USEPA Method 5/202
Summary of Test Results

Plant	Neucor, Inc	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (East Vent)	Personnel	SN/AK/JA/JH	Date	10/25 & 10/26/16

	Run Number	1	*2	3	Average
Date	Test Date	10/25/2016	10/25/2016	10/26/2016	
Start	Run Start Time	10:36	14:30	8:11	
	Run Finish Time	12:43	19:18	10:21	
	Net Traversing Points	24	24	24	
Θ	Net Run Time, min.	120	120	120	120.0
D_N	Nozzle Diameter, in.	0.3292	0.3292	0.3292	0.3292
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.977	0.977	0.977	0.977
P_{Br}	Barometric Pressure, in. Hg	29.04	29.04	29.38	29.15
ΔH	Average orifice meter Differential, in. H_2O	1.81	1.73	1.80	1.78
V_m	Dry Gas Meter Volume Sampled, ft^3	94.581	91.236	93.444	93.087
t_m	Average Dry Gas Meter Temperature, °F	80.1	72.9	56.7	69.9
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	88.083	86.094	92.022	88.733
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	2.495	2.438	2.606	2.513
V_{lc}	Total Moisture Liquid collected, g	28	23.7	35.1	28.9
V_{wstd}	Volume of Water Vapor, scf	1.32	1.12	1.65	1.36
% H_2O	Moisture Content of Stack Gas, %	1.48	1.28	1.77	1.51
%CO_2	Carbon Dioxide, % vd	0.05	0.08	0.08	0.07
%O_2	Oxygen, % vd	20.98	21.01	20.95	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.85	28.85	28.85	28.85
M_s	Wet Molecular weight, lb/lb-Mole	28.69	28.71	28.66	28.69
P_g	Flue Gas Static Pressure, in. H_2O	0.1	0.1	0.1	0.1
P_s	Absolute Flue Gas Pressure, in. Hg	29.05	29.05	29.39	29.16
t_s	Average Stack Gas Temperature, °F	85.8	88.0	84.5	86.1
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.401	0.392	0.399	0.397
V_s	Average Stack Gas Velocity, ft/sec	23.29	22.79	23.05	23.04
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{std}	Dry Volumetric Flow Rate, dry scfm	14,921	14,574	14,937	14,811
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	16,126	15,781	15,964	15,957
%I	Percent Isokinetic of Sampling Rate, %	96.1	96.1	100.2	97.5
VE	Visible Emissions, % Opacity	0.0	0.0	0.0	0.0
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	2.07	2.01	2.19	2.09
PD	Production Limit, MSF/day	53.3	53.3	53.3	53.3
PD	Production Limit, MSF/yr	19,454.5	19,454.5	19,454.5	19,454.5
W_f	Filterable Particulate Matter, g	0.0050	0.0054	0.0082	0.0062
C_f	Filterable Particulate Concentration, gr/dscf	0.0009	0.0010	0.0014	0.0011
E_f	Filterable Particulate Emission Rate, lb/hr	0.11	0.12	0.18	0.14
E_f	Filterable Particulate Emission Rate, lb/MSF	0.054	0.060	0.080	0.065
E_f	Filterable Particulate Emission Rate, tons/yr	0.53	0.58	0.78	0.63
W_c	Condensable Particulate Matter, g	0.0011	0.0014	0.0012	0.0012
C_c	Condensable Particulate Concentration, gr/dscf	0.0002	0.0003	0.0002	0.0002
E_c	Condensable Particulate Emission Rate, lb/hr	0.025	0.031	0.026	0.027
E_c	Condensable Particulate Emission Rate, lb/MSF	0.012	0.016	0.012	0.013
E_c	Condensable Particulate Emission Rate, tons/yr	0.12	0.15	0.11	0.13
W_t	Total Particulate Matter, g	0.0061	0.0068	0.0094	0.0074
C_t	Total Particulate Concentration, gr/dscf	0.0011	0.0012	0.0016	0.0013
E_t	Total Particulate Emission Rate, lb/hr	0.14	0.15	0.20	0.16
E_t	Total Particulate Emission Rate, lb/MSF	0.066	0.076	0.092	0.078
E_t	Total Particulate Emission Rate, tons/yr	0.65	0.74	0.89	0.76

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*

Neucor, Inc
White Swan, WA

FPM/CPM Data

Press Vent #1 (East Vent)
October 25-26, 2016

	Run 1	Run 2	Run 3
Filterable (Front-Half (FH)) Particulate Matter Mass			
Filter Number	2-3585	2-3587	2-3603
Tare Weight of Filter, g	0.5743	0.5604	0.6064
Final Weight of Filter, g	0.5749	0.5619	0.6091
Net Weight of Particulate Matter, g	0.0006	0.0015	0.0027
Container Number	GB 8657	GB 8658	GB 8662
Tare Weight of Container, g	67.2388	66.5892	66.6724
Final Weight of Container, g	67.2434	66.5933	66.6780
Net Weight of Particulate Matter, g	0.0046	0.0041	0.0056
Volume of Acetone, mL	98.0	112.0	71.0
Net Weight of Blank, g	0.0002	0.0002	0.0002
Volume of Acetone Blank, mL	109.0	109.0	109.0
Wt./Vol. of Acetone Blank, mg/mL	0.0018	0.0018	0.0018
Net Weight of PM Due to Acetone, g	0.00018	0.00021	0.00013
Net Weight of Particulate Matter (Blank Corrected), g	0.0044	0.0039	0.0055
Filterable (FH) Particulate Matter, g	0.0050	0.0054	0.0082
Condensible (Back-Half (BH)) Particulate Matter Mass			
Net Weight of DI Field Train Blank (Inorganic), g	0.0021	0.0021	0.0021
Net Weight of Hexane Field Train Blank (Organic), g	0.0001	0.0001	0.0001
Total Field Train Blank, mg (m_{fb}, max = 2.0 mg) **Equation 202-2**	0.002	0.002	0.002
Sample Analysis:			
Mass of dried sample from Inorganic fraction, g (m_r)	0.0028	0.0028	0.0029
Mass of organic CPM, g (m_o)	0.0003	0.0006	0.0003
Total CPM, g	0.0011	0.0014	0.0012

Method 5/202

Run 1

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc	Run No. 1	Date	10/25/2016	Job # 160282
Address	White Swan, WA				
Location	Press Vent #1 (East Vent)				
Personnel	SN/AK/JA/JH				

% Moisture	1.48	Meas
P_{Br} in "Hg	29.04	
P static in H_2O	0.1	
K factor		
Filter #	2-3585	
Filter Wt.	0.5743	

Equipment ID	Cal	
Reag. Box	Samp. box	
Umbical	Meter box	RET-1
Stack TC	TC Readout	
Tedlar Bag	Pitot	MW-5-2
Orsat Pump	Nozzle	Glass-1
Est. Moisture	gm H_2O	28.0
	$B_w$meas	1.5
	$B_w$sat	4.3

Constants		
A_s foot^2		11.54
Y		0.977
$\Delta H_@$		1.668
C_p		0.84
D_N in inches		0.3292
M3A	0.05	%CO_2
	20.98	%O_2
Fo=	F_d=	

Checks	Pre	Mid	Post
Vacuum	15		7
Total leak check volume			
Leak rate	0.015		0.010
Pitot	✓		✓
Nozzle	✓		✓
Stack TC	✓		✓
M_s	28.69	M_d	28.85

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	10:36	616.401	0.15	0.39	85	60	64		1.7	258	250	65	4.0	69
2	5.0	10.0		620.100	0.19	0.44	85	60	74		2.1	256	248	51	4.0	69
3	10.0	15.0		624.300	0.17	0.41	85	62	81		1.9	254	251	51	4.0	69
4	15.0	20.0		628.400	0.19	0.44	85	63	80		2.1	250	250	54	4.0	69
5	20.0	25.0		632.400	0.19	0.44	85	64	84		2.1	252	246	56	4.0	69
6	25.0	30.0		636.600	0.17	0.41	85	65	87		1.9	251	252	56	4.0	68
7	30.0	35.0		640.800	0.17	0.41	86	66	90		1.9	260	248	59	4.0	68
8	35.0	40.0		644.900	0.15	0.39	87	67	92		1.7	262	247	65	4.0	68
9	40.0	45.0		648.800	0.16	0.40	84	68	95		1.8	263	248	61	4.0	69
10	45.0	50.0		652.300	0.17	0.41	85	69	95		1.9	261	247	58	4.0	68
11	50.0	55.0		656.500	0.17	0.41	87	69	97		1.9	263	249	57	4.0	68
12	55.0	60.0	11:38	660.600	0.16	0.40	88	70	97		1.8	261	248	57	4.0	69
B-1	60.0	65.0	11:43	664.592	0.16	0.40	86	71	99		1.8	261	249	59	4.0	68
2	65.0	70.0		668.500	0.15	0.39	86	72	98		1.7	261	250	61	3.75	68
3	70.0	75.0		672.400	0.15	0.39	86	73	98		1.7	262	250	61	3.5	69
4	75.0	80.0		676.300	0.15	0.39	86	73	97		1.7	262	249	62	3.5	69
5	80.0	85.0		680.200	0.15	0.39	86	73	96		1.7	261	250	63	3.5	69
6	85.0	90.0		684.000	0.15	0.39	86	73	95		1.7	262	250	63	3.5	69
7	90.0	95.0		687.800	0.15	0.39	86	73	95		1.7	260	249	63	3.5	68
8	95.0	100.0		691.700	0.15	0.39	86	73	94		1.7	263	250	63	3.5	68
9	100.0	105.0		695.540	0.16	0.40	86	73	95		1.8	261	249	63	3.5	68
10	105.0	110.0		699.450	0.15	0.39	86	72	94		1.7	260	249	63	3.5	68
11	110.0	115.0		703.310	0.15	0.39	86	73	96		1.7	262	249	64	3.5	69
12	115.0	120.0		707.150	0.15	0.39	87	73	96		1.7	262	249	65	3.5	69
	120.0		12:43	710.982												
Final			12:43	710.982												
Sum or avg	120.0			94.581	0.161	0.401	85.8	69.0	91.2		1.808			Max	4	

Flow		% Isokinetic	96.1
ft/sec	23.29	Yqa	0.975
dscfm	14,921.0	Sample Vol. dscf	88.083
acfm	16,126.5	Sample Vol. dscm	2.495

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_t	0	506.5	506.5	0.0
2	M_t	0	626.4	626.4	0.0
3	DI H_2O	100	740.4	739.0	1.4
4	SG	200-300	913.9	887.3	26.6

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ✓ Reasonableness ✓
Checked By: ____ Reviewer (Signature/Date) ____ Team Leader (Signature/Date)

Method 5/202

Run 2

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc	Run No.	2	Date	10/25/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (East Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal
Reag. Box	Samp. box
Umbical	Meter box RET-1
Stack TC	TC Readout
Tedlar Bag	Pitot MW-5-2
Orsat Pump	Nozzle Glass-1
Est. Moisture	gm H_2O 23.7
	$B_w$meas 1.3
	$B_w$sat 4.6

Constants		
A_s foot^2	11.54	
Y	0.977	
$\Delta H_@$	1.668	
C_p	0.84	
D_N in inches	0.3292	
M3A	0.08	%CO_2
	21.01	%O_2
Fo=	F_d=	

Checks	Pre	Mid	Post
Vacuum	15		5
Total leak check volume			
Final DGM			
Leak rate	0.010		0.010
Pitot	✓		✓
Nozzle	✓		✓
Stack TC	✓		✓
M_s	28.71	M_d	28.85

% Moisture	1.28	Meas	
P_{Br} in "Hg	29.04		
P static in H_2O	0.1		
K factor			
Filter #	2-3587		
Filter Wt.	0.5604		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity vΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	14:30	711.472	0.15	0.39	86	67	80		1.7	261	250	61	4.0	68
2	5.0	10.0		715.150	0.15	0.39	90	67	86		1.7	256	251	60	4.0	69
3	10.0	15.0		718.910	0.16	0.40	90	67	86		1.8	254	249	63	4.0	68
4	15.0	20.0		722.730	0.16	0.40	90	65	88		1.8	262	250	67	4.0	69
5	20.0	25.0		726.550	0.16	0.40	88	67	88		1.8	255	250	70	4.0	69
6	25.0	30.0		730.510	0.15	0.39	88	69	87		1.7	259	251	73	4.0	69
7	30.0	35.0		734.420	0.16	0.40	90	69	88		1.8	262	250	74	4.0	68
8	35.0	40.0		738.280	0.16	0.40	91	69	88		1.8	244	250	75	4.0	68
9	40.0	45.0		742.120	0.16	0.40	89	69	90		1.8	261	251	70	4.0	69
10	45.0	50.0		745.990	0.16	0.40	90	69	90		1.8	261	250	64	4.0	69
11	50.0	55.0		749.880	0.16	0.40	88	70	89		1.8	261	251	60	4.0	69
12	55.0	60.0	15:30	753.760	0.15	0.39	91	70	91		1.7	262	250	59	4.0	69
B-1	60.0	65.0	15:40	757.621	0.15	0.39	91	70	92		1.7	255	250	60	4.0	68
2	65.0	70.0	*18:23	761.470	0.15	0.39	87	57	58		1.7	260	250	65	4.0	68
3	70.0	75.0		765.210	0.15	0.39	87	57	64		1.7	256	250	64	4.0	68
4	75.0	80.0		768.860	0.15	0.39	87	56	70		1.7	255	251	64	4.0	68
5	80.0	85.0		772.580	0.15	0.39	87	57	74		1.7	262	250	64	4.0	68
6	85.0	90.0		776.320	0.15	0.39	86	57	76		1.7	262	251	63	4.0	69
7	90.0	95.0		780.030	0.15	0.39	86	58	79		1.7	262	250	63	4.0	67
8	95.0	100.0		783.730	0.15	0.39	87	58	80		1.7	262	251	64	4.0	68
9	100.0	105.0		787.450	0.15	0.39	85	58	82		1.7	240	251	63	4.0	68
10	105.0	110.0		791.200	0.15	0.39	85	59	82		1.7	263	250	62	4.0	67
11	110.0	115.0		794.980	0.15	0.39	86	59	83		1.7	260	252	61	4.0	68
12	115.0	120.0		798.800	0.15	0.39	86	59	86		1.7	260	252	60	4.0	68
	120.0		19:18	802.708												
Final			19:18	802.708												
Sum or avg	120.0			91.236	0.153	0.392	88.0	63.5	82.4		1.733				Max	4.0

Flow		% Isokinetic	96.1
ft/sec	22.79	Yqa	0.984
dscfm	14,573.5	Sample Vol. dscf	86.094
acfm	15,781.0	Sample Vol. dscm	2.438

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_t	0	380.2	380.2	0.0
2	M_t	0	537.0	537.0	0.0
3	DI H_2O	100	748.3	747.8	0.5
4	SG	200-300	920.0	896.8	23.2

Testing paused 15:42-18:20 due to unit upset.

QA/QC Check Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

Method 5/202

Run 3

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc	Run No._	3	Date	10/26/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (East Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID		Cal
Reag. Box	Samp. box	
Umbical	Meter box	RET-1
Stack TC	TC Readout	
Tedlar Bag	Pitot	MW-5-2
Orsat Pump	Nozzle	Glass-1
Est. Moisture	gm H_2O	35.1
	$B_w$meas	1.8
	$B_w$sat	4.1

% Moisture	1.77	Meas
P_{Br} in "Hg	29.38	
P static in H_2O	0.1	
K factor		
Filter #	2-3603	
Filter Wt.	0.6064	

Constants			
A_s foot^2	11.54		
Y	0.977		
$\Delta H_@$	1.658		
C_p	0.84		
D_N in inches	0.3292		
M3A	0.08	$\%CO_2$	
	20.95	$\%O_2$	
Fo=		F_d=	

Checks	Pre	Mid	Post
Vacuum	15		15
Total leak check volume			
Final DGM			
Leak rate	0.010		0.010
Pitot	✓		✓
Nozzle	✓		✓
Stack TC	✓		✓
M_s	28.66	M_d	28.85

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	8:11	814.155	0.16	0.40	84	51	55		1.8	229	250	52	9.0	68
2	5.0	10.0		817.790	0.16	0.40	85	52	56		1.8	245	251	51	9.0	67
3	10.0	15.0		821.480	0.17	0.41	85	51	57		1.9	245	260	52	9.0	68
4	15.0	20.0		825.290	0.20	0.45	85	52	58		2.2	242	252	51	11.5	67
5	20.0	25.0		829.460	0.17	0.41	85	52	64		1.9	241	250	51	13.0	67
6	25.0	30.0		833.800	0.16	0.40	85	51	64		1.8	255	250	52	11.0	68
7	30.0	35.0		837.750	0.15	0.39	85	52	64		1.7	254	251	52	11.0	68
8	35.0	40.0		841.540	0.15	0.39	84	51	63		1.7	255	250	51	11.0	68
9	40.0	45.0		845.250	0.15	0.39	84	51	64		1.7	257	250	51	11.0	68
10	45.0	50.0		849.000	0.15	0.39	84	50	63		1.7	257	251	50	11.5	67
11	50.0	55.0		852.870	0.15	0.39	84	50	63		1.7	257	251	50	11.0	67
12	55.0	60.0	9:11	856.740	0.15	0.39	84	51	64		1.7	257	251	51	11.0	68
B-1	60.0	65.0	9:21	860.625	0.16	0.40	84	50	63		1.8	256	250	50	10.5	67
2	65.0	70.0		864.540	0.16	0.40	84	50	63		1.8	255	250	51	10.5	67
3	70.0	75.0		868.480	0.15	0.39	85	50	64		1.7	258	251	52	10.5	67
4	75.0	80.0		872.360	0.16	0.40	85	51	64		1.8	257	250	51	10.0	68
5	80.0	85.0		876.260	0.16	0.40	84	49	62		1.8	256	250	50	10.5	69
6	85.0	90.0		880.180	0.16	0.40	84	49	63		1.8	257	250	50	10.5	69
7	90.0	95.0		884.090	0.16	0.40	84	50	65		1.8	256	249	51	10.5	68
8	95.0	100.0		887.900	0.16	0.40	84	50	65		1.8	255	250	52	10.5	68
9	100.0	105.0		891.800	0.16	0.40	84	51	65		1.8	255	249	51	10.5	68
10	105.0	110.0		895.790	0.16	0.40	85	50	65		1.8	258	249	52	10.5	67
11	110.0	115.0		899.740	0.16	0.40	85	51	65		1.8	259	250	52	10.5	67
12	115.0	120.0		903.650	0.16	0.40	85	52	65		1.8	259	251	51	10.5	67
	120.0		10:21	907.599												
Final			10:21	907.599												
Sum or avg	120.0			93.444	0.160	0.399	84.5	50.7	62.7		1.796			Max	13.0	

Flow		% Isokinetic	100.2
ft/sec	23.05	Yqa	0.998
dscfm	14,937.4	Sample Vol. dscf	92.022
acfm	15,964.3	Sample Vol. dscm	2.606

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_f	0	508.4	508.4	0.0
2	M_f	0	628.4	628.4	0.0
3	DI H_2O	100	742.9	739.1	3.8
4	SG	200-300	912.9	881.6	31.3

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____

Checked By: ____ Reviewer (Signature/Date) ____ Team Leader (Signature/Date)

Method 1 & 2
Data Sheet

Method 1 and 2 Data Sheet

Plant	Neucor, Inc	Time	
Address	White Swan, WA	Date	10/25/2016
Location	Press Vent #1 (West Vent)	Job #	160282
Personnel	SN/AK/JA/JH		

Wetbulb temp	
% moisture	
Md	
Ms	
$\% CO_2$	
$\% O_2$	
Fo	

Distance from Far Wall to Outside of Port, inches		50.0
Width (if Rectangular)		
Nipple Length and/or Wall Thickness, inches		4.0
Diameter, inches		46.0
Equivalent Diameter (only when rectangular)		
Area in square feet		11.54
Straight Distance before sampling location, inches		95
Number of Diameters Before Location*		2.1
Straight Distance after sampling location, inches		25
Number of Diameters After Location*		0.5
Enter "P" for Particulate or "V" for velocity		P
Minimum Number of Total Points		24
Number of Total Points Chosen	OK	24
Number of Ports	OK	2
Number of Points per Port	OK	12

Draw sampling location, plan & top view.

Points	% Duct Depth	Distance from Outside of Port	Stack Yaw & Velocity Data: Yaw Angle Degrees	ΔP inch H_2O	Temp °F	Velocity Feet/sec
A-1	2.1%	5.0				
A-2	6.7%	7.1				
A-3	11.8%	9.4				
A-4	17.7%	12.1				
A-5	25.0%	15.5				
A-6	35.6%	20.4				
A-7	64.4%	33.6				
A-8	75.0%	38.5				
A-9	82.3%	41.9				
A-10	88.2%	44.6				
A-11	93.3%	46.9				
A-12	97.9%	49.0				
		Average				

dscfm

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____

Checked By: ____________________ ____________________
Reviewer (Signature/Date) Team Leader (Signature/Date)

USEPA Method 5/202
Summary of Test Results

Plant	Neucor, Inc	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (West Vent)	Personnel	SN/AK/JA/JH	Date	10/25 & 10/26/16

	Run Number	1	*2	3	Average
Date	Test Date	10/25/2016	10/25/2016	10/26/2016	
Start	Run Start Time	10:36	14:30	8:11	
	Run Finish Time	12:43	19:18	10:21	
	Net Traversing Points	24	24	24	
Θ	Net Run Time, min.	120	120	120	120.0
D_N	Nozzle Diameter, in.	0.3235	0.3235	0.3235	0.3235
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	1.010	1.010	1.010	1.010
P_{Br}	Barometric Pressure, in. Hg	29.04	29.04	29.38	29.15
ΔH	Average orifice meter Differential, in. H_2O	2.40	2.28	2.25	2.31
V_m	Dry Gas Meter Volume Sampled, ft^3	106.314	106.528	104.015	105.619
t_m	Average Dry Gas Meter Temperature, °F	71.4	64.5	57.7	64.5
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	104.174	105.742	105.802	105.239
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	2.950	2.995	2.996	2.980
V_{lc}	Total Moisture Liquid collected, g	38	33.7	45.2	39.0
V_{wstd}	Volume of Water Vapor, scf	1.79	1.59	2.13	1.84
% H_2O	Moisture Content of Stack Gas, %	1.69	1.48	1.97	1.72
%CO_2	Carbon Dioxide, % vd	0.05	0.08	0.08	0.07
%O_2	Oxygen, % vd	20.98	21.01	20.95	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.85	28.85	28.85	28.85
M_s	Wet Molecular weight, lb/lb-Mole	28.66	28.69	28.64	28.66
P_g	Flue Gas Static Pressure, in. H_2O	0.1	0.1	0.1	0.1
P_s	Absolute Flue Gas Pressure, in. Hg	29.05	29.05	29.39	29.16
t_s	Average Stack Gas Temperature, °F	86.3	87.8	84.1	86.0
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.485	0.478	0.474	0.479
V_s	Average Stack Gas Velocity, ft/sec	28.19	27.81	27.39	27.80
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{std}	Dry Volumetric Flow Rate, dry scfm	18,011	17,758	17,719	17,829
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	19,524	19,260	18,966	19,250
%I	Percent Isokinetic of Sampling Rate, %	97.5	100.3	100.6	99.5
VE	Visible Emissions, % Opacity	0.0	0.0	0.0	0.0
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	2.07	2.01	2.19	2.09
PD	Production Limit, MSF/day	53.3	53.3	53.3	53.3
PD	Production Limit, MSF/yr	19,454.5	19,454.5	19,454.5	19,454.5
W_f	Filterable Particulate Matter, g	0.0598	0.0370	0.0474	0.0481
C_f	Filterable Particulate Concentration, gr/dscf	0.0089	0.0054	0.0069	0.0071
E_f	Filterable Particulate Emission Rate, lb/hr	1.37	0.82	1.05	1.08
E_f	Filterable Particulate Emission Rate, lb/MSF	0.66	0.41	0.48	0.52
E_f	Filterable Particulate Emission Rate, tons/yr	6.43	3.98	4.66	5.02
W_c	Condensable Particulate Matter, g	0.0033	0.0043	0.0026	0.0034
C_c	Condensable Particulate Concentration, gr/dscf	0.0005	0.0006	0.0004	0.0005
E_c	Condensable Particulate Emission Rate, lb/hr	0.075	0.096	0.058	0.076
E_c	Condensable Particulate Emission Rate, lb/MSF	0.037	0.048	0.026	0.037
E_c	Condensable Particulate Emission Rate, tons/yr	0.36	0.46	0.26	0.36
W_t	Total Particulate Matter, g	0.0631	0.0413	0.0500	0.0515
C_t	Total Particulate Concentration, gr/dscf	0.0093	0.0060	0.0073	0.0076
E_t	Total Particulate Emission Rate, lb/hr	1.44	0.92	1.11	1.16
E_t	Total Particulate Emission Rate, lb/MSF	0.70	0.46	0.51	0.55
E_t	Total Particulate Emission Rate, tons/yr	6.79	4.44	4.91	5.38

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*

Neucor, Inc
White Swan, WA

FPM/CPM Data

Press Vent #1 (West Vent)
October 25-26, 2016

	Run 1	Run 2	Run 3
Filterable (Front-Half (FH)) Particulate Matter Mass			
Filter Number	2-3586	2-3604	2-3599
Tare Weight of Filter, g	0.6276	0.5548	0.5271
Final Weight of Filter, g	0.6716	0.5810	0.5640
Net Weight of Particulate Matter, g	0.0440	0.0262	0.0369
Container Number	GB 8663	GB 8664	GB 8667
Tare Weight of Container, g	66.5398	66.6541	66.6514
Final Weight of Container, g	66.5558	66.6651	66.6621
Net Weight of Particulate Matter, g	0.0160	0.0110	0.0107
Volume of Acetone, mL	131.0	102.0	94.0
Net Weight of Blank, g	0.0002	0.0002	0.0002
Volume of Acetone Blank, mL	109.0	109.0	109.0
Wt./Vol. of Acetone Blank, mg/mL	0.0018	0.0018	0.0018
Net Weight of PM Due to Acetone, g	0.00024	0.00019	0.00017
Net Weight of Particulate Matter (Blank Corrected), g	0.0158	0.0108	0.0105
Filterable (FH) Particulate Matter, g	0.0598	0.0370	0.0474
Condensible (Back-Half (BH)) Particulate Matter Mass			
Net Weight of DI Field Train Blank (Inorganic), g	0.0021	0.0021	0.0021
Net Weight of Hexane Field Train Blank (Organic), g	0.0001	0.0001	0.0001
Total Field Train Blank, mg (m_{fb}, max = 2.0 mg) **Equation 202-2**	0.002	0.002	0.002
Sample Analysis:			
Mass of dried sample from Inorganic fraction, g (m_r)	0.0045	0.0050	0.0032
Mass of organic CPM, g (m_o)	0.0008	0.0013	0.0014
Total CPM, g	0.0033	0.0043	0.0026

Method 5/202

Run 1

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc	Run No.	1	Date	10/25/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (West Vent)						
Personnel	SN/AK/JA/JH						
% Moisture	1.69 Meas						
P_{Br} in "Hg	29.04						
P static in H_2O	0.1						
K factor							
Filter #	2-3586						
Filter Wt.	0.6276						

Equipment ID	Cal		Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box		A_s foot^2	11.54	Vacuum	15		10
Umbical	Meter box	CCI-1	Y	1.010	Total leak check volume		2.906	
Stack TC	TC Readout		$\Delta H_@$	1.589				
Tedlar Bag	Pitot	MW-5-1	C_p	0.84	Leak rate	0.015		0.015
Orsat Pump	Nozzle	Glass-2	D_N in inches	0.3235	Pitot	✓		✓
Est. Moisture	gm H_2O	38.0	M3A	0.05 %CO_2	Nozzle	✓		✓
	$B_w$meas	1.7		20.98 %O_2	Stack TC	✓		✓
	$B_w$sat	4.3	Fo=	F_d=	M_s	28.66	M_d	28.85

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	10:36	603.510	0.24	0.49	83	66	62		2.4	230	273	60	6.5	65
2	5.0	10.0		607.750	0.24	0.49	85	66	62		2.4	239	275	60	7.0	65
3	10.0	15.0		612.110	0.24	0.49	85	68	63		2.4	269	276	60	7.5	65
4	15.0	20.0		616.520	0.24	0.49	86	68	64		2.4	275	257	60	7.5	67
5	20.0	25.0		621.010	0.24	0.49	87	69	65		2.4	268	259	60	7.0	67
6	25.0	30.0		625.420	0.24	0.49	87	72	67		2.4	266	257	60	7.0	67
7	30.0	35.0		629.830	0.23	0.48	87	73	68		2.5	265	258	60	7.0	67
8	35.0	40.0		634.290	0.23	0.48	87	74	69		2.4	266	260	60	7.0	67
9	40.0	45.0		638.740	0.23	0.48	84	74	69		2.4	265	259	60	7.0	67
10	45.0	50.0		643.200	0.23	0.48	85	74	70		2.4	267	258	57	7.0	62
11	50.0	55.0		647.700	0.23	0.48	87	75	70		2.4	266	258	58	7.0	62
12	55.0	60.0	11:39	652.350	0.23	0.48	88	75	70		2.4	264	259	57	7.0	63
B-1	60.0	65.0	11:43	657.005	0.23	0.48	87	75	71		2.4	262	258	57	8.0	63
2	65.0	70.0		661.700	0.24	0.49	86	76	72		2.4	263	258	56	8.0	64
3	70.0	75.0		666.350	0.24	0.49	86	76	72		2.4	264	260	64	8.0	65
4	75.0	80.0		671.090	0.24	0.49	86	76	72		2.4	265	261	64	8.0	65
5	80.0	85.0		675.790	0.23	0.48	85	76	73		2.4	264	261	62	8.0	65
6	85.0	90.0		680.530	0.23	0.48	88	75	73		2.4	268	262	62	8.0	65
7	90.0	95.0		685.140	0.24	0.49	88	76	72		2.4	264	261	60	8.0	65
8	95.0	100.0		689.740	0.23	0.48	87	75	72		2.4	264	262	60	8.0	64
9	100.0	105.0		694.320	0.24	0.49	86	75	72		2.4	265	261	62	9.0	65
10	105.0	110.0		699.090	0.24	0.49	86	75	72		2.4	265	261	62	8.0	65
11	110.0	115.0		703.660	0.24	0.49	87	77	72		2.4	264	261	62	8.0	64
12	115.0	120.0		708.220	0.22	0.47	87	78	73		2.3	267	261	62	8.0	66
	120.0		12:43	712.730												
Final			12:43	712.730												
Sum or avg	120.0			106.314	0.235	0.485	86.3	73.5	69.4		2.400			Max	9	

Flow		% Isokinetic	97.5
ft/sec	28.19	Yqa	1.030
dscfm	18,011.3	Sample Vol. dscf	104.174
acfm	19,523.7	Sample Vol. dscm	2.950

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_I	0	489.2	489.2	0.0
2	M_I	0	524.8	524.8	0.0
3	DI H_2O	100	795.8	795.4	0.4
4	SG	200-300	858.3	820.7	37.6

QA/QC Check Completeness Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

Method 5/202

Run 2

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc	Run No._ 2		Date	10/25/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (West Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	15		10
Umbical	Meter box CCI-1	Y	1.010	Total leak check volume			
Stack TC	TC Readout	$\Delta H_@$	1.589	Final DGM			
Tedlar Bag	Pitot MW-5-1	C_p	0.84	Leak rate	0.015		0.015
Orsat Pump	Nozzle Glass-2	D_N in inches	0.3235	Pitot	✓		✓
Est. Moisture	gm H_2O 33.7	M3A 0.08	%CO_2	Nozzle	✓		✓
	$B_w$meas 1.5	21.01	%O_2	Stack TC	✓		✓
	$B_w$sat 4.6	Fo=	F_d=	M_s	28.69	M_d	28.85

% Moisture	1.48	Meas
P_{Br} in "Hg	29.04	
P static in H_2O	0.1	
K factor		
Filter #	2-3604	
Filter Wt.	0.5548	

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	14:30	714.634	0.23	0.48	86	69	67		2.3	265	261	63	7.0	65
2	5.0	10.0		719.580	0.23	0.48	90	70	67		2.3	262	260	64	7.0	65
3	10.0	15.0		724.090	0.22	0.47	90	70	67		2.2	262	259	64	7.0	67
4	15.0	20.0		728.520	0.23	0.48	90	70	67		2.3	266	259	64	7.0	67
5	20.0	25.0		733.030	0.23	0.48	91	70	68		2.3	264	253	64	7.0	68
6	25.0	30.0		737.560	0.23	0.48	88	70	68		2.3	262	257	65	7.0	68
7	30.0	35.0		742.090	0.23	0.48	88	70	68		2.3	263	260	65	7.0	70
8	35.0	40.0		746.620	0.23	0.48	88	71	68		2.3	264	259	66	7.0	70
9	40.0	45.0		751.130	0.22	0.47	89	72	68		2.2	266	258	66	7.0	70
10	45.0	50.0		755.600	0.22	0.47	90	72	69		2.2	260	254	65	7.0	69
11	50.0	55.0		759.900	0.22	0.47	88	72	69		2.2	250	257	66	7.0	69
12	55.0	60.0	15:30	764.300	0.22	0.47	91	72	69		2.2	254	258	65	7.0	70
B-1	60.0	65.0	15:40	768.590	0.21	0.46	91	74	69		2.1	255	256	64	7.0	70
2	65.0	70.0	*18:23	772.800	0.22	0.47	87	56	57		2.2	248	257	51	7.0	69
3	70.0	75.0		777.100	0.22	0.47	87	56	56		2.2	245	256	49	7.0	70
4	75.0	80.0		781.400	0.23	0.48	87	59	56		2.3	249	256	52	7.0	70
5	80.0	85.0		785.700	0.23	0.48	86	59	56		2.3	250	256	57	7.0	71
6	85.0	90.0		790.150	0.24	0.49	86	60	56		2.4	251	256	61	7.0	71
7	90.0	95.0		794.540	0.24	0.49	85	61	57		2.4	252	256	61	7.0	72
8	95.0	100.0		798.980	0.24	0.49	87	61	57		2.4	251	256	61	7.0	72
9	100.0	105.0		803.420	0.24	0.49	85	62	57		2.4	251	256	63	7.0	73
10	105.0	110.0		807.870	0.24	0.49	85	62	57		2.4	247	257	63	7.0	74
11	110.0	115.0		812.300	0.23	0.48	86	63	58		2.3	249	257	65	7.0	75
12	115.0	120.0		816.730	0.23	0.48	85	64	58		2.3	252	257	65	7.0	75
	120.0		19:18	821.162												
Final			19:18	821.162												
Sum or avg	120.0			106.528	0.228	0.478	87.8	66.0	62.9		2.283			Max	7.0	

Flow		% Isokinetic	100.3
ft/sec	27.81	Yqa	1.025
dscfm	17,757.6	Sample Vol. dscf	105.742
acfm	19,260.4	Sample Vol. dscm	2.995

Testing paused 15:42-18:20 due to unit upset.

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_f	0	476.5	476.5	0.0
2	M_f	0	541.2	541.2	0.0
3	DI H_2O	100	755.6	755.9	-0.3
4	SG	200-300	958.7	924.7	34.0

QA/QC Check Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date) _____

Method 5/202

Run 3

Reference Method 5/202 Data Sheet

Plant	Neucor, Inc		Run No._ 3		Date	10/26/2016		Job #	160282		
Address	White Swan, WA	Equipment ID	Cal	Constants		Checks	Pre	Mid	Post		
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	15		8		
Personnel	SN/AK/JA/JH	Umbical	Meter box CCI-1	Y	1.010	Total leak check volume					
% Moisture	1.97 Meas	Stack TC	TC Readout	$\Delta H_@$	1.589	Final DGM					
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot MW-5-1	C_p	0.84	Leak rate	0.015		0.015		
P static in H_2O	0.1	Orsat Pump	Nozzle Glass-2	D_N in inches	0.3235	Pitot	✓		✓		
K factor		Est. Moisture	gm H_2O 45.2	M3A	0.08 %CO_2	Nozzle	✓		✓		
Filter #	2-3599		$B_w$meas 2.0		20.95 %O_2	Stack TC	✓		✓		
Filter Wt.	0.5271		$B_w$sat 4.0	Fo=		F_d=	M_s 28.64		M_d 28.85		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O Desired	Actual	Probe Temp. °F	Oven Temp. °F	Imping. Temp. °F	Pump Vac. Hg	CPM Temp °F
A-1	0.0	5.0	8:11	823.326	0.23	0.48	85	55	51		2.3	251	255	50	6.5	66
2	5.0	10.0		827.680	0.23	0.48	85	57	51		2.3	244	253	50	6.5	66
3	10.0	15.0		832.070	0.23	0.48	85	57	52		2.3	245	254	54	7.0	66
4	15.0	20.0		836.480	0.23	0.48	85	58	53		2.3	243	255	54	7.0	67
5	20.0	25.0		840.800	0.23	0.48	85	59	53		2.3	246	254	56	7.0	67
6	25.0	30.0		845.200	0.22	0.47	84	59	53		2.2	245	255	56	7.0	68
7	30.0	35.0		849.600	0.23	0.48	84	59	53		2.3	243	255	56	7.0	68
8	35.0	40.0		854.000	0.23	0.48	84	60	54		2.3	245	253	55	7.0	68
9	40.0	45.0		858.400	0.23	0.48	84	60	55		2.3	243	255	55	7.0	68
10	45.0	50.0		862.700	0.23	0.48	84	60	55		2.3	244	255	55	7.0	68
11	50.0	55.0		867.100	0.23	0.48	84	61	55		2.3	244	255	54	7.0	68
12	55.0	60.0	9:11	871.400	0.23	0.48	84	61	55		2.3	245	254	54	7.0	68
B-1	60.0	65.0	9:21	875.800	0.22	0.47	84	62	55		2.2	245	255	54	7.0	68
2	65.0	70.0		880.100	0.22	0.47	83	62	56		2.2	248	256	54	7.0	69
3	70.0	75.0		884.390	0.22	0.47	82	62	56		2.2	251	256	55	7.0	69
4	75.0	80.0		888.690	0.23	0.48	83	62	56		2.3	252	256	56	7.0	69
5	80.0	85.0		892.990	0.22	0.47	83	62	56		2.2	253	256	58	7.0	69
6	85.0	90.0		897.280	0.22	0.47	84	62	56		2.2	251	255	58	7.0	69
7	90.0	95.0		901.570	0.22	0.47	85	62	56		2.2	248	256	59	7.0	70
8	95.0	100.0		905.870	0.22	0.47	84	63	56		2.2	246	256	60	7.0	70
9	100.0	105.0		910.170	0.22	0.47	85	63	57		2.2	248	255	60	7.0	70
10	105.0	110.0		914.450	0.22	0.47	84	63	57		2.2	249	254	61	7.0	70
11	110.0	115.0		918.740	0.22	0.47	84	63	57		2.2	250	255	61	7.0	70
12	115.0	120.0		923.040	0.22	0.47	85	63	57		2.2	250	255	61	7.0	70
	120.0		10:21	927.341												
Final			10:21	927.341												
Sum or avg	120.0			104.015	0.225	0.474	84.1	60.6	54.8		2.250			Max	7.0	

Flow		% Isokinetic	100.6
ft/sec	27.39	Yqa	1.032
dscfm	17,718.9	Sample Vol. dscf	105.802
acfm	18,965.5	Sample Vol. dscm	2.996

Impingers	Contents	Vol. (mL)	Post weight	Pre weight	Net gain
1	M_t	0	491.4	491.4	0.0
2	M_t	0	526.4	526.4	0.0
3	DI H_2O	100	807.0	794.8	12.2
4	SG	200-300	884.8	851.8	33.0

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

Run Averages

Run averages corrected for bias

Operator: SN/AK/JA/JH
Plant Name: Neucor, Inc.
Location: Press Vent #1

Run	Date	Time	O_2_1	CO_2_1
			% vd	% vd
1	10/25/2016	10:35 - 12:40	20.982	0.052
2	10/25/2016	17:20 - 19:25	21.007	0.076
3	10/26/2016	8:11 - 10:16	20.946	0.079

Neucor, Inc.
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One-Minute Reference Method Data
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 1		
10/25/2016	11:35:15	10:35:15	20.598	0.176
10/25/2016	11:36:15	10:36:15	20.595	0.178
10/25/2016	11:37:15	10:37:15	20.597	0.160
10/25/2016	11:38:15	10:38:15	20.595	0.173
10/25/2016	11:39:15	10:39:15	20.592	0.179
10/25/2016	11:40:15	10:40:15	20.593	0.176
10/25/2016	11:41:15	10:41:15	20.594	0.158
10/25/2016	11:42:15	10:42:15	20.590	0.175
10/25/2016	11:43:15	10:43:15	20.587	0.178
10/25/2016	11:44:15	10:44:15	20.588	0.177
10/25/2016	11:45:15	10:45:15	20.590	0.164
10/25/2016	11:46:15	10:46:15	20.585	0.177
10/25/2016	11:47:15	10:47:15	20.584	0.179
10/25/2016	11:48:15	10:48:15	20.583	0.182
10/25/2016	11:49:15	10:49:15	20.587	0.159
10/25/2016	11:50:15	10:50:15	20.580	0.179
10/25/2016	11:51:15	10:51:15	20.580	0.180
10/25/2016	11:52:15	10:52:15	20.579	0.176
10/25/2016	11:53:15	10:53:15	20.587	0.160
10/25/2016	11:54:15	10:54:15	20.578	0.179
10/25/2016	11:55:15	10:55:15	20.527	0.171
10/25/2016	11:56:15	10:56:15	20.568	0.169
10/25/2016	11:57:15	10:57:15	20.582	0.162
10/25/2016	11:58:15	10:58:15	20.573	0.177
10/25/2016	11:59:15	10:59:15	20.565	0.171
10/25/2016	12:00:15	11:00:15	20.582	0.152
10/25/2016	12:01:15	11:01:15	20.579	0.151
10/25/2016	12:02:15	11:02:15	20.586	0.147
10/25/2016	12:03:15	11:03:15	20.588	0.146
10/25/2016	12:04:15	11:04:15	20.594	0.145
10/25/2016	12:05:15	11:05:15	20.599	0.146
10/25/2016	12:06:15	11:06:15	20.602	0.143
10/25/2016	12:07:15	11:07:15	20.603	0.141
10/25/2016	12:08:15	11:08:15	20.602	0.167
10/25/2016	12:09:15	11:09:15	20.599	0.163
10/25/2016	12:10:15	11:10:15	20.604	0.151
10/25/2016	12:11:15	11:11:15	20.601	0.168
10/25/2016	12:12:15	11:12:15	20.603	0.149
10/25/2016	12:13:15	11:13:15	20.599	0.164
10/25/2016	12:14:15	11:14:15	20.601	0.168
10/25/2016	12:15:15	11:15:15	20.599	0.168
10/25/2016	12:16:15	11:16:15	20.601	0.156
10/25/2016	12:17:15	11:17:15	20.602	0.160
10/25/2016	12:18:15	11:18:15	20.601	0.168
10/25/2016	12:19:15	11:19:15	20.598	0.170
10/25/2016	12:20:15	11:20:15	20.605	0.166
10/25/2016	12:21:15	11:21:15	20.605	0.149
10/25/2016	12:22:15	11:22:15	20.603	0.167
10/25/2016	12:23:15	11:23:15	20.606	0.167
10/25/2016	12:24:15	11:24:15	20.607	0.166
10/25/2016	12:25:15	11:25:15	20.609	0.149
10/25/2016	12:26:15	11:26:15	20.608	0.166
10/25/2016	12:27:15	11:27:15	20.605	0.166
10/25/2016	12:28:15	11:28:15	20.609	0.168
10/25/2016	12:29:15	11:29:15	20.610	0.159
10/25/2016	12:30:15	11:30:15	20.613	0.154
10/25/2016	12:31:15	11:31:15	20.611	0.167
10/25/2016	12:32:15	11:32:15	20.612	0.167
10/25/2016	12:33:15	11:33:15	20.615	0.164
10/25/2016	12:34:15	11:34:15	20.621	0.150
10/25/2016	12:35:15	11:35:15	20.617	0.165
10/25/2016	12:36:15	11:36:15	20.615	0.167
10/25/2016	12:37:15	11:37:15	20.615	0.165
10/25/2016	12:38:15	11:38:15	20.621	0.151

Neucor, Inc.
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Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
10/25/2016	12:39:15	11:39:15	20.616	0.162
10/25/2016	12:40:15	11:40:15	20.618	0.164
10/25/2016	12:41:15	11:41:15	20.618	0.163
10/25/2016	12:42:15	11:42:15	20.624	0.159
10/25/2016	12:43:15	11:43:15	20.626	0.146
10/25/2016	12:44:15	11:44:15	20.624	0.159
10/25/2016	12:45:15	11:45:15	20.623	0.161
10/25/2016	12:46:15	11:46:15	20.627	0.160
10/25/2016	12:47:15	11:47:15	20.624	0.159
10/25/2016	12:48:15	11:48:15	20.629	0.145
10/25/2016	12:49:15	11:49:15	20.625	0.161
10/25/2016	12:50:15	11:50:15	20.623	0.161
10/25/2016	12:51:15	11:51:15	20.623	0.162
10/25/2016	12:52:15	11:52:15	20.625	0.155
10/25/2016	12:53:15	11:53:15	20.627	0.145
10/25/2016	12:54:15	11:54:15	20.624	0.163
10/25/2016	12:55:15	11:55:15	20.630	0.161
10/25/2016	12:56:15	11:56:15	20.626	0.159
10/25/2016	12:57:15	11:57:15	20.626	0.151
10/25/2016	12:58:15	11:58:15	20.624	0.151
10/25/2016	12:59:15	11:59:15	20.624	0.162
10/25/2016	13:00:15	12:00:15	20.622	0.160
10/25/2016	13:01:15	12:01:15	20.624	0.160
10/25/2016	13:02:15	12:02:15	20.625	0.151
10/25/2016	13:03:15	12:03:15	20.625	0.160
10/25/2016	13:04:15	12:04:15	20.624	0.175
10/25/2016	13:05:15	12:05:15	20.622	0.174
10/25/2016	13:06:15	12:06:15	20.621	0.172
10/25/2016	13:07:15	12:07:15	20.625	0.162
10/25/2016	13:08:15	12:08:15	20.620	0.172
10/25/2016	13:09:15	12:09:15	20.619	0.176
10/25/2016	13:10:15	12:10:15	20.617	0.178
10/25/2016	13:11:15	12:11:15	20.617	0.173
10/25/2016	13:12:15	12:12:15	20.620	0.167
10/25/2016	13:13:15	12:13:15	20.617	0.179
10/25/2016	13:14:15	12:14:15	20.615	0.178
10/25/2016	13:15:15	12:15:15	20.620	0.178
10/25/2016	13:16:15	12:16:15	20.620	0.178
10/25/2016	13:17:15	12:17:15	20.622	0.166
10/25/2016	13:18:15	12:18:15	20.619	0.178
10/25/2016	13:19:15	12:19:15	20.619	0.176
10/25/2016	13:20:15	12:20:15	20.618	0.175
10/25/2016	13:21:15	12:21:15	20.624	0.174
10/25/2016	13:22:15	12:22:15	20.623	0.171
10/25/2016	13:23:15	12:23:15	20.622	0.178
10/25/2016	13:24:15	12:24:15	20.621	0.175
10/25/2016	13:25:15	12:25:15	20.622	0.176
10/25/2016	13:26:15	12:26:15	20.624	0.167
10/25/2016	13:27:15	12:27:15	20.622	0.173
10/25/2016	13:28:15	12:28:15	20.619	0.173
10/25/2016	13:29:15	12:29:15	20.620	0.172
10/25/2016	13:30:15	12:30:15	20.625	0.177
10/25/2016	13:31:15	12:31:15	20.629	0.161
10/25/2016	13:32:15	12:32:15	20.625	0.173
10/25/2016	13:33:15	12:33:15	20.621	0.173
10/25/2016	13:34:15	12:34:15	20.618	0.171
10/25/2016	13:35:15	12:35:15	20.619	0.174
10/25/2016	13:36:15	12:36:15	20.622	0.158
10/25/2016	13:37:15	12:37:15	20.618	0.171
10/25/2016	13:38:15	12:38:15	20.621	0.169
10/25/2016	13:39:15	12:39:15	20.625	0.170
	Average:		**20.609**	**0.165**

Neucor, Inc.
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Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 2		
10/25/2016	18:19:45	17:19:45	20.637	0.172
10/25/2016	18:20:45	17:20:45	20.639	0.176
10/25/2016	18:21:45	17:21:45	20.639	0.177
10/25/2016	18:22:45	17:22:45	20.640	0.177
10/25/2016	18:23:45	17:23:45	20.638	0.179
10/25/2016	18:24:45	17:24:45	20.639	0.179
10/25/2016	18:25:45	17:25:45	20.640	0.183
10/25/2016	18:26:45	17:26:45	20.638	0.184
10/25/2016	18:27:45	17:27:45	20.640	0.186
10/25/2016	18:28:45	17:28:45	20.638	0.187
10/25/2016	18:29:45	17:29:45	20.641	0.187
10/25/2016	18:30:45	17:30:45	20.638	0.188
10/25/2016	18:31:45	17:31:45	20.640	0.188
10/25/2016	18:32:45	17:32:45	20.640	0.190
10/25/2016	18:33:45	17:33:45	20.640	0.190
10/25/2016	18:34:45	17:34:45	20.641	0.191
10/25/2016	18:35:45	17:35:45	20.639	0.192
10/25/2016	18:36:45	17:36:45	20.640	0.195
10/25/2016	18:37:45	17:37:45	20.641	0.192
10/25/2016	18:38:45	17:38:45	20.642	0.191
10/25/2016	18:39:45	17:39:45	20.641	0.190
10/25/2016	18:40:45	17:40:45	20.642	0.190
10/25/2016	18:41:45	17:41:45	20.641	0.190
10/25/2016	18:42:45	17:42:45	20.642	0.190
10/25/2016	18:43:45	17:43:45	20.643	0.191
10/25/2016	18:44:45	17:44:45	20.524	0.154
10/25/2016	18:45:45	17:45:45	20.641	0.192
10/25/2016	18:46:45	17:46:45	20.643	0.191
10/25/2016	18:47:45	17:47:45	20.641	0.190
10/25/2016	18:48:45	17:48:45	20.643	0.188
10/25/2016	18:49:45	17:49:45	20.643	0.186
10/25/2016	18:50:45	17:50:45	20.640	0.184
10/25/2016	18:51:45	17:51:45	20.643	0.183
10/25/2016	18:52:45	17:52:45	20.644	0.181
10/25/2016	18:53:45	17:53:45	20.640	0.181
10/25/2016	18:54:45	17:54:45	20.641	0.181
10/25/2016	18:55:45	17:55:45	20.640	0.184
10/25/2016	18:56:45	17:56:45	20.644	0.180
10/25/2016	18:57:45	17:57:45	20.640	0.181
10/25/2016	18:58:45	17:58:45	20.641	0.183
10/25/2016	18:59:45	17:59:45	20.643	0.182
10/25/2016	19:00:45	18:00:45	20.640	0.183
10/25/2016	19:01:45	18:01:45	20.646	0.186
10/25/2016	19:02:45	18:02:45	20.641	0.186
10/25/2016	19:03:45	18:03:45	20.641	0.188
10/25/2016	19:04:45	18:04:45	20.644	0.184
10/25/2016	19:05:45	18:05:45	20.643	0.185
10/25/2016	19:06:45	18:06:45	20.640	0.187
10/25/2016	19:07:45	18:07:45	20.640	0.188
10/25/2016	19:08:45	18:08:45	20.643	0.187
10/25/2016	19:09:45	18:09:45	20.641	0.188
10/25/2016	19:10:45	18:10:45	20.641	0.187
10/25/2016	19:11:45	18:11:45	20.644	0.187
10/25/2016	19:12:45	18:12:45	20.640	0.188
10/25/2016	19:13:45	18:13:45	20.641	0.183
10/25/2016	19:14:45	18:14:45	20.644	0.180
10/25/2016	19:15:45	18:15:45	20.643	0.181
10/25/2016	19:16:45	18:16:45	20.639	0.179
10/25/2016	19:17:45	18:17:45	20.642	0.182
10/25/2016	19:18:45	18:18:45	20.640	0.179
10/25/2016	19:19:45	18:19:45	20.639	0.199
10/25/2016	19:20:45	18:20:45	20.638	0.204
10/25/2016	19:21:45	18:21:45	20.641	0.191
10/25/2016	19:22:45	18:22:45	20.640	0.198

