29:58	19.62	0.25	11.54	3.1	0.24	273.08
3/29/2024	22:30:58	19.62	0.25	11.05	3.2	0.24	268.1
3/29/2024	22:31:58	19.62	0.25	10.78	3.47	0.23	261.42
3/29/2024	22:32:58	19.63	0.25	10.49	2.53	0.24	253.77
3/29/2024	22:33:58	19.61	0.25	10.59	3.36	0.23	263.73
3/29/2024	22:34:58	19.64	0.25	10	3.3	0.23	247.86
3/29/2024	22:35:58	19.62	0.25	10.17	3.73	0.23	245.5
3/29/2024	22:36:58	19.65	0.25	9.55	2.41	0.24	237.44
3/29/2024	22:37:58	19.62	0.25	9.65	3.8	0.22	251.81
3/29/2024	22:38:58	19.65	0.25	9.04	2.43	0.23	230.91
3/29/2024	22:39:58	19.61	0.25	9.4	3.99	0.22	247.09
3/29/2024	22:40:58	19.65	0.25	8.8	2.95	0.23	223.98
3/29/2024	22:41:58	19.59	0.25	9.61	4.5	0.22	236.32
3/29/2024	22:42:58	19.66	0.25	8.41	3.07	0.23	215.81
3/29/2024	22:43:58	19.58	0.25	9.48	4.73	0.21	231.34
3/29/2024	22:44:58	19.67	0.25	8.16	4.3	0.22	202.5
3/29/2024	22:45:58	19.58	0.25	9.43	3.11	0.23	220.85
3/29/2024	22:46:58	19.59	0.25	9.17	3.3	0.23	229.19
3/29/2024	22:47:58	19.62	0.25	8.68	3.36	0.22	230.18
3/29/2024	22:48:58	19.62	0.25	8.56	3.46	0.22	229.03
3/29/2024	22:49:58	19.62	0.25	8.65	3.58	0.23	228.57
3/29/2024	22:50:58	19.63	0.25	8.61	3.55	0.23	227.77
3/29/2024	22:51:58	19.56	0.25	9.56	2.01	0.24	247.08
3/29/2024	22:52:58	19.47	0.25	10.95	3.88	0.23	250.37
3/29/2024	22:53:58	19.44	0.25	11.52	3.47	0.23	215.53
3/29/2024	22:54:58	19.44	0.25	11.43	1.68	0.24	254.4
3/29/2024	22:55:58	19.43	0.25	11.55	1.64	0.24	261.74
3/29/2024	22:56:58	19.44	0.25	11.53	1.6	0.24	263.21
3/29/2024	22:57:58	19.44	0.25	11.45	1.57	0.24	264.28
3/29/2024	22:58:58	19.43	0.25	11.63	1.55	0.24	265.41
3/29/2024	22:59:58	19.42	0.25	11.65	1.54	0.24	266.04
3/29/2024	23:00:58	19.42	0.25	11.68	1.53	0.24	267.33
3/29/2024	23:01:58	19.42	0.25	11.74	1.53	0.24	268.2
3/29/2024	23:02:58	19.42	0.25	11.68	1.54	0.25	268.95
3/29/2024	23:03:58	19.43	0.25	11.67	1.55	0.26	269.76
3/29/2024	23:04:58	19.43	0.25	11.73	1.55	0.26	269.96
3/29/2024	23:05:58	19.42	0.25	11.74	1.56	0.26	270.45
3/29/2024	23:06:58	19.41	0.25	12.13	3	0.26	270.67
3/29/2024	23:07:58	19.41	0.25	12.14	2.32	0.26	244.57
3/29/2024	23:08:58	19.43	0.25	11.63	1.74	0.26	268.43
3/29/2024	23:09:58	19.43	0.25	11.76	1.75	0.26	271.71
3/29/2024	23:10:58	19.43	0.25	11.89	1.76	0.26	272.32
3/29/2024	23:11:58	19.43	0.25	11.95	1.78	0.26	272.3
3/29/2024	23:12:58	19.44	0.25	11.81	1.78	0.26	272.33
3/29/2024	23:13:58	19.44	0.25	11.87	1.78	0.26	272.34
3/29/2024	23:14:58	19.44	0.25	11.8	1.8	0.27	272.37
3/29/2024	23:15:58	19.44	0.25	11.84	1.8	0.27	272.58

