VERMONT FORENSIC LABORATORY

# BLOOD ALCOHOL DATA REVIEW CHECKLIST

Lot - ~~AGENCY CASE#~~: Cerilliant FN 021111-03 ANALYST: ~~AEB~~ / RLM 12/23/13

LAB #: AEB 12/23/13

TECHNICAL REVIEWER: AEB DATE: 12/20/13

- [x] QC complete?
- [x] Pertinent standard lot numbers listed?
- [x] Data package is complete?
- [x] Transcribed data and calculations verified?
- [x] Calibration and control results all within ± 10% (± 20% for STD A) of the known values?
- [x] Calibration line correlation factor at least 0.99xx?
- [x] Average error for components of the calibration line less than 10%?
- [x] Timing mix chromatogram demonstrates appropriate identification of components and separation from ethanol?
- [x] Surrogate compound concentrations all within 0.900 to 1.100 range?
- [x] Statistical means of the continuing calibration check sample duplicate analysis all within ± 10% of the known value?
- [x] Individual replicates within ± 5% of the statistical mean?
- [x] Reported results are means of two or more analyses?
  1. In the event of QNS for 2 (two) analysis a notation must be made on the worksheet.
  2. In the event that more than 2 (two) results are used to determine the reported result a notation is made on the worksheet.

Comments:

ADMINISTRATIVE REVIEWER: [signature] DATE: 12/23/2013

- [N/A] Agency Case # and Lab # match submission form?
- [N/A] Submitting agency, investigator, suspect, CC match submission form?
- [N/A] Chain of Custody is complete and dated appropriately?
- [X] Are all pages numbered and initialed on the Examination Documents?
- [X] Case number written on all pages of the case file (Either agency or lab #)?
- [N/A] Is the exam end date documented in the paper case file consistent with the exam end date in LIMS?

Comments:

DIRECTOR REVIEWER: [signature] DATE: 12/23/2013

- [X] Does the report and associated paperwork meet administrative expectations?
- [X] Have the appropriate technical and administrative reviews been completed?

Check Mark or X = pass, NA= Not Applicable

# Headspace Alcohol Analysis Standards Coversheet

Analyst: RLM Date: 11/26/13

Calibration Standards:

Lot ID: ES-09262013 Preparation Date: 09/26/2013 Expiration Date: 12/26/2013

| | Standard A | Standard B | Standard C | Standard D | Standard E | Calibration Check (c) |
|---|---|---|---|---|---|---|
| % Ethanol (w/v) | 0.006 | 0.025 | 0.082 | 0.201 | 0.411 | 0.082 |
| Acceptance Range (± 10%) | 0.007 | 0.028 | 0.090 | 0.221 | 0.452 | 0.090 |
| | 0.005 | 0.023 | 0.074 | 0.181 | 0.370 | 0.074 |

TMX: TMX-08122013

Control Sample: IS: IS-10312013 11/26/13 RLM

| Sample | Source | Lot number | Target Value | Acceptance Range | |
|---|---|---|---|---|---|
| Aqueous | Cerilliant | FN021111-03 | 0.080 | 0.072 | 0.088 |

Calibration and Control Sample Data:

| Vial No. | Sample Identification | | Result | In Range? | Comments |
|---|---|---|---|---|---|
| 1 | Blank | | <0.005 | Y N | |
| 2 | Compound Retention Times: | | | N/A | |
| | | Acetaldehyde | 1.92 | | |
| | | Methanol | 2.01 | | |
| | | Ethanol | 2.65 | | |
| | | Acetone | 3.06 | | |
| | | Isopropanol | 3.19 | | |
| | | T- butanol | 3.63 | | |
| | | n-propanol | 4.43 | | |
| 3 | Standard A | | 0.006 | Y N | |
| 4 | Standard B | | 0.024 | Y N | |
| 5 | Standard C | | 0.082 | Y N | |
| 6 | Standard D | | 0.198 | Y N | |
| 7 | Standard E | | 0.413 | Y N | |
| 8 | Aqueous QC | | N/A | Y N | |
| 9 | Aqueous QC | | N/A | Y N | |

Form no longer in use as of 12/2/13 RLM

~~F-ALC-010-v1-03012012~~



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File Name: C:\Methods\VFL11262013.CAL
Version: 7

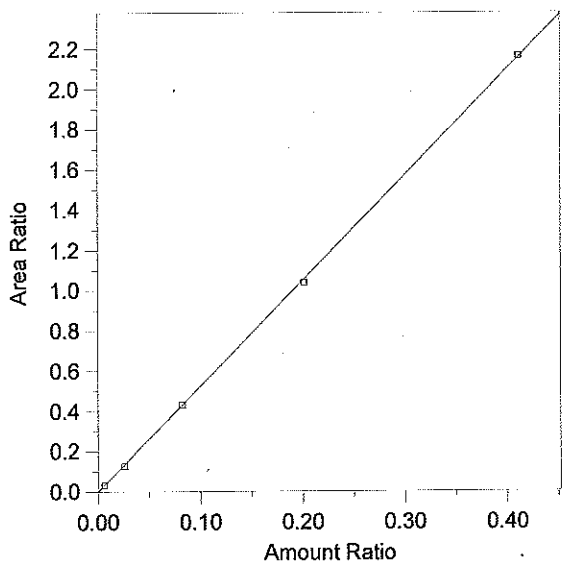
Creator:
Description:
Reason for change:

Internal standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 1500
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

3 Ethanol




| | |
|---|---|
| Expected retention time: | 2.655 minutes |
| Search window: | 0.1 minutes |
| Internal standard component: | 7 (n-Propanol) |
| No retention time reference component | |
| Group number: | 0 |
| High alarm limit: | 0 |
| Low alarm limit: | 0 |
| Component constant: | 0 |

