

Loadlist-Alcohol Reference Solution Verification

Location	Sample
1	Volatiles Mix
2	Blank
3	Cerilliant 025
4	Cerilliant 100
5	Cerilliant 200
6	Cerilliant 400
7	Restek 50
8	1206
9	1200
10	1201
11	1205
12	1172
13	1207
14	1202
15	1203
16	1197
17	1198
18	Restek 100
19	1206
20	1200
21	1201
22	1205
23	1172
24	1207
25	1202
26	1203
27	1197
28	1198
29	Restek 300
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Instrument Parameters			
Sample Temp	60	C	✓
Needle Temp	70	C	✓
Transfer Temp	80	C	✓
Thermostat time	15	min	✓
Pressurization time	2.0	min	✓
Withdraw time	0.1	min	✓
Injection Time	0.03	min	✓
Cycle Time	4.5	min	✓
inlet temp	90	C	✓
Carrier pressure	15	psi	✓
Column oven temp	55	C	✓
Run Time	5.0	min	✓
FID Temp	200	C	✓
Hydrogen Flow	45	mL/min	✓
Air Flow	450	mL/min	✓
Nitrogen Flow	15	mL/min	✓

Helium
10/17/14
BK

Reagents, Calibrators and Controls

Materials	Lot	Exp. Date
Internal Standard	03032014bhk	na
Volatiles Mixture	041513dkr	na
Cerilliant 025	FN032210-01	04/2015
Cerilliant 100	FN050312-01	05/2017
Cerilliant 200	FN032712-01	03/2017
Cerilliant 400	FN012712-01	01/2017
Restek 50	A092903	05/2017
Restek 100	A092464	04/2017
Restek 300	A094444	08/2017

Reference Solution

Level Tested:	0.200 g/210L
Lot #:	201402A
Manufacture Date:	2/11/2014
Expiration Date	2/11/2016

Operator: BK

Date: 3/5/15

Alcohol Analysis QC Summary

Report Date 3/5/2014

Reviewer Brett Kirkland

Run Summary Data			Ethanol			n-Propanol		
Run Date	Channel	Sample	Lot	RT	Area	Conc.	RT	Area
3/5/2014	A	Vol's Mix	041513dkr	1.418	16642.78	0.039	0.039	294717.54
3/5/2014	A	Blank		0.000	0.00	0.000	0.000	273874.70
3/5/2014	A	CER 025	FN032210-01	1.419	10286.52	0.025	0.025	290670.03
3/5/2014	A	CER 100	FN050312-01	1.419	41091.42	0.099	0.099	286020.78
3/5/2014	A	CER 200	FN032712-01	1.393	81319.20	0.197	0.197	282343.57
3/5/2014	A	CER 400	FN012712-01	1.420	167104.45	0.400	0.400	288954.25
3/5/2014	A	Restek 50	A092903	1.396	20289.00	0.050	0.050	284399.34
3/5/2014	A	1206	201402A	1.394	100037.72	0.243	0.243	285096.63
3/5/2014	A	1200	201402A	1.420	96671.65	0.242	0.242	276790.85
3/5/2014	A	1201	201402A	1.420	99523.37	0.242	0.242	285318.94
3/5/2014	A	1205	201402A	1.396	99797.75	0.242	0.242	285673.68
3/5/2014	A	1172	201402A	1.393	99270.53	0.242	0.242	284160.78
3/5/2014	A	1207	201402A	1.421	98672.62	0.243	0.243	281449.91
3/5/2014	A	1202	201402A	1.420	100340.07	0.242	0.242	286850.47
3/5/2014	A	1203	201402A	1.393	98267.41	0.242	0.242	280865.68
3/5/2014	A	1197	201402A	1.421	99730.14	0.242	0.242	285605.64
3/5/2014	A	1198	201402A	1.393	99920.55	0.242	0.242	285865.66
3/5/2014	A	Restek 100	A092464	1.421	41412.74	0.100	0.100	287960.30
3/5/2014	A	1206	201402A	1.393	100023.04	0.240	0.240	288351.99
3/5/2014	A	1200	201402A	1.393	98727.83	0.241	0.241	283532.80
3/5/2014	A	1201	201402A	1.420	100283.13	0.241	0.241	288806.80
3/5/2014	A	1205	201402A	1.421	100751.12	0.241	0.241	289313.10
3/5/2014	A	1172	201402A	1.421	99442.99	0.242	0.242	285055.91
3/5/2014	A	1207	201402A	1.393	98241.44	0.243	0.243	280172.55
3/5/2014	A	1202	201402A	1.420	98888.02	0.240	0.240	284930.23
3/5/2014	A	1203	201402A	1.396	98831.80	0.242	0.242	282984.05
3/5/2014	A	1197	201402A	1.393	100029.03	0.241	0.241	287053.27
3/5/2014	A	1198	201402A	1.393	98631.11	0.242	0.242	282328.36
3/5/2014	A	Restek 300	A094444	1.393	122911.57	0.299	0.299	285009.32