3/29/2024	23:16:58	19.44	0.25	11.8	1.8	0.27	272.74
3/29/2024	23:17:58	19.45	0.25	11.75	1.81	0.27	273.18
3/29/2024	23:18:58	19.46	0.25	11.59	1.81	0.27	273.36
3/29/2024	23:19:58	19.46	0.25	11.62	1.81	0.27	273.2
3/29/2024	23:20:58	19.46	0.25	11.67	1.81	0.28	272.91
3/29/2024	23:21:58	19.45	0.25	11.66	1.81	0.27	272.56
3/29/2024	23:22:58	19.43	0.25	11.8	1.81	0.27	272.38
3/29/2024	23:23:58	19.44	0.25	11.77	1.82	0.27	271.87
3/29/2024	23:24:58	19.46	0.25	11.56	1.82	0.27	271.02
3/29/2024	23:25:58	19.45	0.25	11.41	1.81	0.27	269.48
3/29/2024	23:26:58	19.46	0.25	11.19	1.82	0.27	267.78
3/29/2024	23:27:58	19.45	0.25	11.12	1.81	0.27	265.93
3/29/2024	23:28:58	19.45	0.25	11.05	1.81	0.27	264.01
3/29/2024	23:29:58	19.45	0.25	11.03	1.81	0.27	262.87
3/29/2024	23:30:58	19.45	0.25	10.82	1.81	0.27	261.14
3/29/2024	23:31:58	19.45	0.25	10.75	1.8	0.27	259.42
3/29/2024	23:32:58	19.45	0.25	10.68	7.87	0.23	239.58
3/29/2024	23:33:58	19.44	0.25	10.55	1.79	0.27	189.29
3/29/2024	23:34:58	19.45	0.25	10.19	1.54	0.27	255.44
3/29/2024	23:35:58	19.45	0.25	10.11	1.54	0.27	254.93
3/29/2024	23:36:58	19.44	0.25	9.96	1.54	0.27	253.11
3/29/2024	23:37:58	19.44	0.25	9.8	1.53	0.27	250.54
3/29/2024	23:38:58	19.46	0.25	9.72	1.53	0.27	248.05
3/29/2024	23:39:58	19.46	0.25	9.46	1.55	0.27	245.55
3/29/2024	23:40:58	19.44	0.25	9.35	4.05	0.26	239.79
3/29/2024	23:41:58	19.43	0.25	9.43	2.33	0.27	206.83
3/29/2024	23:42:58	19.44	0.25	9.11	2.08	0.27	230.56
3/29/2024	23:43:58	19.44	0.25	8.82	2.08	0.27	229.03
3/29/2024	23:44:58	19.45	0.25	8.52	2.07	0.27	226.91
3/29/2024	23:45:58	19.45	0.25	8.36	2.07	0.27	224.48
3/29/2024	23:46:58	19.45	0.25	8.15	2.07	0.27	221.82
3/29/2024	23:47:58	19.45	0.25	7.89	2.07	0.26	218.9
3/29/2024	23:48:58	19.45	0.25	7.65	2.06	0.26	216.26
3/29/2024	23:49:58	19.45	0.25	7.5	2.06	0.26	213.12
3/29/2024	23:50:58	19.44	0.25	7.31	2.05	0.25	210.52
3/29/2024	23:51:58	19.44	0.25	7.17	2.05	0.25	208.4
3/29/2024	23:52:58	19.44	0.25	6.97	2.05	0.25	206.18
3/29/2024	23:53:58	19.45	0.25	6.77	2.05	0.25	203.6
3/29/2024	23:54:58	19.46	0.25	6.6	2.05	0.24	201
3/29/2024	23:55:58	19.45	0.25	6.53	2.04	0.24	199.1
3/29/2024	23:56:58	19.45	0.25	6.41	2.05	0.24	196.59
3/29/2024	23:57:58	19.45	0.25	6.26	2.04	0.24	194.14
3/29/2024	23:58:58	19.45	0.25	6.04	2.05	0.24	191.73
3/29/2024	23:59:58	19.45	0.25	5.89	2.04	0.24	189.11
3/30/2024	0:00:58	19.45	0.25	5.82	3.98	2.59	185.67
3/30/2024	0:01:58	19.4	0.25	6.18	11.68	12.43	85.39
3/30/2024	0:02:58	19.26	0.27	7.24	11.79	12.6	4.38
3/30/2024	0:03:58	19.16	0.32	7.05	11.8	12.61	3.09
3/30/2024	0:04:58	19.14	0.33	6.82	11.8	12.62	3.09
3/30/2024	0:05:58	19.13	0.34	6.71	8.73	8.67	5.2
3/30/2024	0:06:58	19.22	0.32	6.16	2.74	0.65	133.18
3/30/2024	0:07:58	19.34	0.26	6.1	0.15	0.1	1390.16
3/30/2024	0:08:58	19.24	0.25	7.57	0.13	0.08	2029.15
3/30/2024	0:09:58	19.23	0.25	7.69	0.13	0.09	2032.87
3/30/2024	0:10:58	19.24	0.25	7.54	1.23	0.2	1685.43
3/30/2024	0:11:58	19.36	0.25	5.87	1.66	0.24	282.97
3/30/2024	0:12:58	19.43	0.25	4.91	1.66	0.24	166.17
3/30/2024	0:13:58	19.43	0.25	4.92	1.66	0.23	163.32
3/30/2024	0:14:58	19.44	0.25	4.91	1.65	0.23	160.76
3/30/2024	0:15:58	19.44	0.24	4.7	1.66	0.22	159.06
3/30/2024	0:16:58	19.44	0.24	4.79	1.64	0.22	156.84
3/30/2024	0:17:58	19.43	0.24	4.72	1.65	0.22	154.7
3/30/2024	0:18:58	19.43	0.24	4.69	1.65	0.22	152.89
3/30/2024	0:19:58	19.44	0.24	4.65	1.65	0.21	151.24
3/30/2024	0:20:58	19.44	0.24	4.55	1.65	0.21	149.04
3/30/2024	0:21:58	19.44	0.24	4.63	1.65	0.21	147.71
3/30/2024	0:22:58	19.44	0.24	4.48	1.65	0.21	145.79
3/30/2024	0:23:58	19.43	0.24	4.58	1.65	0.2	144.54
3/30/2024	0:24:58	19.44	0.24	4.53	1.65	0.2	142.57
3/30/2024	0:25:58	19.43	0.24	4.59	4.87	0.19	127.2
3/30/2024	0:26:58	19.43	0.24	4.44	1.48	0.2	130.53
3/30/2024	0:27:58	19.44	0.24	4.43	1.47	0.2	138.97
3/30/2024	0:28:58	19.45	0.24	4.34	1.47	0.2	137.02
3/30/2024	0:29:58	19.45	0.24	4.33	1.47	0.2	135.72
3/30/2024	0:30:58	19.44	0.24	4.28	1.47	0.2	134.28
3/30/2024	0:31:58	19.44	0.24	4.21	1.47	0.19	132.85