Single peak quantification by area

Y = 5.24025 X + 0

Linear fit with equal weighting, forced to origin

| | |
|---|---|
| Coefficient of determination: | 0.9998868 |
| Average error: | 1.489% |
| Average CF: | 5.170133 |
| RSD: | 2.202% |

| Level | Amount | Response | Cal Factor | Error, % | Amount Ratio | Response Ratio | Source | Date and time |
|---|---|---|---|---|---|---|---|---|
| 1 | (0.091) | (85146) | -- | -- | 0.091 | 85146 | Manual | 8/12/2013 4:03:34 PM |
| 2 | 0.0063 | 6446.197 | 1023206 | -0.341 | 0.0063 | 0.0329009 | C:\Alcohol Data\VFL11262013\VFL11262013.0003.BND | 11/26/2013 3:23:22 PM |
| 3 | 0.0254 | 25472.65 | 1002860 | -5.039 | 0.0254 | 0.1263956 | C:\Alcohol Data\VFL11262013\VFL11262013.0004.BND | 11/26/2013 3:39:20 PM |
| 4 | 0.0822 | 82984.34 | 1009542 | -0.228 | 0.0822 | 0.4297672 | C:\Alcohol Data\VFL11262013\VFL11262013.0005.BND | 11/26/2013 3:53:41 PM |
| 5 | 0.2012 | 218654.7 | 1086753 | -1.460 | 0.2012 | 1.038942 | C:\Alcohol Data\VFL11262013\VFL11262013.0006.BND | 11/26/2013 4:10:41 PM |
| 6 | 0.4112 | 437195.6 | 1063219 | 0.378 | 0.4112 | 2.162936 | C:\Alcohol Data\VFL11262013\VFL11262013.0007.BND | 11/26/2013 4:24:20 PM |



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File Name = C:\Alcohol Data\VFL11262013\VFL11262013.SEQ
Version = 1
File Date = 11/26/2013 2:16:08 PM

| Entry # | Raw File Name | Method File Name | Sample Name | Sample Wt. | Int. Std. Amount |
|---|---|---|---|---|---|
| 1 | VFL11262013.0001.raw | Blood Alc temp VFL.MET | Blank | 1.00 | 1.00 |
| 2 | VFL11262013.0002.raw | Blood Alc temp VFL.MET | TMX | 1.00 | 1.00 |
| 3 | VFL11262013.0003.raw | Blood Alc temp VFL.MET | STD A | 1.00 | 1.00 |
| 4 | VFL11262013.0004.raw | Blood Alc temp VFL.MET | STD B | 1.00 | 1.00 |
| 5 | VFL11262013.0005.raw | Blood Alc temp VFL.MET | STD C | 1.00 | 1.00 |
| 6 | VFL11262013.0006.raw | Blood Alc temp VFL.MET | STD D | 1.00 | 1.00 |
| 7 | VFL11262013.0007.raw | Blood Alc temp VFL.MET | STD E | 1.00 | 1.00 |
| 8 | VFL11262013.0008.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |
| 9 | VFL11262013.0009.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |
| 10 | VFL11262013.0010.raw | Blood Alc temp VFL.MET | FN021111-03 | 1.00 | 1.00 |
| 11 | VFL11262013.0011.raw | Blood Alc temp VFL.MET | FN021111-03 | 1.00 | 1.00 |
| 12 | VFL11262013.0012.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |
| 13 | VFL11262013.0013.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |
| 14 | VFL11262013.0014.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 15 | VFL11262013.0015.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 16 | VFL11262013.0016.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 17 | VFL11262013.0017.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 18 | VFL11262013.0018.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 19 | VFL11262013.0019.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 20 | VFL11262013.0020.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 21 | VFL11262013.0021.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 22 | VFL11262013.0022.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 23 | VFL11262013.0023.raw | Blood Alc temp VFL.MET | 1212090 | 1.00 | 1.00 |
| 24 | VFL11262013.0024.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |
| 25 | VFL11262013.0025.raw | Blood Alc temp VFL.MET | CCS | 1.00 | 1.00 |

WB verification not included RZM 11/27/13



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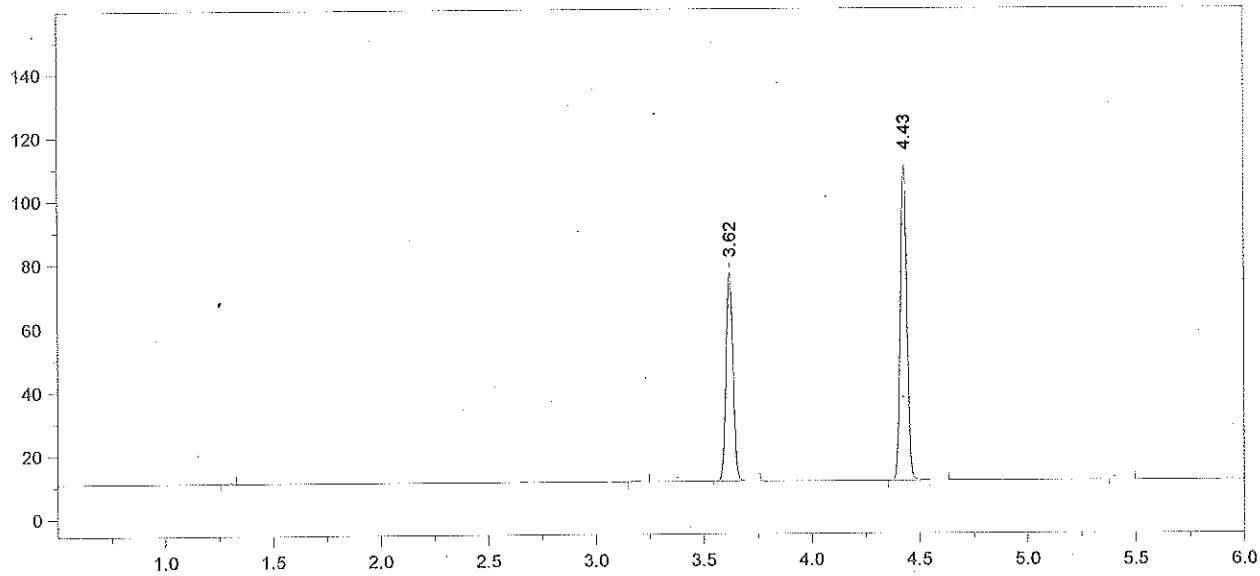


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:15 AM
Bound File Name = VFL11262013.0001.RAW
Sample Name = Blank
Date Taken = 11/26/2013 2:51:54 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 3 | 3.62 | t-Butanol | 151929 | 0.9666 |
| 4 | 4.43 | n-Propanol | 210476 | 1.0000 |