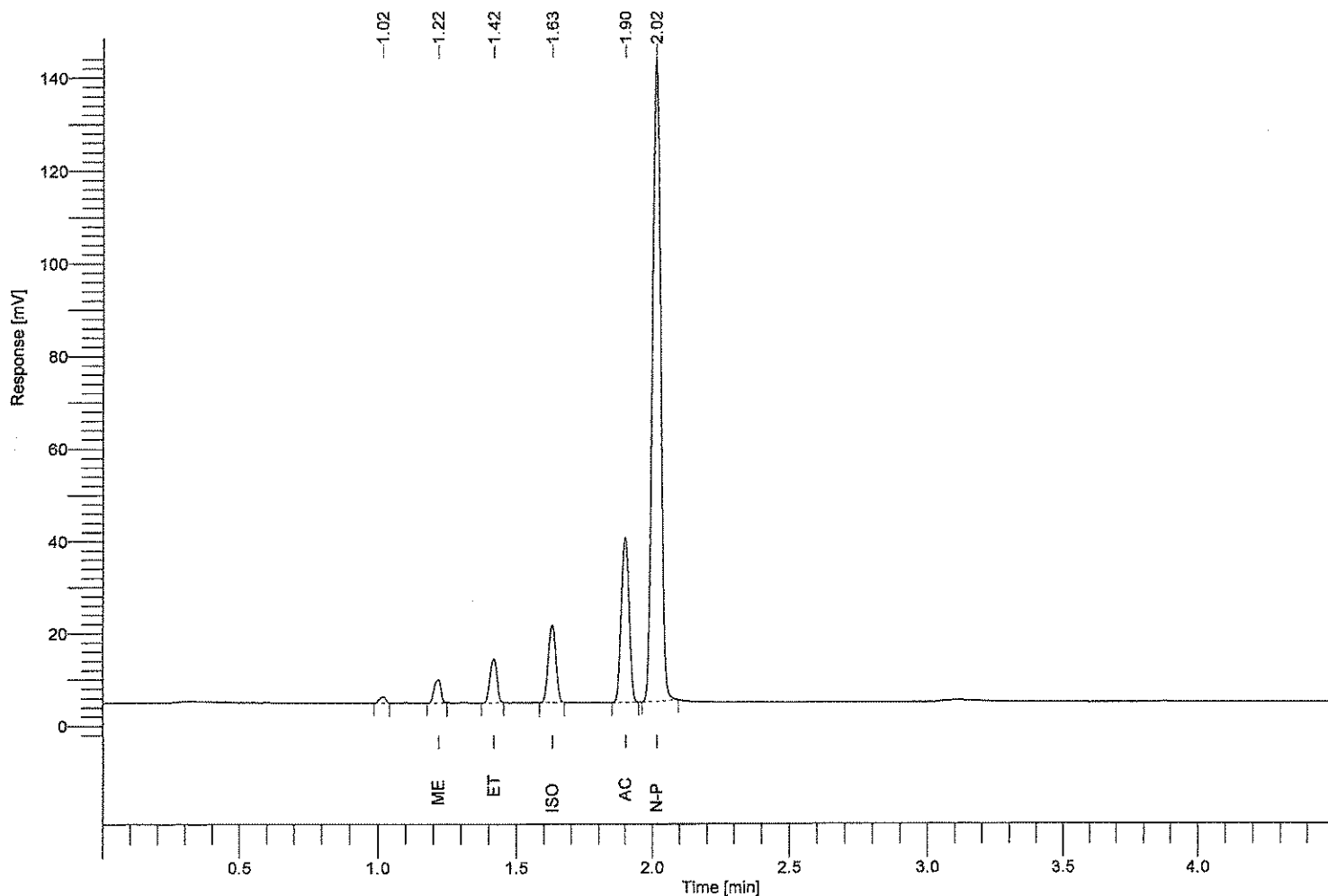
updated 5/18/2015

Amended due to a typo. The appropriate chromatograms have been attached.

