



November 08, 2019

Vista Work Order No. 1903460

Ms. Delaney Peterson
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101

Dear Ms. Peterson,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on October 03, 2019 under your Project Name 'Gasco PDI'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1903460

Case Narrative

Sample Condition on Receipt:

Nine sediment samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613B

These samples were extracted and analyzed for tetra-through-octa chlorinated dioxins and furans by EPA Method 1613B using a ZB-5MS GC column.

Holding Times

These samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with each preparation batch. No analytes were detected in the Method Blanks. The OPR recoveries were within the method acceptance criteria.

As requested, a Duplicate was performed on sample "PDI-042SC-A-12-13-190930". All of the RPDs within the acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

| Vista Sample ID | Client Sample ID | Sampled | Received | Components/Containers |
|-----------------|----------------------------|--------------------|-----------------|-----------------------|
| 1903460-01 | PDI-039SC-A-12-13-190930 | 30-Sep-19 09:09 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-02 | PDI-039SC-A-13-13.7-190930 | 30-Sep-19 09:48 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-03 | PDI-1039SC-A-12-13-190930 | 30-Sep-19 00:00 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-04 | PDI-040SC-A-09-10-190930 | 30-Sep-19 13:44 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-05 | PDI-040SC-A-10-11.3-190930 | 30-Sep-19 13:59 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-06 | PDI-042SC-A-12-13-190930 | Dup30-Sep-19 11:22 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-07 | PDI-042SC-A-13-13.8-190930 | 30-Sep-19 12:42 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-08 | PDI-044SC-A-11-12-190930 | 30-Sep-19 15:05 | 03-Oct-19 09:02 | Amber Glass, 120 mL |
| 1903460-09 | PDI-044SC-A-12-12.8-190930 | 30-Sep-19 15:05 | 03-Oct-19 09:02 | Amber Glass, 120 mL |

ANALYTICAL RESULTS

| Sample ID: Method Blank | | | | | EPA Method 1613B | | | |
|--------------------------------------|--------------|---|------|---|---|------|----------|------------|
| Matrix: Solid Sample Size: 10.0 g | | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 | | Lab Sample: B9J0143-BLK1 Date Analyzed: 22-Oct-19 04:27 Column: ZB-5MS | | | | |
| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
| 2,3,7,8-TCDD | ND | 0.0833 | | | IS 13C-2,3,7,8-TCDD | 91.1 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.0975 | | | 13C-1,2,3,7,8-PeCDD | 96.2 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.170 | | | 13C-1,2,3,4,7,8-HxCDD | 105 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.180 | | | 13C-1,2,3,6,7,8-HxCDD | 88.2 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.174 | | | 13C-1,2,3,7,8,9-HxCDD | 95.2 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.121 | | | 13C-1,2,3,4,6,7,8-HpCDD | 107 | 23 - 140 | |
| OCDD | ND | 0.158 | | | 13C-OCDD | 91.6 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0880 | | | 13C-2,3,7,8-TCDF | 85.4 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0685 | | | 13C-1,2,3,7,8-PeCDF | 104 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0688 | | | 13C-2,3,4,7,8-PeCDF | 94.2 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0839 | | | 13C-1,2,3,4,7,8-HxCDF | 100 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0759 | | | 13C-1,2,3,6,7,8-HxCDF | 92.3 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0916 | | | 13C-2,3,4,6,7,8-HxCDF | 92.9 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.105 | | | 13C-1,2,3,7,8,9-HxCDF | 100 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.103 | | | 13C-1,2,3,4,6,7,8-HpCDF | 100 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0957 | | | 13C-1,2,3,4,7,8,9-HpCDF | 109 | 26 - 138 | |
| OCDF | 0.210 | | | J | 13C-OCDF | 95.6 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 77.3 | 35 - 197 | |
| | | | | | Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) | | | |
| | | | | | TEQMinWHO2005Dioxin 0.000063 | | | |
| TOTALS | | | | | | | | |
| Total TCDD | ND | 0.0833 | | | | | | |
| Total PeCDD | ND | 0.0975 | | | | | | |
| Total HxCDD | ND | 0.180 | | | | | | |
| Total HpCDD | ND | 0.121 | | | | | | |
| Total TCDF | ND | 0.0880 | | | | | | |
| Total PeCDF | ND | 0.0688 | | | | | | |
| Total HxCDF | ND | 0.105 | | | | | | |
| Total HpCDF | ND | 0.103 | | | | | | |

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

| Sample ID: OPR | | | | | EPA Method 1613B | | |
|--------------------------------------|------------------|---|------|--|-------------------------|------|----------|
| Matrix: Solid Sample Size: 10.0 g | | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 | | Lab Sample: B9J0143-BS1 Date Analyzed: 22-Oct-19 02:51 Column: ZB-5MS | | | |
| Analyte | Amt Found (pg/g) | Spike Amt | %R | Limits | Labeled Standard | %R | LCL-UCL |
| 2,3,7,8-TCDD | 20.4 | 20.0 | 102 | 67 - 158 | IS 13C-2,3,7,8-TCDD | 58.4 | 20 - 175 |
| 1,2,3,7,8-PeCDD | 103 | 100 | 103 | 70 - 142 | 13C-1,2,3,7,8-PeCDD | 79.7 | 21 - 227 |
| 1,2,3,4,7,8-HxCDD | 95.0 | 100 | 95.0 | 70 - 164 | 13C-1,2,3,4,7,8-HxCDD | 88.8 | 21 - 193 |
| 1,2,3,6,7,8-HxCDD | 102 | 100 | 102 | 76 - 134 | 13C-1,2,3,6,7,8-HxCDD | 74.7 | 25 - 163 |
| 1,2,3,7,8,9-HxCDD | 102 | 100 | 102 | 64 - 162 | 13C-1,2,3,7,8,9-HxCDD | 87.7 | 21 - 193 |
| 1,2,3,4,6,7,8-HpCDD | 101 | 100 | 101 | 70 - 140 | 13C-1,2,3,4,6,7,8-HpCDD | 100 | 26 - 166 |
| OCDD | 203 | 200 | 102 | 78 - 144 | 13C-OCDD | 92.0 | 13 - 199 |
| 2,3,7,8-TCDF | 20.1 | 20.0 | 101 | 75 - 158 | 13C-2,3,7,8-TCDF | 50.7 | 22 - 152 |
| 1,2,3,7,8-PeCDF | 104 | 100 | 104 | 80 - 134 | 13C-1,2,3,7,8-PeCDF | 72.3 | 21 - 192 |
| 2,3,4,7,8-PeCDF | 104 | 100 | 104 | 68 - 160 | 13C-2,3,4,7,8-PeCDF | 68.7 | 13 - 328 |
| 1,2,3,4,7,8-HxCDF | 98.2 | 100 | 98.2 | 72 - 134 | 13C-1,2,3,4,7,8-HxCDF | 84.4 | 19 - 202 |
| 1,2,3,6,7,8-HxCDF | 99.1 | 100 | 99.1 | 84 - 130 | 13C-1,2,3,6,7,8-HxCDF | 81.7 | 21 - 159 |
| 2,3,4,6,7,8-HxCDF | 102 | 100 | 102 | 70 - 156 | 13C-2,3,4,6,7,8-HxCDF | 84.1 | 22 - 176 |
| 1,2,3,7,8,9-HxCDF | 100 | 100 | 100 | 78 - 130 | 13C-1,2,3,7,8,9-HxCDF | 85.7 | 17 - 205 |
| 1,2,3,4,6,7,8-HpCDF | 99.0 | 100 | 99.0 | 82 - 122 | 13C-1,2,3,4,6,7,8-HpCDF | 98.6 | 21 - 158 |
| 1,2,3,4,7,8,9-HpCDF | 97.6 | 100 | 97.6 | 78 - 138 | 13C-1,2,3,4,7,8,9-HpCDF | 101 | 20 - 186 |
| OCDF | 199 | 200 | 99.5 | 63 - 170 | 13C-OCDF | 93.1 | 13 - 199 |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 52.4 | 31 - 191 |

LCL-UCL - Lower control limit - upper control limit

| Sample ID: Method Blank | | | | | EPA Method 1613B | | | | |
|--------------------------------------|--------------|---|------|---|---|------|----------|------------|--|
| Matrix: Solid Sample Size: 10.0 g | | QC Batch: B9J0253 Date Extracted: 23-Oct-2019 9:56 | | Lab Sample: B9J0253-BLK1 Date Analyzed: 29-Oct-19 15:02 Column: ZB-5MS | | | | | |
| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers | |
| 2,3,7,8-TCDD | ND | 0.119 | | | IS 13C-2,3,7,8-TCDD | 112 | 25 - 164 | | |
| 1,2,3,7,8-PeCDD | ND | 0.106 | | | 13C-1,2,3,7,8-PeCDD | 110 | 25 - 181 | | |
| 1,2,3,4,7,8-HxCDD | ND | 0.261 | | | 13C-1,2,3,4,7,8-HxCDD | 117 | 32 - 141 | | |
| 1,2,3,6,7,8-HxCDD | ND | 0.274 | | | 13C-1,2,3,6,7,8-HxCDD | 101 | 28 - 130 | | |
| 1,2,3,7,8,9-HxCDD | ND | 0.271 | | | 13C-1,2,3,7,8,9-HxCDD | 104 | 32 - 141 | | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.104 | | | 13C-1,2,3,4,6,7,8-HpCDD | 111 | 23 - 140 | | |
| OCDD | ND | 0.245 | | | 13C-OCDD | 107 | 17 - 157 | | |
| 2,3,7,8-TCDF | ND | 0.0813 | | | 13C-2,3,7,8-TCDF | 102 | 24 - 169 | | |
| 1,2,3,7,8-PeCDF | ND | 0.119 | | | 13C-1,2,3,7,8-PeCDF | 107 | 24 - 185 | | |
| 2,3,4,7,8-PeCDF | ND | 0.110 | | | 13C-2,3,4,7,8-PeCDF | 105 | 21 - 178 | | |
| 1,2,3,4,7,8-HxCDF | ND | 0.114 | | | 13C-1,2,3,4,7,8-HxCDF | 112 | 26 - 152 | | |
| 1,2,3,6,7,8-HxCDF | ND | 0.116 | | | 13C-1,2,3,6,7,8-HxCDF | 103 | 26 - 123 | | |
| 2,3,4,6,7,8-HxCDF | ND | 0.121 | | | 13C-2,3,4,6,7,8-HxCDF | 102 | 28 - 136 | | |
| 1,2,3,7,8,9-HxCDF | ND | 0.154 | | | 13C-1,2,3,7,8,9-HxCDF | 111 | 29 - 147 | | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.0792 | | | 13C-1,2,3,4,6,7,8-HpCDF | 105 | 28 - 143 | | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0727 | | | 13C-1,2,3,4,7,8,9-HpCDF | 108 | 26 - 138 | | |
| OCDF | ND | 0.145 | | | 13C-OCDF | 112 | 17 - 157 | | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 98.5 | 35 - 197 | | |
| | | | | | Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) | | | | |
| | | | | | TEQMinWHO2005Dioxin | | 0.00 | | |
| TOTALS | | | | | | | | | |
| Total TCDD | ND | 0.119 | | | | | | | |
| Total PeCDD | ND | 0.106 | | | | | | | |
| Total HxCDD | ND | 0.270 | | | | | | | |
| Total HpCDD | ND | 0.104 | | | | | | | |
| Total TCDF | ND | 0.0813 | | | | | | | |
| Total PeCDF | ND | 0.115 | | | | | | | |
| Total HxCDF | ND | 0.125 | | | | | | | |
| Total HpCDF | ND | 0.0762 | | | | | | | |

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight. The sample size is reported in wet weight.

Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

| Sample ID: OPR | | | | | EPA Method 1613B | | |
|---------------------|----------------------------------|--------------------------------|----------------|----------|-------------------------|------|----------|
| Matrix: Solid | QC Batch: B9J0253 | Lab Sample: B9J0253-BS1 | | | | | |
| Sample Size: 10.0 g | Date Extracted: 23-Oct-2019 9:56 | Date Analyzed: 29-Oct-19 12:39 | Column: ZB-5MS | | | | |
| Analyte | Amt Found (pg/g) | Spike Amt | %R | Limits | Labeled Standard | %R | LCL-UCL |
| 2,3,7,8-TCDD | 21.2 | 20.0 | 106 | 67 - 158 | IS 13C-2,3,7,8-TCDD | 103 | 20 - 175 |
| 1,2,3,7,8-PeCDD | 112 | 100 | 112 | 70 - 142 | 13C-1,2,3,7,8-PeCDD | 105 | 21 - 227 |
| 1,2,3,4,7,8-HxCDD | 102 | 100 | 102 | 70 - 164 | 13C-1,2,3,4,7,8-HxCDD | 115 | 21 - 193 |
| 1,2,3,6,7,8-HxCDD | 102 | 100 | 102 | 76 - 134 | 13C-1,2,3,6,7,8-HxCDD | 104 | 25 - 163 |
| 1,2,3,7,8,9-HxCDD | 105 | 100 | 105 | 64 - 162 | 13C-1,2,3,7,8,9-HxCDD | 105 | 21 - 193 |
| 1,2,3,4,6,7,8-HpCDD | 102 | 100 | 102 | 70 - 140 | 13C-1,2,3,4,6,7,8-HpCDD | 111 | 26 - 166 |
| OCDD | 215 | 200 | 107 | 78 - 144 | 13C-OCDD | 107 | 13 - 199 |
| 2,3,7,8-TCDF | 18.8 | 20.0 | 93.9 | 75 - 158 | 13C-2,3,7,8-TCDF | 102 | 22 - 152 |
| 1,2,3,7,8-PeCDF | 104 | 100 | 104 | 80 - 134 | 13C-1,2,3,7,8-PeCDF | 116 | 21 - 192 |
| 2,3,4,7,8-PeCDF | 98.4 | 100 | 98.4 | 68 - 160 | 13C-2,3,4,7,8-PeCDF | 115 | 13 - 328 |
| 1,2,3,4,7,8-HxCDF | 100 | 100 | 100 | 72 - 134 | 13C-1,2,3,4,7,8-HxCDF | 115 | 19 - 202 |
| 1,2,3,6,7,8-HxCDF | 97.2 | 100 | 97.2 | 84 - 130 | 13C-1,2,3,6,7,8-HxCDF | 106 | 21 - 159 |
| 2,3,4,6,7,8-HxCDF | 104 | 100 | 104 | 70 - 156 | 13C-2,3,4,6,7,8-HxCDF | 102 | 22 - 176 |
| 1,2,3,7,8,9-HxCDF | 99.4 | 100 | 99.4 | 78 - 130 | 13C-1,2,3,7,8,9-HxCDF | 108 | 17 - 205 |
| 1,2,3,4,6,7,8-HpCDF | 100 | 100 | 100 | 82 - 122 | 13C-1,2,3,4,6,7,8-HpCDF | 101 | 21 - 158 |
| 1,2,3,4,7,8,9-HpCDF | 95.7 | 100 | 95.7 | 78 - 138 | 13C-1,2,3,4,7,8,9-HpCDF | 109 | 20 - 186 |
| OCDF | 194 | 200 | 97.1 | 63 - 170 | 13C-OCDF | 112 | 13 - 199 |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 94.7 | 31 - 191 |

LCL-UCL - Lower control limit - upper control limit

Sample ID: PDI-039SC-A-12-13-190930 **EPA Method 1613B**

| | | |
|----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-01 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.6 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 9:09 | % Solids: 73.7 | Date Analyzed : 22-Oct-19 05:15 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.118 | | | IS 13C-2,3,7,8-TCDD | 97.7 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.133 | | | 13C-1,2,3,7,8-PeCDD | 115 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.150 | | | 13C-1,2,3,4,7,8-HxCDD | 108 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.160 | | | 13C-1,2,3,6,7,8-HxCDD | 89.9 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.150 | | | 13C-1,2,3,7,8,9-HxCDD | 96.6 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | 1.27 | | | J | 13C-1,2,3,4,6,7,8-HpCDD | 106 | 23 - 140 | |
| OCDD | 11.4 | | | | 13C-OCDD | 99.5 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0972 | | | 13C-2,3,7,8-TCDF | 93.6 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0728 | | | 13C-1,2,3,7,8-PeCDF | 109 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0637 | | | 13C-2,3,4,7,8-PeCDF | 109 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0880 | | | 13C-1,2,3,4,7,8-HxCDF | 101 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0867 | | | 13C-1,2,3,6,7,8-HxCDF | 92.3 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0923 | | | 13C-2,3,4,6,7,8-HxCDF | 95.8 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.116 | | | 13C-1,2,3,7,8,9-HxCDF | 100 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.114 | | | 13C-1,2,3,4,6,7,8-HpCDF | 102 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0947 | | | 13C-1,2,3,4,7,8,9-HpCDF | 111 | 26 - 138 | |
| OCDF | ND | 0.150 | | | 13C-OCDF | 103 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 89.3 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.0161

| TOTALS | | | |
|---------------|-------|--------|--|
| Total TCDD | 0.363 | | |
| Total PeCDD | ND | 0.151 | |
| Total HxCDD | 0.868 | | |
| Total HpCDD | 3.64 | | |
| Total TCDF | ND | 0.0972 | |
| Total PeCDF | ND | 0.0728 | |
| Total HxCDF | ND | 0.116 | |
| Total HpCDF | ND | 0.114 | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-039SC-A-13-13.7-190930 **EPA Method 1613B**

| | | |
|----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-02 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.8 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 9:48 | % Solids: 73.4 | Date Analyzed : 22-Oct-19 06:03 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.124 | | | IS 13C-2,3,7,8-TCDD | 93.1 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.108 | | | 13C-1,2,3,7,8-PeCDD | 104 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.212 | | | 13C-1,2,3,4,7,8-HxCDD | 109 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.221 | | | 13C-1,2,3,6,7,8-HxCDD | 89.2 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.243 | | | 13C-1,2,3,7,8,9-HxCDD | 93.6 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | 0.725 | | | J | 13C-1,2,3,4,6,7,8-HpCDD | 109 | 23 - 140 | |
| OCDD | 6.30 | | | | 13C-OCDD | 93.3 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0744 | | | 13C-2,3,7,8-TCDF | 91.9 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0756 | | | 13C-1,2,3,7,8-PeCDF | 106 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0717 | | | 13C-2,3,4,7,8-PeCDF | 103 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0836 | | | 13C-1,2,3,4,7,8-HxCDF | 101 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0840 | | | 13C-1,2,3,6,7,8-HxCDF | 92.3 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0858 | | | 13C-2,3,4,6,7,8-HxCDF | 99.6 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.109 | | | 13C-1,2,3,7,8,9-HxCDF | 104 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.130 | | | 13C-1,2,3,4,6,7,8-HpCDF | 105 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.109 | | | 13C-1,2,3,4,7,8,9-HpCDF | 112 | 26 - 138 | |
| OCDF | ND | 0.136 | | | 13C-OCDF | 96.7 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 84.3 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00914

| TOTALS | | | |
|---------------|-------|--------|--------|
| Total TCDD | ND | | 0.195 |
| Total PeCDD | ND | 0.108 | |
| Total HxCDD | 0.762 | | |
| Total HpCDD | 2.27 | | |
| Total TCDF | ND | | 0.0920 |
| Total PeCDF | ND | 0.0756 | |
| Total HxCDF | ND | 0.109 | |
| Total HpCDF | ND | 0.130 | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-1039SC-A-12-13-190930 **EPA Method 1613B**

| | | |
|----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-03 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.8 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 0:00 | % Solids: 72.4 | Date Analyzed : 06-Nov-19 14:53 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.0938 | | | IS 13C-2,3,7,8-TCDD | 87.7 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.0861 | | | 13C-1,2,3,7,8-PeCDD | 93.2 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.139 | | | 13C-1,2,3,4,7,8-HxCDD | 98.2 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.145 | | | 13C-1,2,3,6,7,8-HxCDD | 84.0 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.150 | | | 13C-1,2,3,7,8,9-HxCDD | 90.3 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | 0.666 | | | J | 13C-1,2,3,4,6,7,8-HpCDD | 91.9 | 23 - 140 | |
| OCDD | 6.46 | | | | 13C-OCDD | 83.5 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0678 | | | 13C-2,3,7,8-TCDF | 82.9 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0820 | | | 13C-1,2,3,7,8-PeCDF | 87.1 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0799 | | | 13C-2,3,4,7,8-PeCDF | 83.0 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0436 | | | 13C-1,2,3,4,7,8-HxCDF | 100 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0461 | | | 13C-1,2,3,6,7,8-HxCDF | 88.6 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0484 | | | 13C-2,3,4,6,7,8-HxCDF | 90.2 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.0623 | | | 13C-1,2,3,7,8,9-HxCDF | 94.1 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.0838 | | | 13C-1,2,3,4,6,7,8-HpCDF | 82.4 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0704 | | | 13C-1,2,3,4,7,8,9-HpCDF | 89.8 | 26 - 138 | |
| OCDF | ND | 0.112 | | | 13C-OCDF | 84.9 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 83.8 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00860

| TOTALS | | | |
|---------------|-------|--------|-------|
| Total TCDD | ND | | 0.200 |
| Total PeCDD | ND | 0.0861 | |
| Total HxCDD | 0.574 | | |
| Total HpCDD | 1.79 | | |
| Total TCDF | ND | 0.0678 | |
| Total PeCDF | ND | 0.0809 | |
| Total HxCDF | ND | 0.0497 | |
| Total HpCDF | ND | 0.0775 | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-040SC-A-09-10-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-04 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 12.1 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 13:44 | % Solids: 82.8 | Date Analyzed : 22-Oct-19 07:38 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.103 | | | IS 13C-2,3,7,8-TCDD | 102 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.0972 | | | 13C-1,2,3,7,8-PeCDD | 116 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.108 | | | 13C-1,2,3,4,7,8-HxCDD | 106 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.121 | | | 13C-1,2,3,6,7,8-HxCDD | 91.2 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.120 | | | 13C-1,2,3,7,8,9-HxCDD | 96.1 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.134 | | | 13C-1,2,3,4,6,7,8-HpCDD | 98.8 | 23 - 140 | |
| OCDD | 0.454 | | | J | 13C-OCDD | 85.7 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0984 | | | 13C-2,3,7,8-TCDF | 93.6 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0996 | | | 13C-1,2,3,7,8-PeCDF | 98.7 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0833 | | | 13C-2,3,4,7,8-PeCDF | 106 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0654 | | | 13C-1,2,3,4,7,8-HxCDF | 102 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0700 | | | 13C-1,2,3,6,7,8-HxCDF | 92.4 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0674 | | | 13C-2,3,4,6,7,8-HxCDF | 98.2 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.0914 | | | 13C-1,2,3,7,8,9-HxCDF | 102 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.109 | | | 13C-1,2,3,4,6,7,8-HpCDF | 102 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0998 | | | 13C-1,2,3,4,7,8,9-HpCDF | 99.9 | 26 - 138 | |
| OCDF | ND | 0.155 | | | 13C-OCDF | 85.6 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 91.9 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.000136

| TOTALS | | |
|---------------|----|--------|
| Total TCDD | ND | 0.103 |
| Total PeCDD | ND | 0.0972 |
| Total HxCDD | ND | 0.121 |
| Total HpCDD | ND | 0.134 |
| Total TCDF | ND | 0.0984 |
| Total PeCDF | ND | 0.0996 |
| Total HxCDF | ND | 0.0914 |
| Total HpCDF | ND | 0.109 |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-040SC-A-10-11.3-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-05 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.2 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 13:59 | % Solids: 76.0 | Date Analyzed : 22-Oct-19 08:26 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.147 | | | IS 13C-2,3,7,8-TCDD | 63.1 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.158 | | | 13C-1,2,3,7,8-PeCDD | 65.7 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.144 | | | 13C-1,2,3,4,7,8-HxCDD | 86.9 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.158 | | | 13C-1,2,3,6,7,8-HxCDD | 71.7 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.140 | | | 13C-1,2,3,7,8,9-HxCDD | 83.7 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.120 | | | 13C-1,2,3,4,6,7,8-HpCDD | 101 | 23 - 140 | |
| OCDD | 0.280 | | | J | 13C-OCDD | 98.0 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.184 | | | 13C-2,3,7,8-TCDF | 61.5 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.130 | | | 13C-1,2,3,7,8-PeCDF | 66.0 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.125 | | | 13C-2,3,4,7,8-PeCDF | 67.1 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0941 | | | 13C-1,2,3,4,7,8-HxCDF | 81.3 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0962 | | | 13C-1,2,3,6,7,8-HxCDF | 72.4 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0944 | | | 13C-2,3,4,6,7,8-HxCDF | 81.0 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.116 | | | 13C-1,2,3,7,8,9-HxCDF | 83.8 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.122 | | | 13C-1,2,3,4,6,7,8-HpCDF | 94.3 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.107 | | | 13C-1,2,3,4,7,8,9-HpCDF | 98.5 | 26 - 138 | |
| OCDF | ND | 0.156 | | | 13C-OCDF | 98.3 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 62.2 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)
 TEQMinWHO2005Dioxin 0.000084

| TOTALS | | | |
|---------------|----|-------|--|
| Total TCDD | ND | 0.147 | |
| Total PeCDD | ND | 0.158 | |
| Total HxCDD | ND | 0.158 | |
| Total HpCDD | ND | 0.120 | |
| Total TCDF | ND | 0.184 | |
| Total PeCDF | ND | 0.130 | |
| Total HxCDF | ND | 0.116 | |
| Total HpCDF | ND | 0.122 | |

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight. The sample size is reported in wet weight.
 Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-042SC-A-12-13-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-06 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 12.5 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 11:22 | % Solids: 81.5 | Date Analyzed : 22-Oct-19 09:14 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.124 | | | IS 13C-2,3,7,8-TCDD | 89.5 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.127 | | | 13C-1,2,3,7,8-PeCDD | 97.0 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.233 | | | 13C-1,2,3,4,7,8-HxCDD | 108 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.270 | | | 13C-1,2,3,6,7,8-HxCDD | 87.6 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.256 | | | 13C-1,2,3,7,8,9-HxCDD | 93.9 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | 0.645 | | | J | 13C-1,2,3,4,6,7,8-HpCDD | 109 | 23 - 140 | |
| OCDD | 5.94 | | | | 13C-OCDD | 100 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.107 | | | 13C-2,3,7,8-TCDF | 89.5 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.226 | | | 13C-1,2,3,7,8-PeCDF | 106 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.217 | | | 13C-2,3,4,7,8-PeCDF | 101 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0719 | | | 13C-1,2,3,4,7,8-HxCDF | 102 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0705 | | | 13C-1,2,3,6,7,8-HxCDF | 91.5 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0783 | | | 13C-2,3,4,6,7,8-HxCDF | 92.4 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.0941 | | | 13C-1,2,3,7,8,9-HxCDF | 99.8 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.109 | | | 13C-1,2,3,4,6,7,8-HpCDF | 101 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0873 | | | 13C-1,2,3,4,7,8,9-HpCDF | 113 | 26 - 138 | |
| OCDF | ND | 0.152 | | | 13C-OCDF | 104 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 81.2 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00823

| TOTALS | | | | | | | | |
|---------------|-------|--------|-------|--|--|--|--|--|
| Total TCDD | ND | 0.124 | | | | | | |
| Total PeCDD | ND | | 0.359 | | | | | |
| Total HxCDD | 0.540 | | | | | | | |
| Total HpCDD | 1.77 | | | | | | | |
| Total TCDF | ND | 0.107 | | | | | | |
| Total PeCDF | ND | | 0.263 | | | | | |
| Total HxCDF | ND | 0.0941 | | | | | | |
| Total HpCDF | ND | 0.109 | | | | | | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

| Sample ID: Duplicate | | | | | EPA Method 1613B | | | |
|--|--------------|----------------------------------|--------|---|---|------|----------|------------|
| Source Client ID: PDI-042SC-A-12-13-190930 | | QC Batch: B9J0143 | | Lab Sample: B9J0143-DUP1 | | | | |
| Source LabNumber: 1903460-06 | | Date Extracted: 15-Oct-2019 6:32 | | Date Analyzed: 22-Oct-19 10:02 Column: ZB-5MS | | | | |
| Matrix: Solid | | | | | | | | |
| Sample Size: 12.4 g | | | | | | | | |
| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
| 2,3,7,8-TCDD | ND | 0.215 | | | IS 13C-2,3,7,8-TCDD | 96.6 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.168 | | | 13C-1,2,3,7,8-PeCDD | 102 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.290 | | | 13C-1,2,3,4,7,8-HxCDD | 105 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.343 | | | 13C-1,2,3,6,7,8-HxCDD | 87.1 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.340 | | | 13C-1,2,3,7,8,9-HxCDD | 94.4 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | | 0.609 | | 13C-1,2,3,4,6,7,8-HpCDD | 104 | 23 - 140 | |
| OCDD | 5.19 | | | | 13C-OCDD | 97.5 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.165 | | | 13C-2,3,7,8-TCDF | 94.0 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.106 | | | 13C-1,2,3,7,8-PeCDF | 109 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0965 | | | 13C-2,3,4,7,8-PeCDF | 107 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.166 | | | 13C-1,2,3,4,7,8-HxCDF | 99.0 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.163 | | | 13C-1,2,3,6,7,8-HxCDF | 90.3 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.182 | | | 13C-2,3,4,6,7,8-HxCDF | 91.0 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.219 | | | 13C-1,2,3,7,8,9-HxCDF | 101 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.221 | | | 13C-1,2,3,4,6,7,8-HpCDF | 99.9 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.184 | | | 13C-1,2,3,4,7,8,9-HpCDF | 107 | 26 - 138 | |
| OCDF | ND | 0.298 | | | 13C-OCDF | 99.8 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 89.0 | 35 - 197 | |
| | | | | | Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt) | | | |
| | | | | | TEQMinWHO2005Dioxin 0.00156 | | | |
| TOTALS | | | | | | | | |
| Total TCDD | ND | 0.215 | | | | | | |
| Total PeCDD | ND | 0.168 | | | | | | |
| Total HxCDD | ND | | 0.433 | | | | | |
| Total HpCDD | 1.26 | | 1.87 | | | | | |
| Total TCDF | ND | 0.165 | | | | | | |
| Total PeCDF | ND | | 0.0850 | | | | | |
| Total HxCDF | ND | 0.219 | | | | | | |
| Total HpCDF | ND | 0.221 | | | | | | |

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit

The results are reported in dry weight.

The sample size is reported in wet weight.

| Sample ID: Duplicate | | | | | EPA Method 1613B | | | | |
|--|-------------------|--------------|------|------------|------------------------------------|--------|-----------|----------|--|
| Source Client ID: PDI-042SC-A-12-13-190930 | | | | | Duplicate Lab Sample: B9J0143-DUP1 | | | | |
| Source LabNumber: 1903460-06 | | | | | | | | | |
| Matrix: Solid | | | | | | | | | |
| Analyte | Dup Conc. (pg/g) | Source Conc. | RPD | RPD Limits | Labeled Standard | Dup %R | Source %R | LCL-UCL | |
| 2,3,7,8-TCDD | ND | ND | NA | 25 | IS 13C-2,3,7,8-TCDD | 96.6 | 89.5 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | ND | NA | 25 | 13C-1,2,3,7,8-PeCDD | 102 | 97.0 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | ND | NA | 25 | 13C-1,2,3,4,7,8-HxCDD | 105 | 108 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | ND | NA | 25 | 13C-1,2,3,6,7,8-HxCDD | 87.1 | 87.6 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | ND | NA | 25 | 13C-1,2,3,7,8,9-HxCDD | 94.4 | 93.9 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.645 | # | 25 | 13C-1,2,3,4,6,7,8-HpCDD | 104 | 109 | 23 - 140 | |
| OCDD | 5.19 | 5.94 | 13.4 | 25 | 13C-OCDD | 97.5 | 100 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | ND | NA | 25 | 13C-2,3,7,8-TCDF | 94.0 | 89.5 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | ND | NA | 25 | 13C-1,2,3,7,8-PeCDF | 109 | 106 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | ND | NA | 25 | 13C-2,3,4,7,8-PeCDF | 107 | 101 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | ND | NA | 25 | 13C-1,2,3,4,7,8-HxCDF | 99.0 | 102 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | ND | NA | 25 | 13C-1,2,3,6,7,8-HxCDF | 90.3 | 91.5 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | ND | NA | 25 | 13C-2,3,4,6,7,8-HxCDF | 91.0 | 92.4 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | ND | NA | 25 | 13C-1,2,3,7,8,9-HxCDF | 101 | 99.8 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | ND | NA | 25 | 13C-1,2,3,4,6,7,8-HpCDF | 99.9 | 101 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | ND | NA | 25 | 13C-1,2,3,4,7,8,9-HpCDF | 107 | 113 | 26 - 138 | |
| OCDF | ND | ND | NA | 25 | 13C-OCDF | 99.8 | 104 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 89.0 | 81.2 | 35 - 197 | |

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight. Results reported to the MDL

Sample ID: PDI-042SC-A-13-13.8-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-07 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.5 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 12:42 | % Solids: 75.5 | Date Analyzed: 22-Oct-19 10:50 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|-------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.175 | | | IS 13C-2,3,7,8-TCDD | 87.2 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.357 | | | 13C-1,2,3,7,8-PeCDD | 94.7 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.139 | | | 13C-1,2,3,4,7,8-HxCDD | 103 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.148 | | | 13C-1,2,3,6,7,8-HxCDD | 85.0 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.144 | | | 13C-1,2,3,7,8,9-HxCDD | 91.8 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.156 | | | 13C-1,2,3,4,6,7,8-HpCDD | 104 | 23 - 140 | |
| OCDD | ND | | 0.615 | | 13C-OCDD | 93.8 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.162 | | | 13C-2,3,7,8-TCDF | 84.5 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.281 | | | 13C-1,2,3,7,8-PeCDF | 90.9 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.236 | | | 13C-2,3,4,7,8-PeCDF | 94.8 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.102 | | | 13C-1,2,3,4,7,8-HxCDF | 96.6 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0987 | | | 13C-1,2,3,6,7,8-HxCDF | 88.6 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.109 | | | 13C-2,3,4,6,7,8-HxCDF | 91.9 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.136 | | | 13C-1,2,3,7,8,9-HxCDF | 96.1 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.122 | | | 13C-1,2,3,4,6,7,8-HpCDF | 97.6 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.102 | | | 13C-1,2,3,4,7,8,9-HpCDF | 108 | 26 - 138 | |
| OCDF | ND | 0.163 | | | 13C-OCDF | 101 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 77.9 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00

| TOTALS | | | |
|---------------|-------|-------|-------|
| Total TCDD | ND | 0.175 | |
| Total PeCDD | ND | 0.357 | |
| Total HxCDD | ND | | 0.190 |
| Total HpCDD | 0.279 | | |
| Total TCDF | ND | 0.162 | |
| Total PeCDF | ND | | 0.693 |
| Total HxCDF | ND | 0.136 | |
| Total HpCDF | ND | 0.122 | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-044SC-A-11-12-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-08 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 12.8 g | QC Batch: B9J0253 Date Extracted: 23-Oct-2019 9:56 |
| Date Collected: 30-Sep-2019 15:05 | % Solids: 78.8 | Date Analyzed : 29-Oct-19 21:25 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|-------|------------|-------------------------|-----|----------|------------|
| 2,3,7,8-TCDD | ND | 0.113 | | | IS 13C-2,3,7,8-TCDD | 105 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.106 | | | 13C-1,2,3,7,8-PeCDD | 104 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.181 | | | 13C-1,2,3,4,7,8-HxCDD | 119 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.189 | | | 13C-1,2,3,6,7,8-HxCDD | 103 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.195 | | | 13C-1,2,3,7,8,9-HxCDD | 107 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | ND | | 0.934 | | 13C-1,2,3,4,6,7,8-HpCDD | 116 | 23 - 140 | |
| OCDD | 7.17 | | | | 13C-OCDD | 106 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.0786 | | | 13C-2,3,7,8-TCDF | 108 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.143 | | | 13C-1,2,3,7,8-PeCDF | 116 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.132 | | | 13C-2,3,4,7,8-PeCDF | 115 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0648 | | | 13C-1,2,3,4,7,8-HxCDF | 113 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0647 | | | 13C-1,2,3,6,7,8-HxCDF | 104 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0695 | | | 13C-2,3,4,6,7,8-HxCDF | 105 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.0920 | | | 13C-1,2,3,7,8,9-HxCDF | 110 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.147 | | | 13C-1,2,3,4,6,7,8-HpCDF | 108 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.139 | | | 13C-1,2,3,4,7,8,9-HpCDF | 118 | 26 - 138 | |
| OCDF | ND | 0.133 | | | 13C-OCDF | 109 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 101 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00215

| TOTALS | | | | | | | | |
|---------------|------|--------|------|--|--|--|--|--|
| Total TCDD | ND | 0.113 | | | | | | |
| Total PeCDD | ND | 0.106 | | | | | | |
| Total HxCDD | 1.54 | | | | | | | |
| Total HpCDD | 1.82 | | 2.76 | | | | | |
| Total TCDF | ND | 0.0786 | | | | | | |
| Total PeCDF | ND | 0.138 | | | | | | |
| Total HxCDF | ND | 0.0721 | | | | | | |
| Total HpCDF | ND | 0.144 | | | | | | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

Sample ID: PDI-044SC-A-12-12.8-190930 **EPA Method 1613B**

| | | |
|-----------------------------------|---------------------|---|
| Client Data | Sample Data | Laboratory Data |
| Name: Anchor QEA, LLC | Matrix: Sediment | Lab Sample: 1903460-09 Date Received: 03-Oct-2019 9:02 |
| Project: Gasco PDI | Sample Size: 13.1 g | QC Batch: B9J0143 Date Extracted: 15-Oct-2019 6:32 |
| Date Collected: 30-Sep-2019 15:05 | % Solids: 76.6 | Date Analyzed : 22-Oct-19 12:26 Column: ZB-5MS |

| Analyte | Conc. (pg/g) | DL | EMPC | Qualifiers | Labeled Standard | %R | LCL-UCL | Qualifiers |
|---------------------|--------------|--------|------|------------|-------------------------|------|----------|------------|
| 2,3,7,8-TCDD | ND | 0.193 | | | IS 13C-2,3,7,8-TCDD | 80.2 | 25 - 164 | |
| 1,2,3,7,8-PeCDD | ND | 0.122 | | | 13C-1,2,3,7,8-PeCDD | 91.9 | 25 - 181 | |
| 1,2,3,4,7,8-HxCDD | ND | 0.197 | | | 13C-1,2,3,4,7,8-HxCDD | 99.2 | 32 - 141 | |
| 1,2,3,6,7,8-HxCDD | ND | 0.209 | | | 13C-1,2,3,6,7,8-HxCDD | 81.8 | 28 - 130 | |
| 1,2,3,7,8,9-HxCDD | ND | 0.210 | | | 13C-1,2,3,7,8,9-HxCDD | 89.8 | 32 - 141 | |
| 1,2,3,4,6,7,8-HpCDD | 0.437 | | | J | 13C-1,2,3,4,6,7,8-HpCDD | 103 | 23 - 140 | |
| OCDD | 4.05 | | | J | 13C-OCDD | 95.3 | 17 - 157 | |
| 2,3,7,8-TCDF | ND | 0.134 | | | 13C-2,3,7,8-TCDF | 77.7 | 24 - 169 | |
| 1,2,3,7,8-PeCDF | ND | 0.0702 | | | 13C-1,2,3,7,8-PeCDF | 89.9 | 24 - 185 | |
| 2,3,4,7,8-PeCDF | ND | 0.0689 | | | 13C-2,3,4,7,8-PeCDF | 86.4 | 21 - 178 | |
| 1,2,3,4,7,8-HxCDF | ND | 0.0857 | | | 13C-1,2,3,4,7,8-HxCDF | 93.1 | 26 - 152 | |
| 1,2,3,6,7,8-HxCDF | ND | 0.0927 | | | 13C-1,2,3,6,7,8-HxCDF | 83.2 | 26 - 123 | |
| 2,3,4,6,7,8-HxCDF | ND | 0.0956 | | | 13C-2,3,4,6,7,8-HxCDF | 85.5 | 28 - 136 | |
| 1,2,3,7,8,9-HxCDF | ND | 0.119 | | | 13C-1,2,3,7,8,9-HxCDF | 94.3 | 29 - 147 | |
| 1,2,3,4,6,7,8-HpCDF | ND | 0.127 | | | 13C-1,2,3,4,6,7,8-HpCDF | 95.4 | 28 - 143 | |
| 1,2,3,4,7,8,9-HpCDF | ND | 0.0994 | | | 13C-1,2,3,4,7,8,9-HpCDF | 105 | 26 - 138 | |
| OCDF | ND | 0.166 | | | 13C-OCDF | 97.7 | 17 - 157 | |
| | | | | | CRS 37Cl-2,3,7,8-TCDD | 71.7 | 35 - 197 | |

Toxic Equivalent Quotient (TEQ) Data (pg/g dry wt)

TEQMinWHO2005Dioxin 0.00559

| TOTALS | | | |
|---------------|-------|--------|-------|
| Total TCDD | ND | 0.193 | |
| Total PeCDD | ND | 0.122 | |
| Total HxCDD | ND | | 0.219 |
| Total HpCDD | 0.437 | | 1.12 |
| Total TCDF | ND | 0.134 | |
| Total PeCDF | ND | 0.0702 | |
| Total HxCDF | ND | 0.119 | |
| Total HpCDF | ND | 0.127 | |

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
The results are reported in dry weight. The sample size is reported in wet weight.
Min-The TEQ is calculated using zero for the concentration of congeners that are not detected.

DATA QUALIFIERS & ABBREVIATIONS

| | |
|-------|---|
| B | This compound was also detected in the method blank |
| Conc. | Concentration |
| CRS | Cleanup Recovery Standard |
| D | Dilution |
| DL | Detection limit |
| E | The associated compound concentration exceeded the calibration range of the instrument |
| H | Recovery and/or RPD was outside laboratory acceptance limits |
| I | Chemical Interference |
| IS | Internal Standard |
| J | The amount detected is below the Reporting Limit/LOQ |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| M | Estimated Maximum Possible Concentration (CA Region 2 projects only) |
| NA | Not applicable |
| ND | Not Detected |
| OPR | Ongoing Precision and Recovery sample |
| P | The reported concentration may include contribution from chlorinated diphenyl ether(s). |
| Q | The ion transition ratio is outside of the acceptance criteria. |
| RL | Reporting Limit |
| TEQ | Toxic Equivalency |
| U | Not Detected (specific projects only) |
| * | See Cover Letter |

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

| Accrediting Authority | Certificate Number |
|--|--------------------|
| Alaska Department of Environmental Conservation | 17-013 |
| Arkansas Department of Environmental Quality | 19-013-0 |
| California Department of Health – ELAP | 2892 |
| DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005 | 3091.01 |
| Florida Department of Health | E87777-23 |
| Hawaii Department of Health | N/A |
| Louisiana Department of Environmental Quality | 01977 |
| Maine Department of Health | 2018017 |
| Massachusetts Department of Environmental Protection | N/A |
| Michigan Department of Environmental Quality | 9932 |
| Minnesota Department of Health | 1521520 |
| New Hampshire Environmental Accreditation Program | 207718-B |
| New Jersey Department of Environmental Protection | 190001 |
| New York Department of Health | 11411 |
| Oregon Laboratory Accreditation Program | 4042-010 |
| Pennsylvania Department of Environmental Protection | 016 |
| Texas Commission on Environmental Quality | T104704189-19-10 |
| Vermont Department of Health | VT-4042 |
| Virginia Department of General Services | 10272 |
| Washington Department of Ecology | C584-19 |
| Wisconsin Department of Natural Resources | 998036160 |

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

| MATRIX: Air | |
|--|-----------|
| Description of Test | Method |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA 23 |
| Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans | EPA TO-9A |

| MATRIX: Biological Tissue | |
|---|----------------|
| Description of Test | Method |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Drinking Water | |
|--|----------------|
| Description of Test | Method |
| 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS | EPA 1613/1613B |
| 1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS | EPA 522 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | ISO 25101 2009 |

| MATRIX: Non-Potable Water | |
|---|----------------|
| Description of Test | Method |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Dioxin by GC/HRMS | EPA 613 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

| MATRIX: Solids | |
|---|----------------|
| Description of Test | Method |
| Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613 |
| Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS | EPA 1613B |
| Brominated Diphenyl Ethers by HRGC/HRMS | EPA 1614A |
| Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS | EPA 1668A/C |
| Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS | EPA 1699 |
| Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS | EPA 537 |
| Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS | EPA 8280A/B |
| Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS | EPA 8290/8290A |

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

POC: # Delaney Peterson (360-715-2707)
 1605 Cornwall Avenue, Bellingham, WA 98225

Project: Gasco PDI
Client: NW Natural

1903460 0.9°C

COC ID: VISTA-20191001-170018
Sample Custodian: dep
Lab: VISTA

| COC Sample Number | Field Sample ID | Sample Type | Matrix | Collected Date | Time | Containers # | Lab QC* | Test Request | Method | TAT** | Preservative |
|-------------------|----------------------------|-------------|--------|----------------|-------|--------------|-------------------------------------|----------------------|---------|-------|--------------|
| 001 | PDI-039SC-A-12-13-190930 | N | SE | 09/30/2019 | 9:09 | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 002 | PDI-039SC-A-13-13.7-190930 | N | SE | 09/30/2019 | 9:48 | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 003 | PDI-1039SC-A-12-13-190930 | FD | SE | 09/30/2019 | | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 004 | PDI-040SC-A-09-10-190930 | N | SE | 09/30/2019 | 13:44 | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 005 | PDI-040SC-A-10-11.3-190930 | N | SE | 09/30/2019 | 13:59 | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 006 | PDI-042SC-A-12-13-190930 | N | SE | 09/30/2019 | 11:22 | 1 | <input checked="" type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 007 | PDI-042SC-A-13-13.8-190930 | N | SE | 09/30/2019 | 12:42 | 1 | <input type="checkbox"/> | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |

Comment:

| | | | | | |
|-------------------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|---------------------------|
| Relinquished By: Signature | Received By: Signature | Relinquished By: Signature | Received By: Signature | Relinquished By: Signature | Received By: Signature |
| Print Name | Print Name | Print Name | Print Name | Print Name | Print Name |
| Company | Company | Company | Company | Company | Company |
| Date/Time | Date/Time | Date/Time | Date/Time | Date/Time | Date/Time |

ENVIRONMENTAL SAMPLE CHAIN OF CUSTODY

POC: # Delaney Peterson (360-715-2707)
 1605 Cornwall Avenue, Bellingham, WA 98225


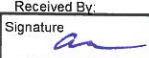
Project: Gasco PDI
Client: NW Natural

1903460

COC ID: VISTA-20191001-170018
Sample Custodian: dep
Lab: VISTA

| COC Sample Number | Field Sample ID | Sample Type | Matrix | Collected Date | Time | Containers # | Lab QC* | Test Request | Method | TAT** | Preservative |
|-------------------|----------------------------|-------------|--------|----------------|-------|--------------|--------------------------|----------------------|---------|-------|--------------|
| 008 | PDI-044SC-A-11-12-190930 | N | SE | 09/30/2019 | 15:05 | 1 | <input type="checkbox"/> | | | | |
| | | | | | | | | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |
| 009 | PDI-044SC-A-12-12.8-190930 | N | SE | 09/30/2019 | 15:05 | 1 | <input type="checkbox"/> | | | | |
| | | | | | | | | Dioxin/Furans | E1613B | 30 | 4°C |
| | | | | | | | | Total solids (VISTA) | SM2540G | 30 | 4°C |

Comment:

| Relinquished By: | Received By: | Relinquished By: | Received By: | Relinquished By: | Received By: |
|--|---|------------------|--------------|------------------|--------------|
| Signature  | Signature  | Signature | Signature | Signature | Signature |
| Print Name D. Peterson | Print Name Ashley Mason | Print Name | Print Name | Print Name | Print Name |
| Company AP | Company Vista | Company | Company | Company | Company |
| Date/Time 10.2.19 1000 | Date/Time 10/03/19 0902 | Date/Time | Date/Time | Date/Time | Date/Time |

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 1903460 TAT std

| | | | |
|-----------------------------------|---|-----------------------------------|---|
| Samples Arrival: | Date/Time <u>10/03/19 0902</u> | Initials: <u>ajm</u> | Location: <u>WR-2</u> |
| | | | Shelf/Rack: <u>N/A</u> |
| Logged In: | Date/Time <u>10/03/19 1528</u> | Initials: <u>MWS</u> | Location: <u>WR-2</u> |
| | | | Shelf/Rack: <u>2-1</u> |
| Delivered By: | <input checked="" type="checkbox"/> FedEx | <input type="checkbox"/> UPS | <input type="checkbox"/> On Trac |
| | <input type="checkbox"/> GSO | <input type="checkbox"/> DHL | <input type="checkbox"/> Hand Delivered |
| | <input type="checkbox"/> Other | | |
| Preservation: | <input checked="" type="checkbox"/> Ice | <input type="checkbox"/> Blue Ice | <input type="checkbox"/> Dry Ice |
| | <input type="checkbox"/> None | | |
| Temp °C: <u>0.9</u> (uncorrected) | Probe used: Y / <input checked="" type="checkbox"/> N | | Thermometer ID: <u>TK-3</u> |
| Temp °C: <u>0.9</u> (corrected) | | | |

| | YES | NO | NA |
|--|--|-------------------------------------|--|
| Adequate Sample Volume Received? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Holding Time Acceptable? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Shipping Container(s) Intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Shipping Custody Seals Intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Shipping Documentation Present? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Airbill <u>—————</u> Trk # <u>7764 4746 7438</u> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sample Container Intact? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Sample Custody Seals Intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Chain of Custody / Sample Documentation Present? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| COC Anomaly/Sample Acceptance Form completed? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| If Chlorinated or Drinking Water Samples, Acceptable Preservation? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Preservation Documented: | <input type="checkbox"/> Na ₂ S ₂ O ₃ | <input type="checkbox"/> Trizma | <input checked="" type="checkbox"/> None |
| | <input type="checkbox"/> Other | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Shipping Container | <input checked="" type="checkbox"/> Vista | <input type="checkbox"/> Client | <input checked="" type="checkbox"/> Retain |
| | <input type="checkbox"/> Return | <input type="checkbox"/> Dispose | |

Comments:

EXTRACTION INFORMATION

Process Sheet
 Workorder: **1903460**

Prep Expiration: 2020-09-29
 Client: Anchor QEA, LLC

Workorder Due: **24-Oct-19 00:00**
 TAT: 21

Method: **1613 Full List**
 Matrix: **Solid**
 Client Matrix: **Sediment**
 Also run: **Percent Solids**

Prep Batch: B9J0143
 Prep Data Entered: AO 10/16/19
Date and Initials
 Initial Sequence: S9J0047 S9J0052
HL 11/4/19

| LabSampleID | Recon | ClientSampleID | Date Received | Location | Comments |
|-------------|---------------------------------------|------------------------------|-----------------|----------|----------|
| 1903460-01 | A <input checked="" type="checkbox"/> | PDI-039SC-A-12-13-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-02 | A <input checked="" type="checkbox"/> | PDI-039SC-A-13-13.7-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-03 | A <input checked="" type="checkbox"/> | PDI-1039SC-A-12-13-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-04 | A <input checked="" type="checkbox"/> | PDI-040SC-A-09-10-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-05 | A <input checked="" type="checkbox"/> | PDI-040SC-A-10-11.3-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-06 | A <input checked="" type="checkbox"/> | PDI-042SC-A-12-13-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | Dup |
| 1903460-07 | A <input checked="" type="checkbox"/> | PDI-042SC-A-13-13.8-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-08 | A <input checked="" type="checkbox"/> | PDI-044SC-A-11-12-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-09 | A <input checked="" type="checkbox"/> | PDI-044SC-A-12-12.8-190930 ✓ | 03-Oct-19 09:02 | WR-2 A-1 | |

WO Comments: ~~Rest 1g extraction (dry weight)~~
Dioxin - 10g (dry weight)
~~RGP 5g extraction (dry weight)~~

Pre-Prep Check Out: TL 10/09/19 TL 10/09/19 Prep Check Out: TL 10/15/19
 Pre-Prep Check In: TL 10/09/19 TL 10/09/19 Prep Check In: TL 10/15/19

Prep Reconciled Initials/Date: TL 10/09/19 TL 10/09/19
 Spike Reconciled Initials/Date: TL 10/15/19
 VialBoxID: Test

Batch: B9J0143

Matrix: Solid

| LabNumber | WetWeight (Initial) | % Solids (Extraction Solids) | DryWeight | Final | Extracted | Ext By | Spike | SpikeAmount | ClientMatrix | Analysis |
|--------------|------------------------|---------------------------------|-----------|-------|-----------------|--------|---------|-------------|--------------|----------------|
| 1903460-01 | 13.6 | 73.70518 | 10.0239 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-02 | 13.79 | 73.37733 | 10.1187 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-03 | 13.84 | 72.39404 | 10.0193 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-04 | 12.13 | 82.77512 | 10.0406 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-05 | 13.19 | 75.966 | 10.0199 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-06 | 12.52 | 81.50346 | 10.2042 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-07 | 13.48 | 75.46239 | 10.1723 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-08 | 12.7 | 78.77238 | 10.0041 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| 1903460-09 | 13.12 | 76.58611 | 10.0481 | 20 | 15-Oct-19 06:32 | JJC | | | Sediment | 1613 Full List |
| B9J0143-BLK1 | 10 | | | 20 | 15-Oct-19 06:32 | JJC | | | | QC |
| B9J0143-BS1 | 10 | | | 20 | 15-Oct-19 06:32 | JJC | 18F1913 | 10 | | QC |
| B9J0143-DUP1 | 12.42 | 81.55746 | 10.1227 | 20 | 15-Oct-19 06:32 | JJC | | | | QC |

All bolded data on report verified against written benchsheet by (initial/date) CIO 10/16/19

Printed: 10/16/2019 3:08:46PM
Page 1 of 1

PREPARATION BENCH SHEET

Matrix: Solid

B9J0143

Chemist: 26

Method: 1613 Full List

Prepared using: HRMS - Soxhlet

Prep Date/Time: 15-Oct-19 06:32

| C | VISTA Sample ID | G Eqv | Sample Amt. (g) | IS/NS CHEM/WIT DATE | CRS CHEM/WIT DATE | AP CHEM/ DATE | ABSG CHEM/ DATE | AA CHEM/ DATE | Florisl CHEM/ DATE | RS CHEM/WIT DATE |
|--------------------------|----------------------------|-------|-----------------|---------------------|-------------------|---------------|-----------------|---------------|--------------------|------------------|
| <input type="checkbox"/> | B9J0143-BLK1 | NA | (10.00) | 12 12 10/15/19 | 00 AZ 10/16/19 | NA | AZ 10/16/19 | 00 10/16/19 | 90 10/16/19 | 00 10/16/19 |
| <input type="checkbox"/> | B9J0143-BS1 | NA | (10.00) | T | | T | | T | T | T |
| <input type="checkbox"/> | B9J0143-DUP1 1903460-06 | 12.27 | 12.42 | | | | | | | |
| <input type="checkbox"/> | 1903460-01 | 13.57 | 13.60 | | | | | | | |
| <input type="checkbox"/> | 1903460-02 | 13.63 | 13.79 | | | | | | | |
| <input type="checkbox"/> | 1903460-03 | 13.81 | 13.84 | | | | | | | |
| <input type="checkbox"/> | 1903460-04 | 12.08 | 12.13 | | | | | | | |
| <input type="checkbox"/> | 1903460-05 | 13.16 | 13.19 | | | | | | | |
| <input type="checkbox"/> | 1903460-06 | 12.27 | 12.52 | | | | | | | |
| <input type="checkbox"/> | 1903460-07 | 13.25 | 13.48 | | | | | | | |
| <input type="checkbox"/> | 1903460-08 (A) | 12.69 | 12.70 | | | | | | | |
| <input type="checkbox"/> | 1903460-09 | 13.06 | 13.12 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |

(A) Sharpie ink in sample. Sample is purple AZ 10/16/19

| | | | | | | |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--|----------------------------|----------------------------------|
| IS Name <u>V3</u> | NS Name <u>V6</u> | CRS Name <u>V7</u> | RS Name <u>V7</u> | Cycle Time | APP: SEFUN SOX <u>SPS</u> | Check Out: |
| PCDD/F <u>19C1902, 10µL</u> | PCDD/F <u>19F1913, 10µL</u> | PCDD/F <u>19A1602, 10µL</u> | PCDD/F <u>19I1603, 10µL</u> | Start Date/Time <u>10/15/19 13:33</u> | SOLV: <u>tol</u> | Chemist/Date: <u>26 10/15/19</u> |
| PCB _____ | PCB _____ | PCB _____ | PCB _____ | Other <u>NA</u> | Final Volume(s) <u>C14</u> | Check In: |
| PAH _____ | PAH _____ | PAH _____ | PAH _____ | Stop Date/Time <u>10/16/19 5:45</u> | <u>20µL</u> | Chemist/Date: <u>26 10/15/19</u> |
| | | | | | | Balance ID: <u>HRMS-8</u> |

Comments:

- 1 = Sample approached dryness on rotovap
- 2 = Sample bumped on rotovap; lost < 5%
- 3 = Sample poured through Na2SO4 to remove water
- 4 = Precipitate present at Final Volume
- 5 = Sample homogenized in secondary container
- 6 = Sample clogged during extraction; pipetted and used Nitrogen to assist

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0078

| | | |
|--|---|--|
| Analyst: TL Analyte: Dried at 110°C+/-5°C Oven ID: 01 02 | Test Code: %Moist/%Solids Units: % | Data Entry Verified by: (Initial and Date) <u>DO 10/10/19</u> |
|--|---|--|

Inst HRMS-9 Date/Time IN: 10/09/19 1000 Date/Time OUT: 10/10/19 1127

| Particle Size | SampID | SampType | E | | G | | H | I | K | | | | O | P | | |
|---------------|------------|----------|--------------------|-------------|-------------------------------|-----------------------|-------------------------------|-----------|----------------|-------------------|------|-----------|----|----|----------|------------|
| | | | Intial and Date: | TL 10/09/19 | AO 10/10/19 | Dry Sample Weight (g) | | | %Solids RawVal | Visual Inspection | Cl- | pH Before | | | pH After | Acid Added |
| | 1903460-01 | Sample | Pan Tare Wt. (gms) | 1.2600 ✓ | Wet Pan and Sample Weight (g) | 6.2800 ✓ | Dry Pan and Sample Weight (g) | 4.9600 ✓ | 3.7000 | 73.71 | SOIL | NA | NA | NA | NA | X |
| | 1903460-02 | Sample | | 1.2500 ✓ | | 10.3400 ✓ | | 7.9200 ✓ | 6.6700 | 73.38 | SOIL | NA | NA | NA | NA | X |
| | 1903460-03 | Sample | | 1.2300 ✓ | | 9.9600 ✓ | | 7.5500 ✓ | 6.3200 | 72.39 | SOIL | NA | NA | NA | NA | X |
| | 1903460-04 | Sample | | 1.2400 ✓ | | 7.5100 ✓ | | 6.4300 ✓ | 5.1900 | 82.78 | SOIL | NA | NA | NA | NA | X |
| | 1903460-05 | Sample | | 1.2500 ✓ | | 14.1900 ✓ | | 11.0800 ✓ | 9.8300 | 75.97 | SOIL | NA | NA | NA | NA | X |
| | 1903460-06 | Sample | | 1.2400 ✓ | | 11.3500 ✓ | | 9.4800 ✓ | 8.2400 | 81.50 | SOIL | NA | NA | NA | NA | X |
| | 1903460-07 | Sample | | 1.2500 ✓ | | 9.3600 ✓ | | 7.3700 ✓ | 6.1200 | 75.46 | SOIL | NA | NA | NA | NA | X |
| | 1903460-08 | Sample | | 1.2600 ✓ | | 9.0800 ✓ | | 7.4200 ✓ | 6.1600 | 78.77 | SOIL | NA | NA | NA | NA | X |
| | 1903460-09 | Sample | | 1.2500 ✓ | | 7.8700 ✓ | | 6.3200 ✓ | 5.0700 | 76.59 | SOIL | NA | NA | NA | NA | X |
| | | | | | | | | | | | | | | | | |
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*Sample homogenized in sample container unless otherwise noted.

Percent Moisture/ Percent Solids

D2216-90

BATCH ID B9J0078

| | | |
|----------------------------------|---------------------------|---|
| Analyst: <u>TL</u> | Test Code: %Moist/%Solids | Data Entry Verified by: (Initial and Date) <u>NA</u> |
| Analyte: Dried at 110°C+/-5°C | Units: % | |
| Oven ID: 01 <u>Ⓢ</u> | | |

Inst HRMS-9

Date/Time IN: 10/09/18 10:00 Date/Time OUT: 10/10/19 11:27

| B | | C | D | E | | F | G | H | I | K | L | M | N | O | P |
|---------------|------------|----------|--------------------|------|-------------------------------|-------------------------------|-----------------------|----------------|-------------------|------------|----------|------------|---------------------|---|---|
| Particle Size | SampleID | SampType | Initial and Date: | | Wet Pan and Sample Weight (g) | Dry Pan and Sample Weight (g) | Dry Sample Weight (g) | %Solids RawVal | TL 10/09/18 | | NA | | TL 10/09/18 | | |
| | | | Pan Tare Wt. (gms) | | | | | | Visual Inspection | Cl- Before | pH After | Acid Added | Sample Homogenized* | | |
| | 1903460-01 | A | Sample | 1.26 | 6.28 | 4.96 | Z | Soil | NA | NA | NA | NA | NA | X | |
| | 1903460-02 | A | Sample | 1.25 | 10.34 | 7.92 | | T | T | T | T | T | X | | |
| | 1903460-03 | A | Sample | 1.23 | 9.96 | 7.55 | | T | T | T | T | T | X | | |
| | 1903460-04 | A | Sample | 1.24 | 7.51 | 6.43 | | T | T | T | T | T | X | | |
| | 1903460-05 | A | Sample | 1.25 | 14.19 | 11.08 | | T | T | T | T | T | X | | |
| | 1903460-06 | A | Sample | 1.24 | 11.55 | 9.48 | | T | T | T | T | T | X | | |
| | 1903460-07 | A | Sample | 1.25 | 9.36 | 7.37 | | T | T | T | T | T | X | | |
| | 1903460-08 | A | Sample | 1.26 | 9.08 | 7.42 | | T | T | T | T | T | X | | |
| | 1903460-09 | A | Sample | 1.25 | 7.87 | 6.32 | | T | T | T | T | T | X | | |

*Sample homogenized in sample container unless otherwise noted.

RX ASAP

Process Sheet

Workorder: **1903460**

24-Oct-19

Workorder Due: ~~31-Oct-19 00:00~~

10/23/19

Prep Expiration: 2020-09-29
Client: Anchor QEA, LLC

TAT: 28 21

Method: **1613 Full List**
Matrix: **Solid**

Client Matrix: Sediment
Also run: **Percent Solids**

Prep Batch: B950283

Prep Data Entered: TL 10/28/19
Date and Initials

Initial Sequence: S950076

| LabSampleID | Recon | ClientSampleID | Date Received | Location | Comments |
|-----------------------|---------------------------------------|---|-----------------|----------|----------|
| 1903460-01 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-02 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-03 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-04 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-05 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-06 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | Dup |
| 1903460-07 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-08 | A <input checked="" type="checkbox"/> | PDI-044SC-A-11-12-190930 | 03-Oct-19 09:02 | WR-2 A-1 | |
| 1903460-09 | <input type="checkbox"/> | PDI-044SC-A-10-10-19-1903460 | 03-Oct-19 09:02 | WR-2 A-1 | |

WO Comments: Pest - 1g extraction (dry weight)
Dioxin - 10g (dry weight)
PCB - 5g extraction (dry weight)

Pre-Prep Check Out: NA
Pre-Prep Check In: NA

Prep Check Out: TL 10/23/19
Prep Check In: TL 10/23/19

Prep Reconciled Initials/Date: TL 10/23/19
Spike Reconciled Initials/Date: AZ 10/23/19
VialBoxID: Prion

Batch: B9J0253

Matrix: Solid

| LabNumber | WetWeight (Initial) | % Solids (Extraction Solids) | DryWeight | Final | Extracted | Ext By | Spike | SpikeAmount | ClientMatrix | Analysis |
|---------------|------------------------|---------------------------------|-----------|-------|-----------------|--------|-----------|-------------|--------------|----------------|
| 1903460-08RE1 | 12.82 ✓ | 78.77238 | 10.0986 | 20 | 23-Oct-19 09:56 | MSD | | | Sediment | 1613 Full List |
| B9J0253-BLK1 | 10 | | | 20 | 23-Oct-19 09:56 | MSD | | | | QC |
| B9J0253-BS1 | 10 | | | 20 | 23-Oct-19 09:56 | MSD | 18F1913 ✓ | 10 ✓ | | QC |

All bolded data on report verified against written benchsheet by (initial/date) *rc* 10/28/19^a

PREPARATION BENCH SHEET

Matrix: Solid

B9J0253

Chemist:

Method: 1613 Full List

Prepared using: HRMS - Soxhlet

Prep Date/Time: 23-Oct-19 09:56

| C | VISTA Sample ID | G Eqv | Sample Amt. (g) | IS/NS CHEM/WIT DATE | CRS CHEM/WIT DATE | AP CHEM/ DATE | ABSG CHEM/ DATE | AA CHEM/ DATE | Florisil CHEM/ DATE | RS CHEM/WIT DATE |
|--------------------------|-----------------|-------|-----------------|---------------------|-------------------|---------------|-----------------|---------------|---------------------|------------------|
| <input type="checkbox"/> | B9J0253-BLKI | NA | (10.00) | HN 10/23/19 | AZ 10/24/19 | NA | 10/24/19 | 10/24/19 | 10/23/19 | HN 10/25/19 |
| <input type="checkbox"/> | B9J0253-BS1 | ↓ | (10.00) | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| <input type="checkbox"/> | 1903460-08RE1 | 12.69 | 12.82 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |

| | | | | | | |
|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------------|-----------------------------|---|
| IS Name <u>V6</u> | NS Name <u>V6</u> | CRS Name <u>V7</u> | RS Name <u>V7</u> | Cycle Time | APP: SEFUN SOX <u>SDS</u> | Check Out: Chemist/Date: <u>TL 10/23/19</u> |
| PCDD/F <u>19C1702, 10µL</u> | PCDD/F <u>18F1913, 10µL</u> | PCDD/F <u>19I1602, 10µL</u> | PCDD/F <u>19I1603, 10µL</u> | Start Date/Time <u>10/23/19 08:05</u> | SOLV: <u>Toluene</u> | Check In: Chemist/Date: <u>10/23/19</u> |
| PCB _____ | PCB _____ | PCB _____ | PCB _____ | Stop Date/Time _____ | Other <u>N/A</u> | Balance ID: <u>HRMS-8</u> |
| PAH _____ | PAH _____ | PAH _____ | PAH _____ | | Final Volume(s) <u>20µL</u> | |
| | | | | | <u>C14</u> | |

Comments:

- 1 = Sample approached dryness on rotovap
- 2 = Sample bumped on rotovap; lost < 5%
- 3 = Sample poured through Na2SO4 to remove water
- 4 = Precipitate present at Final Volume
- 5 = Sample homogenized in secondary container
- 6 = Sample clogged during extraction; pipetted and used Nitrogen to assist

¥ 1457 10/23/19

SAMPLE DATA – EPA METHOD 1613

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-4.qld

Last Altered: Monday, November 04, 2019 14:34:53 Pacific Standard Time

Printed: Monday, November 04, 2019 14:35:08 Pacific Standard Time

CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 24 Oct 2019 11:22:52

Calibration: 04 Nov 2019 12:27:29

HZ 11-4-19

Name: VG7 191021D3_4, Date: 22-OCT-2019, Time: 04:27:22, ID: B9J0143-BLK1 Method Blank, Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

| Name | Area | IS Area | Area/IS | RRF | PA | Y/N | Prec | RRF | Prec | Conc | %Rec | EM | ... |
|---------------------------|--------|---------|---------|-------|-------|-----|-------|-------|-------|-------|---------|-------|--------|
| 1 2,3,7,8-TCDD | | 1.35e5 | 10.0000 | 0.905 | | | 1.001 | | 26.30 | | | | 0.0833 |
| 2 1,2,3,7,8-PeCDD | | 1.15e5 | 10.0000 | 0.903 | | | 1.001 | | 30.76 | | | | 0.0975 |
| 3 1,2,3,4,7,8-HxCDD | | 1.20e5 | 10.0000 | 1.101 | | | 1.000 | | 34.06 | | | | 0.170 |
| 4 1,2,3,6,7,8-HxCDD | | 1.34e5 | 10.0000 | 0.939 | | | 1.000 | | 34.15 | | | | 0.180 |
| 5 1,2,3,7,8,9-HxCDD | | 1.36e5 | 10.0000 | 0.961 | | | 1.001 | | 34.49 | | | | 0.174 |
| 6 1,2,3,4,6,7,8-HpCDD | | 1.23e5 | 10.0000 | 0.979 | | | 1.000 | | 37.91 | | | | 0.121 |
| 7 OCDD | | 1.88e5 | 10.0000 | 0.959 | | | 1.000 | | 41.18 | | | | 0.158 |
| 8 2,3,7,8-TCDF | | 1.89e5 | 10.0000 | 0.950 | | | 1.001 | | 25.51 | | | | 0.0880 |
| 9 1,2,3,7,8-PeCDF | | 1.91e5 | 10.0000 | 0.960 | | | 1.001 | | 29.59 | | | | 0.0685 |
| 10 2,3,4,7,8-PeCDF | | 1.71e5 | 10.0000 | 1.015 | | | 1.001 | | 30.49 | | | | 0.0688 |
| 11 1,2,3,4,7,8-HxCDF | | 1.47e5 | 10.0000 | 1.177 | | | 1.000 | | 33.16 | | | | 0.0839 |
| 12 1,2,3,6,7,8-HxCDF | | 1.69e5 | 10.0000 | 1.069 | | | 1.000 | | 33.29 | | | | 0.0759 |
| 13 2,3,4,6,7,8-HxCDF | | 1.57e5 | 10.0000 | 1.114 | | | 1.001 | | 33.91 | | | | 0.0916 |
| 14 1,2,3,7,8,9-HxCDF | | 1.47e5 | 10.0000 | 1.062 | | | 1.000 | | 34.84 | | | | 0.105 |
| 15 1,2,3,4,6,7,8-HpCDF | | 1.34e5 | 10.0000 | 1.128 | | | 1.001 | | 36.71 | | | | 0.103 |
| 16 1,2,3,4,7,8,9-HpCDF | | 1.12e5 | 10.0000 | 1.280 | | | 1.000 | | 38.43 | | | | 0.0957 |
| 17 OCDF | 1.16e2 | 2.33e5 | 10.0000 | 0.947 | 0.776 | NO | 1.000 | 1.000 | 41.40 | 41.41 | 0.20980 | 0.210 | 0.134 |
| 18 13C-2,3,7,8-TCDD | 1.35e5 | 1.36e5 | 10.0000 | 1.095 | 0.817 | NO | 1.021 | 1.022 | 26.25 | 26.26 | 182.14 | 91.1 | 0.272 |
| 19 13C-1,2,3,7,8-PeCDD | 1.15e5 | 1.36e5 | 10.0000 | 0.881 | 0.605 | NO | 1.187 | 1.196 | 30.50 | 30.74 | 192.41 | 96.2 | 0.248 |
| 20 13C-1,2,3,4,7,8-Hx... | 1.20e5 | 1.77e5 | 10.0000 | 0.642 | 1.263 | NO | 1.014 | 1.014 | 34.04 | 34.05 | 210.56 | 105.3 | 0.567 |
| 21 13C-1,2,3,6,7,8-Hx... | 1.34e5 | 1.77e5 | 10.0000 | 0.856 | 1.260 | NO | 1.017 | 1.017 | 34.15 | 34.15 | 176.48 | 88.2 | 0.426 |
| 22 13C-1,2,3,7,8,9-Hx... | 1.36e5 | 1.77e5 | 10.0000 | 0.807 | 1.255 | NO | 1.026 | 1.026 | 34.45 | 34.45 | 190.41 | 95.2 | 0.451 |
| 23 13C-1,2,3,4,6,7,8-H... | 1.23e5 | 1.77e5 | 10.0000 | 0.654 | 1.046 | NO | 1.126 | 1.129 | 37.81 | 37.90 | 213.28 | 106.6 | 0.855 |
| 24 13C-OCDD | 1.88e5 | 1.77e5 | 10.0000 | 0.580 | 0.917 | NO | 1.226 | 1.227 | 41.16 | 41.18 | 366.37 | 91.6 | 0.490 |
| 25 13C-2,3,7,8-TCDF | 1.89e5 | 2.14e5 | 10.0000 | 1.035 | 0.776 | NO | 0.993 | 0.992 | 25.54 | 25.49 | 170.88 | 85.4 | 0.335 |
| 26 13C-1,2,3,7,8-PeCDF | 1.91e5 | 2.14e5 | 10.0000 | 0.854 | 1.541 | NO | 1.143 | 1.150 | 29.38 | 29.57 | 208.77 | 104.4 | 0.489 |
| 27 13C-2,3,4,7,8-PeCDF | 1.71e5 | 2.14e5 | 10.0000 | 0.847 | 1.582 | NO | 1.176 | 1.185 | 30.24 | 30.46 | 188.45 | 94.2 | 0.493 |
| 28 13C-1,2,3,4,7,8-Hx... | 1.47e5 | 1.77e5 | 10.0000 | 0.832 | 0.514 | NO | 0.987 | 0.988 | 33.14 | 33.16 | 200.44 | 100.2 | 0.629 |
| 29 13C-1,2,3,6,7,8-Hx... | 1.69e5 | 1.77e5 | 10.0000 | 1.034 | 0.501 | NO | 0.991 | 0.991 | 33.26 | 33.28 | 184.53 | 92.3 | 0.506 |
| 30 13C-2,3,4,6,7,8-Hx... | 1.57e5 | 1.77e5 | 10.0000 | 0.953 | 0.515 | NO | 1.009 | 1.009 | 33.88 | 33.87 | 185.74 | 92.9 | 0.549 |
| 31 13C-1,2,3,7,8,9-Hx... | 1.47e5 | 1.77e5 | 10.0000 | 0.828 | 0.509 | NO | 1.039 | 1.038 | 34.87 | 34.84 | 200.59 | 100.3 | 0.632 |
| 32 13C-1,2,3,4,6,7,8-H... | 1.34e5 | 1.77e5 | 10.0000 | 0.757 | 0.446 | NO | 1.093 | 1.093 | 36.69 | 36.68 | 200.17 | 100.1 | 0.870 |
| 33 13C-1,2,3,4,7,8,9-H... | 1.12e5 | 1.77e5 | 10.0000 | 0.581 | 0.447 | NO | 1.143 | 1.145 | 38.37 | 38.43 | 218.07 | 109.0 | 1.13 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-4.qld

Last Altered: Monday, November 04, 2019 14:34:53 Pacific Standard Time

Printed: Monday, November 04, 2019 14:35:08 Pacific Standard Time

Name: VG7 191021D3_4, Date: 22-OCT-2019, Time: 04:27:22, ID: B9J0143-BLK1 Method Blank,
 Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| Name | IS Avc | WL/Vol | FR | FA | NO | RRT | Prod RT | %Rec | EMF | | | | | |
|---------------------------|--------|--------|---------|-------|-------|-----|---------|-------|-------|-------|--------|-------|--------|--------|
| 34 13C-OCDF | 2.33e5 | 1.77e5 | 10.0000 | 0.689 | 0.928 | NO | 1.233 | 1.233 | 41.40 | 41.40 | 382.34 | 95.6 | 0.411 | |
| 35 37Cl-2,3,7,8-TCDD | 5.02e4 | 1.36e5 | 10.0000 | 1.198 | | | 1.022 | 1.022 | 26.27 | 26.28 | 61.839 | 77.3 | 0.113 | |
| 36 13C-1,2,3,4-TCDD | 1.36e5 | 1.36e5 | 10.0000 | 1.000 | 0.837 | NO | 1.000 | 1.000 | 25.42 | 25.70 | 200.00 | 100.0 | 0.298 | |
| 37 13C-1,2,3,4-TCDF | 2.14e5 | 2.14e5 | 10.0000 | 1.000 | 0.771 | NO | 1.000 | 1.000 | 24.67 | 24.29 | 200.00 | 100.0 | 0.346 | |
| 38 13C-1,2,3,4,6,9-Hx... | 1.77e5 | 1.77e5 | 10.0000 | 1.000 | 0.518 | NO | 1.000 | 1.000 | 33.55 | 33.57 | 200.00 | 100.0 | 0.523 | |
| 39 Total Tetra-Dioxins | | 1.35e5 | 10.0000 | 0.901 | | | | | 0.000 | | 25.50 | | 0.6833 | 0.0416 |
| 40 Total Penta-Dioxins | | 1.15e5 | 10.0000 | 0.872 | | | | | 0.000 | | 30.00 | | 0.0975 | 0.0448 |
| 41 Total Hexa-Dioxins | | 0.00e0 | 10.0000 | 0.976 | | | | | 0.000 | | 33.80 | | 0.180 | 0.0010 |
| 42 Total Hepta-Dioxins | | 1.23e5 | 10.0000 | 0.989 | | | | | 0.000 | | 37.75 | | 0.121 | 0.0575 |
| 43 Total Tetra-Furans | | 1.89e5 | 10.0000 | 0.943 | | | | | 0.000 | | 24.00 | | 0.0880 | 0.0454 |
| 44 1st Func. Penta-Fur... | | 0.00e0 | 10.0000 | 0.940 | | | | | 0.000 | | 27.63 | | 0.0688 | 0.0335 |
| 45 Total Penta-Furans | | 0.00e0 | 10.0000 | 0.940 | | | | | 0.000 | | 30.00 | | | 0.0410 |
| 46 Total Hexa-Furans | | 0.00e0 | 10.0000 | 1.078 | | | | | 0.000 | | 33.00 | | 0.105 | 0.0437 |
| 47 Total Hepta-Furans | | 0.00e0 | 10.0000 | 1.135 | | | | | 0.000 | | 37.75 | | 0.103 | 0.0506 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-4.qld

Last Altered: Monday, November 04, 2019 14:34:53 Pacific Standard Time

Printed: Monday, November 04, 2019 14:35:08 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 24 Oct 2019 11:22:52

Calibration: 04 Nov 2019 12:27:29

Name: VG7 191021D3_4, Date: 22-OCT-2019, Time: 04:27:22, ID: B9J0143-BLK1 Method Blank,
Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hexa-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hepta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Tetra-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Furans function 1

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-4.qld

Last Altered: Monday, November 04, 2019 14:34:53 Pacific Standard Time

Printed: Monday, November 04, 2019 14:35:08 Pacific Standard Time

Name: VG7 191021D3_4, Date: 22-OCT-2019, Time: 04:27:22, ID: B9J0143-BLK1 Method Blank,

Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Hexa-Furans

| # | Name | WY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPG |
|---|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | | |

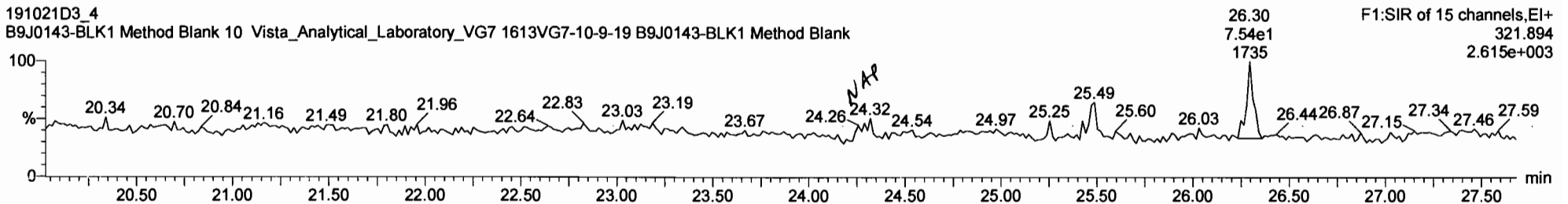
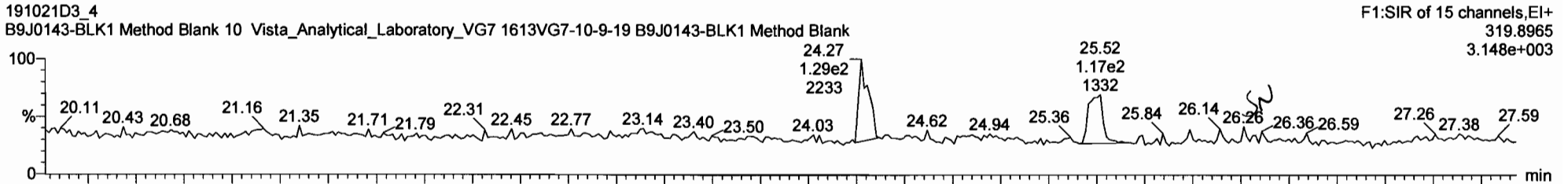
Hepta-Furans

| # | Name | WY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPG |
|---|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | | |

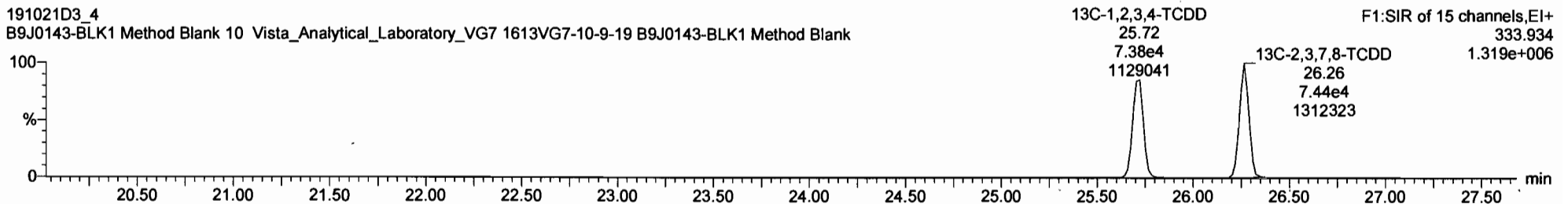
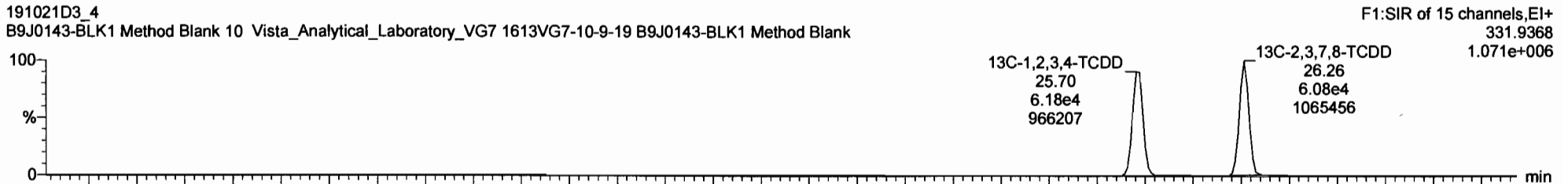
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Calibration: 04 Nov 2019 12:08:49

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Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins



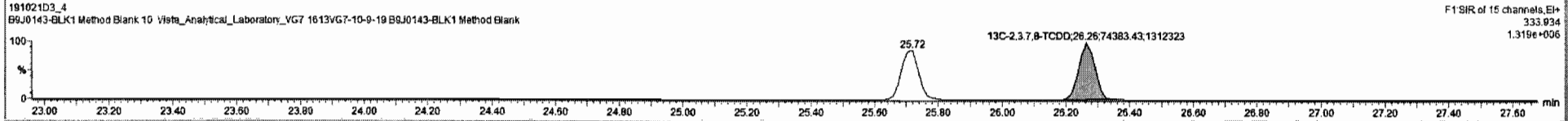
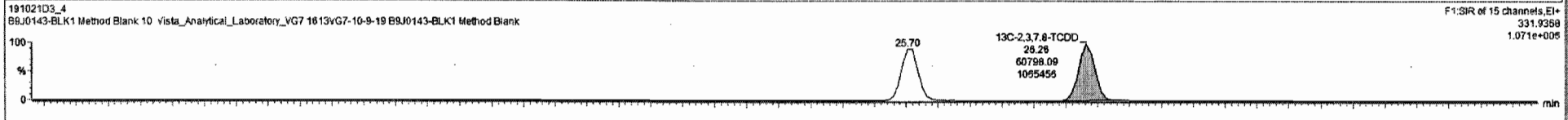
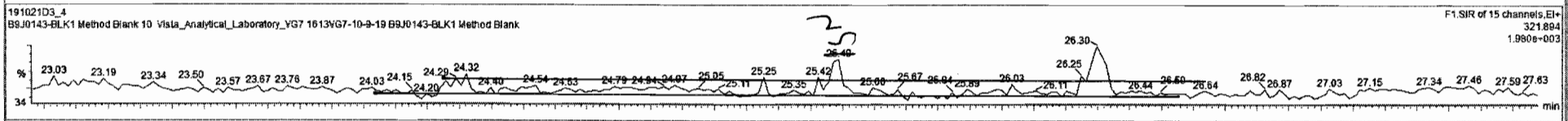
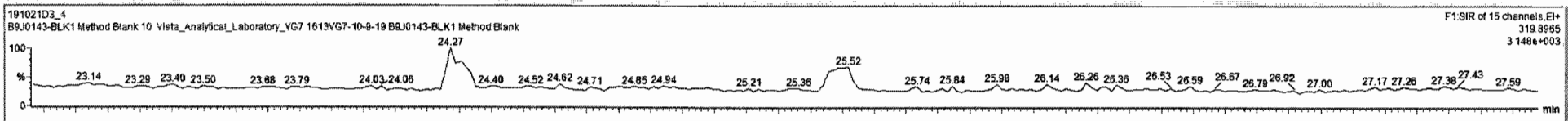
13C-2,3,7,8-TCDD



191021D3_4 - B9J0143-BLK1 Method Blank - B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS# | RA | n/y | RPF | wt/vol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 34 | 13C-OCDF | 2.33e5 | 1.77e5 | 38 | 0.93 | NO | 0.889 | 10.000 | 41.40 | 41.40 | 1.233 | 1.233 | NO | 382.3 | 96.6 | 0.411 | |
| 35 | 37Cl-2,3,7,8-TCDD | 5.02e4 | 1.36e5 | 38 | | | 1.198 | 10.000 | 26.27 | 26.28 | 1.022 | 1.022 | NO | 61.84 | 77.3 | 0.113 | |
| 36 | 13C-1,2,3,4-TCDD | 1.36e5 | 1.36e5 | 36 | 0.84 | NO | 1.000 | 10.000 | 25.42 | 25.70 | 1.000 | 1.000 | NO | 200.0 | 100 | 0.298 | |
| 37 | 13C-1,2,3,4-TCDF | 2.14e5 | 2.14e5 | 37 | 0.77 | NO | 1.000 | 10.000 | 24.87 | 24.29 | 1.000 | 1.000 | NO | 200.0 | 100 | 0.348 | |
| 38 | 13C-1,2,3,4,6,8-HxCDF | 1.77e5 | 1.77e5 | 38 | 0.52 | NO | 1.000 | 10.000 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 200.0 | 100 | 0.523 | |
| 39 | Total Tetra-Dioxins | 1.35e5 | | | | | 0.901 | 10.000 | 25.40 | | | 0.000 | NO | | | 0.0418 | |
| 40 | Total Penta-Dioxins | 1.15e5 | | | | | 0.872 | 10.000 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.0448 | 2.250 |
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.976 | 10.000 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.0610 | 1.713 |
| 42 | Total Hepta-Dioxins | 1.23e5 | | | | | 0.589 | 10.000 | 37.75 | | | 0.000 | NO | 0.0000 | | 0.0575 | 0.6130 |
| 43 | Total Tetra-Furans | 1.89e5 | | | | | 0.943 | 10.000 | 24.00 | | | 0.000 | NO | | | 0.0454 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.000 | 27.63 | | | 0.000 | NO | | | 0.0335 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.000 | 30.00 | | | 0.000 | NO | | | 0.0410 | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 0.938 | 10.000 | 33.80 | | | 0.000 | NO | | | 0.0410 | |

| # | Name | Pred RT | RT | Int Resp | RI2 Resp | Pred RA | RA | n/y | EMPC | Conc. |
|---|------|---------|----|----------|----------|---------|----|-----|------|-------|
| 1 | | | | | | | | | | |

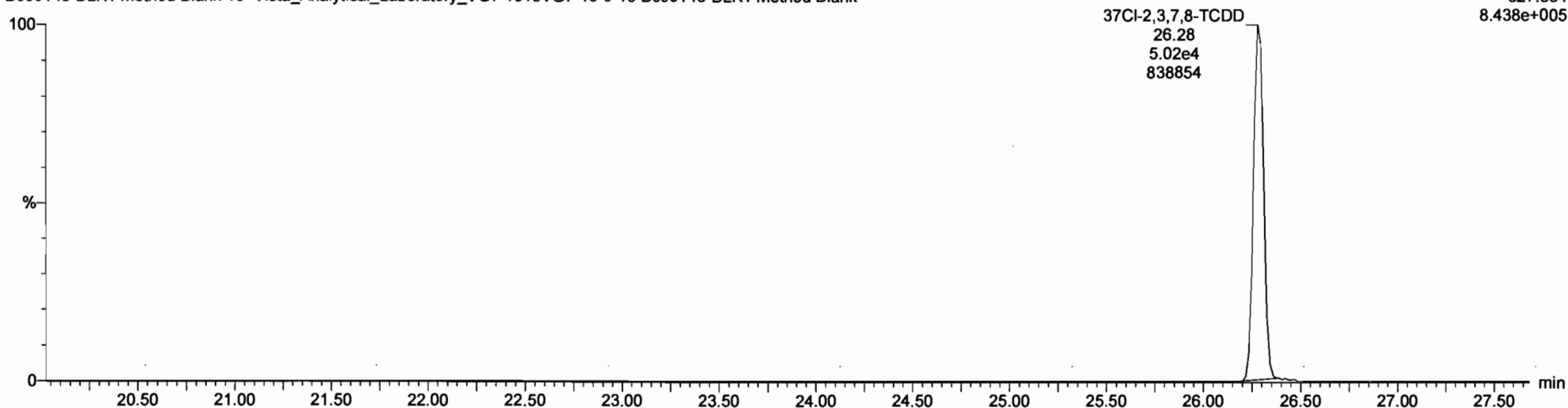


Name: VG7 191021D3_4, Date: 22-OCT-2019, Time: 04:27:22, ID: B9J0143-BLK1 Method Blank,
Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

37Cl-2,3,7,8-TCDD

191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

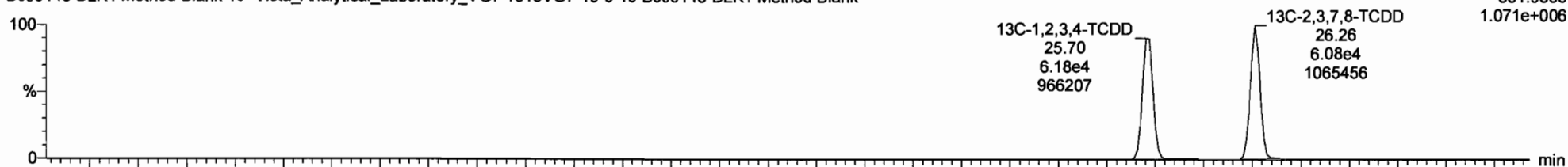
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327.884
8.438e+005



13C-1,2,3,4-TCDD

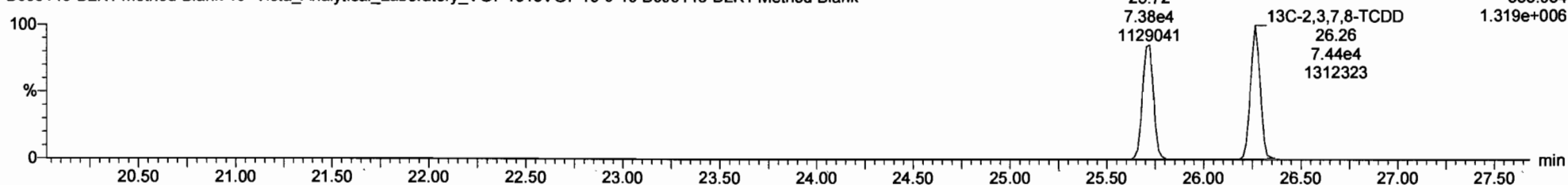
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F1:SIR of 15 channels,EI+
331.9368
1.071e+006



191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F1:SIR of 15 channels,EI+
333.934
1.319e+006



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

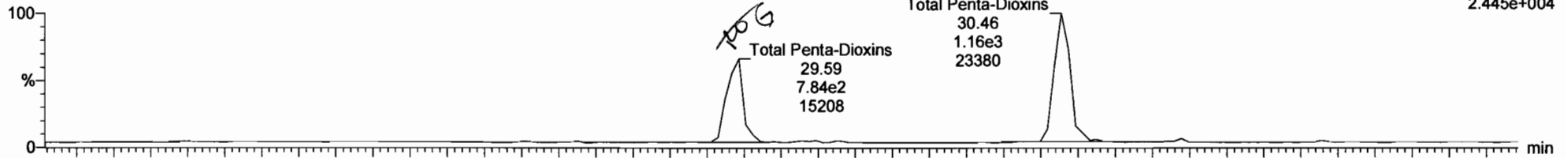
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Total Penta-Dioxins

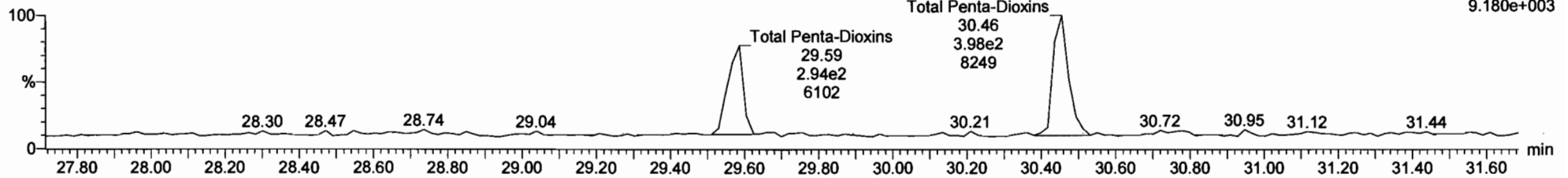
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F2:SIR of 17 channels, EI+
353.8576
2.445e+004



191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F2:SIR of 17 channels, EI+
355.8550
9.180e+003



13C-1,2,3,7,8-PeCDD

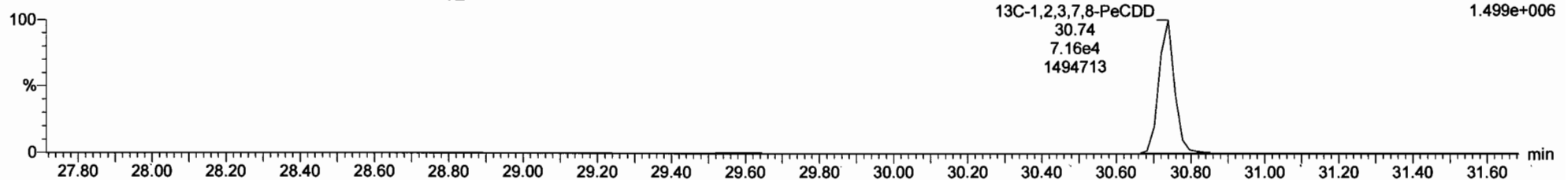
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365.8978
9.362e+005



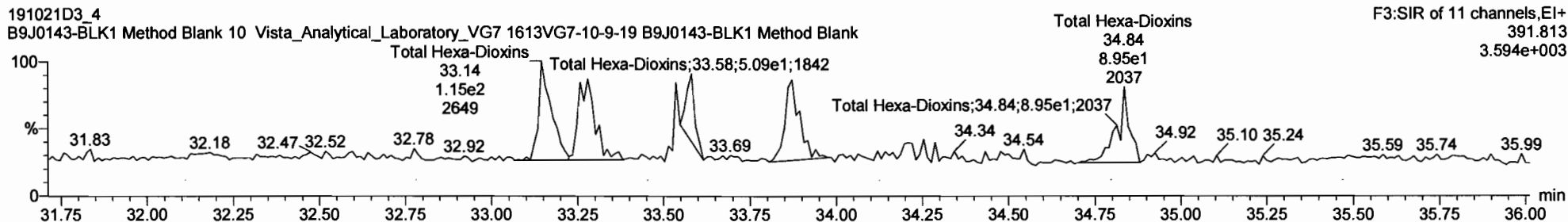
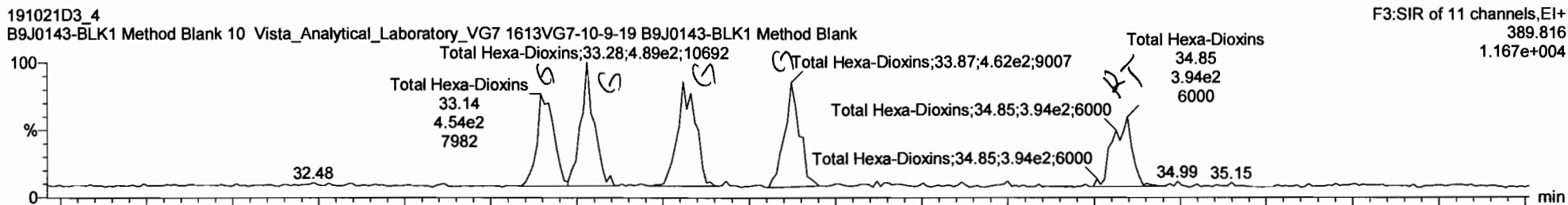
191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F2:SIR of 17 channels, EI+
367.895
1.499e+006

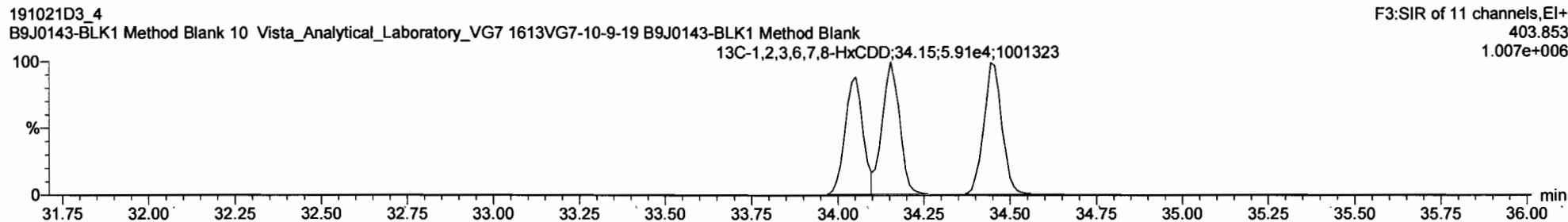
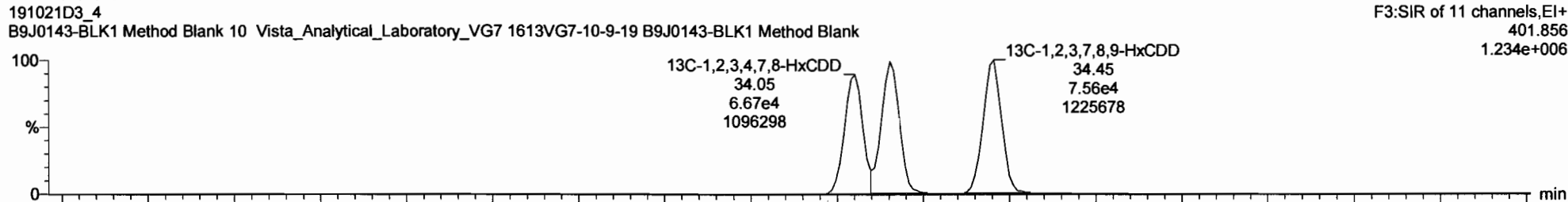


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 Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hexa-Dioxins



13C-1,2,3,4,7,8-HxCDD



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

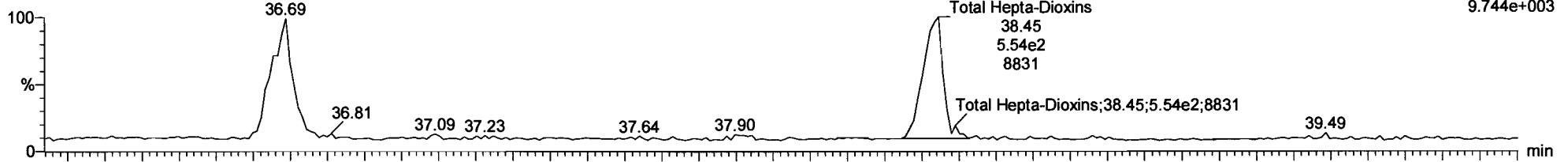
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Total Hepta-Dioxins

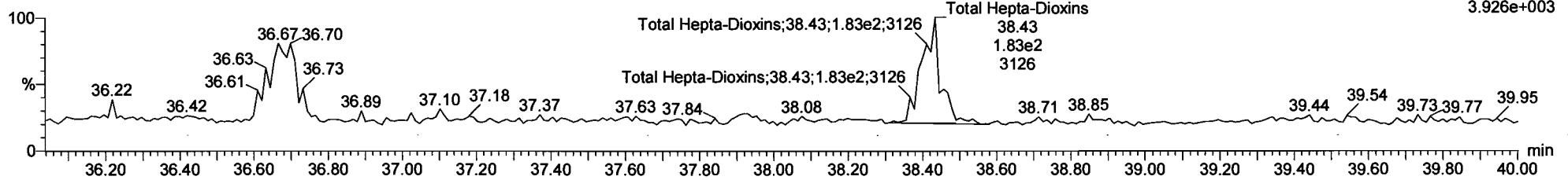
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F4:SIR of 11 channels,EI+
423.777
9.744e+003



191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

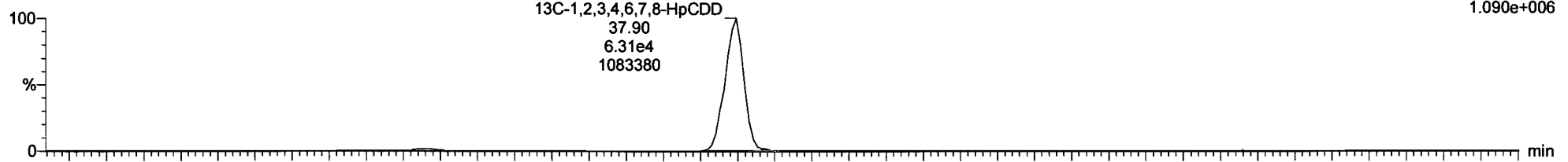
F4:SIR of 11 channels,EI+
425.774
3.926e+003



13C-1,2,3,4,6,7,8-HpCDD

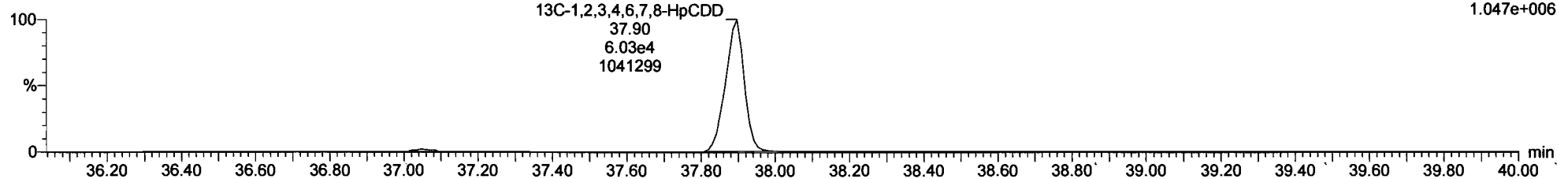
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F4:SIR of 11 channels,EI+
435.817
1.090e+006



191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F4:SIR of 11 channels,EI+
437.814
1.047e+006

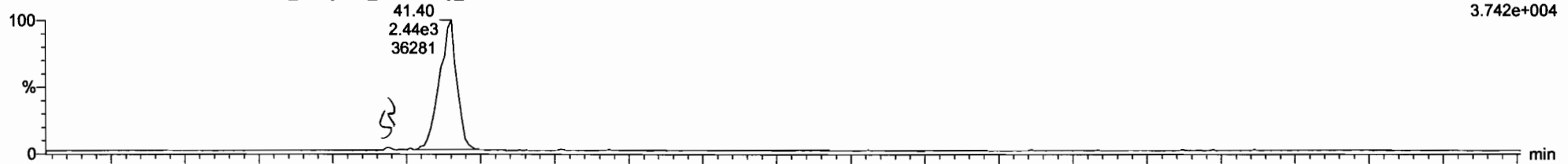


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OCDD

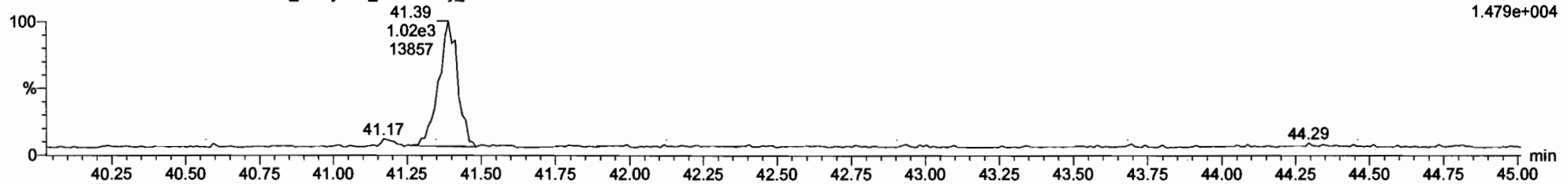
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F5:SIR of 11 channels,EI+
457.738
3.742e+004



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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

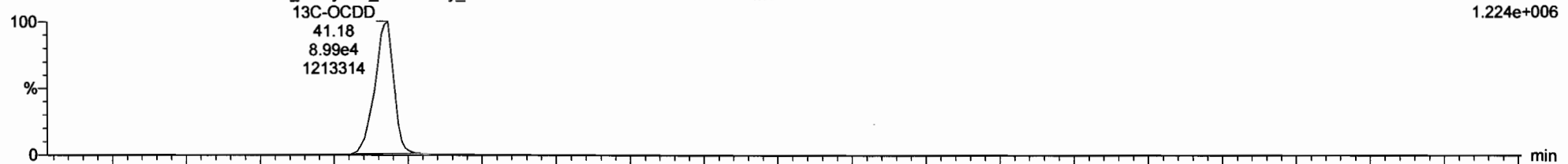
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459.735
1.479e+004



13C-OCDD

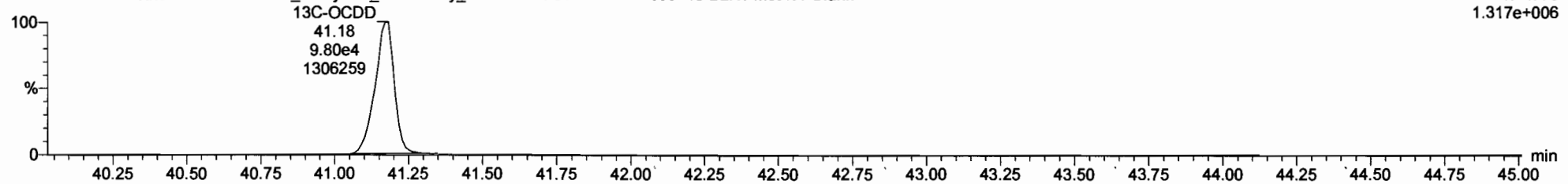
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B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F5:SIR of 11 channels,EI+
469.778
1.224e+006



191021D3_4
B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BLK1 Method Blank

F5:SIR of 11 channels,EI+
471.775
1.317e+006



Vista Analytical Laboratory

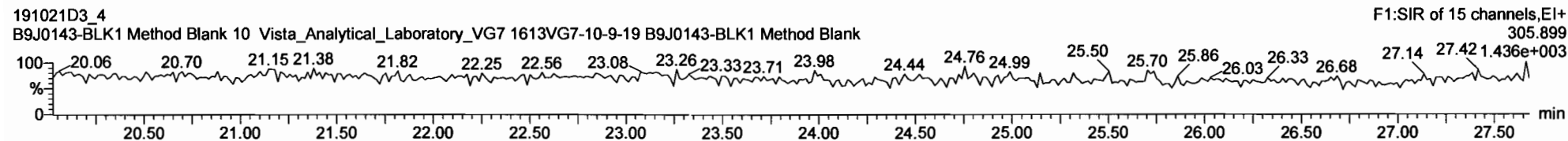
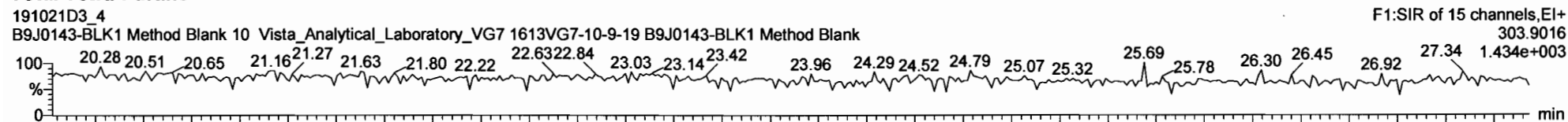
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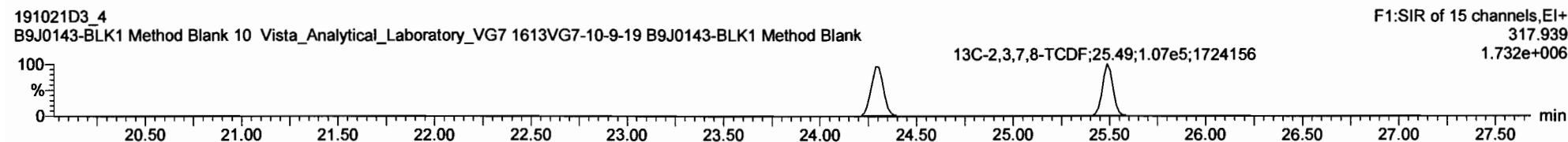
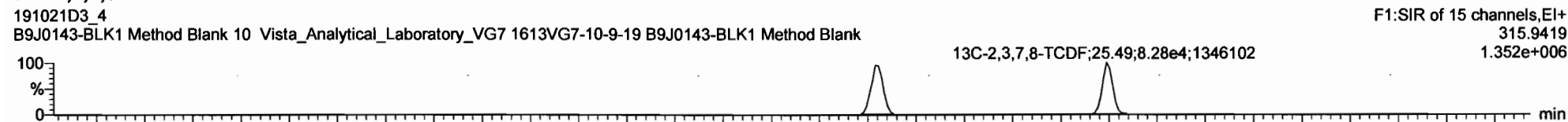
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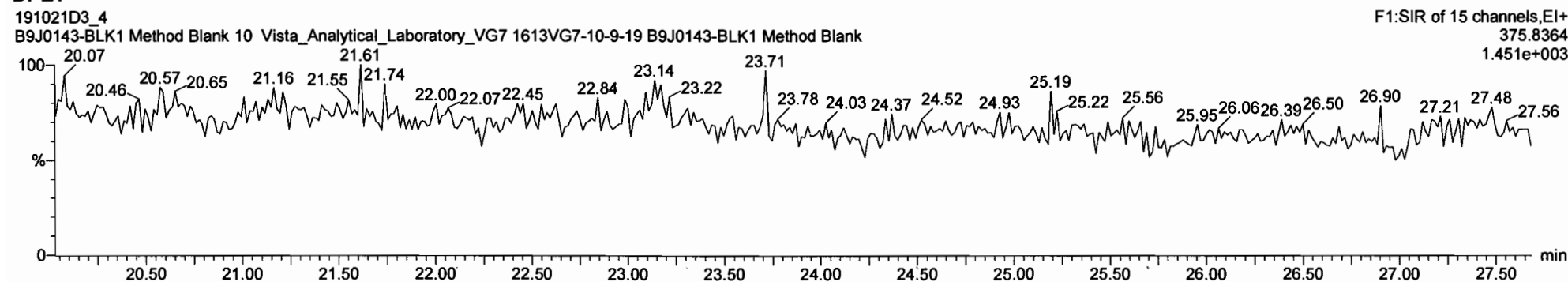
Total Tetra-Furans



13C-2,3,7,8-TCDF

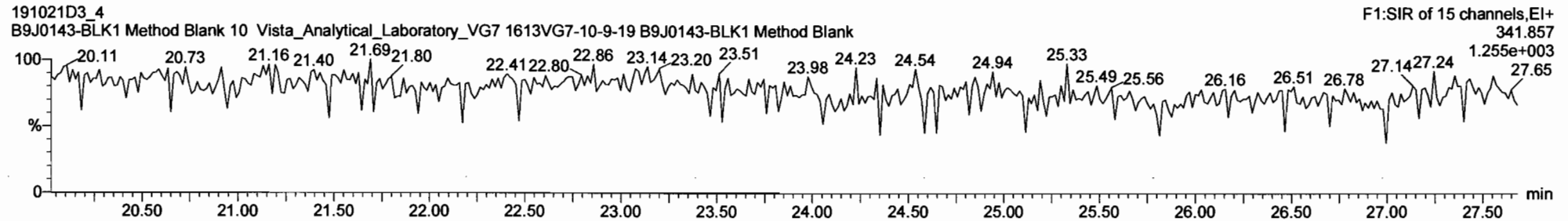
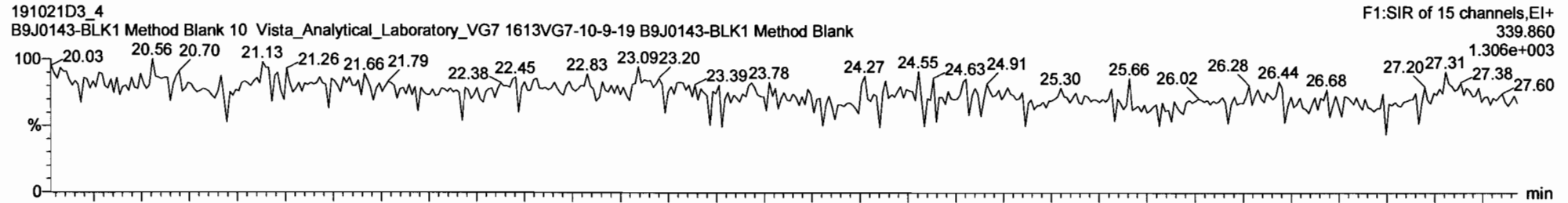


DPE1

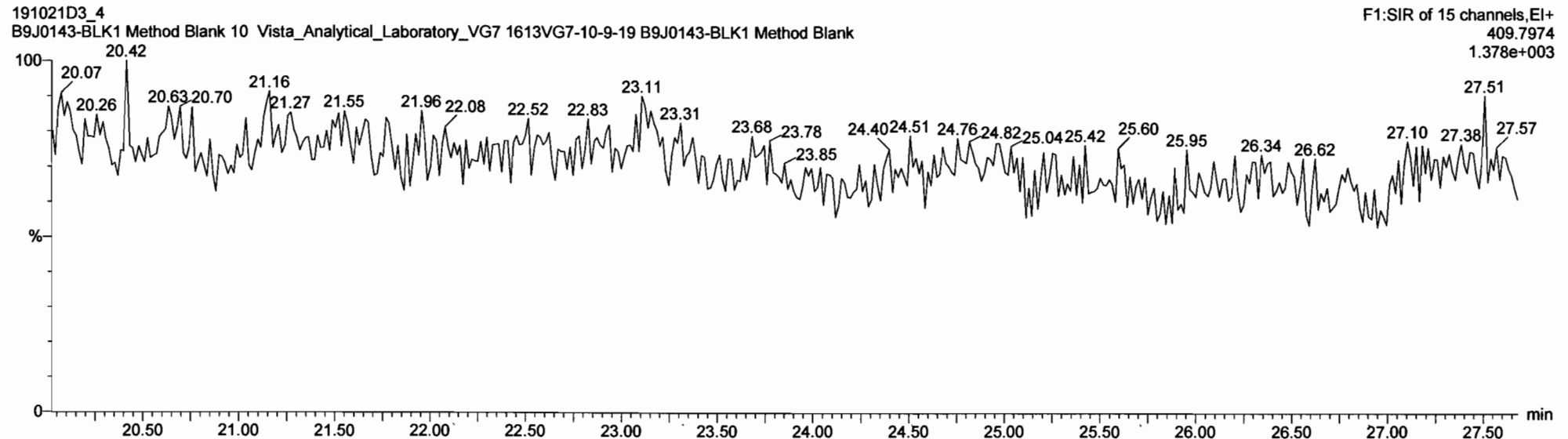


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1st Func. Penta-Furans

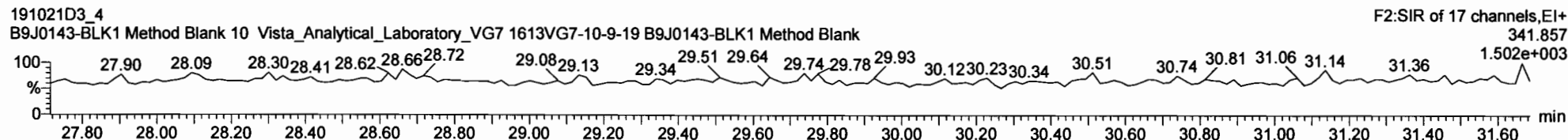
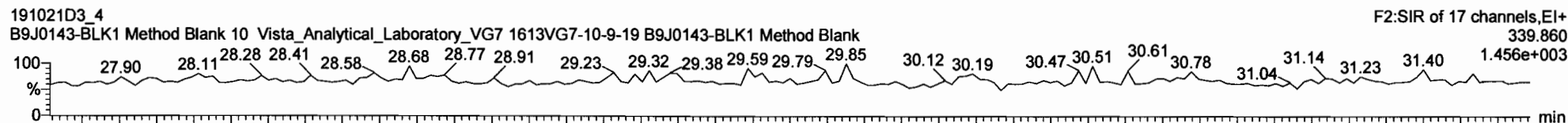


DPE6

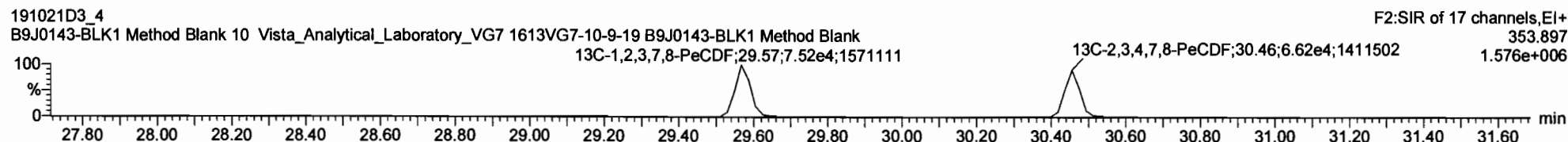
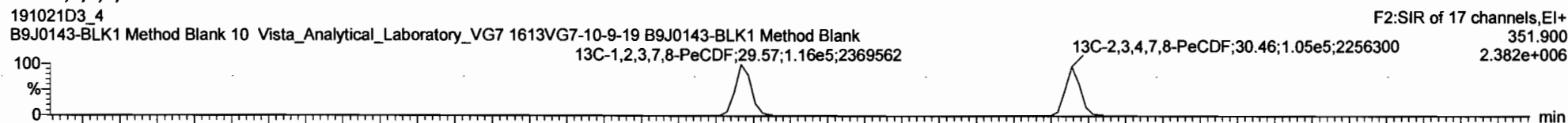


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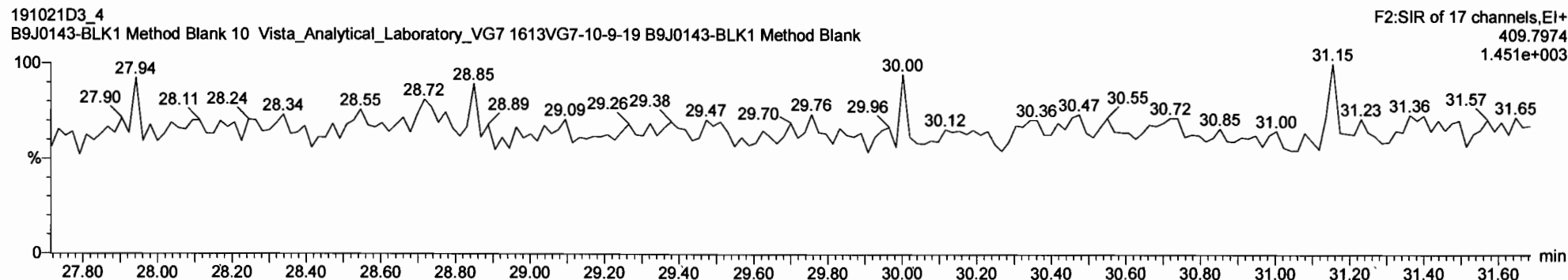
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

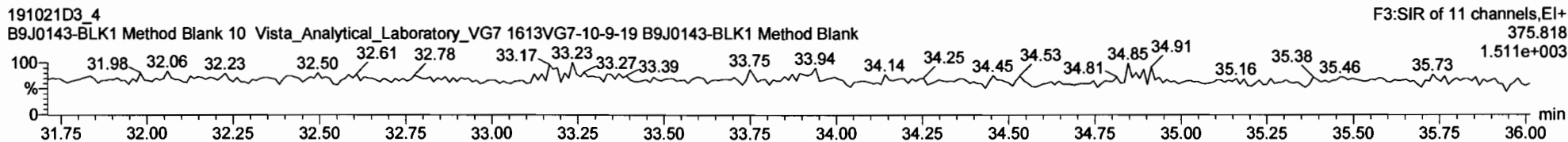
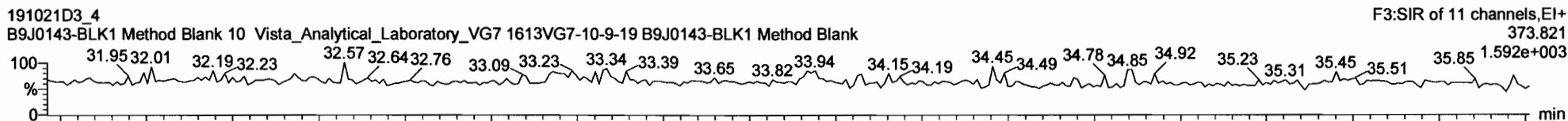


DPE2

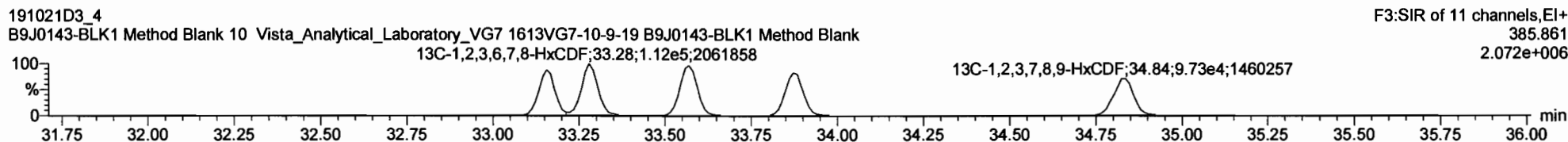
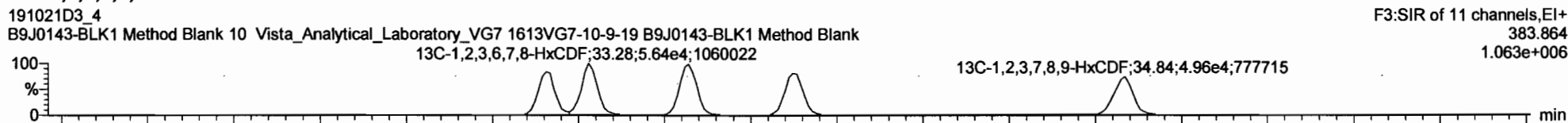


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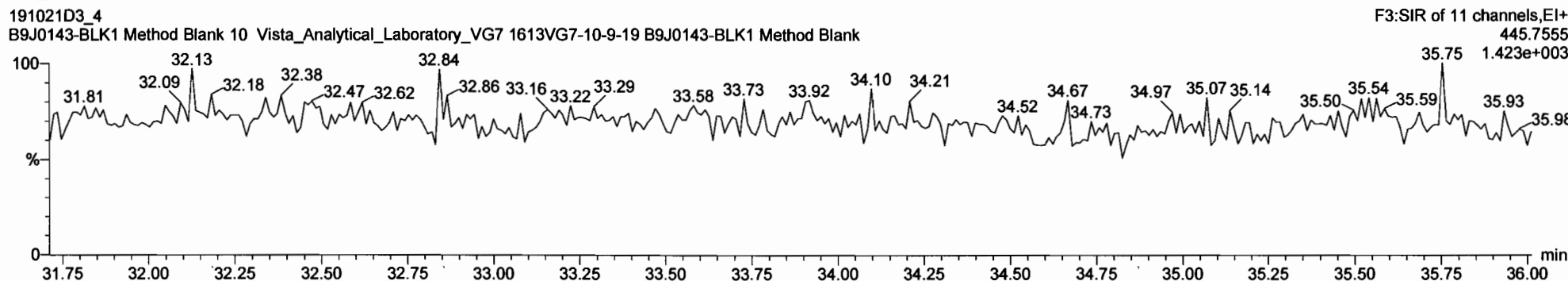
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

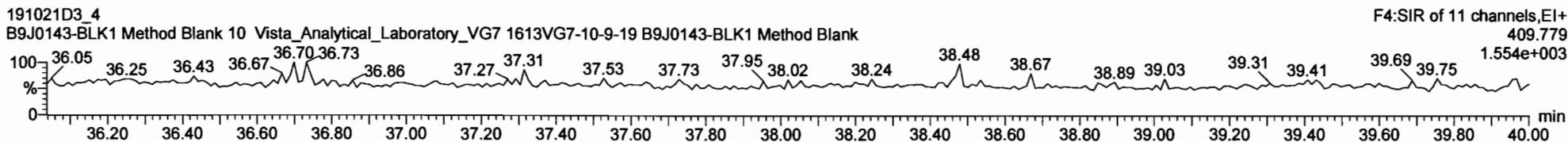
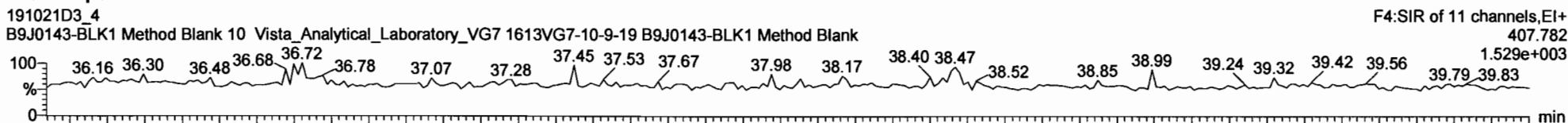


DPE3

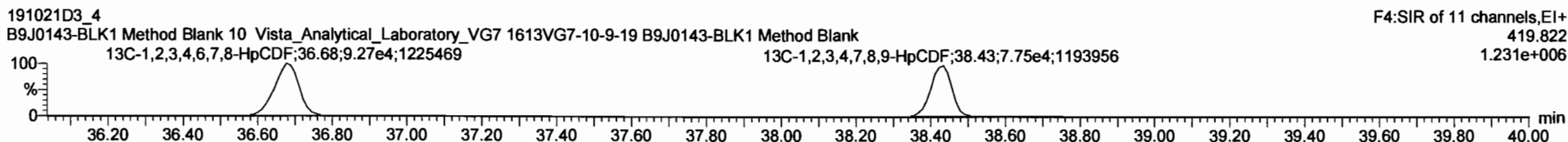
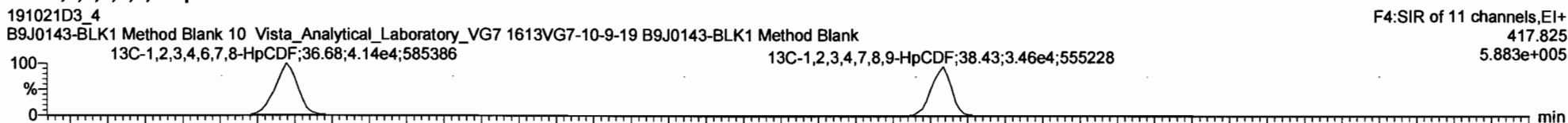


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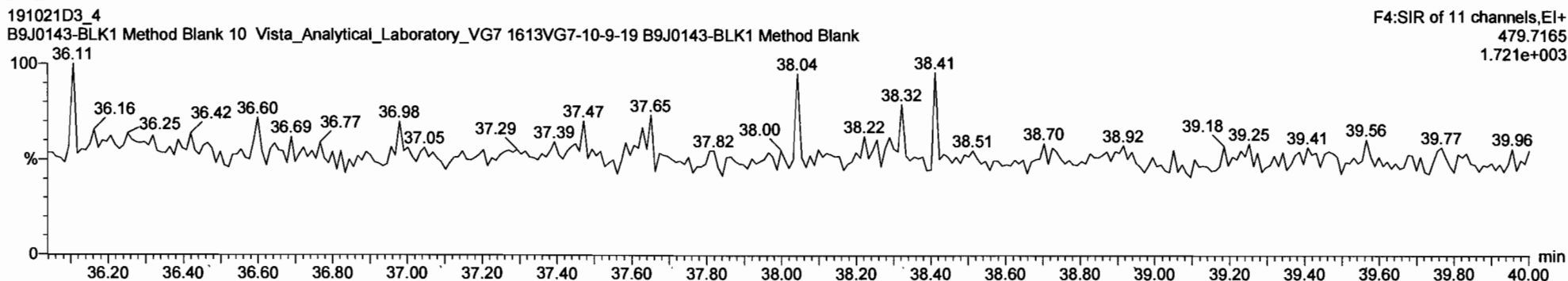
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



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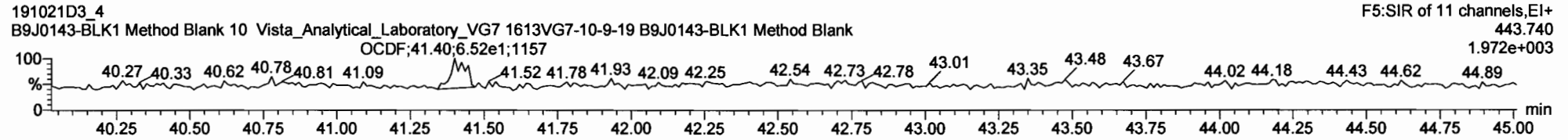
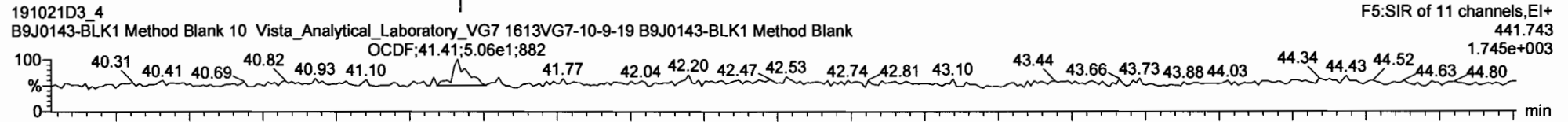
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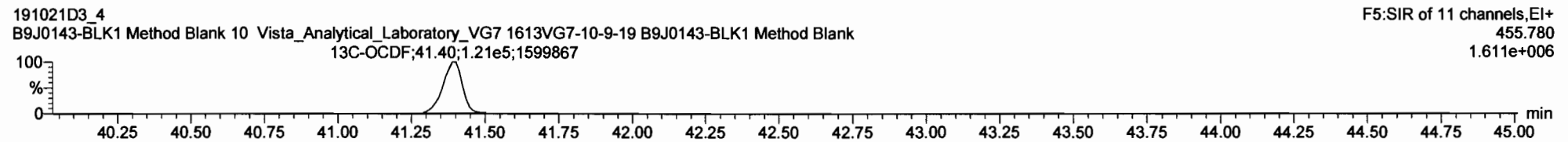
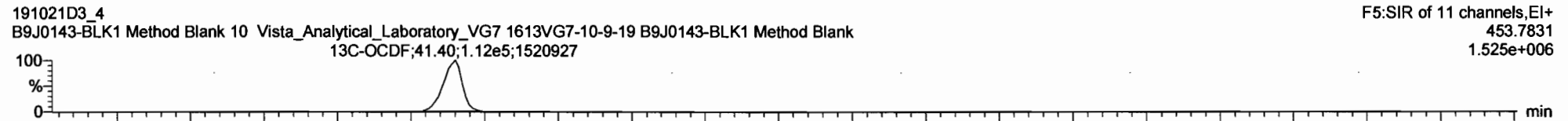
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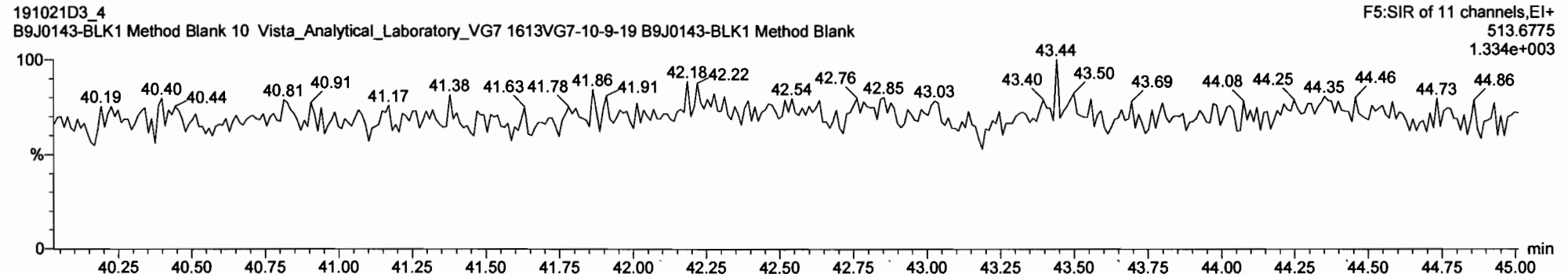
OCDF



13C-OCDF

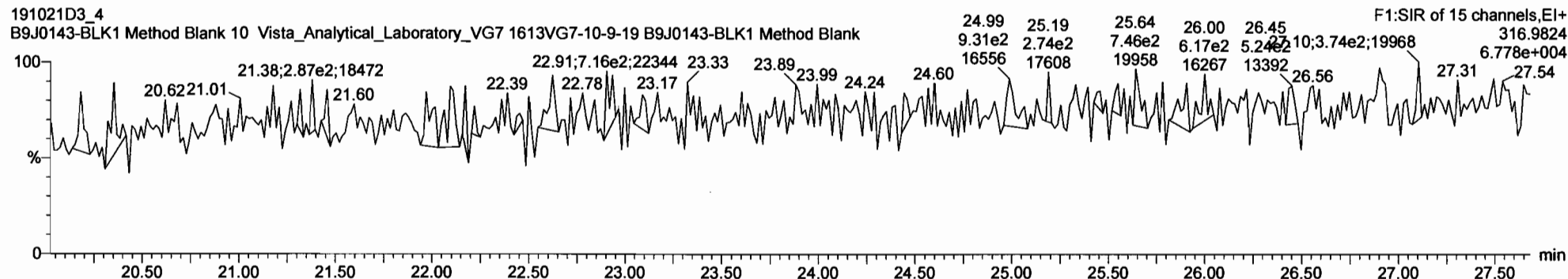


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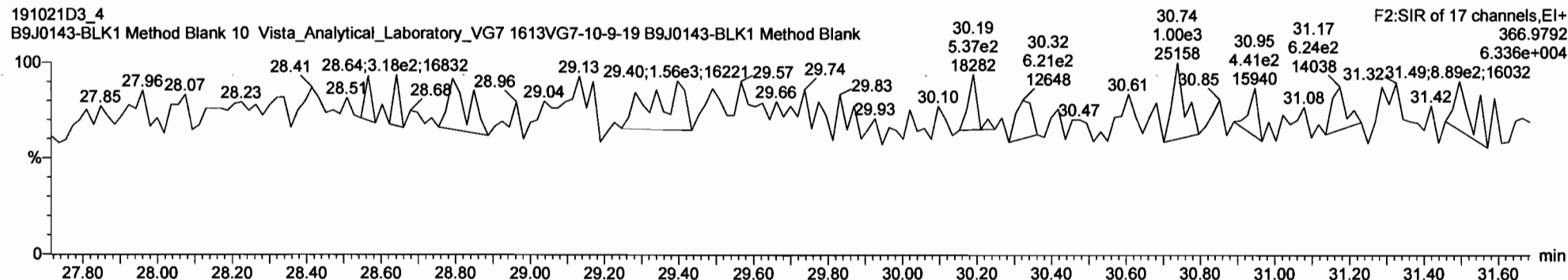


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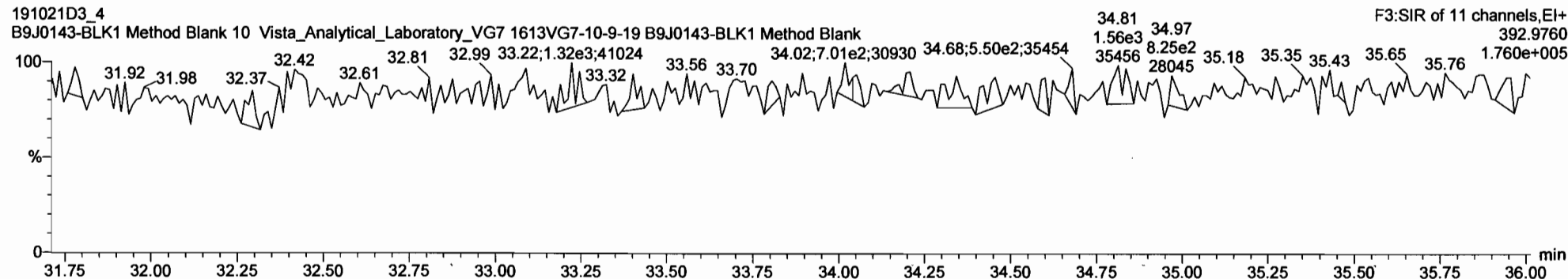
PFK1



PFK2



PFK3



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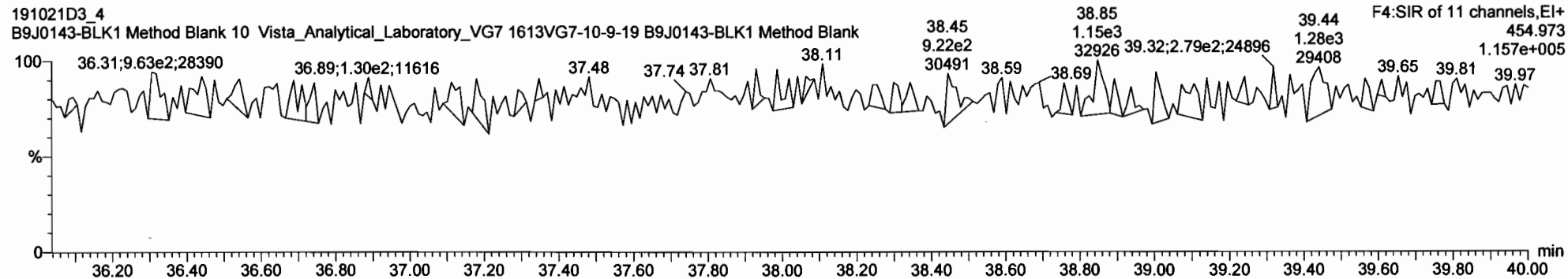
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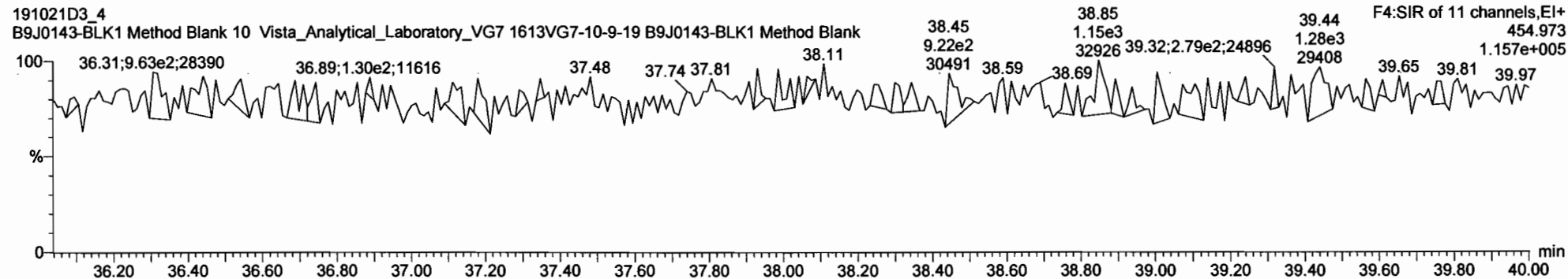
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

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Description: B9J0143-BLK1 Method Blank 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-2.qld

Last Altered: Monday, November 04, 2019 12:16:45 Pacific Standard Time

Printed: Monday, November 04, 2019 12:43:44 Pacific Standard Time

HL 11-4-19

CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 24 Oct 2019 11:22:52

Calibration: 04-Nov-2019 12:16:45

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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

| # | Name | Area | IS Area | WL Vd | RRF | R _s | Y/N | Q | RP | Pred RT | RT | %R | E | D |
|----|------------------------|--------|---------|---------|-------|----------------|-----|-------|-------|---------|-------|--------|-------|-------|
| 1 | 2,3,7,8-TCDD | 9.41e3 | 1.02e5 | 10.0000 | 0.905 | 0.833 | NO | 1.001 | 1.001 | 26.31 | 26.29 | 20.355 | 20.4 | 0.175 |
| 2 | 1,2,3,7,8-PeCDD | 5.21e4 | 1.12e5 | 10.0000 | 0.903 | 0.610 | NO | 1.001 | 1.001 | 30.76 | 30.76 | 102.99 | 103 | 0.204 |
| 3 | 1,2,3,4,7,8-HxCDD | 5.83e4 | 1.11e5 | 10.0000 | 1.101 | 1.193 | NO | 1.000 | 1.001 | 34.06 | 34.07 | 95.020 | 95.0 | 0.325 |
| 4 | 1,2,3,6,7,8-HxCDD | 5.97e4 | 1.25e5 | 10.0000 | 0.939 | 1.212 | NO | 1.000 | 1.000 | 34.16 | 34.17 | 101.82 | 102 | 0.331 |
| 5 | 1,2,3,7,8,9-HxCDD | 6.81e4 | 1.38e5 | 10.0000 | 0.961 | 1.219 | NO | 1.001 | 1.001 | 34.49 | 34.48 | 102.34 | 102 | 0.302 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 6.34e4 | 1.28e5 | 10.0000 | 0.979 | 1.033 | NO | 1.000 | 1.000 | 37.91 | 37.91 | 100.85 | 101 | 0.364 |
| 7 | OCDD | 1.01e5 | 2.09e5 | 10.0000 | 0.959 | 0.936 | NO | 1.000 | 1.001 | 41.17 | 41.19 | 203.01 | 203 | 0.322 |
| 8 | 2,3,7,8-TCDF | 1.26e4 | 1.32e5 | 10.0000 | 0.950 | 0.796 | NO | 1.001 | 1.001 | 25.53 | 25.52 | 20.119 | 20.1 | 0.187 |
| 9 | 1,2,3,7,8-PeCDF | 7.74e4 | 1.55e5 | 10.0000 | 0.960 | 1.585 | NO | 1.001 | 1.001 | 29.61 | 29.60 | 103.75 | 104 | 0.183 |
| 10 | 2,3,4,7,8-PeCDF | 7.76e4 | 1.47e5 | 10.0000 | 1.015 | 1.551 | NO | 1.001 | 1.000 | 30.50 | 30.47 | 104.38 | 104 | 0.194 |
| 11 | 1,2,3,4,7,8-HxCDF | 7.93e4 | 1.37e5 | 10.0000 | 1.177 | 1.214 | NO | 1.000 | 1.000 | 33.17 | 33.18 | 98.158 | 98.2 | 0.316 |
| 12 | 1,2,3,6,7,8-HxCDF | 8.76e4 | 1.65e5 | 10.0000 | 1.069 | 1.218 | NO | 1.000 | 1.000 | 33.30 | 33.30 | 99.082 | 99.1 | 0.291 |
| 13 | 2,3,4,6,7,8-HxCDF | 8.93e4 | 1.57e5 | 10.0000 | 1.114 | 1.196 | NO | 1.001 | 1.001 | 33.91 | 33.89 | 102.29 | 102 | 0.319 |
| 14 | 1,2,3,7,8,9-HxCDF | 7.36e4 | 1.39e5 | 10.0000 | 1.062 | 1.250 | NO | 1.000 | 1.000 | 34.83 | 34.85 | 99.995 | 100 | 0.402 |
| 15 | 1,2,3,4,6,7,8-HpCDF | 8.15e4 | 1.46e5 | 10.0000 | 1.128 | 1.040 | NO | 1.001 | 1.000 | 36.72 | 36.70 | 99.034 | 99.0 | 0.388 |
| 16 | 1,2,3,4,7,8,9-HpCDF | 7.21e4 | 1.15e5 | 10.0000 | 1.280 | 1.008 | NO | 1.000 | 1.000 | 38.43 | 38.44 | 97.616 | 97.6 | 0.345 |
| 17 | OCDF | 1.18e5 | 2.51e5 | 10.0000 | 0.947 | 0.922 | NO | 1.000 | 1.000 | 41.40 | 41.41 | 199.03 | 199 | 0.276 |
| 18 | 13C-2,3,7,8-TCDD | 1.02e5 | 1.60e5 | 10.0000 | 1.095 | 0.790 | NO | 1.021 | 1.022 | 26.26 | 26.28 | 116.82 | 58.4 | 0.351 |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.12e5 | 1.60e5 | 10.0000 | 0.881 | 0.646 | NO | 1.187 | 1.195 | 30.52 | 30.74 | 159.35 | 79.7 | 0.282 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.11e5 | 1.96e5 | 10.0000 | 0.642 | 1.269 | NO | 1.014 | 1.014 | 34.04 | 34.05 | 177.51 | 88.8 | 0.622 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.25e5 | 1.96e5 | 10.0000 | 0.856 | 1.239 | NO | 1.017 | 1.018 | 34.15 | 34.16 | 149.32 | 74.7 | 0.467 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.38e5 | 1.96e5 | 10.0000 | 0.807 | 1.220 | NO | 1.026 | 1.026 | 34.45 | 34.45 | 175.49 | 87.7 | 0.495 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.28e5 | 1.96e5 | 10.0000 | 0.654 | 1.018 | NO | 1.126 | 1.129 | 37.81 | 37.90 | 200.90 | 100.4 | 0.774 |
| 24 | 13C-OCDD | 2.09e5 | 1.96e5 | 10.0000 | 0.580 | 0.917 | NO | 1.226 | 1.226 | 41.16 | 41.17 | 368.05 | 92.0 | 0.488 |
| 25 | 13C-2,3,7,8-TCDF | 1.32e5 | 2.52e5 | 10.0000 | 1.035 | 0.797 | NO | 0.993 | 0.992 | 25.55 | 25.50 | 101.40 | 50.7 | 0.334 |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.55e5 | 2.52e5 | 10.0000 | 0.854 | 1.589 | NO | 1.143 | 1.150 | 29.40 | 29.58 | 144.50 | 72.3 | 0.383 |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.47e5 | 2.52e5 | 10.0000 | 0.847 | 1.551 | NO | 1.176 | 1.185 | 30.25 | 30.47 | 137.49 | 68.7 | 0.387 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.37e5 | 1.96e5 | 10.0000 | 0.832 | 0.512 | NO | 0.987 | 0.988 | 33.14 | 33.17 | 168.82 | 84.4 | 0.617 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.65e5 | 1.96e5 | 10.0000 | 1.034 | 0.532 | NO | 0.991 | 0.992 | 33.26 | 33.29 | 163.50 | 81.7 | 0.496 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.57e5 | 1.96e5 | 10.0000 | 0.953 | 0.502 | NO | 1.009 | 1.009 | 33.88 | 33.87 | 168.17 | 84.1 | 0.539 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.39e5 | 1.96e5 | 10.0000 | 0.828 | 0.511 | NO | 1.039 | 1.038 | 34.87 | 34.83 | 171.39 | 85.7 | 0.620 |
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.46e5 | 1.96e5 | 10.0000 | 0.757 | 0.459 | NO | 1.093 | 1.093 | 36.68 | 36.69 | 197.11 | 98.6 | 0.669 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.15e5 | 1.96e5 | 10.0000 | 0.581 | 0.441 | NO | 1.143 | 1.145 | 38.37 | 38.43 | 202.95 | 101.5 | 0.872 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-2.qld