BIAS/DRIFT CALS

back on stack gas



3/30/2024	0:32:58	19.44	0.24	4.11	1.47	0.19	131.21
3/30/2024	0:33:58	19.44	0.24	4.09	1.47	0.19	129.46
3/30/2024	0:34:58	19.45	0.24	4.09	1.47	0.19	128.13
3/30/2024	0:35:58	19.45	0.24	4.15	1.47	0.19	126.65
3/30/2024	0:36:58	19.45	0.24	4.02	1.47	0.19	125.37
3/30/2024	0:37:58	19.45	0.24	3.97	1.48	0.19	124.06
3/30/2024	0:38:58	19.45	0.24	4.01	1.48	0.18	122.56
3/30/2024	0:39:58	19.45	0.24	4.03	1.48	0.18	121.42
3/30/2024	0:40:58	19.45	0.23	3.96	1.49	0.18	119.85
3/30/2024	0:41:58	19.44	0.23	3.88	3.72	0.18	111.94
3/30/2024	0:42:58	19.45	0.23	3.75	1.49	0.18	110.07
3/30/2024	0:43:58	19.46	0.23	3.8	1.49	0.18	115.11
3/30/2024	0:44:58	19.45	0.23	3.7	1.49	0.18	113.77
3/30/2024	0:45:58	19.45	0.23	3.69	1.49	0.17	112.42
3/30/2024	0:46:58	19.45	0.23	3.71	1.5	0.17	111.15
3/30/2024	0:47:58	19.45	0.23	3.71	1.5	0.17	110.07
3/30/2024	0:48:58	19.45	0.24	3.66	1.5	0.17	108.84
3/30/2024	0:49:58	19.45	0.23	3.7	1.49	0.17	108.08
3/30/2024	0:50:58	19.46	0.23	3.61	1.49	0.17	106.75
3/30/2024	0:51:58	19.46	0.23	3.61	1.49	0.17	105.43
3/30/2024	0:52:58	19.45	0.23	3.56	1.49	0.17	104.15
3/30/2024	0:53:58	19.45	0.23	3.62	1.49	0.17	103.06
3/30/2024	0:54:58	19.46	0.23	3.46	1.49	0.17	101.81
3/30/2024	0:55:58	19.45	0.23	3.39	1.48	0.16	101.03
3/30/2024	0:56:58	19.45	0.23	3.45	1.48	0.16	100.06
3/30/2024	0:57:58	19.45	0.23	3.38	1.49	0.16	99.03
3/30/2024	0:58:58	19.45	0.23	3.42	1.49	0.16	97.46
3/30/2024	0:59:58	19.45	0.23	3.33	1.49	0.16	96.38
3/30/2024	1:00:58	19.45	0.23	3.4	1.48	0.16	95.29
3/30/2024	1:01:58	19.45	0.23	3.21	1.48	0.16	94.61
3/30/2024	1:02:58	19.45	0.23	3.16	1.5	0.16	93.42
3/30/2024	1:03:58	19.45	0.23	3.1	1.5	0.15	92.35
3/30/2024	1:04:58	19.45	0.23	3.06	1.5	0.15	91.11
3/30/2024	1:05:58	19.45	0.23	3.08	1.5	0.15	90.25
3/30/2024	1:06:58	19.45	0.23	3.03	1.5	0.15	89.61
3/30/2024	1:07:58	19.44	0.23	2.93	1.5	0.15	88.39
3/30/2024	1:08:58	19.45	0.23	2.85	1.5	0.15	87.2
3/30/2024	1:09:58	19.45	0.23	2.75	1.5	0.15	86.53
3/30/2024	1:10:58	19.45	0.23	2.69	1.5	0.14	85.69
3/30/2024	1:11:58	19.44	0.23	2.66	1.51	0.14	84.57
3/30/2024	1:12:58	19.44	0.23	2.69	1.5	0.14	83.52
3/30/2024	1:13:58	19.44	0.23	2.54	1.5	0.14	83.09
3/30/2024	1:14:58	19.44	0.23	2.52	1.51	0.14	81.48
3/30/2024	1:15:58	19.45	0.23	2.46	1.51	0.14	80.33
3/30/2024	1:16:58	19.45	0.23	2.4	1.5	0.13	80.16
3/30/2024	1:17:58	19.45	0.23	2.36	1.5	0.13	78.89
3/30/2024	1:18:58	19.45	0.23	2.31	1.5	0.13	77.76
3/30/2024	1:19:58	19.44	0.23	2.31	1.51	0.13	77.54
3/30/2024	1:20:58	19.44	0.23	2.31	4.1	0.13	74.9
3/30/2024	1:21:58	19.43	0.23	2.34	1.62	0.13	67.95
3/30/2024	1:22:58	19.44	0.23	2.22	1.5	0.13	74.95
3/30/2024	1:23:58	19.44	0.23	2.2	1.5	0.13	73.83
3/30/2024	1:24:58	19.45	0.23	2.17	1.5	0.12	72.95
3/30/2024	1:25:58	19.44	0.23	2.23	1.5	0.13	72.39
3/30/2024	1:26:58	19.44	0.23	2.25	1.5	0.13	71.25
3/30/2024	1:27:58	19.44	0.23	2.21	1.5	0.13	71.07
3/30/2024	1:28:58	19.43	0.23	2.18	1.51	0.12	69.82
3/30/2024	1:29:58	19.44	0.23	2.2	1.51	0.12	69.35
3/30/2024	1:30:58	19.44	0.23	2.25	1.51	0.12	68.46
3/30/2024	1:31:58	19.44	0.23	2.2	1.51	0.12	67.25
3/30/2024	1:32:58	19.44	0.23	2.08	1.5	0.12	66.93
3/30/2024	1:33:58	19.43	0.23	2.11	1.5	0.12	65.79
3/30/2024	1:34:58	19.44	0.23	2	1.5	0.12	64.59
3/30/2024	1:35:58	19.44	0.24	2.08	1.51	0.11	64.32
3/30/2024	1:36:58	19.44	0.24	2.13	1.51	0.11	63.28
3/30/2024	1:37:58	19.45	0.24	2.16	1.51	0.11	62.78
3/30/2024	1:38:58	19.41	0.25	2.13	1.51	0.11	61.75
3/30/2024	1:39:58	18.88	0.54	2.13	1.51	0.11	61.2
3/30/2024	1:40:58	19.32	0.3	2.01	2.43	0.11	60.49
3/30/2024	1:41:58	19.4	0.25	2.23	2.44	0.11	54.94
3/30/2024	1:42:58	19.43	0.25	2.38	1.53	0.11	58.53
3/30/2024	1:43:58	19.43	0.25	2.38	1.53	0.11	58.18
3/30/2024	1:44:58	19.44	0.25	2.37	1.53	0.11	57.35
3/30/2024	1:45:58	19.44	0.25	2.31	1.53	0.1	56.65
3/30/2024	1:46:58	19.44	0.25	2.47	1.54	0.1	56.03
3/30/2024	1:47:58	19.43	0.25	2.54	1.54	0.1	55.29