BSK 4/25/14

Software Version : 6.3.2.0646 Date : 3/5/2014 12:19:54 PM
 Reprocess Number : gc-pc: 601
 Sample Name : Volatile Mix Data Acquisition Time : 3/5/2014 12:15:12 PM
 Instrument Name : ClarusGC Channel : A
 Rack/Vial : 0/0 Operator : manager
 Sample Amount : 1.000000 Dilution Factor : 1.000000
 Cycle : 1

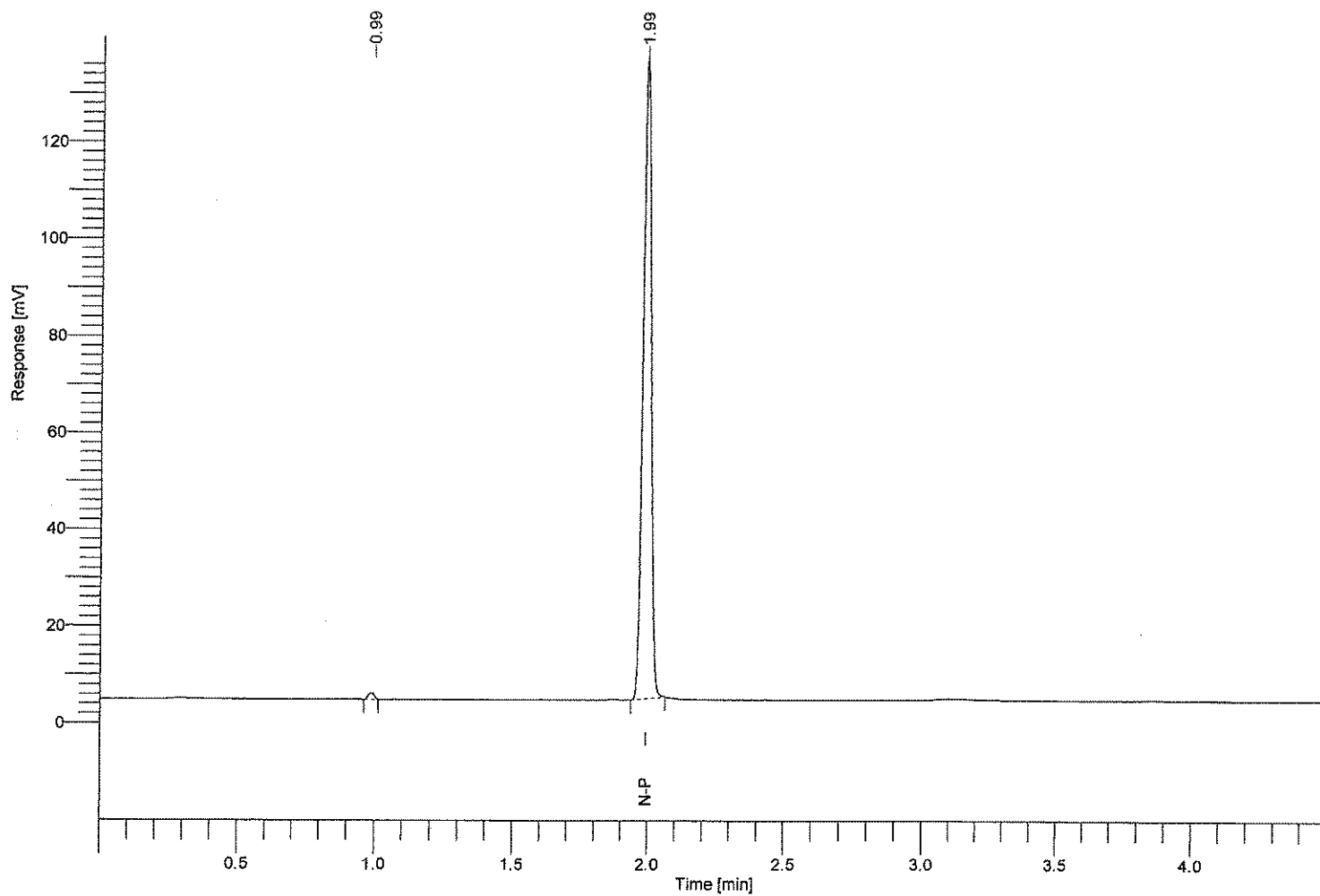
Result File : c:\totalchrom data\03052014\vol mix.rst
 Sequence File : C:\Totalchrom Sequences\2013\ACS validation\03052014bhk.seq