Neucor, Inc.
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Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
10/25/2016	19:23:45	18:23:45	20.636	0.199
10/25/2016	19:24:45	18:24:45	20.638	0.200
10/25/2016	19:25:45	18:25:45	20.638	0.197
10/25/2016	19:26:45	18:26:45	20.638	0.187
10/25/2016	19:27:45	18:27:45	20.636	0.198
10/25/2016	19:28:45	18:28:45	20.635	0.203
10/25/2016	19:29:45	18:29:45	20.637	0.202
10/25/2016	19:30:45	18:30:45	20.637	0.200
10/25/2016	19:31:45	18:31:45	20.641	0.188
10/25/2016	19:32:45	18:32:45	20.636	0.202
10/25/2016	19:33:45	18:33:45	20.635	0.203
10/25/2016	19:34:45	18:34:45	20.636	0.202
10/25/2016	19:35:45	18:35:45	20.637	0.200
10/25/2016	19:36:45	18:36:45	20.638	0.192
10/25/2016	19:37:45	18:37:45	20.635	0.204
10/25/2016	19:38:45	18:38:45	20.635	0.197
10/25/2016	19:39:45	18:39:45	20.632	0.194
10/25/2016	19:40:45	18:40:45	20.634	0.182
10/25/2016	19:41:45	18:41:45	20.632	0.175
10/25/2016	19:42:45	18:42:45	20.630	0.187
10/25/2016	19:43:45	18:43:45	20.629	0.181
10/25/2016	19:44:45	18:44:45	20.628	0.181
10/25/2016	19:45:45	18:45:45	20.630	0.169
10/25/2016	19:46:45	18:46:45	20.628	0.177
10/25/2016	19:47:45	18:47:45	20.628	0.184
10/25/2016	19:48:45	18:48:45	20.628	0.189
10/25/2016	19:49:45	18:49:45	20.629	0.191
10/25/2016	19:50:45	18:50:45	20.630	0.179
10/25/2016	19:51:45	18:51:45	20.627	0.187
10/25/2016	19:52:45	18:52:45	20.625	0.188
10/25/2016	19:53:45	18:53:45	20.624	0.189
10/25/2016	19:54:45	18:54:45	20.626	0.189
10/25/2016	19:55:45	18:55:45	20.629	0.177
10/25/2016	19:56:45	18:56:45	20.622	0.191
10/25/2016	19:57:45	18:57:45	20.623	0.191
10/25/2016	19:58:45	18:58:45	20.622	0.190
10/25/2016	19:59:45	18:59:45	20.624	0.187
10/25/2016	20:00:45	19:00:45	20.622	0.179
10/25/2016	20:01:45	19:01:45	20.620	0.195
10/25/2016	20:02:45	19:02:45	20.620	0.200
10/25/2016	20:03:45	19:03:45	20.620	0.198
10/25/2016	20:04:45	19:04:45	20.622	0.193
10/25/2016	20:05:45	19:05:45	20.624	0.195
10/25/2016	20:06:45	19:06:45	20.622	0.206
10/25/2016	20:07:45	19:07:45	20.622	0.207
10/25/2016	20:08:45	19:08:45	20.623	0.203
10/25/2016	20:09:45	19:09:45	20.627	0.190
10/25/2016	20:10:45	19:10:45	20.624	0.197
10/25/2016	20:11:45	19:11:45	20.622	0.201
10/25/2016	20:12:45	19:12:45	20.622	0.202
10/25/2016	20:13:45	19:13:45	20.622	0.198
10/25/2016	20:14:45	19:14:45	20.627	0.186
10/25/2016	20:15:45	19:15:45	20.623	0.198
10/25/2016	20:16:45	19:16:45	20.624	0.198
10/25/2016	20:17:45	19:17:45	20.623	0.199
10/25/2016	20:18:45	19:18:45	20.623	0.197
10/25/2016	20:19:45	19:19:45	20.627	0.185
10/25/2016	20:20:45	19:20:45	20.621	0.198
10/25/2016	20:21:45	19:21:45	20.621	0.198
10/25/2016	20:22:45	19:22:45	20.619	0.202
10/25/2016	20:23:45	19:23:45	20.625	0.197
	Average:		**20.634**	**0.189**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method Data
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 3		
10/26/2016	9:11:15	8:11:15	20.541	-0.005
10/26/2016	9:12:15	8:12:15	20.628	-0.011
10/26/2016	9:13:15	8:13:15	20.623	0.012
10/26/2016	9:14:15	8:14:15	20.622	0.012
10/26/2016	9:15:15	8:15:15	20.625	0.004
10/26/2016	9:16:15	8:16:15	20.625	0.006
10/26/2016	9:17:15	8:17:15	20.621	0.018
10/26/2016	9:18:15	8:18:15	20.621	0.016
10/26/2016	9:19:15	8:19:15	20.623	0.007
10/26/2016	9:20:15	8:20:15	20.621	0.011
10/26/2016	9:21:15	8:21:15	20.623	0.019
10/26/2016	9:22:15	8:22:15	20.625	0.023
10/26/2016	9:23:15	8:23:15	20.623	0.027
10/26/2016	9:24:15	8:24:15	20.626	0.012
10/26/2016	9:25:15	8:25:15	20.623	0.022
10/26/2016	9:26:15	8:26:15	20.622	0.026
10/26/2016	9:27:15	8:27:15	20.621	0.028
10/26/2016	9:28:15	8:28:15	20.621	0.025
10/26/2016	9:29:15	8:29:15	20.626	0.014
10/26/2016	9:30:15	8:30:15	20.619	0.028
10/26/2016	9:31:15	8:31:15	20.622	0.030
10/26/2016	9:32:15	8:32:15	20.619	0.030
10/26/2016	9:33:15	8:33:15	20.620	0.028
10/26/2016	9:34:15	8:34:15	20.624	0.016
10/26/2016	9:35:15	8:35:15	20.619	0.028
10/26/2016	9:36:15	8:36:15	20.624	0.029
10/26/2016	9:37:15	8:37:15	20.619	0.031
10/26/2016	9:38:15	8:38:15	20.621	0.025
10/26/2016	9:39:15	8:39:15	20.622	0.013
10/26/2016	9:40:15	8:40:15	20.617	0.026
10/26/2016	9:41:15	8:41:15	20.618	0.028
10/26/2016	9:42:15	8:42:15	20.617	0.024
10/26/2016	9:43:15	8:43:15	20.621	0.018
10/26/2016	9:44:15	8:44:15	20.620	0.015
10/26/2016	9:45:15	8:45:15	20.618	0.024
10/26/2016	9:46:15	8:46:15	20.619	0.027
10/26/2016	9:47:15	8:47:15	20.622	0.023
10/26/2016	9:48:15	8:48:15	20.621	0.009
10/26/2016	9:49:15	8:49:15	20.618	0.016
10/26/2016	9:50:15	8:50:15	20.617	0.020
10/26/2016	9:51:15	8:51:15	20.616	0.021
10/26/2016	9:52:15	8:52:15	20.618	0.021
10/26/2016	9:53:15	8:53:15	20.620	0.006
10/26/2016	9:54:15	8:54:15	20.620	0.016
10/26/2016	9:55:15	8:55:15	20.617	0.022
10/26/2016	9:56:15	8:56:15	20.618	0.021
10/26/2016	9:57:15	8:57:15	20.620	0.022
10/26/2016	9:58:15	8:58:15	20.622	0.006
10/26/2016	9:59:15	8:59:15	20.618	0.016
10/26/2016	10:00:15	9:00:15	20.618	0.025
10/26/2016	10:01:15	9:01:15	20.620	0.021
10/26/2016	10:02:15	9:02:15	20.619	0.020
10/26/2016	10:03:15	9:03:15	20.620	0.006
10/26/2016	10:04:15	9:04:15	20.616	0.021
10/26/2016	10:05:15	9:05:15	20.615	0.021
10/26/2016	10:06:15	9:06:15	20.617	0.024
10/26/2016	10:07:15	9:07:15	20.621	0.019
10/26/2016	10:08:15	9:08:15	20.620	0.013
10/26/2016	10:09:15	9:09:15	20.619	0.029
10/26/2016	10:10:15	9:10:15	20.619	0.032
10/26/2016	10:11:15	9:11:15	20.616	0.028
10/26/2016	10:12:15	9:12:15	20.617	0.021
10/26/2016	10:13:15	9:13:15	20.616	0.025
10/26/2016	10:14:15	9:14:15	20.614	0.030

Neucor, Inc.
White Swan, WA

One-Minute Reference Method Data
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
10/26/2016	10:15:15	9:15:15	20.616	0.015
10/26/2016	10:16:15	9:16:15	20.614	0.004
10/26/2016	10:17:15	9:17:15	20.613	0.011
10/26/2016	10:18:15	9:18:15	20.609	0.004
10/26/2016	10:19:15	9:19:15	20.611	0.005
10/26/2016	10:20:15	9:20:15	20.612	-0.001
10/26/2016	10:21:15	9:21:15	20.614	-0.014
10/26/2016	10:22:15	9:22:15	20.612	-0.002
10/26/2016	10:23:15	9:23:15	20.610	0.001
10/26/2016	10:24:15	9:24:15	20.611	0.001
10/26/2016	10:25:15	9:25:15	20.612	-0.006
10/26/2016	10:26:15	9:26:15	20.611	0.005
10/26/2016	10:27:15	9:27:15	20.607	0.011
10/26/2016	10:28:15	9:28:15	20.612	0.015
10/26/2016	10:29:15	9:29:15	20.608	0.014
10/26/2016	10:30:15	9:30:15	20.613	0.002
10/26/2016	10:31:15	9:31:15	20.611	0.015
10/26/2016	10:32:15	9:32:15	20.611	0.022
10/26/2016	10:33:15	9:33:15	20.609	0.018
10/26/2016	10:34:15	9:34:15	20.610	0.017
10/26/2016	10:35:15	9:35:15	20.612	0.004
10/26/2016	10:36:15	9:36:15	20.613	0.018
10/26/2016	10:37:15	9:37:15	20.612	0.010
10/26/2016	10:38:15	9:38:15	20.615	0.008
10/26/2016	10:39:15	9:39:15	20.612	-0.012
10/26/2016	10:40:15	9:40:15	20.613	-0.030
10/26/2016	10:41:15	9:41:15	20.608	-0.022
10/26/2016	10:42:15	9:42:15	20.609	-0.026
10/26/2016	10:43:15	9:43:15	20.609	-0.030
10/26/2016	10:44:15	9:44:15	20.610	-0.038
10/26/2016	10:45:15	9:45:15	20.610	-0.043
10/26/2016	10:46:15	9:46:15	20.609	-0.035
10/26/2016	10:47:15	9:47:15	20.607	-0.035
10/26/2016	10:48:15	9:48:15	20.607	-0.032
10/26/2016	10:49:15	9:49:15	20.613	-0.043
10/26/2016	10:50:15	9:50:15	20.612	-0.031
10/26/2016	10:51:15	9:51:15	20.608	-0.021
10/26/2016	10:52:15	9:52:15	20.607	-0.022
10/26/2016	10:53:15	9:53:15	20.608	-0.023
10/26/2016	10:54:15	9:54:15	20.611	-0.033
10/26/2016	10:55:15	9:55:15	20.611	-0.024
10/26/2016	10:56:15	9:56:15	20.610	-0.017
10/26/2016	10:57:15	9:57:15	20.607	-0.016
10/26/2016	10:58:15	9:58:15	20.609	-0.017
10/26/2016	10:59:15	9:59:15	20.611	-0.027
10/26/2016	11:00:15	10:00:15	20.610	-0.013
10/26/2016	11:01:15	10:01:15	20.607	-0.014
10/26/2016	11:02:15	10:02:15	20.610	-0.012
10/26/2016	11:03:15	10:03:15	20.608	-0.015
10/26/2016	11:04:15	10:04:15	20.612	-0.025
10/26/2016	11:05:15	10:05:15	20.606	-0.012
10/26/2016	11:06:15	10:06:15	20.608	-0.008
10/26/2016	11:07:15	10:07:15	20.608	-0.011
10/26/2016	11:08:15	10:08:15	20.609	-0.013
10/26/2016	11:09:15	10:09:15	20.604	-0.019
10/26/2016	11:10:15	10:10:15	20.603	-0.005
10/26/2016	11:11:15	10:11:15	20.604	-0.007
10/26/2016	11:12:15	10:12:15	20.603	-0.008
10/26/2016	11:13:15	10:13:15	20.604	-0.014
10/26/2016	11:14:15	10:14:15	20.610	-0.018
10/26/2016	11:15:15	10:15:15	20.610	-0.012
	Average:		**20.614**	**0.005**

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (East Vent)	Personnel	SN/AK/JA/JH	Date	10/26/2016

	Run Number	1	*2	3	Average
Date	Test Date	10/26/2016	10/26/2016	10/26/2016	
Start	Run Start Time	12:25	14:30	16:28	
	Run Finish Time	13:25	15:47	17:28	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.977	0.977	0.977	0.977
P_{Br}	Barometric Pressure, in. Hg	29.38	29.38	29.38	29.38
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	42.359	42.271	42.570	42.400
t_m	Average Dry Gas Meter Temperature, °F	53.6	62.8	66.8	61.0
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	41.935	41.114	41.091	41.380
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.188	1.164	1.164	1.172
V_{lc}	Total Moisture Liquid collected, g	14.6	13.6	14.6	14.3
V_{wstd}	Volume of Water Vapor, scf	0.69	0.64	0.69	0.67
% H_2O	Moisture Content of Stack Gas, %	1.62	1.54	1.65	1.60
%CO_2	Carbon Dioxide, % vd	0.03	0.04	0.05	0.04
%O_2	Oxygen, % vd	20.95	20.94	20.94	20.94
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.68	28.67	28.67
P_g	Flue Gas Static Pressure, in. H_2O	0.10	0.10	0.10	0.10
P_s	Absolute Flue Gas Pressure, in. Hg	29.39	29.39	29.39	29.39
t_s	Average Stack Gas Temperature, °F	85.9	86.8	86.9	86.5
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.416	0.406	0.409	0.410
v_s	Average Stack Gas Velocity, ft/sec	24.05	23.48	23.68	23.73
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	15,565	15,183	15,289	15,346
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	16,654	16,257	16,394	16,435
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	5.14	3.22	3.33	3.90
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	56.67	64.67	67.50	62.94
V_m	Gas Meter Volume Sampled, L	24.267	24.021	23.940	24.076
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.024	0.024	0.024
$C_2H_4O_{\mu g/mL}$	Acetaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	61	67	73	67
$C_2H_4O_{\mu g}$	Total Mass of Acetaldehyde in the Sample, µg	< 15.3	< 16.8	< 18.3	< 16.8
$C_2H_4O_{mg}$	Total Mass of Acetaldehyde in the Sample, mg	< 0.015	< 0.017	< 0.018	< 0.017
$C_2H_4O_{mg/dscm}$	Acetaldehyde Concentration in Air, mg/dscm	< 0.63	< 0.70	< 0.76	< 0.70
$C_2H_4O_{ppmvd}$	Acetaldehyde Concentration, ppmvd	< 0.34	< 0.38	< 0.42	< 0.38
$C_2H_4O_{lb/hr}$	Acetaldehyde Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040
$C_3H_6O_{\mu g/mL}$	Propionaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	61	67	73	67
$C_3H_6O_{\mu g}$	Total Mass of Propionaldehyde in the Sample, µg	< 15.3	< 16.8	< 18.3	< 16.8
$C_3H_6O_{mg}$	Total Mass of Propionaldehyde in the Sample, mg	< 0.015	< 0.017	< 0.018	< 0.017
$C_3H_6O_{mg/dscm}$	Propionaldehyde Concentration in Air, mg/dscm	< 0.63	< 0.70	< 0.76	< 0.70
$C_3H_6O_{ppmvd}$	Propionaldehyde Concentration, ppmvd	< 0.26	< 0.29	< 0.32	< 0.29
$C_3H_6O_{lb/hr}$	Propionaldehyde Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040
$CH_4O_{\mu g/mL}$	Methanol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	61	67	73	67
$CH_4O_{\mu g}$	Total Mass of Methanol in the Sample, µg	< 15.3	< 16.8	< 18.3	< 16.8
CH_4O_{mg}	Total Mass of Methanol in the Sample, mg	< 0.015	< 0.017	< 0.018	< 0.017
$CH_4O_{mg/dscm}$	Methanol Concentration in Air, mg/dscm	< 0.63	< 0.70	< 0.76	< 0.70
CH_4O_{ppmvd}	Methanol Concentration, ppmvd	< 0.47	< 0.52	< 0.57	< 0.52
$CH_4O_{lb/hr}$	Methanol Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (East Vent)	Personnel	SN/AK/JA/JH	Date	10/26/2016

	Run Number	1	*2	3	Average
Date	Test Date	10/26/2016	10/26/2016	10/26/2016	
Start	Run Start Time	12:25	14:30	16:28	
	Run Finish Time	13:25	15:47	17:28	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.977	0.977	0.977	0.977
P_{Br}	Barometric Pressure, in. Hg	29.38	29.38	29.38	29.38
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	42.359	42.271	42.570	42.400
t_m	Average Dry Gas Meter Temperature, °F	53.6	62.8	66.8	61.0
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	41.935	41.114	41.091	41.380
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.188	1.164	1.164	1.172
V_{lc}	Total Moisture Liquid collected, g	14.6	13.6	14.6	14.3
V_{wstd}	Volume of Water Vapor, scf	0.69	0.64	0.69	0.67
% H_2O	Moisture Content of Stack Gas, %	1.62	1.54	1.65	1.60
%CO_2	Carbon Dioxide, % vd	0.03	0.04	0.05	0.04
%O_2	Oxygen, % vd	20.95	20.94	20.94	20.94
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.68	28.67	28.67
P_g	Flue Gas Static Pressure, in. H_2O	0.10	0.10	0.10	0.10
P_s	Absolute Flue Gas Pressure, in. Hg	29.39	29.39	29.39	29.39
t_s	Average Stack Gas Temperature, °F	85.9	86.8	86.9	86.5
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	0.416	0.406	0.409	0.410
v_s	Average Stack Gas Velocity, ft/sec	24.05	23.48	23.68	23.73
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	15,565	15,183	15,289	15,346
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	16,654	16,257	16,394	16,435
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	5.14	3.22	3.33	3.90
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	56.67	64.67	67.50	62.94
V_m	Gas Meter Volume Sampled, L	24.267	24.021	23.940	24.076
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.024	0.024	0.024
$C_3H_4O_{\mu g/mL}$	Acrolein Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	61	67	73	67
$C_3H_4O_{\mu g}$	Total Mass of Acrolein in the Sample, µg	< 15.3	< 16.8	< 18.3	< 16.8
$C_3H_4O_{mg}$	Total Mass of Acrolein in the Sample, mg	< 0.015	< 0.017	< 0.018	< 0.017
$C_3H_4O_{mg/dscm}$	Acrolein Concentration in Air, mg/dscm	< 0.63	< 0.70	< 0.76	< 0.70
$C_3H_4O_{ppmvd}$	Acrolein Concentration, ppmvd	< 0.27	< 0.30	< 0.33	< 0.30
$C_3H_4O_{lb/hr}$	Acrolein Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040
$C_6H_6O_{\mu g/mL}$	Phenol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	61	67	73	67
$C_6H_6O_{\mu g}$	Total Mass of Phenol in the Sample, µg	< 15.3	< 16.8	< 18.3	< 16.8
$C_6H_6O_{mg}$	Total Mass of Phenol in the Sample, mg	< 0.015	< 0.017	< 0.018	< 0.017
$C_6H_6O_{mg/dscm}$	Phenol Concentration in Air, mg/dscm	< 0.63	< 0.70	< 0.76	< 0.70
$C_6H_6O_{ppmvd}$	Phenol Concentration, ppmvd	< 0.16	< 0.18	< 0.19	< 0.18
$C_6H_6O_{lb/hr}$	Phenol Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040
$CH_2O_{\mu g/mL}$	Formaldehyde Concentration in the Sample, µg/mL	< 0.05	< 0.05	< 0.05	< 0.05
Vol.	Volume of Sample Collected, mL	61	67	73	67
$CH_2O_{\mu g}$	Total Mass of Formaldehyde in the Sample, µg	< 3.05	< 3.35	< 3.65	< 3.35
CH_2O_{mg}	Total Mass of Formaldehyde in the Sample, mg	< 0.003	< 0.003	< 0.004	< 0.003
$CH_2O_{mg/dscm}$	Formaldehyde Concentration in Air, mg/dscm	< 0.13	< 0.14	< 0.15	< 0.14
CH_2O_{ppmvd}	Formaldehyde Concentration, ppmvd	< 0.10	< 0.11	< 0.12	< 0.11
$CH_2O_{lb/hr}$	Formaldehyde Emission Rate, lb/hr	< 0.0073	< 0.0079	< 0.0087	< 0.0080
$CH_2O_{lb/MSF}$	Formaldehyde Emission Rate, lb/MSF	< 0.0014	< 0.0025	< 0.0026	< 0.0022
$HAPS_{lb/hr}$	Total HAPS Emission Rate, lb/hr	< 0.037	< 0.040	< 0.044	< 0.040
$HAPS_{lb/MSF}$	Total HAPS Emission Rate, lb/MSF	< 0.007	< 0.012	< 0.013	< 0.011

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

USEPA Methods 2 & 4
Run 1

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.	Run No.	1	Date	10/26/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (East Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	15		10
Umbical	Meter box RET-1	Y	0.977	Initial DGM			
Stack TC	TC Readout	$\Delta H_@$	1.668	Final DGM			
Tedlar Bag	Pitot MW-5-2	C_p	0.84	Leak rate	0.000		0.000
Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
Est. Moisture	gm H_2O 14.6	M3/3A 0.03	%CO_2	Nozzle			
	$B_w$meas 1.62	20.95	%O_2	Stack TC			
	$B_w$sat 4.24	Fo=	F_d=	M_s	28.67	M_d	28.84

% Moisture	1.62	Meas
P_{Br} in "Hg	29.38	
P static in H_2O	0.1	
K factor		
Filter #		
Filter Wt.		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	12:25	908.640	0.17	0.41	85	51	52		1.5	NA	NA	NA	60	2.0	
2	10.0	20.0		915.700	0.17	0.41	86	52	52		1.5	NA	NA	NA	58	2.0	
3	20.0	30.0		922.750	0.16	0.40	86	53	54		1.5	NA	NA	NA	56	2.0	
4	30.0	40.0		929.850	0.15	0.39	86	54	55		1.5	NA	NA	NA	56	2.0	
5	40.0	50.0		936.890	0.16	0.40	87	55	55		1.5	NA	NA	NA	55	2.0	
6	50.0	60.0		943.900	0.17	0.41	84	55	55		1.5	NA	NA	NA	55	2.0	
7	60.0		13:25	950.999	0.19	0.44	85										
8					0.18	0.42	85										
9					0.18	0.42	85										
10					0.19	0.44	85										
11					0.20	0.45	86										
12					0.18	0.42	86										
B-1					0.18	0.42	87										
2					0.17	0.41	86										
3					0.16	0.40	86										
4					0.16	0.40	87										
5					0.17	0.41	87										
6					0.16	0.40	85										
7					0.15	0.39	85										
8					0.18	0.42	86										
9					0.19	0.44	86										
10					0.18	0.42	87										
11					0.18	0.42	87										
12					0.18	0.42	87										
Final			13:25	950.999													
Sum or avg	60.0			42.359	0.173	0.416	85.9	53.3	53.8		1.500				Max	2.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.935
Sample Vol. dscm	1.188
Flow	
ft/sec	24.05
dscfm	15,565.2
acfm	16,654.1

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	754.5	754.6	-0.1
2	DI H_2O	100	748.3	748.0	0.3
3	M_T	0	630.7	629.5	1.2
4	SG	200-300	905.6	892.4	13.2

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____

Checked By: ____ Reviewer (Signature/Date) ____ Team Leader (Signature/Date)

NCASI Method 99.02
Run 1

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	1		Date	10/26/2016		Job #	160282			
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post		
Location	Press Vent #1 (East Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15		5		
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1	Y		1.0134	Initial DGM					
% Moisture	1.62 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM					
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00		
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓		
K factor		Est. Moisture	gm H_2O	14.6	M3/3A	0.03	%CO_2	Nozzle					
Filter #			$B_w$meas	1.62		20.95	%O_2	Stack TC					
Filter Wt.			$B_w$sat	4.24	Fo=		F_d=	M_s	28.67	M_d	28.84		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	12:25	5823.97	NA	NA	NA	53	66		NA	250	250	NA	NA	2.0	
SP	10.0	20.0		5827.75	NA	NA	NA	53	53		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		5831.63	NA	NA	NA	55	57		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		5835.88	NA	NA	NA	57	59		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		5839.87	NA	NA	NA	60	62		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		5843.65	NA	NA	NA	62	63		NA	250	250	NA	NA	1.0	
SP	60.0		13:25	5847.91													
Final			13:25	5847.910													
Sum or avg	60.0			23.940	NA	NA	NA	56.7	60.0		NA				Max	2.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	24.267
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 2

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (East Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15		5
Personnel	SN/AK/JA/JH	Umbical	Meter box	RET-1	Y		0.977	Init DGM			
% Moisture	1.54 Meas	Stack TC	TC Readout		$\Delta H_@$		1.668	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	MW-5-2	C_p		0.84	Leak rate	0.000		0.001
P static in H_2O	0.1	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	13.6	M3/3A	0.04	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	1.54		20.94	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	4.35	Fo=		F_d=	M_s	28.68	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	14:30	953.454	0.18	0.42	86	62	61		1.5	NA	NA	NA	58	3.0	
2	10.0	20.0		960.450	0.18	0.42	86	62	61		1.5	NA	NA	NA	59	3.0	
3	20.0	30.0	*14:57	967.500	0.17	0.41	87	63	62		1.5	NA	NA	NA	60	3.0	
4	30.0	40.0		974.620	0.16	0.40	88	63	63		1.5	NA	NA	NA	59	3.0	
5	40.0	50.0		981.550	0.15	0.39	88	63	64		1.5	NA	NA	NA	59	3.0	
6	50.0	60.0		988.670	0.15	0.39	88	64	65		1.5	NA	NA	NA	59	3.0	
7	60.0		15:47	995.725	0.15	0.39	87										
8					0.17	0.41	86										
9					0.17	0.41	86										
10					0.17	0.41	86										
11					0.16	0.40	85										
12					0.16	0.40	85										
B-1					0.15	0.39	85										
2					0.15	0.39	86										
3					0.15	0.39	87										
4					0.16	0.40	87										
5					0.18	0.42	87										
6					0.18	0.42	88										
7					0.19	0.44	88										
8					0.19	0.44	88										
9					0.17	0.41	87										
10					0.16	0.40	88										
11					0.16	0.40	87										
12					0.15	0.39	86										
Final			15:47	995.725													
Sum or avg	60.0			42.271	0.165	0.406	86.8	62.8	62.7		1.500				Max	3.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.114
Sample Vol. dscm	1.164
Flow	
ft/sec	23.48
dscfm	15,183.5
acfm	16,257.3

Testing paused 14:40-14:57 due to unit upset.

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	762.5	762.8	-0.3
2	DI H_2O	100	752.0	751.4	0.6
3	M_T	0	632.6	632.6	0.0
4	SG	200-300	925.6	912.3	13.3

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 2

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (East Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	5		5
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1	Y		1.0134	Init DGM			
% Moisture	1.54 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	13.6	M3/3A	0.04	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	1.54		20.94	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	4.35	Fo=		F_d=	M_s	28.68	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	14:30	5848.34	NA	NA	NA	62	61		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5852.32	NA	NA	NA	62	61		NA	250	250	NA	NA	1.0	
SP	20.0	30.0	*14:57	5856.45	NA	NA	NA	64	64		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		5860.48	NA	NA	NA	65	65		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		5864.42	NA	NA	NA	66	67		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		5868.44	NA	NA	NA	69	68		NA	250	250	NA	NA	1.0	
SP	60.0		15:47	5872.32													
Final			15:47	5872.320													
Sum or avg	60.0			23.980	NA	NA	NA	64.7	64.3		NA					Max	1.0

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	24.021
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

Testing paused 14:40-14:57 due to unit upset.

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 3

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.	Run No.	3	Date	10/26/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (East Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	10		5
Umbical	Meter box RET-1	Y	0.977	Init DGM			
Stack TC	TC Readout	$\Delta H_@$	1.668	Final DGM			
Tedlar Bag	Pitot MW-5-2	C_p	0.84	Leak rate	0.002		0.002
Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
Est. Moisture	gm H_2O 14.6	M3/3A 0.05	%CO_2	Nozzle			
	$B_w$meas 1.65	20.94	%O_2	Stack TC			
	$B_w$sat 4.38	Fo=	F_d=	M_s	28.67	M_d	28.84

% Moisture	1.65	Meas
P_{Br} in "Hg	29.38	
P static in H_2O	0.1	
K factor		
Filter #		
Filter Wt.		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	16:28	998.423	0.18	0.42	86	65	65		1.5	NA	NA	NA	59	3.0	
2	10.0	20.0		1005.500	0.18	0.42	85	66	66		1.5	NA	NA	NA	59	3.0	
3	20.0	30.0		1012.550	0.18	0.42	85	67	67		1.5	NA	NA	NA	59	2.0	
4	30.0	40.0		1019.700	0.17	0.41	86	67	67		1.5	NA	NA	NA	60	2.0	
5	40.0	50.0		1026.850	0.16	0.40	87	67	68		1.5	NA	NA	NA	61	2.0	
6	50.0	60.0		1033.900	0.16	0.40	88	68	68		1.5	NA	NA	NA	61	2.0	
7	60.0		17:28	1040.993	0.17	0.41	88										
8					0.16	0.40	89										
9					0.16	0.40	90										
10					0.16	0.40	88										
11					0.17	0.41	87										
12					0.17	0.41	87										
B-1					0.17	0.41	87										
2					0.18	0.42	87										
3					0.17	0.41	87										
4					0.17	0.41	87										
5					0.17	0.41	87										
6					0.17	0.41	87										
7					0.17	0.41	87										
8					0.16	0.40	87										
9					0.16	0.40	87										
10					0.16	0.40	86										
11					0.16	0.40	86										
12					0.16	0.40	85										
Final			17:28	1040.993													
Sum or avg	60.0			42.570	0.168	0.409	86.9	66.7	66.8		1.500					Max 3.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.091
Sample Vol. dscm	1.164
Flow	
ft/sec	23.68
dscfm	15,289.3
acfm	16,394.3

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	754.7	754.5	0.2
2	DI H_2O	100	748.6	748.3	0.3
3	M_T	0	631.8	630.7	1.1
4	SG	200-300	918.6	905.6	13.0

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 3

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	3		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (East Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	20		8
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1	Y		1.0134	Init DGM			
% Moisture	1.65 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	14.6	M3/3A	0.05	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	1.65		20.94	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	4.38	Fo=		F_d=	M_s	28.67	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	16:28	5873.35	NA	NA	NA	66	66		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5877.28	NA	NA	NA	67	66		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		5881.22	NA	NA	NA	67	67		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		5885.39	NA	NA	NA	68	69		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		5889.28	NA	NA	NA	67	69		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		5893.26	NA	NA	NA	70	69		NA	250	250	NA	NA	1.0	
SP	60.0		17:28	5897.39													
Final			17:28	5897.390													
Sum or avg	60.0			24.040	NA	NA	NA	67.5	67.7		NA					Max	1.0

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.940
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (West Vent)	Personnel	SN/AK/JA/JH	Date	10/26/2016

	Run Number	1	*2	3	Average
Date	Test Date	10/26/2016	10/26/2016	10/26/2016	
Start	Run Start Time	12:25	14:30	16:28	
	Run Finish Time	13:25	15:47	17:28	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.977	0.977	0.977	0.977
P_{Br}	Barometric Pressure, in. Hg	29.38	29.38	29.38	29.38
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	42.359	42.271	42.570	42.400
t_m	Average Dry Gas Meter Temperature, °F	53.6	62.8	66.8	61.0
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	41.935	41.114	41.091	41.380
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.188	1.164	1.164	1.172
V_{lc}	Total Moisture Liquid collected, g	14.6	13.6	14.6	14.3
V_{wstd}	Volume of Water Vapor, scf	0.69	0.64	0.69	0.67
% H_2O	Moisture Content of Stack Gas, %	1.62	1.54	1.65	1.60
%CO_2	Carbon Dioxide, % vd	0.03	0.04	0.05	0.04
%O_2	Oxygen, % vd	20.95	20.94	20.94	20.94
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.68	28.67	28.67
P_g	Flue Gas Static Pressure, in. H_2O	0.10	0.10	0.10	0.10
P_s	Absolute Flue Gas Pressure, in. Hg	29.39	29.39	29.39	29.39
t_s	Average Stack Gas Temperature, °F	83.4	83.8	86.7	84.7
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.480	0.476	0.478	0.478
v_s	Average Stack Gas Velocity, ft/sec	27.66	27.46	27.64	27.59
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	17,981	17,856	17,856	17,898
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	19,151	19,017	19,139	19,102
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	5.14	3.22	3.33	3.90
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	54.50	60.67	60.83	58.67
V_m	Gas Meter Volume Sampled, L	23.387	23.061	23.078	23.175
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.023	0.023	0.023	0.023
$C_2H_4O_{\mu g/mL}$	Acetaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	71	74	74	73
$C_2H_4O_{\mu g}$	Total Mass of Acetaldehyde in the Sample, µg	< 17.8	< 18.5	< 18.5	< 18.3
$C_2H_4O_{mg}$	Total Mass of Acetaldehyde in the Sample, mg	< 0.018	< 0.019	< 0.019	< 0.018
$C_2H_4O_{mg/dscm}$	Acetaldehyde Concentration in Air, mg/dscm	< 0.76	< 0.80	< 0.80	< 0.79
$C_2H_4O_{ppmvd}$	Acetaldehyde Concentration, ppmvd	< 0.41	< 0.44	< 0.44	< 0.43
$C_2H_4O_{lb/hr}$	Acetaldehyde Emission Rate, lb/hr	< 0.051	< 0.054	< 0.054	< 0.053
$C_3H_6O_{\mu g/mL}$	Propionaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	71	74	74	73
$C_3H_6O_{\mu g}$	Total Mass of Propionaldehyde in the Sample, µg	< 17.8	< 18.5	< 18.5	< 18.3
$C_3H_6O_{mg}$	Total Mass of Propionaldehyde in the Sample, mg	< 0.018	< 0.019	< 0.019	< 0.018
$C_3H_6O_{mg/dscm}$	Propionaldehyde Concentration in Air, mg/dscm	< 0.76	< 0.80	< 0.80	< 0.79
$C_3H_6O_{ppmvd}$	Propionaldehyde Concentration, ppmvd	< 0.31	< 0.33	< 0.33	< 0.33
$C_3H_6O_{lb/hr}$	Propionaldehyde Emission Rate, lb/hr	< 0.051	< 0.054	< 0.054	< 0.053
$CH_4O_{\mu g/mL}$	Methanol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	71	74	74	73
$CH_4O_{\mu g}$	Total Mass of Methanol in the Sample, µg	< 17.8	< 18.5	< 18.5	< 18.3
CH_4O_{mg}	Total Mass of Methanol in the Sample, mg	< 0.018	< 0.019	< 0.019	< 0.018
$CH_4O_{mg/dscm}$	Methanol Concentration in Air, mg/dscm	< 0.76	< 0.80	< 0.80	< 0.79
CH_4O_{ppmvd}	Methanol Concentration, ppmvd	< 0.57	< 0.60	< 0.60	< 0.59
$CH_4O_{lb/hr}$	Methanol Emission Rate, lb/hr	< 0.051	< 0.054	< 0.054	< 0.053

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Press Vent #1 (West Vent)	Personnel	SN/AK/JA/JH	Date	10/26/2016

	Run Number	1	*2	3	Average
Date	Test Date	10/26/2016	10/26/2016	10/26/2016	
Start	Run Start Time	12:25	14:30	16:28	
	Run Finish Time	13:25	15:47	17:28	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coeficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	0.977	0.977	0.977	0.977
P_{Br}	Barometric Pressure, in. Hg	29.38	29.38	29.38	29.38
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	42.359	42.271	42.570	42.400
t_m	Average Dry Gas Meter Temperature, °F	53.6	62.8	66.8	61.0
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	41.935	41.114	41.091	41.380
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.188	1.164	1.164	1.172
V_{lc}	Total Moisture Liquid collected, g	14.6	13.6	14.6	14.3
V_{wstd}	Volume of Water Vapor, scf	0.69	0.64	0.69	0.67
% H_2O	Moisture Content of Stack Gas, %	1.62	1.54	1.65	1.60
%CO_2	Carbon Dioxide, % vd	0.03	0.04	0.05	0.04
%O_2	Oxygen, % vd	20.95	20.94	20.94	20.94
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.68	28.67	28.67
P_g	Flue Gas Static Pressure, in. H_2O	0.10	0.10	0.10	0.10
P_s	Absolute Flue Gas Pressure, in. Hg	29.39	29.39	29.39	29.39
t_s	Average Stack Gas Temperature, °F	83.4	83.8	86.7	84.7
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.480	0.476	0.478	0.478
v_s	Average Stack Gas Velocity, ft/sec	27.66	27.46	27.64	27.59
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	17,981	17,856	17,856	17,898
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	19,151	19,017	19,139	19,102
$MSF_{3/4}$	Thousand square feet of board quantity (based on 3/4" basis) per hour	5.14	3.22	3.33	3.90
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	54.50	60.67	60.83	58.67
V_m	Gas Meter Volume Sampled, L	23.387	23.061	23.078	23.175
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.023	0.023	0.023	0.023
$C_3H_4O_{\mu g/mL}$	Acrolein Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	71	74	74	73
$C_3H_4O_{\mu g}$	Total Mass of Acrolein in the Sample, µg	< 17.8	< 18.5	< 18.5	< 18.3
$C_3H_4O_{mg}$	Total Mass of Acrolein in the Sample, mg	< 0.018	< 0.019	< 0.019	< 0.018
$C_3H_4O_{mg/dscm}$	Acrolein Concentration in Air, mg/dscm	< 0.76	< 0.80	< 0.80	< 0.79
$C_3H_4O_{ppmvd}$	Acrolein Concentration, ppmvd	< 0.33	< 0.34	< 0.34	< 0.34
$C_3H_4O_{lb/hr}$	Acrolein Emission Rate, lb/hr	< 0.051	< 0.054	< 0.054	< 0.053
$C_6H_6O_{\mu g/mL}$	Phenol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	71	74	74	73
$C_6H_6O_{\mu g}$	Total Mass of Phenol in the Sample, µg	< 17.8	< 18.5	< 18.5	< 18.3
$C_6H_6O_{mg}$	Total Mass of Phenol in the Sample, mg	< 0.018	< 0.019	< 0.019	< 0.018
$C_6H_6O_{mg/dscm}$	Phenol Concentration in Air, mg/dscm	< 0.76	< 0.80	< 0.80	< 0.79
$C_6H_6O_{ppmvd}$	Phenol Concentration, ppmvd	< 0.19	< 0.20	< 0.20	< 0.20
$C_6H_6O_{lb/hr}$	Phenol Emission Rate, lb/hr	< 0.051	< 0.054	< 0.054	< 0.053
$CH_2O_{\mu g/mL}$	Formaldehyde Concentration in the Sample, µg/mL	0.12	< 0.05	< 0.05	< 0.07
Vol.	Volume of Sample Collected, mL	71	74	74	73
$CH_2O_{\mu g}$	Total Mass of Formaldehyde in the Sample, µg	8.52	< 3.70	< 3.70	< 5.31
CH_2O_{mg}	Total Mass of Formaldehyde in the Sample, mg	0.009	< 0.004	< 0.004	< 0.005
$CH_2O_{mg/dscm}$	Formaldehyde Concentration in Air, mg/dscm	0.36	< 0.16	< 0.16	< 0.23
CH_2O_{ppmvd}	Formaldehyde Concentration, ppmvd	0.29	< 0.13	< 0.13	< 0.18
$CH_2O_{lb/hr}$	Formaldehyde Emission Rate, lb/hr	0.025	< 0.011	< 0.011	< 0.015
$CH_2O_{lb/MSF}$	Formaldehyde Emission Rate, lb/MSF	0.005	< 0.003	< 0.003	< 0.004
$HAPS_{lb/hr}$	Total HAPS Emission Rate, lb/hr	< 0.076	< 0.054	< 0.054	< 0.061
$HAPS_{lb/MSF}$	Total HAPS Emission Rate, lb/MSF	< 0.015	< 0.017	< 0.016	< 0.016

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

USEPA Methods 2 & 4
Run 1

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	1		Date	10/26/2016		Job # 160282
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre / Mid / Post
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15 / / 10
Personnel	SN/AK/JA/JH	Umbical	Meter box	RET-1	Y		0.977	Initial DGM	
% Moisture	1.62 Meas	Stack TC	TC Readout		$\Delta H_@$		1.668	Final DGM	
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	MW-5-1	C_p		0.84	Leak rate	0.000 / / 0.000
P static in H_2O	0.1	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓ / / ✓
K factor		Est. Moisture	gm H_2O	14.6	M3/3A	0.03	%CO_2	Nozzle	
Filter #			$B_w$meas	1.62		20.95	%O_2	Stack TC	
Filter Wt.			$B_w$sat	3.91	Fo=		F_d=	M_s 28.67	M_d 28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	12:25	908.640	0.23	0.48	85	51	52		1.5	NA	NA	NA	60	2.0	
2	10.0	20.0		915.700	0.23	0.48	85	52	52		1.5	NA	NA	NA	58	2.0	
3	20.0	30.0		922.750	0.24	0.49	84	53	54		1.5	NA	NA	NA	56	2.0	
4	30.0	40.0		929.850	0.23	0.48	84	54	55		1.5	NA	NA	NA	56	2.0	
5	40.0	50.0		936.890	0.23	0.48	83	55	55		1.5	NA	NA	NA	55	2.0	
6	50.0	60.0		943.900	0.22	0.47	83	55	55		1.5	NA	NA	NA	55	2.0	
7	60.0		13:25	950.999	0.23	0.48	83										
8					0.23	0.48	82										
9					0.24	0.49	83										
10					0.23	0.48	83										
11					0.23	0.48	83										
12					0.24	0.49	83										
B-1					0.24	0.49	83										
2					0.24	0.49	84										
3					0.23	0.48	84										
4					0.22	0.47	84										
5					0.22	0.47	84										
6					0.24	0.49	84										
7					0.23	0.48	84										
8					0.23	0.48	84										
9					0.23	0.48	83										
10					0.22	0.47	82										
11					0.22	0.47	83										
12					0.22	0.47	82										
Final			13:25	950.999													
Sum or avg	60.0			42.359	0.230	0.480	83.4	53.3	53.8		1.500				Max	2.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.935
Sample Vol. dscm	1.188
Flow	
ft/sec	27.66
dscfm	17,981.3
acfm	19,151.1

Impingers

	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	754.5	754.6	-0.1
2	DI H_2O	100	748.3	748.0	0.3
3	M_T	0	630.7	629.5	1.2
4	SG	200-300	905.6	892.4	13.2

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 1

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	1		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15		3
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-3	Y		0.9658	Initial DGM			
% Moisture	1.62 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	14.6	M3/3A	0.03	%CO_2	Nozzle			
Filter #			$B_w$meas	1.62		20.95	%O_2	Stack TC			
Filter Wt.			$B_w$sat	3.91	Fo=		F_d=	M_s	28.67	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Outlet		Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	12:25	0.000	0.4	NA	NA	53			NA	250	250	NA	NA	0.0	
SP	10.0	20.0		4.010	0.4	NA	NA	53			NA	250	250	NA	NA	0.0	
SP	20.0	30.0		7.992	0.4	NA	NA	54			NA	250	250	NA	NA	0.0	
SP	30.0	40.0		11.988	0.4	NA	NA	55			NA	250	250	NA	NA	0.0	
SP	40.0	50.0		15.980	0.4	NA	NA	56			NA	250	250	NA	NA	0.0	
SP	50.0	60.0		20.050	0.4	NA	NA	56			NA	250	250	NA	NA	0.0	
SP	60.0		13:25	24.030													
Final			13:25	24.030													
Sum or avg	60.0			24.030	0.400	NA	NA	54.5			NA				Max	0.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.387
Sample Vol. dscm	0.023
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check

Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Shawn Reviewer (Signature/Date) Shawn Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 2

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15		5
Personnel	SN/AK/JA/JH	Umbical	Meter box	RET-1	Y		0.977	Init DGM			
% Moisture	1.54 Meas	Stack TC	TC Readout		$\Delta H_@$		1.668	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	MW-5-1	C_p		0.84	Leak rate	0.000		0.001
P static in H_2O	0.1	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	13.6	M3/3A	0.04	%CO_2	Nozzle			
Filter #			$B_w$meas	1.54		20.94	%O_2	Stack TC			
Filter Wt.			$B_w$sat	3.97	Fo=		F_d=	M_s	28.68	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	14:30	953.454	0.22	0.47	85	62	61		1.5	NA	NA	NA	58	3.0	
2	10.0	20.0		960.450	0.22	0.47	85	62	61		1.5	NA	NA	NA	59	3.0	
3	20.0	30.0	*14:57	967.500	0.22	0.47	85	63	62		1.5	NA	NA	NA	60	3.0	
4	30.0	40.0		974.620	0.23	0.48	85	63	63		1.5	NA	NA	NA	59	3.0	
5	40.0	50.0		981.550	0.23	0.48	85	63	64		1.5	NA	NA	NA	59	3.0	
6	50.0	60.0		988.670	0.23	0.48	83	64	65		1.5	NA	NA	NA	59	3.0	
7	60.0		15:47	995.725	0.23	0.48	84										
8					0.22	0.47	84										
9					0.23	0.48	84										
10					0.23	0.48	84										
11					0.22	0.47	84										
12					0.23	0.48	84										
B-1					0.23	0.48	83										
2					0.23	0.48	83										
3					0.23	0.48	83										
4					0.23	0.48	83										
5					0.23	0.48	83										
6					0.23	0.48	83										
7					0.23	0.48	83										
8					0.22	0.47	83										
9					0.22	0.47	83										
10					0.22	0.47	84										
11					0.23	0.48	84										
12					0.23	0.48	85										
Final			15:47	995.725													
Sum or avg	60.0			42.271	0.227	0.476	83.8	62.8	62.7		1.500				Max	3.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.114
Sample Vol. dscm	1.164
Flow	
ft/sec	27.46
dscfm	17,856.2
acfm	19,017.1

Testing paused 14:40-14:57 due to unit upset.

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	762.5	762.8	-0.3
2	DI H_2O	100	752.0	751.4	0.6
3	M_T	0	632.6	632.6	0.0
4	SG	200-300	925.6	912.3	13.3

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 2

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/26/2016		Job # 160282
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre / Mid / Post
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	5 / 5
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-3	Y		0.9658	Init DGM	
% Moisture	1.54 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM	
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00 / 0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓ / ✓
K factor		Est. Moisture	gm H_2O	13.6	M3/3A	0.04	%CO_2	Nozzle	
Filter #			$B_w$meas	1.54		20.94	%O_2	Stack TC	
Filter Wt.			$B_w$sat	3.97	Fo=		F_d=	M_s 28.68	M_d 28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Outlet			Orifice Pressure ΔH in. H_2O Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	14:30	0.000	0.4	NA	NA	57			NA	250	250	NA	NA	0.0	
SP	10.0	20.0		4.039	0.4	NA	NA	58			NA	250	250	NA	NA	0.0	
SP	20.0	30.0	*14:57	7.978	0.4	NA	NA	61			NA	250	250	NA	NA	0.0	
SP	30.0	40.0		12.003	0.4	NA	NA	62			NA	250	250	NA	NA	0.0	
SP	40.0	50.0		16.021	0.4	NA	NA	63			NA	250	250	NA	NA	0.0	
SP	50.0	60.0		20.005	0.4	NA	NA	63			NA	250	250	NA	NA	0.0	
SP	60.0		15:47	23.979													
Final			15:47	23.979													
Sum or avg	60.0			23.979	0.400	NA	NA	60.7			NA				Max	0.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.061
Sample Vol. dscm	0.023
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

Testing paused 14:40-14:57 due to unit upset.