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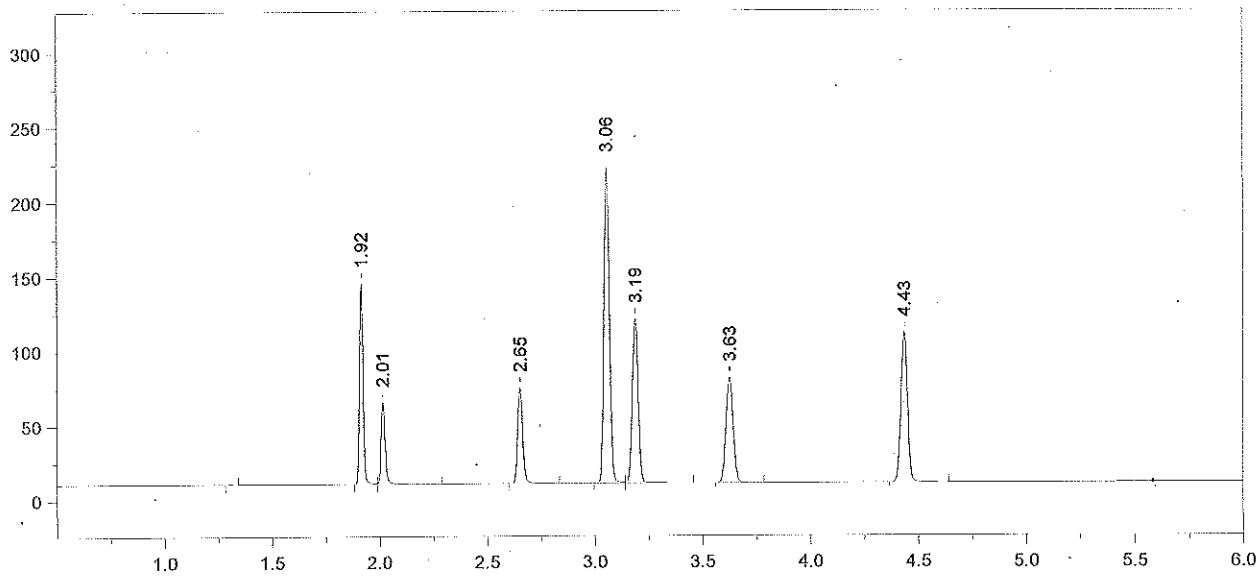


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:20 AM
Bound File Name = VFL11262013.0002.RAW
Sample Name = TMX
Date Taken = 11/26/2013 3:07:42 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 1.92 | Acetaldehyde | 157810 | 0.0520 |
| 3 | 2.01 | Methanol | 71208 | 0.1370 |
| 4 | 2.65 | Ethanol | 99775 | 0.0892 |
| 5 | 3.06 | Acetone | 361230 | 0.0940 |
| 6 | 3.19 | Isopropanol | 207159 | 0.0850 |
| 7 | 3.63 | t-Butanol | 163093 | 1.0233 |
| 8 | 4.43 | n-Propanol | 213415 | 1.0000 |



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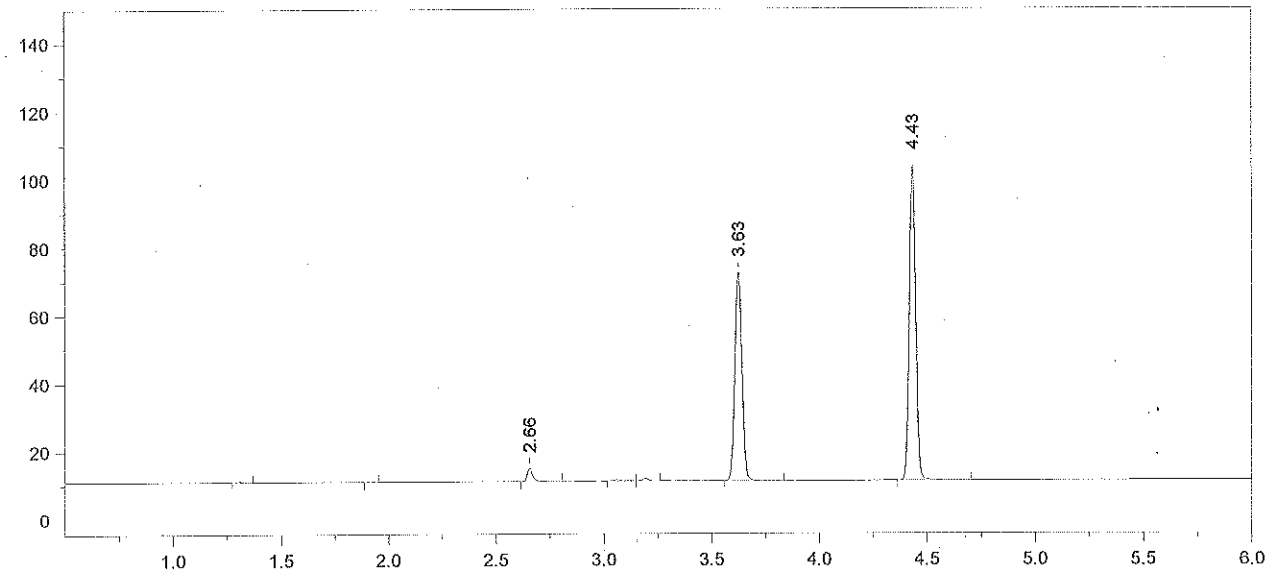


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:26 AM
Bound File Name = VFL11262013.0003.RAW
Sample Name = STD A
Date Taken = 11/26/2013 3:23:13 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 3 | 2.66 | Ethanol | 06446 | 0.0063 * |
| 6 | 3.63 | t-Butanol | 141745 | 0.9687 |
| 7 | 4.43 | n-Propanol | 195928 | 1.0000 |



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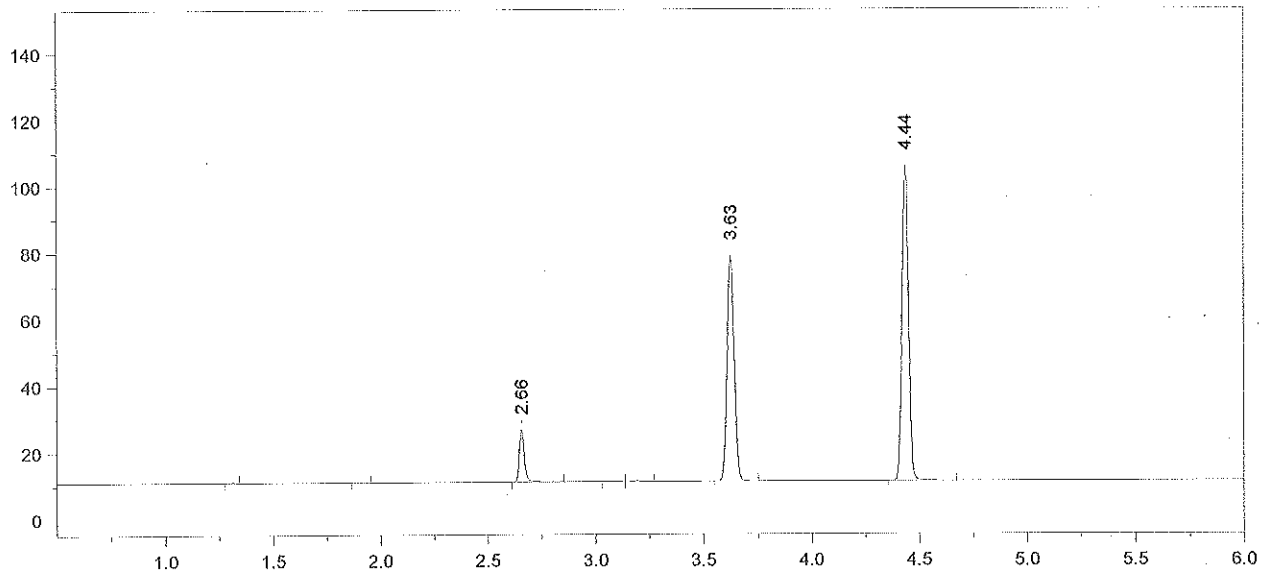