Last Altered: Monday, November 04, 2019 12:16:45 Pacific Standard Time

Printed: Monday, November 04, 2019 12:43:44 Pacific Standard Time

Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
 Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | Wt Vol | CP | RA | Y/N | Pred... | RRT | Prod... | FT | Conc | % | EMPC | DL |
|----|-----------------------|--------|---------|---------|-------|-------|-----|---------|-------|---------|-------|--------|-------|------|--------|
| 34 | 13C-OCDF | 2.51e5 | 1.96e5 | 10.0000 | 0.689 | 0.914 | NO | 1.233 | 1.233 | 41.40 | 41.40 | 372.55 | 93.1 | | 0.430 |
| 35 | 37Cl-2,3,7,8-TCDD | 4.00e4 | 1.60e5 | 10.0000 | 1.198 | | | 1.022 | 1.022 | 26.28 | 26.29 | 41.882 | 52.4 | | 0.0598 |
| 36 | 13C-1,2,3,4-TCDD | 1.60e5 | 1.60e5 | 10.0000 | 1.000 | 0.806 | NO | 1.000 | 1.000 | 25.42 | 25.72 | 200.00 | 100.0 | | 0.384 |
| 37 | 13C-1,2,3,4-TCDF | 2.52e5 | 2.52e5 | 10.0000 | 1.000 | 0.812 | NO | 1.000 | 1.000 | 24.67 | 24.32 | 200.00 | 100.0 | | 0.345 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.96e5 | 1.96e5 | 10.0000 | 1.000 | 0.517 | NO | 1.000 | 1.000 | 33.55 | 33.57 | 200.00 | 100.0 | | 0.514 |

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:09:45 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 24 Oct 2019 11:22:52

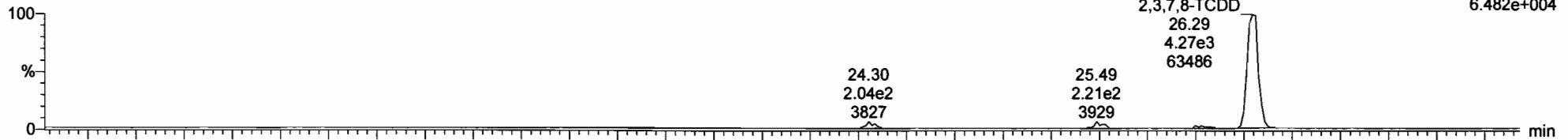
Calibration: 04 Nov 2019 12:08:49

Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR, Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins

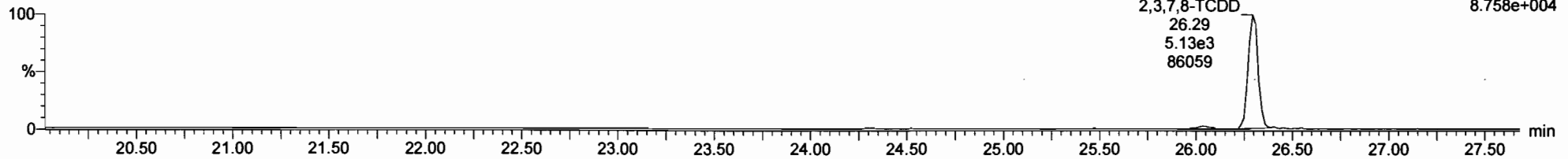
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
319.8965
6.482e+004



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

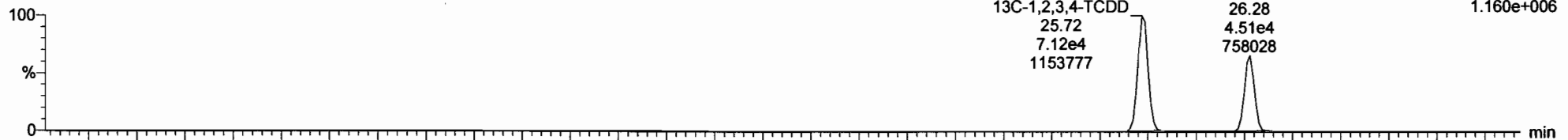
F1:SIR of 15 channels,EI+
321.894
8.758e+004



13C-2,3,7,8-TCDD

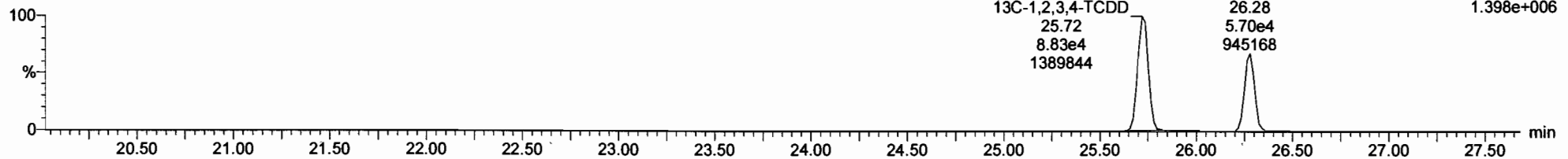
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
331.9368
1.160e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
333.934
1.398e+006

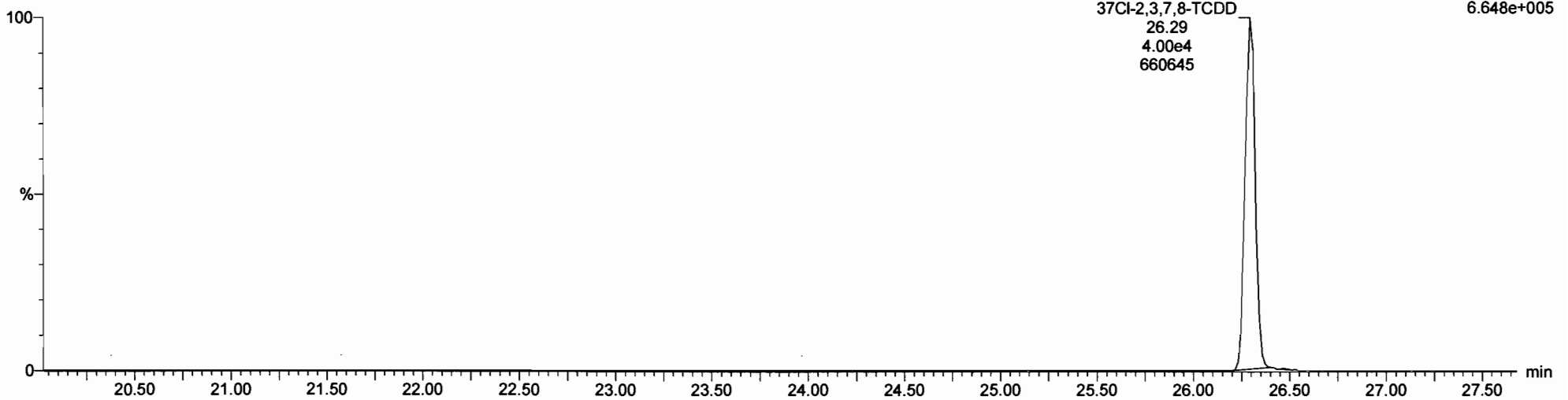


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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

37Cl-2,3,7,8-TCDD

191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
327.884
6.648e+005



13C-1,2,3,4-TCDD

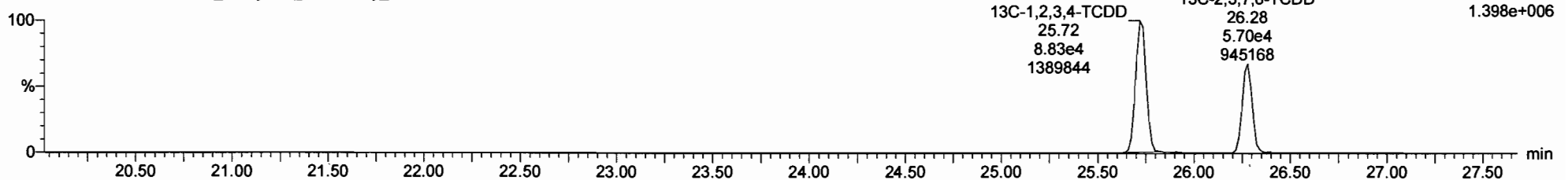
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F1:SIR of 15 channels,EI+
331.9368
1.160e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
333.934
1.398e+006



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

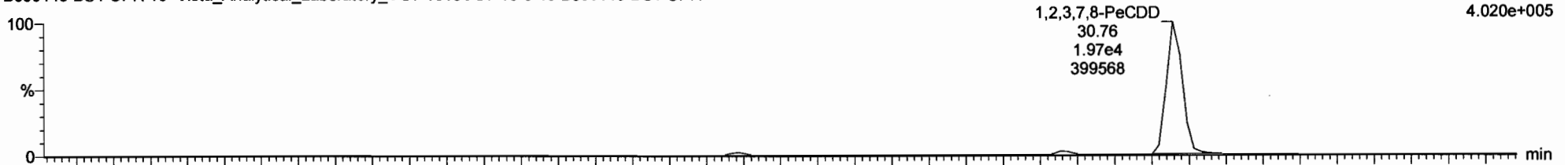
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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Penta-Dioxins

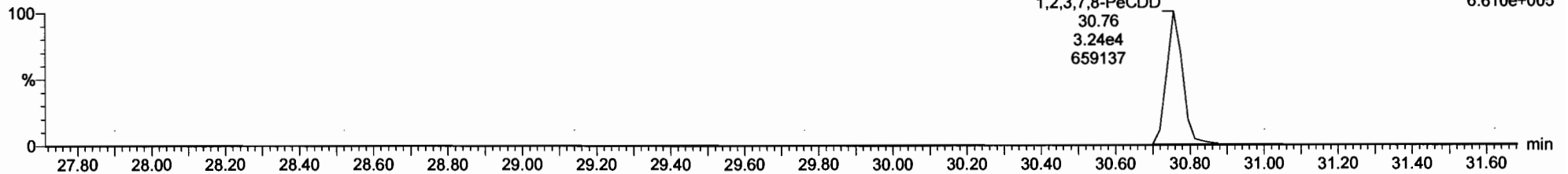
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F2:SIR of 17 channels,EI+
353.8576
4.020e+005



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F2:SIR of 17 channels,EI+
355.8550
6.610e+005



13C-1,2,3,7,8-PeCDD

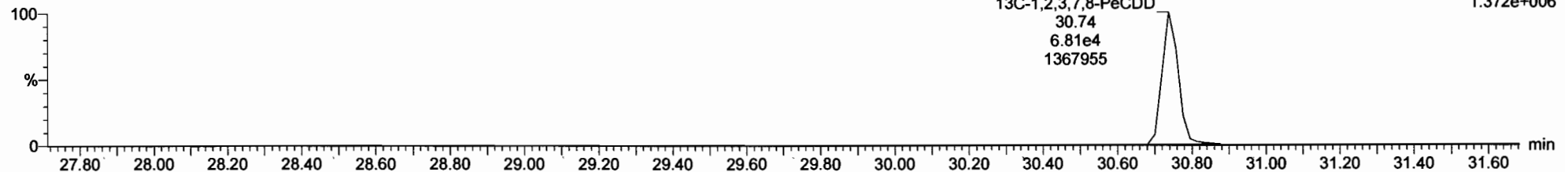
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B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F2:SIR of 17 channels,EI+
365.8978
8.886e+005



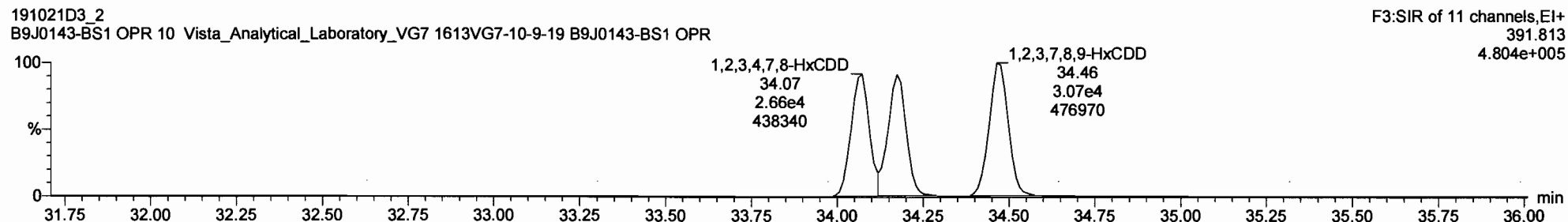
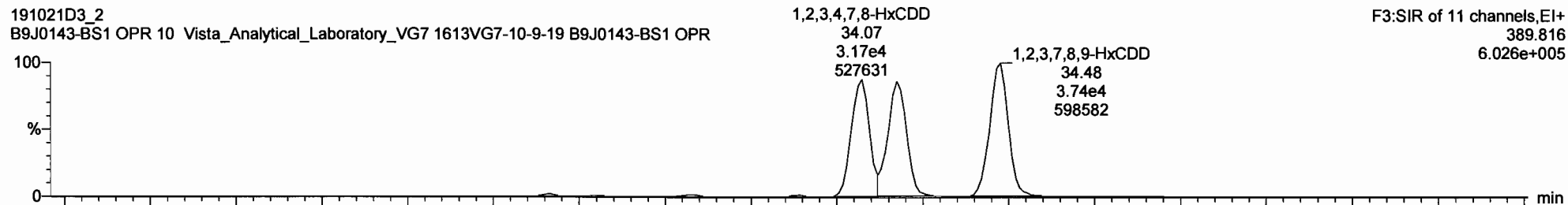
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B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F2:SIR of 17 channels,EI+
367.895
1.372e+006

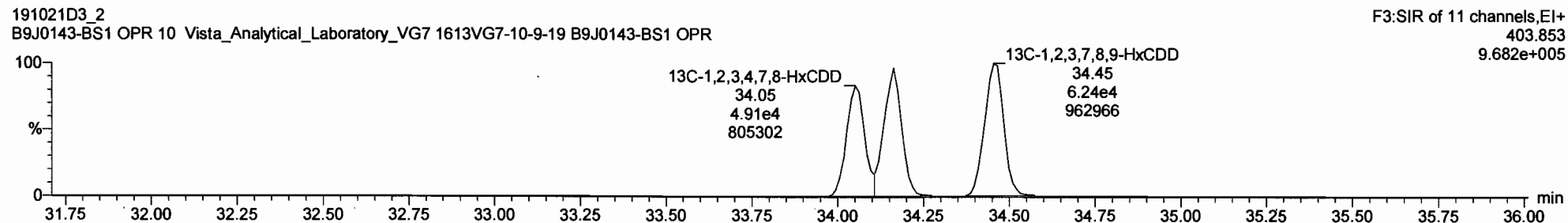
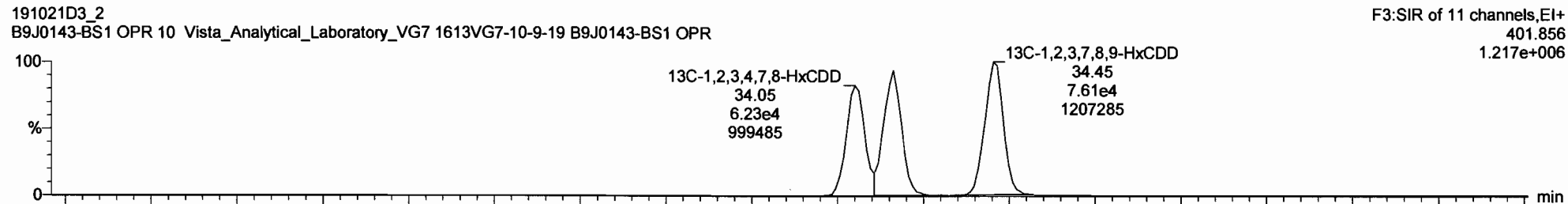


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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hexa-Dioxins



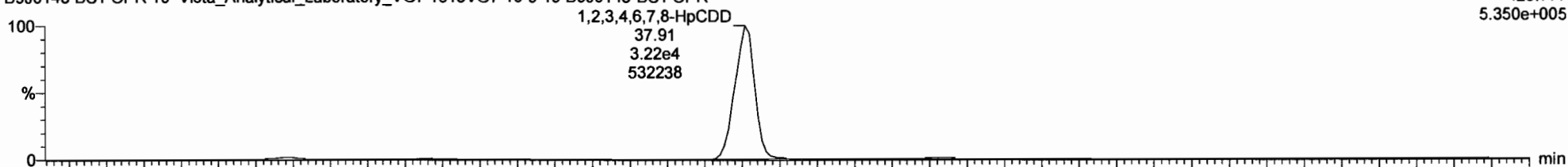
13C-1,2,3,4,7,8-HxCDD



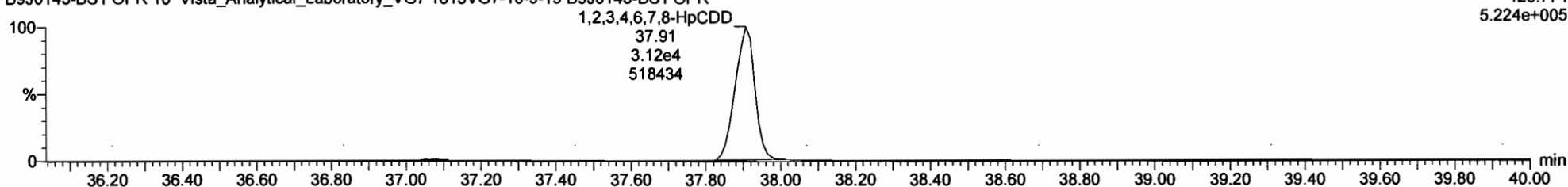
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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hepta-Dioxins

191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR
F4:SIR of 11 channels, EI+
423.777
5.350e+005

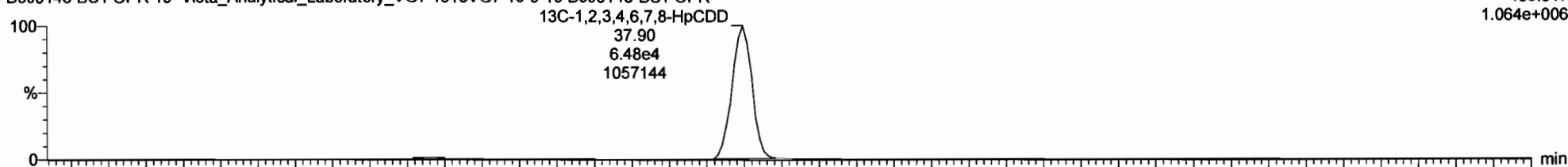


191021D3_2
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F4:SIR of 11 channels, EI+
425.774
5.224e+005

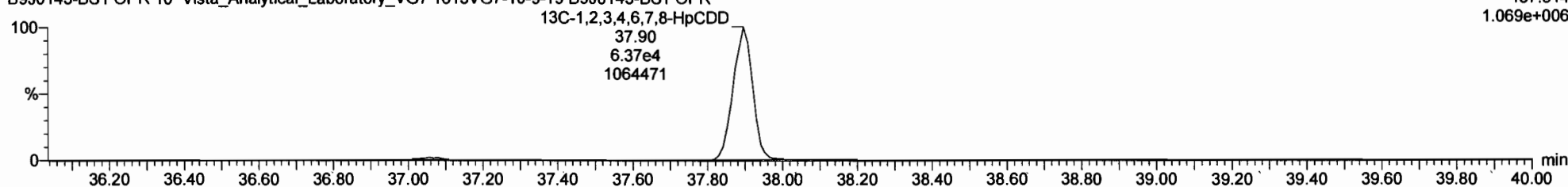


¹³C-1,2,3,4,6,7,8-HpCDD

191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR
F4:SIR of 11 channels, EI+
435.817
1.064e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR
F4:SIR of 11 channels, EI+
437.814
1.069e+006

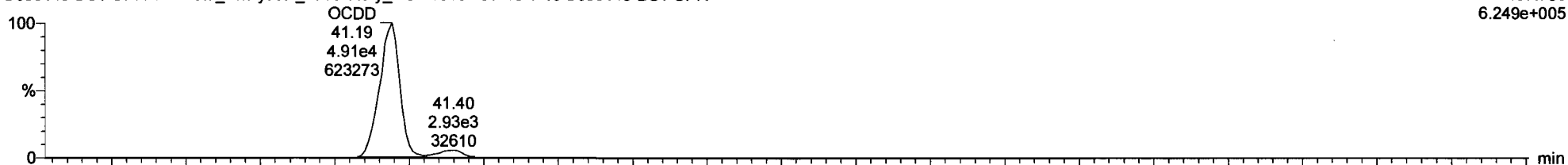


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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

OCDD

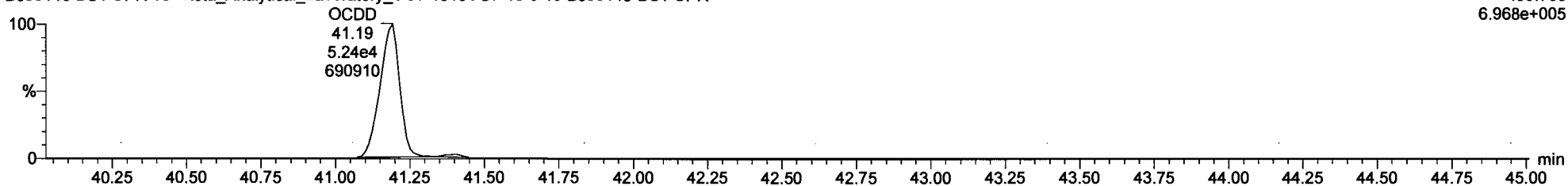
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
457.738
6.249e+005



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
459.735
6.968e+005



13C-OCDD

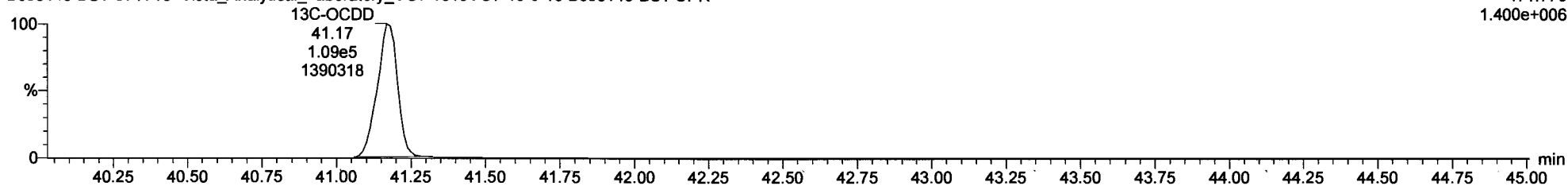
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F5:SIR of 11 channels, EI+
469.778
1.302e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
471.775
1.400e+006



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

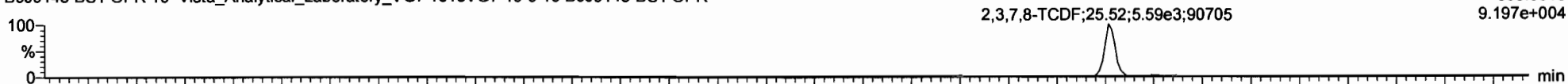
Printed: Monday, November 04, 2019 12:09:45 Pacific Standard Time

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Total Tetra-Furans

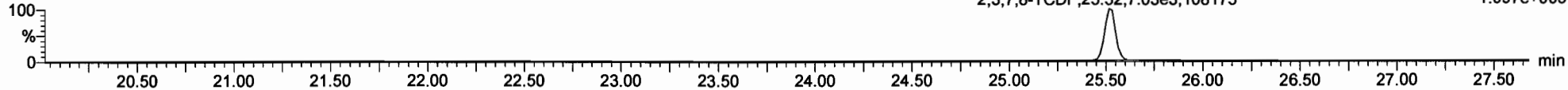
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
303.9016
9.197e+004



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

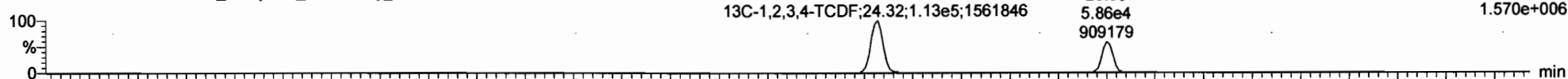
F1:SIR of 15 channels,EI+
305.899
1.097e+005



13C-2,3,7,8-TCDF

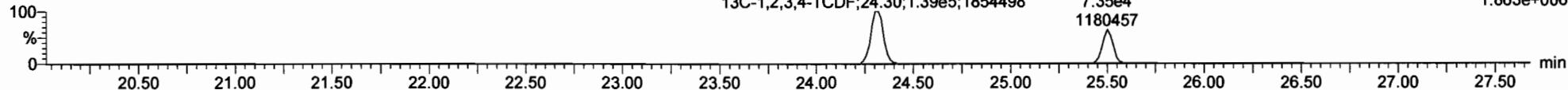
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
25.50
315.9419
5.86e4
909179
1.570e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

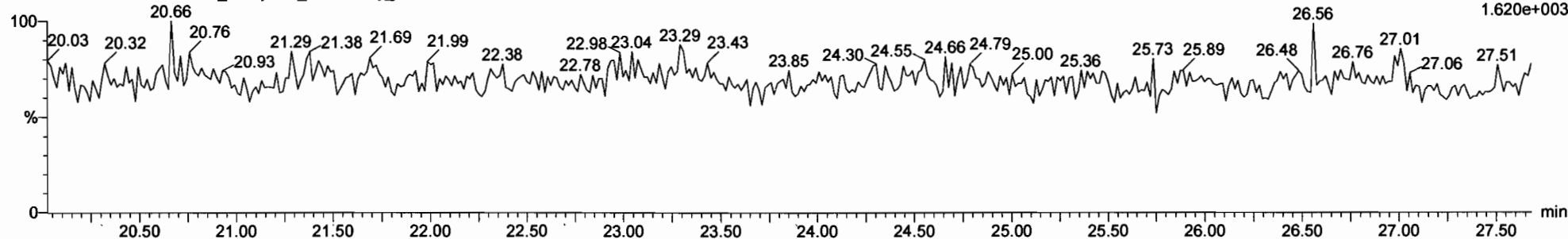
F1:SIR of 15 channels,EI+
25.50
317.939
7.35e4
1180457
1.863e+006



DPE1

191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
375.8364
1.620e+003

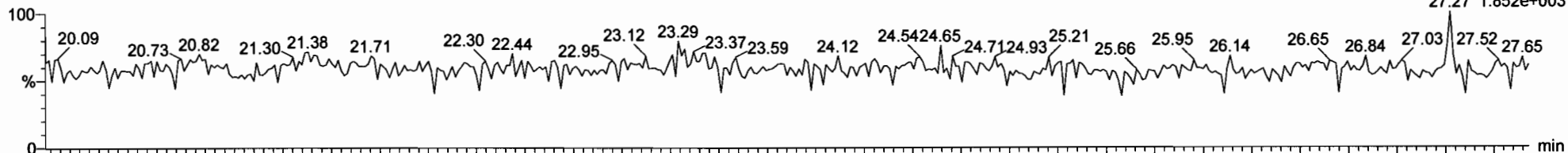


Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

1st Func. Penta-Furans

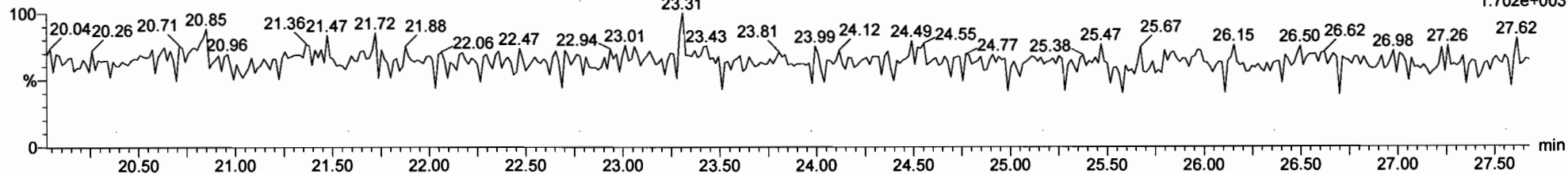
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
339.860
27.27 1.852e+003



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

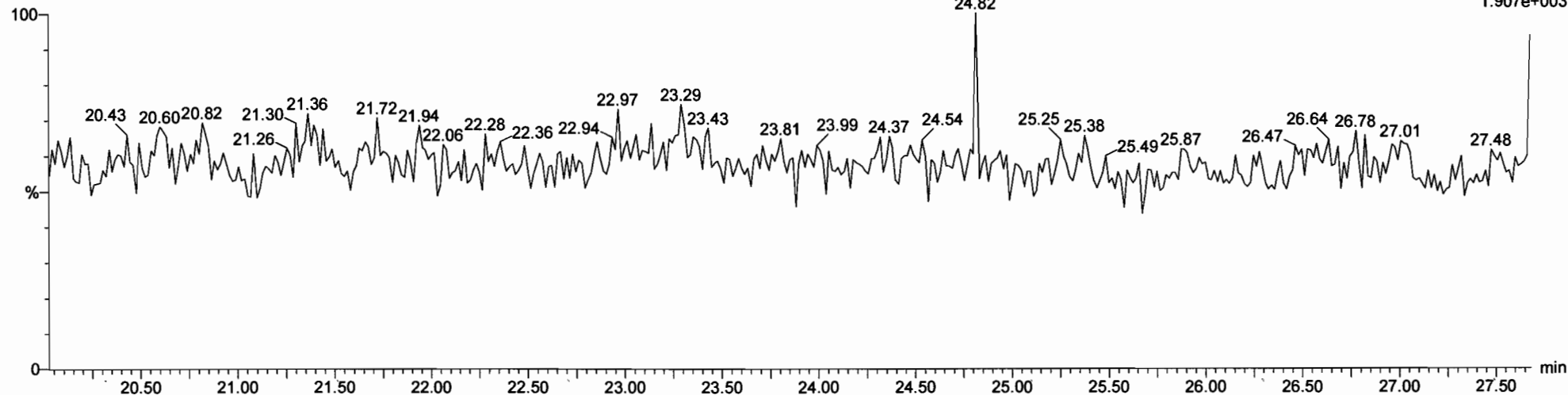
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341.857
1.702e+003



DPE6

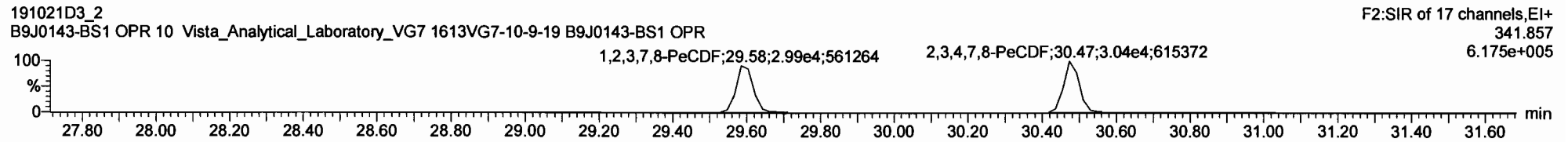
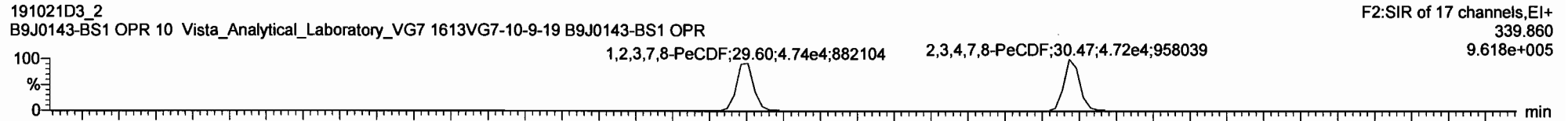
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F1:SIR of 15 channels,EI+
409.7974
1.907e+003

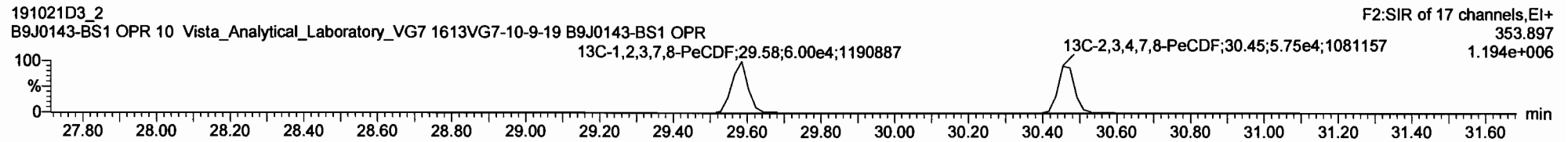
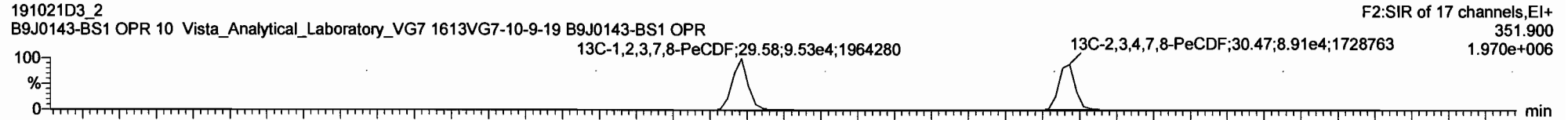


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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

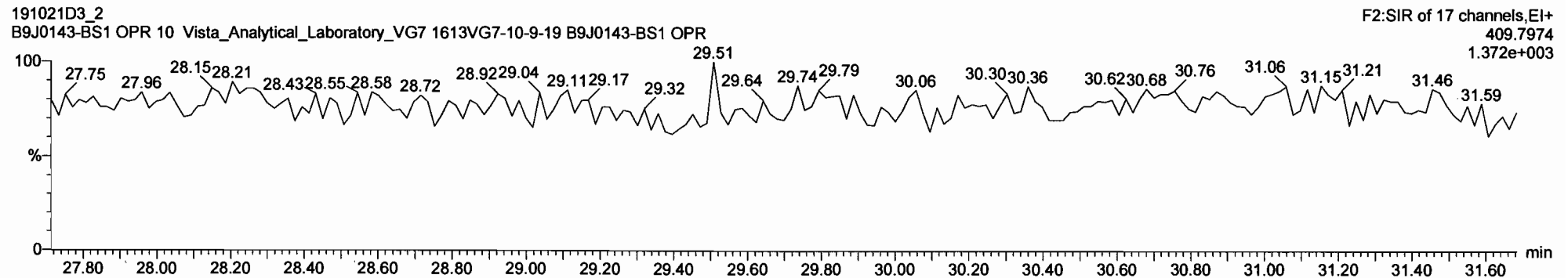
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

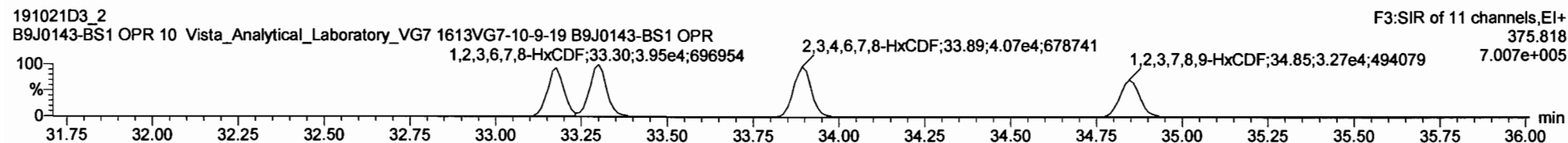
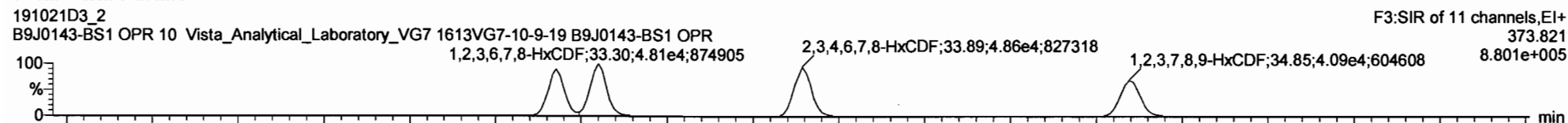


DPE2

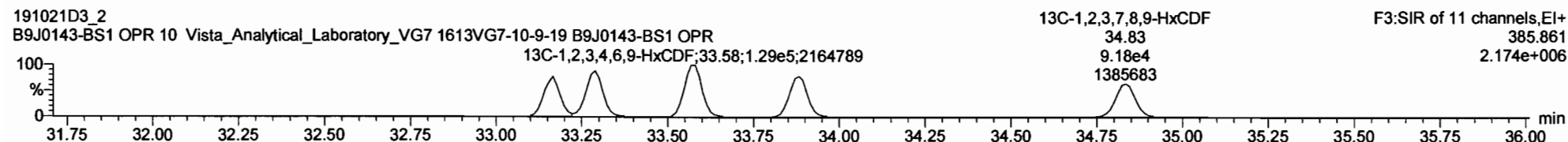
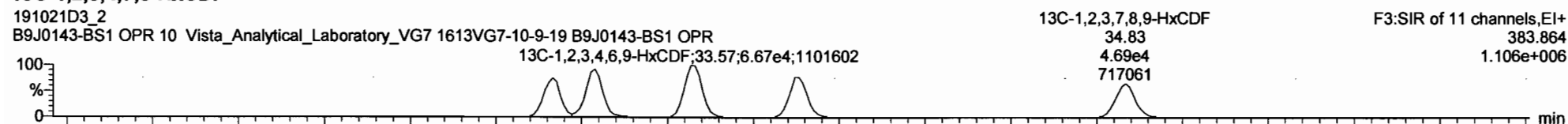


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Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

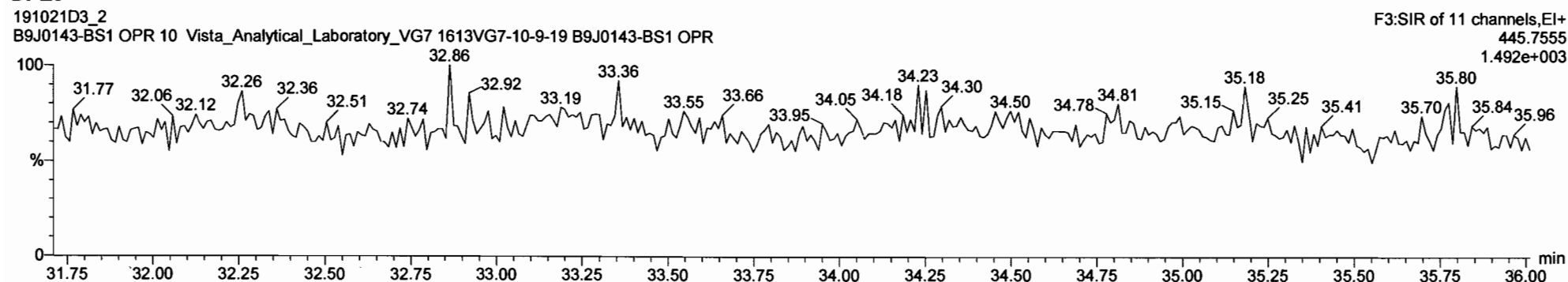
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

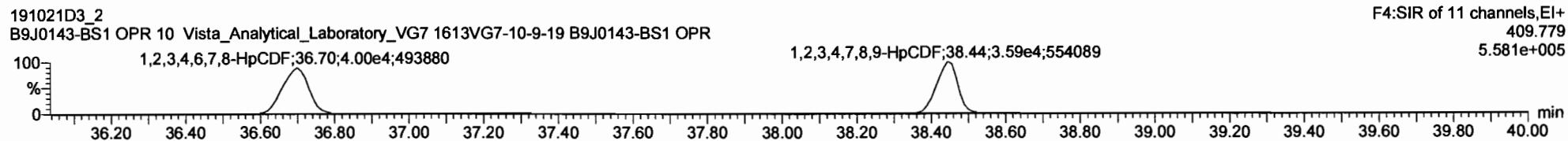
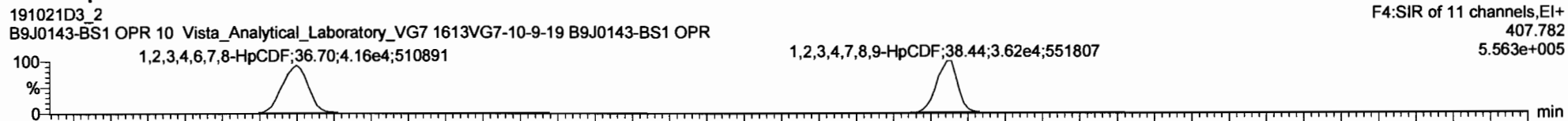


DPE3

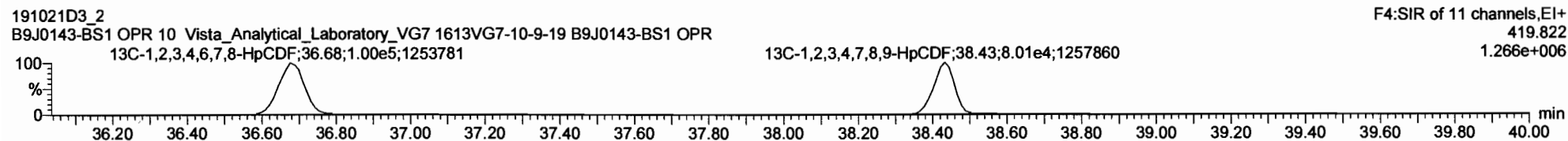
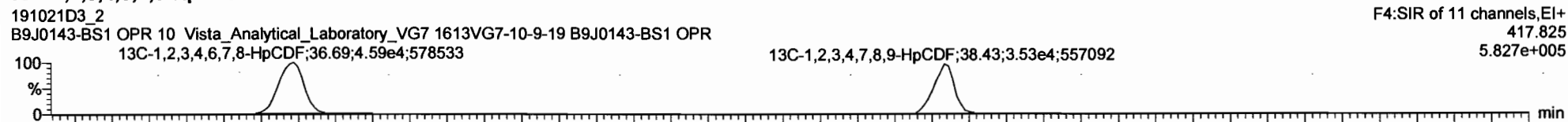


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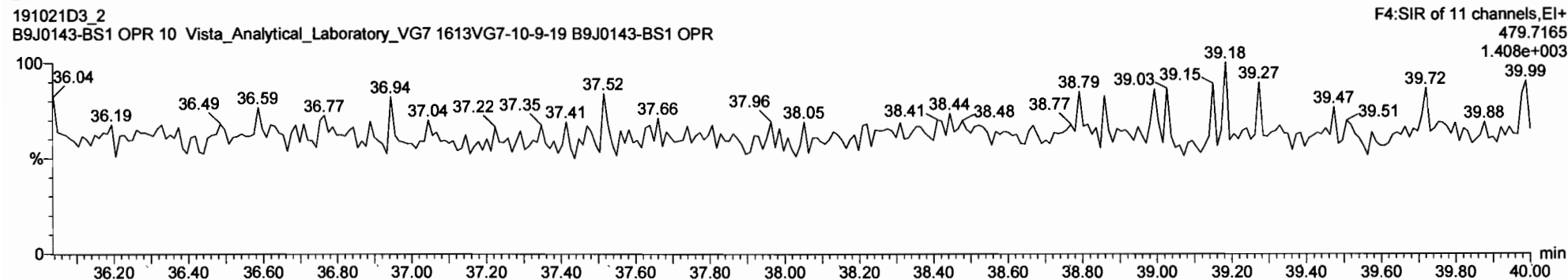
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

OCDF

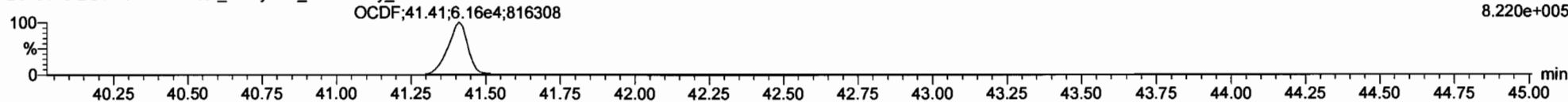
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
441.743
7.549e+005



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
443.740
8.220e+005



13C-OCDF

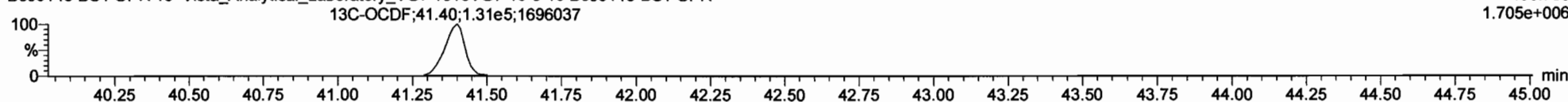
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
453.7831
1.584e+006



191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

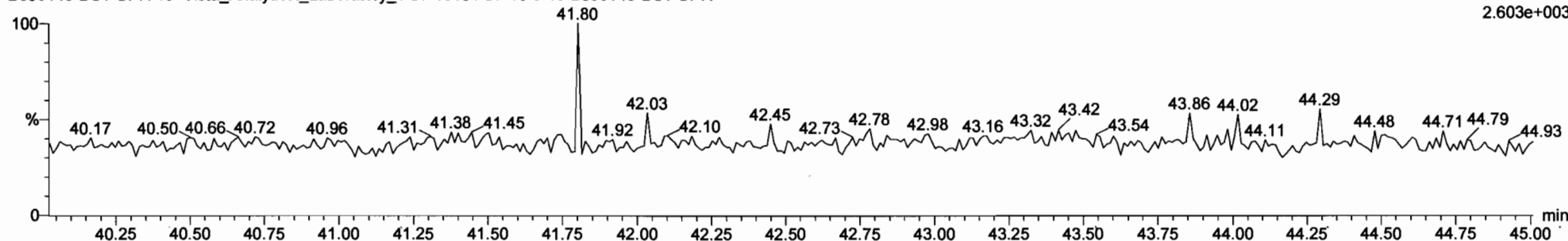
F5:SIR of 11 channels, EI+
455.780
1.705e+006



DPE5

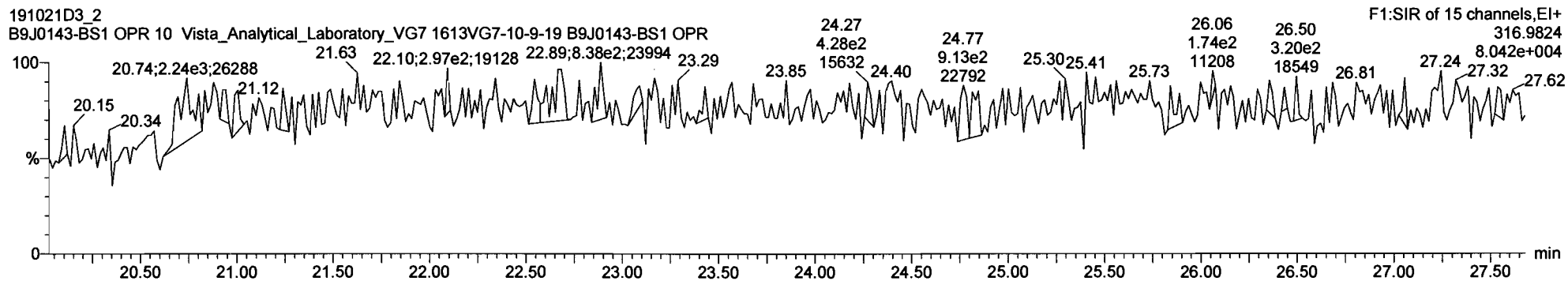
191021D3_2
B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-BS1 OPR

F5:SIR of 11 channels, EI+
513.6775
2.603e+003

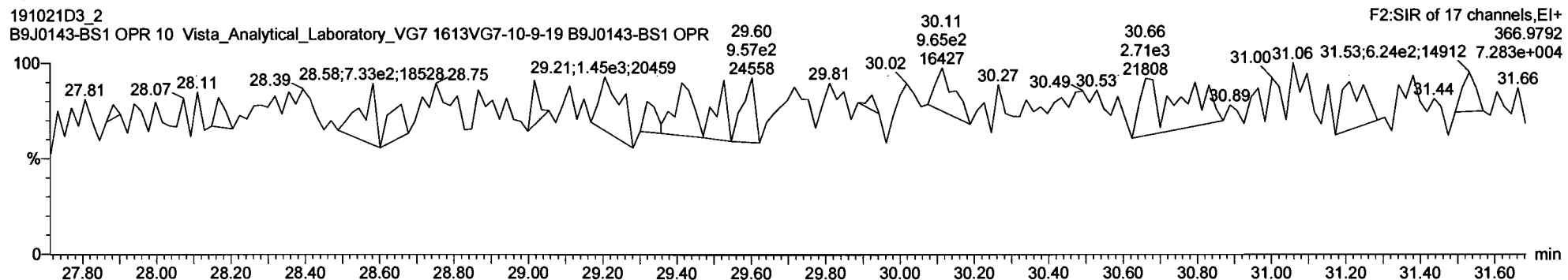


Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
 Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

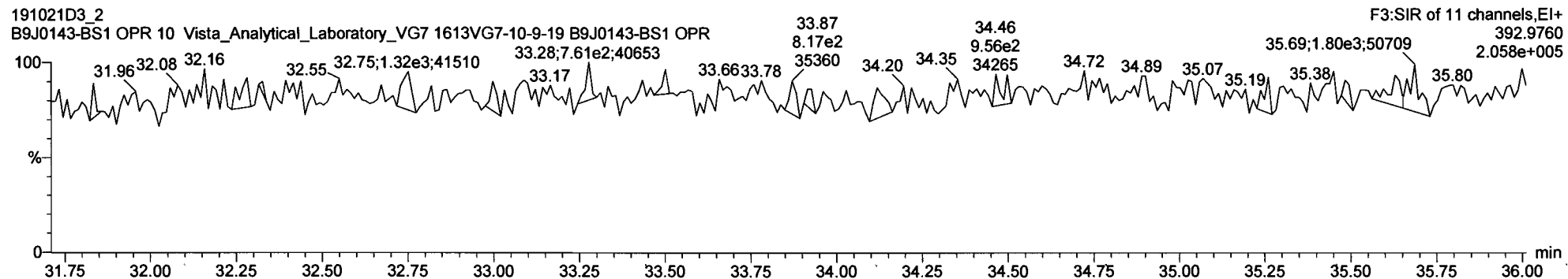
PFK1



PFK2



PFK3



Vista Analytical Laboratory

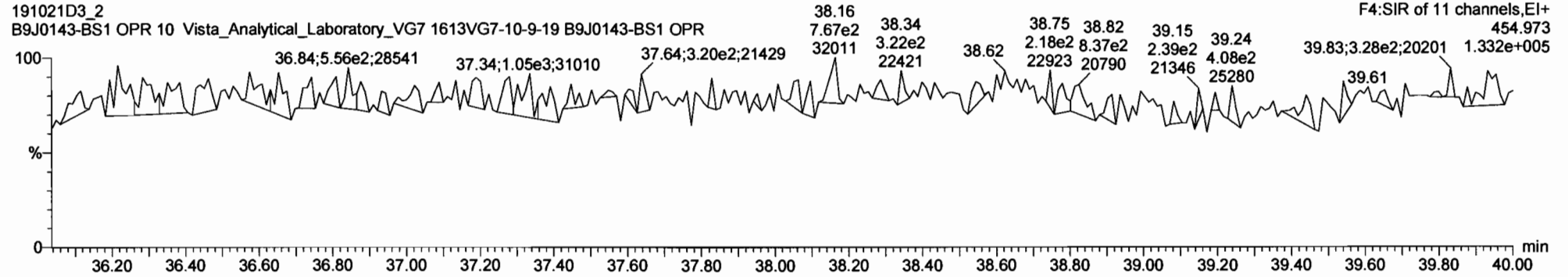
Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

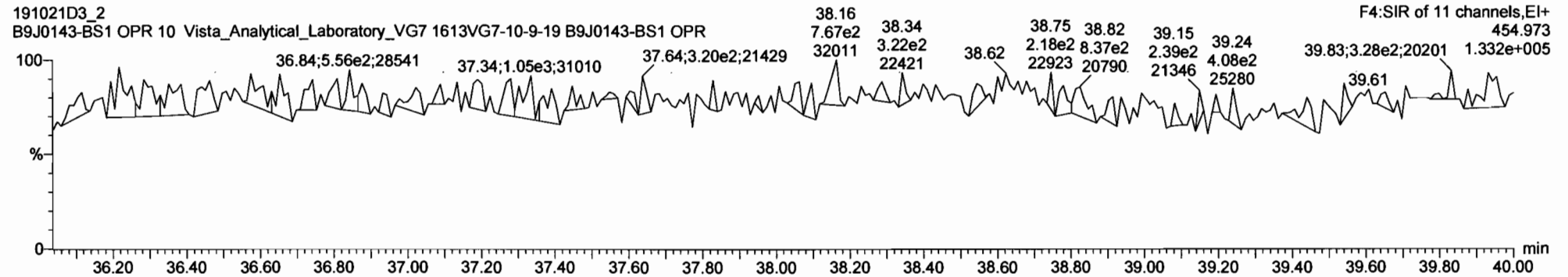
Printed: Monday, November 04, 2019 12:09:45 Pacific Standard Time

Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:09:45 Pacific Standard Time

**Name: VG7 191021D3_2, Date: 22-OCT-2019, Time: 02:51:29, ID: B9J0143-BS1 OPR,
Description: B9J0143-BS1 OPR 10 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19**

Client ID: Method Blank
Lab ID: B9J0253-BLK1

Filename: 191029D1 S:7 Acq:29-OCT-19 15:02:56
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol:10.000

ConCal: ST191029D1-1
EndCAL: NA

| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL |
|---------------------|------|-----|------|-------------|------|------|-------|-----|--------|
| 2,3,7,8-TCDD | * | * n | 0.91 | NotF η | * | | 264 | 2.5 | 0.119 |
| 1,2,3,7,8-PeCDD | * | * n | 0.90 | NotF η | * | | 224 | 2.5 | 0.106 |
| 1,2,3,4,7,8-HxCDD | * | * n | 1.10 | NotF η | * | | 328 | 2.5 | 0.261 |
| 1,2,3,6,7,8-HxCDD | * | * n | 0.94 | NotF η | * | | 328 | 2.5 | 0.274 |
| 1,2,3,7,8,9-HxCDD | * | * n | 0.96 | NotF η | * | | 328 | 2.5 | 0.271 |
| 1,2,3,4,6,7,8-HpCDD | * | * n | 0.98 | NotF η | * | | 120 | 2.5 | 0.104 |
| OCDD | * | * n | 0.96 | NotF η | * | | 223 | 2.5 | 0.245 |
| 2,3,7,8-TCDF | * | * n | 0.95 | NotF η | * | | 224 | 2.5 | 0.0813 |
| 1,2,3,7,8-PeCDF | * | * n | 0.96 | NotF η | * | | 239 | 2.5 | 0.119 |
| 2,3,4,7,8-PeCDF | * | * n | 1.01 | NotF η | * | | 239 | 2.5 | 0.110 |
| 1,2,3,4,7,8-HxCDF | * | * n | 1.18 | NotF η | * | | 312 | 2.5 | 0.114 |
| 1,2,3,6,7,8-HxCDF | * | * n | 1.07 | NotF η | * | | 312 | 2.5 | 0.116 |
| 2,3,4,6,7,8-HxCDF | * | * n | 1.11 | NotF η | * | | 312 | 2.5 | 0.121 |
| 1,2,3,7,8,9-HxCDF | * | * n | 1.06 | NotF η | * | | 312 | 2.5 | 0.154 |
| 1,2,3,4,6,7,8-HpCDF | * | * n | 1.13 | NotF η | * | | 134 | 2.5 | 0.0792 |
| 1,2,3,4,7,8,9-HpCDF | * | * n | 1.28 | NotF η | * | | 134 | 2.5 | 0.0727 |
| OCDF | * | * n | 0.95 | NotF η | * | | 159 | 2.5 | 0.145 |

| Name | Conc | EMPC | Qual | noise | DL |
|---------------------|--------|--------|------|-------|--------|
| Total Tetra-Dioxins | * | * | | 264 | 0.119 |
| Total Penta-Dioxins | * | * | | 224 | 0.106 |
| Total Hexa-Dioxins | * | * | | 328 | 0.270 |
| Total Hepta-Dioxins | * | * | | 120 | 0.104 |
| Total Tetra-Furans | * | * | | 224 | 0.0813 |
| Total Penta-Furans | 0.0000 | 0.0000 | | 239 | 0.115 |
| Total Hexa-Furans | * | * | | 312 | 0.125 |
| Total Hepta-Furans | * | * | | 134 | 0.0762 |

| IS | 13C-2,3,7,8-TCDD | 7.46e+06 | 0.78 | y | 1.10 | 26:15 | 223.57 |
|----|-------------------------|----------|------|---|------|-------|--------|
| IS | 13C-1,2,3,7,8-PeCDD | 5.92e+06 | 0.62 | y | 0.88 | 30:44 | 220.30 |
| IS | 13C-1,2,3,4,7,8-HxCDD | 4.60e+06 | 1.33 | y | 0.64 | 34:03 | 233.13 |
| IS | 13C-1,2,3,6,7,8-HxCDD | 5.31e+06 | 1.30 | y | 0.86 | 34:10 | 201.79 |
| IS | 13C-1,2,3,7,8,9-HxCDD | 5.15e+06 | 1.32 | y | 0.81 | 34:28 | 207.71 |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 4.45e+06 | 1.07 | y | 0.65 | 37:56 | 221.24 |
| IS | 13C-OCDD | 7.63e+06 | 0.91 | y | 0.58 | 41:16 | 428.04 |
| IS | 13C-2,3,7,8-TCDF | 9.81e+06 | 0.80 | y | 1.03 | 25:28 | 203.36 |
| IS | 13C-1,2,3,7,8-PeCDF | 8.56e+06 | 1.61 | y | 0.85 | 29:34 | 214.81 |
| IS | 13C-2,3,4,7,8-PeCDF | 8.32e+06 | 1.56 | y | 0.85 | 30:27 | 210.67 |
| IS | 13C-1,2,3,4,7,8-HxCDF | 5.73e+06 | 0.52 | y | 0.83 | 33:10 | 223.90 |
| IS | 13C-1,2,3,6,7,8-HxCDF | 6.57e+06 | 0.52 | y | 1.03 | 33:17 | 206.59 |
| IS | 13C-2,3,4,6,7,8-HxCDF | 5.98e+06 | 0.52 | y | 0.95 | 33:53 | 203.84 |
| IS | 13C-1,2,3,7,8,9-HxCDF | 5.66e+06 | 0.51 | y | 0.83 | 34:50 | 222.36 |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 4.89e+06 | 0.44 | y | 0.76 | 36:42 | 209.92 |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 3.87e+06 | 0.44 | y | 0.58 | 38:29 | 216.48 |
| IS | 13C-OCDF | 9.51e+06 | 0.88 | y | 0.69 | 41:29 | 448.52 |

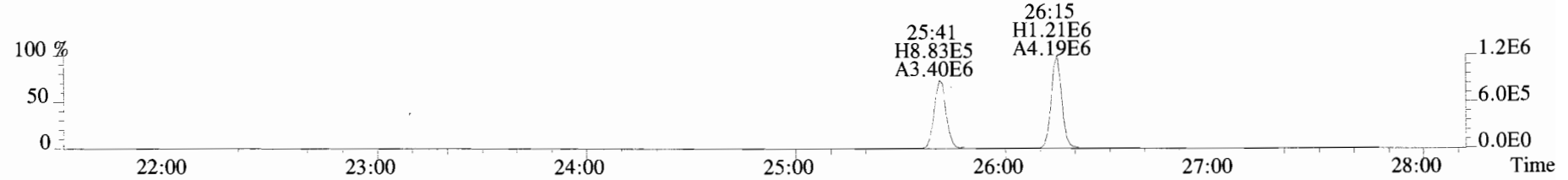
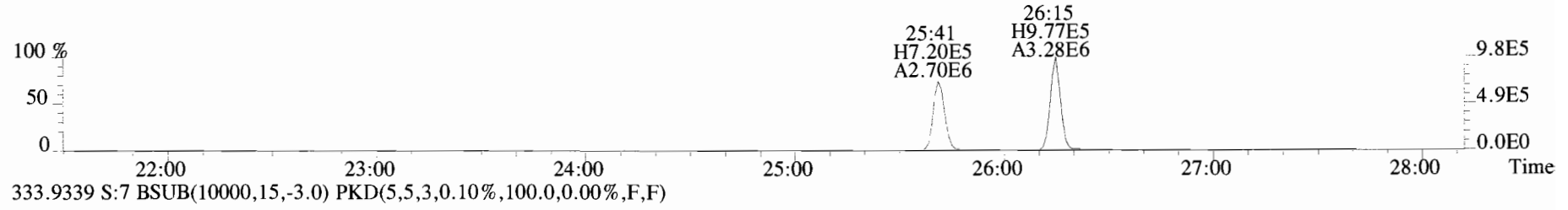
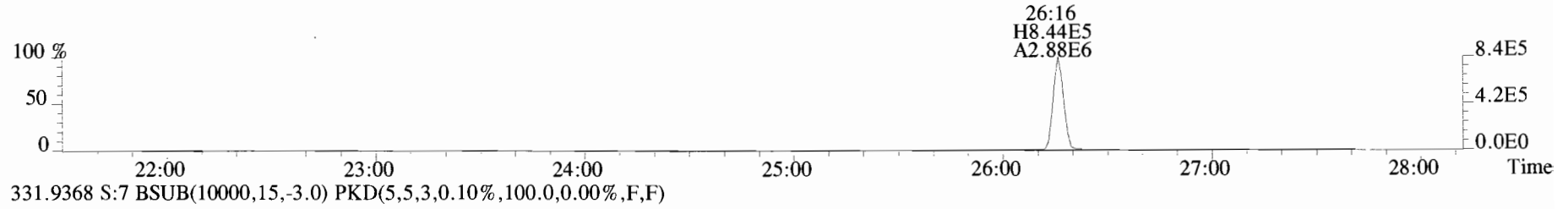
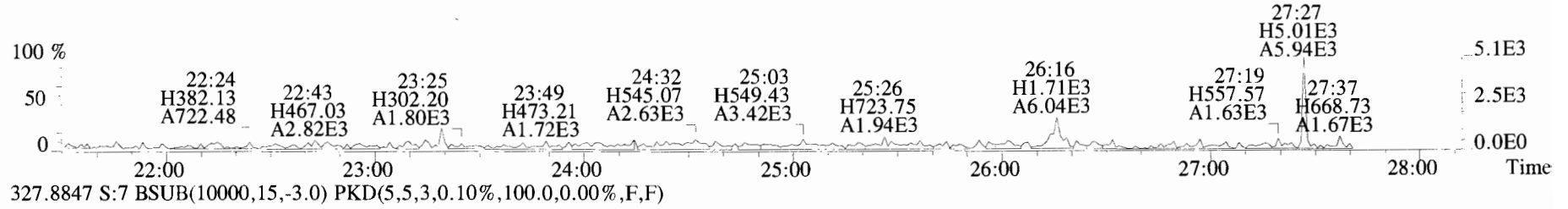
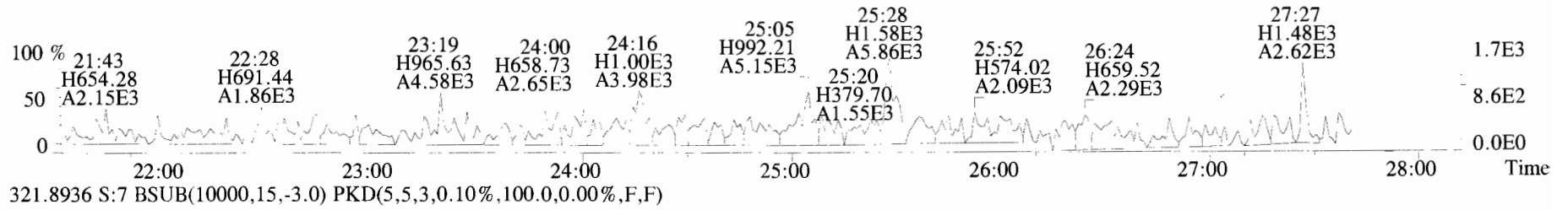
Rec Qual

112
110
117
101
104
111
107
102
107
105
112
103
102
111
105
108
112

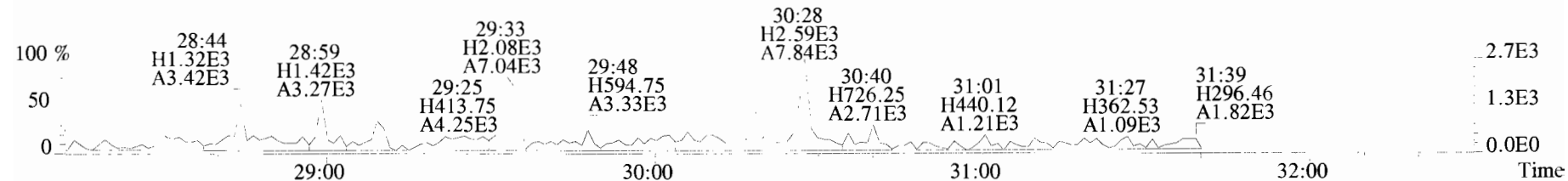
| | | | | | | | |
|-------|-----------------------|----------|------|------|-------|--------|--------|
| C/Up | 37C1-2,3,7,8-TCDD | 2.88e+06 | | 1.20 | 26:16 | 78.799 | |
| RS/RT | 13C-1,2,3,4-TCDD | 6.10e+06 | 0.79 | y | 1.00 | 25:41 | 200.00 |
| RS | 13C-1,2,3,4-TCDF | 9.33e+06 | 0.81 | y | 1.00 | 24:16 | 200.00 |
| RS/RT | 13C-1,2,3,4,6,9-HxCDF | 6.15e+06 | 0.52 | y | 1.00 | 33:35 | 200.00 |

98.5 Integrations Reviewed
by DB Analyst: DB
Date: 10/30/19 Date: 11/05/19

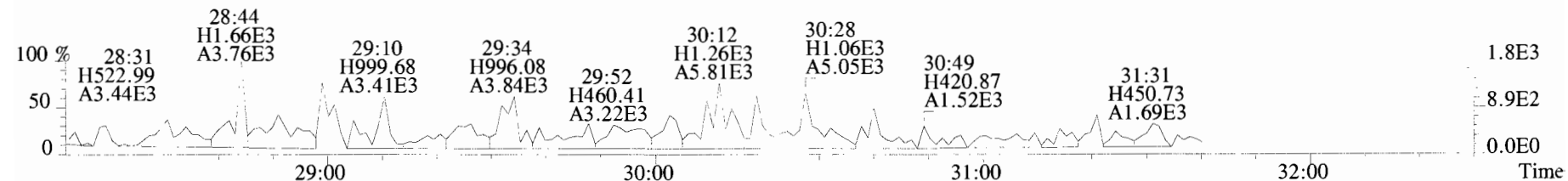
File:191029D1 #1-493 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B910253-BLK1 Method Blank 10 Exp:OCDD_DB5
319.8965 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



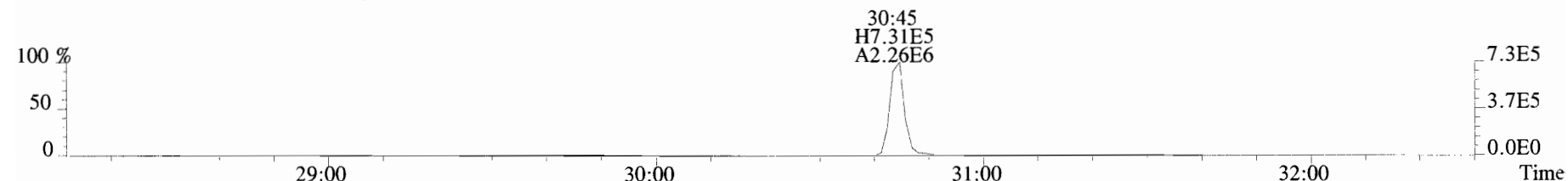
File:191029D1 #1-210 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
353.8576 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



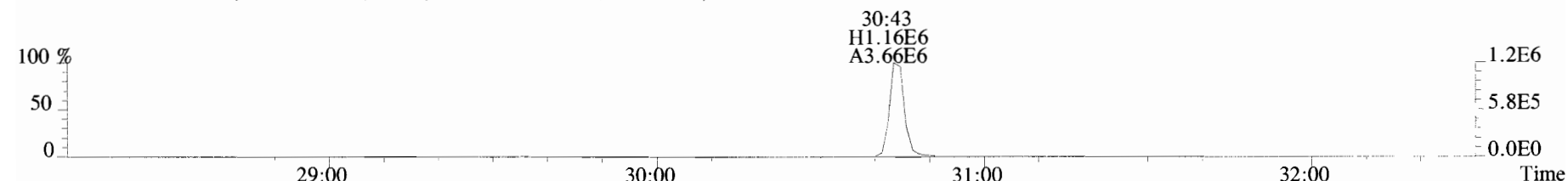
355.8546 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



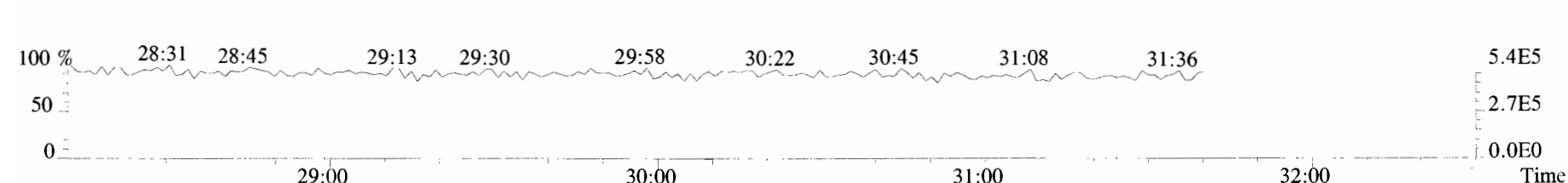
365.8978 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



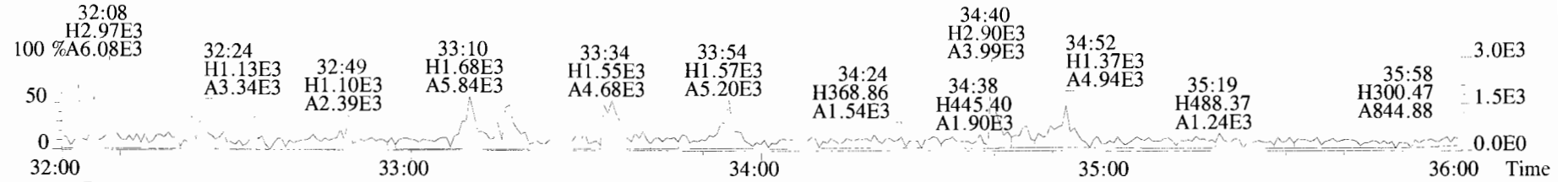
367.8949 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



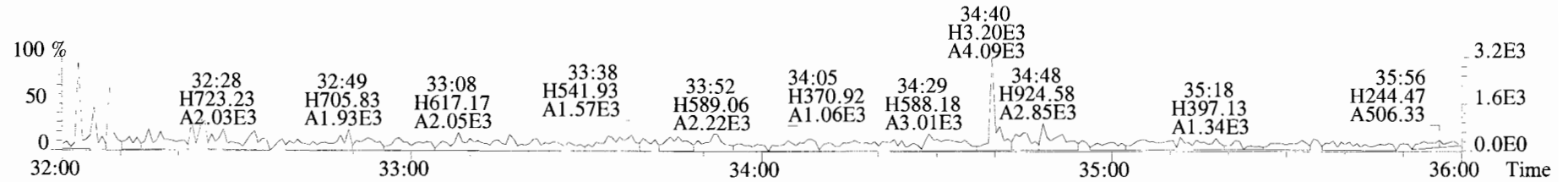
366.9792 S:7 F:2



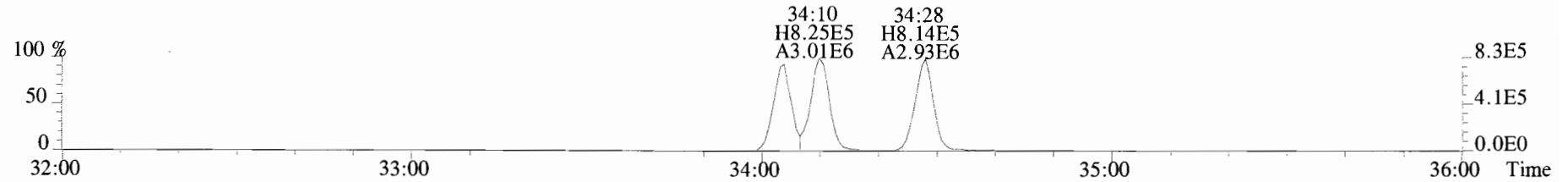
File:191029D1 #1-385 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B910253-BLK1 Method Blank 10 Exp:OCDD_DB5
 389.8156 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



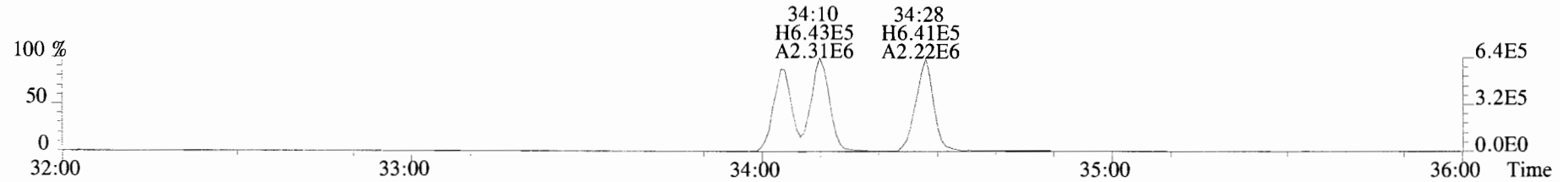
391.8127 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



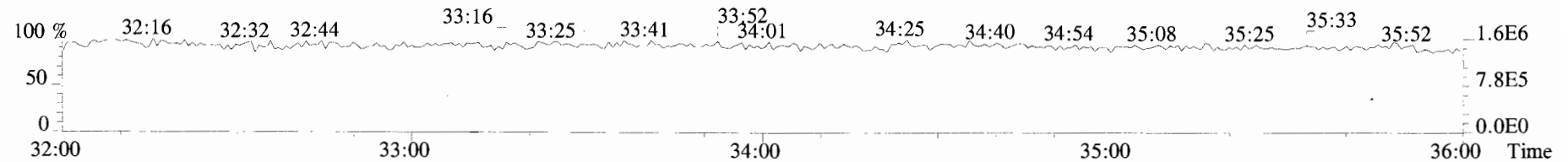
401.8559 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



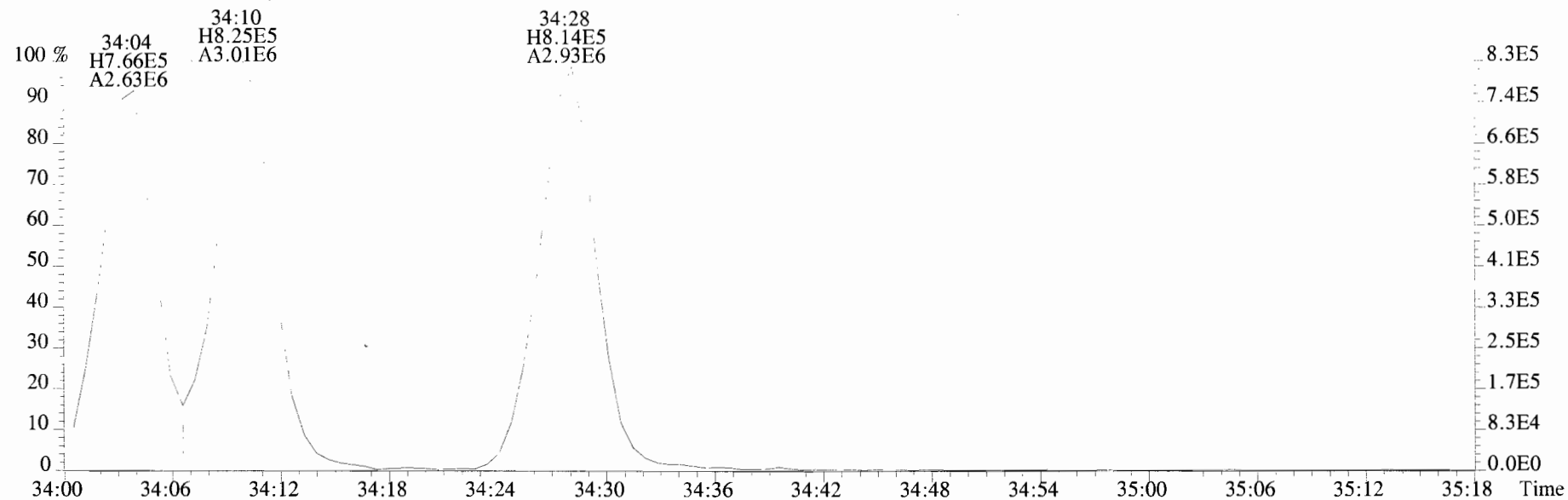
403.8530 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



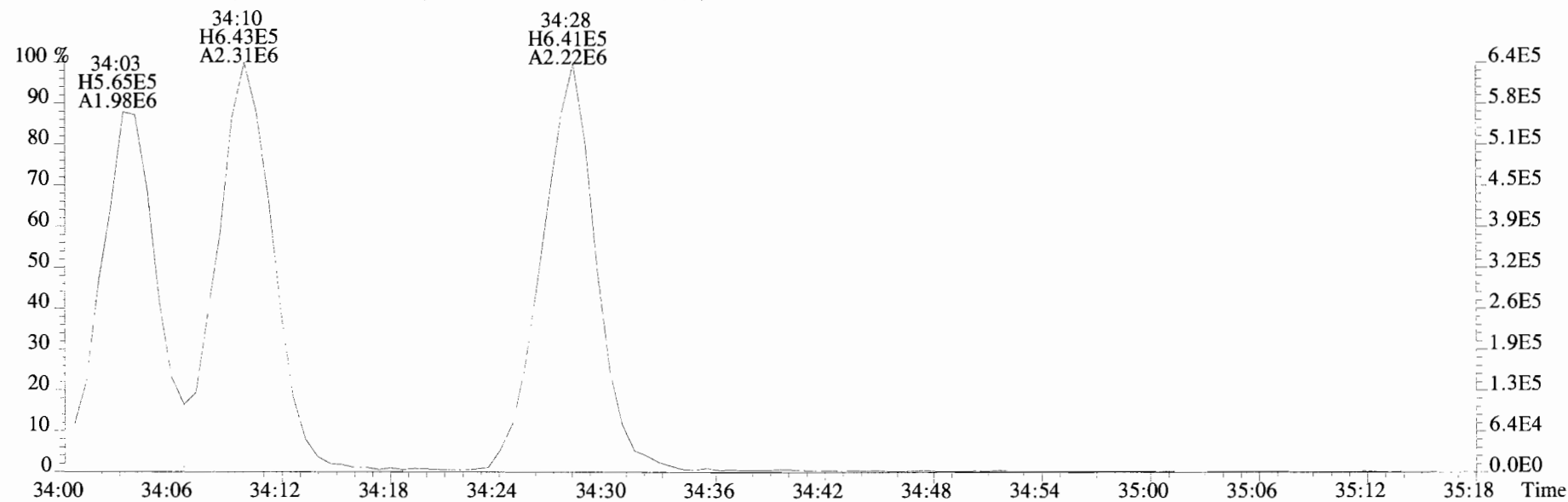
392.9760 S:7 F:3



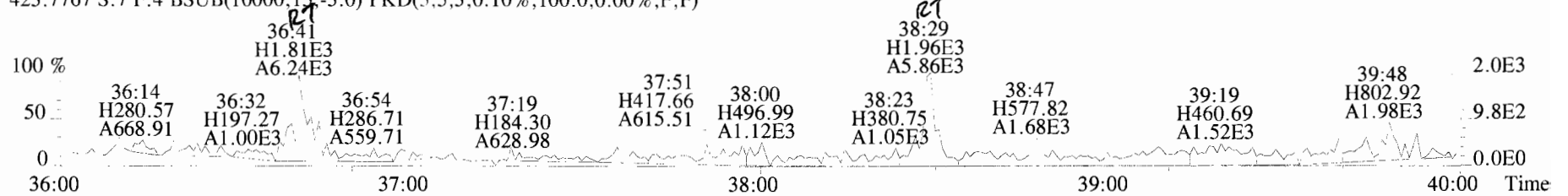
File:191029D1 #1-385 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
401.8559 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



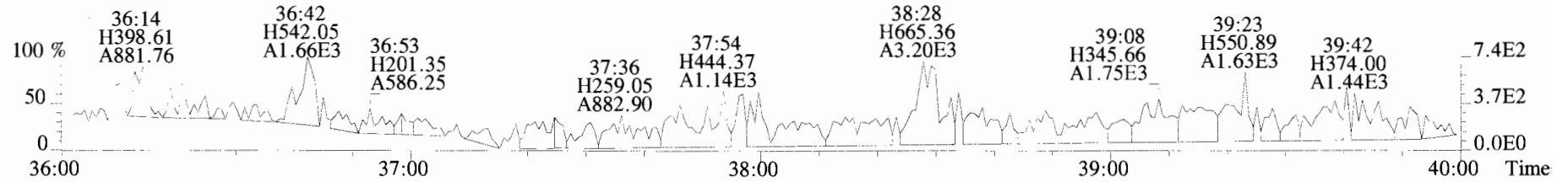
403.8530 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



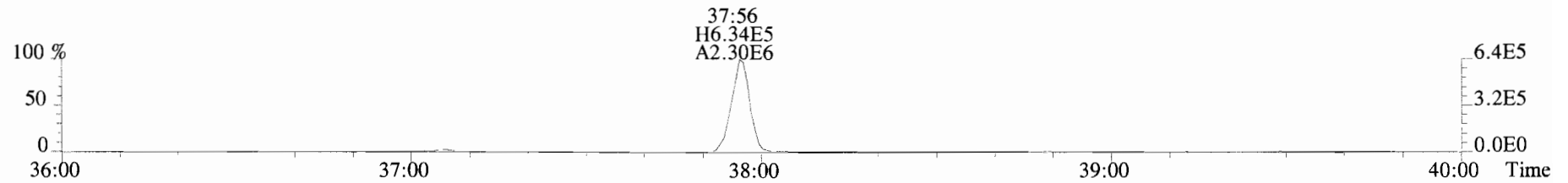
File:191029D1 #1-355 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
423.7767 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



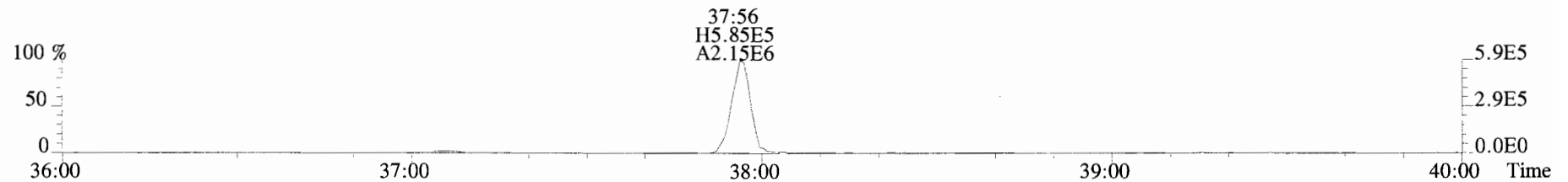
425.7737 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



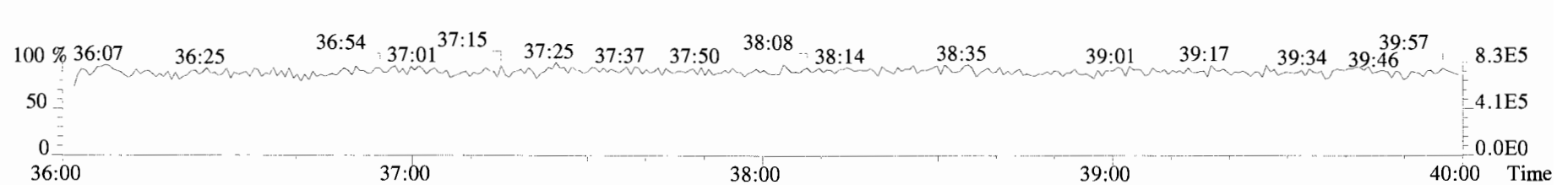
435.8169 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



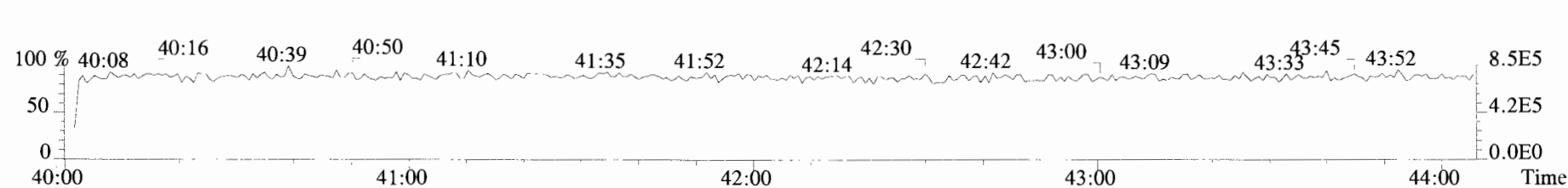
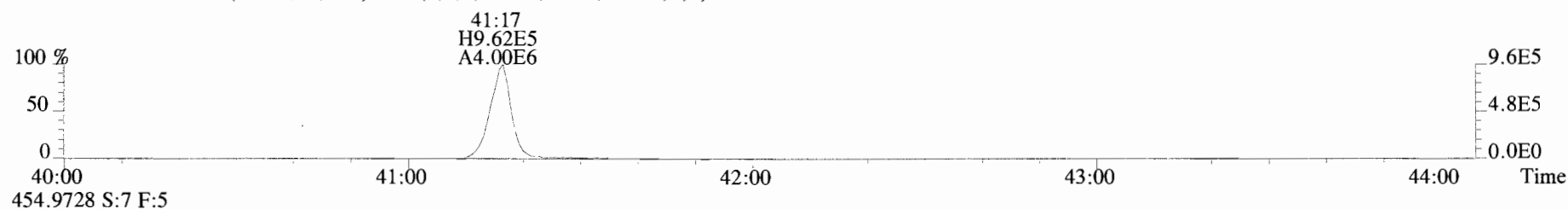
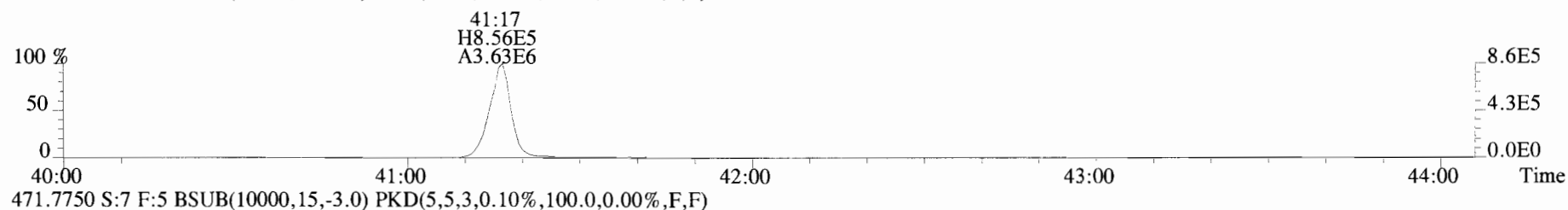
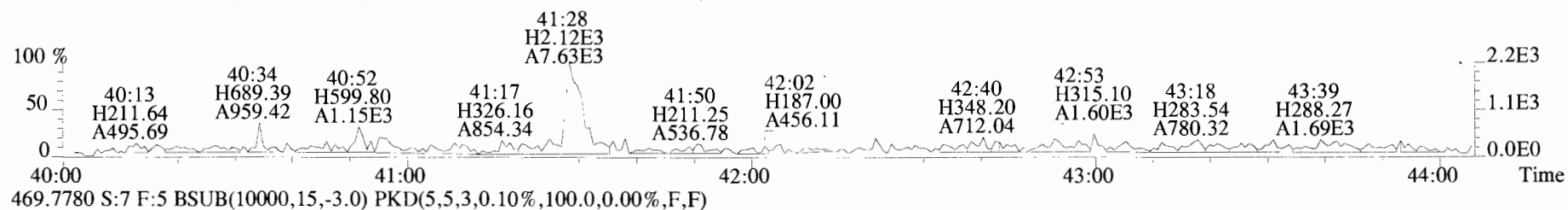
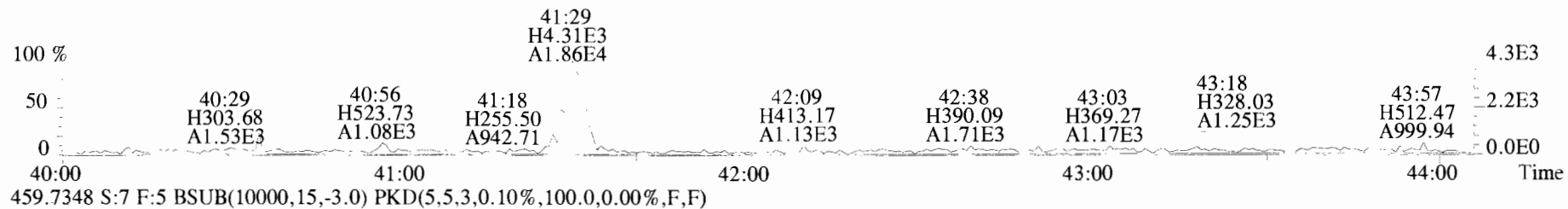
437.8140 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



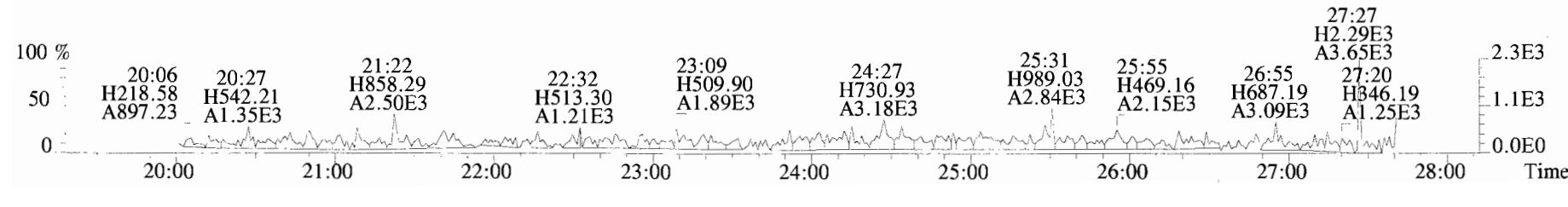
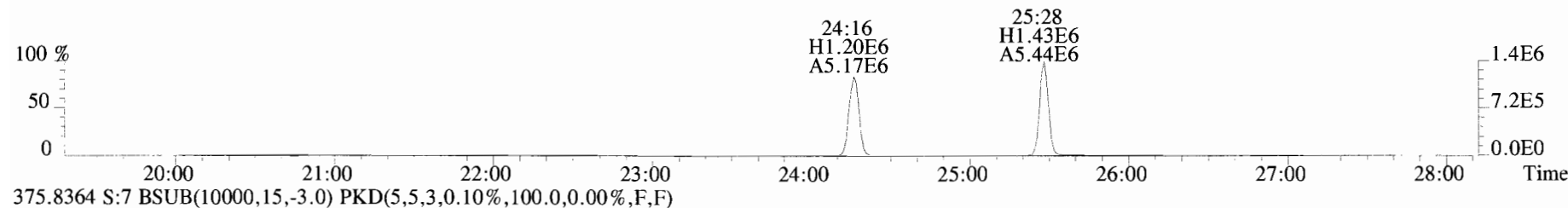
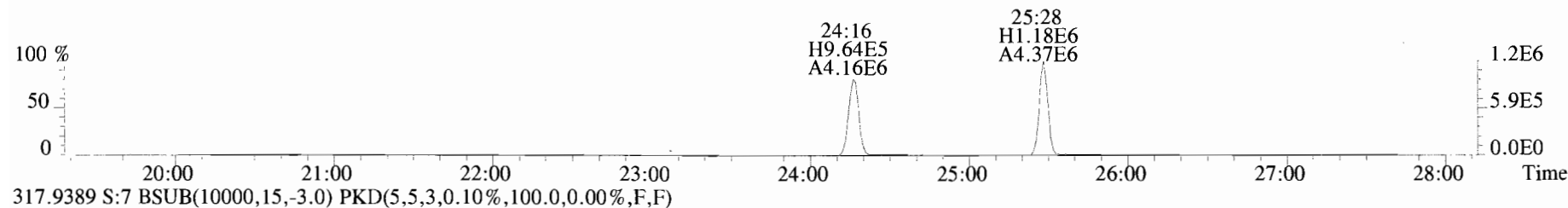
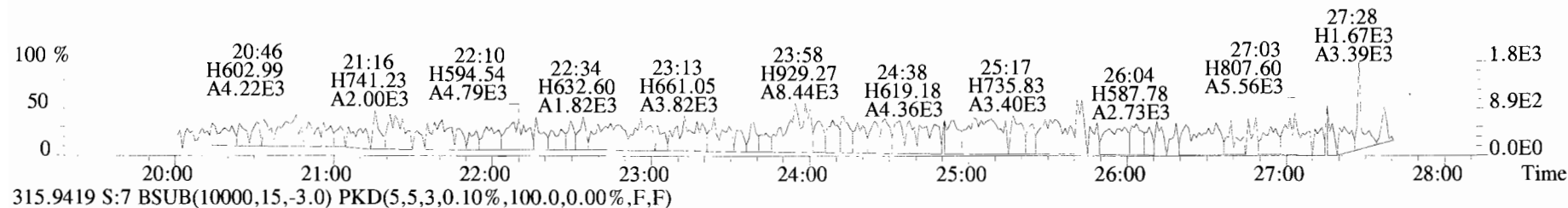
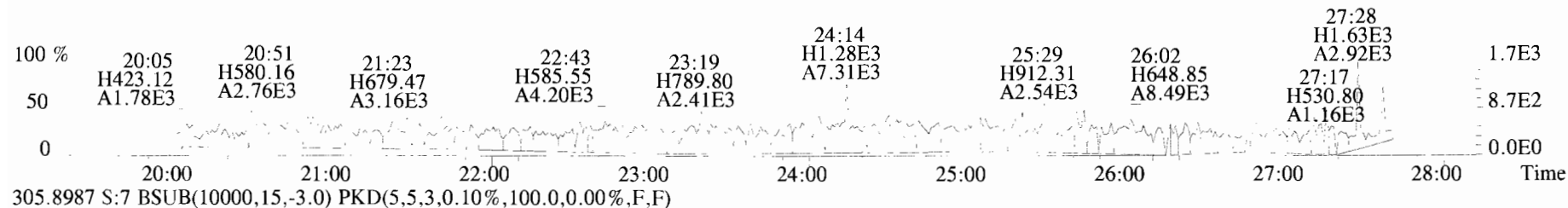
454.9728 S:7 F:4



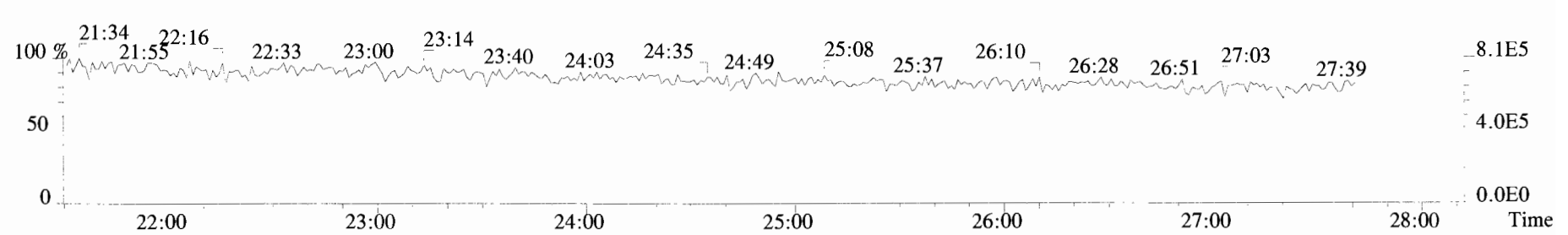
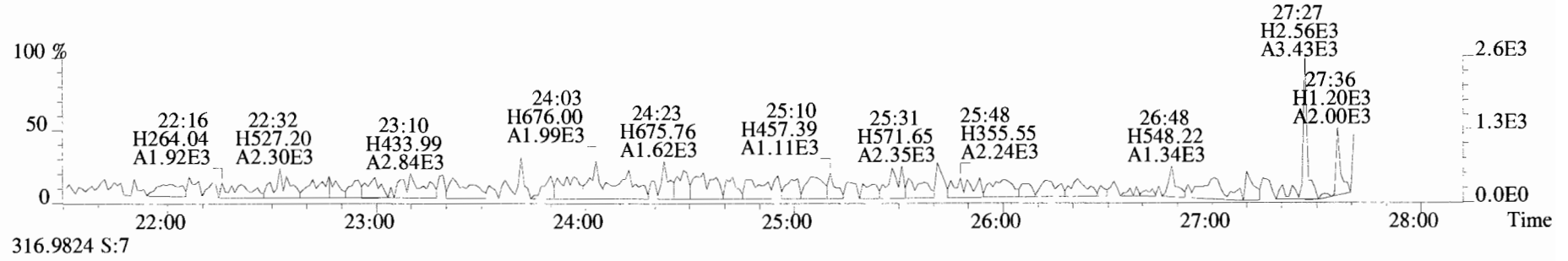
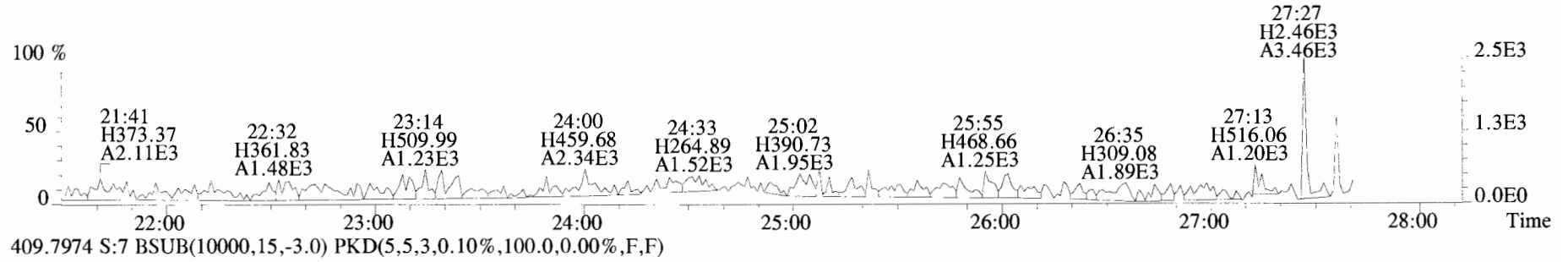
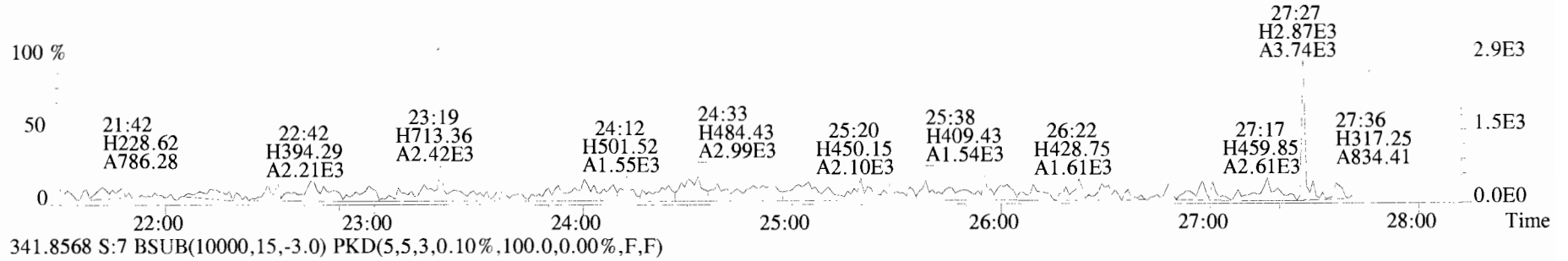
File:191029D1 #1-432 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
457.7377 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



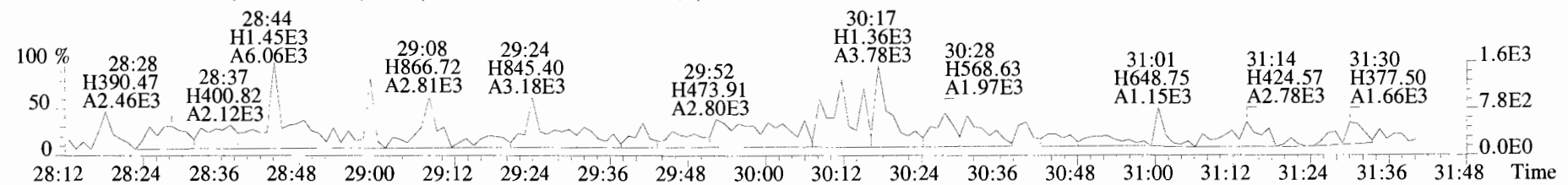
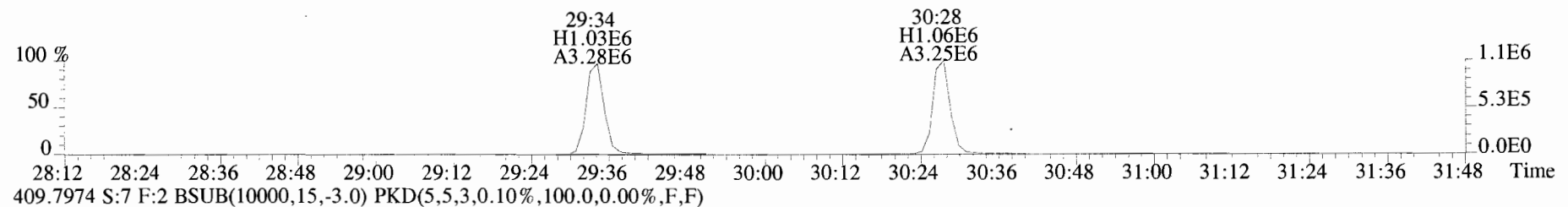
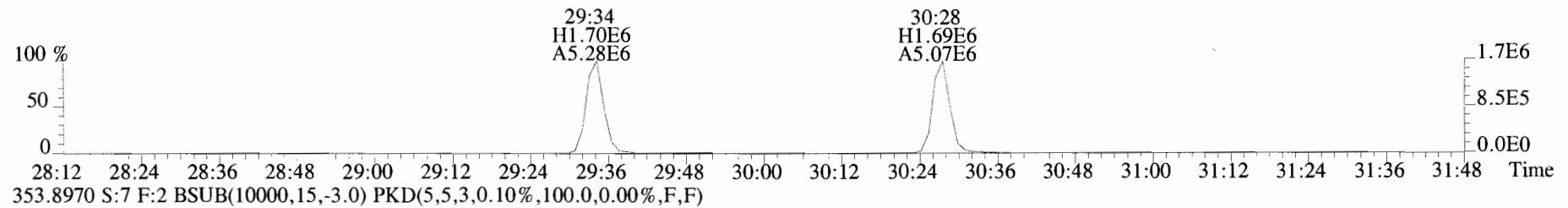
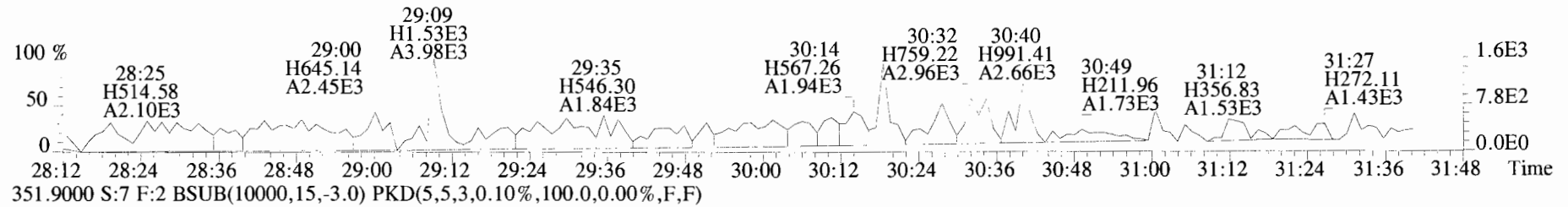
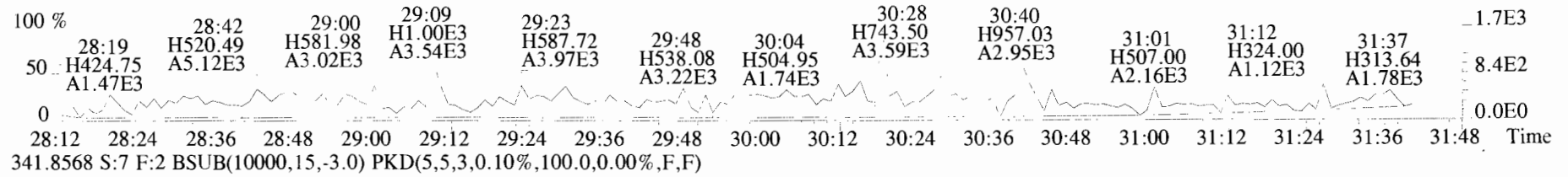
File:191029D1 #1-493 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
 303.9016 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



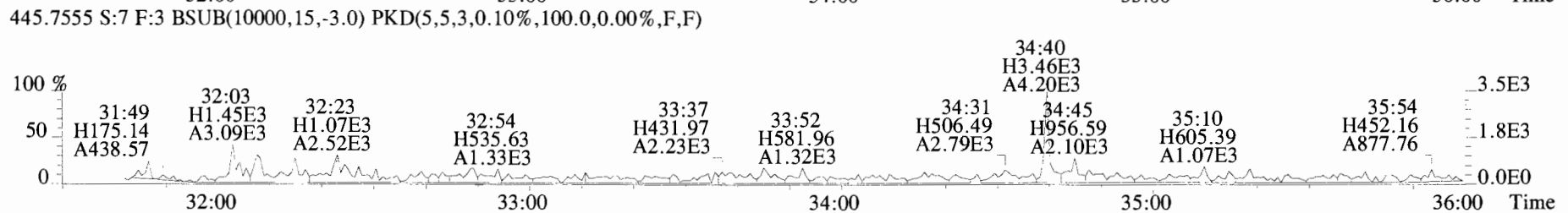
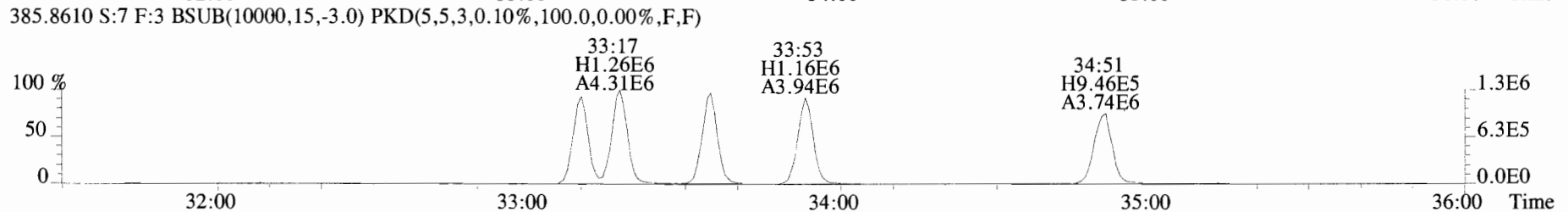
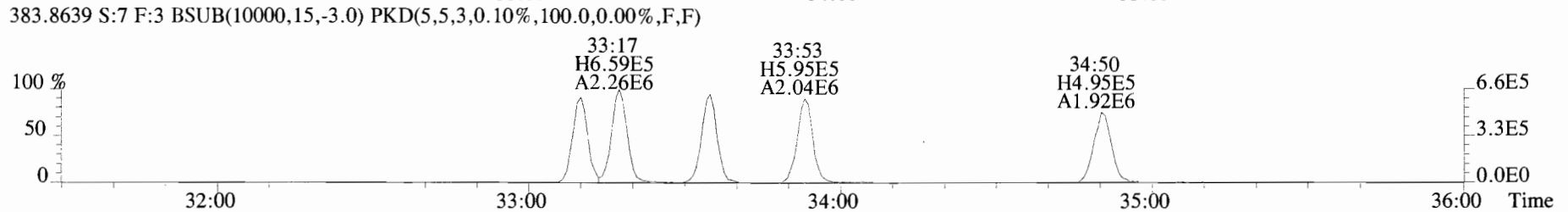
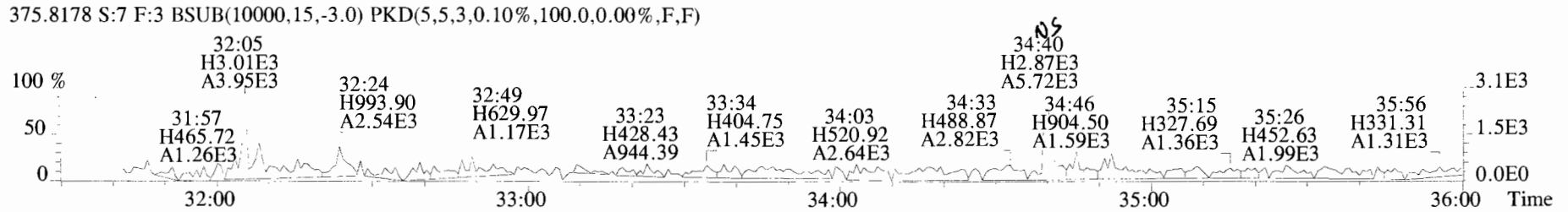
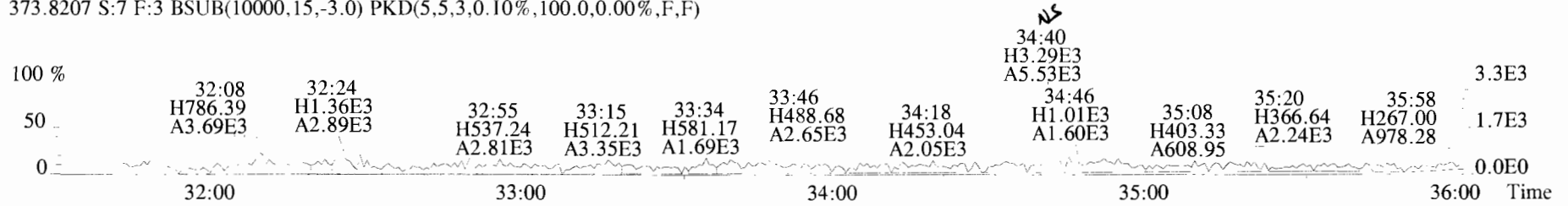
File:191029D1 #1-493 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
 339.8597 S:7 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



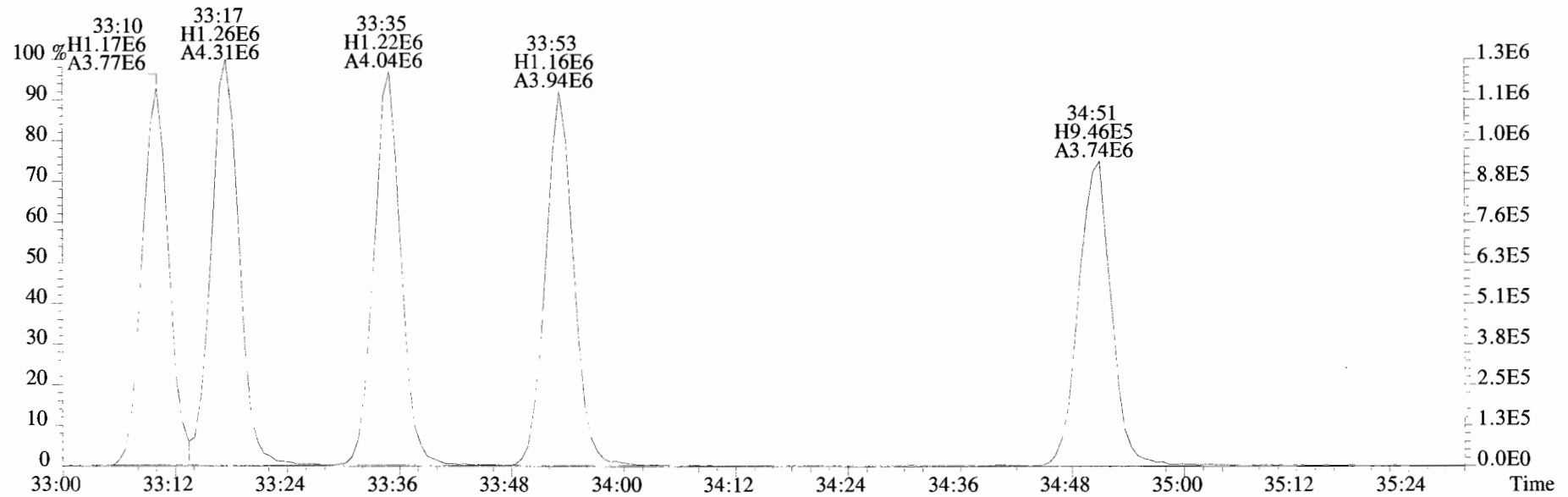
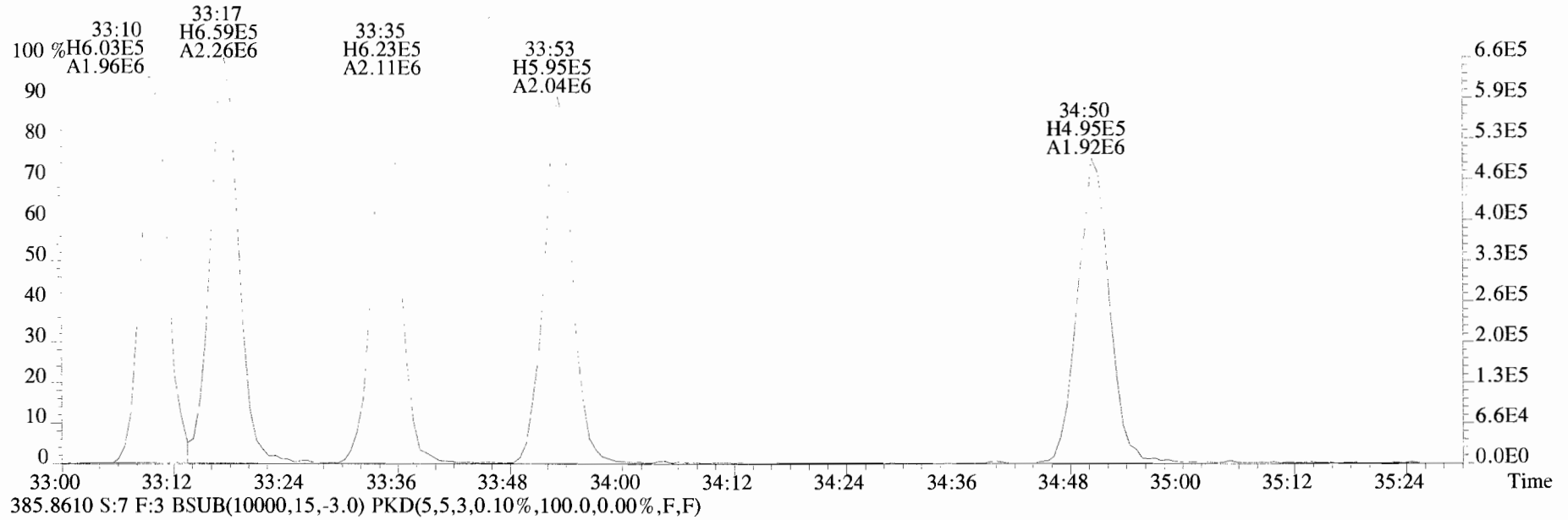
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Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
339.8597 S:7 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



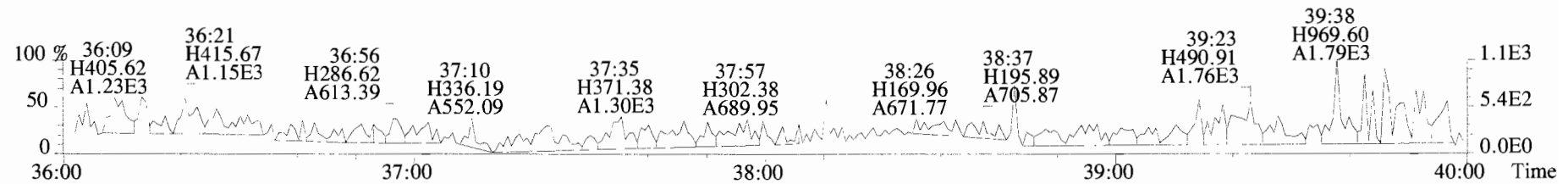
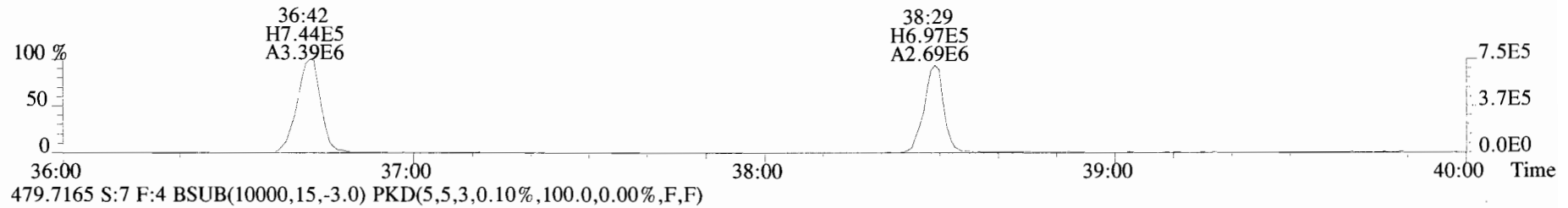
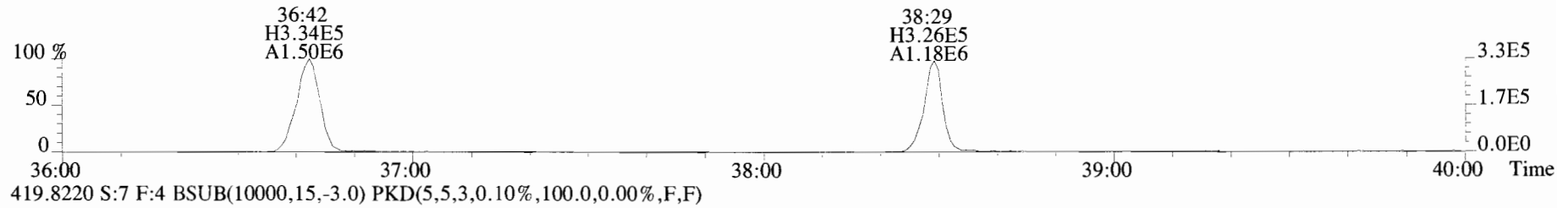
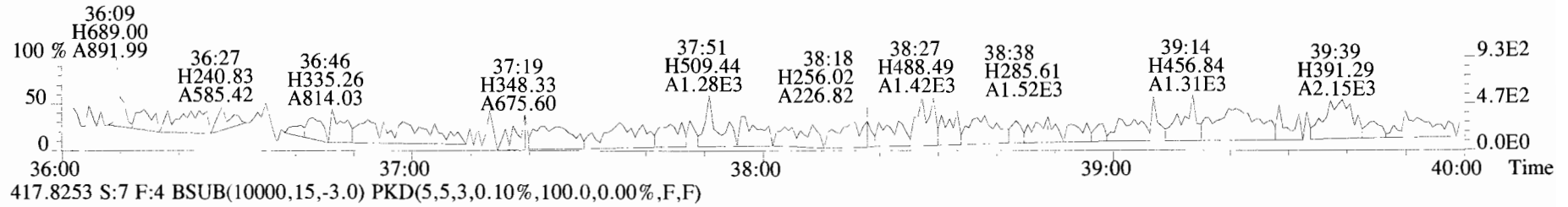
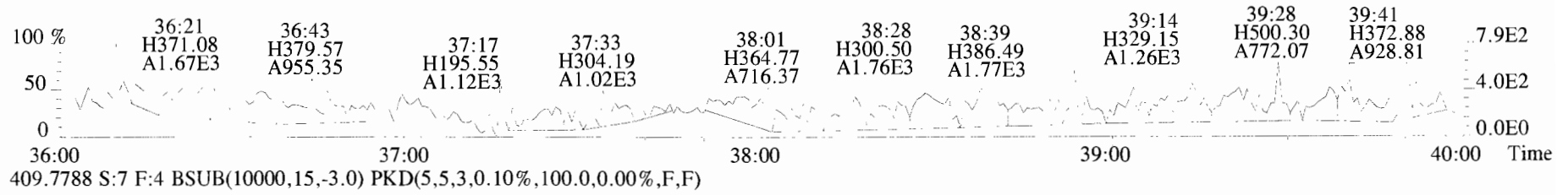
File:191029D1 #1-385 Acq:29-OCT-2019 15:02:56 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
 373.8207 S:7 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



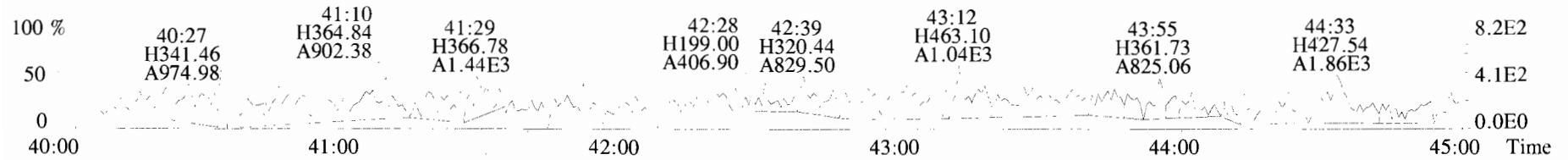
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Sample#7 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
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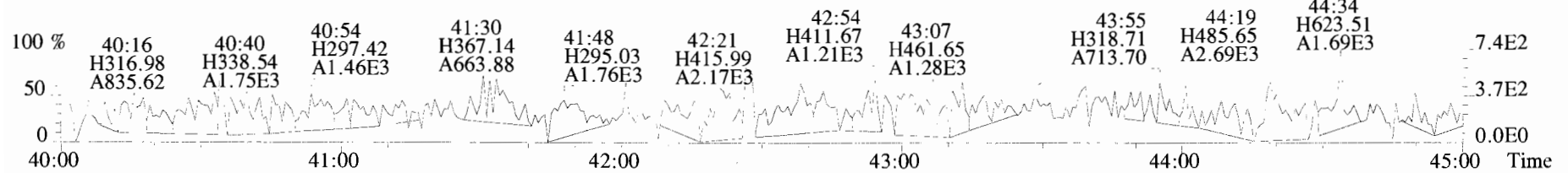
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 Sample#7 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BLK1 Method Blank 10 Exp:OCDD_DB5
 407.7818 S:7 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



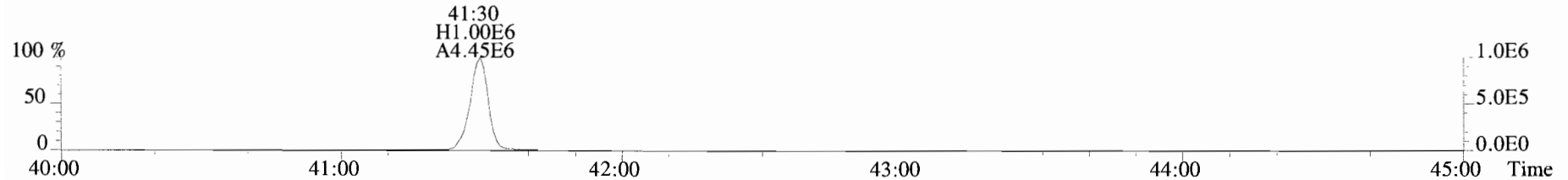
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441.7428 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



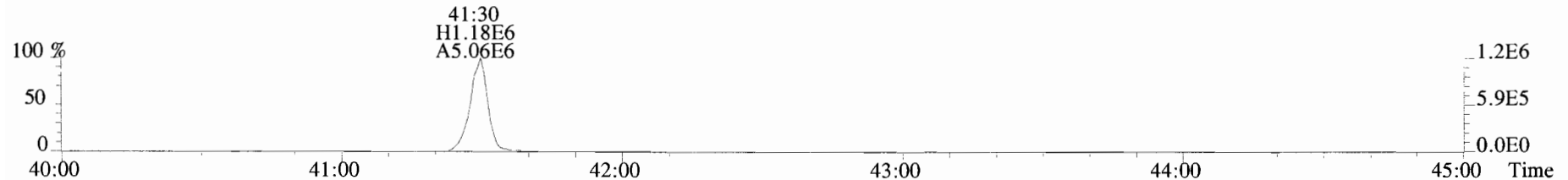
443.7398 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



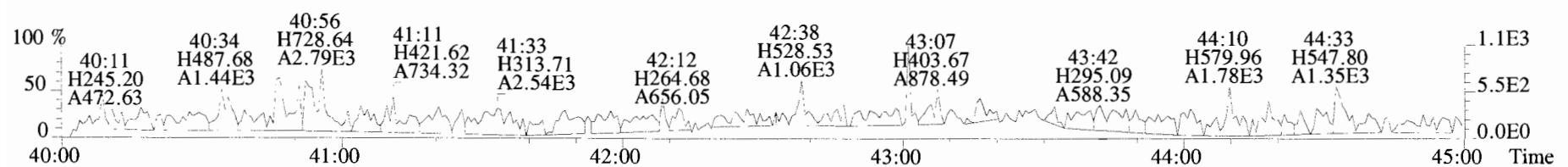
453.7831 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:7 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



FORM 8A
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9J0253-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191029D1-4

Ext. Date: Shift: Day Analysis Date: 29-OCT-19 Time: 12:39:19

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

| NATIVE ANALYTES | SPIKE CONC. (ng/mL) | CONC. FOUND (ng/mL) | OPR CONC. LIMITS (1) (ng/mL) |
|---------------------|---------------------------|---------------------------|------------------------------------|
| 2,3,7,8-TCDD | 10 | 10.6 | 6.7 - 15.8 7.3 - 14.6 (2) |
| 1,2,3,7,8-PeCDD | 50 | 56.2 | 35.0 - 71.0 |
| 1,2,3,4,7,8-HxCDD | 50 | 51.0 | 35.0 - 82.0 |
| 1,2,3,6,7,8-HxCDD | 50 | 51.0 | 38.0 - 67.0 |
| 1,2,3,7,8,9-HxCDD | 50 | 52.6 | 32.0 - 81.0 |
| 1,2,3,4,6,7,8-HpCDD | 50 | 50.9 | 35.0 - 70.0 |
| OCDD | 100 | 107 | 78.0 - 144.0 |
| 2,3,7,8-TCDF | 10 | 9.39 | 7.5 - 15.8 8.0 - 14.7 (2) |
| 1,2,3,7,8-PeCDF | 50 | 51.9 | 40.0 - 67.0 |
| 2,3,4,7,8-PeCDF | 50 | 49.2 | 34.0 - 80.0 |
| 1,2,3,4,7,8-HxCDF | 50 | 50.1 | 36.0 - 67.0 |
| 1,2,3,6,7,8-HxCDF | 50 | 48.6 | 42.0 - 65.0 |
| 2,3,4,6,7,8-HxCDF | 50 | 52.0 | 35.0 - 78.0 |
| 1,2,3,7,8,9-HxCDF | 50 | 49.7 | 39.0 - 65.0 |
| 1,2,3,4,6,7,8-HpCDF | 50 | 50.1 | 41.0 - 61.0 |
| 1,2,3,4,7,8,9-HpCDF | 50 | 47.9 | 39.0 - 69.0 |
| OCDF | 100 | 97.1 | 63.0 - 170.0 |

(1) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

(2) Contract-required concentration limits for OPR as specified in Table 6a, Method 1613. 10/94

Analyst: DB

Date: 10/29/19

FORM 8B
PCDD/PCDF ONGOING PRECISION AND RECOVERY (OPR)

Lab Name: Vista Analytical Laboratory Extraction Batch: B9J0253-BS1

Contract No.: SAS No.:

Matrix (aqueous/solid/leachate): SOLID OPR Data Filename: 191029D1-4

Ext. Date: Shift: Day Analysis Date: 29-OCT-19 Time: 12:39:19

ALL CONCENTRATIONS REPORTED ON THIS FORM ARE CONCENTRATIONS IN EXTRACT.

| LABELED COMPOUNDS | SPIKE CONC. (ng/mL) | CONC. FOUND (ng/mL) | OPR CONC. LIMITS (1) (ng/mL) |
|-------------------------|---------------------------|---------------------------|------------------------------------|
| 13C-2,3,7,8-TCDD | 100 | 103 | 20.0 - 175.0 25.0 - 141.0 (2) |
| 13C-1,2,3,7,8-PeCDD | 100 | 105 | 21.0 - 227.0 |
| 13C-1,2,3,4,7,8-HxCDD | 100 | 115 | 21.0 - 193.0 |
| 13C-1,2,3,6,7,8-HxCDD | 100 | 104 | 25.0 - 163.0 |
| 13C-1,2,3,7,8,9-HxCDD | 100 | 105 | 21.0 - 193.0 |
| 13C-1,2,3,4,6,7,8-HpCDD | 100 | 111 | 26.0 - 166.0 |
| 13C-OCDD | 200 | 214 | 26.0 - 397.0 |
| 13C-2,3,7,8-TCDF | 100 | 102 | 22.0 - 152.0 26.0 - 126.0 (2) |
| 13C-1,2,3,7,8-PeCDF | 100 | 116 | 21.0 - 192.0 |
| 13C-2,3,4,7,8-PeCDF | 100 | 115 | 13.0 - 328.0 |
| 13C-1,2,3,4,7,8-HxCDF | 100 | 115 | 19.0 - 202.0 |
| 13C-1,2,3,6,7,8-HxCDF | 100 | 106 | 21.0 - 159.0 |
| 13C-2,3,4,6,7,8-HxCDF | 100 | 102 | 22.0 - 176.0 |
| 13C-1,2,3,7,8,9-HxCDF | 100 | 108 | 17.0 - 205.0 |
| 13C-1,2,3,4,6,7,8-HpCDF | 100 | 101 | 21.0 - 158.0 |
| 13C-1,2,3,4,7,8,9-HpCDF | 100 | 109 | 20.0 - 186.0 |
| 13C-OCDF | 200 | 224 | 26.0 - 397.0 |
| CLEANUP STANDARD | | | |
| 37Cl-2,3,7,8-TCDD | 40 | 37.9 | 12.4 - 76.4 |

(1) Contract-required concentration limits for OPR as specified in Table 6, Method 1613. 10/94

(2) Contract-required concentration limits for OPR as specified in Table 6a, Method 1613. 10/94

Analyst: DB

Date: 10/29/19

Client ID: OPR
Lab ID: B9J0253-BS1

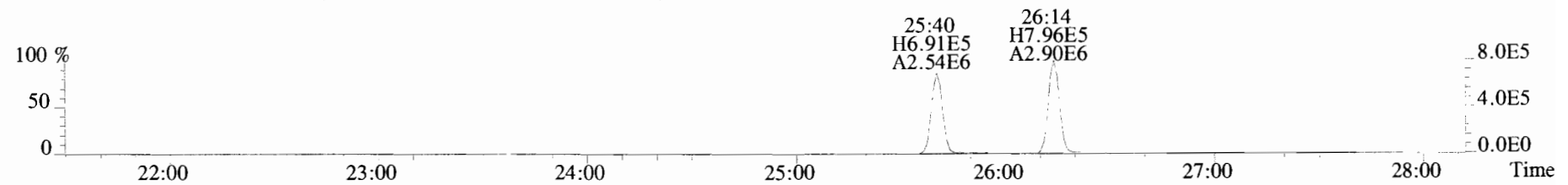
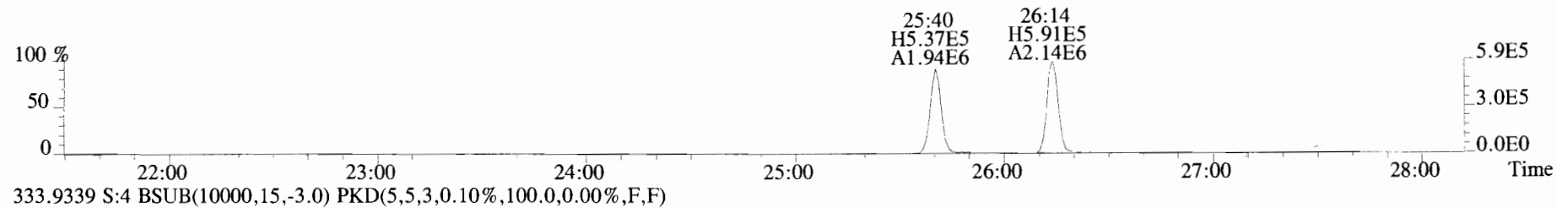
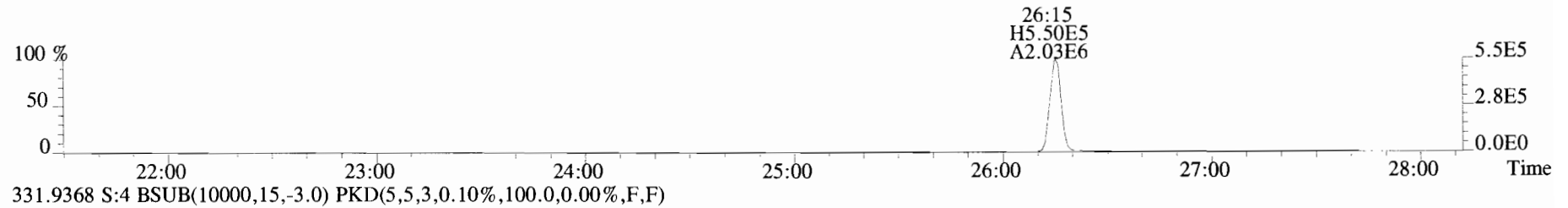
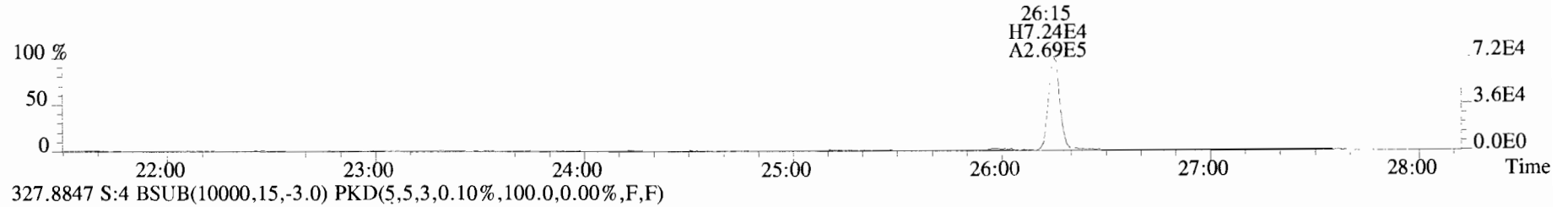
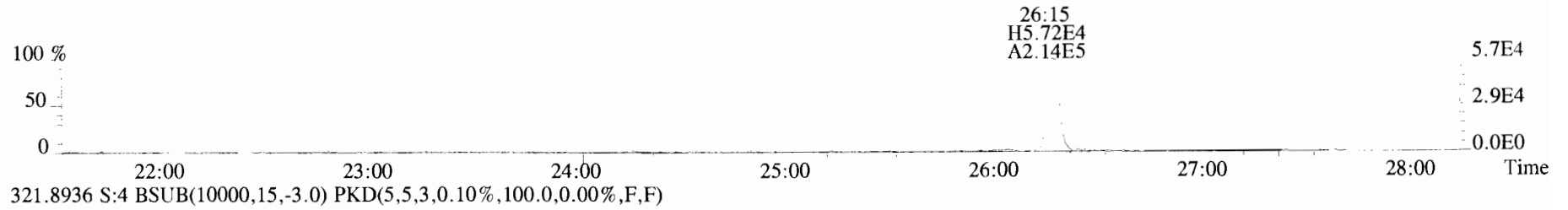
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GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191029D1-1
EndCAL: NA

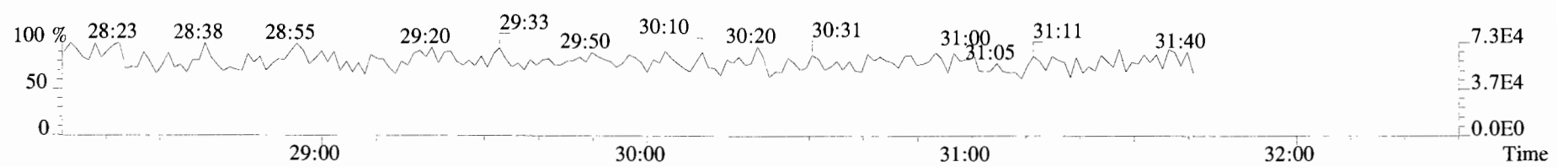
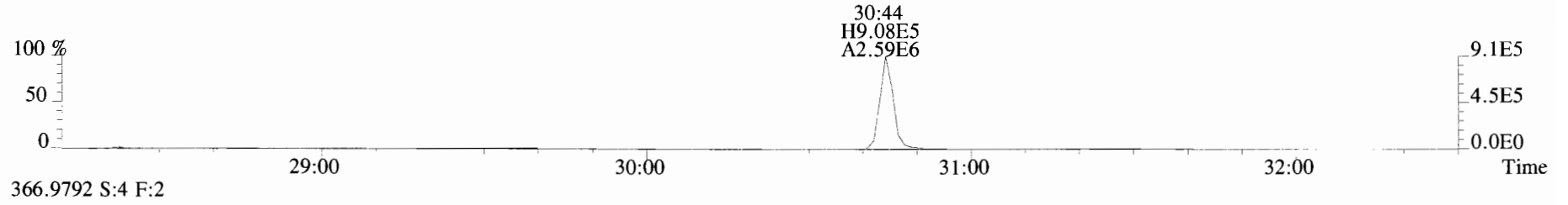
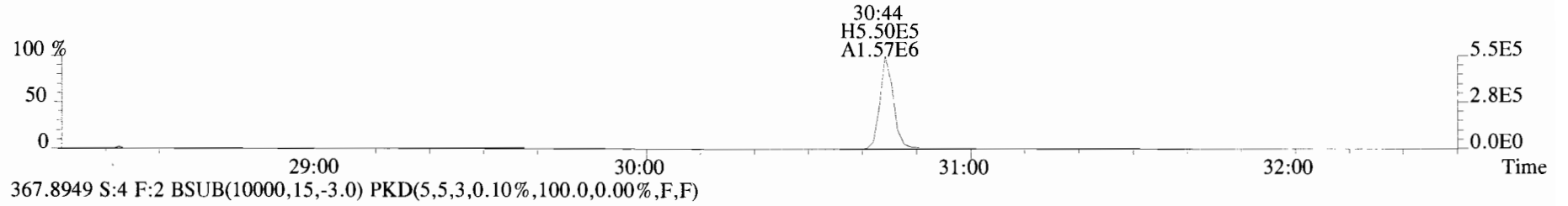
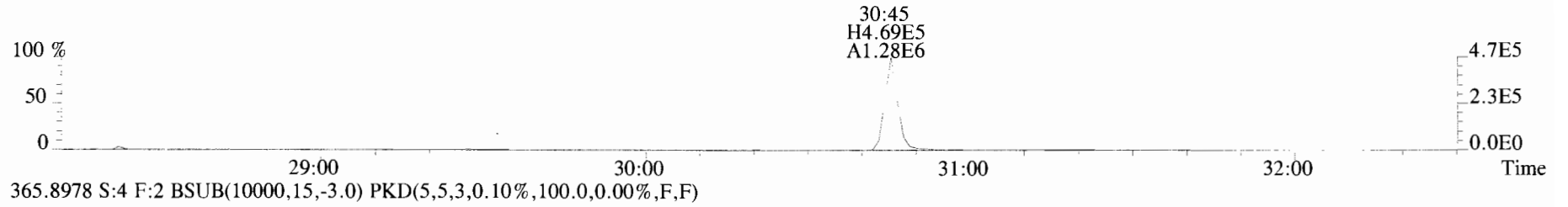
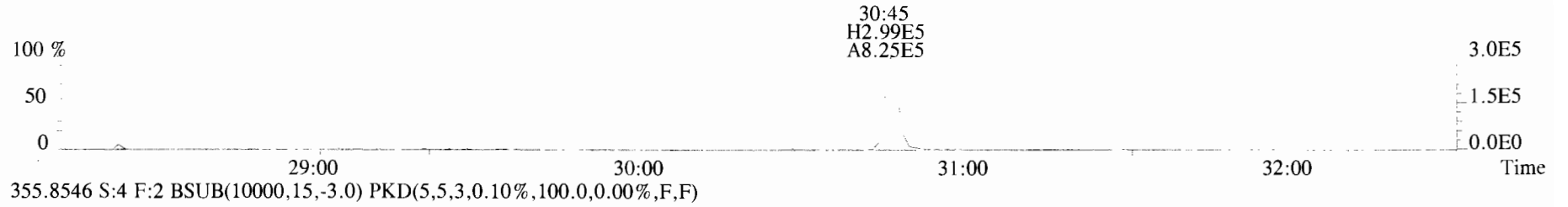
| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Pac | DL | Name | Conc | EMPC | Qual | noise | DL |
|---------------------|-------------------------|----------|--------|-------|--------|--------|-------|-----|----|---------------------|--------|--------|------|-------|----|
| 2,3,7,8-TCDD | 4.83e+05 | 0.80 y | 0.91 | 26:15 | 10.604 | | * 2.5 | | * | Total Tetra-Dioxins | 11.4 | 13.3 | | * | * |
| 1,2,3,7,8-PeCDD | 2.11e+06 | 0.64 y | 0.90 | 30:45 | 56.164 | | * 2.5 | | * | Total Penta-Dioxins | 56.5 | 58.5 | | * | * |
| 1,2,3,4,7,8-HxCDD | 2.05e+06 | 1.23 y | 1.10 | 34:05 | 50.961 | | * 2.5 | | * | Total Hexa-Dioxins | 155 | 155 | | * | * |
| 1,2,3,6,7,8-HxCDD | 2.10e+06 | 1.19 y | 0.94 | 34:12 | 50.985 | | * 2.5 | | * | Total Hepta-Dioxins | 51.5 | 53.2 | | * | * |
| 1,2,3,7,8,9-HxCDD | 2.11e+06 | 1.21 y | 0.96 | 34:30 | 52.590 | | * 2.5 | | * | Total Tetra-Furans | 10.1 | 12.0 | | * | * |
| 1,2,3,4,6,7,8-HpCDD | 1.78e+06 | 1.01 y | 0.98 | 37:58 | 50.866 | | * 2.5 | | * | Total Penta-Furans | 101.21 | 103.29 | | * | * |
| OCDD | 3.14e+06 | 0.93 y | 0.96 | 41:18 | 107.30 | | * 2.5 | | * | Total Hexa-Furans | 201 | 202 | | * | * |
| | | | | | | | | | | Total Hepta-Furans | 98.7 | 100 | | * | * |
| 2,3,7,8-TCDF | 6.48e+05 | 0.85 y | 0.95 | 25:28 | 9.3914 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8-PeCDF | 3.39e+06 | 1.60 y | 0.96 | 29:35 | 51.879 | | * 2.5 | | * | | | | | | |
| 2,3,4,7,8-PeCDF | 3.36e+06 | 1.63 y | 1.01 | 30:28 | 49.180 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8-HxCDF | 2.78e+06 | 1.22 y | 1.18 | 33:11 | 50.125 | | * 2.5 | | * | | | | | | |
| 1,2,3,6,7,8-HxCDF | 2.82e+06 | 1.24 y | 1.07 | 33:19 | 48.601 | | * 2.5 | | * | | | | | | |
| 2,3,4,6,7,8-HxCDF | 2.78e+06 | 1.23 y | 1.11 | 33:55 | 52.006 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8,9-HxCDF | 2.33e+06 | 1.22 y | 1.06 | 34:52 | 49.719 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 2.13e+06 | 1.06 y | 1.13 | 36:44 | 50.059 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.92e+06 | 1.04 y | 1.28 | 38:31 | 47.859 | | * 2.5 | | * | | | | | | |
| OCDF | 3.50e+06 | 0.92 y | 0.95 | 41:31 | 97.103 | | * 2.5 | | * | | | | | | |
| IS | 13C-2,3,7,8-TCDD | 5.03e+06 | 0.74 y | 1.10 | 26:14 | 102.58 | | | | Rec | Qual | | | | |
| IS | 13C-1,2,3,7,8-PeCDD | 4.16e+06 | 0.60 y | 0.88 | 30:44 | 105.28 | | | | 103 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDD | 3.65e+06 | 1.28 y | 0.64 | 34:04 | 115.30 | | | | 105 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDD | 4.39e+06 | 1.29 y | 0.86 | 34:10 | 104.22 | | | | 115 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDD | 4.17e+06 | 1.33 y | 0.81 | 34:29 | 104.80 | | | | 104 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 3.56e+06 | 1.05 y | 0.65 | 37:57 | 110.58 | | | | 105 | | | | | |
| IS | 13C-OCDD | 6.11e+06 | 0.95 y | 0.58 | 41:17 | 213.81 | | | | 111 | | | | | |
| IS | 13C-2,3,7,8-TCDF | 7.26e+06 | 0.79 y | 1.03 | 25:27 | 101.75 | | | | 107 | | | | | |
| IS | 13C-1,2,3,7,8-PeCDF | 6.81e+06 | 1.59 y | 0.85 | 29:34 | 115.57 | | | | 102 | | | | | |
| IS | 13C-2,3,4,7,8-PeCDF | 6.73e+06 | 1.57 y | 0.85 | 30:27 | 115.18 | | | | 116 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDF | 4.71e+06 | 0.52 y | 0.83 | 33:11 | 114.90 | | | | 115 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDF | 5.42e+06 | 0.50 y | 1.03 | 33:18 | 106.32 | | | | 106 | | | | | |
| IS | 13C-2,3,4,6,7,8-HxCDF | 4.81e+06 | 0.51 y | 0.95 | 33:54 | 102.37 | | | | 102 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDF | 4.42e+06 | 0.52 y | 0.83 | 34:51 | 108.41 | | | | 108 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 3.78e+06 | 0.46 y | 0.76 | 36:43 | 101.27 | | | | 101 | | | | | |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 3.13e+06 | 0.43 y | 0.58 | 38:30 | 109.18 | | | | 109 | | | | | |
| IS | 13C-OCDF | 7.61e+06 | 0.88 y | 0.69 | 41:30 | 224.10 | | | | 112 | | | | | |
| C/Up | 37Cl-2,3,7,8-TCDD | 2.03e+06 | | 1.20 | 26:15 | 37.875 | | | | 94.7 | | | | | |
| RS/RT | 13C-1,2,3,4-TCDD | 4.48e+06 | 0.76 y | 1.00 | 25:40 | 100.00 | | | | | | | | | |
| RS | 13C-1,2,3,4-TCDF | 6.90e+06 | 0.81 y | 1.00 | 24:15 | 100.00 | | | | | | | | | |
| RS/RT | 13C-1,2,3,4,6,9-HxCDF | 4.93e+06 | 0.51 y | 1.00 | 33:35 | 100.00 | | | | | | | | | |