Component Name	Time [min]	RRt	Area [uV*sec]	Conc. g/100ml
methanol	1.217	0.604	8518.49	0.040
ethanol	1.418	0.703	16642.78	0.039
isopropanol	1.630	0.809	32129.41	0.040
acetone	1.901	0.943	72199.30	0.040
n-propanol	2.016	1.000	294717.54	----- BK

Software Version : 6.3.2.0646 Date : 3/5/2014 12:24:52 PM
Reprocess Number : gc-pc: 602
Sample Name : Blank Data Acquisition Time : 3/5/2014 12:20:11 PM
Instrument Name : ClarusGC Channel : A
Rack/Vial : 0/0 Operator : manager
Sample Amount : 1.000000 Dilution Factor : 1.000000
Cycle : 2

Result File : c:\totalchrom data\03052014\blank.rst
Sequence File : C:\Totalchrom Sequences\2013\ACS validation\03052014bhk.seq

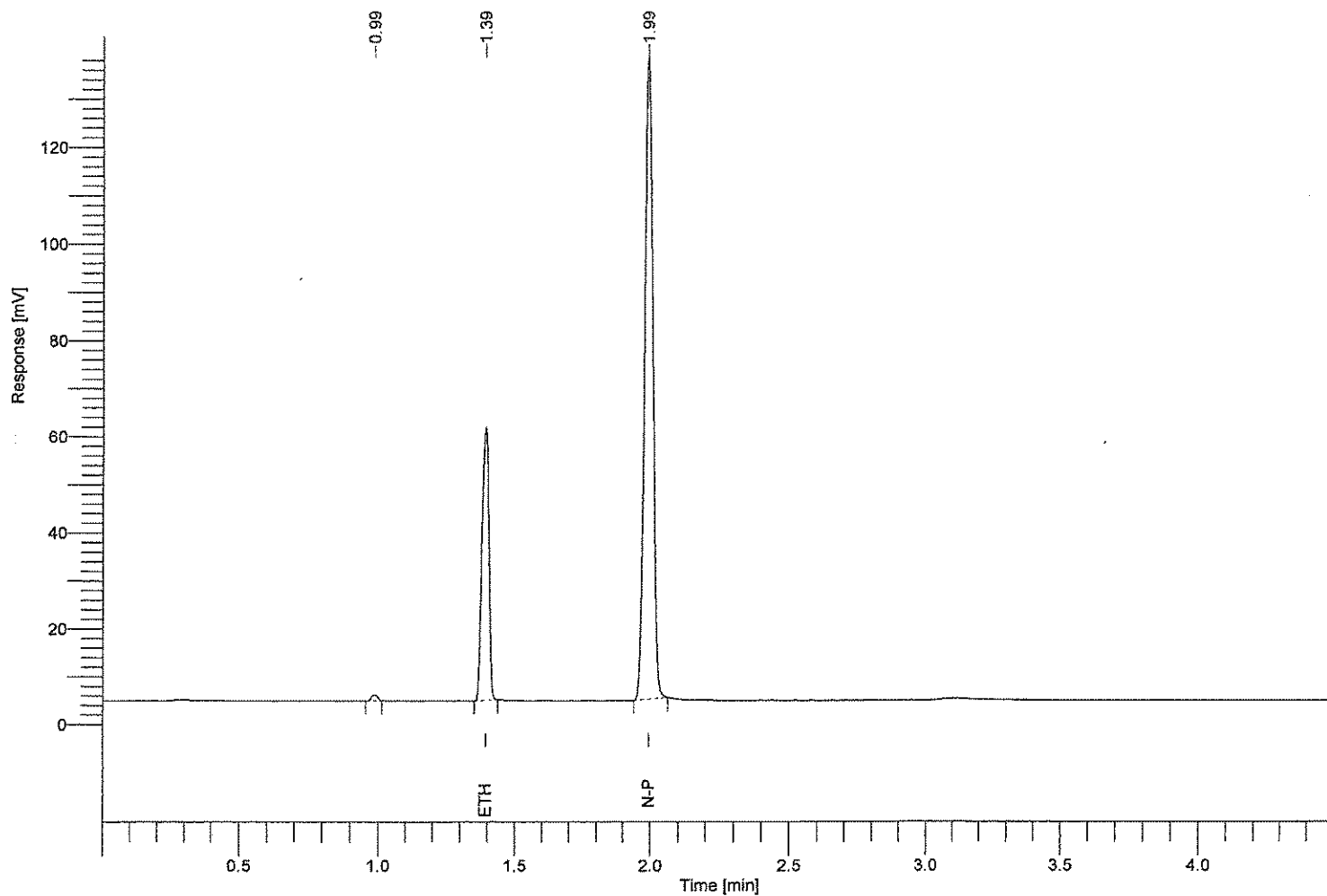


Component Name	Time [min]	RRt	Area [uV*sec]	Conc. g/100ml
methanol	1.220	----	0.00	0.000
ethanol	1.420	----	0.00	0.000