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:32 AM
Bound File Name = VFL11262013.0004.RAW
Sample Name = STD B
Date Taken = 11/26/2013 3:39:12 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 3 | 2.66 | Ethanol | 25473 | 0.0241* |
| 6 | 3.63 | t-Butanol | 156225 | 1.0380 |
| 7 | 4.44 | n-Propanol | 201531 | 1.0000 |



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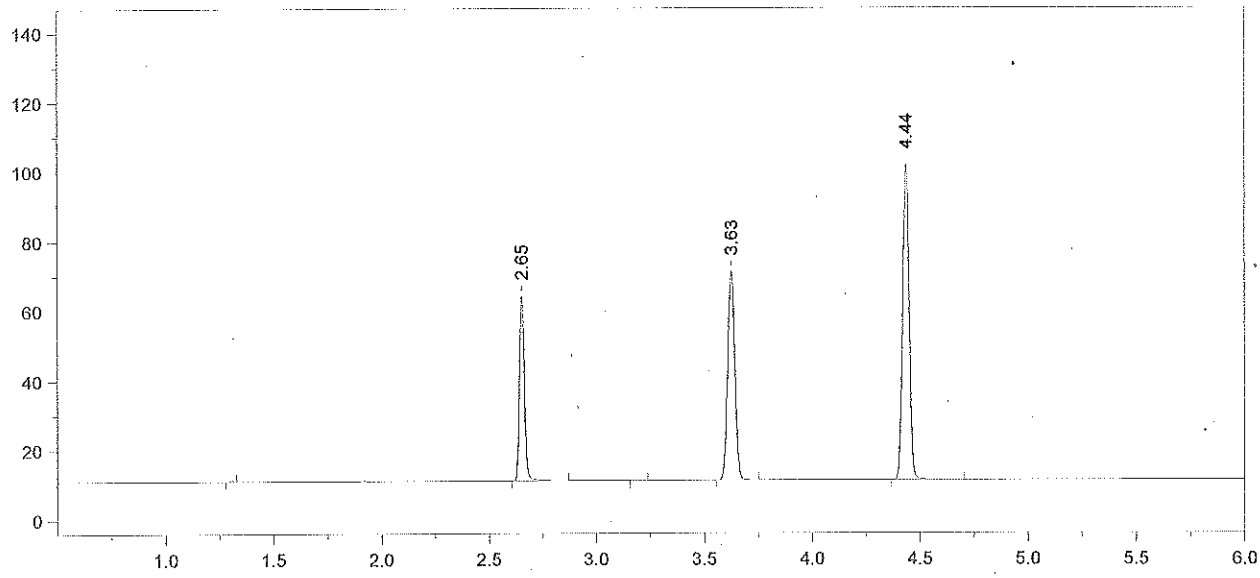
~~FN01111-03~~

7

KZM




Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:38 AM
Bound File Name = VFL11262013.0005.RAW
Sample Name = STD C
Date Taken = 11/26/2013 3:53:32 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 82984 | 0.0820 * |
| 4 | 3.63 | t-Butanol | 139242 | 0.9656 |
| 5 | 4.44 | n-Propanol | 193091 | 1.0000 |



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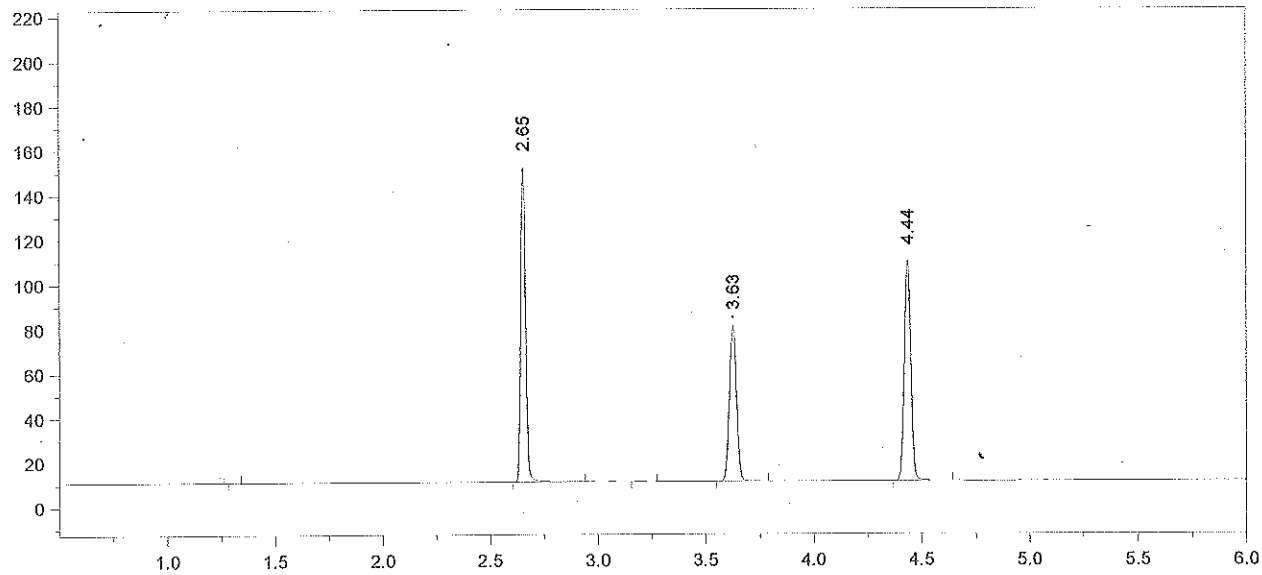