Integrations
by DB
Analyst: DB
Date: 10/29/19
Reviewed
by CM
Analyst: CM
Date: 11/05/19

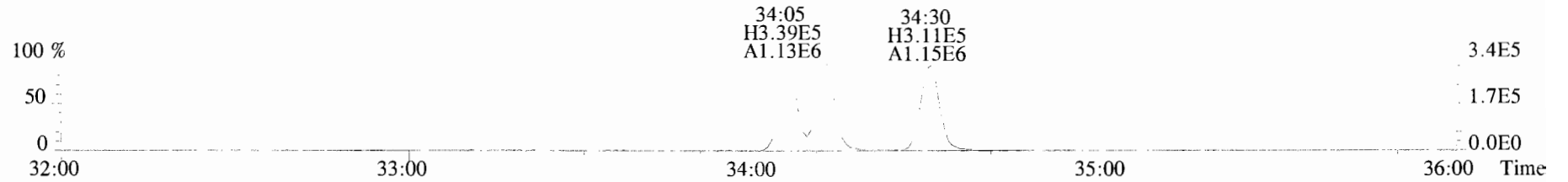
File:191029D1 #1-493 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
319.8965 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



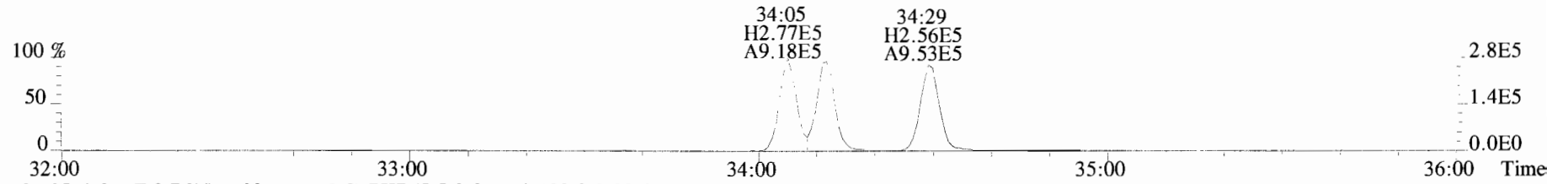
File:191029D1 #1-211 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
353.8576 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



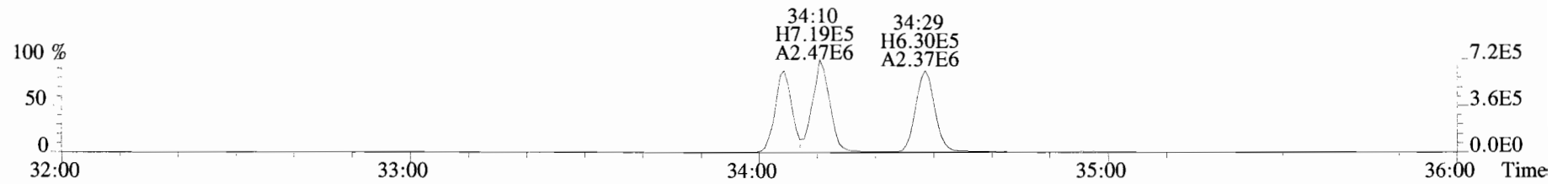
File:191029D1 #1-385 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
389.8156 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



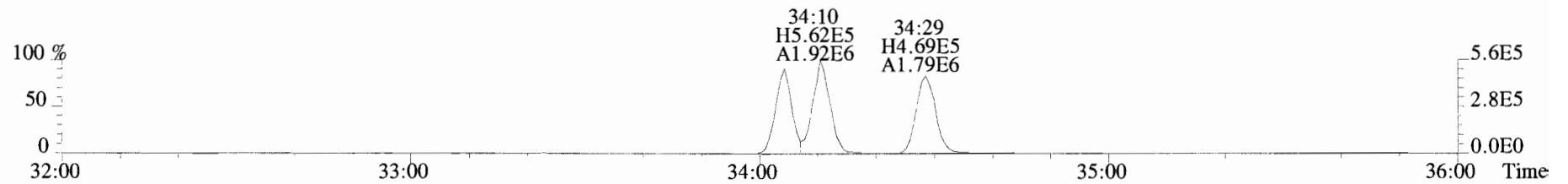
391.8127 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



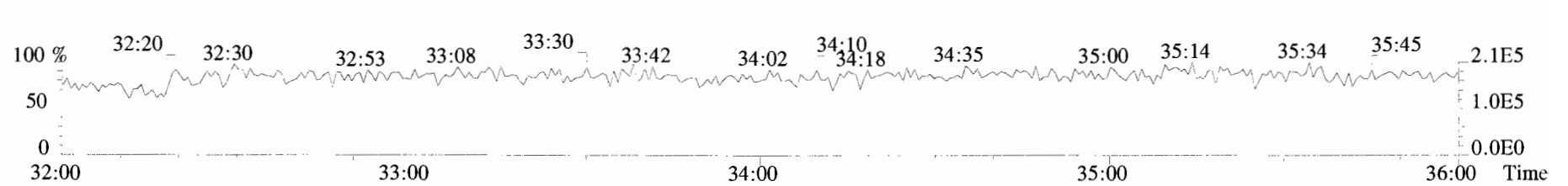
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



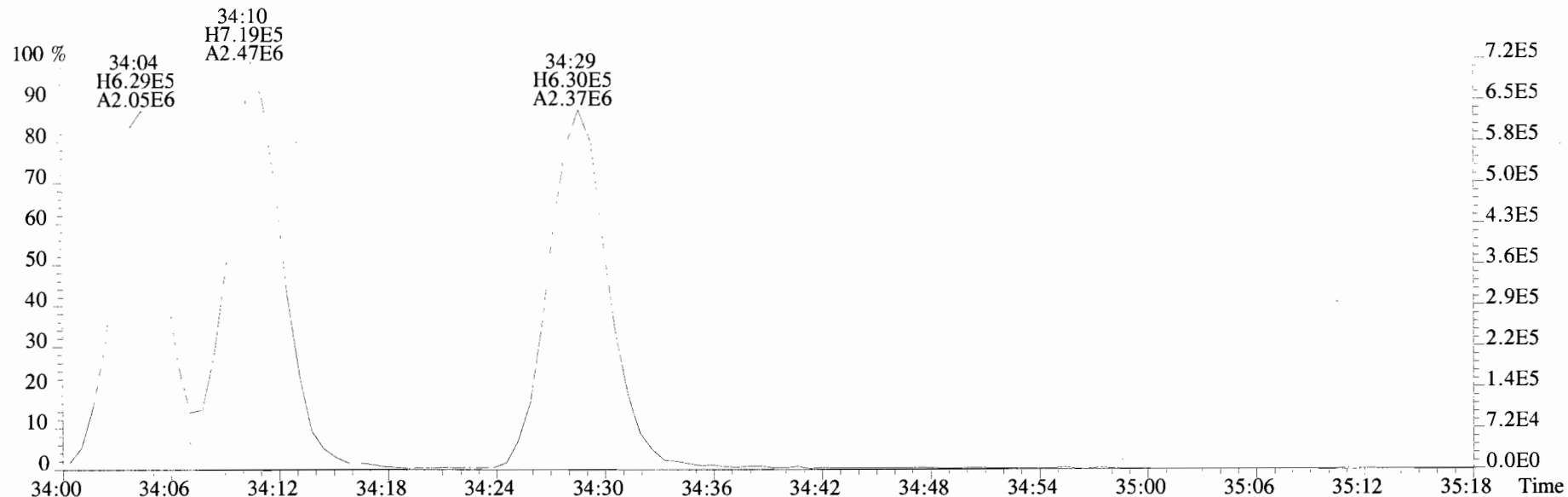
403.8530 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



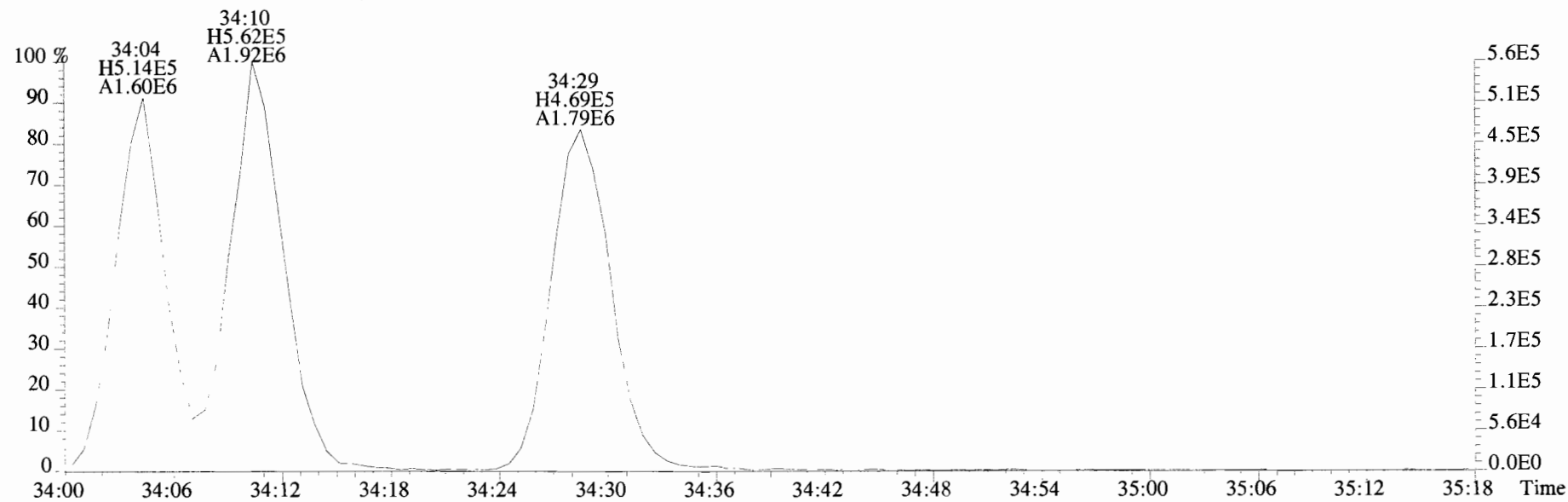
392.9760 S:4 F:3



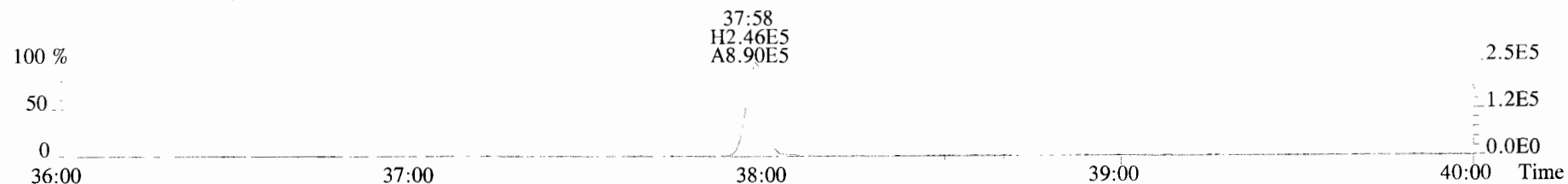
File: 191029D1 #1-385 Acq: 29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text: Viata_Analytical_Laboratory_VG7 Text: B9J0253-BS1 OPR 10 Exp: OCDD_DB5
401.8559 S:4 F:3 BSUB(I0000,15,-3.0) PKD(5,5,3,0.10%.100.0,0.00%,F,F)



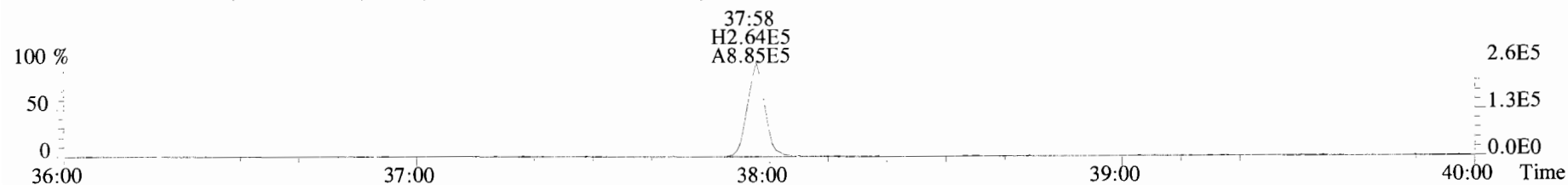
403.8530 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



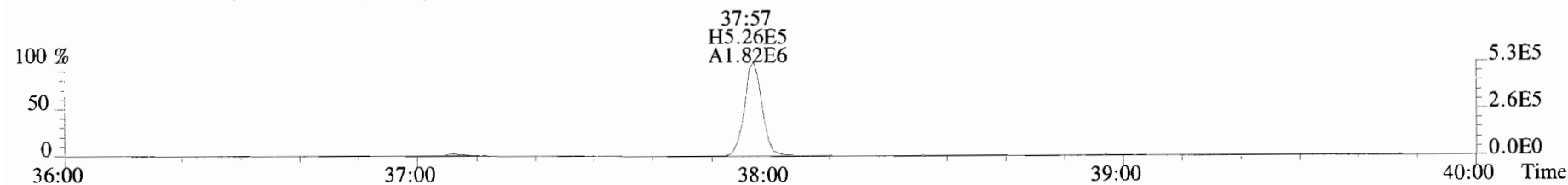
File:191029D1 #1-355 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
423.7767 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



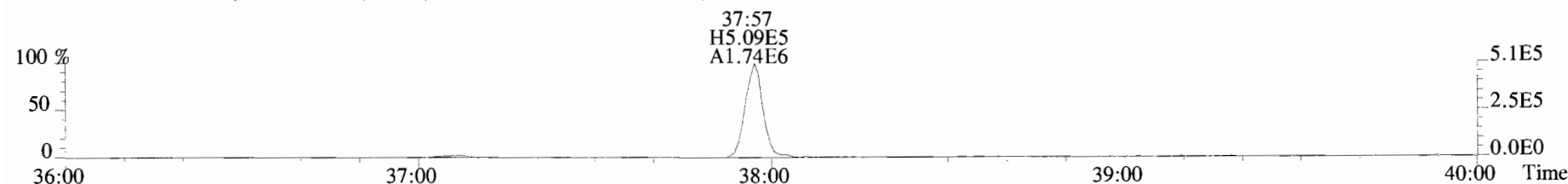
425.7737 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



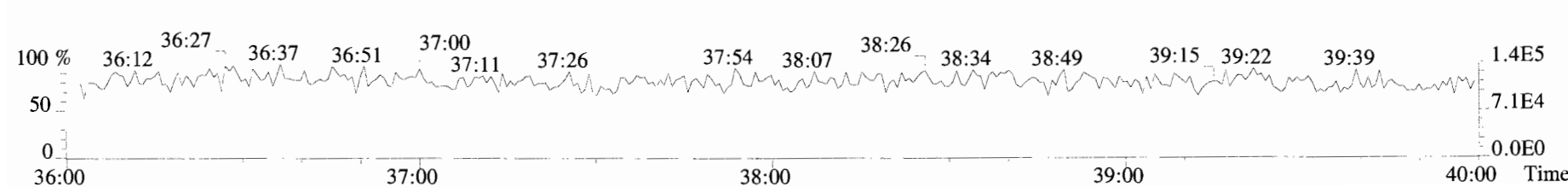
435.8169 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



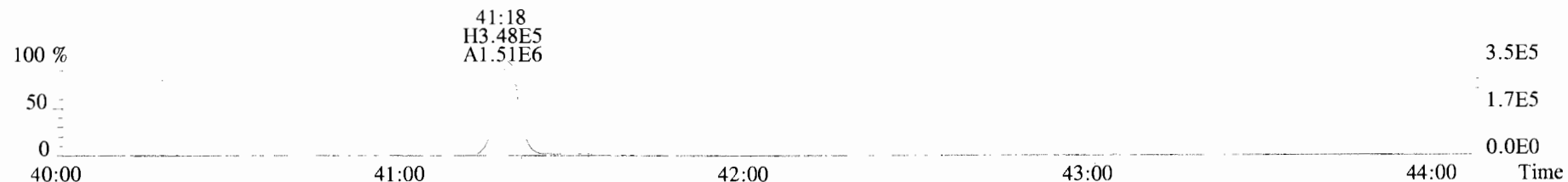
437.8140 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



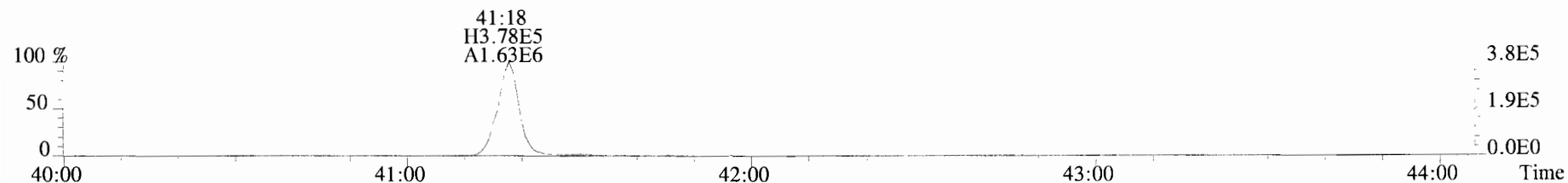
454.9728 S:4 F:4



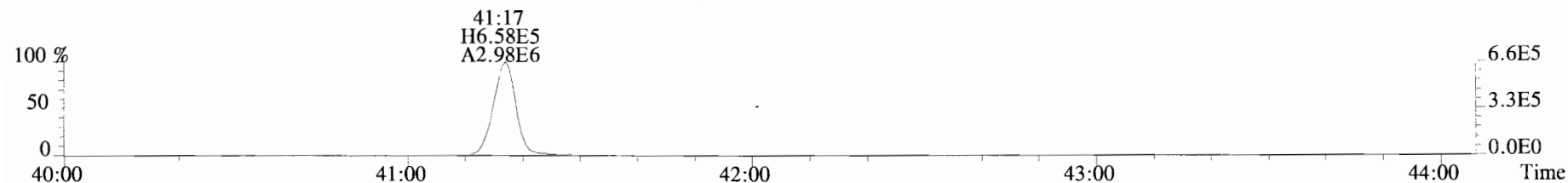
File:191029D1 #1-433 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
457.7377 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



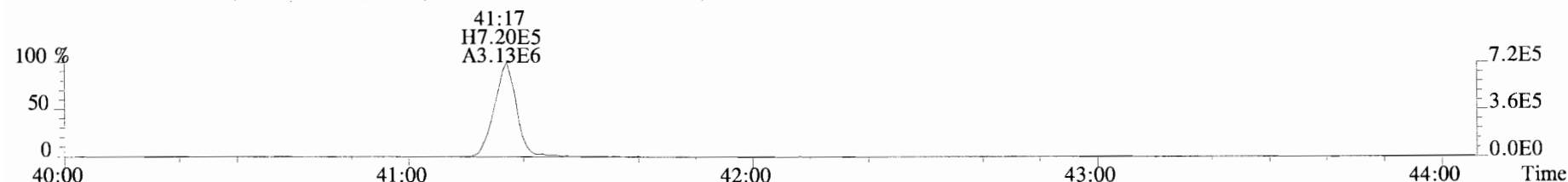
459.7348 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



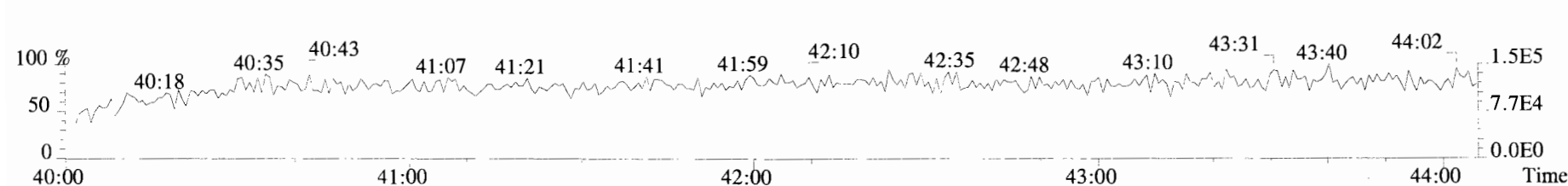
469.7780 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



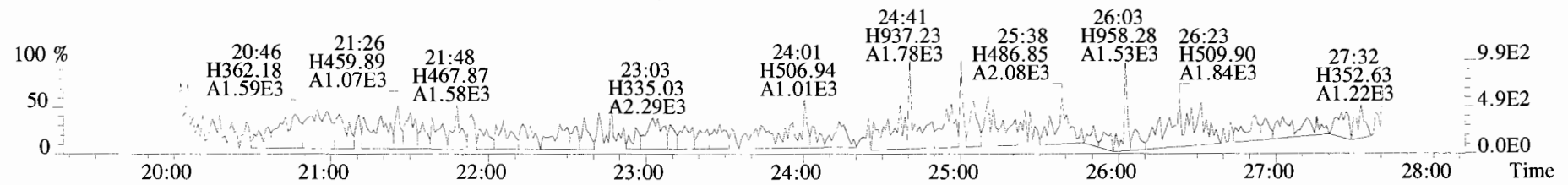
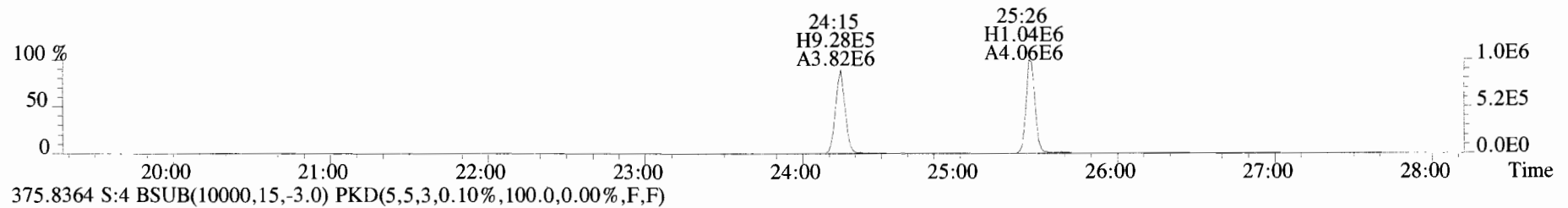
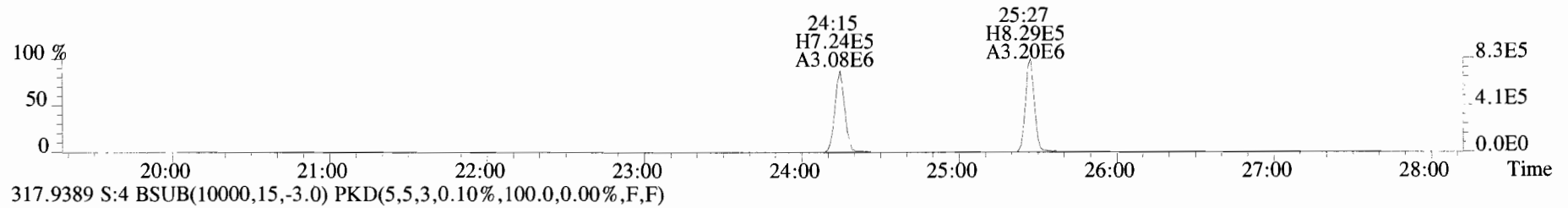
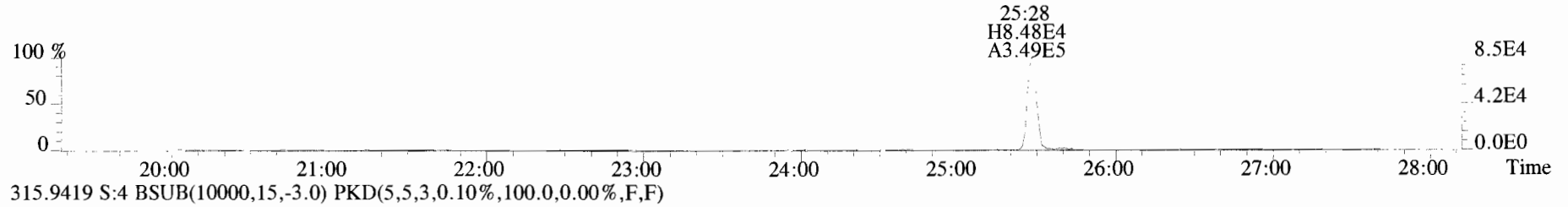
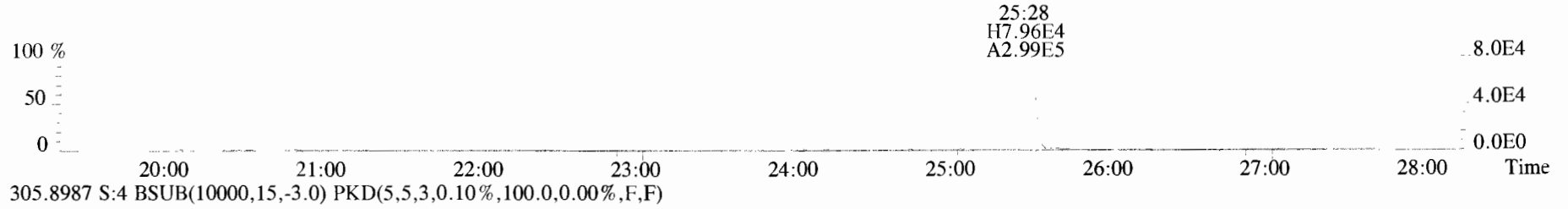
471.7750 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



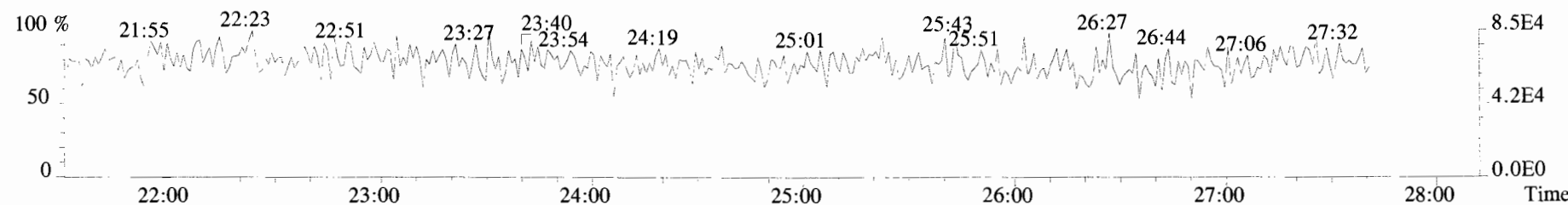
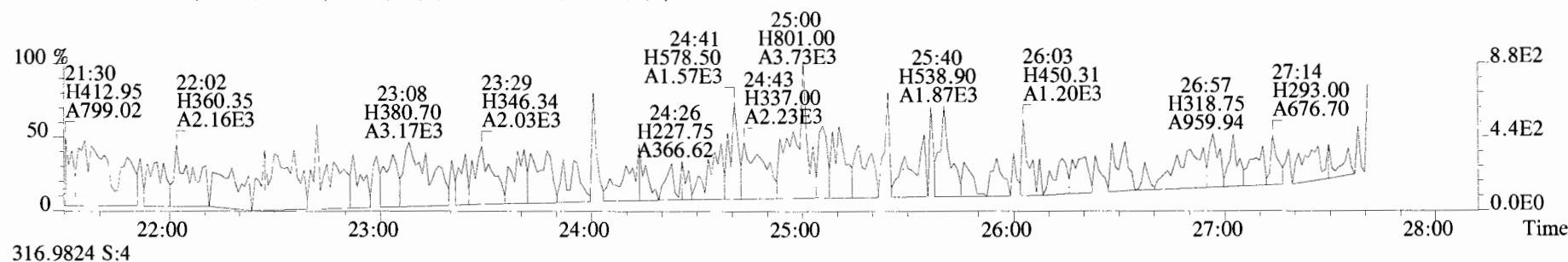
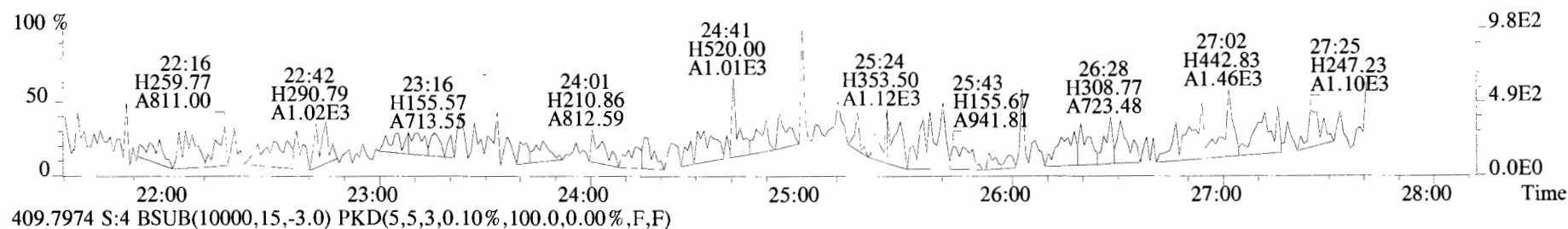
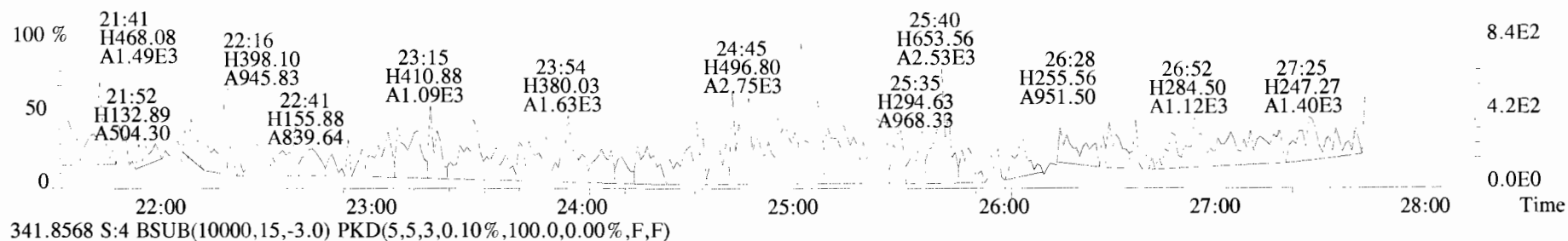
454.9728 S:4 F:5



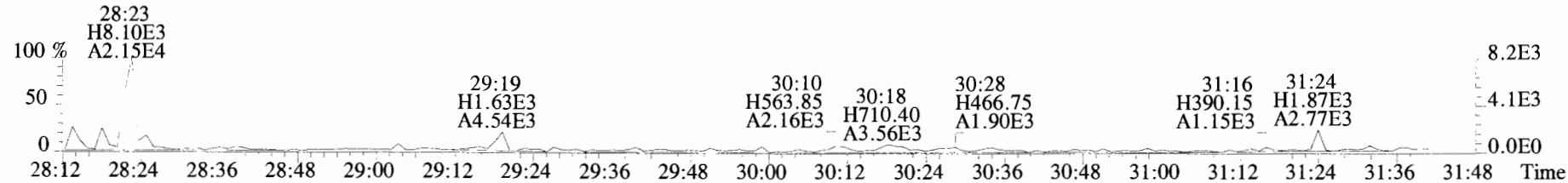
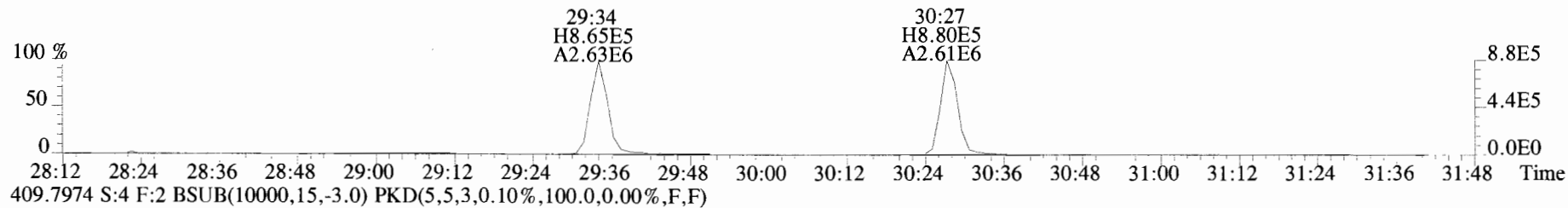
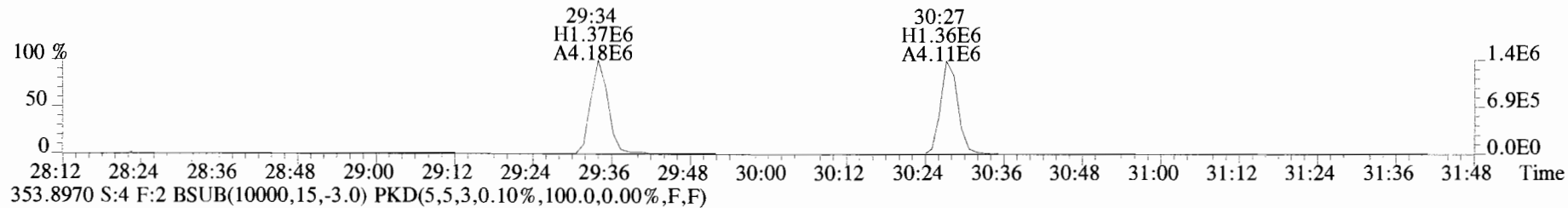
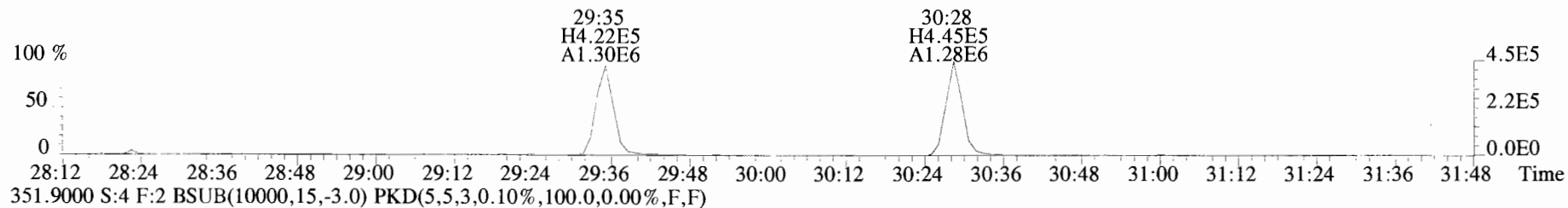
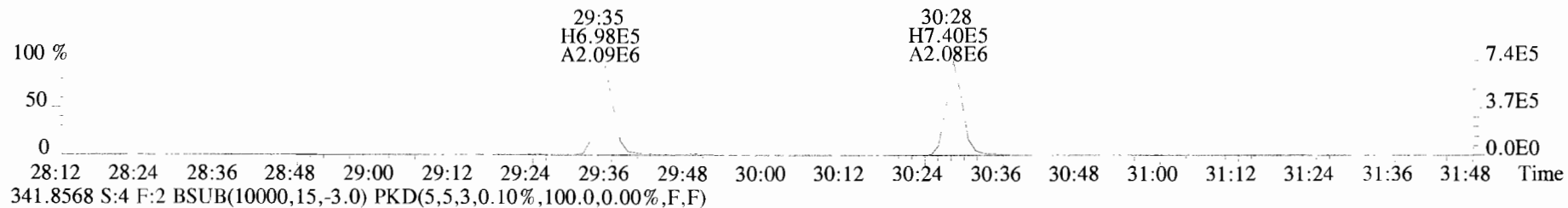
File:191029D1 #1-493 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



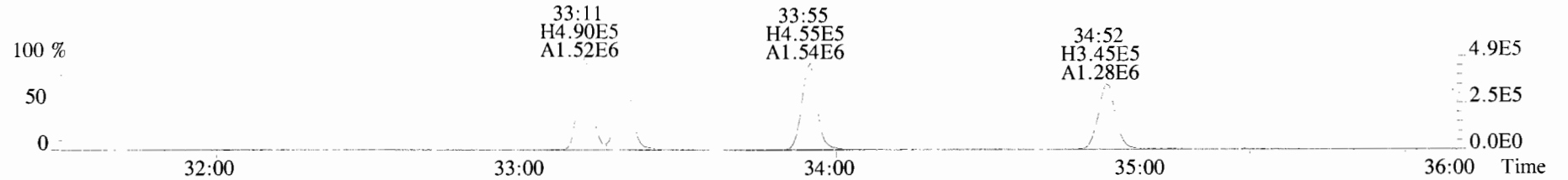
File:191029D1 #1-493 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
339.8597 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



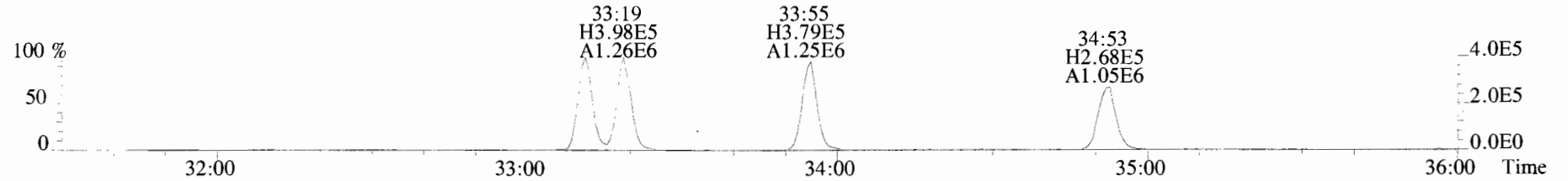
File:191029D1 #1-211 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
 339.8597 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



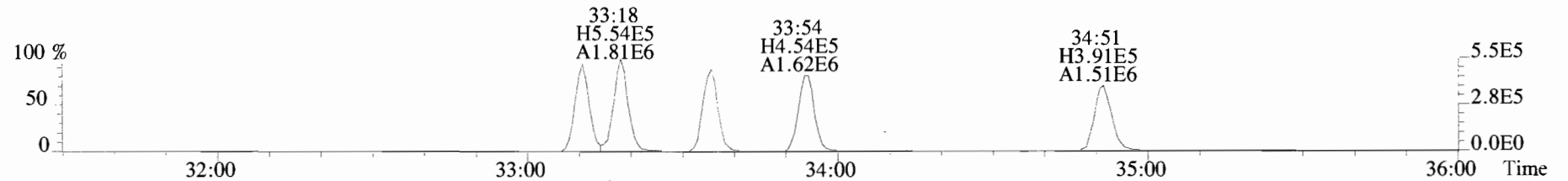
File:191029D1 #1-385 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
373.8207 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



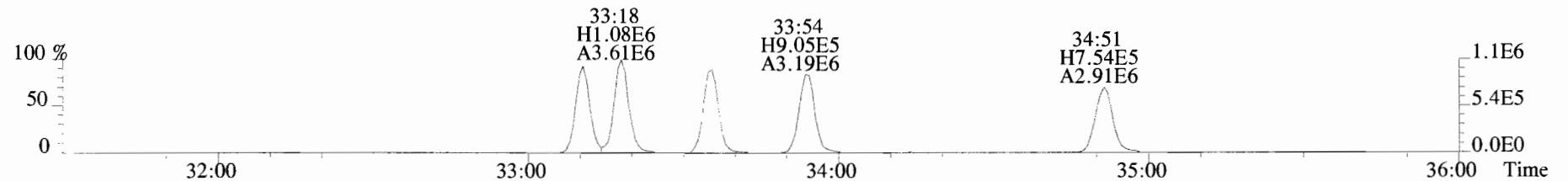
375.8178 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



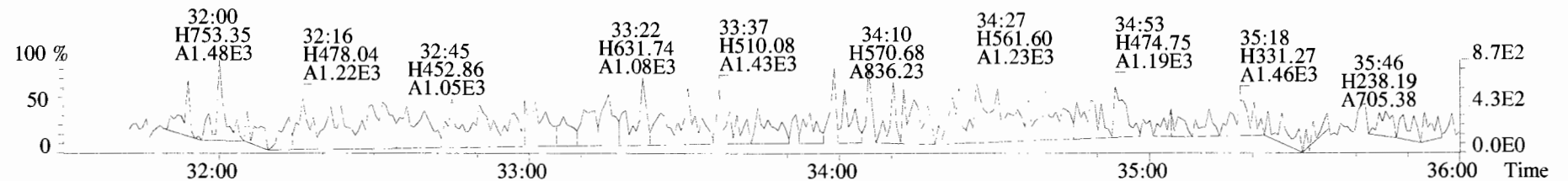
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



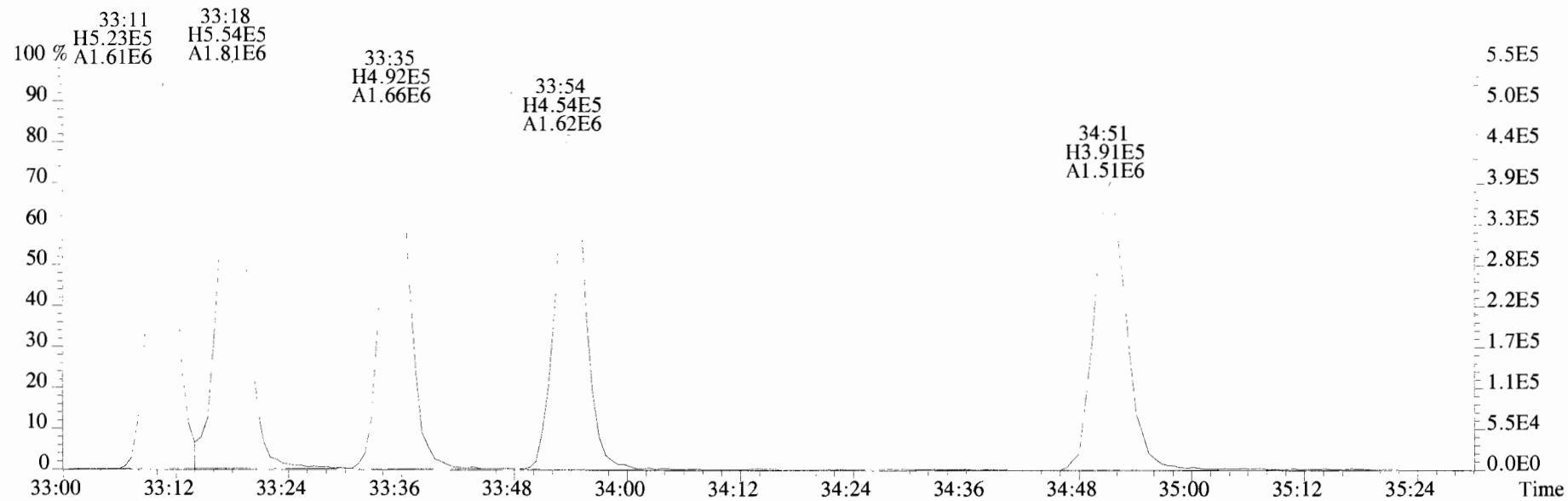
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



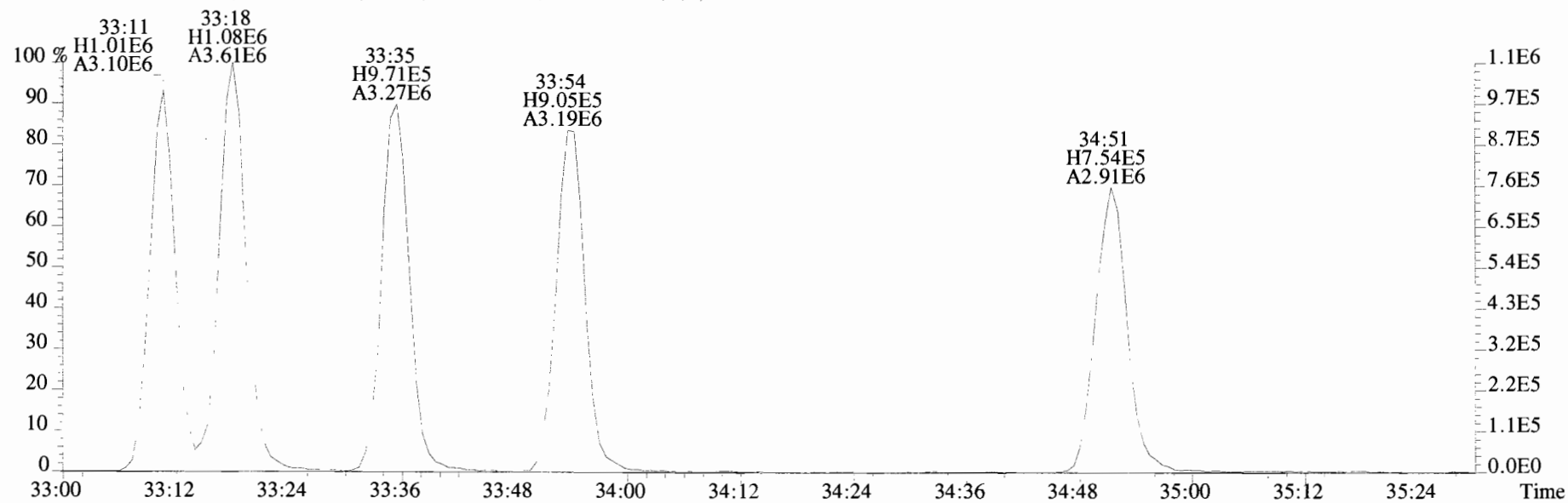
445.7555 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



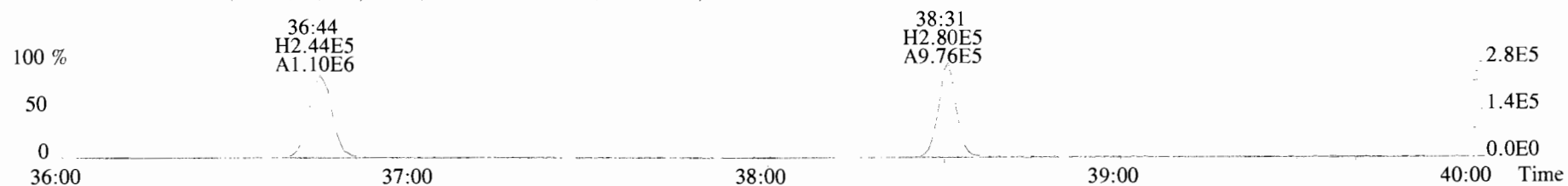
File:191029D1 #1-385 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata_Analytical_Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



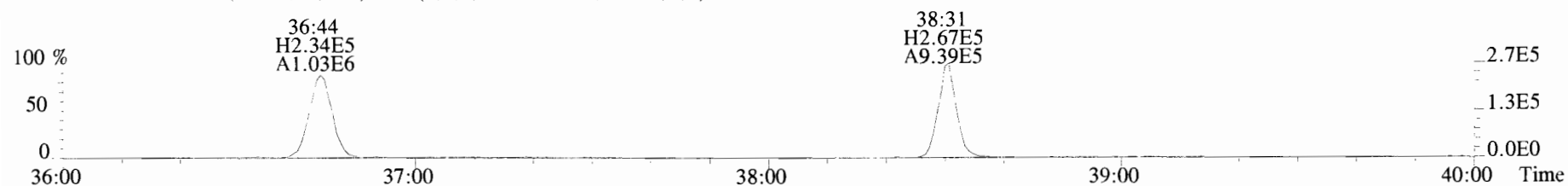
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



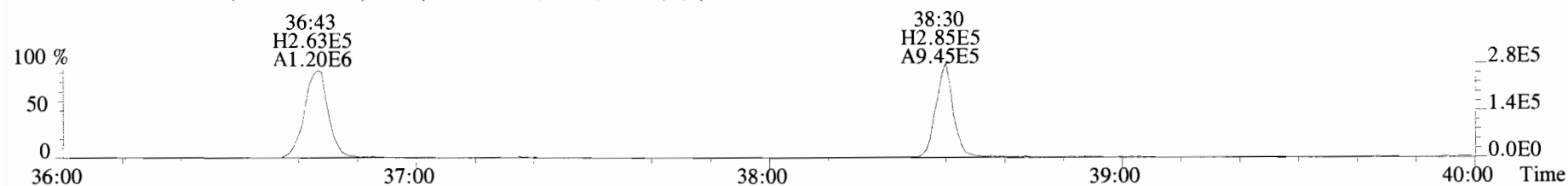
File:191029D1 #1-355 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
407.7818 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



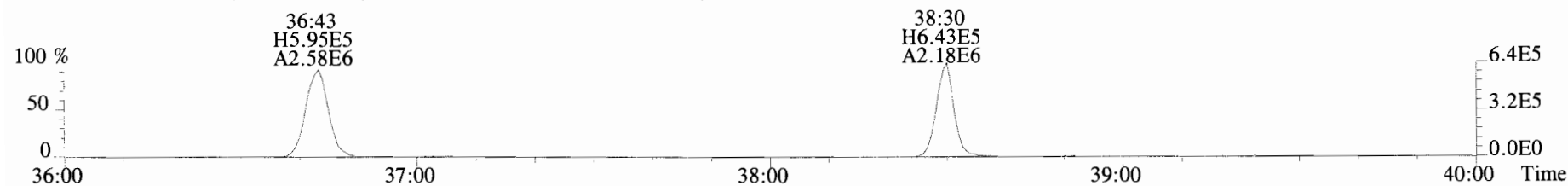
409.7788 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



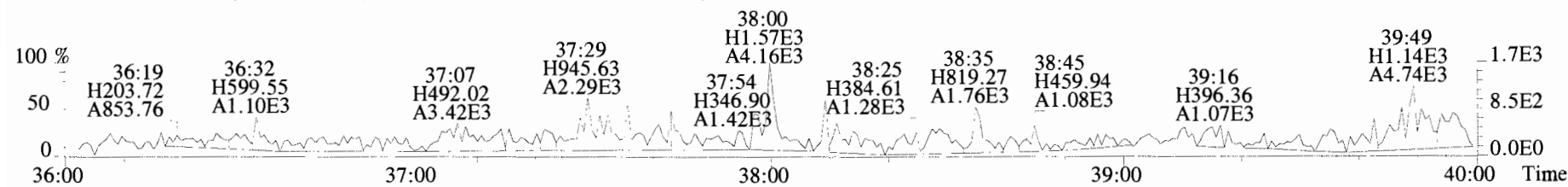
417.8253 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



419.8220 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



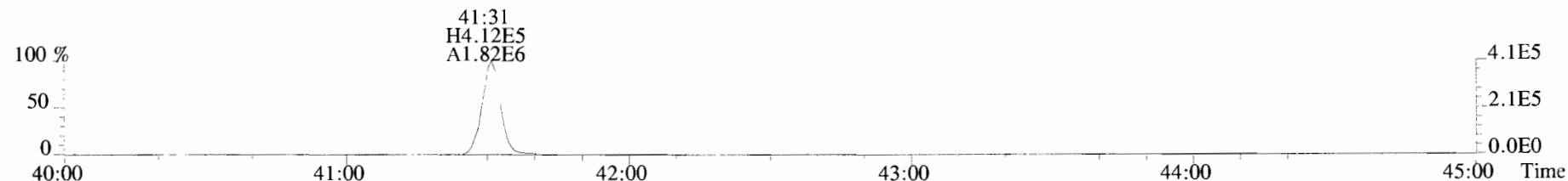
479.7165 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



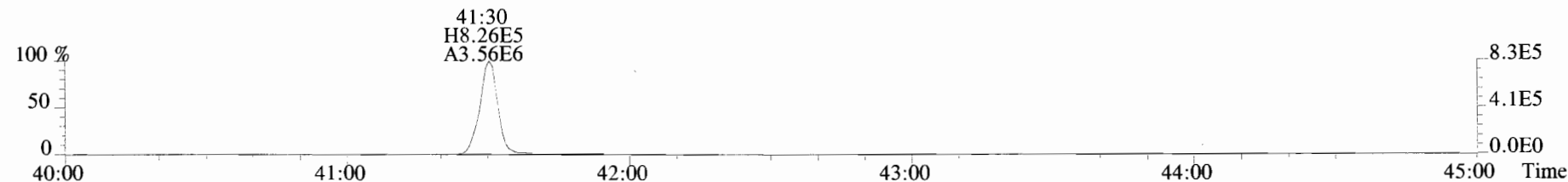
File:191029D1 #1-433 Acq:29-OCT-2019 12:39:19 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Viata Analytical Laboratory_VG7 Text:B9J0253-BS1 OPR 10 Exp:OCDD_DB5
441.7428 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



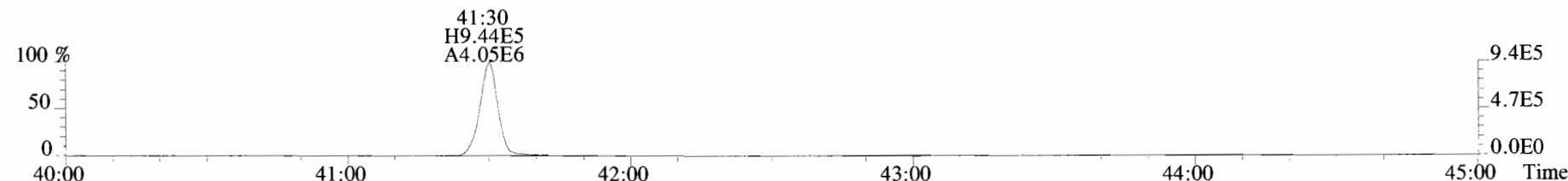
443.7398 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



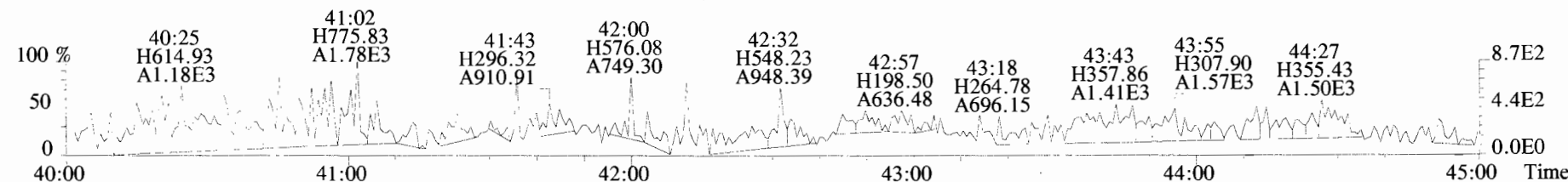
453.7831 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-5.qld
 Last Altered: Tuesday, November 05, 2019 11:43:10 Pacific Standard Time
 Printed: Tuesday, November 05, 2019 11:43:22 Pacific Standard Time

HL 11-5-19

CM 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 13:25:01

Name: VG7 191021D3_5, Date: 22-OCT-2019, Time: 05:15:19, ID: 1903460-01 PDI-039SC-A-12-13-190930,
 Description: 1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

| # | Name | Area | IS Area | WL/Vol | RR | Y/N | Prod | RR | Prod | Prod | Prod | Prod | Prod | Prod |
|----|------------------------|--------|---------|---------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 1.39e5 | 10.0239 | 0.905 | | 1.001 | | | | | | | 0.118 |
| 2 | 1,2,3,7,8-PeCDD | | 1.31e5 | 10.0239 | 0.903 | | 1.001 | | | | | | | 0.133 |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.17e5 | 10.0239 | 1.101 | | 1.000 | | | | | | | 0.150 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.30e5 | 10.0239 | 0.939 | | 1.000 | | | | | | | 0.160 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.32e5 | 10.0239 | 0.961 | | 1.001 | | | | | | | 0.150 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 7.29e2 | 1.17e5 | 10.0239 | 0.979 | 1.065 | NO | 1.000 | 1.001 | 37.90 | 37.91 | 1.2709 | 1.27 | 0.191 |
| 7 | OCDD | 5.33e3 | 1.95e5 | 10.0239 | 0.959 | 0.942 | NO | 1.000 | 1.001 | 41.17 | 41.19 | 11.385 | 11.4 | 0.162 |
| 8 | 2,3,7,8-TCDF | | 2.01e5 | 10.0239 | 0.950 | | 1.001 | | | | | | | 0.0972 |
| 9 | 1,2,3,7,8-PeCDF | | 1.94e5 | 10.0239 | 0.960 | | 1.001 | | | | | | | 0.0728 |
| 10 | 2,3,4,7,8-PeCDF | | 1.92e5 | 10.0239 | 1.015 | | 1.001 | | | | | | | 0.0637 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.42e5 | 10.0239 | 1.177 | | 1.000 | | | | | | | 0.0880 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.61e5 | 10.0239 | 1.069 | | 1.000 | | | | | | | 0.0867 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.54e5 | 10.0239 | 1.114 | | 1.001 | | | | | | | 0.0923 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.40e5 | 10.0239 | 1.062 | | 1.000 | | | | | | | 0.116 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.31e5 | 10.0239 | 1.128 | | 1.001 | | | | | | | 0.114 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.09e5 | 10.0239 | 1.280 | | 1.000 | | | | | | | 0.0947 |
| 17 | OCDF | | 2.39e5 | 10.0239 | 0.947 | | 1.000 | | | | | | | 0.150 |
| 18 | 13C-2,3,7,8-TCDD | 1.39e5 | 1.30e5 | 10.0239 | 1.095 | 0.813 | NO | 1.021 | 1.021 | 26.26 | 26.27 | 194.97 | 97.7 | 0.271 |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.31e5 | 1.30e5 | 10.0239 | 0.881 | 0.631 | NO | 1.187 | 1.195 | 30.52 | 30.74 | 229.14 | 114.8 | 0.378 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.17e5 | 1.69e5 | 10.0239 | 0.642 | 1.290 | NO | 1.014 | 1.014 | 34.04 | 34.05 | 215.21 | 107.9 | 0.441 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.30e5 | 1.69e5 | 10.0239 | 0.856 | 1.263 | NO | 1.017 | 1.017 | 34.16 | 34.15 | 179.35 | 89.9 | 0.331 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.32e5 | 1.69e5 | 10.0239 | 0.807 | 1.258 | NO | 1.026 | 1.026 | 34.45 | 34.46 | 192.76 | 96.6 | 0.351 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.17e5 | 1.69e5 | 10.0239 | 0.654 | 1.039 | NO | 1.126 | 1.129 | 37.81 | 37.89 | 210.98 | 105.7 | 0.838 |
| 24 | 13C-OCDD | 1.95e5 | 1.69e5 | 10.0239 | 0.580 | 0.915 | NO | 1.226 | 1.226 | 41.16 | 41.17 | 397.08 | 99.5 | 0.558 |
| 25 | 13C-2,3,7,8-TCDF | 2.01e5 | 2.08e5 | 10.0239 | 1.035 | 0.775 | NO | 0.993 | 0.991 | 25.55 | 25.49 | 186.74 | 93.6 | 0.415 |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.94e5 | 2.08e5 | 10.0239 | 0.854 | 1.605 | NO | 1.143 | 1.150 | 29.40 | 29.57 | 218.21 | 109.4 | 0.489 |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.92e5 | 2.08e5 | 10.0239 | 0.847 | 1.603 | NO | 1.176 | 1.184 | 30.26 | 30.46 | 217.53 | 109.0 | 0.493 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.42e5 | 1.69e5 | 10.0239 | 0.832 | 0.512 | NO | 0.987 | 0.988 | 33.14 | 33.16 | 201.50 | 101.0 | 0.762 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.61e5 | 1.69e5 | 10.0239 | 1.034 | 0.504 | NO | 0.991 | 0.991 | 33.26 | 33.28 | 184.20 | 92.3 | 0.613 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.54e5 | 1.69e5 | 10.0239 | 0.953 | 0.508 | NO | 1.009 | 1.009 | 33.88 | 33.87 | 191.05 | 95.8 | 0.665 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.40e5 | 1.69e5 | 10.0239 | 0.828 | 0.519 | NO | 1.039 | 1.038 | 34.87 | 34.84 | 200.23 | 100.4 | 0.766 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-5.qld

Last Altered: Tuesday, November 05, 2019 11:43:10 Pacific Standard Time

Printed: Tuesday, November 05, 2019 11:43:22 Pacific Standard Time

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 Description: 1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | Wt/Vol | RRF | SA | Y/N | Pred. | SP | Pred RT | RT | Conc | %Rd | EMPC | |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|---------|-------|---------|-------|-------|--------------------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.31e5 | 1.69e5 | 10.0239 | 0.757 | 0.450 | NO | 1.093 | 1.093 | 36.69 | 36.68 | 203.77 | 102.1 | | 0.738 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.09e5 | 1.69e5 | 10.0239 | 0.581 | 0.431 | NO | 1.143 | 1.145 | 38.37 | 38.43 | 220.79 | 110.7 | | 0.962 |
| 34 | 13C-OCDF | 2.39e5 | 1.69e5 | 10.0239 | 0.689 | 0.915 | NO | 1.233 | 1.233 | 41.40 | 41.39 | 410.47 | 102.9 | | 0.494 |
| 35 | 37Cl-2,3,7,8-TCDD | 5.55e4 | 1.30e5 | 10.0239 | 1.198 | | | 1.022 | 1.022 | 26.29 | 26.30 | 71.250 | 89.3 | | 0.115 |
| 36 | 13C-1,2,3,4-TCDD | 1.30e5 | 1.30e5 | 10.0239 | 1.000 | 0.845 | NO | 1.000 | 1.000 | 25.70 | 25.72 | 199.52 | 100.0 | | 0.297 |
| 37 | 13C-1,2,3,4-TCDF | 2.08e5 | 2.08e5 | 10.0239 | 1.000 | 0.804 | NO | 1.000 | 1.000 | 24.28 | 24.31 | 199.52 | 100.0 | | 0.429 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.69e5 | 1.69e5 | 10.0239 | 1.000 | 0.508 | NO | 1.000 | 1.000 | 33.55 | 33.57 | 199.52 | 100.0 | | 0.634 |
| 39 | Total Tetra-Dioxins | | 1.39e5 | 10.0239 | 0.901 | | | 0.000 | | 25.50 | | 0.36284 | | 0.363 | 0.119 |
| 40 | Total Penta-Dioxins | | 1.31e5 | 10.0239 | 0.872 | | | 0.000 | | 30.00 | | 0.00000 | | 0.151 | 0.0503 0.133 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.0239 | 0.976 | | | 0.000 | | 33.80 | | 0.86829 | | 0.868 | 0.156 |
| 42 | Total Hepta-Dioxins | | 1.17e5 | 10.0239 | 0.989 | | | 0.000 | | 37.75 | | 3.6368 | | 3.64 | 0.189 |
| 43 | Total Tetra-Furans | | 2.01e5 | 10.0239 | 0.943 | | | 0.000 | | 24.00 | | | | | 0.0497 0.072 0.072 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.0239 | 0.940 | | | 0.000 | | 27.63 | | | | | 0.0374 0.072 0 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.0239 | 0.940 | | | 0.000 | | 30.00 | | | | | 0.0354 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.0239 | 1.078 | | | 0.000 | | 33.00 | | | | | 0.0484 0.116 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.0239 | 1.135 | | | 0.000 | | 37.75 | | | | | 0.0562 0.114 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-5.qld
 Last Altered: Tuesday, November 05, 2019 11:43:10 Pacific Standard Time
 Printed: Tuesday, November 05, 2019 11:43:22 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 13:25:01

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 Description: 1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|------------------------|----|-------|---------|-----------|----------|--------------|-------------|
| 39 Total Tetra-Dioxins | NO | 24.45 | 103.292 | 62362.090 | 3.277 | MM | 0.3628 0.36 |

Penta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|------------------------|-----|-------|--------|-----------|----------|--------------|-------------|
| 40 Total Penta-Dioxins | YES | 29.17 | 44.135 | 50879.602 | 0.000 | MM | 0.0000 0.15 |

Hexa-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|-----------------------|----|-------|---------|-----------|----------|--------------|-------------|
| 41 Total Hexa-Dioxins | NO | 32.53 | 297.927 | 70577.013 | 8.494 | bb | 0.8683 0.87 |

Hepta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|------------------------|----|-------|---------|-----------|----------|--------------|-------------|
| 6 1,2,3,4,6,7,8-HpCDD | NO | 37.91 | 375.816 | 59501.578 | 12.477 | MM | 1.2709 1.27 |
| 42 Total Hepta-Dioxins | NO | 37.07 | 689.014 | 59501.578 | 23.447 | bb | 2.3659 2.37 |

Tetra-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|------|----|----|------|---------|----------|--------------|------|
| | | | | | | | |

Penta-Furans function 1

| Name | NY | RT | Area | IS Area | Response | Primary Flag | EMPC |
|------|----|----|------|---------|----------|--------------|------|
| | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-5.qld

Last Altered: Tuesday, November 05, 2019 11:43:10 Pacific Standard Time

Printed: Tuesday, November 05, 2019 11:43:22 Pacific Standard Time

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Description: 1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| # | Name | RT | Area | IS Area | Response | Primary Flag | EMPC |
|---|------|----|------|---------|----------|--------------|------|
| | | | | | | | |

Hexa-Furans

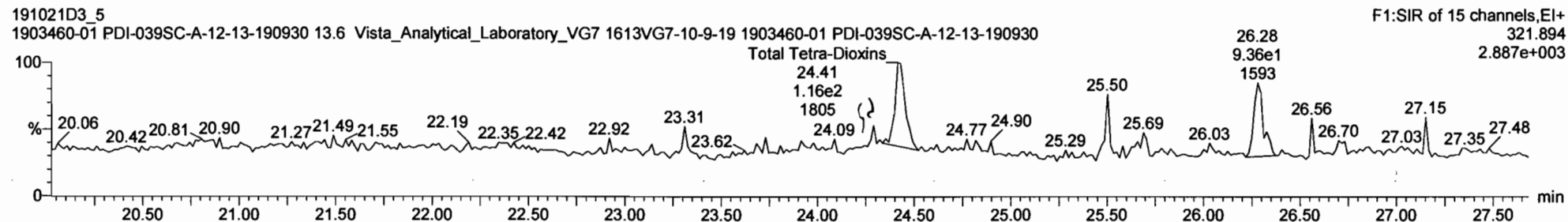
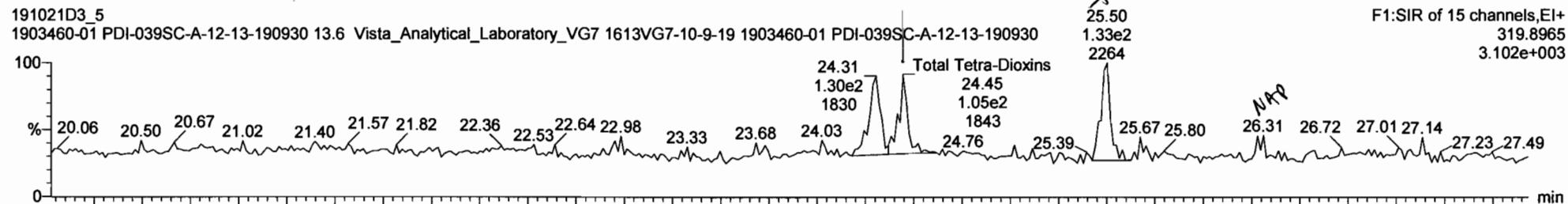
| # | Name | RT | Area | IS Area | Response | Primary Flag | EMPC |
|---|------|----|------|---------|----------|--------------|------|
| | | | | | | | |

Hepta-Furans

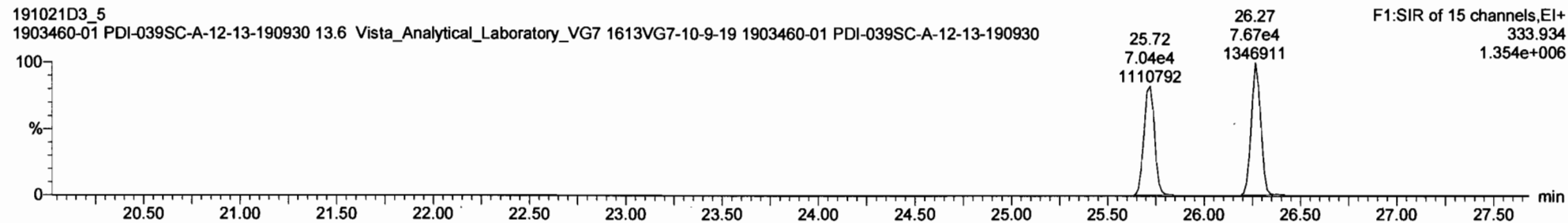
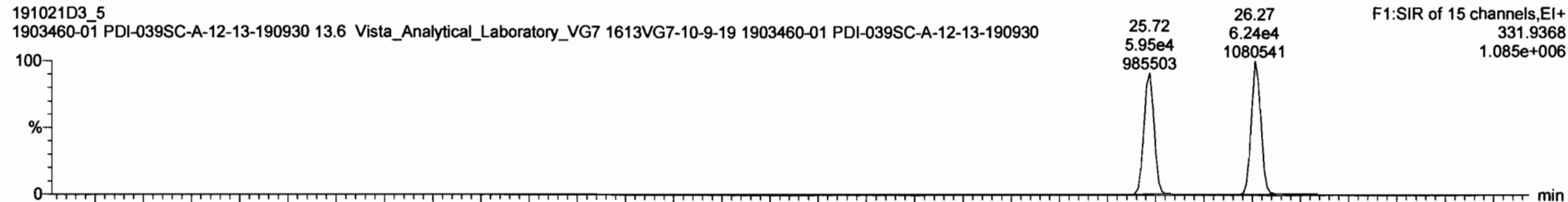
| # | Name | RT | Area | IS Area | Response | Primary Flag | EMPC |
|---|------|----|------|---------|----------|--------------|------|
| | | | | | | | |

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Total Tetra-Dioxins



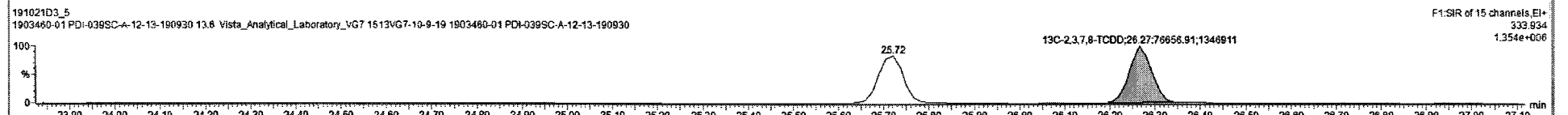
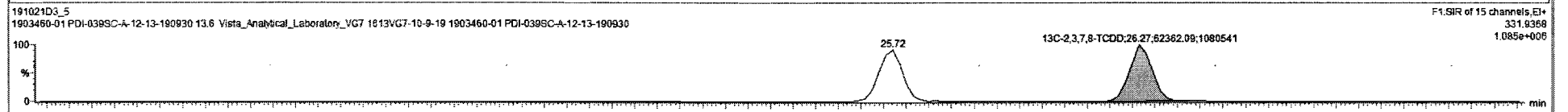
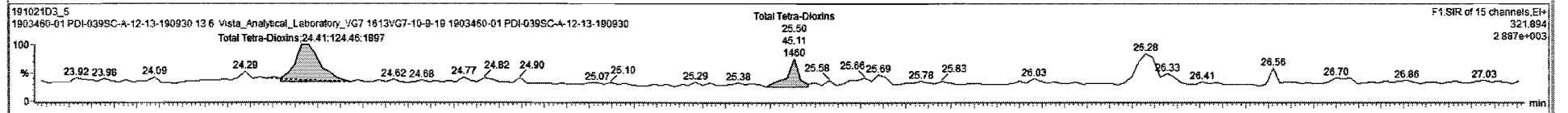
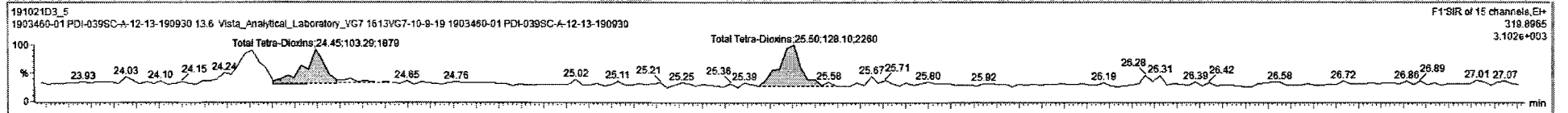
13C-2,3,7,8-TCDD



191021D3_5 - 1903460-01 PDI-039SC-A-12-13-190930 1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS# | RA | aly | RPF | wt/vol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|-------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|--------|
| 31 | 13C-1,2,3,7,8,9-HxCDF | 1.40e5 | 1.69e5 | 38 | 0.52 | NO | 0.828 | 10.024 | 34.87 | 34.84 | 1.038 | 1.038 | NO | 200.2 | 100 | 0.766 | |
| 32 | 13C-1,2,3,4,6,7,8-HpCDF | 1.31e5 | 1.69e5 | 38 | 0.45 | NO | 0.757 | 10.024 | 36.68 | 36.68 | 1.083 | 1.083 | NO | 203.8 | 102 | 0.738 | |
| 33 | 13C-1,2,3,4,7,8,9-HpCDF | 1.09e5 | 1.69e5 | 38 | 0.43 | NO | 0.581 | 10.024 | 38.37 | 38.43 | 1.145 | 1.143 | NO | 228.8 | 111 | 0.862 | |
| 34 | 13C-OCDF | 2.39e5 | 1.69e5 | 38 | 0.91 | NO | 0.689 | 10.024 | 41.40 | 41.39 | 1.233 | 1.233 | NO | 410.5 | 103 | 0.494 | |
| 35 | 37Cl-2,3,7,8-TCDD | 5.55e4 | 1.30e5 | 36 | | | 1.198 | 10.024 | 26.29 | 26.30 | 1.022 | 1.022 | NO | 71.25 | 89.3 | 0.115 | |
| 36 | 13C-1,2,3,4-TCDD | 1.30e5 | 1.30e5 | 36 | 0.84 | NO | 1.000 | 10.024 | 25.70 | 25.72 | 1.000 | 1.000 | NO | 199.5 | 100 | 0.297 | |
| 37 | 13C-1,2,3,4-TCDF | 2.08e5 | 2.08e5 | 37 | 0.80 | NO | 1.000 | 10.024 | 24.28 | 24.31 | 1.000 | 1.000 | NO | 199.5 | 100 | 0.429 | |
| 38 | 13C-1,2,3,4,5,9-HxCDF | 1.69e5 | 1.69e5 | 38 | 0.51 | NO | 1.000 | 10.024 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 199.5 | 100 | 0.634 | |
| 39 | Total Tetra-Dioxins | | 1.35e5 | | | | 0.801 | 10.024 | 25.50 | | | | NO | 0.3628 | | 0.119 | 0.4900 |

| # | Name | Pred RT | RT | m1 Resp | m2 Resp | Pred RA | RA | aly | EMPC | Conc |
|---|------------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 1 | 39 Total Tetra-Dioxins | 25.50 | 25.50 | 1.033e2 | 1.245e2 | 0.770 | 0.63 | NO | 0.36284 | 0.36284 |
| 2 | 39 Total Tetra-Dioxins | 25.50 | 25.50 | 1.281e2 | 4.511e1 | 0.770 | 2.84 | YES | 0.12720 | 0.90000 |



Vista Analytical Laboratory

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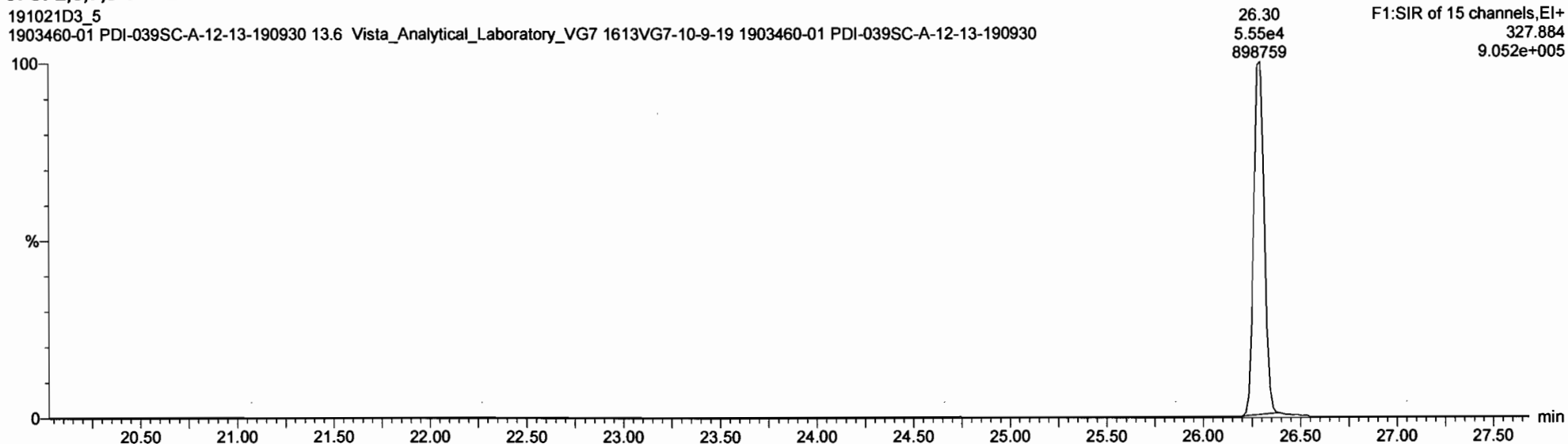
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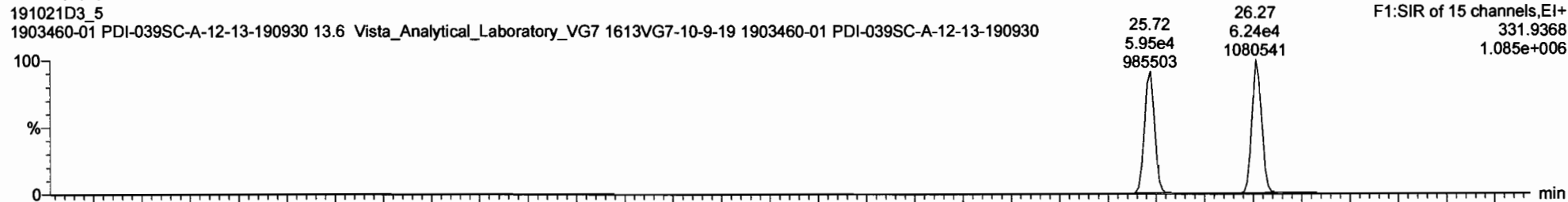
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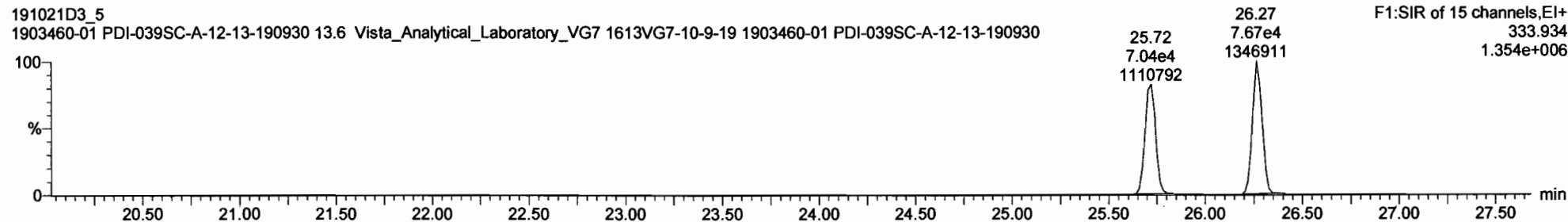


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Vista Analytical Laboratory

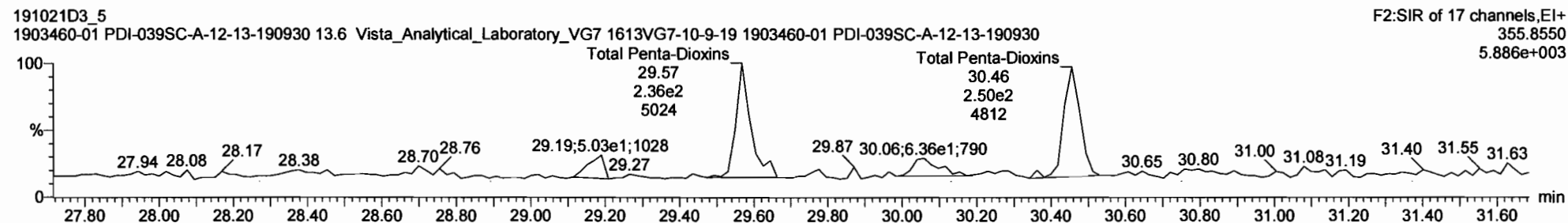
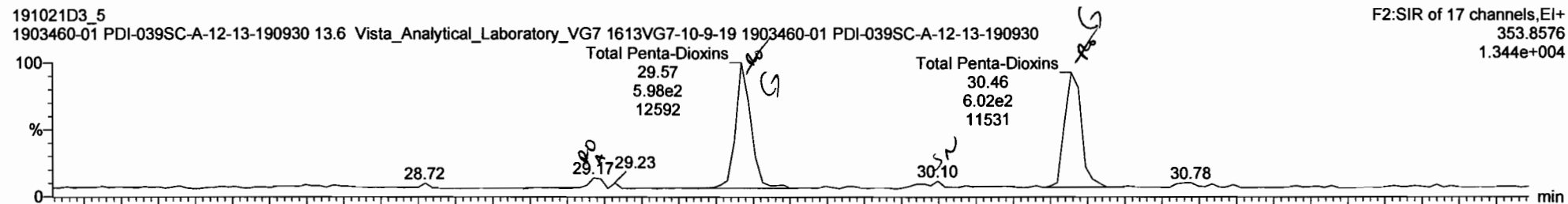
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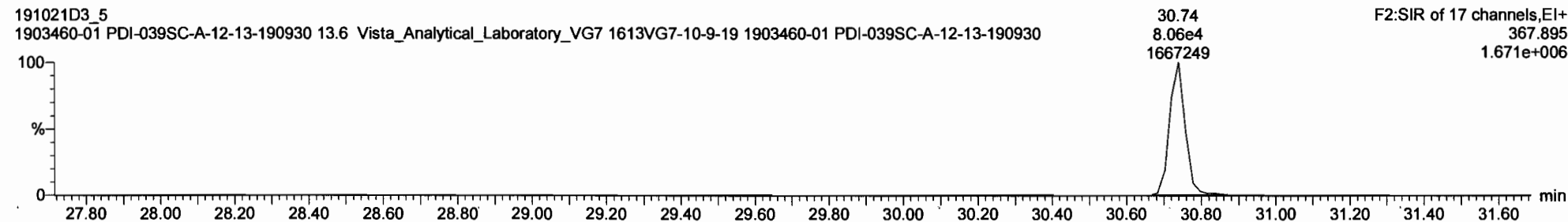
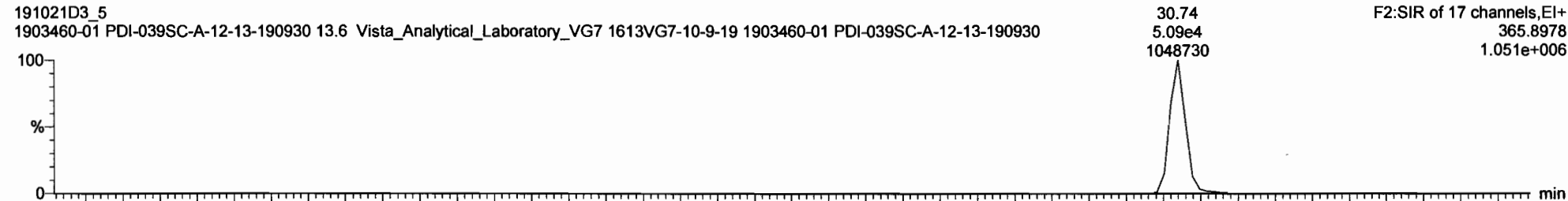
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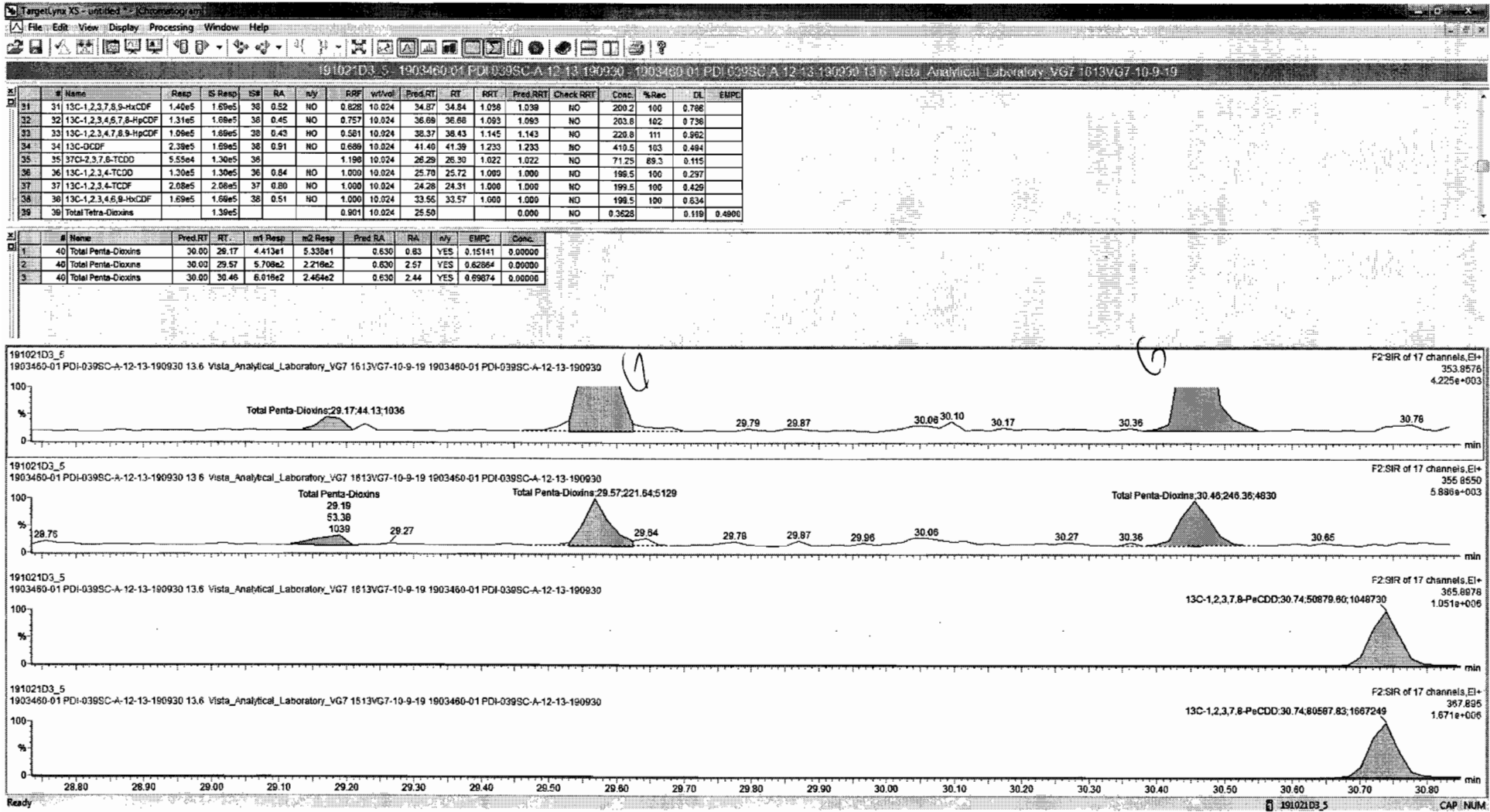
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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD





Vista Analytical Laboratory

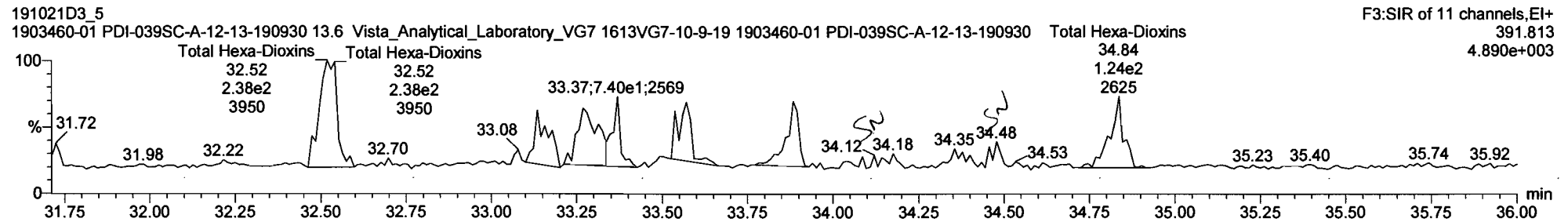
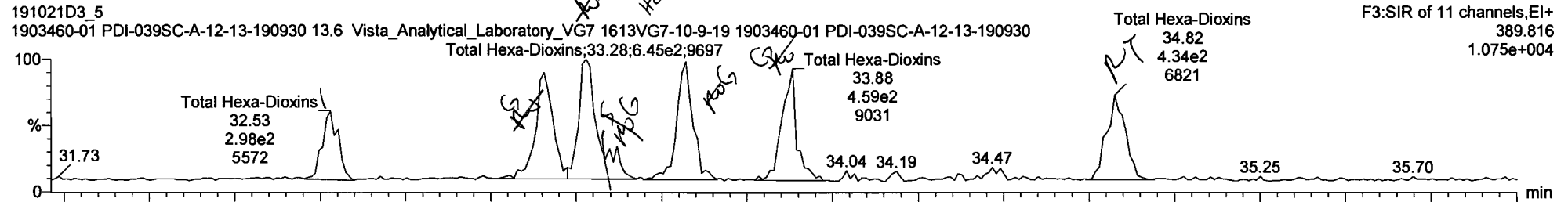
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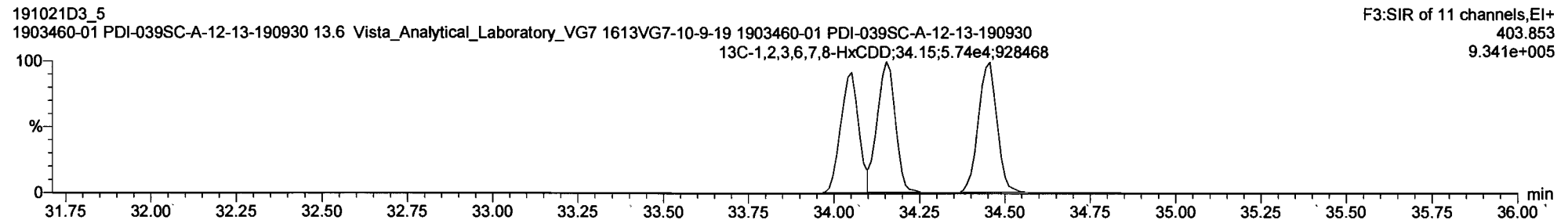
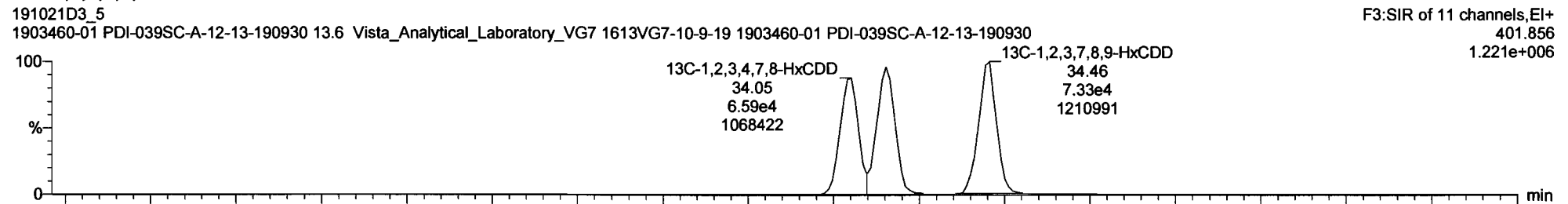
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Total Hexa-Dioxins

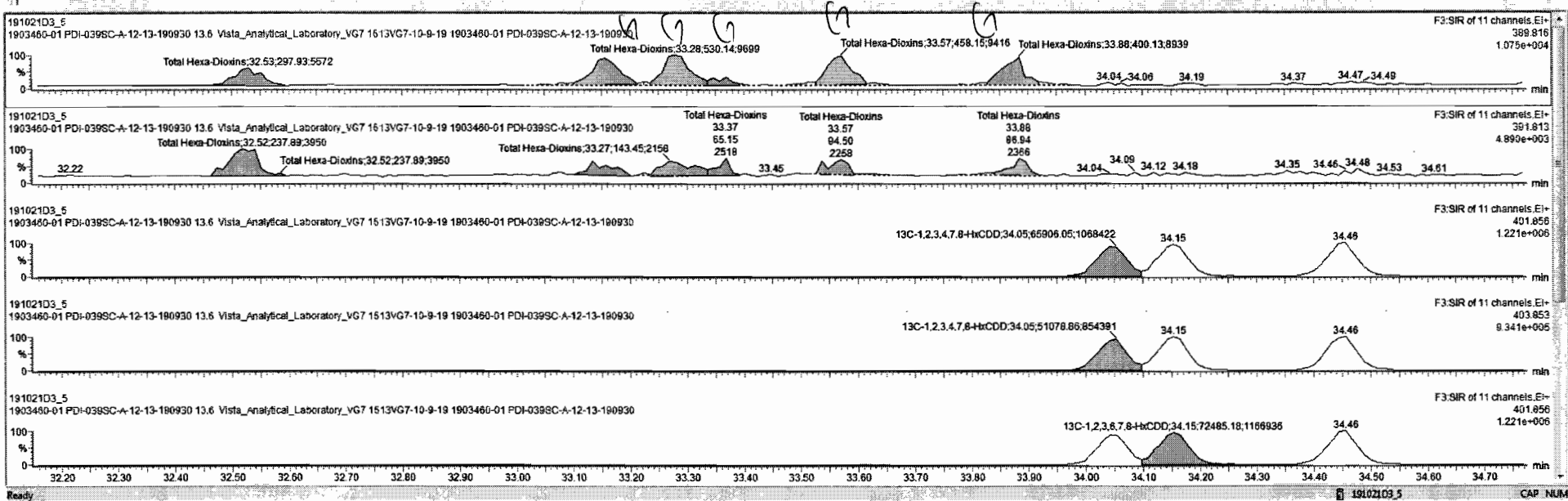


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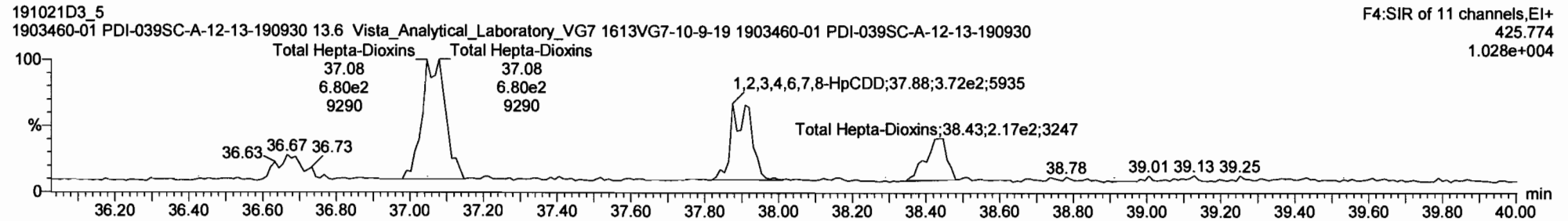
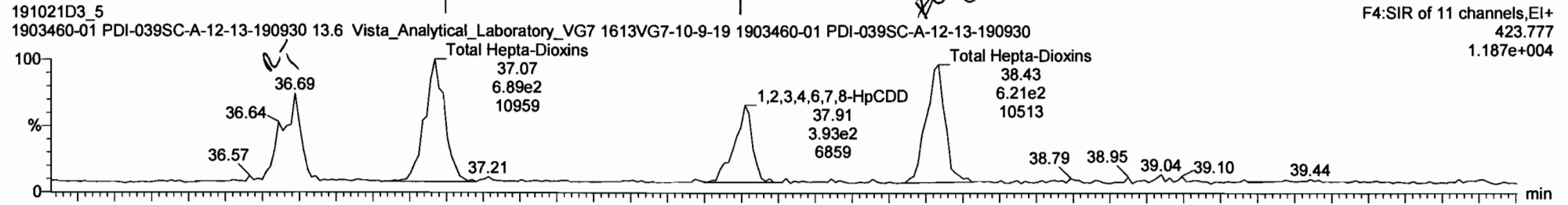
| # | Name | Resp | S Resp | RF | RA | mfy | RRF | wt/wt | Pred_RT | RT | RRT | Pred_RR1 | Check RRT | Conc | %Rec | DL | EMPC |
|----|------------------------|--------|--------|----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|-------|
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.878 | 10.024 | 33.50 | | | 0.000 | NO | 8.6893 | | 0.158 | 2.626 |
| 42 | Total Hepta-Dioxins | 1.17e5 | | | | | 0.989 | 10.024 | 37.75 | | | 0.000 | NO | 3.859 | | 0.189 | 4.463 |
| 43 | Total Tetra-Furans | 2.01e5 | | | | | 0.943 | 10.024 | 24.00 | | | 0.000 | NO | | | 0.0487 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.024 | 27.53 | | | 0.000 | NO | | | 0.0374 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.024 | 30.00 | | | 0.000 | NO | | | 0.0354 | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.076 | 10.024 | 33.00 | | | 0.000 | NO | | | 0.0484 | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.136 | 10.024 | 37.75 | | | 0.000 | NO | | | 0.0562 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred_RT | RT | ref Resp | m2 Resp | Pred RA | RA | mfy | EMPC | Conc |
|---|--------------------|---------|-------|----------|---------|---------|------|-----|---------|---------|
| 1 | Total Hexa-Dioxins | 33.80 | 32.53 | 2.579e2 | 2.379e2 | 1.240 | 1.25 | NO | 8.86829 | 0.86829 |
| 2 | Total Hexa-Dioxins | 33.80 | 33.18 | 4.739e2 | 8.481e1 | 1.240 | 5.00 | YES | 0.34417 | 0.00000 |
| 3 | Total Hexa-Dioxins | 33.80 | 33.28 | 5.301e2 | 1.434e2 | 1.240 | 3.70 | YES | 0.52070 | 0.00000 |
| 4 | Total Hexa-Dioxins | 33.80 | 33.37 | 1.012e2 | 8.515e1 | 1.240 | 1.55 | YES | 0.23849 | 0.00000 |
| 5 | Total Hexa-Dioxins | 33.80 | 33.57 | 4.582e2 | 9.450e1 | 1.240 | 4.85 | YES | 0.34382 | 0.00000 |
| 6 | Total Hexa-Dioxins | 33.80 | 33.88 | 4.001e2 | 8.694e1 | 1.240 | 4.80 | YES | 0.31560 | 0.00000 |

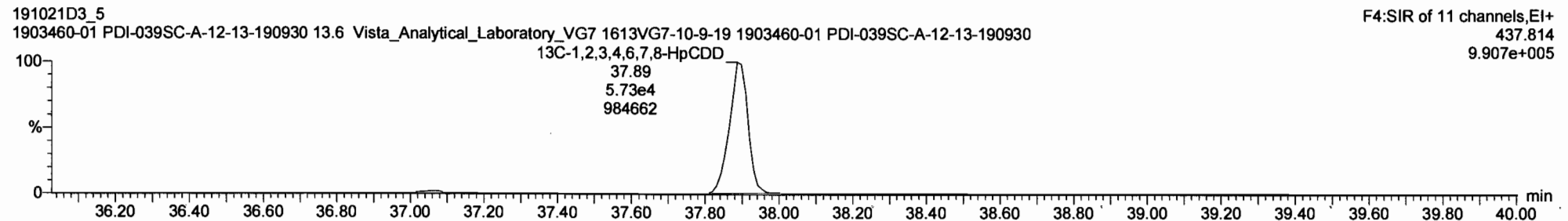
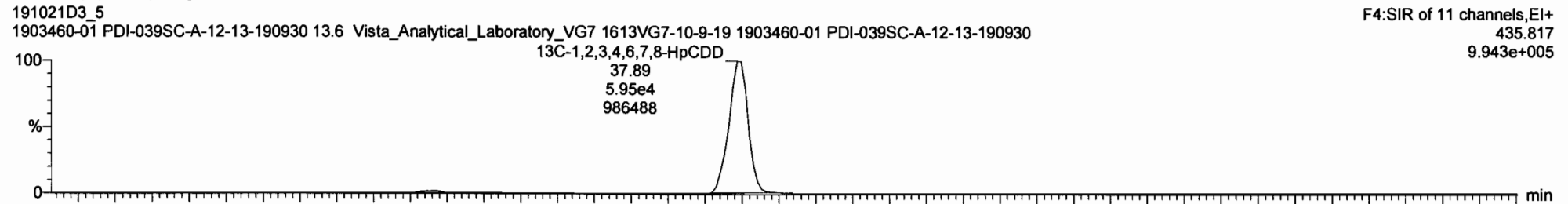


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Total Hepta-Dioxins

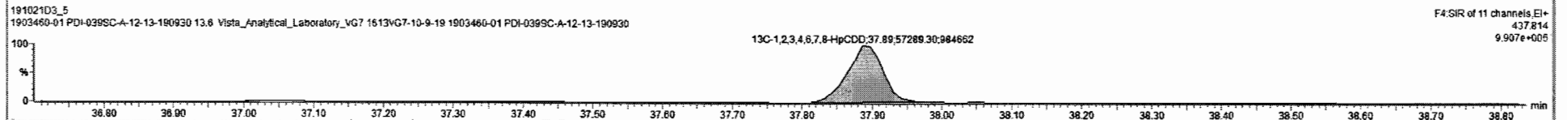
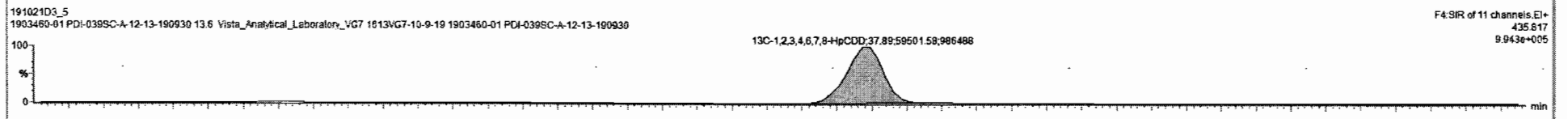
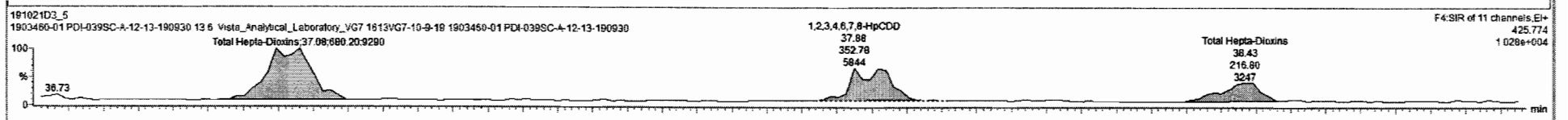
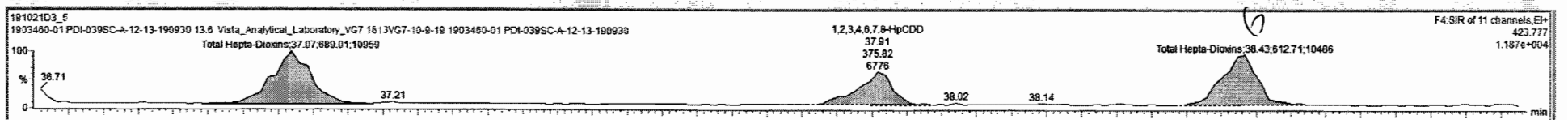


13C-1,2,3,4,6,7,8-HpCDD



| # | Name | Resp | IS Resp | IS# | RA | nly | RRF | wt/wei | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|-------|
| 41 | Total Hexa-Dioxins | | 0.00e0 | | | | 0.976 | 10.024 | 33.80 | | | 0.000 | NO | 0.8883 | | 0.156 | 2.826 |
| 42 | Total Hepta-Dioxins | | 1.17e5 | | | | 0.988 | 10.024 | 37.75 | | | 0.000 | NO | 3.037 | | 0.185 | 4.461 |
| 43 | Total Tetra-Furans | | 2.01e5 | | | | 0.943 | 10.024 | 24.00 | | | 0.000 | NO | | | 0.0497 | |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.940 | 10.024 | 27.83 | | | 0.000 | NO | | | 0.0374 | |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.940 | 10.024 | 30.00 | | | 0.000 | NO | | | 0.0354 | |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.078 | 10.024 | 33.00 | | | 0.000 | NO | | | 0.0464 | |
| 47 | Total Hepta-Furans | | 0.00e0 | | | | 1.135 | 10.024 | 37.75 | | | 0.000 | NO | | | 0.0562 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred RT | RT | Int Resp | Ext Resp | Pred RA | RA | nly | EMPC | Conc. |
|---|------------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 1 | 42 Total Hepta-Dioxins | 37.75 | 37.67 | 6.690e2 | 6.602e2 | 1.040 | 1.01 | NO | 2.3659 | 2.3659 |
| 2 | 6 1,2,3,4,6,7,8-HpCDD | 37.90 | 37.91 | 3.759e2 | 3.529e2 | 1.040 | 1.07 | NO | 1.2709 | 1.2709 |
| 3 | 42 Total Hepta-Dioxins | 37.75 | 38.43 | 6.127e2 | 2.169e2 | 1.040 | 2.83 | YES | 0.76421 | 0.00000 |

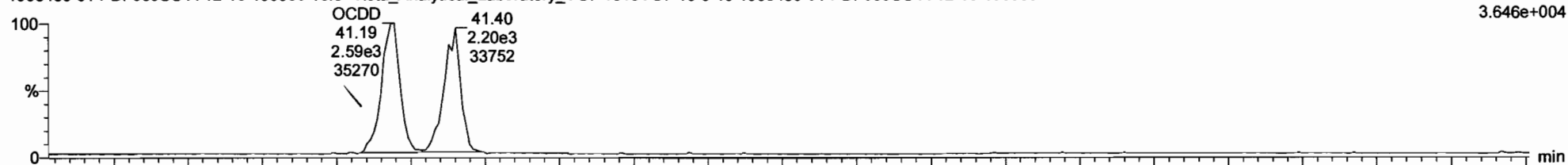


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OCDD

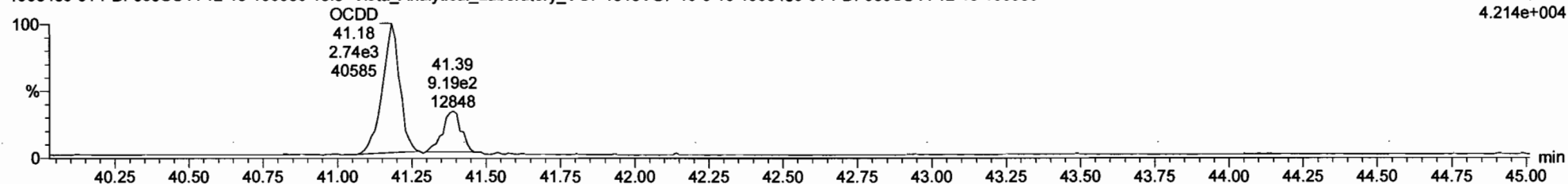
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1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-01 PDI-039SC-A-12-13-190930

F5:SIR of 11 channels,EI+
457.738
3.646e+004



191021D3_5
1903460-01 PDI-039SC-A-12-13-190930 13.6 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-01 PDI-039SC-A-12-13-190930

F5:SIR of 11 channels,EI+
459.735
4.214e+004



13C-OCDD

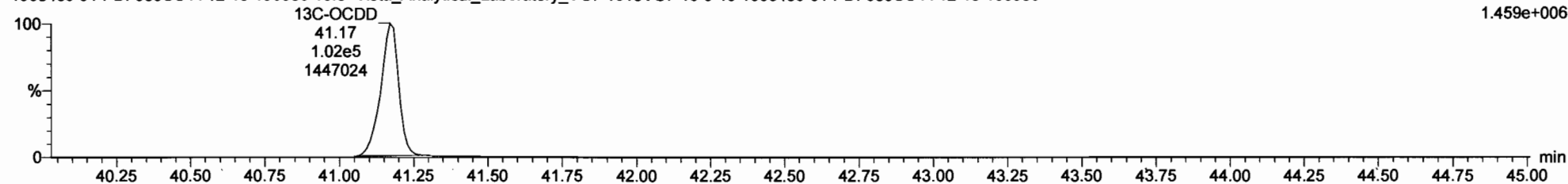
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F5:SIR of 11 channels,EI+
469.778
1.320e+006



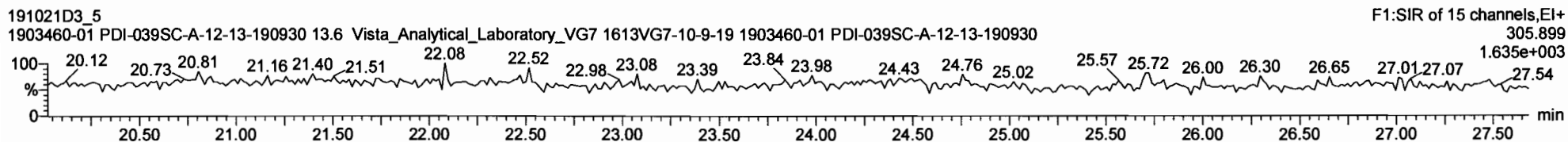
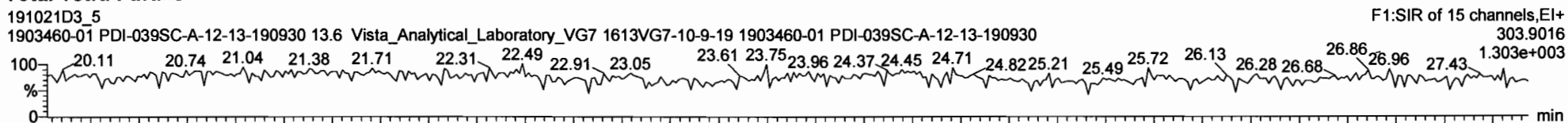
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F5:SIR of 11 channels,EI+
471.775
1.459e+006

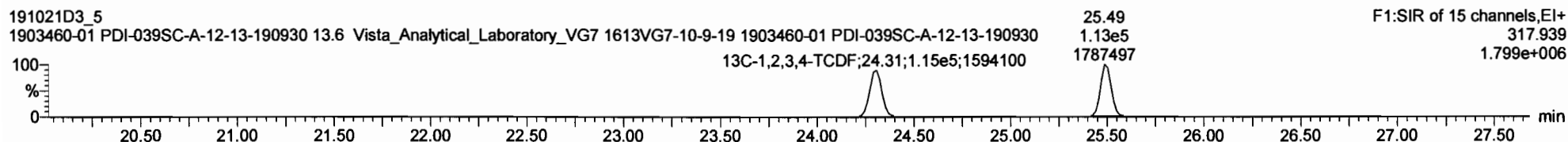
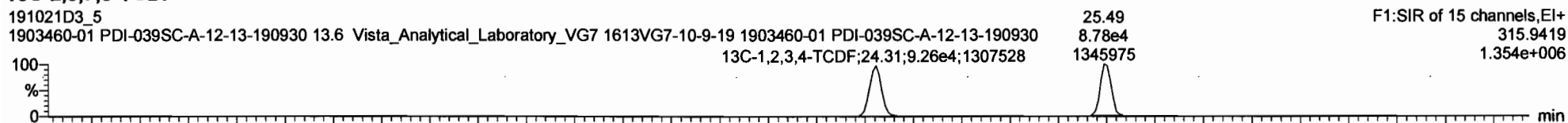


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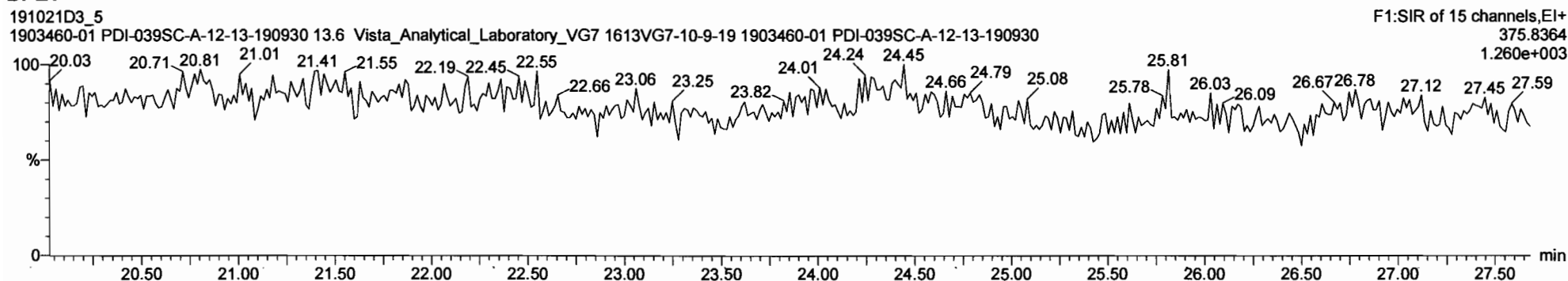
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

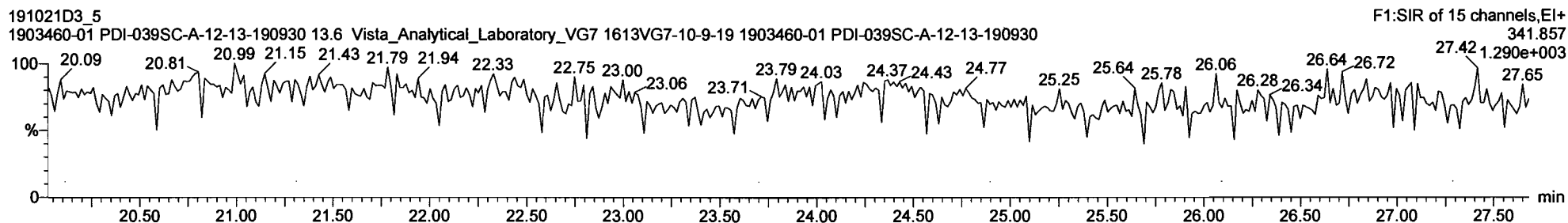
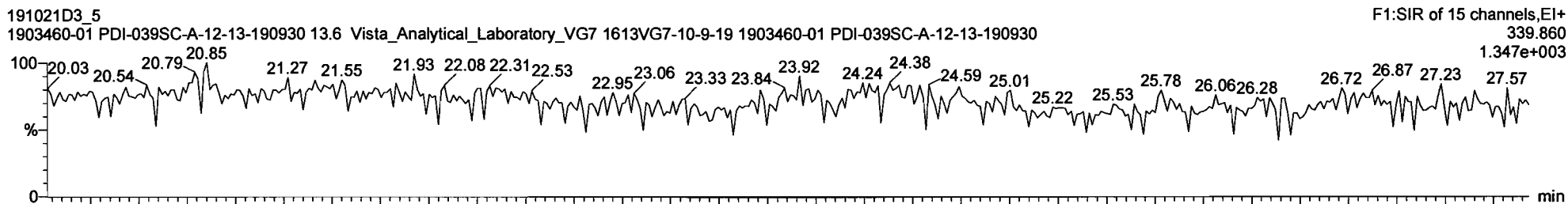
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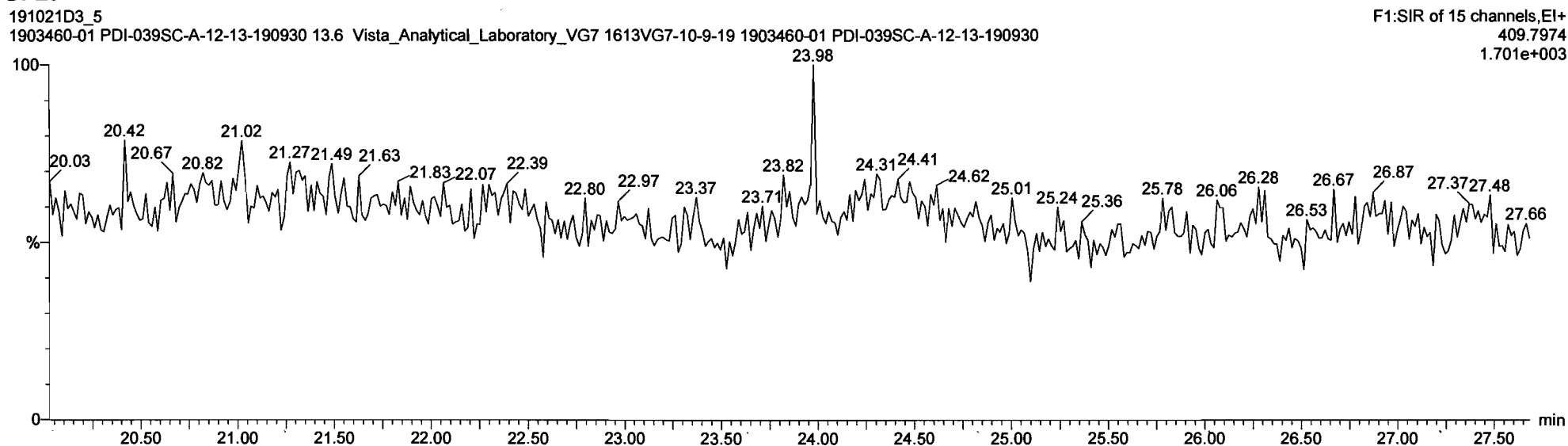
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1st Func. Penta-Furans

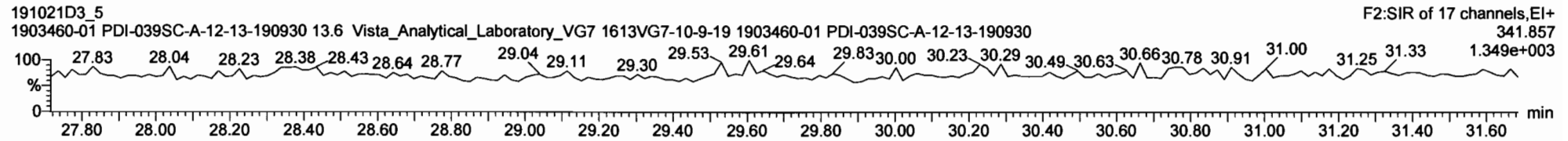
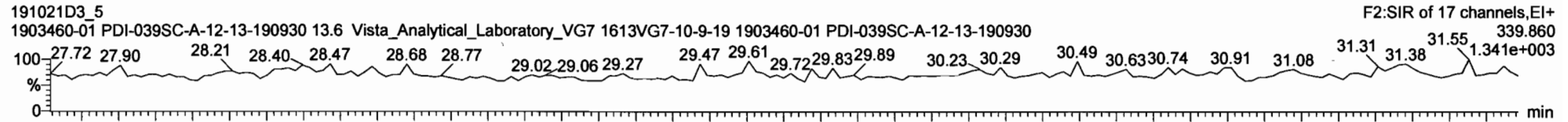


DPE6

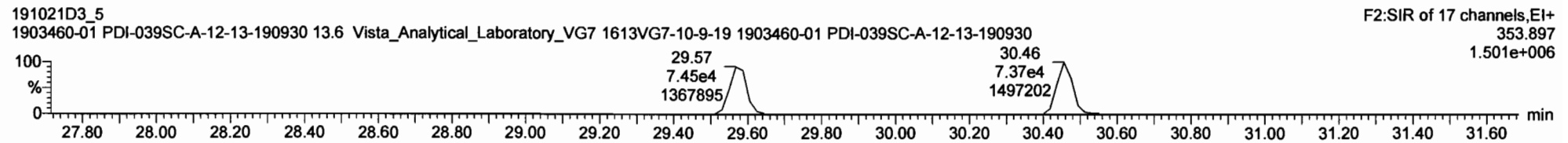
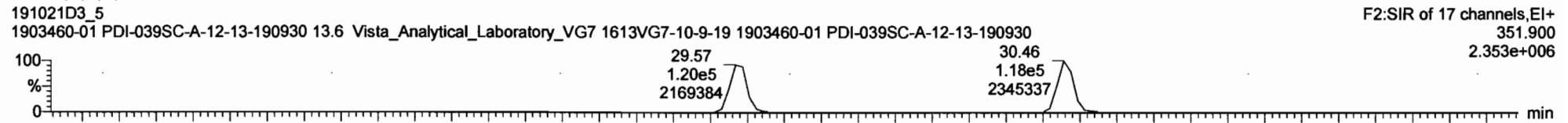


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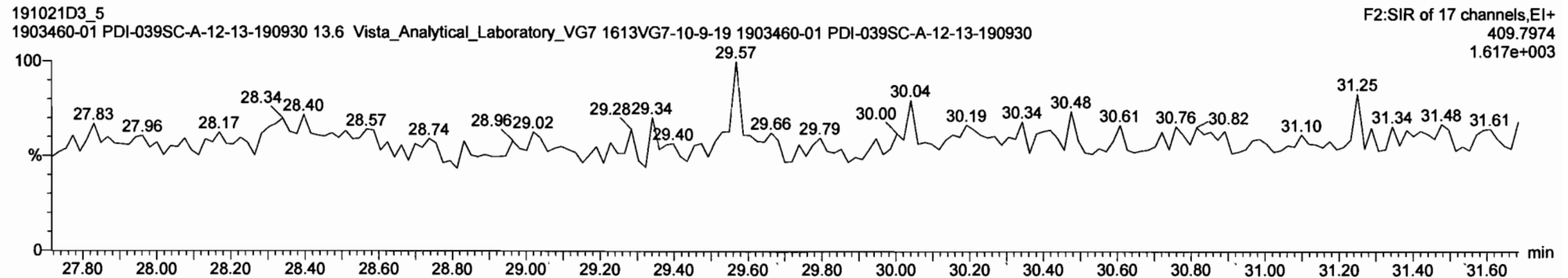
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

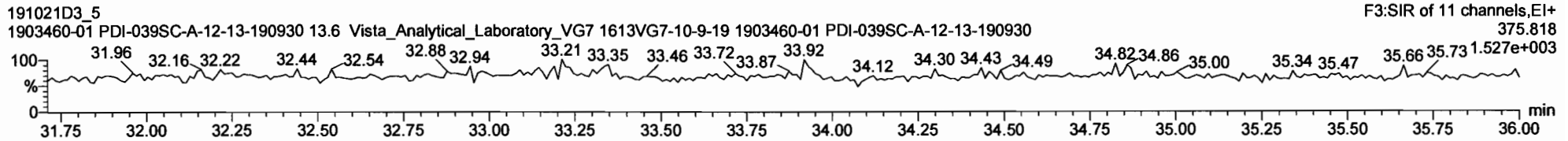
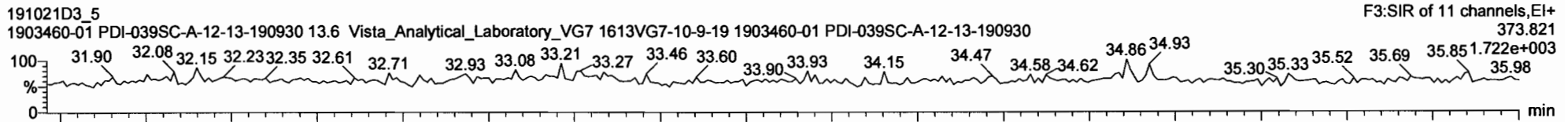


DPE2

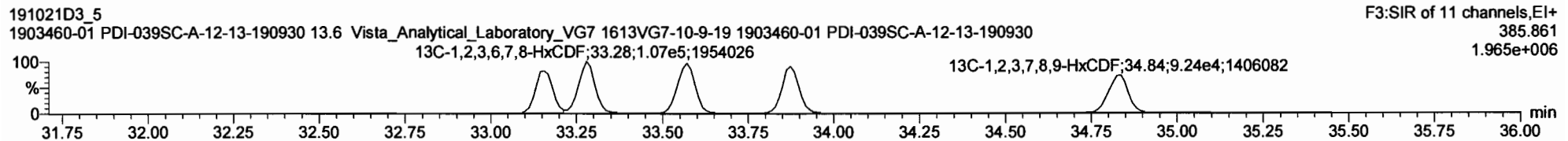
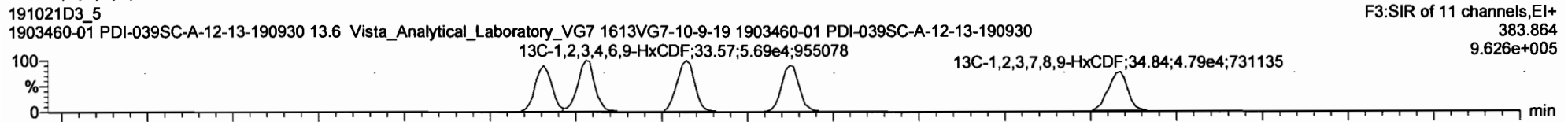


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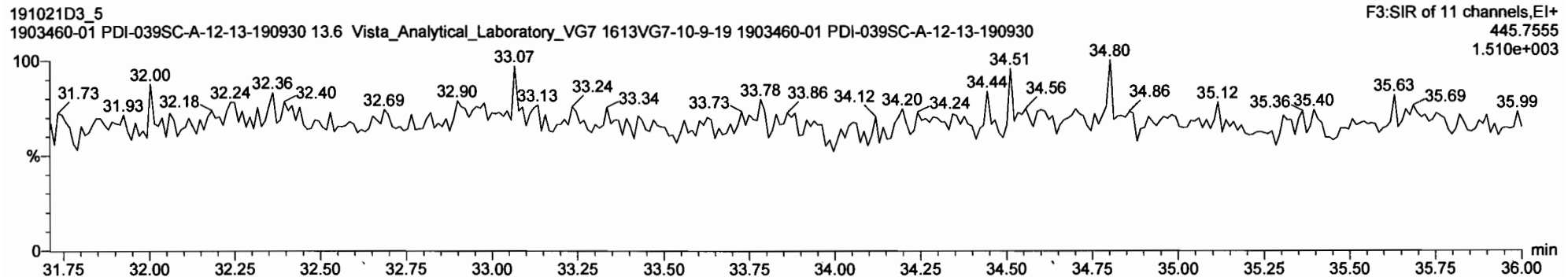
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

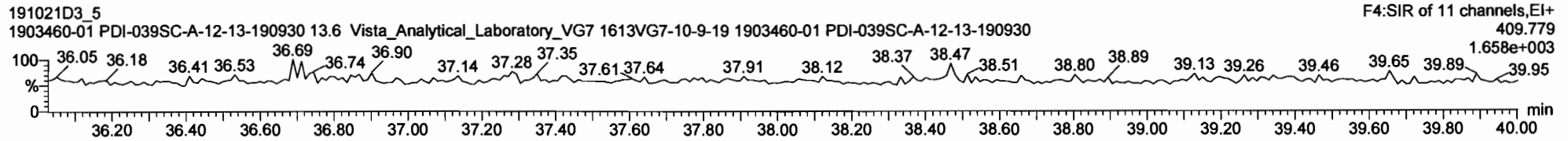
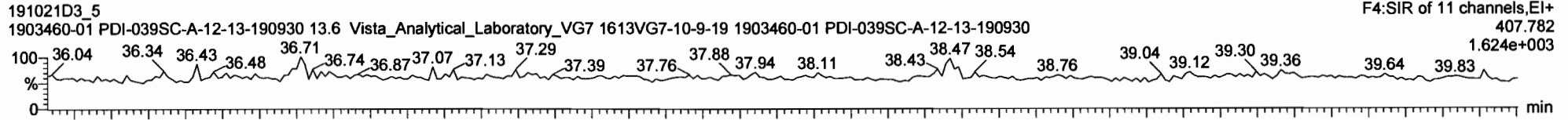
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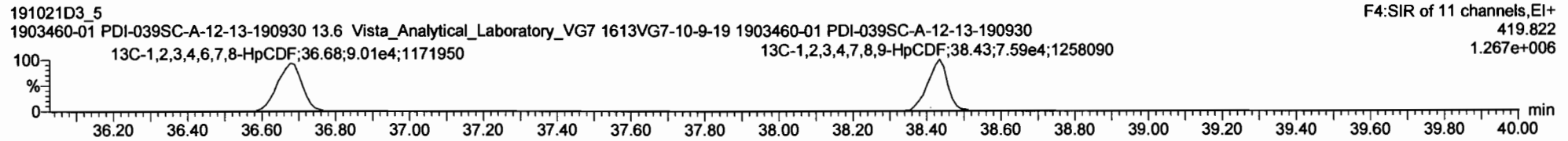
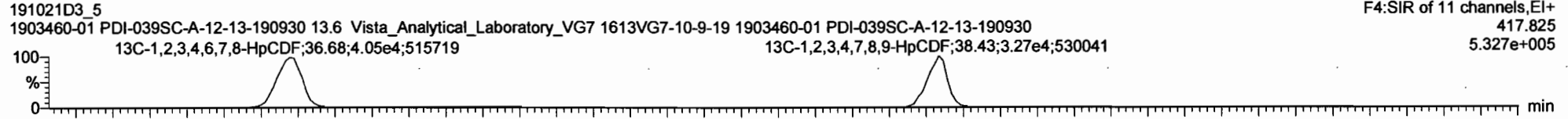
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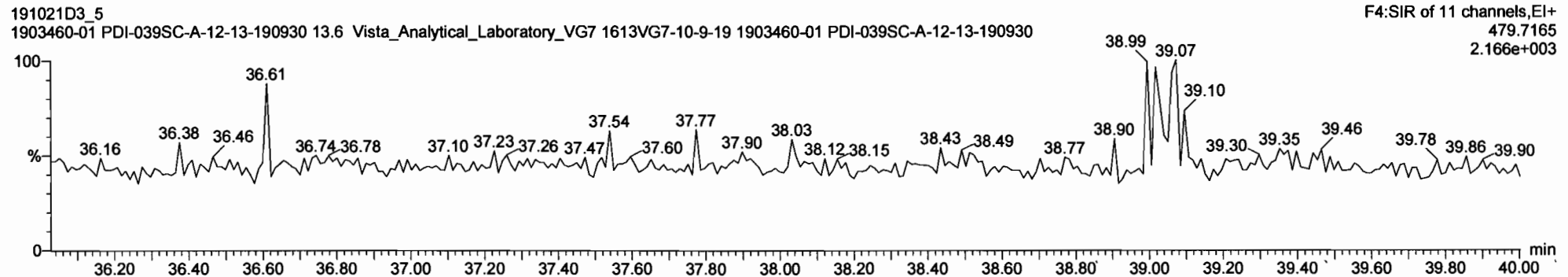
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

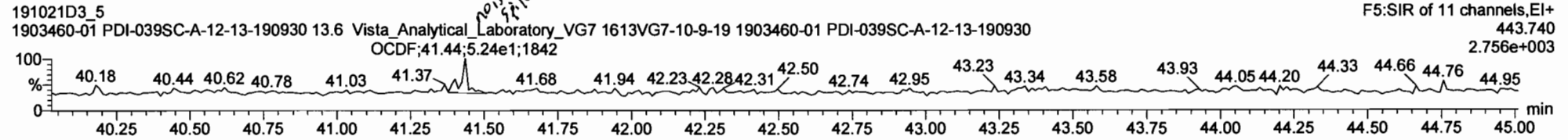
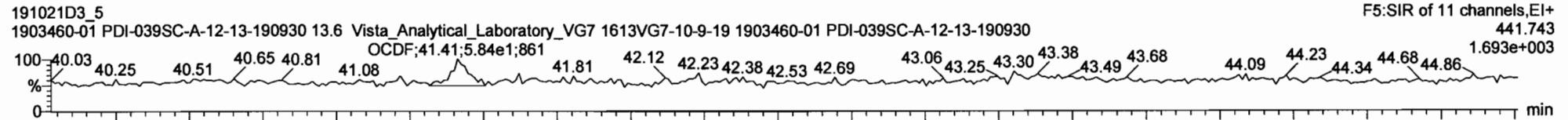
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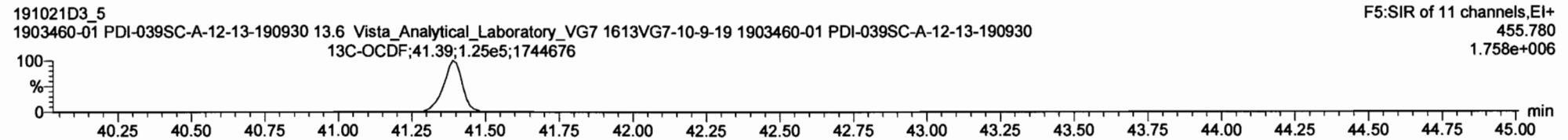
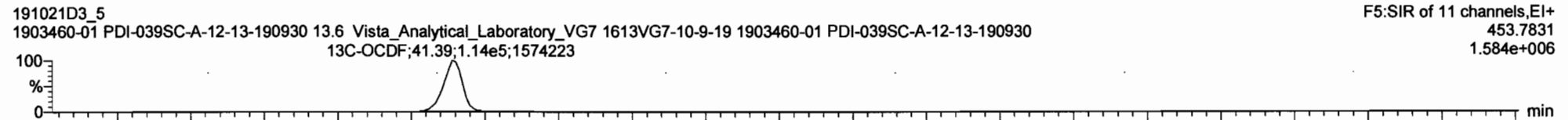
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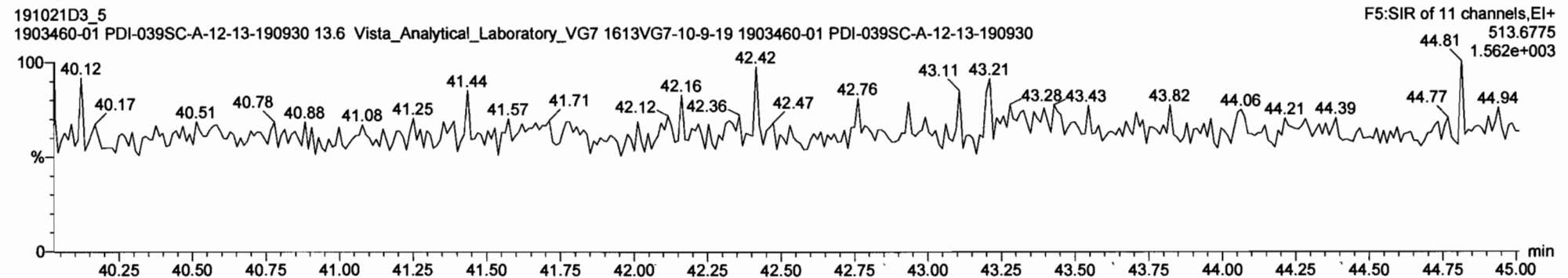
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

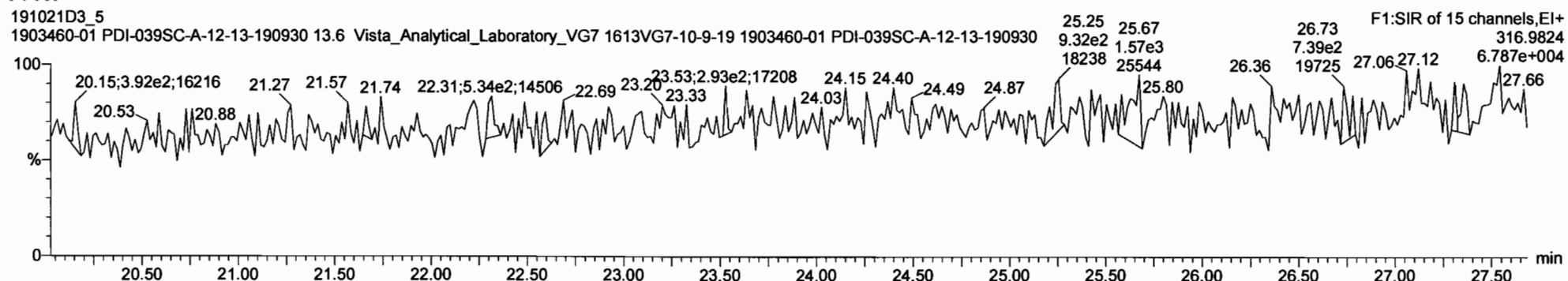
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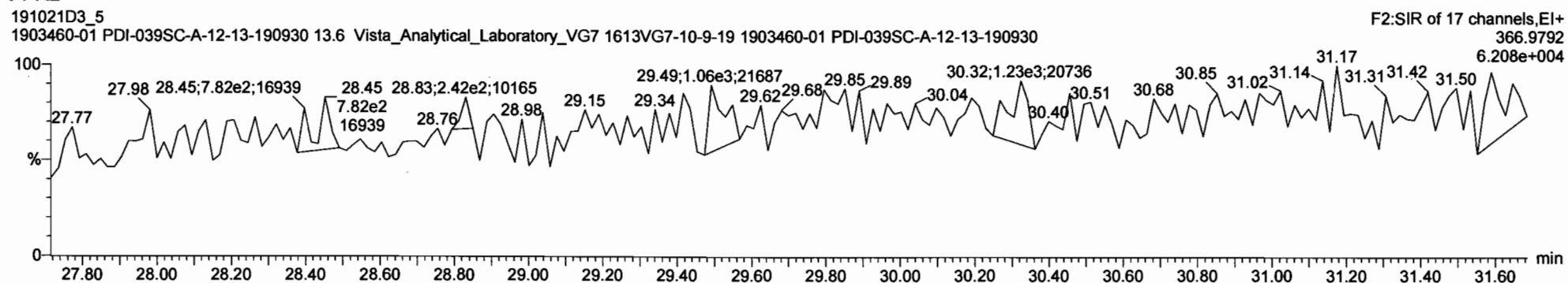
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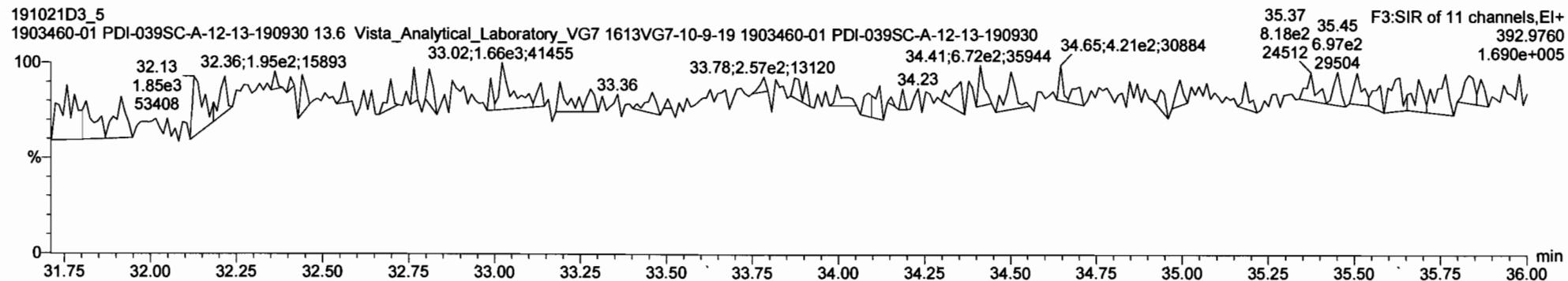
PFK1



PFK2

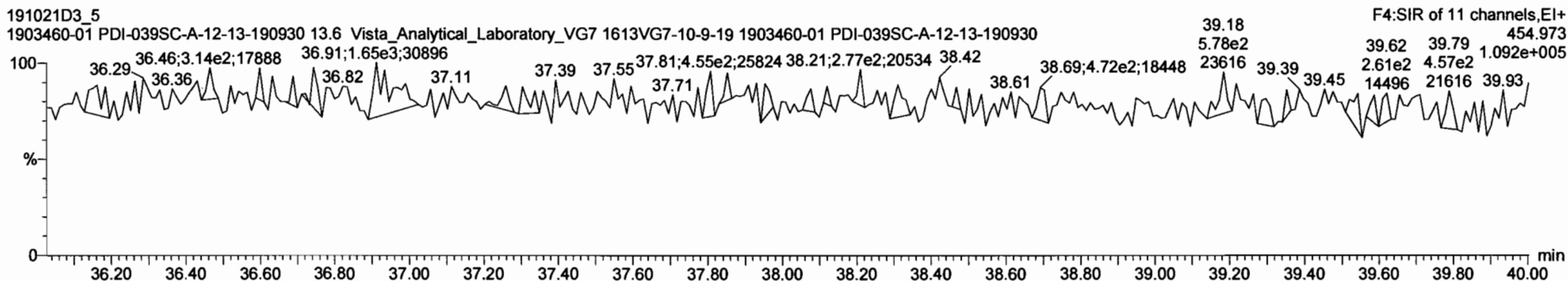


PFK3

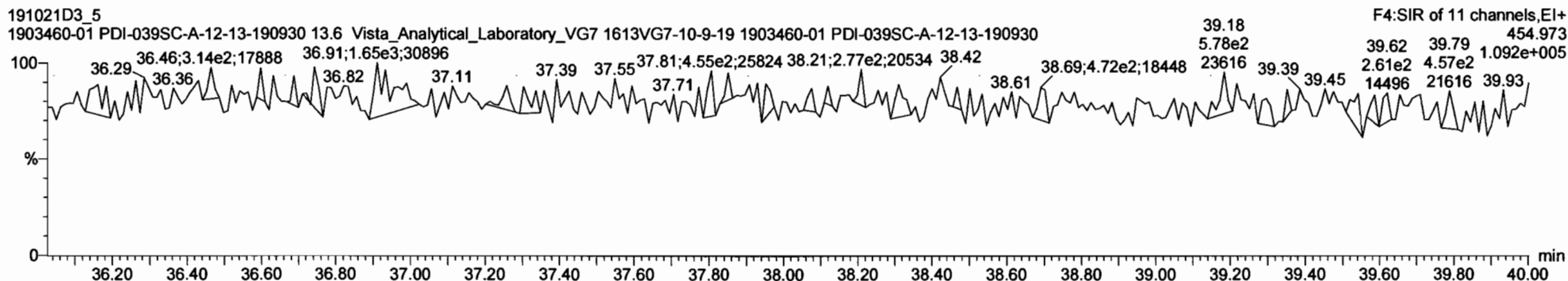


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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-6.qld
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Hz 11-5-19 07:11/05/19

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Calibration: 04 Nov 2019 14:14:44