3/30/2024	1:48:58	19.43	0.25	2.69	1.54	0.1	54.31
3/30/2024	1:49:58	19.42	0.25	2.78	1.55	0.1	53.8
3/30/2024	1:50:58	19.43	0.25	2.66	1.55	0.1	53.01
3/30/2024	1:51:58	19.43	0.26	2.85	1.55	0.1	52.51
3/30/2024	1:52:58	19.43	0.26	2.82	1.55	0.1	51.73
3/30/2024	1:53:58	19.43	0.26	2.79	1.55	0.1	51.5
3/30/2024	1:54:58	19.43	0.25	2.92	1.55	0.1	51.02
3/30/2024	1:55:58	19.42	0.25	2.95	7.11	0.1	47.23
3/30/2024	1:56:58	19.41	0.25	3.12	1.8	0.09	39.08
3/30/2024	1:57:58	19.41	0.25	3.13	1.57	0.09	48.72
3/30/2024	1:58:58	19.42	0.25	3.1	1.57	0.09	48.55
3/30/2024	1:59:58	19.42	0.25	3.19	1.57	0.08	47.98
3/30/2024	2:00:58	19.42	0.25	3.29	1.58	0.08	47.34
3/30/2024	2:01:58	19.42	0.25	3.42	1.58	0.08	47.08
3/30/2024	2:02:58	19.43	0.25	3.39	1.58	0.08	46.49
3/30/2024	2:03:58	19.42	0.25	3.53	1.58	0.08	45.72
3/30/2024	2:04:58	19.42	0.25	3.62	1.58	0.07	45.36
3/30/2024	2:05:58	19.42	0.25	3.7	1.58	0.07	44.74
3/30/2024	2:06:58	19.41	0.25	3.93	1.58	0.07	44.28
3/30/2024	2:07:58	19.41	0.25	3.93	1.58	0.07	43.66
3/30/2024	2:08:58	19.42	0.25	4.06	1.58	0.07	43.18
3/30/2024	2:09:58	19.42	0.25	4.19	1.59	0.07	42.82
3/30/2024	2:10:58	19.41	0.25	4.22	2.49	0.06	42.36
3/30/2024	2:11:58	19.4	0.25	4.38	3.22	0.06	37.56
3/30/2024	2:12:58	19.42	0.24	4.36	1.59	0.05	40.77
3/30/2024	2:13:58	19.42	0.24	4.47	1.59	0.05	40.86
3/30/2024	2:14:58	19.42	0.24	4.61	1.59	0.04	40.63
3/30/2024	2:15:58	19.42	0.24	4.63	1.59	0.04	40.37
3/30/2024	2:16:58	19.42	0.23	4.78	1.59	0.04	40.15
3/30/2024	2:17:58	19.42	0.23	4.94	1.59	0.04	39.55
3/30/2024	2:18:58	19.41	0.23	5.08	1.59	0.04	39.05
3/30/2024	2:19:58	19.41	0.23	5.12	1.59	0.04	38.92
3/30/2024	2:20:58	19.41	0.23	5.22	1.6	0.04	38.22
3/30/2024	2:21:58	19.42	0.23	5.36	1.6	0.04	37.62
3/30/2024	2:22:58	19.41	0.24	5.32	1.6	0.04	37.58
3/30/2024	2:23:58	19.41	0.24	5.4	1.6	0.04	36.95
3/30/2024	2:24:58	19.41	0.24	5.44	1.6	0.04	36.47
3/30/2024	2:25:58	19.4	0.24	5.56	1.6	0.04	36.31
3/30/2024	2:26:58	19.41	0.24	5.63	4.61	0.05	34.91
3/30/2024	2:27:58	19.4	0.24	5.69	2.17	0.04	29.8
3/30/2024	2:28:58	19.4	0.24	5.72	1.93	0.05	33.65
3/30/2024	2:29:58	19.4	0.25	5.79	1.92	0.05	33.66
3/30/2024	2:30:58	19.4	0.25	5.8	1.92	0.05	33.63
3/30/2024	2:31:58	19.4	0.25	5.83	1.92	0.05	32.91
3/30/2024	2:32:58	19.4	0.25	5.92	1.92	0.05	32.3
3/30/2024	2:33:58	19.4	0.25	6.06	1.93	0.05	32.32
3/30/2024	2:34:58	19.4	0.25	6.13	1.94	0.04	31.83
3/30/2024	2:35:58	19.4	0.25	6.14	1.94	0.04	31.02
3/30/2024	2:36:58	19.4	0.25	6.24	1.93	0.04	31.03
3/30/2024	2:37:58	19.4	0.25	6.34	1.94	0.04	30.47
3/30/2024	2:38:58	19.4	0.25	6.36	1.93	0.04	29.66
3/30/2024	2:39:58	19.4	0.25	6.34	1.94	0.04	29.65
3/30/2024	2:40:58	19.39	0.25	6.5	3.94	0.04	29.28
3/30/2024	2:41:58	19.38	0.25	6.57	4.99	0.04	23.37
3/30/2024	2:42:58	19.41	0.25	6.65	1.93	0.04	27.03
3/30/2024	2:43:58	19.41	0.25	6.66	1.94	0.04	28.33
3/30/2024	2:44:58	19.4	0.25	6.7	1.92	0.04	28.07
3/30/2024	2:45:58	19.39	0.26	6.77	1.94	0.04	27.46
3/30/2024	2:46:58	19.4	0.26	6.83	1.93	0.04	27.03
3/30/2024	2:47:58	19.4	0.26	6.97	1.93	0.04	27.03
3/30/2024	2:48:58	19.4	0.26	6.98	1.94	0.04	26.75
3/30/2024	2:49:58	19.4	0.26	7.11	1.93	0.04	25.76
3/30/2024	2:50:58	19.4	0.26	7.11	1.93	0.04	25.78
3/30/2024	2:51:58	19.4	0.26	7.22	1.94	0.04	25.78
3/30/2024	2:52:58	19.4	0.26	7.2	1.93	0.04	25.02
3/30/2024	2:53:58	19.4	0.26	7.21	1.94	0.04	24.61
3/30/2024	2:54:58	19.4	0.26	7.27	1.94	0.04	24.39
3/30/2024	2:55:58	19.4	0.26	7.28	1.92	0.04	24.37
3/30/2024	2:56:58	19.4	0.26	7.39	1.93	0.03	23.9
3/30/2024	2:57:58	19.4	0.26	7.35	1.93	0.03	23.34
3/30/2024	2:58:58	19.4	0.26	7.34	1.94	0.03	23.13
3/30/2024	2:59:58	19.4	0.26	7.37	1.95	0.03	23.12
3/30/2024	3:00:58	19.4	0.26	7.4	3.3	0.03	23.08
3/30/2024	3:01:58	19.4	0.25	7.37	1.78	0.02	21.47
3/30/2024	3:02:58	19.39	0.24	7.41	1.7	0.01	23.15
3/30/2024	3:03:58	19.4	0.24	7.47	1.7	0.01	22.72