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 3

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.	Run No.	3	Date	10/26/2016	Job #	160282
Address	White Swan, WA						
Location	Press Vent #1 (West Vent)						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal		Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box		A_s foot^2	11.54	Vacuum	10		5
Umbical	Meter box	RET-1	Y	0.977	Init DGM			
Stack TC	TC Readout		$\Delta H_@$	1.668	Final DGM			
Tedlar Bag	Pitot	MW-5-1	C_p	0.84	Leak rate	0.002		0.002
Orsat Pump	Nozzle	NA	D_N in inches	NA	Pitot	✓		✓
Est. Moisture	gm H_2O	14.6	M3/3A 0.05	%CO_2	Nozzle			
	$B_w$meas	1.65	20.94	%O_2	Stack TC			
	$B_w$sat	4.35	Fo=	F_d=	M_s	28.67	M_d	28.84

% Moisture	1.65	Meas
P_{Br} in "Hg	29.38	
P static in H_2O	0.1	
K factor		
Filter #		
Filter Wt.		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	16:28	998.423	0.22	0.47	83	65	65		1.5	NA	NA	NA	59	3.0	
2	10.0	20.0		1005.500	0.22	0.47	85	66	66		1.5	NA	NA	NA	59	3.0	
3	20.0	30.0		1012.550	0.23	0.48	86	67	67		1.5	NA	NA	NA	59	2.0	
4	30.0	40.0		1019.700	0.22	0.47	86	67	67		1.5	NA	NA	NA	60	2.0	
5	40.0	50.0		1026.850	0.23	0.48	86	67	68		1.5	NA	NA	NA	61	2.0	
6	50.0	60.0		1033.900	0.23	0.48	86	68	68		1.5	NA	NA	NA	61	2.0	
7	60.0		17:28	1040.993	0.23	0.48	87										
8					0.23	0.48	88										
9					0.23	0.48	89										
10					0.22	0.47	88										
11					0.22	0.47	89										
12					0.21	0.46	88										
B-1					0.22	0.47	87										
2					0.23	0.48	86										
3					0.24	0.49	85										
4					0.24	0.49	86										
5					0.24	0.49	87										
6					0.24	0.49	87										
7					0.24	0.49	87										
8					0.23	0.48	87										
9					0.23	0.48	87										
10					0.23	0.48	87										
11					0.23	0.48	87										
12					0.22	0.47	87										
Final			17:28	1040.993													
Sum or avg		60.0		42.570	0.228	0.478	86.7	66.7	66.8		1.500				Max	3.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	41.091
Sample Vol. dscm	1.164
Flow	
ft/sec	27.64
dscfm	17,855.9
acfm	19,139.0

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	754.7	754.5	0.2
2	DI H_2O	100	748.6	748.3	0.3
3	M_T	0	631.8	630.7	1.1
4	SG	200-300	918.6	905.6	13.0

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

NCASI Method 99.02
Run 3

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	3		Date	10/26/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Press Vent #1 (West Vent)	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	6		6
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-3	Y		0.9658	Init DGM			
% Moisture	1.65 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	29.38	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	14.6	M3/3A	0.05	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	1.65		20.94	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	4.35	Fo=		F_d=	M_s	28.67	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Outlet		Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	16:28	0.000	0.4	NA	NA	62			NA	250	250	NA	NA	0.0	
SP	10.0	20.0		4.019	0.4	NA	NA	61			NA	250	250	NA	NA	0.0	
SP	20.0	30.0		7.989	0.4	NA	NA	61			NA	250	250	NA	NA	0.0	
SP	30.0	40.0		12.001	0.4	NA	NA	60			NA	250	250	NA	NA	0.0	
SP	40.0	50.0		15.996	0.4	NA	NA	61			NA	250	250	NA	NA	0.0	
SP	50.0	60.0		20.042	0.4	NA	NA	60			NA	250	250	NA	NA	0.0	
SP	60.0		17:28	24.005													
Final			17:28	24.005													
Sum or avg	60.0			24.005	0.400	NA	NA	60.8			NA				Max	0.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.078
Sample Vol. dscm	0.023
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____

Checked By: _____ _____
Reviewer (Signature/Date) Team Leader (Signature/Date)

Run Averages

Run averages corrected for bias

Operator: SN/AK/JA/JH
Plant Name: Neucor, Inc.
Location: Press Vent #1

Run	Date	Time	O_2_1	CO_2_1
			% vd	% vd
1	10/26/2016	12:25 - 13:25	20.945	0.029
2	10/26/2016	14:49 - 15:49	20.942	0.037
3	10/26/2016	16:27 - 17:27	20.939	0.046

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 1		
10/26/2016	13:25:15	12:25:15	20.615	-0.002
10/26/2016	13:26:15	12:26:15	20.521	-0.337
10/26/2016	13:27:15	12:27:15	20.616	-0.010
10/26/2016	13:28:15	12:28:15	20.618	-0.022
10/26/2016	13:29:15	12:29:15	20.618	-0.016
10/26/2016	13:30:15	12:30:15	20.618	-0.012
10/26/2016	13:31:15	12:31:15	20.618	-0.024
10/26/2016	13:32:15	12:32:15	20.617	-0.024
10/26/2016	13:33:15	12:33:15	20.610	-0.017
10/26/2016	13:34:15	12:34:15	20.615	-0.022
10/26/2016	13:35:15	12:35:15	20.618	-0.050
10/26/2016	13:36:15	12:36:15	20.611	-0.030
10/26/2016	13:37:15	12:37:15	20.617	-0.054
10/26/2016	13:38:15	12:38:15	20.613	-0.052
10/26/2016	13:39:15	12:39:15	20.612	-0.054
10/26/2016	13:40:15	12:40:15	20.614	-0.049
10/26/2016	13:41:15	12:41:15	20.613	-0.065
10/26/2016	13:42:15	12:42:15	20.617	-0.049
10/26/2016	13:43:15	12:43:15	20.615	-0.066
10/26/2016	13:44:15	12:44:15	20.608	-0.049
10/26/2016	13:45:15	12:45:15	20.611	-0.060
10/26/2016	13:46:15	12:46:15	20.612	-0.059
10/26/2016	13:47:15	12:47:15	20.606	-0.050
10/26/2016	13:48:15	12:48:15	20.608	-0.059
10/26/2016	13:49:15	12:49:15	20.611	-0.058
10/26/2016	13:50:15	12:50:15	20.609	-0.045
10/26/2016	13:51:15	12:51:15	20.611	-0.049
10/26/2016	13:52:15	12:52:15	20.614	-0.058
10/26/2016	13:53:15	12:53:15	20.611	-0.038
10/26/2016	13:54:15	12:54:15	20.615	-0.038
10/26/2016	13:55:15	12:55:15	20.618	-0.051
10/26/2016	13:56:15	12:56:15	20.616	-0.038
10/26/2016	13:57:15	12:57:15	20.615	-0.032
10/26/2016	13:58:15	12:58:15	20.619	-0.048
10/26/2016	13:59:15	12:59:15	20.615	-0.033
10/26/2016	14:00:15	13:00:15	20.614	-0.029
10/26/2016	14:01:15	13:01:15	20.616	-0.030
10/26/2016	14:02:15	13:02:15	20.615	-0.041
10/26/2016	14:03:15	13:03:15	20.618	-0.022
10/26/2016	14:04:15	13:04:15	20.621	-0.046
10/26/2016	14:05:15	13:05:15	20.619	-0.044
10/26/2016	14:06:15	13:06:15	20.619	-0.041
10/26/2016	14:07:15	13:07:15	20.612	-0.022
10/26/2016	14:08:15	13:08:15	20.620	-0.035
10/26/2016	14:09:15	13:09:15	20.615	-0.026
10/26/2016	14:10:15	13:10:15	20.615	-0.019
10/26/2016	14:11:15	13:11:15	20.621	-0.046
10/26/2016	14:12:15	13:12:15	20.618	-0.038
10/26/2016	14:13:15	13:13:15	20.617	-0.038
10/26/2016	14:14:15	13:14:15	20.612	-0.031
10/26/2016	14:15:15	13:15:15	20.620	-0.050
10/26/2016	14:16:15	13:16:15	20.613	-0.033
10/26/2016	14:17:15	13:17:15	20.616	-0.044
10/26/2016	14:18:15	13:18:15	20.614	-0.039
10/26/2016	14:19:15	13:19:15	20.620	-0.031
10/26/2016	14:20:15	13:20:15	20.622	-0.050
10/26/2016	14:21:15	13:21:15	20.604	-0.029
10/26/2016	14:22:15	13:22:15	20.617	-0.049
10/26/2016	14:23:15	13:23:15	20.615	-0.035
10/26/2016	14:24:15	13:24:15	20.615	-0.036
	Average:		**20.613**	**-0.044**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 2		
10/26/2016	15:49:15	14:49:15	20.621	-0.080
10/26/2016	15:50:15	14:50:15	20.618	-0.078
10/26/2016	15:51:15	14:51:15	20.617	-0.077
10/26/2016	15:52:15	14:52:15	20.611	-0.058
10/26/2016	15:53:15	14:53:15	20.619	-0.074
10/26/2016	15:54:15	14:54:15	20.613	-0.050
10/26/2016	15:55:15	14:55:15	20.615	-0.044
10/26/2016	15:56:15	14:56:15	20.617	-0.043
10/26/2016	15:57:15	14:57:15	20.617	-0.051
10/26/2016	15:58:15	14:58:15	20.616	-0.052
10/26/2016	15:59:15	14:59:15	20.614	-0.043
10/26/2016	16:00:15	15:00:15	20.612	-0.042
10/26/2016	16:01:15	15:01:15	20.617	-0.040
10/26/2016	16:02:15	15:02:15	20.617	-0.047
10/26/2016	16:03:15	15:03:15	20.613	-0.047
10/26/2016	16:04:15	15:04:15	20.613	-0.037
10/26/2016	16:05:15	15:05:15	20.612	-0.035
10/26/2016	16:06:15	15:06:15	20.613	-0.034
10/26/2016	16:07:15	15:07:15	20.614	-0.046
10/26/2016	16:08:15	15:08:15	20.612	-0.039
10/26/2016	16:09:15	15:09:15	20.610	-0.030
10/26/2016	16:10:15	15:10:15	20.613	-0.030
10/26/2016	16:11:15	15:11:15	20.611	-0.031
10/26/2016	16:12:15	15:12:15	20.612	-0.041
10/26/2016	16:13:15	15:13:15	20.611	-0.033
10/26/2016	16:14:15	15:14:15	20.611	-0.026
10/26/2016	16:15:15	15:15:15	20.609	-0.026
10/26/2016	16:16:15	15:16:15	20.609	-0.028
10/26/2016	16:17:15	15:17:15	20.612	-0.037
10/26/2016	16:18:15	15:18:15	20.610	-0.027
10/26/2016	16:19:15	15:19:15	20.610	-0.023
10/26/2016	16:20:15	15:20:15	20.609	-0.022
10/26/2016	16:21:15	15:21:15	20.608	-0.022
10/26/2016	16:22:15	15:22:15	20.612	-0.036
10/26/2016	16:23:15	15:23:15	20.612	-0.024
10/26/2016	16:24:15	15:24:15	20.611	-0.019
10/26/2016	16:25:15	15:25:15	20.610	-0.017
10/26/2016	16:26:15	15:26:15	20.613	-0.022
10/26/2016	16:27:15	15:27:15	20.611	-0.032
10/26/2016	16:28:15	15:28:15	20.609	-0.019
10/26/2016	16:29:15	15:29:15	20.607	-0.017
10/26/2016	16:30:15	15:30:15	20.607	-0.015
10/26/2016	16:31:15	15:31:15	20.607	-0.016
10/26/2016	16:32:15	15:32:15	20.608	-0.028
10/26/2016	16:33:15	15:33:15	20.605	-0.017
10/26/2016	16:34:15	15:34:15	20.605	-0.017
10/26/2016	16:35:15	15:35:15	20.605	-0.021
10/26/2016	16:36:15	15:36:15	20.605	-0.030
10/26/2016	16:37:15	15:37:15	20.609	-0.045
10/26/2016	16:38:15	15:38:15	20.604	-0.034
10/26/2016	16:39:15	15:39:15	20.604	-0.035
10/26/2016	16:40:15	15:40:15	20.604	-0.035
10/26/2016	16:41:15	15:41:15	20.605	-0.041
10/26/2016	16:42:15	15:42:15	20.604	-0.047
10/26/2016	16:43:15	15:43:15	20.605	-0.033
10/26/2016	16:44:15	15:44:15	20.602	-0.031
10/26/2016	16:45:15	15:45:15	20.605	-0.029
10/26/2016	16:46:15	15:46:15	20.607	-0.038
10/26/2016	16:47:15	15:47:15	20.606	-0.038
10/26/2016	16:48:15	15:48:15	20.603	-0.027
	Average:		**20.610**	**-0.036**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Press Vent #1 (East & West Vents)

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 3		
10/26/2016	17:27:15	16:27:15	20.602	-0.039
10/26/2016	17:28:15	16:28:15	20.597	-0.037
10/26/2016	17:29:15	16:29:15	20.599	-0.038
10/26/2016	17:30:15	16:30:15	20.600	-0.039
10/26/2016	17:31:15	16:31:15	20.604	-0.049
10/26/2016	17:32:15	16:32:15	20.601	-0.040
10/26/2016	17:33:15	16:33:15	20.602	-0.035
10/26/2016	17:34:15	16:34:15	20.601	-0.034
10/26/2016	17:35:15	16:35:15	20.600	-0.032
10/26/2016	17:36:15	16:36:15	20.600	-0.046
10/26/2016	17:37:15	16:37:15	20.601	-0.034
10/26/2016	17:38:15	16:38:15	20.601	-0.028
10/26/2016	17:39:15	16:39:15	20.599	-0.028
10/26/2016	17:40:15	16:40:15	20.600	-0.029
10/26/2016	17:41:15	16:41:15	20.603	-0.040
10/26/2016	17:42:15	16:42:15	20.600	-0.028
10/26/2016	17:43:15	16:43:15	20.597	-0.024
10/26/2016	17:44:15	16:44:15	20.596	-0.021
10/26/2016	17:45:15	16:45:15	20.597	-0.024
10/26/2016	17:46:15	16:46:15	20.602	-0.032
10/26/2016	17:47:15	16:47:15	20.600	-0.019
10/26/2016	17:48:15	16:48:15	20.599	-0.023
10/26/2016	17:49:15	16:49:15	20.598	-0.020
10/26/2016	17:50:15	16:50:15	20.604	-0.025
10/26/2016	17:51:15	16:51:15	20.605	-0.036
10/26/2016	17:52:15	16:52:15	20.600	-0.024
10/26/2016	17:53:15	16:53:15	20.601	-0.026
10/26/2016	17:54:15	16:54:15	20.600	-0.028
10/26/2016	17:55:15	16:55:15	20.602	-0.031
10/26/2016	17:56:15	16:56:15	20.602	-0.044
10/26/2016	17:57:15	16:57:15	20.601	-0.052
10/26/2016	17:58:15	16:58:15	20.603	-0.047
10/26/2016	17:59:15	16:59:15	20.599	-0.032
10/26/2016	18:00:15	17:00:15	20.609	-0.028
10/26/2016	18:01:15	17:01:15	20.602	-0.029
10/26/2016	18:02:15	17:02:15	20.607	-0.028
10/26/2016	18:03:15	17:03:15	20.607	-0.039
10/26/2016	18:04:15	17:04:15	20.603	-0.027
10/26/2016	18:05:15	17:05:15	20.605	-0.022
10/26/2016	18:06:15	17:06:15	20.605	-0.019
10/26/2016	18:07:15	17:07:15	20.610	-0.023
10/26/2016	18:08:15	17:08:15	20.612	-0.031
10/26/2016	18:09:15	17:09:15	20.612	-0.019
10/26/2016	18:10:15	17:10:15	20.607	-0.018
10/26/2016	18:11:15	17:11:15	20.614	-0.013
10/26/2016	18:12:15	17:12:15	20.613	-0.022
10/26/2016	18:13:15	17:13:15	20.620	-0.027
10/26/2016	18:14:15	17:14:15	20.618	-0.012
10/26/2016	18:15:15	17:15:15	20.616	-0.011
10/26/2016	18:16:15	17:16:15	20.621	-0.009
10/26/2016	18:17:15	17:17:15	20.626	-0.017
10/26/2016	18:18:15	17:18:15	20.625	-0.022
10/26/2016	18:19:15	17:19:15	20.625	-0.018
10/26/2016	18:20:15	17:20:15	20.626	-0.020
10/26/2016	18:21:15	17:21:15	20.623	-0.023
10/26/2016	18:22:15	17:22:15	20.627	-0.036
10/26/2016	18:23:15	17:23:15	20.625	-0.036
10/26/2016	18:24:15	17:24:15	20.622	-0.025
10/26/2016	18:25:15	17:25:15	20.623	-0.023
10/26/2016	18:26:15	17:26:15	20.625	-0.021
	Average:		**20.607**	**-0.028**

Method 1
Data Sheet

Method 1 and 2 Data Sheet

Plant	Neucor, Inc.	Time	Date	10/27/2016	Job # 160282
Address	White Swan, WA	C_p	Wetbulb temp	Md	$\%CO_2$
Location	Line Former #1	P_{Br} in "Hg	% moisture	Ms	$\%O_2$
Personnel	SN/AK/JA/JH	P static in H_2O			Fo -

Distance from Far Wall to Outside of Port, inches		32.0
Width (if Rectangular)		48.0
Nipple Length and/or Wall Thickness, inches		4.0
Diameter, inches		
Equivalent Diameter (only when rectangular)		35.37
Area in square feet		9.33
Straight Distance before sampling location, inches		29
Number of Diameters Before Location*		0.60
Straight Distance after sampling location, inches		19
Number of Diameters After Location*		0.54
Enter "P" for Particulate or "V" for velocity		V
Minimum Number of Total Points		25
Number of Total Points Chosen	OK	25
Number of Ports	OK	5
Number of Points per Port	OK	5

Draw sampling location, plan & top view.

Points	% Duct Depth	Distance from Outside of Port	Stack Yaw & Velocity Data: Yaw Angle Degrees	ΔP inch H_2O	Temp °F	Velocity Feet/sec
A1	10.0%	6.8				
A2	30.0%	12.4				
A3	50.0%	18.0				
A4	70.0%	23.6				
A5	90.0%	29.2				
		Average				

dscfm

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specification ____ Reasonableness ____

Checked By: ____ Reviewer (Signature/Date) ____ Team Leader (Signature/Date)

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Line Former #1	Personnel	SN/AK/JA/JH	Date	10/27/2016

	Run Number	*1	2	3	Average
Date	Test Date	10/27/2016	10/27/2016	10/27/2016	
Start	Run Start Time	8:29	10:26	11:47	
	Run Finish Time	10:03	11:26	12:47	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	1.010	1.010	1.010	1.010
P_{Br}	Barometric Pressure, in. Hg	28.90	28.90	28.90	28.90
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	41.975	42.304	41.931	42.070
t_m	Average Dry Gas Meter Temperature, °F	54.4	56.0	56.2	55.5
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	42.191	42.391	42.004	42.196
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.195	1.201	1.190	1.195
V_{lc}	Total Moisture Liquid collected, g	14.5	16.4	11.4	14.1
V_{wstd}	Volume of Water Vapor, scf	0.68	0.77	0.54	0.66
% H_2O	Moisture Content of Stack Gas, %	1.59	1.79	1.26	1.55
%CO_2	Carbon Dioxide, % vd	0.03	0.03	0.02	0.03
%O_2	Oxygen, % vd	20.96	20.98	20.99	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.65	28.71	28.68
P_g	Flue Gas Static Pressure, in. H_2O	0.15	0.15	0.15	0.15
P_s	Absolute Flue Gas Pressure, in. Hg	28.91	28.91	28.91	28.91
t_s	Average Stack Gas Temperature, °F	72.6	76.0	73.0	73.9
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.239	0.361	0.490	0.363
v_s	Average Stack Gas Velocity, ft/sec	13.75	20.83	28.19	20.92
A_s	Stack Crossectional Area, ft^2	9.33	9.33	9.33	9.33
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	7,258	10,903	14,922	11,028
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	7,700	11,664	15,788	11,717
ODT	Oven dried tons per hour	3.28	3.17	3.31	3.25
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	54.50	59.67	63.50	59.22
V_m	Gas Meter Volume Sampled, L	24.041	23.791	23.723	23.852
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.024	0.024	0.024
$C_2H_4O_{\mu g/mL}$	Acetaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	75	76	74	75
$C_2H_4O_{\mu g}$	Total Mass of Acetaldehyde in the Sample, µg	< 18.8	< 19.0	< 18.5	< 18.8
$C_2H_4O_{mg}$	Total Mass of Acetaldehyde in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_2H_4O_{mg/dscm}$	Acetaldehyde Concentration in Air, mg/dscm	< 0.78	< 0.80	< 0.78	< 0.79
$C_2H_4O_{ppmvd}$	Acetaldehyde Concentration, ppmvd	< 0.43	< 0.44	< 0.43	< 0.43
$C_2H_4O_{lb/hr}$	Acetaldehyde Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$C_3H_6O_{\mu g/mL}$	Propionaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	75	76	74	75
$C_3H_6O_{\mu g}$	Total Mass of Propionaldehyde in the Sample, µg	< 18.8	< 19.0	< 18.5	< 18.8
$C_3H_6O_{mg}$	Total Mass of Propionaldehyde in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_3H_6O_{mg/dscm}$	Propionaldehyde Concentration in Air, mg/dscm	< 0.78	< 0.80	< 0.78	< 0.79
$C_3H_6O_{ppmvd}$	Propionaldehyde Concentration, ppmvd	< 0.32	< 0.33	< 0.32	< 0.33
$C_3H_6O_{lb/hr}$	Propionaldehyde Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$CH_4O_{\mu g/mL}$	Methanol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	75	76	74	75
$CH_4O_{\mu g}$	Total Mass of Methanol in the Sample, µg	< 18.8	< 19.0	< 18.5	< 18.8
CH_4O_{mg}	Total Mass of Methanol in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$CH_4O_{mg/dscm}$	Methanol Concentration in Air, mg/dscm	< 0.78	< 0.80	< 0.78	< 0.79
CH_4O_{ppmvd}	Methanol Concentration, ppmvd	< 0.59	< 0.60	< 0.58	< 0.59
$CH_4O_{lb/hr}$	Methanol Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$CH_4O_{lb/ODT}$	Methanol Emission Rate, lb/ODT	< 0.006	< 0.010	< 0.013	< 0.010

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Line Former #1	Personnel	SN/AK/JA/JH	Date	10/27/2016

	Run Number	*1	2	3	Average
Date	Test Date	10/27/2016	10/27/2016	10/27/2016	
Start	Run Start Time	8:29	10:26	11:47	
	Run Finish Time	10:03	11:26	12:47	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	1.010	1.010	1.010	1.010
P_{Br}	Barometric Pressure, in. Hg	28.90	28.90	28.90	28.90
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	41.975	42.304	41.931	42.070
t_m	Average Dry Gas Meter Temperature, °F	54.4	56.0	56.2	55.5
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	42.191	42.391	42.004	42.196
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.195	1.201	1.190	1.195
V_{lc}	Total Moisture Liquid collected, g	14.5	16.4	11.4	14.1
V_{wstd}	Volume of Water Vapor, scf	0.68	0.77	0.54	0.66
% H_2O	Moisture Content of Stack Gas, %	1.59	1.79	1.26	1.55
%CO_2	Carbon Dioxide, % vd	0.03	0.03	0.02	0.03
%O_2	Oxygen, % vd	20.96	20.98	20.99	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	28.67	28.65	28.71	28.68
P_g	Flue Gas Static Pressure, in. H_2O	0.15	0.15	0.15	0.15
P_s	Absolute Flue Gas Pressure, in. Hg	28.91	28.91	28.91	28.91
t_s	Average Stack Gas Temperature, °F	72.6	76.0	73.0	73.9
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	0.239	0.361	0.490	0.363
v_s	Average Stack Gas Velocity, ft/sec	13.75	20.83	28.19	20.92
A_s	Stack Crossectional Area, ft^2	9.33	9.33	9.33	9.33
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	7,258	10,903	14,922	11,028
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	7,700	11,664	15,788	11,717
ODT	Oven dried tons per hour	3.28	3.17	3.31	3.25
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	54.50	59.67	63.50	59.22
V_m	Gas Meter Volume Sampled, L	24.041	23.791	23.723	23.852
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.024	0.024	0.024
$C_3H_4O_{\mu g/mL}$	Acrolein Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	75	76	74	75
$C_3H_4O_{\mu g}$	Total Mass of Acrolein in the Sample, µg	< 18.8	< 19.0	< 18.5	< 18.8
$C_3H_4O_{mg}$	Total Mass of Acrolein in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_3H_4O_{mg/dscm}$	Acrolein Concentration in Air, mg/dscm	< 0.78	< 0.80	< 0.78	< 0.79
$C_3H_4O_{ppmvd}$	Acrolein Concentration, ppmvd	< 0.33	< 0.34	< 0.33	< 0.34
$C_3H_4O_{lb/hr}$	Acrolein Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$C_6H_6O_{\mu g/mL}$	Phenol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	75	76	74	75
$C_6H_6O_{\mu g}$	Total Mass of Phenol in the Sample, µg	< 18.8	< 19.0	< 18.5	< 18.8
$C_6H_6O_{mg}$	Total Mass of Phenol in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_6H_6O_{mg/dscm}$	Phenol Concentration in Air, mg/dscm	< 0.78	< 0.80	< 0.78	< 0.79
$C_6H_6O_{ppmvd}$	Phenol Concentration, ppmvd	< 0.20	< 0.20	< 0.20	< 0.20
$C_6H_6O_{lb/hr}$	Phenol Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$CH_2O_{\mu g/mL}$	Formaldehyde Concentration in the Sample, µg/mL	< 0.05	< 0.05	< 0.05	< 0.05
Vol.	Volume of Sample Collected, mL	75	76	74	75
$CH_2O_{\mu g}$	Total Mass of Formaldehyde in the Sample, µg	< 3.75	< 3.80	< 3.70	< 3.75
CH_2O_{mg}	Total Mass of Formaldehyde in the Sample, mg	< 0.004	< 0.004	< 0.004	< 0.004
$CH_2O_{mg/dscm}$	Formaldehyde Concentration in Air, mg/dscm	< 0.16	< 0.16	< 0.16	< 0.16
CH_2O_{ppmvd}	Formaldehyde Concentration, ppmvd	< 0.12	< 0.13	< 0.12	< 0.13
$CH_2O_{lb/hr}$	Formaldehyde Emission Rate, lb/hr	< 0.0042	< 0.0065	< 0.0087	< 0.0065
$CH_2O_{lb/ODT}$	Formaldehyde Emission Rate, lb/ODT	< 0.0013	< 0.0021	< 0.0026	< 0.0020
$HAPS_{lb/hr}$	Total HAPS Emission Rate, lb/hr	< 0.021	< 0.033	< 0.044	< 0.032
$HAPS_{lb/ODT}$	Total HAPS Emission Rate, lb/ODT	< 0.006	< 0.010	< 0.013	< 0.010

**Run paused due to unit upset. See the Problems, Deviations, and/or Exceptions section.*
For results below the reporting limit, half the reporting limit was used in the calculations.

USEPA Methods 2 & 4
Run 1

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	1		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Line Former #1	Reag. Box	Samp. box		A_s foot^2		9.33	Vacuum	15		7
Personnel	SN/AK/JA/JH	Umbical	Meter box	CCI-1	Y		1.010	Initial DGM			
% Moisture	1.59 Meas	Stack TC	TC Readout		$\Delta H_@$		1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	TIM5-1	C_p		0.84	Leak rate	0.000		0.000
P static in H_2O	0.15	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	14.5	M3/3A	0.03	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	1.59		20.96	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	2.78	Fo=		F_d=	M_s	28.67	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	9:02	928.690	0.04	0.20	68	52	53		1.5	NA	NA	NA	58	5.5	
2	10.0	20.0		935.750	0.05	0.22	70	53	52		1.5	NA	NA	NA	58	5.5	
3	20.0	30.0		942.770	0.06	0.24	72	56	53		1.5	NA	NA	NA	60	5.5	
4	30.0	40.0		949.710	0.07	0.26	73	57	53		1.5	NA	NA	NA	60	5.5	
5	40.0	50.0		956.680	0.05	0.22	73	58	53		1.5	NA	NA	NA	62	5.5	
B-1	50.0	60.0		963.670	0.04	0.20	73	59	54		1.5	NA	NA	NA	62	5.5	
2	60.0		10:03	970.665	0.06	0.24	73										
3					0.07	0.26	73										
4					0.07	0.26	73										
5					0.05	0.22	73										
C-1					0.05	0.22	73										
2					0.07	0.26	73										
3					0.07	0.26	73										
4					0.07	0.26	73										
5					0.04	0.20	73										
D-1					0.04	0.20	73										
2					0.06	0.24	73										
3					0.06	0.24	73										
4					0.07	0.26	73										
5					0.06	0.24	73										
E-1					0.05	0.22	73										
2					0.05	0.22	73										
3					0.07	0.26	73										
4					0.07	0.26	73										
5					0.05	0.22	73										
Final			10:03	970.665													
Sum or avg	60.0			41.975	0.058	0.239	72.6	55.8	53.0		1.500				Max	5.5	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	42.191
Sample Vol. dscm	1.195
Flow	
ft/sec	13.75
dscfm	7,257.6
acfm	7,699.7

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	753.9	754.5	-0.6
2	DI H_2O	100	742.0	741.4	0.6
3	M_T	0	628.7	628.7	0.0
4	SG	200-300	891.2	876.7	14.5

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 1

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	1		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Line Former #1	Reag. Box	Samp. box		A_s foot^2		9.33	Vacuum	10		5
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1	Y		1.0134	Initial DGM			
% Moisture	1.59 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	14.5	M3/3A	0.03	%CO_2	Nozzle			
Filter #			$B_w$meas	1.59		20.96	%O_2	Stack TC			
Filter Wt.			$B_w$sat	2.78	Fo=		F_d=	M_s	28.67	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	8:29	5897.56	0.4	NA	NA	54	53		NA	250	250	NA	NA	0.0	
SP	10.0	20.0	*9:13	5903.30	0.4	NA	NA	54	53		NA	250	250	NA	NA	0.0	
SP	20.0	30.0		5904.95	0.4	NA	NA	54	53		NA	250	250	NA	NA	0.0	
SP	30.0	40.0		5909.19	0.4	NA	NA	55	55		NA	250	250	NA	NA	0.0	
SP	40.0	50.0		5913.50	0.4	NA	NA	54	57		NA	250	250	NA	NA	0.0	
SP	50.0	60.0		5917.52	0.4	NA	NA	56	58		NA	250	250	NA	NA	0.0	
SP	60.0		10:03	5921.50													
Final			10:03	5921.500													
Sum or avg	60.0			23.940	0.400	NA	NA	54.5	54.8		NA					Max	0.0

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	24.041
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

Testing paused 8:31-9:01 due to unit upset.

QA/QC Check

Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ *Reviewer (Signature/Date) _____ *Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 2

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Line Former #1	Reag. Box	Samp. box		A_s foot^2		9.33	Vacuum	10		8
Personnel	SN/AK/JA/JH	Umbical	Meter box	CCI-1	Y		1.010	Init DGM			
% Moisture	1.79 Meas	Stack TC	TC Readout		$\Delta H_@$		1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	TIM5-1	C_p		0.84	Leak rate	0.010		0.010
P static in H_2O	0.15	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	16.4	M3/3A	0.03	%CO_2	Nozzle			
Filter #			$B_w$meas	1.79		20.98	%O_2	Stack TC			
Filter Wt.			$B_w$sat	3.12	Fo=		F_d=	M_s	28.65	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	10:28	970.944	0.13	0.36	76	54	53		1.5	NA	NA	NA	56	6.0	
2	10.0	20.0		978.480	0.13	0.36	76	56	53		1.5	NA	NA	NA	60	6.0	
3	20.0	30.0		985.440	0.13	0.36	76	58	54		1.5	NA	NA	NA	64	6.0	
4	30.0	40.0		992.420	0.13	0.36	76	59	54		1.5	NA	NA	NA	64	6.0	
5	40.0	50.0		999.360	0.13	0.36	76	60	55		1.5	NA	NA	NA	64	6.0	
B-1	50.0	60.0		1006.300	0.13	0.36	76	61	55		1.5	NA	NA	NA	63	6.0	
2	60.0		11:28	1013.248	0.13	0.36	76										
3					0.13	0.36	76										
4					0.13	0.36	76										
5					0.13	0.36	76										
C-1					0.13	0.36	76										
2					0.13	0.36	76										
3					0.13	0.36	76										
4					0.13	0.36	76										
5					0.13	0.36	76										
D-1					0.13	0.36	76										
2					0.13	0.36	76										
3					0.13	0.36	76										
4					0.13	0.36	76										
5					0.13	0.36	76										
E-1					0.13	0.36	76										
2					0.13	0.36	76										
3					0.13	0.36	76										
4					0.13	0.36	76										
5					0.13	0.36	76										
Final			11:28	1013.248													
Sum or avg	60.0			42.304	0.130	0.361	76.0	58.0	54.0		1.500				Max	6.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	42.391
Sample Vol. dscm	1.201
Flow	
ft/sec	20.83
dscfm	10,903.4
acfm	11,663.9

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	639.0	638.5	0.5
2	DI H_2O	100	799.7	798.2	1.5
3	M_T	0	544.8	543.9	0.9
4	SG	200-300	874.8	861.3	13.5

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ _____
Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 2

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.	Run No.	2	Date	10/27/2016	Job #	160282
Address	White Swan, WA						
Location	Line Former #1						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	9.33	Vacuum	10		5
Umbical	Meter box VOST-1	Y	1.0134	Init DGM			
Stack TC	TC Readout	$\Delta H_@$	NA	Final DGM			
Tedlar Bag	Pitot NA	C_p	NA	Leak rate	0.00		0.00
Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
Est. Moisture	gm H_2O 16.4	M3/3A 0.03	%CO_2	Nozzle			
	$B_w$meas 1.79	20.98	%O_2	Stack TC			
	$B_w$sat 3.12	Fo=	F_d=	M_s 28.65	M_d 28.84		

% Moisture	1.79	Meas
P_{Br} in "Hg	28.90	
P static in H_2O	NA	
K factor		
Filter #		
Filter Wt.		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	10:26	5921.83	0.4	NA	NA	58	59		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5925.80	0.4	NA	NA	58	59		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		5929.81	0.4	NA	NA	59	59		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		5933.61	0.4	NA	NA	60	59		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		5937.77	0.4	NA	NA	61	61		NA	250	250	NA	NA	0.0	
SP	50.0	60.0		5941.74	0.4	NA	NA	62	63		NA	250	250	NA	NA	0.0	
SP	60.0		11:26	5945.76													
Final			11:26	5945.760													
Sum or avg	60.0			23.930	0.400	NA	NA	59.7	60.0		NA					Max 1.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.791
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 3

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	3		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Line Former #1	Reag. Box	Samp. box		A_s foot^2		9.33	Vacuum	10		10
Personnel	SN/AK/JA/JH	Umbical	Meter box	CCI-1	Y		1.010	Init DGM			
% Moisture	1.26 Meas	Stack TC	TC Readout		$\Delta H_@$		1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	TIM5-1	C_p		0.84	Leak rate	0.010		0.010
P static in H_2O	0.15	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	11.4	M3/3A	0.02	%CO_2	Nozzle			
Filter #			$B_w$meas	1.26		20.99	%O_2	Stack TC			
Filter Wt.			$B_w$sat	2.82	Fo=		F_d=	M_s	28.71	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	11:47	013.678	0.24	0.49	73	54	54		1.5	NA	NA	NA	58	6.0	
2	10.0	20.0		020.680	0.24	0.49	73	56	54		1.5	NA	NA	NA	62	6.0	
3	20.0	30.0		027.680	0.24	0.49	73	58	54		1.5	NA	NA	NA	64	6.0	
4	30.0	40.0		034.680	0.24	0.49	73	59	54		1.5	NA	NA	NA	66	6.0	
5	40.0	50.0		041.650	0.24	0.49	73	60	55		1.5	NA	NA	NA	64	6.0	
B-1	50.0	60.0		048.620	0.24	0.49	73	61	55		1.5	NA	NA	NA	61	6.0	
2	60.0		12:47	055.609	0.24	0.49	73										
3					0.24	0.49	73										
4					0.24	0.49	73										
5					0.24	0.49	73										
C-1					0.24	0.49	73										
2					0.24	0.49	73										
3					0.24	0.49	73										
4					0.24	0.49	73										
5					0.24	0.49	73										
D-1					0.24	0.49	73										
2					0.24	0.49	73										
3					0.24	0.49	73										
4					0.24	0.49	73										
5					0.24	0.49	73										
E-1					0.24	0.49	73										
2					0.24	0.49	73										
3					0.24	0.49	73										
4					0.24	0.49	73										
5					0.24	0.49	73										
Final			12:47	55.609													
Sum or avg	60.0			41.931	0.240	0.490	73.0	58.0	54.3		1.500				Max	6.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	42.004
Sample Vol. dscm	1.190
Flow	
ft/sec	28.19
dscfm	14,921.9
acfm	15,788.4

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	753.7	753.9	-0.2
2	DI H_2O	100	742.0	742.0	0.0
3	M_T	0	630.1	628.7	1.4
4	SG	200-300	901.4	891.2	10.2

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____

Checked By: _____ _____
Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 3

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.			Run No.	3		Date	10/27/2016		Job #	160282				
Address	White Swan, WA	Equipment ID	Cal			Constants			Checks	Pre	Mid	Post			
Location	Line Former #1	Reag. Box	Samp. box			A_s foot^2		9.33	Vacuum	10		5			
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1		Y		1.0134	Init DGM						
% Moisture	1.26 Meas	Stack TC	TC Readout			$\Delta H_@$		NA	Final DGM						
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	NA		C_p		NA	Leak rate	0.00		0.00			
P static in H_2O	NA	Orsat Pump	Nozzle	NA		D_N in inches		NA	Pitot	✓		✓			
K factor		Est. Moisture	gm H_2O	11.4		M3/3A	0.02	%CO_2	Nozzle						
Filter #			$B_w$meas	1.26			20.99	%O_2	Stack TC						
Filter Wt.			$B_w$sat	2.82		Fo=		F_d=	M_s	28.71	M_d	28.84			

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	11:47	5946.02	0.4	NA	NA	70	63		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5950.01	0.4	NA	NA	62	60		NA	250	250	NA	NA	0.0	
SP	20.0	30.0		5954.04	0.4	NA	NA	62	60		NA	250	250	NA	NA	0.0	
SP	30.0	40.0		5957.97	0.4	NA	NA	62	60		NA	250	250	NA	NA	0.0	
SP	40.0	50.0		5962.03	0.4	NA	NA	61	60		NA	250	250	NA	NA	0.0	
SP	50.0	60.0		5966.98	0.4	NA	NA	64	65		NA	250	250	NA	NA	0.0	
SP	60.0		12:47	5970.00													
Final			12:47	5970.000													
Sum or avg	60.0			23.980	0.400	NA	NA	63.5	61.3		NA					Max	1.0

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.723
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

Neucor, Inc.
White Swan, WA

Run Averages

Line Former #1
October 27, 2016

Run averages corrected for bias

Operator: SN/AK/JA/JH
Plant Name: Neucor, Inc.
Location: Line Former #1

Run	Date	Time	O_2_1	CO_2_1
			% vd	% vd
1	10/27/2016	9:03 - 10:03	20.962	0.027
2	10/27/2016	10:27 - 11:27	20.976	0.033
3	10/27/2016	11:47 - 12:47	20.988	0.018

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Line Former #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 1		
10/27/2016	10:03:15	9:03:15	20.556	0.161
10/27/2016	10:04:15	9:04:15	20.561	0.159
10/27/2016	10:05:15	9:05:15	20.556	0.161
10/27/2016	10:06:15	9:06:15	20.559	0.156
10/27/2016	10:07:15	9:07:15	20.556	0.158
10/27/2016	10:08:15	9:08:15	20.557	0.156
10/27/2016	10:09:15	9:09:15	20.558	0.154
10/27/2016	10:10:15	9:10:15	20.556	0.152
10/27/2016	10:11:15	9:11:15	20.557	0.154
10/27/2016	10:12:15	9:12:15	20.558	0.155
10/27/2016	10:13:15	9:13:15	20.555	0.157
10/27/2016	10:14:15	9:14:15	20.555	0.156
10/27/2016	10:15:15	9:15:15	20.557	0.158
10/27/2016	10:16:15	9:16:15	20.556	0.159
10/27/2016	10:17:15	9:17:15	20.559	0.160
10/27/2016	10:18:15	9:18:15	20.554	0.163
10/27/2016	10:19:15	9:19:15	20.556	0.165
10/27/2016	10:20:15	9:20:15	20.556	0.168
10/27/2016	10:21:15	9:21:15	20.554	0.166
10/27/2016	10:22:15	9:22:15	20.556	0.169
10/27/2016	10:23:15	9:23:15	20.554	0.167
10/27/2016	10:24:15	9:24:15	20.555	0.169
10/27/2016	10:25:15	9:25:15	20.553	0.170
10/27/2016	10:26:15	9:26:15	20.551	0.172
10/27/2016	10:27:15	9:27:15	20.552	0.171
10/27/2016	10:28:15	9:28:15	20.553	0.172
10/27/2016	10:29:15	9:29:15	20.553	0.172
10/27/2016	10:30:15	9:30:15	20.550	0.173
10/27/2016	10:31:15	9:31:15	20.551	0.173
10/27/2016	10:32:15	9:32:15	20.551	0.174
10/27/2016	10:33:15	9:33:15	20.552	0.171
10/27/2016	10:34:15	9:34:15	20.548	0.171
10/27/2016	10:35:15	9:35:15	20.550	0.171
10/27/2016	10:36:15	9:36:15	20.550	0.170
10/27/2016	10:37:15	9:37:15	20.546	0.172
10/27/2016	10:38:15	9:38:15	20.549	0.171
10/27/2016	10:39:15	9:39:15	20.549	0.169
10/27/2016	10:40:15	9:40:15	20.550	0.168
10/27/2016	10:41:15	9:41:15	20.551	0.170
10/27/2016	10:42:15	9:42:15	20.554	0.166
10/27/2016	10:43:15	9:43:15	20.548	0.165
10/27/2016	10:44:15	9:44:15	20.550	0.165
10/27/2016	10:45:15	9:45:15	20.550	0.162
10/27/2016	10:46:15	9:46:15	20.550	0.159
10/27/2016	10:47:15	9:47:15	20.547	0.157
10/27/2016	10:48:15	9:48:15	20.549	0.154
10/27/2016	10:49:15	9:49:15	20.549	0.155
10/27/2016	10:50:15	9:50:15	20.548	0.155
10/27/2016	10:51:15	9:51:15	20.547	0.156
10/27/2016	10:52:15	9:52:15	20.549	0.156
10/27/2016	10:53:15	9:53:15	20.546	0.156
10/27/2016	10:54:15	9:54:15	20.544	0.157
10/27/2016	10:55:15	9:55:15	20.545	0.159
10/27/2016	10:56:15	9:56:15	20.545	0.159
10/27/2016	10:57:15	9:57:15	20.545	0.160
10/27/2016	10:58:15	9:58:15	20.546	0.160
10/27/2016	10:59:15	9:59:15	20.545	0.162
10/27/2016	11:00:15	10:00:15	20.545	0.163
10/27/2016	11:01:15	10:01:15	20.544	0.164
10/27/2016	11:02:15	10:02:15	20.548	0.166
10/27/2016	11:03:15	10:03:15	20.547	0.178
	Average:		20.551	0.163

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Line Former #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 2		
10/27/2016	11:28:00	10:28:00	20.548	0.183
10/27/2016	11:29:00	10:29:00	20.547	0.180
10/27/2016	11:30:00	10:30:00	20.549	0.183
10/27/2016	11:31:00	10:31:00	20.553	0.181
10/27/2016	11:32:00	10:32:00	20.550	0.183
10/27/2016	11:33:00	10:33:00	20.556	0.181
10/27/2016	11:34:00	10:34:00	20.552	0.183
10/27/2016	11:35:00	10:35:00	20.555	0.184
10/27/2016	11:36:00	10:36:00	20.554	0.185
10/27/2016	11:37:00	10:37:00	20.558	0.185
10/27/2016	11:38:00	10:38:00	20.553	0.184
10/27/2016	11:39:00	10:39:00	20.558	0.186
10/27/2016	11:40:00	10:40:00	20.554	0.187
10/27/2016	11:41:00	10:41:00	20.560	0.192
10/27/2016	11:42:00	10:42:00	20.563	0.186
10/27/2016	11:43:00	10:43:00	20.564	0.184
10/27/2016	11:44:00	10:44:00	20.561	0.183
10/27/2016	11:45:00	10:45:00	20.566	0.184
10/27/2016	11:46:00	10:46:00	20.567	0.177
10/27/2016	11:47:00	10:47:00	20.568	0.175
10/27/2016	11:48:00	10:48:00	20.568	0.174
10/27/2016	11:49:00	10:49:00	20.571	0.171
10/27/2016	11:50:00	10:50:00	20.569	0.173
10/27/2016	11:51:00	10:51:00	20.567	0.171
10/27/2016	11:52:00	10:52:00	20.568	0.170
10/27/2016	11:53:00	10:53:00	20.570	0.168
10/27/2016	11:54:00	10:54:00	20.569	0.166
10/27/2016	11:55:00	10:55:00	20.571	0.162
10/27/2016	11:56:00	10:56:00	20.567	0.163
10/27/2016	11:57:00	10:57:00	20.569	0.159
10/27/2016	11:58:00	10:58:00	20.565	0.159
10/27/2016	11:59:00	10:59:00	20.566	0.159
10/27/2016	12:00:00	11:00:00	20.566	0.158
10/27/2016	12:01:00	11:01:00	20.568	0.161
10/27/2016	12:02:00	11:02:00	20.566	0.158
10/27/2016	12:03:00	11:03:00	20.569	0.156
10/27/2016	12:04:00	11:04:00	20.567	0.155
10/27/2016	12:05:00	11:05:00	20.572	0.156
10/27/2016	12:06:00	11:06:00	20.567	0.157
10/27/2016	12:07:00	11:07:00	20.569	0.155
10/27/2016	12:08:00	11:08:00	20.569	0.155
10/27/2016	12:09:00	11:09:00	20.569	0.156
10/27/2016	12:10:00	11:10:00	20.572	0.156
10/27/2016	12:11:00	11:11:00	20.570	0.156
10/27/2016	12:12:00	11:12:00	20.570	0.157
10/27/2016	12:13:00	11:13:00	20.571	0.157
10/27/2016	12:14:00	11:14:00	20.570	0.159
10/27/2016	12:15:00	11:15:00	20.571	0.159
10/27/2016	12:16:00	11:16:00	20.572	0.160
10/27/2016	12:17:00	11:17:00	20.570	0.158
10/27/2016	12:18:00	11:18:00	20.570	0.160
10/27/2016	12:19:00	11:19:00	20.573	0.161
10/27/2016	12:20:00	11:20:00	20.572	0.163
10/27/2016	12:21:00	11:21:00	20.575	0.164
10/27/2016	12:22:00	11:22:00	20.572	0.165
10/27/2016	12:23:00	11:23:00	20.572	0.168
10/27/2016	12:24:00	11:24:00	20.571	0.169
10/27/2016	12:25:00	11:25:00	20.572	0.168
10/27/2016	12:26:00	11:26:00	20.573	0.169
10/27/2016	12:27:00	11:27:00	20.575	0.155
	Average:		**20.565**	**0.169**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Line Former #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 3		
10/27/2016	12:48:00	11:48:00	20.577	0.151
10/27/2016	12:49:00	11:49:00	20.579	0.152
10/27/2016	12:50:00	11:50:00	20.578	0.152
10/27/2016	12:51:00	11:51:00	20.578	0.154
10/27/2016	12:52:00	11:52:00	20.575	0.155
10/27/2016	12:53:00	11:53:00	20.577	0.157
10/27/2016	12:54:00	11:54:00	20.575	0.160
10/27/2016	12:55:00	11:55:00	20.576	0.158
10/27/2016	12:56:00	11:56:00	20.576	0.158
10/27/2016	12:57:00	11:57:00	20.580	0.158
10/27/2016	12:58:00	11:58:00	20.580	0.161
10/27/2016	12:59:00	11:59:00	20.576	0.159
10/27/2016	13:00:00	12:00:00	20.576	0.159
10/27/2016	13:01:00	12:01:00	20.576	0.159
10/27/2016	13:02:00	12:02:00	20.578	0.159
10/27/2016	13:03:00	12:03:00	20.577	0.156
10/27/2016	13:04:00	12:04:00	20.574	0.156
10/27/2016	13:05:00	12:05:00	20.575	0.156
10/27/2016	13:06:00	12:06:00	20.576	0.153
10/27/2016	13:07:00	12:07:00	20.576	0.153
10/27/2016	13:08:00	12:08:00	20.577	0.152
10/27/2016	13:09:00	12:09:00	20.572	0.149
10/27/2016	13:10:00	12:10:00	20.576	0.149
10/27/2016	13:11:00	12:11:00	20.575	0.148
10/27/2016	13:12:00	12:12:00	20.575	0.152
10/27/2016	13:13:00	12:13:00	20.576	0.148
10/27/2016	13:14:00	12:14:00	20.576	0.148
10/27/2016	13:15:00	12:15:00	20.575	0.148
10/27/2016	13:16:00	12:16:00	20.576	0.145
10/27/2016	13:17:00	12:17:00	20.575	0.143
10/27/2016	13:18:00	12:18:00	20.575	0.143
10/27/2016	13:19:00	12:19:00	20.575	0.140
10/27/2016	13:20:00	12:20:00	20.573	0.139
10/27/2016	13:21:00	12:21:00	20.576	0.143
10/27/2016	13:22:00	12:22:00	20.572	0.141
10/27/2016	13:23:00	12:23:00	20.575	0.143
10/27/2016	13:24:00	12:24:00	20.575	0.145
10/27/2016	13:25:00	12:25:00	20.573	0.145
10/27/2016	13:26:00	12:26:00	20.575	0.149
10/27/2016	13:27:00	12:27:00	20.574	0.149
10/27/2016	13:28:00	12:28:00	20.573	0.151
10/27/2016	13:29:00	12:29:00	20.577	0.153
10/27/2016	13:30:00	12:30:00	20.574	0.155
10/27/2016	13:31:00	12:31:00	20.573	0.155
10/27/2016	13:32:00	12:32:00	20.575	0.156
10/27/2016	13:33:00	12:33:00	20.574	0.157
10/27/2016	13:34:00	12:34:00	20.576	0.158
10/27/2016	13:35:00	12:35:00	20.579	0.160
10/27/2016	13:36:00	12:36:00	20.577	0.162
10/27/2016	13:37:00	12:37:00	20.574	0.164
10/27/2016	13:38:00	12:38:00	20.579	0.165
10/27/2016	13:39:00	12:39:00	20.577	0.164
10/27/2016	13:40:00	12:40:00	20.574	0.167
10/27/2016	13:41:00	12:41:00	20.576	0.168
10/27/2016	13:42:00	12:42:00	20.574	0.170
10/27/2016	13:43:00	12:43:00	20.576	0.170
10/27/2016	13:44:00	12:44:00	20.574	0.171
10/27/2016	13:45:00	12:45:00	20.575	0.168
10/27/2016	13:46:00	12:46:00	20.578	0.166
10/27/2016	13:47:00	12:47:00	20.552	0.152
	Average:		**20.575**	**0.154**

Method 1
Data Sheet

Method 1 and 2 Data Sheet

Plant	Neucor, Inc.	Time	Date	10/27/2016	Job # 160282
Address	White Swan, WA	C_p	Wetbulb temp	Md	$\%CO_2$
Location	Dryer Vent # 1	P_{Br} in "Hg	% moisture	Ms	$\%O_2$
Personnel	SN/AK/JA/JH	P static in H_2O			Fo -

Distance from Far Wall to Outside of Port, inches		50.0
Width (if Rectangular)		
Nipple Length and/or Wall Thickness, inches		4.0
Diameter, inches		46.0
Equivalent Diameter (only when rectangular)		
Area in square feet		11.54
Straight Distance before sampling location, inches		95
Number of Diameters Before Location*		2.07
Straight Distance after sampling location, inches		25
Number of Diameters After Location*		0.54
Enter "P" for Particulate or "V" for velocity		V
Minimum Number of Total Points		16
Number of Total Points Chosen	OK	16
Number of Ports	OK	2
Number of Points per Port	OK	8

Draw sampling location, plan & top view.