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 Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

| # | Name | Area | IS Area | Wt/Vol | RRF | RA | YN | Pred | RRT | Pred RT | RT | Conc | EMPC | DL |
|----|------------------------|--------|---------|---------|-------|-------|----|-------|-------|---------|-------|---------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 1.65e5 | 10.1187 | 0.905 | | | 1.001 | | 26.31 | | | | 0.124 |
| 2 | 1,2,3,7,8-PeCDD | | 1.49e5 | 10.1187 | 0.903 | | | 1.001 | | 30.76 | | | | 0.108 |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.37e5 | 10.1187 | 1.101 | | | 1.000 | | 34.06 | | | | 0.212 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.50e5 | 10.1187 | 0.939 | | | 1.000 | | 34.16 | | | | 0.221 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.48e5 | 10.1187 | 0.961 | | | 1.001 | | 34.49 | | | | 0.243 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 5.02e2 | 1.40e5 | 10.1187 | 0.979 | 1.162 | NO | 1.000 | 1.000 | 37.91 | 37.90 | 0.72506 | 0.725 | 0.160 |
| 7 | OCDD | 3.24e3 | 2.12e5 | 10.1187 | 0.959 | 0.834 | NO | 1.000 | 1.000 | 41.18 | 41.19 | 6.2985 | 6.30 | 0.169 |
| 8 | 2,3,7,8-TCDF | | 2.31e5 | 10.1187 | 0.950 | | | 1.001 | | 25.53 | | | | 0.0744 |
| 9 | 1,2,3,7,8-PeCDF | | 2.19e5 | 10.1187 | 0.960 | | | 1.001 | | 29.61 | | | | 0.0756 |
| 10 | 2,3,4,7,8-PeCDF | | 2.12e5 | 10.1187 | 1.015 | | | 1.001 | | 30.49 | | | | 0.0717 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.64e5 | 10.1187 | 1.177 | | | 1.000 | | 33.17 | | | | 0.0836 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.87e5 | 10.1187 | 1.069 | | | 1.000 | | 33.30 | | | | 0.0840 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.86e5 | 10.1187 | 1.114 | | | 1.001 | | 33.92 | | | | 0.0858 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.69e5 | 10.1187 | 1.062 | | | 1.000 | | 34.83 | | | | 0.109 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.55e5 | 10.1187 | 1.128 | | | 1.001 | | 36.72 | | | | 0.130 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.28e5 | 10.1187 | 1.280 | | | 1.000 | | 38.43 | | | | 0.109 |
| 17 | OCDF | | 2.61e5 | 10.1187 | 0.947 | | | 1.000 | | 41.41 | | | | 0.136 |
| 18 | 13C-2,3,7,8-TCDD | 1.65e5 | 1.62e5 | 10.1187 | 1.095 | 0.758 | NO | 1.021 | 1.022 | 26.26 | 26.28 | 184.11 | 93.1 | 0.232 |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.49e5 | 1.62e5 | 10.1187 | 0.881 | 0.631 | NO | 1.187 | 1.195 | 30.52 | 30.74 | 205.99 | 104.2 | 0.222 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.37e5 | 1.96e5 | 10.1187 | 0.642 | 1.245 | NO | 1.014 | 1.014 | 34.04 | 34.05 | 214.81 | 108.7 | 0.564 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.50e5 | 1.96e5 | 10.1187 | 0.856 | 1.271 | NO | 1.017 | 1.018 | 34.15 | 34.16 | 176.29 | 89.2 | 0.423 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.48e5 | 1.96e5 | 10.1187 | 0.807 | 1.232 | NO | 1.026 | 1.026 | 34.45 | 34.45 | 184.93 | 93.6 | 0.449 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.40e5 | 1.96e5 | 10.1187 | 0.654 | 1.038 | NO | 1.126 | 1.129 | 37.81 | 37.90 | 215.31 | 108.9 | 0.913 |
| 24 | 13C-OCDD | 2.12e5 | 1.96e5 | 10.1187 | 0.580 | 0.909 | NO | 1.226 | 1.227 | 41.16 | 41.18 | 368.77 | 93.3 | 0.458 |
| 25 | 13C-2,3,7,8-TCDF | 2.31e5 | 2.43e5 | 10.1187 | 1.035 | 0.800 | NO | 0.993 | 0.992 | 25.55 | 25.50 | 181.66 | 91.9 | 0.225 |
| 26 | 13C-1,2,3,7,8-PeCDF | 2.19e5 | 2.43e5 | 10.1187 | 0.854 | 1.587 | NO | 1.143 | 1.150 | 29.40 | 29.59 | 208.73 | 105.6 | 0.430 |
| 27 | 13C-2,3,4,7,8-PeCDF | 2.12e5 | 2.43e5 | 10.1187 | 0.847 | 1.616 | NO | 1.176 | 1.184 | 30.25 | 30.46 | 204.43 | 103.4 | 0.433 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.64e5 | 1.96e5 | 10.1187 | 0.832 | 0.503 | NO | 0.987 | 0.988 | 33.14 | 33.17 | 198.87 | 100.6 | 0.668 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.87e5 | 1.96e5 | 10.1187 | 1.034 | 0.506 | NO | 0.991 | 0.992 | 33.26 | 33.29 | 182.49 | 92.3 | 0.537 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.86e5 | 1.96e5 | 10.1187 | 0.953 | 0.508 | NO | 1.009 | 1.009 | 33.88 | 33.88 | 196.90 | 99.6 | 0.583 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.69e5 | 1.96e5 | 10.1187 | 0.828 | 0.516 | NO | 1.039 | 1.038 | 34.87 | 34.83 | 205.46 | 103.9 | 0.671 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-6.qld

Last Altered: Tuesday, November 05, 2019 11:45:20 Pacific Standard Time

Printed: Tuesday, November 05, 2019 11:45:37 Pacific Standard Time

Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,
 Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | Wt (Vb) | RR | RA | Y/N | Pred | RR | Pred RI | RI | Conc | % Rec | EMIC | DL |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|---------|-------|---------|-------|--------|--------------------------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.55e5 | 1.96e5 | 10.1187 | 0.757 | 0.446 | NO | 1.093 | 1.093 | 36.69 | 36.69 | 206.61 | 104.5 | | 0.789 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.28e5 | 1.96e5 | 10.1187 | 0.581 | 0.433 | NO | 1.143 | 1.145 | 38.37 | 38.43 | 221.39 | 112.0 | | 1.03 |
| 34 | 13C-OCDF | 2.61e5 | 1.96e5 | 10.1187 | 0.689 | 0.923 | NO | 1.233 | 1.234 | 41.40 | 41.41 | 382.25 | 96.7 | | 0.681 |
| 35 | 37Cl-2,3,7,8-TCDD | 6.54e4 | 1.62e5 | 10.1187 | 1.198 | | | 1.022 | 1.022 | 26.29 | 26.30 | 66.641 | 84.3 | | 0.0611 |
| 36 | 13C-1,2,3,4-TCDD | 1.62e5 | 1.62e5 | 10.1187 | 1.000 | 0.775 | NO | 1.000 | 1.000 | 25.70 | 25.72 | 197.65 | 100.0 | | 0.254 |
| 37 | 13C-1,2,3,4-TCDF | 2.43e5 | 2.43e5 | 10.1187 | 1.000 | 0.790 | NO | 1.000 | 1.000 | 24.28 | 24.30 | 197.65 | 100.0 | | 0.233 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.96e5 | 1.96e5 | 10.1187 | 1.000 | 0.514 | NO | 1.000 | 1.000 | 33.55 | 33.57 | 197.65 | 100.0 | | 0.556 |
| 39 | Total Tetra-Dioxins | | 1.65e5 | 10.1187 | 0.901 | | | 0.000 | | 25.50 | | 0.00000 | | 0.195 | 0.0823 |
| 40 | Total Penta-Dioxins | | 1.49e5 | 10.1187 | 0.872 | | | 0.000 | | 30.00 | | | | | 0.0421 0.103 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.1187 | 0.976 | | | 0.000 | | 33.80 | | 0.76196 | | 0.762 | 0.230 |
| 42 | Total Hepta-Dioxins | | 1.40e5 | 10.1187 | 0.989 | | | 0.000 | | 37.75 | | 2.2691 | | 2.27 | 0.158 |
| 43 | Total Tetra-Furans | | 2.31e5 | 10.1187 | 0.943 | | | 0.000 | | 24.00 | | 0.00000 | | 0.0924 | 0.0406 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.1187 | 0.940 | | | 0.000 | | 27.63 | | | | | 0.0312 > |
| 45 | Total Penta-Furans | | 0.00e0 | 10.1187 | 0.940 | | | 0.000 | | 30.00 | | | | | 0.0362 0.756 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.1187 | 1.078 | | | 0.000 | | 33.00 | | | | | 0.0443 0.1109 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.1187 | 1.135 | | | 0.000 | | 37.75 | | | | | 0.0608 0.1130 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-6.qld

Last Altered: Tuesday, November 05, 2019 11:45:20 Pacific Standard Time

Printed: Tuesday, November 05, 2019 11:45:37 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 14:14:44

Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,

Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|----|---------------------|-----|-------|--------|-----------|----------|--------------|--------|------|
| 39 | Total Tetra-Dioxins | YES | 24.41 | 63.912 | 71270.461 | 0.000 | db | 0.0000 | 0.19 |

Penta-Dioxins

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|---|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | | |

Hexa-Dioxins

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|----|--------------------|----|-------|---------|-----------|----------|--------------|--------|------|
| 41 | Total Hexa-Dioxins | NO | 32.52 | 294.003 | 80411.354 | 7.524 | MM | 0.7620 | 0.76 |

Hepta-Dioxins

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|----|---------------------|----|-------|---------|-----------|----------|--------------|--------|------|
| 6 | 1,2,3,4,6,7,8-HpCDD | NO | 37.90 | 269.599 | 71135.125 | 7.186 | MM | 0.7251 | 0.73 |
| 42 | Total Hepta-Dioxins | NO | 37.08 | 570.990 | 71135.125 | 15.447 | bb | 1.5440 | 1.54 |

Tetra-Furans

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|----|--------------------|-----|-------|--------|------------|----------|--------------|--------|------|
| 43 | Total Tetra-Furans | YES | 25.74 | 79.120 | 102500.180 | 0.000 | MM | 0.0000 | 0.09 |

Penta-Furans function 1

| # | Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|---|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-6.qld

Last Altered: Tuesday, November 05, 2019 11:45:20 Pacific Standard Time

Printed: Tuesday, November 05, 2019 11:45:37 Pacific Standard Time

Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,
Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| Name | RT | Area | S Area | Response | Primary Flags | Conc | EMPC |
|------|----|------|--------|----------|---------------|------|------|
| | | | | | | | |

Hexa-Furans

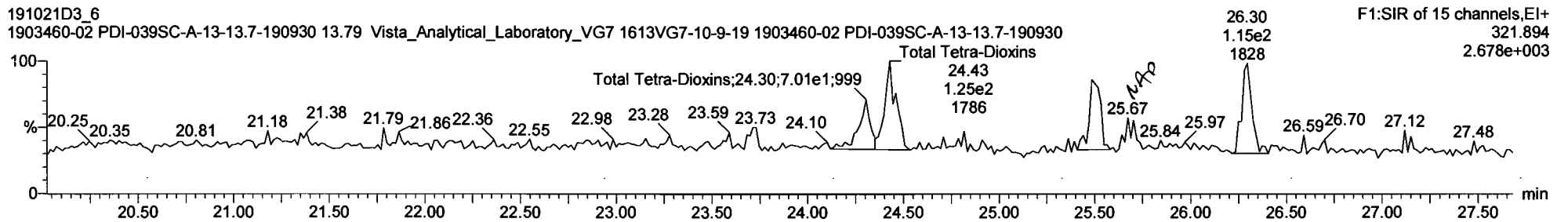
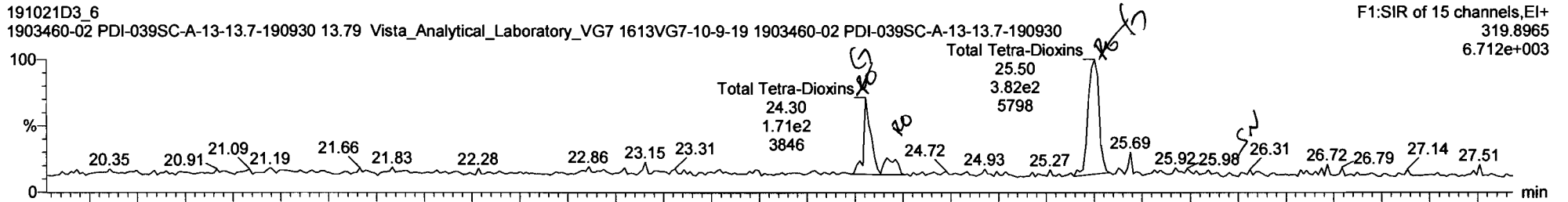
| Name | RT | Area | S Area | Response | Primary Flags | Conc | EMPC |
|------|----|------|--------|----------|---------------|------|------|
| | | | | | | | |

Hepta-Furans

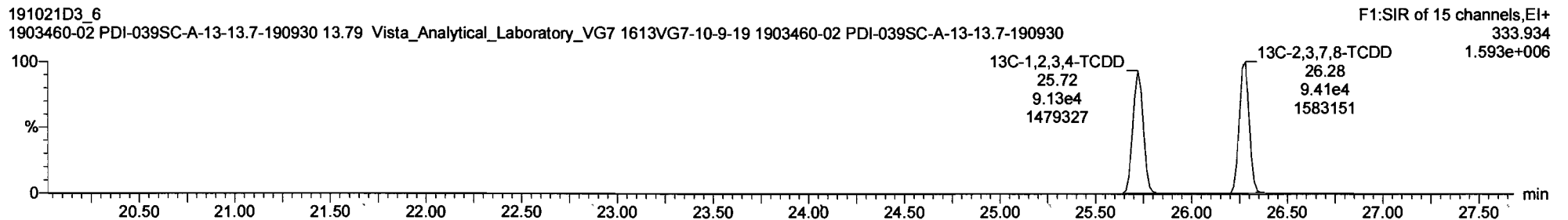
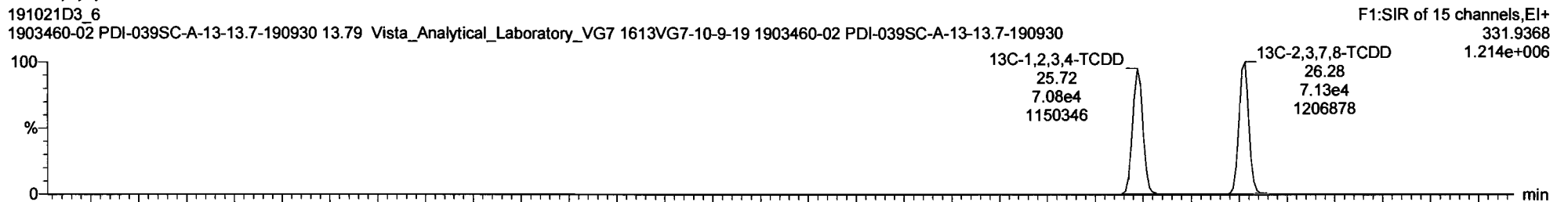
| Name | RT | Area | S Area | Response | Primary Flags | Conc | EMPC |
|------|----|------|--------|----------|---------------|------|------|
| | | | | | | | |

Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,
 Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins

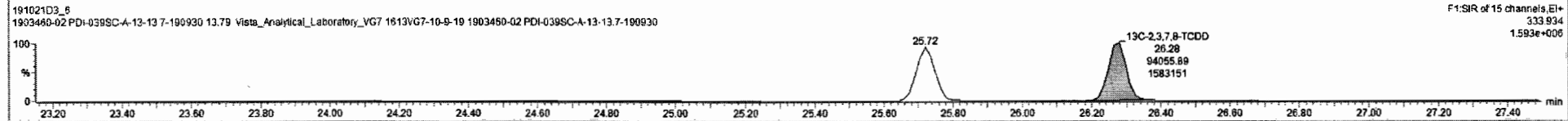
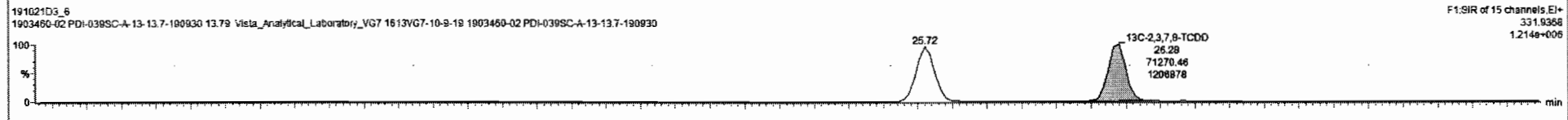
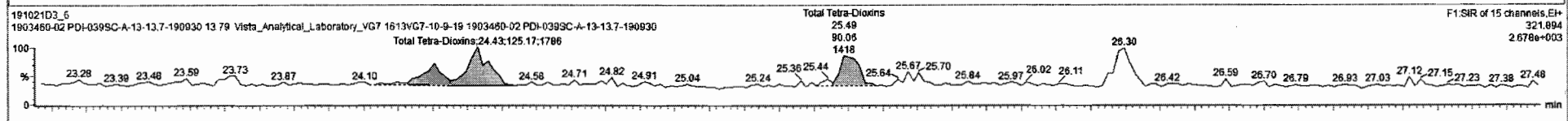
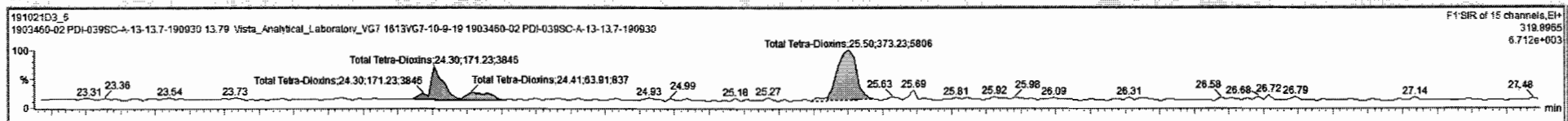


13C-2,3,7,8-TCDD



| # | Name | Resp | IS Resp | IS# | RA | n/y | RRF | wt/vol | Pred RT | RT | ART | Pred ART | Check RRF | Conc. | %Rec | DL | EMPC |
|----|-------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 31 | 13C-1,2,3,7,8,9-HxCDF | 1.69e5 | 1.96e5 | 38 | 0.52 | NO | 0.828 | 10.119 | 34.87 | 34.83 | 1.038 | 1.038 | NO | 205.5 | 104 | 0.671 | |
| 32 | 13C-1,2,3,4,6,7,8-HpCDF | 1.55e5 | 1.95e5 | 38 | 0.45 | NO | 0.757 | 10.119 | 36.69 | 36.89 | 1.093 | 1.093 | NO | 206.6 | 105 | 0.789 | |
| 33 | 13C-1,2,3,4,7,8,9-HpCDF | 1.28e5 | 1.96e5 | 38 | 0.43 | NO | 0.581 | 10.119 | 38.37 | 38.43 | 1.145 | 1.143 | NO | 221.4 | 112 | 1.03 | |
| 34 | 13C-OCDF | 2.61e5 | 1.96e5 | 38 | 0.52 | NO | 0.689 | 10.119 | 41.40 | 41.41 | 1.234 | 1.233 | NO | 382.2 | 96.7 | 0.681 | |
| 35 | 37Cl-2,3,7,8-TCDD | 6.54e4 | 1.82e5 | 38 | | | 1.198 | 10.119 | 26.29 | 26.30 | 1.022 | 1.022 | NO | 66.64 | 64.3 | 0.0611 | |
| 36 | 13C-1,2,3,4-TCDD | 1.62e5 | 1.62e5 | 38 | 0.78 | NO | 1.000 | 10.119 | 25.70 | 25.72 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.254 | |
| 37 | 13C-1,2,3,4-TCDF | 2.43e5 | 2.43e5 | 37 | 0.79 | NO | 1.000 | 10.119 | 24.28 | 24.30 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.233 | |
| 38 | 13C-1,2,3,4,6,9-HxCDF | 1.96e5 | 1.96e5 | 38 | 0.51 | NO | 1.000 | 10.119 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.656 | |
| 39 | Total Tetra-Dioxins | | 1.85e5 | | | | 4.801 | 10.119 | 25.50 | | | | 0.000 | 0.6000 | | 0.0023 | 0.5634 |

| # | Name | Pred RT | RT | n1 Resp | n2 Resp | Pred RA | RA | n/y | EMPC | Conc. |
|---|------------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 1 | 39 Total Tetra-Dioxins | 25.50 | 24.30 | 1.712e2 | 6.252e1 | 0.770 | 2.74 | YES | 0.14658 | 0.00000 |
| 2 | 39 Total Tetra-Dioxins | 25.50 | 24.41 | 6.391e1 | 1.252e2 | 0.770 | 0.51 | YES | 0.19498 | 0.00000 |
| 3 | 39 Total Tetra-Dioxins | 25.50 | 25.50 | 3.732e2 | 9.006e1 | 0.770 | 4.14 | YES | 0.21155 | 0.00000 |



Vista Analytical Laboratory

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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

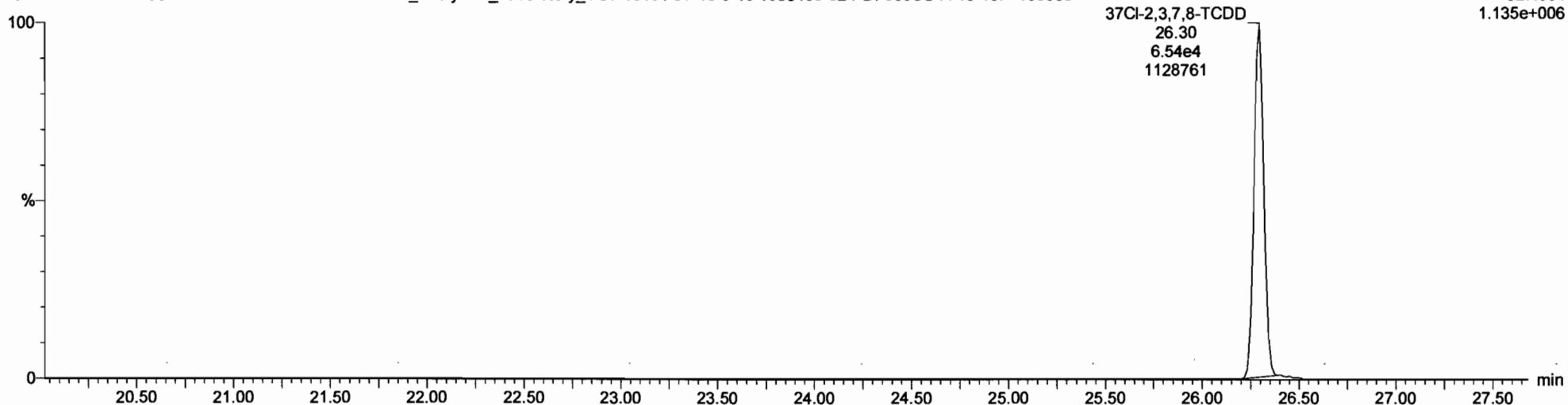
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37Cl-2,3,7,8-TCDD

191021D3_6
1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-02 PDI-039SC-A-13-13.7-190930

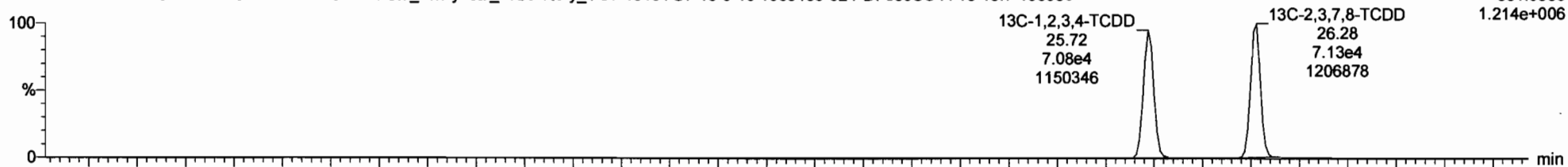
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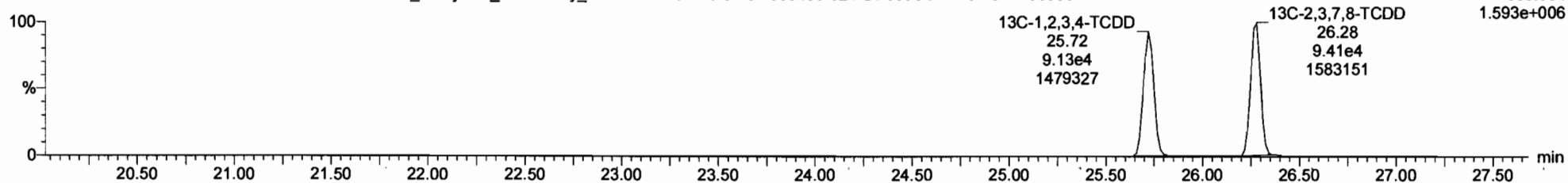
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F1:SIR of 15 channels,EI+
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191021D3_6
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F1:SIR of 15 channels,EI+
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1.593e+006



Vista Analytical Laboratory

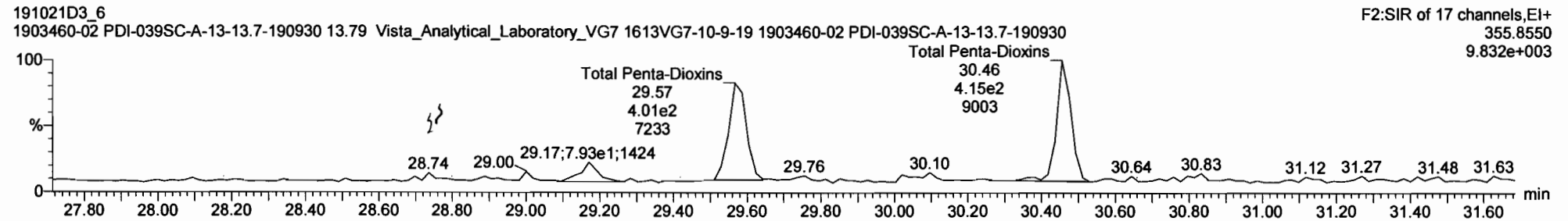
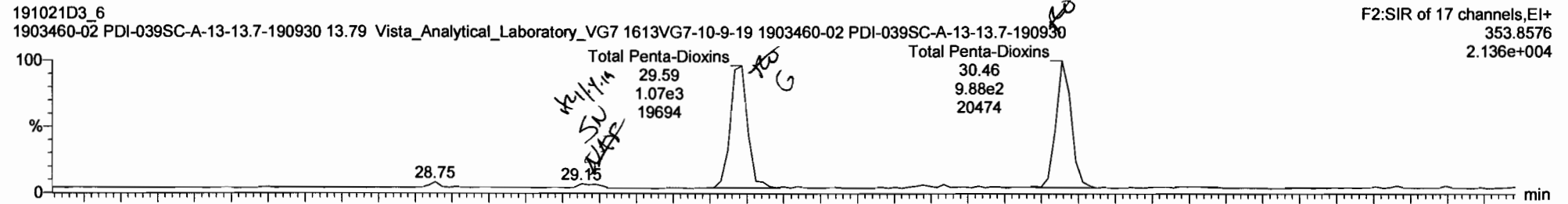
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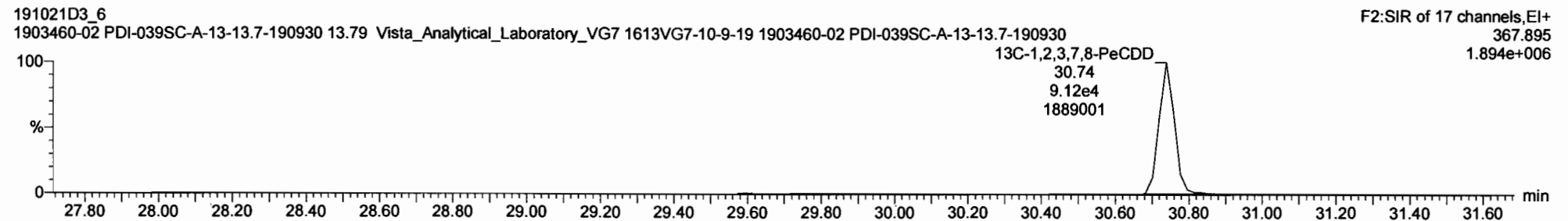
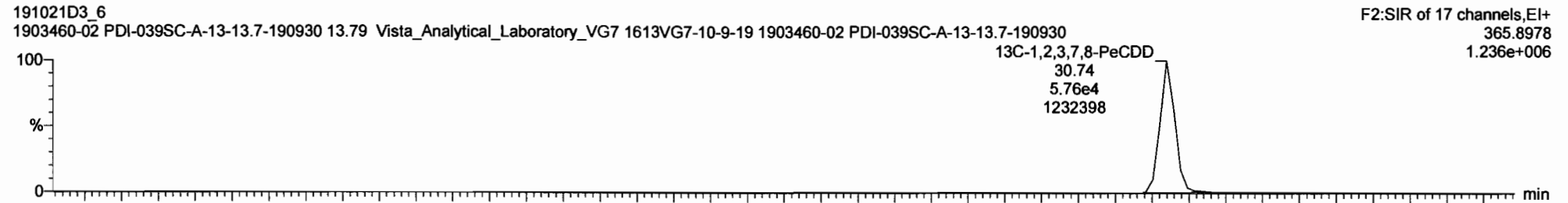
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Total Penta-Dioxins

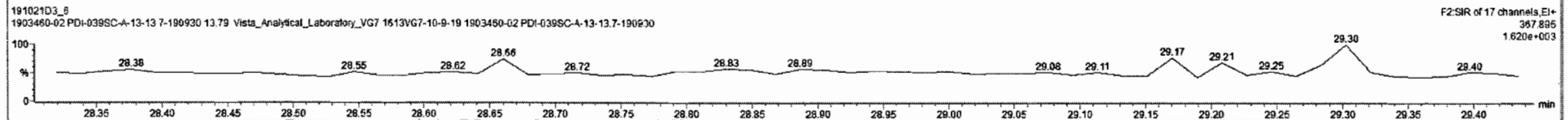
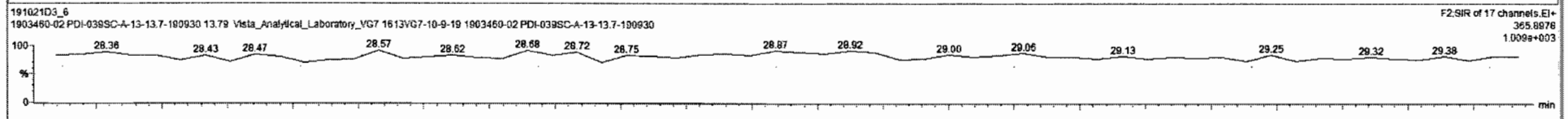
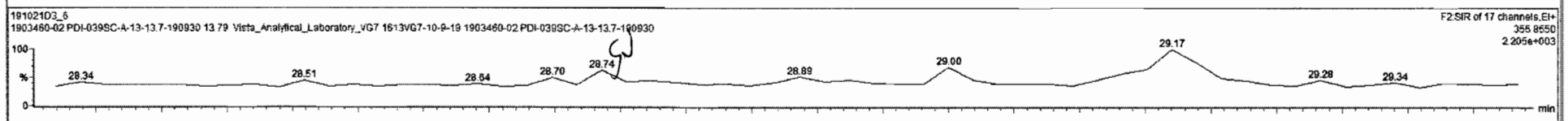
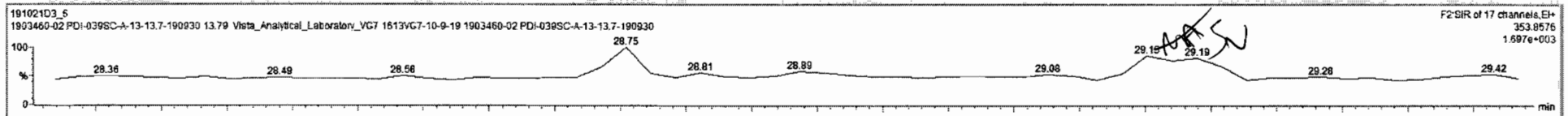


13C-1,2,3,7,8-PeCDD



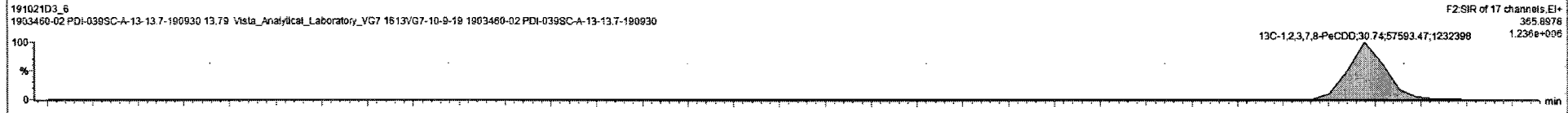
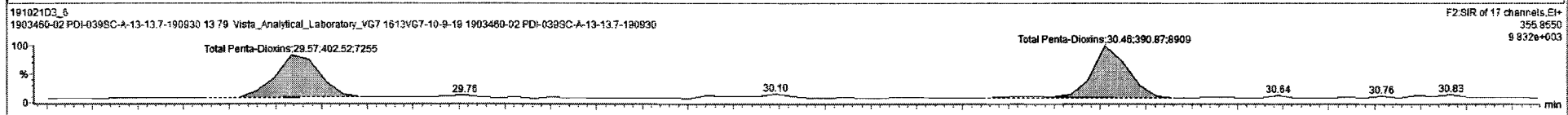
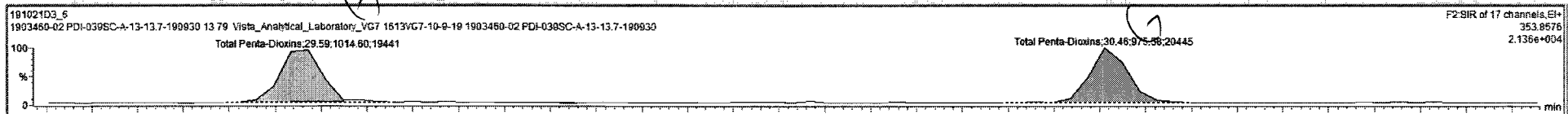
| # | Name | Resp | IS Resp | IS# | RA | nly | RRF | wt/vol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|-------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 31 | 13C-1,2,3,7,8,9-HxCDF | 1.89e5 | 1.96e5 | 38 | 0.52 | NO | 0.828 | 10.119 | 34.87 | 34.83 | 1.038 | 1.038 | NO | 205.5 | 104 | 0.871 | |
| 32 | 13C-1,2,3,4,6,7,8-HpCDF | 1.55e5 | 1.96e5 | 38 | 0.45 | NO | 0.757 | 10.119 | 36.89 | 36.89 | 1.093 | 1.093 | NO | 206.6 | 105 | 0.789 | |
| 33 | 13C-1,2,3,4,7,8,9-HpCDF | 1.28e5 | 1.96e5 | 38 | 0.43 | NO | 0.581 | 10.119 | 38.37 | 38.43 | 1.145 | 1.143 | NO | 221.4 | 112 | 1.03 | |
| 34 | 13C-OCDF | 2.61e5 | 1.96e5 | 38 | 0.52 | NO | 0.689 | 10.119 | 41.40 | 41.41 | 1.234 | 1.233 | NO | 382.2 | 96.7 | 0.681 | |
| 35 | 37Cl-2,3,7,8-TCDD | 6.54e4 | 1.62e5 | 36 | | | 1.198 | 10.119 | 28.29 | 28.30 | 1.022 | 1.022 | NO | 68.64 | 64.3 | 0.0511 | |
| 36 | 13C-1,2,3,4-TCDD | 1.62e5 | 1.62e5 | 36 | 0.78 | NO | 1.000 | 10.119 | 25.70 | 25.72 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.254 | |
| 37 | 13C-1,2,3,4-TCDF | 2.43e5 | 2.43e5 | 37 | 0.79 | NO | 1.000 | 10.119 | 24.28 | 24.30 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.233 | |
| 38 | 13C-1,2,3,4,6,8-HxCDF | 1.96e5 | 1.96e5 | 38 | 0.51 | NO | 1.000 | 10.119 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.558 | |
| 39 | 36 Total Tetra-Dioxins | | 1.65e5 | | | | 0.801 | 10.119 | 25.50 | | | 0.000 | NO | 0.0000 | | 0.0823 | 0.5534 |

| # | Name | Pred RT | RT | Int Resp | Int Resp | Pred RA | RA | nly | EMPC | Conc |
|---|------------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 1 | 40 Total Penta-Dioxins | 30.00 | 29.59 | 1.015e2 | 4.025e2 | 0.830 | 2.52 | YES | 0.99696 | 0.00000 |
| 2 | 40 Total Penta-Dioxins | 30.00 | 30.46 | 9.756e2 | 3.909e2 | 0.830 | 2.50 | YES | 0.97006 | 0.00000 |



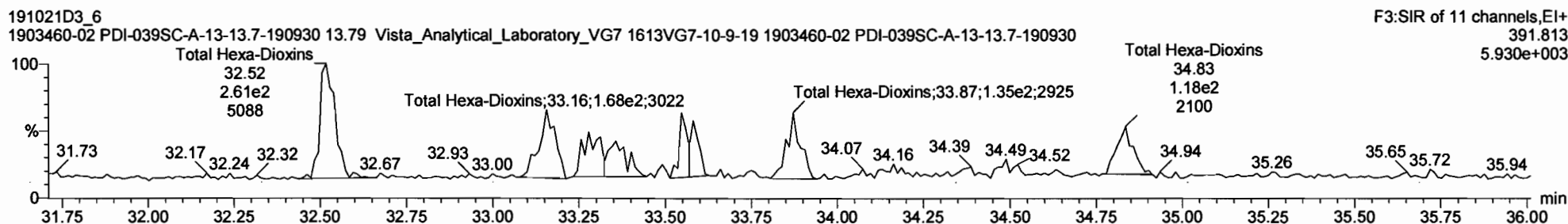
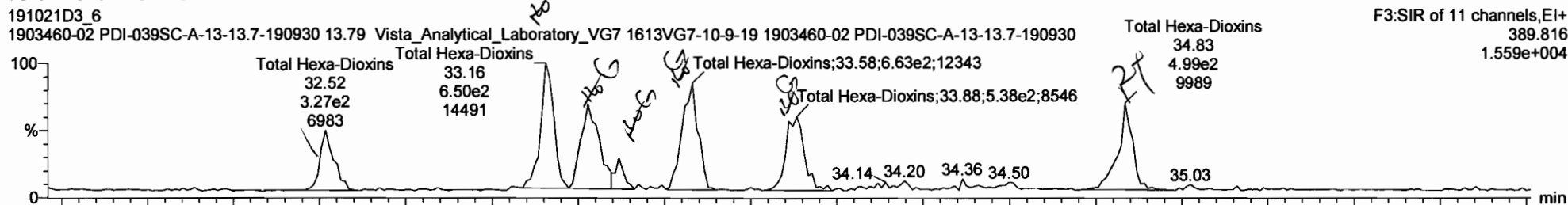
| # | Name | Resp | IS Resp | IS# | RA | ny | RRF | wtVol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|-------------------------|--------|---------|-----|------|----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 31 | 13C-1,2,3,7,8,9-HxCDF | 1.89e5 | 1.96e5 | 38 | 0.52 | NO | 0.828 | 10.119 | 34.87 | 34.83 | 1.036 | 1.039 | NO | 205.5 | 104 | 0.671 | |
| 32 | 13C-1,2,3,4,6,7,8-HpCDF | 1.58e5 | 1.96e5 | 38 | 0.45 | NO | 0.757 | 10.119 | 36.69 | 36.69 | 1.093 | 1.093 | NO | 206.6 | 105 | 0.789 | |
| 33 | 13C-1,2,3,4,7,8,9-HpCDF | 1.28e5 | 1.96e5 | 38 | 0.43 | NO | 0.581 | 10.119 | 38.37 | 38.43 | 1.145 | 1.143 | NO | 221.4 | 112 | 1.03 | |
| 34 | 13C-OCDF | 2.81e5 | 1.96e5 | 38 | 0.52 | NO | 0.689 | 10.119 | 41.40 | 41.41 | 1.234 | 1.233 | NO | 382.2 | 96.7 | 0.681 | |
| 35 | 3TC-2,3,7,8-TCDD | 6.54e4 | 1.62e5 | 36 | | | 1.196 | 10.119 | 26.29 | 26.30 | 1.022 | 1.022 | NO | 66.64 | 64.3 | 0.0611 | |
| 36 | 13C-1,2,3,4-TCDD | 1.62e5 | 1.62e5 | 36 | 0.78 | NO | 1.000 | 10.119 | 25.70 | 25.72 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.254 | |
| 37 | 13C-1,2,3,4-TCDF | 2.43e5 | 2.43e5 | 37 | 0.79 | NO | 1.000 | 10.119 | 24.28 | 24.30 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.233 | |
| 38 | 13C-1,2,3,4,6,9-HxCDF | 1.96e5 | 1.96e5 | 38 | 0.51 | NO | 1.800 | 10.119 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.556 | |
| 39 | 36 Total Tetra-Dioxins | | 1.65e5 | | | | 0.901 | 10.119 | 25.50 | | | | NO | 0.0000 | | 0.0823 | 0.5534 |

| # | Name | Pred RT | RT | m1 Resp | m2 Resp | Pred RA | RA | ny | EMPC | Conc |
|---|------------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 1 | 40 Total Penta-Dioxins | 30.00 | 29.59 | 1.015e3 | 4.025e2 | 0.630 | 2.52 | YES | 0.99696 | 0.00500 |
| 2 | 40 Total Penta-Dioxins | 30.00 | 30.46 | 9.756e2 | 3.909e2 | 0.630 | 2.50 | YES | 0.97008 | 0.00000 |

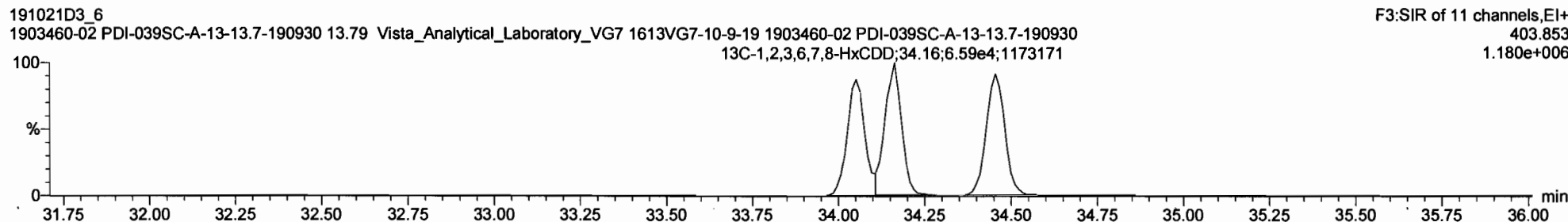
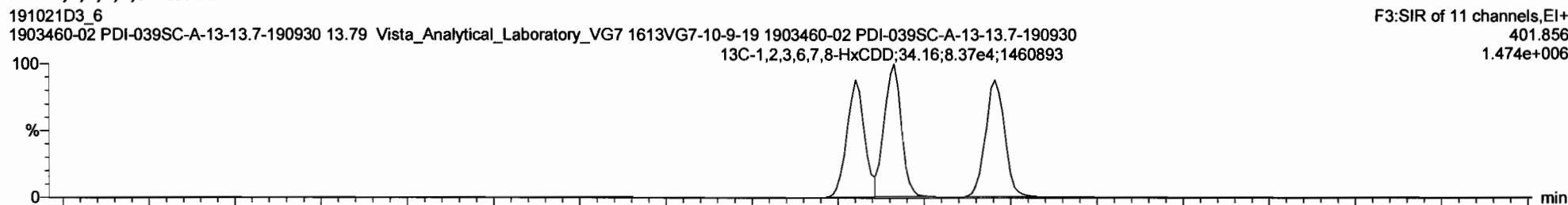


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 Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hexa-Dioxins

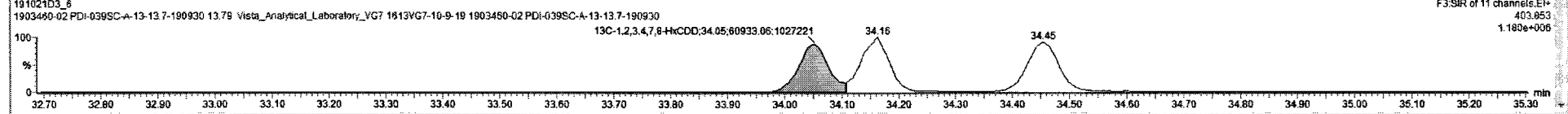
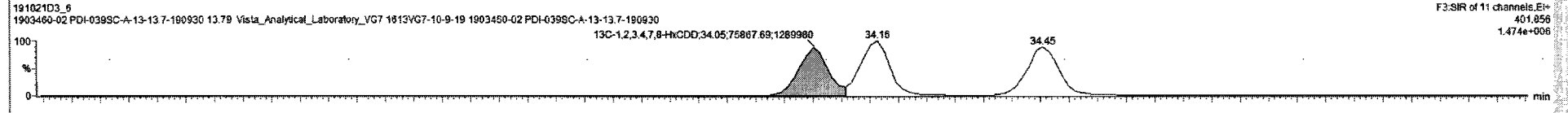
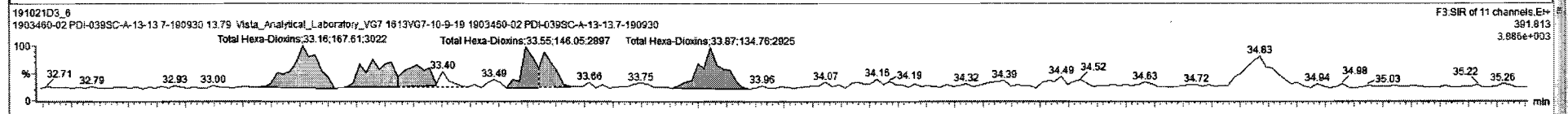
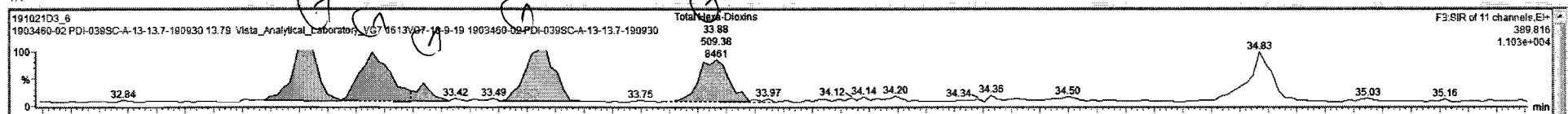


13C-1,2,3,4,7,8-HxCDD



| # | Name | Resp | IS Resp | IS1 | RA | aly | RPF | wf/wt | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|--------|--------|------|
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.978 | 10.119 | 33.80 | | | 0.000 | NO | 8.7820 | 0.230 | 2.740 | |
| 42 | Total Hepta-Dioxins | 1.40e5 | | | | | 0.989 | 10.119 | 37.75 | | | 0.000 | NO | 2.333 | 0.158 | 3.981 | |
| 43 | Total Tetra-Furans | 2.31e5 | | | | | 0.943 | 10.119 | 24.00 | | | 0.000 | NO | 0.0000 | 0.0406 | 0.1087 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.119 | 27.53 | | | 0.000 | NO | | 0.0312 | | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.119 | 30.00 | | | 0.000 | NO | | 0.0362 | | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.119 | 33.00 | | | 0.000 | NO | | 0.0443 | | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.135 | 10.119 | 37.75 | | | 0.000 | NO | | 0.0808 | | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred.RT | RT | Inf Resp | Int Resp | Pred.RA | RA | aly | EMPC | Conc |
|----|--------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 41 | Total Hexa-Dioxins | 33.80 | 32.52 | 2.949e2 | 2.507e2 | 1.240 | 1.17 | NO | 0.76196 | 0.76196 |
| 2 | Total Hexa-Dioxins | 33.80 | 33.16 | 6.496e2 | 1.876e2 | 1.240 | 3.88 | YES | 0.52523 | 0.80000 |
| 3 | Total Hexa-Dioxins | 33.80 | 33.28 | 6.119e2 | 1.091e2 | 1.240 | 5.61 | YES | 0.34183 | 0.00000 |
| 4 | Total Hexa-Dioxins | 33.80 | 33.37 | 1.102e2 | 7.367e1 | 1.240 | 1.50 | YES | 0.23086 | 0.00000 |
| 5 | Total Hexa-Dioxins | 33.80 | 33.58 | 6.828e2 | 1.461e2 | 1.240 | 4.54 | YES | 0.45768 | 0.00000 |
| 6 | Total Hexa-Dioxins | 33.80 | 33.88 | 5.094e2 | 1.348e2 | 1.240 | 3.76 | YES | 0.42226 | 0.00000 |



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

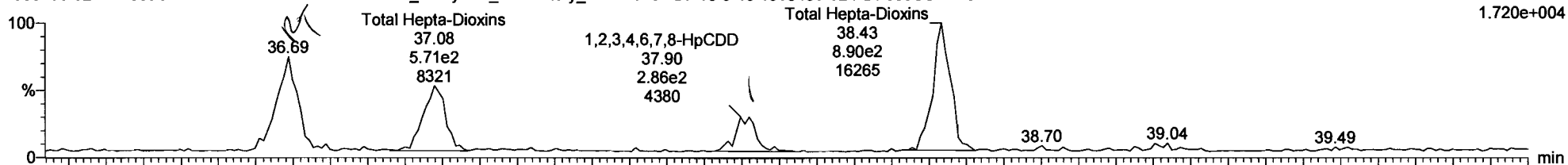
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Total Hepta-Dioxins

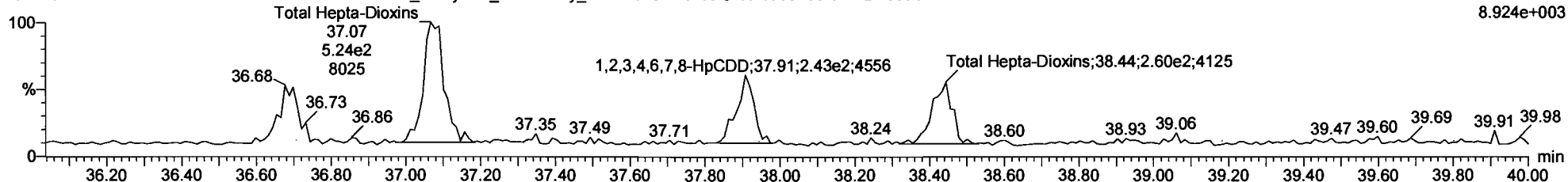
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F4:SIR of 11 channels,EI+ 423.777 1.720e+004



191021D3_6 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-02 PDI-039SC-A-13-13.7-190930

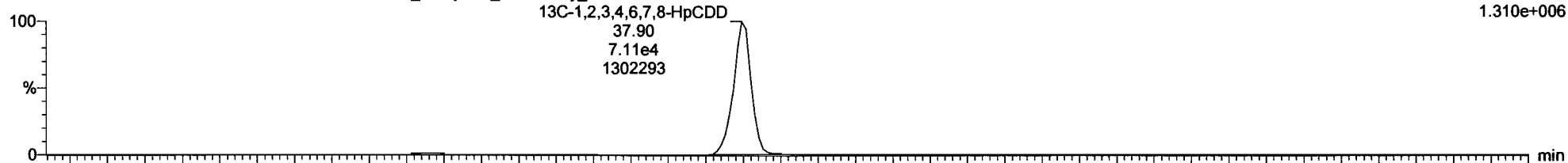
F4:SIR of 11 channels,EI+ 425.774 8.924e+003



13C-1,2,3,4,6,7,8-HpCDD

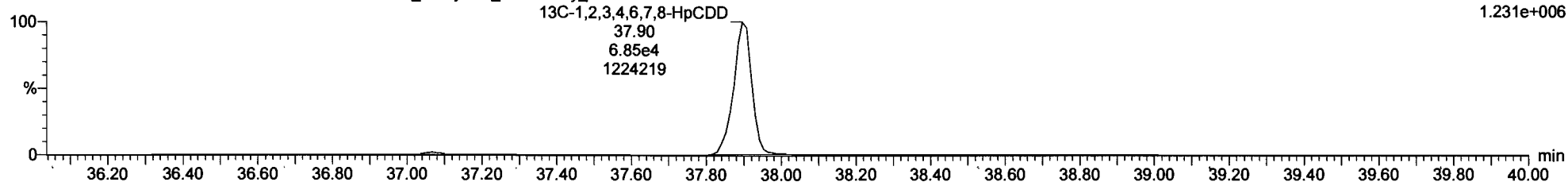
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F4:SIR of 11 channels,EI+ 435.817 1.310e+006



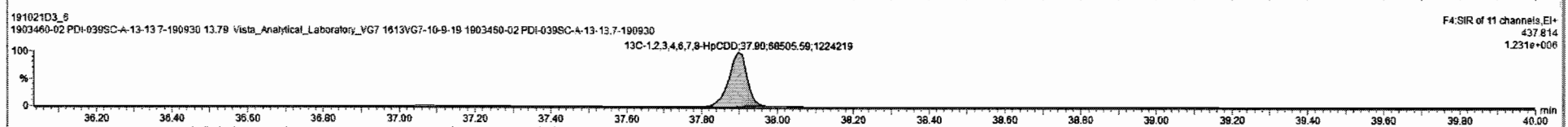
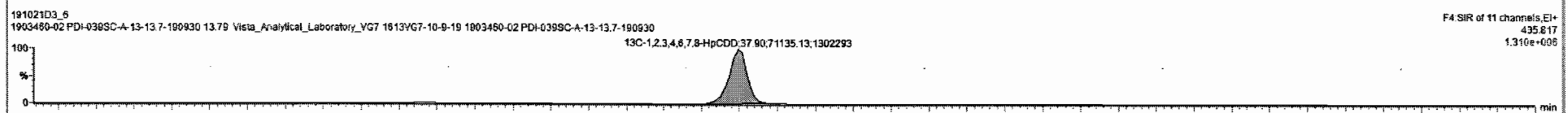
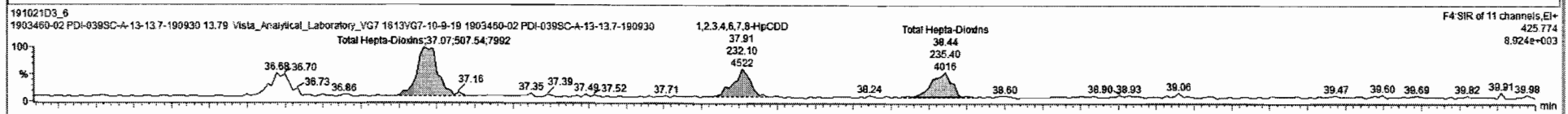
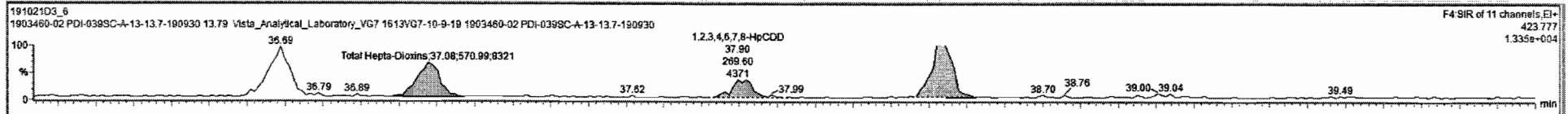
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F4:SIR of 11 channels,EI+ 437.814 1.231e+006



| # | Name | Resp | IS Resp | IS# | RA | nly | RRF | w/wot | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|--------|--------|------|
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.976 | 10.119 | 33.80 | | | 0.000 | NO | 0.7620 | 0.230 | 2.740 | |
| 42 | Total Hepta-Dioxins | 1.40e5 | | | | | 0.989 | 10.119 | 37.75 | | | 0.000 | NO | 2.289 | 0.158 | 2.957 | |
| 43 | Total Tetra-Furans | 2.31e5 | | | | | 0.943 | 10.119 | 24.00 | | | 0.000 | NO | 0.0000 | 0.0406 | 0.1067 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.119 | 27.63 | | | 0.000 | NO | | 0.0312 | | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.119 | 30.00 | | | 0.000 | NO | | 0.0362 | | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.119 | 33.00 | | | 0.000 | NO | | 0.0443 | | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.135 | 10.119 | 37.75 | | | 0.000 | NO | | 0.0608 | | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred RT | RT | n1 Resp | n2 Resp | Pred RA | RA | nly | EMPC | Conc. |
|---|------------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 1 | 42 Total Hepta-Dioxins | 37.75 | 37.08 | 5.710e2 | 5.075e2 | 1.940 | 1.13 | NO | 1.5440 | 1.5440 |
| 2 | 6 1,2,3,4,6,7,8-HpCDD | 37.91 | 37.90 | 2.696e2 | 2.321e2 | 1.940 | 1.16 | NO | 0.72506 | 0.72506 |
| 3 | 42 Total Hepta-Dioxins | 37.75 | 38.43 | 8.868e2 | 2.354e2 | 1.940 | 3.77 | YES | 0.68748 | 0.00000 |

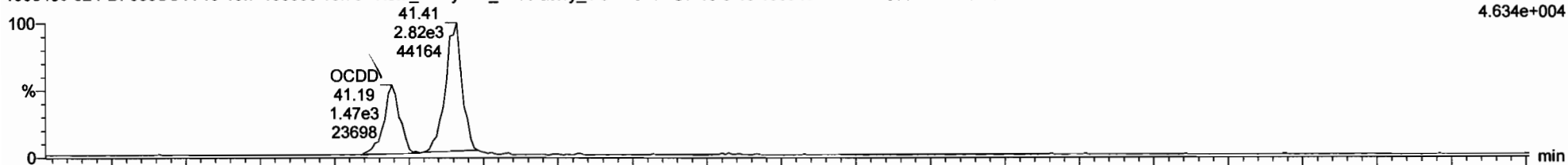


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Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

OCDD

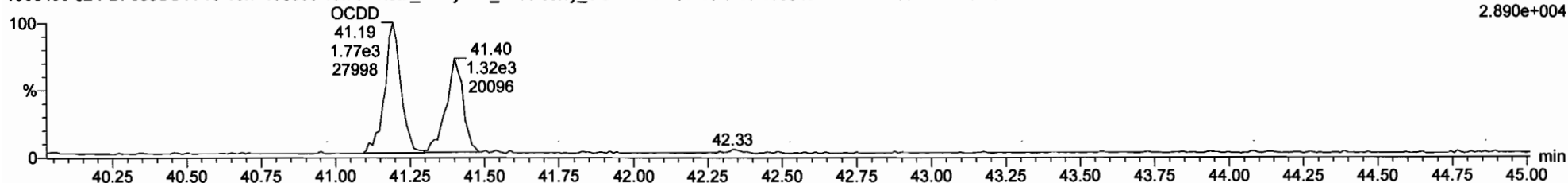
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F5:SIR of 11 channels, EI+
457.738
4.634e+004



191021D3_6
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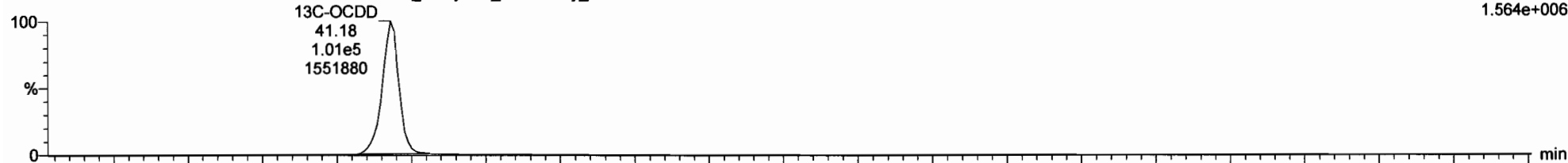
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459.735
2.890e+004



13C-OCDD

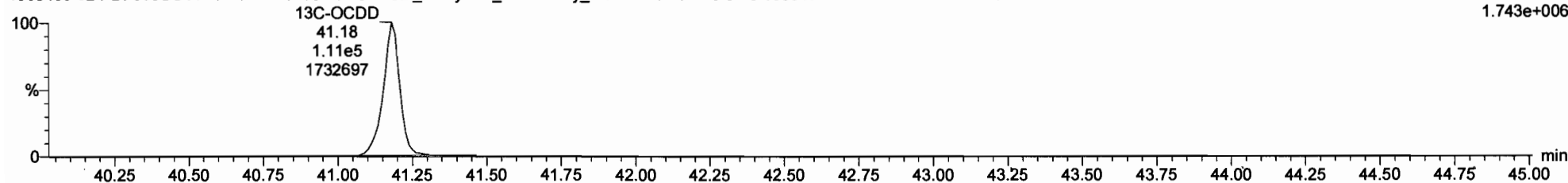
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F5:SIR of 11 channels, EI+
469.778
1.564e+006



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F5:SIR of 11 channels, EI+
471.775
1.743e+006



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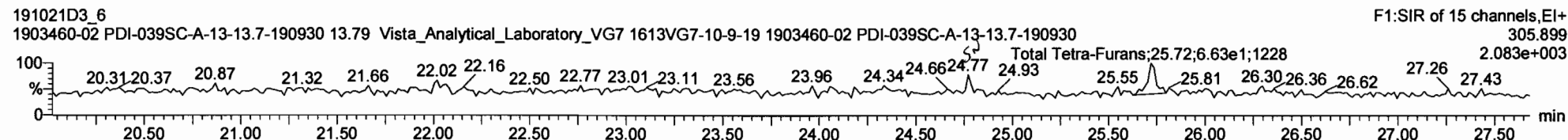
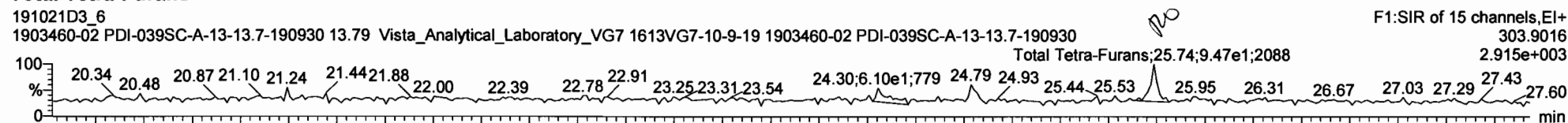
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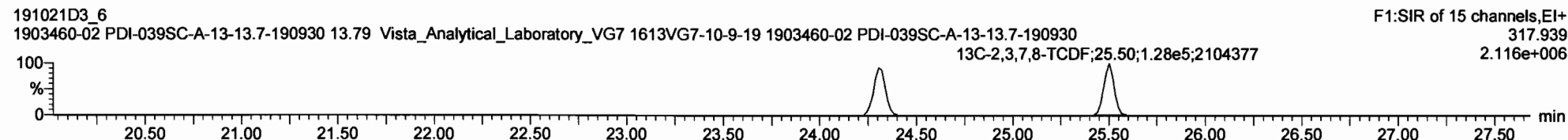
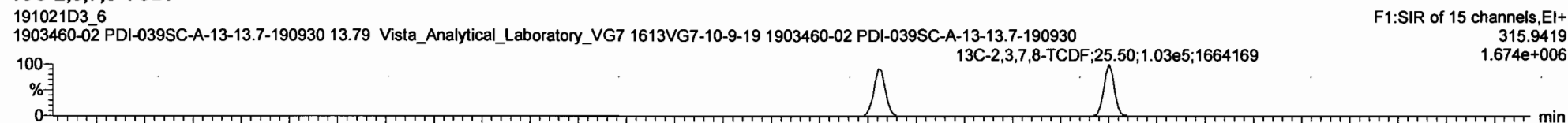
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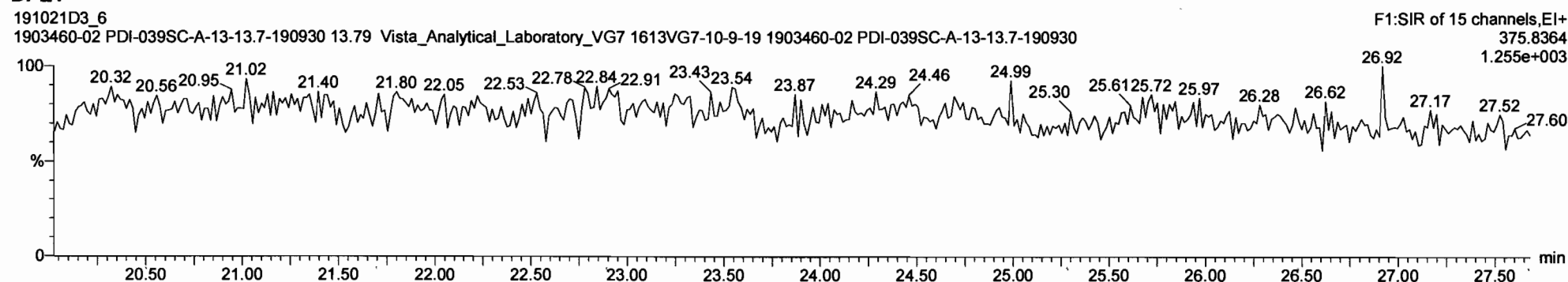
Total Tetra-Furans



13C-2,3,7,8-TCDF

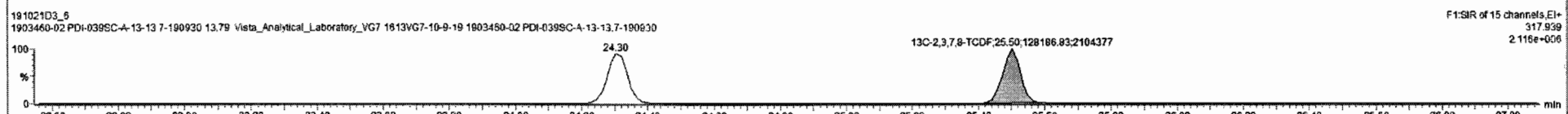
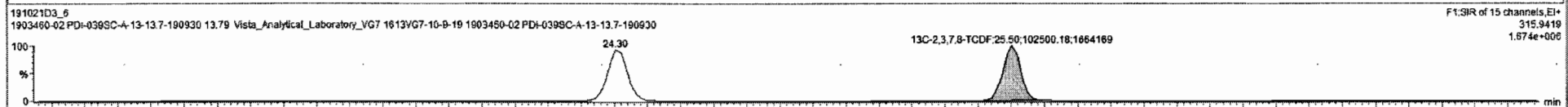
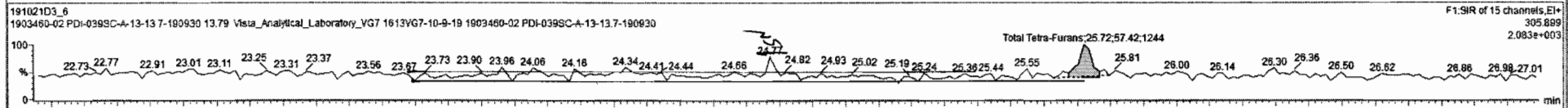
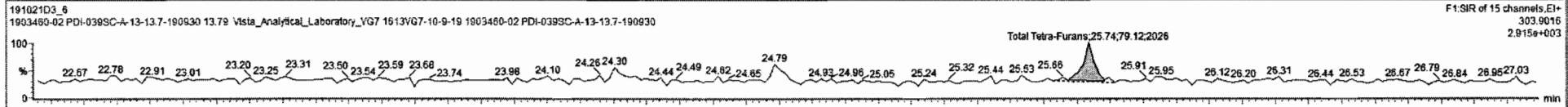


DPE1



| # | Name | Resp | IS Resp | IS# | RA | n/y | RRF | wt/wt | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|---------|
| 38 | 13C-1,2,3,4,6,8-HxCDF | 1.96e5 | 1.96e5 | 38 | 0.51 | NO | 1.000 | 10.119 | 33.55 | 33.57 | 1.000 | 1.000 | NO | 197.7 | 100 | 0.568 | |
| 39 | Total Tetra-Dioxins | | 1.65e5 | | | | 0.901 | 10.119 | 25.50 | | | 0.000 | NO | 0.0000 | | 0.0823 | 0.5834 |
| 40 | Total Penta-Dioxins | | 1.49e5 | | | | 0.872 | 10.119 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.0421 | 1.969 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | | | | 0.578 | 10.119 | 33.80 | | | 0.000 | NO | 0.7620 | | 0.230 | 2.740 |
| 42 | Total Hepta-Dioxins | | 1.40e5 | | | | 0.989 | 10.119 | 37.75 | | | 0.000 | NO | 2.269 | | 0.158 | 2.957 |
| 43 | Total Tetra-Furans | | 2.31e5 | | | | 0.943 | 10.119 | 24.00 | | | 0.000 | NO | 0.9000 | | 0.0498 | 0.09236 |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.940 | 10.119 | 27.83 | | | 0.000 | NO | | | | 0.0312 |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.940 | 10.119 | 30.00 | | | 0.000 | NO | | | | 0.0382 |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.078 | 10.119 | 33.00 | | | 0.000 | NO | | | | 0.0443 |

| # | Name | Pred RT | RT | n1 Resp | n2 Resp | Pred RA | RA | n/y | EMPC | Conc. |
|----|--------------------|---------|-------|---------|---------|---------|------|-----|----------|---------|
| 43 | Total Tetra-Furans | 24.00 | 25.74 | 7.612e1 | 5.742e1 | 0.770 | 1.38 | YES | 0.092363 | 0.00000 |



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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

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1st Func. Penta-Furans

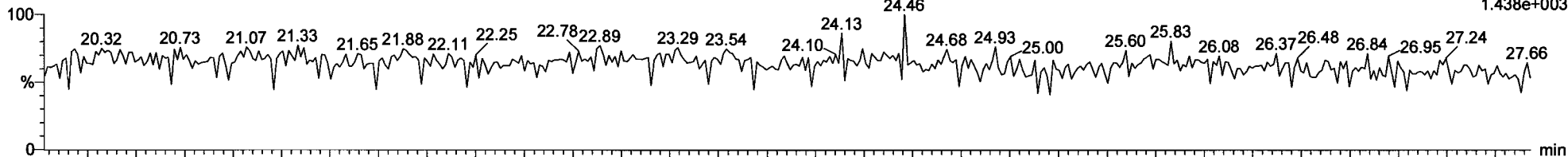
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F1:SIR of 15 channels,EI+

339.860

1.438e+003



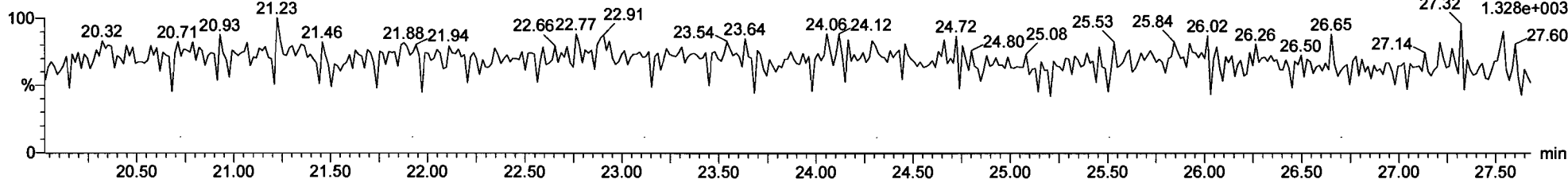
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F1:SIR of 15 channels,EI+

341.857

1.328e+003



DPE6

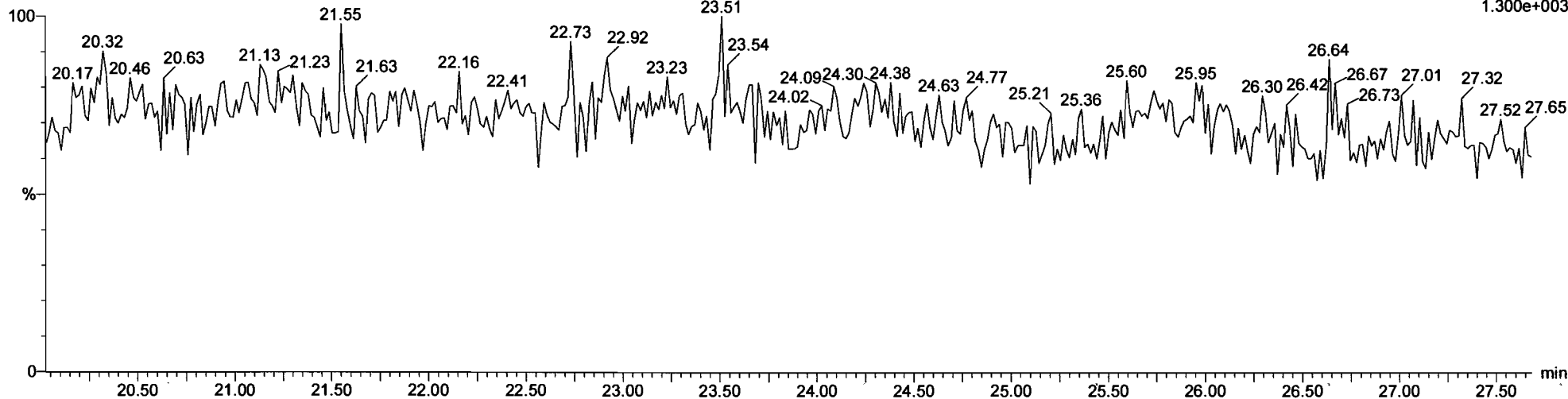
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F1:SIR of 15 channels,EI+

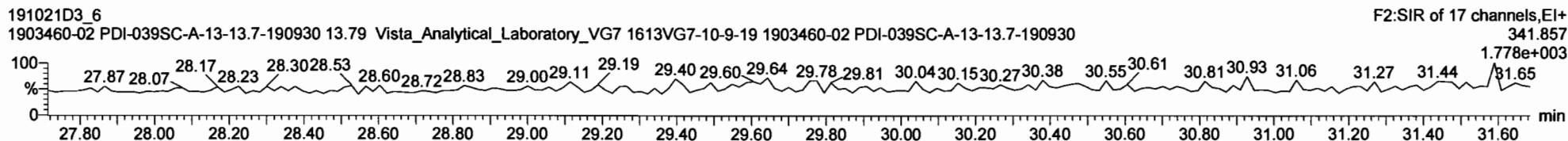
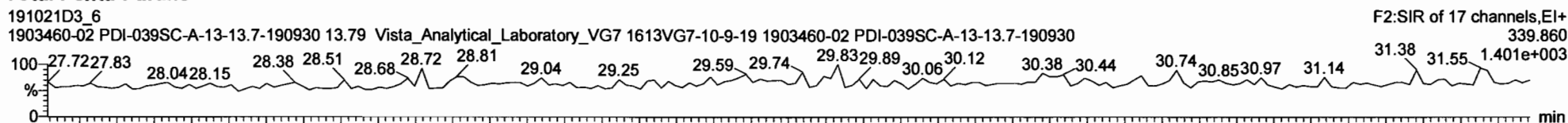
409.7974

1.300e+003

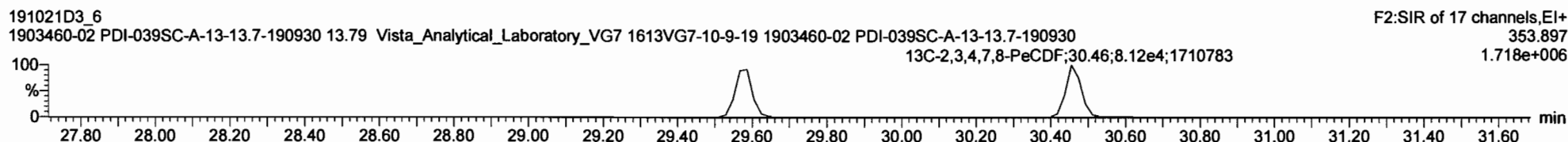
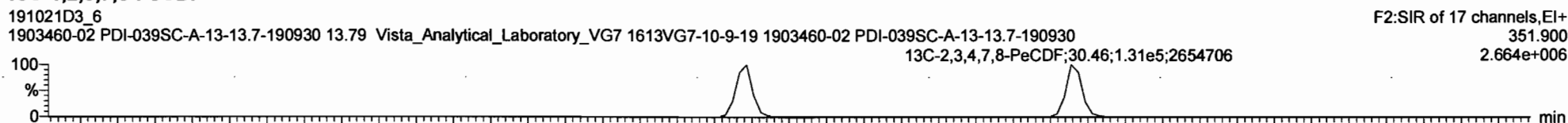


Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,
Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

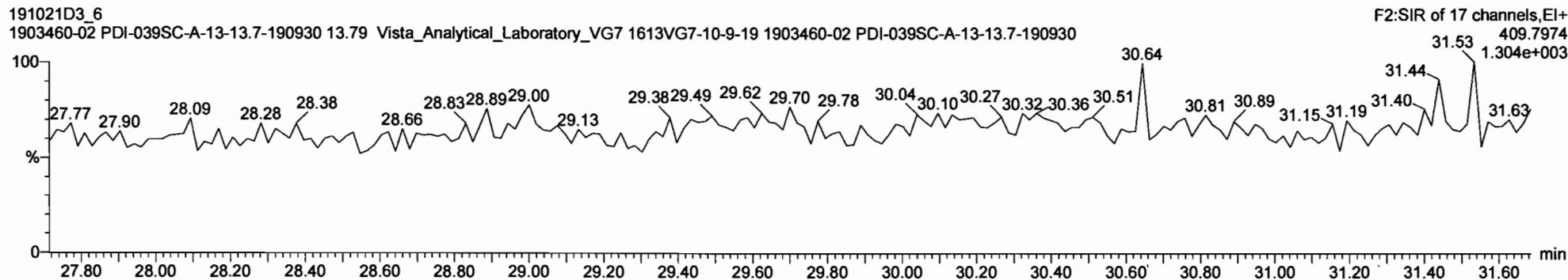
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

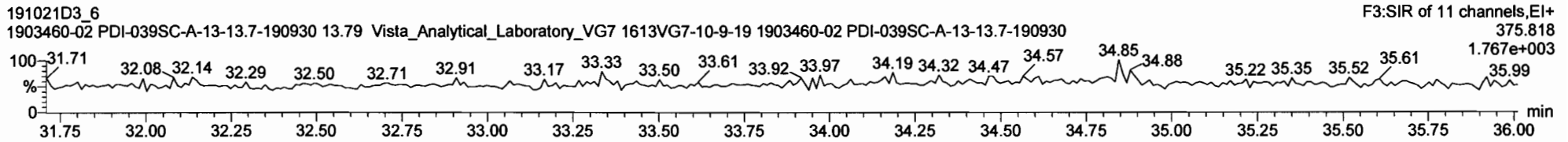
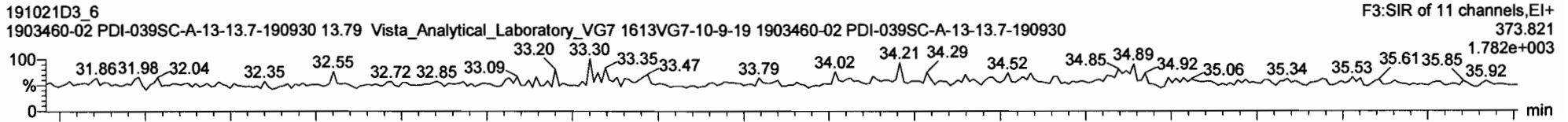


DPE2

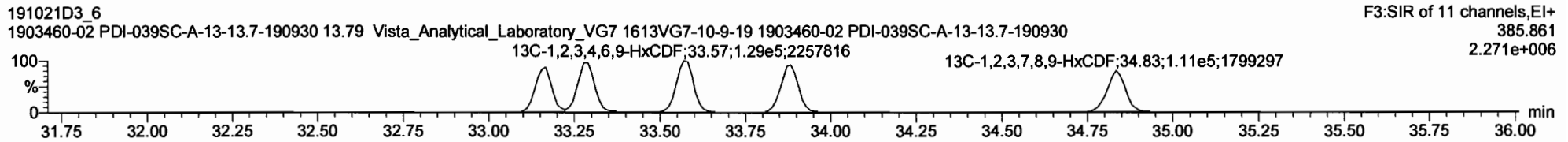
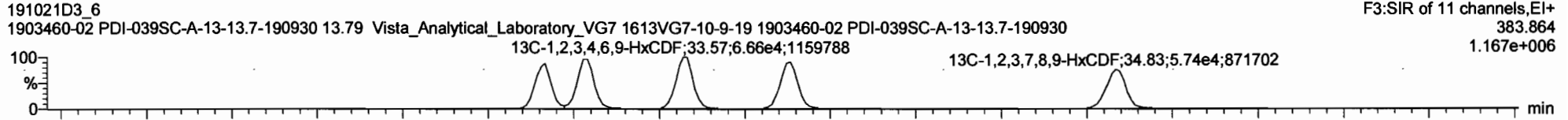


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Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

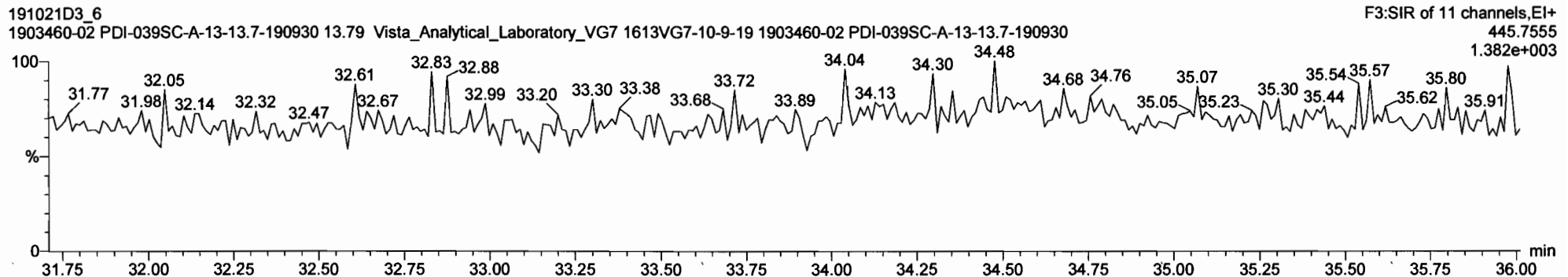
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

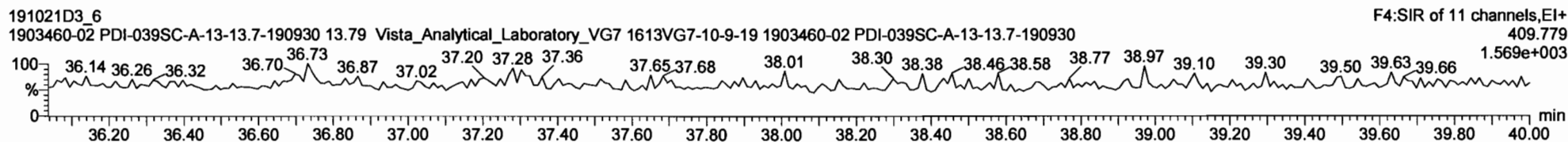
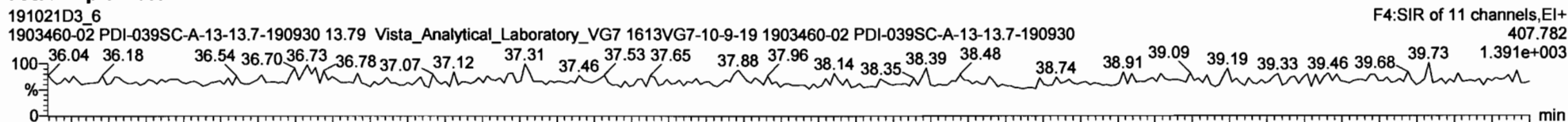


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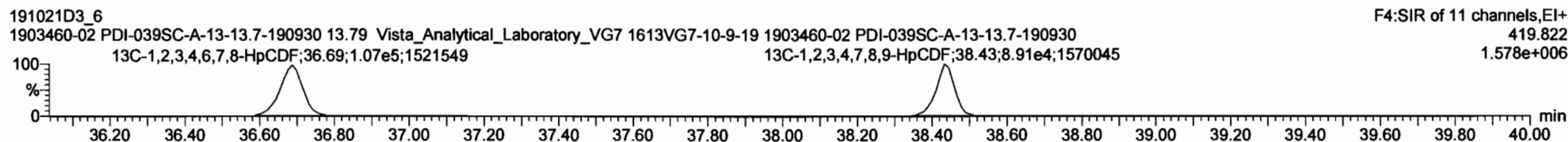
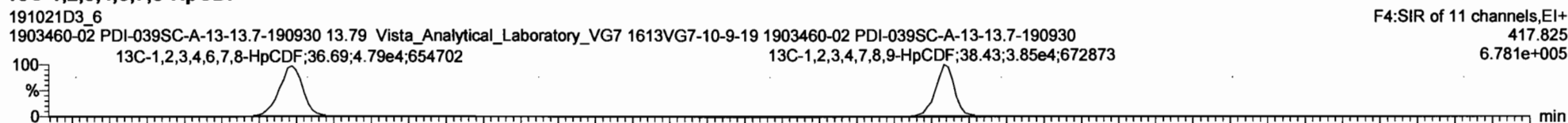


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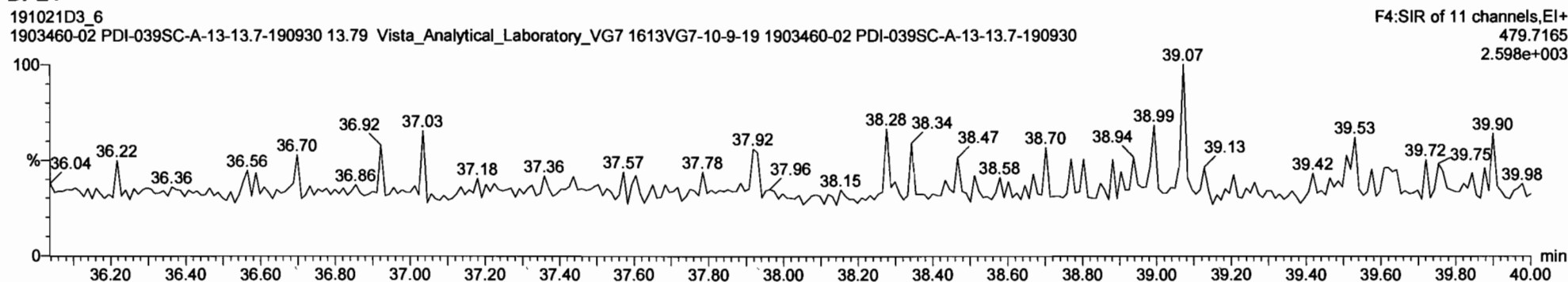
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

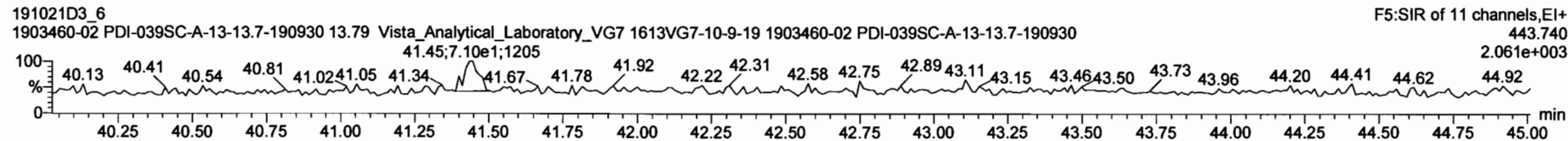
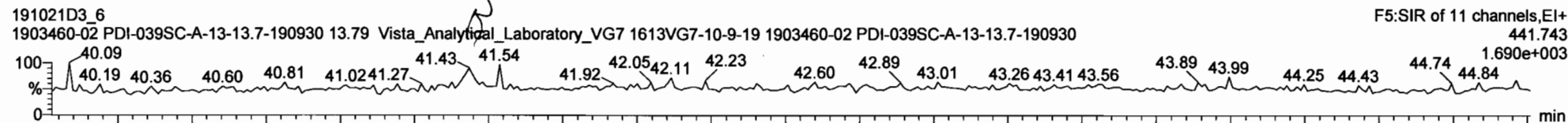
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

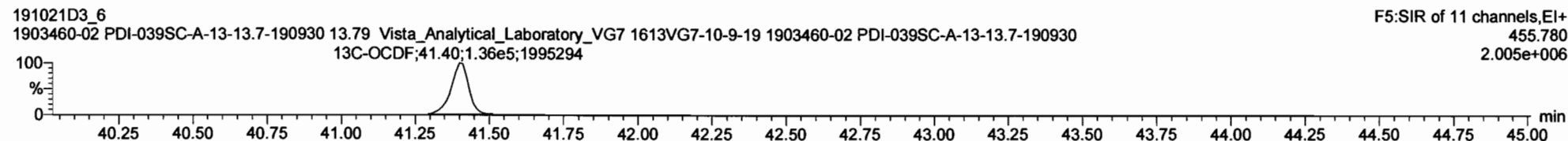
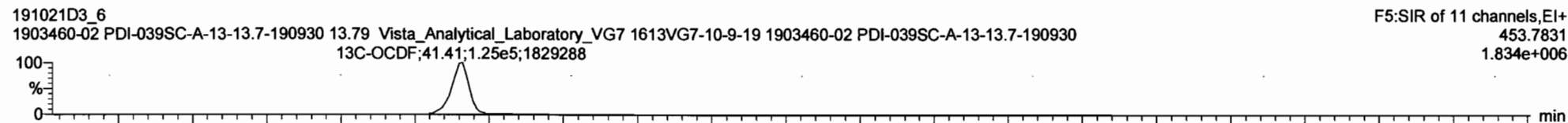
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Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

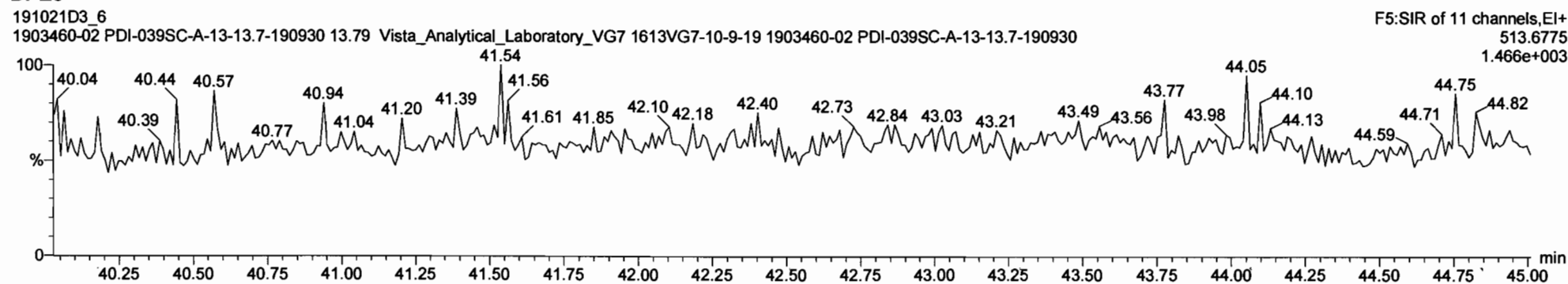
OCDF



13C-OCDF



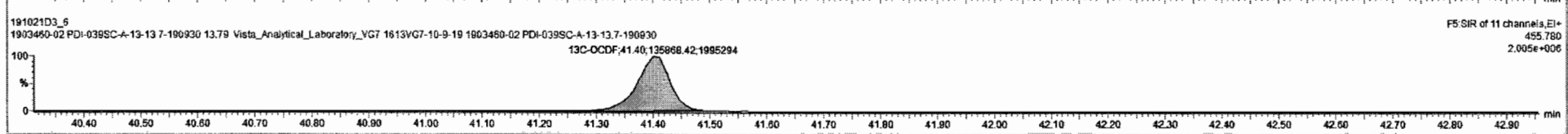
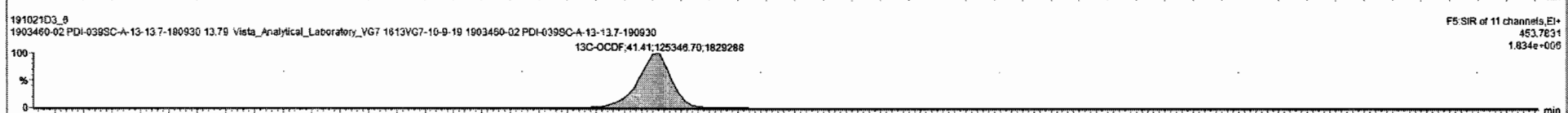
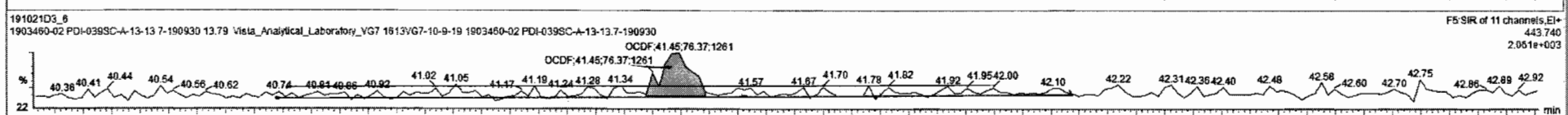
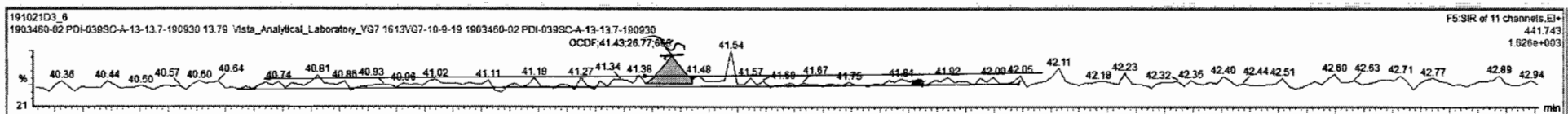
DPE5



191021D3_6 - 1903460-02 PDI-039SC-A-13-13.7-190930 - 1903460-02 PDI-039SC-A-13-13.7-190930 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

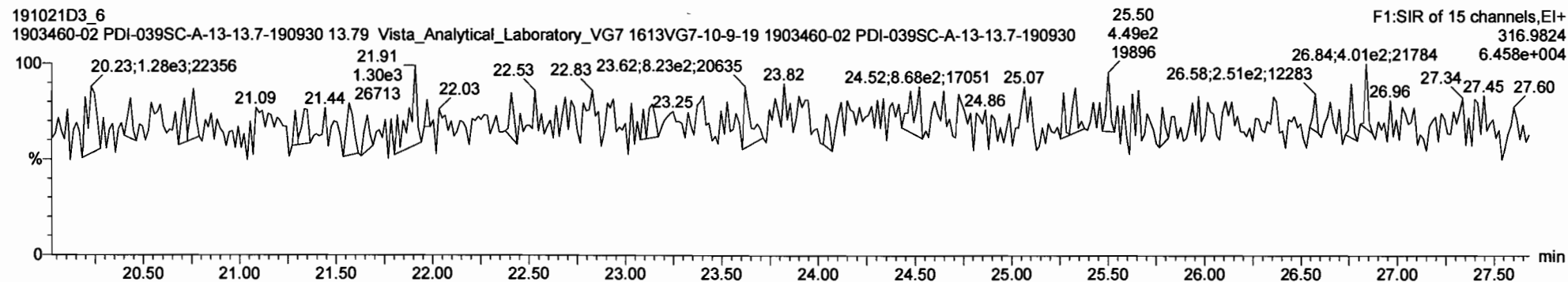
| # | Name | Resp | IS Resp | IS# | RA | n/y | RRF | wt/vol | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|-------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|---------|
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.55e5 | 32 | | | 1.128 | 10.119 | 38.72 | | | 1.001 | NO | | | 0.130 | |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.28e5 | 33 | | | 1.280 | 10.119 | 38.43 | | | 1.000 | NO | | | 0.109 | |
| 17 | OCDF | 1.03e2 | 2.61e5 | 34 | 0.35 | YES | 0.947 | 10.119 | 41.41 | 41.43 | 1.001 | 1.009 | NO | 0.1648 | | 0.136 | 0.09082 |
| 18 | 13C-2,3,7,8-TCDD | 1.65e5 | 1.62e5 | 36 | 0.76 | NO | 1.095 | 10.119 | 26.26 | 26.28 | 1.022 | 1.021 | NO | 184.1 | 93.1 | 0.232 | |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.49e5 | 1.62e5 | 36 | 0.83 | NO | 0.881 | 10.119 | 30.52 | 30.74 | 1.195 | 1.187 | NO | 206.0 | 104 | 0.222 | |
| 20 | 13C-1,2,3,4,7,8-HxCDD | 1.37e5 | 1.96e5 | 38 | 1.25 | NO | 0.642 | 10.119 | 34.04 | 34.05 | 1.014 | 1.014 | NO | 214.8 | 109 | 0.584 | |
| 21 | 13C-1,2,3,6,7,8-HxCDD | 1.50e5 | 1.96e5 | 38 | 1.27 | NO | 0.856 | 10.119 | 34.15 | 34.18 | 1.018 | 1.017 | NO | 178.3 | 88.2 | 0.423 | |
| 22 | 13C-1,2,3,7,8,9-HxCDD | 1.48e5 | 1.96e5 | 38 | 1.23 | NO | 0.807 | 10.119 | 34.45 | 34.45 | 1.026 | 1.026 | NO | 184.9 | 93.6 | 0.449 | |
| 23 | 13C-1,2,3,4,6,7,8-HpCDD | 1.40e5 | 1.96e5 | 38 | 1.04 | NO | 0.654 | 10.119 | 37.81 | 37.90 | 1.129 | 1.128 | NO | 215.3 | 109 | 0.913 | |

| # | Name | Pred.RT | RT | m1 Resp | m2 Resp | Pred.RA | RA | n/y | EMPC | Conc. |
|---|------|---------|----|---------|---------|---------|----|-----|------|-------|
| 1 | | | | | | | | | | |

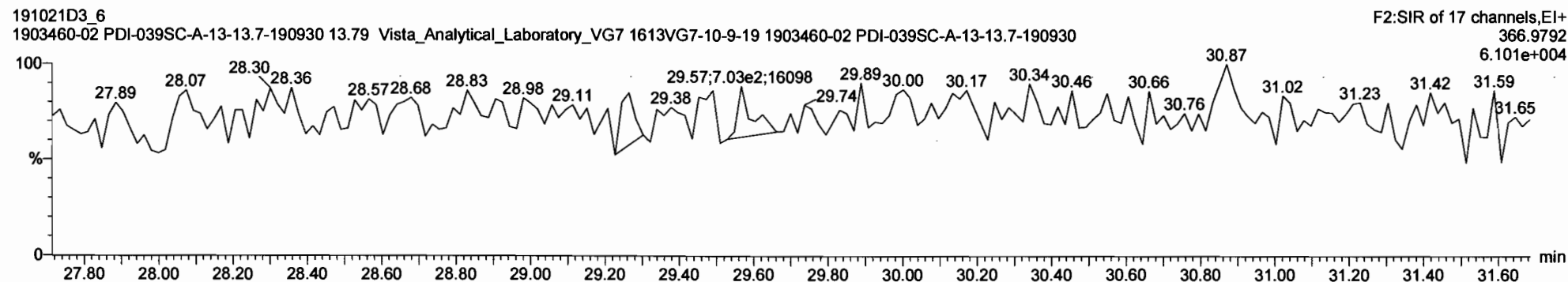


Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,
 Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

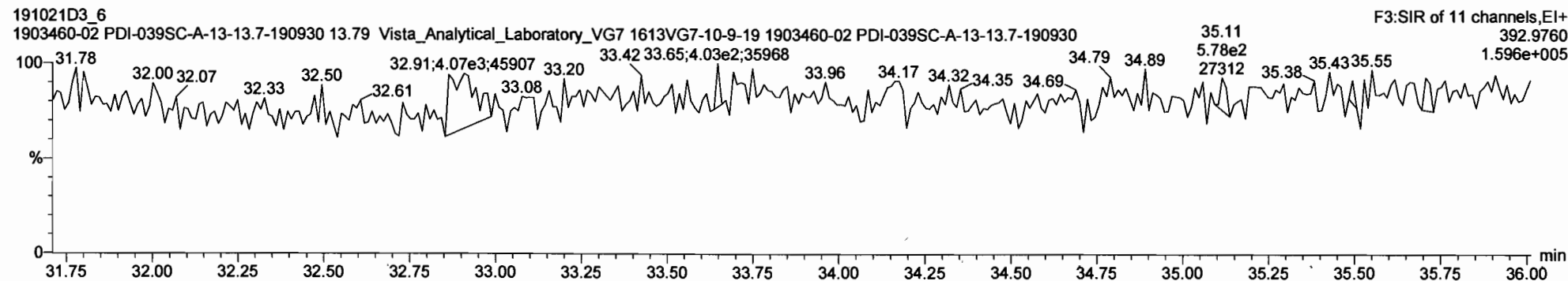
PFK1



PFK2



PFK3



Vista Analytical Laboratory

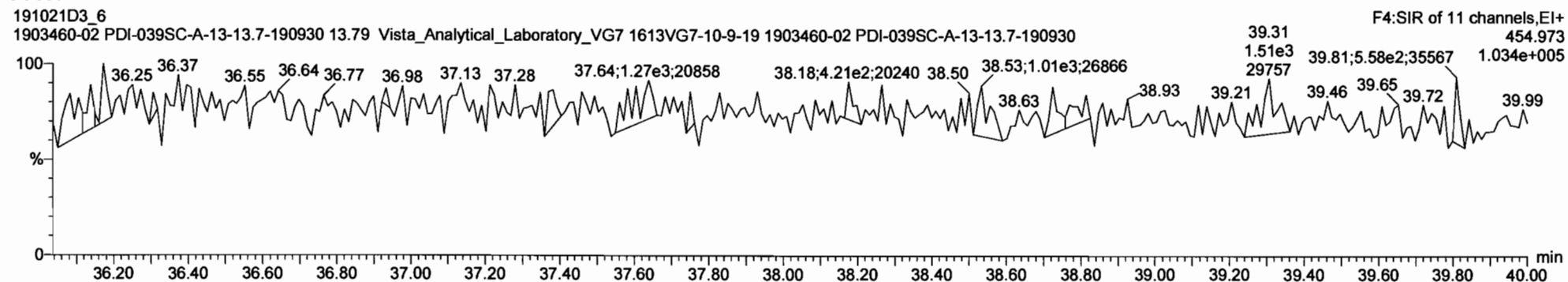
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

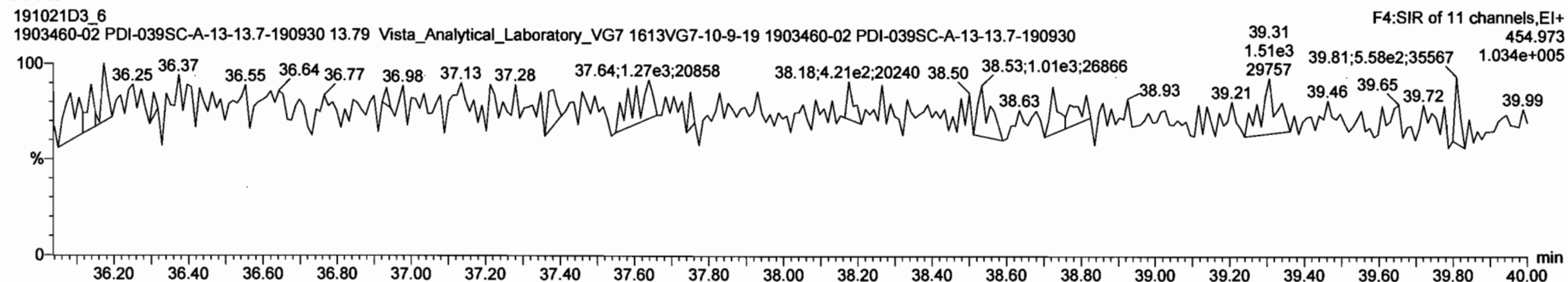
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Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3-6, Date: 22-OCT-2019, Time: 06:03:16, ID: 1903460-02 PDI-039SC-A-13-13.7-190930,

Description: 1903460-02 PDI-039SC-A-13-13.7-190930 13.79 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL | Name | Conc | EMPC | Qual | noise | DL |
|---------------------|-------------------------|----------|--------|--------------------|---------|--------|-------|-----|--------|---------------------|--------|--------|------|-------|--------|
| 2,3,7,8-TCDD | * | * n | 0.91 | NotF ₇₁ | * | | 171 | 2.5 | 0.0938 | Total Tetra-Dioxins | * | 0.200 | * | * | |
| 1,2,3,7,8-PeCDD | * | * n | 0.90 | NotF ₇₁ | * | | 176 | 2.5 | 0.0861 | Total Penta-Dioxins | * | * | | 176 | 0.0861 |
| 1,2,3,4,7,8-HxCDD | * | * n | 1.10 | NotF ₇₁ | * | | 155 | 2.5 | 0.139 | Total Hexa-Dioxins | 0.574 | 0.574 | * | * | |
| 1,2,3,6,7,8-HxCDD | * | * n | 0.94 | NotF ₇₁ | * | | 155 | 2.5 | 0.145 | Total Hepta-Dioxins | 1.79 | 1.79 | * | * | |
| 1,2,3,7,8,9-HxCDD | * | * n | 0.96 | NotF ₇₁ | * | | 155 | 2.5 | 0.150 | Total Tetra-Furans | * | * | | 181 | 0.0678 |
| 1,2,3,4,6,7,8-HpCDD | 1.28e+04 | 0.98 y | 0.98 | 37:54 | 0.66630 | | * | 2.5 | * | Total Penta-Furans | 0.0000 | 0.0000 | | 162 | 0.0809 |
| OCDD | 9.78e+04 | 0.92 y | 0.96 | 41:13 | 6.4551 | | * | 2.5 | * | Total Hexa-Furans | * | * | | 113 | 0.0497 |
| | | | | | | | | | | Total Hepta-Furans | * | * | | 114 | 0.0775 |
| 2,3,7,8-TCDF | * | * n | 0.95 | NotF ₇₁ | * | | 181 | 2.5 | 0.0678 | | | | | | |
| 1,2,3,7,8-PeCDF | * | * n | 0.96 | NotF ₇₁ | * | | 162 | 2.5 | 0.0820 | | | | | | |
| 2,3,4,7,8-PeCDF | * | * n | 1.01 | NotF ₇₁ | * | | 162 | 2.5 | 0.0799 | | | | | | |
| 1,2,3,4,7,8-HxCDF | * | * n | 1.18 | NotF ₇₁ | * | | 113 | 2.5 | 0.0436 | | | | | | |
| 1,2,3,6,7,8-HxCDF | * | * n | 1.07 | NotF ₇₁ | * | | 113 | 2.5 | 0.0461 | | | | | | |
| 2,3,4,6,7,8-HxCDF | * | * n | 1.11 | NotF ₇₁ | * | | 113 | 2.5 | 0.0484 | | | | | | |
| 1,2,3,7,8,9-HxCDF | * | * n | 1.06 | NotF ₇₁ | * | | 113 | 2.5 | 0.0623 | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | * | * n | 1.13 | NotF ₇₁ | * | | 114 | 2.5 | 0.0838 | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | * | * n | 1.28 | NotF ₇₁ | * | | 114 | 2.5 | 0.0704 | | | | | | |
| OCDF | * | * n | 0.95 | NotF ₇₁ | * | | 96.6 | 2.5 | 0.112 | | | | | | |
| IS | 13C-2,3,7,8-TCDD | 6.08e+06 | 0.84 y | 1.10 | 26:15 | 175.01 | | | | Rec | Qual | | | | |
| IS | 13C-1,2,3,7,8-PeCDD | 5.21e+06 | 0.64 y | 0.88 | 30:44 | 186.14 | | | | 87.7 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDD | 4.11e+06 | 1.36 y | 0.64 | 34:03 | 196.12 | | | | 93.2 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDD | 4.69e+06 | 1.25 y | 0.86 | 34:09 | 167.76 | | | | 98.2 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDD | 4.75e+06 | 1.27 y | 0.81 | 34:27 | 180.32 | | | | 84.0 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 3.92e+06 | 1.04 y | 0.65 | 37:54 | 183.43 | | | | 90.3 | | | | | |
| IS | 13C-OCDD | 6.31e+06 | 0.90 y | 0.58 | 41:12 | 333.52 | | | | 91.9 | | | | | |
| IS | 13C-2,3,7,8-TCDF | 9.40e+06 | 0.77 y | 1.03 | 25:29 | 165.46 | | | | 83.5 | | | | | |
| IS | 13C-1,2,3,7,8-PeCDF | 8.16e+06 | 1.61 y | 0.85 | 29:34 | 173.90 | | | | 82.9 | | | | | |
| IS | 13C-2,3,4,7,8-PeCDF | 7.70e+06 | 1.64 y | 0.85 | 30:27 | 165.61 | | | | 87.1 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDF | 5.42e+06 | 0.52 y | 0.83 | 33:09 | 199.67 | | | | 83.0 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDF | 5.97e+06 | 0.52 y | 1.03 | 33:17 | 176.80 | | | | 100 | | | | | |
| IS | 13C-2,3,4,6,7,8-HxCDF | 5.60e+06 | 0.51 y | 0.95 | 33:53 | 180.02 | | | | 88.6 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDF | 5.08e+06 | 0.51 y | 0.83 | 34:50 | 187.86 | | | | 90.2 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 4.07e+06 | 0.46 y | 0.76 | 36:41 | 164.49 | | | | 94.1 | | | | | |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 3.40e+06 | 0.43 y | 0.58 | 38:27 | 179.30 | | | | 82.4 | | | | | |
| IS | 13C-OCDF | 7.63e+06 | 0.87 y | 0.69 | 41:25 | 339.09 | | | | 89.8 | | | | | |
| C/Up | 37C1-2,3,7,8-TCDD | 2.54e+06 | | 1.20 | 26:16 | 66.880 | | | | 84.9 | | | | | |
| RS/RT | 13C-1,2,3,4-TCDD | 6.34e+06 | 0.84 y | 1.00 | 25:42 | 199.62 | | | | 83.8 | | | | | |
| RS | 13C-1,2,3,4-TCDF | 1.10e+07 | 0.79 y | 1.00 | 24:17 | 199.62 | | | | | | | | | |
| RS/RT | 13C-1,2,3,4,6,8-HxCDF | 6.52e+06 | 0.50 y | 1.00 | 33:34 | 199.62 | | | | | | | | | |

Integrations
 by DB
 Analyst: DB
 Date: 11/7/19
 Reviewed
 by CT
 Analyst: CT
 Date: 11/07/19

Totals class: HpCDD EMPC

Entry #: 25

Run: 10 File: 191106D1 S: 5 I: 1 F: 4
Acquired: 6-NOV-19 14:53:21 Processed: 6-NOV-19 16:33:07

Total Concentration: 1.7950

Unnamed Concentration: 1.129

| RT | m1 Resp | m2 Resp | RA | | Resp Concentration | Name |
|-------|-----------|-----------|------|---|--------------------|-----------------------------|
| 37:04 | 1.172e+04 | 9.969e+03 | 1.18 | y | 2.169e+04 | 1.1287 |
| 37:54 | 6.329e+03 | 6.474e+03 | 0.98 | y | 1.280e+04 | 0.66630 1,2,3,4,6,7,8-HpCDD |

Totals class: TCDD EMPC

Entry #: 19

Run: 10 File: 191106D1 S: 5 I: 1 F: 1
Acquired: 6-NOV-19 14:53:21 Processed: 6-NOV-19 16:33:07

Total Concentration: 0.20024 Unnamed Concentration: 0.200

| RT | m1 Resp | m2 Resp | RA | Resp Concentration | Name |
|-------|-----------|-----------|--------|--------------------|---------|
| 24:23 | 3.072e+03 | 3.121e+03 | 0.98 n | 5.525e+03 | 0.20024 |

Totals class: HxCDD EMPC

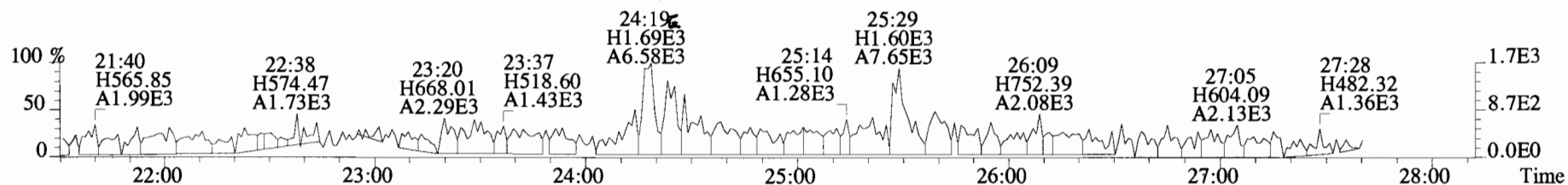
Entry #: 23

Run: 10 File: 191106D1 S: 5 I: 1 F: 3
Acquired: 6-NOV-19 14:53:21 Processed: 6-NOV-19 16:33:07

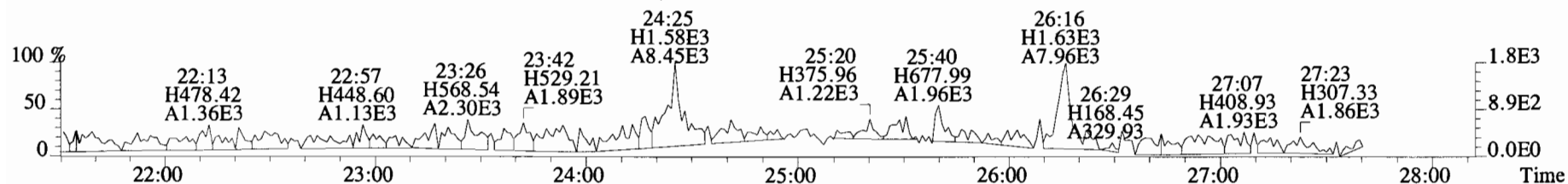
Total Concentration: 0.57417 Unnamed Concentration: 0.574

| RT | m1 Resp | m2 Resp | RA | Resp Concentration | Name |
|-------|-----------|-----------|--------|--------------------|---------|
| 32:31 | 6.994e+03 | 5.887e+03 | 1.19 y | 1.288e+04 | 0.57417 |

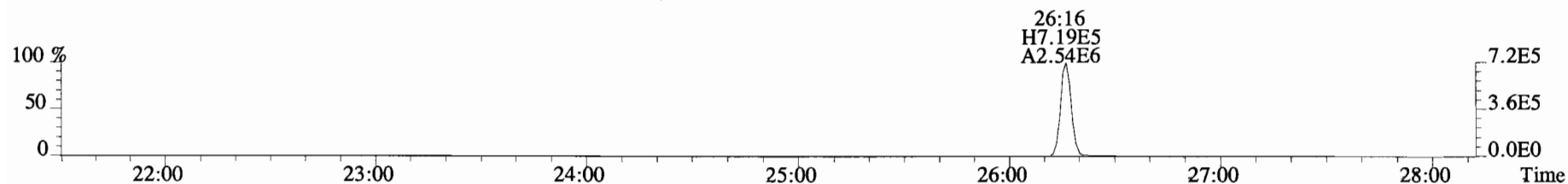
File:191106D1 #1-493 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
319.8965 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



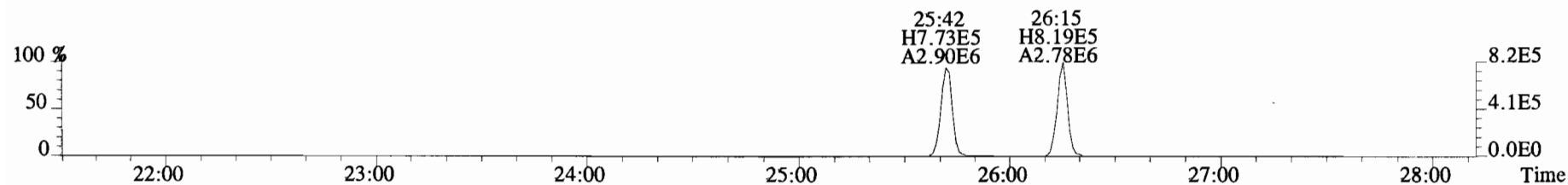
321.8936 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



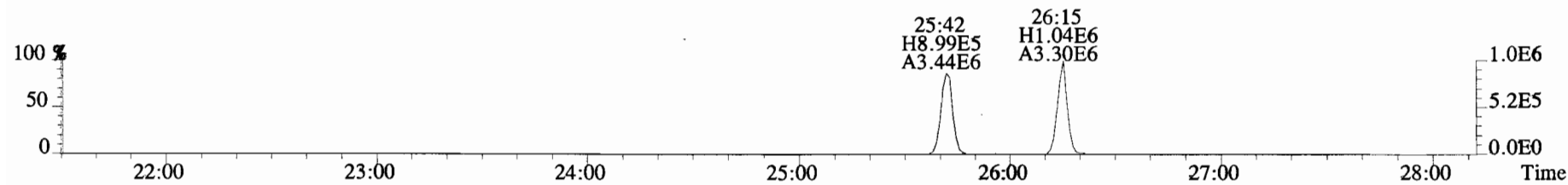
327.8847 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



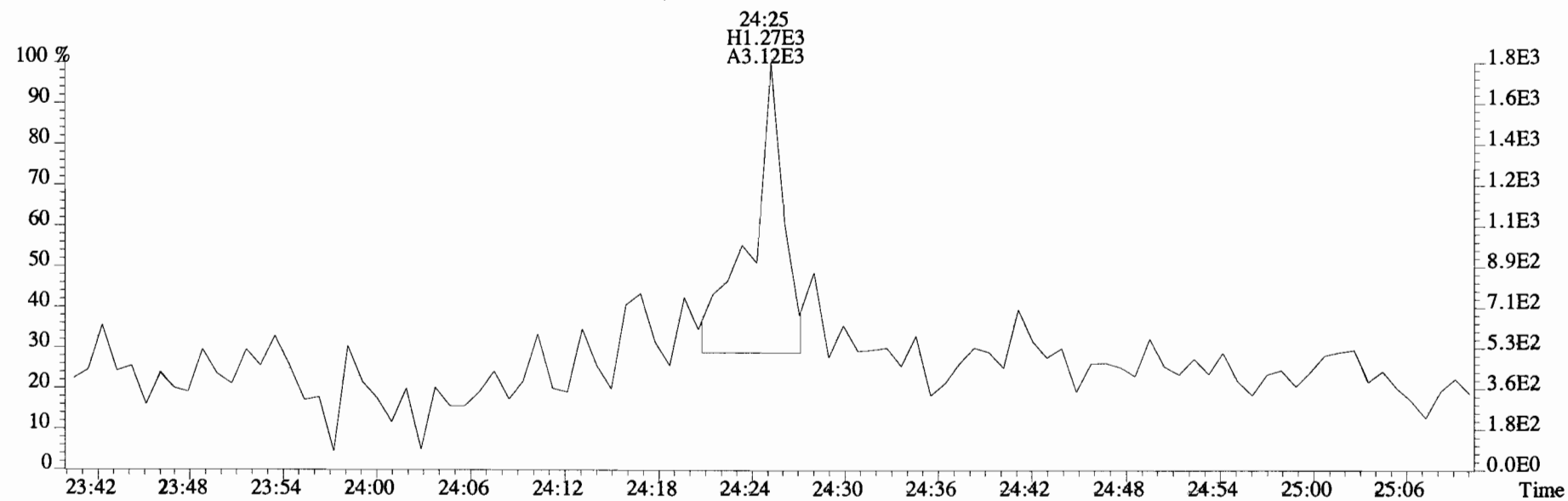
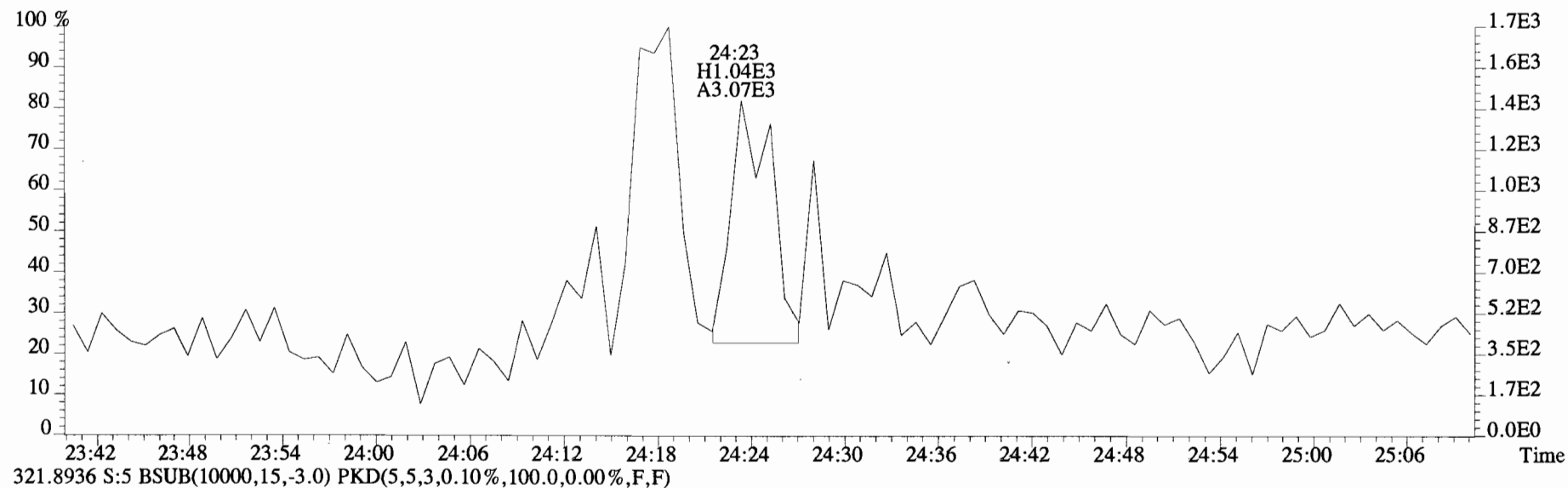
331.9368 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



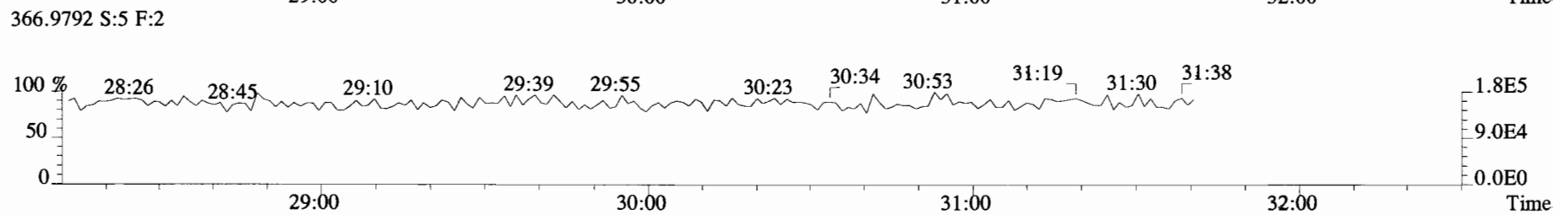
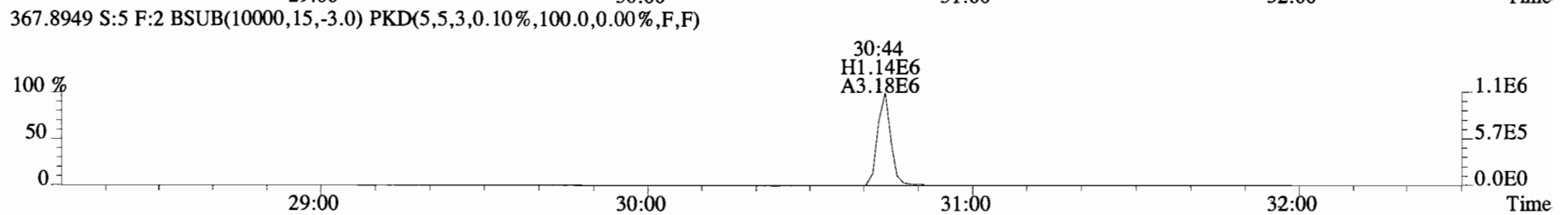
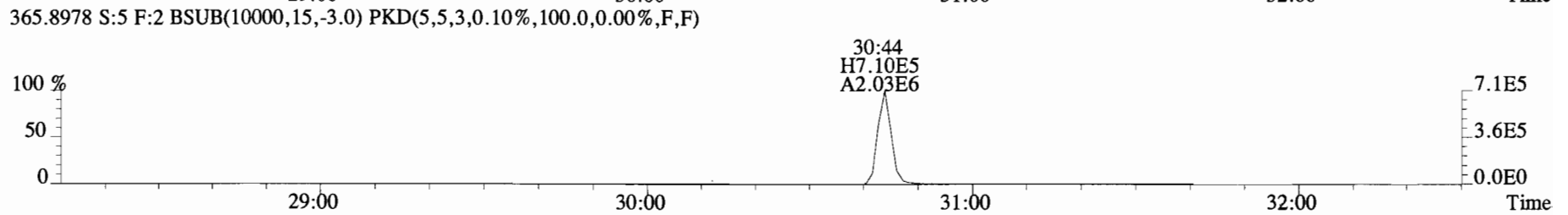
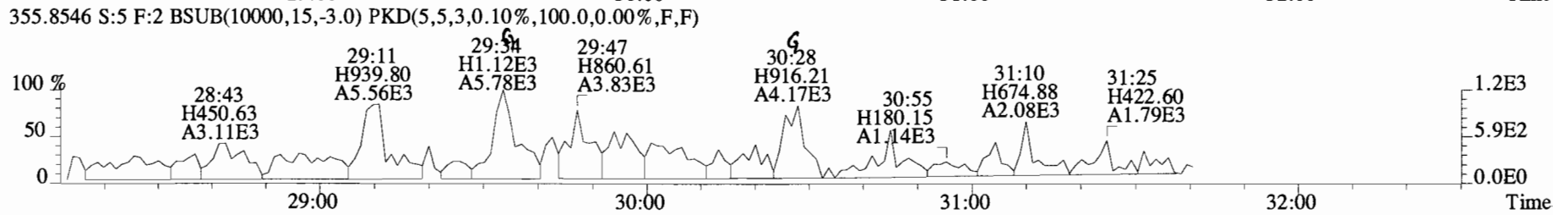
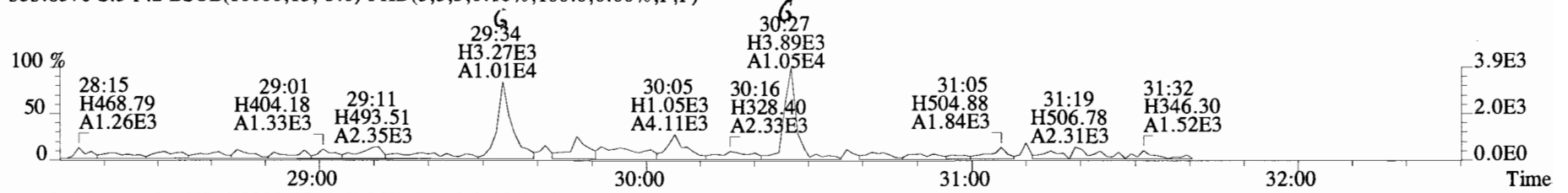
333.9339 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



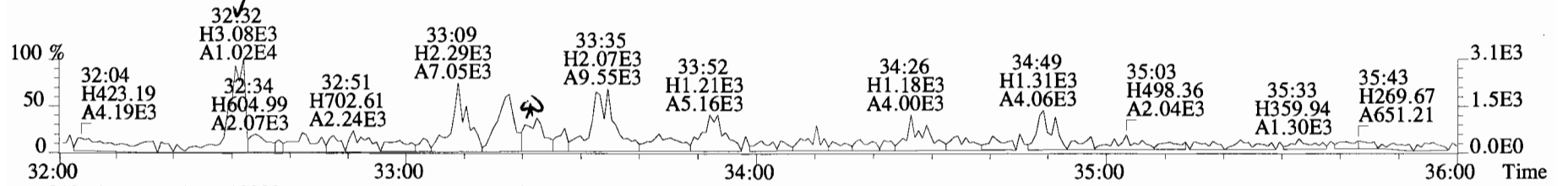
File:191106D1 #1-493 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 Exp:OCDD DB5
319.8965 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



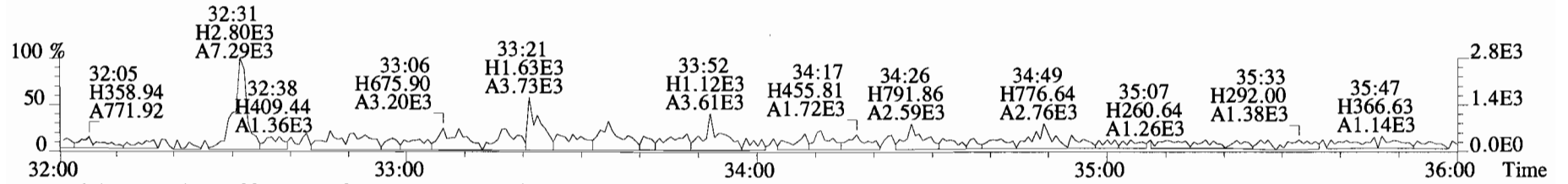
File:191106D1 #1-211 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
 353.8576 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



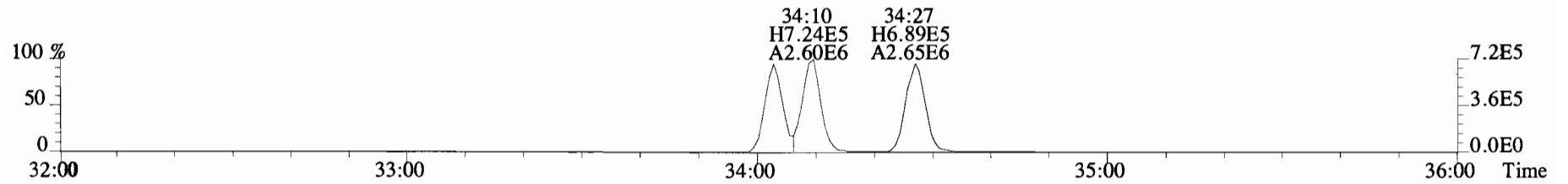
File:191106D1 #1-385 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
389.8156 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



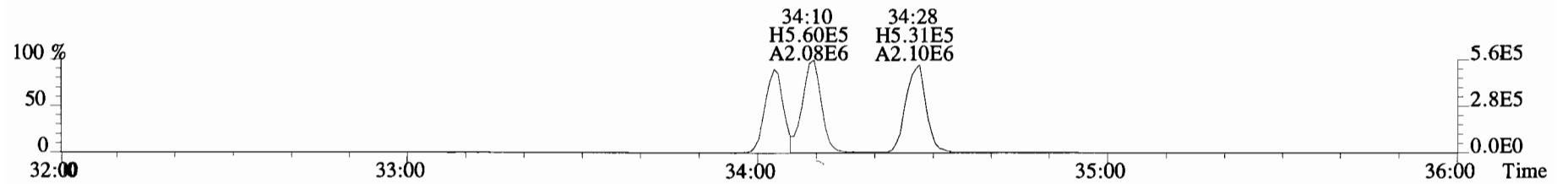
391.8127 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



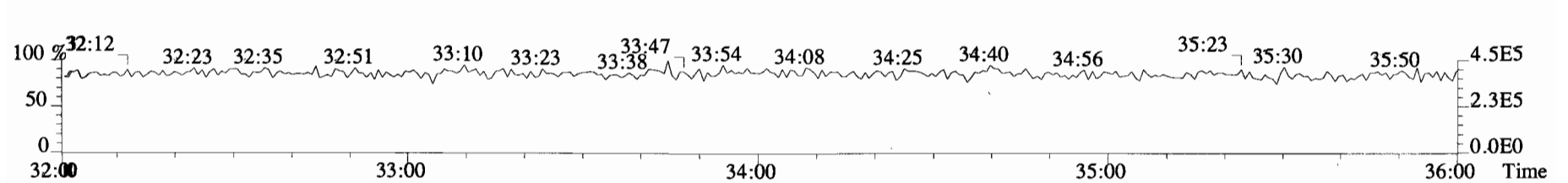
401.8559 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



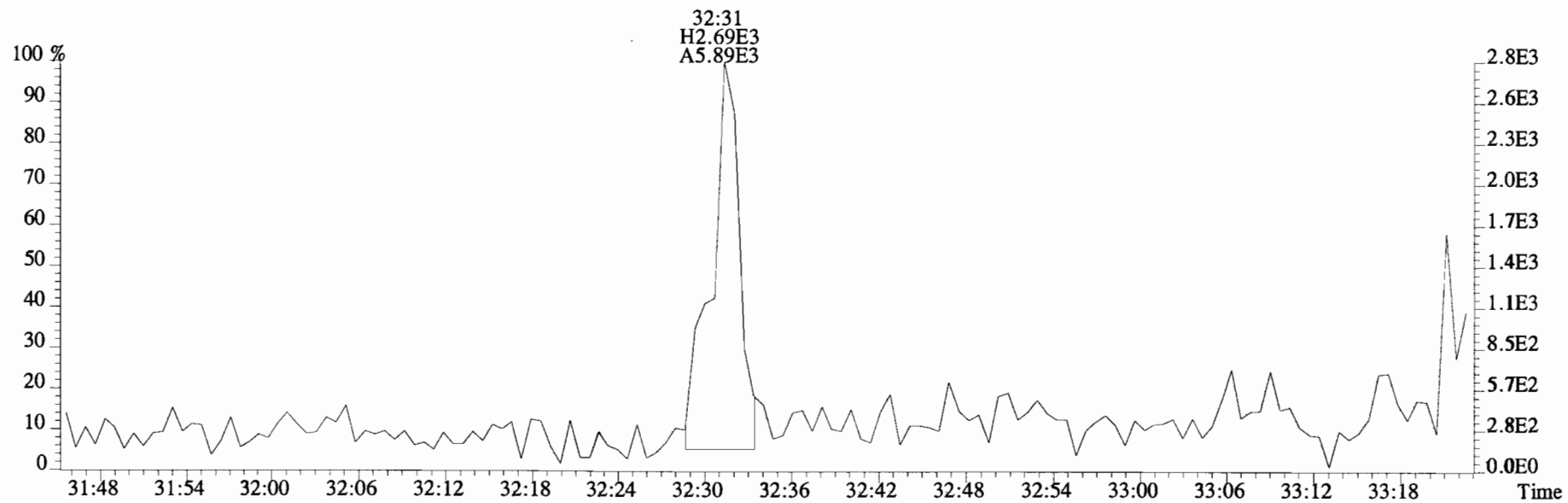
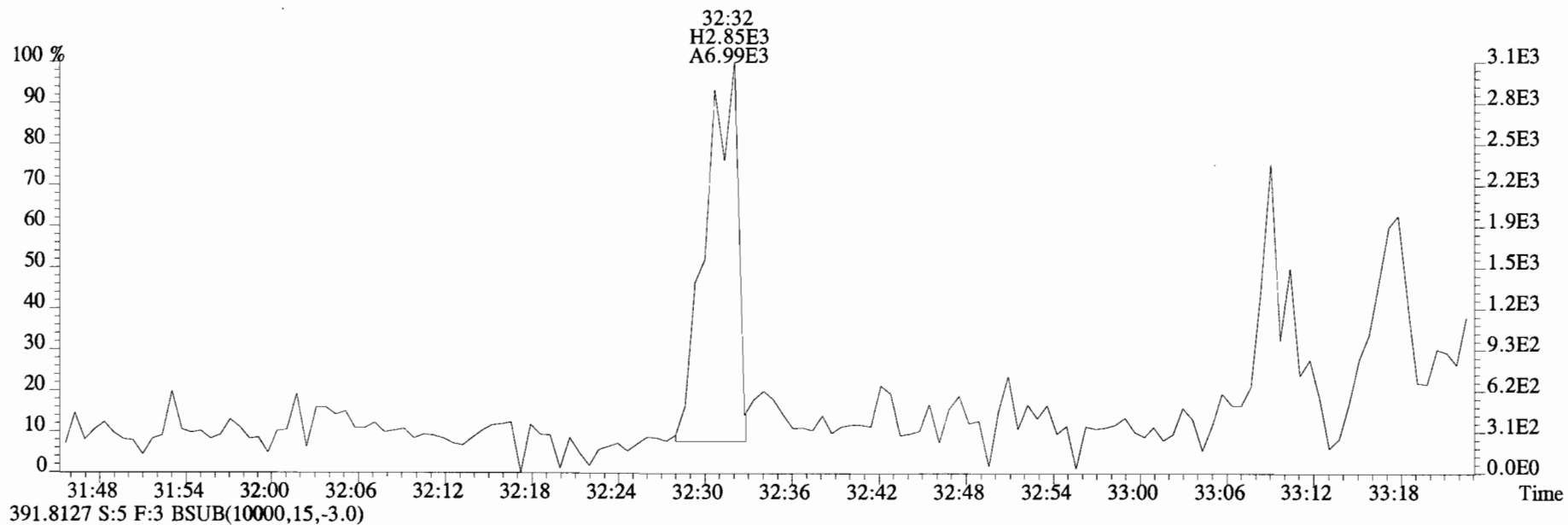
403.8530 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



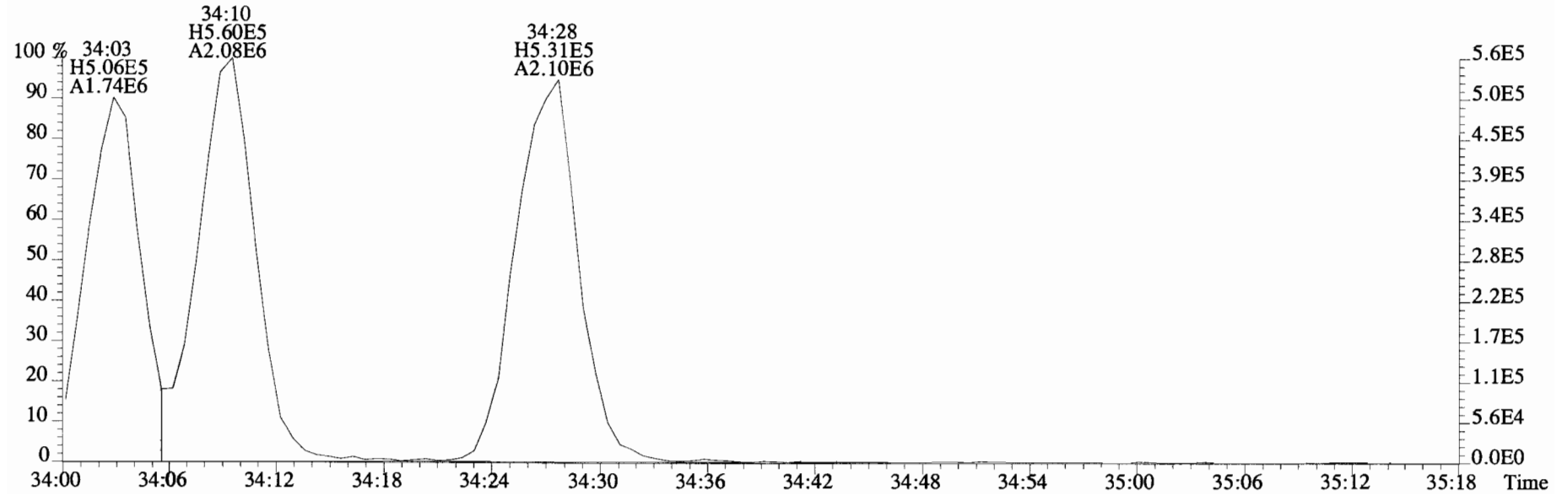
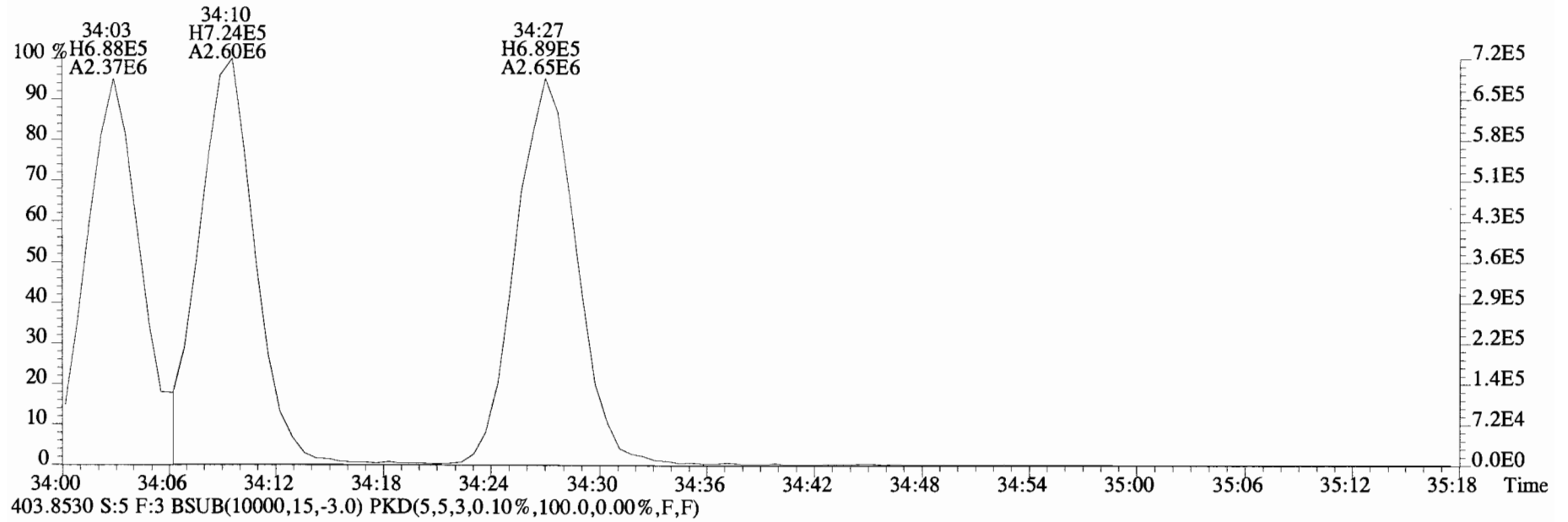
392.9760 S:5 F:3



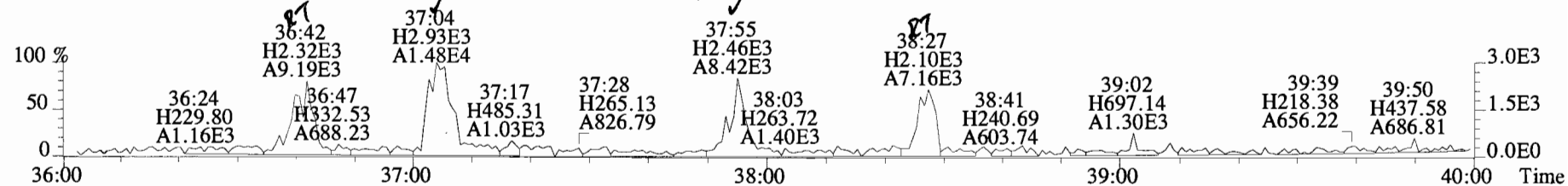
File:191106D1 #1-385 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
389.8156 S:5 F:3 BSUB(10000,15,-3.0)



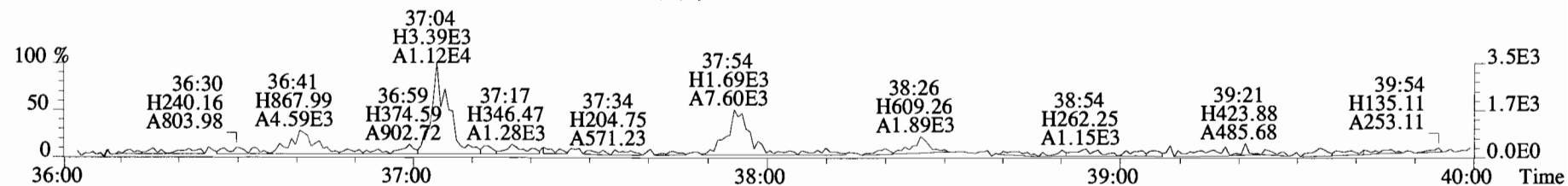
File:191106D1 #1-385 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
401.8559 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



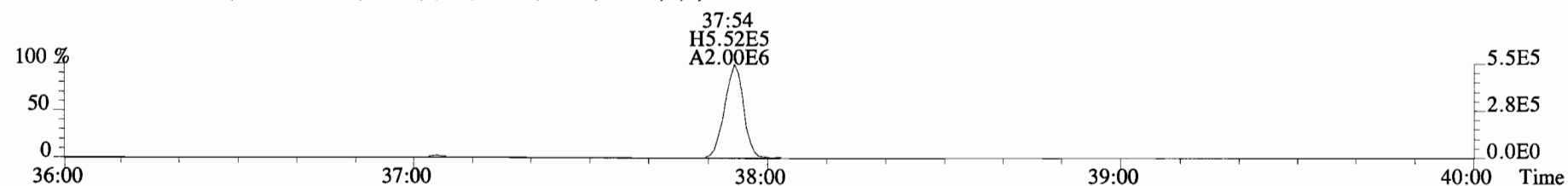
File:191106D1 #1-355 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Viata Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
 423.7767 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



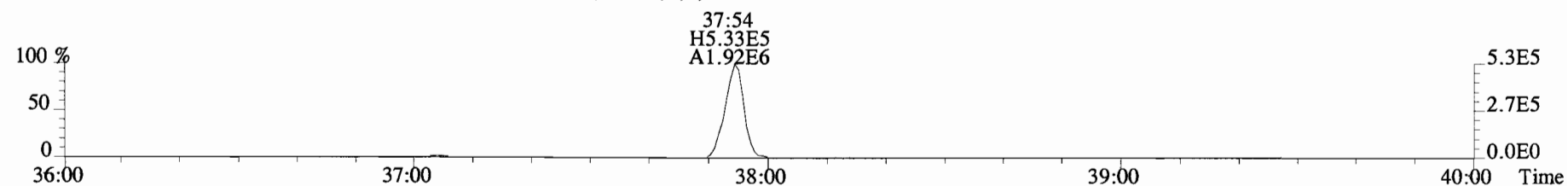
425.7737 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



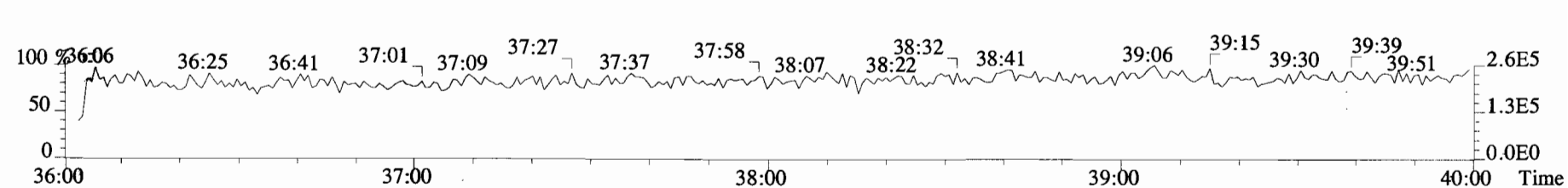
435.8169 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