3/30/2024	3:04:58	19.4	0.24	7.44	1.71	0.01	22.5
3/30/2024	3:05:58	19.4	0.24	7.33	1.71	0.01	22.21
3/30/2024	3:06:58	19.4	0.24	7.44	1.71	0.01	21.83
3/30/2024	3:07:58	19.4	0.24	7.6	1.71	0.01	21.86
3/30/2024	3:08:58	19.4	0.23	7.73	1.71	0.01	21.85
3/30/2024	3:09:58	19.4	0.23	7.72	1.7	0.01	21.87
3/30/2024	3:10:58	19.4	0.23	7.76	2.32	0.01	21.39
3/30/2024	3:11:58	19.4	0.23	7.8	3.3	0.01	19.89
3/30/2024	3:12:58	19.4	0.23	7.79	2.05	0.01	20.3
3/30/2024	3:13:58	19.39	0.23	7.85	2.05	0.01	20.57

		O2 Combo [%]	CO2 Combo [%]	CO Combo [ppm]	O2 Process [%]	CO2 Process [%]	CO Process [ppm]
<b>AVERAGES</b>		<b>19.32</b>	<b>0.22</b>	<b>19.66</b>	<b>1.79</b>	<b>0.22</b>	<b>330.69</b>

END RUN 4

3/30/2024	3:14:58	19.4	0.23	7.75	2.06	0.01	20.37
3/30/2024	3:15:58	19.4	0.23	7.88	2.39	0.47	20.71
3/30/2024	3:16:58	18.72	0.25	8	11.28	11.61	70.47
3/30/2024	3:17:58	5.76	0.34	30.18	11.79	12.22	8.07
3/30/2024	3:18:58	1.09	0.21	46.24	11.8	12.23	1.19
3/30/2024	3:19:58	0.55	0.19	48.48	11.8	12.24	1.17
3/30/2024	3:20:58	0.45	0.19	48.84	3.01	2.88	307.74
3/30/2024	3:21:58	0.59	0.19	48.98	0.15	0	1854.89
3/30/2024	3:22:58	12.63	0.42	30.36	0.14	-0.01	2008.94
3/30/2024	3:23:58	13.11	7.98	10	0.13	-0.01	2018.99
3/30/2024	3:24:58	12.14	10.77	5.87	0.82	0.01	1921.27
3/30/2024	3:25:58	11.99	11.29	5.28	1.59	0.02	377.78
3/30/2024	3:26:58	11.98	11.37	5.12	1.59	0.03	21.85
3/30/2024	3:27:58	12.4	10.83	5.03	1.64	0.03	19.8
3/30/2024	3:28:58	17.98	3.12	4.36	1.77	0.03	19.71
3/30/2024	3:29:58	19.63	0.83	5.61	1.77	0.03	19
3/30/2024	3:30:58	19.92	0.37	6.56	13.76	0.05	17.15

POST TEST  
BIAS/DRIFT CALS



## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI76E15A0295	Reference Number:	122-402898720-1
Cylinder Number:	CC709790	Cylinder Volume:	152.0 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22023	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Nov 14, 2023

**Expiration Date: Nov 14, 2031**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	12.00 %	12.01 %	G1	+/- 0.6% NIST Traceable	11/14/2023
OXYGEN	12.00 %	12.06 %	G1	+/- 0.4% NIST Traceable	11/14/2023
NITROGEN	Balance				

  

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	19060402	6162642Y	11.105 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Dec 04, 2025
NTRM	100106	K021587	9.967 % OXYGEN/NITROGEN	+/- 0.3%	Mar 22, 2028

  

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SIEMENS ULTRAMAT 6 N1P3228	Nondispersive Infrared (NDIR)	Nov 08, 2023
Siemens Oxymat 61 M3299 O2	Paramagnetic	Nov 08, 2023

Triad Data Available Upon Request



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## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E03NI55E15A48Q4	Reference Number:	122-401826198-1
Cylinder Number:	CC216635	Cylinder Volume:	162.2 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22020	Valve Outlet:	590
Gas Code:	CO2,O2,BALN	Certification Date:	Jun 05, 2020

**Expiration Date: Jun 05, 2028**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON DIOXIDE	22.50 %	22.37 %	G1	+/- 0.6% NIST Traceable	06/05/2020
OXYGEN	22.50 %	22.83 %	G1	+/- 0.7% NIST Traceable	06/05/2020
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12061508	CC354696	19.87 % CARBON DIOXIDE/NITROGEN	+/- 0.6%	Jan 11, 2024
NTRM	08010202	1D003076	23.20 % OXYGEN/NITROGEN	+/- 0.4%	Jun 01, 2024

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA510 CO2 2L6YXWY0	Nondispersive Infrared (NDIR)	May 28, 2020
Horiba MPA510 O2 41499150042	Paramagnetic	May 28, 2020

Triad Data Available Upon Request



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**CERTIFICATE OF ANALYSIS****Grade of Product: EPA PROTOCOL STANDARD**

Part Number: E02NI99E15A0223  
Cylinder Number: AAL073072  
Laboratory: 124 - Durham (SAP) - NC  
PGVP Number: B22022  
Gas Code: CO,BALN

Reference Number: 122-402500427-1  
Cylinder Volume: 144.0 CF  
Cylinder Pressure: 2015 PSIG  
Valve Outlet: 350  
Certification Date: Jul 26, 2022

**Expiration Date: Jul 26, 2030**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

**ANALYTICAL RESULTS**

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	45.00 PPM	44.96 PPM	G1	+/- 0.5% NIST Traceable	07/26/2022
NITROGEN	Balance				

**CALIBRATION STANDARDS**

Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	20060913	CC714793	26.54 PPM CARBON MONOXIDE/NITROGEN	+/- 0.4%	Jun 28, 2027

**ANALYTICAL EQUIPMENT**

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Nicolet iS50 AUP2110292 CO	FTIR	Jul 20, 2022