Points	% Duct Depth	Distance from Outside of Port	Stack Yaw & Velocity Data: Yaw Angle Degrees	ΔP inch H_2O	Temp °F	Velocity Feet/sec
A1	3.2%	5.5				
A2	10.5%	8.8				
A3	19.4%	12.9				
A4	32.3%	18.9				
A5	67.7%	35.1				
A6	80.6%	41.1				
A7	89.5%	45.2				
A8	96.8%	48.5				
		Average				

dscfm

QA/QC Check
Completeness ____ Legibility ____ Accuracy ____ Specifications ____ Reasonableness ____
Checked By: ____ Reviewer (Signature/Date) ____ Team Leader (Signature/Date)

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Dryer Vent # 1	Personnel	SN/AK/JA/JH	Date	10/27/2016

	Run Number	1	2	3	Average
Date	Test Date	10/27/2016	10/27/2016	10/27/2016	
Start	Run Start Time	14:31	16:20	17:49	
	Run Finish Time	15:31	17:20	18:49	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	1.010	1.010	1.010	1.010
P_{Br}	Barometric Pressure, in. Hg	28.90	28.90	28.90	28.90
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	40.423	41.138	39.847	40.469
t_m	Average Dry Gas Meter Temperature, °F	57.8	63.6	56.3	59.3
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	40.363	40.626	39.904	40.298
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.143	1.151	1.130	1.141
V_{lc}	Total Moisture Liquid collected, g	82.7	90.4	88.4	87.2
V_{wstd}	Volume of Water Vapor, scf	3.90	4.26	4.17	4.11
% H_2O	Moisture Content of Stack Gas, %	8.81	9.50	9.46	9.25
%CO_2	Carbon Dioxide, % vd	0.03	0.01	0.03	0.02
%O_2	Oxygen, % vd	20.96	20.99	20.98	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	27.89	27.81	27.82	27.84
P_g	Flue Gas Static Pressure, in. H_2O	0.81	0.81	0.81	0.81
P_s	Absolute Flue Gas Pressure, in. Hg	28.96	28.96	28.96	28.96
t_s	Average Stack Gas Temperature, °F	139.0	140.0	139.0	139.3
$\sqrt{\Delta P}_{avg}$	Average Square-Root Velocity Head, in H_2O	1.304	1.304	1.304	1.304
v_s	Average Stack Gas Velocity, ft/sec	80.64	80.81	80.74	80.73
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	43,443	43,139	43,187	43,256
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	55,838	55,961	55,907	55,902
ODT	Oven dried tons per hour	2.85	2.79	2.88	2.84
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	58.67	66.83	56.67	60.72
V_m	Gas Meter Volume Sampled, L	23.822	23.485	21.703	23.003
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.023	0.022	0.023
$C_2H_4O_{\mu g/mL}$	Acetaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	76	77	76	76
$C_2H_4O_{\mu g}$	Total Mass of Acetaldehyde in the Sample, µg	< 19.0	< 19.3	< 19.0	< 19.1
$C_2H_4O_{mg}$	Total Mass of Acetaldehyde in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_2H_4O_{mg/dscm}$	Acetaldehyde Concentration in Air, mg/dscm	< 0.80	< 0.82	< 0.88	< 0.83
$C_2H_4O_{ppmvd}$	Acetaldehyde Concentration, ppmvd	< 0.44	< 0.45	< 0.48	< 0.45
$C_2H_4O_{lb/hr}$	Acetaldehyde Emission Rate, lb/hr	< 0.130	< 0.132	< 0.142	< 0.135
$C_3H_6O_{\mu g/mL}$	Propionaldehyde Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	76	77	76	76
$C_3H_6O_{\mu g}$	Total Mass of Propionaldehyde in the Sample, µg	< 19.0	< 19.3	< 19.0	< 19.1
$C_3H_6O_{mg}$	Total Mass of Propionaldehyde in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_3H_6O_{mg/dscm}$	Propionaldehyde Concentration in Air, mg/dscm	< 0.80	< 0.82	< 0.88	< 0.83
$C_3H_6O_{ppmvd}$	Propionaldehyde Concentration, ppmvd	< 0.33	< 0.34	< 0.36	< 0.34
$C_3H_6O_{lb/hr}$	Propionaldehyde Emission Rate, lb/hr	< 0.130	< 0.132	< 0.142	< 0.135
$CH_4O_{\mu g/mL}$	Methanol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	76	77	76	76
$CH_4O_{\mu g}$	Total Mass of Methanol in the Sample, µg	< 19.0	< 19.3	< 19.0	< 19.1
CH_4O_{mg}	Total Mass of Methanol in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$CH_4O_{mg/dscm}$	Methanol Concentration in Air, mg/dscm	< 0.80	< 0.82	< 0.88	< 0.83
CH_4O_{ppmvd}	Methanol Concentration, ppmvd	< 0.60	< 0.61	< 0.66	< 0.62
$CH_4O_{lb/hr}$	Methanol Emission Rate, lb/hr	< 0.130	< 0.132	< 0.142	< 0.135
$CH_4O_{lb/ODT}$	Methanol Emission Rate, lb/ODT	< 0.045	< 0.047	< 0.049	< 0.047

For results below the reporting limit, half the reporting limit was used in the calculations.

NCASI Method 99.02
Summary of Test Results

Plant	Neucor, Inc.	Address	White Swan, WA	Job #	160282
Location	Dryer Vent # 1	Personnel	SN/AK/JA/JH	Date	10/27/2016

	Run Number	1	2	3	Average
Date	Test Date	10/27/2016	10/27/2016	10/27/2016	
Start	Run Start Time	14:31	16:20	17:49	
	Run Finish Time	15:31	17:20	18:49	
Θ	Net Run Time, min.	60	60	60	60.0
C_p	Pitot Tube Coefficient	0.84	0.84	0.84	0.84
Y	Dry Gas Meter Calibration Factor	1.010	1.010	1.010	1.010
P_{Br}	Barometric Pressure, in. Hg	28.90	28.90	28.90	28.90
ΔH	Average orifice meter Differential, inches H_2O	1.50	1.50	1.50	1.50
V_m	Dry Gas Meter Volume Sampled, ft^3	40.423	41.138	39.847	40.469
t_m	Average Dry Gas Meter Temperature, °F	57.8	63.6	56.3	59.3
V_{mstd}	Dry Gas Meter Volume Sampled, dscf	40.363	40.626	39.904	40.298
V_{mstd}	Dry Gas Meter Volume Sampled, dscm	1.143	1.151	1.130	1.141
V_{lc}	Total Moisture Liquid collected, g	82.7	90.4	88.4	87.2
V_{wstd}	Volume of Water Vapor, scf	3.90	4.26	4.17	4.11
% H_2O	Moisture Content of Stack Gas, %	8.81	9.50	9.46	9.25
%CO_2	Carbon Dioxide, % vd	0.03	0.01	0.03	0.02
%O_2	Oxygen, % vd	20.96	20.99	20.98	20.98
M_d	Dry Molecular Weight, lb/lb-Mole	28.84	28.84	28.84	28.84
M_s	Wet Molecular weight, lb/lb-Mole	27.89	27.81	27.82	27.84
P_g	Flue Gas Static Pressure, in. H_2O	0.81	0.81	0.81	0.81
P_s	Absolute Flue Gas Pressure, in. Hg	28.96	28.96	28.96	28.96
t_s	Average Stack Gas Temperature, °F	139.0	140.0	139.0	139.3
$\sqrt{\Delta P_{avg}}$	Average Square-Root Velocity Head, in H_2O	1.304	1.304	1.304	1.304
v_s	Average Stack Gas Velocity, ft/sec	80.64	80.81	80.74	80.73
A_s	Stack Crossectional Area, ft^2	11.54	11.54	11.54	11.54
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	43,443	43,139	43,187	43,256
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	55,838	55,961	55,907	55,902
ODT	Oven dried tons per hour	2.85	2.79	2.88	2.84
NCASI 99.02 Sampling Data					
t_m	Average Dry Gas Meter Temperature, °F	58.67	66.83	56.67	60.72
V_m	Gas Meter Volume Sampled, L	23.822	23.485	21.703	23.003
V_{mstd}	Dry Standard Gas Meter Volume Sampled, dscm	0.024	0.023	0.022	0.023
$C_3H_4O_{\mu g/mL}$	Acrolein Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	76	77	76	76
$C_3H_4O_{\mu g}$	Total Mass of Acrolein in the Sample, µg	< 19.0	< 19.3	< 19.0	< 19.1
$C_3H_4O_{mg}$	Total Mass of Acrolein in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_3H_4O_{mg/dscm}$	Acrolein Concentration in Air, mg/dscm	< 0.80	< 0.82	< 0.88	< 0.83
$C_3H_4O_{ppmvd}$	Acrolein Concentration, ppmvd	< 0.34	< 0.35	< 0.38	< 0.36
$C_3H_4O_{lb/hr}$	Acrolein Emission Rate, lb/hr	< 0.130	< 0.132	< 0.142	< 0.135
$C_6H_6O_{\mu g/mL}$	Phenol Concentration in the Sample, µg/mL	< 0.25	< 0.25	< 0.25	< 0.25
Vol.	Volume of Sample Collected, mL	76	77	76	76
$C_6H_6O_{\mu g}$	Total Mass of Phenol in the Sample, µg	< 19.0	< 19.3	< 19.0	< 19.1
$C_6H_6O_{mg}$	Total Mass of Phenol in the Sample, mg	< 0.019	< 0.019	< 0.019	< 0.019
$C_6H_6O_{mg/dscm}$	Phenol Concentration in Air, mg/dscm	< 0.80	< 0.82	< 0.88	< 0.83
$C_6H_6O_{ppmvd}$	Phenol Concentration, ppmvd	< 0.20	< 0.21	< 0.22	< 0.21
$C_6H_6O_{lb/hr}$	Phenol Emission Rate, lb/hr	< 0.130	< 0.132	< 0.142	< 0.135
$CH_2O_{\mu g/mL}$	Formaldehyde Concentration in the Sample, µg/mL	< 0.05	< 0.05	0.12	< 0.07
Vol.	Volume of Sample Collected, mL	76	77	76	76
$CH_2O_{\mu g}$	Total Mass of Formaldehyde in the Sample, µg	< 3.80	< 3.85	9.12	< 5.59
CH_2O_{mg}	Total Mass of Formaldehyde in the Sample, mg	< 0.004	< 0.004	0.009	< 0.006
$CH_2O_{mg/dscm}$	Formaldehyde Concentration in Air, mg/dscm	< 0.16	< 0.16	0.42	< 0.25
CH_2O_{ppmvd}	Formaldehyde Concentration, ppmvd	< 0.13	< 0.13	0.34	< 0.20
$CH_2O_{lb/hr}$	Formaldehyde Emission Rate, lb/hr	< 0.026	< 0.026	0.068	< 0.040
$CH_2O_{lb/ODT}$	Formaldehyde Emission Rate, lb/ODT	< 0.009	< 0.009	0.024	< 0.014
$HAPS_{lb/hr}$	Total HAPS Emission Rate, lb/hr	< 0.130	< 0.132	< 0.209	< 0.157
$HAPS_{lb/ODT}$	Total HAPS Emission Rate, lb/ODT	< 0.045	< 0.047	< 0.073	< 0.055

For results below the reporting limit, half the reporting limit was used in the calculations.

USEPA Methods 2 & 4
Run 1

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.	Run No.	1	Date	10/27/2016	Job #	160282		
Address	White Swan, WA	Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Location	Dryer Vent # 1	Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	15		15
Personnel	SN/AK/JA/JH	Umbical	Meter box CCI-1	Y	1.010	Initial DGM			
% Moisture	8.81 Meas	Stack TC	TC Readout	$\Delta H_@$	1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot TIM5-1	C_p	0.84	Leak rate	0.015		0.015
P static in H_2O	0.81	Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O 82.7	M3/3A 0.03	%CO_2	Nozzle			
Filter #			$B_w$meas 8.81	20.96	%O_2	Stack TC			
Filter Wt.			$B_w$sat 19.26	Fo=	F_d=	M_s 27.89	M_d 28.84		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	14:32	056.136	1.7	1.30	139	58	54		1.5	NA	NA	NA	55	5.0	
2	10.0	20.0		062.930	1.7	1.30	139	58	55		1.5	NA	NA	NA	56	6.0	
3	20.0	30.0		069.590	1.7	1.30	139	58	56		1.5	NA	NA	NA	58	6.0	
4	30.0	40.0		076.230	1.7	1.30	139	61	56		1.5	NA	NA	NA	58	7.0	
5	40.0	50.0		082.680	1.7	1.30	139	61	57		1.5	NA	NA	NA	60	7.0	
6	50.0	60.0		089.440	1.7	1.30	139	62	58		1.5	NA	NA	NA	63	7.0	
7	60.0		15:32	096.559	1.7	1.30	139										
8					1.7	1.30	139										
B-1					1.7	1.30	139										
2					1.7	1.30	139										
3					1.7	1.30	139										
4					1.7	1.30	139										
5					1.7	1.30	139										
6					1.7	1.30	139										
7					1.7	1.30	139										
8					1.7	1.30	139										
Final			15:32	96.559													
Sum or avg	60.0			40.423	1.700	1.304	139.0	59.7	56.0		1.500				Max	7.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	40.363
Sample Vol. dscm	1.143
Flow	
ft/sec	80.64
dscfm	43,442.5
acfm	55,837.8

Impingers

	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	709.9	639.0	70.9
2	DI H_2O	100	798.6	799.7	-1.1
3	M_T	0	544.2	544.8	-0.6
4	SG	200-300	888.3	874.8	13.5

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 1

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.	Run No.	1	Date	10/27/2016	Job #	160282
Address	White Swan, WA						
Location	Dryer Vent # 1						
Personnel	SN/AK/JA/JH						

% Moisture	8.81	Meas
P_{Br} in "Hg	28.90	
P static in H_2O	NA	
K factor		
Filter #		
Filter Wt.		

Equipment ID	Cal		
Reag. Box	Samp. box		
Umbical	Meter box	VOST-1	
Stack TC	TC Readout		
Tedlar Bag	Pitot	NA	
Orsat Pump	Nozzle	NA	
Est. Moisture	gm H_2O	82.7	
	$B_w$meas	8.81	
	$B_w$sat	19.26	

Constants			
A_s foot^2	11.54		
Y	1.0134		
$\Delta H_@$	NA		
C_p	NA		
D_N in inches	NA		
M3/3A	0.03	$\%CO_2$	
	20.96	$\%O_2$	
Fo=		F_d=	

Checks	Pre	Mid	Post
Vacuum	10		5
Initial DGM			
Final DGM			
Leak rate	0.00		0.00
Pitot	✓		✓
Nozzle			
Stack TC			
M_s	27.89	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	14:31	5971.42	NA	NA	NA	56	56		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5975.30	NA	NA	NA	56	57		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		5979.37	NA	NA	NA	58	58		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		5983.38	NA	NA	NA	59	59		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		5987.40	NA	NA	NA	61	62		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		5991.34	NA	NA	NA	62	62		NA	250	250	NA	NA	1.0	
SP	60.0		15:31	5995.335													
Final			15:31	5995.335													
Sum or avg	60.0			23.915	NA	NA	NA	58.7	59.0		NA					Max 1.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.822
Sample Vol. dscm	0.024
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness _____ Logibility _____ Accuracy _____ Specifications _____ Reasonableness _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 2

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	2	Date	10/27/2016	Job #	160282	
Address	White Swan, WA	Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Location	Dryer Vent # 1	Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	15		10
Personnel	SN/AK/JA/JH	Umbical	Meter box CCI-1	Y	1.010	Init DGM			
% Moisture	9.50 Meas	Stack TC	TC Readout	$\Delta H_@$	1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot TIM5-1	C_p	0.84	Leak rate	0.000		0.000
P static in H_2O	0.81	Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O 90.4	M3/3A 0.01	%CO_2	Nozzle			
Filter #			$B_w$meas 9.50	20.99	%O_2	Stack TC			
Filter Wt.			$B_w$sat 19.76	Fo=	F_d=	M_s 27.81	M_d 28.84		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	16:20	096.798	1.7	1.30	140	61	61		1.5	NA	NA	NA	59	7.0	
2	10.0	20.0		103.660	1.7	1.30	140	63	62		1.5	NA	NA	NA	58	7.0	
3	20.0	30.0		110.560	1.7	1.30	140	65	63		1.5	NA	NA	NA	60	7.0	
4	30.0	40.0		117.430	1.7	1.30	140	65	63		1.5	NA	NA	NA	62	7.0	
5	40.0	50.0		124.290	1.7	1.30	140	69	63		1.5	NA	NA	NA	64	7.0	
6	50.0	60.0		131.120	1.7	1.30	140	65	63		1.5	NA	NA	NA	65	7.0	
7	60.0		17:20	137.936	1.7	1.30	140										
8					1.7	1.30	140										
B-1					1.7	1.30	140										
2					1.7	1.30	140										
3					1.7	1.30	140										
4					1.7	1.30	140										
5					1.7	1.30	140										
6					1.7	1.30	140										
7					1.7	1.30	140										
8					1.7	1.30	140										
Final			17:20	137.936													
Sum or avg	60.0			41.138	1.700	1.304	140.0	64.7	62.5		1.500				Max	7.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	40.626
Sample Vol. dscm	1.151
Flow	
ft/sec	80.81
dscfm	43,138.6
acfm	55,960.6

Impingers

	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	828.4	753.7	74.7
2	DI H_2O	100	743.6	742.0	1.6
3	M_T	0	631.4	630.1	1.3
4	SG	200-300	855.2	842.4	12.8

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

NCASI Method 99.02
Run 2

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.		Run No.	2		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Dryer Vent # 1	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	10		5
Personnel	SN/AK/JA/JH	Umbical	Meter box	VOST-1	Y		1.0134	Init DGM			
% Moisture	9.50 Meas	Stack TC	TC Readout		$\Delta H_@$		NA	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	NA	C_p		NA	Leak rate	0.00		0.00
P static in H_2O	NA	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	90.4	M3/3A	0.01	$\%CO_2$	Nozzle			
Filter #			$B_w$meas	9.50		20.99	$\%O_2$	Stack TC			
Filter Wt.			$B_w$sat	19.76	Fo=		F_d=	M_s	27.81	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	16:20	5995.585	NA	NA	NA	64	62		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		5999.60	NA	NA	NA	66	67		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		6003.49	NA	NA	NA	67	68		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		6007.58	NA	NA	NA	68	69		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		6011.55	NA	NA	NA	68	69		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		6015.54	NA	NA	NA	68	70		NA	250	250	NA	NA	1.0	
SP	60.0		17:20	6019.540													
Final			17:20	6019.540													
Sum or avg	60.0			23.955	NA	NA	NA	66.8	67.5		NA					Max	1.0

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	23.485
Sample Vol. dscm	0.023
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ Reasonableness ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

USEPA Methods 2 & 4
Run 3

USEPA Methods 2 & 4 Data Sheet

Plant	Neucor, Inc.		Run No.	3		Date	10/27/2016		Job #	160282	
Address	White Swan, WA	Equipment ID	Cal		Constants			Checks	Pre	Mid	Post
Location	Dryer Vent # 1	Reag. Box	Samp. box		A_s foot^2		11.54	Vacuum	15		10
Personnel	SN/AK/JA/JH	Umbical	Meter box	CCI-1	Y		1.010	Init DGM			
% Moisture	9.46 Meas	Stack TC	TC Readout		$\Delta H_@$		1.589	Final DGM			
P_{Br} in "Hg	28.90	Tedlar Bag	Pitot	TIM5-1	C_p		0.84	Leak rate	0.010		0.010
P static in H_2O	0.81	Orsat Pump	Nozzle	NA	D_N in inches		NA	Pitot	✓		✓
K factor		Est. Moisture	gm H_2O	88.4	M3/3A	0.03	%CO_2	Nozzle			
Filter #			$B_w$meas	9.46		20.98	%O_2	Stack TC			
Filter Wt.			$B_w$sat	19.26	Fo=		F_d=	M_s	27.82	M_d	28.84

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading	Velocity ΔP	Velocity √ΔP	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
A-1	0.0	10.0	17:50	138.216	1.7	1.30	139	56	59		1.5	NA	NA	NA	55	7.0	
2	10.0	20.0		144.840	1.7	1.30	139	57	56		1.5	NA	NA	NA	53	7.0	
3	20.0	30.0		151.560	1.7	1.30	139	58	56		1.5	NA	NA	NA	57	7.0	
4	30.0	40.0		158.220	1.7	1.30	139	57	57		1.5	NA	NA	NA	58	7.0	
5	40.0	50.0		164.850	1.7	1.30	139	56	54		1.5	NA	NA	NA	58	7.0	
6	50.0	60.0		171.430	1.7	1.30	139	56	54		1.5	NA	NA	NA	58	7.0	
7	60.0		18:50	178.063	1.7	1.30	139										
8					1.7	1.30	139										
B-1					1.7	1.30	139										
2					1.7	1.30	139										
3					1.7	1.30	139										
4					1.7	1.30	139										
5					1.7	1.30	139										
6					1.7	1.30	139										
7					1.7	1.30	139										
8					1.7	1.30	139										
Final			18:50	178.063													
Sum or avg	60.0			39.847	1.700	1.304	139.0	56.7	56.0		1.500				Max	7.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dscf	39.904
Sample Vol. dscm	1.130
Flow	
ft/sec	80.74
dscfm	43,187.4
acfm	55,907.2

Impingers					
	Contents	Vol. (mL/g)	Post weight	Pre weight	Net gain
1	DI H_2O	100	785.0	709.9	75.1
2	DI H_2O	100	799.4	798.6	0.8
3	M_T	0	545.6	544.2	1.4
4	SG	200-300	843.3	832.2	11.1

QA/QC Check
Completeness _____ Legibility _____ Accuracy _____ Specifications _____

Checked By: _____ Reviewer (Signature/Date) _____ Team Leader (Signature/Date)

NCASI Method 99.02
Run 3

NCASI Method 99.02 Data Sheet

Plant	Neucor, Inc.	Run No.	3	Date	10/27/2016	Job #	160282
Address	White Swan, WA						
Location	Dryer Vent # 1						
Personnel	SN/AK/JA/JH						

Equipment ID	Cal	Constants		Checks	Pre	Mid	Post
Reag. Box	Samp. box	A_s foot^2	11.54	Vacuum	10		5
Umbical	Meter box VOST-2	Y	0.9187	Init DGM			
Stack TC	TC Readout	$\Delta H_@$	NA	Final DGM			
Tedlar Bag	Pitot NA	C_p	NA	Leak rate	0.00		0.00
Orsat Pump	Nozzle NA	D_N in inches	NA	Pitot	✓		✓
Est. Moisture	gm H_2O 88.4	M3/3A 0.03	%CO_2	Nozzle			
	$B_w$meas 9.46	20.98	%O_2	Stack TC			
	$B_w$sat 19.26	Fo=	F_d=	M_s 27.82	M_d 28.84		

% Moisture	9.46	Meas
P_{Br} in "Hg	28.90	
P static in H_2O	NA	
K factor		
Filter #		
Filter Wt.		

Traverse Point No.	Elapsed Time In Minutes Begin	End	Clock Time 24 hr	Gas Meter Reading (L)	Sampling Rate LPM	Velocity $\sqrt{\Delta P}$	Stack Temp. °F	Dry Gas Meter Temperature, °F Inlet	Outlet	Orifice Pressure ΔH in. H_2O	Actual	Probe Temp. °F	Oven Temp. °F	Condenser Temp. °F	Impinger Temp. °F	Pump Vac. Hg	Notes
SP	0.0	10.0	17:49	2363.88	NA	NA	NA	57	59		NA	250	250	NA	NA	1.0	
SP	10.0	20.0		2367.84	NA	NA	NA	54	57		NA	250	250	NA	NA	1.0	
SP	20.0	30.0		2371.86	NA	NA	NA	58	58		NA	250	250	NA	NA	1.0	
SP	30.0	40.0		2375.86	NA	NA	NA	57	58		NA	250	250	NA	NA	1.0	
SP	40.0	50.0		2379.75	NA	NA	NA	57	58		NA	250	250	NA	NA	1.0	
SP	50.0	60.0		2383.99	NA	NA	NA	57	57		NA	250	250	NA	NA	1.0	
SP	60.0		18:49	2387.84													
Final			18:49	2387.840													
Sum or avg	60.0			23.960	NA	NA	NA	56.7	57.8		NA					Max 1.0	

% Isokinetic	NA
Yqa	NA
Sample Vol. dstd. L	21.703
Sample Vol. dscm	0.022
Flow	
ft/sec	NA
dscfm	NA
acfm	NA

QA/QC Check
Completeness ✓ Legibility ✓ Accuracy ✓ Specifications ✓ ✓

Checked By: Reviewer (Signature/Date) Team Leader (Signature/Date)

Neucor, Inc.
White Swan, WA

Run Averages

Dryer Vent #1
October 27, 2016

Run averages corrected for bias

Operator: SN/AK/JA/JH
Plant Name: Neucor, Inc.
Location: Dryer Vent #1

Run	Date	Time	O_2_1	CO_2_1
			% vd	% vd
1	10/27/2016	14:33 - 15:33	20.957	0.026
2	10/27/2016	16:20 - 17:20	20.987	0.008
3	10/27/2016	17:49 - 18:49	20.983	0.027

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Dryer Vent #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 1		
10/27/2016	15:34:00	14:34:00	20.545	0.152
10/27/2016	15:35:00	14:35:00	20.548	0.150
10/27/2016	15:36:00	14:36:00	20.549	0.152
10/27/2016	15:37:00	14:37:00	20.545	0.152
10/27/2016	15:38:00	14:38:00	20.545	0.155
10/27/2016	15:39:00	14:39:00	20.546	0.156
10/27/2016	15:40:00	14:40:00	20.549	0.157
10/27/2016	15:41:00	14:41:00	20.548	0.158
10/27/2016	15:42:00	14:42:00	20.547	0.160
10/27/2016	15:43:00	14:43:00	20.545	0.163
10/27/2016	15:44:00	14:44:00	20.549	0.164
10/27/2016	15:45:00	14:45:00	20.546	0.165
10/27/2016	15:46:00	14:46:00	20.544	0.168
10/27/2016	15:47:00	14:47:00	20.547	0.165
10/27/2016	15:48:00	14:48:00	20.549	0.160
10/27/2016	15:49:00	14:49:00	20.545	0.161
10/27/2016	15:50:00	14:50:00	20.547	0.157
10/27/2016	15:51:00	14:51:00	20.543	0.155
10/27/2016	15:52:00	14:52:00	20.545	0.153
10/27/2016	15:53:00	14:53:00	20.546	0.153
10/27/2016	15:54:00	14:54:00	20.547	0.150
10/27/2016	15:55:00	14:55:00	20.547	0.152
10/27/2016	15:56:00	14:56:00	20.549	0.153
10/27/2016	15:57:00	14:57:00	20.548	0.154
10/27/2016	15:58:00	14:58:00	20.546	0.156
10/27/2016	15:59:00	14:59:00	20.548	0.157
10/27/2016	16:00:00	15:00:00	20.551	0.158
10/27/2016	16:01:00	15:01:00	20.547	0.161
10/27/2016	16:02:00	15:02:00	20.551	0.164
10/27/2016	16:03:00	15:03:00	20.548	0.164
10/27/2016	16:04:00	15:04:00	20.547	0.166
10/27/2016	16:05:00	15:05:00	20.547	0.167
10/27/2016	16:06:00	15:06:00	20.548	0.165
10/27/2016	16:07:00	15:07:00	20.548	0.166
10/27/2016	16:08:00	15:08:00	20.546	0.163
10/27/2016	16:09:00	15:09:00	20.546	0.161
10/27/2016	16:10:00	15:10:00	20.546	0.161
10/27/2016	16:11:00	15:11:00	20.546	0.161
10/27/2016	16:12:00	15:12:00	20.546	0.161
10/27/2016	16:13:00	15:13:00	20.545	0.161
10/27/2016	16:14:00	15:14:00	20.545	0.162
10/27/2016	16:15:00	15:15:00	20.546	0.164
10/27/2016	16:16:00	15:16:00	20.546	0.165
10/27/2016	16:17:00	15:17:00	20.546	0.165
10/27/2016	16:18:00	15:18:00	20.545	0.167
10/27/2016	16:19:00	15:19:00	20.546	0.167
10/27/2016	16:20:00	15:20:00	20.545	0.167
10/27/2016	16:21:00	15:21:00	20.544	0.169
10/27/2016	16:22:00	15:22:00	20.545	0.168
10/27/2016	16:23:00	15:23:00	20.544	0.170
10/27/2016	16:24:00	15:24:00	20.546	0.168
10/27/2016	16:25:00	15:25:00	20.546	0.169
10/27/2016	16:26:00	15:26:00	20.546	0.168
10/27/2016	16:27:00	15:27:00	20.546	0.169
10/27/2016	16:28:00	15:28:00	20.547	0.174
10/27/2016	16:29:00	15:29:00	20.546	0.171
10/27/2016	16:30:00	15:30:00	20.545	0.174
10/27/2016	16:31:00	15:31:00	20.546	0.174
10/27/2016	16:32:00	15:32:00	20.547	0.176
10/27/2016	16:33:00	15:33:00	20.569	0.152
	Average:		**20.547**	**0.162**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Dryer Vent #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 2		
10/27/2016	17:21:00	16:21:00	20.576	0.143
10/27/2016	17:22:00	16:22:00	20.575	0.144
10/27/2016	17:23:00	16:23:00	20.577	0.146
10/27/2016	17:24:00	16:24:00	20.573	0.150
10/27/2016	17:25:00	16:25:00	20.576	0.150
10/27/2016	17:26:00	16:26:00	20.578	0.150
10/27/2016	17:27:00	16:27:00	20.575	0.153
10/27/2016	17:28:00	16:28:00	20.577	0.152
10/27/2016	17:29:00	16:29:00	20.573	0.152
10/27/2016	17:30:00	16:30:00	20.575	0.154
10/27/2016	17:31:00	16:31:00	20.575	0.149
10/27/2016	17:32:00	16:32:00	20.578	0.147
10/27/2016	17:33:00	16:33:00	20.573	0.147
10/27/2016	17:34:00	16:34:00	20.576	0.144
10/27/2016	17:35:00	16:35:00	20.579	0.144
10/27/2016	17:36:00	16:36:00	20.577	0.143
10/27/2016	17:37:00	16:37:00	20.581	0.140
10/27/2016	17:38:00	16:38:00	20.575	0.140
10/27/2016	17:39:00	16:39:00	20.576	0.137
10/27/2016	17:40:00	16:40:00	20.577	0.139
10/27/2016	17:41:00	16:41:00	20.577	0.135
10/27/2016	17:42:00	16:42:00	20.579	0.135
10/27/2016	17:43:00	16:43:00	20.576	0.136
10/27/2016	17:44:00	16:44:00	20.576	0.135
10/27/2016	17:45:00	16:45:00	20.577	0.136
10/27/2016	17:46:00	16:46:00	20.578	0.138
10/27/2016	17:47:00	16:47:00	20.577	0.137
10/27/2016	17:48:00	16:48:00	20.575	0.138
10/27/2016	17:49:00	16:49:00	20.578	0.138
10/27/2016	17:50:00	16:50:00	20.578	0.141
10/27/2016	17:51:00	16:51:00	20.578	0.143
10/27/2016	17:52:00	16:52:00	20.578	0.145
10/27/2016	17:53:00	16:53:00	20.573	0.152
10/27/2016	17:54:00	16:54:00	20.578	0.150
10/27/2016	17:55:00	16:55:00	20.578	0.157
10/27/2016	17:56:00	16:56:00	20.580	0.153
10/27/2016	17:57:00	16:57:00	20.579	0.155
10/27/2016	17:58:00	16:58:00	20.579	0.159
10/27/2016	17:59:00	16:59:00	20.578	0.157
10/27/2016	18:00:00	17:00:00	20.581	0.155
10/27/2016	18:01:00	17:01:00	20.582	0.156
10/27/2016	18:02:00	17:02:00	20.581	0.154
10/27/2016	18:03:00	17:03:00	20.580	0.154
10/27/2016	18:04:00	17:04:00	20.579	0.152
10/27/2016	18:05:00	17:05:00	20.580	0.152
10/27/2016	18:06:00	17:06:00	20.579	0.151
10/27/2016	18:07:00	17:07:00	20.580	0.151
10/27/2016	18:08:00	17:08:00	20.580	0.148
10/27/2016	18:09:00	17:09:00	20.578	0.149
10/27/2016	18:10:00	17:10:00	20.582	0.144
10/27/2016	18:11:00	17:11:00	20.579	0.141
10/27/2016	18:12:00	17:12:00	20.576	0.140
10/27/2016	18:13:00	17:13:00	20.577	0.137
10/27/2016	18:14:00	17:14:00	20.578	0.136
10/27/2016	18:15:00	17:15:00	20.576	0.136
10/27/2016	18:16:00	17:16:00	20.578	0.137
10/27/2016	18:17:00	17:17:00	20.578	0.134
10/27/2016	18:18:00	17:18:00	20.574	0.136
10/27/2016	18:19:00	17:19:00	20.513	0.117
10/27/2016	18:20:00	17:20:00	20.479	0.119
	Average:		**20.575**	**0.144**

Neucor, Inc.
White Swan, WA

One-Minute Reference Method
Trailer 2

Dryer Vent #1

Date	Logged Time	Adjusted Time	O_2_1	CO_2_1
			System 1	
			% vd	% vd
		Run 3		
10/27/2016	18:50:00	17:50:00	20.571	0.133
10/27/2016	18:51:00	17:51:00	20.571	0.134
10/27/2016	18:52:00	17:52:00	20.573	0.137
10/27/2016	18:53:00	17:53:00	20.572	0.133
10/27/2016	18:54:00	17:54:00	20.573	0.135
10/27/2016	18:55:00	17:55:00	20.571	0.135
10/27/2016	18:56:00	17:56:00	20.571	0.135
10/27/2016	18:57:00	17:57:00	20.571	0.134
10/27/2016	18:58:00	17:58:00	20.572	0.134
10/27/2016	18:59:00	17:59:00	20.571	0.135
10/27/2016	19:00:00	18:00:00	20.570	0.135
10/27/2016	19:01:00	18:01:00	20.573	0.135
10/27/2016	19:02:00	18:02:00	20.569	0.136
10/27/2016	19:03:00	18:03:00	20.571	0.139
10/27/2016	19:04:00	18:04:00	20.571	0.141
10/27/2016	19:05:00	18:05:00	20.572	0.143
10/27/2016	19:06:00	18:06:00	20.570	0.147
10/27/2016	19:07:00	18:07:00	20.571	0.149
10/27/2016	19:08:00	18:08:00	20.571	0.152
10/27/2016	19:09:00	18:09:00	20.572	0.157
10/27/2016	19:10:00	18:10:00	20.573	0.159
10/27/2016	19:11:00	18:11:00	20.572	0.164
10/27/2016	19:12:00	18:12:00	20.573	0.164
10/27/2016	19:13:00	18:13:00	20.575	0.169
10/27/2016	19:14:00	18:14:00	20.572	0.172
10/27/2016	19:15:00	18:15:00	20.571	0.174
10/27/2016	19:16:00	18:16:00	20.571	0.176
10/27/2016	19:17:00	18:17:00	20.569	0.179
10/27/2016	19:18:00	18:18:00	20.571	0.179
10/27/2016	19:19:00	18:19:00	20.572	0.181
10/27/2016	19:20:00	18:20:00	20.572	0.180
10/27/2016	19:21:00	18:21:00	20.573	0.186
10/27/2016	19:22:00	18:22:00	20.572	0.181
10/27/2016	19:23:00	18:23:00	20.573	0.180
10/27/2016	19:24:00	18:24:00	20.573	0.179
10/27/2016	19:25:00	18:25:00	20.572	0.181
10/27/2016	19:26:00	18:26:00	20.571	0.180
10/27/2016	19:27:00	18:27:00	20.572	0.182
10/27/2016	19:28:00	18:28:00	20.570	0.183
10/27/2016	19:29:00	18:29:00	20.570	0.182
10/27/2016	19:30:00	18:30:00	20.570	0.179
10/27/2016	19:31:00	18:31:00	20.572	0.176
10/27/2016	19:32:00	18:32:00	20.570	0.176
10/27/2016	19:33:00	18:33:00	20.571	0.176
10/27/2016	19:34:00	18:34:00	20.572	0.175
10/27/2016	19:35:00	18:35:00	20.570	0.179
10/27/2016	19:36:00	18:36:00	20.570	0.180
10/27/2016	19:37:00	18:37:00	20.570	0.180
10/27/2016	19:38:00	18:38:00	20.570	0.180
10/27/2016	19:39:00	18:39:00	20.571	0.180
10/27/2016	19:40:00	18:40:00	20.570	0.180
10/27/2016	19:41:00	18:41:00	20.568	0.179
10/27/2016	19:42:00	18:42:00	20.570	0.176
10/27/2016	19:43:00	18:43:00	20.570	0.174
10/27/2016	19:44:00	18:44:00	20.569	0.174
10/27/2016	19:45:00	18:45:00	20.569	0.174
10/27/2016	19:46:00	18:46:00	20.571	0.173
10/27/2016	19:47:00	18:47:00	20.568	0.173
10/27/2016	19:48:00	18:48:00	20.570	0.173
10/27/2016	19:49:00	18:49:00	20.565	0.168
	Average:		**20.571**	**0.164**

GOLDEN SPECIALTY

APPENDIX F – Process Data

Neucor Source Test Production Data

Press One PM emission tests

		Run 1	Run 2		Run3
Day		25-Oct	25-Oct		26-Oct
Time	Start	10:36	14:30	18:20	8:11
	Stop	12:43	15:42	19:10	10:21
hrs		2.12	2.03		2.17
Press Loads		92	86		100
$MSF_{3/4"}$/Ld		0.0475	0.0475		0.0475
$MSF_{3/4}$		4.37	4.09		4.75
Total Furnish Purchased, ODT		100.00	100.00		100.00
% Furnish Less than 15% MC		35%	35%		35%
% MC exiting the Truck Dump		33.0%	33.0%		33.0%
% MC @ Dryer Outlet		12.5%	11.6%		13.7%
Dryer Inlet Temp ˚F		241	234		235
Dryer Outlet Temp ˚F		150	172		146
Digester Temp ˚F		333	332		332
Press Platen Temp ˚F		291	299		297
% MC @ Dryer Inlet		25.4%	24.0%		24.0%
Species %	Pacific Albus	24%	22%		22%
	Ponderosa Pine	42%	43%		43%
	Douglas Fir	20%	21%		21%
	Whit Fir	14%	14%		14%

Neucor Source Test Production Data

Press One HAP emission tests

		Run 1	Run 2		Run3
Day		26-Oct	26-Oct		26-Oct
Time	Start	12:25	14:30	14:57	16:28
	Stop	13:25	14:40	15:47	17:28
hrs		1.00	1.00		1.00
Total Tons		5.81	3.62		3.79
Total ODT		5.14	3.22		3.33
Press Loads		42	46		46
$MSF_{3/4"}$/Ld		0.0475	0.0475		0.0475
$MSF_{3/4}$		2.00	2.19		2.19
Total Furnish Purchased		100.00	100.00		100.00
% Furnish Less than 15% MC		35%	35%		35%
% MC exiting the Truck Dump		33.0%	33.0%		33.0%
% MC @ Dryer Outlet		13.1	12.5		13.9
Dryer Inlet Temp ˚F		241	241		232
Dryer Outlet Temp ˚F		149	149		153
Digester Temp ˚F		335	332		330
Press Platen Temp ˚F		296	297		296
Dryer Inlet MC %		24.0%	25.4%		25.4%
Species %	Pacific Albus	22%	24%		24%
	Ponderosa Pine	43%	42%		42%
	Douglas Fir	21%	20%		20%
	White Fir	14%	14%		14%

Neucor Source Test Production Data

Dryer One HAP emission tests

		Run 1	Run 2	Run3
Day		27-Oct	27-Oct	27-Oct
Time	Start	14:31	16:20	17:49
	Stop	15:31	17:20	18:49
hrs		1.00	1.00	1.00
Total Tons		3.23	3.14	3.28
Tons ODT		2.85	2.79	2.88
Press Loads		44	45	43
$MSF_{3/4"}$/Ld		0.0475	0.0475	0.0475
$MSF_{3/4}$		2.09	2.14	2.04
Total Furnish Purchased		100.00	100.00	100.00
% Furnish Less than 15% MC		35%	35%	35%
% MC exiting the Truck Dump		33.0%	33.0%	33.0%
% MC @ Dryer Outlet		13.1	12.5	13.9
Dryer Inlet Temp ˚F		238	240	237
Dryer Outlet Temp ˚F		145	147	145
Digester Temp ˚F		331	330	332
Press Platen Temp ˚F		296	285	287
Dryer Inlet MC %		25.4%	25.4%	25.4%
Species %	Pacific Albus	24%	24%	24%
	Ponderosa Pine	42%	42%	42%
	Douglas Fir	20%	20%	20%
	White Fir	14%	14%	14%

Neucor Source Test Production Data

Former One HAP emission tests

		Run 1		Run 2	Run3
Day		27-Oct		27-Oct	27-Oct
Time	Start	8:29	9:01	10:26	11:47
	Stop	8:31	10:03	11:26	12:47
hrs		1.07		1.00	1.00
Total Tons		3.94		3.54	3.77
Total ODT		3.50		3.17	3.31
% MC exiting the Truck Dump		33.0%		33.0%	33.0%
% MC @ Dryer Outlet		12.5		11.6	13.7
Dryer Inlet Temp ˚F		214		224	237
Dryer Outlet Temp ˚F		160		151	147
Digester Temp ˚F		307		334	334
Press Platen Temp ˚F		291		296	293

Date 10-25-2016

Run # 1

Wood Totalizer

Start Time 10:18

Start 625020

End Time 12:49

End 641571

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	15	Start	48
End	15	End	48

Press Loads

Start 66 10:36 68

End 162-96 12:43 160 - 92

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
10:15	14.3	12:45	10.5
10:30	11.1		
10:45	12.8		
11:00	12.4		
11:15	12.4		
11:30	12.8		
11:45	11.7		
12:00	14.3		
12:15	10.5		
12:30	12.4		

Date 10-25-2016

Run # 2

Start Time 2:30

End Time 7:30

Wood Totalizer

Start 653987 (3:00)

End 666018

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	15	Start	54
End	15	End	54

Press Loads

Start 222 14:30 222 18:20 267

End 319 15:42 265 19:10 310

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
2:30	12.8	7:15	13.0
2:45	11.7	7:30	10.5
3:00 ~~2:00~~	14.3		
3:15	10.5		
3:30	12.4		
3:45	10.5		
4:00	11.1		
6:30	11.1		
6:45	11.1		
7:00	10.5		

Date 10-26-2016

Run # 3

Wood Totalizer

Start Time 8:30

Start 674850

End Time 10:12

End 687592

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	15	Start	54
End	15	End	56

Press Loads

Start	50	8:18	40
End	138	10:21	140

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
8:30	13.6		
8:45	15.6		
9:00	15.6		
9:15	13.0		
9:30	16.3		
9:45	11.1		
10:00	10.5		

Date 10-26-2016

Run # 4

Start Time 12:05

End Time 1:25

Wood Totalizer

Start 691927

End 707432

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	15	Start	56
End	15	End	56

Press Loads

Start 164 12:25 186

End 228 13:25 228

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
12:00	12.4		
12:15	15.6		
12:30	14.9		
12:45	11.7		
1:00	13.6		
1:15	11.7		
1:30	13.6		
1:45	12.4		
2:00	12.4		

Date 10-26-2016

Run # 5

Wood Totalizer

Start Time 2:25

Start 708679

End Time 3:51

End 719066

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	15	Start	56
End	18	End	58

Press Loads

Start 252 14:30 252 14:57 266

End 304 14:40 260 15:47 304

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
2:30	11.1		
2:45	13.0		
3:00	13.6		
3:15	12.4		
3:30	11.1		
3:45	13.6		

Date 10-26-2016

Run # _____

Start Time 4:30

End Time 5:31

Wood Totalizer

Start 723366

End 731066

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

Press Loads

Start 329

End ~~347~~ 325

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
4:30	10.5		
4:45	13.0		
5:00	14.3		
5:15	17.6		

Date 10-28-2016

Run # 1

Start Time ~~8~~ 9:02

End Time 10:02

10130

actual 7870 lbs/hr

SP 6800

Wood Totalizer

Start 731066

End 742609

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	~~4~~ 18	End	58

Press Loads

Start 0 8:29 0 9:01 2

End ~~40~~ 50 8:31 2 10:03 50

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
10:00	11.7		
10:15	11.7		
10:30	12.4		

Date 10-28-2016

Run # 2

Start Time ~~10:30~~ 25 10:30

End Time ~~10~~ 11:26

actual 7074 ~~6494~~ 165 /hr

SP 6800

Wood Totalizer

Start 742609

End 749211

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

Press Loads

Start 68 10:26 66

End 107 11:26 111

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
10:30	11.1		
10:45	12.4		
11:00	11.7		
11:15	20.5		

Date 10-28-16

Run # 3

Start Time ~~10:40~~ ~~10:45~~ 1140 ws

End Time 12:49

Wood Totalizer

Start 750582

End 759247

actual 7534 lbs/hr

SP 6800

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

Press Loads

Start 121 11:47

End 166 12:47

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
11:45	12.4		
12:00	11.7		
12:15	12.4		
12:30	14.9		
12:45	14.3		
1:00	13.0		

Date 10-28-16

Run # 4 (1)

Wood Totalizer

Start 762475

End 770547

Start Time ~~230~~ 1430

End Time 1545

actual 6458 lbs/hr

58 6500

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

~~205~~

Press Loads

Start 195 14:31 195

End 252 15:31 239

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
2:30	14.3		
2:45	14.3		
3:00	14.3		
3:15	13.6		
3:30	13.0		

Date 10-29-16

Run # 5 (2)

Start Time 4:20

End Time 5:20

actual 6273 lbs/hr

SP 6500 lbs/hr

Wood Totalizer

Start 774380

End 780653

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

Press Loads

Start	~~26~~ 277	~~17:49~~	277	16:20
End	320	~~18:49~~	322	17:20

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
4:15	11.1		
4:30	14.3		
4:45	14.9		
5:00	14.9		
5:15	15.6		

Date 10-27-16

Run # 6 (3)

Start Time 1749

End Time 1852

actual 6566 lbs/hr

SP 6500

Wood Totalizer

Start 783842

End 790736

Silo outfeed screws (Hz)

#2 Silo		#3 Silo	
Start	18	Start	58
End	18	End	58

Press Loads

Start 340 17:49 340

End 388 18:49 383

Fiber Moisture Content (every 15 minutes)

Time	MC %	Time	MC %
5:45	12.4		
6:00	12.4		
6:15	13.0%		
6:30	13.6		
6:45	13.6		
1900	14.9%		

Ed - 0
Will +1
Comp +1
phone 0

Particulate — Press Vent

Run 1 - 10:36 - 12:43 10/25/16 18+74 = 92

Run 2 - 14:30 - 15:42; 18:20 - 19:18 10/25/16 43+43 = 86

Run 3 - 8:11 - 10:21 10/26/16 76+24 = 100

HAPS — Press Vents

Run 1 - 12:25 - 13:25 10/26/16 42

Run 2 - 14:30 - 14:40; 14:57 - 15:47 10/26/16 8+38

Run 3 - 16:28 - 17:28 10/26/16 46

HAPS - FORMER LENS

Run 1 - 8:29 - 8:310; 9:01 - 10:03 10/28/16 50

Run 2 - 10:26 - 11:26 10/28/16 45

Run 3 - 11:47 - 12:47 10/28/16 45

Dryer Vents HAB – 10/27/16

Run 1 – ~~17:49~~ 14:31-15:31 44

Run 2 – 16:20-17:20 45

Run 3 – 17:49-18:49 43

$Date	$Time	Dryer Inlet Temp °F	Dryer Outlet Temp °F	Digester Pressure psi	Press Platen Temp °F
10/25/2016	14:40:58	244.6364	180.6535	92.45564	298.6753
10/25/2016	14:48:10	159.8438	178.3523	92.85876	298.1944
10/25/2016	14:55:22	248.5061	181.8041	92.20795	298.1846
10/25/2016	15:02:34	249.4705	187.8026	91.14914	298.3907
10/25/2016	15:09:46	250.911	200.7175	92.41193	298.5674
10/25/2016	15:16:58	242.3536	205.3069	91.52798	298.7931
10/25/2016	15:24:10	249.2263	207.9829	83.93667	298.6753
10/25/2016	15:31:22	244.1603	160.4732	87.61819	299.2642
10/25/2016	15:38:34	243.9161	182.1919	89.09468	300.6971
10/25/2016	18:24:10	182.0368	160.0853	88.53128	303.6121
10/25/2016	18:31:22	228.3517	163.537	92.03795	299.2642
10/25/2016	18:38:34	238.4838	148.2176	92.14481	296.4965
10/25/2016	18:45:46	223.6518	147.3255	93.24731	296.8989
10/25/2016	18:52:58	243.7941	147.7005	92.63049	297.5761
10/25/2016	19:00:10	243.1959	147.1963	90.82373	298.1257
10/25/2016	19:07:22	243.7941	146.8084	92.93648	298.43
10/25/2016	10:36:10	239.2163	147.1963	88.88097	285.9458
10/25/2016	10:43:22	238.4838	148.4761	91.56198	287.2708
10/25/2016	10:50:34	241.2671	150.0016	92.64992	288.4289
10/25/2016	10:57:46	240.9009	150.0016	91.84853	289.1945
10/25/2016	11:04:58	241.6211	152.3028	91.29971	290.0679
10/25/2016	11:12:10	243.0738	150.5187	91.56683	290.804
10/25/2016	11:19:22	241.6211	149.2389	91.90196	290.5979
10/25/2016	11:26:34	239.8145	147.5841	93.02876	290.6961
10/25/2016	11:33:46	239.2163	146.4335	91.48912	291.1672
10/25/2016	11:40:58	239.0942	148.9803	92.7082	291.8542
10/25/2016	11:48:10	245.0026	151.4108	92.26623	292.2958
10/25/2016	11:55:22	244.8805	150.648	91.72711	292.7277
10/25/2016	12:02:34	239.4482	147.8297	92.8782	292.9142
10/25/2016	12:09:46	239.3384	149.1096	92.7422	293.1301
10/25/2016	12:16:58	244.0382	152.0442	93.04819	293.2871
10/25/2016	12:24:10	242.5855	151.1522	91.37742	293.346
10/25/2016	12:31:22	242.8297	152.8069	92.57706	293.3951
10/25/2016	12:38:34	242.4635	151.7857	92.03795	293.5227
10/26/2016	8:12:10	232.3313	142.4647	90.57117	294.3373
10/26/2016	8:19:22	234.0281	142.9689	91.88739	294.8378
10/26/2016	8:26:34	232.4534	142.4647	91.31913	295.9665
10/26/2016	8:33:46	234.0281	142.4647	91.85825	295.9861
10/26/2016	8:40:58	234.3822	143.2274	92.56735	295.7113
10/26/2016	8:48:10	233.5398	143.6023	93.10161	295.6917
10/26/2016	8:55:22	236.201	146.175	91.42599	295.515
10/26/2016	9:02:34	237.8857	144.8822	91.59112	296.0941
10/26/2016	9:09:46	238.3618	144.2487	90.11462	296.732
10/26/2016	9:16:58	239.3384	145.1407	90.58089	297.0952
10/26/2016	9:24:10	237.3974	145.5286	90.19234	297.4092

$Date	$Time	Dryer Inlet Temp °F	Dryer Outlet Temp °F	Digester Pressure psi	Press Platen Temp °F
10/26/2016	9:31:22	238.1298	145.3993	90.50803	297.4191
10/26/2016	9:38:34	238.2519	146.4335	90.28947	297.4191
10/26/2016	9:45:46	238.0078	150.2602	90.14377	297.4191
10/26/2016	9:52:58	240.3027	151.0229	90.15348	297.3307
10/26/2016	10:00:10	243.7941	152.6906	91.14429	297.3602
10/26/2016	10:07:22	242.4635	155.1081	90.74602	297.4681
10/26/2016	10:14:34	227.1554	150.7644	92.67906	297.5565
10/26/2016	10:21:46	211.5909	147.8297	93.03847	297.792
10/26/2016	12:31:22	239.3384	149.7431	95.89918	294.0625
10/26/2016	12:38:34	238.2519	147.8297	96.37029	294.4747
10/26/2016	12:45:46	239.8145	149.8723	95.62719	295.25
10/26/2016	12:52:58	241.9874	149.7431	94.69466	295.7702
10/26/2016	13:00:10	241.3892	149.2389	95.00551	296.0156
10/26/2016	13:07:22	242.4635	149.1096	96.16631	296.4278
10/26/2016	13:14:34	243.1959	150.1309	95.66119	297.105
10/26/2016	13:21:46	243.318	148.9803	95.87489	297.2915
10/26/2016	14:33:46	239.9365	144.5073	93.65044	296.7222
10/26/2016	14:40:58	241.3892	147.1963	96.12745	296.8793
10/26/2016	15:02:34	241.7432	146.3043	89.76007	297.0363
10/26/2016	15:09:46	241.7432	148.9803	91.19286	297.0265
10/26/2016	15:16:58	245.2467	153.9575	88.89069	297.2326
10/26/2016	15:24:10	243.1959	152.8069	91.54741	297.4779
10/26/2016	15:31:22	236.7992	150.2602	88.76441	297.7233
10/26/2016	15:38:34	238.3618	148.7218	89.29382	297.7724
10/26/2016	15:45:46	242.5855	150.5187	89.60465	297.5957
10/26/2016	16:28:58	241.9874	147.959	89.91064	297.213
10/26/2016	16:36:10	240.9009	146.3043	89.68722	296.9774
10/26/2016	16:43:22	243.318	151.1522	87.95332	296.3591
10/26/2016	16:50:34	237.3974	180.6535	87.4142	296.0646
10/26/2016	16:57:46	162.7369	171.4489	89.69208	295.78
10/26/2016	17:04:58	241.023	147.3255	88.77898	295.8193
10/26/2016	17:12:10	240.3027	138.6251	89.5318	295.6328
10/26/2016	17:19:22	241.4991	144.1194	90.38661	295.5543
10/26/2016	17:26:34	240.5347	151.0229	89.67265	295.6426
10/27/2016	8:33:46	63.57616	77.17915	4.779174	289.165
10/27/2016	9:02:34	211.713	188.3197	4.735462	289.0669
10/27/2016	9:09:46	221.1127	193.0384	4.818029	287.8204
10/27/2016	9:16:58	238.1298	197.2658	33.63392	289.2337
10/27/2016	9:24:10	234.7484	199.0498	90.0272	290.9709
10/27/2016	9:31:22	232.5755	153.5826	89.83292	292.1388
10/27/2016	9:38:34	234.6263	163.537	91.04715	293.1105
10/27/2016	9:45:46	234.5042	142.2061	90.47404	293.8269