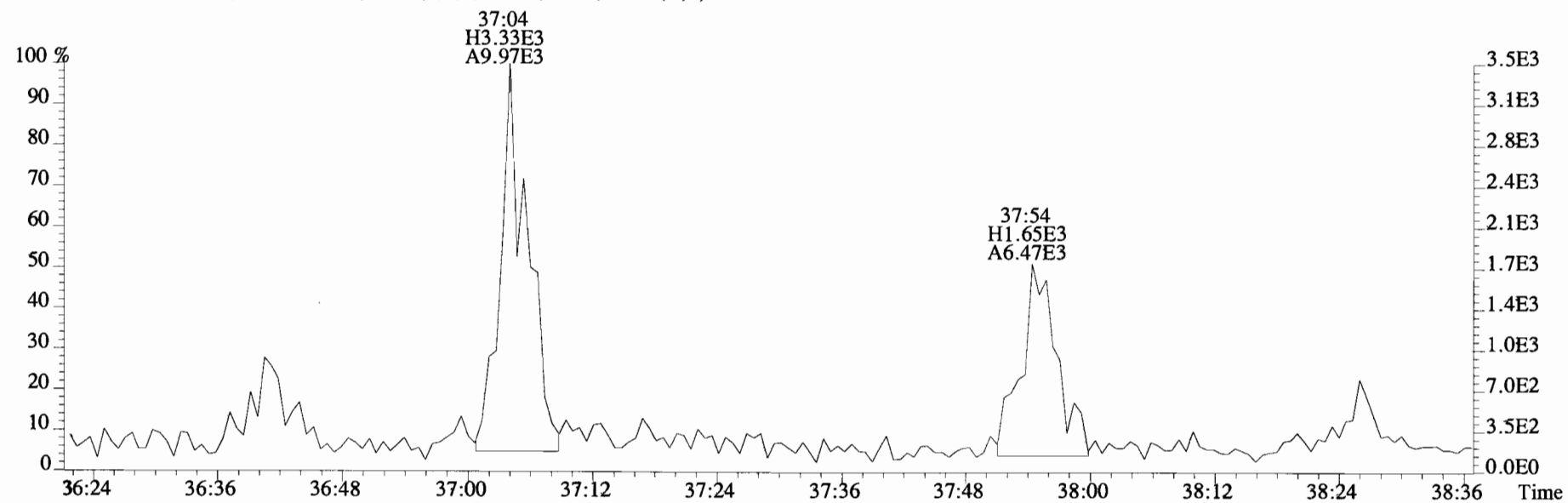
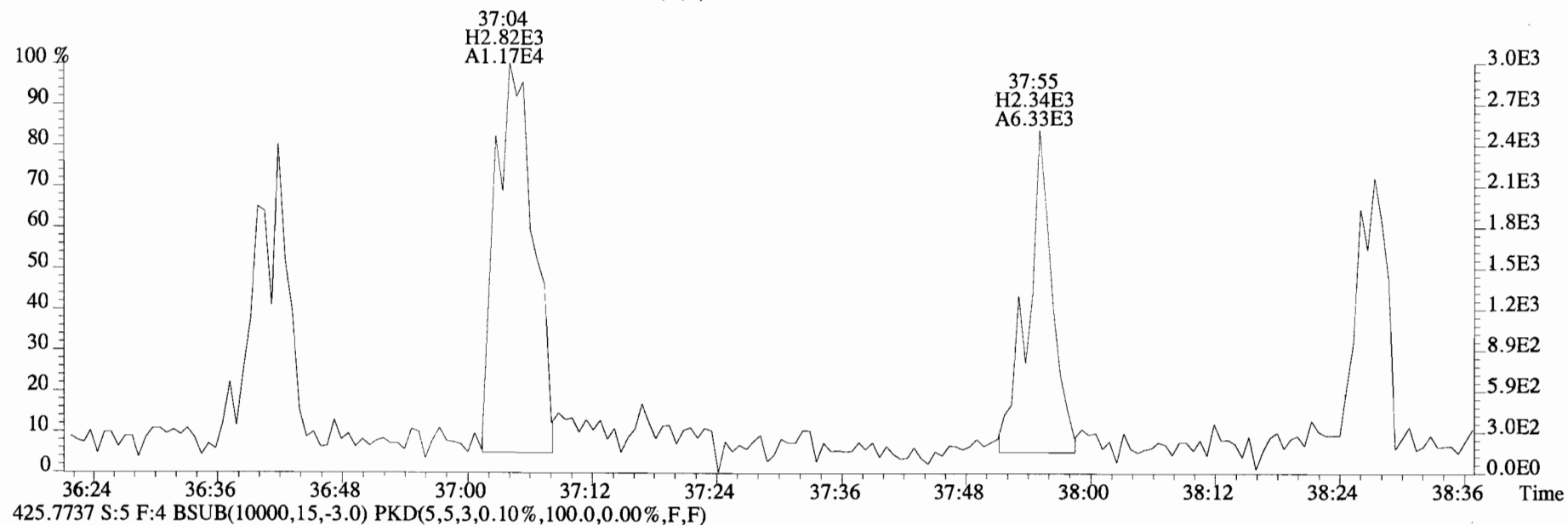
437.8140 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



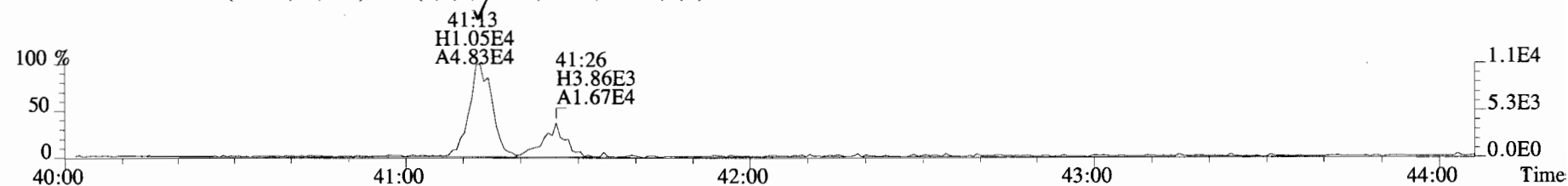
454.9728 S:5 F:4



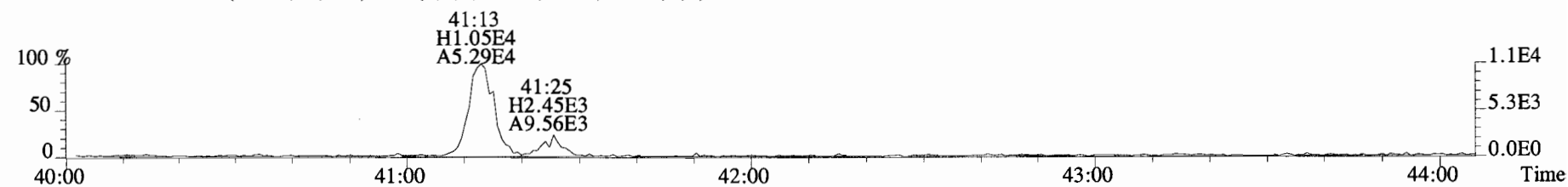
File:191106D1 #1-355 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
423.7767 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



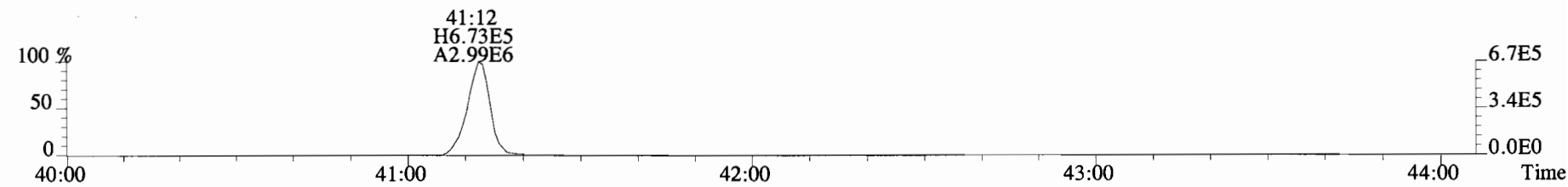
File:191106D1 #1-433 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
457.7377 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



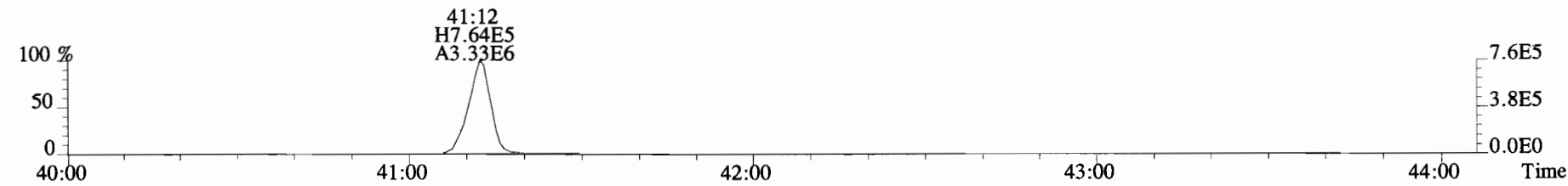
459.7348 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



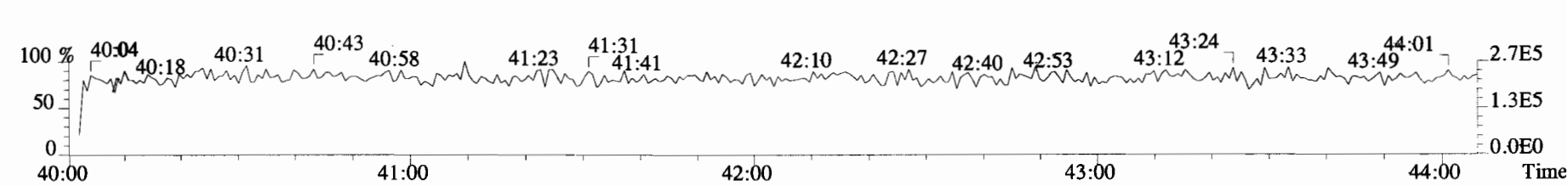
469.7780 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



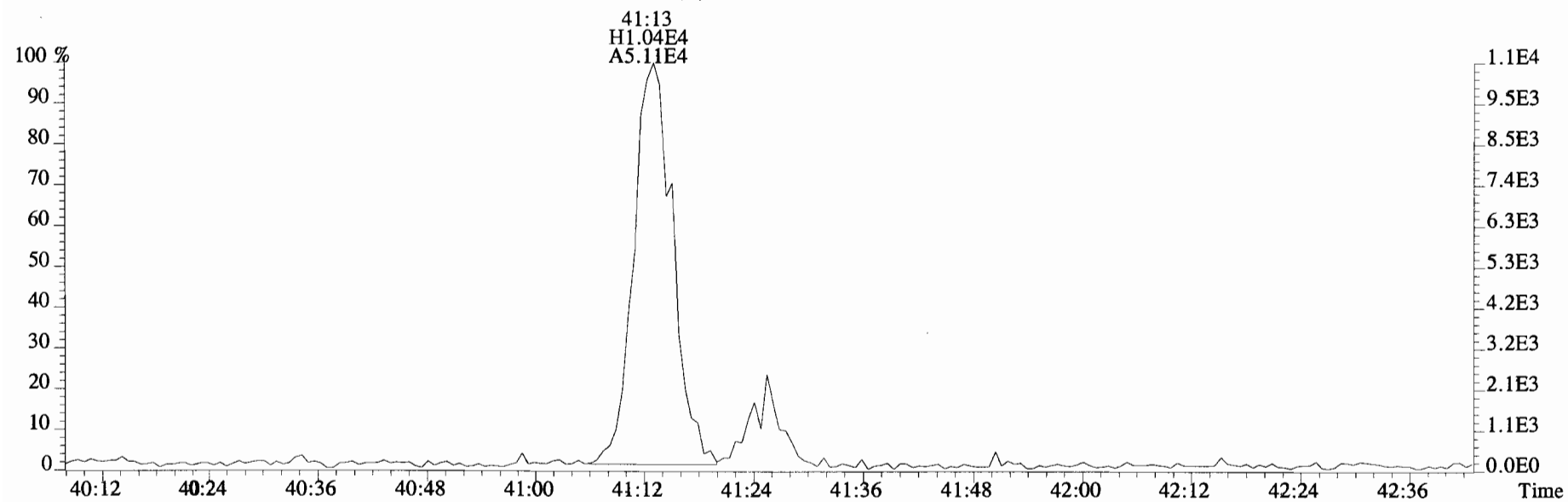
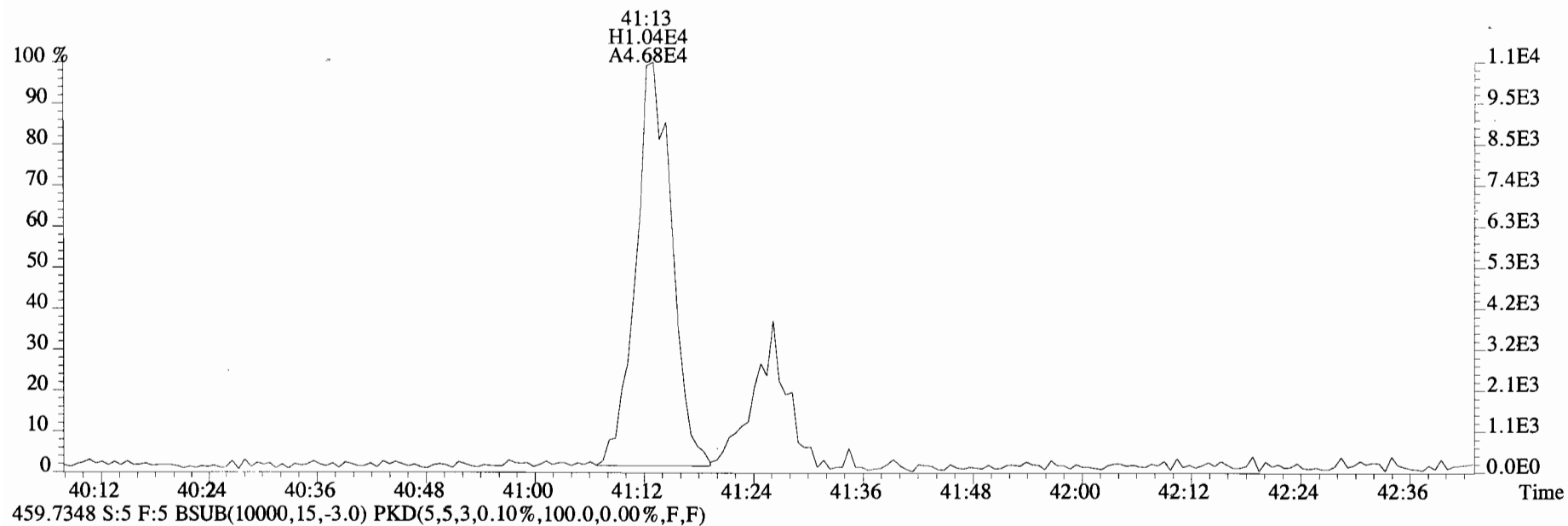
471.7750 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



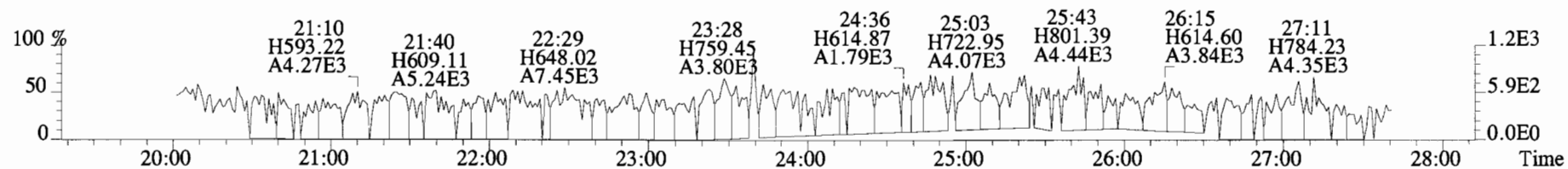
454.9728 S:5 F:5



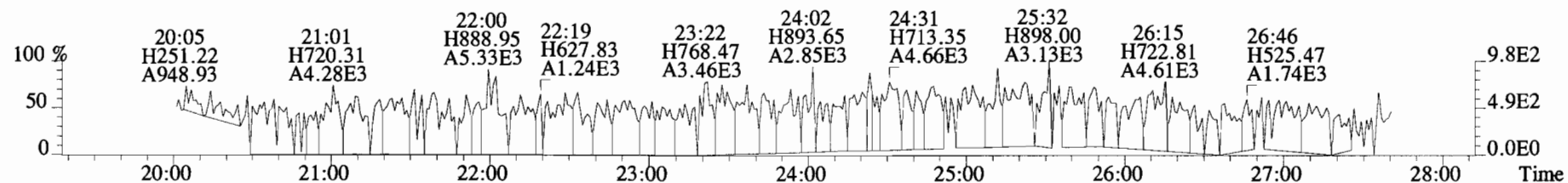
File:191106D1 #1-433 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
457.7377 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



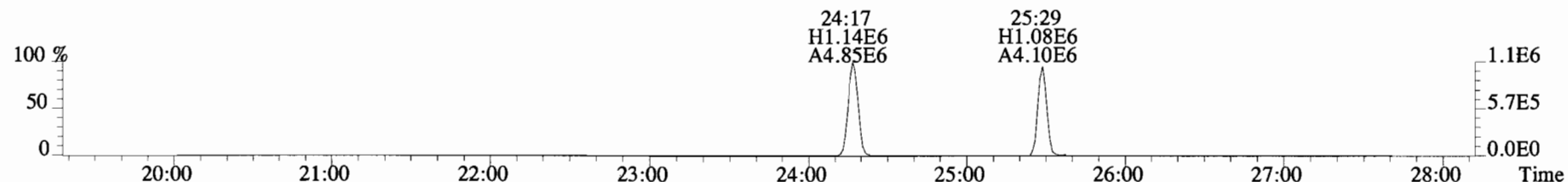
File:191106D1 #1-493 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
 303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



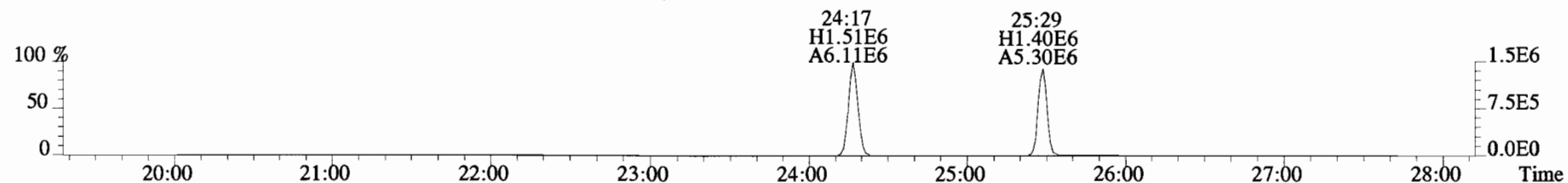
305.8987 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



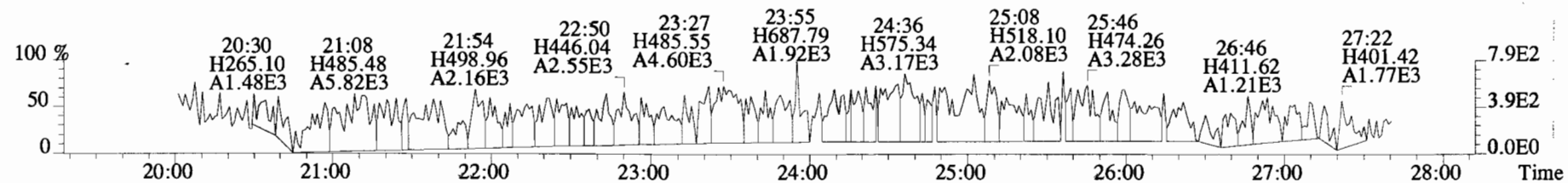
315.9419 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



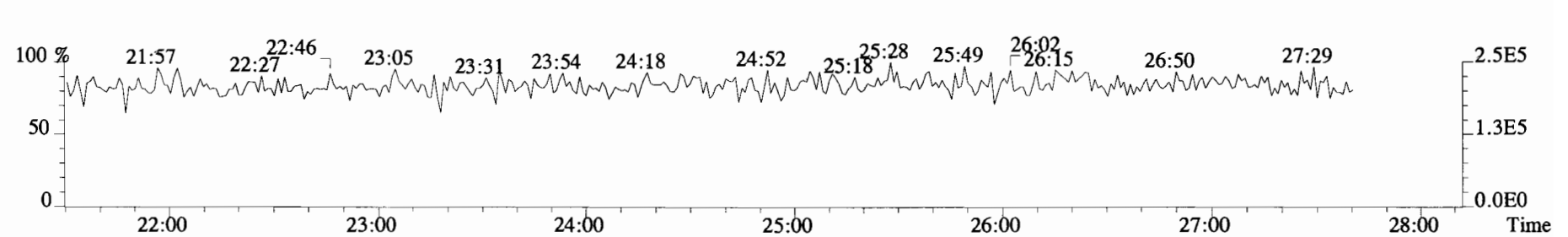
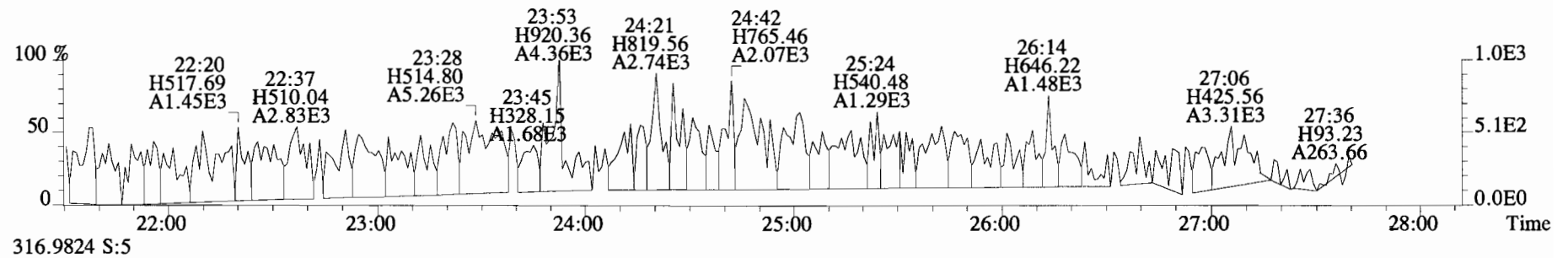
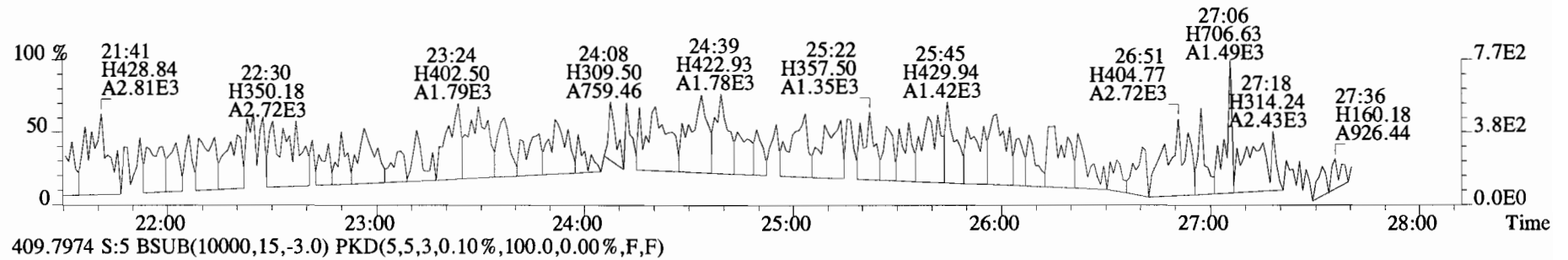
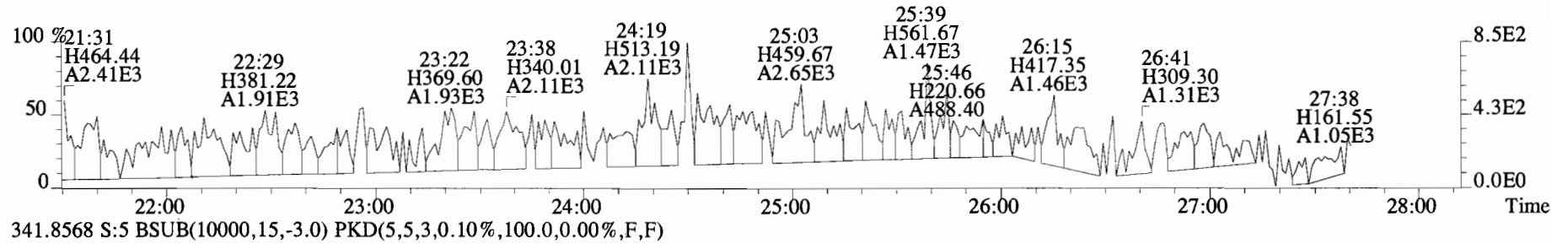
317.9389 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



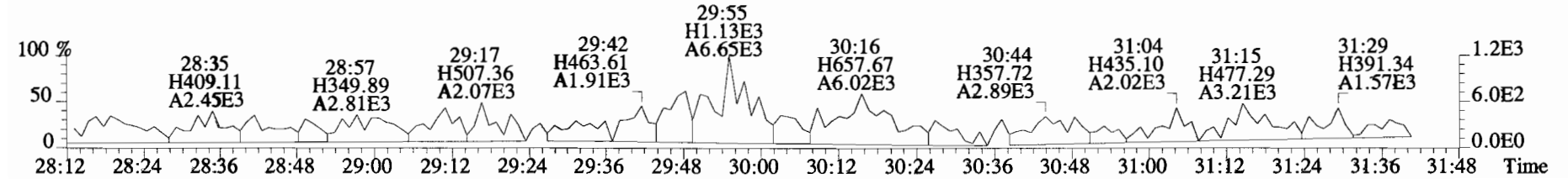
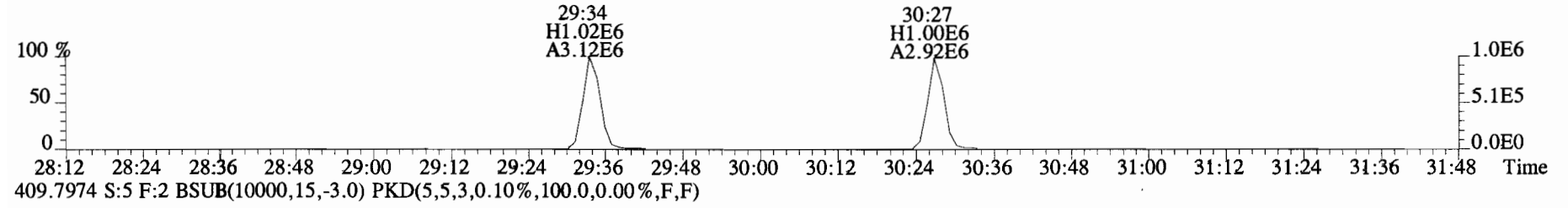
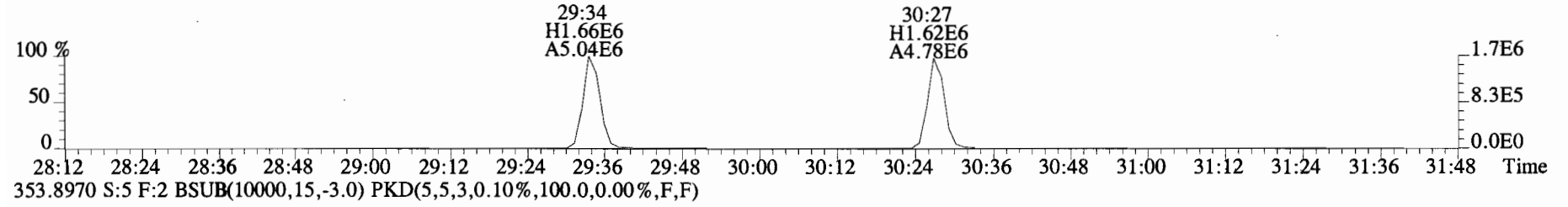
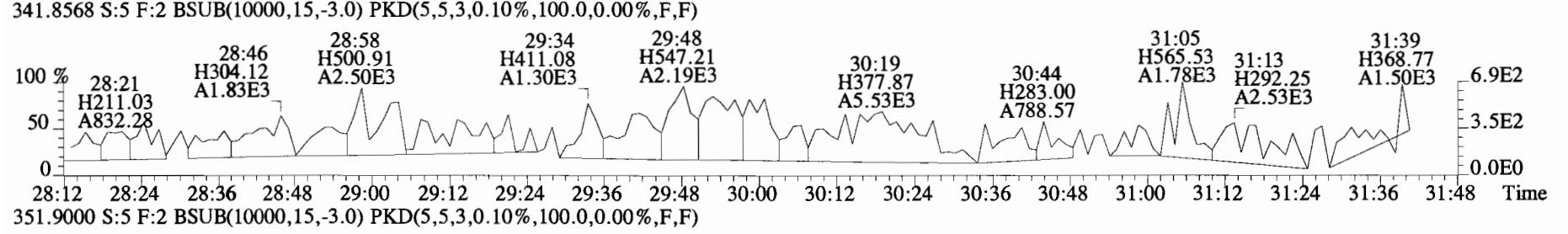
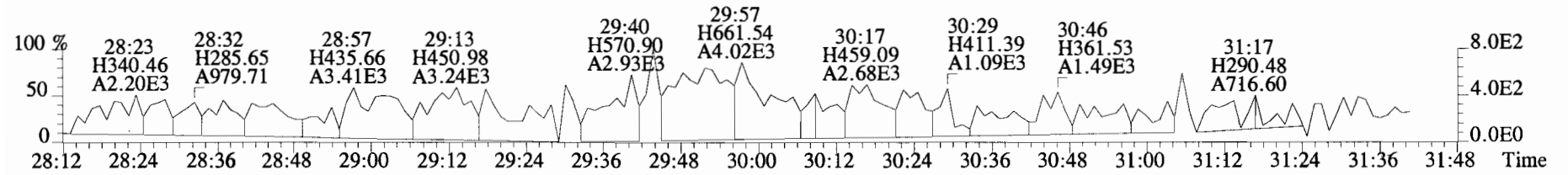
375.8364 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



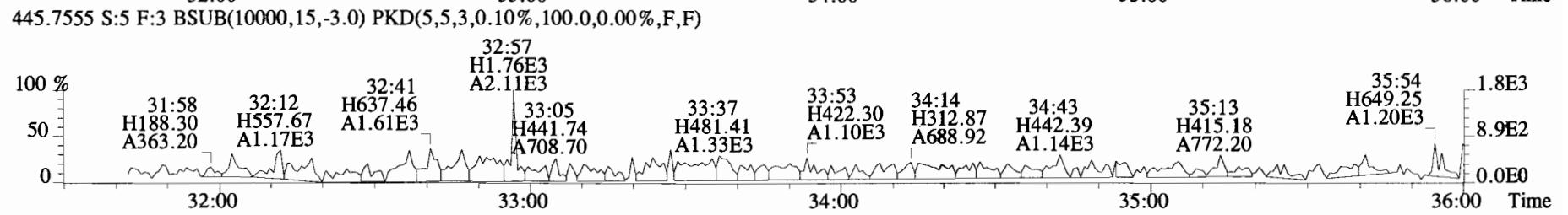
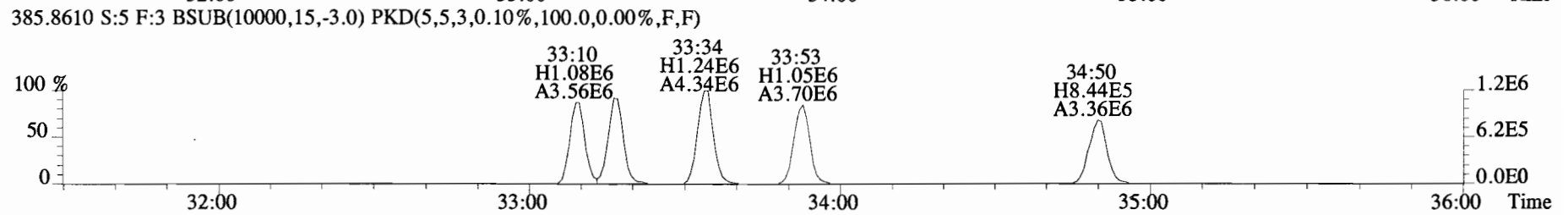
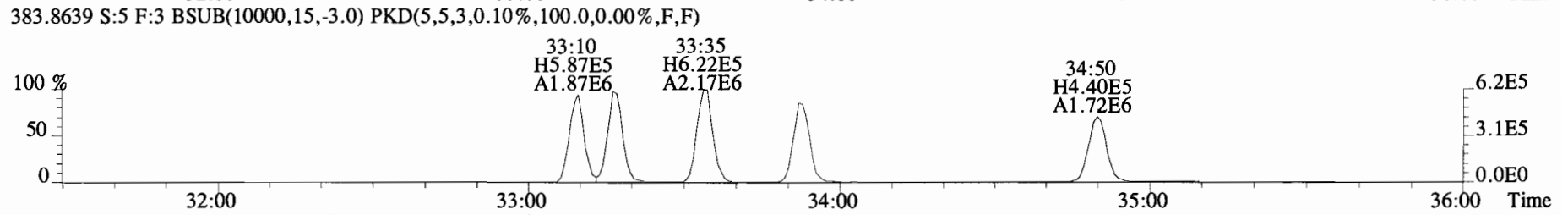
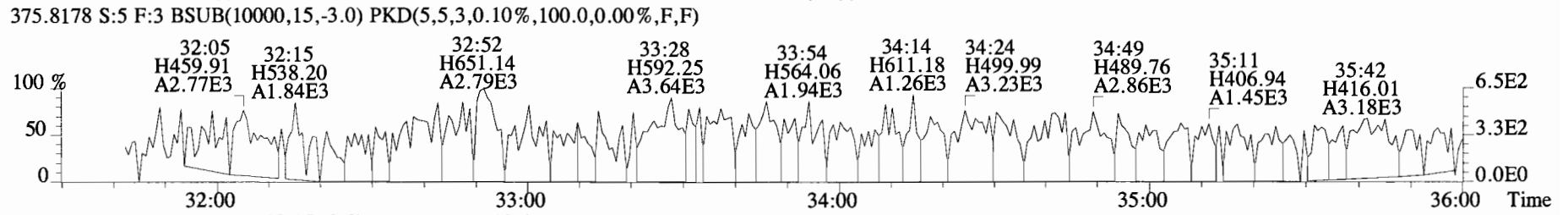
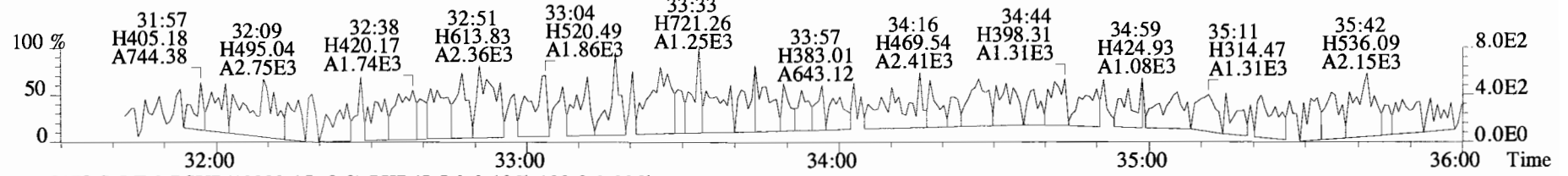
File:191106D1 #1-493 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
339.8597 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



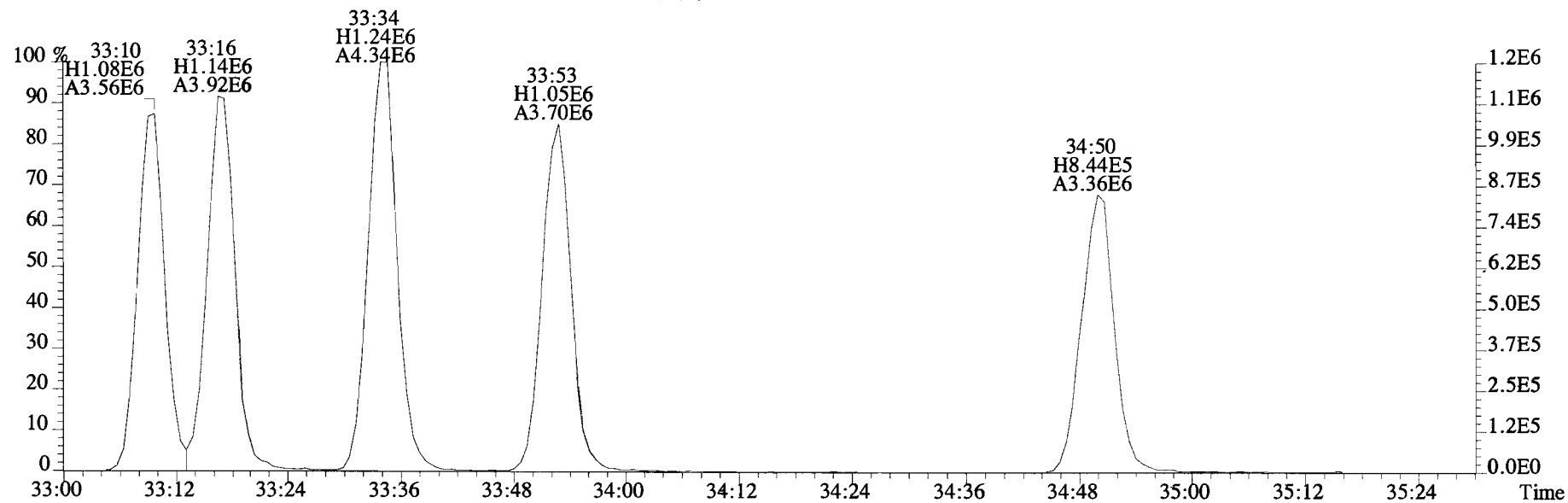
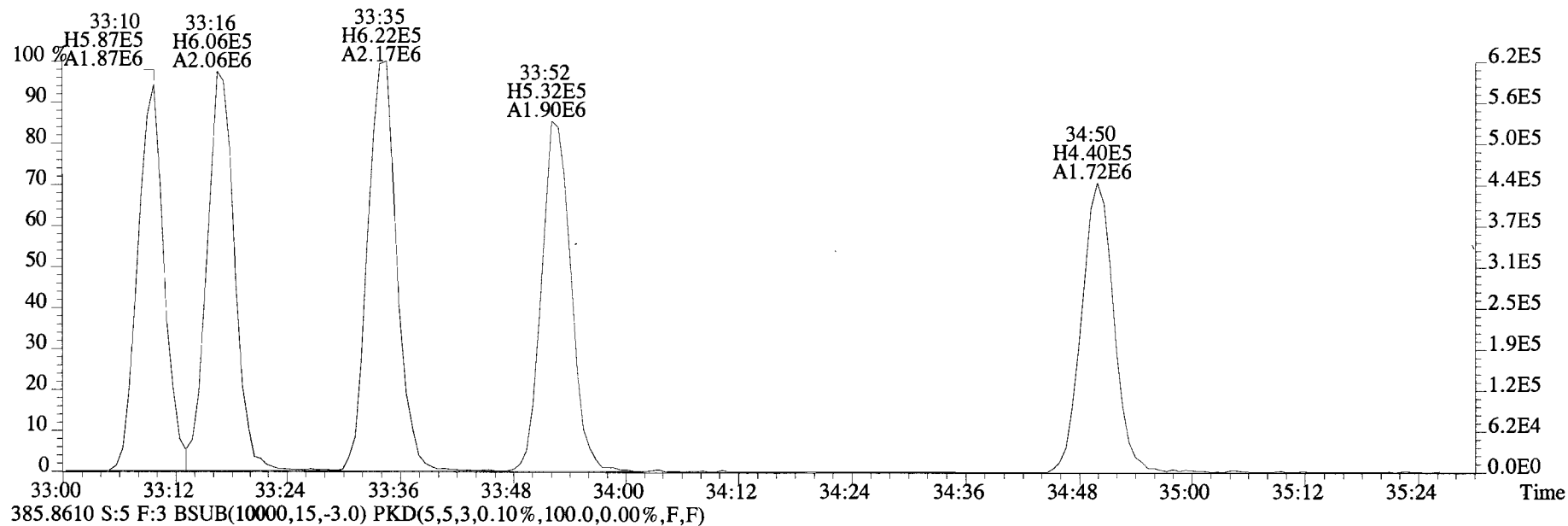
File:191106D1 #1-211 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
 339.8597 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



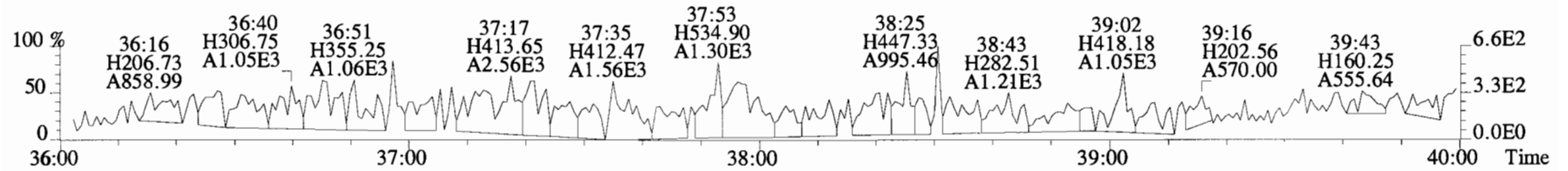
File:191106D1 #1-385 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
373.8207 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



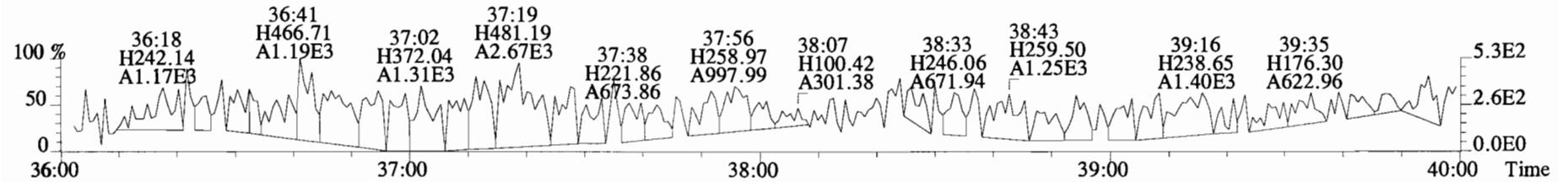
File:191106D1 #1-385 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata Analytical Laboratory VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
383.8639 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



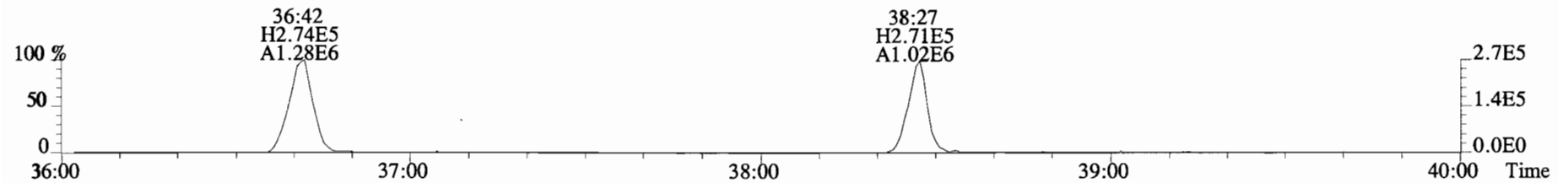
File:191106D1 #1-355 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
407.7818 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



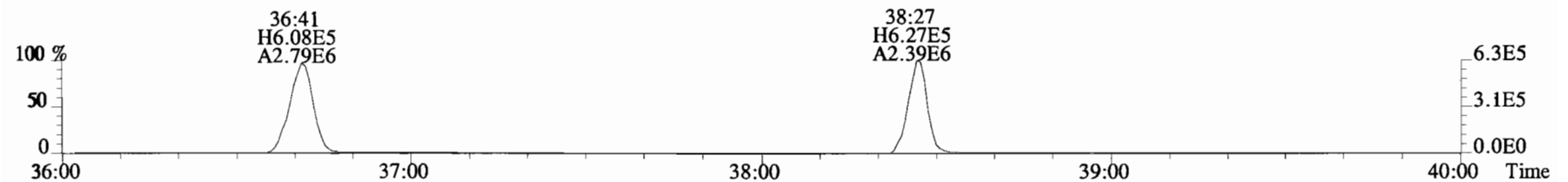
409.7788 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



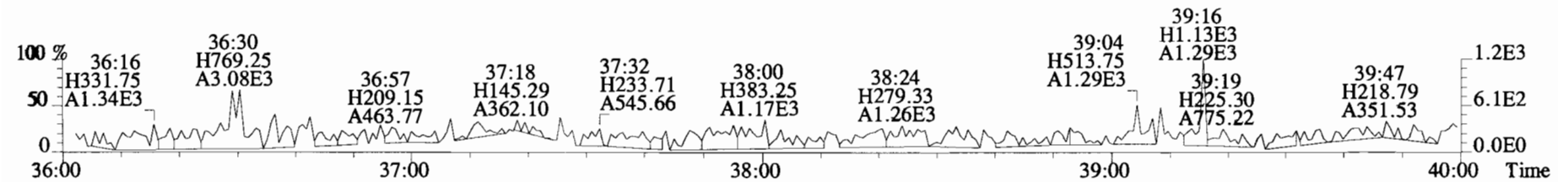
417.8253 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



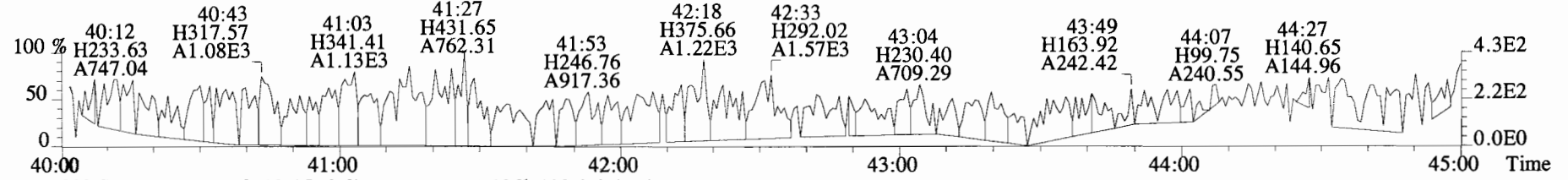
419.8220 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



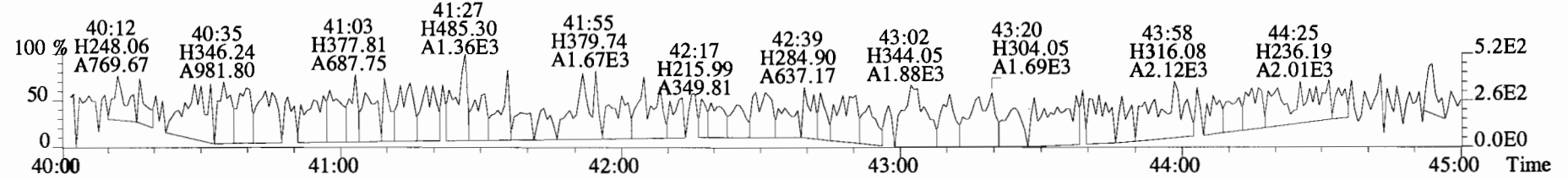
479.7165 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



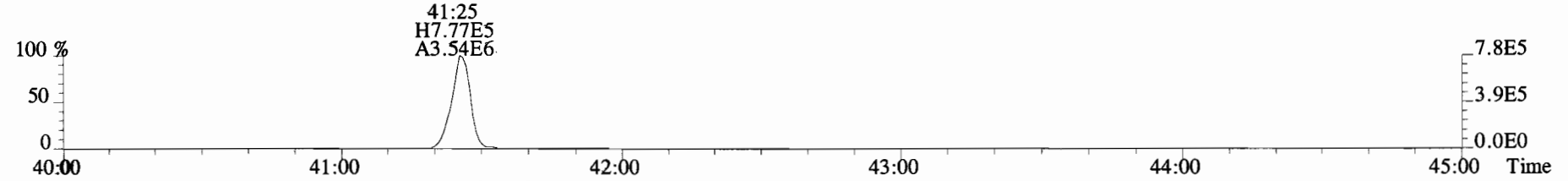
File:191106D1 #1-433 Acq: 6-NOV-2019 14:53:21 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Viata_Analytical Laboratory_VG7 Text:1903460-03 PDI-1039SC-A-12-13-190930 10.019 Exp:OCDD_DB5
441.7428 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



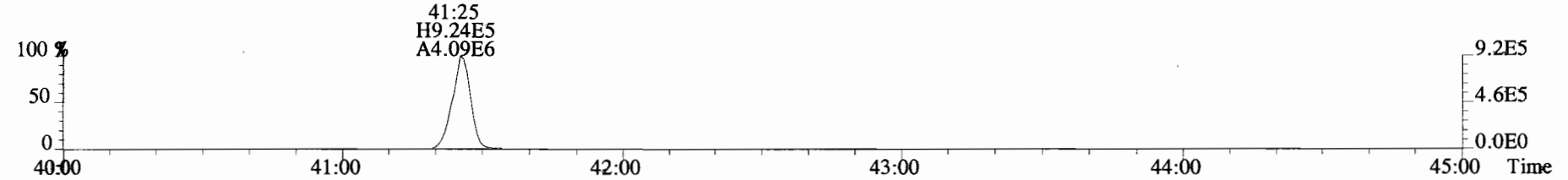
443.7398 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



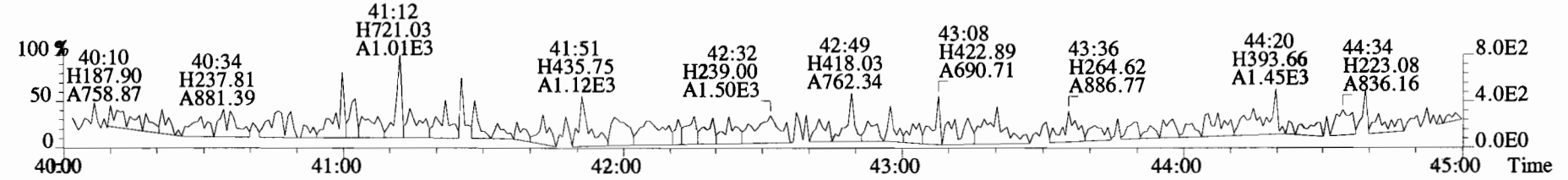
453.7831 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-8.qld
 Last Altered: Monday, November 04, 2019 15:05:22 Pacific Standard Time
 Printed: Monday, November 04, 2019 15:05:44 Pacific Standard Time

Hk 11-4-19

CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 14:50:23

Name: VG7 191021D3_8, Date: 22-OCT-2019, Time: 07:38:59, ID: 1903460-04 PDI-040SC-A-09-10-190930,
 Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | Wt | RRF | RF | Y/N | P | RRT | Pred RT | R | IS | IMP | D |
|----|------------------------|--------|---------|---------|---------|-------|-----|-------|-------|---------|-------|---------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 1.21e5 | 10.0406 | ✓ 0.905 | | | 1.001 | | 26.30 | | | | 0.103 |
| 2 | 1,2,3,7,8-PeCDD | | 1.11e5 | 10.0406 | 0.903 | | | 1.001 | | 30.75 | | | | 0.0972 |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.31e5 | 10.0406 | 1.101 | | | 1.000 | | 34.05 | | | | 0.108 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.50e5 | 10.0406 | 0.939 | | | 1.000 | | 34.14 | | | | 0.121 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.49e5 | 10.0406 | 0.961 | | | 1.001 | | 34.47 | | | | 0.120 |
| 6 | 1,2,3,4,6,7,8-HpCDD | | 1.24e5 | 10.0406 | 0.979 | | | 1.000 | | 37.90 | | | | 0.134 |
| 7 | OCDD | 2.08e2 | 1.91e5 | 10.0406 | 0.959 | 0.994 | NO | 1.000 | 1.000 | 41.16 | 41.17 | 0.45360 | 0.454 | 0.243 |
| 8 | 2,3,7,8-TCDF | | 1.66e5 | 10.0406 | 0.950 | | | 1.001 | | 25.52 | | | | 0.0984 |
| 9 | 1,2,3,7,8-PeCDF | | 1.44e5 | 10.0406 | 0.960 | | | 1.001 | | 29.60 | | | | 0.0996 |
| 10 | 2,3,4,7,8-PeCDF | | 1.54e5 | 10.0406 | 1.015 | | | 1.001 | | 30.48 | | | | 0.0833 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.63e5 | 10.0406 | 1.177 | | | 1.000 | | 33.15 | | | | 0.0654 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.83e5 | 10.0406 | 1.069 | | | 1.000 | | 33.28 | | | | 0.0700 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.80e5 | 10.0406 | 1.114 | | | 1.001 | | 33.91 | | | | 0.0674 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.62e5 | 10.0406 | 1.062 | | | 1.000 | | 34.82 | | | | 0.0914 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.48e5 | 10.0406 | 1.128 | | | 1.001 | | 36.70 | | | | 0.109 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.11e5 | 10.0406 | 1.280 | | | 1.000 | | 38.42 | | | | 0.0998 |
| 17 | OCDF | | 2.26e5 | 10.0406 | 0.947 | | | 1.000 | | 41.38 | | | | 0.155 |
| 18 | 13C-2,3,7,8-TCDD | 1.21e5 | 1.09e5 | 10.0406 | 1.095 | 0.813 | NO | 1.021 | 1.022 | 26.25 | 26.27 | 203.52 | 102.2 | 0.331 |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.11e5 | 1.09e5 | 10.0406 | 0.881 | 0.646 | NO | 1.187 | 1.195 | 30.51 | 30.73 | 230.36 | 115.6 | 0.254 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.31e5 | 1.92e5 | 10.0406 | 0.642 | 1.298 | NO | 1.014 | 1.014 | 34.03 | 34.04 | 211.76 | 106.3 | 0.487 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.50e5 | 1.92e5 | 10.0406 | 0.856 | 1.265 | NO | 1.017 | 1.017 | 34.15 | 34.14 | 181.59 | 91.2 | 0.365 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.49e5 | 1.92e5 | 10.0406 | 0.807 | 1.234 | NO | 1.026 | 1.026 | 34.44 | 34.43 | 191.50 | 96.1 | 0.387 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.24e5 | 1.92e5 | 10.0406 | 0.654 | 1.002 | NO | 1.126 | 1.129 | 37.80 | 37.89 | 196.83 | 98.8 | 0.733 |
| 24 | 13C-OCDD | 1.91e5 | 1.92e5 | 10.0406 | 0.580 | 0.918 | NO | 1.226 | 1.226 | 41.15 | 41.16 | 341.56 | 85.7 | 0.448 |
| 25 | 13C-2,3,7,8-TCDF | 1.66e5 | 1.71e5 | 10.0406 | 1.035 | 0.749 | NO | 0.993 | 0.992 | 25.54 | 25.49 | 186.39 | 93.6 | 0.345 |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.44e5 | 1.71e5 | 10.0406 | 0.854 | 1.641 | NO | 1.143 | 1.150 | 29.39 | 29.58 | 196.58 | 98.7 | 1.04 |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.54e5 | 1.71e5 | 10.0406 | 0.847 | 1.663 | NO | 1.176 | 1.184 | 30.24 | 30.45 | 211.69 | 106.3 | 1.05 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.63e5 | 1.92e5 | 10.0406 | 0.832 | 0.516 | NO | 0.987 | 0.988 | 33.14 | 33.15 | 203.49 | 102.2 | 0.706 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.83e5 | 1.92e5 | 10.0406 | 1.034 | 0.515 | NO | 0.991 | 0.991 | 33.25 | 33.27 | 184.03 | 92.4 | 0.568 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.80e5 | 1.92e5 | 10.0406 | 0.953 | 0.513 | NO | 1.009 | 1.009 | 33.87 | 33.87 | 195.69 | 98.2 | 0.616 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.62e5 | 1.92e5 | 10.0406 | 0.828 | 0.506 | NO | 1.039 | 1.037 | 34.86 | 34.82 | 203.74 | 102.3 | 0.710 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-8.qld

Last Altered: Monday, November 04, 2019 15:05:22 Pacific Standard Time

Printed: Monday, November 04, 2019 15:05:44 Pacific Standard Time

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 Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | RRF | CA | YN | Pred | EBT | Pred R | RT | Conc | %Rec | EMPC | DI |
|----|------------------------|--------|---------|---------|-------|-------|------|-------|--------|-------|-------|--------|-------|--------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.48e5 | 1.92e5 | 10.0406 | 0.757 | 0.431 | NO | 1.093 | 1.093 | 36.68 | 36.67 | 202.43 | 101.6 | 0.773 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.11e5 | 1.92e5 | 10.0406 | 0.581 | 0.420 | NO | 1.143 | 1.145 | 38.36 | 38.42 | 199.00 | 99.9 | 1.01 |
| 34 | 13C-OCDF | 2.26e5 | 1.92e5 | 10.0406 | 0.689 | 0.928 | NO | 1.233 | 1.233 | 41.39 | 41.38 | 340.82 | 85.6 | 0.405 |
| 35 | 37Cl-2,3,7,8-TCDD | 4.78e4 | 1.09e5 | 10.0406 | 1.198 | | | 1.022 | 1.022 | 26.28 | 26.29 | 73.246 | 91.9 | 0.206 |
| 36 | 13C-1,2,3,4-TCDD | 1.09e5 | 1.09e5 | 10.0406 | 1.000 | 0.873 | NO | 1.000 | 1.000 | 25.70 | 25.71 | 199.19 | 100.0 | 0.362 |
| 37 | 13C-1,2,3,4-TCDF | 1.71e5 | 1.71e5 | 10.0406 | 1.000 | 0.763 | NO | 1.000 | 1.000 | 24.28 | 24.30 | 199.19 | 100.0 | 0.357 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.92e5 | 1.92e5 | 10.0406 | 1.000 | 0.504 | NO | 1.000 | 1.000 | 33.55 | 33.56 | 199.19 | 100.0 | 0.587 |
| 39 | Total Tetra-Dioxins | | 1.21e5 | 10.0406 | 0.901 | | | 0.000 | | 25.50 | | | | 0.0546 |
| 40 | Total Penta-Dioxins | | 1.11e5 | 10.0406 | 0.872 | | | 0.000 | | 30.00 | | | | 0.0378 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.0406 | 0.976 | | | 0.000 | | 33.80 | | | | 0.0549 |
| 42 | Total Hepta-Dioxins | | 1.24e5 | 10.0406 | 0.989 | | | 0.000 | | 37.75 | | | | 0.0729 |
| 43 | Total Tetra-Furans | | 1.66e5 | 10.0406 | 0.943 | | | 0.000 | | 24.00 | | | | 0.0481 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.0406 | 0.940 | | | 0.000 | | 27.63 | | | | 0.0421 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.0406 | 0.940 | | | 0.000 | | 30.00 | | | | 0.0458 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.0406 | 1.078 | | | 0.000 | | 33.00 | | | | 0.0377 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.0406 | 1.135 | | | 0.000 | | 37.75 | | | | 0.0546 |

0.1103
 0.0972
 0.121
 0.134
 0.0984
 0.0996
 0.0914
 0.109

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-8.qld

Last Altered: Monday, November 04, 2019 15:05:22 Pacific Standard Time

Printed: Monday, November 04, 2019 15:05:44 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 14:50:23

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Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Penta-Dioxins

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Hexa-Dioxins

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Hepta-Dioxins

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Tetra-Furans

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Penta-Furans function 1

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Penta-Furans

| Name | NY | RI | Area | IS Area | Response | Primary | Flags | Conc | EMPC |
|------|----|----|------|---------|----------|---------|-------|------|------|
| | | | | | | | | | |

Vista Analytical Laboratory

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Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Hexa-Furans

| Name | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|------|---------|----------|--------------|------|------|
| | | | | | | | |

Hepta-Furans

| Name | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|------|---------|----------|--------------|------|------|
| | | | | | | | |

Vista Analytical Laboratory

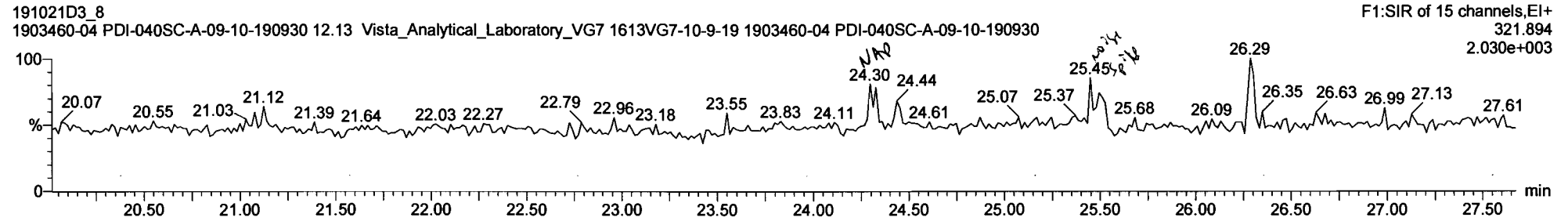
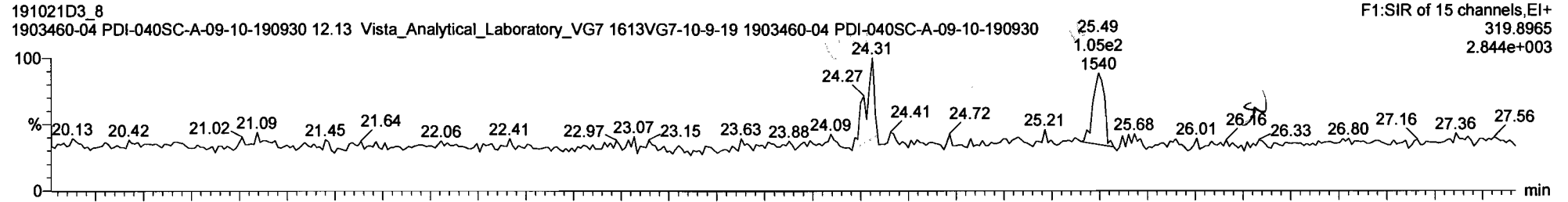
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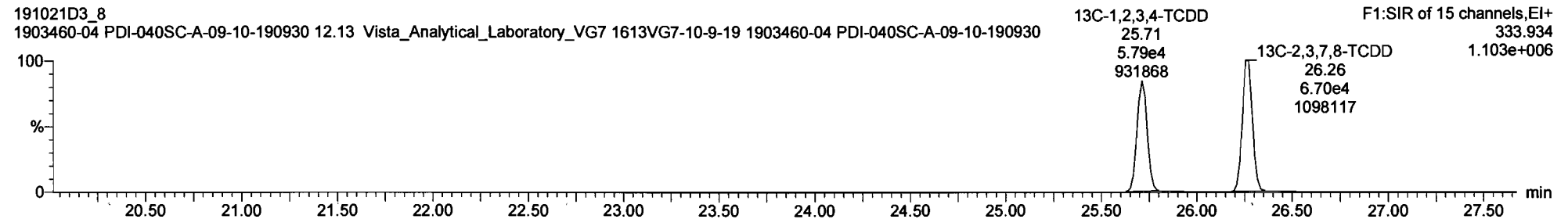
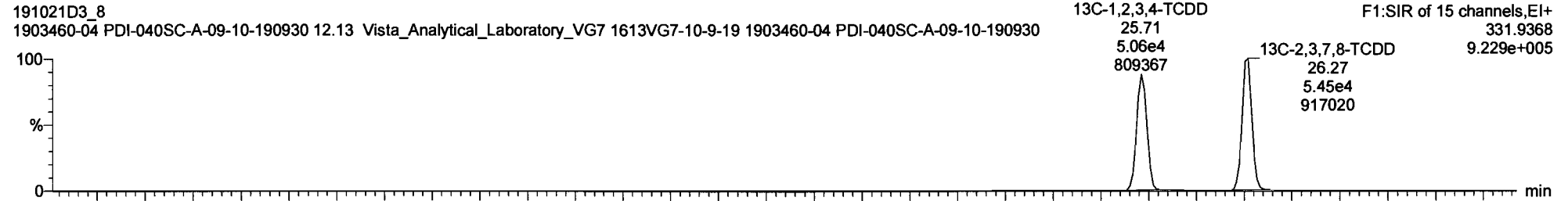
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

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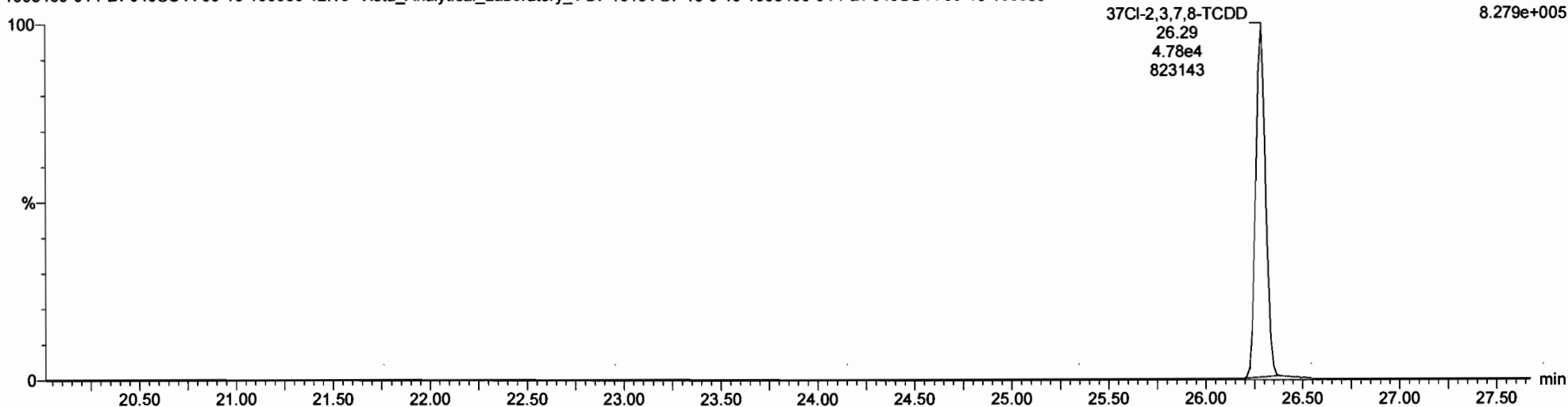
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37Cl-2,3,7,8-TCDD

191021D3_8
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F1:SIR of 15 channels,EI+
327.884
8.279e+005



13C-1,2,3,4-TCDD

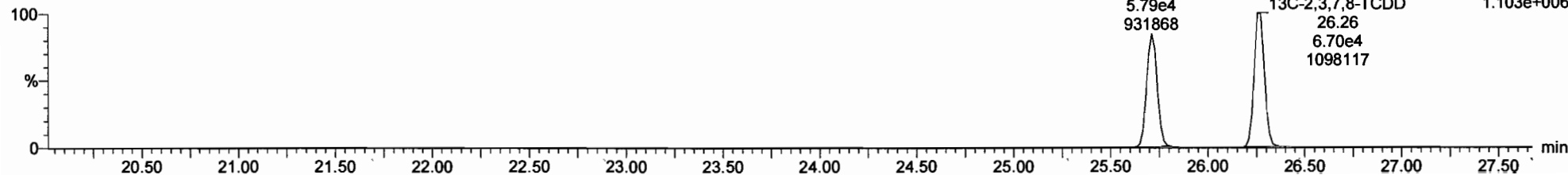
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F1:SIR of 15 channels,EI+
331.9368
9.229e+005



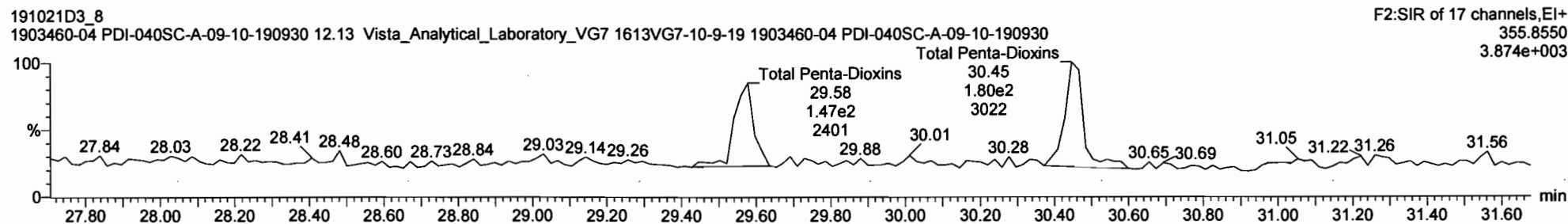
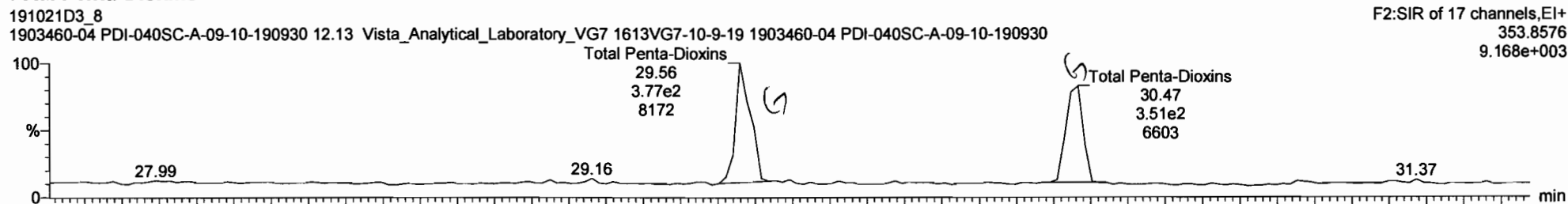
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F1:SIR of 15 channels,EI+
333.934
1.103e+006

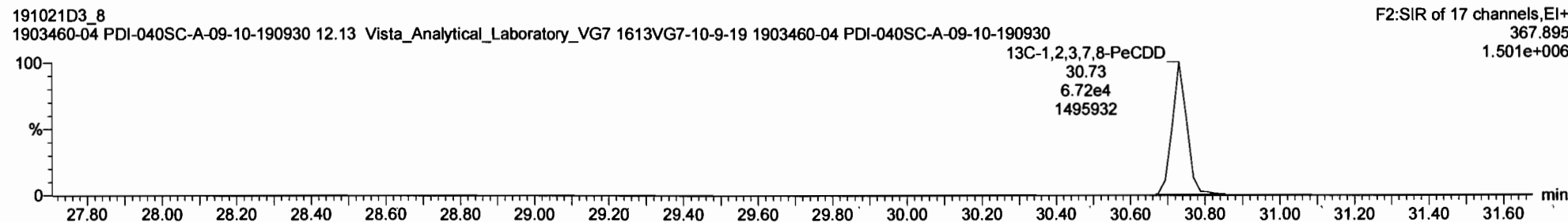
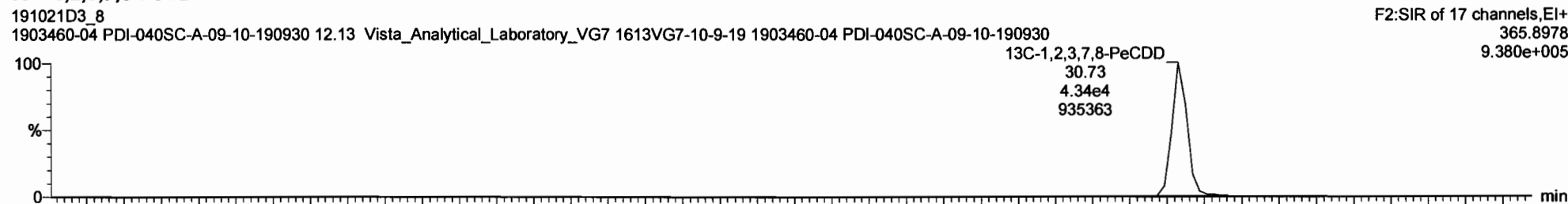


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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

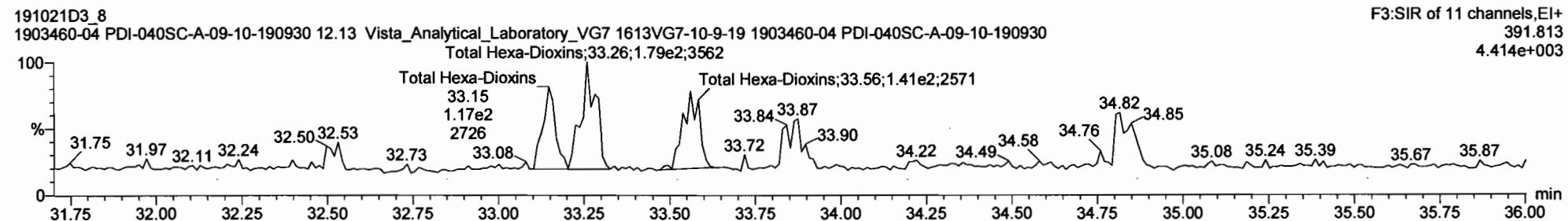
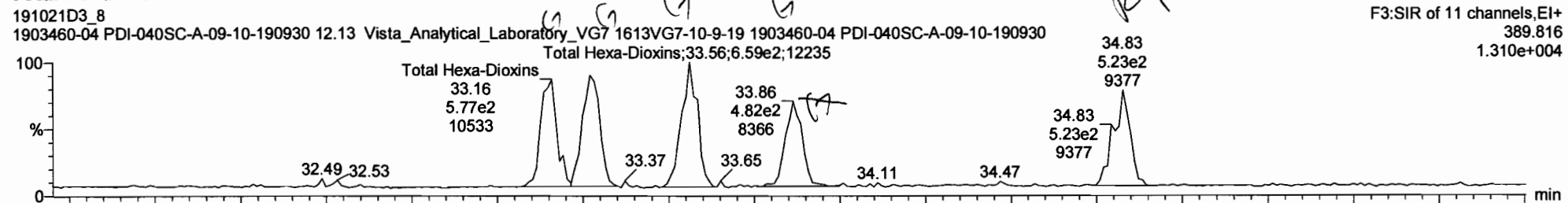
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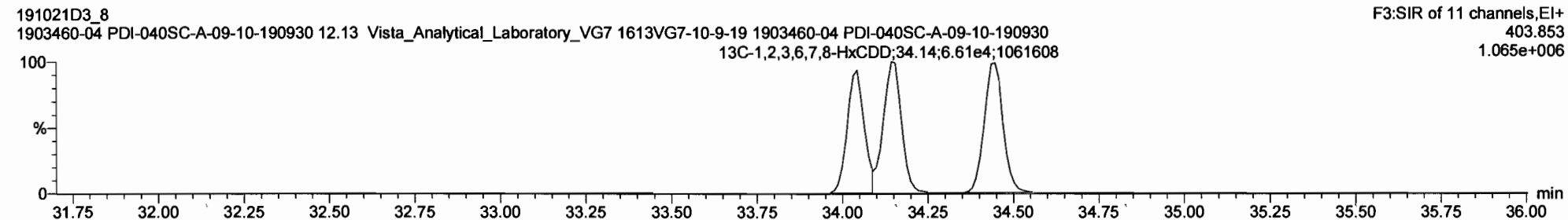
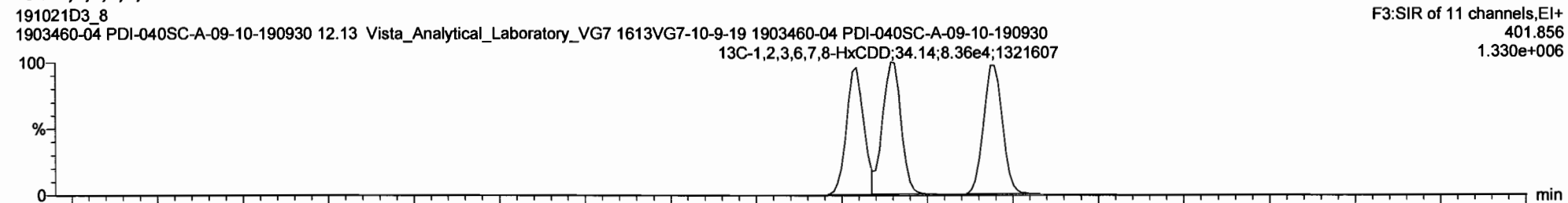
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Total Hexa-Dioxins



13C-1,2,3,4,7,8-HxCDD



Vista Analytical Laboratory

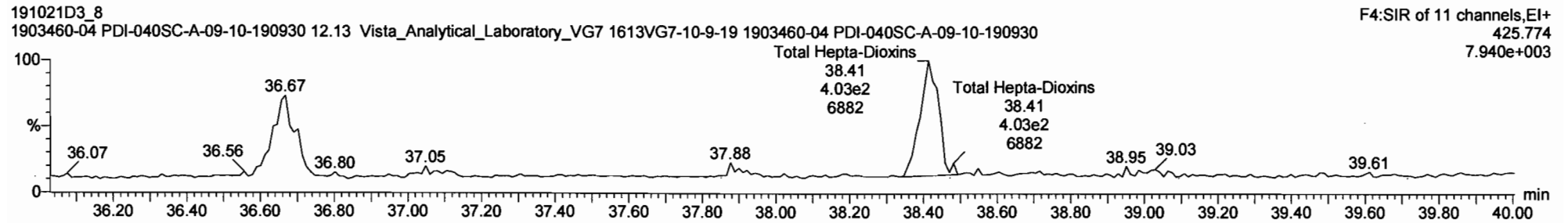
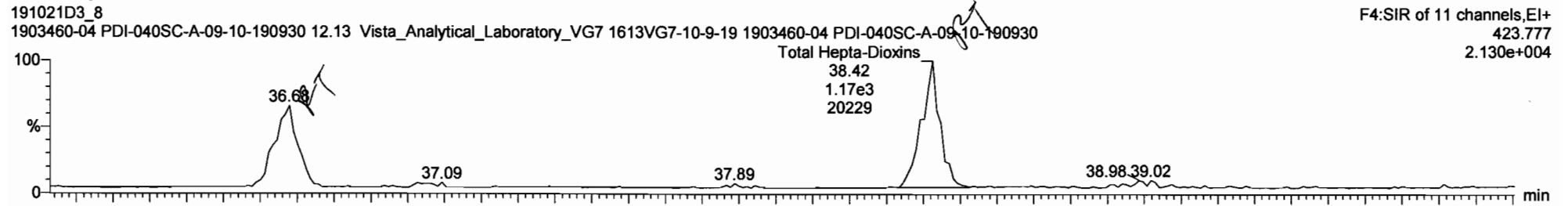
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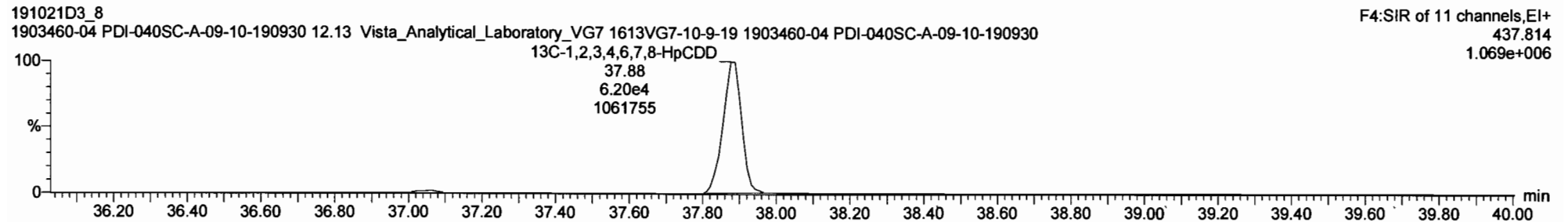
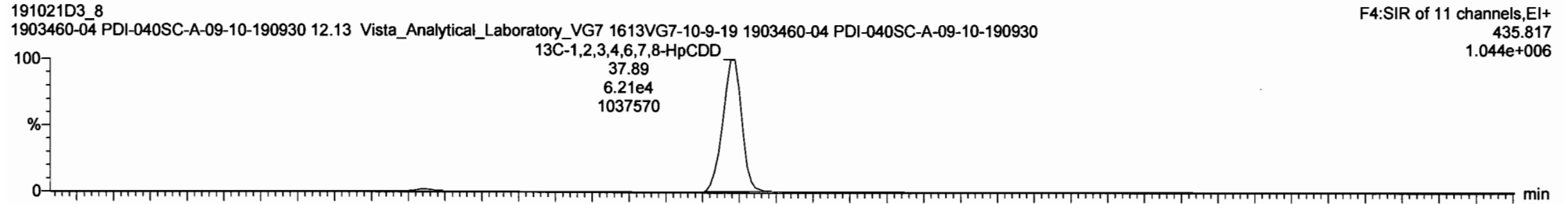
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 Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hepta-Dioxins



13C-1,2,3,4,6,7,8-HpCDD



Vista Analytical Laboratory

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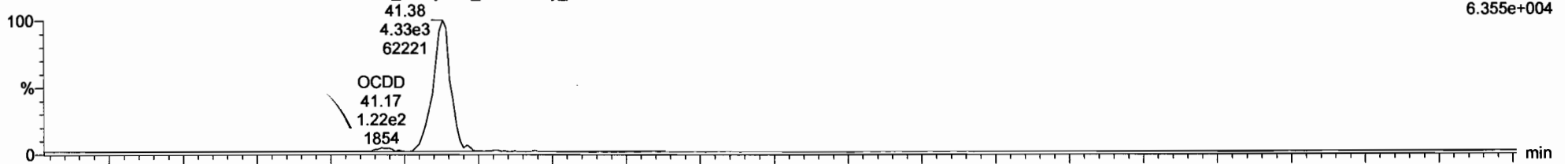
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OCDD

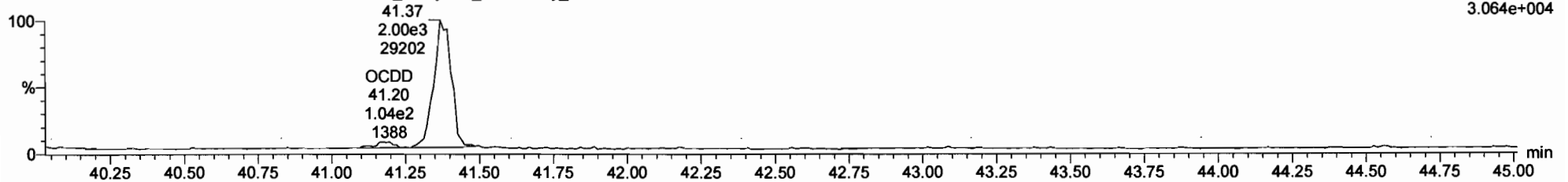
191021D3_8 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-04 PDI-040SC-A-09-10-190930

F5:SIR of 11 channels,EI+ 457.738 6.355e+004



191021D3_8 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-04 PDI-040SC-A-09-10-190930

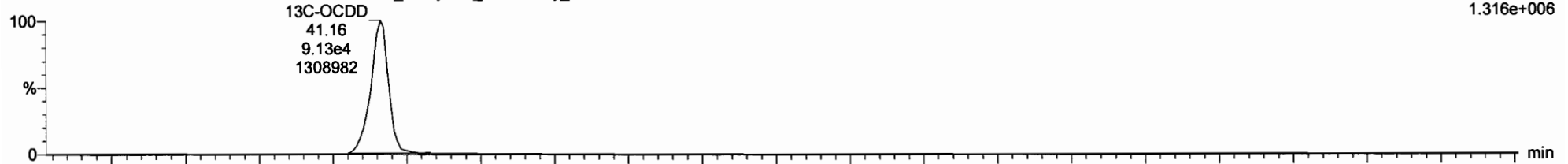
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13C-OCDD

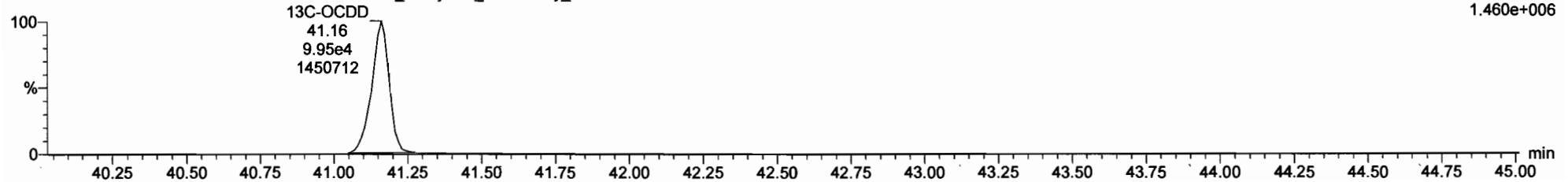
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F5:SIR of 11 channels,EI+ 469.778 1.316e+006



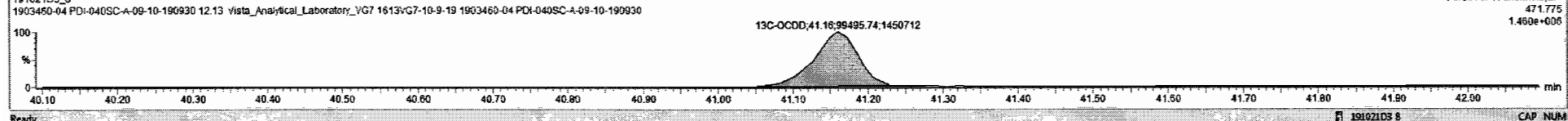
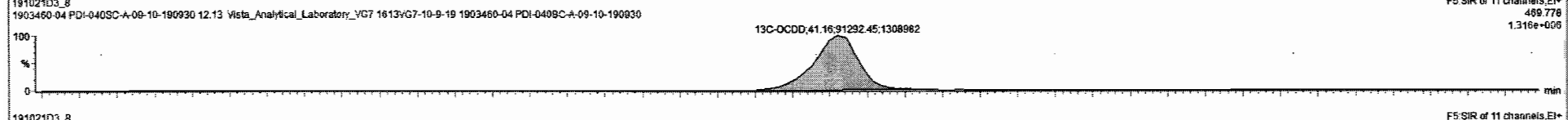
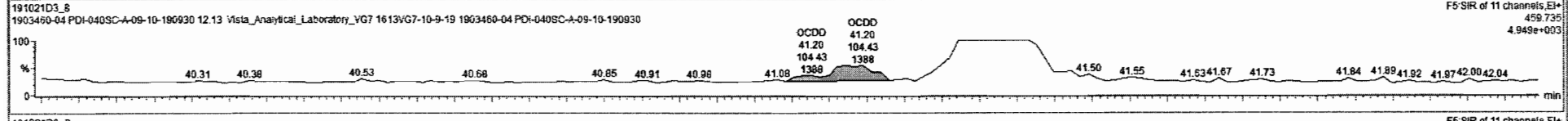
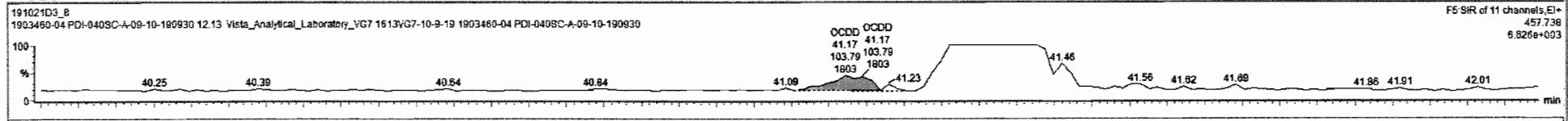
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F5:SIR of 11 channels,EI+ 471.775 1.460e+006



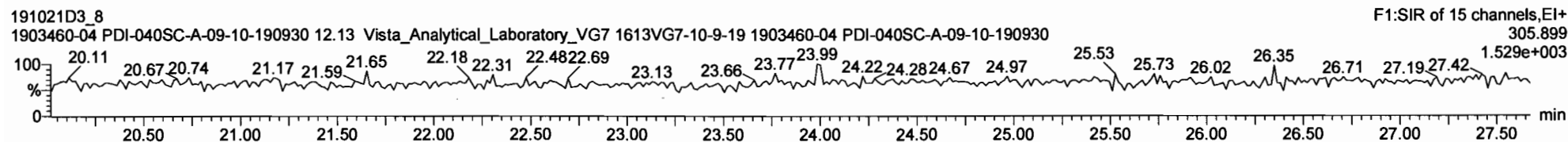
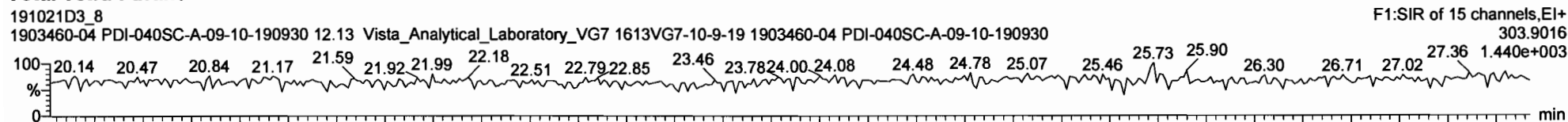
| # | Name | Resp | IS Resp | SA | RA | aly | RRF | wtVol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|---|---------------------|--------|---------|----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 1 | 1,2,3,7,8-TCDD | | 1.21e5 | 18 | | | 0.905 | 10.041 | 28.30 | | | 1.001 | NO | | | 0.103 | |
| 2 | 1,2,3,7,8-PeCDD | | 1.11e5 | 19 | | | 0.903 | 10.041 | 30.75 | | | 1.001 | NO | | | 0.0972 | |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.31e5 | 20 | | | 1.101 | 10.041 | 34.05 | | | 1.000 | NO | | | 0.108 | |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.50e5 | 21 | | | 0.938 | 10.041 | 34.14 | | | 1.000 | NO | | | 0.121 | |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.49e5 | 22 | | | 0.981 | 10.041 | 34.47 | | | 1.001 | NO | | | 0.120 | |
| 6 | 1,2,3,4,6,7,8-HpCDD | | 1.24e5 | 23 | | | 0.979 | 10.041 | 37.90 | | | 1.000 | NO | | | 0.134 | |
| 7 | OCDD | 2.00e2 | 1.91e5 | 24 | 0.98 | NO | 0.959 | 10.041 | 41.16 | 41.17 | 1.004 | 1.000 | NO | 0.4536 | | 0.243 | 0.4536 |
| 8 | 2,3,7,8-TCDF | | 1.86e5 | 25 | | | 0.950 | 10.041 | 25.52 | | | 1.001 | NO | | | 0.0984 | |
| 9 | 1,2,3,7,8-PeCDF | | 1.44e5 | 26 | | | 0.980 | 10.041 | 29.60 | | | 1.001 | NO | | | 0.0996 | |

| # | Name | Pred RT | RT | est Resp | is2 Resp | Pred RA | RA | aly | EMPC | Conc |
|---|------|---------|----|----------|----------|---------|----|-----|------|------|
| 1 | | | | | | | | | | |

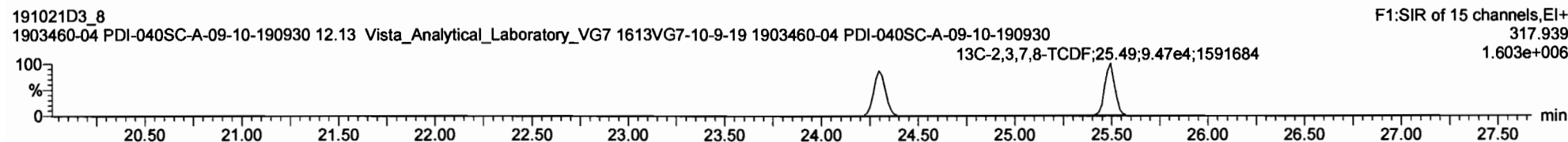
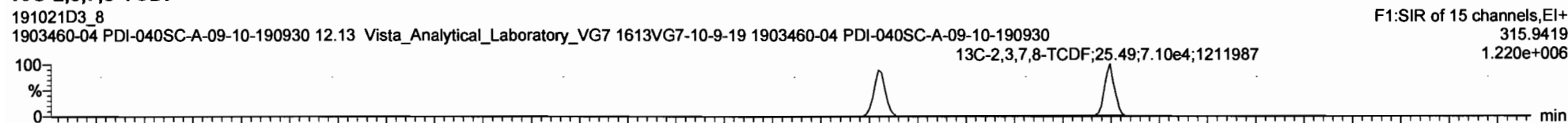


Name: VG7 191021D3_8, Date: 22-OCT-2019, Time: 07:38:59, ID: 1903460-04 PDI-040SC-A-09-10-190930,
Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

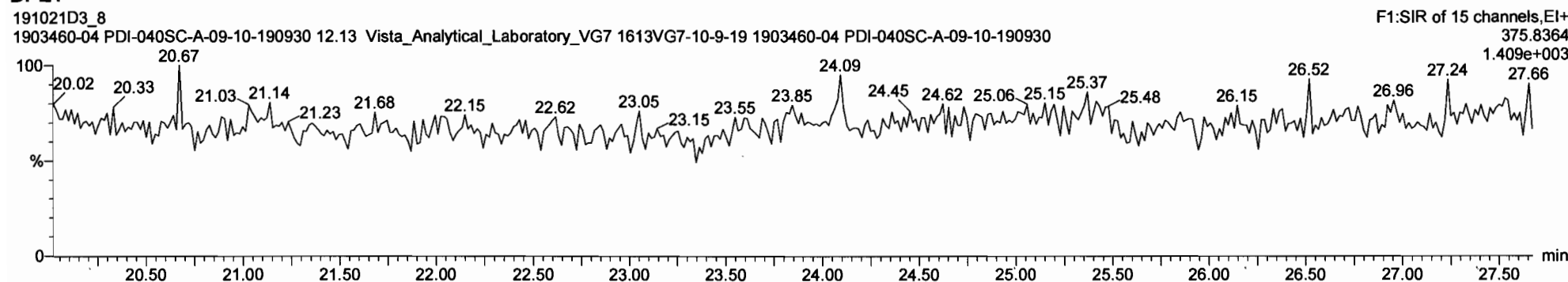
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

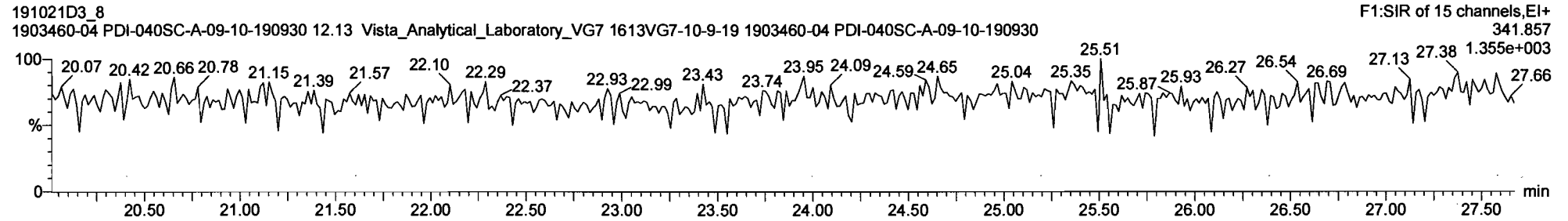
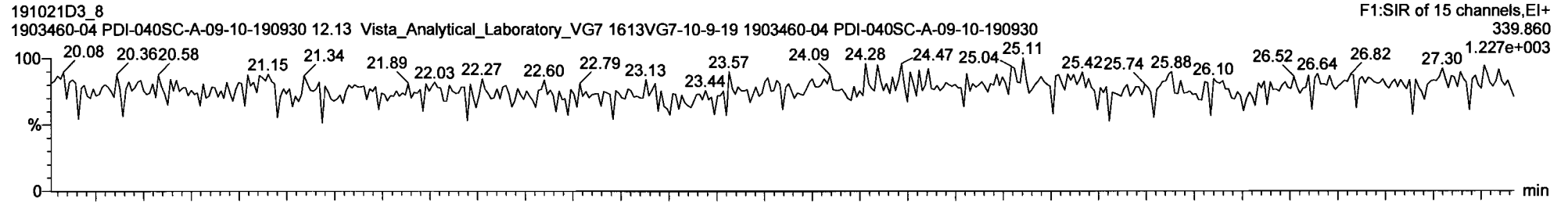
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

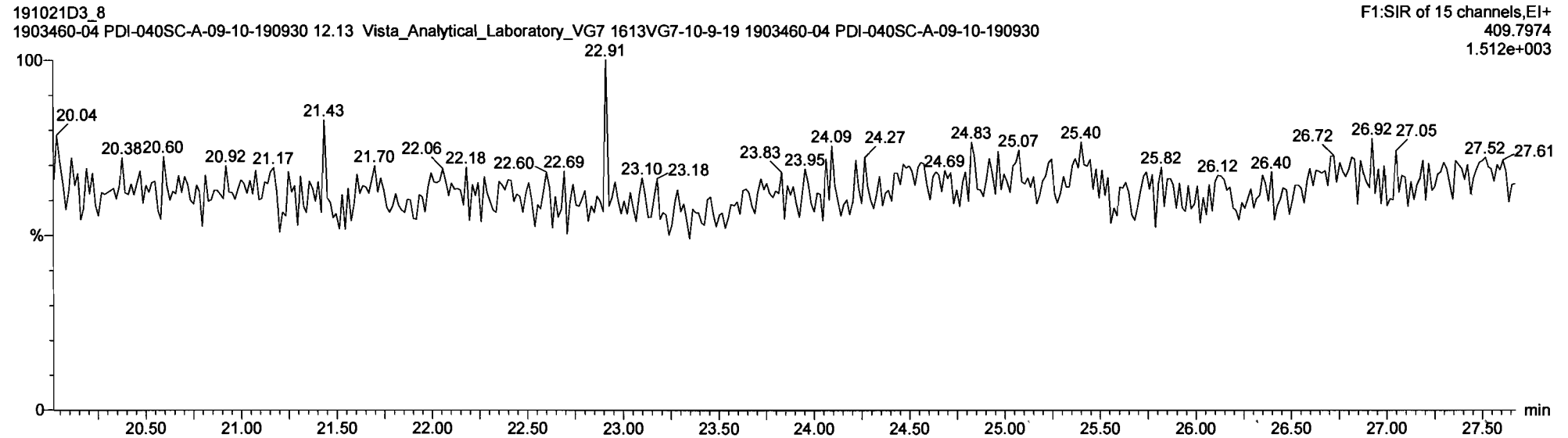
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

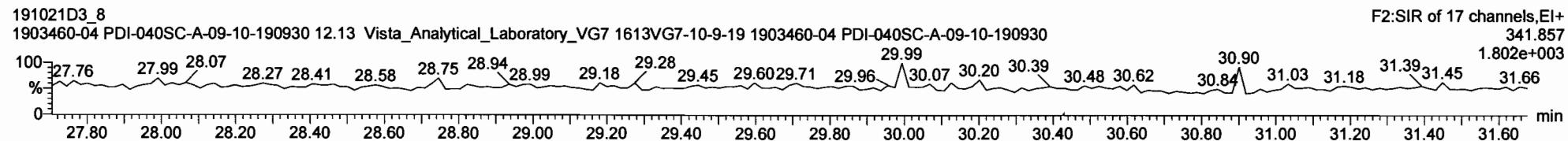
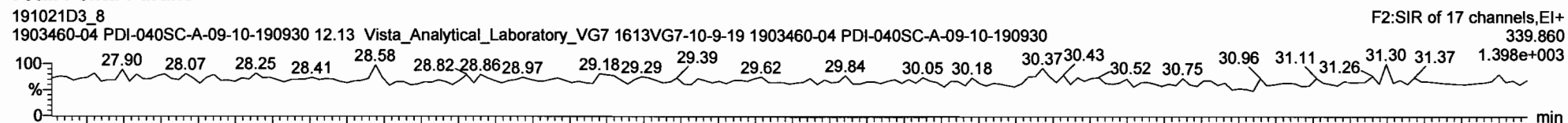
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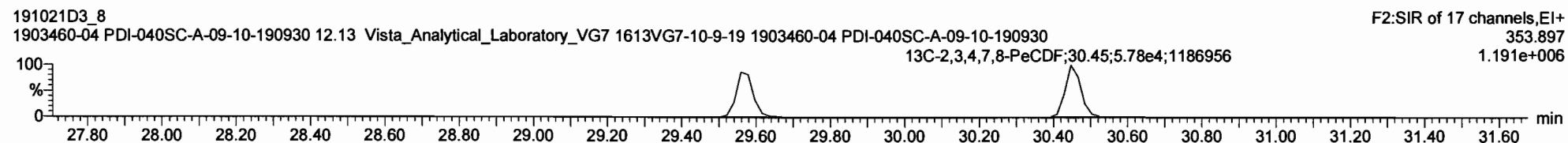
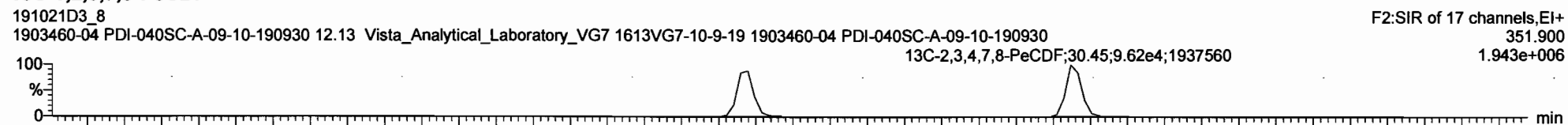
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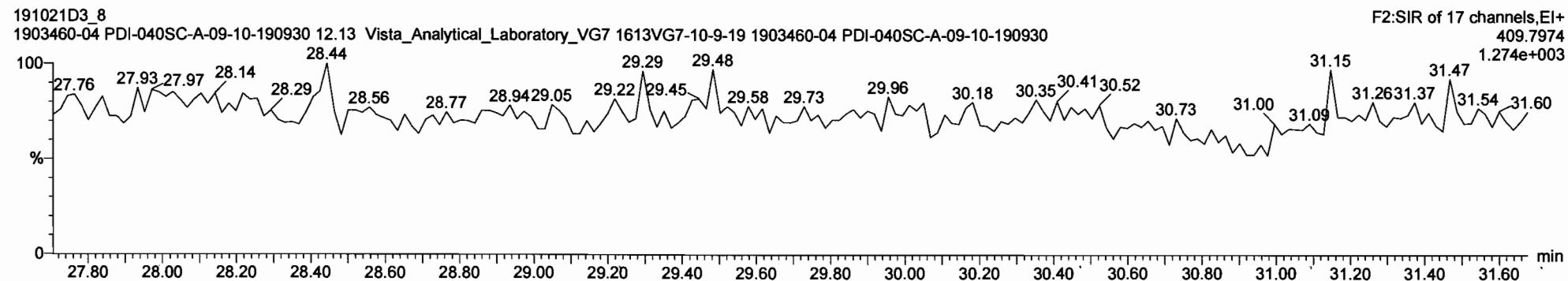
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

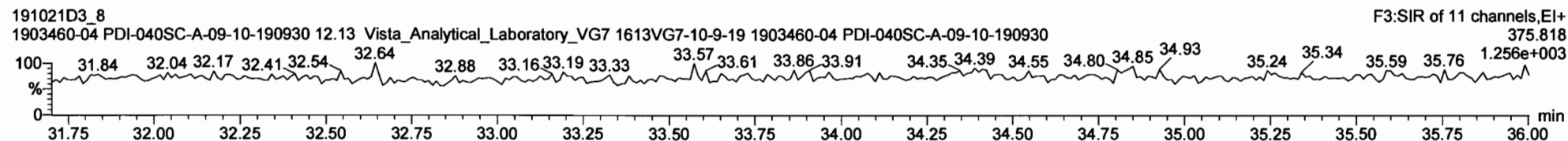
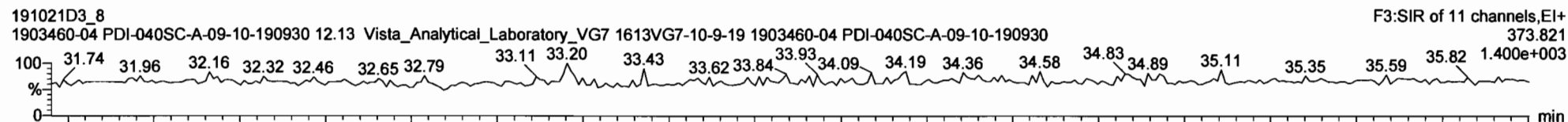


DPE2

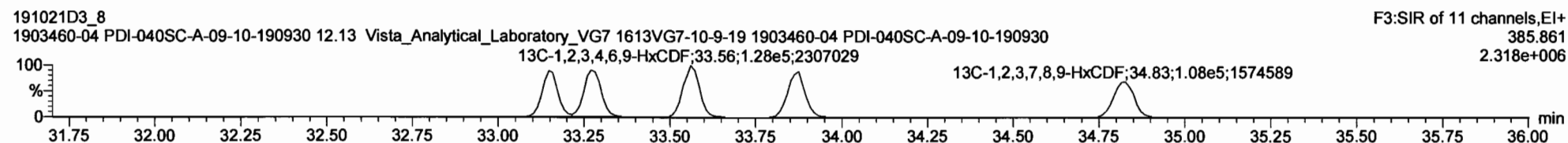
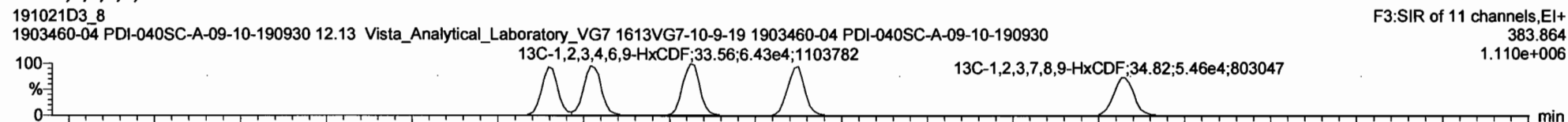


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Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

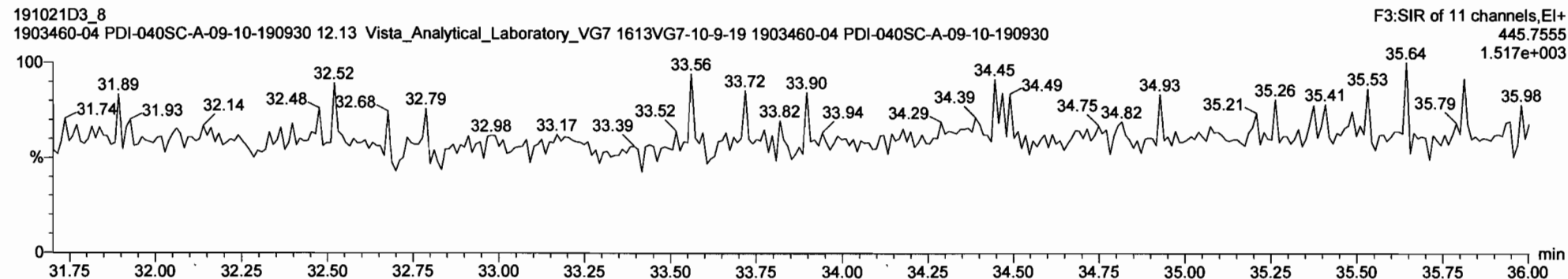
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

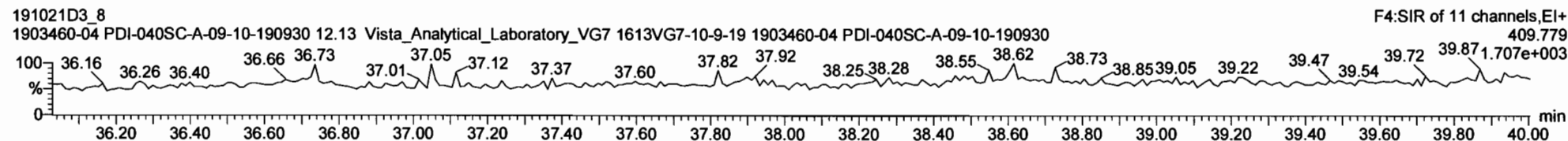
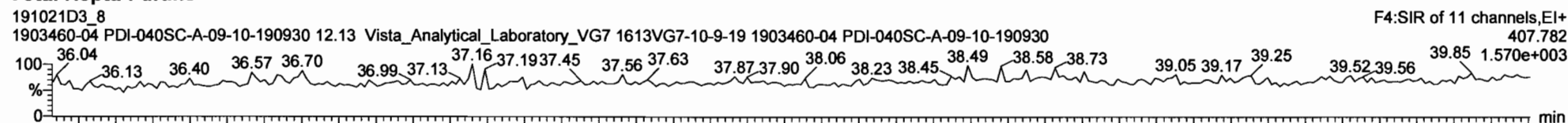
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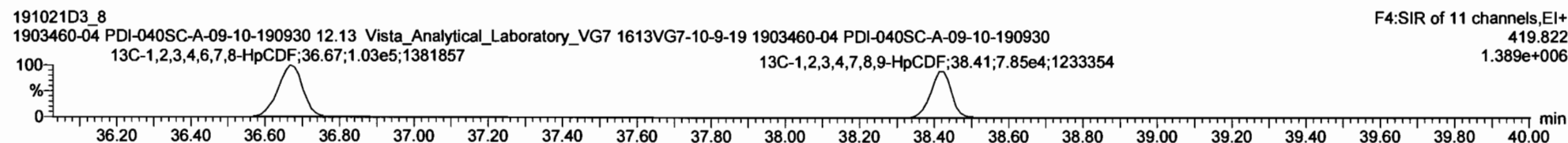
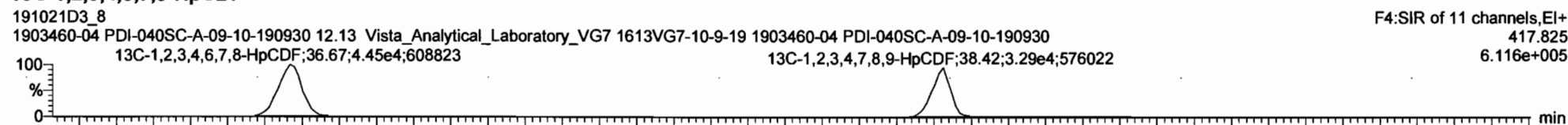
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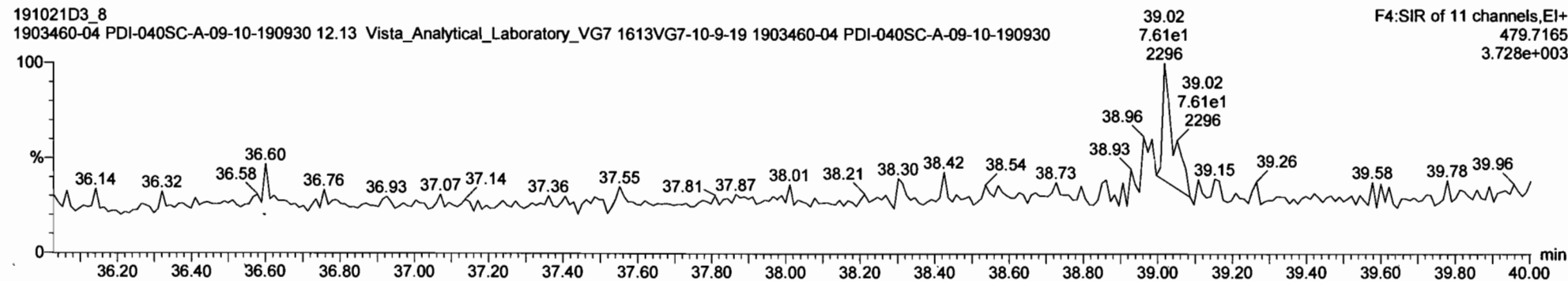
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

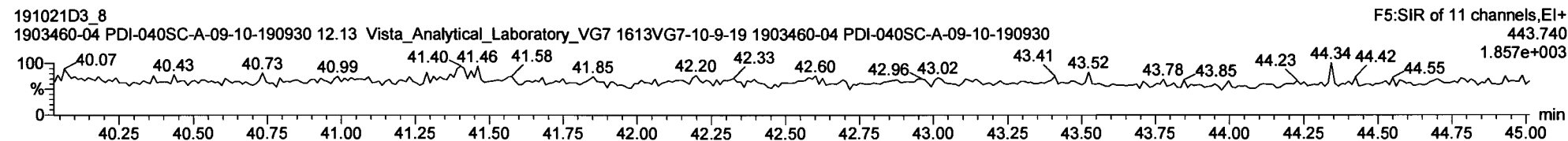
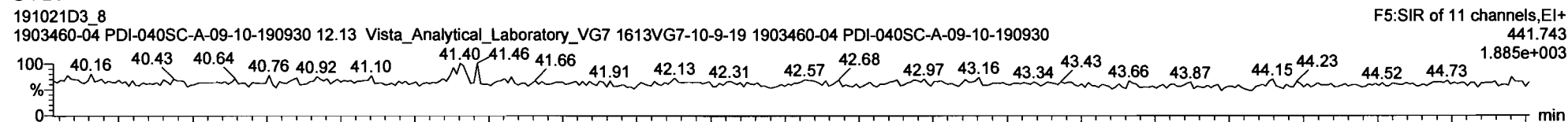
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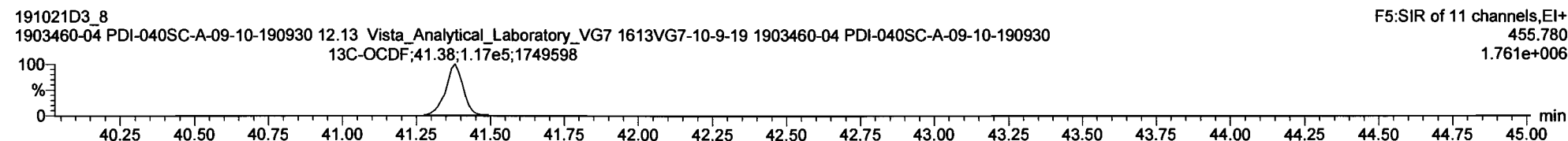
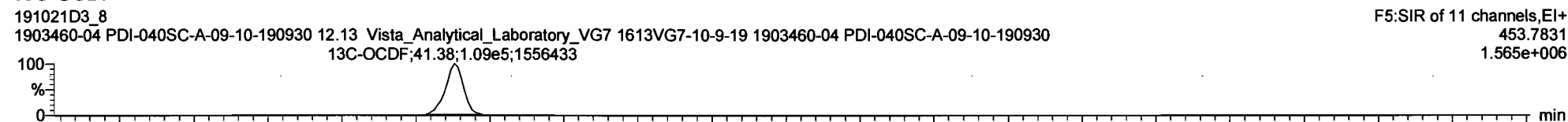
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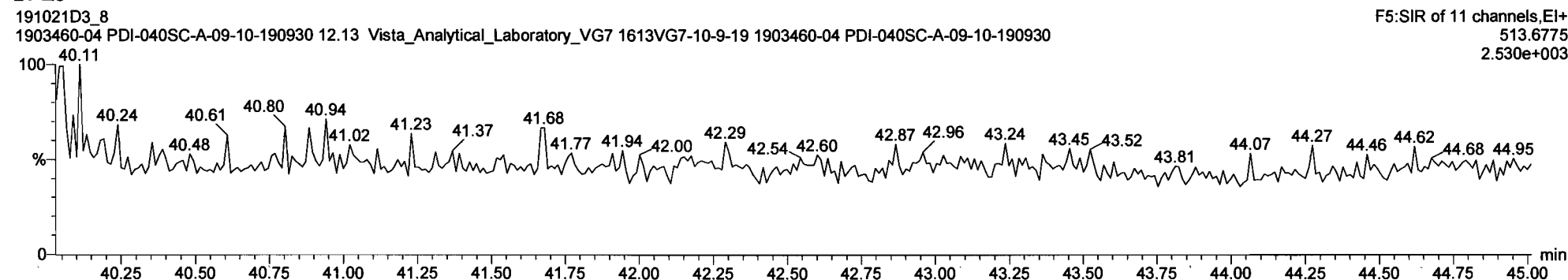
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

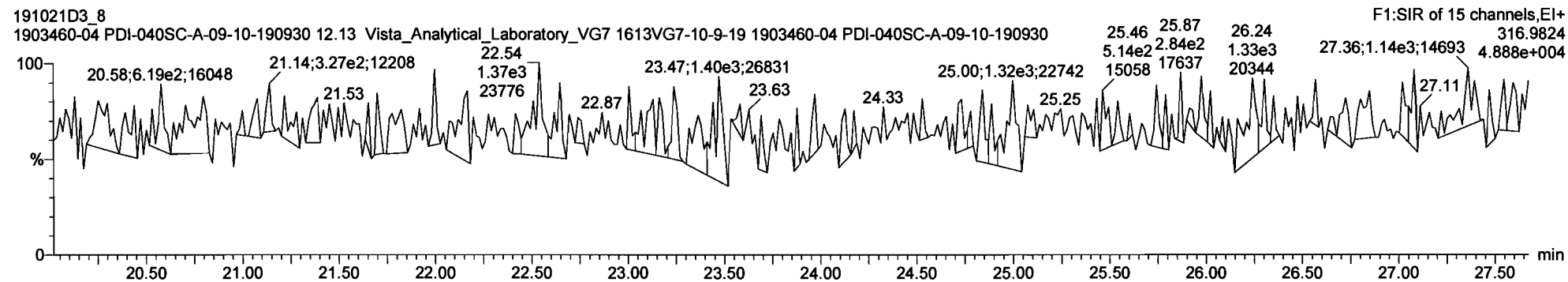
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

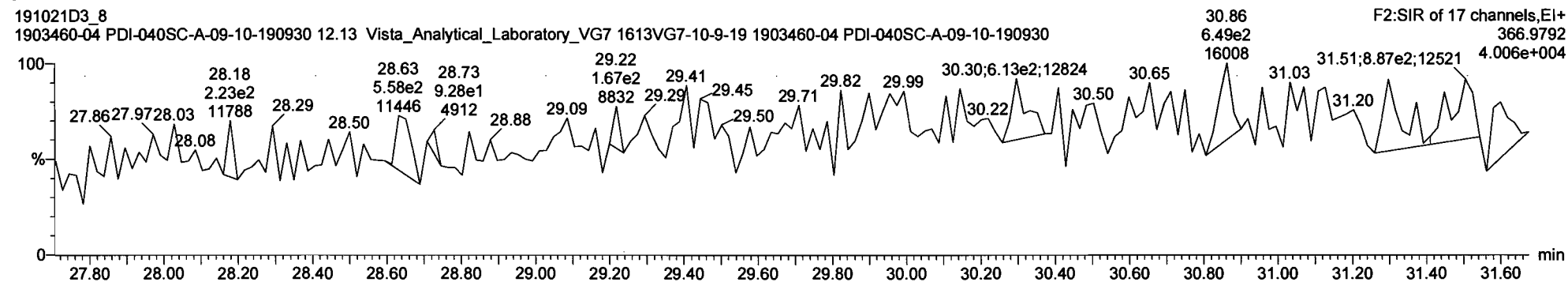
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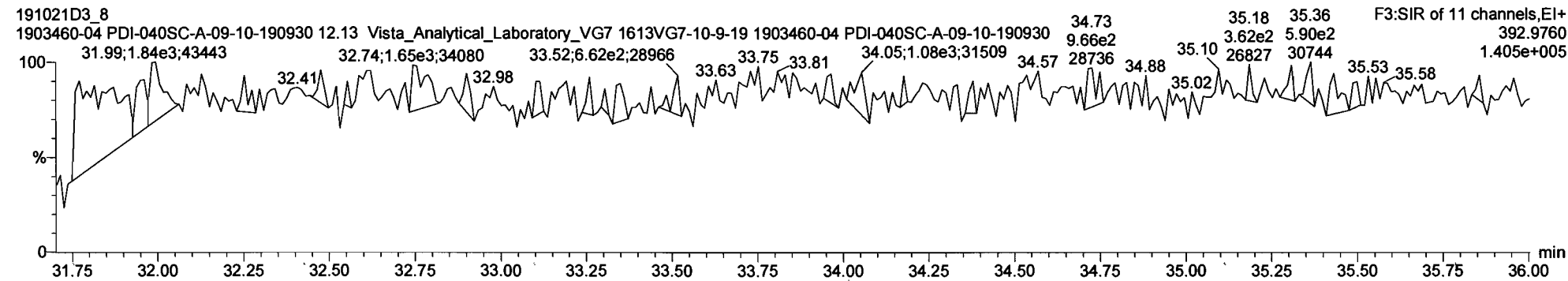
PFK1



PFK2



PFK3



Vista Analytical Laboratory

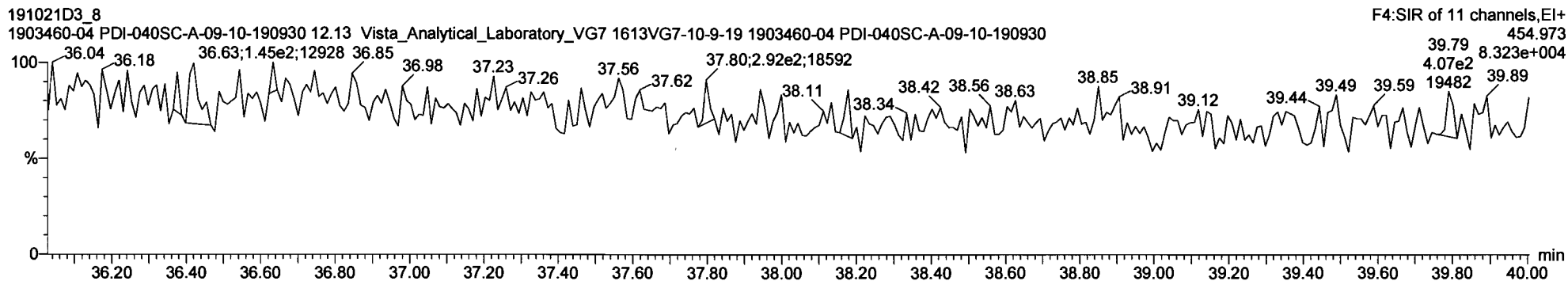
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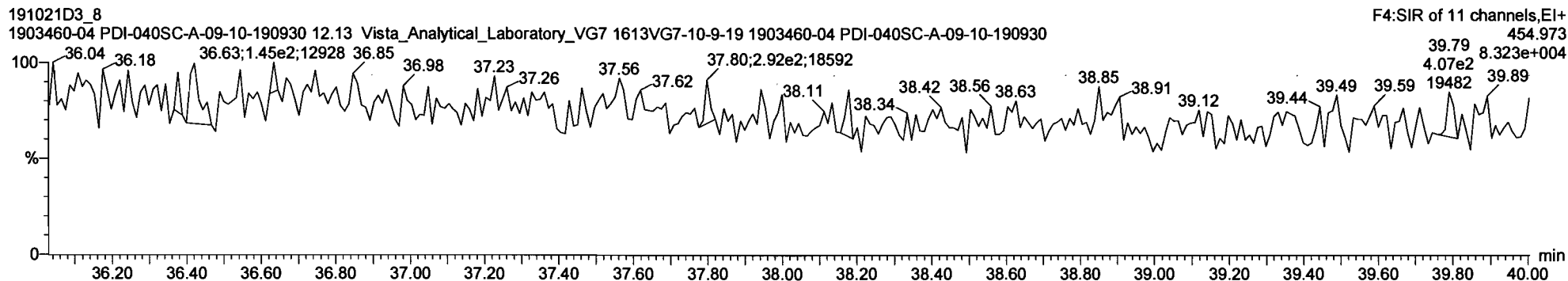
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Description: 1903460-04 PDI-040SC-A-09-10-190930 12.13 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-9.qld

Last Altered: Monday, November 04, 2019 15:15:00 Pacific Standard Time

Printed: Monday, November 04, 2019 15:15:11 Pacific Standard Time

He 11/4/19

CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04-Nov-2019 15:06:40

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Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 ✓

| # | Name | Area | IS Area | RT | RR | RA | IN | PR | RRR | PL | PL | Conc | Spec | EMPA | DL |
|----|------------------------|--------|---------|---------|-------|-------|----|-------|-------|-------|-------|---------|-------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 8.98e4 | 10.0199 | 0.905 | | | 1.001 | | | | 26.28 | | | 0.147 |
| 2 | 1,2,3,7,8-PeCDD | | 7.53e4 | 10.0199 | 0.903 | | | 1.001 | | | | 30.74 | | | 0.158 |
| 3 | 1,2,3,4,7,8-HxCDD | | 9.97e4 | 10.0199 | 1.101 | | | 1.000 | | | | 34.05 | | | 0.144 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.10e5 | 10.0199 | 0.939 | | | 1.000 | | | | 34.14 | | | 0.158 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.21e5 | 10.0199 | 0.961 | | | 1.001 | | | | 34.46 | | | 0.140 |
| 6 | 1,2,3,4,6,7,8-HpCDD | | 1.18e5 | 10.0199 | 0.979 | | | 1.000 | | | | 37.89 | | | 0.120 |
| 7 | OCDD | 1.37e2 | 2.03e5 | 10.0199 | 0.959 | 0.899 | NO | 1.000 | 1.000 | 41.16 | 41.16 | 0.28040 | | 0.280 | 0.173 |
| 8 | 2,3,7,8-TCDF | | 1.17e5 | 10.0199 | 0.950 | | | 1.001 | | | | 25.50 | | | 0.184 |
| 9 | 1,2,3,7,8-PeCDF | | 1.04e5 | 10.0199 | 0.960 | | | 1.001 | | | | 29.59 | | | 0.130 |
| 10 | 2,3,4,7,8-PeCDF | | 1.05e5 | 10.0199 | 1.015 | | | 1.001 | | | | 30.47 | | | 0.125 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.21e5 | 10.0199 | 1.177 | | | 1.000 | | | | 33.14 | | | 0.0941 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.34e5 | 10.0199 | 1.069 | | | 1.000 | | | | 33.28 | | | 0.0962 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.38e5 | 10.0199 | 1.114 | | | 1.001 | | | | 33.89 | | | 0.0944 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.24e5 | 10.0199 | 1.062 | | | 1.000 | | | | 34.81 | | | 0.116 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.28e5 | 10.0199 | 1.128 | | | 1.001 | | | | 36.70 | | | 0.122 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.02e5 | 10.0199 | 1.280 | | | 1.000 | | | | 38.41 | | | 0.107 |
| 17 | OCDF | | 2.42e5 | 10.0199 | 0.947 | | | 1.000 | | | | 41.38 | | | 0.156 |
| 18 | 13C-2,3,7,8-TCDD | 8.98e4 | 1.30e5 | 10.0199 | 1.095 | 0.822 | NO | 1.021 | 1.022 | 26.23 | 26.25 | 125.85 | 63.1 | | 0.355 |
| 19 | 13C-1,2,3,7,8-PeCDD | 7.53e4 | 1.30e5 | 10.0199 | 0.881 | 0.679 | NO | 1.187 | 1.196 | 30.48 | 30.72 | 131.15 | 65.7 | | 0.272 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 9.97e4 | 1.79e5 | 10.0199 | 0.642 | 1.284 | NO | 1.014 | 1.014 | 34.02 | 34.04 | 173.44 | 86.9 | | 0.486 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.10e5 | 1.79e5 | 10.0199 | 0.856 | 1.270 | NO | 1.017 | 1.017 | 34.14 | 34.14 | 143.12 | 71.7 | | 0.365 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.21e5 | 1.79e5 | 10.0199 | 0.807 | 1.255 | NO | 1.026 | 1.026 | 34.44 | 34.43 | 167.10 | 83.7 | | 0.387 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.18e5 | 1.79e5 | 10.0199 | 0.654 | 1.061 | NO | 1.126 | 1.129 | 37.79 | 37.88 | 202.26 | 101.3 | | 0.751 |
| 24 | 13C-OCDD | 2.03e5 | 1.79e5 | 10.0199 | 0.580 | 0.904 | NO | 1.226 | 1.226 | 41.14 | 41.16 | 391.07 | 98.0 | | 0.503 |
| 25 | 13C-2,3,7,8-TCDF | 1.17e5 | 1.84e5 | 10.0199 | 1.035 | 0.770 | NO | 0.993 | 0.992 | 25.52 | 25.47 | 122.84 | 61.5 | | 0.316 |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.04e5 | 1.84e5 | 10.0199 | 0.854 | 1.551 | NO | 1.143 | 1.151 | 29.36 | 29.57 | 131.66 | 66.0 | | 0.396 |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.05e5 | 1.84e5 | 10.0199 | 0.847 | 1.636 | NO | 1.176 | 1.185 | 30.22 | 30.43 | 133.94 | 67.1 | | 0.399 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.21e5 | 1.79e5 | 10.0199 | 0.832 | 0.506 | NO | 0.987 | 0.988 | 33.13 | 33.14 | 162.21 | 81.3 | | 0.727 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.34e5 | 1.79e5 | 10.0199 | 1.034 | 0.512 | NO | 0.991 | 0.991 | 33.25 | 33.27 | 144.61 | 72.4 | | 0.585 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.38e5 | 1.79e5 | 10.0199 | 0.953 | 0.517 | NO | 1.009 | 1.009 | 33.87 | 33.86 | 161.58 | 81.0 | | 0.635 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.24e5 | 1.79e5 | 10.0199 | 0.828 | 0.521 | NO | 1.039 | 1.037 | 34.86 | 34.81 | 167.28 | 83.8 | | 0.731 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-9.qld
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 Printed: Monday, November 04, 2019 15:15:11 Pacific Standard Time

Name: VG7 191021D3_9, Date: 22-OCT-2019, Time: 08:26:57, ID: 1903460-05 PDI-040SC-A-10-11.3-190930,
 Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | S Area | Wt/Vol | RRF | RA | Y/N | Pred. | RR | Pred.RT | RT | Comp. | %Rec | EMPC | DL |
|----|------------------------|--------|--------|---------|-------|-------|-----|-------|-------|---------|-------|--------|-------|------|--------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.28e5 | 1.79e5 | 10.0199 | 0.757 | 0.457 | NO | 1.093 | 1.093 | 36.67 | 36.66 | 188.29 | 94.3 | | 0.694 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.02e5 | 1.79e5 | 10.0199 | 0.581 | 0.445 | NO | 1.143 | 1.145 | 38.36 | 38.41 | 196.58 | 98.5 | | 0.905 |
| 34 | 13C-OCDF | 2.42e5 | 1.79e5 | 10.0199 | 0.689 | 0.904 | NO | 1.233 | 1.233 | 41.38 | 41.38 | 392.52 | 98.3 | | 0.482 |
| 35 | 37Cl-2,3,7,8-TCDD | 3.87e4 | 1.30e5 | 10.0199 | 1.198 | | | 1.022 | 1.022 | 26.25 | 26.26 | 49.651 | 62.2 | | 0.0593 |
| 36 | 13C-1,2,3,4-TCDD | 1.30e5 | 1.30e5 | 10.0199 | 1.000 | 0.863 | NO | 1.000 | 1.000 | 25.70 | 25.69 | 199.60 | 100.0 | | 0.389 |
| 37 | 13C-1,2,3,4-TCDF | 1.84e5 | 1.84e5 | 10.0199 | 1.000 | 0.763 | NO | 1.000 | 1.000 | 24.28 | 24.29 | 199.60 | 100.0 | | 0.327 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.79e5 | 1.79e5 | 10.0199 | 1.000 | 0.506 | NO | 1.000 | 1.000 | 33.55 | 33.56 | 199.60 | 100.0 | | 0.605 |
| 39 | Total Tetra-Dioxins | | 8.98e4 | 10.0199 | 0.901 | | | 0.000 | | 25.50 | | | | | 0.0696 |
| 40 | Total Penta-Dioxins | | 7.53e4 | 10.0199 | 0.872 | | | 0.000 | | 30.00 | | | | | 0.0706 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.0199 | 0.976 | | | 0.000 | | 33.80 | | | | | 0.0661 |
| 42 | Total Hepta-Dioxins | | 1.18e5 | 10.0199 | 0.989 | | | 0.000 | | 37.75 | | | | | 0.0818 |
| 43 | Total Tetra-Furans | | 1.17e5 | 10.0199 | 0.943 | | | 0.000 | | 24.00 | | | | | 0.0971 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.0199 | 0.940 | | | 0.000 | | 27.63 | | | | | 0.0690 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.0199 | 0.940 | | | 0.000 | | 30.00 | | | | | 0.0727 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.0199 | 1.078 | | | 0.000 | | 33.00 | | | | | 0.0476 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.0199 | 1.135 | | | 0.000 | | 37.75 | | | | | 0.0562 |

0.147
 0.158
 0.158
 0.120
 0.184
 0.130
 0.116
 0.122

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-9.qld

Last Altered: Monday, November 04, 2019 15:15:00 Pacific Standard Time

Printed: Monday, November 04, 2019 15:15:11 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 15:06:40

Name: VG7 191021D3_9, Date: 22-OCT-2019, Time: 08:26:57, ID: 1903460-05 PDI-040SC-A-10-11.3-190930,

Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hexa-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hepta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Tetra-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Furans function 1

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-9.qld

Last Altered: Monday, November 04, 2019 15:15:00 Pacific Standard Time

Printed: Monday, November 04, 2019 15:15:11 Pacific Standard Time

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Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Hexa-Furans

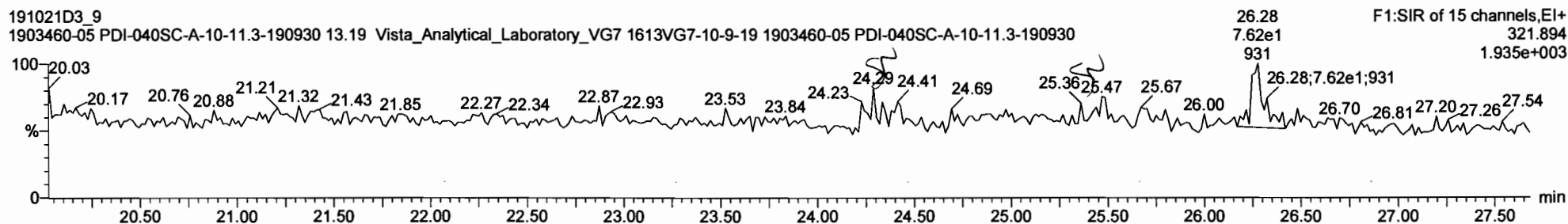
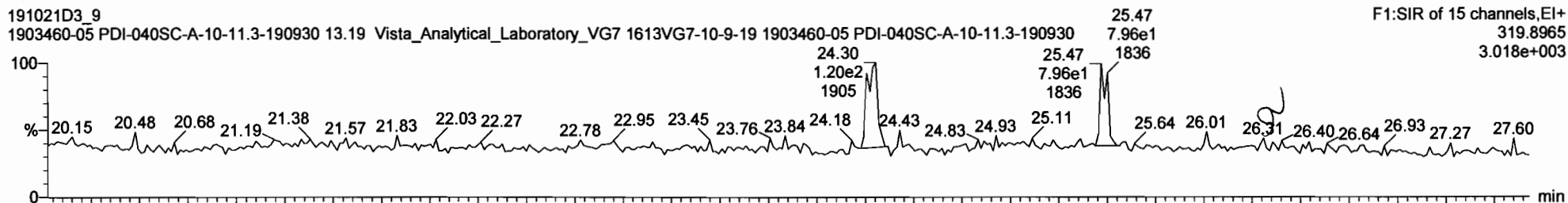
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| | | | | | | | | |

Hepta-Furans

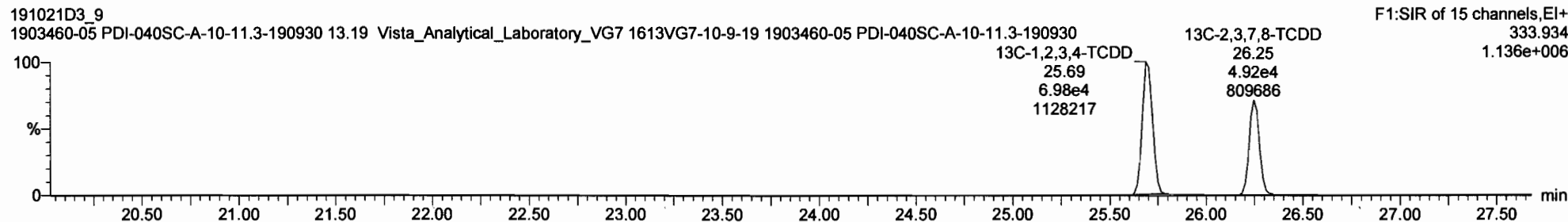
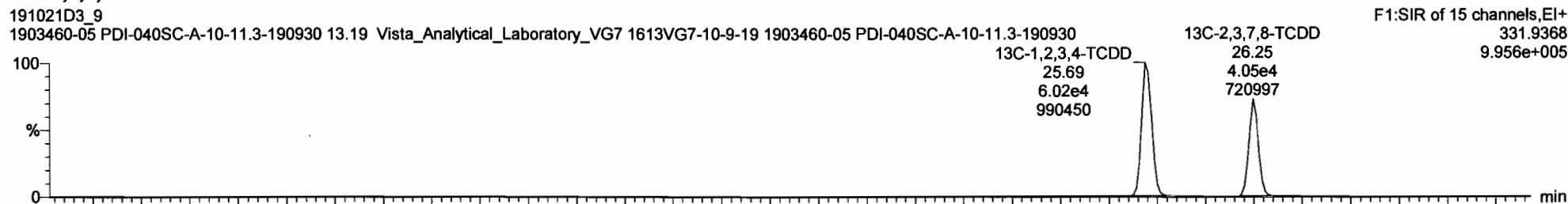
| # | Name | RT | Area | IS Area | Response | Priority Flag | Conc | EU/PC |
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 Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins



13C-2,3,7,8-TCDD

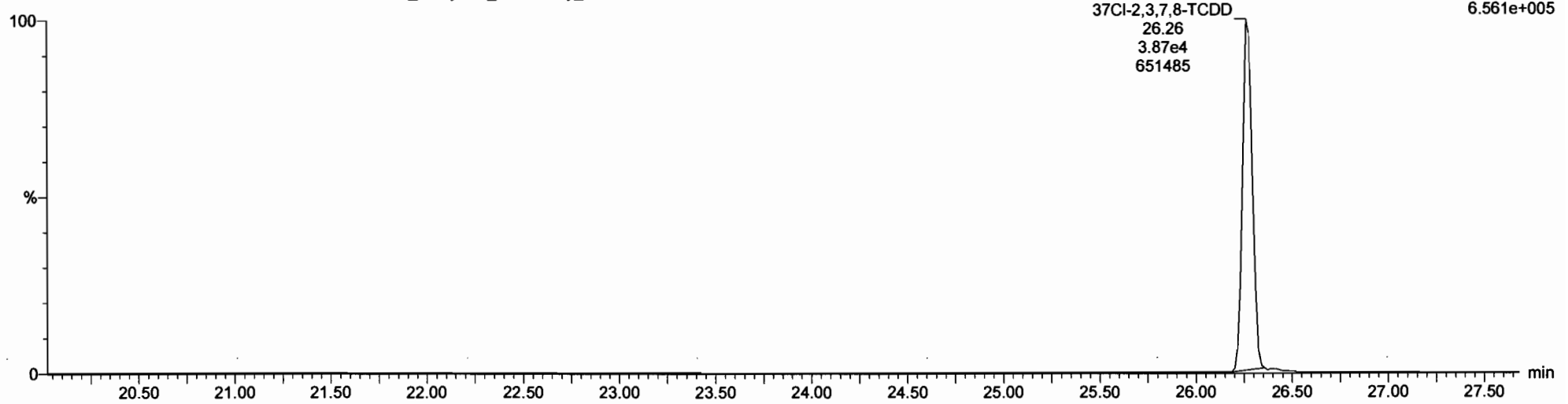


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37CI-2,3,7,8-TCDD

191021D3_9
1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-05 PDI-040SC-A-10-11.3-190930

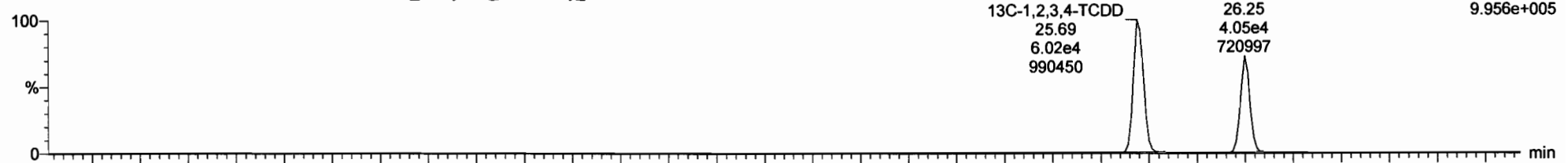
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6.561e+005



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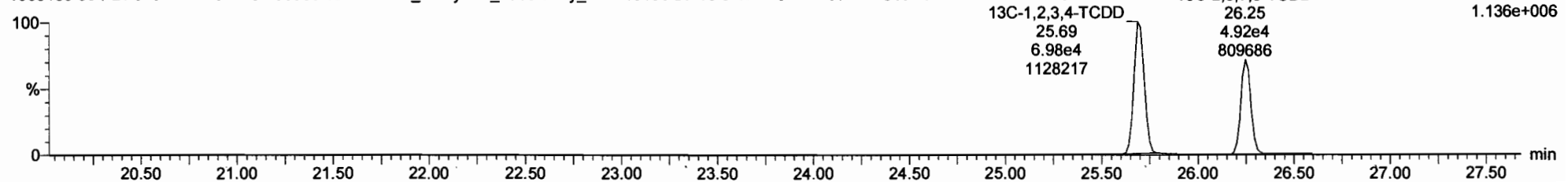
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F1:SIR of 15 channels,EI+
331.9368
9.956e+005



191021D3_9
1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-05 PDI-040SC-A-10-11.3-190930

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Vista Analytical Laboratory

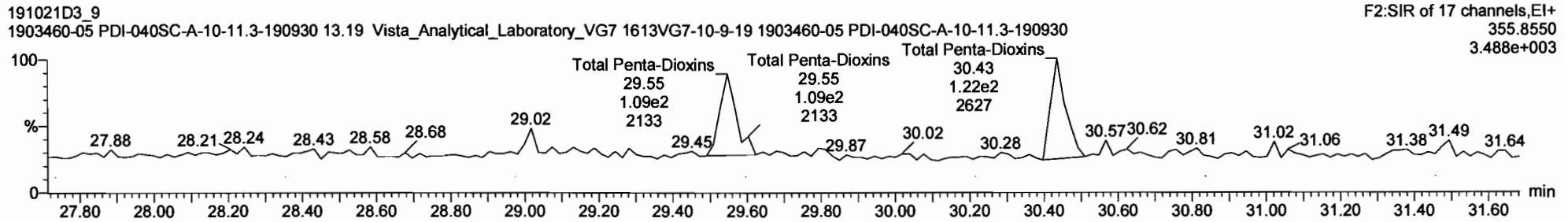
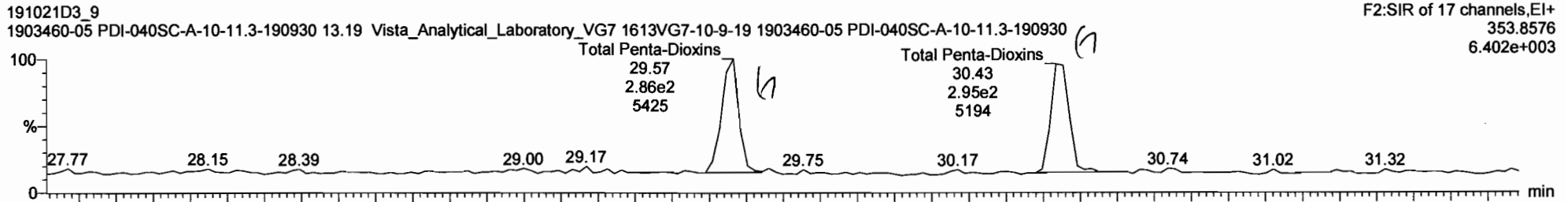
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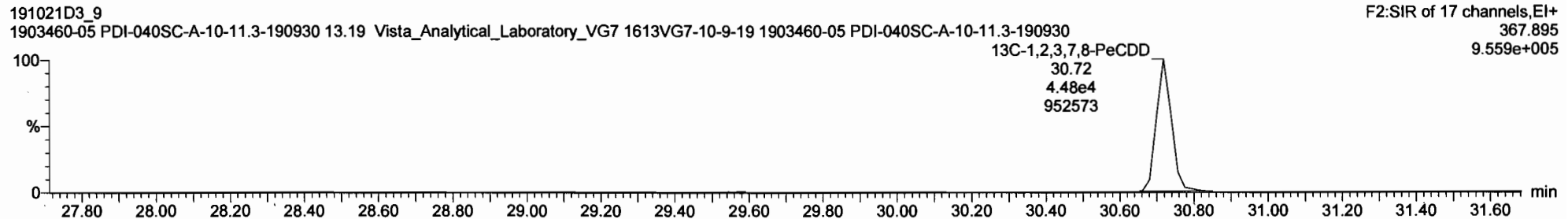
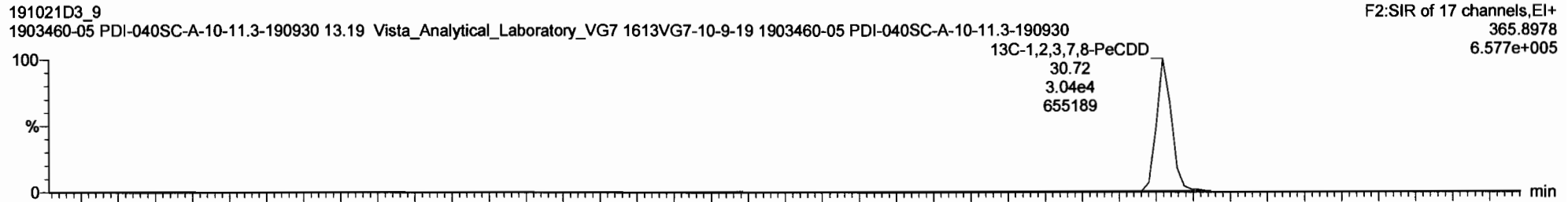
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Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

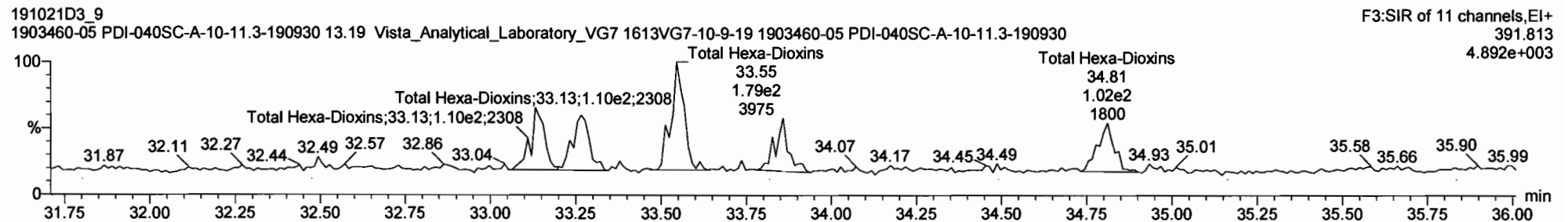
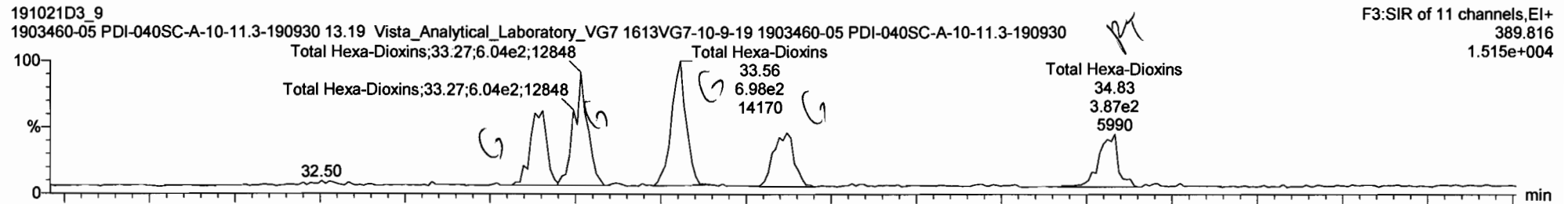
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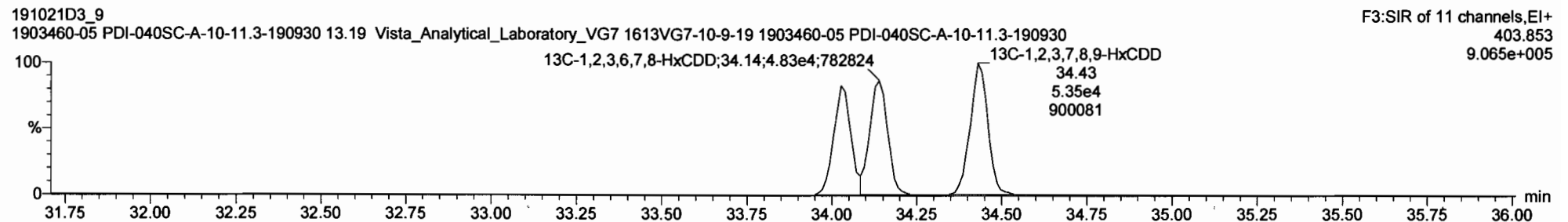
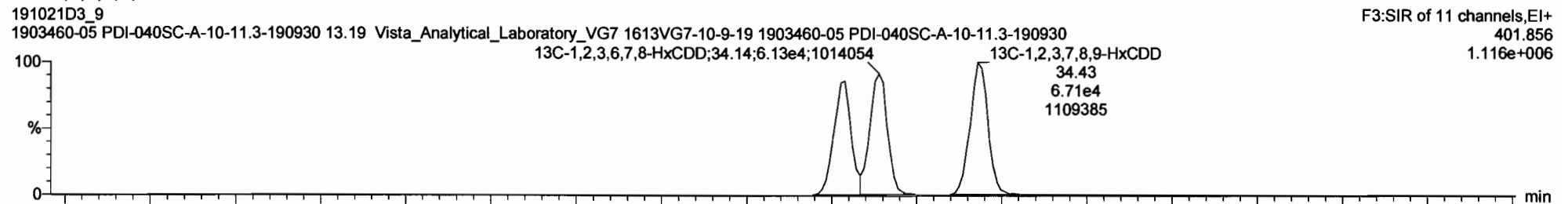
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Total Hexa-Dioxins