Triad Data Available Upon Request

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## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02NI99E15A0679	Reference Number:	54-401438137-1
Cylinder Number:	CC483619	Cylinder Volume:	144.3 CF
Laboratory:	124 - Chicago (SAP) - IL	Cylinder Pressure:	2015 PSIG
PGVP Number:	B12019	Valve Outlet:	350
Gas Code:	CO,BALN	Certification Date:	Mar 04, 2019

**Expiration Date: Mar 04, 2027**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	80.00 PPM	80.04 PPM	G1	+/- 0.8% NIST Traceable	03/04/2019
NITROGEN	Balance				

  

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12062224	CC365465	97.56 PPM CARBON MONOXIDE/NITROGEN	+/- 0.6%	May 10, 2024

  

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
CO-1 SIEMENS ULTRAMAT 6E N1J5700	NDIR	Feb 17, 2019

Triad Data Available Upon Request



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## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02NI99E15A0502	Reference Number:	122-401166318-1
Cylinder Number:	CC496504	Cylinder Volume:	144.3 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22018	Valve Outlet:	350
Gas Code:	CO,BALN	Certification Date:	Apr 03, 2018

**Expiration Date: Apr 03, 2026**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	900.0 PPM	920.7 PPM	G1	+/- 0.5% NIST Traceable	04/03/2018
NITROGEN	Balance				

  

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date

  

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA510 CO RS2EGL6K	Nondispersive Infrared (NDIR)	Mar 21, 2018

Triad Data Available Upon Request



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## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA PROTOCOL STANDARD

Part Number:	E02NI99E15A0206	Reference Number:	122-401177826-1
Cylinder Number:	CC365236	Cylinder Volume:	144.4 CF
Laboratory:	124 - Durham (SAP) - NC	Cylinder Pressure:	2015 PSIG
PGVP Number:	B22018	Valve Outlet:	350
Gas Code:	CO,BALN	Certification Date:	Apr 16, 2018

**Expiration Date: Apr 16, 2026**

Certification performed in accordance with "EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (May 2012)" document EPA 600/R-12/531, using the assay procedures listed. Analytical Methodology does not require correction for analytical interference. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a mole/mole basis unless otherwise noted. The results relate only to the items tested. The report shall not be reproduced except in full without approval of the laboratory. Do Not Use This Cylinder below 100 psig, i.e. 0.7 megapascals.

ANALYTICAL RESULTS					
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty	Assay Dates
CARBON MONOXIDE	2000 PPM	2034 PPM	G1	+/- 0.6% NIST Traceable	04/16/2018
NITROGEN	Balance				

CALIBRATION STANDARDS					
Type	Lot ID	Cylinder No	Concentration	Uncertainty	Expiration Date
NTRM	12060736	CC356024	2498 PPM CARBON MONOXIDE/NITROGEN	+/- 0.6%	Dec 14, 2023

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
Horiba VIA510 CO RS2EGL6K	Nondispersive Infrared (NDIR)	Mar 21, 2018

Triad Data Available Upon Request



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# **Appendix G**

## **Equipment Calibration Data**

# Montrose Air Quality Services

## Meter Box Annual Calibration

### Critical Orifice Calibration Method (EPA Method 5 Section 16.2.3)

NIST Thermometer ID:

211072459

Orifice Kit ID:

Set II DU

Meter Box Manufacturer:

Nutech

Meter Box Model:

2010 Stack Sampler

Meter Box Identification No.:

E-15

NIST Traceable Thermometer Calibration Due:

12/14/23

Orifice Kit Calibration Due:

07/29/23

Meter Box Calibration Due:

07/26/24

Barometric Pressure:

30.42

Theoretical Critical Vacuum:

14.35

----- DRY GAS METER READINGS -----									-CRITICAL ORIFICE READINGS-							
dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps.		Final Temps.		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Final (deg F)	Average (deg F)		
0.75	10.72	232.500	237.500	5.000	Inlet (deg F)	95.0	Outlet (deg F)	95.0	98.0	98.0	DU-48	0.3503	20.0	89.9	89.6	89.8
1.30	8.07	237.500	242.500	5.000	Inlet (deg F)	96.0	Outlet (deg F)	96.0	97.0	97.0	DU-55	0.4618	19.0	89.7	89.9	89.8
2.20	6.23	242.500	247.500	5.000	Inlet (deg F)	95.0	Outlet (deg F)	95.0	95.0	95.0	DU-63	0.5945	17.0	89.9	89.9	89.9
4.30	4.52	247.500	252.500	5.000	Inlet (deg F)	95.0	Outlet (deg F)	95.0	96.0	96.0	DU-73	0.8194	14.0	89.6	89.6	89.6
6.60	3.70	252.500	257.500	5.000	Inlet (deg F)	95.0	Outlet (deg F)	95.0	95.0	95.0	DU-81	1.0108	11.0	89.5	89.6	89.6

### \*\*\*\*\* RESULTS \*\*\*\*\*

DRY GAS METER			ORIFICE			DRY GAS METER			ORIFICE		
VOLUME CORRECTED	VOLUME CORRECTED		VOLUME CORRECTED	VOLUME CORRECTED	VOLUME NOMINAL	CALIBRATION FACTOR			CALIBRATION FACTOR		
Vm(std) (cu ft)	Vm(std) (liters)		Vcr(std) (cu ft)	Vcr(std) (liters)	Vcr (cu ft)	Value (number)	*Y Variation (number)		Value (in H <sub>2</sub> O)	**dH@ (mm H <sub>2</sub> O)	Variation (in H <sub>2</sub> O)
4.832	136.8		4.871	137.9	4.990	1.008	0.015		1.970	50.04	-0.050
4.838	137.0		4.833	136.9	4.952	0.999	0.005		1.965	49.92	-0.055
4.862	137.7		4.807	136.1	4.926	0.989	-0.005		2.013	51.12	-0.008
4.882	138.3		4.802	136.0	4.919	0.984	-0.010		2.068	52.52	0.047
4.913	139.1		4.853	137.4	4.970	0.988	-0.006		2.087	53.01	0.067
Average Meter Y =						0.993		Average Orifice ΔH@ =	2.021	51.32	

\*Y tolerance for individual values is ± 2 % from average (EPA Method 5 § 16.2.3.5).

\*\*Delta H<sub>0</sub> tolerance for individual values is ± 0.20 from average (EPA Method 5 Figure 5.5).

Thermocouple and reference thermometer temperatures must agree within 2 °F (EPA Method 5 §10.5).