isopropanol	1.640	----	0.00	0.000
acetone	1.910	----	0.00	0.000
i-propanol	1.994	1.000	273874.70	-----

BK

Software Version : 6.3.2.0646 Date : 3/5/2014 2:14:53 PM
 Reprocess Number : gc-pc: 624
 Sample Name : 200
 Instrument Name : ClarusGC Data Acquisition Time : 3/5/2014 2:10:09 PM
 Rack/Vial : 0/0 Channel : A
 Sample Amount : 1.000000 Operator : manager
 Cycle : 24 Dilution Factor : 1.000000

Result File : c:\totalchrom data\03052014\1207-20140305-141453.rst
 Sequence File : C:\Totalchrom Sequences\2013\ACS validation\03052014bhk.seq



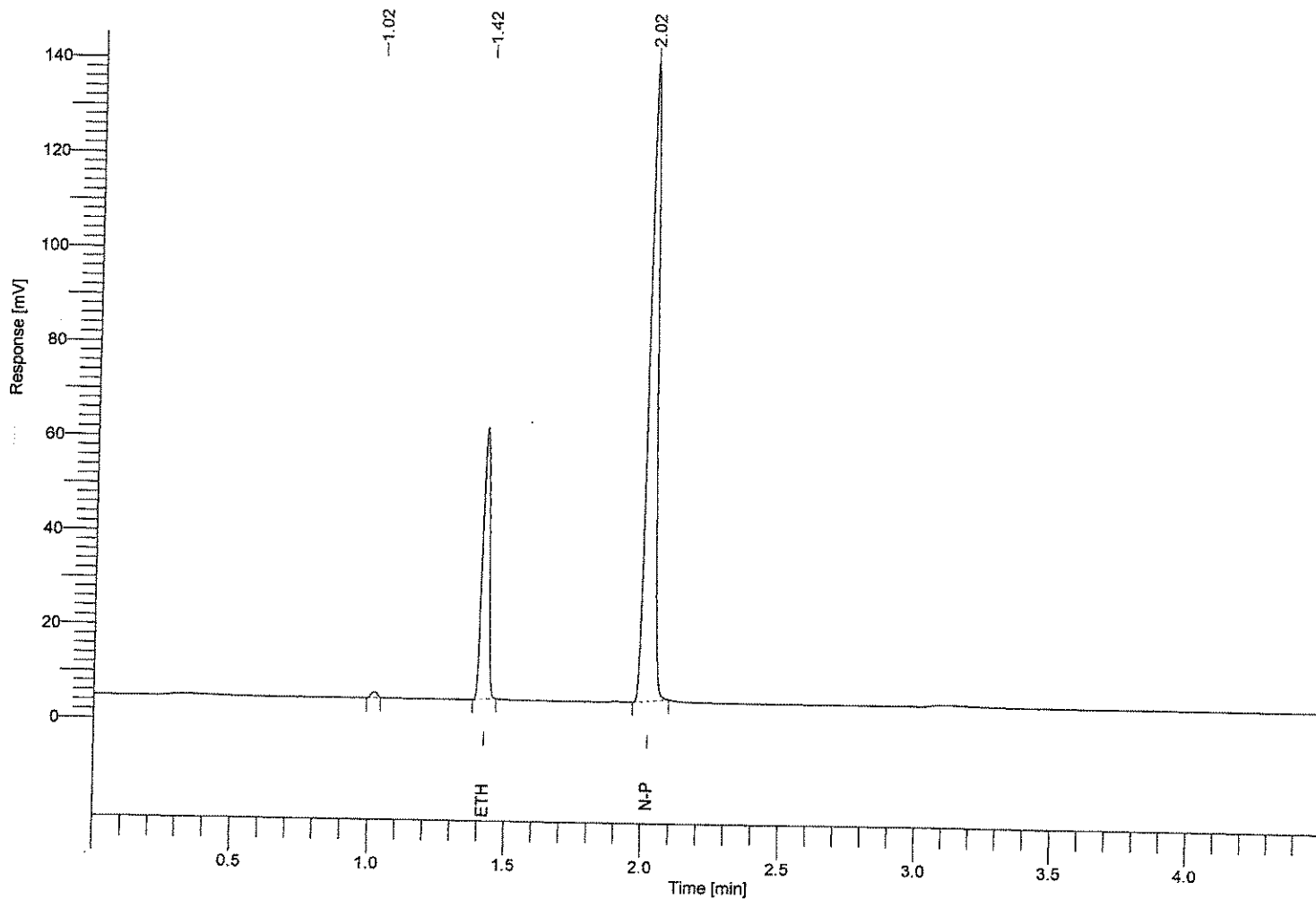
Component Name	Time [min]	RRt	Area [uV*sec]	Conc. g/100ml
methanol	1.220	-----	0.00	0.000
ethanol	1.393	0.699	98241.44	0.243
isopropanol	1.640	-----	0.00	0.000
acetone	1.910	-----	0.00	0.000
n-propanol	1.994	1.000	280172.55	----- <i>HK</i>