$Date	$Time	Dryer Inlet Temp °F	Dryer Outlet Temp °F	Digester Pressure psi	Press Platen Temp °F
10/27/2016	9:52:58	234.5042	142.0769	91.55226	294.4354
10/27/2016	10:00:10	232.9417	145.7871	94.3644	294.7691
10/27/2016	10:28:58	233.9061	151.54	94.98122	295.3875
10/27/2016	10:36:10	140.1776	140.4221	95.59805	295.6034
10/27/2016	10:43:22	232.8196	159.956	95.62719	296.3787
10/27/2016	10:50:34	240.9009	173.3622	95.58348	297.3405
10/27/2016	10:57:46	232.8196	142.9689	95.21921	297.3209
10/27/2016	11:04:58	232.0994	147.7005	93.28617	296.2708
10/27/2016	11:12:10	233.5398	148.7218	92.03795	295.4169
10/27/2016	11:19:22	233.6619	145.6579	92.21766	297.0167
10/27/2016	11:26:34	235.2367	147.4548	95.06865	296.7713
10/27/2016	11:48:10	235.8348	152.9362	92.44593	292.1388
10/27/2016	11:55:22	237.8857	149.7431	91.14914	288.056
10/27/2016	12:02:34	236.9213	143.6023	91.78539	288.213
10/27/2016	12:09:46	237.5195	144.7529	91.73682	293.876
10/27/2016	12:16:58	235.2367	144.378	89.64351	294.0723
10/27/2016	12:24:10	235.4686	145.9164	92.23708	295.8684
10/27/2016	12:31:22	237.6415	147.3255	96.04974	294.7004
10/27/2016	12:38:34	238.3618	146.0457	100.3821	292.8651
10/27/2016	12:45:46	239.2163	145.9164	101.3583	296.5456
10/27/2016	14:33:46	238.1298	145.7871	89.64837	300.6775
10/27/2016	14:40:58	237.8857	145.1407	90.44975	297.3307
10/27/2016	14:48:10	236.7992	144.1194	90.84315	297.0167
10/27/2016	14:55:22	236.9213	144.1194	88.87612	294.9458
10/27/2016	15:02:34	236.6771	144.8822	89.61436	294.1115
10/27/2016	15:09:46	237.7636	146.175	88.55071	297.9392
10/27/2016	15:16:58	238.2519	147.8297	89.9932	298.1846
10/27/2016	15:24:10	238.6059	146.5628	89.74065	293.3656
10/27/2016	15:31:22	239.4482	144.5073	89.0704	289.0767
10/27/2016	16:21:46	238.8501	145.0115	88.25929	280.7441
10/27/2016	16:28:58	238.6059	143.8609	89.47352	288.0952
10/27/2016	16:36:10	239.4482	143.2274	88.55556	285.8869
10/27/2016	16:43:22	239.8145	143.8609	88.97812	281.7354
10/27/2016	16:50:34	240.5347	145.1407	90.92087	278.1629
10/27/2016	16:57:46	240.1807	147.4548	88.59442	277.9764
10/27/2016	17:04:58	239.6924	149.7431	89.41524	287.7125
10/27/2016	17:12:10	241.1451	150.3895	90.07577	290.5292
10/27/2016	17:19:22	243.0738	150.648	88.92954	295.0243
10/27/2016	17:55:22	241.1451	150.1309	89.63865	289.6655
10/27/2016	18:02:34	242.7076	147.067	89.83292	286.4758
10/27/2016	18:09:46	243.0738	144.6236	89.45895	282.4126
10/27/2016	18:16:58	241.2671	145.9164	89.9155	278.9088
10/27/2016	18:24:10	239.4482	144.5073	92.48964	288.5467

$Date	$Time	Dryer Inlet Temp °F	Dryer Outlet Temp °F	Digester Pressure psi	Press Platen Temp °F
10/27/2016	18:31:22	226.545	142.0769	92.31965	291.2751
10/27/2016	18:38:34	229.3161	143.0982	92.06223	290.0581
10/27/2016	18:45:46	231.8552	143.486	91.71254	285.9949

Press Enclosure

Heigth 24'
Length 300'
Width 52'

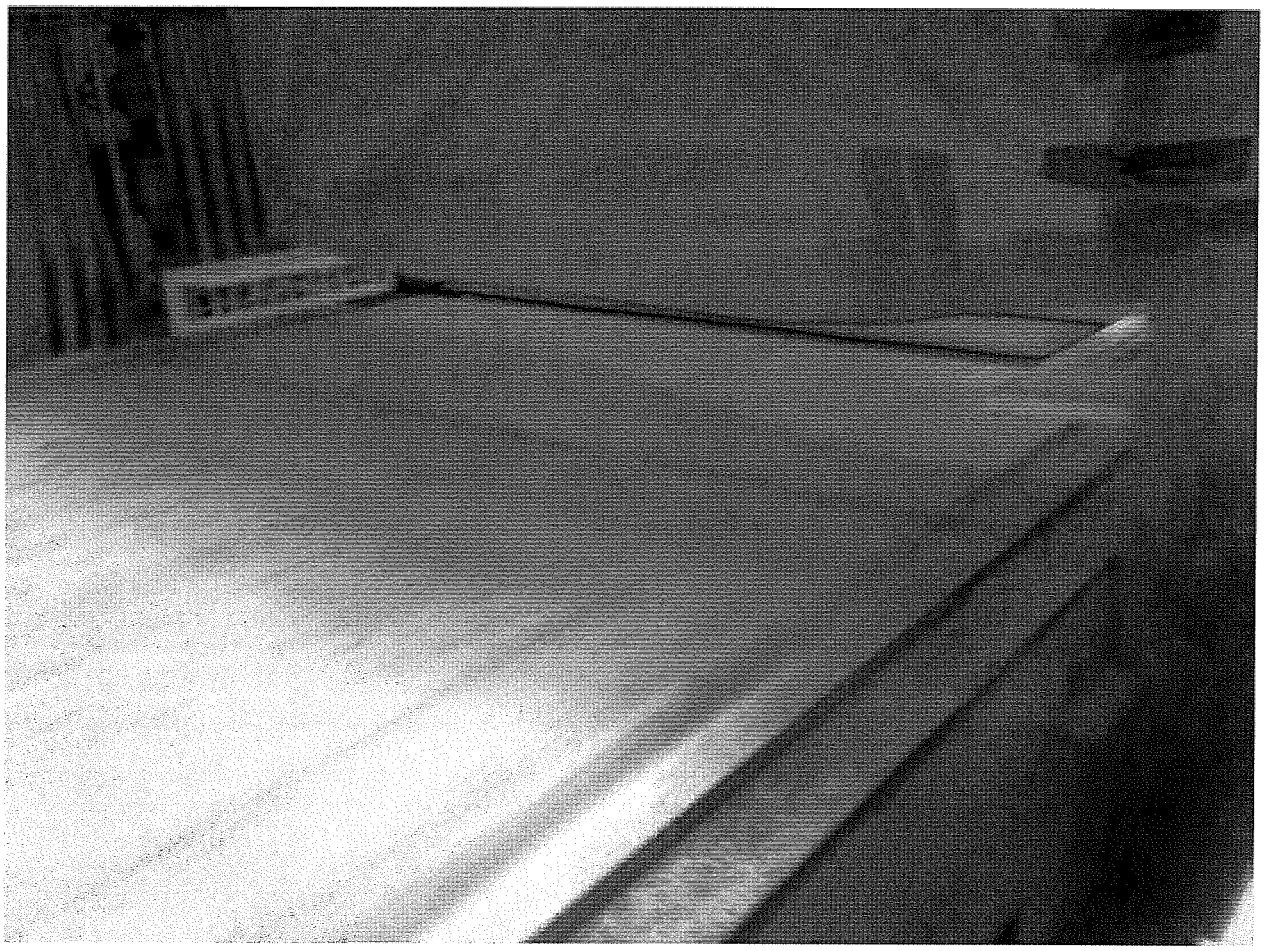
Surface Areas;
Outfeed End 52' X 24' = 1,248 ft^2
Infeed End 52' X 24' = 1,248 ft^2
South Side 300' X 24' = 7,200 ft^2
North Side 300' X 24' = 7,200 ft^2
Top (52' X 150') + (26' X 150') = 11,700 ft^2
Bottom (52' X 150') + (26' X 150') = 11,700 ft^2
Total = 40,296 ft^2

Openings
Cooler Outfeed 7' X 6.5' = 45.5 ft^2
Mat Infeed 1.5' X 7' = 10.5 ft^2
Total = 56 ft^2 = 0.2%

Air Velocity at Cooler Outfeed = 450 fpm
Air Velocity at Mat Infeed = 513 fpm

Cooler Outfeed

Material Infeed



Operators Station

Side View of Production Line

GOLDEN SPECIALTY

APPENDIX G – Laboratory Data

(281) 476-4769
goldenspecialty.com

Lab No. 195965

Certificate No. T104704255-15-12

Laboratory Analysis Report (III)

Supplement to Test Report GSL_160978

Report Date: 12/2/2016
Original Report Date: 11/29/2016

Golden Specialty

Report No.: **GSL_160978 Revision 1.0**
Original Report No.: **GSL_160978**
Project: **Neucor**
White Swan, WA

Prepared for:

Shamit Nakra
Golden Specialty
3921 Spur Ridge Lane
Bellingham, WA 98226

Golden Specialty
Project ID: Neucor
GSL Order ID: GSL_160977 & GSL_160978

Shamit Nakra
3921 Spur Ridge Lane
Bellingham, WA 98226

The samples submitted under the above referenced project name and identified by our Golden Specialty laboratory order number have been analyzed, and the data is enclosed. Only results for samples listed on the original Chain of Custody (at end of report) are included in this report. Raw data and subcontract data, if applicable, are attached to this report. Results provided in this report relate only to the samples.

All samples will be kept for no less than five business days after the final report is submitted, unless other arrangements have been made. Samples put on hold or held in canisters due to client issues will incur weekly canister rental fees. Golden Specialty reserves the right to return any unused samples due to hazardous sample matrices. Raw data and final reports will be filed for five years unless otherwise requested by client or regulatory mandates. To protect the integrity and completeness of this report, it must remain attached to this cover letter.

I certify to the best of my knowledge all analytical data presented in this report has been checked for completeness and accuracy, and is free of errors. Any deviations from the stated analytical protocols due to sample matrix have been documented in the laboratory narrative of this analytical report. Unless otherwise noted, any analysis performed by Golden Specialty falls within the scope of our NELAC accreditation and meets all NELAC requirements.

We thank you for selecting Golden Specialty to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Scott Swiggard
Laboratory Director

This analytical report and data associated has been reviewed and prepared specifically for you. The data package represents the best analytical and technical judgment and interpretations of our personnel, in accordance with the Golden Specialty Laboratory Quality Assurance Manual. Golden Specialty Inc. assumes no responsibility for the end use of this document or any portion extracted from it. Unless it is otherwise agreed upon, in writing, and prior to analytical work, Golden Specialty Inc. liability may not exceed the amount invoiced for this order.

Laboratory Narrative

Supplement to Test Report GSL_160978:

The laboratory analysis report number GSL_160978 has been revised; formaldehyde results are re-processed based on an updated calibration.

Accreditation:

The Washington Department of Environmental Quality does not currently offer accreditation for EPA Method 5, EPA Method 202, or NCASI 99.02.

NCASI 99.02 Formaldehyde Calibration:

In order to identify formaldehyde concentrations below the 0.5 ug/ml limit specified in NCASI Method 99.02, an additional calibration point was determined at 0.1 ug/ml. Because this calibration point is outside the method specifications, formaldehyde results identified between 0.1 ug/ml and 0.5 ug/ml are considered to have marginally increased quantitative uncertainty.

Respectfully,

Scott Swiggard
Laboratory Director

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Laboratory Analysis Report

Sample Results Summary Table

Client Name: Golden Specialty
Test: Analysis by EPA Method 5

Source: Press Vent East

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R1-East	10/25/2016	PM	Filter 2-3585	N/A	0.5743	0.5749	0.0006
M5/202-C1-R2-East	10/25/2016	PM	Filter 2-3587	N/A	0.5604	0.5619	0.0015
M5/202-C1-R3-East	10/26/2016	PM	Filter 2-3603	N/A	0.6064	0.6091	0.0027
M5/202-C2-R1-East	10/25/2016	PM	Glass beaker 8657	98	67.2388	67.2434	0.0046
M5/202-C2-R2-East	10/25/2016	PM	Glass beaker 8658	112	66.5892	66.5933	0.0041
M5/202-C2-R3-East	10/26/2016	PM	Glass beaker 8662	71	66.6724	66.6780	0.0056

Source: Press Vent West

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R1-West	10/25/2016	PM	Filter 2-3586	N/A	0.6276	0.6716	0.0440
M5/202-C1-R2-West	10/25/2016	PM	Filter 2-3604	N/A	0.5548	0.5810	0.0262
M5/202-C1-R3-West	10/26/2016	PM	Filter 2-3599	N/A	0.5271	0.5640	0.0369
M5/202-C2-R1-West	10/25/2016	PM	Glass beaker 8663	131	66.5398	66.5558	0.0160
M5/202-C2-R2-West	10/25/2016	PM	Glass beaker 8664	102	66.6541	66.6651	0.0110
M5/202-C2-R3-West	10/26/2016	PM	Glass beaker 8667	94	66.6514	66.6621	0.0107

Source: Blanks

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5-C3-AcetoneBlank	10/25/2016	PM	Glass beaker 8668	109	66.4991	66.4993	0.0002

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Laboratory Analysis Report

Sample Results Summary Table

Client Name: Golden Specialty
Test: Analysis by EPA Method 202

Source: Press Vent East

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R1-East	10/25/2016	Inorganic CPM	Glass beaker 1839	208	28.4050	28.4078	0.0028
M5/202-CPM-1-R2-East	10/25/2016	Inorganic CPM	Glass beaker 1840	153	28.5671	28.5699	0.0028
M5/202-CPM-1-R3-East	10/26/2016	Inorganic CPM	Glass beaker 1841	206	28.5268	28.5297	0.0029
M5/202-CPM-2-R1-East	10/25/2016	Organic CPM	Tin 4443	122	2.3289	2.3292	0.0003
M5/202-CPM-2-R2-East	10/25/2016	Organic CPM	Tin 4444	93	2.2676	2.2682	0.0006
M5/202-CPM-2-R3-East	10/26/2016	Organic CPM	Tin 4445	155	2.2539	2.2542	0.0003

Source: Press Vent West

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R1-West	10/25/2016	Inorganic CPM	Glass beaker 1842	155	28.3665	28.3710	0.0045
M5/202-CPM-1-R2-West	10/25/2016	Inorganic CPM	Glass beaker 1843	185	28.5322	28.5372	0.0050
M5/202-CPM-1-R3-West	10/26/2016	Inorganic CPM	Glass beaker 1844	185	28.9707	28.9739	0.0032
M5/202-CPM-2-R1-West	10/25/2016	Organic CPM	Tin 4446	82	2.3348	2.3356	0.0008
M5/202-CPM-2-R2-West	10/25/2016	Organic CPM	Tin 4447	131	2.3348	2.3361	0.0013
M5/202-CPM-2-R3-West	10/26/2016	Organic CPM	Tin 4448	140	2.3311	2.3325	0.0014

Source: Blanks

Sample ID	Collect Date	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-FieldTrainBlk	10/26/2016	Inorganic CPM	Glass beaker 1845	166	28.2660	28.2681	0.0021
M5/202-CPM-2-FieldTrainBlk	10/26/2016	Organic CPM	Tin 4449	120	2.3182	2.3183	0.0001
M202-C6-Acetone Blank	10/26/2016	CPM/PM	Tin 4441	57	2.3237	2.3238	0.0001
M202-C7-Water Blank	10/26/2016	CPM	Glass beaker 1835	189	28.3057	28.3060	0.0003
M202-C8-Hexane Blank	10/26/2016	CPM	Tin 4442	90	2.3463	2.3463	< 0.0001

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Laboratory Analysis Report

Sample Results Summary Table

Client Name: Golden Specialty
Test: Analysis by NCASI 99.02

Source: Dryer Vent

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
DV-1	10/27/2016	76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
DV-2	10/27/2016	77	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
DV-3	10/27/2016	76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.12
DV-1 Spike	10/27/2016	78	31.98	31.98	9.17	56.84	44.70	3.03
DV-3 Dup	10/27/2016	75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
Field Spike-DV	10/27/2016	76	53.32	53.32	33.64	56.56	54.98	3.13

Source: Line Former

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
LF-1	10/27/2016	75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
LF-2	10/27/2016	76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
LF-3	10/27/2016	74	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
LF-1 Dup	10/27/2016	76	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
LF-2 Spike	10/27/2016	76	37.82	37.82	17.48	54.37	50.30	2.82
Field Spike-LF	10/27/2016	77	52.57	52.57	31.50	54.42	51.64	2.61

Source: Press Vent East

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
PV-R1-East	10/26/2016	61	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
PV-R2-East	10/26/2016	67	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
PV-R3-East	10/26/2016	73	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
PV-R2-East Dup	10/26/2016	70	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
PV-R3-East Spike	10/26/2016	76	27.15	27.15	8.10	51.70	45.19	2.78

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Laboratory Analysis Report

Sample Results Summary Table

Client Name: Golden Specialty
Test: Analysis by NCASI 99.02

Source: Press Vent West

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
PV-R1-West	10/26/2016	71	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.12
PV-R2-West	10/26/2016	74	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
PV-R3-West	10/26/2016	74	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10

Source: Press Vents

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
Field Spike-PVs	10/27/2016	77	54.44	54.44	33.68	54.94	52.30	3.15

Source: Blanks

Sample ID	Collect Date	Volume (ml)	Acetaldehyde (ug/ml)	Propionaldehyde (ug/ml)	Methanol (ug/ml)	Acrolein (ug/ml)	Phenol (ug/ml)	Formaldehyde (ug/ml)
Field Blank	10/27/2016	75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
Equipment Blank	10/27/2016	75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.10
Train Spike	10/27/2016	78	51.74	51.74	32.55	53.85	51.92	3.01
Field Spike-TS	10/27/2016	77	54.45	54.45	32.63	55.37	52.74	2.43

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 5		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM009		
Analysis Location:	Salt Lake City, UT		
Instrument ID:	Balance CCI-1	**Source Sampled:**	**Press Vent East**
Sample Analyst:	Alyssa Trujillo	**Date Sampled:**	10/25/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/7/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R1-East	025	PM	Filter 2-3585	N/A	0.5743	0.5749	0.0006
M5/202-C1-R2-East	026	PM	Filter 2-3587	N/A	0.5604	0.5619	0.0015
M5/202-C2-R1-East	028	PM	Glass beaker 8657	98	67.2388	67.2434	0.0046
M5/202-C2-R2-East	029	PM	Glass beaker 8658	112	66.5892	66.5933	0.0041

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 202		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM026		
Analysis Location:	Deer Park, TX		
Instrument ID:	Balances #1 & #2	**Source Sampled:**	**Press Vent East**
Sample Analyst:	Sowmya Pabba	**Date Sampled:**	10/25/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/8/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R1-East	001	Inorganic CPM	Glass beaker 1839	208	28.4050	28.4078	0.0028
M5/202-CPM-1-R2-East	002	Inorganic CPM	Glass beaker 1840	153	28.5671	28.5699	0.0028
M5/202-CPM-2-R1-East	004	Organic CPM	Tin 4443	122	2.3289	2.3292	0.0003
M5/202-CPM-2-R2-East	005	Organic CPM	Tin 4444	93	2.2676	2.2682	0.0006

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 5		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM009		
Analysis Location:	Salt Lake City, UT		
Instrument ID:	Balance CCI-1	**Source Sampled:**	**Press Vent East**
Sample Analyst:	Alyssa Trujillo	**Date Sampled:**	10/26/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/7/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R3-East	027	PM	Filter 2-3603	N/A	0.6064	0.6091	0.0027
M5/202-C2-R3-East	030	PM	Glass beaker 8662	71	66.6724	66.6780	0.0056

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 202		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM026		
Analysis Location:	Deer Park, TX		
Instrument ID:	Balances #1 & #2	**Source Sampled:**	**Press Vent East**
Sample Analyst:	Sowmya Pabba	**Date Sampled:**	10/26/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/8/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R3-East	003	Inorganic CPM	Glass beaker 1841	206	28.5268	28.5297	0.0029
M5/202-CPM-2-R3-East	006	Organic CPM	Tin 4445	155	2.2539	2.2542	0.0003

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 5		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM009		
Analysis Location:	Salt Lake City, UT		
Instrument ID:	Balance CCI-1	**Source Sampled:**	**Press Vent West**
Sample Analyst:	Alyssa Trujillo	**Date Sampled:**	10/25/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/7/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R1-West	031	PM	Filter 2-3586	N/A	0.6276	0.6716	0.0440
M5/202-C1-R2-West	032	PM	Filter 2-3604	N/A	0.5548	0.5810	0.0262
M5/202-C2-R1-West	034	PM	Glass beaker 8663	131	66.5398	66.5558	0.0160
M5/202-C2-R2-West	035	PM	Glass beaker 8664	102	66.6541	66.6651	0.0110

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 202		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM026		
Analysis Location:	Deer Park, TX		
Instrument ID:	Balances #1 & #2	**Source Sampled:**	**Press Vent West**
Sample Analyst:	Sowmya Pabba	**Date Sampled:**	10/25/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/8/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R1-West	010	Inorganic CPM	Glass beaker 1842	155	28.3665	28.3710	0.0045
M5/202-CPM-1-R2-West	011	Inorganic CPM	Glass beaker 1843	185	28.5322	28.5372	0.0050
M5/202-CPM-2-R1-West	013	Organic CPM	Tin 4446	82	2.3348	2.3356	0.0008
M5/202-CPM-2-R2-West	014	Organic CPM	Tin 4447	131	2.3348	2.3361	0.0013

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 5		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM009		
Analysis Location:	Salt Lake City, UT		
Instrument ID:	Balance CCI-1	**Source Sampled:**	**Press Vent West**
Sample Analyst:	Alyssa Trujillo	**Date Sampled:**	10/26/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/7/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-C1-R3-West	033	PM	Filter 2-3599	N/A	0.5271	0.5640	0.0369
M5/202-C2-R3-West	036	PM	Glass beaker 8667	94	66.6514	66.6621	0.0107

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 202		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM026		
Analysis Location:	Deer Park, TX		
Instrument ID:	Balances #1 & #2	**Source Sampled:**	**Press Vent West**
Sample Analyst:	Sowmya Pabba	**Date Sampled:**	10/26/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/8/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-R3-West	012	Inorganic CPM	Glass beaker 1844	185	28.9707	28.9739	0.0032
M5/202-CPM-2-R3-West	015	Organic CPM	Tin 4448	140	2.3311	2.3325	0.0014

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 5		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM009		
Analysis Location:	Salt Lake City, UT		
Instrument ID:	Balance CCI-1	**Source Sampled:**	**Blanks**
Sample Analyst:	Alyssa Trujillo	**Date Sampled:**	10/25/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/7/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5-C3-AcetoneBlank	037	PM	Glass beaker 8668	109	66.4991	66.4993	0.0002

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Laboratory Analysis Report

Sample Results

Test:	Analysis by EPA Method 202		
Client Name:	Golden Specialty		
Order ID:	**GSL_160977**		
Analytical SOP:	GSL_TM026		
Analysis Location:	Deer Park, TX		
Instrument ID:	Balances #1 & #2	**Source Sampled:**	**Blanks**
Sample Analyst:	Sowmya Pabba	**Date Sampled:**	10/26/2016
QC Batch ID:	QC_07491	**Date Analyzed:**	11/8/2016

Sample ID	Sample Number	Parameter	Container Number	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Result (g)
M5/202-CPM-1-FieldTrainBlk	019	Inorganic CPM	Glass beaker 1845	166	28.2660	28.2681	0.0021
M5/202-CPM-2-FieldTrainBlk	020	Organic CPM	Tin 4449	120	2.3182	2.3183	0.0001
M202-C6-Acetone Blank	022	CPM/PM	Tin 4441	57	2.3237	2.3238	0.0001
M202-C7-Water Blank	023	CPM	Glass beaker 1835	189	28.3057	28.3060	0.0003
M202-C8-Hexane Blank	024	CPM	Tin 4442	90	2.3463	2.3463	< 0.0001

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Dryer Vent**
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016
QC Batch ID:	QC_07498	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
DV-1	015	Acetaldehyde	0.50	1.00	0.50	76	< 0.50
DV-1	015	Propionaldehyde	0.50	1.00	0.50	76	< 0.50
DV-1	015	Methanol	0.50	1.00	0.50	76	< 0.50
DV-1	015	Acrolein	0.50	1.00	0.50	76	< 0.50
DV-1	015	Phenol	0.50	1.00	0.50	76	< 0.50
DV-2	017	Acetaldehyde	0.50	1.00	0.50	77	< 0.50
DV-2	017	Propionaldehyde	0.50	1.00	0.50	77	< 0.50
DV-2	017	Methanol	0.50	1.00	0.50	77	< 0.50
DV-2	017	Acrolein	0.50	1.00	0.50	77	< 0.50
DV-2	017	Phenol	0.50	1.00	0.50	77	< 0.50
DV-3	018	Acetaldehyde	0.50	1.00	0.50	76	< 0.50
DV-3	018	Propionaldehyde	0.50	1.00	0.50	76	< 0.50
DV-3	018	Methanol	0.50	1.00	0.50	76	< 0.50
DV-3	018	Acrolein	0.50	1.00	0.50	76	< 0.50
DV-3	018	Phenol	0.50	1.00	0.50	76	< 0.50

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Line Former**
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016
QC Batch ID:	QC_07498	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
LF-1	010	Acetaldehyde	0.50	1.00	0.50	75	< 0.50
LF-1	010	Propionaldehyde	0.50	1.00	0.50	75	< 0.50
LF-1	010	Methanol	0.50	1.00	0.50	75	< 0.50
LF-1	010	Acrolein	0.50	1.00	0.50	75	< 0.50
LF-1	010	Phenol	0.50	1.00	0.50	75	< 0.50
LF-2	012	Acetaldehyde	0.50	1.00	0.50	76	< 0.50
LF-2	012	Propionaldehyde	0.50	1.00	0.50	76	< 0.50
LF-2	012	Methanol	0.50	1.00	0.50	76	< 0.50
LF-2	012	Acrolein	0.50	1.00	0.50	76	< 0.50
LF-2	012	Phenol	0.50	1.00	0.50	76	< 0.50
LF-3	014	Acetaldehyde	0.50	1.00	0.50	74	< 0.50
LF-3	014	Propionaldehyde	0.50	1.00	0.50	74	< 0.50
LF-3	014	Methanol	0.50	1.00	0.50	74	< 0.50
LF-3	014	Acrolein	0.50	1.00	0.50	74	< 0.50
LF-3	014	Phenol	0.50	1.00	0.50	74	< 0.50

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent East**
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/26/2016
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016
QC Batch ID:	QC_07498	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
PV-R1-East	001	Acetaldehyde	0.50	1.00	0.50	61	< 0.50
PV-R1-East	001	Propionaldehyde	0.50	1.00	0.50	61	< 0.50
PV-R1-East	001	Methanol	0.50	1.00	0.50	61	< 0.50
PV-R1-East	001	Acrolein	0.50	1.00	0.50	61	< 0.50
PV-R1-East	001	Phenol	0.50	1.00	0.50	61	< 0.50
PV-R2-East	002	Acetaldehyde	0.50	1.00	0.50	67	< 0.50
PV-R2-East	002	Propionaldehyde	0.50	1.00	0.50	67	< 0.50
PV-R2-East	002	Methanol	0.50	1.00	0.50	67	< 0.50
PV-R2-East	002	Acrolein	0.50	1.00	0.50	67	< 0.50
PV-R2-East	002	Phenol	0.50	1.00	0.50	67	< 0.50
PV-R3-East	004	Acetaldehyde	0.50	1.00	0.50	73	< 0.50
PV-R3-East	004	Propionaldehyde	0.50	1.00	0.50	73	< 0.50
PV-R3-East	004	Methanol	0.50	1.00	0.50	73	< 0.50
PV-R3-East	004	Acrolein	0.50	1.00	0.50	73	< 0.50
PV-R3-East	004	Phenol	0.50	1.00	0.50	73	< 0.50

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent West**
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/26/2016
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016
QC Batch ID:	QC_07498	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
PV-R1-West	006	Acetaldehyde	0.50	1.00	0.50	71	< 0.50
PV-R1-West	006	Propionaldehyde	0.50	1.00	0.50	71	< 0.50
PV-R1-West	006	Methanol	0.50	1.00	0.50	71	< 0.50
PV-R1-West	006	Acrolein	0.50	1.00	0.50	71	< 0.50
PV-R1-West	006	Phenol	0.50	1.00	0.50	71	< 0.50
PV-R2-West	007	Acetaldehyde	0.50	1.00	0.50	74	< 0.50
PV-R2-West	007	Propionaldehyde	0.50	1.00	0.50	74	< 0.50
PV-R2-West	007	Methanol	0.50	1.00	0.50	74	< 0.50
PV-R2-West	007	Acrolein	0.50	1.00	0.50	74	< 0.50
PV-R2-West	007	Phenol	0.50	1.00	0.50	74	< 0.50
PV-R3-West	008	Acetaldehyde	0.50	1.00	0.50	74	< 0.50
PV-R3-West	008	Propionaldehyde	0.50	1.00	0.50	74	< 0.50
PV-R3-West	008	Methanol	0.50	1.00	0.50	74	< 0.50
PV-R3-West	008	Acrolein	0.50	1.00	0.50	74	< 0.50
PV-R3-West	008	Phenol	0.50	1.00	0.50	74	< 0.50

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Blanks**
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016
QC Batch ID:	QC_07498	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
Field Blank	022	Acetaldehyde	0.50	1.00	0.50	75	< 0.50
Field Blank	022	Propionaldehyde	0.50	1.00	0.50	75	< 0.50
Field Blank	022	Methanol	0.50	1.00	0.50	75	< 0.50
Field Blank	022	Acrolein	0.50	1.00	0.50	75	< 0.50
Field Blank	022	Phenol	0.50	1.00	0.50	75	< 0.50
Equipment Blank	023	Acetaldehyde	0.50	1.00	0.50	75	< 0.50
Equipment Blank	023	Propionaldehyde	0.50	1.00	0.50	75	< 0.50
Equipment Blank	023	Methanol	0.50	1.00	0.50	75	< 0.50
Equipment Blank	023	Acrolein	0.50	1.00	0.50	75	< 0.50
Equipment Blank	023	Phenol	0.50	1.00	0.50	75	< 0.50

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Dryer Vent**		
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016		
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07498	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
DV-1 Spike	016	Acetaldehyde	0.50	1.00	0.50	78	31.98	< 0.50	53	63	M
DV-1 Spike	016	Propionaldehyde	0.50	1.00	0.50	78	22.84	< 0.50	53	45	M
DV-1 Spike	016	Methanol	0.50	1.00	0.50	78	9.17	< 0.50	53	18	M
DV-1 Spike	016	Acrolein	0.50	1.00	0.50	78	56.84	< 0.50	53	112	
DV-1 Spike	016	Phenol	0.50	1.00	0.50	78	44.70	< 0.50	53	88	
DV-3 Dup	019	Acetaldehyde	0.50	1.00	0.50	75	< 0.50	< 0.50	N/A	NC	
DV-3 Dup	019	Propionaldehyde	0.50	1.00	0.50	75	< 0.50	< 0.50	N/A	NC	
DV-3 Dup	019	Methanol	0.50	1.00	0.50	75	< 0.50	< 0.50	N/A	NC	
DV-3 Dup	019	Acrolein	0.50	1.00	0.50	75	< 0.50	< 0.50	N/A	NC	
DV-3 Dup	019	Phenol	0.50	1.00	0.50	75	< 0.50	< 0.50	N/A	NC	
Field Spike-DV	021	Acetaldehyde	0.50	1.00	0.50	76	53.32	< 0.50	53	102	
Field Spike-DV	021	Propionaldehyde	0.50	1.00	0.50	76	49.96	< 0.50	53	96	
Field Spike-DV	021	Methanol	0.50	1.00	0.50	76	33.64	< 0.50	53	64	M
Field Spike-DV	021	Acrolein	0.50	1.00	0.50	76	56.56	< 0.50	53	108	
Field Spike-DV	021	Phenol	0.50	1.00	0.50	76	54.98	< 0.50	53	105	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Line Former**		
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016		
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07498	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
LF-1 Dup	011	Acetaldehyde	0.50	1.00	0.50	76	< 0.50	< 0.50	N/A	NC	
LF-1 Dup	011	Propionaldehyde	0.50	1.00	0.50	76	< 0.50	< 0.50	N/A	NC	
LF-1 Dup	011	Methanol	0.50	1.00	0.50	76	< 0.50	< 0.50	N/A	NC	
LF-1 Dup	011	Acrolein	0.50	1.00	0.50	76	< 0.50	< 0.50	N/A	NC	
LF-1 Dup	011	Phenol	0.50	1.00	0.50	76	< 0.50	< 0.50	N/A	NC	
LF-2 Spike	013	Acetaldehyde	0.50	1.00	0.50	76	37.82	< 0.50	53	72	
LF-2 Spike	013	Propionaldehyde	0.50	1.00	0.50	76	33.91	< 0.50	53	65	M
LF-2 Spike	013	Methanol	0.50	1.00	0.50	76	17.48	< 0.50	53	33	M
LF-2 Spike	013	Acrolein	0.50	1.00	0.50	76	54.37	< 0.50	53	104	
LF-2 Spike	013	Phenol	0.50	1.00	0.50	76	50.30	< 0.50	53	96	
Field Spike-LF	020	Acetaldehyde	0.50	1.00	0.50	77	52.57	< 0.50	53	102	
Field Spike-LF	020	Propionaldehyde	0.50	1.00	0.50	77	49.09	< 0.50	53	95	
Field Spike-LF	020	Methanol	0.50	1.00	0.50	77	31.50	< 0.50	53	61	M
Field Spike-LF	020	Acrolein	0.50	1.00	0.50	77	54.42	< 0.50	53	105	
Field Spike-LF	020	Phenol	0.50	1.00	0.50	77	51.64	< 0.50	53	100	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent East**		
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/26/2016		
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07498	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
PV-R2-East Dup	003	Acetaldehyde	0.50	1.00	0.50	70	< 0.50	< 0.50	N/A	NC	
PV-R2-East Dup	003	Propionaldehyde	0.50	1.00	0.50	70	< 0.50	< 0.50	N/A	NC	
PV-R2-East Dup	003	Methanol	0.50	1.00	0.50	70	< 0.50	< 0.50	N/A	NC	
PV-R2-East Dup	003	Acrolein	0.50	1.00	0.50	70	< 0.50	< 0.50	N/A	NC	
PV-R2-East Dup	003	Phenol	0.50	1.00	0.50	70	< 0.50	< 0.50	N/A	NC	
PV-R3-East Spike	005	Acetaldehyde	0.50	1.00	0.50	76	27.15	< 0.50	53	52	M
PV-R3-East Spike	005	Propionaldehyde	0.50	1.00	0.50	76	20.71	< 0.50	53	40	M
PV-R3-East Spike	005	Methanol	0.50	1.00	0.50	76	8.10	< 0.50	53	15	M
PV-R3-East Spike	005	Acrolein	0.50	1.00	0.50	76	51.70	< 0.50	53	99	
PV-R3-East Spike	005	Phenol	0.50	1.00	0.50	76	45.19	< 0.50	53	86	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vents**		
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016		
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07498	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
Field Spike-PVs	009	Acetaldehyde	0.50	1.00	0.50	77	54.44	< 0.50	53	105	
Field Spike-PVs	009	Propionaldehyde	0.50	1.00	0.50	77	49.23	< 0.50	53	95	
Field Spike-PVs	009	Methanol	0.50	1.00	0.50	77	33.68	< 0.50	53	65	M
Field Spike-PVs	009	Acrolein	0.50	1.00	0.50	77	54.94	< 0.50	53	106	
Field Spike-PVs	009	Phenol	0.50	1.00	0.50	77	52.30	< 0.50	53	101	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Blanks**		
Instrument ID:	GC #5 - Agilent	**Date Sampled:**	10/27/2016		
Sample Analyst:	Dhan Yeddula	**Date Analyzed:**	11/10/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07498	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
Train Spike	024	Acetaldehyde	0.50	1.00	0.50	78	51.74	< 0.50	53	102	
Train Spike	024	Propionaldehyde	0.50	1.00	0.50	78	49.08	< 0.50	53	96	
Train Spike	024	Methanol	0.50	1.00	0.50	78	32.55	< 0.50	53	64	M
Train Spike	024	Acrolein	0.50	1.00	0.50	78	53.85	< 0.50	53	106	
Train Spike	024	Phenol	0.50	1.00	0.50	78	51.92	< 0.50	53	102	
Field Spike-TS	025	Acetaldehyde	0.50	1.00	0.50	77	54.45	< 0.50	53	105	
Field Spike-TS	025	Propionaldehyde	0.50	1.00	0.50	77	49.85	< 0.50	53	97	
Field Spike-TS	025	Methanol	0.50	1.00	0.50	77	32.63	< 0.50	53	63	M
Field Spike-TS	025	Acrolein	0.50	1.00	0.50	77	55.37	< 0.50	53	107	
Field Spike-TS	025	Phenol	0.50	1.00	0.50	77	52.74	< 0.50	53	102	

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Dryer Vent**
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016
QC Batch ID:	QC_07499	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
DV-1	015	Formaldehyde	0.10	1.00	0.10	76	< 0.10
DV-2	017	Formaldehyde	0.10	1.00	0.10	77	< 0.10
DV-3	018	Formaldehyde	0.10	1.00	0.10	76	0.12

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Line Former**
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016
QC Batch ID:	QC_07499	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
LF-1	010	Formaldehyde	0.10	1.00	0.10	75	< 0.10
LF-2	012	Formaldehyde	0.10	1.00	0.10	76	< 0.10
LF-3	014	Formaldehyde	0.10	1.00	0.10	74	< 0.10

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent East**
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/26/2016
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016
QC Batch ID:	QC_07499	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
PV-R1-East	001	Formaldehyde	0.10	1.00	0.10	61	< 0.10
PV-R2-East	002	Formaldehyde	0.10	1.00	0.10	67	< 0.10
PV-R3-East	004	Formaldehyde	0.10	1.00	0.10	73	< 0.10

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent West**
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/26/2016
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016
QC Batch ID:	QC_07499	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
PV-R1-West	006	Formaldehyde	0.10	1.00	0.10	71	0.12
PV-R2-West	007	Formaldehyde	0.10	1.00	0.10	74	< 0.10
PV-R3-West	008	Formaldehyde	0.10	1.00	0.10	74	< 0.10

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Laboratory Analysis Report

Sample Results

Test:	Analysis by NCASI 99.02		
Client Name:	Golden Specialty		
Order ID:	**GSL_160978**		
Analytical SOP:	GSL_SPCL		
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Blanks**
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016
QC Batch ID:	QC_07499	**Matrix:**	Liquid

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)
Field Blank	022	Formaldehyde	0.10	1.00	0.10	75	< 0.10
Equipment Blank	023	Formaldehyde	0.10	1.00	0.10	75	< 0.10

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Dryer Vent**		
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016		
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07499	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
DV-1 Spike	016	Formaldehyde	0.10	1.00	0.10	78	3.03	< 0.10	2.67	117	
DV-3 Dup	019	Formaldehyde	0.10	1.00	0.10	75	< 0.10	0.12	N/A	NC	
Field Spike-DV	021	Formaldehyde	0.10	1.00	0.10	76	3.13	< 0.10	2.67	116	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Line Former**		
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016		
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07499	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
LF-1 Dup	011	Formaldehyde	0.10	1.00	0.10	76	< 0.10	< 0.10	N/A	NC	
LF-2 Spike	013	Formaldehyde	0.10	1.00	0.10	76	2.82	< 0.10	2.67	106	
Field Spike-LF	020	Formaldehyde	0.10	1.00	0.10	77	2.61	< 0.10	2.67	100	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vent East**		
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/26/2016		
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07499	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
PV-R2-East Dup	003	Formaldehyde	0.10	1.00	0.10	70	< 0.10	< 0.10	N/A	NC	
PV-R3-East Spike	005	Formaldehyde	0.10	1.00	0.10	76	2.78	< 0.10	2.67	103	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Press Vents**		
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016		
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07499	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
Field Spike-PVs	009	Formaldehyde	0.10	1.00	0.10	77	3.15	< 0.10	2.67	119	

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Laboratory Analysis Report

Field Quality Control Samples

Test:	Analysis by NCASI 99.02				
Client Name:	Golden Specialty				
Order ID:	**GSL_160978**				
Analytical SOP:	GSL_SPCL				
Analysis Location:	Deer Park, TX	**Source Sampled:**	**Blanks**		
Instrument ID:	UV/VIS #1 - Thermo	**Date Sampled:**	10/27/2016		
Sample Analyst:	Sowmya Pabba	**Date Analyzed:**	11/4/2016	**Spike Recovery Limits:**	**70 - 130%**
QC Batch ID:	QC_07499	**Matrix:**	Liquid	**Dup RPD Limits:**	**10%**

Sample ID	Sample Number	Parameter	MQL (ug/ml)	DF	SQL (ug/ml)	Sample Vol (ml)	Result (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Recovery or RPD	Flag
Train Spike	024	Formaldehyde	0.10	1.00	0.10	78	3.01	< 0.10	2.67	113	
Field Spike-TS	025	Formaldehyde	0.10	1.00	0.10	77	2.43	< 0.10	2.67	93	

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Laboratory Analysis Report

Quality Control Information

Surrogate Recovery

Test: Analysis by NCASI 99.02
Date Analyzed: 11/9/2016
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Sample Number	Parameter	Analysis Time	Spike Amount (ug/ml)	Surrogate Result (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
GSL_160978-001	Cyclohexanol	10:38 PM	16.27	9.64	59	60 - 140	L
GSL_160978-002	Cyclohexanol	11:06 PM	17.87	15.32	86	60 - 140	
GSL_160978-003	Cyclohexanol	11:34 PM	18.67	14.92	80	60 - 140	

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Laboratory Analysis Report

Quality Control Information

Surrogate Recovery

Test: Analysis by NCASI 99.02
Date Analyzed: 11/10/2016
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Sample Number	Parameter	Analysis Time	Spike Amount (ug/ml)	Surrogate Result (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
GSL_160978-004	Cyclohexanol	12:02 AM	19.47	15.46	79	60 - 140	
GSL_160978-005	Cyclohexanol	12:31 AM	20.27	16.35	81	60 - 140	
GSL_160978-006	Cyclohexanol	12:59 AM	18.93	15.09	80	60 - 140	
GSL_160978-007	Cyclohexanol	1:27 AM	19.73	16.01	81	60 - 140	
GSL_160978-008	Cyclohexanol	1:55 AM	19.73	16.46	83	60 - 140	
GSL_160978-009	Cyclohexanol	2:24 AM	20.53	17.18	84	60 - 140	
GSL_160978-010	Cyclohexanol	2:53 AM	20.00	13.34	67	60 - 140	
GSL_160978-011	Cyclohexanol	3:21 AM	20.27	14.17	70	60 - 140	
GSL_160978-012	Cyclohexanol	3:49 AM	20.27	15.26	75	60 - 140	
GSL_160978-013	Cyclohexanol	4:17 AM	20.27	17.89	88	60 - 140	
GSL_160978-014	Cyclohexanol	4:46 AM	19.73	16.67	84	60 - 140	
GSL_160978-015	Cyclohexanol	5:14 AM	20.27	17.11	84	60 - 140	
GSL_160978-016	Cyclohexanol	5:42 AM	20.80	17.16	82	60 - 140	
GSL_160978-017	Cyclohexanol	6:11 AM	20.53	17.38	85	60 - 140	
GSL_160978-018	Cyclohexanol	6:39 AM	20.27	17.32	85	60 - 140	
GSL_160978-019	Cyclohexanol	7:07 AM	20.00	16.65	83	60 - 140	
GSL_160978-020	Cyclohexanol	7:35 AM	20.53	16.69	81	60 - 140	
GSL_160978-021	Cyclohexanol	8:04 AM	20.27	17.06	84	60 - 140	
GSL_160978-022	Cyclohexanol	8:32 AM	20.00	16.81	84	60 - 140	
GSL_160978-023	Cyclohexanol	9:00 AM	20.00	16.57	83	60 - 140	
GSL_160978-024	Cyclohexanol	9:28 AM	20.80	17.70	85	60 - 140	
GSL_160978-025	Cyclohexanol	9:57 AM	20.53	17.26	84	60 - 140	

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Laboratory Analysis Report

Quality Control Information

Sample Duplicate Recovery

Test: Analysis by NCASI 99.02
Duplicate Sample Number: GSL_160916-044
Duplicate Sample Dilution: 1.00x
Date Analyzed: 11/9/2016 at 09:41 PM
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Parameter	SQL (ug/ml)	Sample Result (ug/ml)	Duplicate Result (ug/ml)	RPD (%)	RPD Limit (%)	Flag
Acetaldehyde	0.50	5.70	6.47	13	10	F
Propionaldehyde	0.50	< 0.50	< 0.50	NC	10	
Methanol	0.50	< 0.50	< 0.50	NC	10	
Acrolein	0.50	11.15	11.00	1	10	
Phenol	0.50	< 0.50	< 0.50	NC	10	

This analytical report and data associated has been reviewed and prepared specifically for you. The data package represents the best analytical and technical judgment and interpretations of our personnel, in accordance with the Golden Specialty Laboratory Quality Assurance Manual. Golden Specialty Inc. assumes no responsibility for the end use of this document or any portion extracted from it. Unless it is otherwise agreed upon, in writing, and prior to analytical work, Golden Specialty Inc. liability may not exceed the amount invoiced for this order.

Laboratory Analysis Report

Quality Control Information

Sample Duplicate Recovery

Test: Analysis by NCASI 99.02
Duplicate Sample Number: GSL_160978-007
Duplicate Sample Dilution: 1.00x
Date Analyzed: 11/4/2016 at 12:00 AM
Matrix: Liquid
Instrument ID: UV/VIS #1 - Thermo
Analyst: Sowmya Pabba
QC Batch ID: QC_07499

Parameter	SQL (ug/ml)	Sample Result (ug/ml)	Duplicate Result (ug/ml)	RPD (%)	RPD Limit (%)	Flag
Formaldehyde	0.10	< 0.10	< 0.10	NC	25	

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Laboratory Analysis Report

Quality Control Information

Matrix Spike Recovery

Test: Analysis by NCASI 99.02
Spiked Sample Number: GSL_160916-044
Spiked Sample Dilution: 1.00x
Date Analyzed: 11/9/2016 at 10:09 PM
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Parameter	MQL (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Spike Result (ug/ml)	Percent Recovery	Percent Recovery Limits	Flag
Acetaldehyde	0.50	5.70	200.00	234.13	114	70 - 130	
Propionaldehyde	0.50	< 0.50	200.00	220.23	110	70 - 130	
Methanol	0.50	< 0.50	200.00	214.70	107	70 - 130	
Acrolein	0.50	11.15	200.00	230.95	110	70 - 130	
Phenol	0.50	< 0.50	200.00	223.38	112	70 - 130	

This analytical report and data associated has been reviewed and prepared specifically for you. The data package represents the best analytical and technical judgment and interpretations of our personnel, in accordance with the Golden Specialty Laboratory Quality Assurance Manual. Golden Specialty Inc. assumes no responsibility for the end use of this document or any portion extracted from it. Unless it is otherwise agreed upon, in writing, and prior to analytical work, Golden Specialty Inc. liability may not exceed the amount invoiced for this order.