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:44 AM
Bound File Name = VFL11262013.0006.RAW
Sample Name = STD D
Date Taken = 11/26/2013 4:10:36 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 218655 | 0.1983 * |
| 4 | 3.63 | t-Butanol | 161558 | 1.0279 |
| 5 | 4.44 | n-Propanol | 210459 | 1.0000 |



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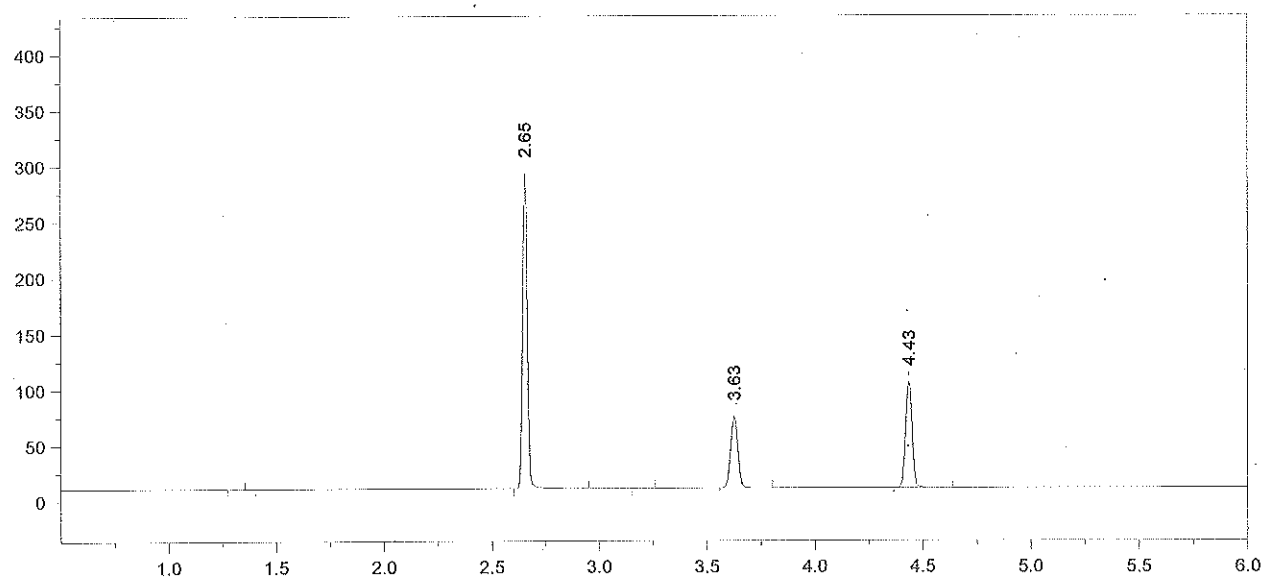


Format File Name = AlcoholVFL.FMT

Today's Date = 11/27/2013
Today's Time = 7:54:53 AM
Bound File Name = VFL11262013.0007.RAW
Sample Name = STD E
Date Taken = 11/26/2013 4:24:16 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 437196 | 0.4128 * |
| 4 | 3.63 | t-Butanol | 147393 | 0.9764 |
| 5 | 4.43 | n-Propanol | 202131 | 1.0000 |



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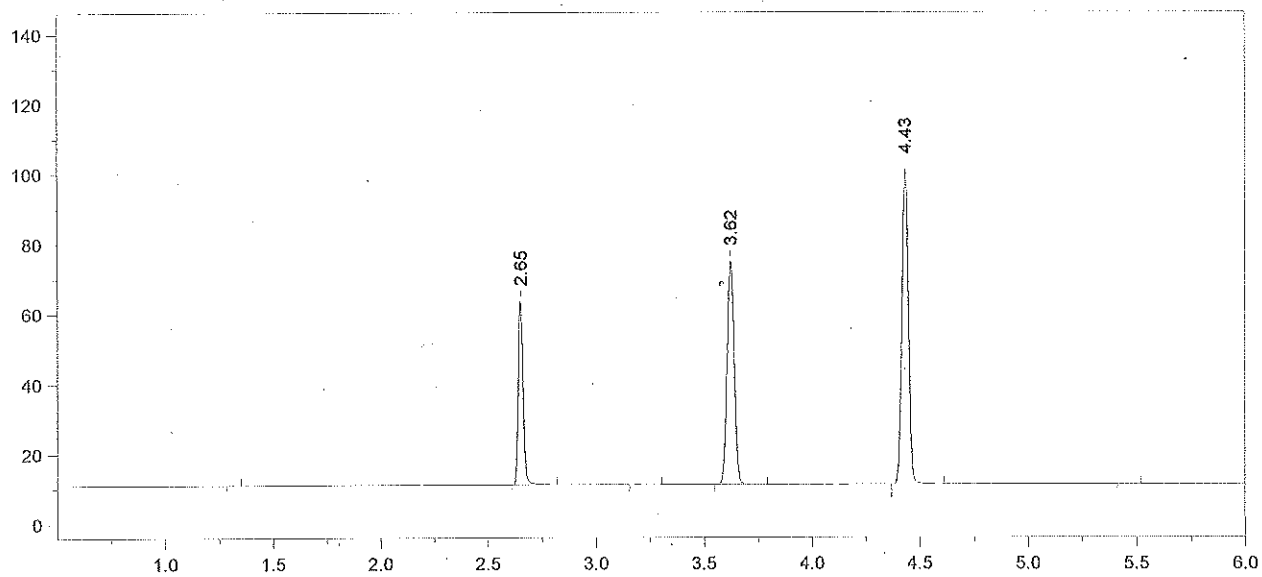


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 4:42:07 PM
Bound File Name = VFL11262013.0008.RAW
Sample Name = CCS
Date Taken = 11/26/2013 4:42:00 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 82212 | 0.0817 * |
| 4 | 3.62 | t-Butanol | 147547 | 1.0289 |
| 5 | 4.43 | n-Propanol | 192024 | 1.0000 |