Software Version : 6.3.2.0646
 Reprocess Number : gc-pc: 616
 Sample Name : 200
 Instrument Name : ClarusGC
 Rack/Vial : 0/0
 Sample Amount : 1.000000
 Cycle : 16

Date : 3/5/2014 1:34:53 PM
 Data Acquisition Time : 3/5/2014 1:30:10 PM
 Channel : A
 Operator : manager
 Dilution Factor : 1.000000

Result File : c:\totalchrom data\03052014\1197.rst

Sequence File : C:\Totalchrom Sequences\2013\ACS validation03052014bhk.seq



Component Name	Time [min]	RRt	Area [uV*sec]	Conc. g/100ml
methanol	1.220	-----	0.00	0.000
ethanol	1.421	0.704	99730.14	0.242
isopropanol	1.640	-----	0.00	0.000
acetone	1.910	-----	0.00	0.000
n-propanol	2.019	1.000	285605.64	-----

HK

Alcohol Analysis QC Summary

Report Date	3/5/2014
Reviewer	Brett Kirkland

Run Summary Data			Ethanol				n-Propanol				
Run Date	Channel	Sample	Lot	RT	Area	Conc.	RT	Area	Conc.	RT	Area
3/5/2014	A	Vols Mix	041513dkr	1.418	8518.49	0.040	2.016	294717.54	0.040	2.016	294717.54
3/5/2014	A	Blank		0.000	0.00	0.000	1.994	273874.70	0.000	1.994	273874.70
3/5/2014	A	CER 025	FN032210-01	1.419	10286.52	0.025	2.017	290670.03	0.025	2.017	290670.03
3/5/2014	A	CER 100	FN050312-01	1.419	41091.42	0.099	2.018	286020.78	0.099	2.018	286020.78
3/5/2014	A	CER 200	FN032712-01	1.393	81319.20	0.197	1.994	282343.57	0.197	1.994	282343.57
3/5/2014	A	CER 400	FN012712-01	1.420	167104.45	0.400	2.018	288954.25	0.400	2.018	288954.25
3/5/2014	A	Restek 50	A092903	1.396	20289.00	0.050	1.997	284399.34	0.050	1.997	284399.34
3/5/2014	A	1206	201402A	1.394	100037.72	0.243	1.995	285096.63	0.243	1.995	285096.63
3/5/2014	A	1200	201402A	1.420	96671.65	0.242	2.018	276790.85	0.242	2.018	276790.85
3/5/2014	A	1201	201402A	1.420	99523.37	0.242	2.019	285318.94	0.242	2.019	285318.94
3/5/2014	A	1205	201402A	1.396	99797.75	0.242	1.997	285673.68	0.242	1.997	285673.68
3/5/2014	A	1172	201402A	1.393	99270.53	0.242	1.994	284160.78	0.242	1.994	284160.78
3/5/2014	A	1207	201402A	1.421	98672.62	0.243	2.019	281449.91	0.243	2.019	281449.91
3/5/2014	A	1202	201402A	1.420	100340.07	0.242	2.019	286850.47	0.242	2.019	286850.47
3/5/2014	A	1203	201402A	1.393	98267.41	0.242	1.994	280865.68	0.242	1.994	280865.68
3/5/2014	A	1197	201402A	1.241	99730.14	0.242	2.019	285605.64	0.242	2.019	285605.64
3/5/2014	A	1198	201402A	1.393	99920.55	0.242	1.994	285865.66	0.242	1.994	285865.66
3/5/2014	A	Restek 100	A092464	1.421	41412.74	0.100	2.019	287960.30	0.100	2.019	287960.30
3/5/2014	A	1206	201402A	1.393	100023.04	0.240	1.994	288351.99	0.240	1.994	288351.99
3/5/2014	A	1200	201402A	1.393	98727.83	0.241	1.994	283532.80	0.241	1.994	283532.80
3/5/2014	A	1201	201402A	1.420	100283.13	0.241	2.019	288806.80	0.241	2.019	288806.80
3/5/2014	A	1205	201402A	1.421	100751.12	0.241	2.020	289313.10	0.241	2.020	289313.10
3/5/2014	A	1172	201402A	1.421	99442.99	0.242	2.019	285055.91	0.242	2.019	285055.91
3/5/2014	A	1207	201402A	1.939	98241.44	0.243	1.994	280172.55	0.243	1.994	280172.55
3/5/2014	A	1202	201402A	1.420	98888.02	0.240	2.019	284930.23	0.240	2.019	284930.23
3/5/2014	A	1203	201402A	1.396	98831.80	0.242	1.997	282984.05	0.242	1.997	282984.05
3/5/2014	A	1197	201402A	1.393	100029.03	0.241	1.994	287053.27	0.241	1.994	287053.27
3/5/2014	A	1198	201402A	1.393	98631.11	0.242	1.994	282328.36	0.242	1.994	282328.36
3/5/2014	A	Restek 300	A094444	1.393	122911.57	0.299	1.994	285009.32	0.299	1.994	285009.32