Laboratory Analysis Report

Quality Control Information

Matrix Spike Recovery

Test: Analysis by NCASI 99.02
Spiked Sample Number: 1.6
Spiked Sample Dilution: 1.00x
Date Analyzed: 11/4/2016 at 12:00 AM
Matrix: Liquid
Instrument ID: UV/VIS #1 - Thermo
Analyst: Sowmya Pabba
QC Batch ID: QC_07499

Parameter	MQL (ug/ml)	Sample Result (ug/ml)	Spike Amount (ug/ml)	Spike Result (ug/ml)	Percent Recovery	Percent Recovery Limits	Flag
Formaldehyde	0.10	< 0.10	2.00	2.07	104	70 - 130	

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Laboratory Analysis Report

Quality Control Information

Lab Blank Analysis

Test: Analysis by EPA Method 5
Date Analyzed: 8/24/2016
Matrix: Liquid
Instrument ID: Balances #1 & #2
Analyst: Sowmya Pabba
QC Batch ID: QC_07491

Parameter	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Blank Result (g)	Flag
Acetone blank	100	2.2987	2.2986	< 0.0001	

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Laboratory Analysis Report

Quality Control Information

Lab Blank Analysis

Test: Analysis by EPA Method 202
Date Analyzed: 8/10/2016
Matrix: Liquid
Instrument ID: Balances #1 & #2
Analyst: Sowmya Pabba
QC Batch ID: QC_07491

Parameter	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Blank Result (g)	Flag
De-ionized water blank	100	28.6717	28.6713	< 0.0001	

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Laboratory Analysis Report

Quality Control Information

Lab Blank Analysis

Test: Analysis by EPA Method 202
Date Analyzed: 10/6/2016
Matrix: Liquid
Instrument ID: Balances #1 & #2
Analyst: Sowmya Pabba
QC Batch ID: QC_07491

Parameter	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Blank Result (g)	Flag
Hexane blank	100	2.3178	2.3177	< 0.0001	

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Laboratory Analysis Report

Quality Control Information

Lab Blank Analysis

Test: Analysis by EPA Method 202
Date Analyzed: 11/7/2016
Matrix: Liquid
Instrument ID: Balances #1 & #2
Analyst: Sowmya Pabba
QC Batch ID: QC_07491

Parameter	Volume (ml)	Tare Weight (g)	Post Test Weight (g)	Blank Result (g)	Flag
De-ionized water blank	100	28.6073	28.6073	< 0.0001	

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Laboratory Analysis Report

Quality Control Information

Blank Analysis

Test: Analysis by NCASI 99.02
Date Analyzed: 11/9/2016 at 02:08 PM
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Parameter	CAS #	MQL (ug/ml)	Blank Result (ug/ml)	Flag
Acetaldehyde	75-07-0	0.50	< 0.50	
Propionaldehyde	123-38-6	0.50	< 0.50	
Methanol	67-56-1	0.50	< 0.50	
Acrolein	107-02-8	0.50	< 0.50	
Phenol	108-95-2	0.50	< 0.50	

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Laboratory Analysis Report

Quality Control Information

Blank Analysis

Test: Analysis by NCASI 99.02
Date Analyzed: 11/4/2016 at 12:00 AM
Matrix: Liquid
Instrument ID: UV/VIS #1 - Thermo
Analyst: Sowmya Pabba
QC Batch ID: QC_07499

Parameter	CAS #	MQL (ug/ml)	Blank Result (ug/ml)	Flag
Formaldehyde	50-00-0	0.10	< 0.10	

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Laboratory Analysis Report

Quality Control Information

Initial Calibration Verification

Test: Analysis by NCASI 99.02
Date Analyzed: 11/9/2016 at 02:36 PM
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Parameter	ICV Result (ug/ml)	Spike Amount (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
Acetaldehyde	91.17	100.00	91	70 - 130	
Propionaldehyde	93.31	100.00	93	70 - 130	
Methanol	90.64	100.00	91	70 - 130	
Acrolein	95.71	100.00	96	70 - 130	
Phenol	95.51	100.00	96	70 - 130	

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Laboratory Analysis Report

Quality Control Information

Initial Calibration Verification

Test: Analysis by NCASI 99.02
Date Analyzed: 11/4/2016 at 12:00 AM
Matrix: Liquid
Instrument ID: UV/VIS #1 - Thermo
Analyst: Sowmya Pabba
QC Batch ID: QC_07499

Parameter	ICV Result (ug/ml)	Spike Amount (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
Formaldehyde	2.01	2.00	101	80 - 120	

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Laboratory Analysis Report

Quality Control Information

Post Analysis Continuing Calibration Verification

Test: Analysis by NCASI 99.02
Date Analyzed: 11/10/2016 at 10:25 AM
Matrix: Liquid
Instrument ID: GC #5 - Agilent
Analyst: Dhan Yeddula
QC Batch ID: QC_07498

Parameter	CCV Result (ug/ml)	Spike Amount (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
Acetaldehyde	95.14	100.00	95	80 - 120	
Propionaldehyde	92.54	100.00	93	80 - 120	
Methanol	85.41	100.00	85	80 - 120	
Acrolein	96.46	100.00	96	80 - 120	
Phenol	93.75	100.00	94	80 - 120	

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Laboratory Analysis Report

Quality Control Information

Post Analysis Continuing Calibration Verification

Test: Analysis by NCASI 99.02
Date Analyzed: 11/4/2016 at 12:00 AM
Matrix: Liquid
Instrument ID: UV/VIS #1 - Thermo
Analyst: Sowmya Pabba
QC Batch ID: QC_07499

Parameter	CCV Result (ug/ml)	Spike Amount (ug/ml)	Percent Recovery	Percent Recovery Limit	Flag
Formaldehyde	2.05	2.00	103	80 - 120	

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Laboratory Analysis Report

Data Qualifiers and Flags

- MDL – Method Detection Limit
- MQL – Method Quantitation Limit
- SDL – Sample Detection Limit
- SQL – Sample Quantitation Limit
- RPD - Relative Percent Difference
- J – Target analyte is between the MDL and SQL values.
- L – Target analyte recovered below the recovery limits.
- H – Target analyte recovered above the recovery limits.
- B – Target analyte identified in blank run.
- F – RPD/RSD is outside the control limits.
- NC – Not calculated due to division by zero, or negative spike recovery.
- M – Target analyte reported outside control limit due to matrix interference.
- E – Estimated; Target analyte is above the Upper Quantitation Limit, or estimated due to other issue(s) noted in narrative.
- ND - Non-detect; analyte is below the MDL value, or TIC not detected in GC/MS scan.
- A - Sample analyzed outside holding time.
- C - Sample analyzed by FTIR; results estimated.
- I - Internal standard outside acceptable response range.

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GSL-160977

1 of 3

GOLDEN SPECIALTY

Chain of Custody

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		

Sampled by (Print and Signature): Shamit Nakra

Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:

Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:

Work Requested by: Shamit Nakra	Phone: 385-252-7553	Fax:	e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553	Fax:	e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO -14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
M5/202-CPM-1-R1-East	001	10/25/16			197.5 g							202								
M5/202-CPM-1-R2-East	002	10/25/16			151.9 g							202								
M5/202-CPM-1-R3-East	003	10/26/16			207.0 g							202								
M5/202-CPM-2-R1-East	004	10/25/16			74.9 g							202								
M5/202-CPM-2-R2-East	005	10/25/16			88.2 g							202								
M5/202-CPM-2-R3-East	006	10/26/16			119.5 g							202								
M5/202-CPM-3-R1-East	007	10/25/16			NA							202								petri dishes arrived broken, were transferred to new
M5/202-CPM-3-R2-East	008	10/25/16			NA							202								
M5/202-CPM-3-R3-East	009	10/26/16			NA							202								

Relinquished by (signature):	Date	Time	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by(signature):
	10/31/16	9:00	Alyssa Trujillo 9:00 10/31/16	Alyssa Trujillo	10/31/16	1300	
Relinquished by (signature):	Date: 11/1/16	Time: 1302	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by (signature):

GSL Project #:: Sample PICK-UP (Circle One): Yes / No by _____ Print Name

Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

GSL-160977

2 of 3

GOLDEN SPECIALTY

Chain of Custody

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		
Sampled by (Print and Signature): Shamit Nakra	Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:	
	Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:	
Work Requested by: Shamit Nakra	Phone: 385-252-7553	Fax: e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553	Fax: e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO -14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
M5/202-CPM-1-R1-West	010	10/25/16			149.5 g							202								
M5/202-CPM-1-R2-West	011	10/25/16			183.6 g							202								
M5/202-CPM-1-R3-West	012	10/26/16			184.3 g							202								
M5/202-CPM-2-R1-West	013	10/25/16			63.1 g							202								
M5/202-CPM-2-R2-West	014	10/25/16			100.6 g							202								
M5/202-CPM-2-R3-West	015	10/26/16			110.1 g							202								
M5/202-CPM-3-R1-West	016	10/25/16			NA							202								
M5/202-CPM-3-R2-West	017	10/25/16			NA							202								
M5/202-CPM-3-R3-West	018	10/26/16			NA							202								

Relinquished by (signature):	Date	Time	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by(signature):
	10/31/16	9:06	Alyssa Laijeb 900 10/31/16	Alyssa Laijeb	10/31/16	1300	
Relinquished by (signature):	Date:	Time:	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by (signature):
	11/1/16	1302					

GSL Project #::	Sample PICK-UP (Circle One): Yes / No by _____ Print Name	Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

G2-160977

3 of 3

GOLDEN SPECIALTY

Chain of Custody

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		
Sampled by (Print and Signature): Shamit Nakra	Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:	
	Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:	
Work Requested by: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO-14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
M5/202-CPM-1-Field Train Blank	019	10/26/16			164.9 g							202								
M5/202-CPM-2-Field Train Blank	020	10/26/16			89.5 g							202								
M5/202-CPM-3-Field Train Blank	021	10/26/16			NA							202								
M202-C6-Acetone Blank	022	10/26/16			44.4 g							202								
M202-C7-Water Blank	023	10/26/16			86.2 g							202								
M202-C8-Hexane Blank	024	10/26/16			60.6 g							202								

Relinquished by (signature):	Date	Time	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by(signature):
	10/31/16	9:00	900 Alyssa Loyola 10/31/16	Alyssa Loyola	10/31/16	1300	
Relinquished by (signature):	Date:	Time:	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by (signature):
	11/1/16	1302					

GSL Project #::	Sample PICK-UP (Circle One): Yes / No by _____ Print Name	Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

GSL-160978

Chain of Custody

1 of 3

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		
Sampled by (Print and Signature): Shamit Nakra	Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:	
	Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:	
Work Requested by: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO -14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
Press Vent-R1-East	001	10/26/16			60.9 g							NCASI 99.02								
Press Vent-R2-East	002	10/26/16			66.8 g							NCASI 99.02								
Press Vent-R2-East-Dup	003	10/26/16			69.5 g							NCASI 99.02								
Press Vent-R3-East	004	10/26/16			71.9 g							NCASI 99.02								
Press Vent-R3-East Spike	005	10/26/16			75.6 g							NCASI 99.02								
Press Vent-R1-West	006	10/26/16			71.3 g							NCASI 99.02								
Press Vent-R2-West	007	10/26/16			74.3 g							NCASI 99.02								
Press Vent-R3-West	008	10/26/16			73.8 g							NCASI 99.02								
Field Spike-Press Vents	009	10/27/16			76.8 g							NCASI 99.02								

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	10/31/16	9:30	930 10/31/16		10/31/16	1400	
Relinquished by (signature):	Date: 11/1/16 ~~10/31/16~~	Time: 13:02	Received by (signature): 13:02	Relinquished by (signature):	Date:	Time:	Received by (signature):

GSL Project #::

Sample PICK-UP (Circle One): Yes / No by _____ Print Name

Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

GSL-160978

Chain of Custody

2 of 3

GOLDEN SPECIALTY

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		
Sampled by (Print and Signature): Shamit Nakra	Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:	
	Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:	
Work Requested by: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO -14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
Line Former-1	010	10/27/16			75.0 g							NCASI 99.02								
Line Former-1 Dup	011	10/27/16			75.3 g							NCASI 99.02								
Line Former-2	012	10/27/16			75.5 g							NCASI 99.02								
Line Former- 2 Spike	013	10/27/16			75.0 g							NCASI 99.02								
Line Former-3	014	10/27/16			73.9 g							NCASI 99.02								
Dryer Vent-1	015	10/27/16			75.4 g							NCASI 99.02								
Dryer Vent-1 Spike	016	10/27/16			77.2 g							NCASI 99.02								
Dryer Vent-2	017	10/27/16			72.4 g							NCASI 99.02								
Dryer Vent-3	018	10/27/16			75.3 g							NCASI 99.02								
Dryer Vent-3 Dup	019	10/27/16			74.9 g							NCASI 99.02								

Relinquished by (signature):	Date	Time	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by(signature):
	10/31/16	9:30	Alyssa Leigh 930 10/31/16	Alyssa Leigh	10/31/16	1700	
Relinquished by (signature):	Date:	Time:	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by (signature):
	11/1/16	1302	13:02				

GSL Project #:: Sample PICK-UP (Circle One): Yes / No by _____ Print Name

Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

GSL-160978

Chain of Custody

3 of 3

GOLDEN SPECIALTY

Project #:160282	Client/Plant Name: Neucor	Special Instructions:
Sampling Location: Press Vents East and West		
Sampled by (Print and Signature): Shamit Nakra	Report Turnaround Time: X Normal (10 business days) ☐ 5 business days ☐ Other:	
	Analytical Deadline ☐ 7 day ☐ 72 hrs. ☐ 24 hrs. ☐ Other:	
Work Requested by: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com
Submit Report to: Shamit Nakra	Phone: 385-252-7553 Fax:	e-Mail: snakra@goldenspecialty.com

Field Sample ID	Laboratory Sample ID	Collection Date	Collection	Container Type Canister (C) Tedlar Bag (T) Other (O)	Vol.. (mL.) Or Tare Weight (mgs)	Amb Temp °F	Press. Start / Stop (in Hg)	Source Type: Cooling Tower	Flare	Heater / Furnace	Incinerator	App. EPA Method or Rule	Analysis: RM 5 gravimetric	RM 20 Gravimetric	Fuel Gas Analysis (ASTM 1946)	Flare Gas Analysis (M18 + ASTM 1946D)	TO -14A / TO-15	HRVOC M18 Spike		Comments: Include Run and Sample Fraction, visual observance (i.e. Run 1 – Impinger 1, murky) (Additional Analytes)
Field Spike-Line Former	020	10/27/16			76.3 g							NCASI 99.02								
Field Spike- Dryer Vent	021	10/27/16			76.0 g							NCASI 99.02								
Field Blank	022	10/27/16			79.0 g							NCASI 99.02								
Equipment Blank	023	10/27/16			74.8 g							NCASI 99.02								
Train Spike	024	10/27/16			77.2 g							NCASI 99.02								
Field Spike-TS	025	10/27/16			79.7 g							NCASI 99.02								

Relinquished by (signature):	Date	Time	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by(signature):
	10/31/16	9:30	930 10/31/16		10/31/16	1400	
Relinquished by (signature):	Date:	Time:	Received by (signature):	Relinquished by (signature):	Date:	Time:	Received by (signature):
	11/1/16	1302	13:02				

GSL Project #::	Sample PICK-UP (Circle One): Yes / No by _____ Print Name	Canister Rental (Circle One): Yes / No

Form #GSINC-DR1001-001, REV 2010-01
Effective 11/1/10

GOLDEN SPECIALTY

M202 Beakers; 18-35 to 18-60

FORM GSL-Misc1000-001
REV 2015-01, EFF 5/26/15

Gravimetric Raw Data Sheet

Balance ID: 1020588 T

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-35	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-16077-023 Volume (ml): 189 pH: 5.0 Comments:	10/18/16 1144	19.8/58	SP	28.3057		11/7/16 1022	21.6/62	RM	28.3060	
			10/19/16 1353	20.0/52	RM	28.3051	Y	11/7/16 1657	22.0/54	RM	28.3059	Y
		Constant Weight:				28.3057		Constant Weight:			28.3060	
18-36	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-08121 6L Volume (ml): 100 pH: — Comments: DI water Blank Lot#6072046	10/18/16 1145	19.8/58	SP	28.6075		11/7/16 1024	21.6/62	RM	28.6073	
			10/19/16 1354	20.0/53	RM	28.6071	Y	11/7/16 1656	22.0/54	RM	28.6073	Y
		Constant Weight:				28.6073		Constant Weight:			28.6073	
18-37	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: DI Blank Volume (ml): 100 pH: — Comments: Lot#6072046, GSL-08121 6L	10/18/16 1145	19.8/58	SP	28.5681		11/7/16 1024	21.6/61	RM	28.5680	
			10/19/16 1355	20.2/54	RM	28.5677	Y	11/7/16 1658	22.0/55	RM	28.5681	Y
		Constant Weight:				28.5679		Constant Weight:			28.5681	
18-38	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: DI Blank Volume (ml): 100 pH: — Comments: Lot#6072046, GSL-08121 6L	10/18/16 1146	19.8/59	SP	28.9391		11/7/16 1025	21.6/61	RM	28.9390	
			10/19/16 1356	20.2/55	RM	28.9389	Y	11/7/16 1659	22.0/56	RM	28.9389	Y
		Constant Weight:				28.9390		Constant Weight:			28.9390	
18-39	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-16077-00 Volume (ml): 208 pH: — Comments:	10/18/16 1147	19.9/57	SP	28.4051		11/7/16 1006	21.4/57	RM	28.4077	
			10/19/16 1351	20.2/55	RM	28.4048	Y	11/7/16 1646	22.0/54	RM	28.4078	Y
		Constant Weight:				28.4050		Constant Weight:			28.4078	

GOLDEN SPECIALTY

FORM GSL-Misc1000-001
REV 2015-01, EFF 8/26/15

Gravimetric Raw Data Sheet

Balance ID: 10205887

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-40	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-008 Volume (ml): 153 pH: — Comments:	10/18/16 1448	19.9/57	SP	28.5672		11/7/16 1010	21.4/58	RM	28.5697	
			10/19/16 1359	20.2/56	RM	28.5670	Y	11/7/16 1649	22.0/54	RM	28.5701	Y
			Constant Weight:			28.5671		Constant Weight:			28.5679	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-41	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-003 Volume (ml): 206 pH: — Comments:	10/18/16 1448	20/57	SP	28.5269		11/7/16 1010	21.4/59	RM	28.5297	
			10/19/16 1359	20.2/56	RM	28.5266	Y	11/7/16 1649	22.0/54	RM	28.5297	Y
			Constant Weight:			28.5268		Constant Weight:			28.5297	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-42	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-010 Volume (ml): 155 pH: — Comments:	10/18/16 1513	20.7/59	RM	28.3665		11/7/16 1012	21.6/61	RM	28.3710	
			10/19/16 1400	20.2/56	RM	28.3665	Y	11/7/16 1650	22.0/54	RM	28.3710	Y
			Constant Weight:			28.3665		Constant Weight:			28.3710	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-43	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-011 Volume (ml): 185 pH: — Comments:	10/18/16 1515	20.7/59	RM	28.5323		11/7/16 1013	21.6/62	RM	28.5370	
			10/19/16 1401	20.3/57	RM	28.5321	Y	11/7/16 1651	22.0/54	RM	28.5373	Y
			Constant Weight:			28.5322		Constant Weight:			28.5372	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-44	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-012 Volume (ml): 185 pH: — Comments:	10/18/16 1514	20.7/59	RM	28.9708		11/7/16 1014	21.6/63	RM	28.9746	
			10/19/16 1403	20.3/57	RM	28.9706	Y	11/7/16 1652	22.0/54	RM	28.9738	Y
			Constant Weight:			28.9707		Constant Weight:			28.9739	

GOLDEN SPECIALTY

FORM GSL-Misc1000-001
REV 2015-01, EFF 5/20/15

Gravimetric Raw Data Sheet

Balance ID: 10205887

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-45	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: 22L-160977-019 Volume (ml): 166 pH: — Comments:	10/19/16 1657	20.7/59	RM	28.2661		11/7/16 1016	21.6/63	RM	28.2681	
			10/19/16 1400	20.3/51	RM	28.2658	Y	11/7/16 1653	22.0/54	RM	28.2681	Y
			Constant Weight:			28.2660		Constant Weight:			28.2681	
18-46	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Volume (ml): pH: Comments:	10/18/16 1657	20.7/59	RM	28.8016		11/7/16 1018	21.6/62	RM	29.0302	
			10/19/16 1405	20.3/58	RM	28.8015	Y	11/7/16 1654	22.0/54	RM	29.0303	Y
			Constant Weight:					Constant Weight:			29.0303	
18-47	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Volume (ml): pH: Comments:	10/18/16 1652	20.7/59	RM	28.3264		11/15/16 1100	20.7/53	SP	28.3270	
			10/19/16 1402	20.3/58		28.3263	Y					
			Constant Weight:			28.3264		Constant Weight:				
18-48	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Volume (ml): pH: Comments:	10/18/16 1652	20.5/54	RM	28.8139						
			10/19/16 1402	20.3/58		28.8141	Y					
			Constant Weight:					Constant Weight:				
18-49	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Volume (ml): pH: Comments:	10/18/16 1548	20.5/55	RM	28.9593						
			10/19/16 1408	20.3/58		28.9591	Y					
			Constant Weight:					Constant Weight:				

Tins 4440 to 4473

GOLDEN SPECIALTY

FORM GSL-Miscl000-001
REV 2015-01, EFF 2/25/15

Gravimetric Raw Data Sheet

Balance ID: T1000390

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg
4440	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160916-009 Volume (ml): 126 pH: — Comments: ~~Blanks~~	10/6/16 1014	18.8/62	RM	2.318719		10/24/16 1038	19.0/63	RM	2.319724	
			10/12/16 1407	19.6/66	RM	2.318680	Y	10/24/16 1639	19.6/61	RM	2.318996	Y
			Constant Weight:			2.318700		Constant Weight:			2.319060	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg
4441	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-022 Volume (ml): 57 pH: — Comments:	10/6/16 1014	19.0/62	RM	2.323444		11/7/16 1211	21.6/58	RM	2.323837	
						~~2.323~~		11/8/16 1614	21.8/52	RM	2.323839	Y
			10/12/16 1414	19.8/62	RM	2.323722	N					
			10/13/16 1015	19.6/63	RM	2.323649	Y					
			Constant Weight:			2.323686		Constant Weight:			2.323838	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg
4442	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-024 Volume (ml): 90 pH: — Comments:	10/6/16 1016	19.0/61	RM	2.346205		11/7/16 1212	21.6/58	RM	2.346263	
			10/12/16 1421	20.0/61	RM	2.346326	Y	11/8/16 1648	21.8/53	RM	2.346303	Y
			Constant Weight:			2.346266		Constant Weight:			~~2.94~~ 2.346283 ~~2.34~~	

11/16/16

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg
4443	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-004 Volume (ml): 122 pH: — Comments:	10/6/16 1020	19.2/60	RM	2.328859		11/7/16 1046	21.6/60	RM	2.329241	
			10/12/16 1430	20.0/61	RM	2.328906	Y	11/8/16 1621	21.8/56	RM	2.329201	Y
			Constant Weight:			2.328933		Constant Weight:			2.329223	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg
4444	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-005 Volume (ml): 93 pH: — Comments:	10/6/16 1028	19.2/58	RM	2.267655		11/7/16 1049	21.6/62	RM	2.268222	
			10/12/16 1430	20.0/61	RM	2.267614	Y	11/8/16 1624	21.8/58	RM	2.268248	Y
			Constant Weight:			2.267635		Constant Weight:			2.268235	

GOLDEN SPECIALTY

FORM GSL-Misc1868-001
REV 2015-01, EFF 5/20/15

Gravimetric Raw Data Sheet

Balance ID: T1000390

Container number	Container Type	Sample identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4445	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-006 Volume (ml): 155 pH: — Comments:	10/10/16 1033	19.2/57	RM	2.253660		11/7/16 1051	21.6/62	RM	2.254188	
			10/10/16 1446	20.0/61	RM	2.254129	Y	11/8/16 1126	21.8/59	RM	2.254111	Y
			Constant Weight:			2.253895		Constant Weight:			2.254150	
4446	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-013 Volume (ml): 82 pH: — Comments:	10/10/16 1035	19.2/57	RM	2.334755		11/7/16 1207	21.6/56	RM	2.335580	
			10/12/16 1446	20.6/61	RM	2.334751	Y	11/8/16 1129	21.8/62	RM	2.335562	Y
			Constant Weight:			2.334753		Constant Weight:			2.335571	
4447	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-014 Volume (ml): 131 pH: — Comments:	10/10/16 1037	19.2/57	RM	2.334761		11/7/16 1205	21.6/57	RM	2.335953	
			10/12/16 1441	20.0/62	RM	2.334800	Y	11/8/16 1132	22.0/63	RM	2.336339	
			Constant Weight:			2.334784		Constant Weight:			2.336146	
4448	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-015 Volume (ml): 140 pH: — Comments:	10/10/16 1039	19.2/57	RM	2.331129		11/7/16 1208	21.6/57	RM	2.332321	
			10/12/16 1442	20.0/62	RM	2.331061	Y	11/8/16 1136	22.0/65	RM	2.332682	
			Constant Weight:			2.331095		Constant Weight:			2.332502	
4449	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160977-020 Volume (ml): 120 pH: — Comments:	10/10/16 1041	19.2/57	RM	2.318169		11/7/16 1210	21.6/57	RM	2.318170	
			10/12/16 1449	20.2/63	RM	2.318272	Y	11/8/16 1142	22.0/65	RM	2.318486	
			Constant Weight:			2.318191		Constant Weight:			2.318328	

M202 Tins 4389-4439

GOLDEN SPECIALTY

FORM GSL-Misc1609-001
REV 2015-01, EFF 5/26/15

Gravimetric Raw Data Sheet

Balance ID: T1000390

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4389	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Acetone Blank Volume (ml): 100ml pH: Comments: GSL-072216 B,C,D Lot #56083	6/27/16 1512	20.7/54	RM	2.310600	SP	8/10/16 1011	20.2/58	RM	2.310245	SP
			6/29/16 1441	20.2/58	RM	2.310491	Y	8/10/16 1012	21.4/52	RM	2.310606	Y
			Constant Weight:			2.310546		Constant Weight:			2.310426	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4390	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-072216 BCD Volume (ml): 100ml pH: — Comments: Acetone Blank Lot #56083	6/27/16 1515	20.7/55	RM	2.317314	SP	8/10/16 1012	20.2/59	RM	2.317343	SP
			6/29/16 1444	20.2/58	RM	2.317185	Y	8/10/16 1014	21.4/54	RM	2.317370	Y
			Constant Weight:			2.317250		Constant Weight:			2.317357	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4391	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-072216BCD Volume (ml): 100ml pH: — Comments: Acetone Blank Lot #56083	6/27/16 1521	20.7/57	RM	2.324380	SP	8/10/16 1013	20.2/59	RM	2.324229	SP
			6/29/16 1446	20.2/58	RM	2.324011	Y	8/10/16 1016	21.6/55	RM	2.324459	Y
			Constant Weight:			2.324196		Constant Weight:			2.324344	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4392	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL 082216EAH Volume (ml): 100 pH: — Comments: acetone blank lot #55112	6/27/16 1522	20.7/57	RM	~~2.2984~~ 2.298712	SP	8/19/16 1243	21.0/60	RM	2.298621	SP
			6/29/16 1433	20.3/59	RM	2.298733	Y	8/24/16 1012	20.0/63	RM	2.298629	Y
			Constant Weight:			2.298723		Constant Weight:			2.298625	

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4393	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL 082216EAH Volume (ml): 100 pH: — Comments: acetone blank lot #55112	6/27/16 1529	20.7/58	RM	2.318601	SP	8/19/16 1240	21.0/60	RM	2.318945	SP
			6/29/16 1454	20.3/	RM	2.318824	Y	8/24/16 1005	20.0/64	RM	2.318746	Y
			Constant Weight:			2.318913		Constant Weight:			2.318448	

GOLDEN SPECIALTY

FORM: GSL-Misc1000-001
REV 2015-01, EFF 5/28/15

Gravimetric Raw Data Sheet

Balance ID: T1000390

Container number	Container Type	Sample Identification	Date/Time	Temp/Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp/Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
4429	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160879-007 Volume (ml): 155 pH: — Comments: Acetone Blank.	6/29/16 1631	21.0/60	RM	2.323458		10/5/16 1619	21.1/59	RM	2.323460	
			6/29/16 1641	20.1/58	RM	2.323470	Y	10/6/16 1109	20/60	SP	2.323613	Y
			Constant Weight:			2.323464		Constant Weight:			2.323637	
4430	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: GSL-160879-008 Volume (ml): 260 pH: 5.0 Comments: DI water Blank	6/29/16 1635	21.0/60	RM	2.326222		10/5/16 1625	21.1/59	RM	2.327229	
			6/29/16 1644	20.1/59	RM	2.326109	Y	10/6/16 1110	20/60	SP	2.327390	Y
			Constant Weight:			2.326166		Constant Weight:			2.327310	
4431	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Hexane Blank Volume (ml): 100ml pH: — Comments: Lot #56050 GSL-0725160	6/29/16 1637	21.0/60	RM	2.311960		10/6/16 1639	19.6/58	SP	2.312018	
			6/29/16 1643	20.1/59	RM	2.311941	Y	10/6/16 1640	20.3/53	RM	2.311959	Y
			Constant Weight:			~~2.311965~~ 2.311951 RM 8/4/16		Constant Weight:			2.312004	
4432	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Hexane Blank Volume (ml): 100ml pH: — Comments: Lot #56050 GSL-0725160	6/29/16 1639	21.0/60	RM	2.317816		10/6/16 1640	19.6/58	SP	2.317746	
			6/29/16 1644	20.3/62	RM	2.317777	Y	10/6/16 1641	20.3/53	RM	2.317717	Y
			Constant Weight:			~~2.317765~~ 2.317797 RM 8/4/16		Constant Weight:			2.317732	
4433	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: Volume (ml): pH: Comments:	6/29/16 1641	21.0/60	RM	2.320547						
			6/30/16 0850	20.3/59	RM	2.320612	Y					
			Constant Weight:			2.320580		Constant Weight:				

GOLDEN SPECIALTY

FORM GSL-Misc1000-001
REV 2011-01, EH 1/25/11

Gravimetric Raw Data Sheet

Balance ID: 10205887

Container number	Container Type	Sample Identification	Date/Time	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Initials	Post-Test Weight (g)	Within 0.5 mg?
18-02	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Aluminum tin ☐ Other:	Sample number: GSL-160576-013 Volume (ml): 395 pH: 3.5 Comments:	6/6/16 1534	RM	28.2758		7/13/16 1502	RM	28.2802	
			6/8/16 1610	RM	28.2757	Y	7/15/16 1914	RM	28.2802	Y
			Constant Weight:		28.2758		Constant Weight:		28.2802	
18-03	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Aluminum tin ☐ Other:	Sample number: GSL-160576-019 Volume (ml): 179 pH: 5.0 Comments:	6/6/16 1535	RM	28.6325		7/13/16 1503	RM	28.6349	
			6/8/16 1611	RM	28.6324	Y	7/15/16 1020	RM	28.6352	Y
			Constant Weight:		28.6324		Constant Weight:		28.6351	
18-04	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Aluminum tin ☐ Other:	Sample number: GSL-160576-022 Volume (ml): 279 pH: 5.0 Comments:	6/6/16 1536	RM	28.6379		7/13/16 1504	RM	28.6405	
			6/8/16 1613	RM	28.6379	Y	7/15/16 1020	RM	28.6406	Y
			Constant Weight:		28.6379		Constant Weight:		28.6406	
18-05	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Aluminum tin ☐ Other:	Sample number: DI Leachate Blank Volume (ml): 100ml pH: — Comments: Lot# 603456; GSL-032416C	6/6/16 1537	RM	28.6718		8/10/16 1008	RM	28.6711	
			6/8/16 1614	RM	28.6715	Y	8/10/16 1025	RM	28.6715	Y
			Constant Weight:		28.6717		Constant Weight:		28.6713	
18-06	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Aluminum tin ☐ Other:	Sample number: DI Leachate Blank Volume (ml): 100ml pH: — Comments: Lot# 603456; GSL-032416C	6/6/16 1538	RM	28.7543		8/10/16 1004	RM	28.7546	
			6/8/16 1616	RM	28.7544	Y	8/10/16 1016	RM	28.7545	Y
			Constant Weight:		28.7544		Constant Weight:		28.7546	

GOLDEN SPECIALTY

FORM GSL-Miso1006-001
REV 2019-01, Eff 5/26/19

Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
8654	☐ Glass Fiber filter ☐ Quartz Fiber fi ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C2 Volume (ml): R1 pH: 160262 Comments:	8/11/16 840	68/8	AT	68.1823		9/21/16 1125	70/10	AT	68.1961	
			8/12/16 845	69/10	AT	68.1852	N	9/22/16 741	68/10	AT	68.1961	Y
			8/15/16 935	68/9	AT	68.1854	Y					
		Constant Weight:				68.1853		Constant Weight:			68.1961	
8655	☐ Glass Fiber filter ☐ Quartz Fiber fi ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C2 Volume (ml): R2 pH: 160262 Comments:	8/11/16 845	68/8	AT	66.3260		9/21/16 1125	70/10	AT	66.3361	
			8/12/16 845	69/10	AT	66.3260	Y	9/22/16 741	68/10	AT	66.3358	Y
		Constant Weight:				66.3260		Constant Weight:			66.3360	
8656	☐ Glass Fiber filter ☐ Quartz Fiber fi ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C2 Volume (ml): R3 pH: 160262 Comments:	8/11/16 845	68/8	AT	62.9480		9/21/16 1125	70/10	AT	62.9539	
			8/12/16 845	69/10	AT	62.9477	Y	9/22/16 741	68/10	AT	62.9535	Y
		Constant Weight:				62.9479		Constant Weight:			62.9537	
8657	☐ Glass Fiber filter ☐ Quartz Fiber fi ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C2 Volume (ml): R1-East pH: 160282 Comments:	9/16/16 1250	70/14	AT	67.2404		11/4/16 1055	69/10	AT	67.2434	
			9/19/16 800	70/9	AT	67.2386	N	11/7/16 915	68/11	AT	67.2434	Y
			9/20/16 800	69/9	AT	67.2390	Y					
		Constant Weight:				67.2388		Constant Weight:			67.2434	
8658	☐ Glass Fiber filter ☐ Quartz Fiber fi ☐ Teflon© filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C2 Volume (ml): R2-East pH: 160282 Comments:	9/16/16 1250	70/14	AT	66.5900		11/4/16 1055	69/10	AT	66.5932	
			9/19/16 800	70/9	AT	66.5890	N	11/7/16 915	68/11	AT	66.5933	Y
			9/20/16 800	69/9	AT	66.5894	Y					
		Constant Weight:				66.5892		Constant Weight:			66.5933	

GOLDEN SPECIALTY

FORM GSL-Misc-1000-001
REV 2015-01, EN 8/20/15

Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
8659	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1255	70/14	AT	67.3807		9/21/16 1125	70/10	AT	67.3853	
	☐ Quartz Fiber fi	Volume (ml): R4	9/19/16 800	70/9	AT	67.3802	Y	9/22/16 741	68/10	AT	67.3852	Y
	☐ Teflon® filter	pH: 160262										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			67.3805		Constant Weight:			67.3853	
8660	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1300	70/14	AT	63.6209		9/21/16 1125	70/10	AT	63.6343	
	☐ Quartz Fiber fi	Volume (ml): R5	9/19/16 750	70/9	AT	63.6209	Y	9/22/16 741	68/10	AT	63.6338	Y
	☐ Teflon® filter	pH: 160262										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			63.6207		Constant Weight:			63.6341	
8661	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1255	70/14	AT	67.6952		9/21/16 1125	70/10	AT	67.7178	
	☐ Quartz Fiber fi	Volume (ml): R6	9/19/16 750	70/9	AT	67.6947	Y	9/22/16 741	68/10	AT	67.7173	Y
	☐ Teflon® filter	pH: 160262										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			67.6950		Constant Weight:			67.7176	
8662	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1300	70/14	AT	66.6754		11/4/16 1055	69/10	AT	66.6779	
	☐ Quartz Fiber fi	Volume (ml): R3-East	9/19/16 750	70/9	AT	~~66.6717~~	N	11/7/16 915	68/11	AT	66.6781	Y
	☐ Teflon® filter	pH: 160282				66.6723						
	☐ Glass Beaker	Comments:	9/20/16 755	69/9	AT	66.6725	Y					
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.6724		Constant Weight:			66.6780	
8663	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1300	70/14	AT	66.5405		11/4/16 1055	69/10	AT	66.5556	
	☐ Quartz Fiber fi	Volume (ml): R1-West	9/19/16 750	70/9	AT	66.5396	N	11/7/16 910	68/11	AT	66.5559	Y
	☐ Teflon® filter	pH: 160282	9/20/16 750	69/9	AT	66.5400	Y					
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.5398		Constant Weight:			66.5558	

GOLDEN SPECIALTY

FORM GSL-Misc1000-001
REV 2016-01, EN 5/20/15

Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
8664	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1305	70/14	AT	66.6546		11/4/16 1055	69/10	AT	66.6651	
	☐ Quartz Fiber filter	Volume (ml): R2-West	9/19/16 745	70/9	AT	66.6539	N	11/7/16 910	68/11	AT	66.6651	Y
	☐ Teflon© filter	pH: 1602282	9/20/16 755	69/9	AT	66.6543	Y					
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.6541		Constant Weight:			66.6651	
8665	☐ Glass Fiber filter	Sample number: M5/202-C2	9/16/16 1305	70/14	AT	66.9089		9/21/16 1125	70/10	AT	66.9169	
	☐ Quartz Fiber filter	Volume (ml): R7	9/19/16 745	70/9	AT	66.9050	Y	9/22/16 741	68/10	AT	66.9166	Y
	☐ Teflon© filter	pH: 1602602										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.9050		Constant Weight:			66.9168	
8666	☐ Glass Fiber filter	Sample number: M5/202-C3 AT 1/9	9/16/16 1305	70/14	AT	66.6403		9/21/16 1125	70/10	AT	66.6410	
	☐ Quartz Fiber filter	Volume (ml): Acetone Blank	9/19/16 745	70/9	AT	66.6400	Y	9/22/16 741	68/10	AT	66.6408	Y
	☐ Teflon© filter	pH:										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.6402		Constant Weight:			66.6409	
8667	☐ Glass Fiber filter	Sample number: 5/202-C2	10/12/16 900	69/9	AT	66.6515		11/4/16 1055	69/10	AT	66.6621	
	☐ Quartz Fiber filter	Volume (ml): R3-West	10/13/16 1035	67/10	AT	66.6513	Y	~~11/4/16~~ 910	68/11	AT	66.6620	Y
	☐ Teflon© filter	pH: 1602852						11/7/16				
	☐ Glass Beaker	Comments:						AT 11/22/16				
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.6514		Constant Weight:			66.6621	
8668	☐ Glass Fiber filter	Sample number: M5/202-C3	10/12/16 900	69/9	AT	66.5005		11/4/16 1055	69/10	AT	66.4994	
	☐ Quartz Fiber filter	Volume (ml): Acetone	10/13/16 1035	67/10	AT	~~66.49~~	AT 10/13	11/7/16 910	68/11	AT	66.4992	Y
	☐ Teflon© filter	pH: Blank				66.4990	N					
	☐ Glass Beaker	Comments: 1602852	10/14/16 925	68/11	AT	66.4991	Y					
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			66.4991		Constant Weight:			66.4993	

GOLDEN SPECIALTY

FORM GSL-Misc1000-001
REV 2015-01, EH 3/26/15

Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
2 - 3585	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 4/8/16 845 Volume (ml): R1-East 4/11/16 1050 pH: 160282 Comments:		68/14 66/14	AT AT	0.5743 0.5742	 Y	11/1/16 1030 11/4/16 1040	68/10 69/10	AT AT	0.5748 0.5749	 Y
			Constant Weight:			0.5743		Constant Weight:			0.5749	
2 - 3586	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 4/8/16 845 Volume (ml): R1-West 4/11/16 1050 pH: 160282 Comments:		68/14 66/14	AT AT	0.6277 0.6275	 Y	11/1/16 1030 11/4/16 1040	68/10 69/10	AT AT	0.6718 0.6714	 Y
			Constant Weight:			0.6276		Constant Weight:			0.6716	
2 - 3587	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 4/8/16 845 Volume (ml): R2-East 4/11/16 1050 pH: 160282 Comments:		68/14 66/14	AT AT	0.5604 0.5603	 Y	11/1/16 1030 11/4/16 1040	68/10 69/10	AT AT	0.5617 0.5621	 Y
			Constant Weight:			0.5604		Constant Weight:			0.5619	
2 - 3588	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202 4/8/16 845 Volume (ml): C1-R1 4/11/16 1050 pH: Nucor ~~8/31/16 907~~ Comments:		68/14 66/14 ~~68/14~~	AT AT ~~PS~~	0.6491 0.6489 ~~0.1638~~ PS	 Y	~~8/31/16 907~~ ~~8/31/16 907~~ ~~9/1/16 910~~ 8/31/16 9/1/16	~~68/14~~ ~~68/14~~ ~~68/12~~ 68/14 68/12	~~PS~~ ~~PS~~ ~~PS~~ PS PS	~~0.1638~~ PS ~~0.1638~~ PS ~~0.5635~~ Y 0.8419 0.8419	 PS 8-31 Y
			Constant Weight:			0.6490		Constant Weight:			PS ~~0.5636~~ 9/1/16 0.8419	
2 - 3589	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202 7/14/16 940 Volume (ml): C1-R2 7/15/16 840 pH: Nucor ~~8/31/16 900~~ Comments:		70/10 68/12 ~~68/14~~	AT AT ~~PS~~	0.6203 0.6201 ~~0.1638~~ PS	 Y	~~8/31/16 900~~ ~~8/31/16 900~~ 8/31/16 900 9/1/16 910	~~68/14~~ ~~68/14~~ 68/14 68/12	~~PS~~ ~~PS~~ PS PS	~~0.1638~~ PS ~~0.8433~~ 0.8433 0.8433	 PS 8/31 Y
			Constant Weight:			0.6202		Constant Weight:			~~PS 0.5642~~ 0.8434	

GOLDEN SPECIALTY

FORM GSL-Misc1606-001
REV 2015-01, EFF 2/26/15

Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
2 - 3595	☐ Glass Fiber filter	Sample number: M5/202-C1	7/14/16 940	70/10	AT	0.5948		9/16/16 1245	70/14	AT	0.5949	
	☐ Quartz Fiber fi	Volume (ml): Run 3	7/15/16 840	68/12	AT	0.5946	Y	9/19/16 810	70/10	AT	0.5950	Y
	☐ Teflon® filter	pH: 1602602										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			0.5947		Constant Weight:			0.5950	
2 - 3596	☐ Glass Fiber filter	Sample number: M5/202-C1	7/14/16 940	70/10	AT	0.5417		9/16/16 1245	70/14	AT	0.5432	
	☐ Quartz Fiber fi	Volume (ml): Run 4	7/15/16 840	68/12	AT	0.5418	Y	9/19/16 810	70/10	AT	0.5432	Y
	☐ Teflon® filter	pH: 1602602										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			0.5418		Constant Weight:			0.5432	
2 - 3597	☐ Glass Fiber filter	Sample number:	7/14/16 940	70/10	AT	0.5616						
	☐ Quartz Fiber fi	Volume (ml):	7/15/16 840	68/12	AT	0.5615	Y					
	☐ Teflon® filter	pH:										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			0.5616		Constant Weight:				
2 - 3598	☐ Glass Fiber filter	Sample number:	7/14/16 940	70/10	AT	0.5870						
	☐ Quartz Fiber fi	Volume (ml):	7/15/16 840	68/12	AT	0.5865	Y					
	☐ Teflon® filter	pH:										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			0.5868		Constant Weight:				
2 - 3599	☐ Glass Fiber filter	Sample number: M5/202-C1	7/14/16 940	70/10	AT	0.5272		11/1/16 1030	68/10	AT	0.5640	
	☐ Quartz Fiber fi	Volume (ml): R3-West	7/15/16 840	68/12	AT	0.5269	Y	11/4/16 1040	69/10	AT	0.5640	Y
	☐ Teflon® filter	pH: 1602582										
	☐ Glass Beaker	Comments:										
	☐ Aluminum tin											
	☐ Other:											
			Constant Weight:			0.5271		Constant Weight:			0.5640	

GOLDEN SPECIALTY

FORM GSL-Miscr1009-001
REV 2015-01, EFF 5/20/15

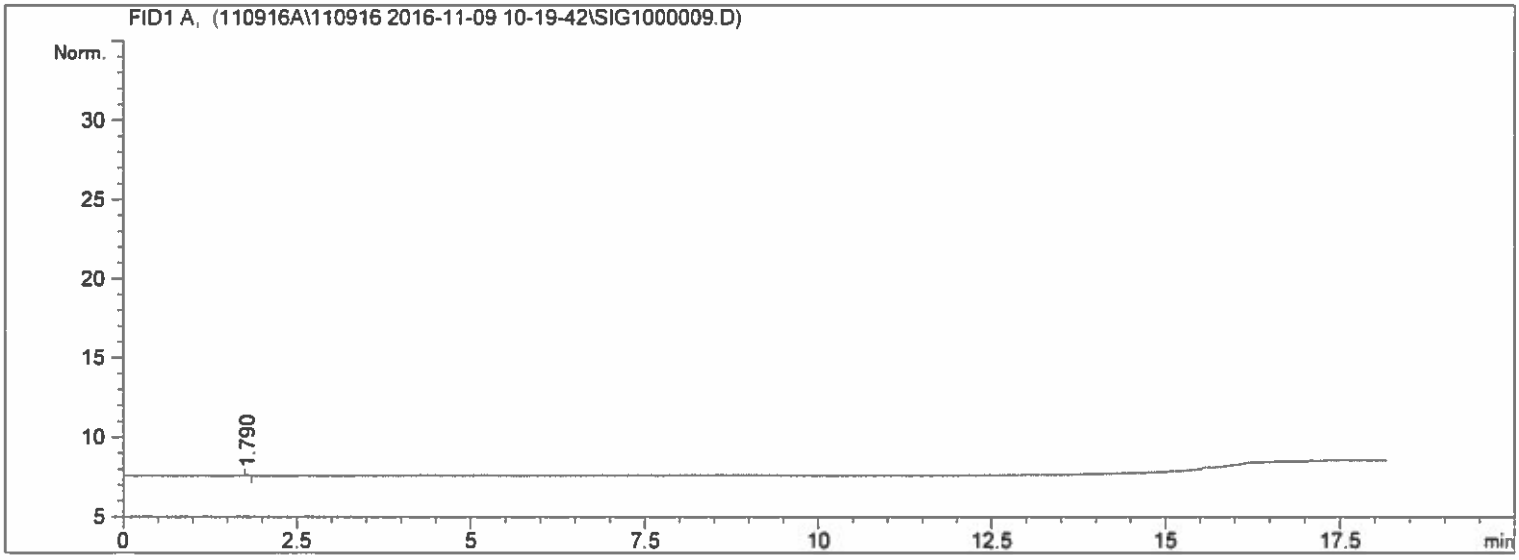
Gravimetric Raw Data Sheet

Balance ID: CCI-1

Container number	Container Type	Sample Identification	Date/Time	Temp Humidity	Initials	Tare Weight (g)	Within 0.5 mg?	Date/Time	Temp Humidity	Initials	Post-Test Weight (g)	Within 0.5 mg?
2 - 3600	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 Volume (ml): Run 5 pH: 160262 Comments:	8/16/16 1018 8/17/16 930	68/10 67/10	AT AT	0.5872 0.5871	 Y	9/16/16 1245 9/19/16 810 9/20/16 750	70/14 70/10 69/9	AT AT AT	0.6563 0.5887 0.5887	 N Y
			Constant Weight:			0.5872		Constant Weight:			0.5887	
2 - 3601	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 Volume (ml): Run 6 pH: 160262 Comments:	8/16/16 1018 8/17/16 930	68/10 67/10	AT AT	0.6385 0.6386	 Y	9/16/16 1245 9/19/16 810	70/14 70/10	AT AT	0.6403 0.6401	 Y
			Constant Weight:			0.6386		Constant Weight:			0.6402	
2 - 3602	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 Volume (ml): Run 7 pH: 160262 Comments:	8/16/16 1018 8/17/16 930	68/10 67/10	AT AT	0.5793 0.5792	 Y	9/16/16 1245 9/19/16 810	70/14 70/10	AT AT	0.5800 0.5798	 Y
			Constant Weight:			0.5793		Constant Weight:			0.5799	
2 - 3603	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 Volume (ml): R3-East pH: 160282 Comments:	8/16/16 1018 8/17/16 930	68/10 67/10	AT AT	0.6065 0.6062	 Y	11/1/16 1030 11/4/16 1040	68/10 69/10	AT AT	0.6092 0.6099	 Y
			Constant Weight:			0.6064		Constant Weight:			0.6091	
2 - 3604	☐ Glass Fiber filter ☐ Quartz Fiber filter ☐ Teflon® filter ☐ Glass Beaker ☐ Aluminum tin ☐ Other:	Sample number: M5/202-C1 Volume (ml): R2-West pH: 160282 Comments:	8/16/16 1022 8/17/16 930	68/10 67/10	AT AT	0.5548 0.5548	 Y	11/1/16 1030 11/4/16 1040	68/10 69/10	AT AT	0.5809 0.5810	 Y
			Constant Weight:			0.5548		Constant Weight:			0.5810	

```
==========================================================================
Acq. Operator    : dyeddula                        Seq. Line :   9
Acq. Instrument  : GC#5                             Location : Vial 1
Injection Date   : 11/9/2016 2:08:17 PM                  Inj :   1
                                                  Inj Volume : 1 µl
Acq. Method      : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                   M
Last changed     : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method  : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed     : 11/14/2016 8:32:16 AM by spabba
                   (modified after loading)
Sample Info      : BLANK
                   Method: NCASI 94.02


==========================================================================
```




```
==========================================================================
                        Internal Standard Report
==========================================================================

Sorted By              :      Signal
Calib. Data Modified   :      Monday, November 14, 2016 8:20:15 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD  ISTD Amount   Name
  #     [ppm]
----|-------------|-------------------------
  1     20.00000   Cyclohexanol


Signal 1: FID1 A,

RetTime  Type  ISTD    Area      Amt/Area    Amount    Grp   Name
 [min]         used  [pA*s]      ratio      [ppm]
-------|------|----|----------|----------|----------|--|-----------------
  2.590          1     -          -          -         Acetaldehyde
  3.406          1     -          -          -         Propionaldehyde
  4.247          1     -          -          -         Methanol
```

11/23/16

```
==================================================================
Acq. Operator   : dyeddula                        Seq. Line :   9
Acq. Instrument : GC#5                             Location : Vial 1
Injection Date  : 11/9/2016 2:08:17 PM                  Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:32:16 AM by spabba
                  (modified after loading)
Sample Info     : BLANK
                  Method: NCASI 94.02


==================================================================

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used  [pA*s]      ratio      [ppm]
-------|------|----|----------|----------|----------|--|------------------
  5.157          1     -          -          -         Acrolein
  9.524          1     -          -          -         Phenol
 15.124          1     -          -          -         Cyclohexanol

Totals without ISTD(s) :                 0.00000


1 Warnings or Errors :

Warning : ISTD compound(s) not found

==================================================================
==================================================================
                          Area Percent Report
==================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, November 14, 2016 8:20:15 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs


Signal 1: FID1 A,

Peak RetTime  Type   Width     Area      Area    Name
  #   [min]          [min]   [pA*s]       %
----|-------|------|-------|----------|--------|---------------------
   1   2.590         0.0000    0.00000  0.00000 Acetaldehyde
   2   3.406         0.0000    0.00000  0.00000 Propionaldehyde
   3   4.247         0.0000    0.00000  0.00000 Methanol
   4   5.157         0.0000    0.00000  0.00000 Acrolein
   5   9.524         0.0000    0.00000  0.00000 Phenol
   6  15.124      I  0.0000    0.00000  0.00000 Cyclohexanol

Totals :                        0.00000   0.0000

Uncalibrated Peaks:
```

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :   9
Acq. Instrument : GC#5                             Location : Vial 1
Injection Date  : 11/9/2016 2:08:17 PM                  Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:32:16 AM by spabba
                  (modified after loading)
Sample Info     : BLANK
                  Method: NCASI 94.02


==========================================================================

Peak RetTime  Type   Width     Area      Area    Name
  #   [min]          [min]   [pA*s]        %
----|-------|------|-------|----------|--------|---------------------
   1   1.790 BB      0.0243 2.00381e-1 1.000e2  ?