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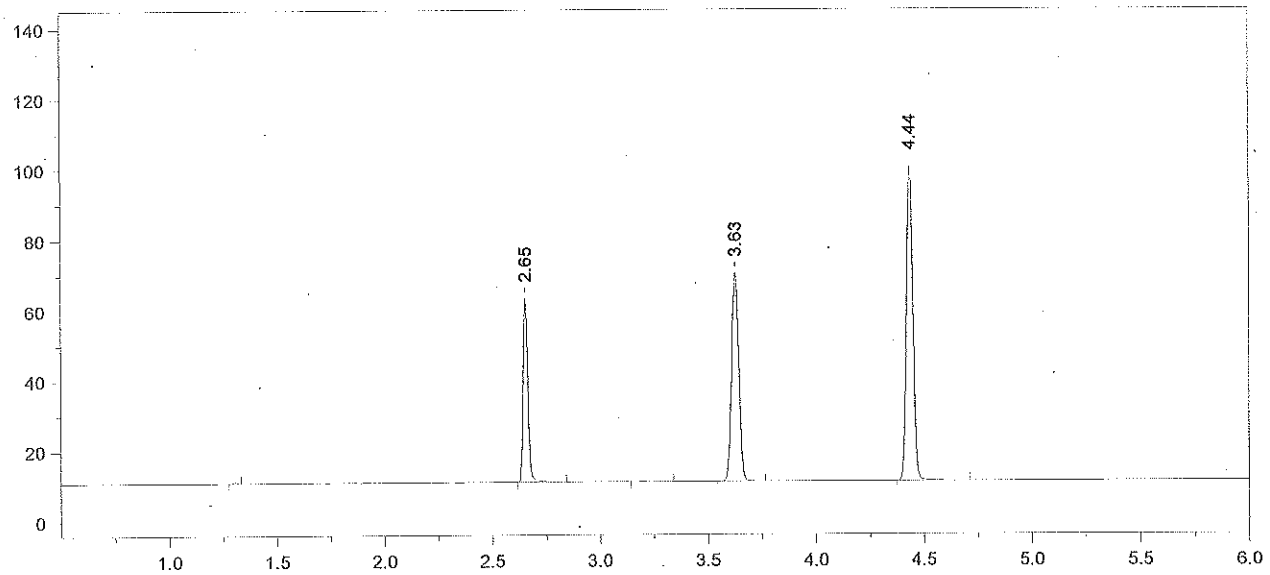


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 4:56:00 PM
Bound File Name = VFL11262013.0009.RAW
Sample Name = CCS
Date Taken = 11/26/2013 4:55:53 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 81714 | 0.0819 * |
| 4 | 3.63 | t-Butanol | 137028 | 0.9634 |
| 5 | 4.44 | n-Propanol | 190459 | 1.0000 |

Avg #8 & #9 = 0.082
RLM 11/27/13



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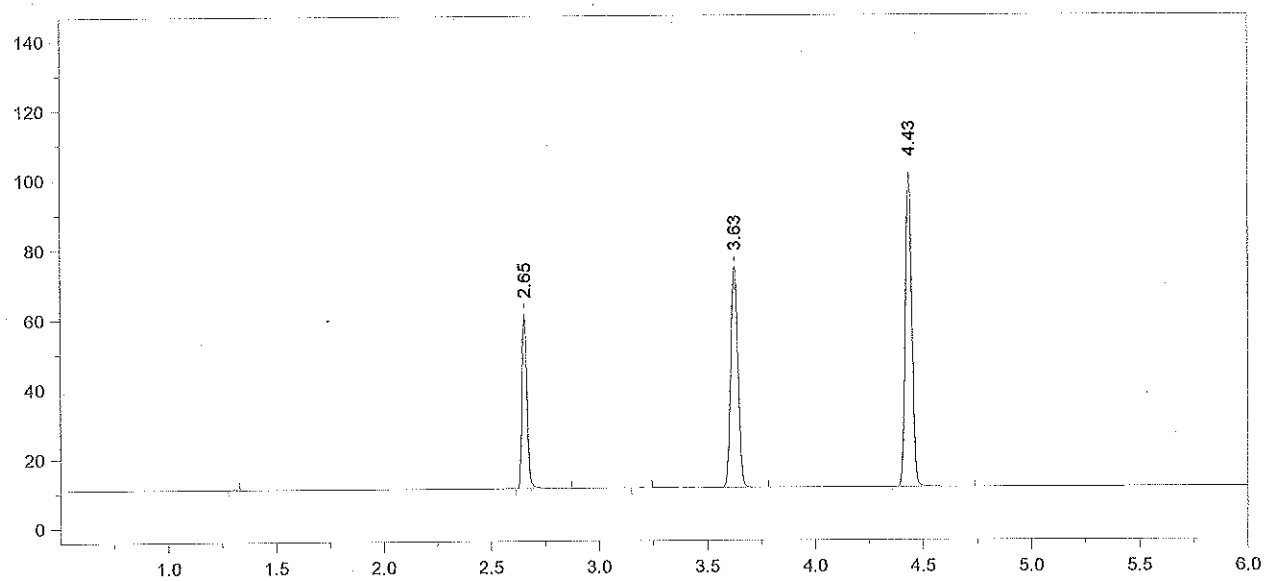


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 5:13:32 PM
Bound File Name = VFL11262013.0010.RAW
Sample Name = FN021111-03
Date Taken = 11/26/2013 5:13:24 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 78318 | 0.0779 * |
| 4 | 3.63 | t-Butanol | 147526 | 1.0298 |
| 5 | 4.43 | n-Propanol | 191831 | 1.0000 |



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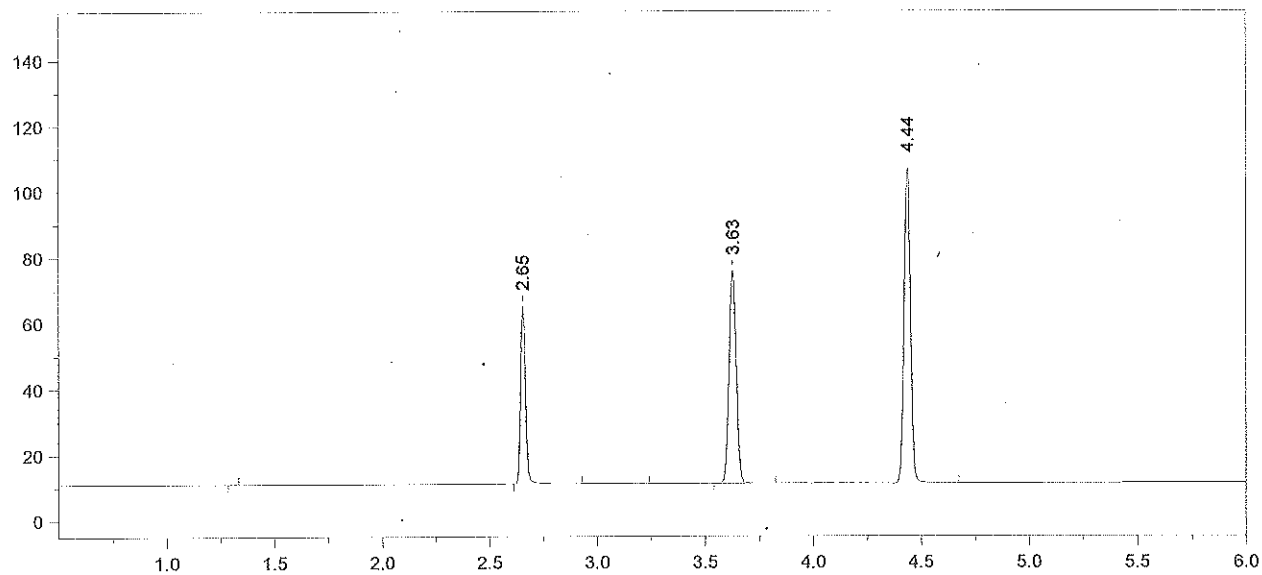