Calibrated By: Jordan Young

Date Calibrated: 7/26/23

Signed: Jordan Young

# Montrose Air Quality Services

## Meter Box Annual Calibration

### Critical Orifice Calibration Method (EPA Method 5 Section 16.2.3)

NIST Thermometer ID:

211072459

Orifice Kit ID:

Set II DU (2GB)

Meter Box Manufacturer:

Environmental Supply

Meter Box Model:

C-5000

Meter Box Identification No.:

2602

NIST Traceable Thermometer Calibration Due:

12/14/23

Orifice Kit Calibration Due:

07/29/23

Meter Box Calibration Due:

07/24/24

Barometric Pressure:

30.10

Theoretical Critical Vacuum:

14.20

----- DRY GAS METER READINGS -----									-CRITICAL ORIFICE READINGS-					
dH (in H <sub>2</sub> O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps.		Final Temps.		Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Final (deg F)	Average (deg F)
0.70	10.78	972.000	977.000	5.000	Inlet (deg F)	Outlet (deg F)	Inlet (deg F)	Outlet (deg F)	48	0.3503	19.0	89.9	89.9	89.9
2.00	6.33	982.200	987.200	5.000	89.0	89.0	89.0	89.0	63	0.5945	17.0	89.9	89.9	89.9
5.80	3.77	992.200	997.200	5.000	89.0	89.0	89.0	89.0	81	1.0108	12.0	87.8	88.3	88.1

### \*\*\*\*\* RESULTS \*\*\*\*\*

#### DRY GAS METER

#### ORIFICE

#### DRY GAS METER

#### ORIFICE

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED	VOLUME NOMINAL	CALIBRATION FACTOR *Y		CALIBRATION FACTOR **dH@		
Vm(std) (cu ft)	Vm(std) (liters)	Vcr(std) (cu ft)	Vcr(std) (liters)	Vcr (cu ft)	Value (number)	Variation (number)	Value (in H <sub>2</sub> O)	Value (mm H <sub>2</sub> O)	Variation (in H <sub>2</sub> O)
4.846	137.2	4.848	137.3	5.021	1.001	0.003	1.884	47.86	0.010
4.861	137.7	4.830	136.8	5.003	0.994	-0.004	1.869	47.48	-0.005
4.906	138.9	4.894	138.6	5.052	0.998	0.000	1.869	47.47	-0.005
Average Meter Y =					0.997	Average Orifice ΔH@ =	1.874	47.60	

\*Y tolerance for individual values is ± 2 % from average (EPA Method 5 § 16.2.3.5).

\*\*Delta H<sub>0</sub> tolerance for individual values is ± 0.20 from average (EPA Method 5 Figure 5.5).

Thermocouple and reference thermometer temperatures must agree within 2 °F (EPA Method 5 §10.5).

Calibrated By: Jordan Young

Date Calibrated: 7/24/23

Signed: Jordan Young

METHOD 5 PRETEST CONSOLE CALIBRATION  
 USING SECONDARY REFERENCE METER

Test Meter Information

Console Model No: 522-D  
 Console ID No: 24  
 DGM ID No: 20171672

Reference Meter Information

Console Model No: SK25EXSR  
 Console ID No: 1407013  
 DGM ID No: 20140780  
 Meter Gamma: 1.0000

Calibration Conditions

Bar. Pressure (in Hg): 28.87  
 Ambient Temp (°F): 69.0  
 Relative Humidity (%): 29  
 Altitude (ft): 0.0  
 Altitude Correction Factor (in): 0  
 Corrected Bar. Pressure (in Hg): 28.87

Std Temp (R): 527.67  
 Std Press (in Hg): 29.92  
 K<sub>1</sub> (R/in Hg): 17.636

Date: 1/11/2024  
 Technician: A. Chopp

Test Meter (DGM)						Reference Meter					
Run Time, min	Orifice, ΔH (in H <sub>2</sub> O)	Pulse Count			Outlet Temp (°F)		Meter Pressure (in. H <sub>2</sub> O)	Volume (ft <sup>3</sup> )		Outlet Temp (°F)	
		Initial	Final	Total	Initial	Final		Initial	Final	Initial	Final
θ	P <sub>m</sub>				t <sub>mp</sub>	t <sub>mf</sub>	P <sub>w</sub>	V <sub>w</sub>	V <sub>mf</sub>	t <sub>w</sub>	t <sub>mf</sub>
10.0	0.50	0	63769	63769	68.0	69.0	0.0	0.0	3.7971	65.0	66.0
14.0	1.00	0	128567	128567	69.0	72.0	0.0	0.0	7.6586	66.0	67.0
11.0	2.00	0	145391	145391	72.0	76.0	0.0	0.0	8.5859	67.0	68.0
10.0	3.50	0	174104	174104	76.0	78.0	0.0	0.0	10.2875	68.0	69.0
10.0	5.00	0	208799	208799	78.0	79.0	0.0	0.0	12.3309	69.0	70.0

Standardized Data			Scaling Factor		Calibration Results			ΔH @ (in H <sub>2</sub> O)	
Std. Volume	Std. Flow Rate	Totalizer	Scaling Factor	Std. Volume	Correction Factor		0.75 SCFM	Variance	
V <sub>wstd</sub> (ft <sup>3</sup> )	Q <sub>wstd</sub> (ft <sup>3</sup> /min)	counts <sub>(std)</sub>		V <sub>mstd</sub> (ft <sup>3</sup> )	Value	Variation		ΔH@	ΔΔH@
3.681	0.368	61551.151	5.981E-05	3.668	1.004	0.004	2.003	0.070	
7.411	0.529	123784.613	5.987E-05	7.377	1.005	0.005	1.933	0.000	
8.292	0.754	139418.029	5.948E-05	8.309	0.998	-0.002	1.899	-0.035	
9.917	0.992	166649.211	5.951E-05	9.931	0.999	-0.001	1.916	-0.017	
11.864	1.186	200056.268	5.931E-05	11.922	0.995	-0.005	1.915	-0.019	
			5.96E-05 = Avg.		1.000 = Y Avg.		1.933 = ΔH@ Avg.		

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is ±0.02.  
 Note: For ΔH<sub>0</sub>, orifice pressure differential that equates to 0.75cfm (0.0212m<sup>3</sup>/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is ±0.2inches (5.1mm) H<sub>2</sub>O.