Uncalib. totals :           2.00381e-1 100.0000

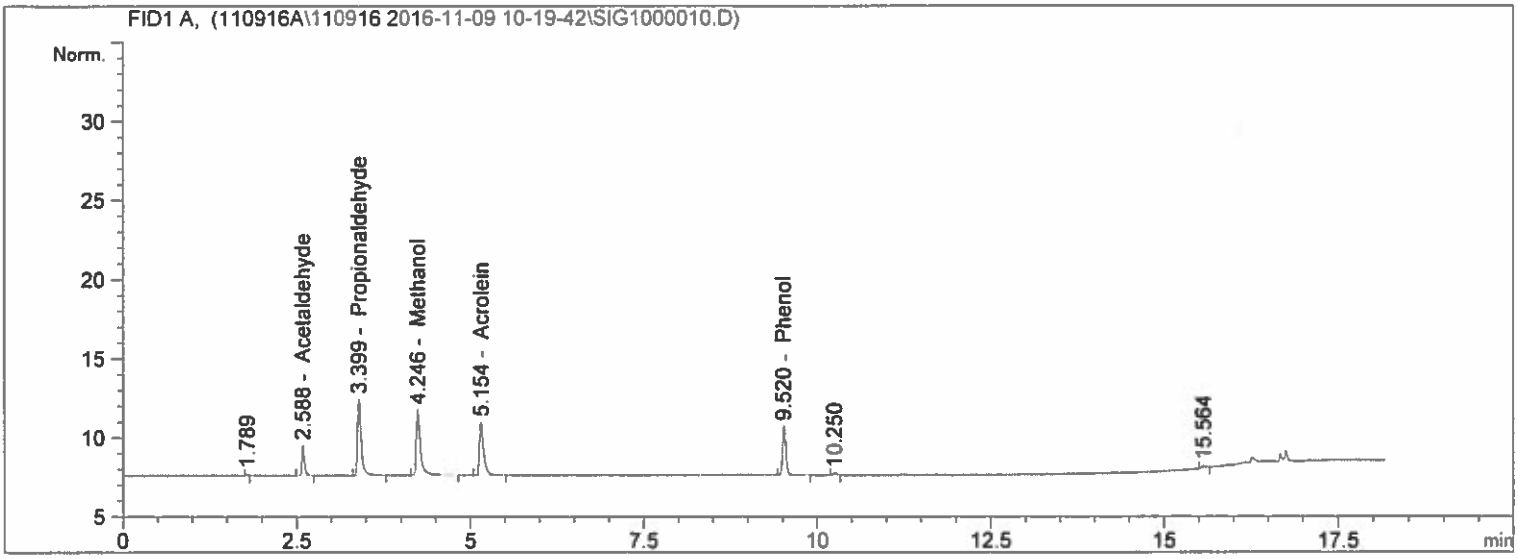

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========================================================================
                            *** End of Report ***
```

```
==================================================================
Acq. Operator    : dyeddula                        Seq. Line :  10
Acq. Instrument  : GC#5                             Location : Vial 9
Injection Date   : 11/9/2016 2:36:44 PM                  Inj :   1
                                                  Inj Volume : 1 µl
Acq. Method      : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                   M
Last changed     : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method  : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed     : 11/14/2016 8:35:29 AM by spabba
                   (modified after loading)
Sample Info      : ICV-100ppm(HAPS)
                   Method: NCASI 94.02


==================================================================
```




```
==================================================================
                      External Standard Report
==================================================================

Sorted By              :      Signal
Calib. Data Modified   :      Monday, November 14, 2016 8:35:28 AM
Multiplier:                    :      1.0000
Dilution:                      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.588	BB	5.01402	18.18361	91.17305		Acetaldehyde
3.399	BB	17.93587	5.20225	93.30697		Propionaldehyde
4.246	BB	18.10468	5.00625	90.63653		Methanol
5.154	BB	14.41708	6.63857	95.70871		Acrolein
9.520	BB	10.70556	8.92110	95.50534		Phenol
15.124		-	-	-		Cyclohexanol

Totals : 466.33060

11/23/16

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :  10
Acq. Instrument : GC#5                             Location : Vial 9
Injection Date  : 11/9/2016 2:36:44 PM                  Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:35:29 AM by spabba
                  (modified after loading)
Sample Info     : ICV-100ppm(HAPS)
                  Method: NCASI 94.02


==========================================================================

1 Warnings or Errors :

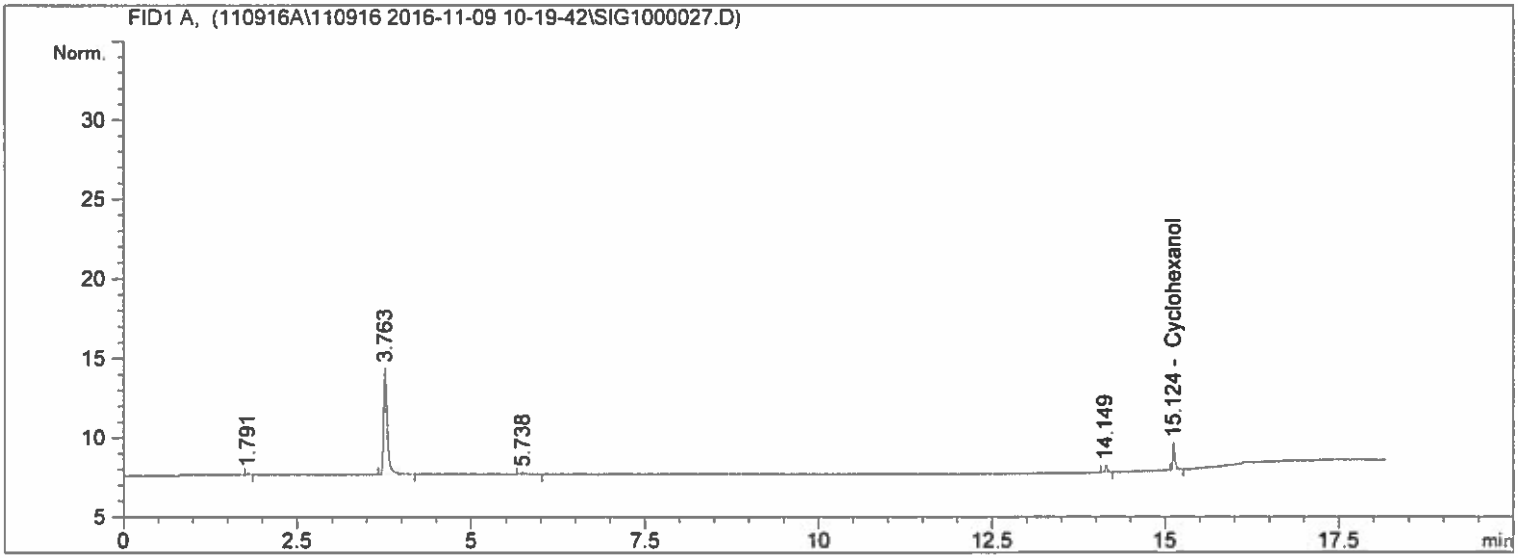
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

==========

Acq. Operator : dyeddula
Seq. Line : 20
Acq. Instrument : GC#5
Location : Vial 19
Injection Date : 11/9/2016 10:38:00 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-001
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.124	BB	3.68962	2.61317	9.64158		Cyclohexanol

Totals : 9.64158

11/28/16

```
==================================================================
Acq. Operator   : dyeddula                      Seq. Line :  20
Acq. Instrument : GC#5                           Location : Vial 19
Injection Date  : 11/9/2016 10:38:00 PM                Inj :   1
                                               Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:39:05 AM by spabba
                  (modified after loading)
Sample Info     : GSL_160978-001
                  Method:NCASI 99.02


==================================================================

1 Warnings or Errors :

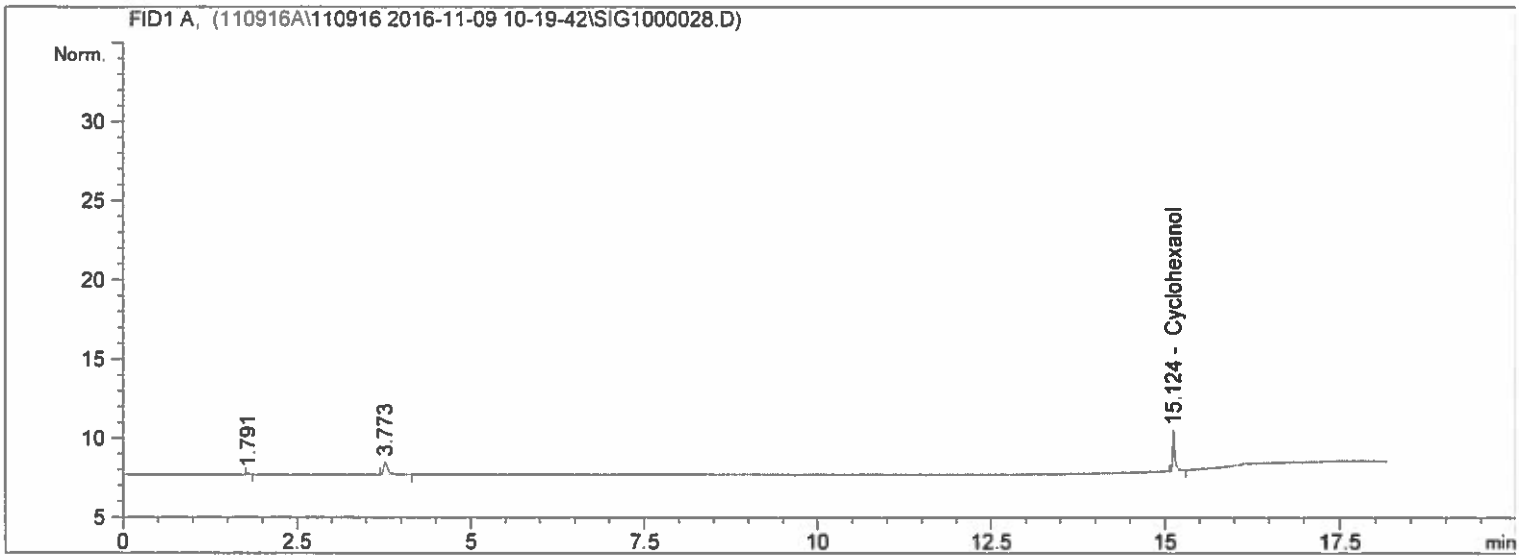
Warning : Calibrated compound(s) not found

==================================================================
                          *** End of Report ***
```

==========

Acq. Operator : dyeddula
Seq. Line : 21
Acq. Instrument : GC#5
Location : Vial 20
Injection Date : 11/9/2016 11:06:26 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-002
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.124	BB	5.86379	2.61317	15.32305		Cyclohexanol

Totals : 15.32305

11/23/16

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :  21
Acq. Instrument : GC#5                             Location : Vial 20
Injection Date  : 11/9/2016 11:06:26 PM                 Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:39:05 AM by spabba
                  (modified after loading)
Sample Info     : GSL_160978-002
                  Method:NCASI 99.02


==========================================================================

1 Warnings or Errors :

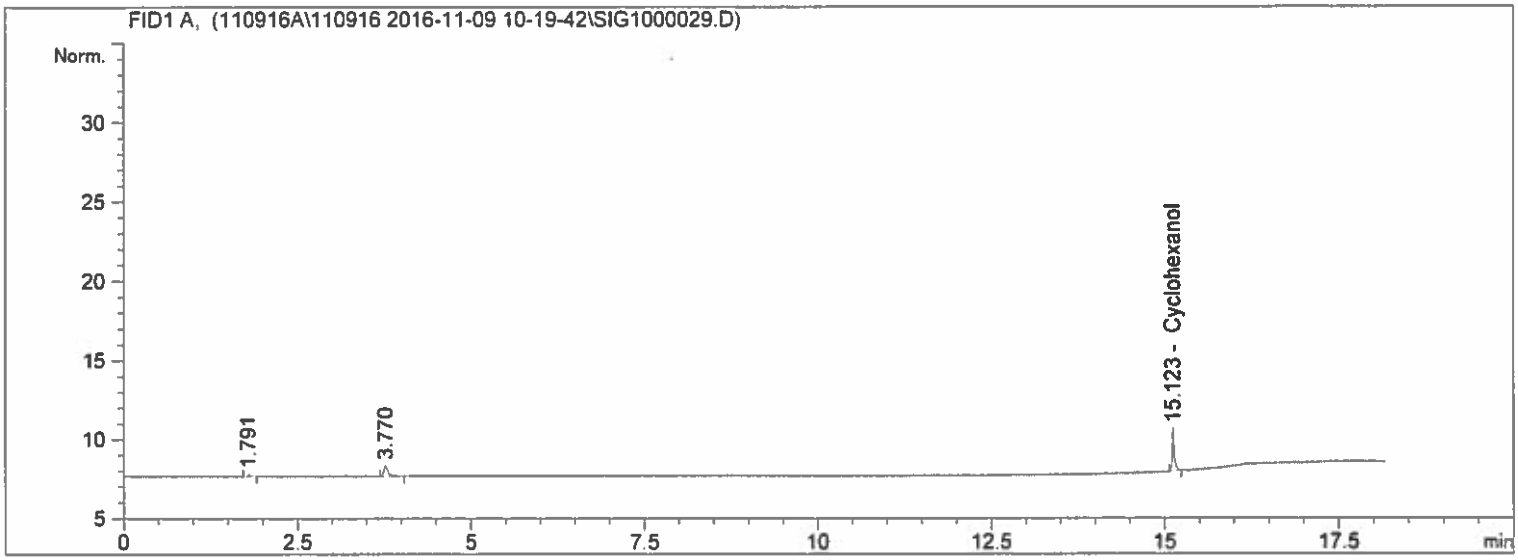
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

==========

Acq. Operator : dyeddula
Seq. Line : 22
Acq. Instrument : GC#5
Location : Vial 21
Injection Date : 11/9/2016 11:34:33 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-003
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.123	BB	5.71061	2.61317	14.92278		Cyclohexanol

Totals : 14.92278

D 11/23/16

==========

Acq. Operator : dyeddula
Seq. Line : 22
Acq. Instrument : GC#5
Location : Vial 21
Injection Date : 11/9/2016 11:34:33 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-003
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

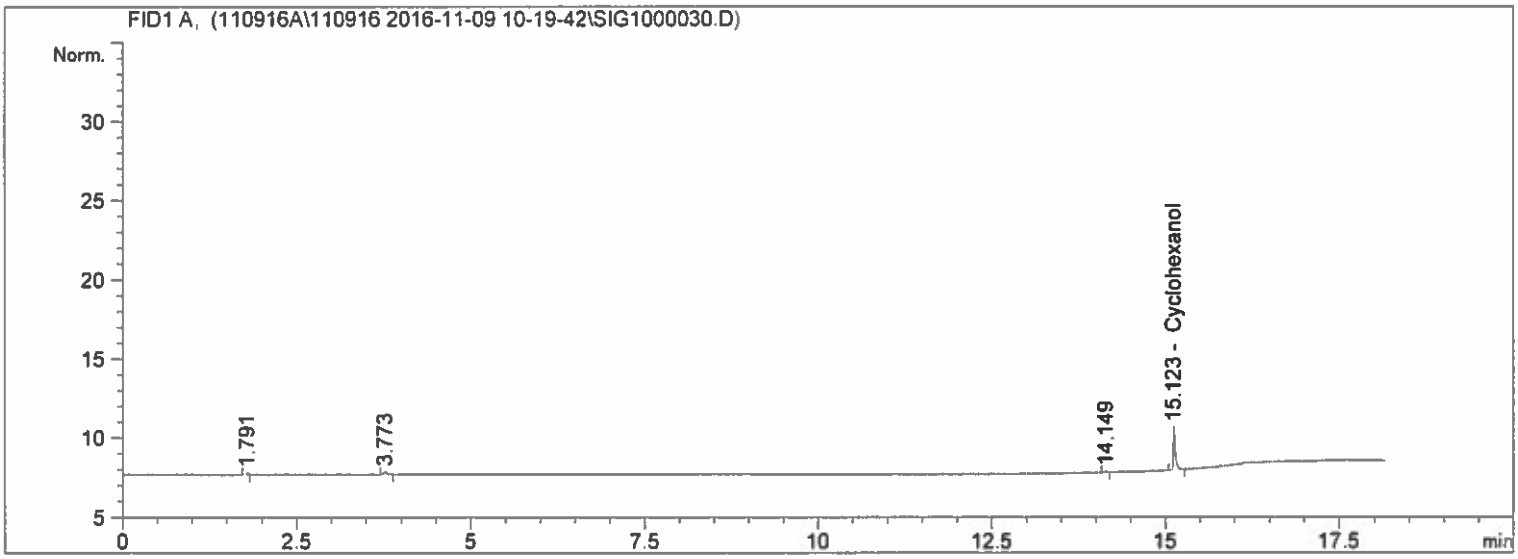
==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 23
Acq. Instrument : GC#5
Location : Vial 22
Injection Date : 11/10/2016 12:02:50 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-004
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.123	BB	5.91627	2.61317	15.46020		Cyclohexanol

Totals : 15.46020

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 23
Acq. Instrument : GC#5
Location : Vial 22
Injection Date : 11/10/2016 12:02:50 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-004
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

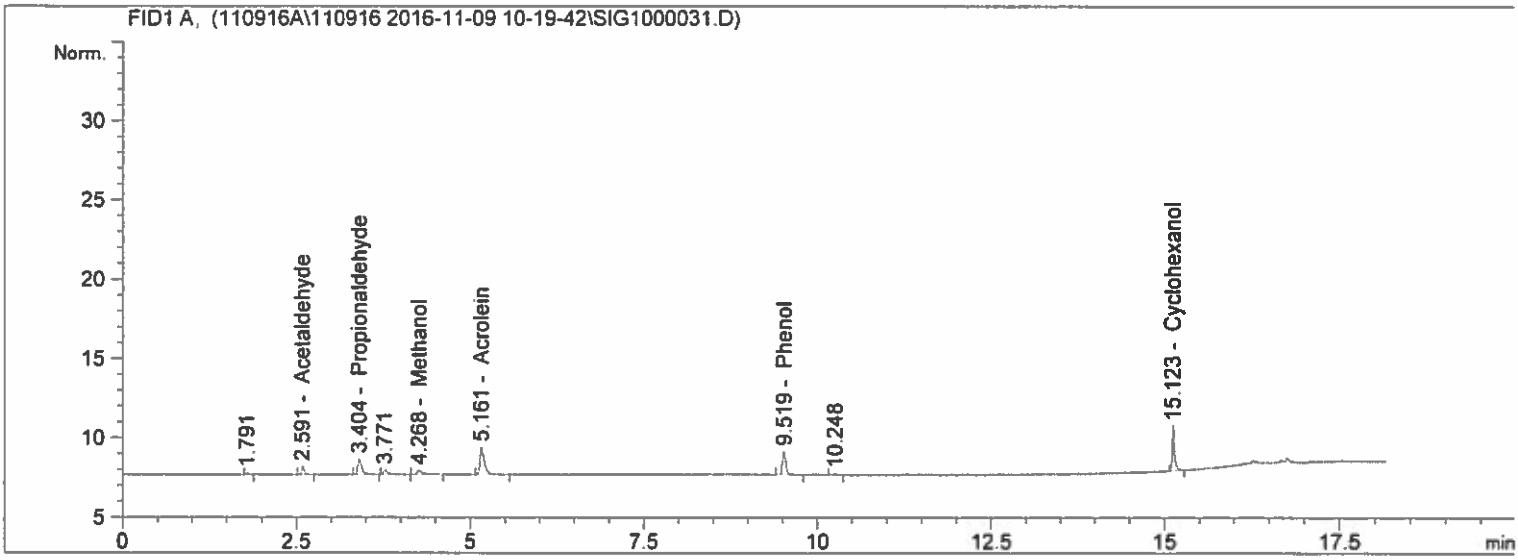
==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 24
Acq. Instrument : GC#5
Location : Vial 23
Injection Date : 11/10/2016 12:31:00 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-005
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.591	BB	1.49289	18.18361	27.14614		Acetaldehyde
3.404	BB	3.98172	5.20225	20.71391		Propionaldehyde
4.268	BB	1.61706	5.00625	8.09539		Methanol
5.161	BB	7.78830	6.63857	51.70316		Acrolein
9.519	BB	5.06598	8.92110	45.19410		Phenol
15.123	BB	6.25491	2.61317	16.34513		Cyclohexanol

Totals : 169.19783

==========

Acq. Operator : dyeddula
Seq. Line : 24
Acq. Instrument : GC#5
Location : Vial 23
Injection Date : 11/10/2016 12:31:00 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-005
Method:NCASI 99.02

==========

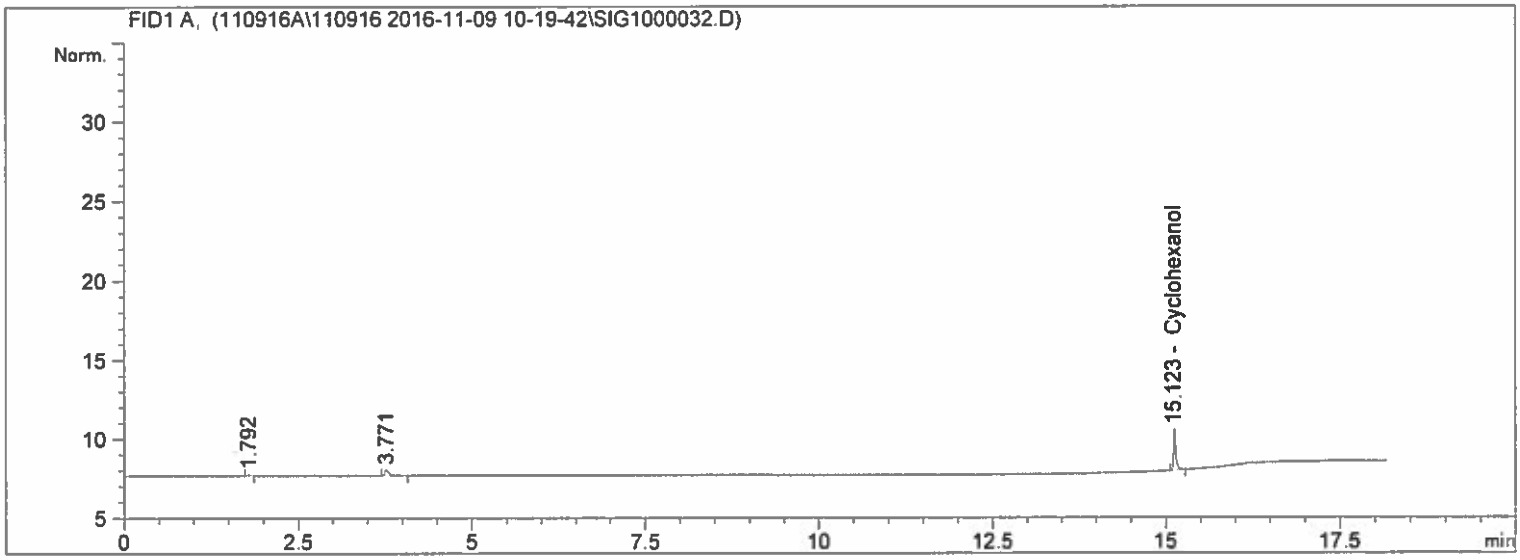
==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 25
Acq. Instrument : GC#5
Location : Vial 24
Injection Date : 11/10/2016 12:59:17 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-006
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.123	BB	5.77572	2.61317	15.09292		Cyclohexanol

Totals : 15.09292

DB 11/28/16

==========

Acq. Operator : dyeddula Seq. Line : 25
Acq. Instrument : GC#5 Location : Vial 24
Injection Date : 11/10/2016 12:59:17 AM Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-006
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

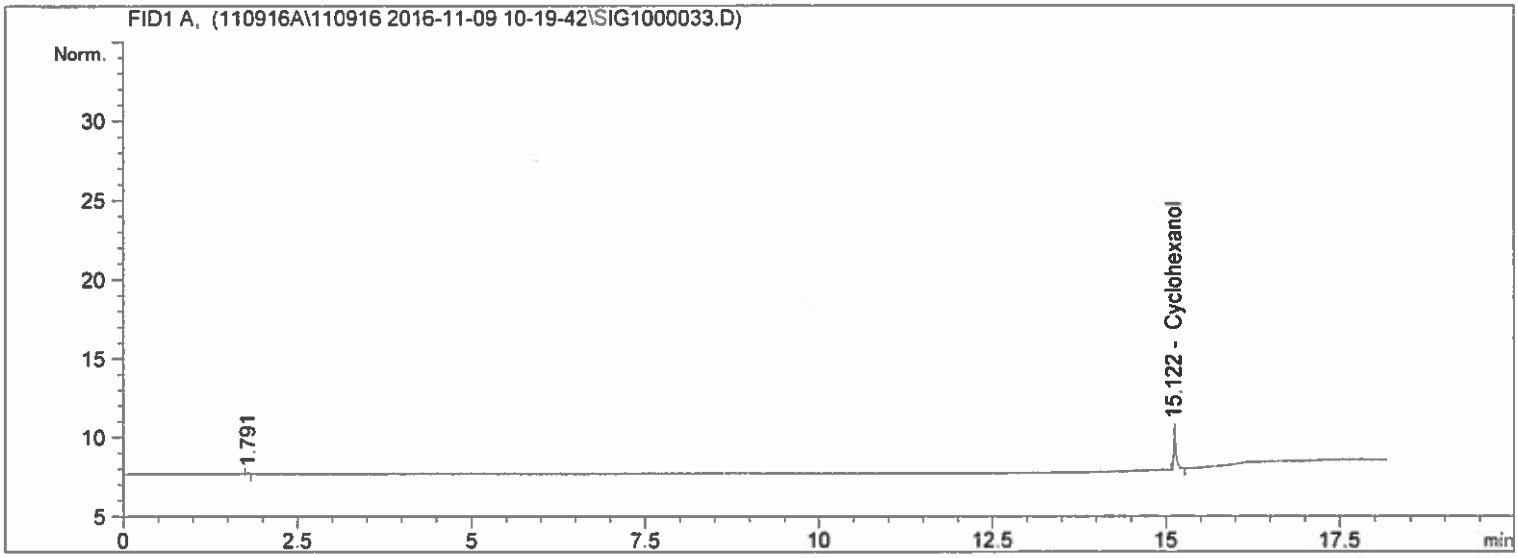
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000033.D
Sample Name: GSL_160978-007

==========

Acq. Operator : dyeddula Seq. Line : 26
Acq. Instrument : GC#5 Location : Vial 25
Injection Date : 11/10/2016 1:27:27 AM Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-007
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.122	BB	6.12760	2.61317	16.01243		Cyclohexanol

Totals : 16.01243

11/23/16

==========

Acq. Operator : dyeddula
Seq. Line : 26
Acq. Instrument : GC#5
Location : Vial 25
Injection Date : 11/10/2016 1:27:27 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-007
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

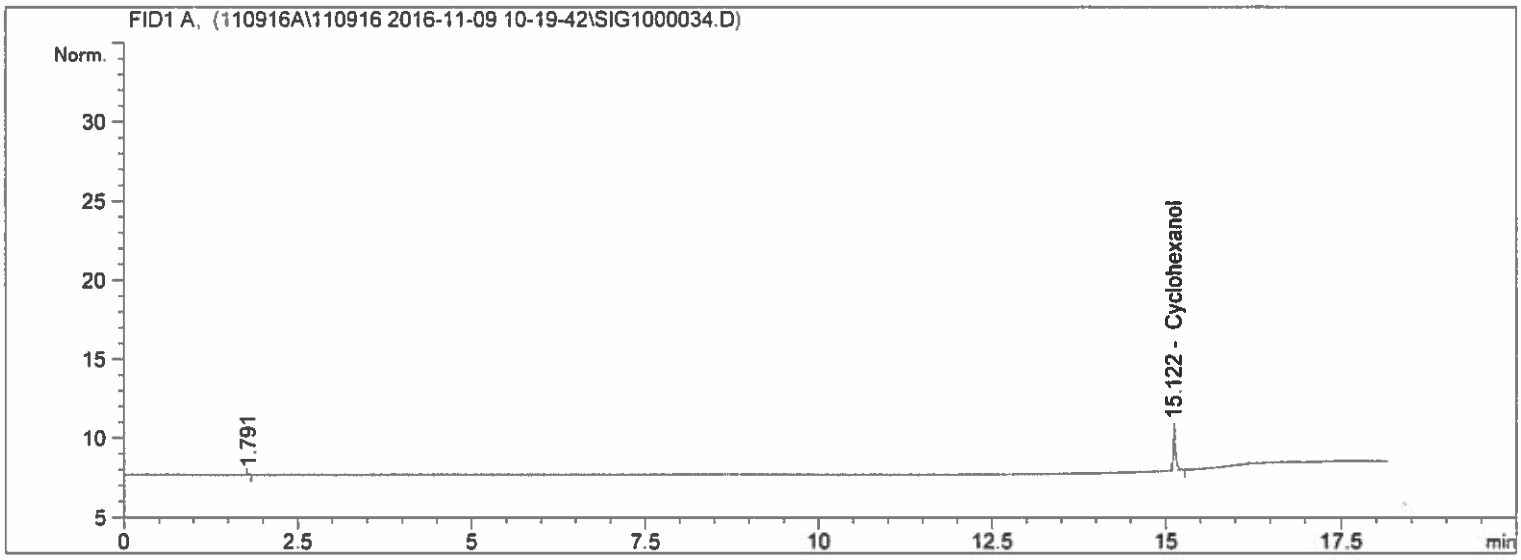
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000034.D
Sample Name: GSL_160978-008

==========

Acq. Operator : dyeddula Seq. Line : 27
Acq. Instrument : GC#5 Location : Vial 26
Injection Date : 11/10/2016 1:55:49 AM Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-008
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.122	BB	6.29726	2.61317	16.45578		Cyclohexanol

Totals : 16.45578

3/17/2016

==========

Acq. Operator : dyeddula
Seq. Line : 27
Acq. Instrument : GC#5
Location : Vial 26
Injection Date : 11/10/2016 1:55:49 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-008
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

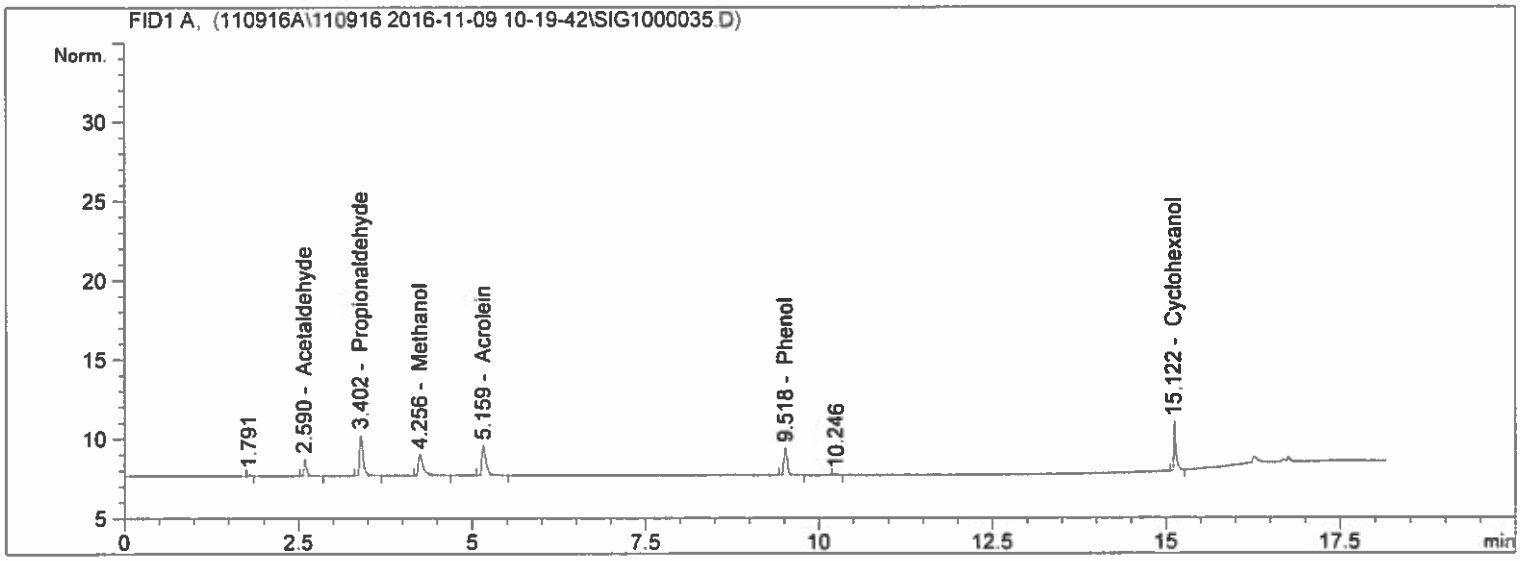
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000035.D
Sample Name: GSL_160978-009

==========

Acq. Operator : dyeddula
Seq. Line : 28
Acq. Instrument : GC#5
Location : Vial 27
Injection Date : 11/10/2016 2:24:28 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-009
Method:NCASI 99.02

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590	BB	2.99364	18.18361	54.43523		Acetaldehyde
3.402	BB	9.46357	5.20225	49.23189		Propionaldehyde
4.256	BB	6.72668	5.00625	33.67543		Methanol
5.159	BB	8.27621	6.63857	54.94217		Acrolein
9.518	BB	5.86277	8.92110	52.30231		Phenol
15.122	BB	6.57287	2.61317	17.17601		Cyclohexanol

Totals : 261.76304

11/23/16

==========

Acq. Operator : dyeddula
Seq. Line : 28
Acq. Instrument : GC#5
Location : Vial 27
Injection Date : 11/10/2016 2:24:28 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-009
Method:NCASI 99.02

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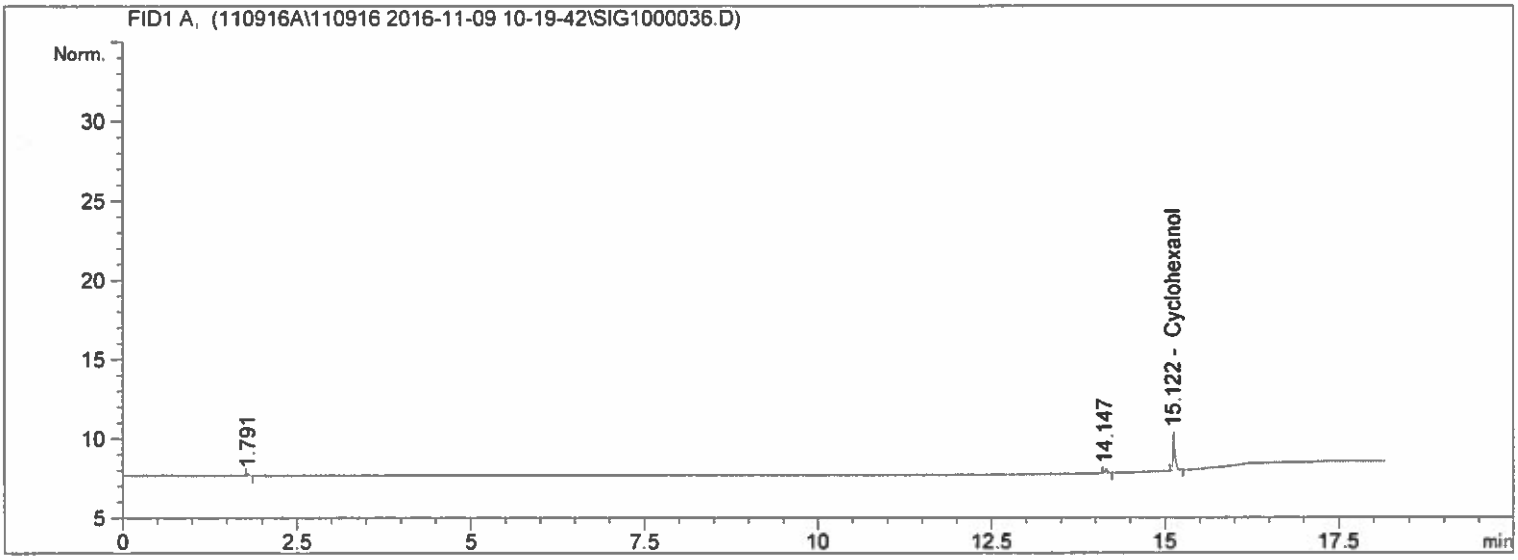
*** End of Report ***

```
==========================================================================
Acq. Operator    : dyeddula                          Seq. Line :  29
Acq. Instrument  : GC#5                               Location : Vial 28
Injection Date   : 11/10/2016 2:53:12 AM                   Inj :   1
                                                     Inj Volume : 1 µl
Acq. Method      : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                   M
Last changed     : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method  : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed     : 11/14/2016 8:39:05 AM by spabba
                   (modified after loading)
Sample Info      : GSL_160978-010
                   Method:NCASI 99.02


==========================================================================
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By              :      Signal
Calib. Data Modified   :      Monday, November 14, 2016 8:38:56 AM
Multiplier:                    :      1.0000
Dilution:                      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  2.590           -          -          -         Acetaldehyde
  3.406           -          -          -         Propionaldehyde
  4.247           -          -          -         Methanol
  5.157           -          -          -         Acrolein
  9.524           -          -          -         Phenol
 15.122 BB      5.10434    2.61317   13.33848     Cyclohexanol

Totals :                               13.33848
```

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 29
Acq. Instrument : GC#5
Location : Vial 28
Injection Date : 11/10/2016 2:53:12 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-010
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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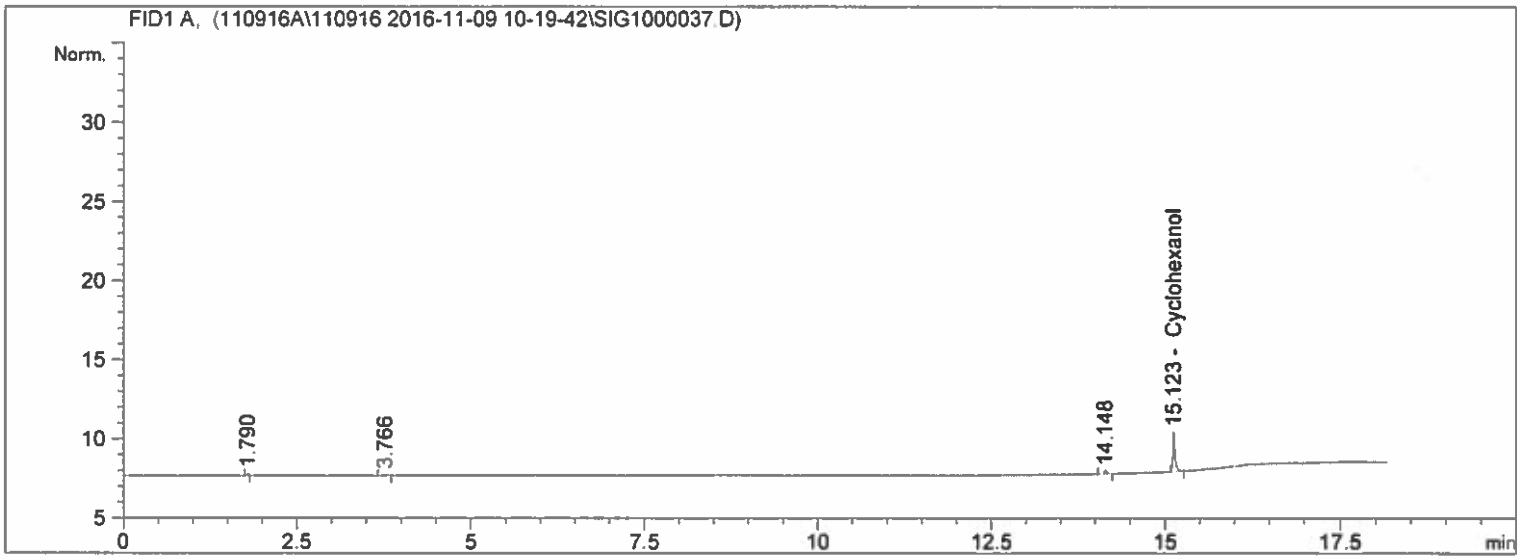
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000037.D
Sample Name: GSL_160978-011

==========

Acq. Operator : dyeddula
Seq. Line : 30
Acq. Instrument : GC#5
Location : Vial 29
Injection Date : 11/10/2016 3:21:26 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-011
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.123	BB	5.42200	2.61317	14.16859		Cyclohexanol

Totals : 14.16859

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 30
Acq. Instrument : GC#5
Location : Vial 29
Injection Date : 11/10/2016 3:21:26 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-011
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

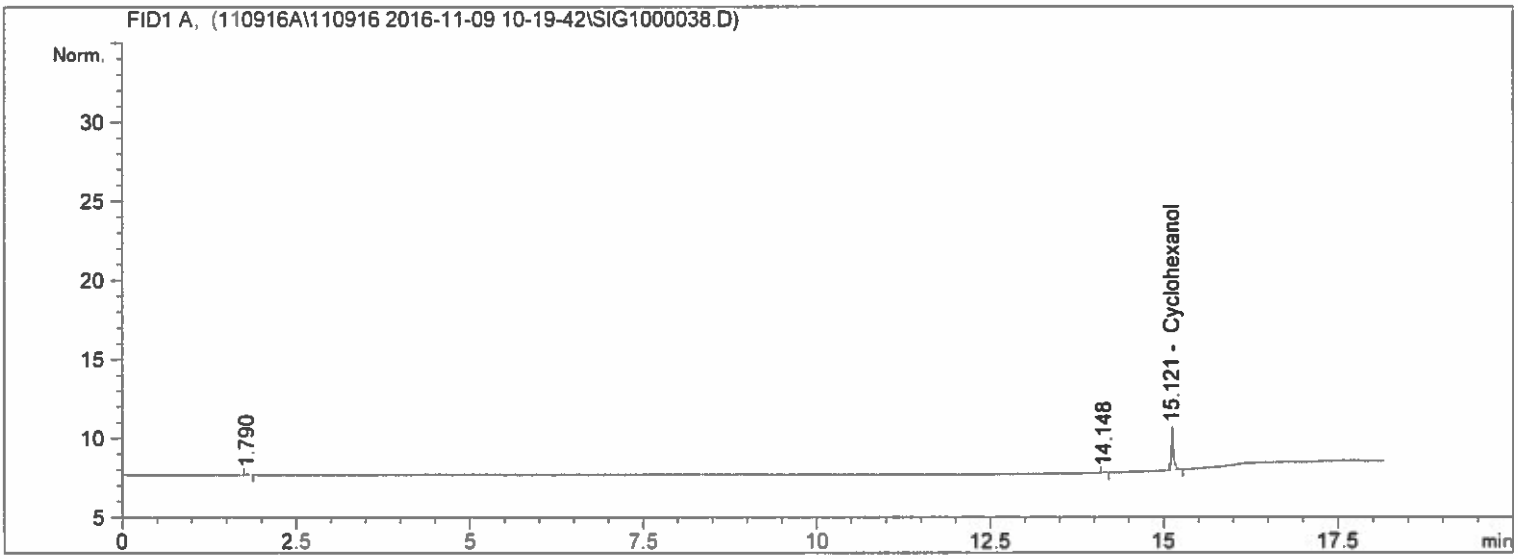
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000038.D
Sample Name: GSL_160978-012

==========

Acq. Operator : dyeddula
Seq. Line : 31
Acq. Instrument : GC#5
Location : Vial 30
Injection Date : 11/10/2016 3:49:44 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-012
Method:NCASI 99.02

==========



==========

External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.121	BB	5.84117	2.61317	15.26396		Cyclohexanol

Totals : 15.26396

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 31
Acq. Instrument : GC#5
Location : Vial 30
Injection Date : 11/10/2016 3:49:44 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-012
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

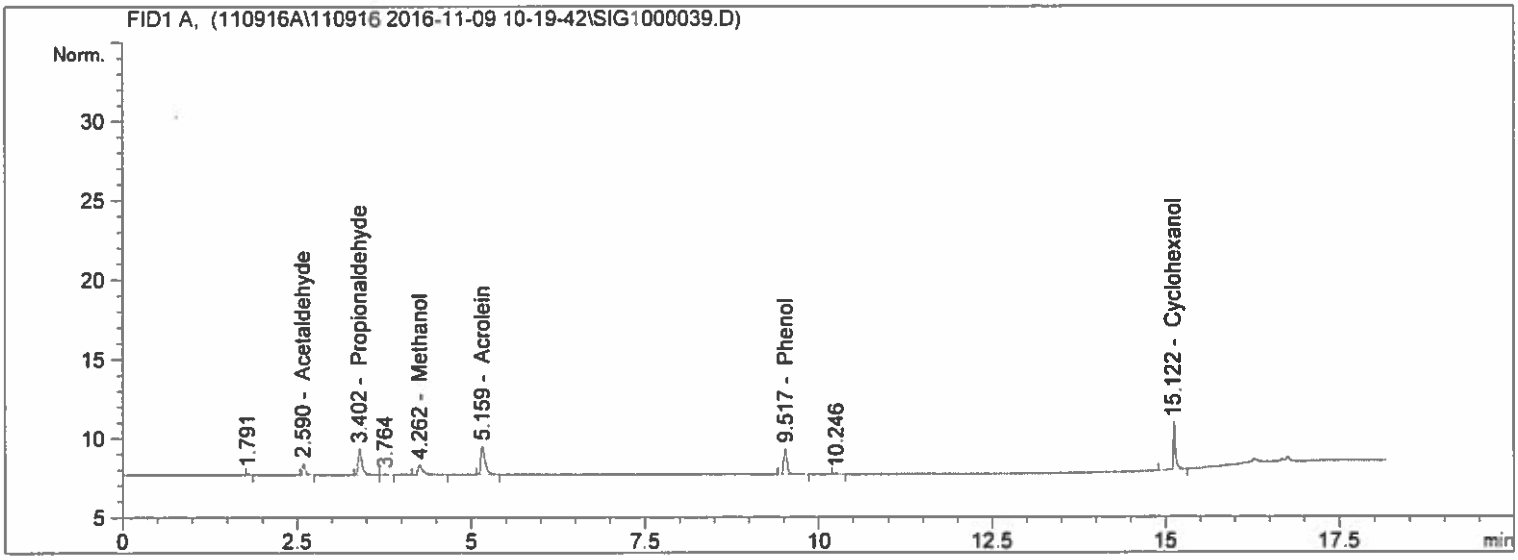
==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 32
Acq. Instrument : GC#5
Location : Vial 31
Injection Date : 11/10/2016 4:17:56 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-013
Method:NCASI 99.02

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590	BB	2.07965	18.18361	37.81558		Acetaldehyde
3.402	BV	6.51768	5.20225	33.90665		Propionaldehyde
4.262	BB	3.49210	5.00625	17.48233		Methanol
5.159	BB	8.19007	6.63857	54.37034		Acrolein
9.517	BB	5.63826	8.92110	50.29948		Phenol
15.122	BB	6.84766	2.61317	17.89408		Cyclohexanol

Totals : 211.76846

3.1/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 32
Acq. Instrument : GC#5
Location : Vial 31
Injection Date : 11/10/2016 4:17:56 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-013
Method:NCASI 99.02

==========

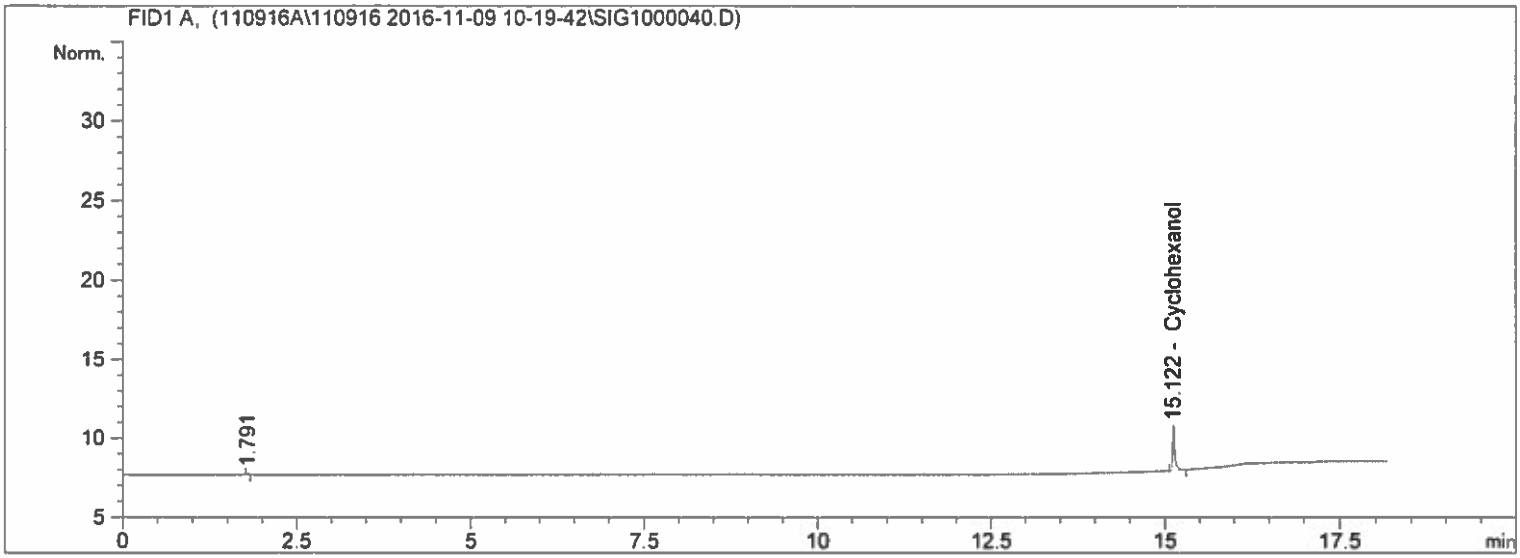
==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 33
Acq. Instrument : GC#5
Location : Vial 32
Injection Date : 11/10/2016 4:46:13 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-014
Method:NCASI 99.02

==========



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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.122	BB	6.38044	2.61317	16.67316		Cyclohexanol

Totals : 16.67316

11/23/16

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :  33
Acq. Instrument : GC#5                             Location : Vial 32
Injection Date  : 11/10/2016 4:46:13 AM                 Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:39:05 AM by spabba
                  (modified after loading)
Sample Info     : GSL_160978-014
                  Method:NCASI 99.02

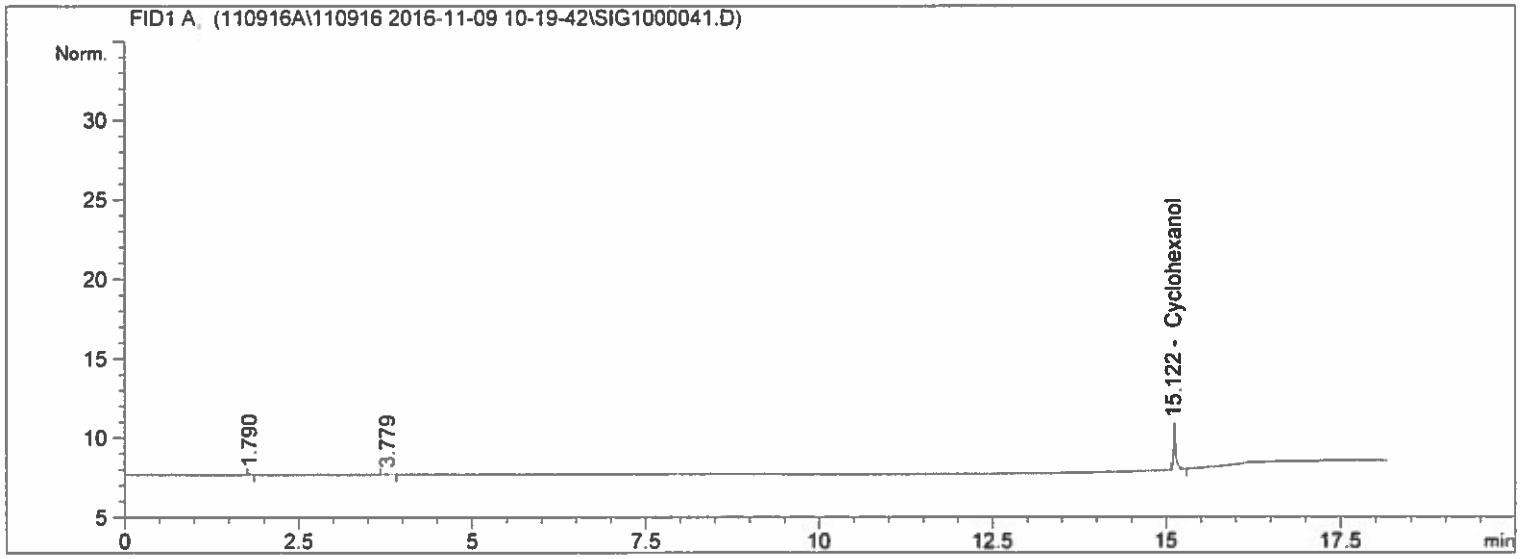

==========================================================================

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                           *** End of Report ***
```

Acq. Operator : dyeddula
Seq. Line : 34
Acq. Instrument : GC#5
Location : Vial 33
Injection Date : 11/10/2016 5:14:32 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-015
Method:NCASI 99.02



External Standard Report

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.122	BB	6.54676	2.61317	17.10777		Cyclohexanol

Totals : 17.10777

11/23/16

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :  34
Acq. Instrument : GC#5                             Location : Vial 33
Injection Date  : 11/10/2016 5:14:32 AM                 Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:39:05 AM by spabba
                  (modified after loading)
Sample Info     : GSL_160978-015
                  Method:NCASI 99.02

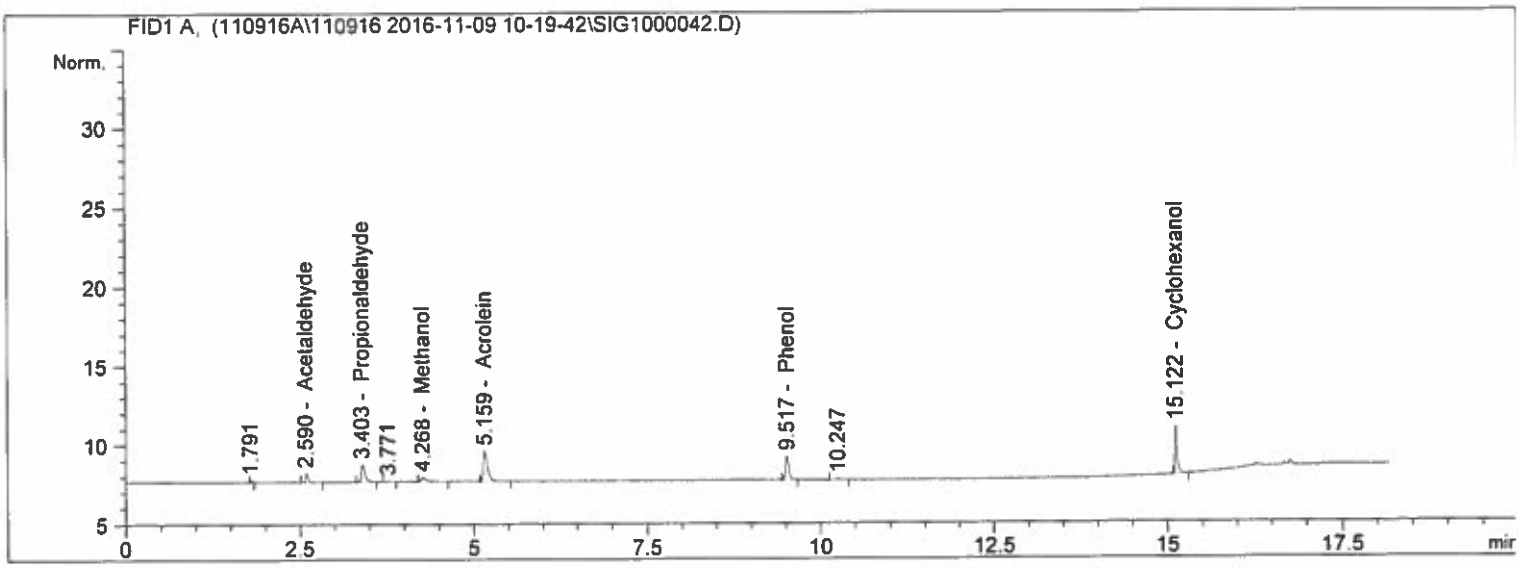

==========================================================================

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                           *** End of Report ***
```