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 5:27:19 PM
Bound File Name = VFL11262013.0011.RAW
Sample Name = FN021111-03
Date Taken = 11/26/2013 5:27:10 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 84594 | 0.0791 ✗ |
| 4 | 3.63 | t-Butanol | 149858 | 0.9838 |
| 5 | 4.44 | n-Propanol | 203961 | 1.0000 |

Avg #10 + #11 = 0.078
RZM 11/27/13

Target value = 0.080
±5% acceptance range: 0.076 - 0.084
RZM 12/20/13



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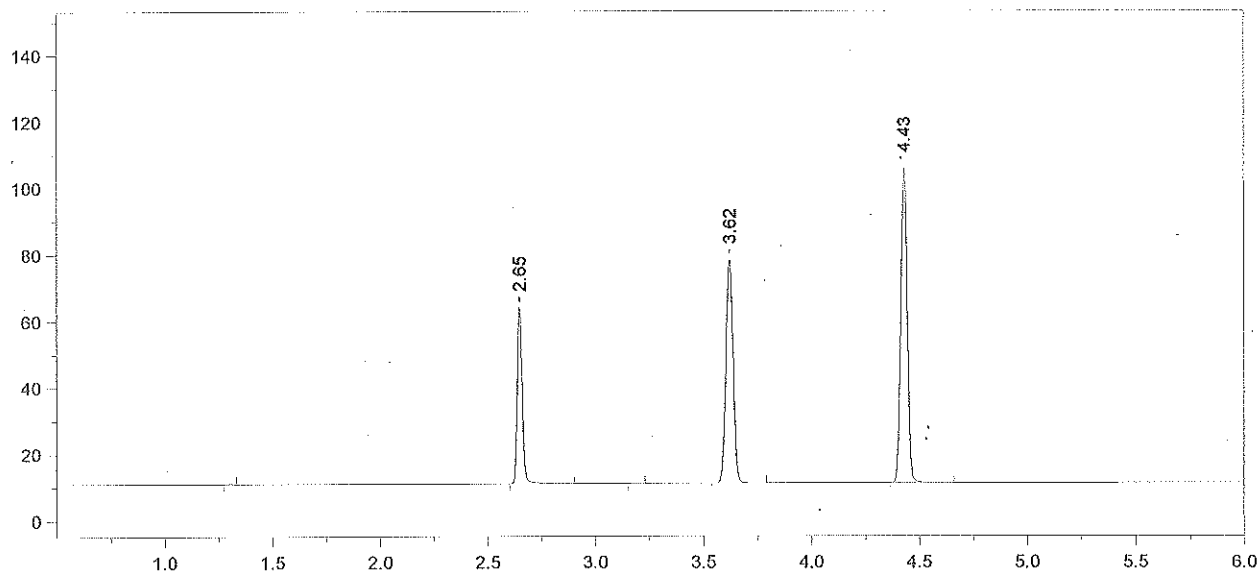


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 5:44:59 PM
Bound File Name = VFL11262013.0012.RAW
Sample Name = CCS
Date Taken = 11/26/2013 5:44:49 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 83385 | 0.0793 * |
| 4 | 3.62 | t-Butanol | 155592 | 1.0378 |
| 5 | 4.43 | n-Propanol | 200754 | 1.0000 |



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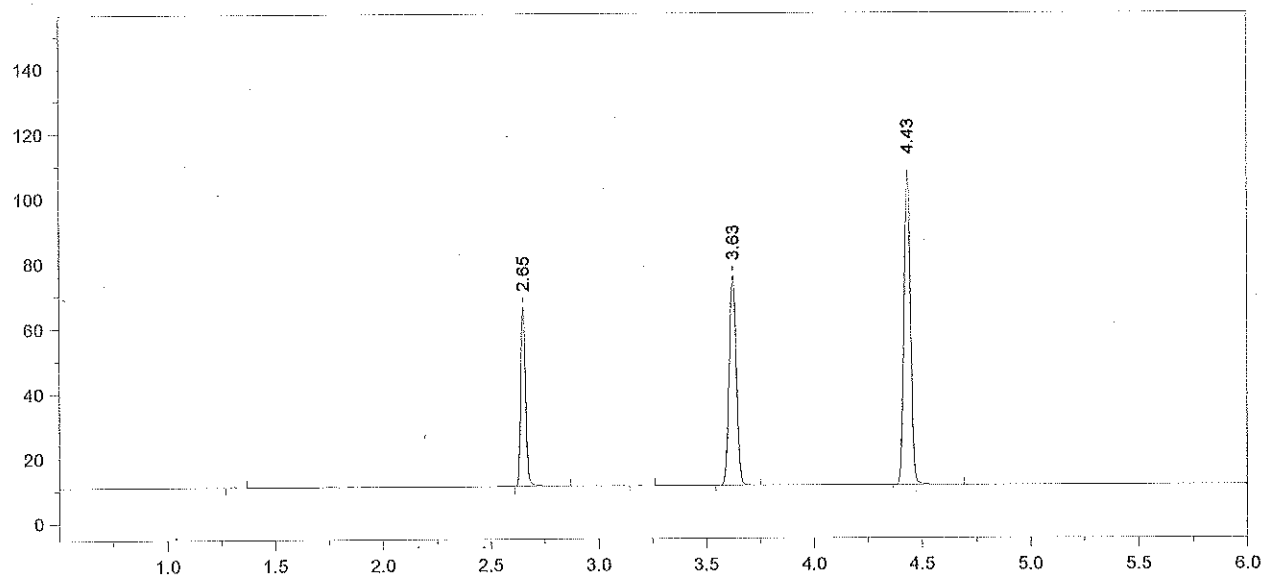