13C-1,2,3,4,7,8-HxCDD



Vista Analytical Laboratory

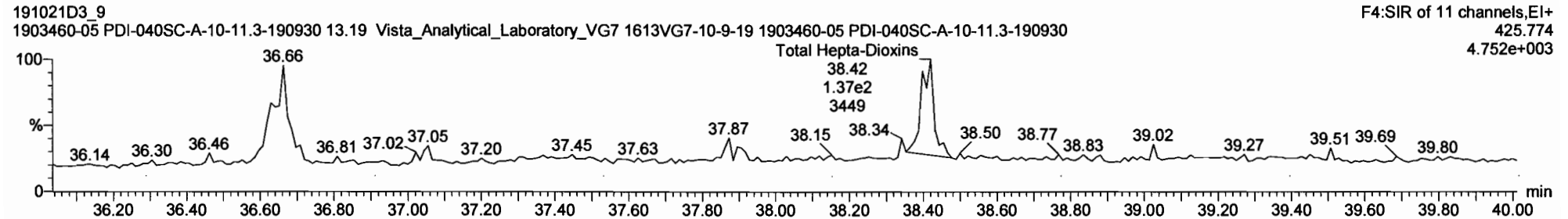
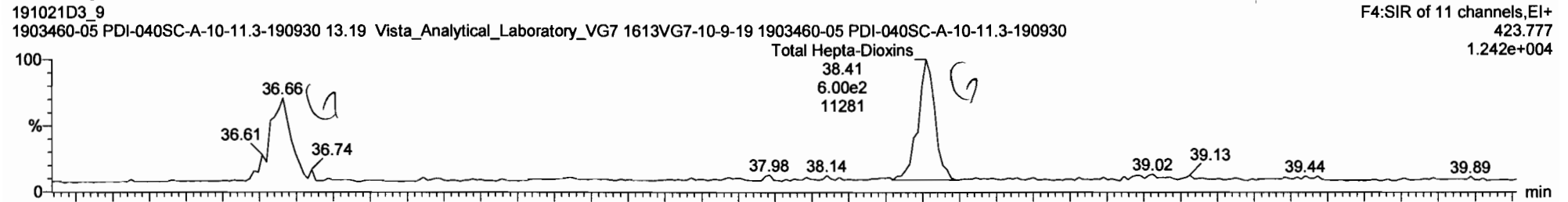
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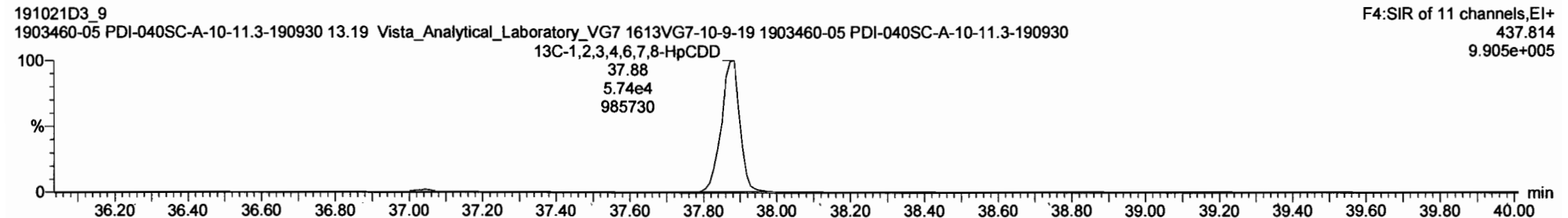
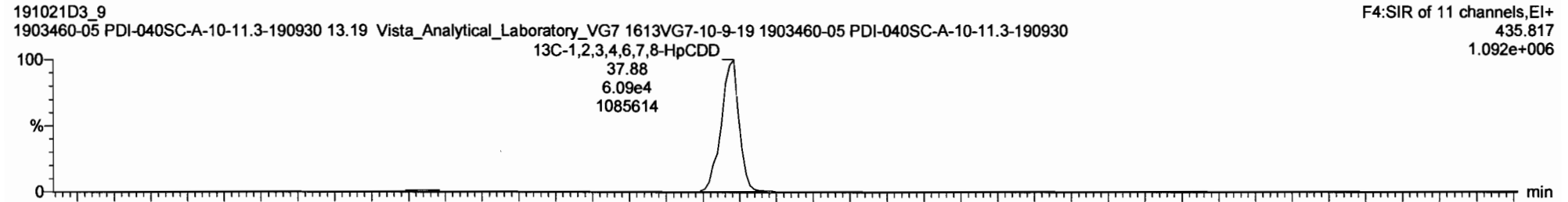
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Total Hepta-Dioxins

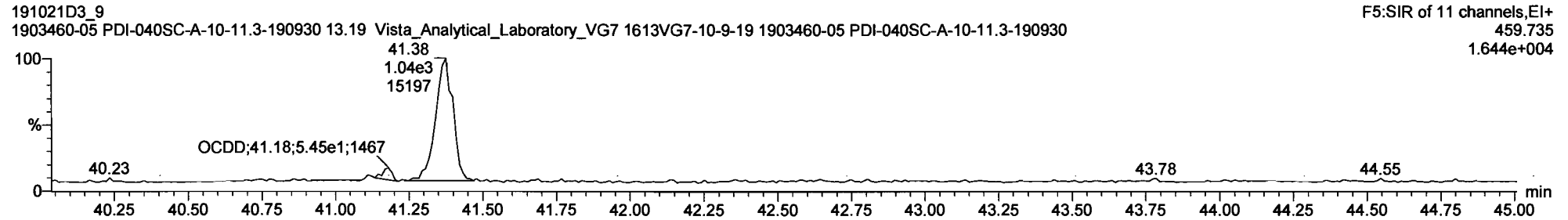
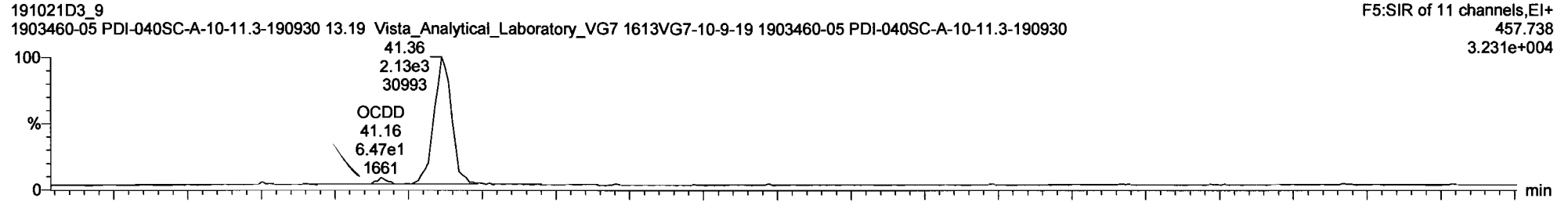


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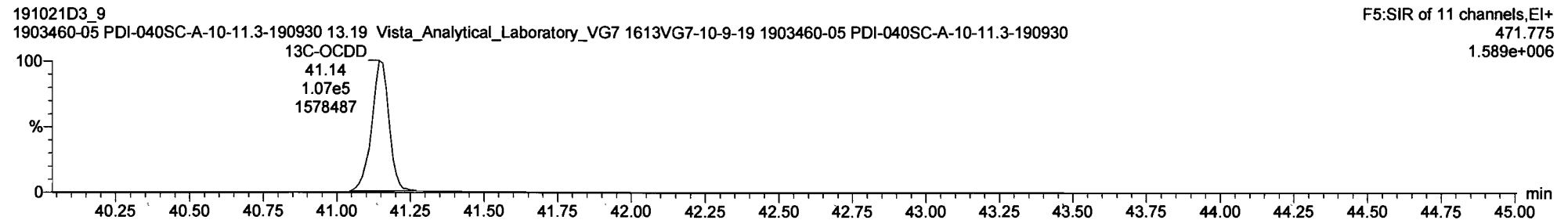
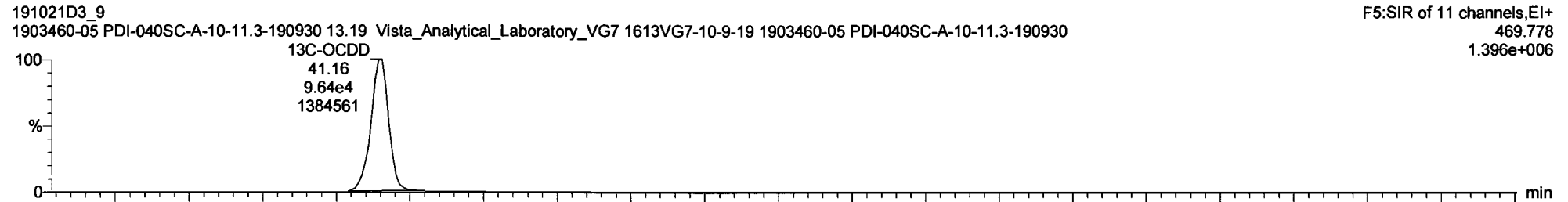


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OCDD

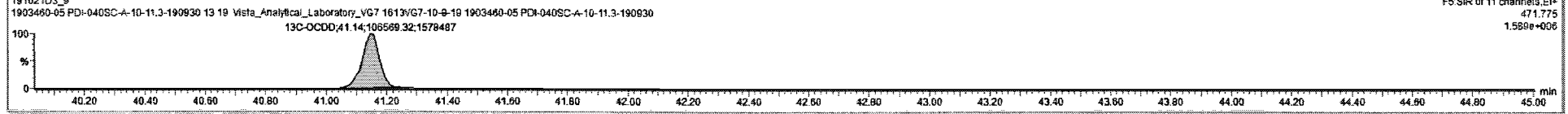
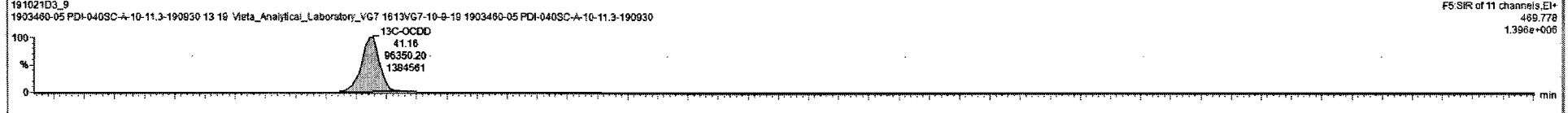
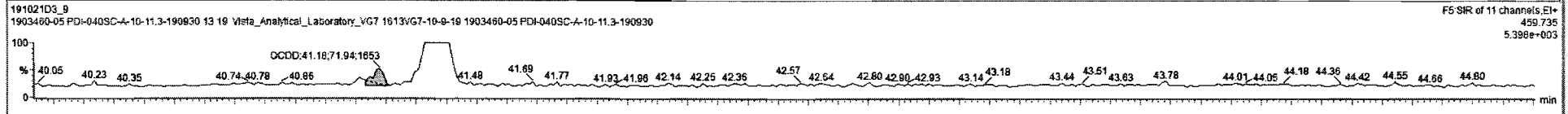
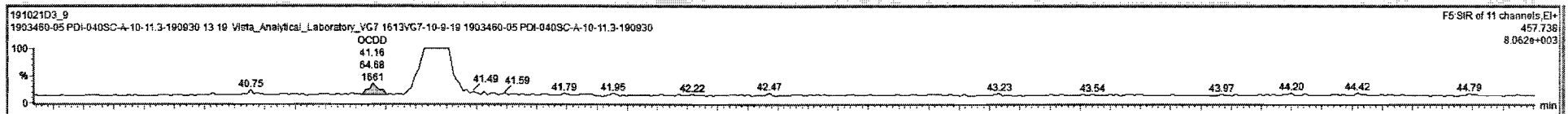


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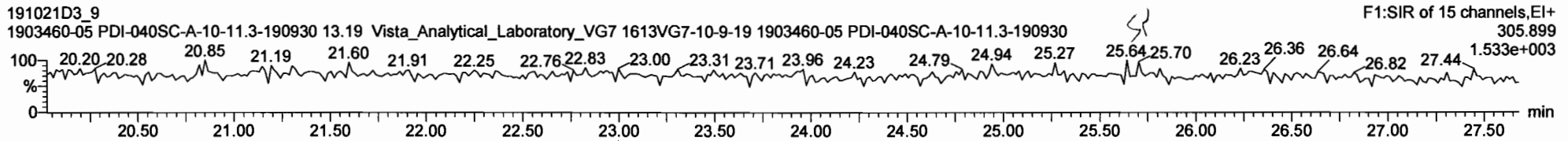
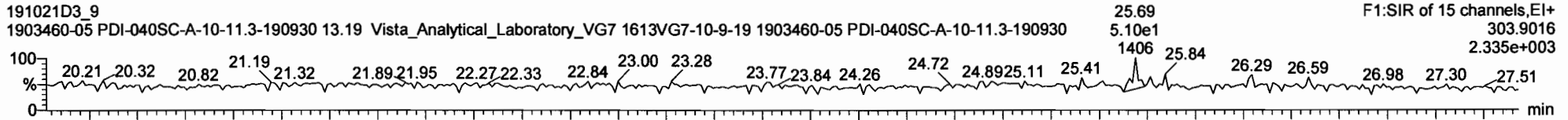
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|---|---------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|--------|
| 1 | 1,2,3,7,8-TCDD | | 8.96e4 | 18 | | | 0.905 | 10.020 | 28.28 | | | 1.001 | NO | | | 0.147 | |
| 2 | 1,2,3,7,8-PeCDD | | 7.53e4 | 19 | | | 0.903 | 10.020 | 30.74 | | | 1.001 | NO | | | 0.158 | |
| 3 | 1,2,3,4,7,8-HxCDD | | 9.97e4 | 20 | | | 1.101 | 10.020 | 34.05 | | | 1.000 | NO | | | 0.144 | |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.10e5 | 21 | | | 0.939 | 10.020 | 34.14 | | | 1.000 | NO | | | 0.158 | |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.21e5 | 22 | | | 0.961 | 10.020 | 34.46 | | | 1.001 | NO | | | 0.140 | |
| 6 | 1,2,3,4,6,7,8-HpCDD | | 1.18e5 | 23 | | | 0.979 | 10.020 | 37.89 | | | 1.000 | NO | | | 0.120 | |
| 7 | OCDD | 1.57e2 | 2.03e5 | 24 | 0.90 | NO | 0.958 | 10.020 | 41.16 | 41.16 | 1.000 | 1.000 | NO | 0.2804 | | 0.173 | 0.2804 |
| 8 | 2,3,7,8-TCDF | | 1.17e5 | 25 | | | 0.950 | 10.020 | 25.50 | | | 1.001 | NO | | | 0.164 | |
| 9 | 1,2,3,7,8-PeCDF | | 1.04e5 | 26 | | | 0.960 | 10.020 | 29.59 | | | 1.001 | NO | | | 0.130 | |

| # | Name | Pred.RT | RT | n1 Resp | n2 Resp | Pred.RA | RA | nty | EMPC | Conc. |
|---|------|---------|----|---------|---------|---------|----|-----|------|-------|
| 1 | | | | | | | | | | |

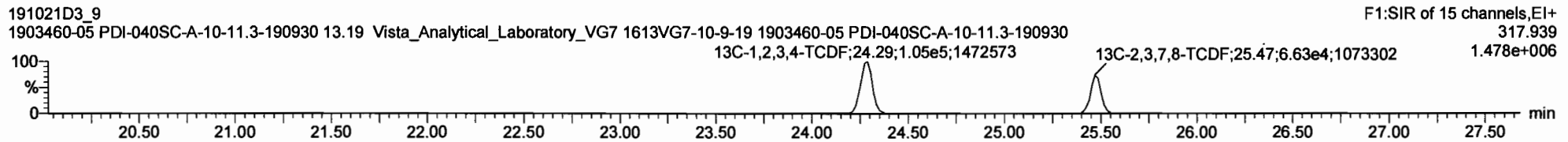
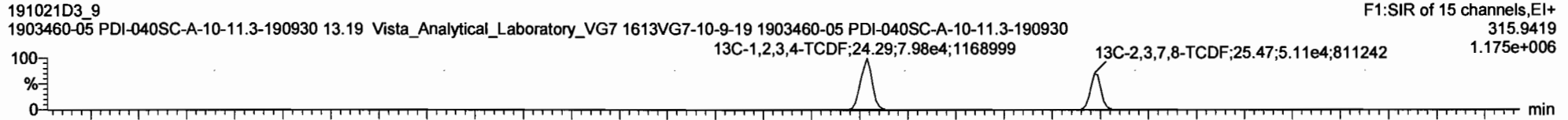


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Description: 1903460-05 PDI-040SC-A-10-11.3-190930 13.19 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

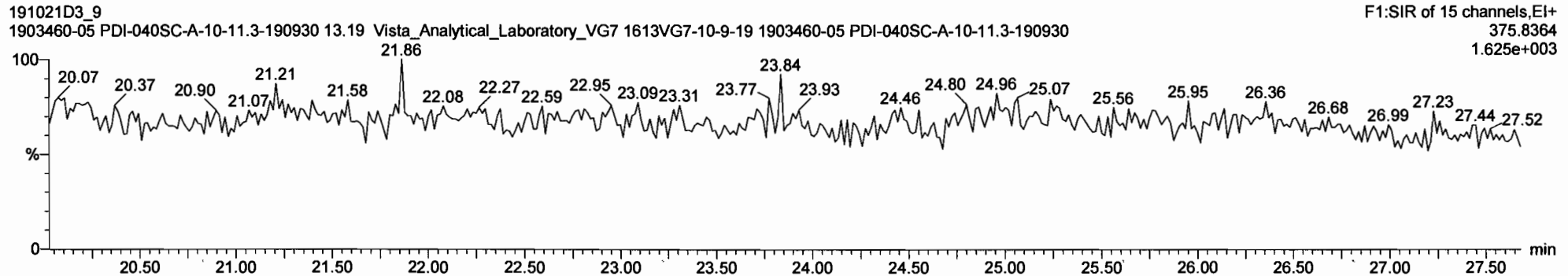
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

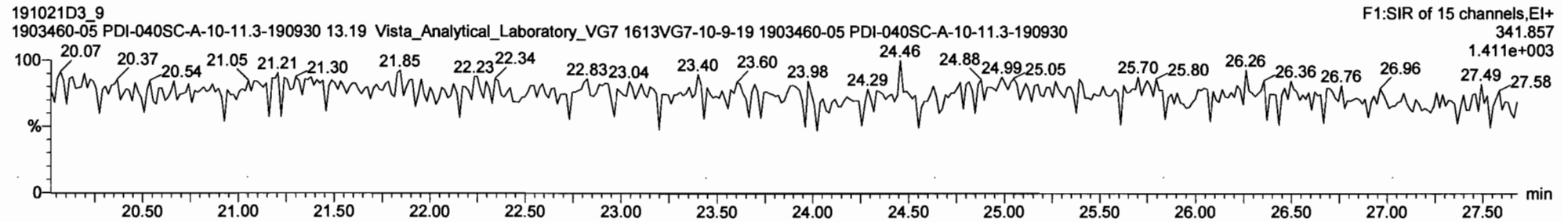
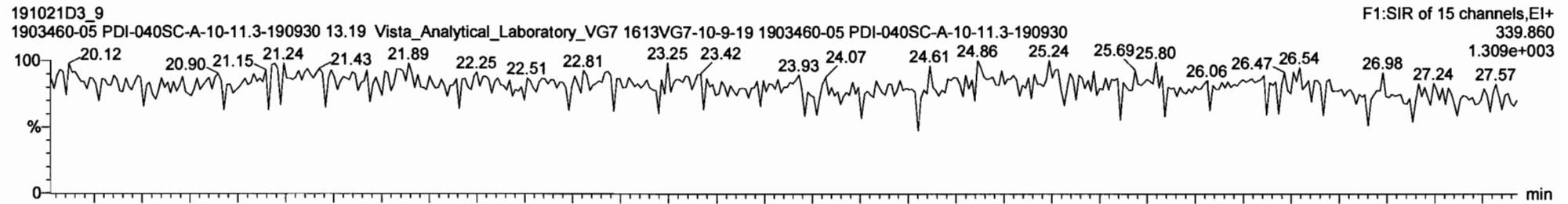
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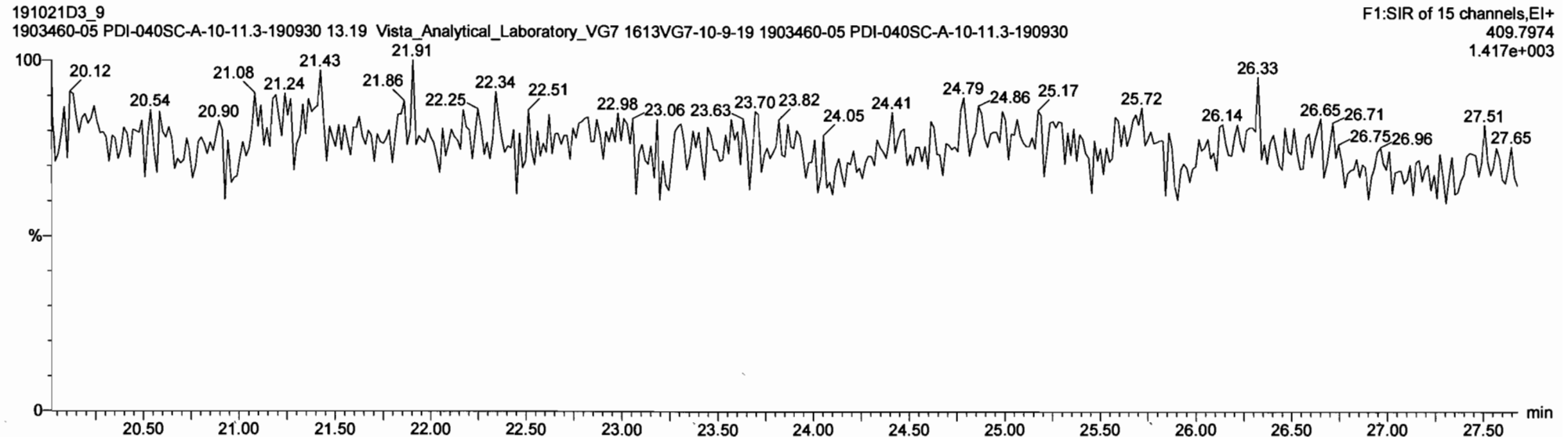
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1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

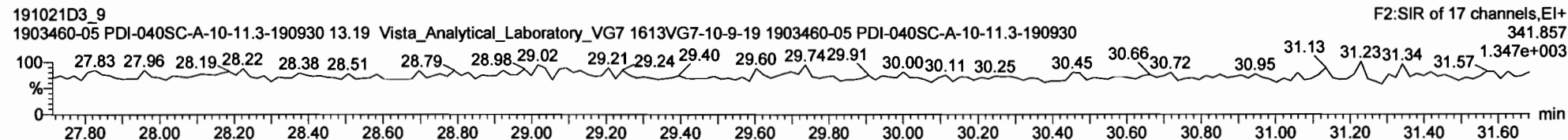
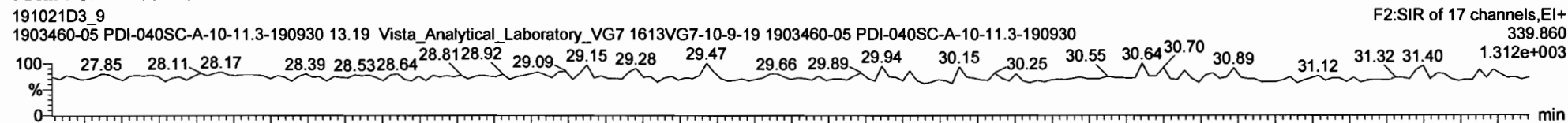
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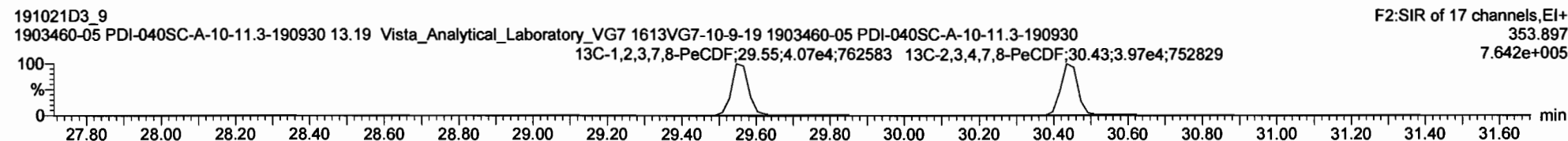
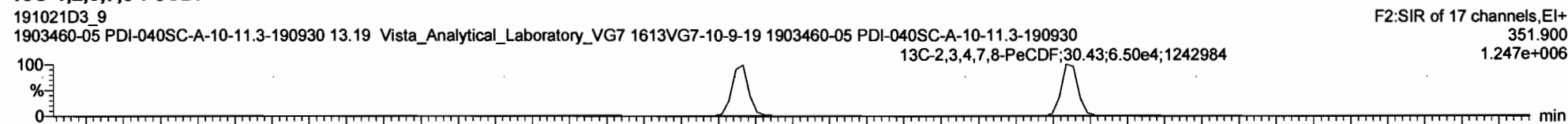
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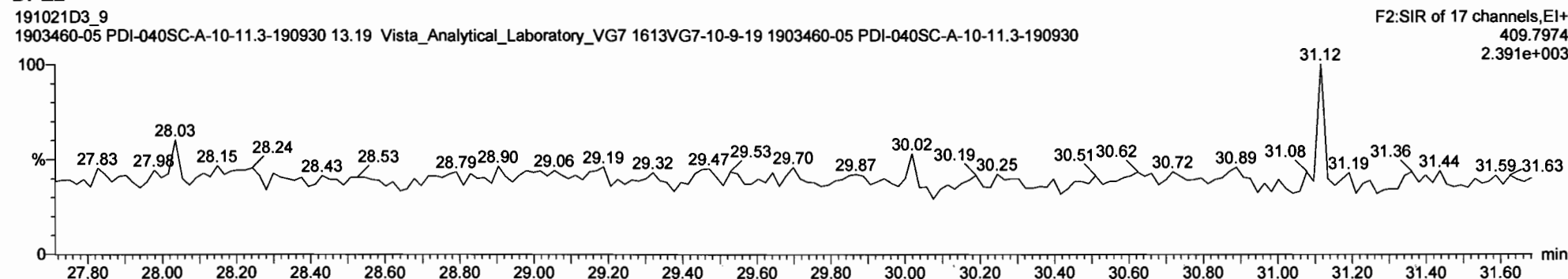
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



Vista Analytical Laboratory

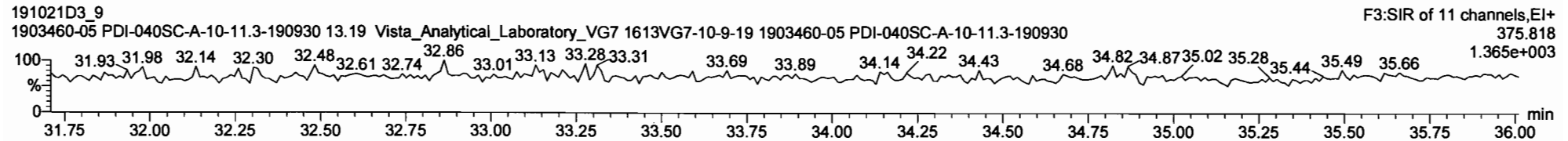
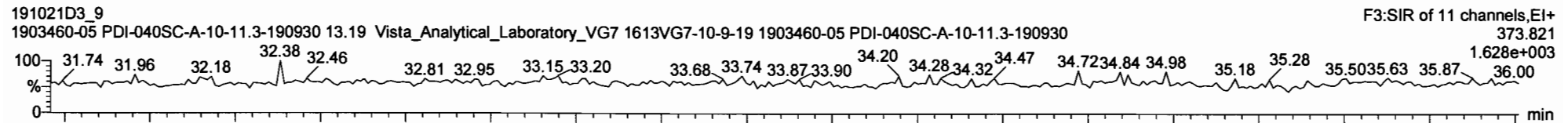
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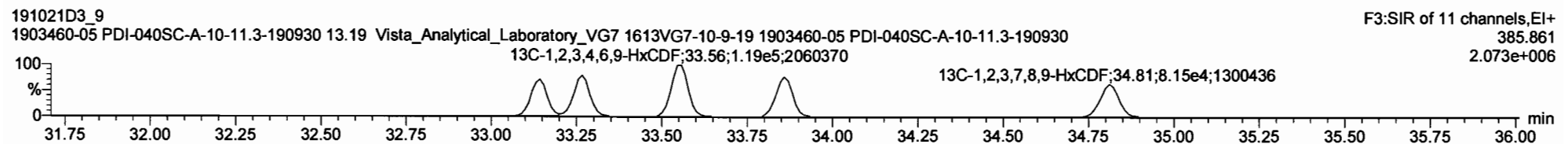
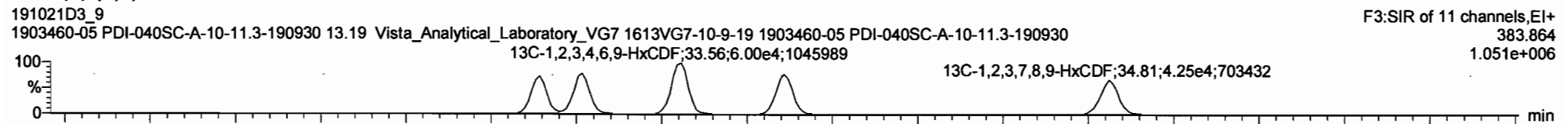
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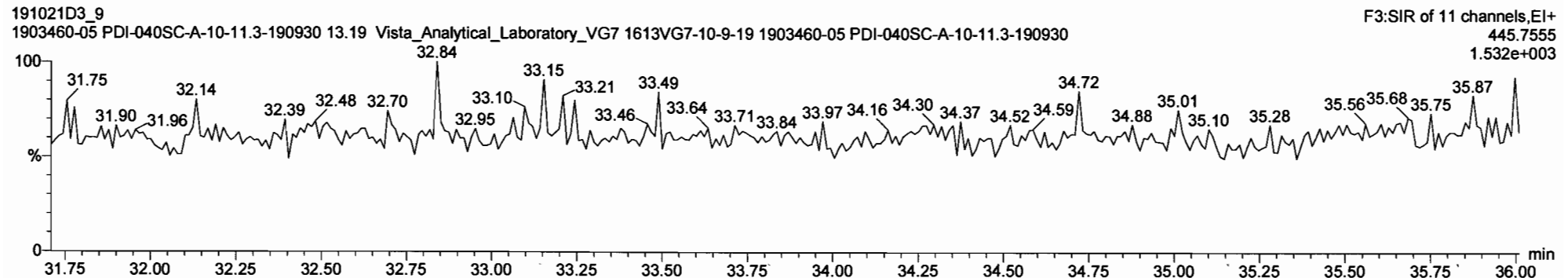
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

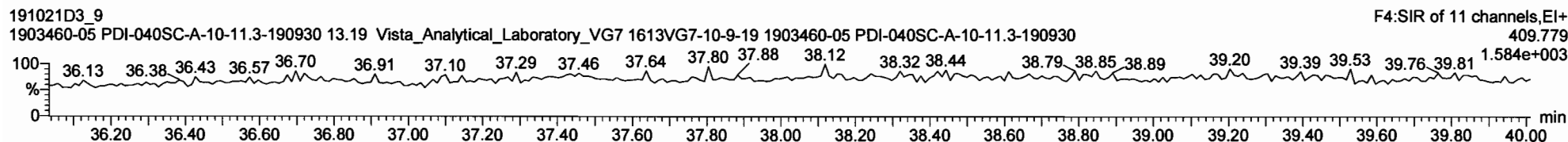
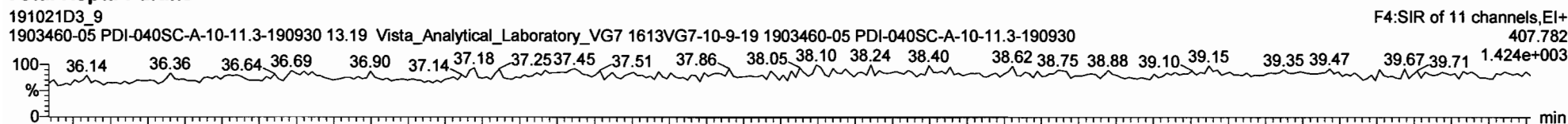


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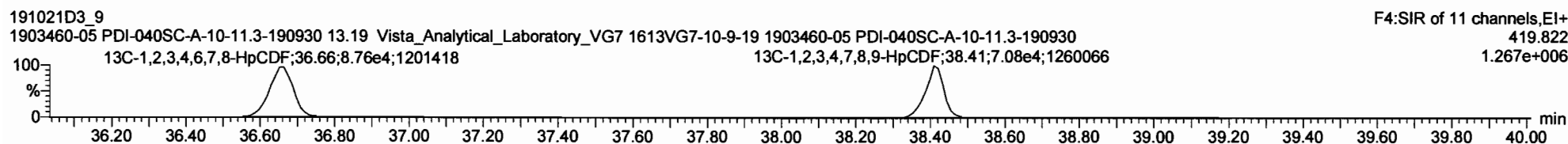
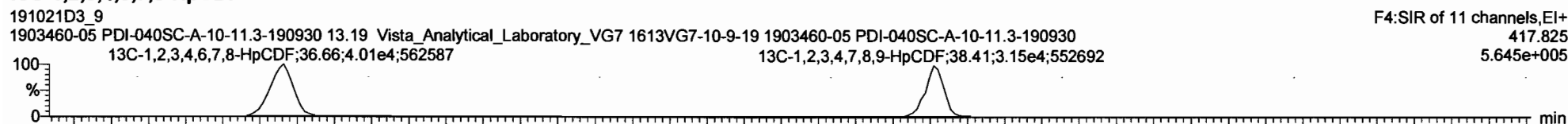


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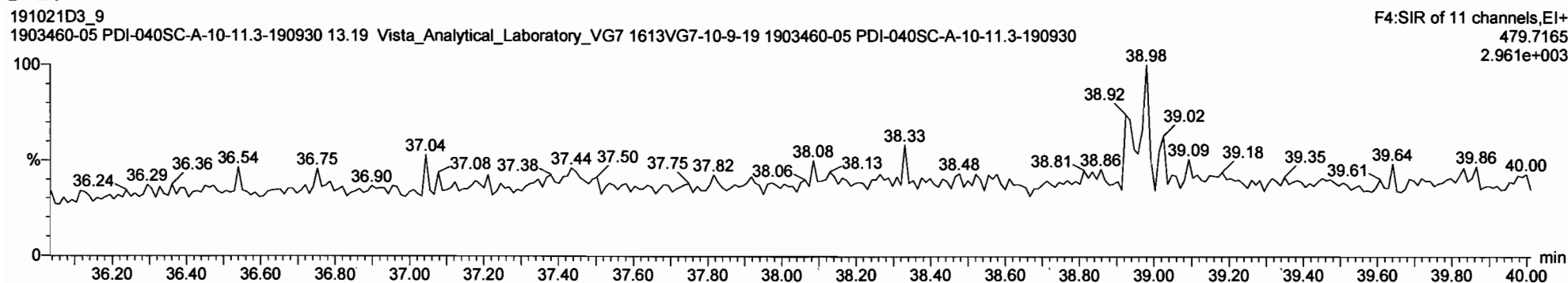
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF

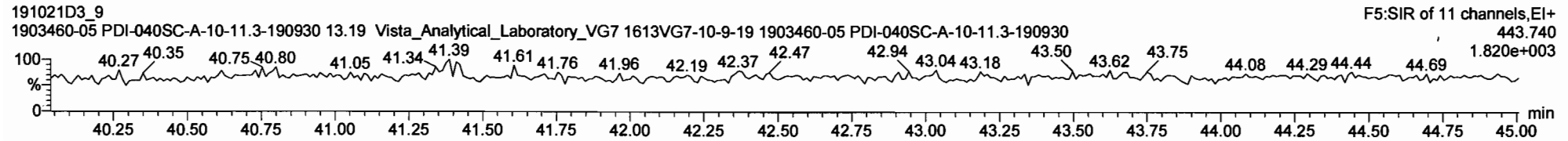
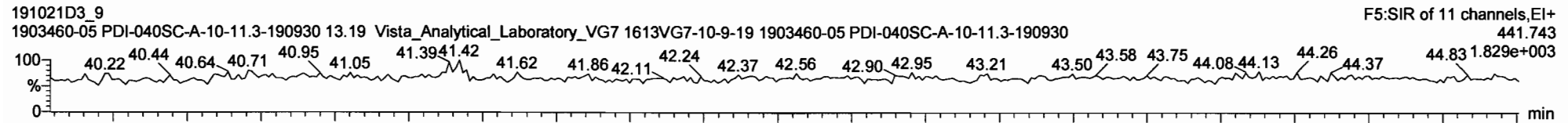


DPE4

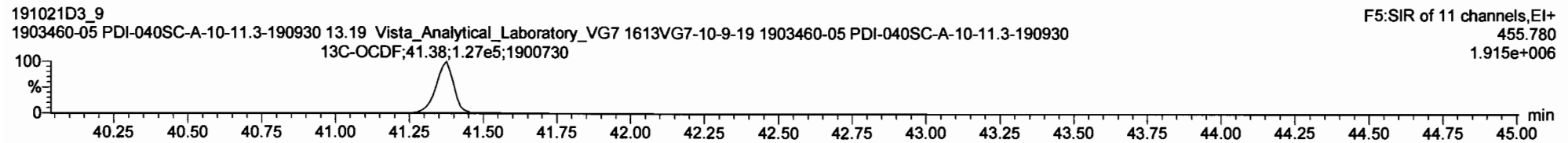
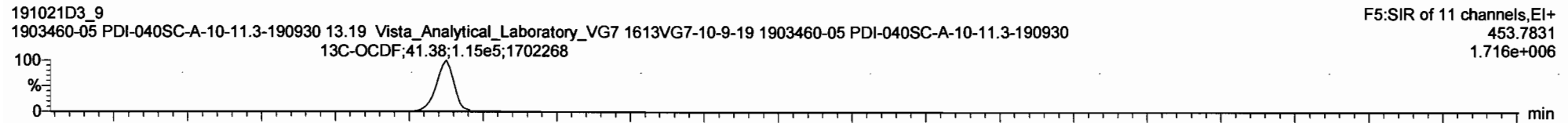


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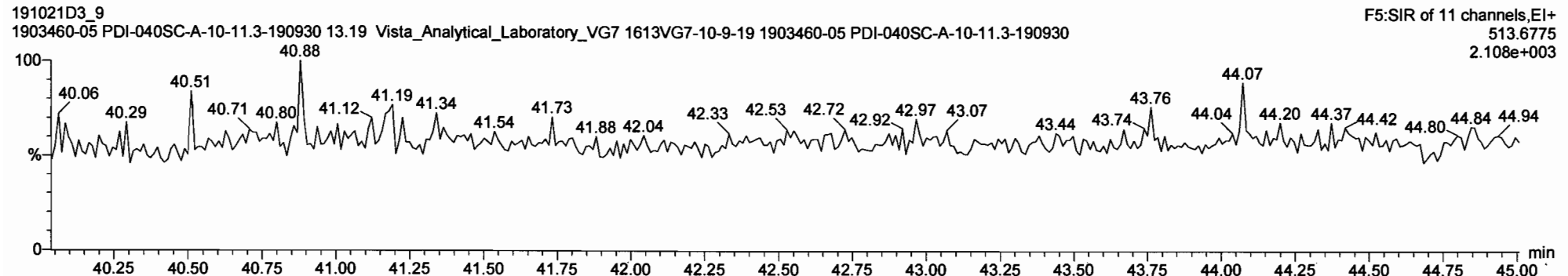
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

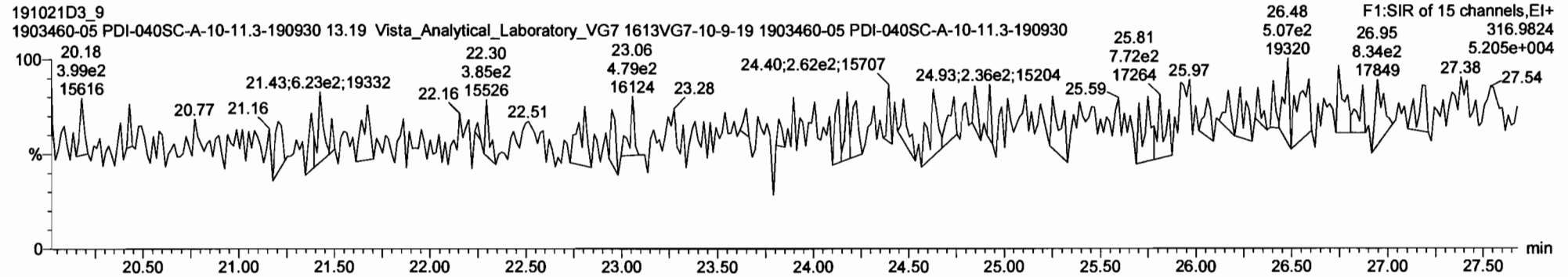
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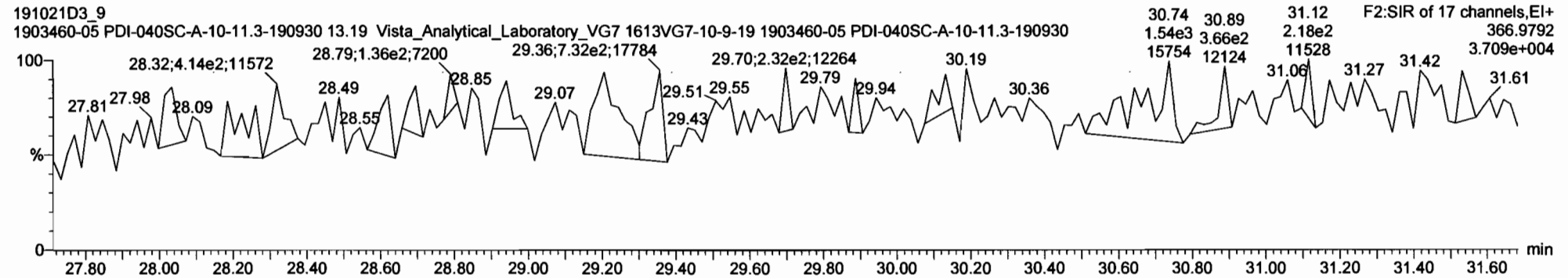
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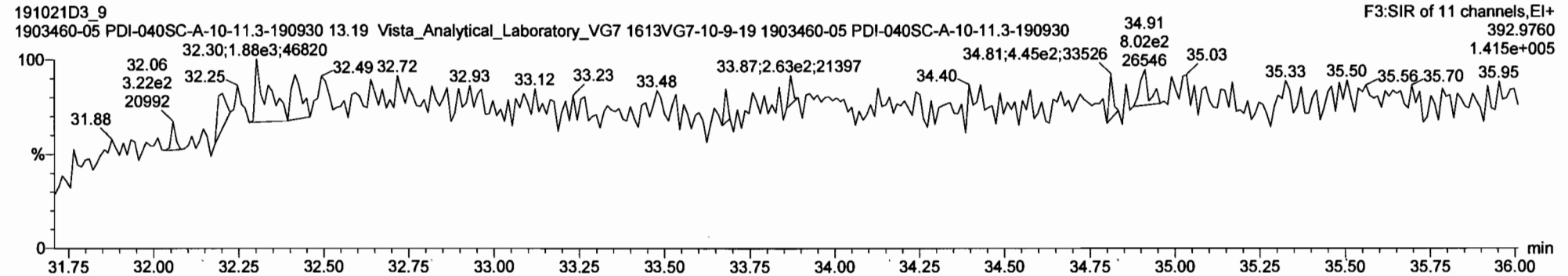
PFK1



PFK2



PFK3



Vista Analytical Laboratory

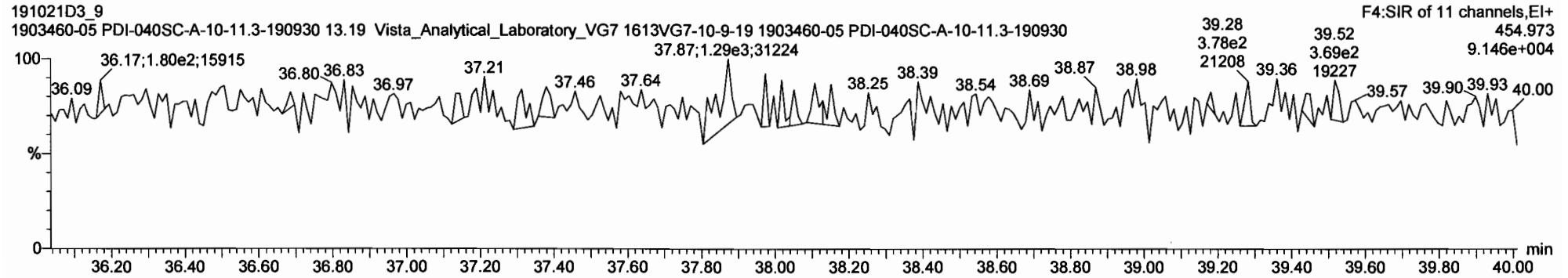
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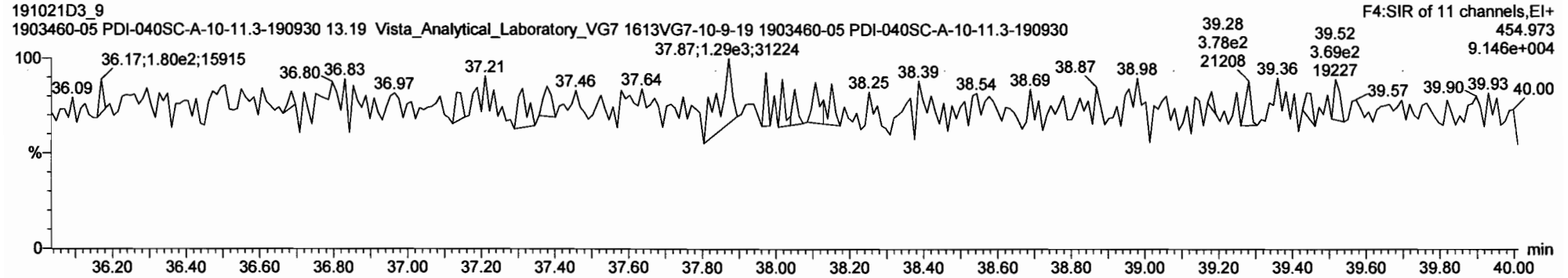
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

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Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-10.qld

Last Altered: Monday, November 04, 2019 15:24:16 Pacific Standard Time

Printed: Monday, November 04, 2019 15:25:15 Pacific Standard Time

16 11-4-19

CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10-21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 15:16:42

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Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | W | RR | | Y/N | Pre | | | | | | | |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|-------|-------|---------|-------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 1.47e5 | 10.2042 | 0.905 | | | 1.001 | | | 26.26 | | | | 0.124 |
| 2 | 1,2,3,7,8-PeCDD | | 1.28e5 | 10.2042 | 0.903 | | | 1.001 | | | 30.74 | | | | 0.127 |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.25e5 | 10.2042 | 1.101 | | | 1.000 | | | 34.03 | | | | 0.233 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.35e5 | 10.2042 | 0.939 | | | 1.000 | | | 34.13 | | | | 0.270 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.36e5 | 10.2042 | 0.961 | | | 1.001 | | | 34.46 | | | | 0.256 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 4.12e2 | 1.28e5 | 10.2042 | 0.979 | 1.145 | NO | 1.000 | 1.000 | 37.88 | 37.88 | 0.64535 | 0.645 | 0.109 | |
| 7 | OCDD | 3.04e3 | 2.09e5 | 10.2042 | 0.959 | 0.822 | NO | 1.000 | 1.000 | 41.16 | 41.16 | 5.9374 | 5.94 | 0.178 | |
| 8 | 2,3,7,8-TCDF | | 2.01e5 | 10.2042 | 0.950 | | | 1.001 | | | 25.50 | | | | 0.107 |
| 9 | 1,2,3,7,8-PeCDF | | 1.97e5 | 10.2042 | 0.960 | | | 1.001 | | | 29.57 | | | | 0.226 |
| 10 | 2,3,4,7,8-PeCDF | | 1.85e5 | 10.2042 | 1.015 | | | 1.001 | | | 30.47 | | | | 0.217 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.52e5 | 10.2042 | 1.177 | | | 1.000 | | | 33.14 | | | | 0.0719 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.70e5 | 10.2042 | 1.069 | | | 1.000 | | | 33.27 | | | | 0.0705 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.59e5 | 10.2042 | 1.114 | | | 1.001 | | | 33.89 | | | | 0.0783 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.49e5 | 10.2042 | 1.062 | | | 1.000 | | | 34.81 | | | | 0.0941 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.38e5 | 10.2042 | 1.128 | | | 1.001 | | | 36.69 | | | | 0.109 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.18e5 | 10.2042 | 1.280 | | | 1.000 | | | 38.41 | | | | 0.0873 |
| 17 | OCDF | | 2.59e5 | 10.2042 | 0.947 | | | 1.000 | | | 41.37 | | | | 0.152 |
| 18 | 13C-2,3,7,8-TCDD | 1.47e5 | 1.50e5 | 10.2042 | 1.095 | 0.775 | NO | 1.021 | 1.021 | 26.23 | 26.23 | 175.50 | 89.5 | 0.351 | |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.28e5 | 1.50e5 | 10.2042 | 0.881 | 0.616 | NO | 1.187 | 1.196 | 30.48 | 30.72 | 190.16 | 97.0 | 0.281 | |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.25e5 | 1.80e5 | 10.2042 | 0.642 | 1.285 | NO | 1.014 | 1.014 | 34.02 | 34.02 | 211.44 | 107.9 | 0.623 | |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.35e5 | 1.80e5 | 10.2042 | 0.856 | 1.268 | NO | 1.017 | 1.017 | 34.13 | 34.13 | 171.78 | 87.6 | 0.468 | |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.36e5 | 1.80e5 | 10.2042 | 0.807 | 1.259 | NO | 1.026 | 1.026 | 34.43 | 34.42 | 184.01 | 93.9 | 0.496 | |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.28e5 | 1.80e5 | 10.2042 | 0.654 | 1.056 | NO | 1.126 | 1.129 | 37.78 | 37.87 | 212.77 | 108.6 | 0.762 | |
| 24 | 13C-OCDD | 2.09e5 | 1.80e5 | 10.2042 | 0.580 | 0.915 | NO | 1.226 | 1.227 | 41.14 | 41.16 | 392.54 | 100.1 | 0.526 | |
| 25 | 13C-2,3,7,8-TCDF | 2.01e5 | 2.17e5 | 10.2042 | 1.035 | 0.815 | NO | 0.993 | 0.992 | 25.52 | 25.47 | 175.44 | 89.5 | 0.369 | |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.97e5 | 2.17e5 | 10.2042 | 0.854 | 1.539 | NO | 1.143 | 1.150 | 29.36 | 29.55 | 208.62 | 106.4 | 0.599 | |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.85e5 | 2.17e5 | 10.2042 | 0.847 | 1.600 | NO | 1.176 | 1.185 | 30.22 | 30.44 | 197.63 | 100.8 | 0.604 | |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.52e5 | 1.80e5 | 10.2042 | 0.832 | 0.512 | NO | 0.987 | 0.988 | 33.12 | 33.14 | 199.36 | 101.7 | 0.682 | |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.70e5 | 1.80e5 | 10.2042 | 1.034 | 0.521 | NO | 0.991 | 0.991 | 33.24 | 33.26 | 179.24 | 91.5 | 0.548 | |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.59e5 | 1.80e5 | 10.2042 | 0.953 | 0.512 | NO | 1.009 | 1.009 | 33.86 | 33.85 | 181.14 | 92.4 | 0.595 | |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.49e5 | 1.80e5 | 10.2042 | 0.828 | 0.514 | NO | 1.039 | 1.037 | 34.85 | 34.81 | 195.52 | 99.8 | 0.685 | |

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Dataset: U:\VG7.PRO\Results\191021D3\191021D3-10.qld

Last Altered: Monday, November 04, 2019 15:24:16 Pacific Standard Time

Printed: Monday, November 04, 2019 15:25:15 Pacific Standard Time

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 Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | IS Area | Wt/Vol | RRF | RA | Y/N | Pred | RRT | Pred RT | RT | Conc | EMPC | DL |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|---------|-------|---------|-------|---------------------------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.38e5 | 1.80e5 | 10.2042 | 0.757 | 0.425 | NO | 1.093 | 1.092 | 36.66 | 36.65 | 198.17 | 101.1 | 0.804 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.18e5 | 1.80e5 | 10.2042 | 0.581 | 0.428 | NO | 1.143 | 1.145 | 38.35 | 38.41 | 221.86 | 113.2 | 1.05 |
| 34 | 13C-OCDF | 2.59e5 | 1.80e5 | 10.2042 | 0.689 | 0.885 | NO | 1.233 | 1.233 | 41.37 | 41.37 | 409.39 | 104.4 | 0.518 |
| 35 | 37Cl-2,3,7,8-TCDD | 5.83e4 | 1.50e5 | 10.2042 | 1.198 | | | 1.022 | 1.022 | 26.25 | 26.25 | 63.692 | 81.2 | 0.137 |
| 36 | 13C-1,2,3,4-TCDD | 1.50e5 | 1.50e5 | 10.2042 | 1.000 | 0.803 | NO | 1.000 | 1.000 | 25.70 | 25.69 | 196.00 | 100.0 | 0.384 |
| 37 | 13C-1,2,3,4-TCDF | 2.17e5 | 2.17e5 | 10.2042 | 1.000 | 0.812 | NO | 1.000 | 1.000 | 24.28 | 24.27 | 196.00 | 100.0 | 0.382 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.80e5 | 1.80e5 | 10.2042 | 1.000 | 0.517 | NO | 1.000 | 1.000 | 33.55 | 33.55 | 196.00 | 100.0 | 0.567 |
| 39 | Total Tetra-Dioxins | | 1.47e5 | 10.2042 | 0.901 | | | 0.000 | | 25.50 | | | | 0.0507 0.1124 |
| 40 | Total Penta-Dioxins | | 1.28e5 | 10.2042 | 0.872 | | | 0.000 | | 30.00 | | 0.00000 | 0.359 | 0.0666 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.2042 | 0.976 | | | 0.000 | | 33.80 | | 0.53992 | 0.540 | 0.258 |
| 42 | Total Hepta-Dioxins | | 1.28e5 | 10.2042 | 0.989 | | | 0.000 | | 37.75 | | 1.7687 | 1.77 | 0.108 |
| 43 | Total Tetra-Furans | | 2.01e5 | 10.2042 | 0.943 | | | 0.000 | | 24.00 | | | | 0.0503 0.1107 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.2042 | 0.940 | | | 0.000 | | 27.63 | | | | 0.0369 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.2042 | 0.940 | | | 0.000 | | 30.00 | | 0.00000 | 0.263 | 0.198 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.2042 | 1.078 | | | 0.000 | | 33.00 | | | | 0.0425 0.10941 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.2042 | 1.135 | | | 0.000 | | 37.75 | | | | 0.0534 0.1109 |

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Dataset: U:\VG7.PRO\Results\191021D3\191021D3-10.qld
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Calibration: 04 Nov 2019 15:16:42

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 Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|------|----|------|---------|----------|---------------|------|------|
| | | | | | | | |

Penta-Dioxins

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|------------------------|-----|-------|---------|-----------|---------------|------|-------------|
| 40 Total Penta-Dioxins | YES | 29.00 | 158.361 | 48781.387 | 0.000 | MM | 0.0000 0.36 |

Hexa-Dioxins

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|-----------------------|----|-------|---------|-----------|---------------|------|-------------|
| 41 Total Hexa-Dioxins | NO | 32.51 | 196.796 | 73879.901 | 5.377 | MM | 0.5399 0.54 |

Hepta-Dioxins

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|------------------------|----|-------|---------|-----------|---------------|------|-------------|
| 6 1,2,3,4,6,7,8-HpCDD | NO | 37.88 | 219.991 | 65639.180 | 6.450 | bb | 0.6453 0.65 |
| 42 Total Hepta-Dioxins | NO | 37.05 | 359.061 | 65639.180 | 11.333 | MM | 1.1233 1.12 |

Tetra-Furans

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|------|----|------|---------|----------|---------------|------|------|
| | | | | | | | |

Penta-Furans function 1

| Name | NY | Area | IS Area | Response | Primary Flags | Conc | EMPG |
|------|----|------|---------|----------|---------------|------|------|
| | | | | | | | |

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Dataset: U:\VG7.PRO\Results\191021D3\191021D3-10.qld

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 Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|-----------------------|-----|-------|---------|------------|----------|--------------|--------|------|
| 45 Total Penta-Furans | YES | 29.00 | 146.421 | 116559.563 | 0.000 | MM | 0.0000 | 0.26 |

Hexa-Furans

| Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hepta-Furans

| Name | NY | RI | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|----|----|------|---------|----------|--------------|------|------|
| | | | | | | | | |

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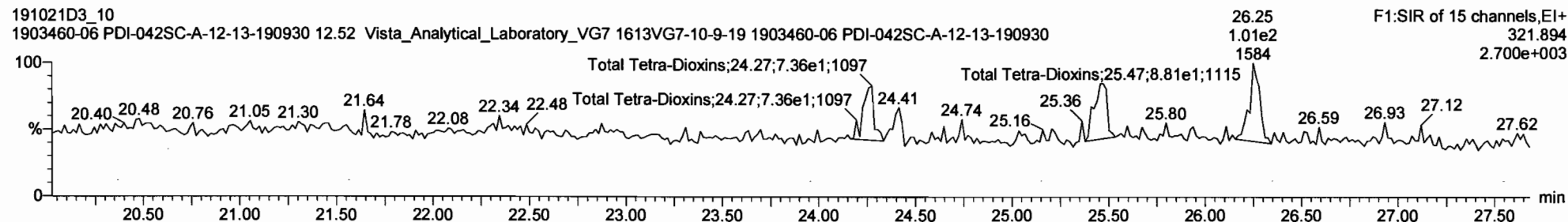
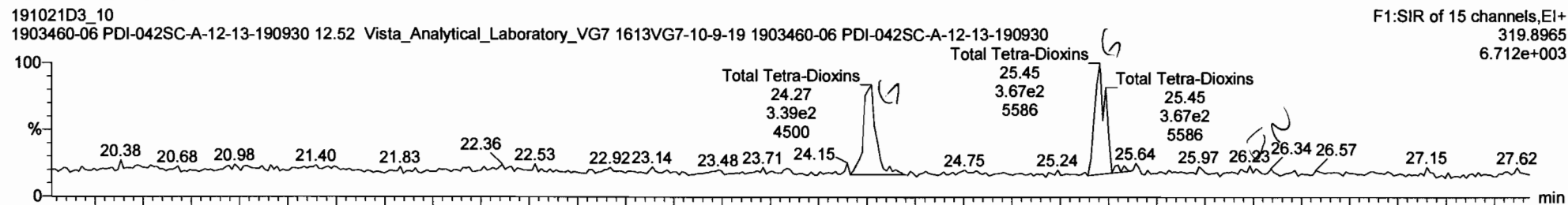
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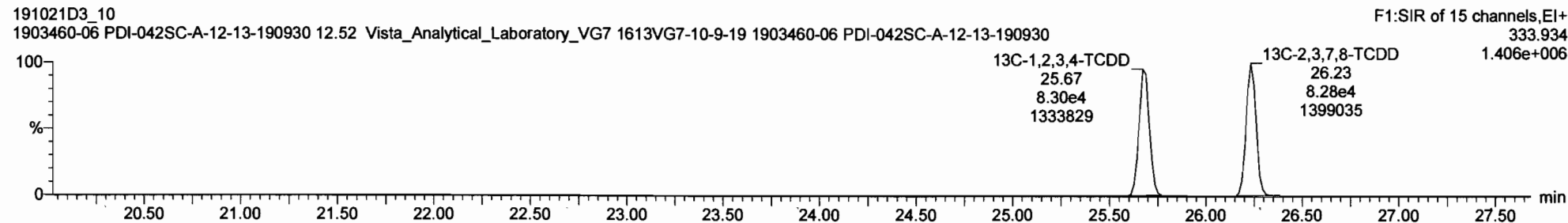
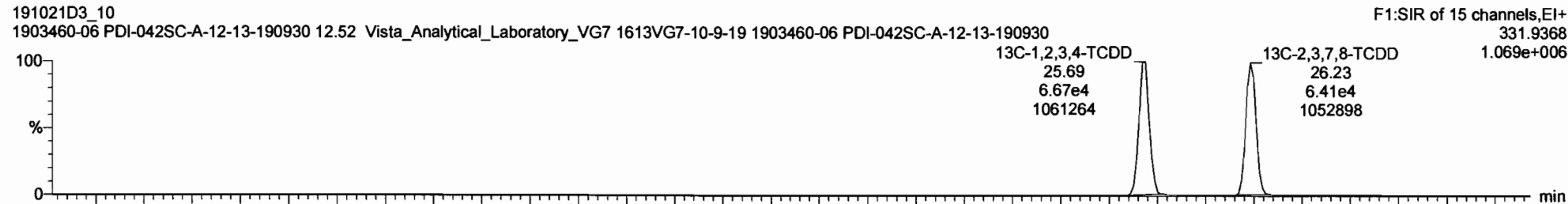
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Name: VG7 191021D3_10, Date: 22-OCT-2019, Time: 09:14:53, ID: 1903460-06 PDI-042SC-A-12-13-190930, Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins



13C-2,3,7,8-TCDD

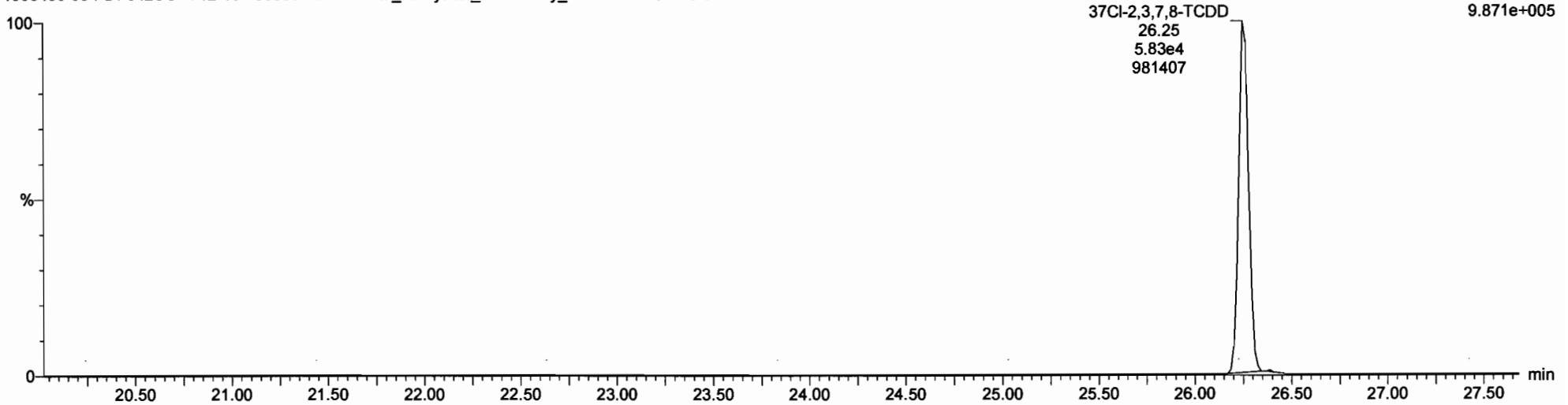


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37Cl-2,3,7,8-TCDD

191021D3_10
1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-06 PDI-042SC-A-12-13-190930

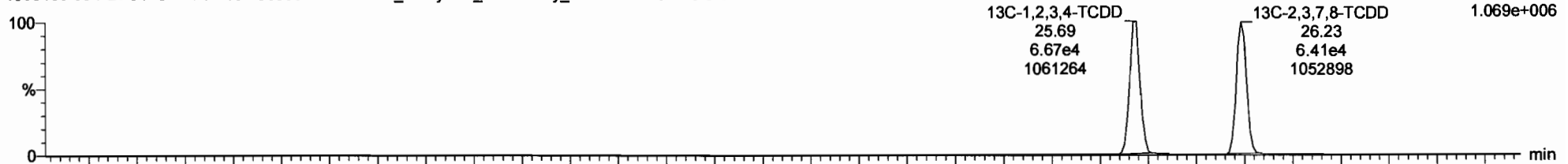
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327.884
9.871e+005



13C-1,2,3,4-TCDD

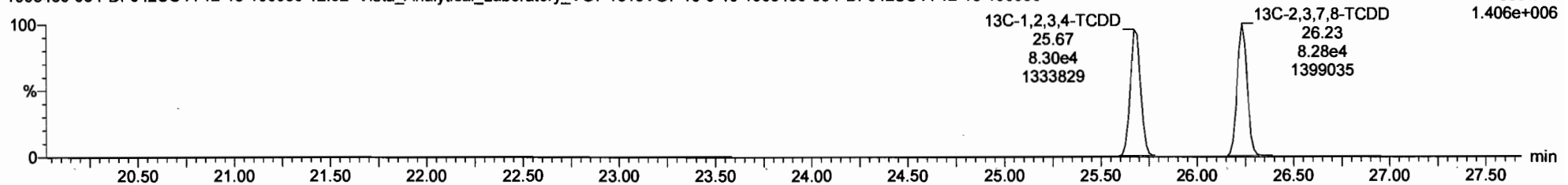
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F1:SIR of 15 channels,EI+
331.9368
1.069e+006



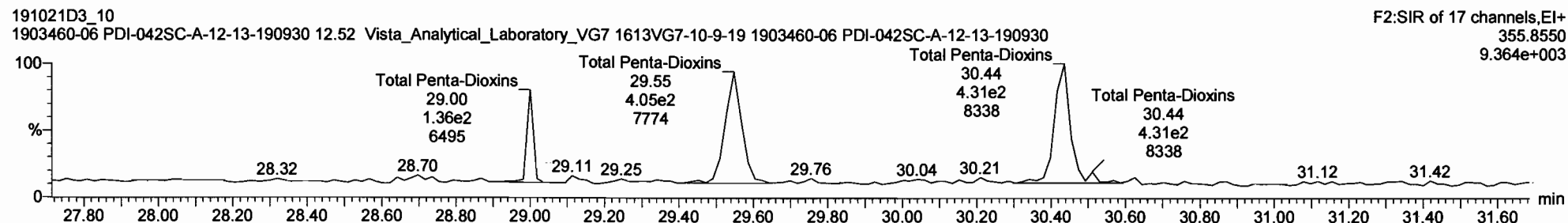
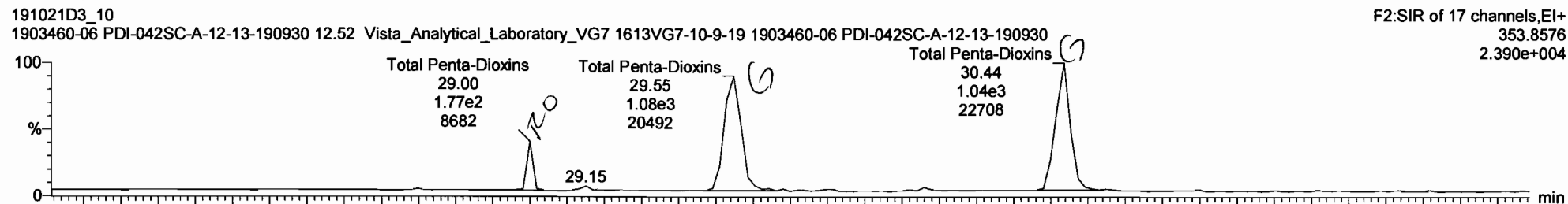
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F1:SIR of 15 channels,EI+
333.934
1.406e+006

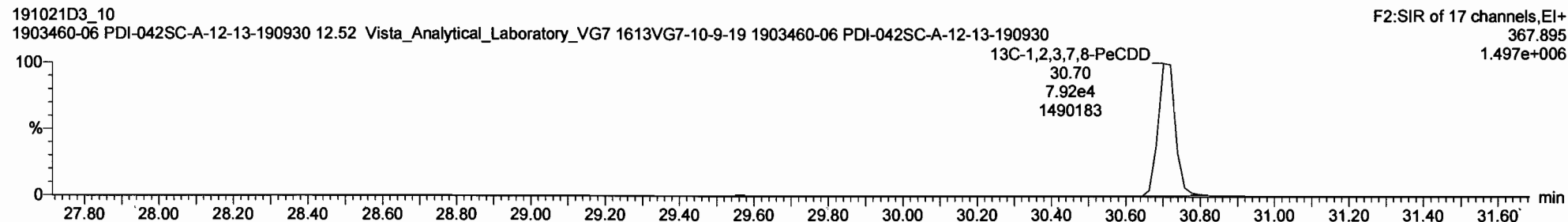
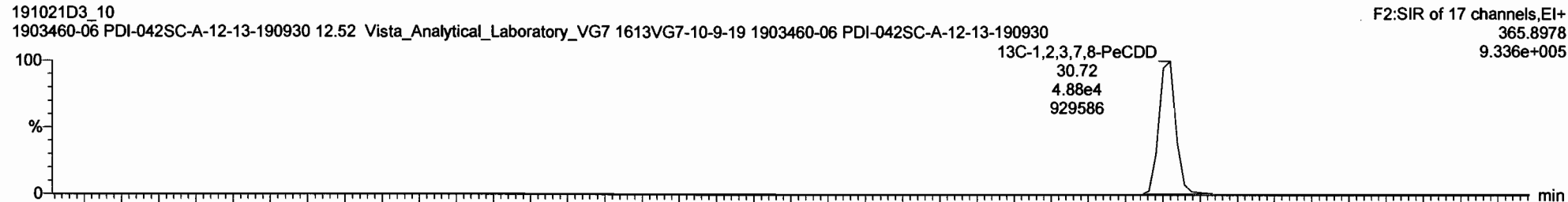


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Total Penta-Dioxins

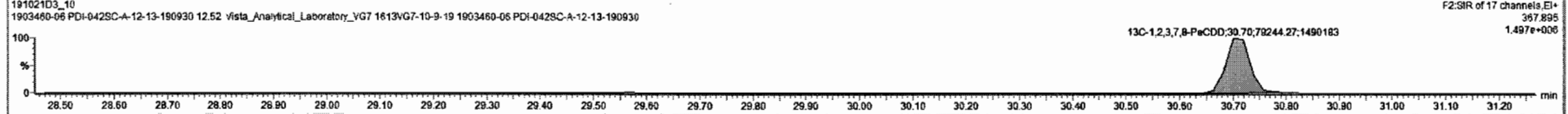
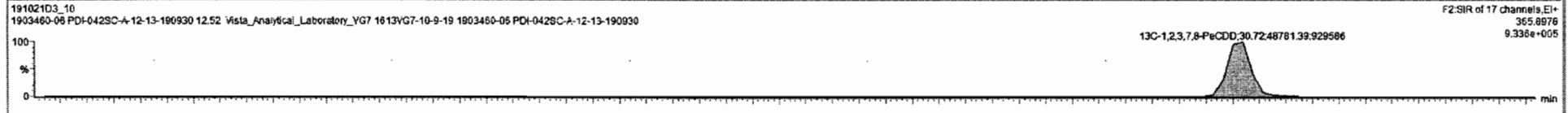
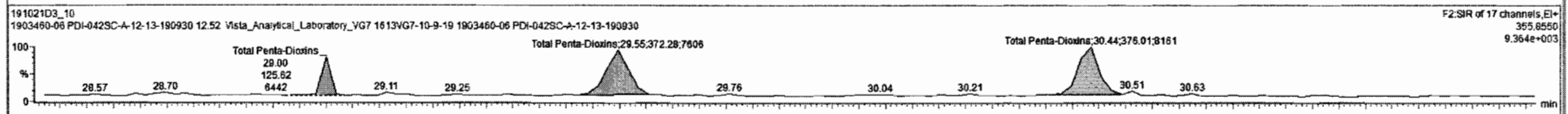
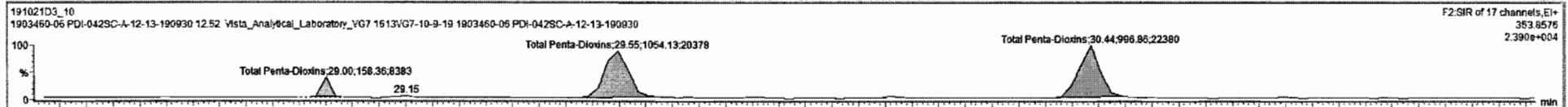


13C-1,2,3,7,8-PeCDD



| # | Name | Resp | IS Resp | IS# | RA | aly | RRF | wt/wt | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc | %Rec | DL | EMPC |
|----|------------------------|------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 40 | Total Penta-Dioxins | | 1.28e5 | | | | 0.872 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.0888 | 2.500 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | | | | 0.978 | 10.204 | 33.80 | | | 0.000 | NO | 0.5583 | | 0.258 | 2.541 |
| 42 | Total Hepta-Dioxins | | 1.28e5 | | | | 0.909 | 10.204 | 37.75 | | | 0.000 | NO | 1.799 | | 0.108 | 2.412 |
| 43 | Total Tetra-Furans | | 2.01e5 | | | | 0.943 | 10.204 | 24.00 | | | 0.000 | NO | | | 0.0563 | |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.940 | 10.204 | 27.63 | | | 0.000 | NO | | | 0.0369 | |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.940 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.198 | 0.2682 |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.078 | 10.204 | 33.00 | | | 0.000 | NO | | | 0.0425 | |
| 47 | Total Hepta-Furans | | 0.00e0 | | | | 1.135 | 10.204 | 37.75 | | | 0.000 | NO | | | 0.0634 | |
| 48 | PK1 | | | | | | | | | | | | | | | | |

| # | Name | Pred RT | RT | Int Resp | Int Resp | Pred RA | RA | aly | EMPC | Conc |
|---|------------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 1 | 40 Total Penta-Dioxins | 30.00 | 29.00 | 1.584e2 | 1.255e2 | 0.630 | 1.26 | YES | 0.35940 | 0.00000 |
| 2 | 40 Total Penta-Dioxins | 30.00 | 29.55 | 1.054e3 | 3.723e2 | 0.630 | 2.83 | YES | 1.0651 | 0.00000 |
| 3 | 40 Total Penta-Dioxins | 30.00 | 30.44 | 9.969e2 | 3.760e2 | 0.630 | 2.65 | YES | 1.0758 | 0.00000 |



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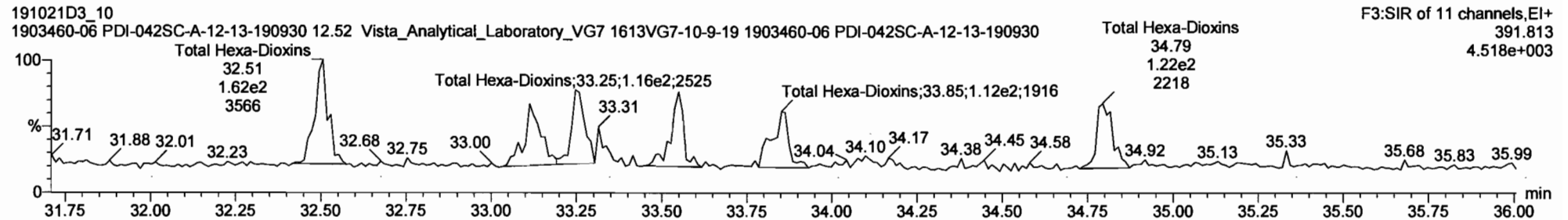
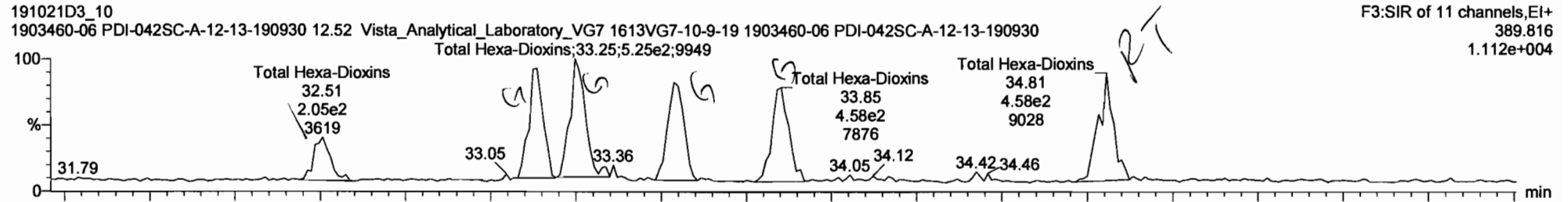
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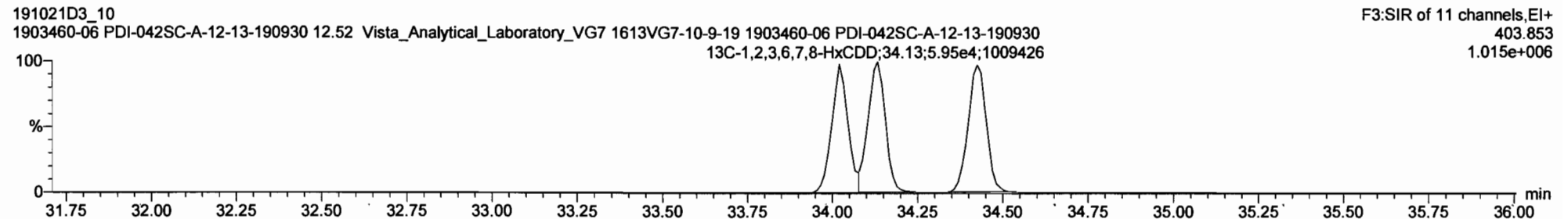
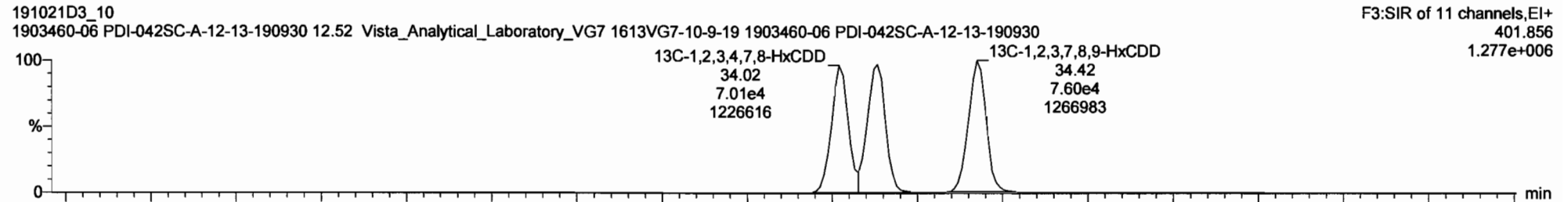
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Total Hexa-Dioxins

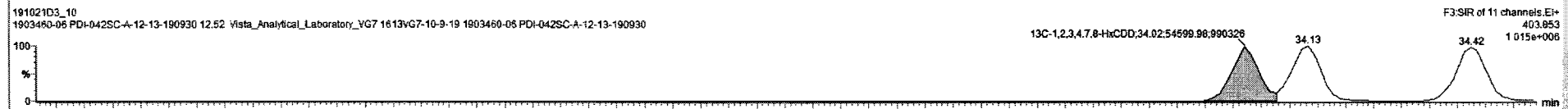
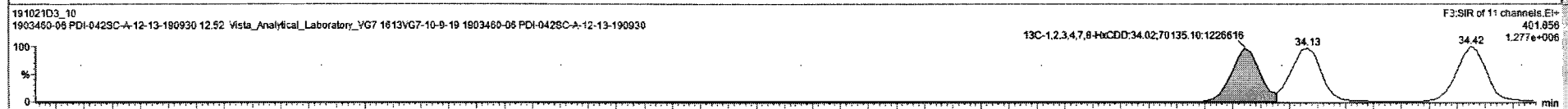
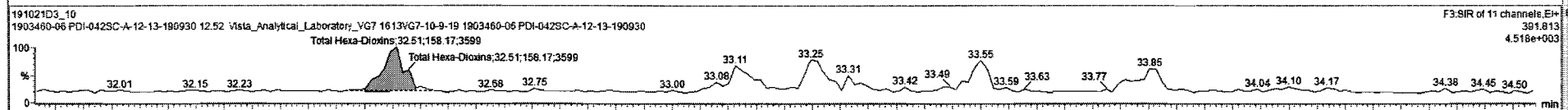
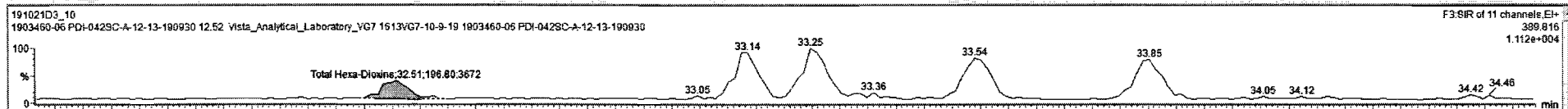


13C-1,2,3,4,7,8-HxCDD



| # | Name | Resp | IS Resp | IS# | RA | nly | RRF | wtvol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DI | EMPC |
|----|------------------------|--------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 40 | Total Penta-Dioxins | 1.28e5 | | | | | 0.872 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.0688 | 0.3594 |
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.978 | 10.204 | 33.80 | | | 0.000 | NO | 0.5399 | | 0.258 | 0.5399 |
| 42 | Total Hepta-Dioxins | 1.28e5 | | | | | 0.909 | 10.204 | 37.75 | | | 0.000 | NO | 1.799 | | 0.108 | 2.412 |
| 43 | Total Tetra-Furans | 2.01e5 | | | | | 0.943 | 10.204 | 24.00 | | | 0.000 | NO | | | 0.0563 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 27.83 | | | 0.000 | NO | | | 0.0369 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.198 | 0.2662 |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.204 | 33.00 | | | 0.000 | NO | | | 0.0425 | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.135 | 10.204 | 37.75 | | | 0.000 | NO | | | 0.0534 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |

| # | Name | Pred RT | RT | m1 Resp | m2 Resp | Pred RA | RA | nly | EMPC | Conc. |
|----|--------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 41 | Total Hexa-Dioxins | 33.80 | 32.51 | 1.969e2 | 1.582e2 | 1.240 | 1.24 | NO | 0.53992 | 0.53992 |



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Dataset: Untitled

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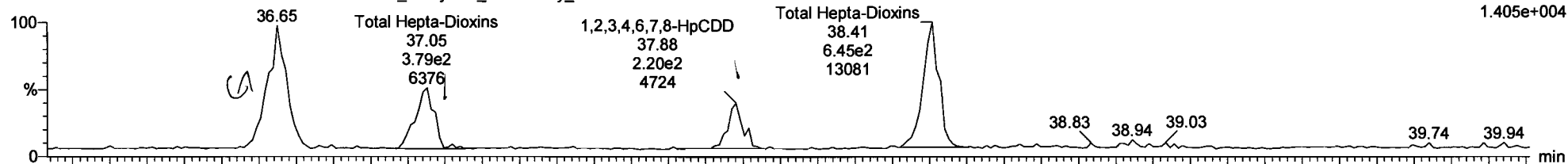
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Total Hepta-Dioxins

191021D3_10

1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-06 PDI-042SC-A-12-13-190930

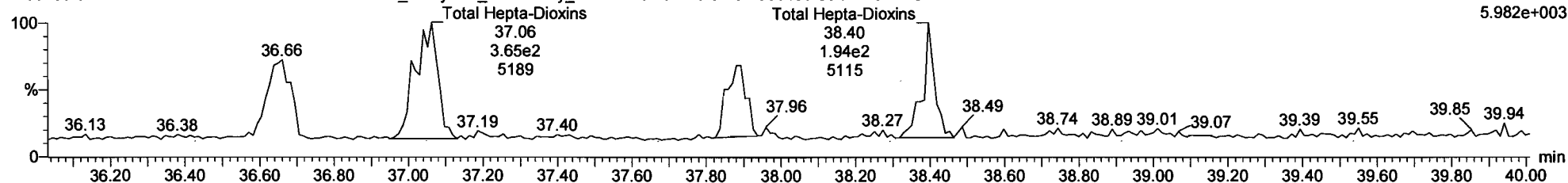
F4:SIR of 11 channels,EI+
423.777
1.405e+004



191021D3_10

1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-06 PDI-042SC-A-12-13-190930

F4:SIR of 11 channels,EI+
425.774
5.982e+003

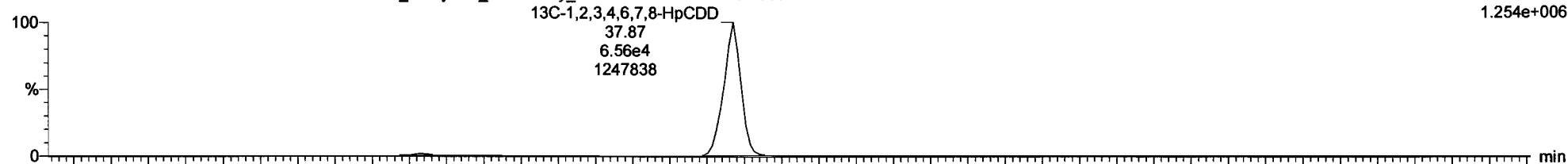


13C-1,2,3,4,6,7,8-HpCDD

191021D3_10

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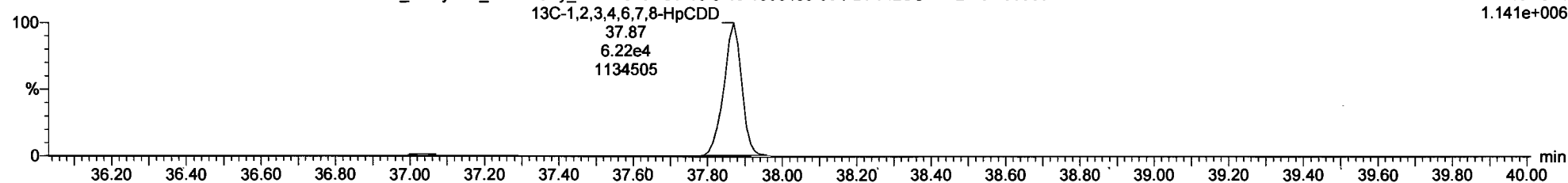
F4:SIR of 11 channels,EI+
435.817
1.254e+006



191021D3_10

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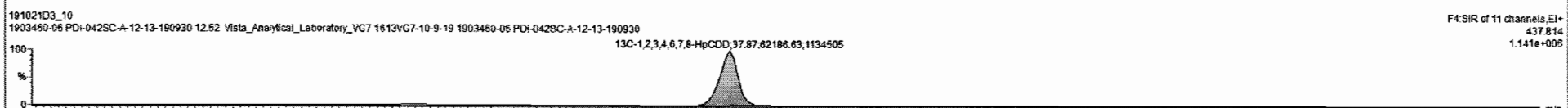
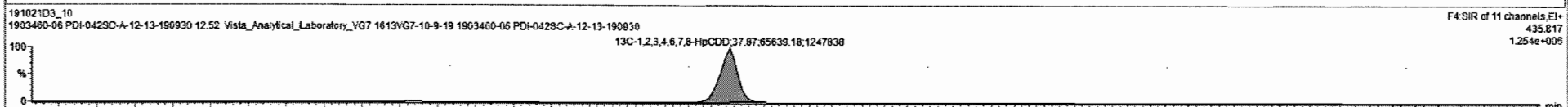
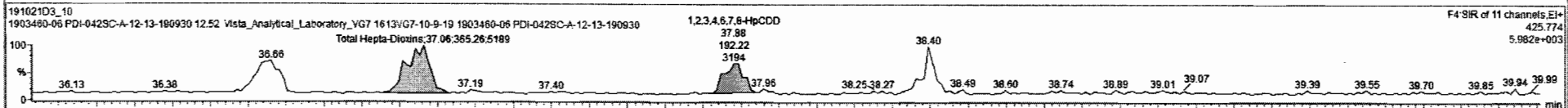
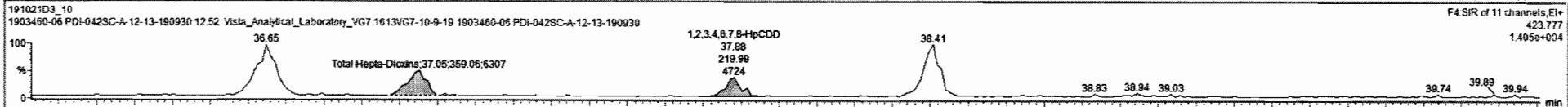
F4:SIR of 11 channels,EI+
437.814
1.141e+006



191021D3_10 1903460-06 PDI-042SC-A-12-13-190930 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS# | RA | aly | RPF | wt/wt | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|--------|--------|------|
| 40 | Total Penta-Dioxins | 1.28e5 | | | | | 0.872 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | 0.0666 | 0.3584 | |
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.976 | 10.204 | 33.00 | | | 0.000 | NO | 0.5389 | 0.258 | 0.5389 | |
| 42 | Total Hepta-Dioxins | 1.28e5 | | | | | 0.989 | 10.204 | 37.75 | | | 0.000 | NO | 1.769 | 0.198 | 1.769 | |
| 43 | Total Tetra-Furans | 2.01e5 | | | | | 0.943 | 10.204 | 24.00 | | | 0.000 | NO | | 0.0563 | | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 27.83 | | | 0.000 | NO | | 0.0369 | | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 30.00 | | | 0.000 | NO | 0.0000 | 0.198 | 0.2682 | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.204 | 33.00 | | | 0.000 | NO | | 0.0425 | | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.135 | 10.204 | 37.75 | | | 0.000 | NO | | 0.0534 | | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |

| # | Name | Pred RT | RT | ref Resp | ref Resp | Pred RA | RA | aly | EMPC | Conc. |
|---|------------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 1 | 42 Total Hepta-Dioxins | 37.75 | 37.05 | 3.591e2 | 3.653e2 | 1.040 | 0.98 | NO | 1.1233 | 1.1233 |
| 2 | 6 1,2,3,4,6,7,8-HpCDD | 37.88 | 37.68 | 2.209e2 | 1.922e2 | 1.040 | 1.14 | NO | 0.64535 | 0.64535 |

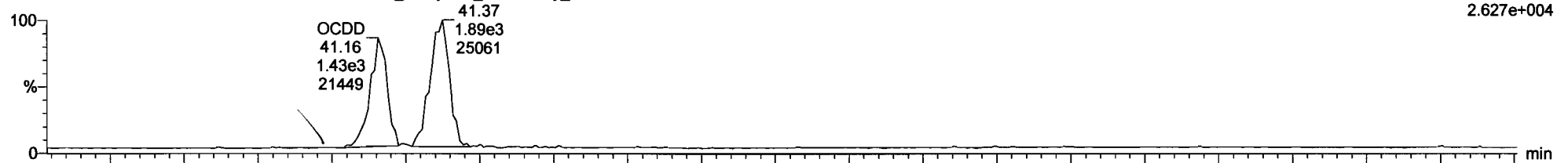


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OCDD

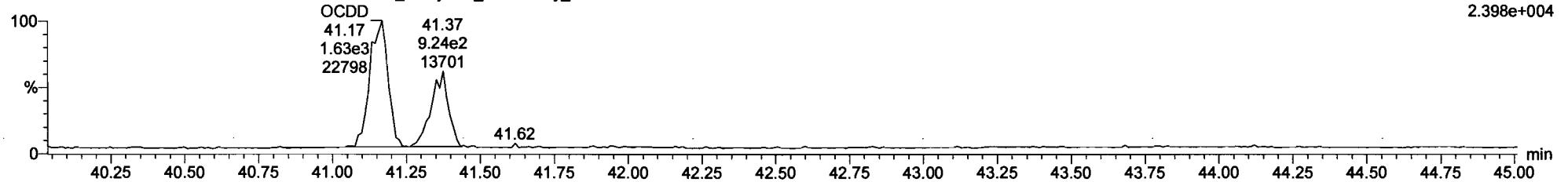
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F5:SIR of 11 channels,EI+
457.738
2.627e+004



191021D3_10
1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-06 PDI-042SC-A-12-13-190930

F5:SIR of 11 channels,EI+
459.735
2.398e+004



13C-OCDD

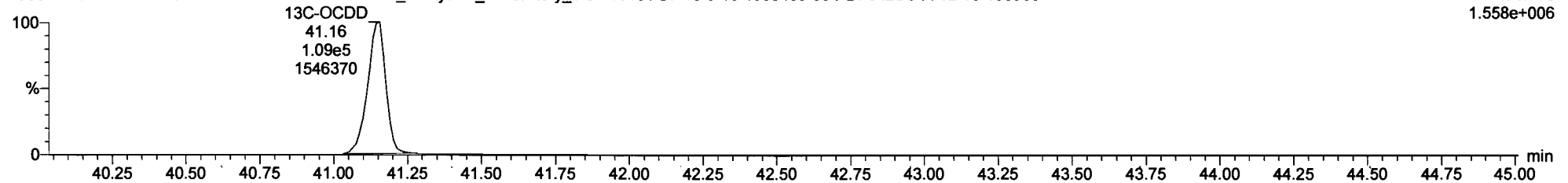
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F5:SIR of 11 channels,EI+
469.778
1.386e+006



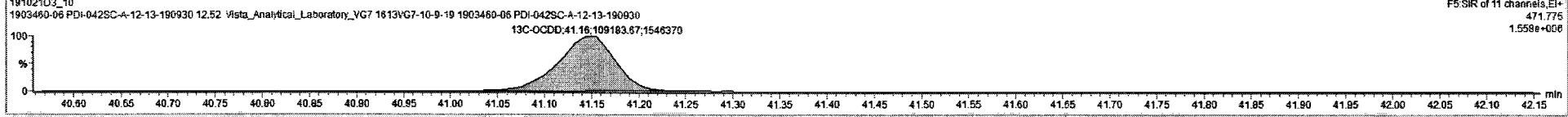
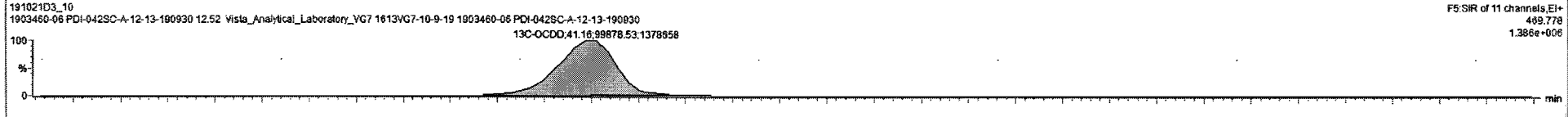
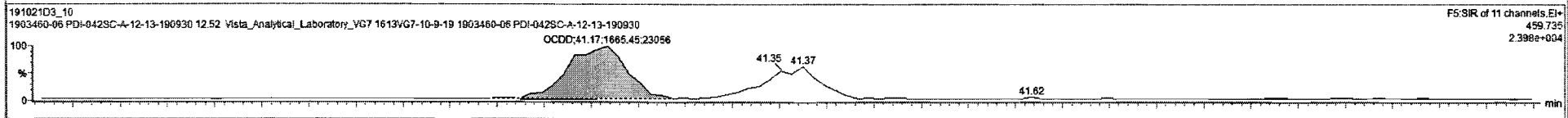
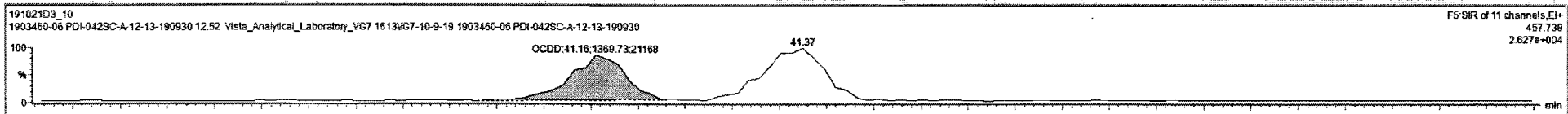
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F5:SIR of 11 channels,EI+
471.775
1.558e+006



| # | Name | Resp | IS Resp | SA | RA | nfy | SRF | Wt/ht | Pred RT | RT | RRT | Pred RRT | Check RRT | Comp | %Rec | DL | EMPC |
|---|---------------------|--------|---------|----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|--------|
| 1 | 1,2,3,7,8-TCDD | | 1.47e5 | 18 | | | 0.905 | 10.204 | 26.26 | | | 1.001 | NO | | | 0.124 | |
| 2 | 1,2,3,7,8-PeCDD | | 1.28e5 | 19 | | | 0.903 | 10.204 | 30.74 | | | 1.001 | NO | | | 0.127 | |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.25e5 | 20 | | | 1.101 | 10.204 | 34.03 | | | 1.000 | NO | | | 0.233 | |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.35e5 | 21 | | | 0.939 | 10.204 | 34.13 | | | 1.000 | NO | | | 0.270 | |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.36e5 | 22 | | | 0.981 | 10.204 | 34.46 | | | 1.001 | NO | | | 0.256 | |
| 6 | 1,2,3,4,6,7,8-HpCDD | 4.12e2 | 1.28e5 | 23 | 1.14 | NO | 0.879 | 10.204 | 37.88 | 37.88 | 1.000 | 1.000 | NO | 0.6453 | | 0.109 | 0.6453 |
| 7 | OCDD | 3.04e3 | 2.08e5 | 24 | 0.82 | NO | 0.956 | 10.204 | 41.18 | 41.18 | 1.000 | 1.000 | NO | 6.937 | | 0.178 | 6.937 |
| 8 | 2,3,7,8-TCDF | | 2.01e5 | 25 | | | 0.950 | 10.204 | 25.50 | | | 1.001 | NO | | | 0.107 | |
| 9 | 1,2,3,7,8-PeCDF | | 1.97e5 | 26 | | | 0.980 | 10.204 | 29.57 | | | 1.001 | NO | | | 0.228 | |

| # | Name | Pred RT | RT | nfy Resp | IS Resp | Pred RA | RA | nfy | EMPC | Comp |
|---|------|---------|----|----------|---------|---------|----|-----|------|------|
| 1 | | | | | | | | | | |



Vista Analytical Laboratory

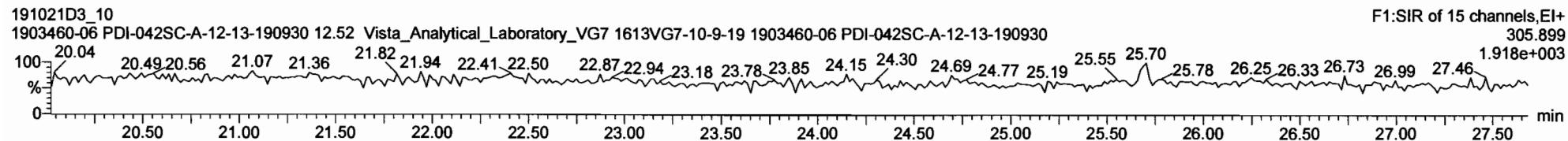
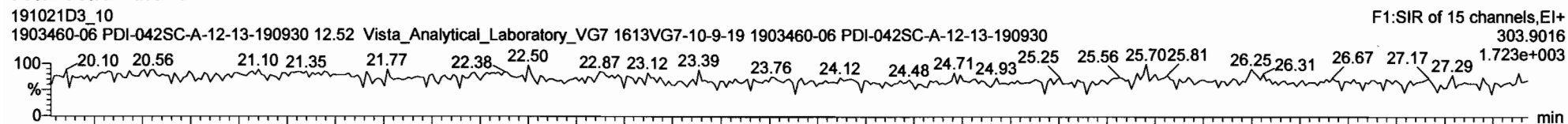
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

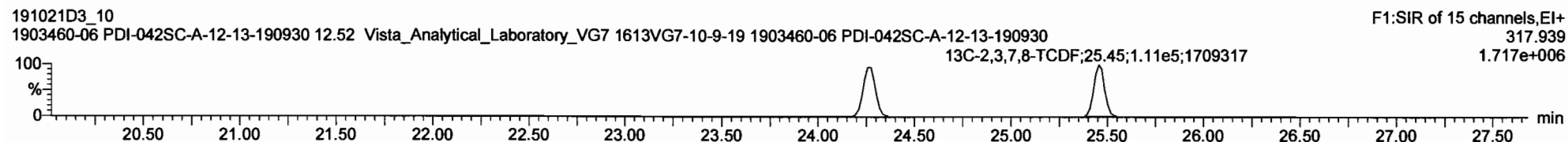
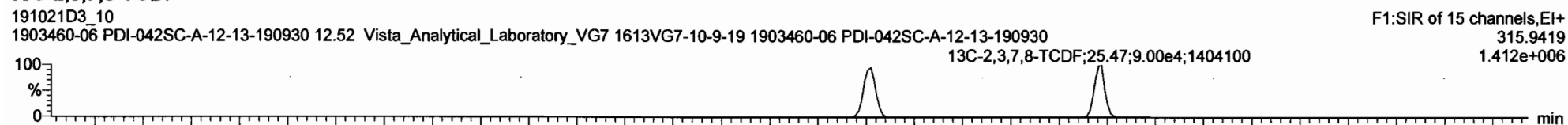
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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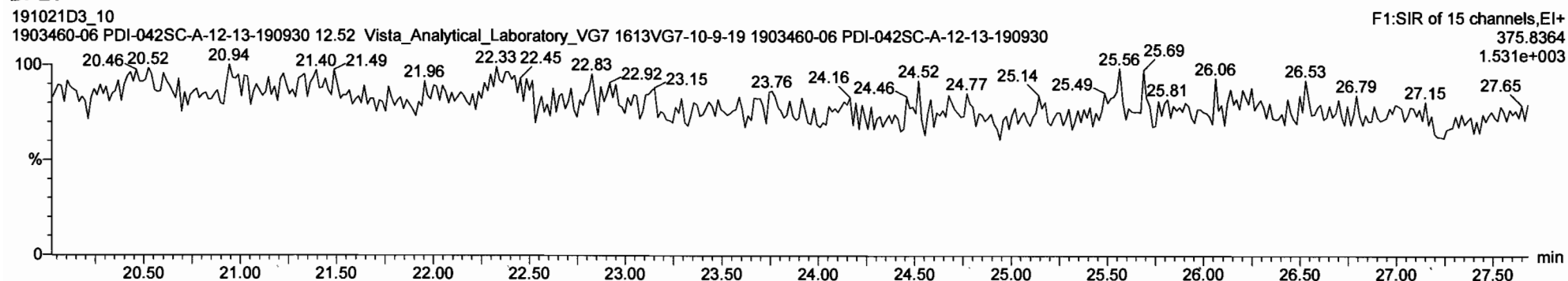
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

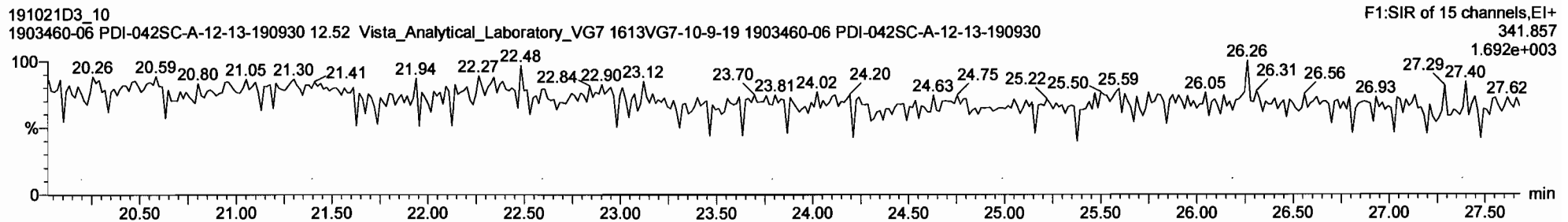
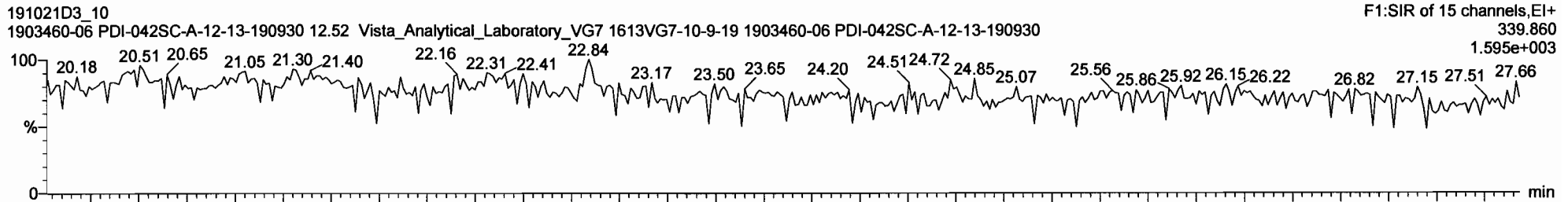
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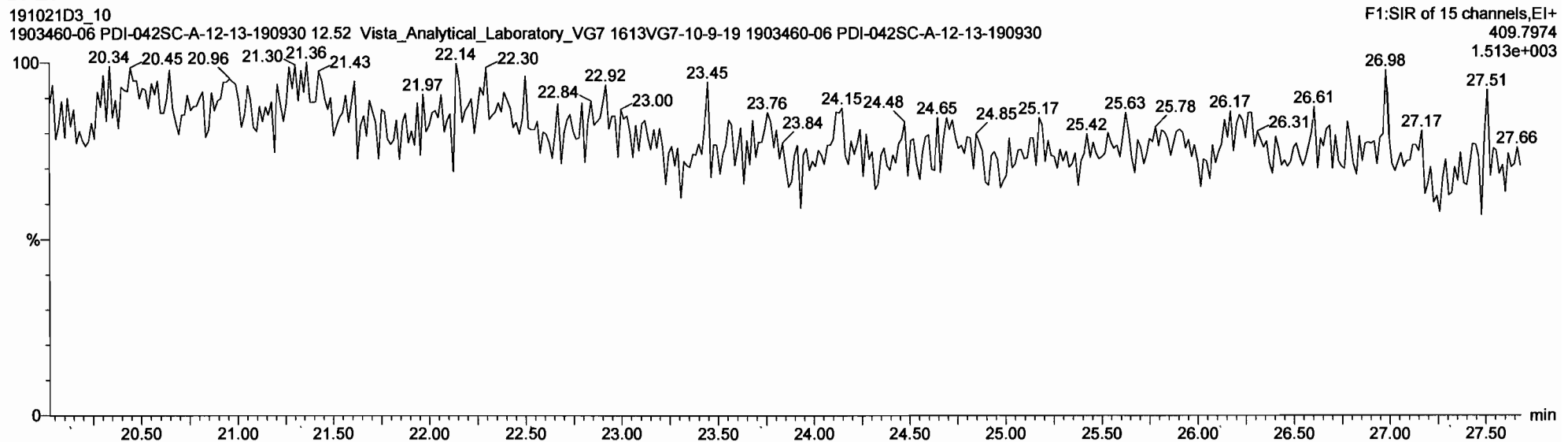
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1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

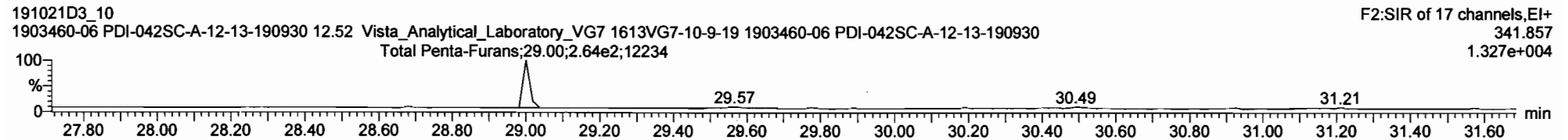
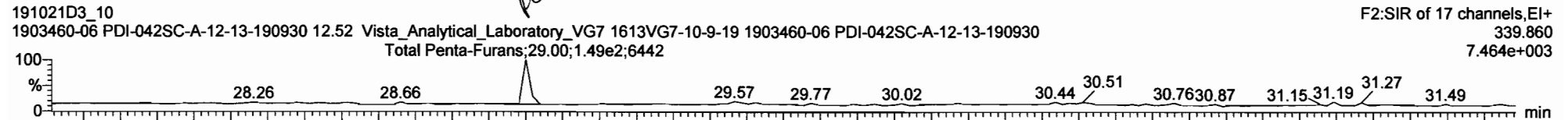
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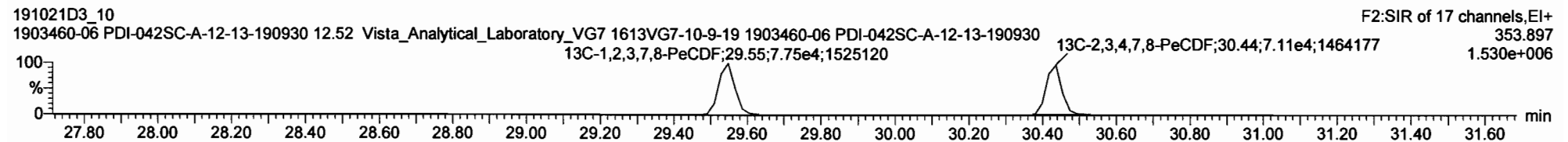
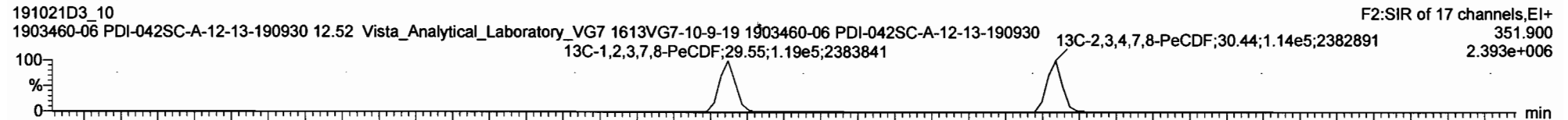
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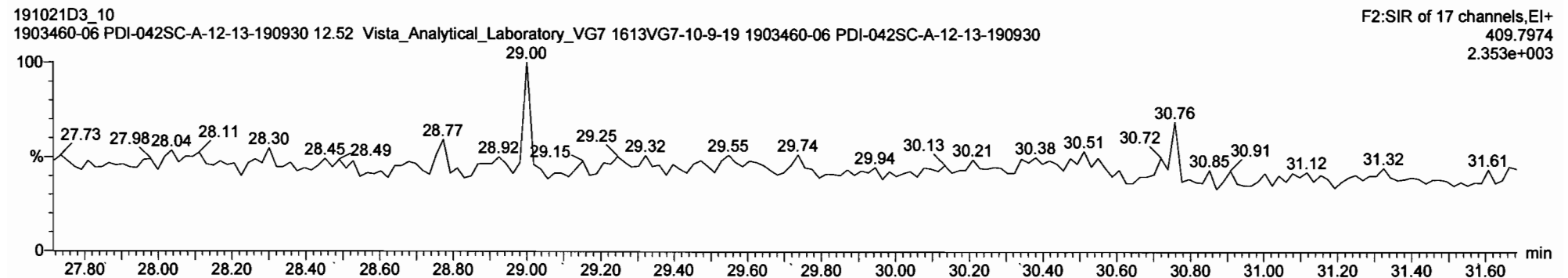
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

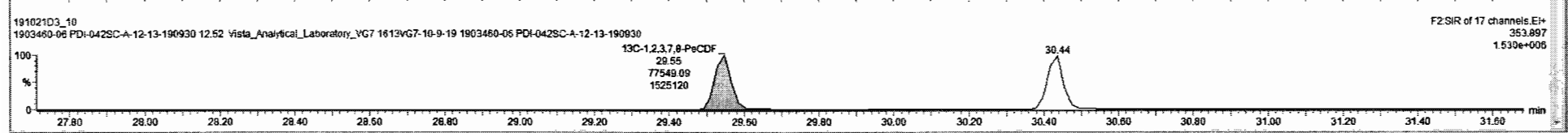
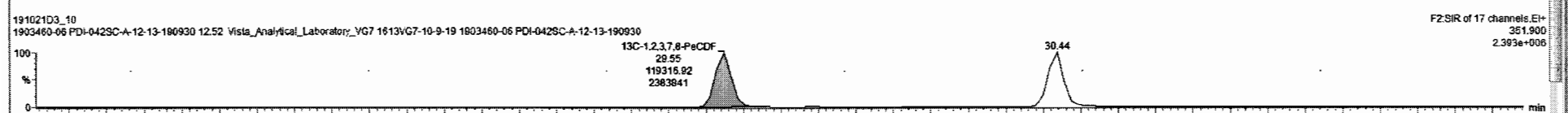
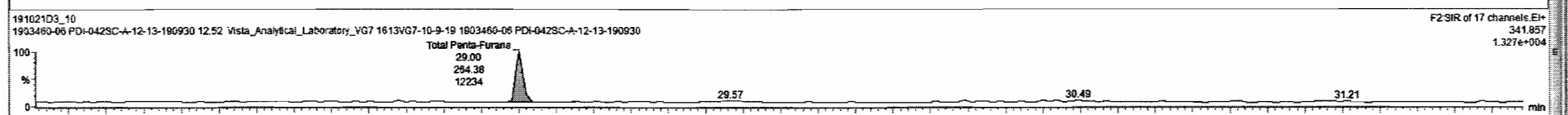
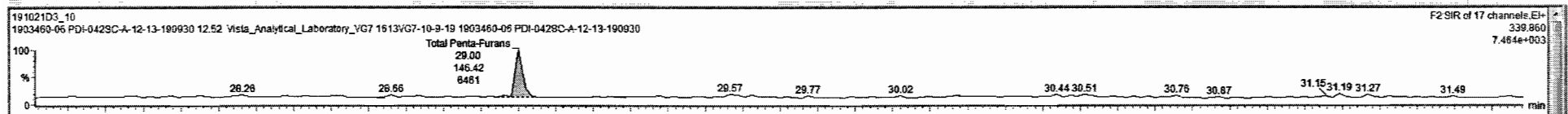


DPE2



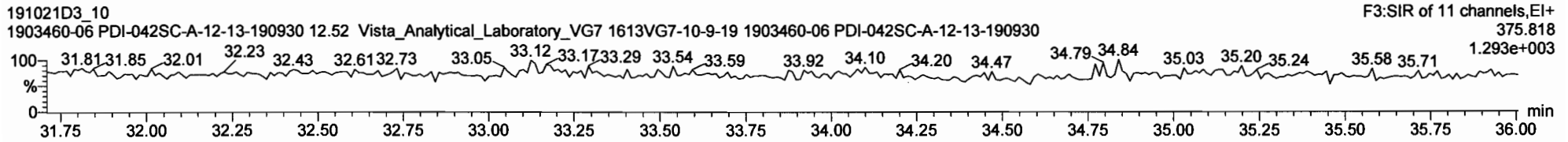
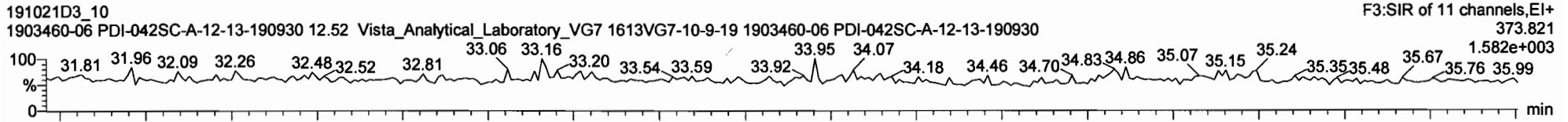
| # | Name | Resp | IS Resp | IS# | RA | n/y | RRF | w/vol | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 43 | Total Tetra-Furans | 2.01e5 | | | | | 0.943 | 10.204 | 24.00 | | | 0.000 | NO | | | 0.0563 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 27.63 | | | 0.000 | NO | | | 0.0369 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.204 | 29.30 | | | 0.000 | NO | 0.0000 | | 0.158 | 0.2632 |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.204 | 23.00 | | | 0.000 | NO | | | 0.0425 | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.135 | 10.204 | 37.75 | | | 0.000 | NO | | | 0.0534 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |
| 50 | PFK3 | | | | | | | | | | | | | | | | |
| 51 | PFK4 | | | | | | | | | | | | | | | | |

| # | Name | Pred.RT | RT | Int Resp | IS2 Resp | Pred RA | RA | n/y | EMPC | Conc. |
|---|-----------------------|---------|-------|----------|----------|---------|------|-----|---------|---------|
| 1 | 45 Total Penta-Furans | 30.00 | 29.00 | 1.464e2 | 2.644e2 | 1.550 | 0.55 | YES | 0.26321 | 0.00000 |

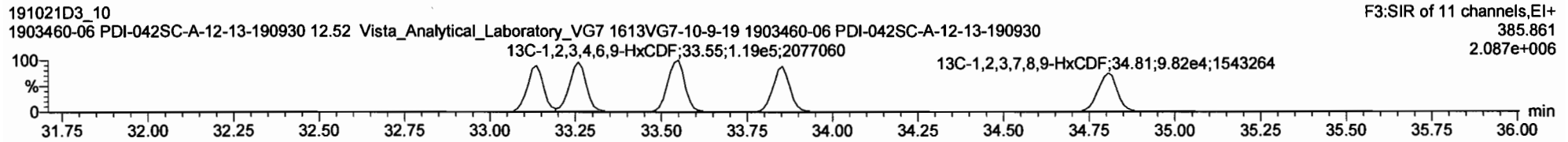
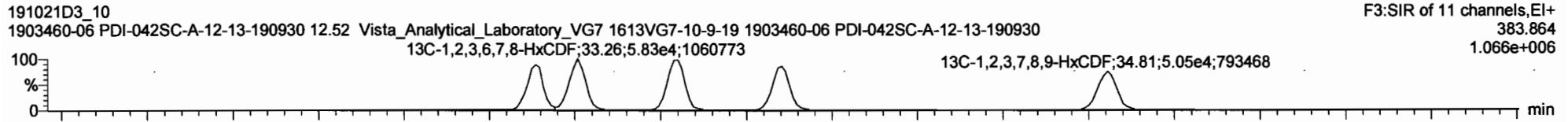


Name: VG7 191021D3_10, Date: 22-OCT-2019, Time: 09:14:53, ID: 1903460-06 PDI-042SC-A-12-13-190930,
Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

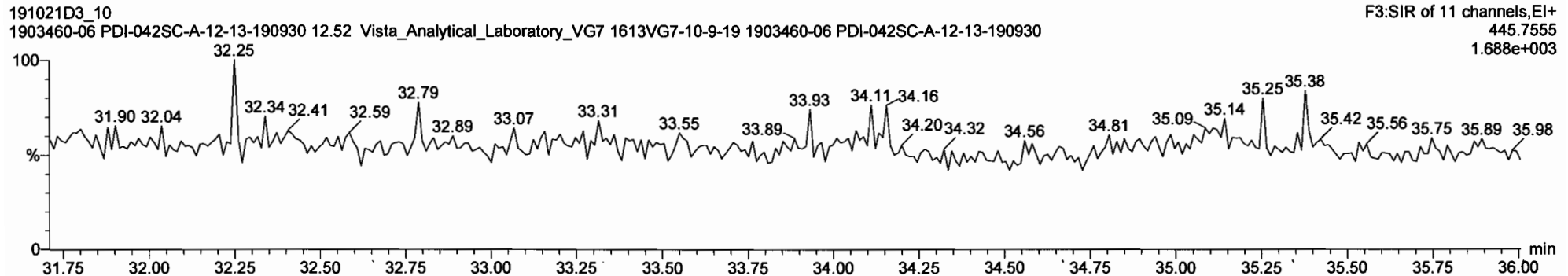
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

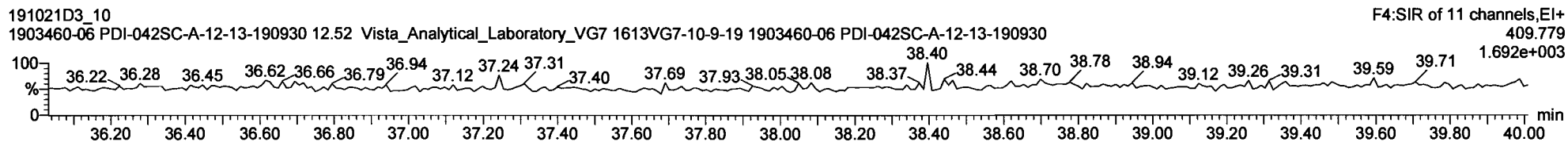
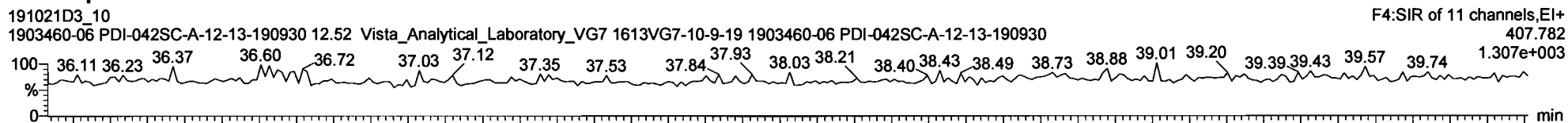
Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

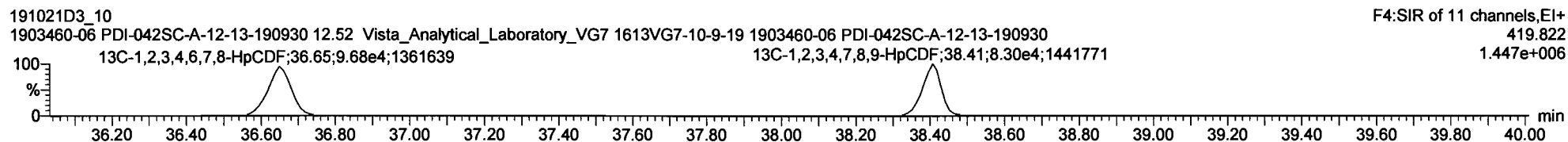
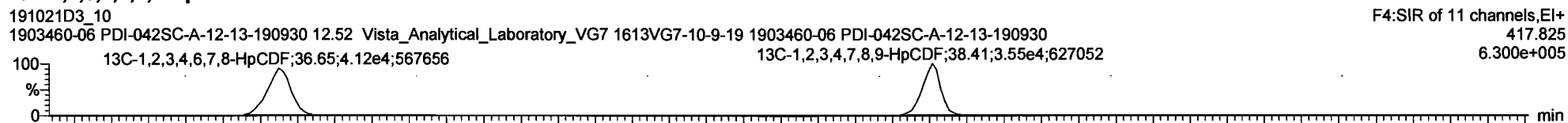
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_10, Date: 22-OCT-2019, Time: 09:14:53, ID: 1903460-06 PDI-042SC-A-12-13-190930, Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

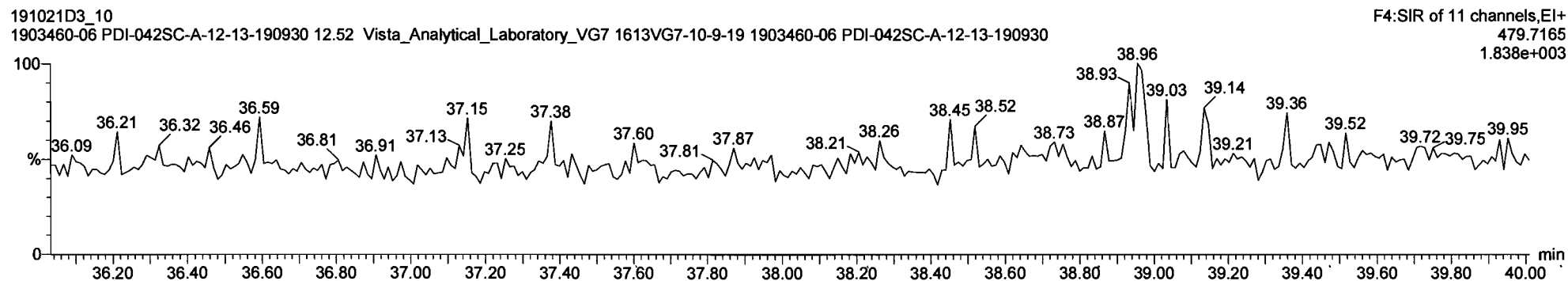
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF

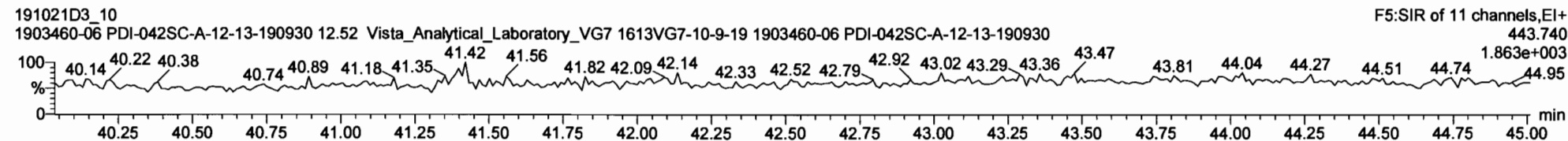
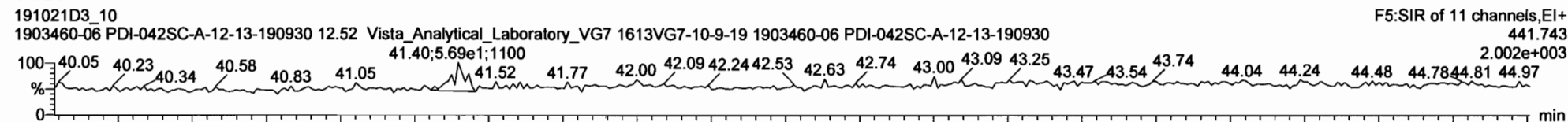


DPE4

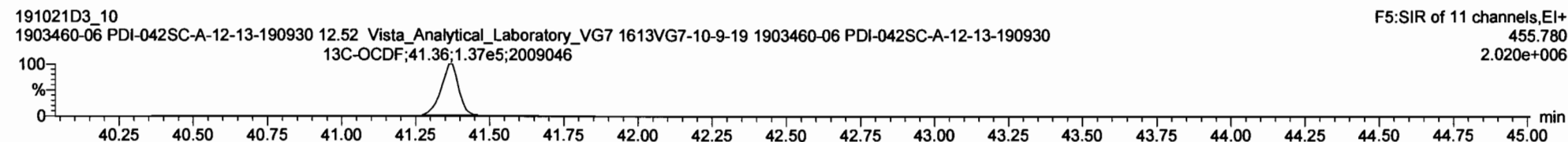
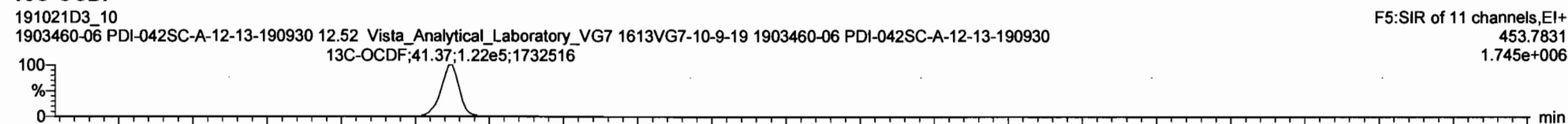


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Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

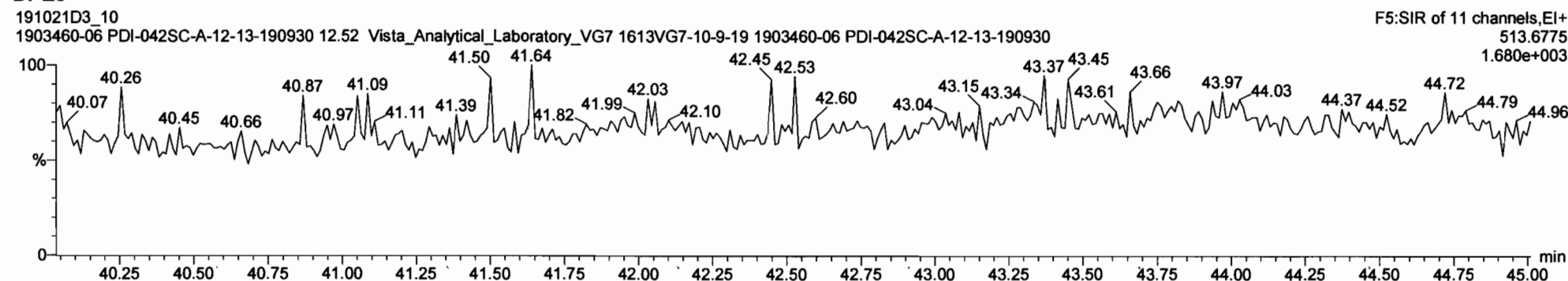
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

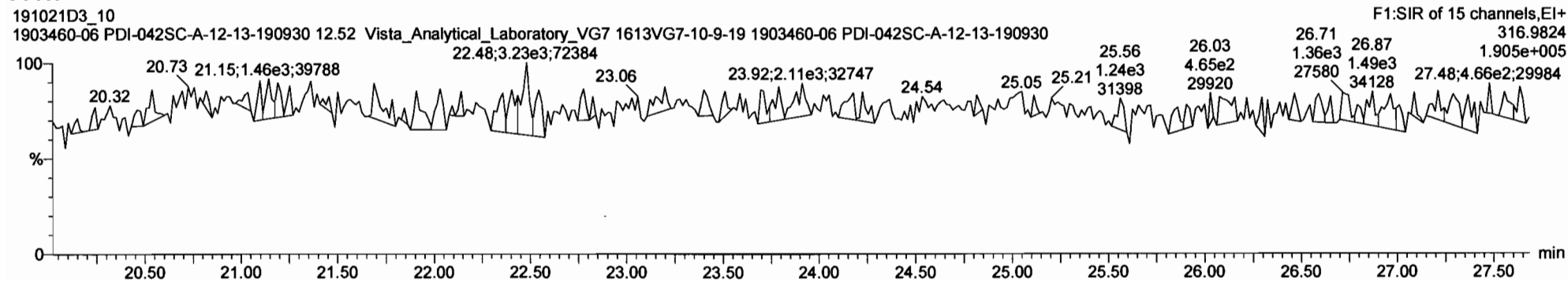
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

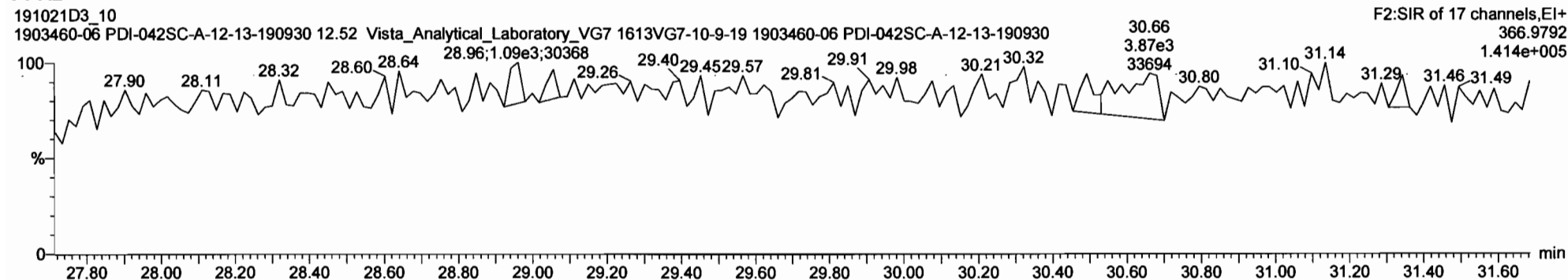
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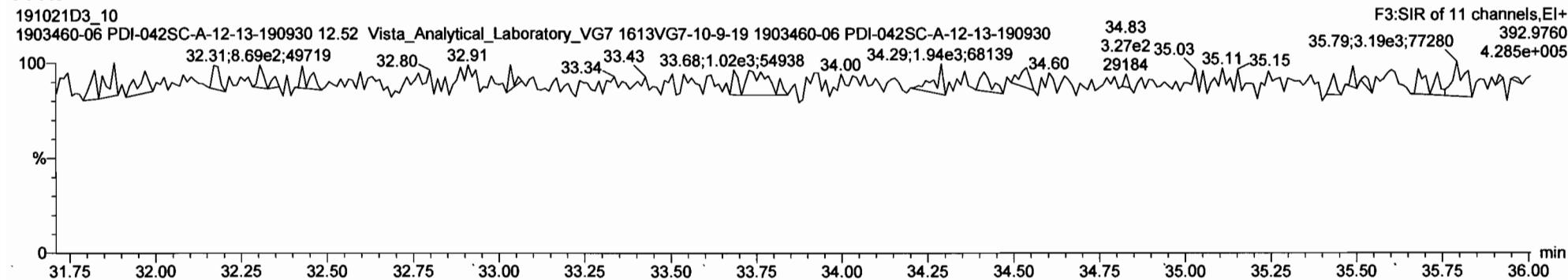
PFK1



PFK2



PFK3



Vista Analytical Laboratory

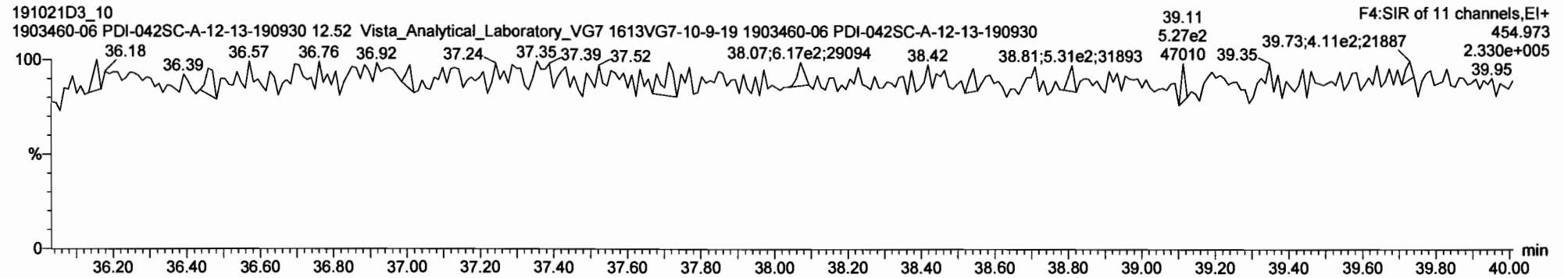
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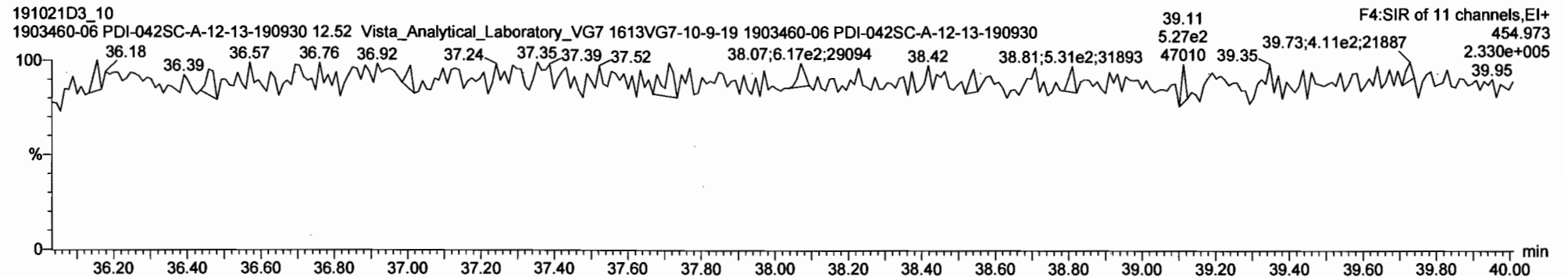
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_10, Date: 22-OCT-2019, Time: 09:14:53, ID: 1903460-06 PDI-042SC-A-12-13-190930,

Description: 1903460-06 PDI-042SC-A-12-13-190930 12.52 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-11.qld
 Last Altered: Monday, November 04, 2019 15:42:24 Pacific Standard Time
 Printed: Monday, November 04, 2019 15:42:35 Pacific Standard Time

HC 114.19 C711/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10-21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 15:31:13

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 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | Std Area | RRF | RA | Y/N | Pred | RRT | Pred.RT | RT | Gain | %Rec | EMPC | DI |
|----|------------------------|--------|----------|---------|-------|-------|-------|-------|---------|-------|-------|---------|-------|--------|
| 1 | 2,3,7,8-TCDD | | 1.65e5 | 10.1227 | 0.905 | | 1.001 | | 26.29 | | | | | 0.215 |
| 2 | 1,2,3,7,8-PeCDD | | 1.40e5 | 10.1227 | 0.903 | | 1.001 | | 30.75 | | | | | 0.168 |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.32e5 | 10.1227 | 1.101 | | 1.000 | | 34.04 | | | | | 0.290 |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.46e5 | 10.1227 | 0.939 | | 1.000 | | 34.13 | | | | | 0.343 |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.50e5 | 10.1227 | 0.961 | | 1.001 | | 34.47 | | | | | 0.340 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 4.43e2 | 1.33e5 | 10.1227 | 0.979 | 0.859 | YES | 1.000 | 1.001 | 37.89 | 37.90 | 0.67123 | 0.609 | 0.210 |
| 7 | OCDD | 2.80e3 | 2.22e5 | 10.1227 | 0.959 | 0.924 | NO | 1.000 | 1.000 | 41.16 | 41.16 | 5.1923 | 5.19 | 0.278 |
| 8 | 2,3,7,8-TCDF | | 2.21e5 | 10.1227 | 0.950 | | 1.001 | | 25.50 | | | | | 0.165 |
| 9 | 1,2,3,7,8-PeCDF | | 2.12e5 | 10.1227 | 0.960 | | 1.001 | | 29.58 | | | | | 0.106 |
| 10 | 2,3,4,7,8-PeCDF | | 2.06e5 | 10.1227 | 1.015 | | 1.001 | | 30.48 | | | | | 0.0965 |
| 11 | 1,2,3,4,7,8-HxCDF | | 1.62e5 | 10.1227 | 1.177 | | 1.000 | | 33.14 | | | | | 0.166 |
| 12 | 1,2,3,6,7,8-HxCDF | | 1.84e5 | 10.1227 | 1.069 | | 1.000 | | 33.28 | | | | | 0.163 |
| 13 | 2,3,4,6,7,8-HxCDF | | 1.70e5 | 10.1227 | 1.114 | | 1.001 | | 33.89 | | | | | 0.182 |
| 14 | 1,2,3,7,8,9-HxCDF | | 1.64e5 | 10.1227 | 1.062 | | 1.000 | | 34.82 | | | | | 0.219 |
| 15 | 1,2,3,4,6,7,8-HpCDF | | 1.49e5 | 10.1227 | 1.128 | | 1.001 | | 36.70 | | | | | 0.221 |
| 16 | 1,2,3,4,7,8,9-HpCDF | | 1.22e5 | 10.1227 | 1.280 | | 1.000 | | 38.43 | | | | | 0.184 |
| 17 | OCDF | | 2.70e5 | 10.1227 | 0.947 | | 1.000 | | 41.38 | | | | | 0.298 |
| 18 | 13C-2,3,7,8-TCDD | 1.65e5 | 1.56e5 | 10.1227 | 1.095 | 0.791 | NO | 1.021 | 1.022 | 26.24 | 26.25 | 190.91 | 96.6 | 0.530 |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.40e5 | 1.56e5 | 10.1227 | 0.881 | 0.627 | NO | 1.187 | 1.196 | 30.49 | 30.73 | 201.48 | 102.0 | 0.370 |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.32e5 | 1.97e5 | 10.1227 | 0.642 | 1.301 | NO | 1.014 | 1.014 | 34.02 | 34.03 | 206.98 | 104.8 | 0.626 |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.46e5 | 1.97e5 | 10.1227 | 0.856 | 1.250 | NO | 1.017 | 1.017 | 34.13 | 34.13 | 172.06 | 87.1 | 0.470 |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.50e5 | 1.97e5 | 10.1227 | 0.807 | 1.251 | NO | 1.026 | 1.026 | 34.43 | 34.44 | 186.43 | 94.4 | 0.498 |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.33e5 | 1.97e5 | 10.1227 | 0.654 | 1.002 | NO | 1.126 | 1.129 | 37.79 | 37.88 | 204.58 | 103.5 | 0.820 |
| 24 | 13C-OCDD | 2.22e5 | 1.97e5 | 10.1227 | 0.580 | 0.875 | NO | 1.226 | 1.227 | 41.14 | 41.16 | 385.29 | 97.5 | 0.474 |
| 25 | 13C-2,3,7,8-TCDF | 2.21e5 | 2.27e5 | 10.1227 | 1.035 | 0.812 | NO | 0.993 | 0.992 | 25.53 | 25.48 | 185.72 | 94.0 | 0.424 |
| 26 | 13C-1,2,3,7,8-PeCDF | 2.12e5 | 2.27e5 | 10.1227 | 0.854 | 1.570 | NO | 1.143 | 1.150 | 29.37 | 29.56 | 215.80 | 109.2 | 0.402 |
| 27 | 13C-2,3,4,7,8-PeCDF | 2.06e5 | 2.27e5 | 10.1227 | 0.847 | 1.614 | NO | 1.176 | 1.185 | 30.23 | 30.45 | 211.69 | 107.1 | 0.406 |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.62e5 | 1.97e5 | 10.1227 | 0.832 | 0.515 | NO | 0.987 | 0.988 | 33.12 | 33.14 | 195.55 | 99.0 | 0.684 |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.84e5 | 1.97e5 | 10.1227 | 1.034 | 0.516 | NO | 0.991 | 0.992 | 33.24 | 33.27 | 178.48 | 90.3 | 0.550 |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.70e5 | 1.97e5 | 10.1227 | 0.953 | 0.525 | NO | 1.009 | 1.009 | 33.86 | 33.85 | 179.71 | 91.0 | 0.597 |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.64e5 | 1.97e5 | 10.1227 | 0.828 | 0.515 | NO | 1.039 | 1.038 | 34.85 | 34.82 | 199.47 | 101.0 | 0.688 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-11.qld

Last Altered: Monday, November 04, 2019 15:42:24 Pacific Standard Time

Printed: Monday, November 04, 2019 15:42:35 Pacific Standard Time

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Area | St Area | Width | Ret | RA | Y/N | Pred | SP | Pred RT | R | Conc | Res | EMPC | DL |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|---------|-------|---------|--------|------|--------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.49e5 | 1.97e5 | 10.1227 | 0.757 | 0.434 | NO | 1.093 | 1.093 | 36.66 | 36.66 | 197.36 | 99.9 | | 0.873 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.22e5 | 1.97e5 | 10.1227 | 0.581 | 0.435 | NO | 1.143 | 1.145 | 38.35 | 38.43 | 210.95 | 106.8 | | 1.14 |
| 34 | 13C-OCDF | 2.70e5 | 1.97e5 | 10.1227 | 0.689 | 0.886 | NO | 1.233 | 1.233 | 41.37 | 41.38 | 394.22 | 99.8 | | 0.532 |
| 35 | 37Cl-2,3,7,8-TCDD | 6.67e4 | 1.56e5 | 10.1227 | 1.198 | | | 1.022 | 1.022 | 26.26 | 26.27 | 70.374 | 89.0 | | 0.109 |
| 36 | 13C-1,2,3,4-TCDD | 1.56e5 | 1.56e5 | 10.1227 | 1.000 | 0.786 | NO | 1.000 | 1.000 | 25.70 | 25.69 | 197.58 | 100.0 | | 0.580 |
| 37 | 13C-1,2,3,4-TCDF | 2.27e5 | 2.27e5 | 10.1227 | 1.000 | 0.820 | NO | 1.000 | 1.000 | 24.28 | 24.28 | 197.58 | 100.0 | | 0.439 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.97e5 | 1.97e5 | 10.1227 | 1.000 | 0.513 | NO | 1.000 | 1.000 | 33.55 | 33.55 | 197.58 | 100.0 | | 0.569 |
| 39 | Total Tetra-Dioxins | | 1.65e5 | 10.1227 | 0.901 | | | 0.000 | | 25.50 | | | | | 0.109 |
| 40 | Total Penta-Dioxins | | 1.40e5 | 10.1227 | 0.872 | | | 0.000 | | 30.00 | | | | | 0.0729 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.1227 | 0.976 | | | 0.000 | | 33.80 | | 0.00000 | 0.433 | | 0.331 |
| 42 | Total Hepta-Dioxins | | 1.33e5 | 10.1227 | 0.989 | | | 0.000 | | 37.75 | | 1.2578 | 1.87 | | 0.208 |
| 43 | Total Tetra-Furans | | 2.21e5 | 10.1227 | 0.943 | | | 0.000 | | 24.00 | | | | | 0.0887 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.1227 | 0.940 | | | 0.000 | | 27.63 | | | | | 0.0720 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.1227 | 0.940 | | | 0.000 | | 30.00 | | 0.00000 | 0.0846 | | 0.0575 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.1227 | 1.078 | | | 0.000 | | 33.00 | | | | | 0.0938 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.1227 | 1.135 | | | 0.000 | | 37.75 | | | | | 0.112 |