Pass/Fail Result: **Pass**

The Redlion totalizer scaling factor input value is determined by the desired decimal point position as set in the Redlion totalizer:

Decimal Point Setting: 4  
 Totalizer Input Value: 0.5959

The instruments listed and described on this certificate have been calibrated against standards traceable to the National Institute of Standards and Technology (N.I.S.T.).

QA/QC Performed By: David Nicellio

Date: 1/12/2024

# THERMOCOUPLE CALIBRATION DATA

Meter Box ID: 24 Date: 1/11/2024  
Calibration Performed By: A Chopp  
Reference Calibrator ID: 120428  
Reference Calibrator Model: 520B  
Reference Calibrator Type: K

Stack Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (%)
1	0	0	0.0
2	32	31	0.2
3	100	98	0.4
4	212	211	0.1
5	300	300	0.0
6	400	397	0.3
7	500	497	0.3
8	600	598	0.2
9	700	700	0.0
10	800	799	0.1
11	900	898	0.1

Average <sup>b</sup>	0.2
Pass/Fail ?	Pass

Probe Heat Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (%)
1	0	0	0.0
2	32	30	0.4
3	100	97	0.5
4	212	211	0.1
5	300	299	0.1
6	400	397	0.3
7	500	496	0.4

Average <sup>b</sup>	0.3
Pass/Fail ?	Pass

Filter Heat Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (%)
1	0	0	0.0
2	32	30	0.4
3	100	97	0.5
4	212	211	0.1
5	300	299	0.1
6	400	397	0.3
7	500	496	0.4

Average <sup>b</sup>	0.3
Pass/Fail ?	Pass

Auxiliary (High) Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (%)
1	0	0	0.0
2	32	31	0.2
3	100	98	0.4
4	212	211	0.1
5	300	300	0.0
6	400	398	0.2
7	500	497	0.3
8	600	598	0.2
9	700	700	0.0
10	800	799	0.1
11	900	899	0.1

Average <sup>b</sup>	0.2
Pass/Fail ?	Pass

\* Difference, % (Based on degrees Rankin):

$$\text{Absolute Difference} = \frac{|1 (\text{Ref. Temp.} + 460) - (\text{TC Temp.} + 460)|}{\text{Ref. Temp.} + 460} \times 100$$

b Average Absolute Difference must be ≤ 1.5%.

Impinger Exit / XAD Condenser Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (°F)
1	0	1	1
2	10	10	0
3	20	20	0
4	32	31	1
5	40	39	1
6	50	48	2
7	60	58	2
8	68	66	2

Average	1
Pass/Fail ?	Pass

Auxiliary (Low) Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (°F)
1	0	1	1
2	10	10	0
3	20	19	1
4	32	31	1
5	40	39	1
6	50	48	2
7	60	58	2
8	68	66	2
9	80	78	2
10	90	88	2
11	100	98	2

Average	1
Pass/Fail ?	Pass

Meter Inlet Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (°F)
1	0	NA	NA
2	32	NA	NA
3	50	NA	NA
4	68	NA	NA
5	80	NA	NA
6	90	NA	NA
7	100	NA	NA
8	110	NA	NA
9	120	NA	NA
10	130	NA	NA
11	140	NA	NA

Average	NA
Pass/Fail ?	NA

Meter Outlet Temperature			
Reference Point	Reference Temperature (°F)	Thermocouple Temperature (°F)	Absolute Difference* (°F)
1	0	1	1
2	32	31	1
3	50	49	1
4	68	66	2
5	80	78	2
6	90	88	2
7	100	98	2
8	110	108	2
9	120	118	2
10	130	129	1
11	140	139	1

Average	2
Pass/Fail ?	Pass

(a) Absolute Difference must be ≤ 2°F for Impinger Exit / XAD Condenser and Auxiliary (Low) Temperatures.  
Absolute Difference must be ≤ 5.4°F for Meter Inlet and Meter Outlet Temperatures.

QA/QC Check Performed By: David Nicellio Date: 1/12/2024

# Montrose Air Quality Services, LLC

## Meter Post Calibration

*M0031 VOST*

Average Field Sample Rate (lpm)	0.500	Date	4/10/2024
Highest Field Vacuum (inches Hg)		Client	
Critical Orifice ID		Project No.	
Orifice Flow Rate (lpm)	0.943	Meter ID	M-11

	Run 1	Run 2	Run 3
Initial Volume (l)	5014.00	5023.43	5032.94
Final Volume (l)	5023.43	5032.94	5042.50
Volume Metered (l)	9.43	9.51	9.56
DGM Inlet Temperature (°F)	66	67	67
DGM Outlet Temperature (°F)	65	66	67
Average DGM Temperature (°F)	65.5	66.5	67.0
Ambient Temperature (°F)	63	63	63
Elapsed Time (min.)	10	10	10
$\Delta H$ (inches H <sub>2</sub> O)	0.50	0.50	0.50
Barometric Pressure (inches Hg)	29.69	29.69	29.69
Pump Vacuum (inches Hg)	17	17	17
K'	0.0259	0.0259	0.0259
V <sub>cr</sub> (l)	9.525	9.524	9.523
V <sub>mstd</sub> (l)	9.410	9.472	9.512
Post Test Y <sub>c</sub>	0.9977	0.9969	0.9965
Full Test Y <sub>d</sub>	0.9929	0.9929	0.9929
% Difference	-0.48	-0.40	-0.36
Average % Difference			-0.42



# Field Barometer Calibration

WYOMONTROSE

**Barometer Model** NB-HgBaro-1

**Watch Model** LAD Weather-MJK

**Technician:** Michael Krall

**Date:** 3/21/2024

Ambient Conditions		
Parameter	Result	Reference Serial No. or Weather Station ID
Temperature:	82.1 °F	S18107, cal due 7/12/2024
Barometric Pressure:	29.24 " Hg	NB-HgBaro-1
Relative Humidity:	56%	KTXNEWBR74

Standard Value ("Hg)	Measured Value ("Hg)	Difference* ("Hg)	Acceptance Criteria (g)
29.24	29.27	0.03	+/- 0.20
29.24	29.29	0.05	

\*note: Difference is calculated as Measured Value - Standard Value

Calibrated By: Michael J Krall Michael J Krall  
Print Sign

Calibrated On: 3/21/2024