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 5:58:40 PM
Bound File Name = VFL11262013.0013.RAW
Sample Name = CCS
Date Taken = 11/26/2013 5:58:32 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 87264 | 0.0807 |
| 4 | 3.63 | t-Butanol | 149832 | 0.9728 |
| 5 | 4.43 | n-Propanol | 206242 | 1.0000 |

Avg #12 & #13 = 0.080
RRT 11/27/13



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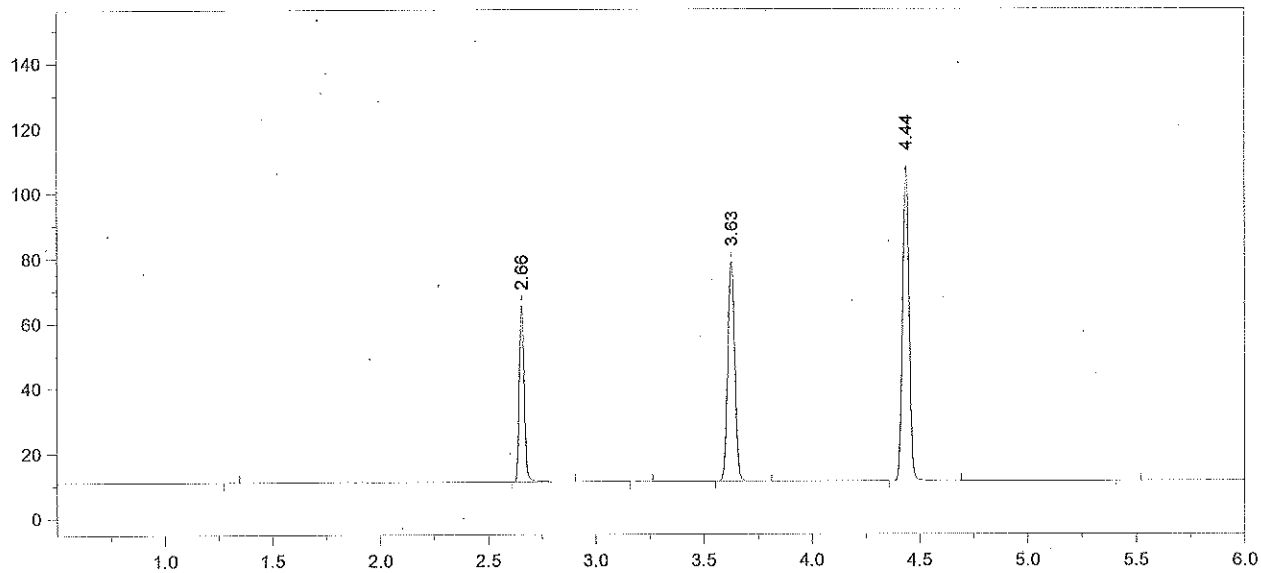


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 8:49:39 PM
Bound File Name = VFL11262013.0024.RAW
Sample Name = CCS
Date Taken = 11/26/2013 8:49:34 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.66 | Ethanol | 85523 | 0.0795 |
| 4 | 3.63 | t-Butanol | 156949 | 1.0232 |
| 5 | 4.44 | n-Propanol | 205391 | 1.0000 |



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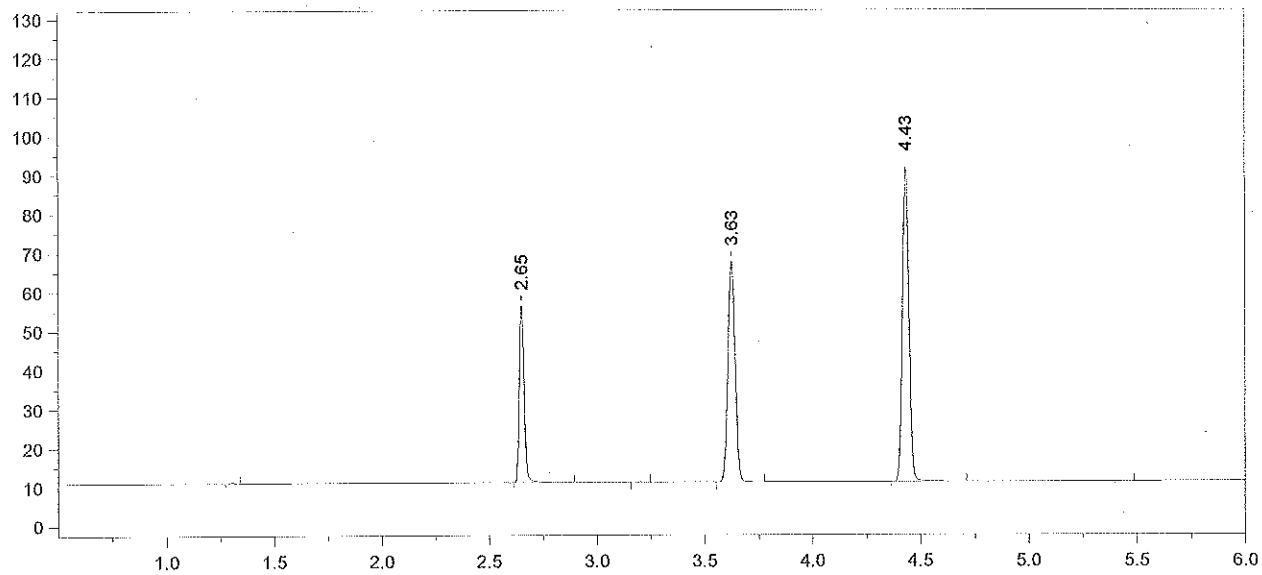


Format File Name = AlcoholVFL.FMT

Today's Date = 11/26/2013
Today's Time = 9:03:45 PM
Bound File Name = VFL11262013.0025.RAW
Sample Name = CCS
Date Taken = 11/26/2013 9:03:35 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL11262013.CAL
Calibration Version = 7

| Peak Number | Ret Time (min) | Peak Name | Area | Amount % WT/VOL |
|---|---|---|---|---|
| 2 | 2.65 | Ethanol | 71594 | 0.0799 * |
| 4 | 3.63 | t-Butanol | 131211 | 1.0278 |
| 5 | 4.43 | n-Propanol | 170954 | 1.0000 |

Avg #24 + #25 = 0.080
RZM 11/27/13



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RZM