0.215
 0.168
 0.165
 0.219
 0.221

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-11.qld

Last Altered: Monday, November 04, 2019 15:42:24 Pacific Standard Time

Printed: Monday, November 04, 2019 15:42:35 Pacific Standard Time

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 15:31:13

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC |
|------|------|---------|----------|--------------|-------|------|
| | | | | | | |

Penta-Dioxins

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC |
|------|------|---------|----------|--------------|-------|------|
| | | | | | | |

Hexa-Dioxins

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC | | |
|-----------------------|------|---------|----------|--------------|-------|------|--------|------|
| 41 Total Hexa-Dioxins | NO | 32.50 | 158.676 | 79778.912 | 0.000 | MM | 0.0000 | 0.43 |

Hepta-Dioxins

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC | | |
|------------------------|------|---------|----------|--------------|--------|------|--------|------|
| 42 Total Hepta-Dioxins | NO | 37.05 | 413.467 | 66609.859 | 12.589 | MM | 1.2578 | 1.26 |
| 6 1,2,3,4,6,7,8-HpCDD | YES | 37.90 | 204.733 | 66609.859 | 0.000 | MM | 0.0000 | 0.61 |

Tetra-Furans

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC |
|------|------|---------|----------|--------------|-------|------|
| | | | | | | |

Penta-Furans function 1

| Name | Area | MS Area | Response | Primary Flag | Conc. | EMPC |
|------|------|---------|----------|--------------|-------|------|
| | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-11.qld

Last Altered: Monday, November 04, 2019 15:42:24 Pacific Standard Time

Printed: Monday, November 04, 2019 15:42:35 Pacific Standard Time

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| Name | Y/N | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|-----------------------|-----|-------|--------|------------|----------|--------------|--------|------|
| 45 Total Penta-Furans | YES | 30.24 | 51.107 | 128332.297 | 0.000 | MM | 0.0000 | 0.08 |

Hexa-Furans

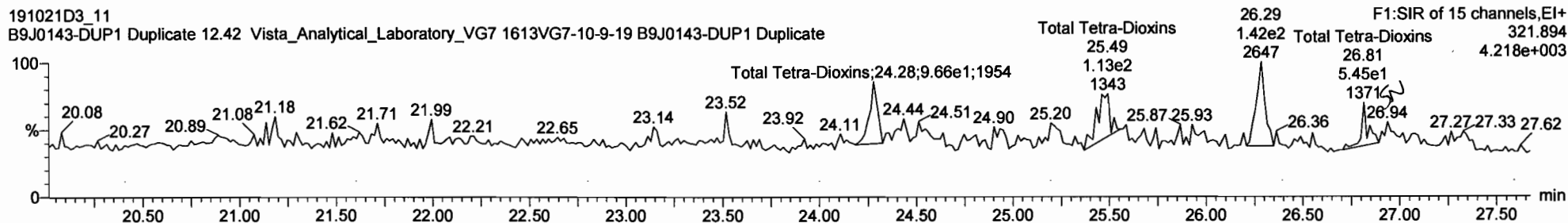
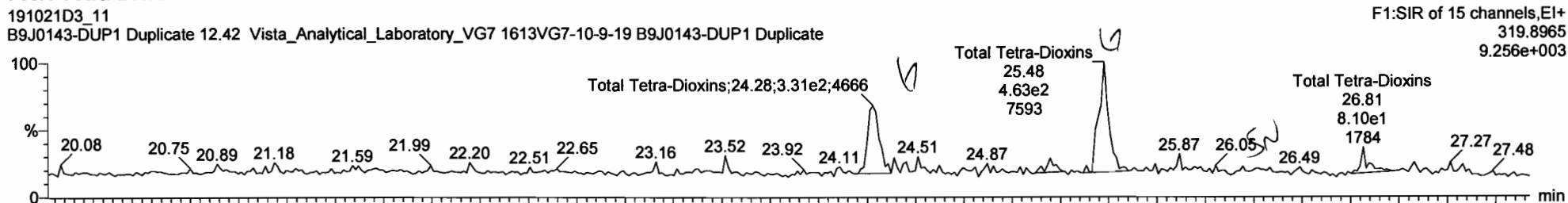
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|------|-----|----|------|---------|----------|--------------|------|------|
|------|-----|----|------|---------|----------|--------------|------|------|

Hepta-Furans

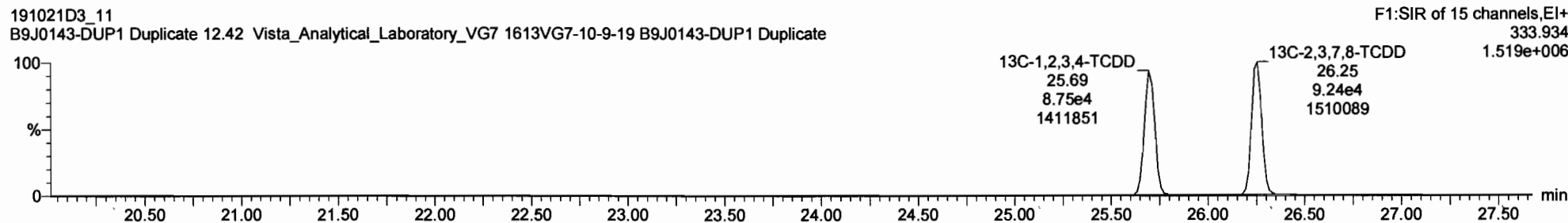
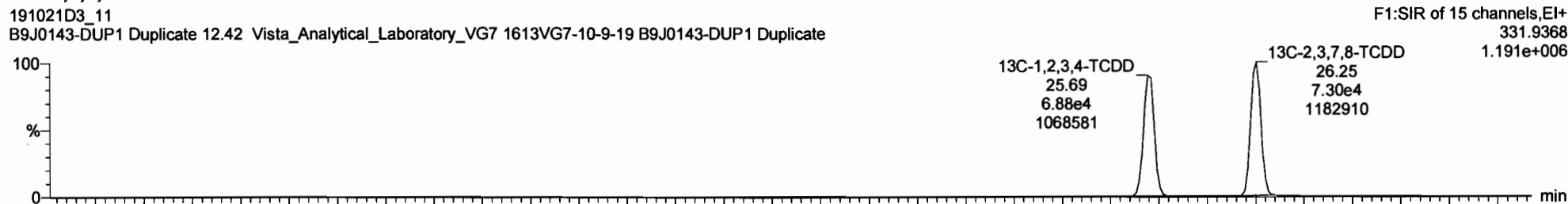
| Name | Y/N | RT | Area | IS Area | Response | Primary Flag | Conc | EMPC |
|------|-----|----|------|---------|----------|--------------|------|------|
|------|-----|----|------|---------|----------|--------------|------|------|

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

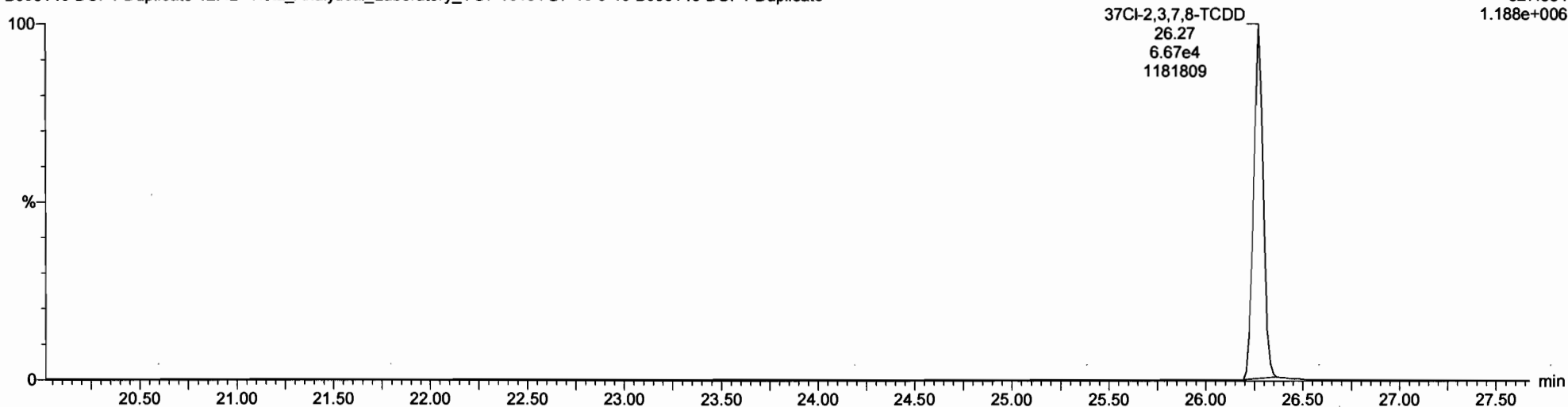
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

37Cl-2,3,7,8-TCDD

191021D3_11
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

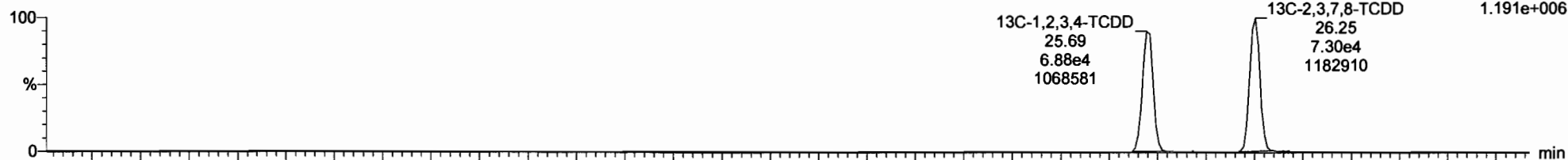
F1:SIR of 15 channels,EI+
327.884
1.188e+006



13C-1,2,3,4-TCDD

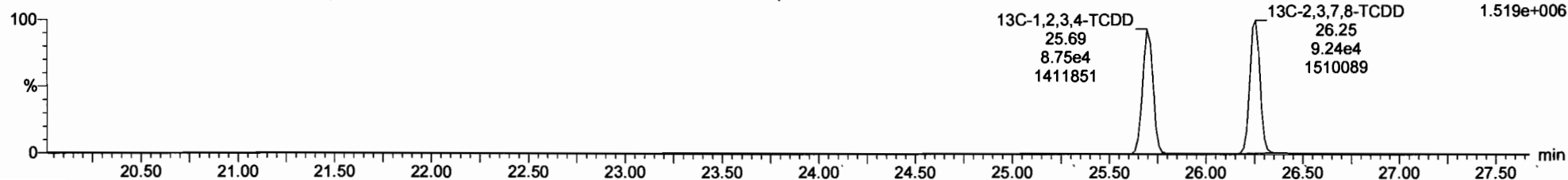
191021D3_11
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F1:SIR of 15 channels,EI+
331.9368
1.191e+006



191021D3_11
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F1:SIR of 15 channels,EI+
333.934
1.519e+006



Vista Analytical Laboratory

Dataset: Untitled

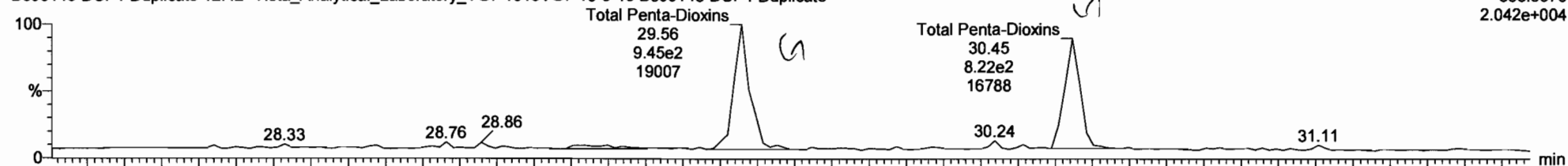
Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

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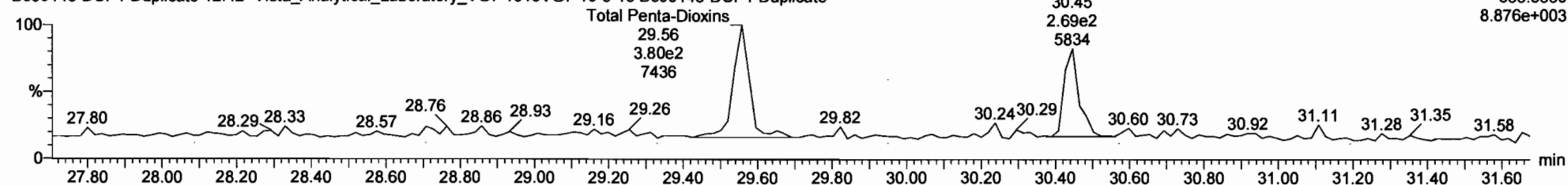
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Total Penta-Dioxins

191021D3_11 F2:SIR of 17 channels,EI+ 353.8576
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate 2.042e+004

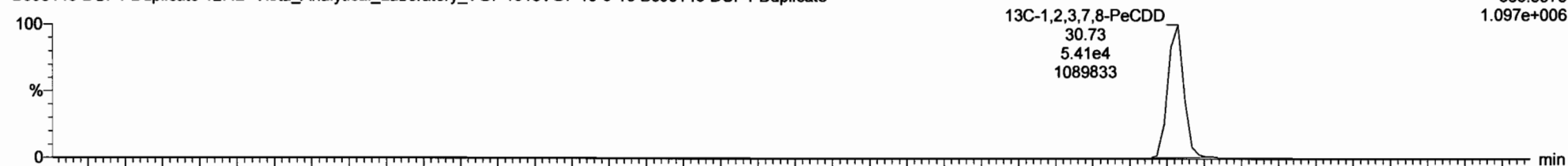


191021D3_11 F2:SIR of 17 channels,EI+ 355.8550
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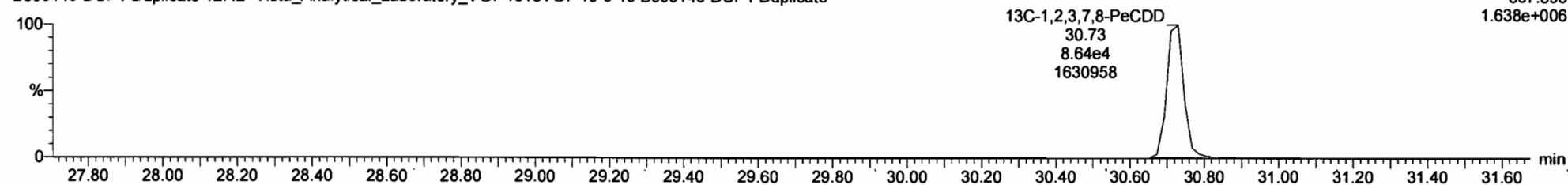


13C-1,2,3,7,8-PeCDD

191021D3_11 F2:SIR of 17 channels,EI+ 365.8978
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate 1.097e+006

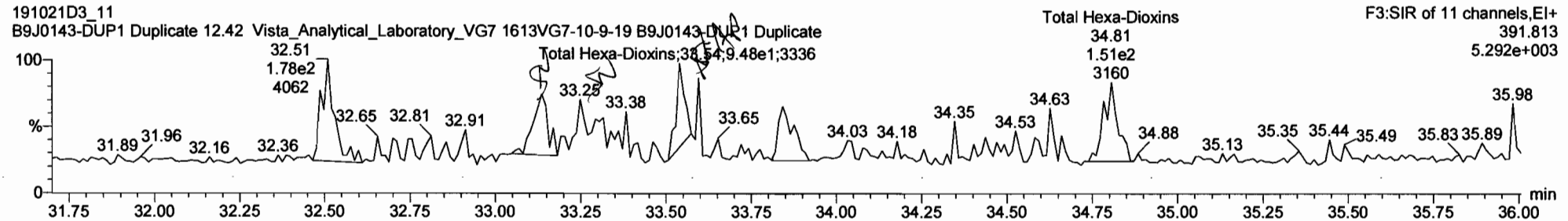
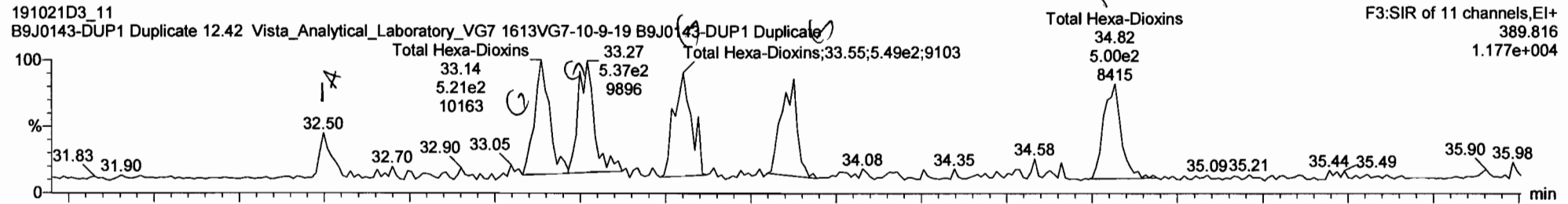


191021D3_11 F2:SIR of 17 channels,EI+ 367.895
B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate 1.638e+006

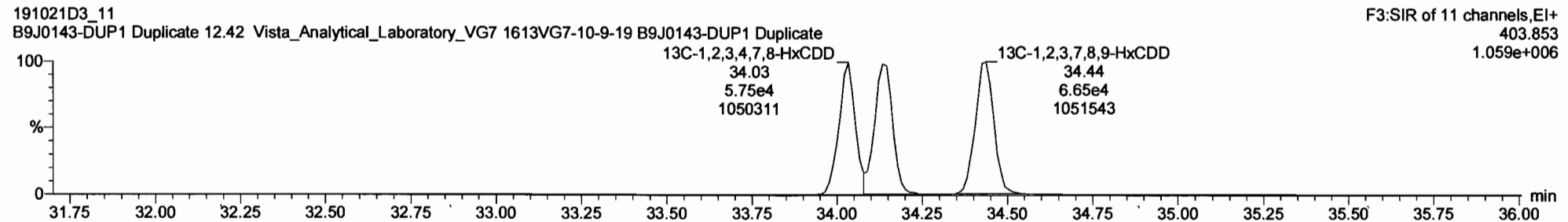
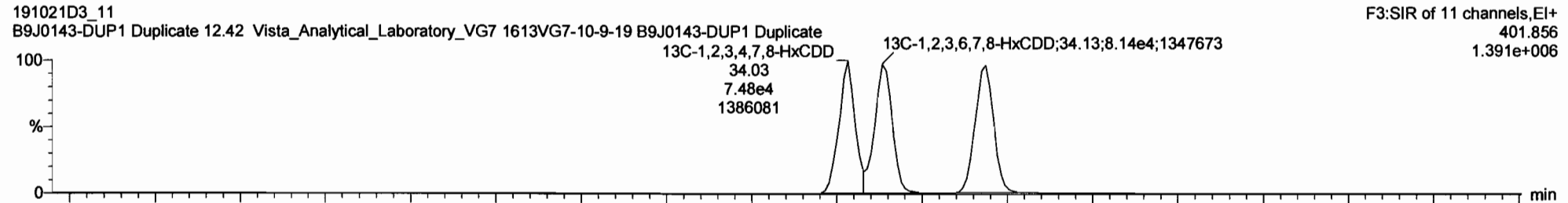


Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hexa-Dioxins



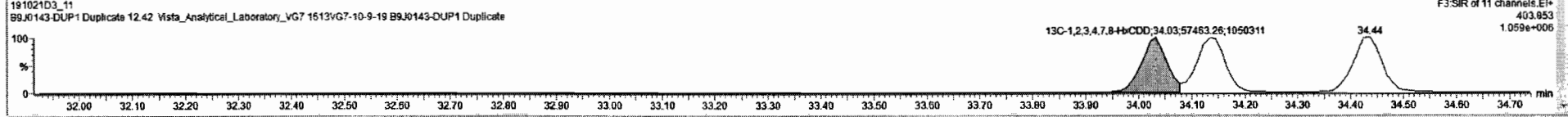
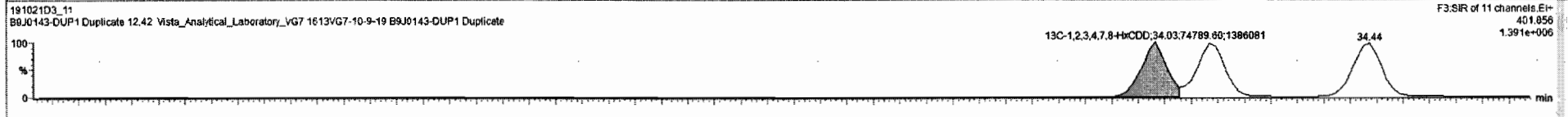
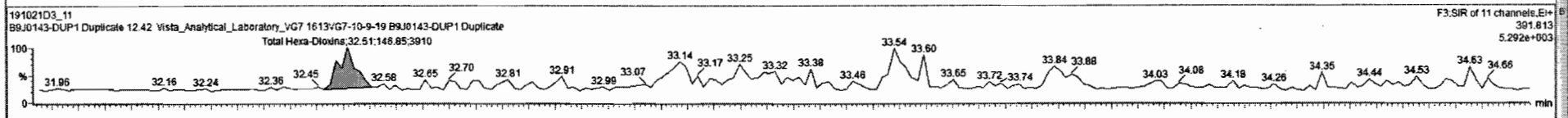
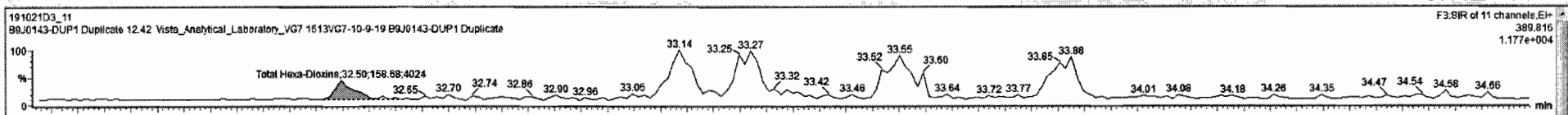
13C-1,2,3,4,7,8-HxCDD



191021D3_11 - B9J0143-DUP1 Duplicate B9J0143-DUP1 Duplicate 12.42 Vista Analytical Laboratory VG7 1613VG7 10-9-19

| # | Name | Resp | ES Resp | ISL | RA | n/y | RRF | wt/val | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 38 | 13C-1,2,3,4,6,9-HxCDF | 1.97e5 | 1.97e5 | 36 | 0.51 | NO | 1.000 | 10.123 | 33.55 | 33.55 | 1.000 | 1.000 | NO | 197.6 | 100 | 0.569 | |
| 39 | Total Tetra-Dioxins | 1.66e5 | | | | | 0.901 | 10.123 | 25.50 | | | 0.000 | NO | | | 0.109 | |
| 40 | Total Penta-Dioxins | 1.40e5 | | | | | 0.872 | 10.123 | 30.00 | | | 0.000 | NO | | | 0.0729 | |
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.978 | 10.123 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.331 | 0.4332 |
| 42 | Total Hepta-Dioxins | 1.33e5 | | | | | 0.989 | 10.123 | 37.75 | | | 0.000 | NO | 1.292 | | 0.208 | 2.663 |
| 43 | Total Tetra-Furans | 2.21e5 | | | | | 0.943 | 10.123 | 24.00 | | | 0.000 | NO | | | 0.0887 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.123 | 27.83 | | | 0.000 | NO | | | 0.0720 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.123 | 30.00 | | | 0.000 | NO | | | 0.0575 | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.123 | 33.00 | | | 0.000 | NO | | | 0.0935 | |

| # | Name | Pred RT | RT | m1 Resp | m2 Resp | Pred RA | RA | n/y | EMPC | Conc. |
|----|--------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 41 | Total Hexa-Dioxins | 33.80 | 32.50 | 1.587e2 | 1.469e2 | 1.240 | 1.06 | NO | 0.43519 | 0.00000 |



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

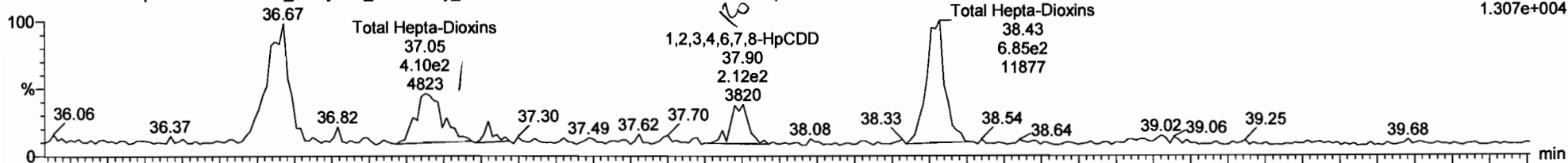
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate,
 Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hepta-Dioxins

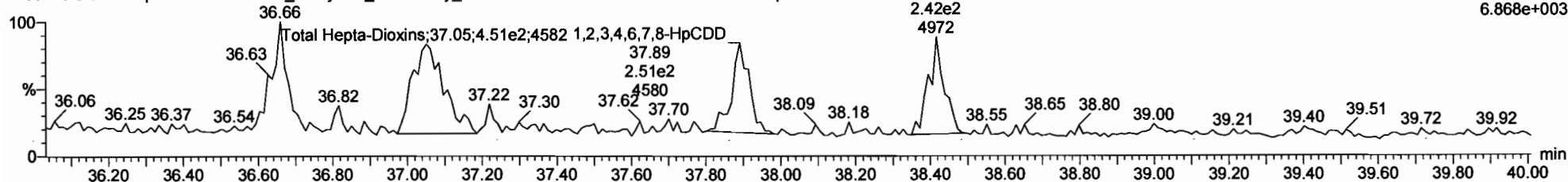
191021D3_11
 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F4:SIR of 11 channels, EI+
 423.777
 1.307e+005



191021D3_11
 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

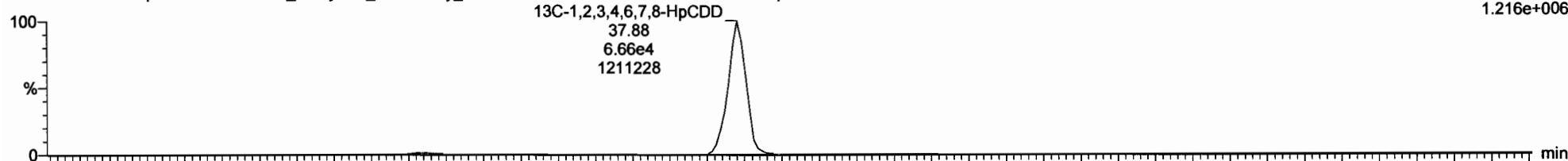
F4:SIR of 11 channels, EI+
 425.774
 6.868e+003



13C-1,2,3,4,6,7,8-HpCDD

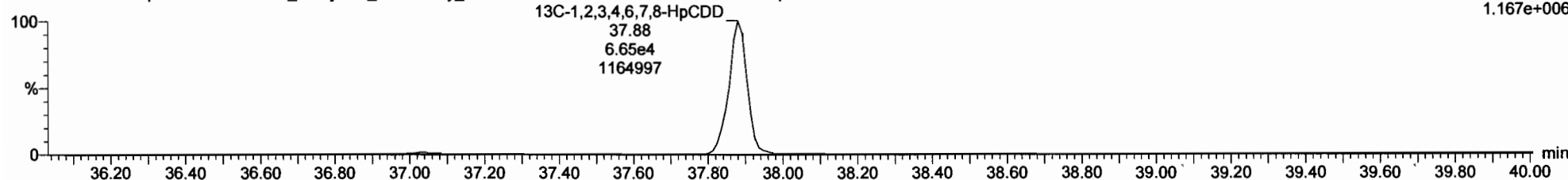
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 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F4:SIR of 11 channels, EI+
 435.817
 1.216e+006



191021D3_11
 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

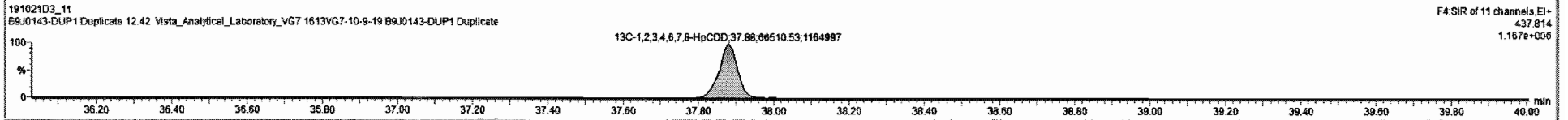
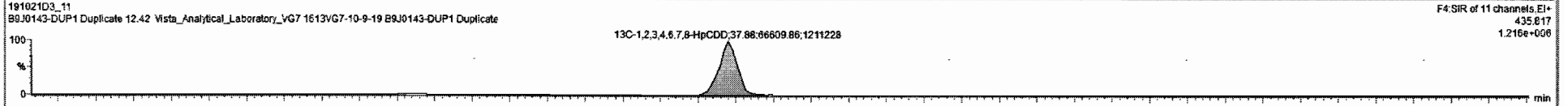
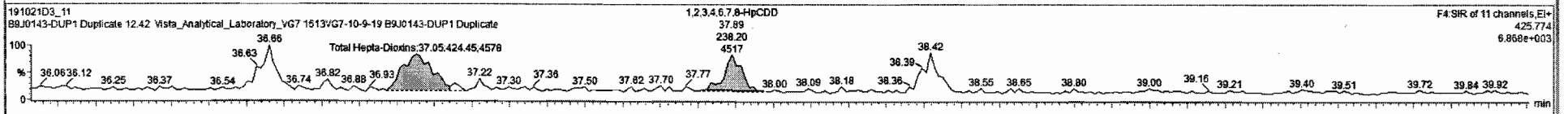
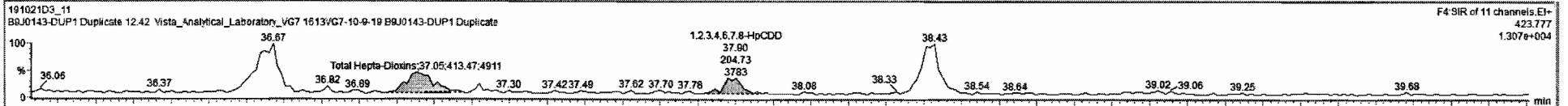
F4:SIR of 11 channels, EI+
 437.814
 1.167e+006



191021D3_11 B9J0143-DUP1 Duplicate B9J0143-DUP1 Duplicate 12.42 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS | RA | ny | RAF | wtPct | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|----|------|----|-------|--------|---------|-------|-------|----------|-----------|--------|------|--------|--------|
| 38 | 13C-1,2,3,4,6,8-HxCDF | 1.97e5 | 1.97e5 | 38 | 0.51 | NO | 1.000 | 10.123 | 33.55 | 33.55 | 1.000 | 1.000 | NO | 197.6 | 100 | 0.569 | |
| 39 | Total Tetra-Dioxins | 1.65e5 | | | | | 0.901 | 10.123 | 25.50 | | | 0.000 | NO | | | 0.109 | |
| 40 | Total Penta-Dioxins | 1.40e5 | | | | | 0.872 | 10.123 | 30.00 | | | 0.000 | NO | | | 0.0729 | |
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.978 | 10.123 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.331 | 0.4332 |
| 42 | Total Hepta-Dioxins | 1.33e5 | | | | | 0.908 | 10.123 | 37.75 | | | 0.000 | NO | 1.258 | | 0.208 | 1.668 |
| 43 | Total Tetra-Furans | 2.21e5 | | | | | 0.943 | 10.123 | 24.00 | | | 0.000 | NO | | | 0.0887 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.123 | 27.83 | | | 0.000 | NO | | | 0.0720 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.123 | 30.00 | | | 0.000 | NO | | | 0.0575 | |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.123 | 33.00 | | | 0.000 | NO | | | 0.0935 | |

| # | Name | Pred.RT | RT | Int Resp | MS Resp | Pred RA | RA | ny | EMPC | Conc. |
|---|------------------------|---------|-------|----------|---------|---------|------|-----|---------|---------|
| 1 | 42 Total Hepta-Dioxins | 37.75 | 37.05 | 4.135e2 | 4.245e2 | 1.040 | 0.97 | NO | 1.2578 | 1.2578 |
| 2 | 6 1,2,3,4,6,7,8-HpCDD | 37.89 | 37.90 | 2.947e2 | 2.382e2 | 1.040 | 0.86 | YES | 0.60657 | 0.00000 |



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

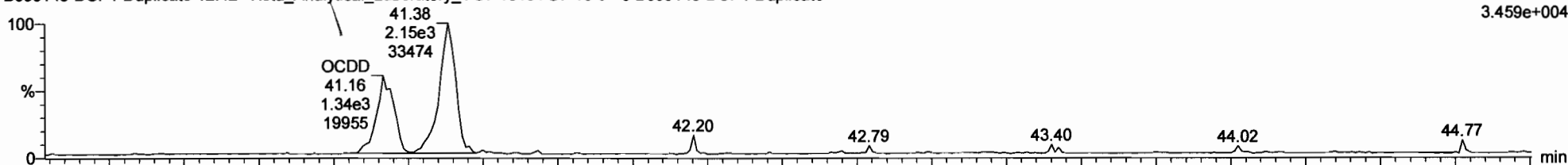
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_11, Date: 22-OCT-2019, Time: 10:02:49, ID: B9J0143-DUP1 Duplicate, Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

OCDD

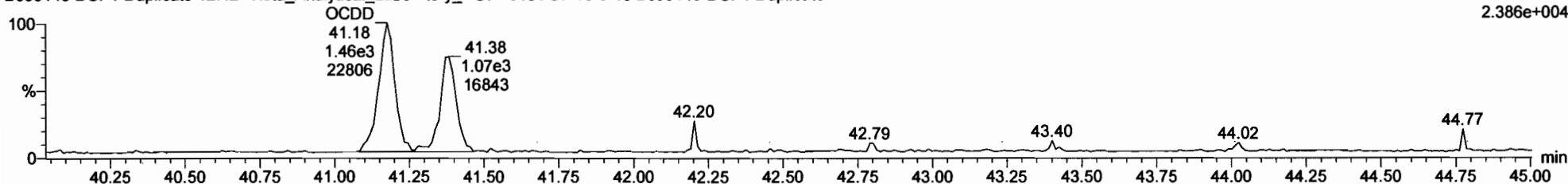
191021D3_11 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F5:SIR of 11 channels, EI+ 457.738 3.459e+004



191021D3_11 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

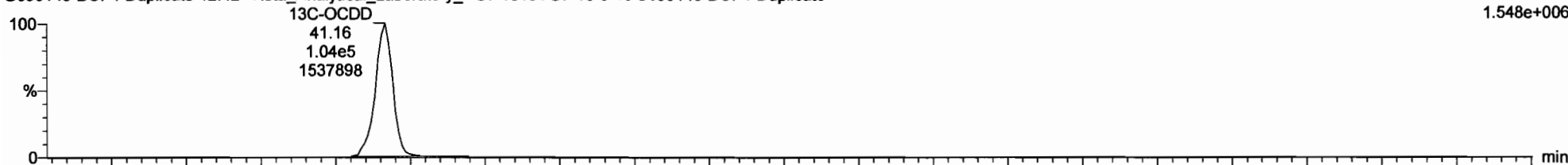
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13C-OCDD

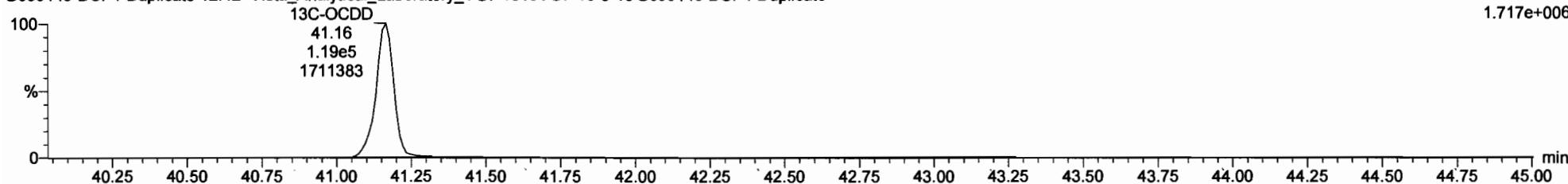
191021D3_11 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F5:SIR of 11 channels, EI+ 469.778 1.548e+006



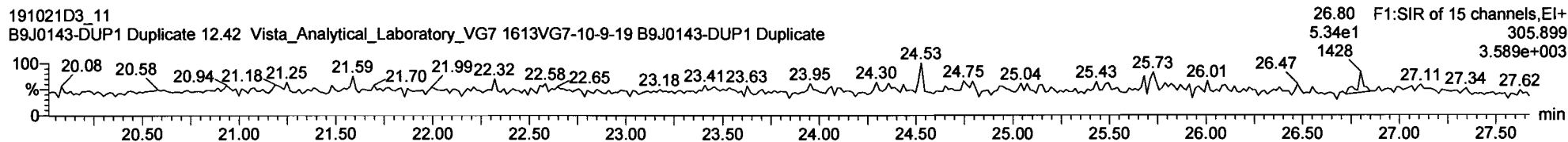
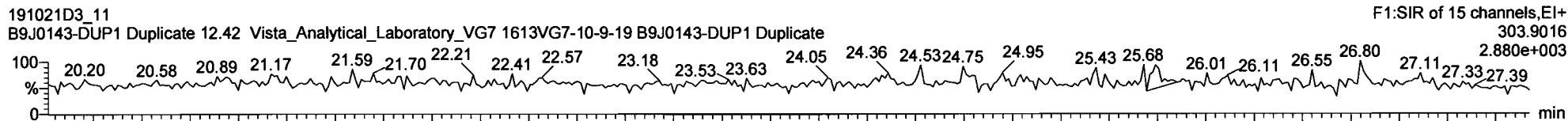
191021D3_11 B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 B9J0143-DUP1 Duplicate

F5:SIR of 11 channels, EI+ 471.775 1.717e+006

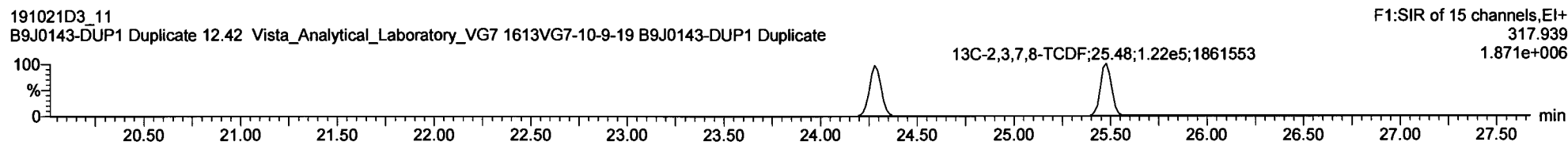
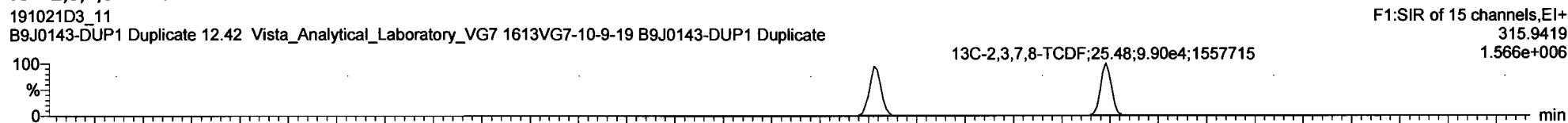


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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

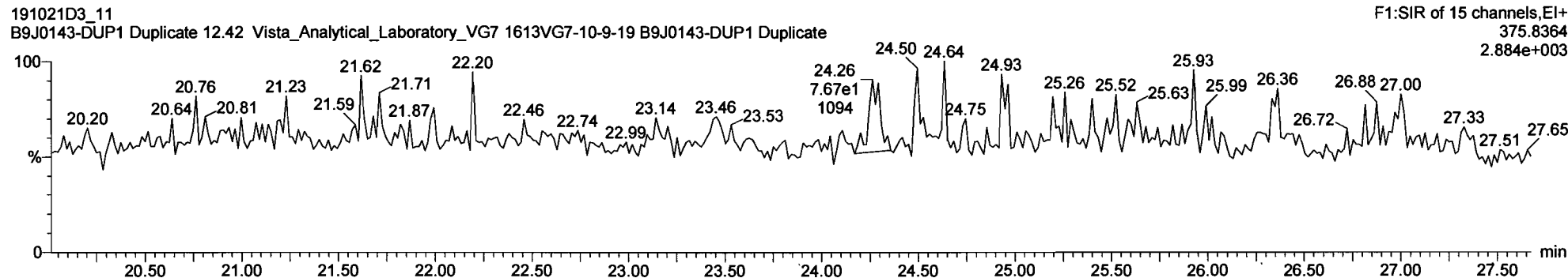
Total Tetra-Furans



13C-2,3,7,8-TCDF

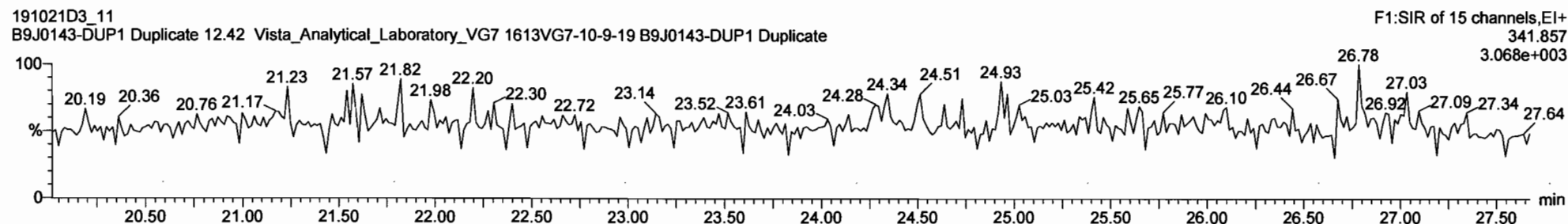
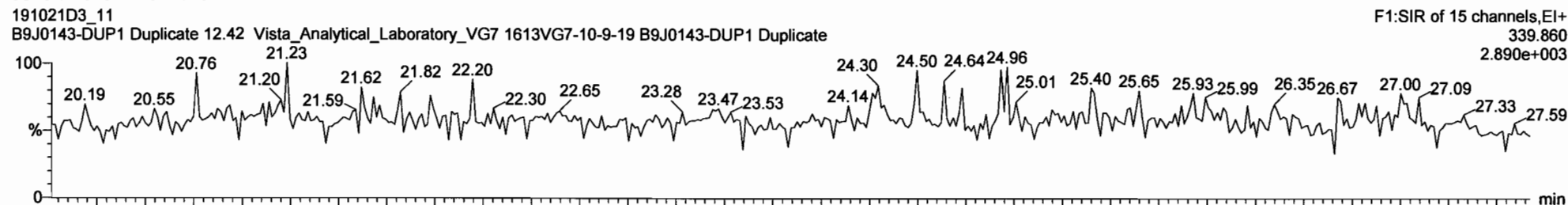


DPE1

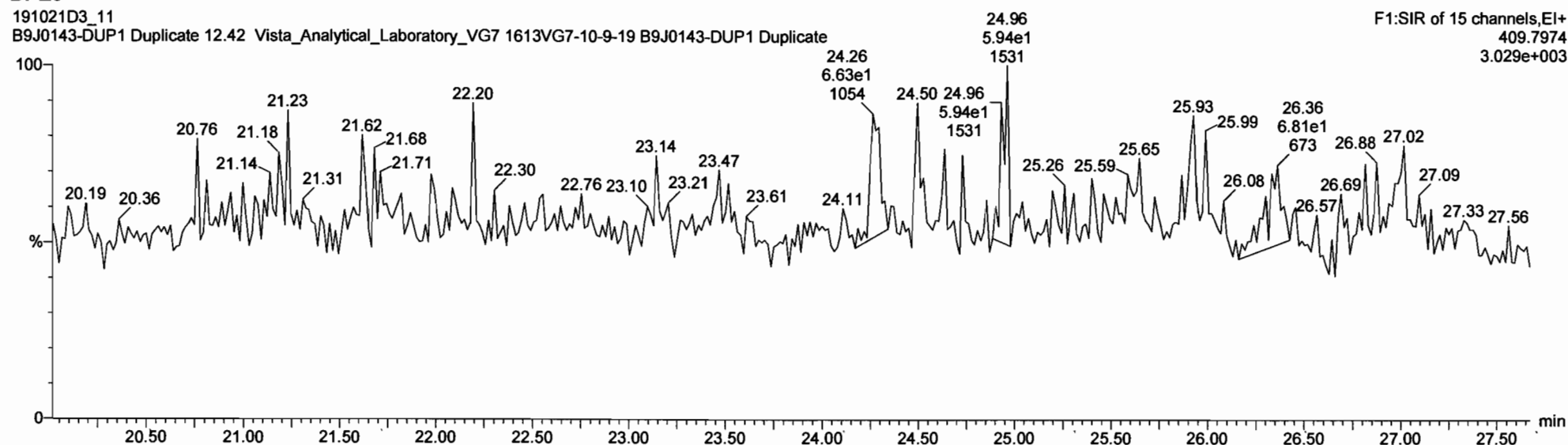


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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

1st Func. Penta-Furans



DPE6



Vista Analytical Laboratory

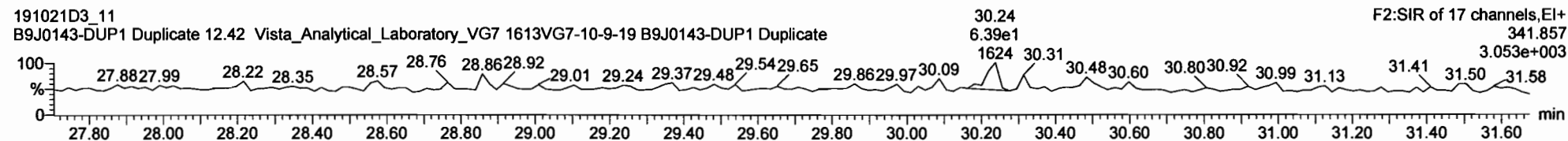
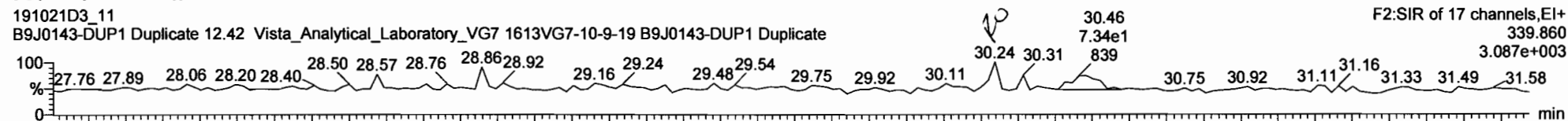
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

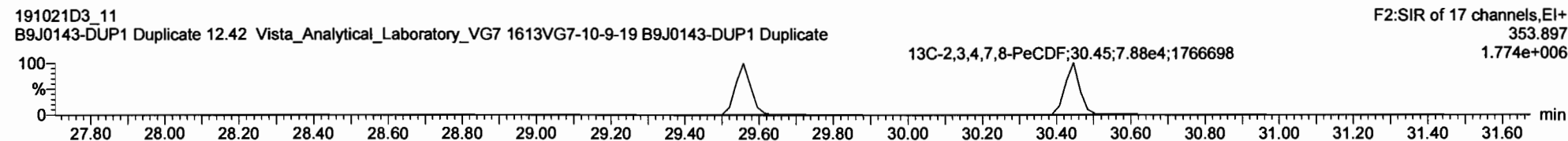
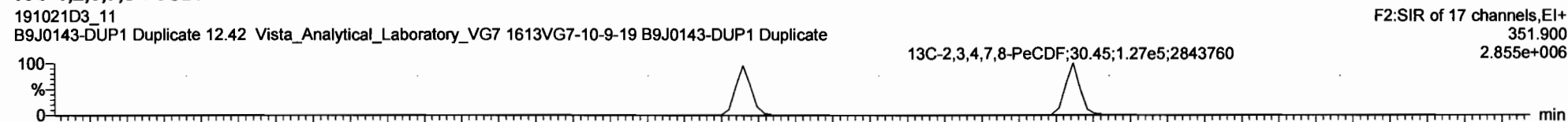
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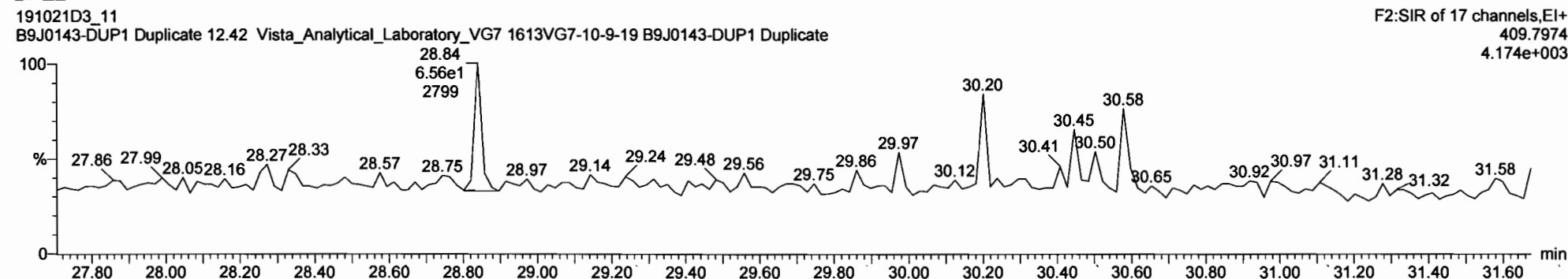
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



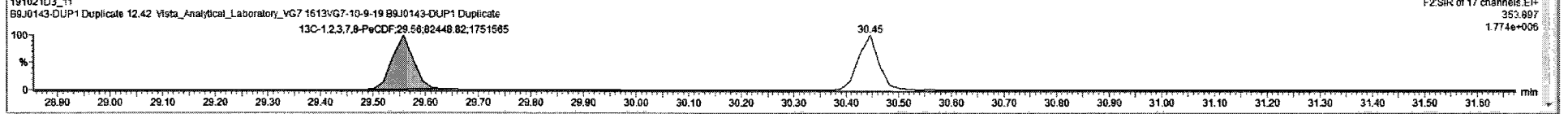
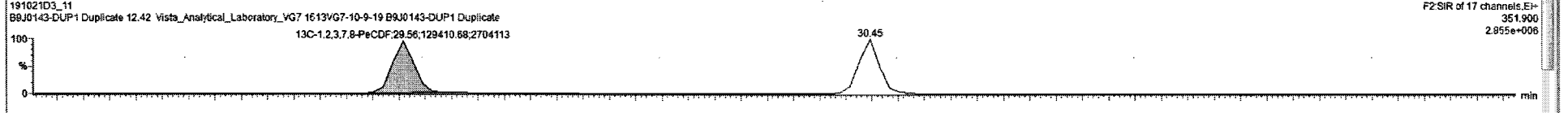
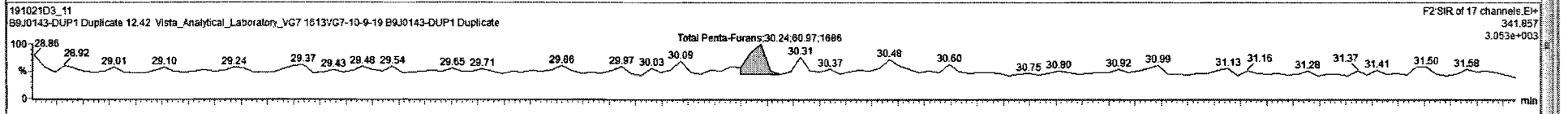
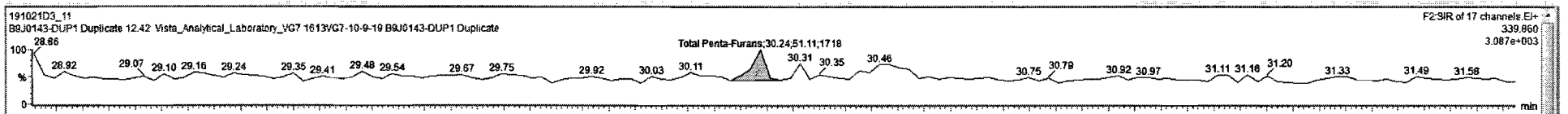
DPE2



191021D3_11 B9J0143-DUP1 Duplicate B9J0143-DUP1 Duplicate 12:42 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

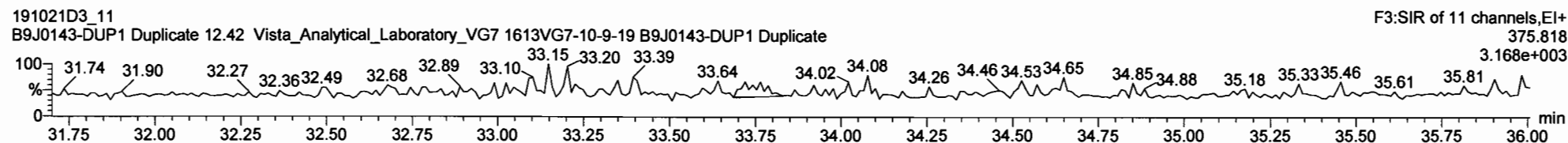
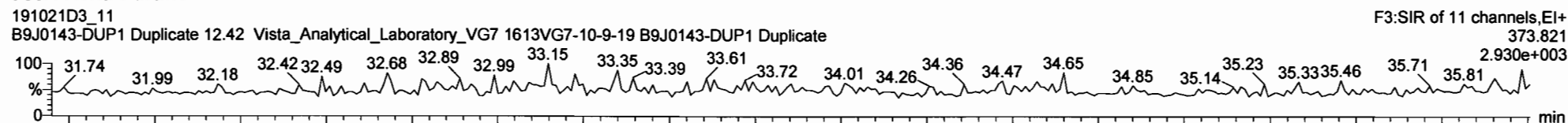
| # | Name | Resp | S Resp | ISF | RA | Adj | RRF | wt/Vol | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|--------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|----------------|
| 38 | 13C-1,2,3,4,6,9-HxCDF | 1.97e5 | 1.97e5 | 38 | 0.51 | NO | 1.000 | 10.123 | 33.55 | 33.55 | 1.000 | 1.000 | NO | 197.8 | 100 | 0.568 | |
| 39 | Total Tetra-Dioxins | | 1.65e5 | | | | 0.801 | 10.123 | 25.50 | | | 0.000 | NO | | | | 0.109 |
| 40 | Total Penta-Dioxins | | 1.40e5 | | | | 0.872 | 10.123 | 30.09 | | | 0.000 | NO | | | | 0.0729 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | | | | 0.976 | 10.123 | 33.80 | | | 0.000 | NO | 0.0000 | | | 0.331 0.4332 |
| 42 | Total Hepta-Dioxins | | 1.33e5 | | | | 0.989 | 10.123 | 37.75 | | | 0.000 | NO | 1.258 | | | 0.208 1.868 |
| 43 | Total Tetra-Furans | | 2.21e5 | | | | 0.943 | 10.123 | 24.00 | | | 0.000 | NO | | | | 0.0887 |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.940 | 10.123 | 27.83 | | | 0.000 | NO | | | | 0.0720 |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.940 | 10.123 | 30.09 | | | 0.000 | NO | 0.8000 | | | 0.0575 0.08488 |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.078 | 10.123 | 33.00 | | | 0.000 | NO | | | | 0.0935 |

| # | Name | Pred.RT | RT | m1 Resp | m2 Resp | Pred RA | RA | Adj | EMPC | Conc. |
|----|--------------------|---------|-------|---------|---------|---------|------|-----|----------|---------|
| 45 | Total Penta-Furans | 30.00 | 30.24 | 5.111e1 | 6.097e1 | 1.550 | 0.84 | YES | 0.084601 | 0.00000 |

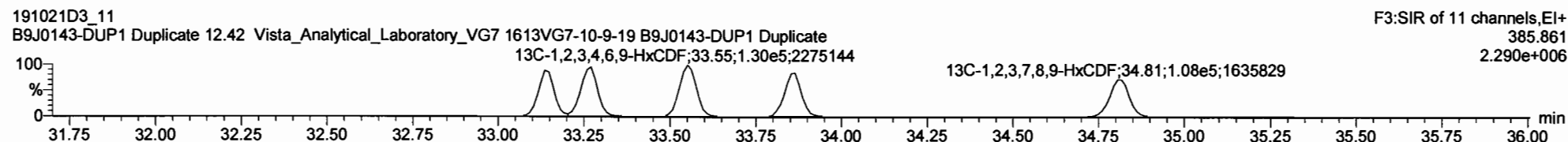
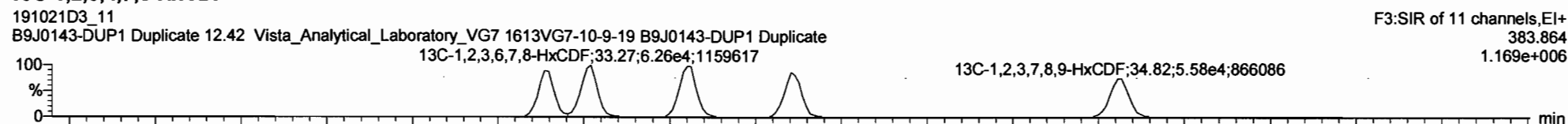


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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

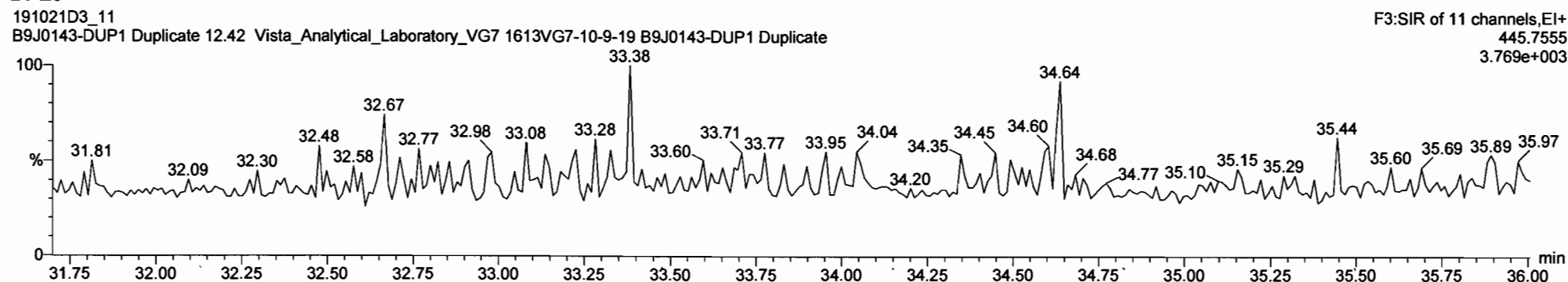
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

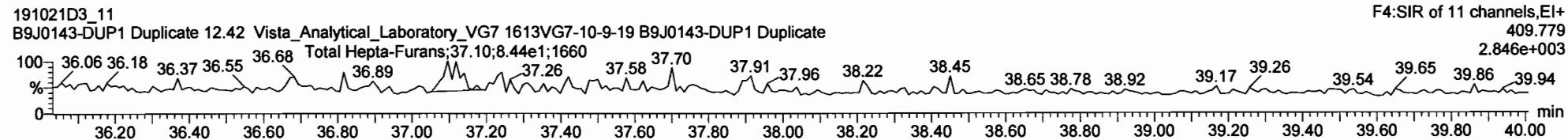
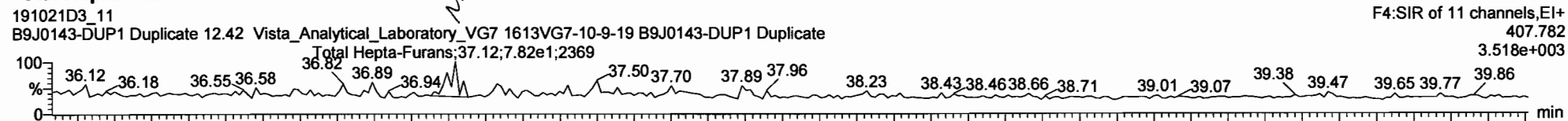


DPE3

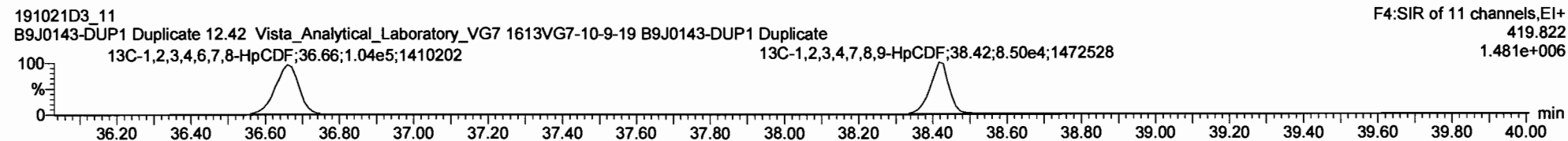
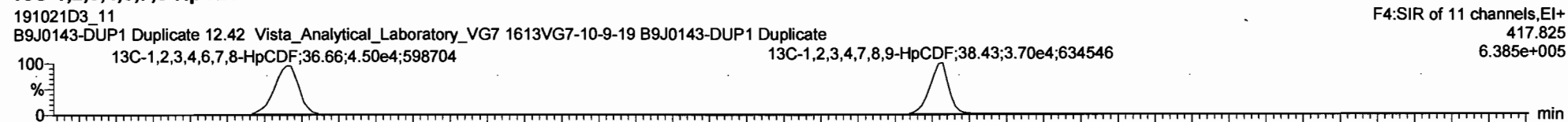


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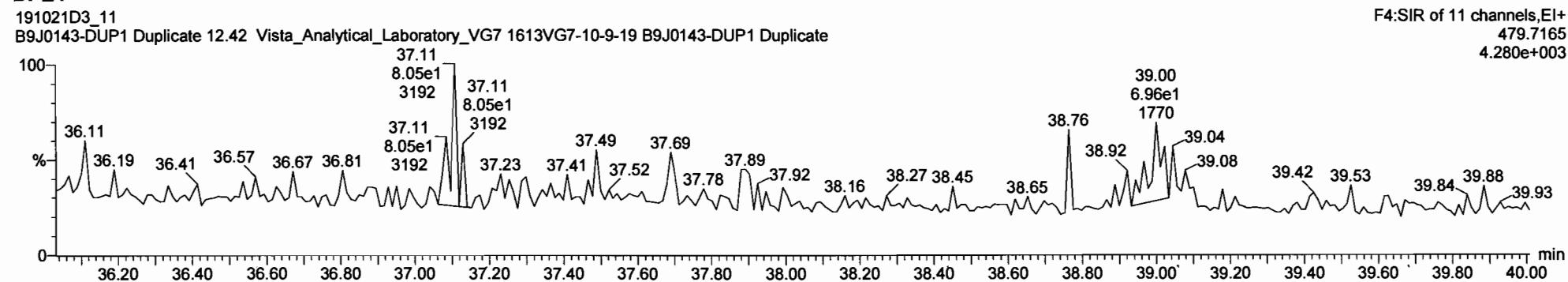
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF

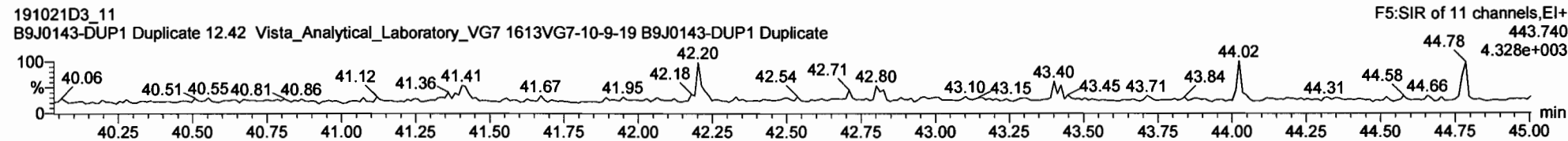
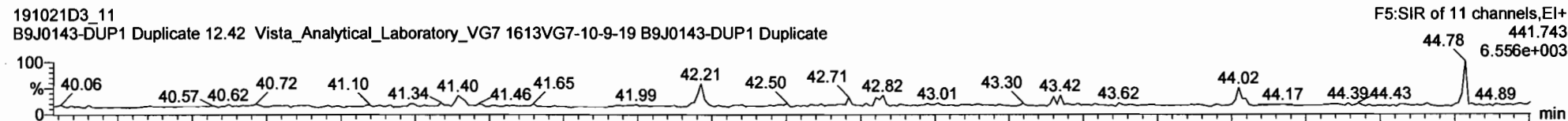


DPE4

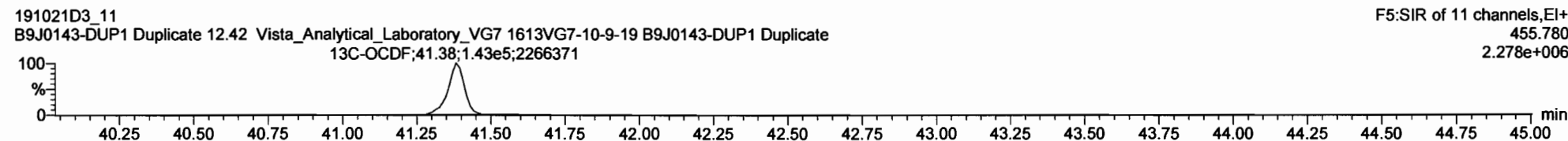
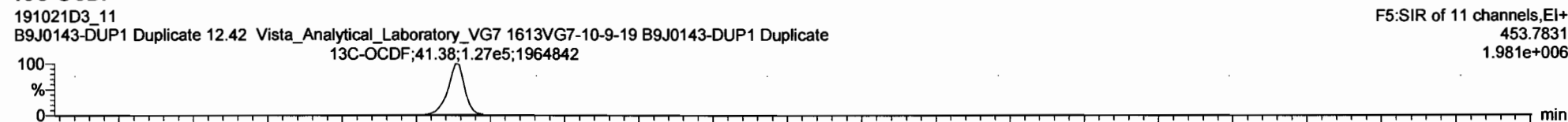


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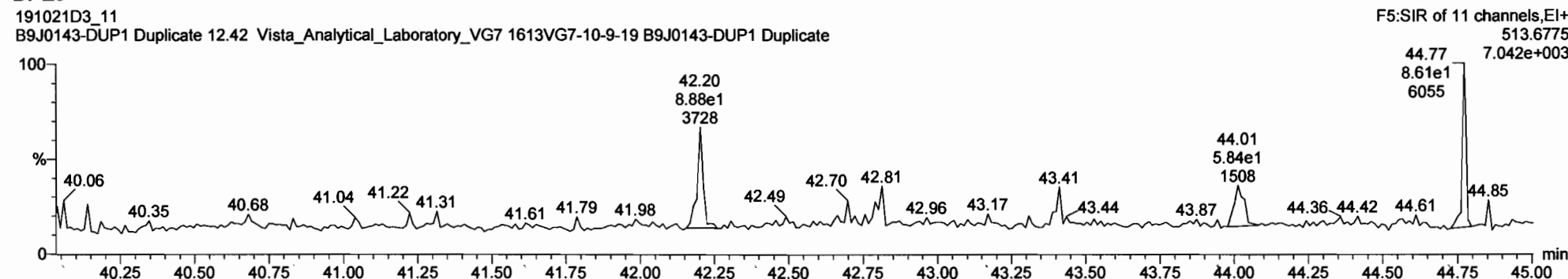
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

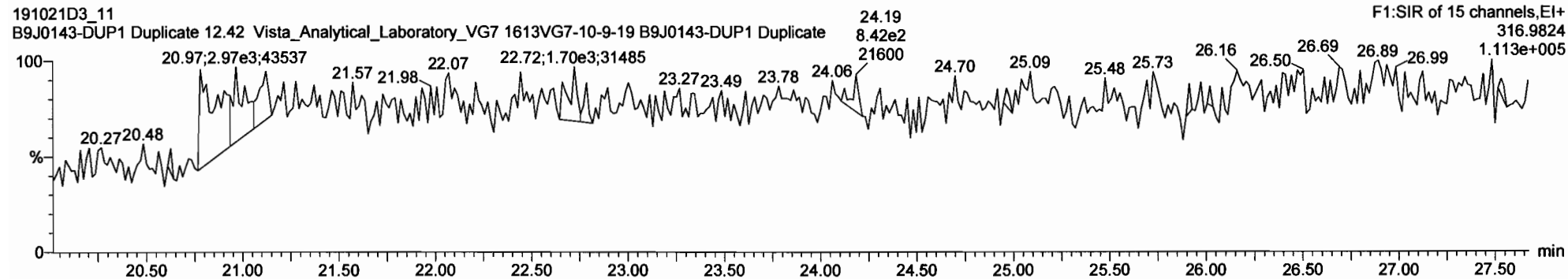
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

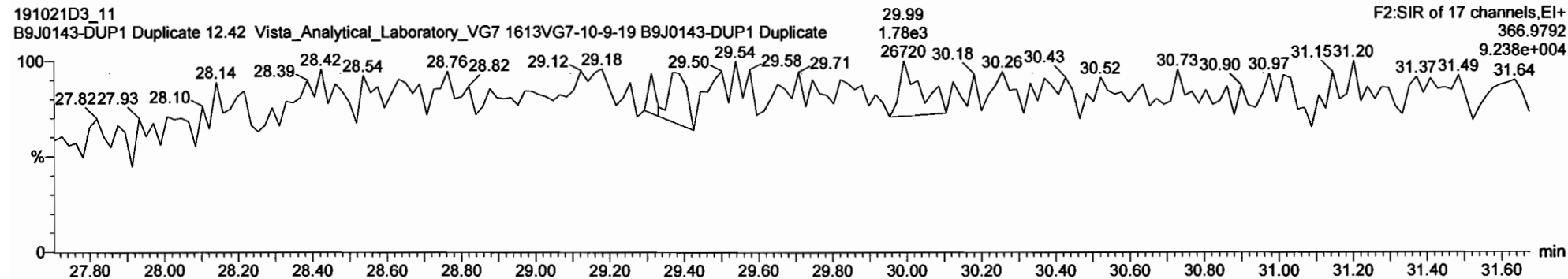
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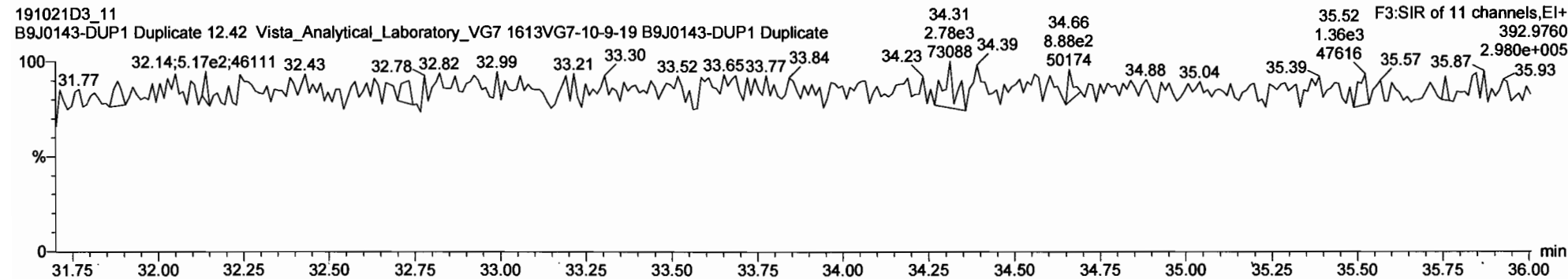
PFK1



PFK2



PFK3



Vista Analytical Laboratory

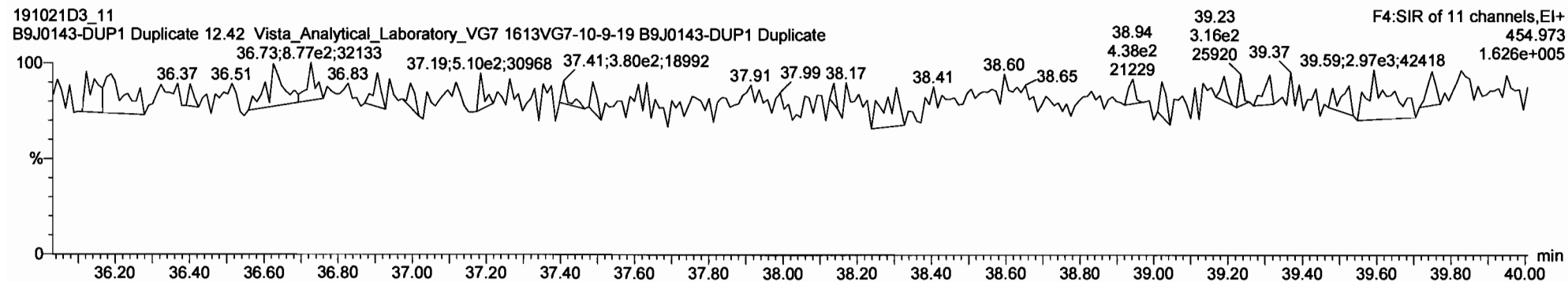
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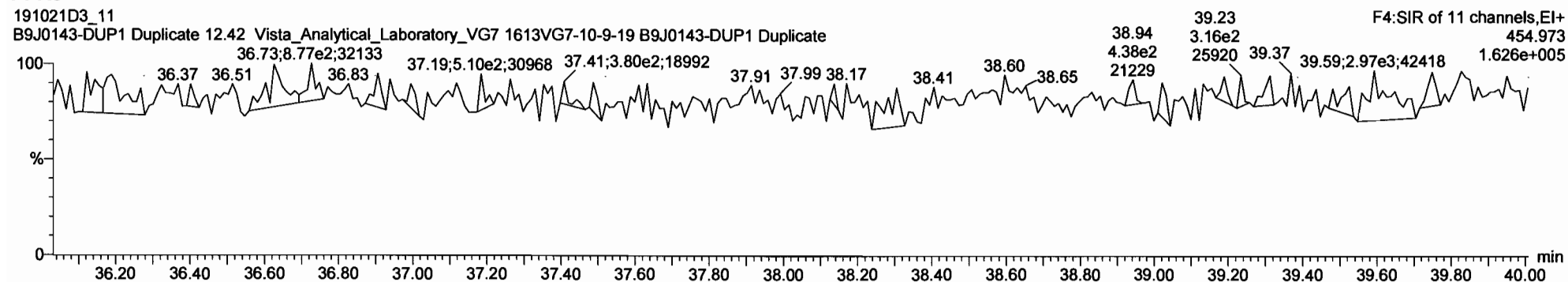
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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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Description: B9J0143-DUP1 Duplicate 12.42 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19**

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-12.qld
Last Altered: Monday, November 04, 2019 15:58:15 Pacific Standard Time
Printed: Monday, November 04, 2019 16:00:10 Pacific Standard Time

HC 11.4.19 CT 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10- 21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 15:51:34

Name: VG7 191021D3_12, Date: 22-OCT-2019, Time: 10:50:45, ID: 1903460-07 PDI-042SC-A-13-13.8-190930,
Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Table with 16 columns: #, Name, Area, Conc, Vol, RRF, ID, Conf, Pres, RT, RT, RT, RT, RT, RT, DL. Contains 31 rows of chemical analysis data including TCDD, PeCDD, HxCDD, HpCDD, OCDD, TCDF, PeCDF, HxCDF, HpCDF, and OCDF.

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-12.qld

Last Altered: Monday, November 04, 2019 15:58:15 Pacific Standard Time

Printed: Monday, November 04, 2019 16:00:10 Pacific Standard Time

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 Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| | Name | Area | IS Area | DLA/Vol | RR1 | RR2 | Y/N | Pred | RR1 | Pred RT | Obs | Comp | EMD | DF |
|----|------------------------|--------|---------|---------|-------|-------|-----|-------|-------|---------|-------|---------|-------|-------------------------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.27e5 | 1.72e5 | 10.1723 | 0.757 | 0.436 | NO | 1.093 | 1.093 | 36.67 | 36.67 | 191.84 | 97.6 | 0.647 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.08e5 | 1.72e5 | 10.1723 | 0.581 | 0.421 | NO | 1.143 | 1.145 | 38.36 | 38.42 | 212.46 | 108.1 | 0.844 |
| 34 | 13C-OCDF | 2.39e5 | 1.72e5 | 10.1723 | 0.689 | 0.904 | NO | 1.233 | 1.233 | 41.39 | 41.38 | 396.08 | 100.7 | 0.493 |
| 35 | 37Cl-2,3,7,8-TCDD | 5.29e4 | 1.42e5 | 10.1723 | 1.198 | | | 1.022 | 1.022 | 26.26 | 26.27 | 61.259 | 77.9 | 0.117 |
| 36 | 13C-1,2,3,4-TCDD | 1.42e5 | 1.42e5 | 10.1723 | 1.000 | 0.825 | NO | 1.000 | 1.000 | 25.70 | 25.69 | 196.61 | 100.0 | 0.414 |
| 37 | 13C-1,2,3,4-TCDF | 2.17e5 | 2.17e5 | 10.1723 | 1.000 | 0.763 | NO | 1.000 | 1.000 | 24.28 | 24.28 | 196.61 | 100.0 | 0.446 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.72e5 | 1.72e5 | 10.1723 | 1.000 | 0.523 | NO | 1.000 | 1.000 | 33.55 | 33.56 | 196.61 | 100.0 | 0.536 |
| 39 | Total Tetra-Dioxins | | 1.35e5 | 10.1723 | 0.901 | | | 0.000 | | 25.50 | | | | 0.0952 0.175 |
| 40 | Total Penta-Dioxins | | 1.18e5 | 10.1723 | 0.872 | | | 0.000 | | 30.00 | | | | 0.201 0.357 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.1723 | 0.976 | | | 0.000 | | 33.80 | | 0.00000 | 0.190 | 0.0713 |
| 42 | Total Hepta-Dioxins | | 1.17e5 | 10.1723 | 0.989 | | | 0.000 | | 37.75 | | 0.27939 | 0.279 | 0.154 |
| 43 | Total Tetra-Furans | | 1.90e5 | 10.1723 | 0.943 | | | 0.000 | | 24.00 | | | | 0.0823 0.162 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.1723 | 0.940 | | | 0.000 | | 27.63 | | | | 0.0798 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.1723 | 0.940 | | | 0.000 | | 30.00 | | 0.00000 | 0.693 | 0.148 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.1723 | 1.078 | | | 0.000 | | 33.00 | | | | 0.0583 0.136 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.1723 | 1.135 | | | 0.000 | | 37.75 | | | | 0.0624 0.122 |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-12.qld

Last Altered: Monday, November 04, 2019 15:58:15 Pacific Standard Time

Printed: Monday, November 04, 2019 16:00:10 Pacific Standard Time

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Calibration: 04 Nov 2019 15:51:34

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Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|------|----|---|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Dioxins

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|------|----|---|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Hexa-Dioxins

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|-----------------------|-----|-------|--------|-----------|----------|--------------|--------|------|
| 41 Total Hexa-Dioxins | YES | 32.51 | 63.885 | 68485.089 | 0.000 | bb | 0.0000 | 0.19 |

Hepta-Dioxins

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|------------------------|----|-------|--------|-----------|----------|--------------|--------|------|
| 42 Total Hepta-Dioxins | NO | 37.07 | 84.146 | 59429.016 | 2.810 | bb | 0.2794 | 0.28 |

Tetra-Furans

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|------|----|---|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Penta-Furans function 1

| Name | NY | R | Area | IS Area | Response | Primary Flag | Conc | EMPO |
|------|----|---|------|---------|----------|--------------|------|------|
| | | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-12.qld

Last Altered: Monday, November 04, 2019 15:58:15 Pacific Standard Time

Printed: Monday, November 04, 2019 16:00:10 Pacific Standard Time

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 Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| Name | Y/N | Area | S Area | Response | Primary Rep | Conc | ENPC |
|-----------------------|-----|-------|--------|------------|-------------|------|-------------|
| 45 Total Penta-Furans | YES | 28.67 | 69.099 | 105402.633 | 0.000 | MM | 0.0000 0.14 |
| 45 Total Penta-Furans | YES | 28.18 | 98.242 | 105402.633 | 0.000 | MM | 0.0000 0.20 |
| 45 Total Penta-Furans | YES | 27.93 | 56.580 | 105402.633 | 0.000 | bb | 0.0000 0.11 |
| 45 Total Penta-Furans | YES | 27.82 | 92.313 | 105402.633 | 0.000 | MM | 0.0000 0.19 |
| 45 Total Penta-Furans | YES | 27.85 | 28.788 | 105402.633 | 0.000 | MM | 0.0000 0.06 |

Hexa-Furans

| Name | Y/N | Area | S Area | Response | Primary Rep | Conc | ENPC |
|------|-----|------|--------|----------|-------------|------|------|
| | | | | | | | |

Hepta-Furans

| Name | Y/N | Area | S Area | Response | Primary Rep | Conc | ENPC |
|------|-----|------|--------|----------|-------------|------|------|
| | | | | | | | |

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_12, Date: 22-OCT-2019, Time: 10:50:45, ID: 1903460-07 PDI-042SC-A-13-13.8-190930, Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Tetra-Dioxins

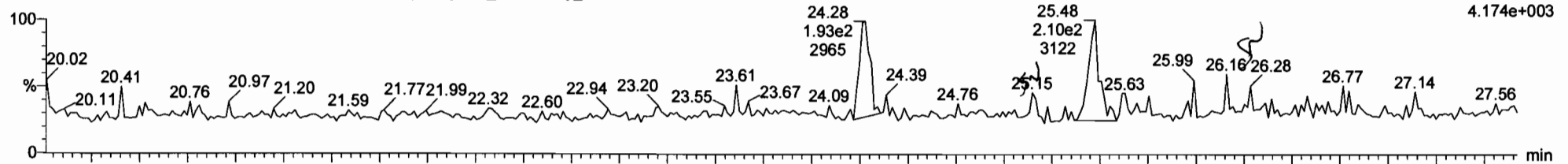
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1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-07 PDI-042SC-A-13-13.8-190930

F1:SIR of 15 channels,EI+

319.8965

4.174e+003



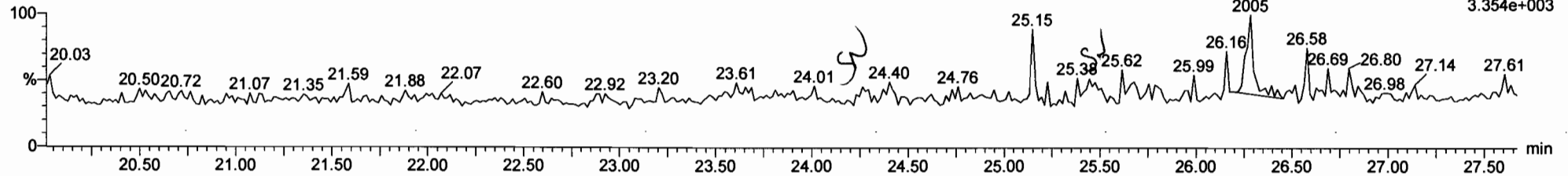
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F1:SIR of 15 channels,EI+

321.894

3.354e+003



13C-2,3,7,8-TCDD

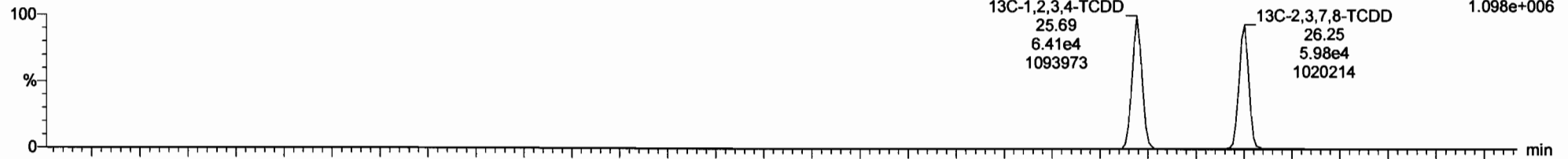
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F1:SIR of 15 channels,EI+

331.9368

1.098e+006



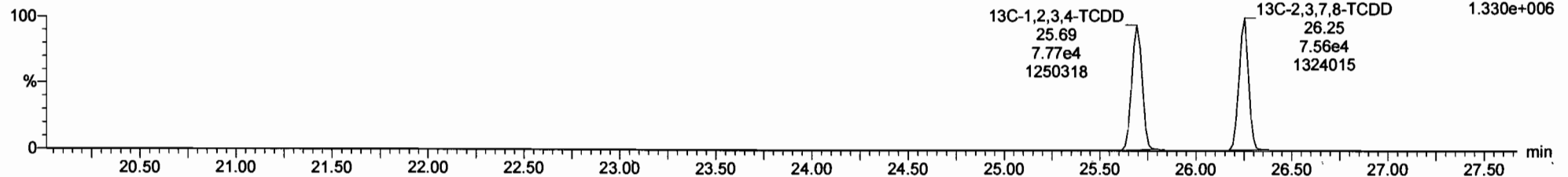
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F1:SIR of 15 channels,EI+

333.934

1.330e+006

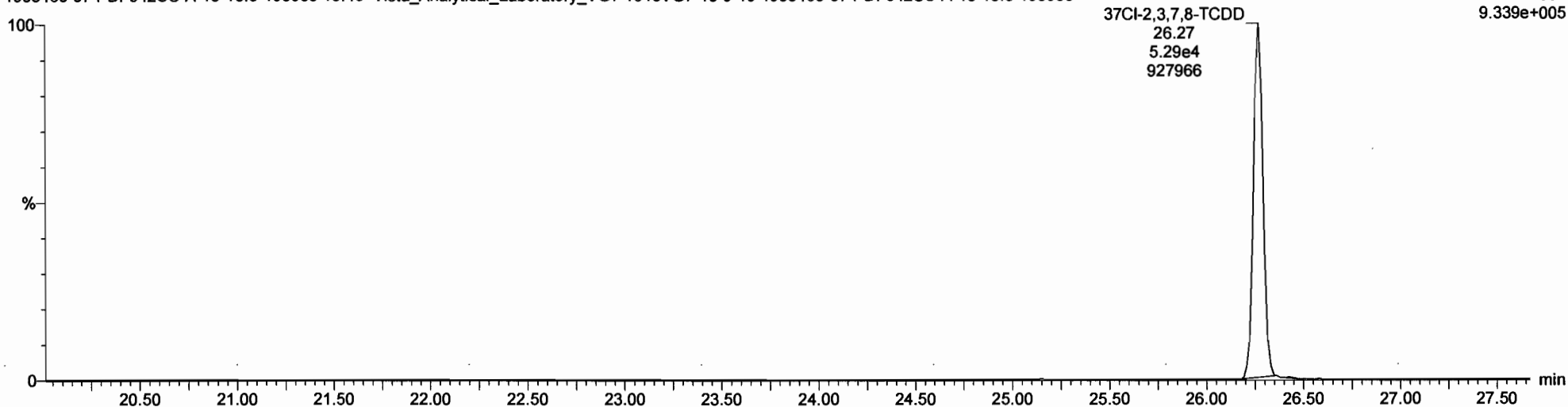


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37Cl-2,3,7,8-TCDD

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327.884
9.339e+005



13C-1,2,3,4-TCDD

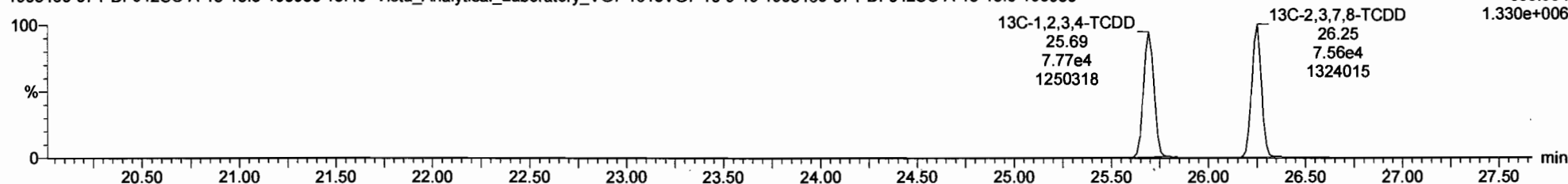
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F1:SIR of 15 channels,EI+
331.9368
1.098e+006



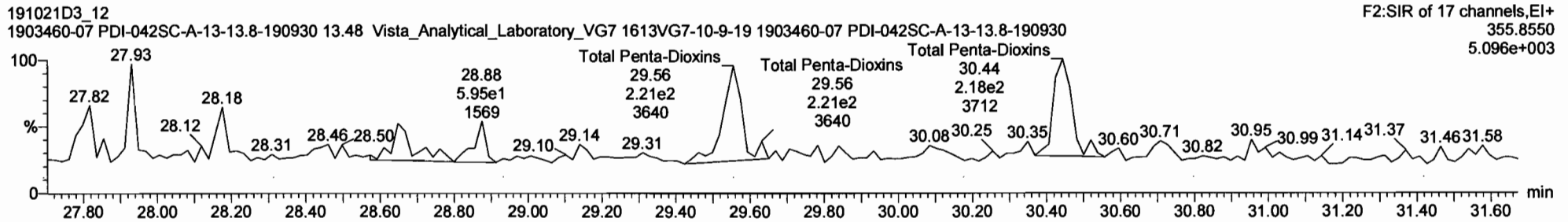
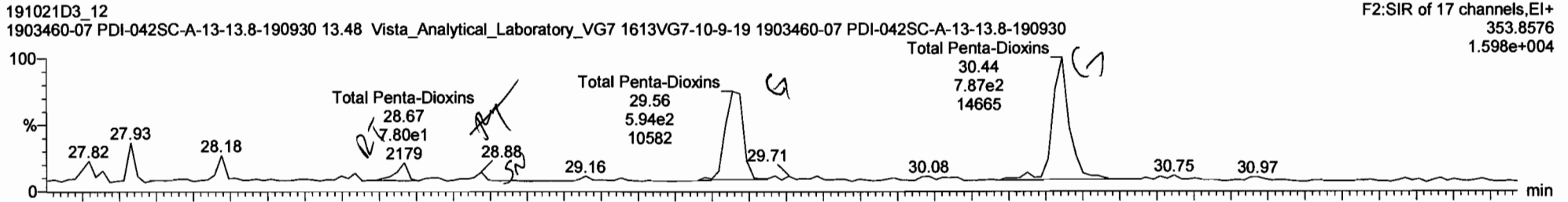
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F1:SIR of 15 channels,EI+
333.934
1.330e+006

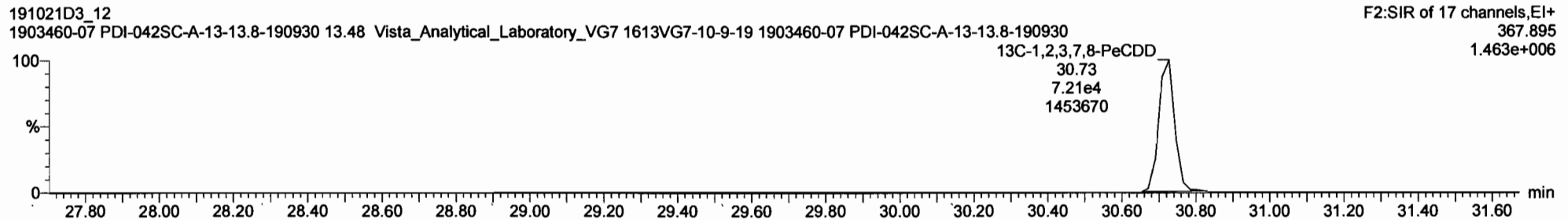
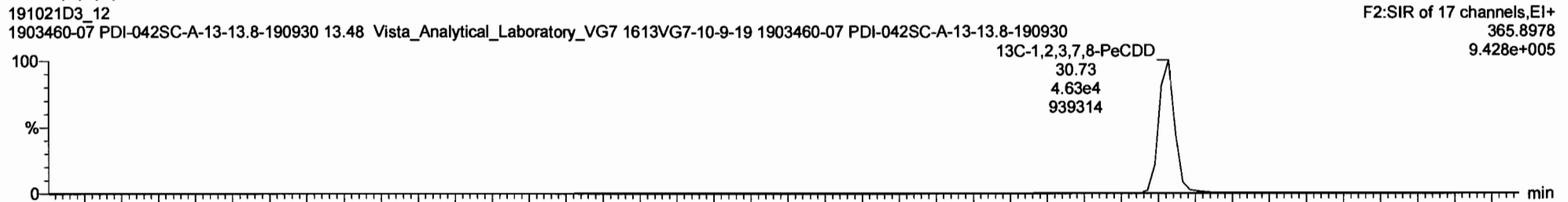


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Total Penta-Dioxins

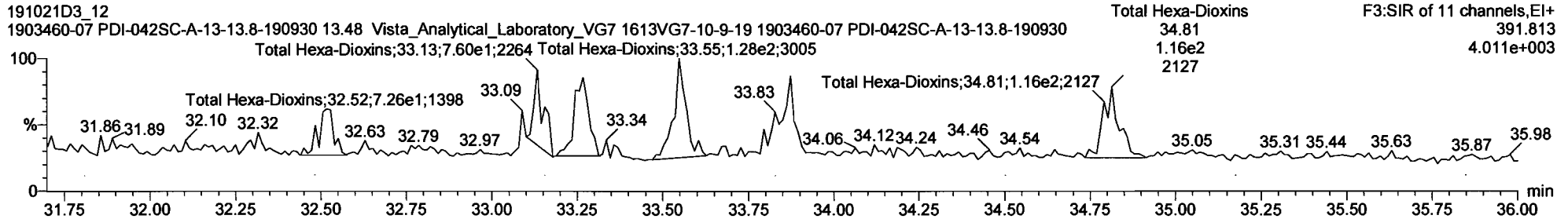
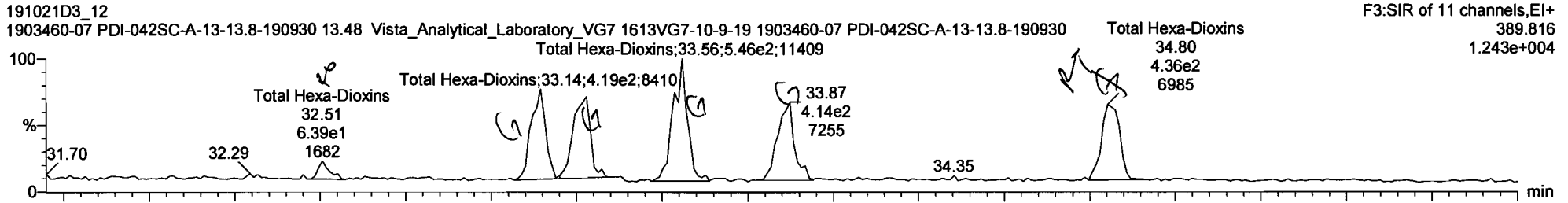


13C-1,2,3,7,8-PeCDD

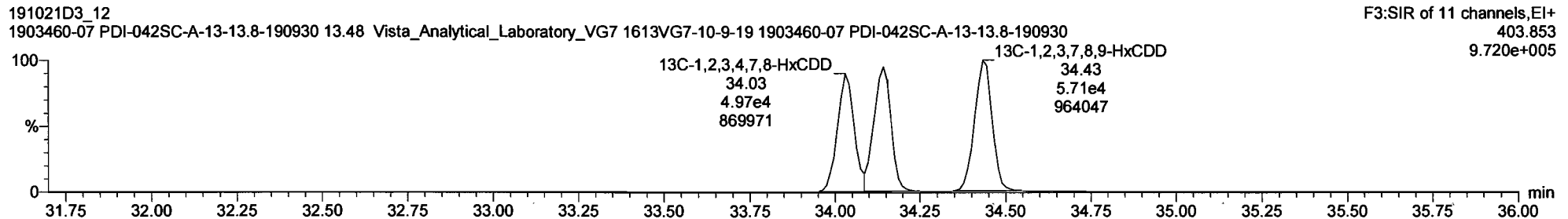
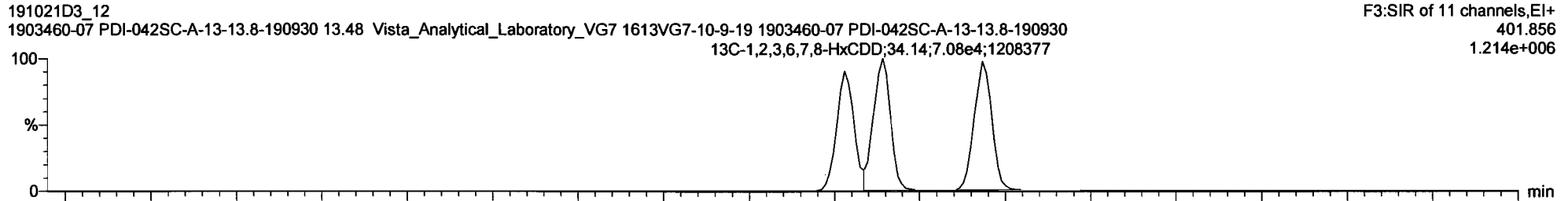


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Total Hexa-Dioxins

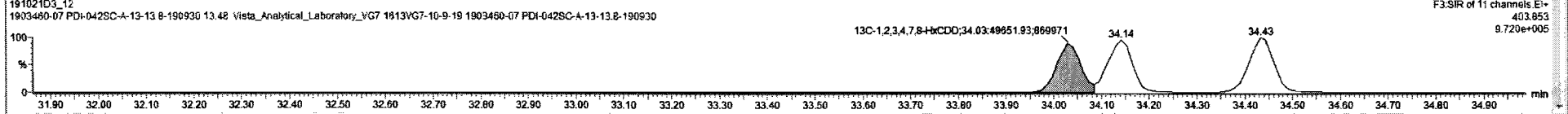
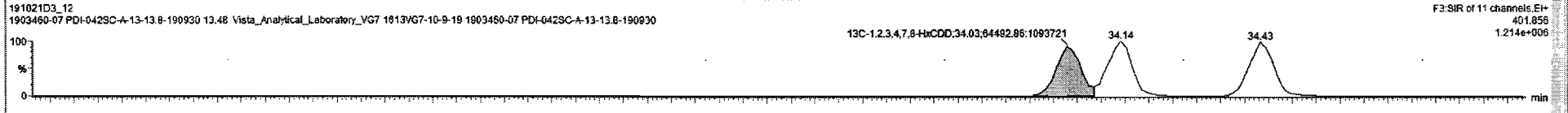
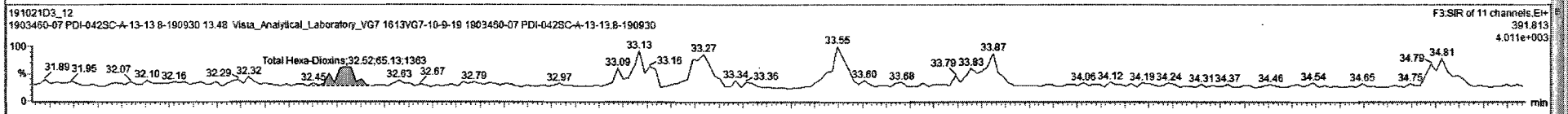
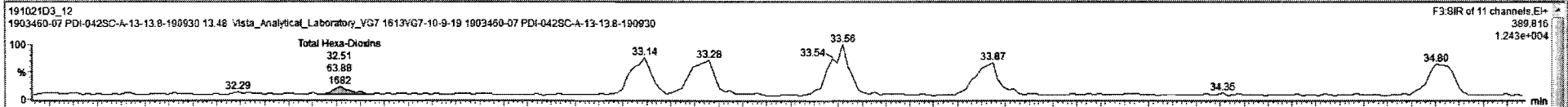


13C-1,2,3,4,7,8-HxCDD



| # | Name | Resp | IS Resp | IS# | RA | aly | RRF | w/wgt | Pred.RT | RT | RRT | Pred.RRT | Check.RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 41 | Total Hexa-Dioxins | | 0.0040 | | | | 0.978 | 10.172 | 33.29 | | | 0.000 | NO | 0.0000 | | 0.0713 | 0.1904 |
| 42 | Total Hepta-Dioxins | | 1.1745 | | | | 0.989 | 10.172 | 37.75 | | | 0.000 | NO | 0.2925 | | 0.154 | 0.9766 |
| 43 | Total Tetra-Furans | | 1.9065 | | | | 0.943 | 10.172 | 24.00 | | | 0.000 | NO | | | 0.0623 | |
| 44 | 1st Func. Penta-Furane | | 0.0060 | | | | 0.940 | 10.172 | 27.63 | | | 0.000 | NO | | | 0.0798 | |
| 45 | Total Penta-Furans | | 0.0060 | | | | 0.940 | 10.172 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.148 | 0.7568 |
| 46 | Total Hexa-Furans | | 0.0060 | | | | 1.078 | 10.172 | 33.00 | | | 0.000 | NO | | | 0.0583 | |
| 47 | Total Hepta-Furans | | 0.0060 | | | | 1.135 | 10.172 | 37.75 | | | 0.000 | NO | | | 0.0624 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred.RT | RT | wt Resp | id Resp | Pred.RA | RA | aly | EMPC | Conc. |
|----|--------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 41 | Total Hexa-Dioxins | 33.00 | 32.51 | 6.588e1 | 6.513e1 | 1.240 | 0.98 | YES | 0.19040 | 0.00000 |



Vista Analytical Laboratory

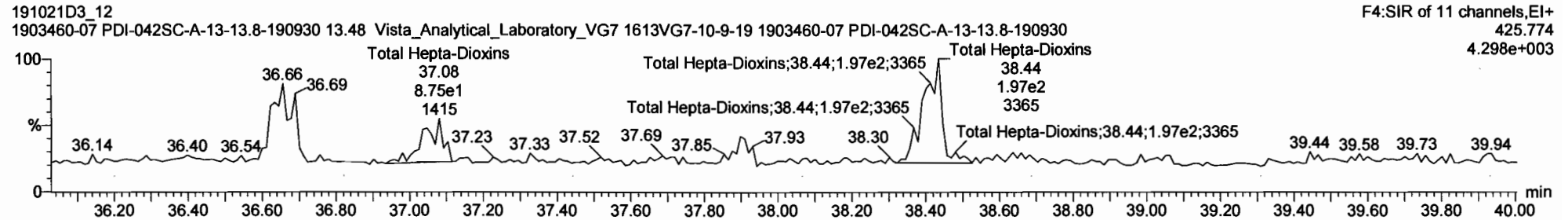
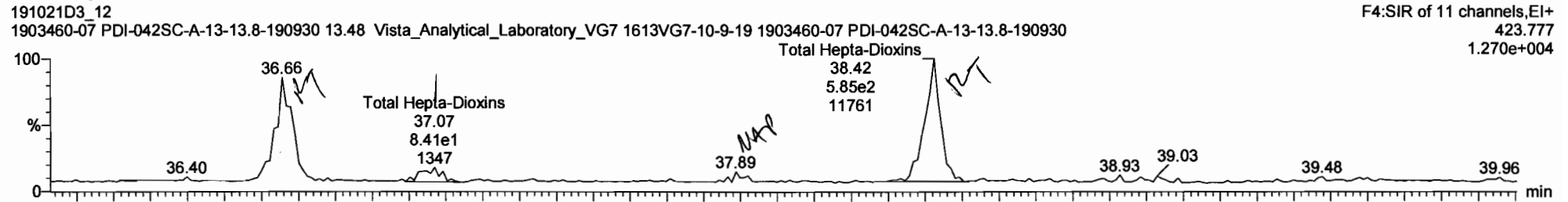
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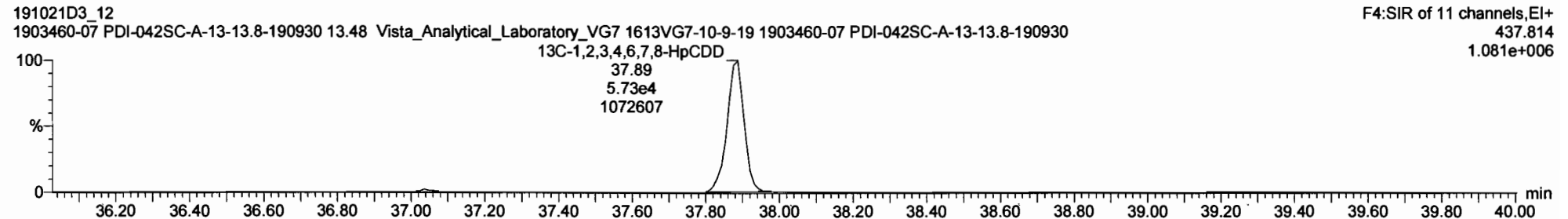
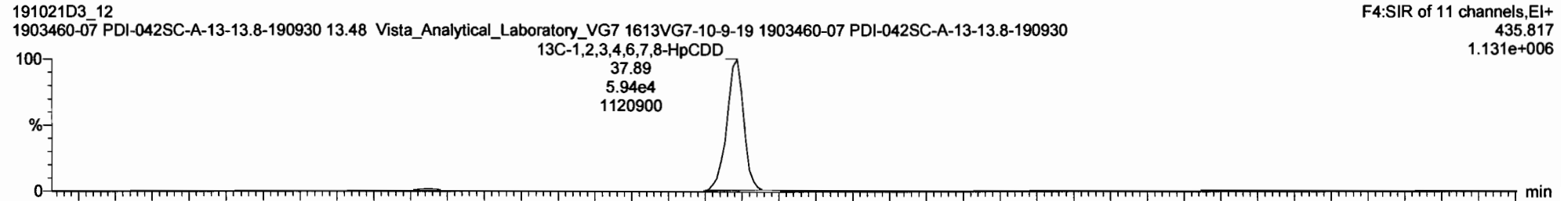
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Total Hepta-Dioxins



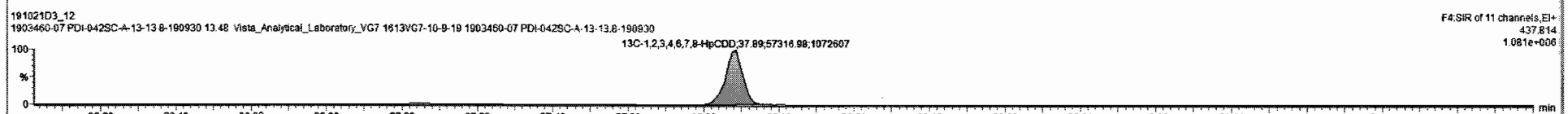
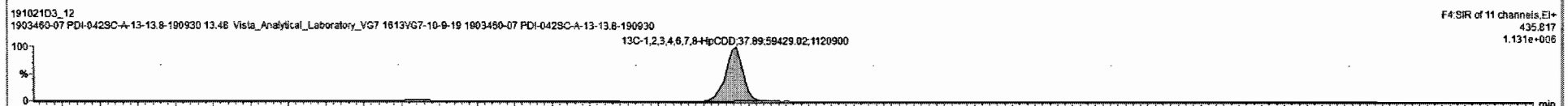
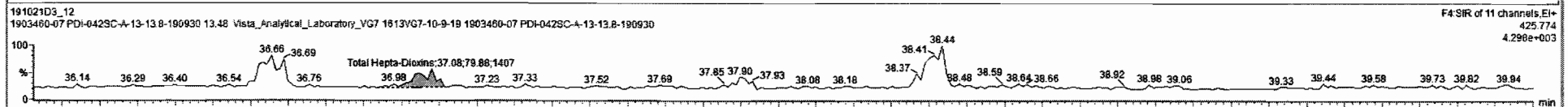
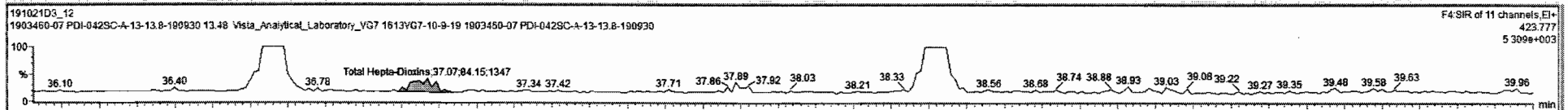
13C-1,2,3,4,6,7,8-HpCDD



191021D3_12 1903460-07 PDI-042SC-A-13-13.8-190930 1903460-07 PDI-042SC-A-13-13.8-190930 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS | RA | ny | RRF | wrtval | Pred_RT | RT | RRT | Pred_RRT | Check_RRT | Conc | %Rec | DL | EMPC |
|----|------------------------|------|---------|----|----|----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 41 | Total Hexa-Dioxins | | 0.00e0 | | | | 0.976 | 10.172 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.0713 | 0.1904 |
| 42 | Total Hepta-Dioxins | | 4.17e5 | | | | 0.988 | 10.172 | 37.75 | | | 0.000 | NO | 0.2794 | | 0.154 | 0.2794 |
| 43 | Total Tetra-Furans | | 1.90e5 | | | | 0.943 | 10.172 | 24.00 | | | 0.000 | NO | | | 0.0823 | |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.940 | 10.172 | 27.53 | | | 0.000 | NO | | | 0.0798 | |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.940 | 10.172 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.146 | 0.7568 |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.078 | 10.172 | 33.00 | | | 0.000 | NO | | | 0.0583 | |
| 47 | Total Hepta-Furans | | 0.00e0 | | | | 1.135 | 10.172 | 37.75 | | | 0.000 | NO | | | 0.0824 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred_RT | RT | m1 Resp | m2 Resp | Pred_RA | RA | ny | EMPC | Conc |
|----|---------------------|---------|-------|---------|---------|---------|------|----|---------|---------|
| 42 | Total Hepta-Dioxins | 37.75 | 37.07 | 8.415e1 | 7.863e1 | 1.040 | 1.05 | NO | 0.27939 | 0.27939 |



Vista Analytical Laboratory

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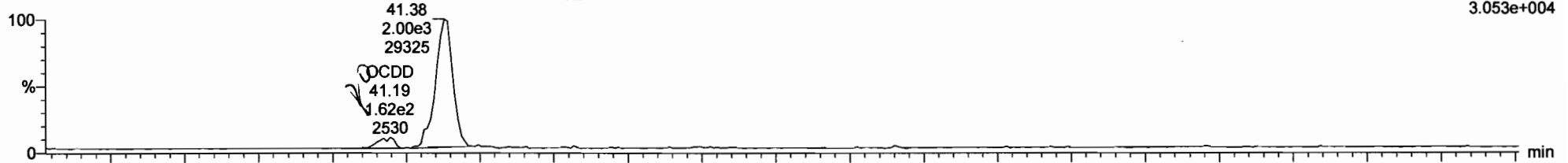
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OCDD

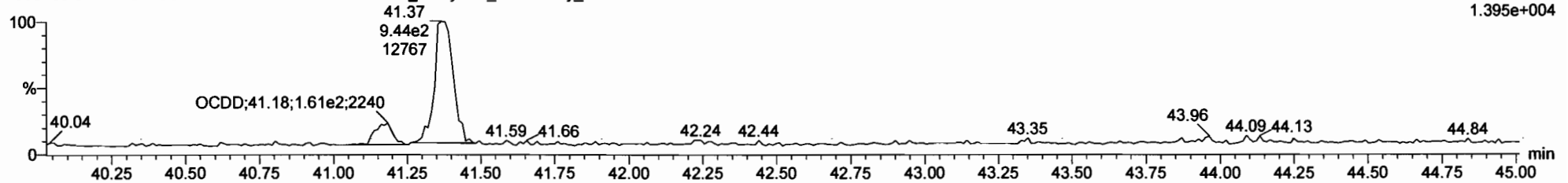
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F5:SIR of 11 channels,EI+
457.738
3.053e+004



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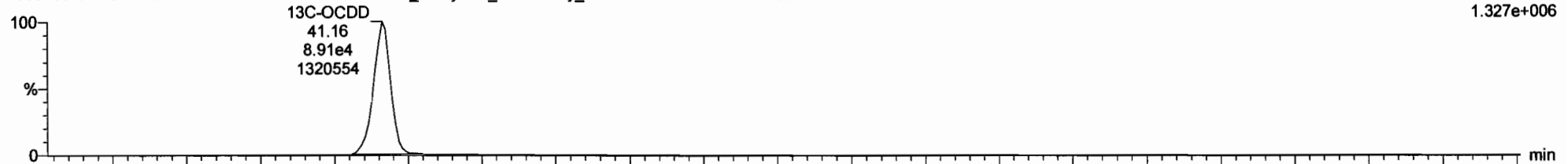
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1.395e+004



13C-OCDD

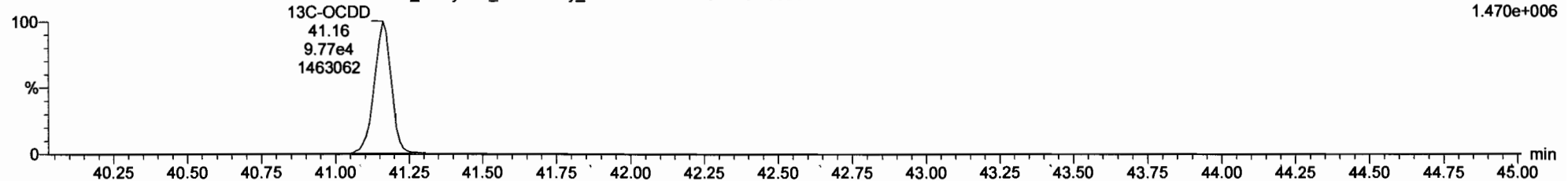
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F5:SIR of 11 channels,EI+
469.778
1.327e+006



191021D3_12
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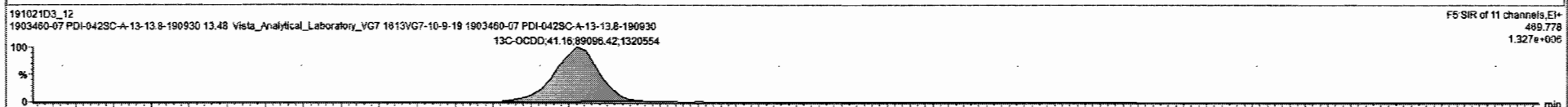
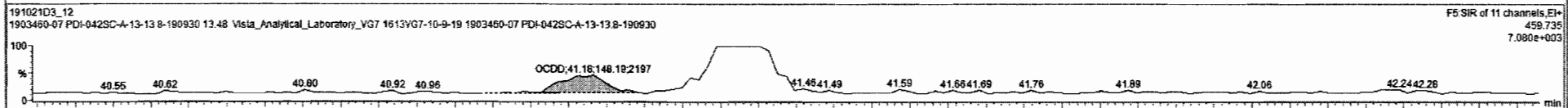
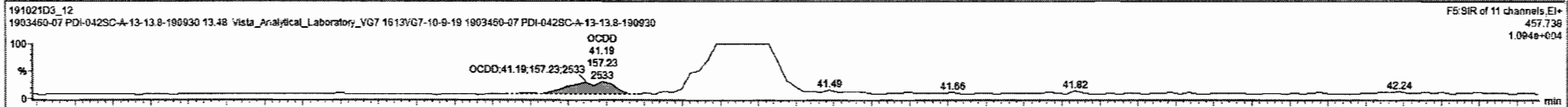
F5:SIR of 11 channels,EI+
471.775
1.470e+006



191021D3_12 1903460-07 PDI-042SC-A-13-13.8-190930 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista Analytical Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS# | RA | nly | RPF | wt/wt | Pred.RT | RT | RRT | Pred.RRT | Check.RRT | Conc | %Rec | DL | EMPC |
|---|---------------------|--------|---------|-----|------|-----|-------|--------|---------|-------|-------|----------|-----------|--------|------|-------|--------|
| 1 | 1,2,3,7,8-TCDD | | 1.35e5 | 18 | | | 0.905 | 10.172 | 28.28 | | | 1.001 | NO | | | 0.175 | |
| 2 | 1,2,3,7,8-PeCDD | | 1.16e5 | 19 | | | 0.903 | 10.172 | 30.75 | | | 1.001 | NO | | | 0.357 | |
| 3 | 1,2,3,4,7,8-HxCDD | | 1.14e5 | 20 | | | 1.101 | 10.172 | 34.04 | | | 1.000 | NO | | | 0.139 | |
| 4 | 1,2,3,6,7,8-HxCDD | | 1.25e5 | 21 | | | 0.938 | 10.172 | 34.14 | | | 1.000 | NO | | | 0.146 | |
| 5 | 1,2,3,7,8,9-HxCDD | | 1.27e5 | 22 | | | 0.961 | 10.172 | 34.47 | | | 1.001 | NO | | | 0.144 | |
| 6 | 1,2,3,4,6,7,8-HpCDD | | 1.17e5 | 23 | | | 0.979 | 10.172 | 37.90 | | | 1.000 | NO | | | 0.156 | |
| 7 | OCDD | 3.05e2 | 1.67e5 | 24 | 1.06 | YES | 0.950 | 10.172 | 41.16 | 41.19 | 1.001 | 1.000 | NO | 0.6707 | | 0.213 | 0.6150 |
| 8 | 2,3,7,8-TCDF | | 1.90e5 | 25 | | | 0.950 | 10.172 | 25.50 | | | 1.001 | NO | | | 0.162 | |
| 9 | 1,2,3,7,8-PeCDF | | 1.69e5 | 26 | | | 0.960 | 10.172 | 29.58 | | | 1.001 | NO | | | 0.281 | |

| # | Name | Pred.RT | RT | m1 Resp | m2 Resp | Pred.RA | RA | nly | EMPC | Conc. |
|---|------|---------|----|---------|---------|---------|----|-----|------|-------|
| 1 | | | | | | | | | | |



Vista Analytical Laboratory

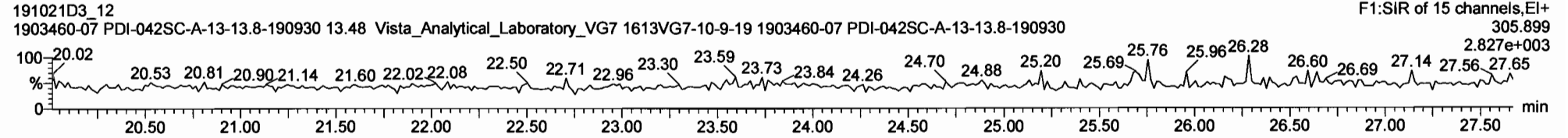
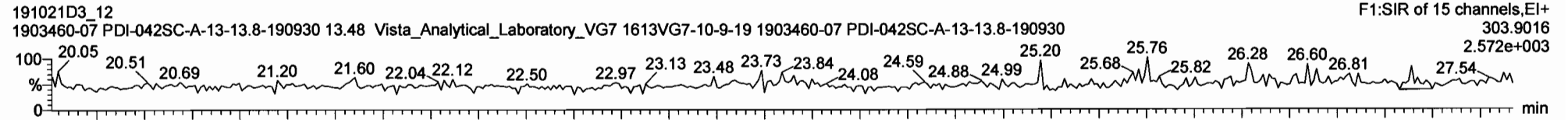
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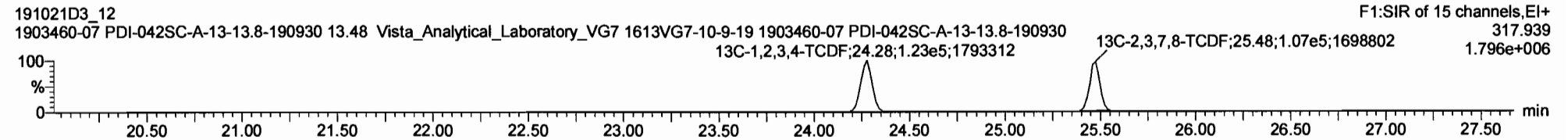
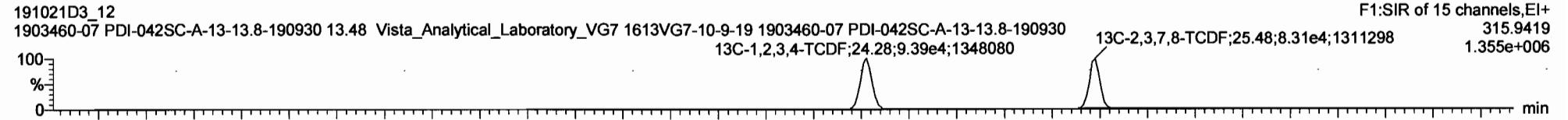
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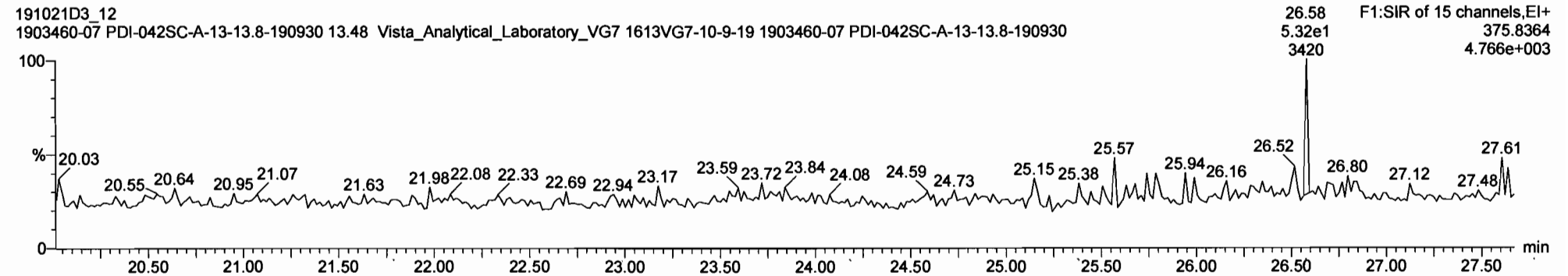
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

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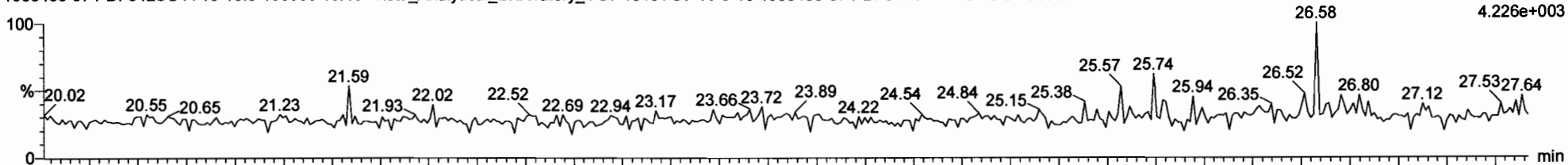
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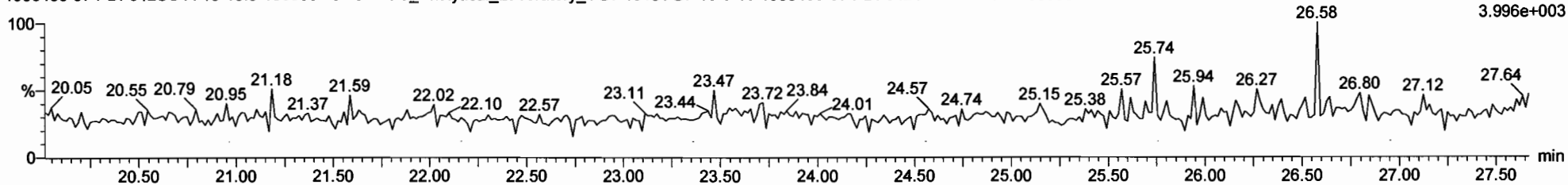
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1st Func. Penta-Furans

191021D3_12
1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-07 PDI-042SC-A-13-13.8-190930

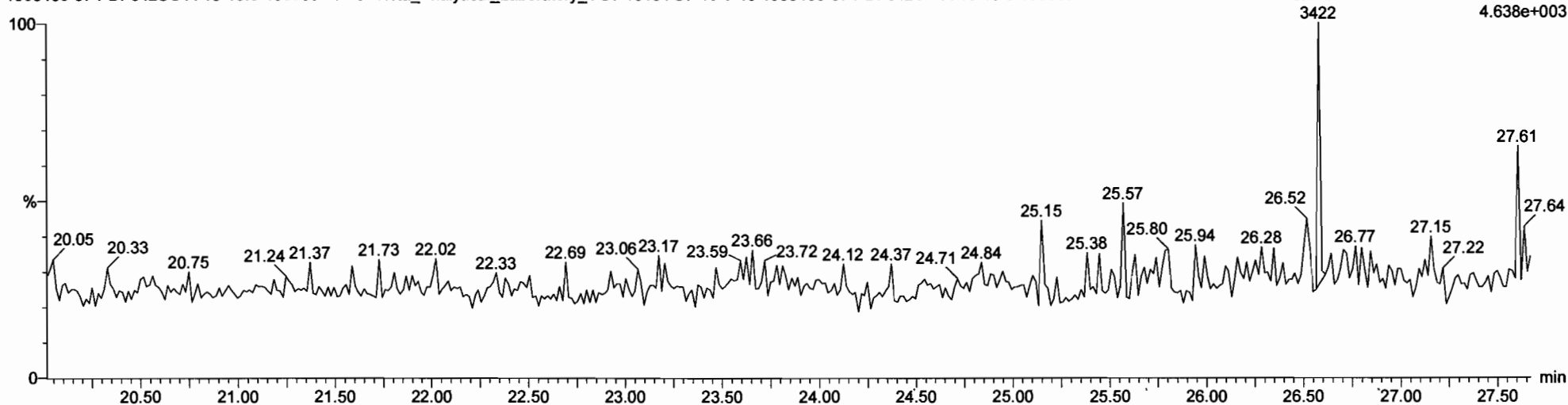


191021D3_12
1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-07 PDI-042SC-A-13-13.8-190930



DPE6

191021D3_12
1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-07 PDI-042SC-A-13-13.8-190930



Vista Analytical Laboratory

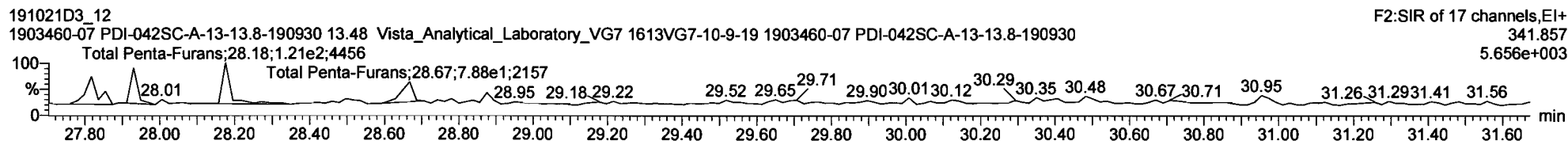
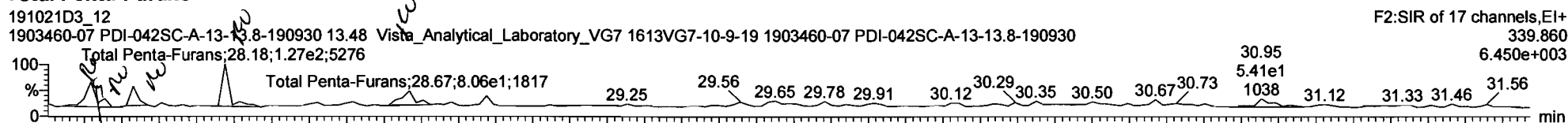
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

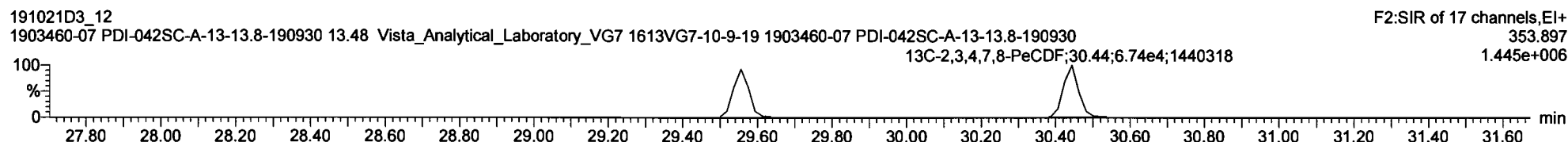
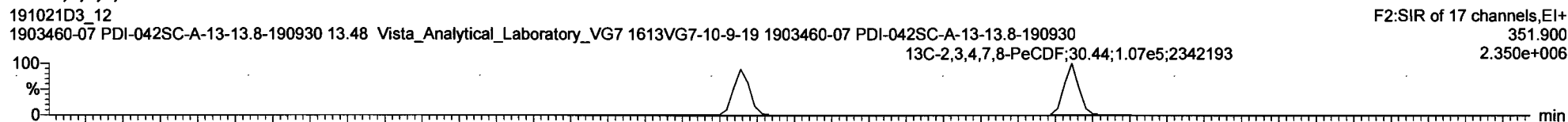
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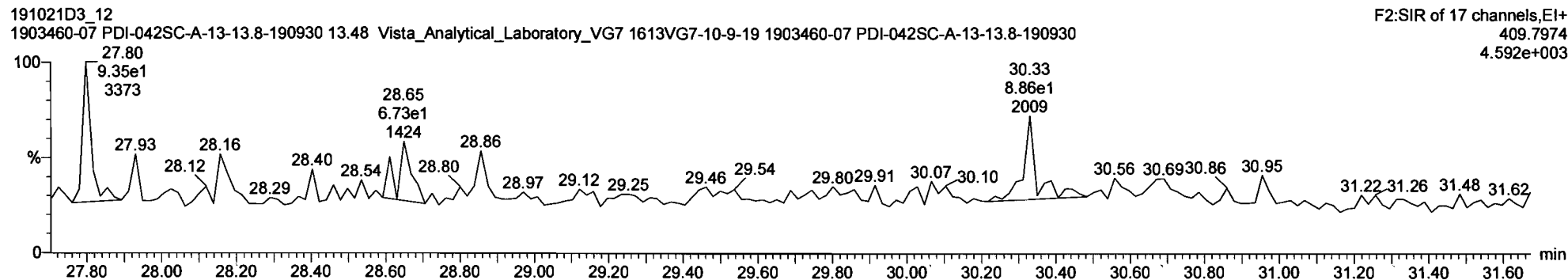
Total Penta-Furans



13C-1,2,3,7,8-PeCDF



DPE2



P

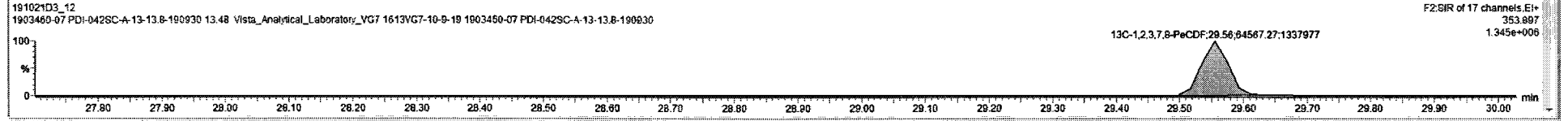
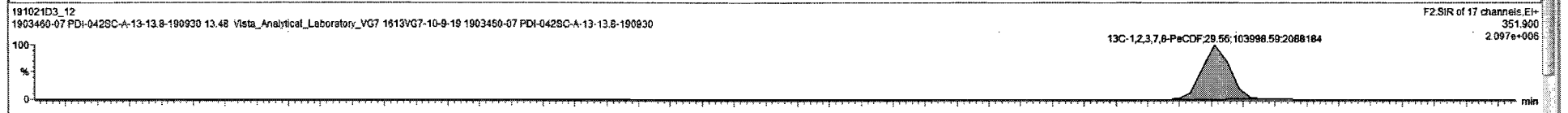
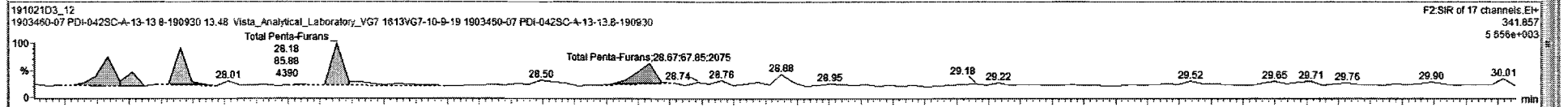
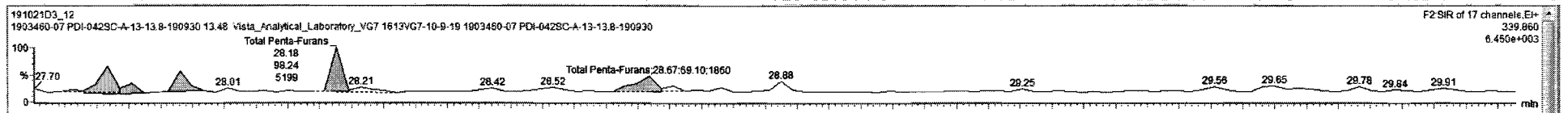
TargetLynx.XS - 191021D3_12 - Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19 1903460-07 PDI-042SC-A-13-13.8-190930

File Edit View Display Processing Window Help

191021D3_12 1903460-07 PDI-042SC-A-13-13.8-190930 1903460-07 PDI-042SC-A-13-13.8-190930 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| # | Name | Resp | IS Resp | IS# | RA | nly | RRF | wtwei | Pred.RT | RT | RRT | Pred.RRT | Check.RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|------|---------|-----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 41 | Total Hexa-Dioxins | | 0.0060 | | | | 0.976 | 10.172 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.0713 | 0.1504 |
| 42 | Total Hepta-Dioxins | | 1.17e5 | | | | 0.989 | 10.172 | 37.75 | | | 0.000 | NO | 0.2764 | | 0.154 | 0.2764 |
| 43 | Total Tetra-Furans | | 1.90e5 | | | | 0.943 | 10.172 | 24.00 | | | 0.000 | NO | | | 0.0823 | |
| 44 | 1st Func. Penta-Furans | | 0.0060 | | | | 0.940 | 10.172 | 27.83 | | | 0.000 | NO | | | 0.0798 | |
| 45 | Total Penta-Furans | | 0.0060 | | | | 0.340 | 10.172 | 33.00 | | | 0.000 | NO | 0.0000 | | 0.146 | 0.6300 |
| 46 | Total Hexa-Furans | | 0.0060 | | | | 1.078 | 10.172 | 33.00 | | | 0.000 | NO | | | 0.0583 | |
| 47 | Total Hepta-Furans | | 0.0060 | | | | 1.135 | 10.172 | 37.75 | | | 0.000 | NO | | | 0.0624 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

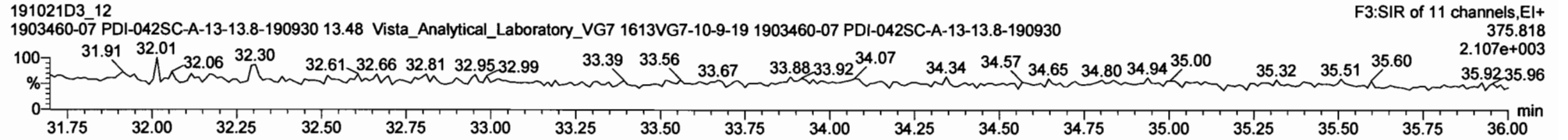
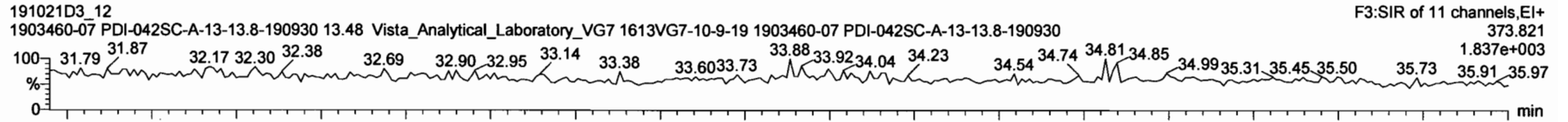
| # | Name | Pred.RT | RT | m1 Resp | m2 Resp | Pred RA | RA | nly | EMPC | Conc. |
|---|--------------------|---------|-------|---------|---------|---------|------|-----|----------|---------|
| 1 | Total Penta-Furans | 30.00 | 27.82 | 9.231e1 | 8.673e1 | 1.550 | 1.06 | YES | 0.18542 | 0.00000 |
| 2 | Total Penta-Furans | 30.00 | 27.85 | 2.879e1 | 3.101e1 | 1.550 | 0.83 | YES | 0.057822 | 0.00000 |
| 3 | Total Penta-Furans | 30.00 | 27.83 | 5.858e1 | 7.804e1 | 1.550 | 0.74 | YES | 0.11364 | 0.00000 |
| 4 | Total Penta-Furans | 30.00 | 28.18 | 9.824e1 | 0.588e1 | 1.550 | 1.14 | YES | 0.19732 | 0.00000 |
| 5 | Total Penta-Furans | 30.00 | 28.67 | 6.919e1 | 6.785e1 | 1.550 | 1.02 | YES | 0.13879 | 0.00000 |



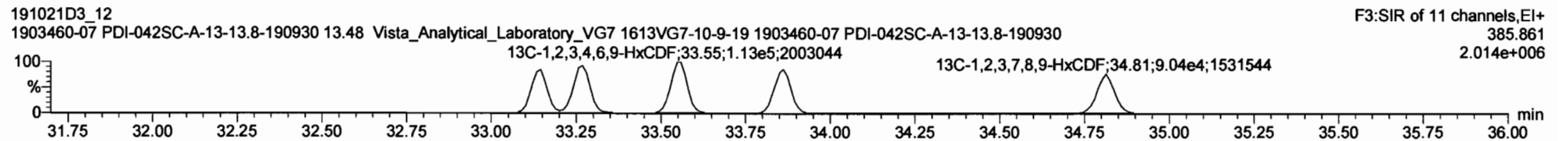
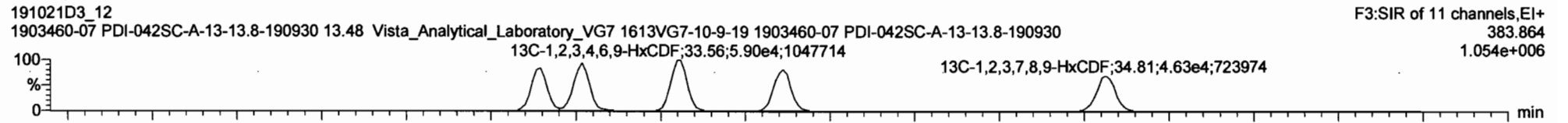
Ready 191021D3_12 CAP. NUM

Name: VG7 191021D3_12, Date: 22-OCT-2019, Time: 10:50:45, ID: 1903460-07 PDI-042SC-A-13-13.8-190930,
Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

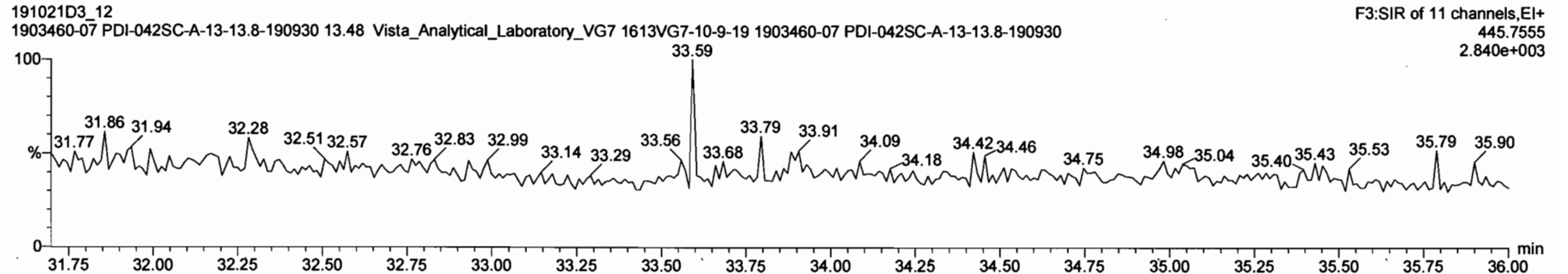
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF

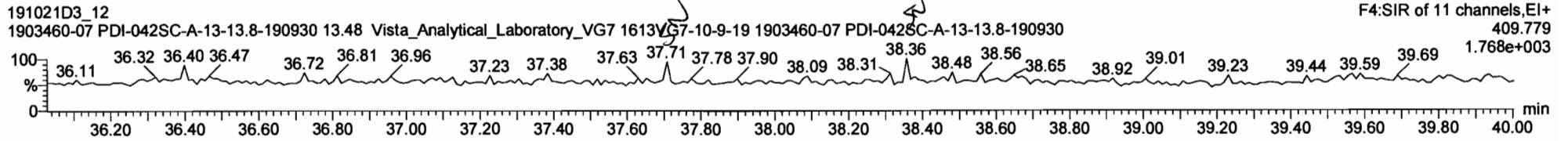
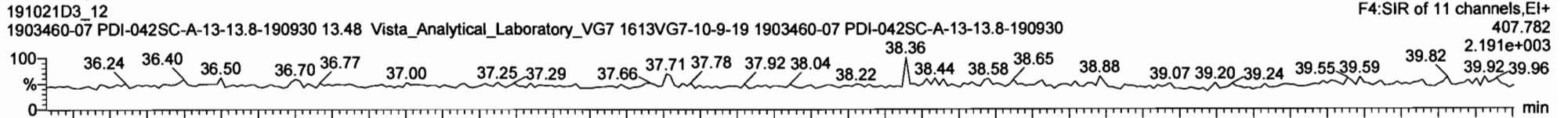


DPE3

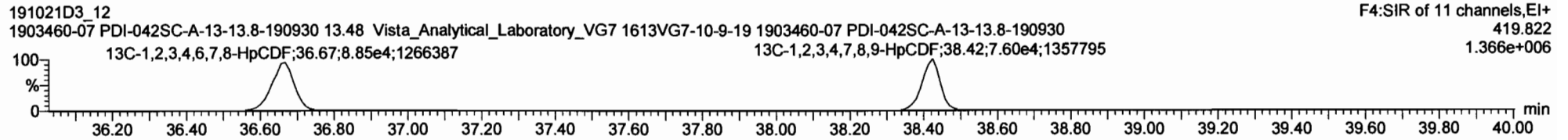
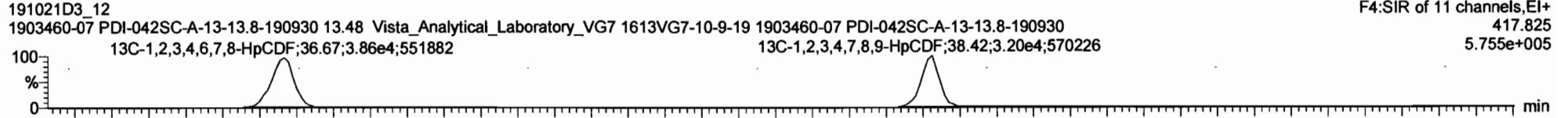


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Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

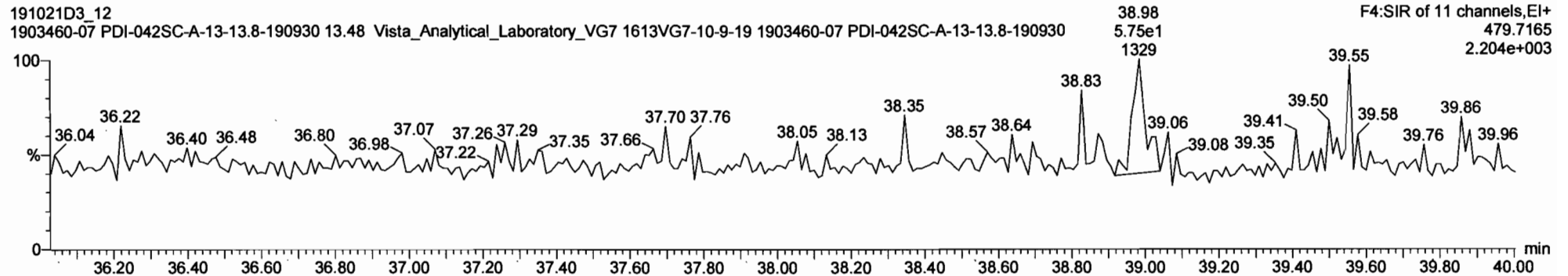
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



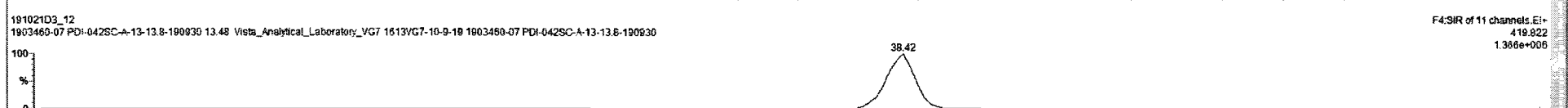
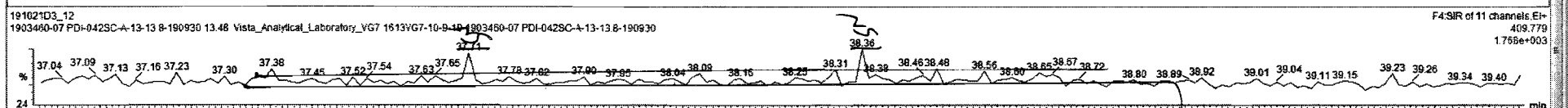
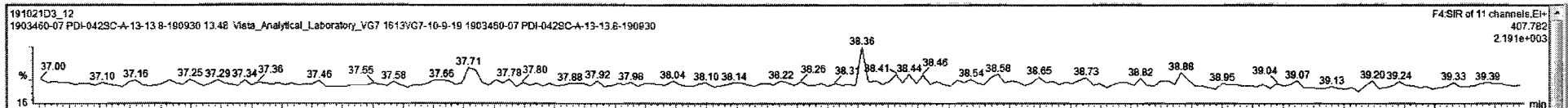
P

TargetLynx.XS - 191021D3_12 [Chromatogram]
File Edit View Display Processing Window Help

191021D3_12 1903460-07 PDI-042SC-A-13-13.8-190930 1903460-07 PDI-042SC-A-13-13.8-190930 Vista Analytical Laboratory_VG7 1613VG7 10-9-19

| # | Name | Resp | IS Resp | IS | RA | aly | RRF | wtVol | Pred RT | RT | RRT | Pred RRT | Check RRT | Conc. | %Rec | DL | EMPC |
|----|------------------------|--------|---------|----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 41 | Total Hexa-Dioxins | 0.00e0 | | | | | 0.976 | 10.172 | 33.80 | | | 0.000 | NO | 0.0000 | | 0.0713 | 0.1904 |
| 42 | Total Hepta-Dioxins | 1.17e5 | | | | | 0.989 | 10.172 | 37.75 | | | 0.000 | NO | 0.2794 | | 0.154 | 0.2794 |
| 43 | Total Tetra-Furans | 1.90e5 | | | | | 0.943 | 10.172 | 24.00 | | | 0.000 | NO | | | 0.0823 | |
| 44 | 1st Func. Penta-Furans | 0.00e0 | | | | | 0.940 | 10.172 | 27.63 | | | 0.000 | NO | | | 0.0798 | |
| 45 | Total Penta-Furans | 0.00e0 | | | | | 0.940 | 10.172 | 30.00 | | | 0.000 | NO | 0.0000 | | 0.148 | 0.8930 |
| 46 | Total Hexa-Furans | 0.00e0 | | | | | 1.078 | 10.172 | 33.00 | | | 0.000 | NO | | | 0.0583 | |
| 47 | Total Hepta-Furans | 0.00e0 | | | | | 1.136 | 10.172 | 37.75 | | | 0.000 | NO | | | 0.0624 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