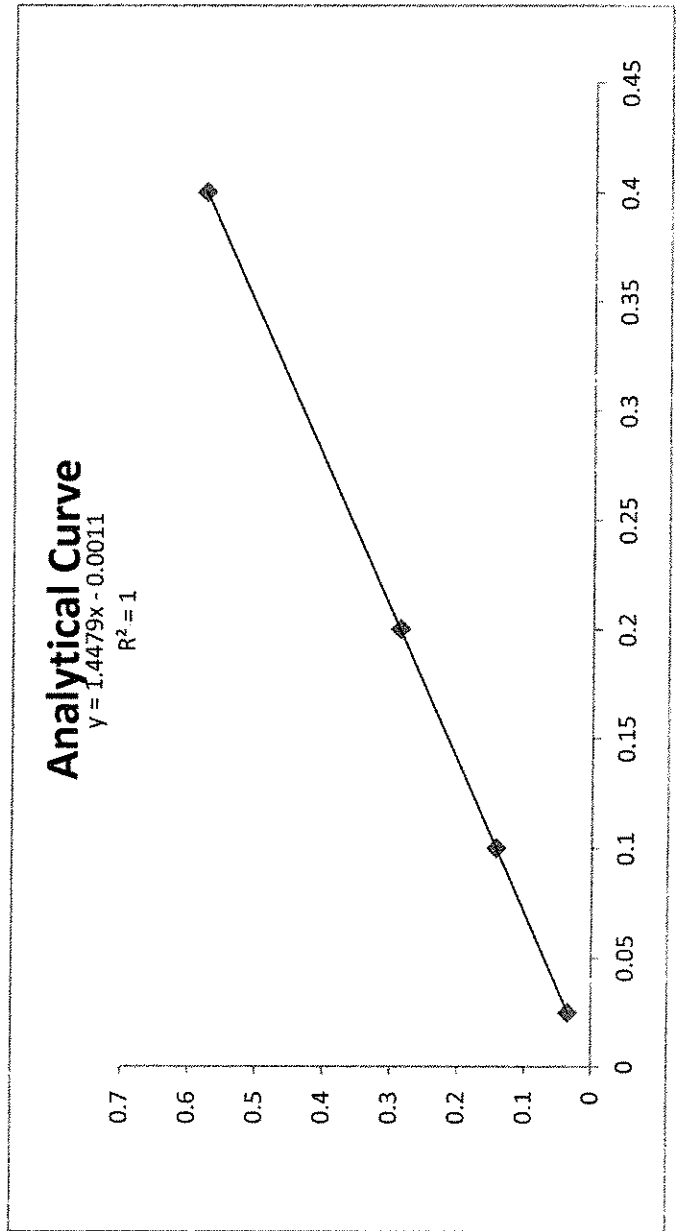
← Corrected 5/18/15
BK
RGM

ALCOHOL ANALYSIS QC SUMMARY

Report Date	3/5/2014
Reviewer	Brett Kirkland

RUN SUMMARY DATA			Ethanol			n-Propanol		
Run Date	Channel	Sample	Lot	RT	Area	Conc.	RT	Area
	A	CER 025	FN032210-01	1.419	10286.52	0.025	2.017	290670
3/5/2014	A	CER 100	FN050312-01	1.419	41091.42	0.099	2.018	286020.8
3/5/2014	A	CER 200	FN032712-01	1.393	81319.2	0.197	1.994	282343.6
3/5/2014	A	CER 400	FN012712-01	1.420	167104.5	0.400	2.018	288954.3

Summary	Standard	E/dL	Ratio	Calc.	Diff
	Blank	0.000	0.00000	0.00000	0.00000
Slope	1.4479	0.025	0.03539	0.02520	0.00020
Intercept	-0.0011	0.100	0.14367	0.09998	-0.00002
Standard Error	0.000425662	0.200	0.28802	0.19967	-0.00033
R-Squared	1.0000	0.400	0.57831	0.40016	0.00016



Loadlist-Alcohol Reference Solution Verification

Location	Sample
1	Volatiles Mix
2	Blank
3	Cerilliant 025
4	Cerilliant 100
5	Cerilliant 200
6	Cerilliant 400
7	Restek 50
8	1206
9	1200
10	1201
11	1205
12	1172
13	1207
14	1202
15	1203
16	1197
17	1198
18	Restek 100
19	1206
20	1200
21	1201
22	1205
23	1172
24	1207
25	1202
26	1203
27	1197
28	1198
29	Restek 300
30	
31	
32	
33	
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35	
36	
37	
38	
39	
40	

Instrument Parameters			
Sample Temp	60	C	✓