Acq. Operator	: dyeddula	Seq. Line :	35
Acq. Instrument	: GC#5	Location :	Vial 34
Injection Date	: 11/10/2016 5:42:37 AM	Inj :	1
		Inj Volume :	1 µl
Acq. Method	: C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M		
Last changed	: 11/9/2016 10:19:20 AM by dyeddula		
Analysis Method	: C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M		
Last changed	: 11/14/2016 8:39:05 AM by spabba (modified after loading)		
Sample Info	: GSL_160978-016 Method:NCASI 99.02		



External Standard Report

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590	BB	1.75863	18.18361	31.97830		Acetaldehyde
3.403	BB	4.39046	5.20225	22.84028		Propionaldehyde
4.268	BB	1.83176	5.00625	9.17025		Methanol
5.159	BB	8.56227	6.63857	56.84121		Acrolein
9.517	BB	5.01073	8.92110	44.70120		Phenol
15.122	BB	6.56623	2.61317	17.15866		Cyclohexanol
Totals :				182.68989		

23/123/16

==========

Acq. Operator : dyeddula
Seq. Line : 35
Acq. Instrument : GC#5
Location : Vial 34
Injection Date : 11/10/2016 5:42:37 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-016
Method:NCASI 99.02

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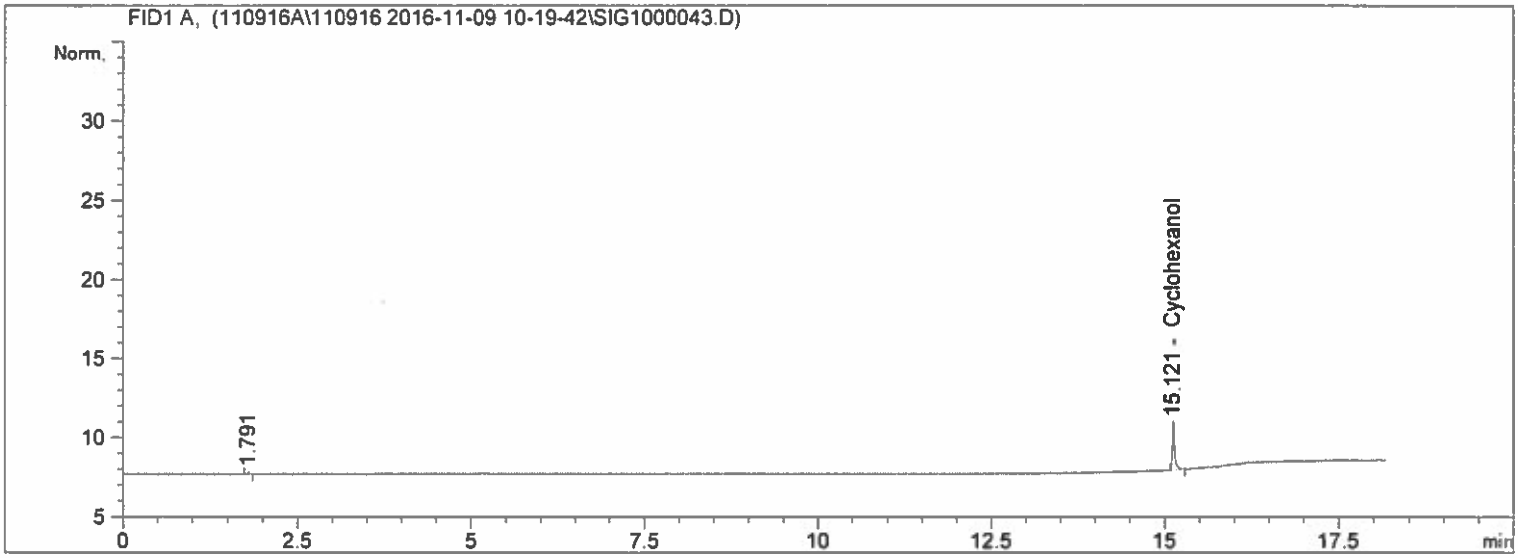
*** End of Report ***

```
==========================================================================
Acq. Operator    : dyeddula                          Seq. Line :  36
Acq. Instrument  : GC#5                               Location : Vial 35
Injection Date   : 11/10/2016 6:11:02 AM                   Inj :   1
                                                     Inj Volume : 1 µl
Acq. Method      : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                   M
Last changed     : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method  : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed     : 11/14/2016 8:39:05 AM by spabba
                   (modified after loading)
Sample Info      : GSL_160978-017
                   Method:NCASI 99.02


==========================================================================
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By              :      Signal
Calib. Data Modified   :      Monday, November 14, 2016 8:38:56 AM
Multiplier:                    :      1.0000
Dilution:                      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  2.590           -          -          -         Acetaldehyde
  3.406           -          -          -         Propionaldehyde
  4.247           -          -          -         Methanol
  5.157           -          -          -         Acrolein
  9.524           -          -          -         Phenol
 15.121 BB      6.64950    2.61317   17.37626     Cyclohexanol

Totals :                               17.37626
```

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 36
Acq. Instrument : GC#5
Location : Vial 35
Injection Date : 11/10/2016 6:11:02 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-017
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000044.D
Sample Name: GSL_160978-018

==========

Acq. Operator : dyeddula
Seq. Line : 37
Acq. Instrument : GC#5
Location : Vial 91
Injection Date : 11/10/2016 6:39:21 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-018
Method:NCASI 99.02

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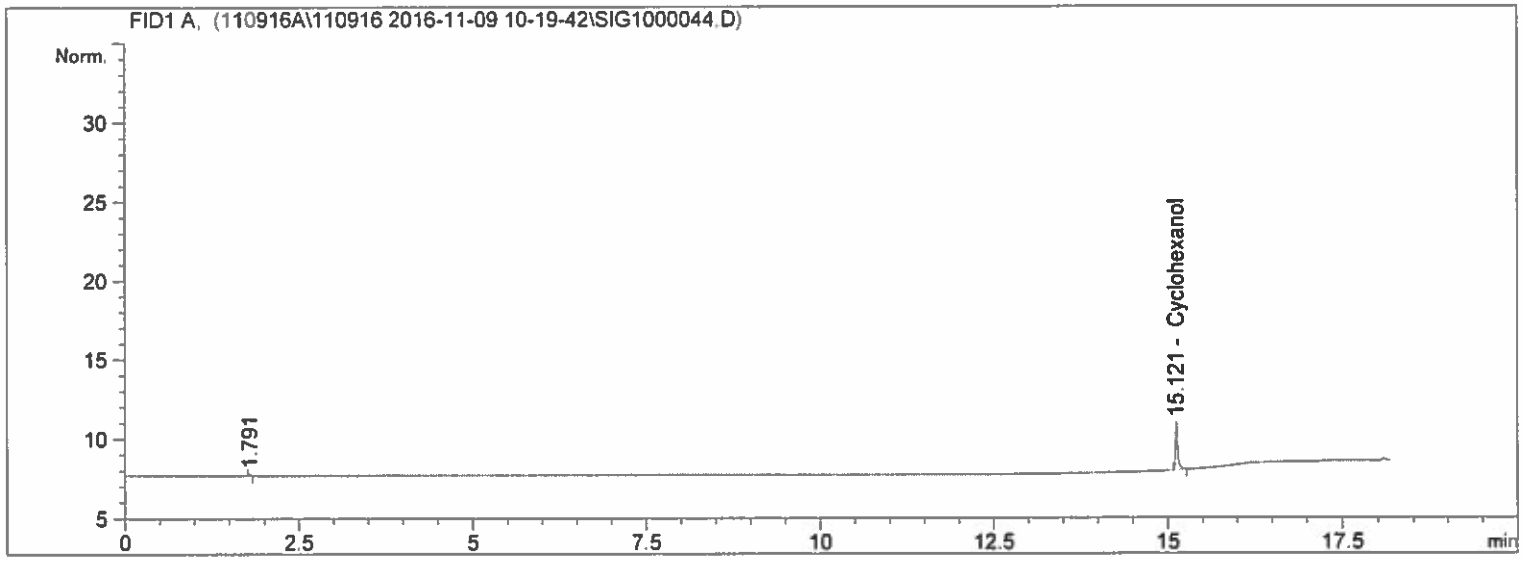

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External Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.121	BB	6.62827	2.61317	17.32079		Cyclohexanol

Totals : 17.32079

11/23/16

==========

Acq. Operator : dyeddula
Seq. Line : 37
Acq. Instrument : GC#5
Location : Vial 91
Injection Date : 11/10/2016 6:39:21 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-018
Method:NCASI 99.02

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1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 38
Acq. Instrument : GC#5
Location : Vial 92
Injection Date : 11/10/2016 7:07:34 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-019
Method:NCASI 99.02

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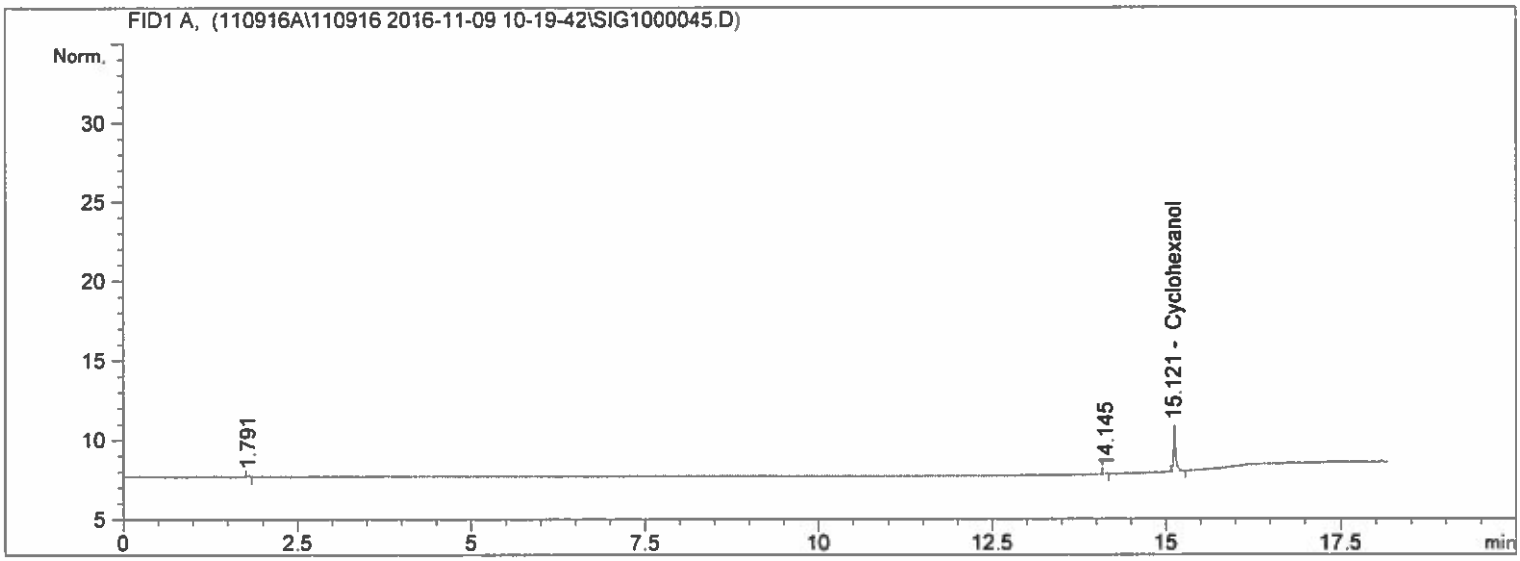

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.121	BB	6.37079	2.61317	16.64795		Cyclohexanol

Totals : 16.64795

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 38
Acq. Instrument : GC#5
Location : Vial 92
Injection Date : 11/10/2016 7:07:34 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-019
Method:NCASI 99.02

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1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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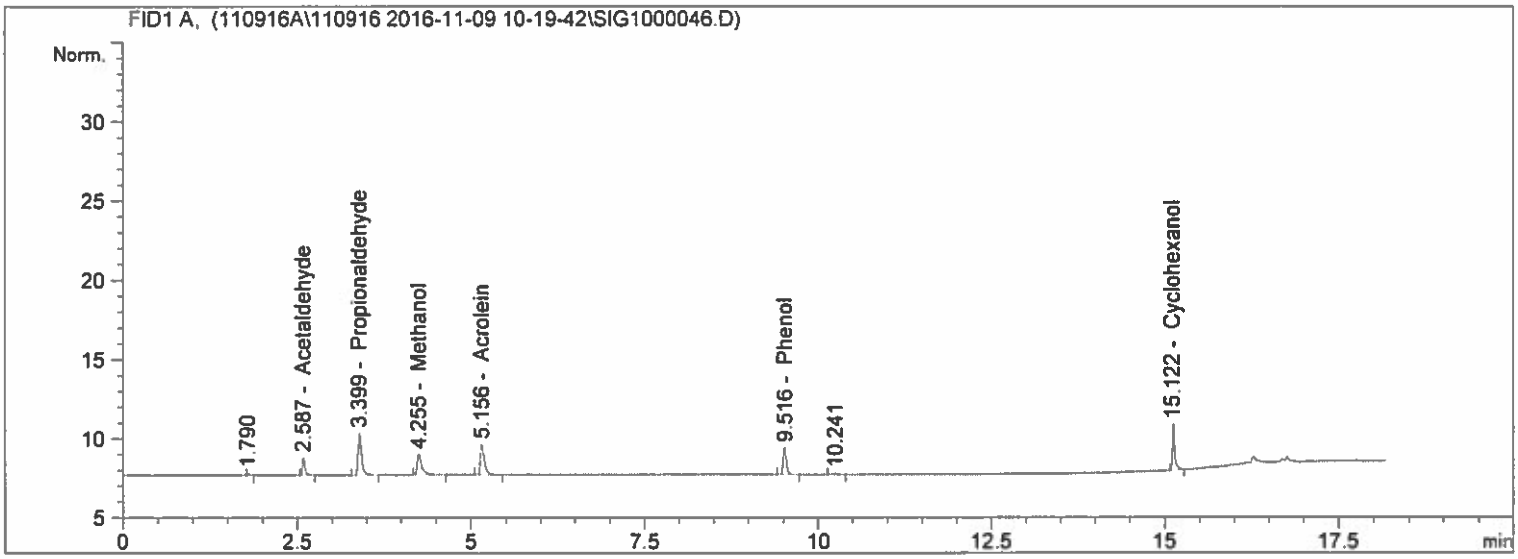
*** End of Report ***

Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000046.D
Sample Name: GSL_160978-020

Acq. Operator	: dyeddula	Seq. Line	: 39
Acq. Instrument	: GC#5	Location	: Vial 93
Injection Date	: 11/10/2016 7:35:51 AM	Inj	: 1
		Inj Volume	: 1 µl

Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-020
Method:NCASI 99.02



External Standard Report

Sorted By : Signal
Calib. Data Modified : Monday, November 14, 2016 8:38:56 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.587	BB	2.89100	18.18361	52.56875		Acetaldehyde
3.399	BB	9.43650	5.20225	49.09110		Propionaldehyde
4.255	BB	6.29203	5.00625	31.49946		Methanol
5.156	BB	8.19755	6.63857	54.41994		Acrolein
9.516	BB	5.78856	8.92110	51.64026		Phenol
15.122	BB	6.38663	2.61317	16.68934		Cyclohexanol

Totals : 255.90884

11/28/16

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Acq. Operator : dyeddula
Seq. Line : 39
Acq. Instrument : GC#5
Location : Vial 93
Injection Date : 11/10/2016 7:35:51 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-020
Method:NCASI 99.02

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*** End of Report ***

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Acq. Operator : dyeddula
Seq. Line : 40
Acq. Instrument : GC#5
Location : Vial 94
Injection Date : 11/10/2016 8:04:06 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-021
Method:NCASI 99.02

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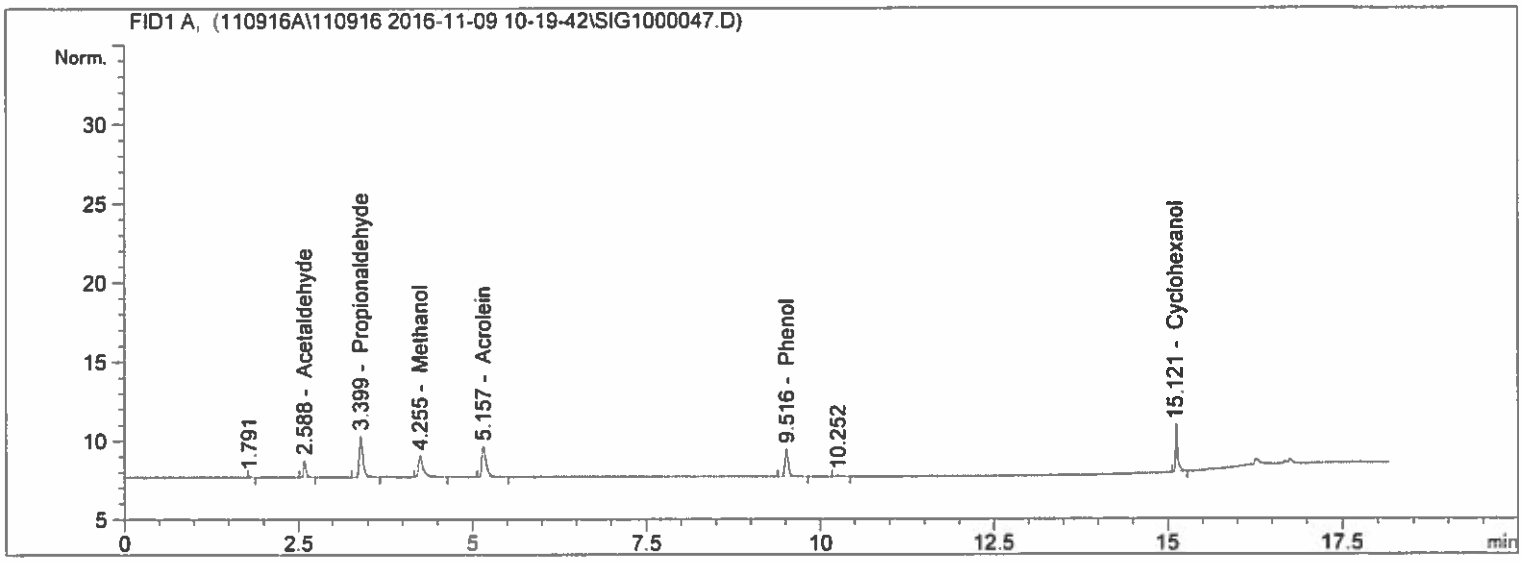

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/14/2016 8:43:33 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.588	BB	2.93226	18.18361	53.31901		Acetaldehyde
3.399	BB	9.60325	5.20225	49.95856		Propionaldehyde
4.255	BB	6.71874	5.00625	33.63567		Methanol
5.157	BB	8.52035	6.63857	56.56287		Acrolein
9.516	BB	6.16268	8.92110	54.97789		Phenol
15.121	BB	6.52961	2.61317	17.06296		Cyclohexanol

Totals : 265.51695

11/23/16

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Acq. Operator : dyeddula
Seq. Line : 40
Acq. Instrument : GC#5
Location : Vial 94
Injection Date : 11/10/2016 8:04:06 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-021
Method:NCASI 99.02

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*** End of Report ***

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Acq. Operator : dyeddula
Seq. Line : 41
Acq. Instrument : GC#5
Location : Vial 95
Injection Date : 11/10/2016 8:32:41 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-022
Method:NCASI 99.02

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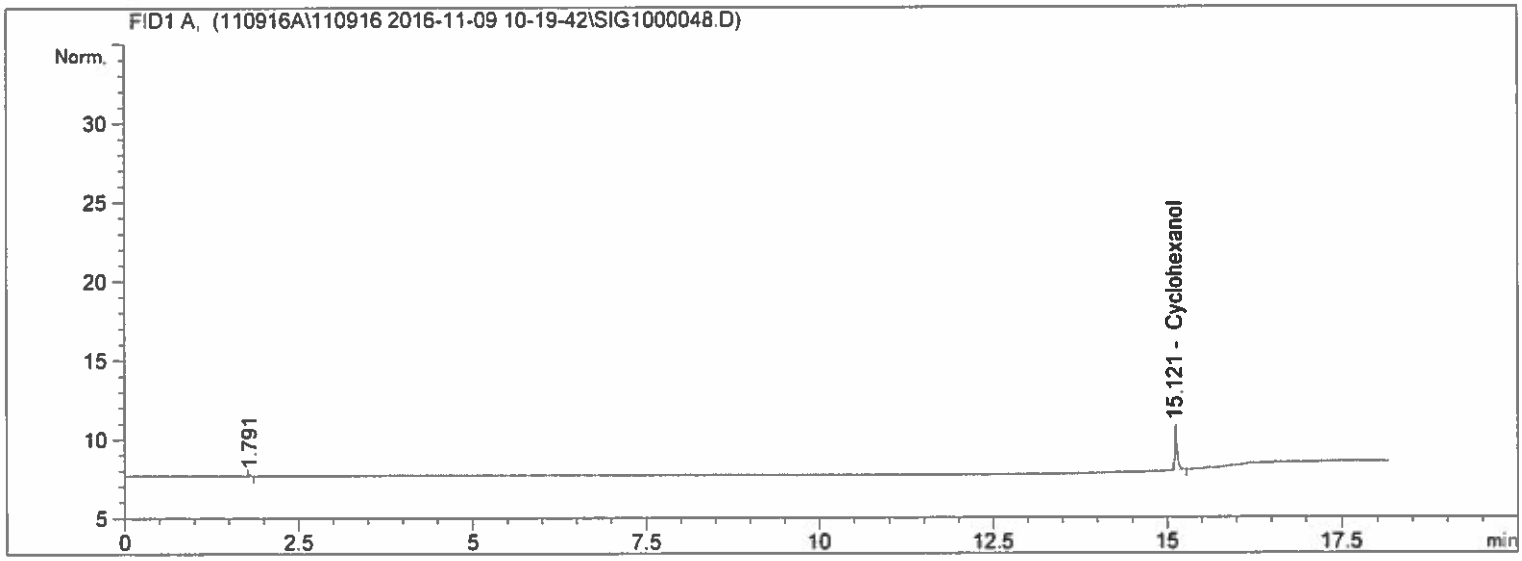

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/14/2016 8:43:33 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.121	BB	6.43102	2.61317	16.80532		Cyclohexanol

Totals : 16.80532

DS 11/28/16

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Acq. Operator : dyeddula
Seq. Line : 41
Acq. Instrument : GC#5
Location : Vial 95
Injection Date : 11/10/2016 8:32:41 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-022
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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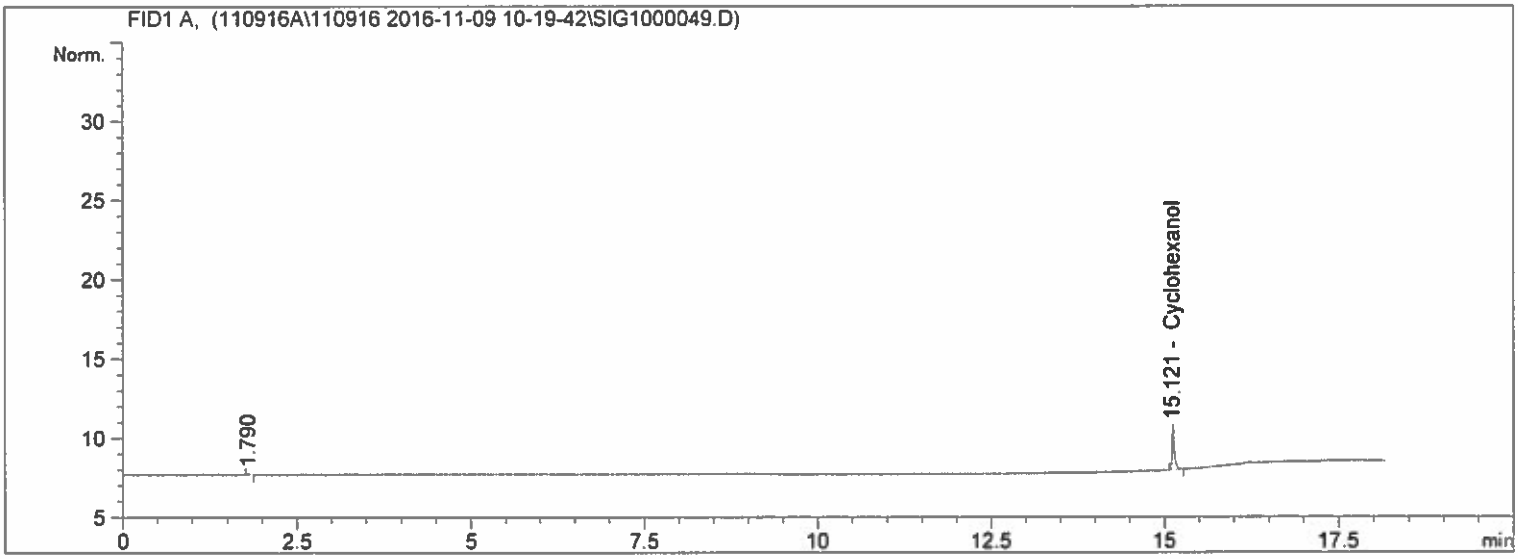
*** End of Report ***

Acq. Operator	: dyeddula	Seq. Line :	42
Acq. Instrument	: GC#5	Location :	Vial 96
Injection Date	: 11/10/2016 9:00:57 AM	Inj :	1
		Inj Volume :	1 µl

Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-023
Method:NCASI 99.02



External Standard Report

Sorted By : Signal
Calib. Data Modified : 11/14/2016 8:43:33 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590		-	-	-		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.157		-	-	-		Acrolein
9.524		-	-	-		Phenol
15.121	BB	6.33990	2.61317	16.56721		Cyclohexanol
Totals :				16.56721		

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 42
Acq. Instrument : GC#5
Location : Vial 96
Injection Date : 11/10/2016 9:00:57 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-023
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 43
Acq. Instrument : GC#5
Location : Vial 97
Injection Date : 11/10/2016 9:28:59 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-024
Method:NCASI 99.02

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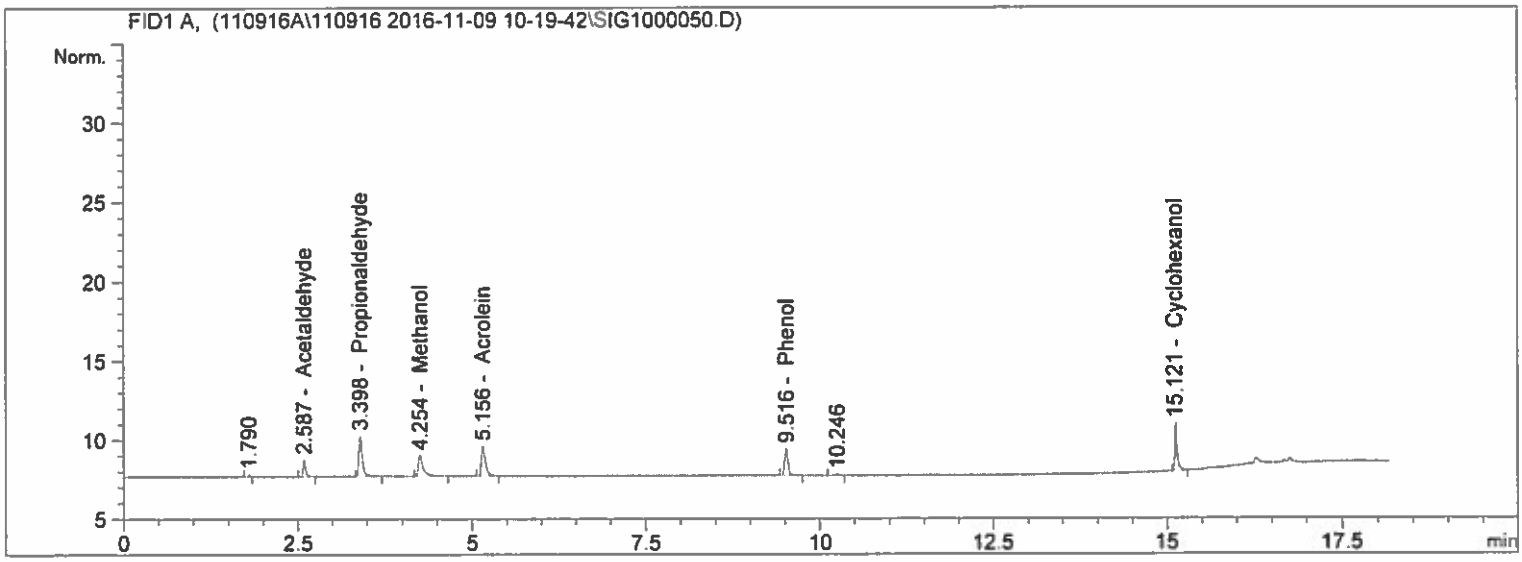

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/14/2016 8:43:33 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.587	BB	2.84563	18.18361	51.74386		Acetaldehyde
3.398	BB	9.43512	5.20225	49.08388		Propionaldehyde
4.254	BB	6.50153	5.00625	32.54825		Methanol
5.156	BB	8.11139	6.63857	53.84797		Acrolein
9.516	BB	5.82016	8.92110	51.92221		Phenol
15.121	BB	6.77524	2.61317	17.70483		Cyclohexanol

Totals : 256.85100

11/28/16

```
==========================================================================
Acq. Operator   : dyeddula                        Seq. Line :  43
Acq. Instrument : GC#5                             Location : Vial 97
Injection Date  : 11/10/2016 9:28:59 AM                 Inj :   1
                                                 Inj Volume : 1 µl
Acq. Method     : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                  M
Last changed    : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed    : 11/14/2016 8:39:05 AM by spabba
                  (modified after loading)
Sample Info     : GSL_160978-024
                  Method:NCASI 99.02


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                          *** End of Report ***
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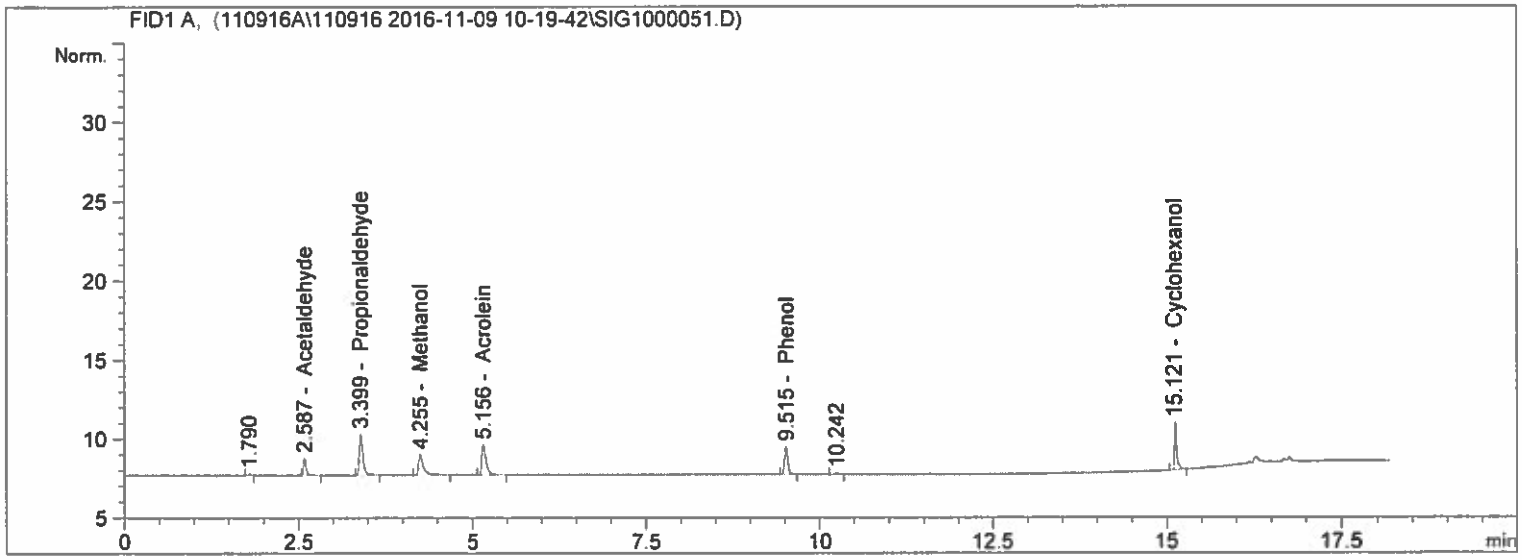
Data File C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\SIG1000051.D
Sample Name: GSL_160978-025

==========

Acq. Operator : dyeddula
Seq. Line : 44
Acq. Instrument : GC#5
Location : Vial 98
Injection Date : 11/10/2016 9:57:03 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-025
Method:NCASI 99.02

==========



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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/14/2016 8:43:33 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.587	BB	2.99430	18.18361	54.44713		Acetaldehyde
3.399	BB	9.58169	5.20225	49.84639		Propionaldehyde
4.255	BB	6.51724	5.00625	32.62691		Methanol
5.156	BB	8.34005	6.63857	55.36594		Acrolein
9.515	BB	5.91216	8.92110	52.74297		Phenol
15.121	BB	6.60662	2.61317	17.26419		Cyclohexanol

Totals : 262.29352

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 44
Acq. Instrument : GC#5
Location : Vial 98
Injection Date : 11/10/2016 9:57:03 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : GSL_160978-025
Method:NCASI 99.02

==========

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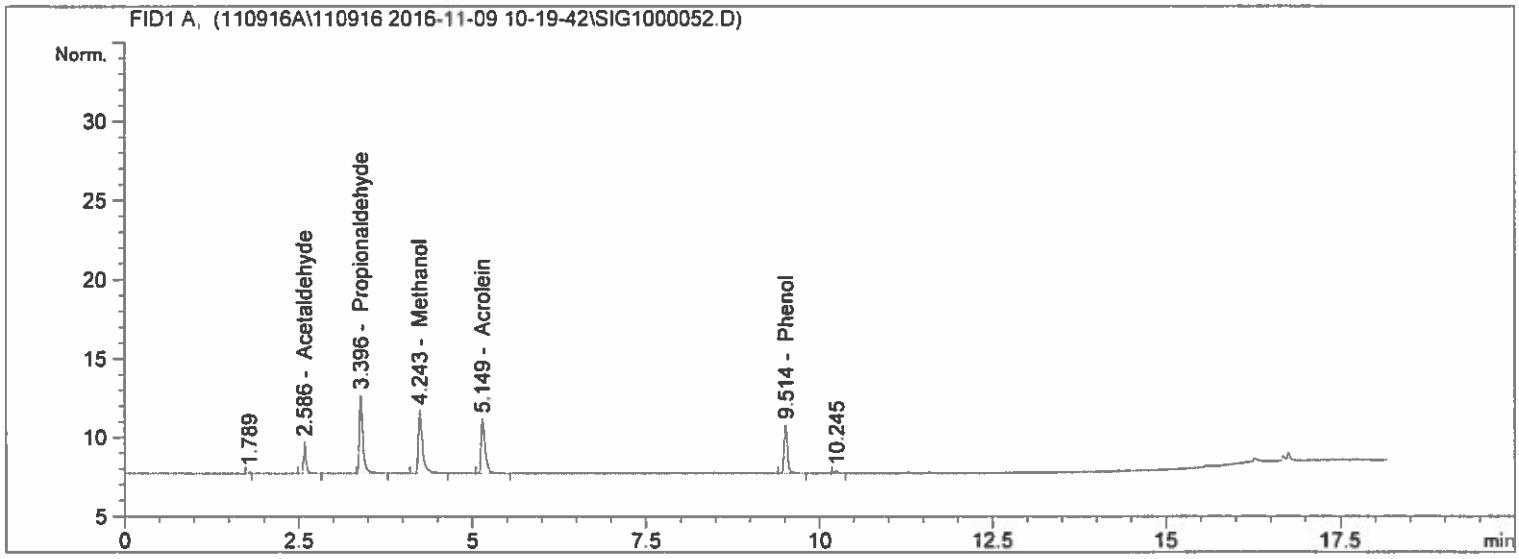
*** End of Report ***

```
==========================================================================
Acq. Operator    : dyeddula                          Seq. Line :  45
Acq. Instrument  : GC#5                               Location : Vial 5
Injection Date   : 11/10/2016 10:25:25 AM                 Inj :   1
                                                    Inj Volume : 1 µl
Acq. Method      : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.
                   M
Last changed     : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method  : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed     : 11/14/2016 8:39:05 AM by spabba
                   (modified after loading)
Sample Info      : POST CCV(100ppm HAPS)
                   Method:NCASI 99.02


==========================================================================
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By              :      Signal
Calib. Data Modified   :      11/14/2016 8:43:33 AM
Multiplier:                    :      1.0000
Dilution:                      :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  2.586 BB        5.23223   18.18361   95.14077     Acetaldehyde
  3.396 BB       17.78858    5.20225   92.54070     Propionaldehyde
  4.243 BB       17.05981    5.00625   85.40564     Methanol
  5.149 BB       14.52972    6.63857   96.45647     Acrolein
  9.514 BB       10.50851    8.92110   93.74742     Phenol
 15.124             -          -          -         Cyclohexanol

Totals :                                463.29100
```

11/23/16

==========

Acq. Operator : dyeddula
Seq. Line : 45
Acq. Instrument : GC#5
Location : Vial 5
Injection Date : 11/10/2016 10:25:25 AM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/14/2016 8:39:05 AM by spabba
(modified after loading)
Sample Info : POST CCV(100ppm HAPS)
Method:NCASI 99.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

==========

Acq. Operator : dyeddula
Seq. Line : 18
Acq. Instrument : GC#5
Location : Vial 17
Injection Date : 11/9/2016 9:13:19 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:30:39 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044
Method:NCASI 94.02

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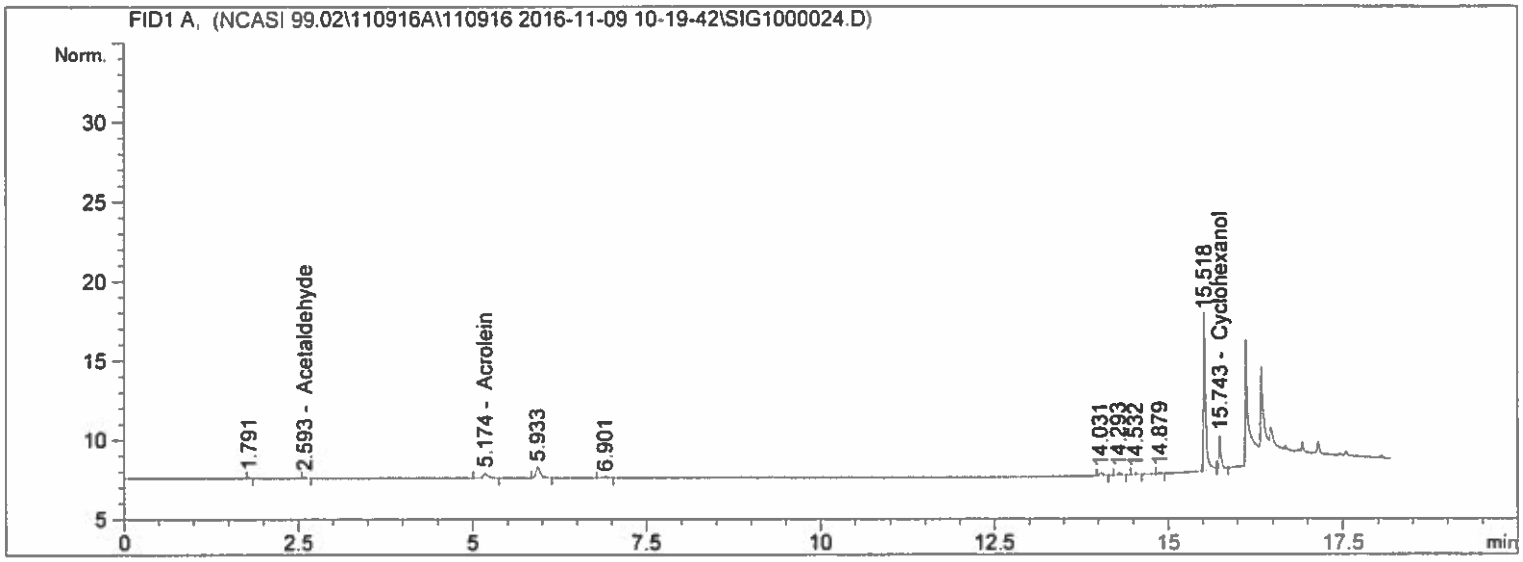

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External Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/23/2016 1:30:38 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.593	BB	3.13506e-1	18.18361	5.70067		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.174	BB	1.67968	6.63857	11.15069		Acrolein
9.524		-	-	-		Phenol
15.743	VB	4.45383	2.61317	11.63860		Cyclohexanol

Totals : 28.48997

11/28/16

==========

Acq. Operator : dyeddula
Seq. Line : 18
Acq. Instrument : GC#5
Location : Vial 17
Injection Date : 11/9/2016 9:13:19 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:30:39 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044
Method:NCASI 94.02

==========

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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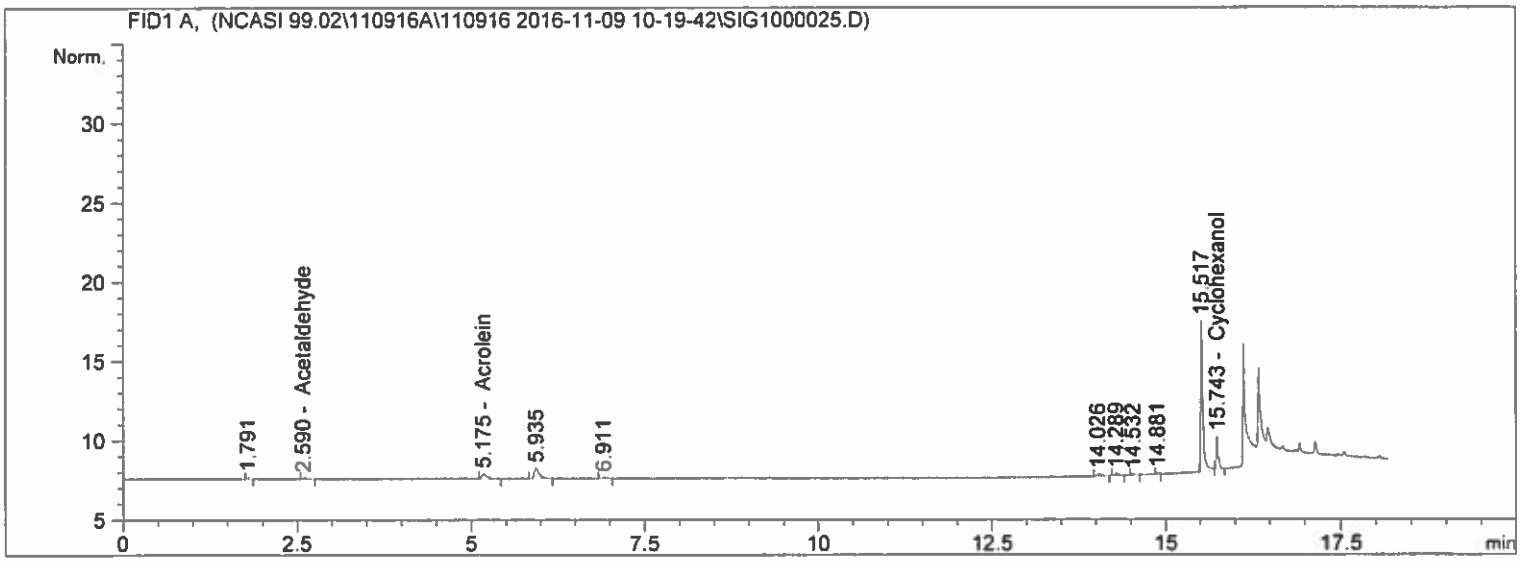
*** End of Report ***

Acq. Operator : dyeddula
Seq. Line : 18
Acq. Instrument : GC#5
Location : Vial 17
Injection Date : 11/9/2016 9:41:39 PM
Inj : 2
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:32:05 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044
Method:NCASI 94.02



External Standard Report

Sorted By : Signal
Calib. Data Modified : 11/23/2016 1:31:27 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.590	BB	3.55734e-1	18.18361	6.46853		Acetaldehyde
3.406		-	-	-		Propionaldehyde
4.247		-	-	-		Methanol
5.175	BB	1.65632	6.63857	10.99560		Acrolein
9.524		-	-	-		Phenol
15.743	VB	4.26895	2.61317	11.15547		Cyclohexanol

Totals : 28.61961

11/22/16

==========

Acq. Operator : dyeddula
Seq. Line : 18
Acq. Instrument : GC#5
Location : Vial 17
Injection Date : 11/9/2016 9:41:39 PM
Inj : 2
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:32:05 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044
Method:NCASI 94.02

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1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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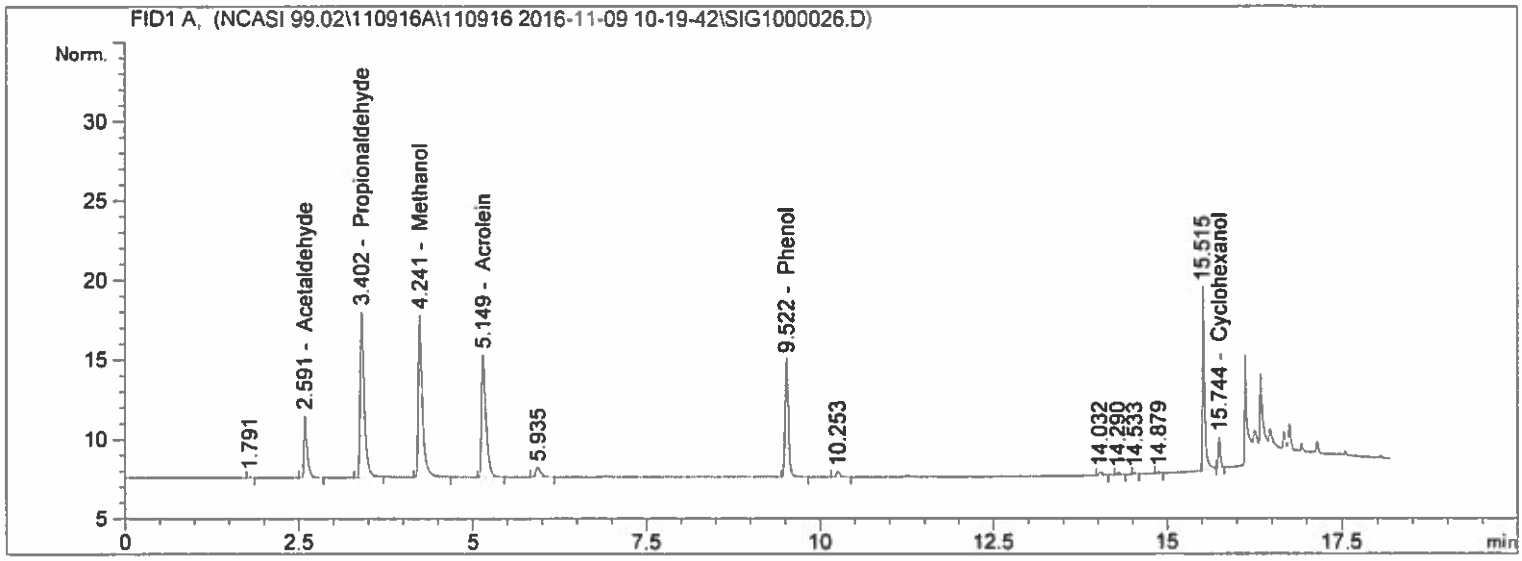
*** End of Report ***

Acq. Operator : dyeddula
Seq. Line : 19
Acq. Instrument : GC#5
Location : Vial 18
Injection Date : 11/9/2016 10:09:53 PM
Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:32:05 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044MS
Method:NCASI 94.02



External Standard Report

Sorted By : Signal
Calib. Data Modified : 11/23/2016 1:31:27 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
2.591	BB	12.76613	18.18361	232.13426		Acetaldehyde
3.402	BB	42.33383	5.20225	220.23134		Propionaldehyde
4.241	BB	42.88646	5.00625	214.70020		Methanol
5.149	BB	34.78962	6.63857	230.95318		Acrolein
9.522	BB	25.03936	8.92110	223.37858		Phenol
15.744	VB	3.86613	2.61317	10.10284		Cyclohexanol

Totals : 1131.50039

11/28/16

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Acq. Operator : dyeddula Seq. Line : 19
Acq. Instrument : GC#5 Location : Vial 18
Injection Date : 11/9/2016 10:09:53 PM Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\DATA\110916A\110916 2016-11-09 10-19-42\FRONT_NCASI_94_110916.M
Last changed : 11/9/2016 10:19:20 AM by dyeddula
Analysis Method : C:\CHEM32\1\METHODS\FRONT_NCASI_99_110916.M
Last changed : 11/23/2016 1:32:05 PM by spabba
(modified after loading)
Sample Info : GSL_160916-044MS
Method:NCASI 94.02

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*** End of Report ***

GOLDEN SPECIALTY

THE GOLD STANDARD FOR AIR TESTING

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