Needle Temp	70	C	✓
Transfer Temp	80	C	✓
Thermostat time	15	min	✓
Pressurization time	2.0	min	✓
Withdraw time	0.1	min	✓
Injection Time	0.03	min	✓
Cycle Time	4.5	min	✓
inlet temp	90	C	✓
Carrier pressure	15	psi	✓
Column oven temp	55	C	✓
Run Time	5.0	min	✓
FID Temp	200	C	✓
Hydrogen Flow	45	mL/min	✓
Air Flow	450	mL/min	✓
Nitrogen Flow	15	mL/min	✓

Reagents, Calibrators and Controls

Materials	Lot	Exp. Date
Internal Standard	03032014bhk	na
Volatiles Mixture	041513dkr	na
Cerilliant 025	FN032210-01	04/2015
Cerilliant 100	FN050312-01	05/2017
Cerilliant 200	FN032712-01	03/2017
Cerilliant 400	FN012712-01	01/2017
Restek 50	A092903	05/2017
Restek 100	A092464	04/2017
Restek 300	A094444	08/2017

Reference Solution

Level Tested:	0.200 g/210L
Lot #:	201402A
Manufacture Date:	2/11/2014
Expiration Date	2/11/2016

Operator: AK

Date: 3/5/15

Source:	Alcohol Countermeasure Systems, Inc.
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Lot	201402A
Level	0.200 g/210L
Manufacture Date	2/11/2014
Expiration Date	2/11/2016

Bottle	Result (g/100ml)
1206	0.243
	0.240
1200	0.242
	0.241
1201	0.242
	0.241
1205	0.242
	0.241
1172	0.242
	0.242
1207	0.243
	0.243
1202	0.242
	0.240
1203	0.242
	0.242
1197	0.242
	0.241
1198	0.242
	0.242

Mean	0.24175
Std. Dev.	0.000850696
Min	0.240
Max	0.243