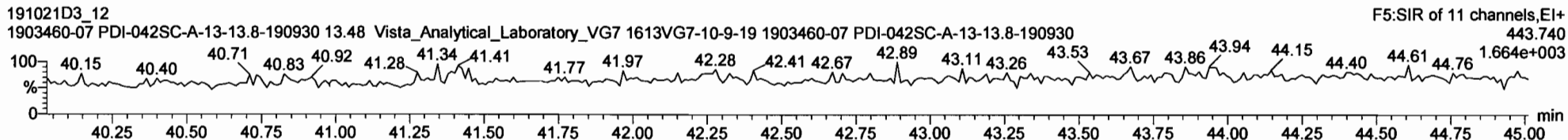
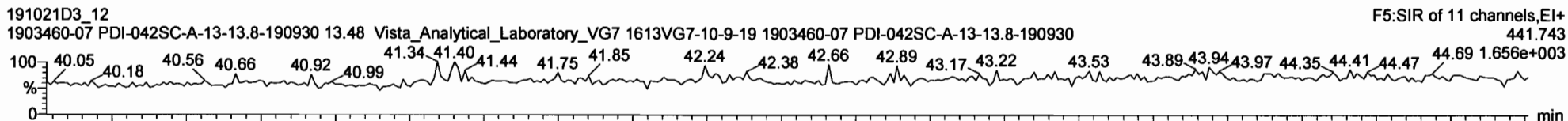
| # | Name | Pred RT | RT | is1 Resp | is2 Resp | Pred RA | RA | aly | EMPC | Conc. |
|---|------|---------|----|----------|----------|---------|----|-----|------|-------|
| 1 | | | | | | | | | | |



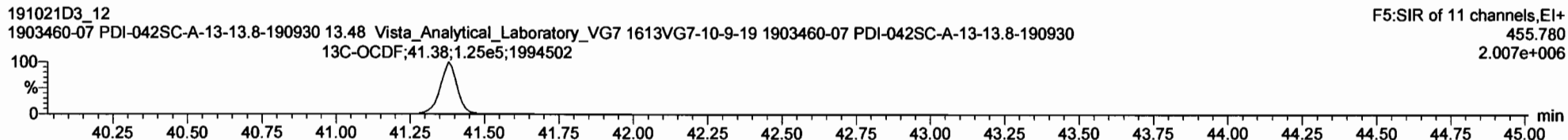
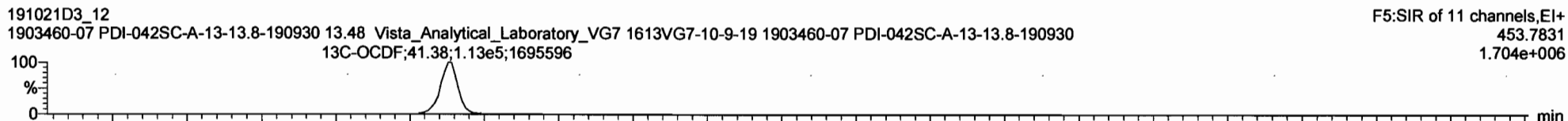
Ready 191021D3_12 CAP_NUM

Name: VG7 191021D3_12, Date: 22-OCT-2019, Time: 10:50:45, ID: 1903460-07 PDI-042SC-A-13-13.8-190930,
Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

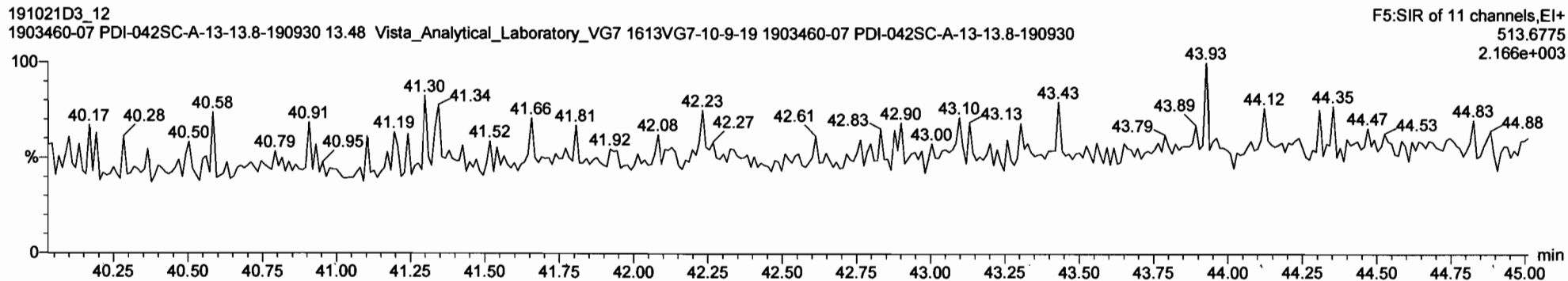
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

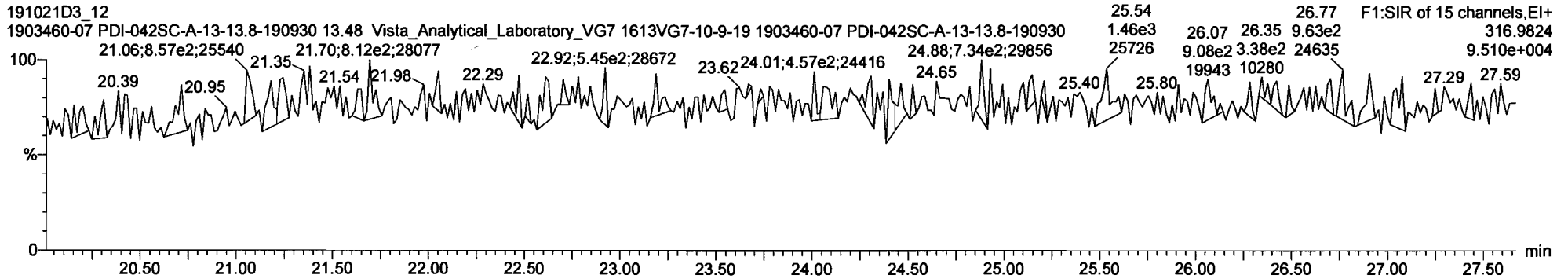
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

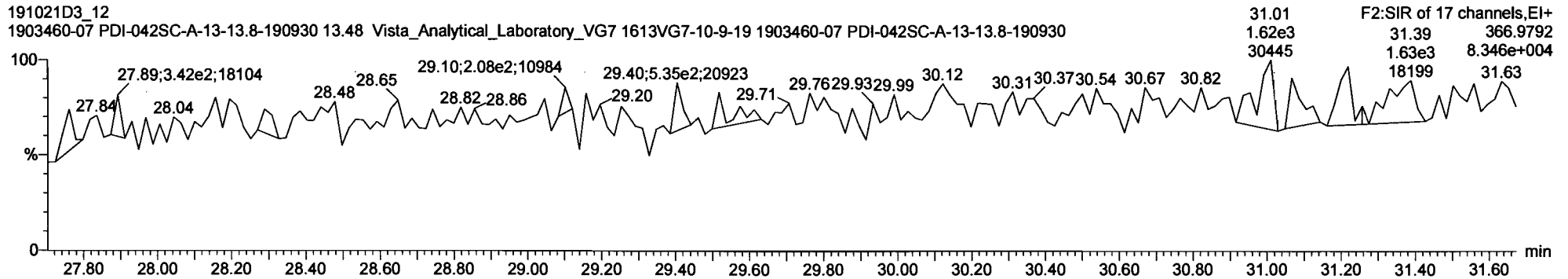
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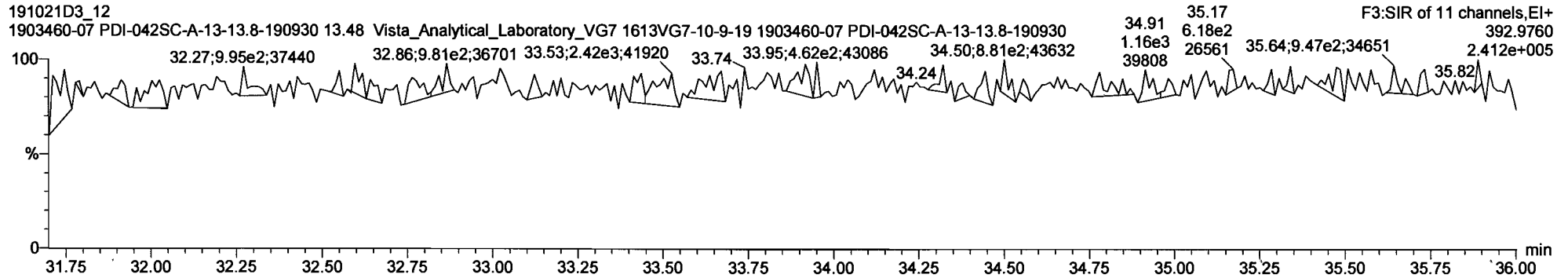
PFK1



PFK2



PFK3



Vista Analytical Laboratory

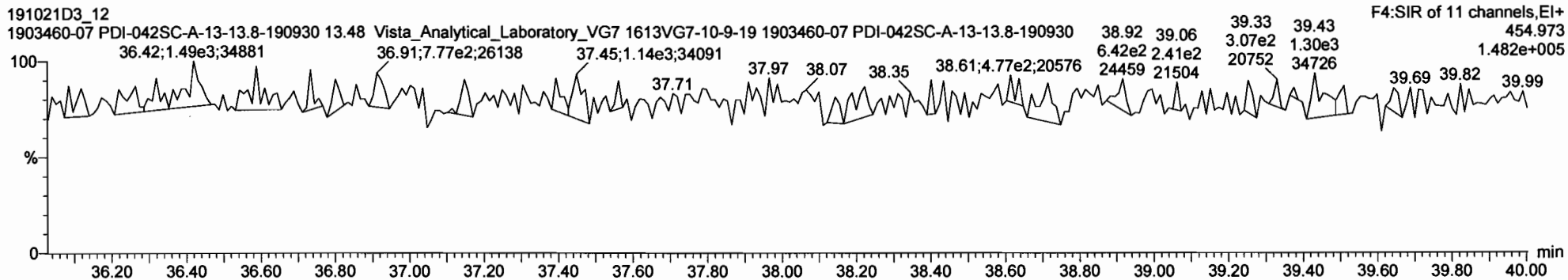
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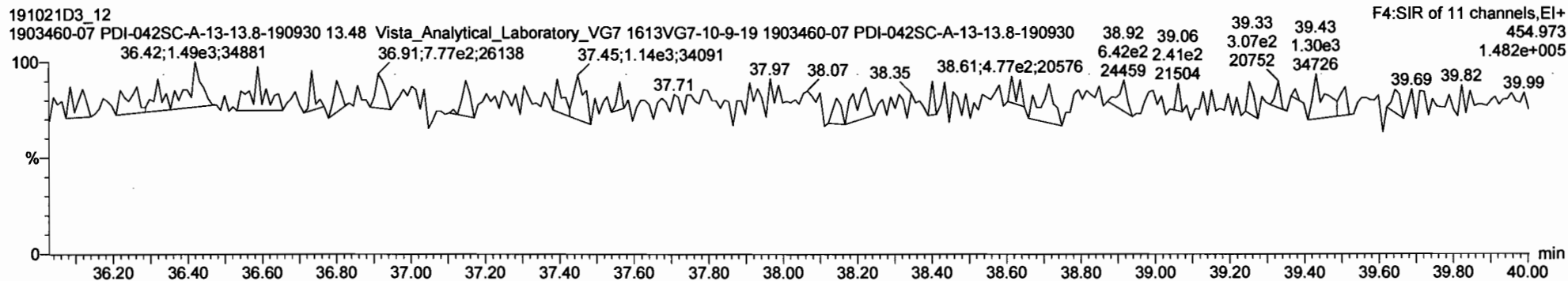
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

Name: VG7 191021D3_12, Date: 22-OCT-2019, Time: 10:50:45, ID: 1903460-07 PDI-042SC-A-13-13.8-190930,

Description: 1903460-07 PDI-042SC-A-13-13.8-190930 13.48 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL | Name | Conc | EMPC | Qual | noise | DL |
|---------------------|-------------------------|----------|--------|-------------|---------|------|-------|------|--------|---------------------|--------|--------|------|-------|--------|
| 2,3,7,8-TCDD | * | * n | 0.91 | NotF η | * | | 248 | 2.5 | 0.113 | Total Tetra-Dioxins | * | * | | 248 | 0.113 |
| 1,2,3,7,8-PeCDD | * | * n | 0.90 | NotF η | * | | 239 | 2.5 | 0.106 | Total Penta-Dioxins | * | * | | 239 | 0.106 |
| 1,2,3,4,7,8-HxCDD | * | * n | 1.10 | NotF η | * | | 255 | 2.5 | 0.181 | Total Hexa-Dioxins | 1.54 | 1.54 | | * | * |
| 1,2,3,6,7,8-HxCDD | * | * n | 0.94 | NotF η | * | | 255 | 2.5 | 0.189 | Total Hepta-Dioxins | 1.82 | 2.76 | | * | * |
| 1,2,3,7,8,9-HxCDD | * | * n | 0.96 | NotF η | * | | 255 | 2.5 | 0.195 | Total Tetra-Furans | * | * | | 238 | 0.0786 |
| 1,2,3,4,6,7,8-HpCDD | 2.46e+04 | 1.26 n | 0.98 | 37:58 | 0.93424 | | * | 2.5 | * | Total Penta-Furans | 0.0000 | 0.0000 | | 321 | 0.138 |
| OCDD | 1.49e+05 | 0.92 y | 0.96 | 41:19 | 7.1748 | | * | 2.5 | * | Total Hexa-Furans | * | * | | 205 | 0.0721 |
| | | | | | | | | | | Total Hepta-Furans | * | * | | 311 | 0.144 |
| 2,3,7,8-TCDF | * | * n | 0.95 | NotF η | * | | 238 | 2.5 | 0.0786 | | | | | | |
| 1,2,3,7,8-PeCDF | * | * n | 0.96 | NotF η | * | | 321 | 2.5 | 0.143 | | | | | | |
| 2,3,4,7,8-PeCDF | * | * n | 1.01 | NotF η | * | | 321 | 2.5 | 0.132 | | | | | | |
| 1,2,3,4,7,8-HxCDF | * | * n | 1.18 | NotF η | * | | 205 | 2.5 | 0.0648 | | | | | | |
| 1,2,3,6,7,8-HxCDF | * | * n | 1.07 | NotF η | * | | 205 | 2.5 | 0.0647 | | | | | | |
| 2,3,4,6,7,8-HxCDF | * | * n | 1.11 | NotF η | * | | 205 | 2.5 | 0.0695 | | | | | | |
| 1,2,3,7,8,9-HxCDF | * | * n | 1.06 | NotF η | * | | 205 | 2.5 | 0.0920 | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | * | * n | 1.13 | NotF η | * | | 311 | 2.5 | 0.147 | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | * | * n | 1.28 | NotF η | * | | 311 | 2.5 | 0.139 | | | | | | |
| OCDF | * | * n | 0.95 | NotF η | * | | 156 | 2.5 | 0.133 | | | | | | |
| IS | 13C-2,3,7,8-TCDD | 7.74e+06 | 0.74 y | 1.10 | 26:16 | | 208 | .54 | | Rec | Qual | | | | |
| IS | 13C-1,2,3,7,8-PeCDD | 6.17e+06 | 0.60 y | 0.88 | 30:46 | | 206 | .64 | | 105 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDD | 5.37e+06 | 1.34 y | 0.64 | 34:05 | | 235 | .63 | | 104 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDD | 6.21e+06 | 1.28 y | 0.86 | 34:11 | | 204 | .57 | | 119 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDD | 6.08e+06 | 1.30 y | 0.81 | 34:30 | | 212 | .64 | | 103 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 5.32e+06 | 1.02 y | 0.65 | 37:58 | | 229 | .45 | | 107 | | | | | |
| IS | 13C-OCDD | 8.61e+06 | 0.94 y | 0.58 | 41:18 | | 418 | .60 | | 116 | | | | | |
| IS | 13C-2,3,7,8-TCDF | 1.07e+07 | 0.81 y | 1.03 | 25:29 | | 214 | .31 | | 106 | | | | | |
| IS | 13C-1,2,3,7,8-PeCDF | 9.52e+06 | 1.54 y | 0.85 | 29:35 | | 230 | .52 | | 108 | | | | | |
| IS | 13C-2,3,4,7,8-PeCDF | 9.35e+06 | 1.61 y | 0.85 | 30:29 | | 228 | .33 | | 116 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDF | 6.60e+06 | 0.51 y | 0.83 | 33:11 | | 223 | .57 | | 115 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDF | 7.54e+06 | 0.51 y | 1.03 | 33:19 | | 205 | .43 | | 113 | | | | | |
| IS | 13C-2,3,4,6,7,8-HxCDF | 7.03e+06 | 0.50 y | 0.95 | 33:55 | | 207 | .99 | | 104 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDF | 6.41e+06 | 0.51 y | 0.83 | 34:52 | | 218 | .33 | | 105 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 5.72e+06 | 0.42 y | 0.76 | 36:44 | | 212 | .94 | | 110 | | | | | |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 4.81e+06 | 0.43 y | 0.58 | 38:31 | | 233 | .45 | | 108 | | | | | |
| IS | 13C-OCDF | 1.06e+07 | 0.90 y | 0.69 | 41:31 | | 431 | .92 | | 118 | | | | | |
| C/Up | 37C1-2,3,7,8-TCDD | 3.23e+06 | | 1.20 | 26:18 | | 79 | .622 | | 109 | | | | | |
| RS/RT | 13C-1,2,3,4-TCDD | 6.71e+06 | 0.77 y | 1.00 | 25:43 | | 198 | .05 | | | | | | | |
| RS | 13C-1,2,3,4-TCDF | 9.57e+06 | 0.82 y | 1.00 | 24:18 | | 198 | .05 | | | | | | | |
| RS/RT | 13C-1,2,3,4,6,9-HxCDF | 7.03e+06 | 0.50 y | 1.00 | 33:36 | | 198 | .05 | | | | | | | |

Integrations Reviewed
 by DB Analyst: DB
 by CT Analyst: CT
 Date: 10/30/19 Date: 11/05/19

Totals class: HxCDD EMPC

Entry #: 23

Run: 20 File: 191029D1 S: 15 I: 1 F: 3
Acquired: 29-OCT-19 21:25:15 Processed: 30-OCT-19 09:47:31

Total Concentration: 1.5437 Unnamed Concentration: 1.544

| RT | m1 Resp | m2 Resp | RA | Resp Concentration | Name |
|-------|-----------|-----------|--------|--------------------|---------|
| 32:33 | 1.623e+04 | 1.462e+04 | 1.11 y | 3.085e+04 | 1.0465 |
| 33:24 | 8.080e+03 | 6.579e+03 | 1.23 y | 1.466e+04 | 0.49723 |

Totals class: HpCDD EMPC

Entry #: 25

Run: 20 File: 191029D1 S: 15 I: 1 F: 4

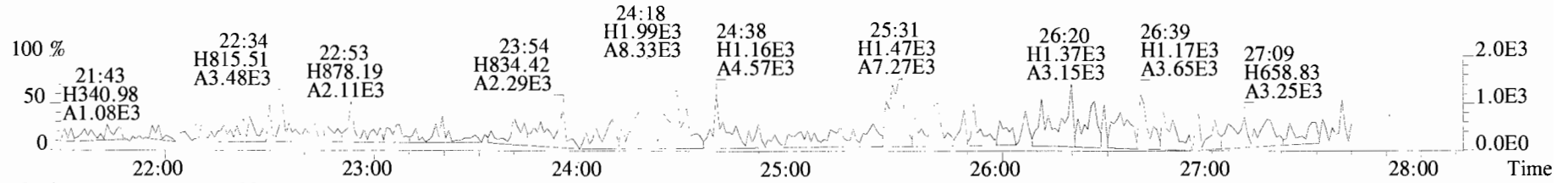
Acquired: 29-OCT-19 21:25:15 Processed: 30-OCT-19 09:47:31

Total Concentration: 2.7580

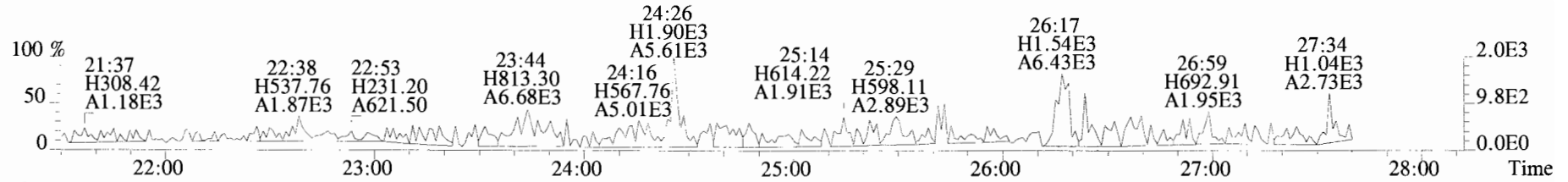
Unnamed Concentration: 1.824

| RT | m1 Resp | m2 Resp | RA | Resp Concentration | Name |
|-------|-----------|-----------|--------|--------------------|-----------------------------|
| 37:08 | 2.359e+04 | 2.442e+04 | 0.97 y | 4.801e+04 | 1.8237 |
| 37:58 | 1.520e+04 | 1.206e+04 | 1.26 n | 2.459e+04 | 0.93424 1,2,3,4,6,7,8-HpCDD |

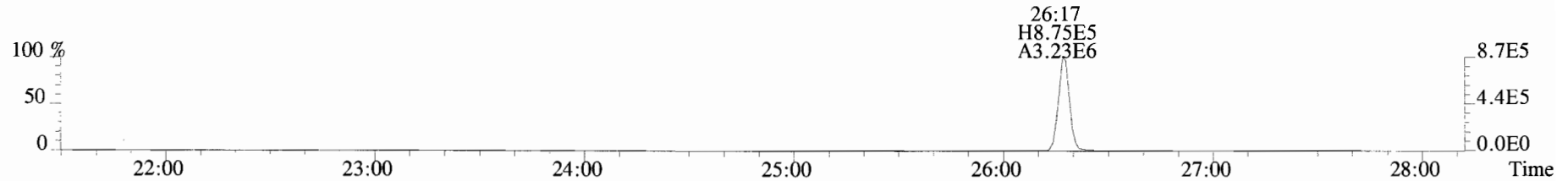
File:191029D1 #1-492 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 319.8965 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



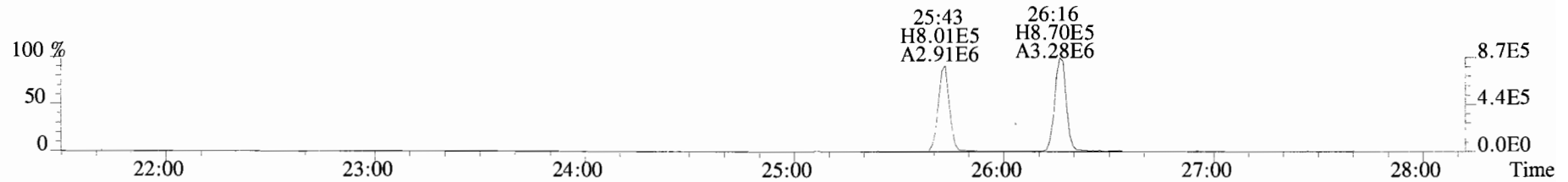
321.8936 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



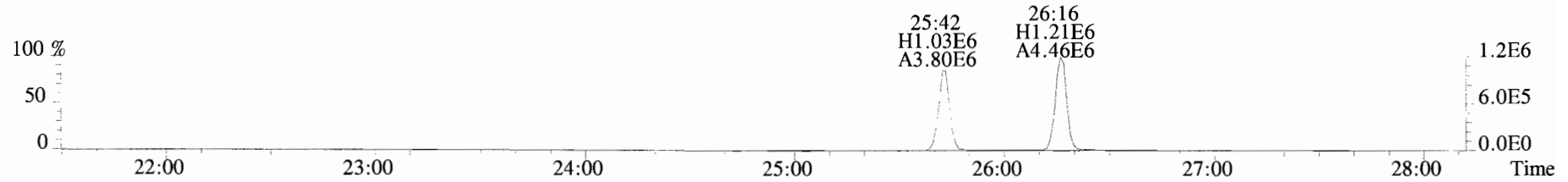
327.8847 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



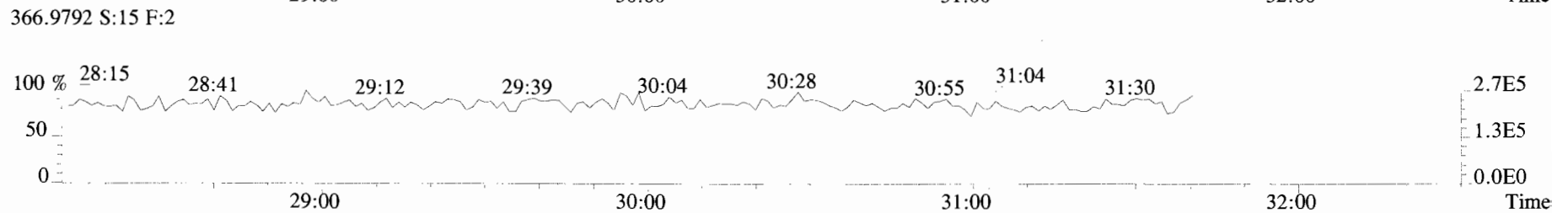
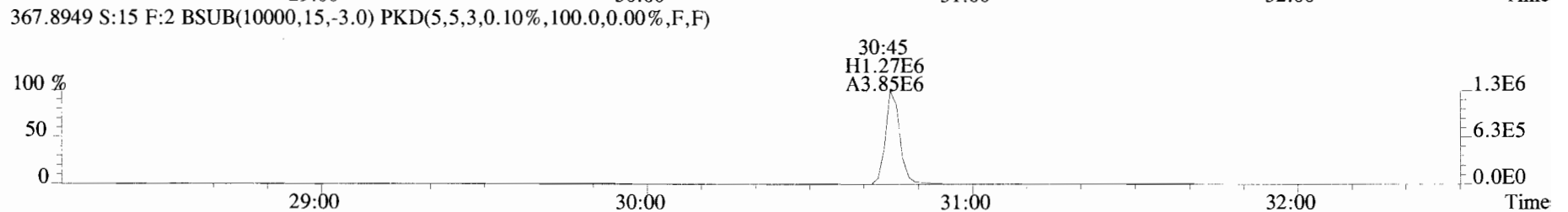
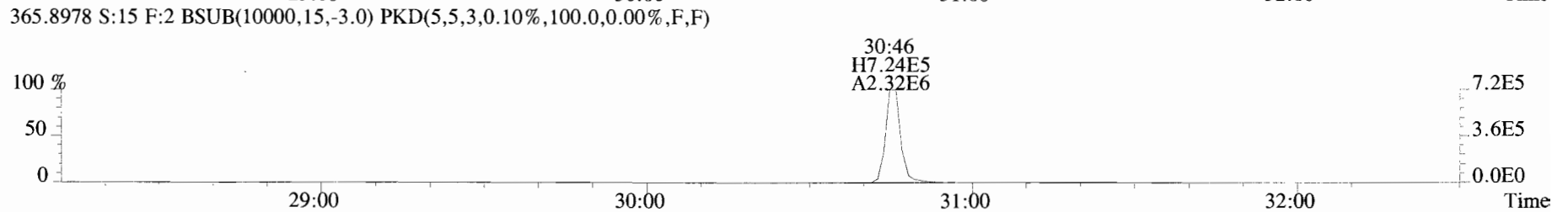
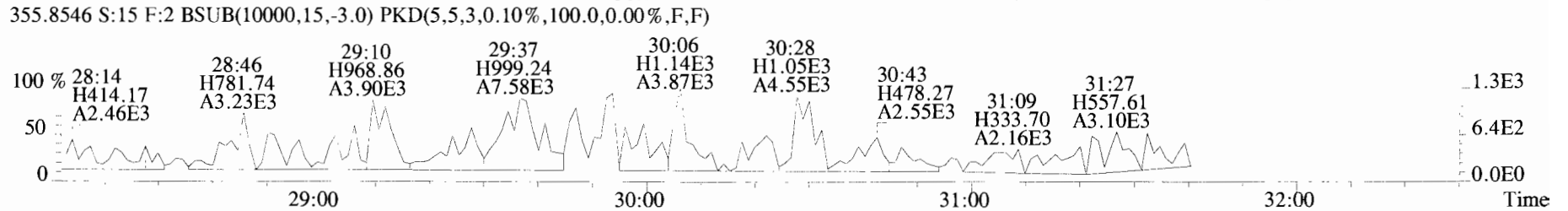
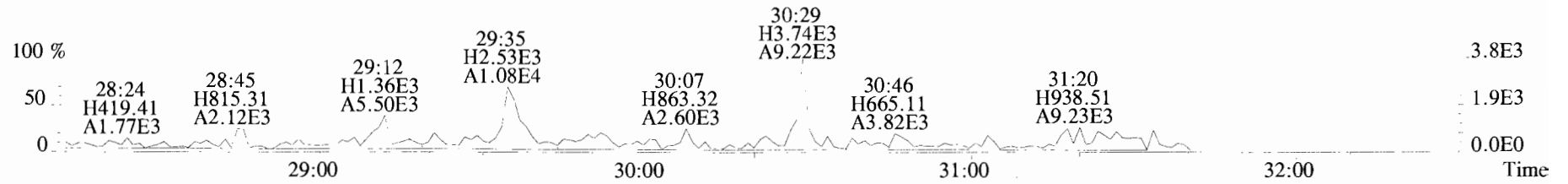
331.9368 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



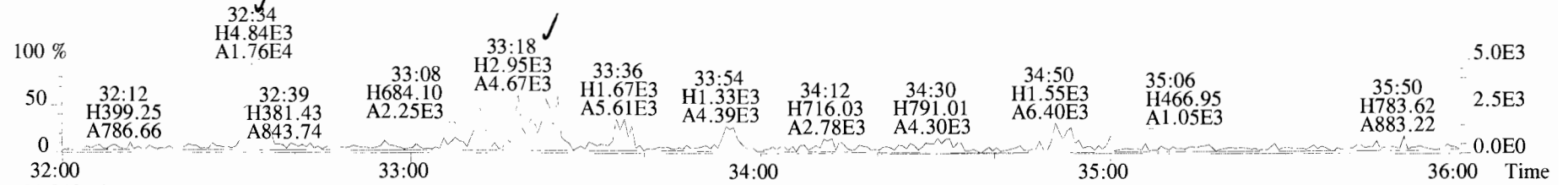
333.9339 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



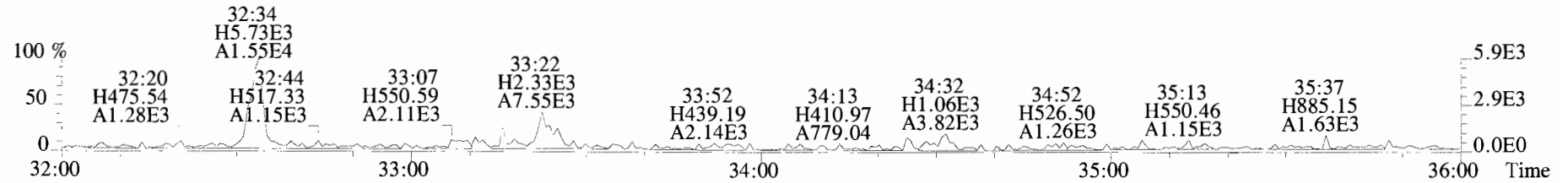
File:191029D1 #1-211 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
353.8576 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



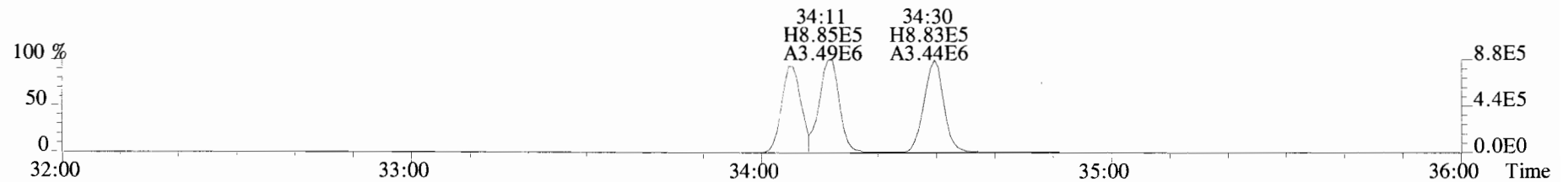
File:191029D1 #1-385 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 389.8156 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



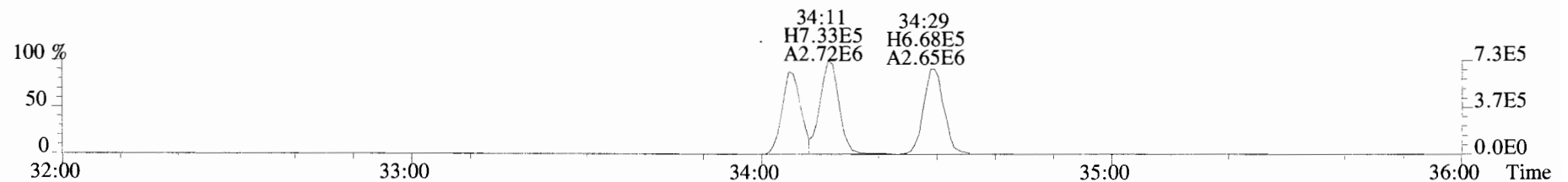
391.8127 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



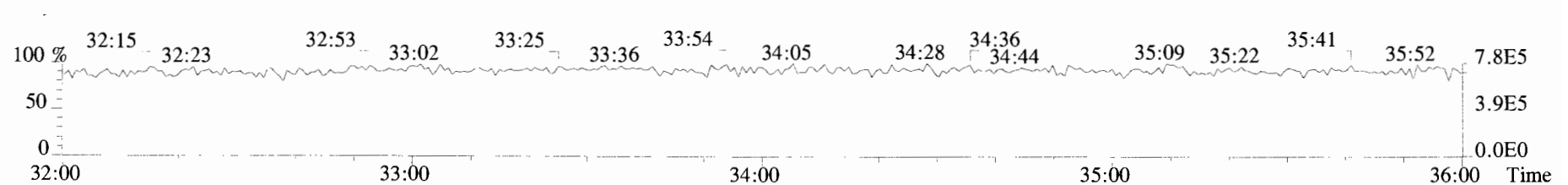
401.8559 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



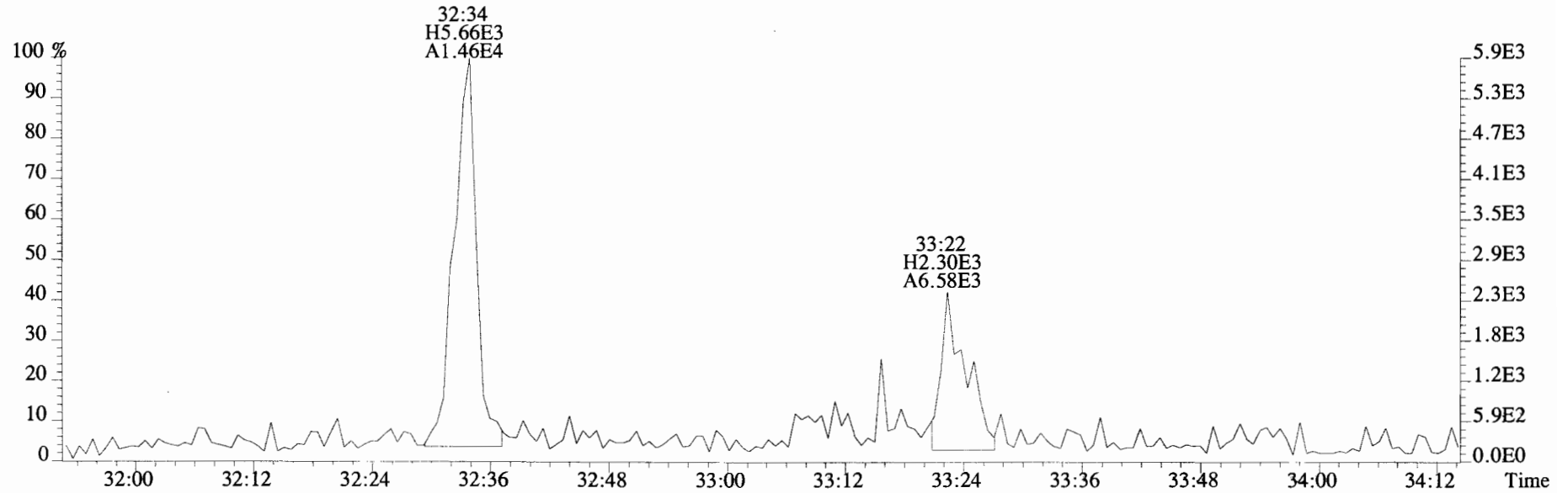
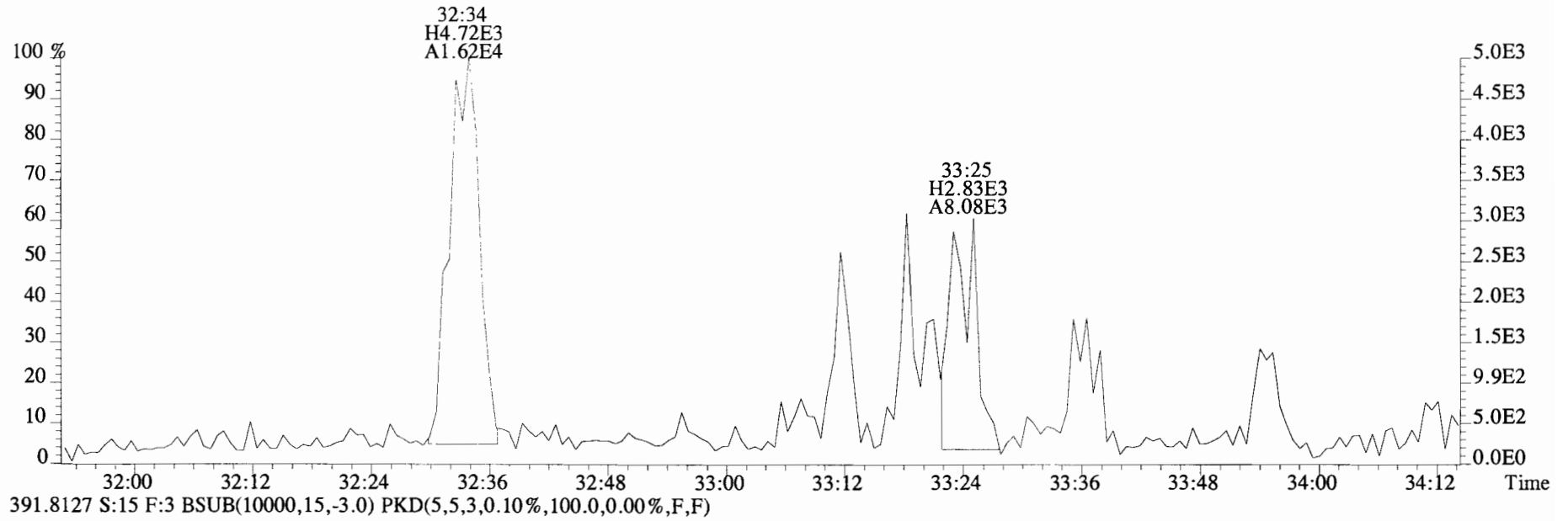
403.8530 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



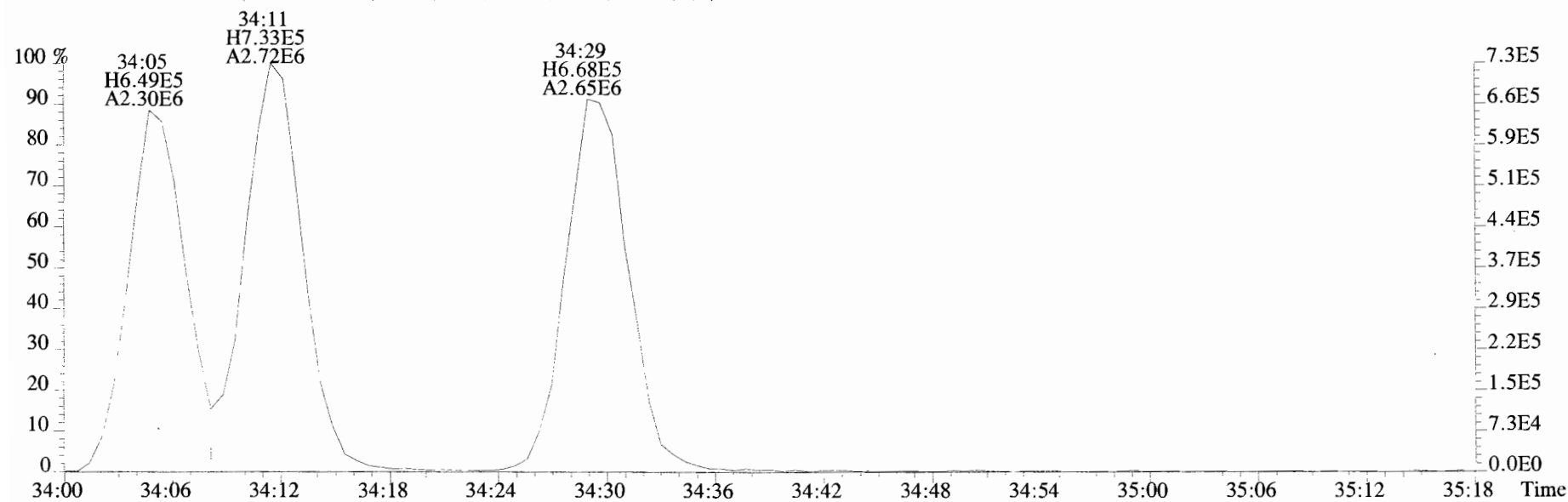
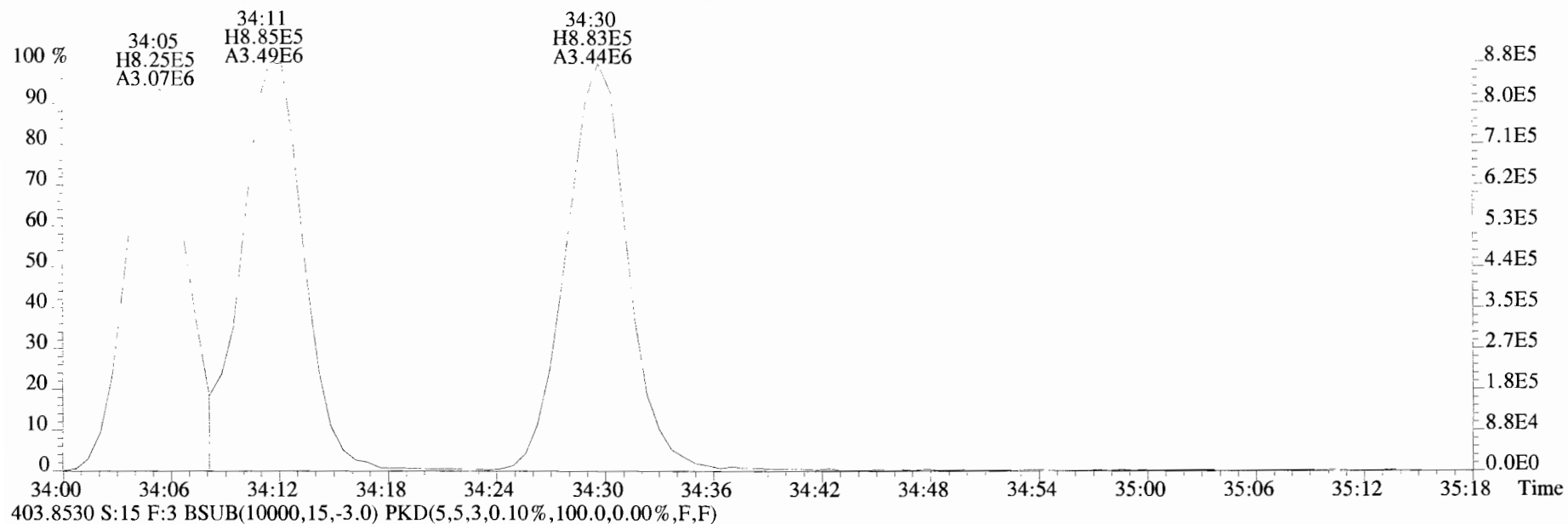
392.9760 S:15 F:3



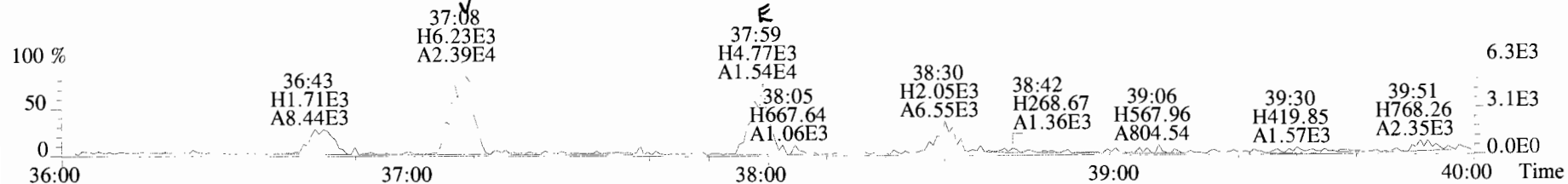
File:191029D1 #1-385 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
389.8156 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



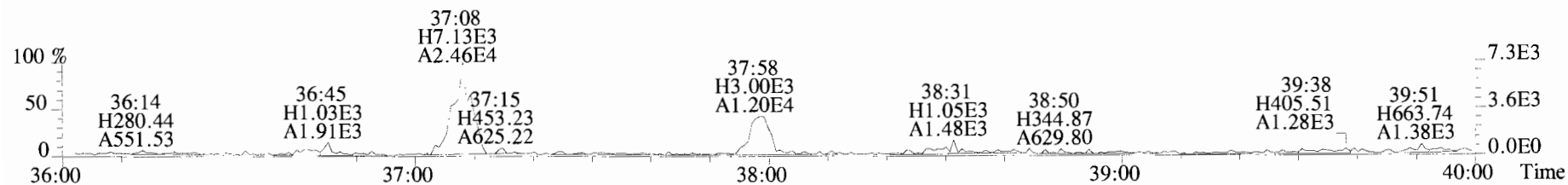
File:191029D1 #1-385 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
401.8559 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



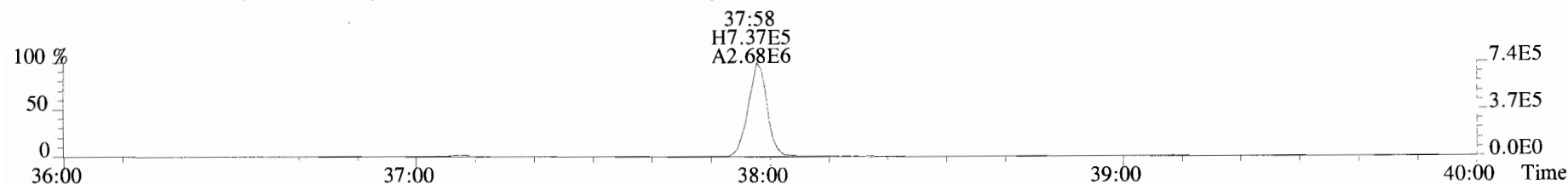
File:191029D1 #1-355 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 423.7767 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



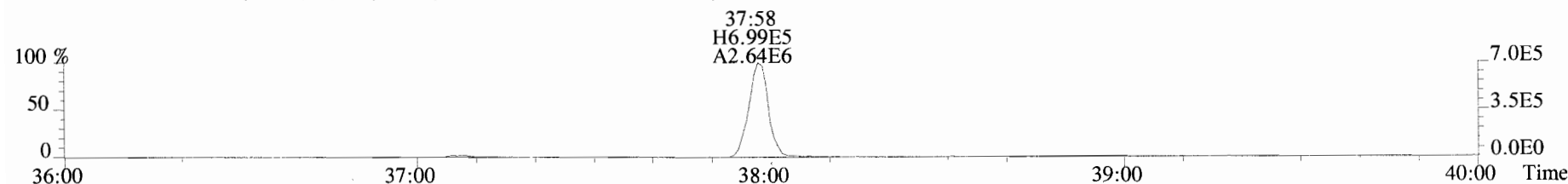
425.7737 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



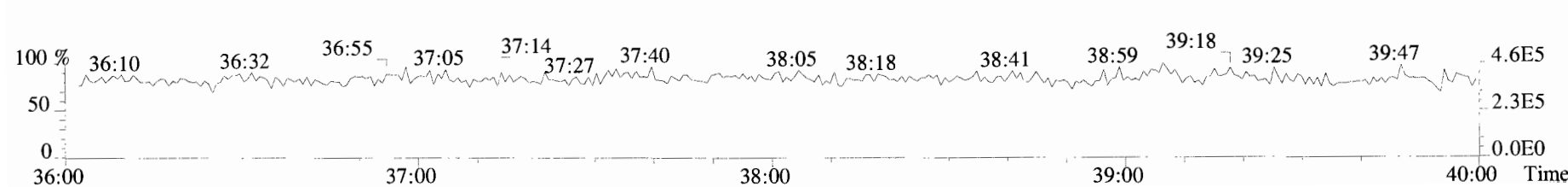
435.8169 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



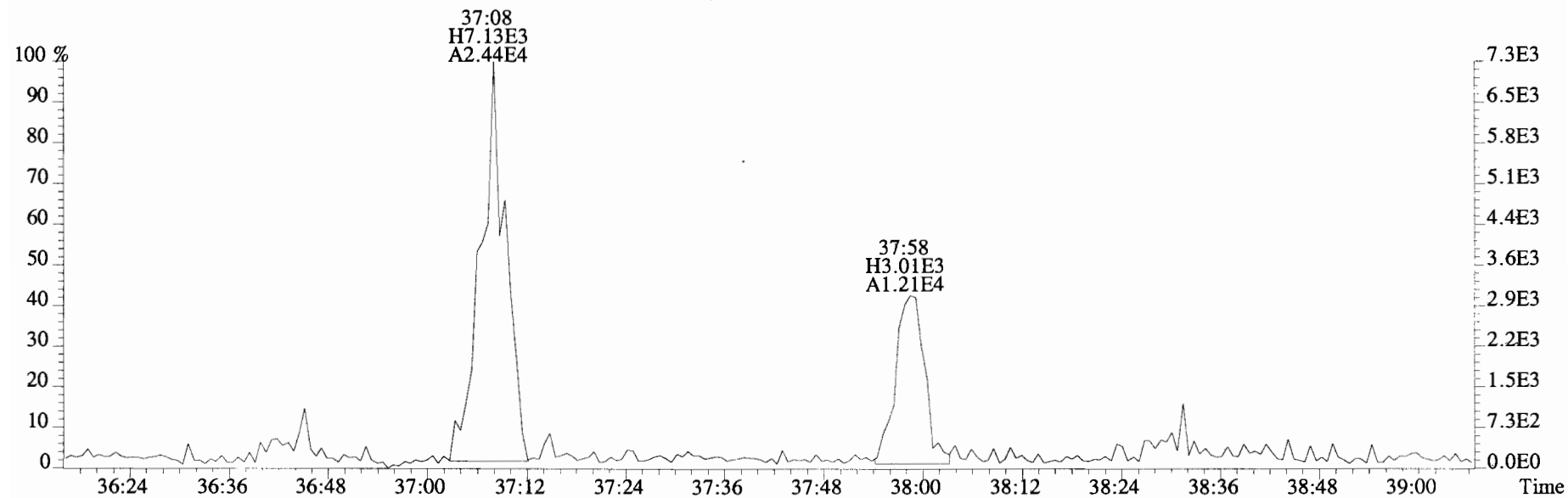
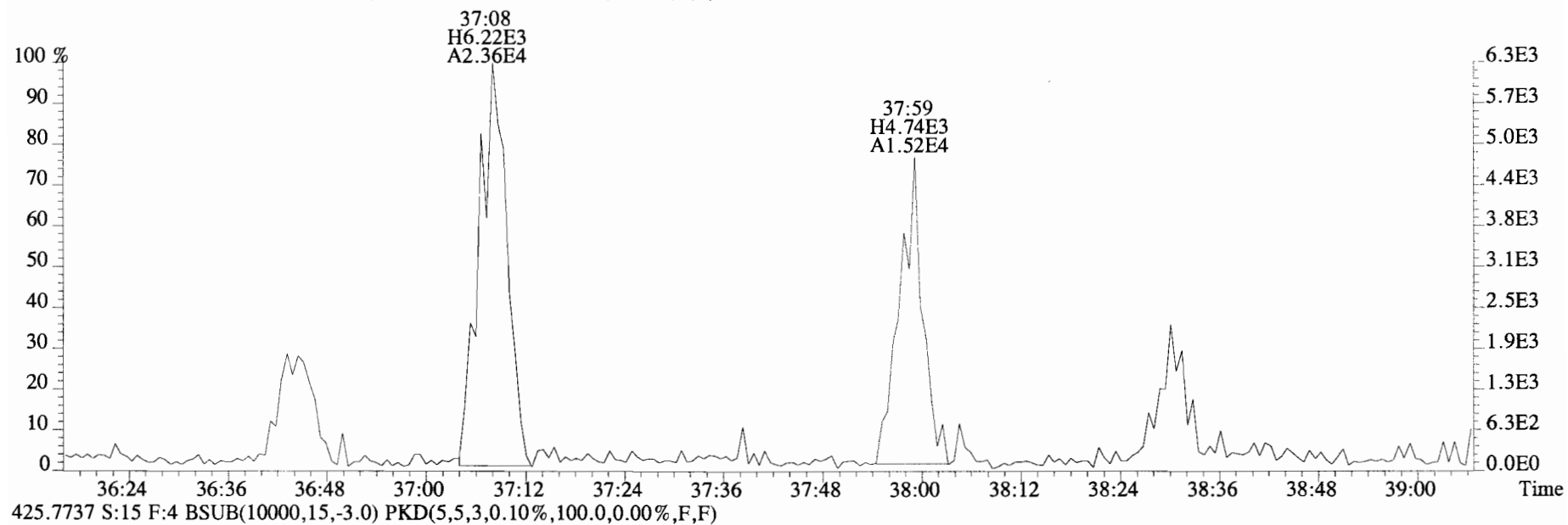
437.8140 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



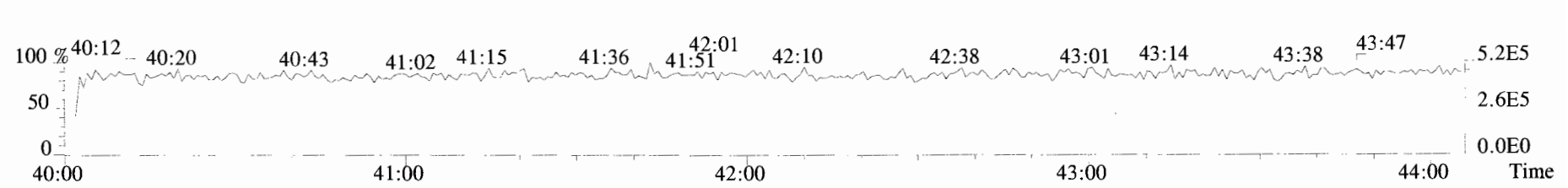
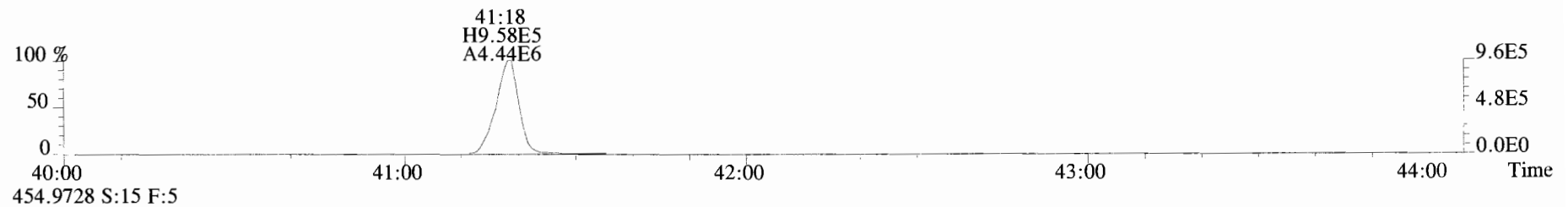
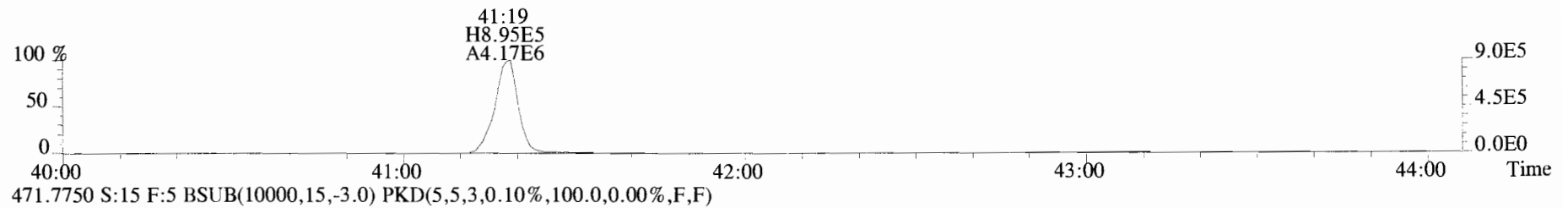
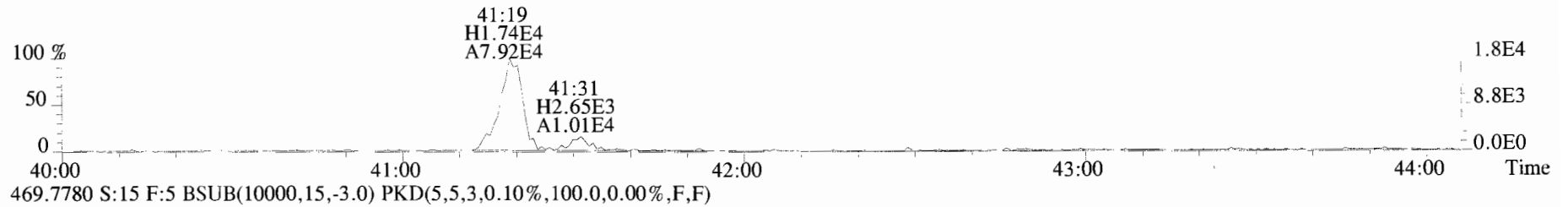
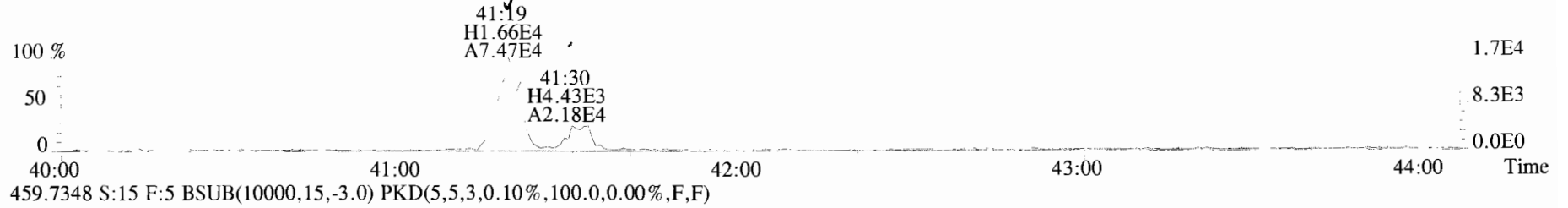
454.9728 S:15 F:4



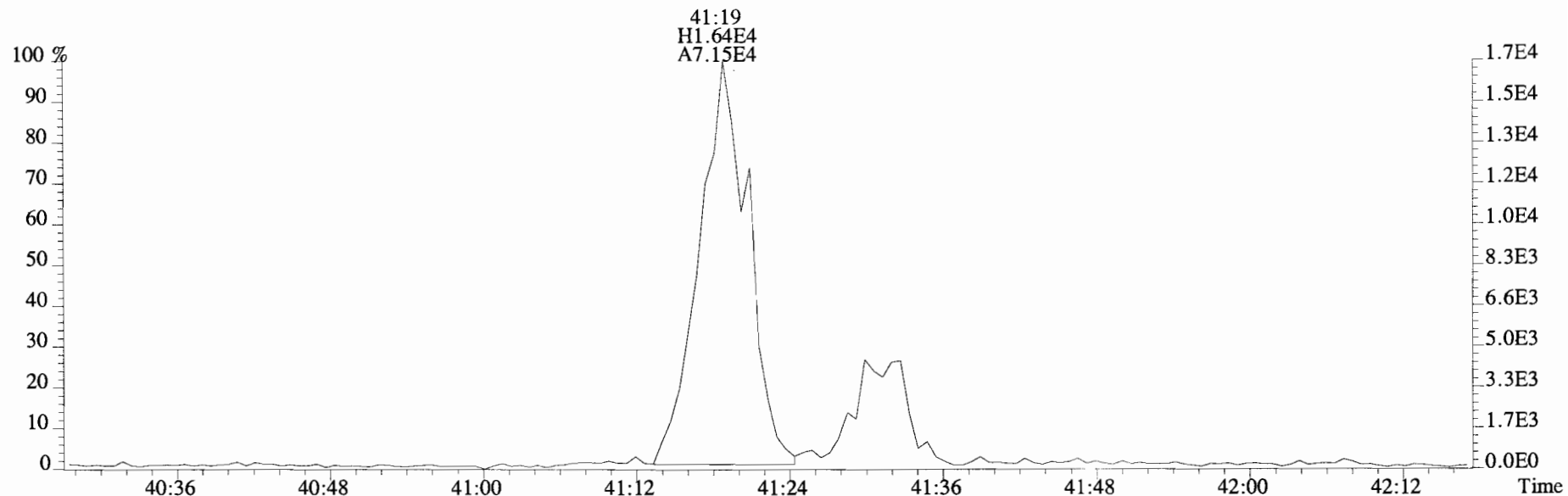
File:191029D1 #1-355 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
423.7767 S:15 F:4 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



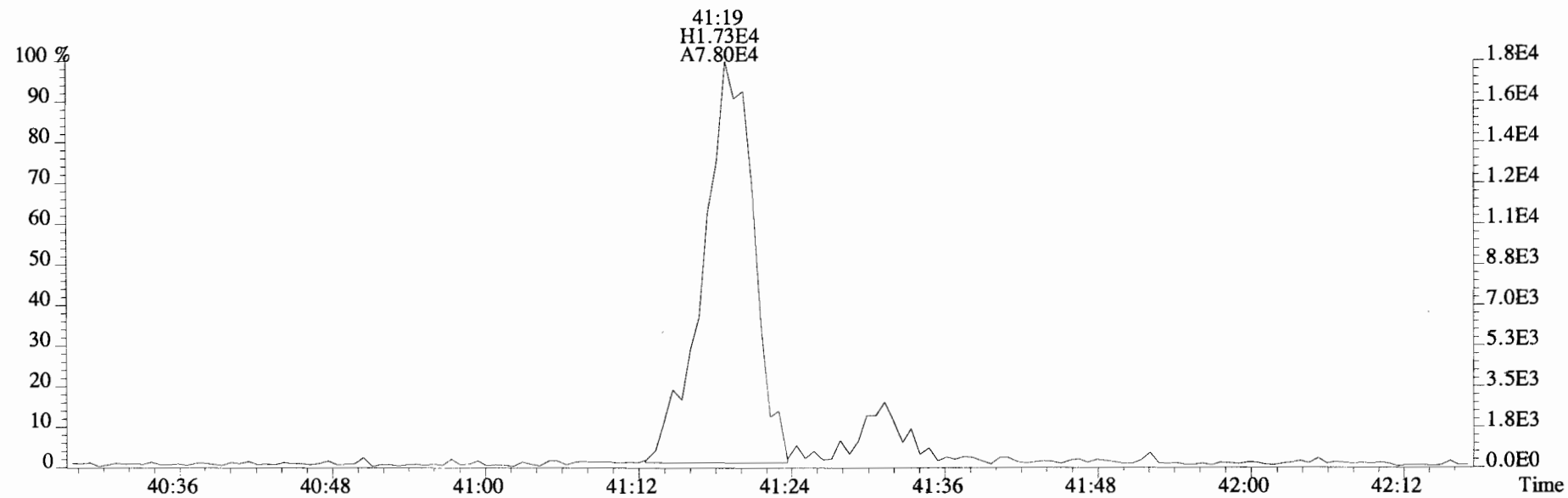
File:191029D1 #1-432 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
457.7377 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



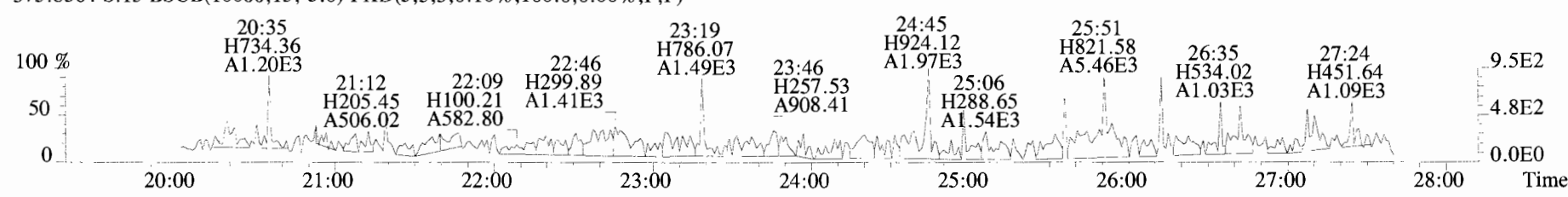
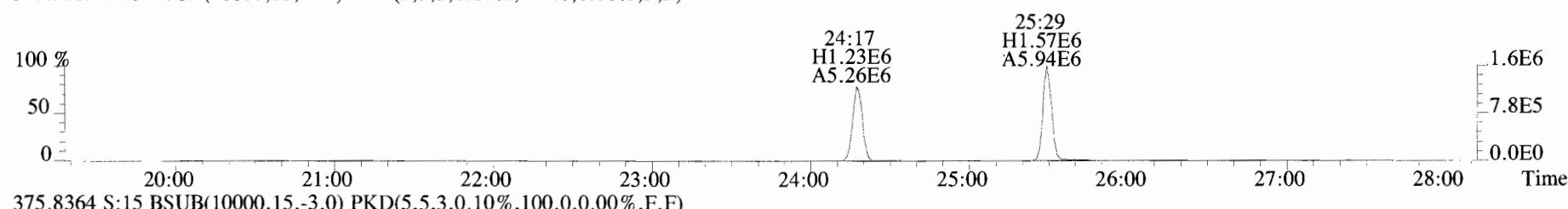
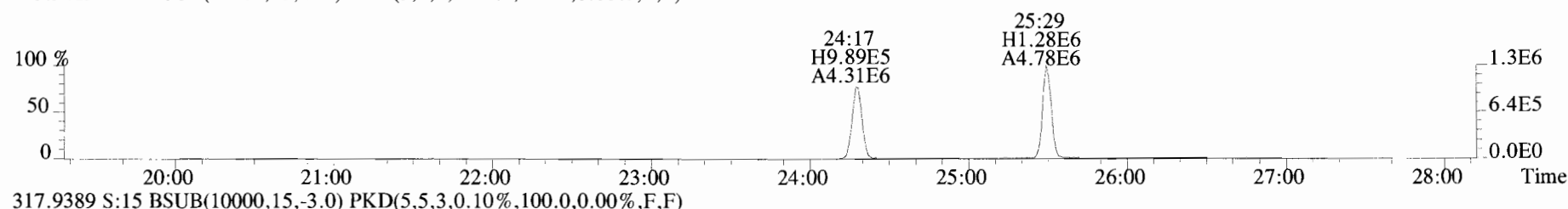
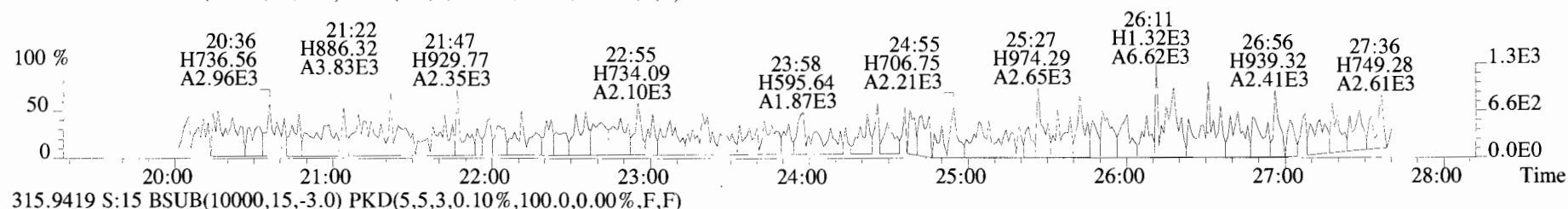
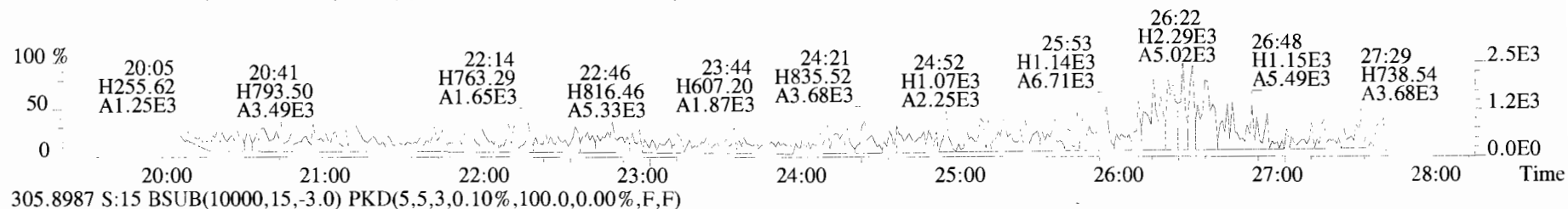
File:191029D1 #1-432 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
457.7377 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



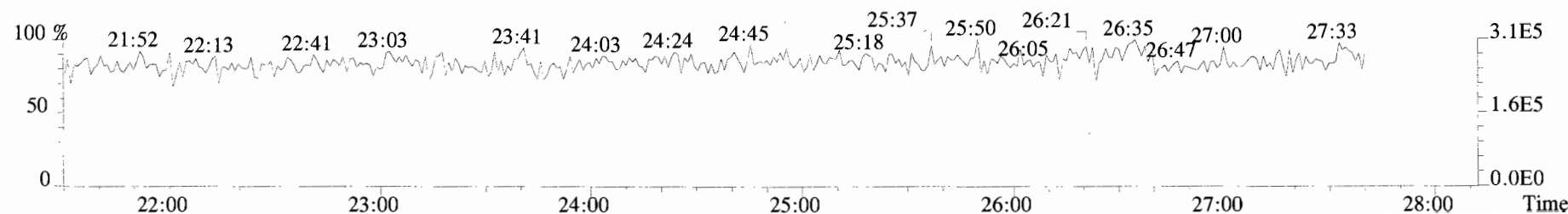
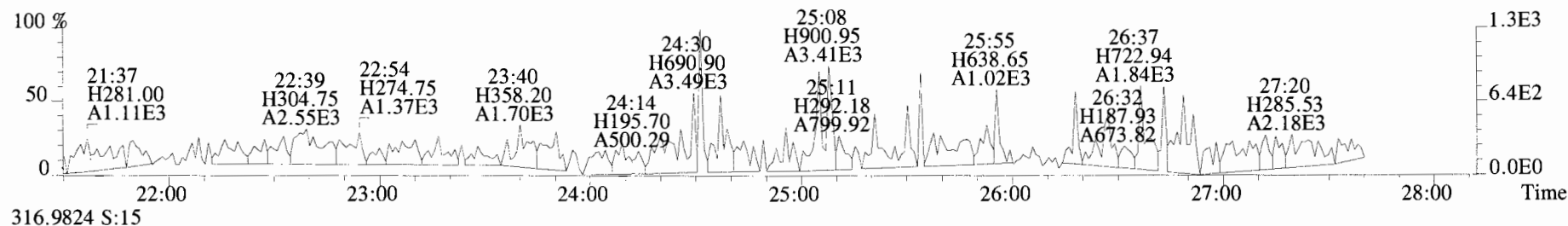
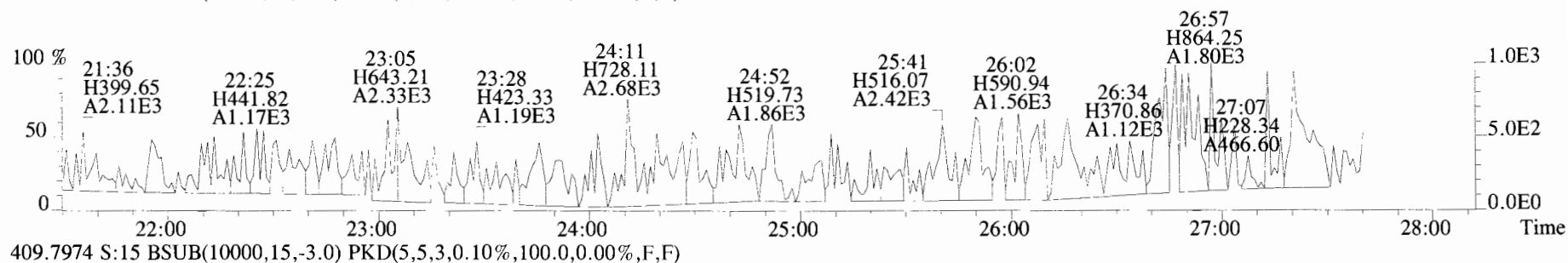
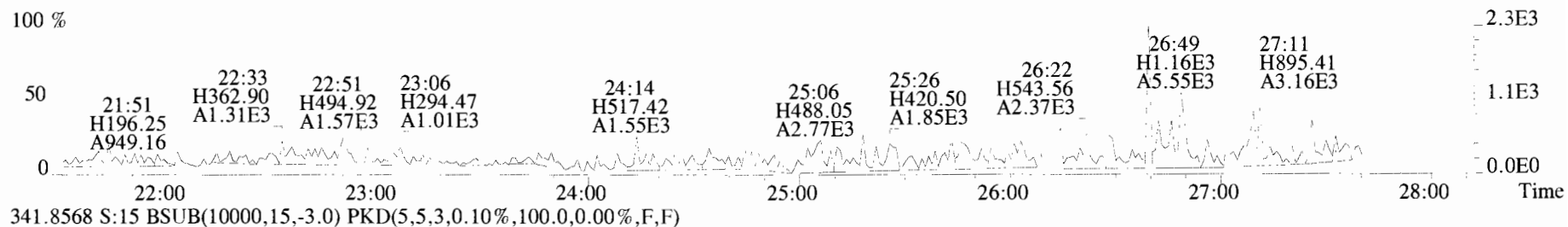
459.7348 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



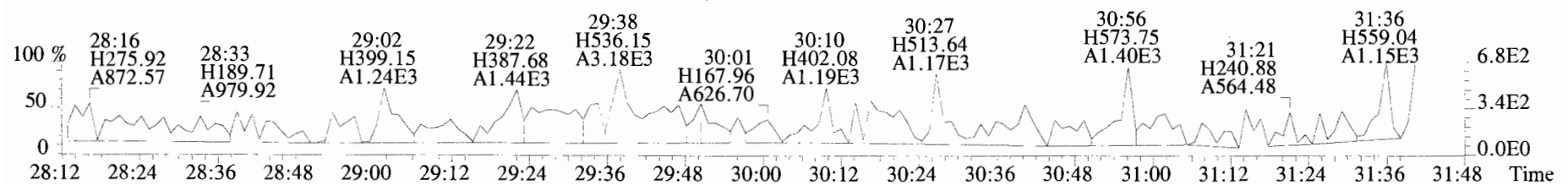
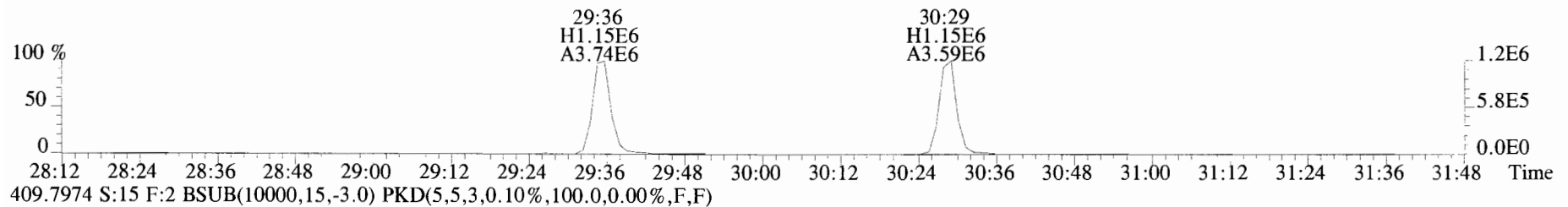
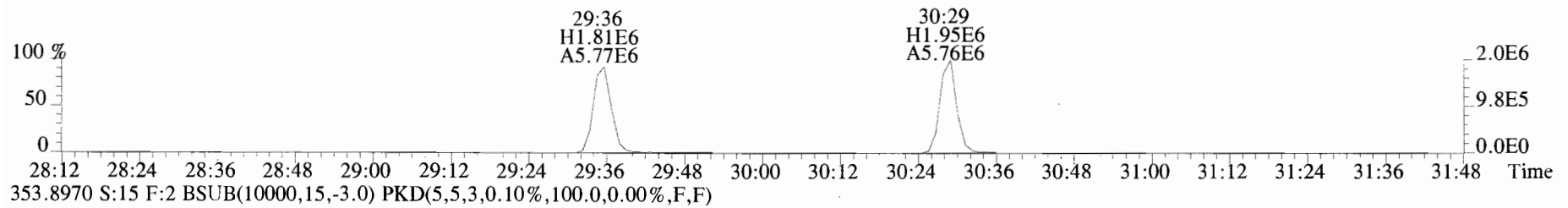
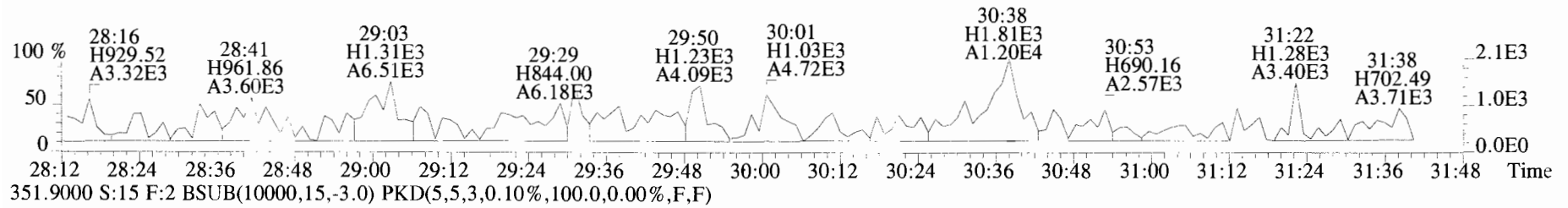
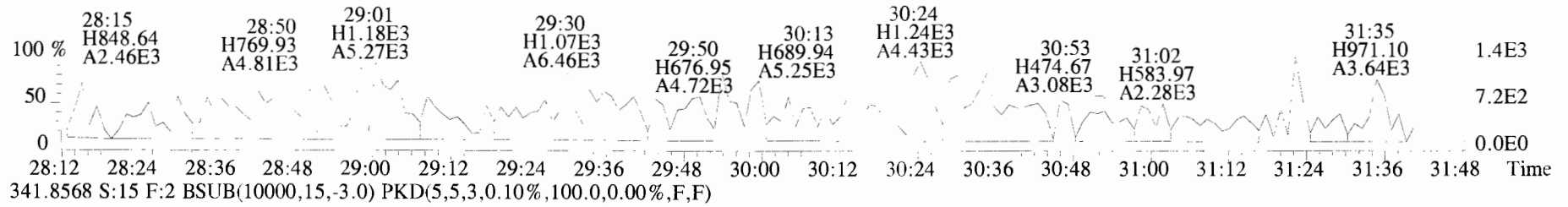
File:191029D1 #1-492 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 303.9016 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



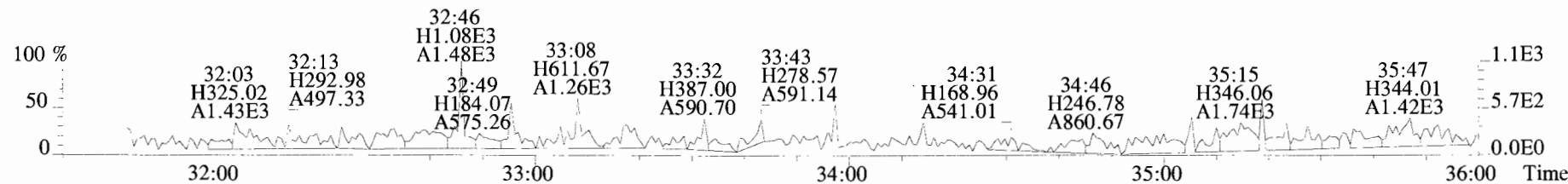
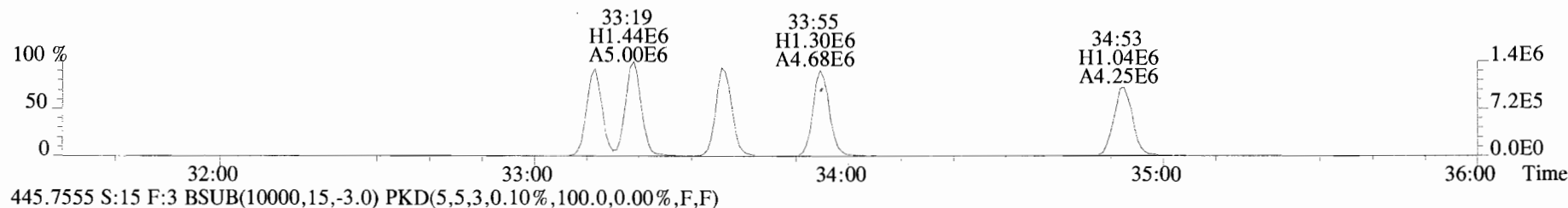
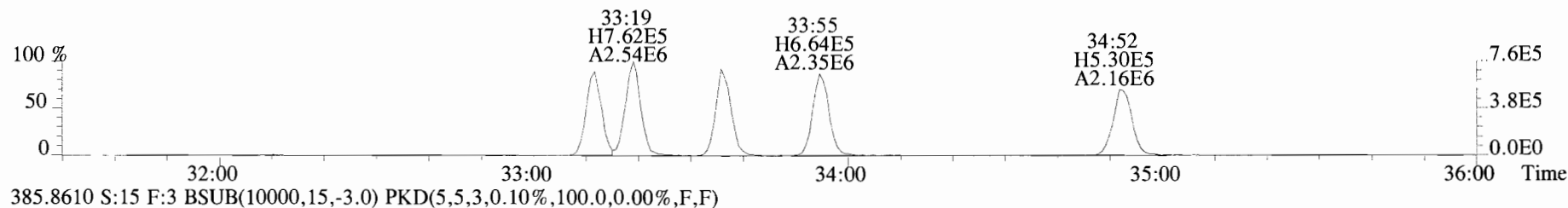
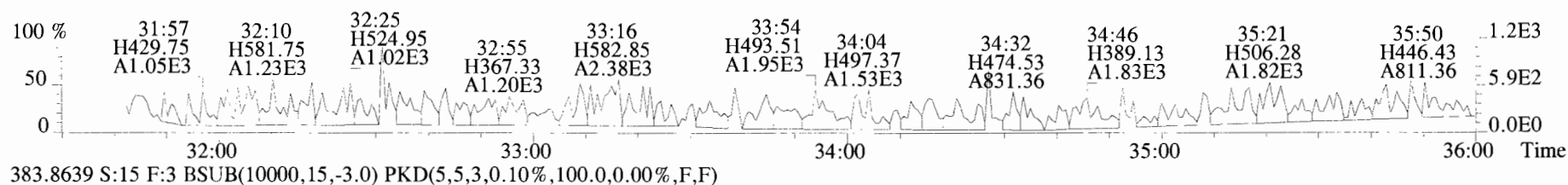
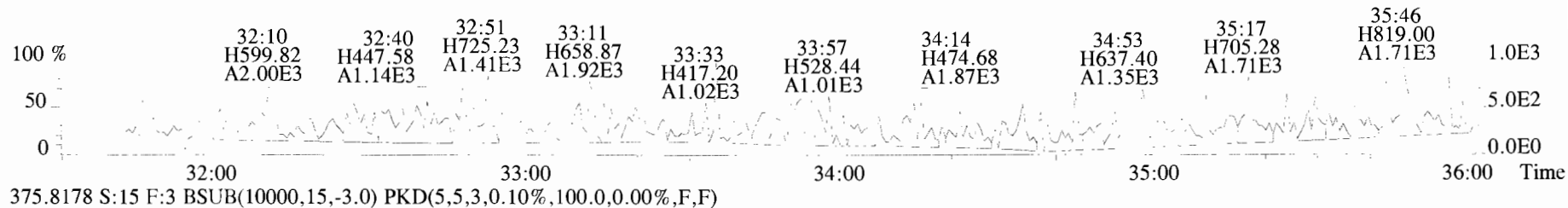
File:191029D1 #1-492 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 339.8597 S:15 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



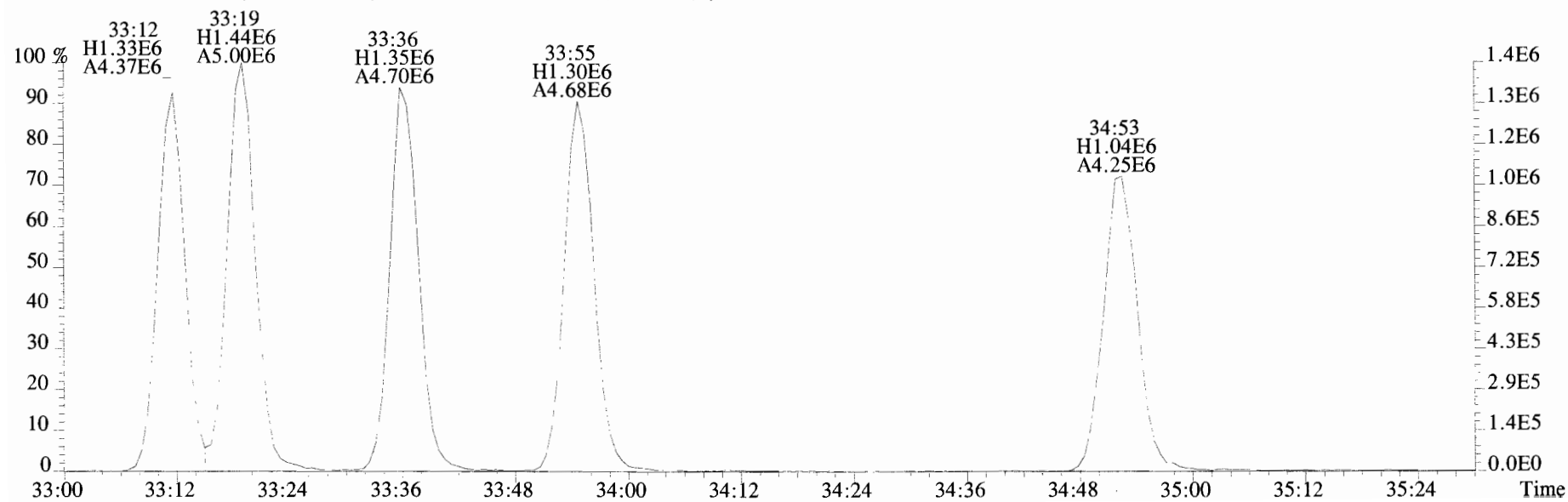
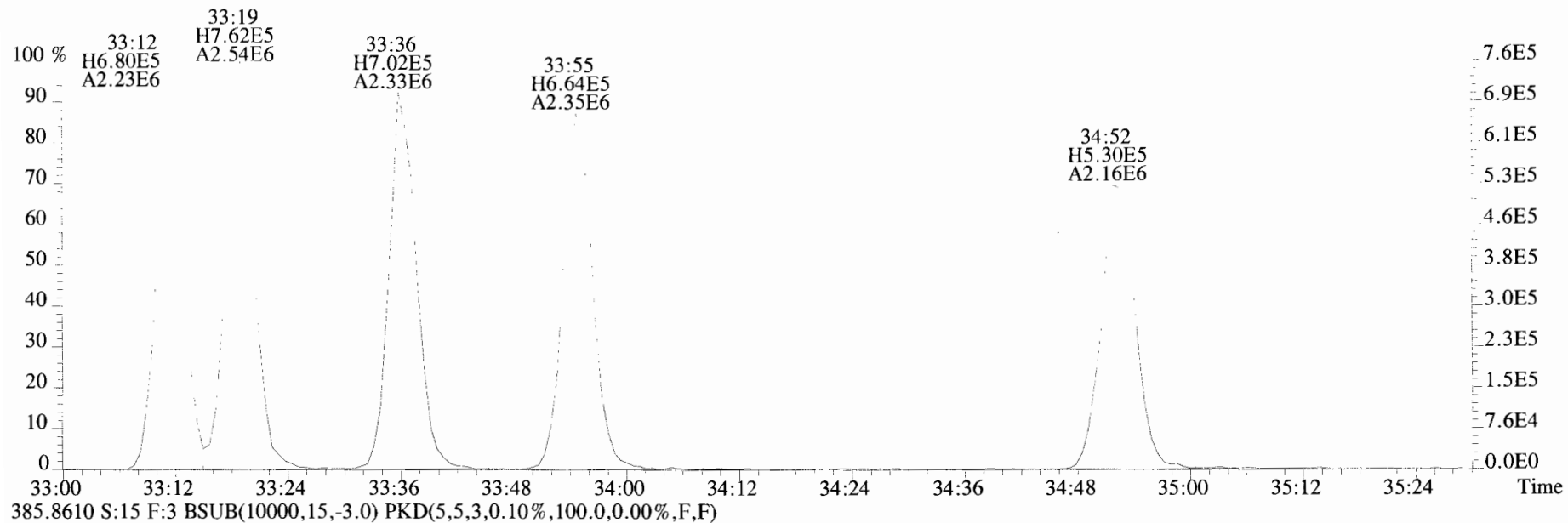
File:191029D1 #1-211 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata Analytical Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 339.8597 S:15 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



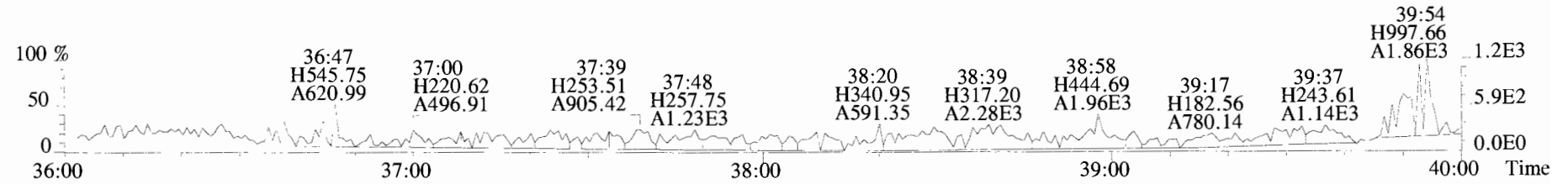
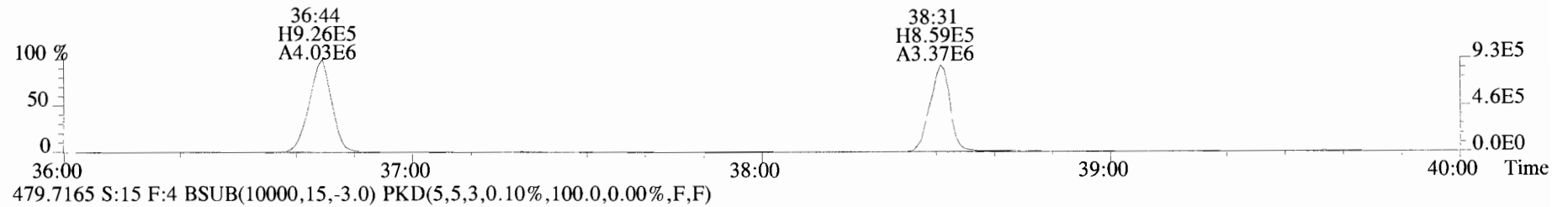
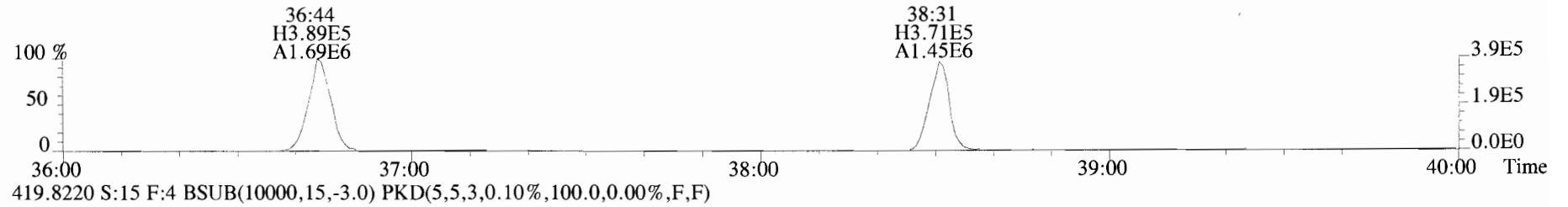
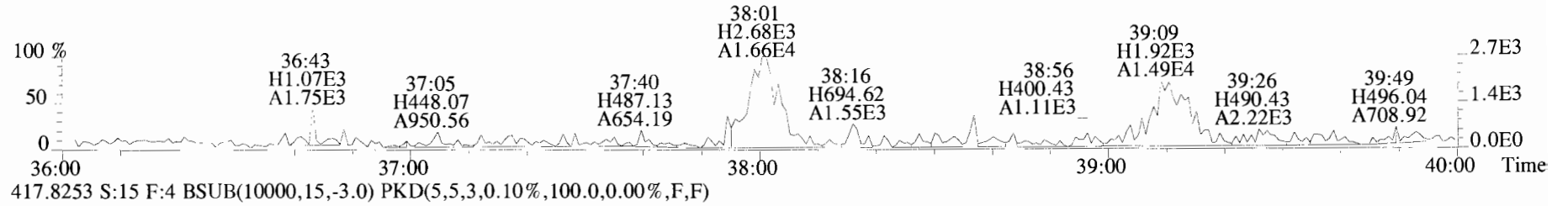
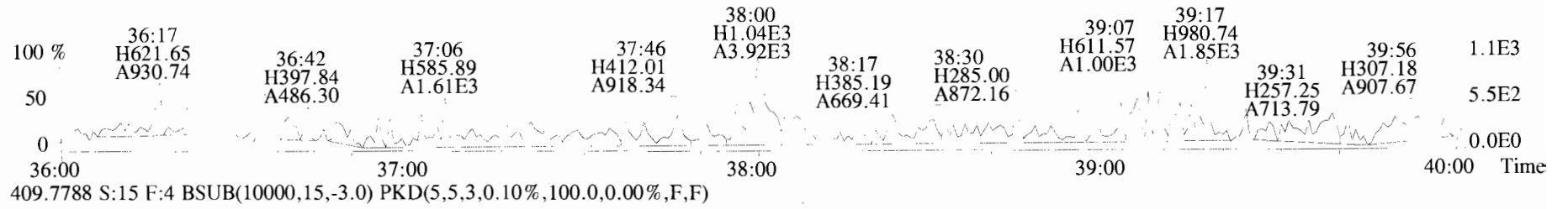
File:191029D1 #1-385 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
373.8207 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



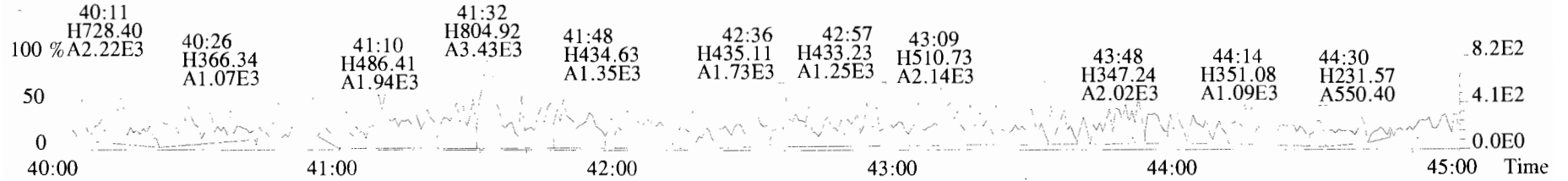
File:191029D1 #1-385 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text:Viata Analytical Laboratory VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
383.8639 S:15 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



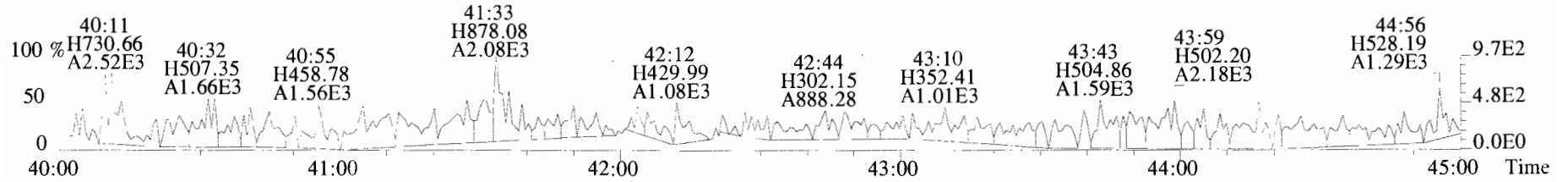
File:191029D1 #1-355 Acq:29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#15 File Text:Viata_Analytical_Laboratory_VG7 Text:1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp:OCDD_DB5
 407.7818 S:15 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



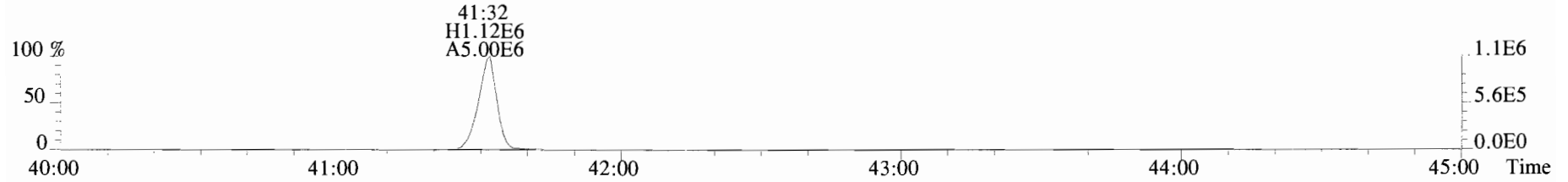
File: 191029D1 #1-432 Acq: 29-OCT-2019 21:25:15 GC EI+ Voltage SIR Autospec-UltimaE
Sample#15 File Text: Viata Analytical Laboratory VG7 Text: 1903460-08RE1 PDI-044SC-A-11-12-190930 12.82 Exp: OCDD_DB5
441.7428 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



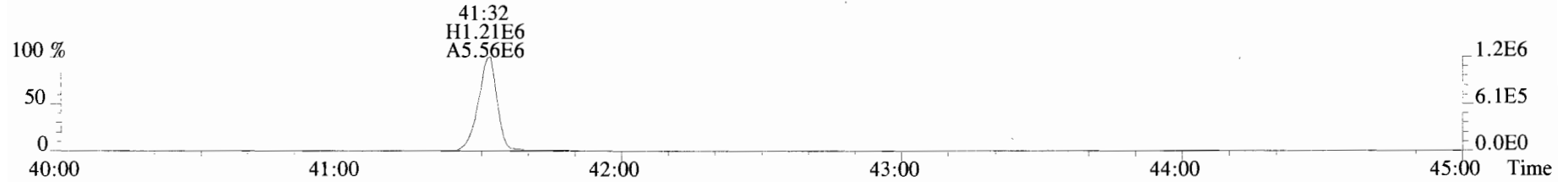
443.7398 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



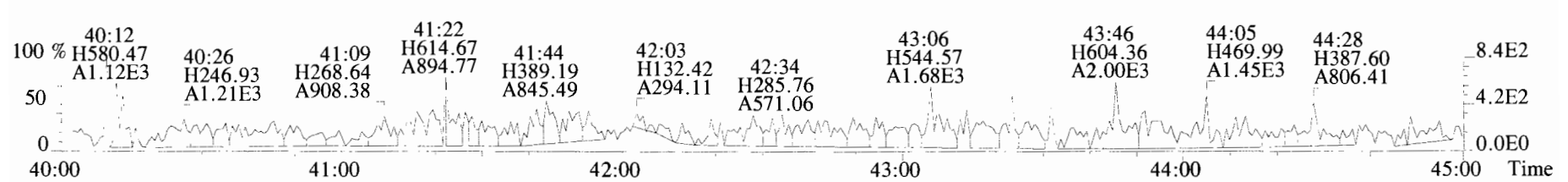
453.7831 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



455.7801 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 S:15 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-14.qld

Last Altered: Monday, November 04, 2019 16:06:54 Pacific Standard Time

Printed: Monday, November 04, 2019 16:07:41 Pacific Standard Time

H2 11-4-19

07 11/05/19

Method: U:\VG7.PRO\MethDB\1613VG7-10-21-19.mdb 04 Nov 2019 13:27:57

Calibration: 04 Nov 2019 16:04:16

Name: VG7 191021D3_14, Date: 22-OCT-2019, Time: 12:26:36, ID: 1903460-09 PDI-044SC-A-12-12.8-190930,

Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| | Name | | | | | | | | | | | | | | | | | |
|----|------------------------|--------|---------|---------|-------|-------|-------|-------|-------|-------|-------|---------|-------|-------|--|--|--|--------|
| 1 | 2,3,7,8-TCDD | 1.32e5 | 10.0481 | 0.905 | | | 1.001 | | | | | | | 26.28 | | | | 0.193 |
| 2 | 1,2,3,7,8-PeCDD | 1.21e5 | 10.0481 | 0.903 | | | 1.001 | | | | | | | 30.75 | | | | 0.122 |
| 3 | 1,2,3,4,7,8-HxCDD | 1.20e5 | 10.0481 | 1.101 | | | 1.000 | | | | | | | 34.04 | | | | 0.197 |
| 4 | 1,2,3,6,7,8-HxCDD | 1.31e5 | 10.0481 | 0.939 | | | 1.000 | | | | | | | 34.14 | | | | 0.209 |
| 5 | 1,2,3,7,8,9-HxCDD | 1.36e5 | 10.0481 | 0.961 | | | 1.001 | | | | | | | 34.46 | | | | 0.210 |
| 6 | 1,2,3,4,6,7,8-HpCDD | 2.71e2 | 1.26e5 | 10.0481 | 0.979 | 0.997 | NO | 1.000 | 1.000 | 37.89 | 37.86 | 0.43672 | 0.437 | 0.199 | | | | |
| 7 | OCDD | 2.02e3 | 2.07e5 | 10.0481 | 0.959 | 0.974 | NO | 1.000 | 1.000 | 41.15 | 41.17 | 4.0469 | 4.05 | 0.196 | | | | |
| 8 | 2,3,7,8-TCDF | 1.92e5 | 10.0481 | 0.950 | | | 1.001 | | | | | | | 25.51 | | | | 0.134 |
| 9 | 1,2,3,7,8-PeCDF | 1.83e5 | 10.0481 | 0.960 | | | 1.001 | | | | | | | 29.58 | | | | 0.0702 |
| 10 | 2,3,4,7,8-PeCDF | 1.74e5 | 10.0481 | 1.015 | | | 1.001 | | | | | | | 30.48 | | | | 0.0689 |
| 11 | 1,2,3,4,7,8-HxCDF | 1.45e5 | 10.0481 | 1.177 | | | 1.000 | | | | | | | 33.14 | | | | 0.0857 |
| 12 | 1,2,3,6,7,8-HxCDF | 1.62e5 | 10.0481 | 1.069 | | | 1.000 | | | | | | | 33.27 | | | | 0.0927 |
| 13 | 2,3,4,6,7,8-HxCDF | 1.53e5 | 10.0481 | 1.114 | | | 1.001 | | | | | | | 33.89 | | | | 0.0956 |
| 14 | 1,2,3,7,8,9-HxCDF | 1.47e5 | 10.0481 | 1.062 | | | 1.000 | | | | | | | 34.81 | | | | 0.119 |
| 15 | 1,2,3,4,6,7,8-HpCDF | 1.36e5 | 10.0481 | 1.128 | | | 1.001 | | | | | | | 36.69 | | | | 0.127 |
| 16 | 1,2,3,4,7,8,9-HpCDF | 1.15e5 | 10.0481 | 1.280 | | | 1.000 | | | | | | | 38.41 | | | | 0.0994 |
| 17 | OCDF | 2.53e5 | 10.0481 | 0.947 | | | 1.000 | | | | | | | 41.37 | | | | 0.166 |
| 18 | 13C-2,3,7,8-TCDD | 1.32e5 | 1.50e5 | 10.0481 | 1.095 | 0.779 | NO | 1.021 | 1.021 | 26.25 | 26.25 | 159.59 | 80.2 | 0.515 | | | | |
| 19 | 13C-1,2,3,7,8-PeCDD | 1.21e5 | 1.50e5 | 10.0481 | 0.881 | 0.630 | NO | 1.187 | 1.196 | 30.50 | 30.73 | 182.97 | 91.9 | 0.216 | | | | |
| 20 | 13C-1,2,3,4,7,8-Hx... | 1.20e5 | 1.88e5 | 10.0481 | 0.642 | 1.277 | NO | 1.014 | 1.014 | 34.02 | 34.02 | 197.40 | 99.2 | 0.484 | | | | |
| 21 | 13C-1,2,3,6,7,8-Hx... | 1.31e5 | 1.88e5 | 10.0481 | 0.856 | 1.286 | NO | 1.017 | 1.017 | 34.14 | 34.14 | 162.91 | 81.8 | 0.364 | | | | |
| 22 | 13C-1,2,3,7,8,9-Hx... | 1.36e5 | 1.88e5 | 10.0481 | 0.807 | 1.257 | NO | 1.026 | 1.026 | 34.44 | 34.43 | 178.76 | 89.8 | 0.386 | | | | |
| 23 | 13C-1,2,3,4,6,7,8-H... | 1.26e5 | 1.88e5 | 10.0481 | 0.654 | 1.041 | NO | 1.126 | 1.129 | 37.79 | 37.88 | 204.69 | 102.8 | 0.863 | | | | |
| 24 | 13C-OCDD | 2.07e5 | 1.88e5 | 10.0481 | 0.580 | 0.917 | NO | 1.226 | 1.226 | 41.14 | 41.15 | 379.22 | 95.3 | 0.555 | | | | |
| 25 | 13C-2,3,7,8-TCDF | 1.92e5 | 2.38e5 | 10.0481 | 1.035 | 0.786 | NO | 0.993 | 0.992 | 25.54 | 25.49 | 154.66 | 77.7 | 0.504 | | | | |
| 26 | 13C-1,2,3,7,8-PeCDF | 1.83e5 | 2.38e5 | 10.0481 | 0.854 | 1.585 | NO | 1.143 | 1.150 | 29.38 | 29.56 | 178.93 | 89.9 | 0.524 | | | | |
| 27 | 13C-2,3,4,7,8-PeCDF | 1.74e5 | 2.38e5 | 10.0481 | 0.847 | 1.642 | NO | 1.176 | 1.184 | 30.24 | 30.45 | 171.99 | 86.4 | 0.528 | | | | |
| 28 | 13C-1,2,3,4,7,8-Hx... | 1.45e5 | 1.88e5 | 10.0481 | 0.832 | 0.508 | NO | 0.987 | 0.988 | 33.13 | 33.14 | 185.33 | 93.1 | 0.731 | | | | |
| 29 | 13C-1,2,3,6,7,8-Hx... | 1.62e5 | 1.88e5 | 10.0481 | 1.034 | 0.517 | NO | 0.991 | 0.991 | 33.25 | 33.26 | 165.64 | 83.2 | 0.588 | | | | |
| 30 | 13C-2,3,4,6,7,8-Hx... | 1.53e5 | 1.88e5 | 10.0481 | 0.953 | 0.518 | NO | 1.009 | 1.009 | 33.86 | 33.86 | 170.17 | 85.5 | 0.638 | | | | |
| 31 | 13C-1,2,3,7,8,9-Hx... | 1.47e5 | 1.88e5 | 10.0481 | 0.828 | 0.516 | NO | 1.039 | 1.037 | 34.85 | 34.81 | 187.74 | 94.3 | 0.735 | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-14.qld

Last Altered: Monday, November 04, 2019 16:06:54 Pacific Standard Time

Printed: Monday, November 04, 2019 16:07:41 Pacific Standard Time

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 Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

| | Name | Area | IS Area | Wt/Vol | RRF | RA | YD | Rec | RRT | Pred RT | Q1 | Conc | RE | EMPC | DL |
|----|------------------------|--------|---------|---------|-------|-------|----|-------|-------|---------|-------|---------|-------|------|--------|
| 32 | 13C-1,2,3,4,6,7,8-H... | 1.36e5 | 1.88e5 | 10.0481 | 0.757 | 0.448 | NO | 1.093 | 1.092 | 36.67 | 36.65 | 189.97 | 95.4 | | 0.633 |
| 33 | 13C-1,2,3,4,7,8,9-H... | 1.15e5 | 1.88e5 | 10.0481 | 0.581 | 0.438 | NO | 1.143 | 1.145 | 38.36 | 38.41 | 209.76 | 105.4 | | 0.825 |
| 34 | 13C-OCDF | 2.53e5 | 1.88e5 | 10.0481 | 0.689 | 0.887 | NO | 1.233 | 1.233 | 41.38 | 41.37 | 389.11 | 97.7 | | 0.325 |
| 35 | 37Cl-2,3,7,8-TCDD | 5.15e4 | 1.50e5 | 10.0481 | 1.198 | | | 1.022 | 1.022 | 26.27 | 26.28 | 57.083 | 71.7 | | 0.0954 |
| 36 | 13C-1,2,3,4-TCDD | 1.50e5 | 1.50e5 | 10.0481 | 1.000 | 0.806 | NO | 1.000 | 1.000 | 25.70 | 25.70 | 199.04 | 100.0 | | 0.564 |
| 37 | 13C-1,2,3,4-TCDF | 2.38e5 | 2.38e5 | 10.0481 | 1.000 | 0.797 | NO | 1.000 | 1.000 | 24.28 | 24.29 | 199.04 | 100.0 | | 0.521 |
| 38 | 13C-1,2,3,4,6,9-Hx... | 1.88e5 | 1.88e5 | 10.0481 | 1.000 | 0.509 | NO | 1.000 | 1.000 | 33.55 | 33.55 | 199.04 | 100.0 | | 0.608 |
| 39 | Total Tetra-Dioxins | | 1.32e5 | 10.0481 | 0.901 | | | 0.000 | | 25.50 | | | | | 0.123 |
| 40 | Total Penta-Dioxins | | 1.21e5 | 10.0481 | 0.872 | | | 0.000 | | 30.00 | | | | | 0.0584 |
| 41 | Total Hexa-Dioxins | | 0.00e0 | 10.0481 | 0.976 | | | 0.000 | | 33.80 | | 0.00000 | 0.219 | | 0.119 |
| 42 | Total Hepta-Dioxins | | 1.26e5 | 10.0481 | 0.989 | | | 0.000 | | 37.75 | | 0.43672 | 1.12 | | 0.197 |
| 43 | Total Tetra-Furans | | 1.92e5 | 10.0481 | 0.943 | | | 0.000 | | 24.00 | | | | | 0.0663 |
| 44 | 1st Func. Penta-Fur... | | 0.00e0 | 10.0481 | 0.940 | | | 0.000 | | 27.63 | | | | | 0.0446 |
| 45 | Total Penta-Furans | | 0.00e0 | 10.0481 | 0.940 | | | 0.000 | | 30.00 | | | | | 0.0335 |
| 46 | Total Hexa-Furans | | 0.00e0 | 10.0481 | 1.078 | | | 0.000 | | 33.00 | | | | | 0.0486 |
| 47 | Total Hepta-Furans | | 0.00e0 | 10.0481 | 1.135 | | | 0.000 | | 37.75 | | | | | 0.0549 |

0.193
 0.122
 0.134
 0.0702
 0.119
 0.127

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-14.qld

Last Altered: Monday, November 04, 2019 16:06:54 Pacific Standard Time

Printed: Monday, November 04, 2019 16:07:41 Pacific Standard Time

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Calibration: 04 Nov 2019 16:04:16

Name: VG7 191021D3_14, Date: 22-OCT-2019, Time: 12:26:36, ID: 1903460-09 PDI-044SC-A-12-12.8-190930,

Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Tetra-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|------|----|----|------|---------|----------|--------------|------|-----|
| | | | | | | | | |

Penta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|------|----|----|------|---------|----------|--------------|------|-----|
| | | | | | | | | |

Hexa-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|-----------------------|-----|-------|--------|-----------|----------|--------------|--------|------|
| 41 Total Hexa-Dioxins | YES | 32.52 | 92.763 | 72223.591 | 0.000 | bb | 0.0000 | 0.22 |

Hepta-Dioxins

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|------------------------|-----|-------|---------|-----------|----------|--------------|--------|------|
| 6 1,2,3,4,6,7,8-HpCDD | NO | 37.86 | 135.383 | 64355.789 | 4.298 | MM | 0.4367 | 0.44 |
| 42 Total Hepta-Dioxins | YES | 37.05 | 216.873 | 64355.789 | 0.000 | MM | 0.0000 | 0.68 |

Tetra-Furans

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|------|----|----|------|---------|----------|--------------|------|-----|
| | | | | | | | | |

Penta-Furans function 1

| Name | NY | RT | Area | IS Area | Response | Primary Flag | Conc | EMV |
|------|----|----|------|---------|----------|--------------|------|-----|
| | | | | | | | | |

Vista Analytical Laboratory

Dataset: U:\VG7.PRO\Results\191021D3\191021D3-14.qld

Last Altered: Monday, November 04, 2019 16:06:54 Pacific Standard Time

Printed: Monday, November 04, 2019 16:07:41 Pacific Standard Time

Name: VG7 191021D3_14, Date: 22-OCT-2019, Time: 12:26:36, ID: 1903460-09 PDI-044SC-A-12-12.8-190930,
Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Penta-Furans

| Name | RT | Area | PS Area | Response | EMPC |
|------|----|------|---------|----------|------|
| | | | | | |

Hexa-Furans

| Name | RT | Area | PS Area | Response | EMPC |
|------|----|------|---------|----------|------|
| | | | | | |

Hepta-Furans

| Name | RT | Area | PS Area | Response | EMPC |
|------|----|------|---------|----------|------|
| | | | | | |

Vista Analytical Laboratory

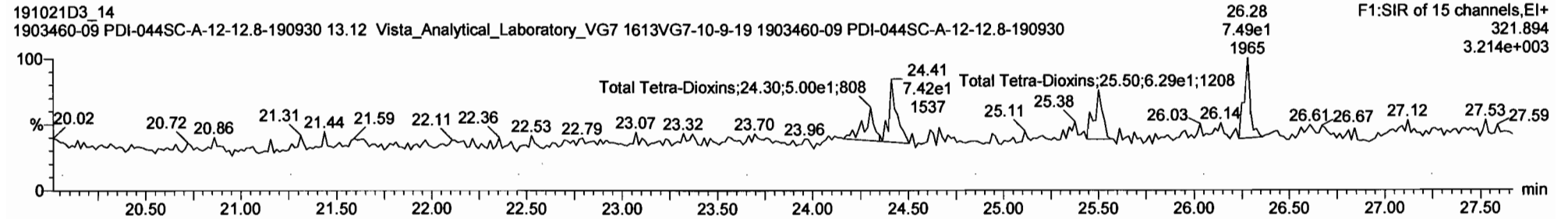
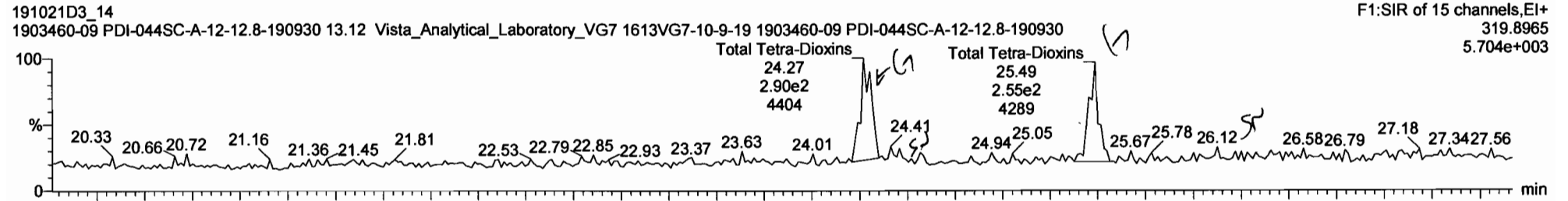
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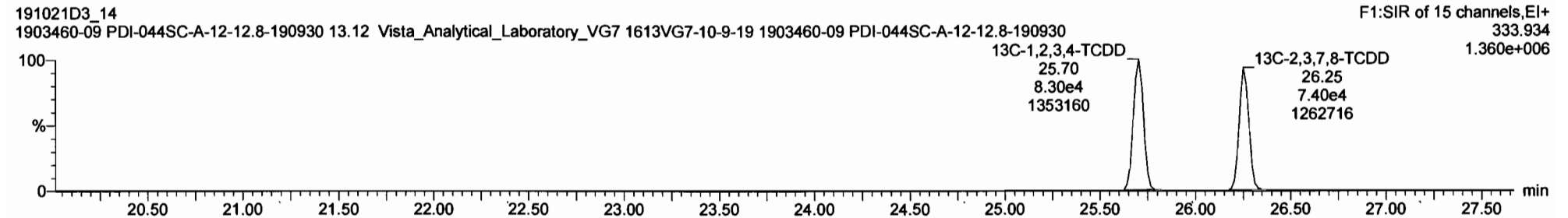
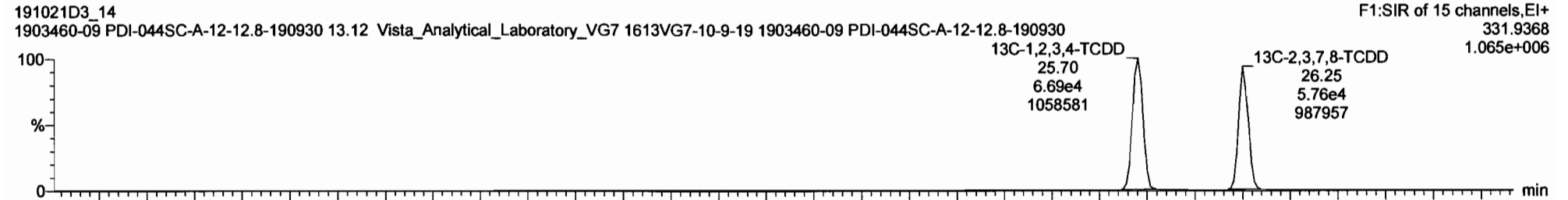
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Total Tetra-Dioxins



13C-2,3,7,8-TCDD



Vista Analytical Laboratory

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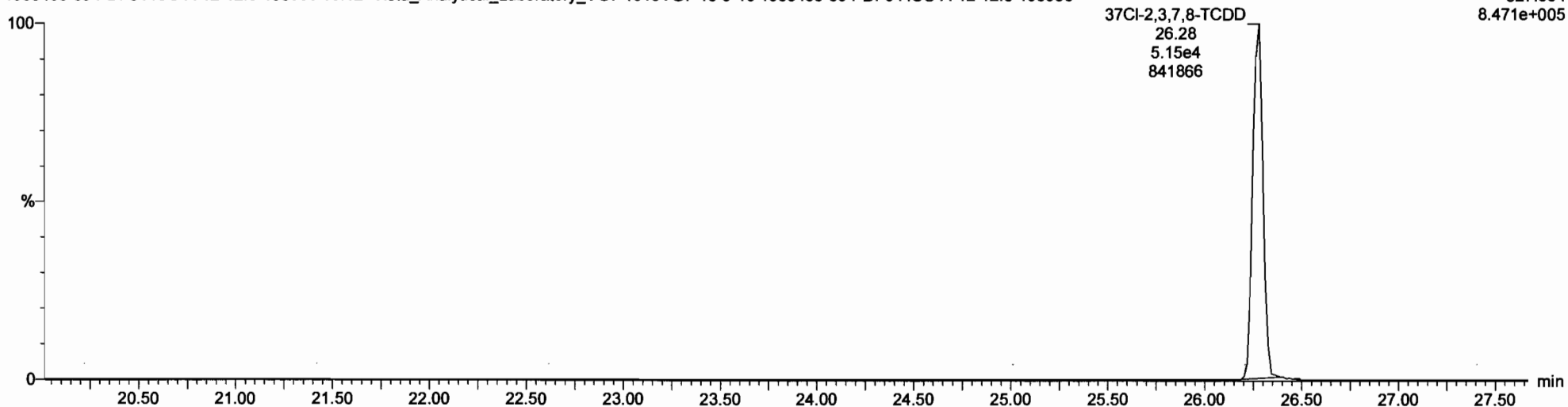
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37Cl-2,3,7,8-TCDD

191021D3_14
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F1:SIR of 15 channels,EI+
 327.884
 8.471e+005



13C-1,2,3,4-TCDD

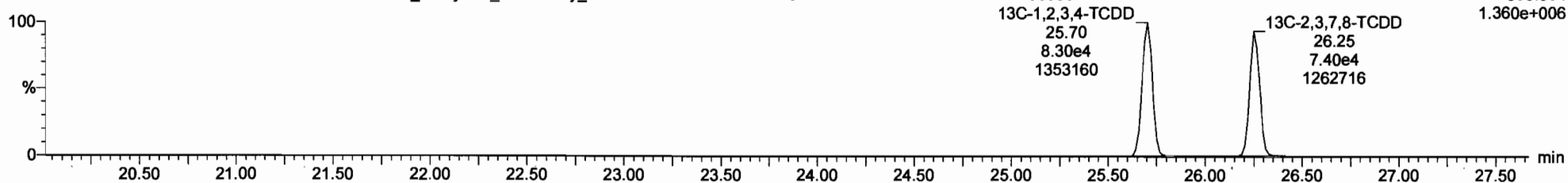
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F1:SIR of 15 channels,EI+
 331.9368
 1.065e+006



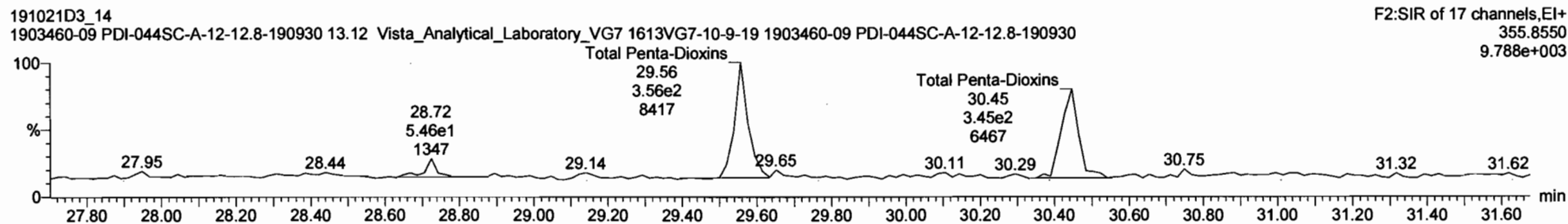
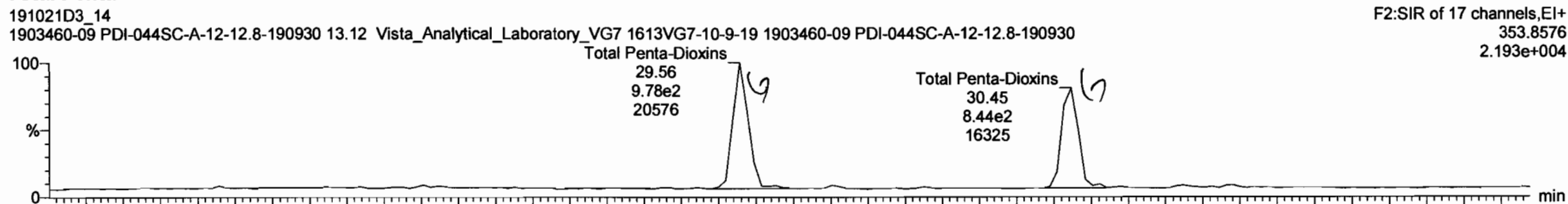
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F1:SIR of 15 channels,EI+
 333.934
 1.360e+006

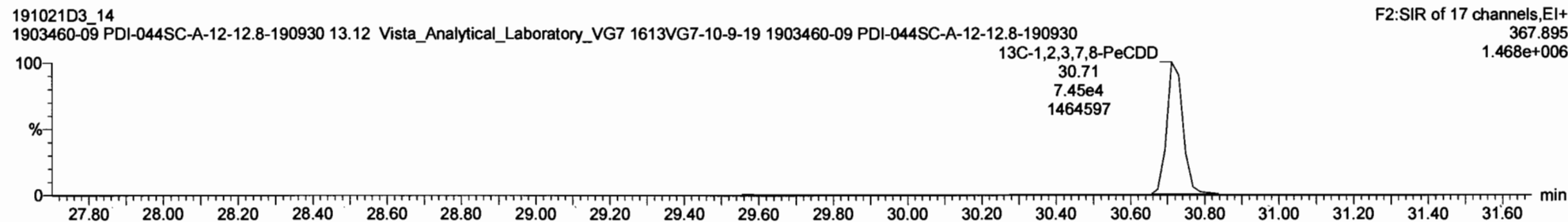
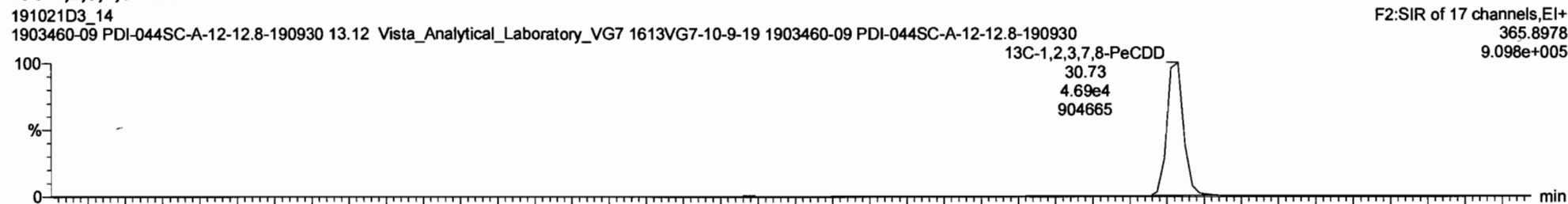


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Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Penta-Dioxins



13C-1,2,3,7,8-PeCDD



Vista Analytical Laboratory

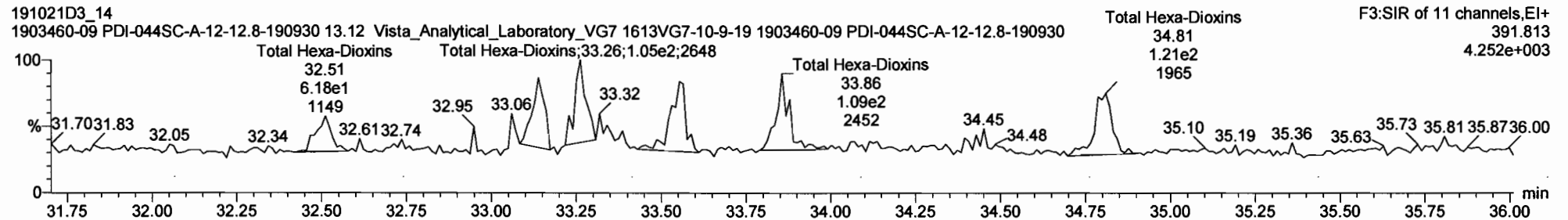
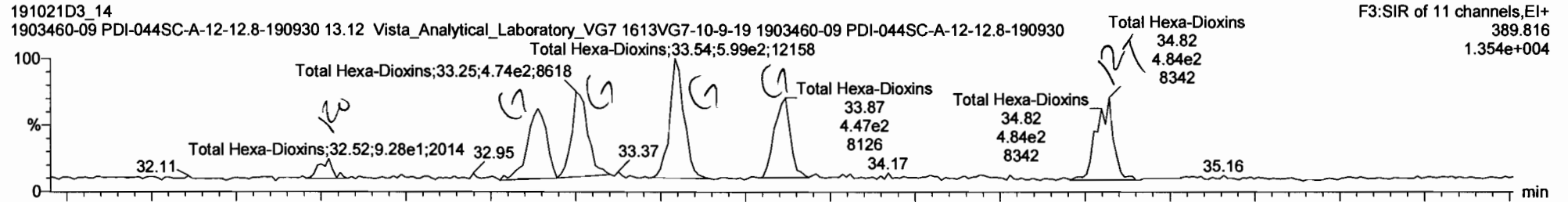
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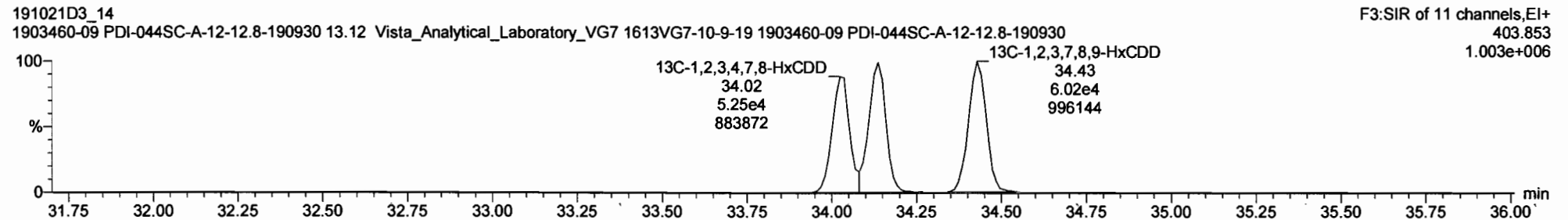
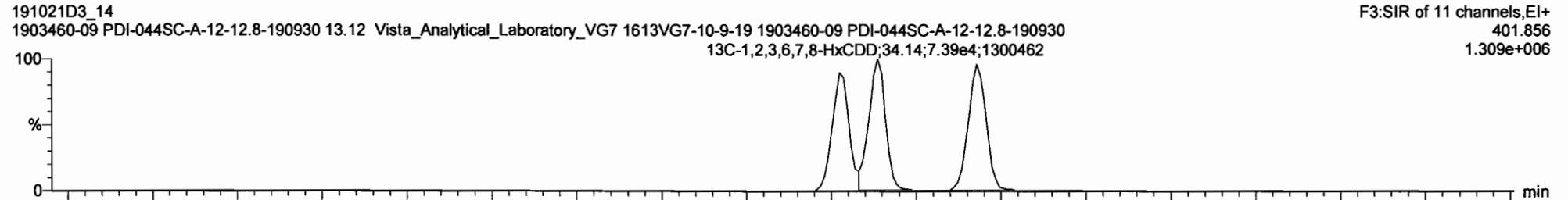
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Total Hexa-Dioxins

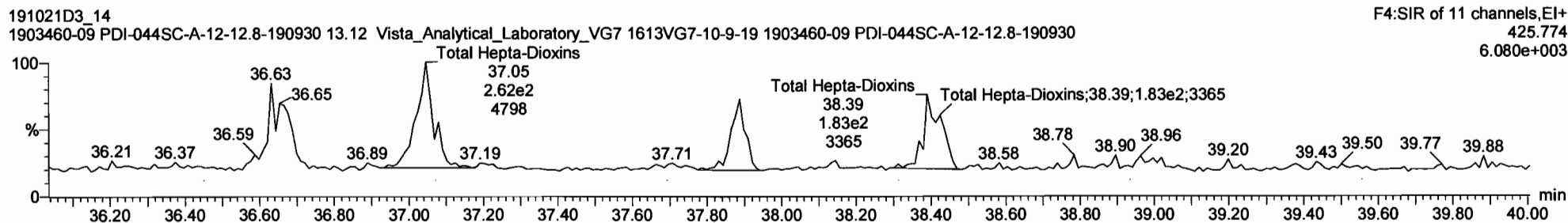
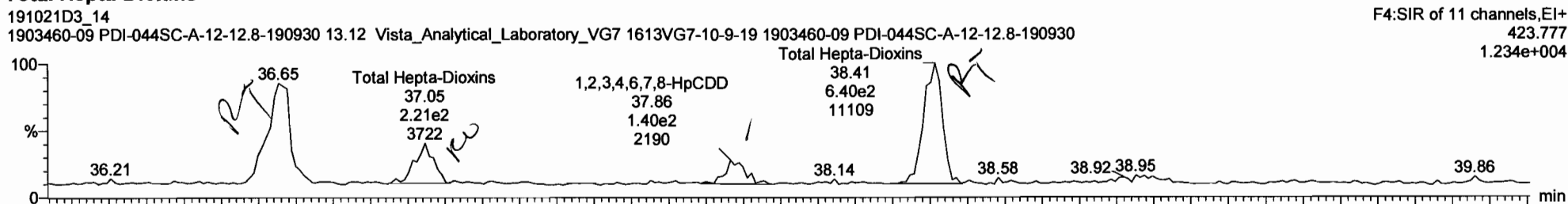


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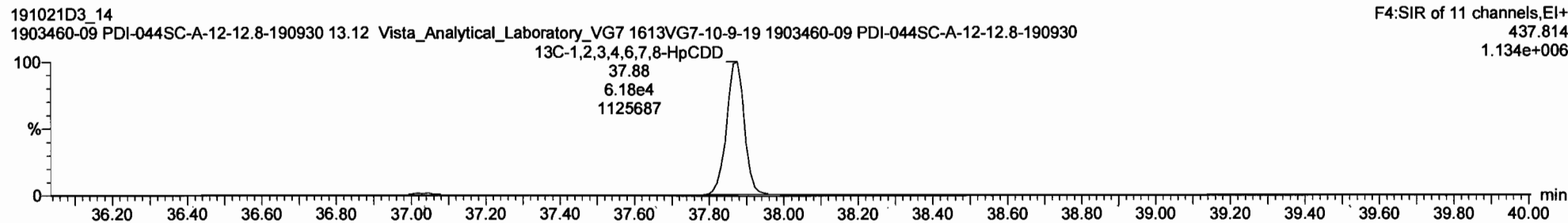
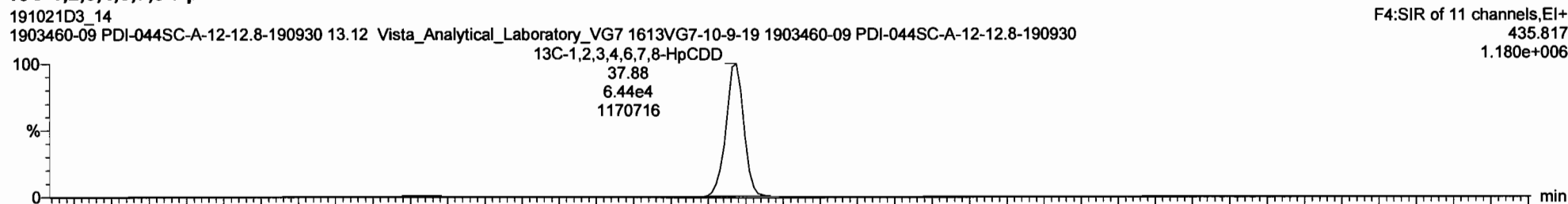


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 Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

Total Hepta-Dioxins



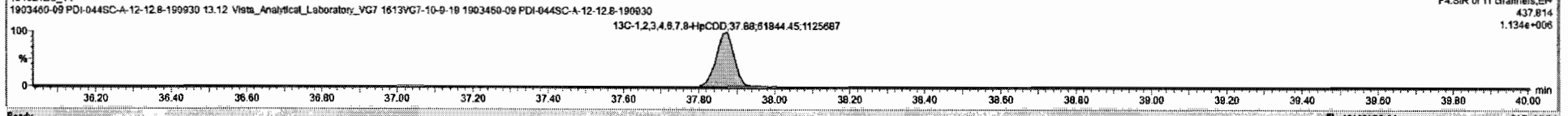
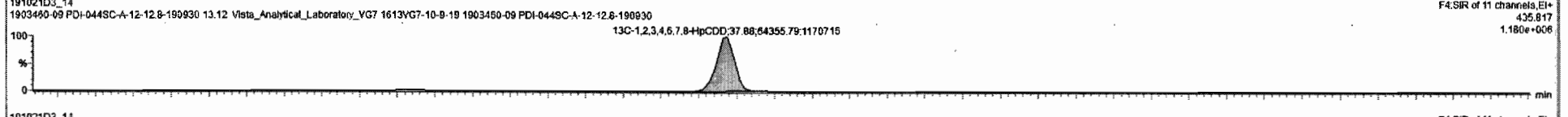
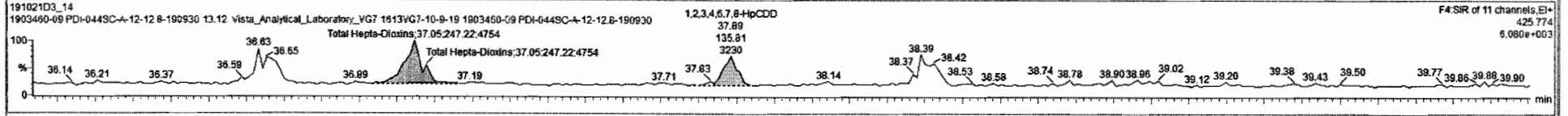
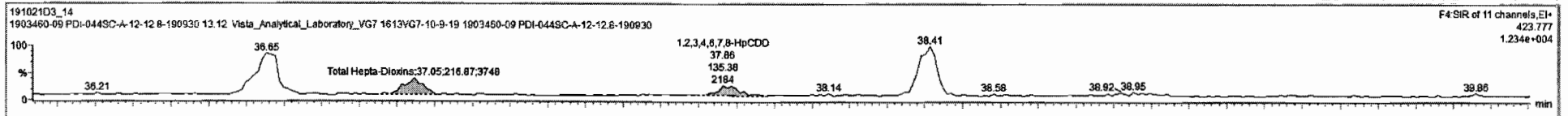
13C-1,2,3,4,6,7,8-HpCDD



TargetLynx XS - 191021D3-14 - (C:\com\1903460) [1903460-09 PDI-044SC-A-12-12.8-190930-1903460-09 PDI-044SC-A-12-12.8-190930-13.12-Vista_Analytical_Laboratory_VG7-1613VG7-10-9-19]

| # | Name | Resp | IS Resp | SM | RA | nly | RRP | wtval | Pred.RT | RT | RRT | Pred.RRT | Check RRT | Conc. | %Rec | DI | EMPC |
|----|------------------------|------|---------|----|----|-----|-------|--------|---------|----|-----|----------|-----------|--------|------|--------|--------|
| 41 | Total Hepta-Dioxins | | 0.00e0 | | | | 0.576 | 10.048 | 33.90 | | | 0.000 | NO | 0.0000 | | 0.119 | 0.2189 |
| 42 | Total Hepta-Dioxins | | 1.26e5 | | | | 4.989 | 10.048 | 37.75 | | | 0.000 | NO | 1.4367 | | 0.197 | 1.116 |
| 43 | Total Tetra-Furans | | 1.92e5 | | | | 9.943 | 10.048 | 24.00 | | | 0.000 | NO | | | 0.0663 | |
| 44 | 1st Func. Penta-Furans | | 0.00e0 | | | | 0.340 | 10.048 | 27.83 | | | 0.000 | NO | | | 0.0446 | |
| 45 | Total Penta-Furans | | 0.00e0 | | | | 0.340 | 10.048 | 30.00 | | | 0.000 | NO | | | 0.0335 | |
| 46 | Total Hexa-Furans | | 0.00e0 | | | | 1.079 | 10.048 | 33.90 | | | 0.000 | NO | | | 0.0486 | |
| 47 | Total Hepta-Furans | | 0.00e0 | | | | 1.135 | 10.048 | 37.75 | | | 0.000 | NO | | | 0.0549 | |
| 48 | PFK1 | | | | | | | | | | | | | | | | |
| 49 | PFK2 | | | | | | | | | | | | | | | | |

| # | Name | Pred.RT | RT | m1 Resp | m2 Resp | Prod RA | RA | nly | EMPC | Conc. |
|---|------------------------|---------|-------|---------|---------|---------|------|-----|---------|---------|
| 1 | 42 Total Hepta-Dioxins | 37.75 | 37.05 | 2.169e2 | 2.472e2 | 1.040 | 0.86 | YES | 0.07882 | 0.00000 |
| 2 | 6 1,2,3,4,6,7,8-HpCDD | 37.88 | 37.86 | 1.354e2 | 1.358e2 | 1.040 | 1.00 | NO | 0.43672 | 0.43672 |



Vista Analytical Laboratory

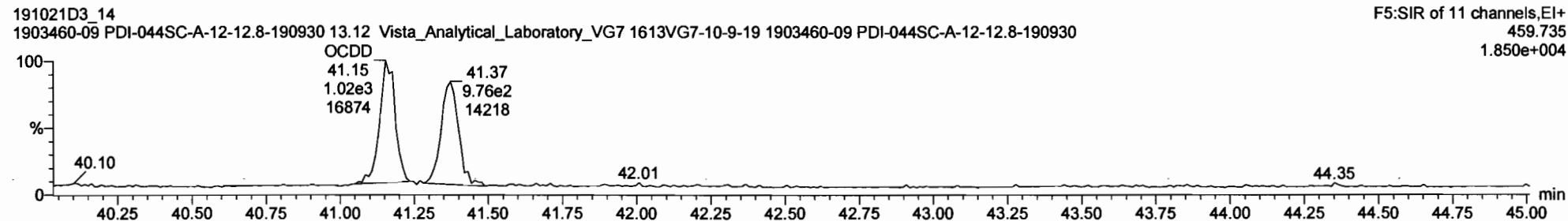
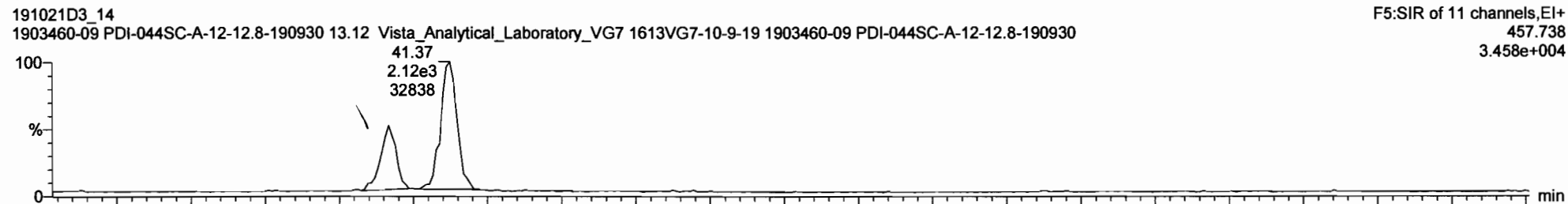
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Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

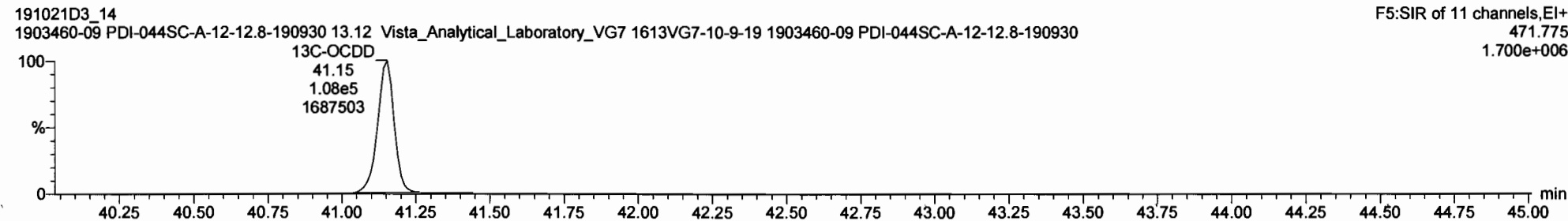
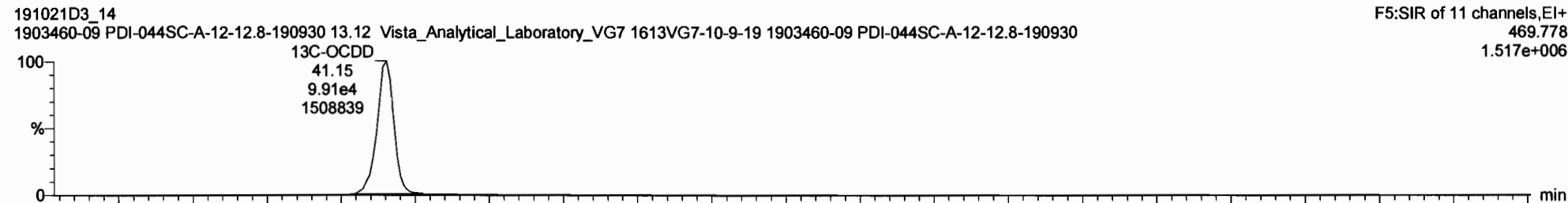
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 Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

OCDD



13C-OCDD



Vista Analytical Laboratory

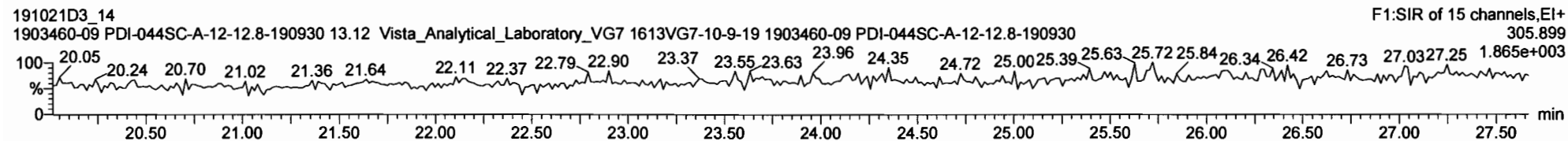
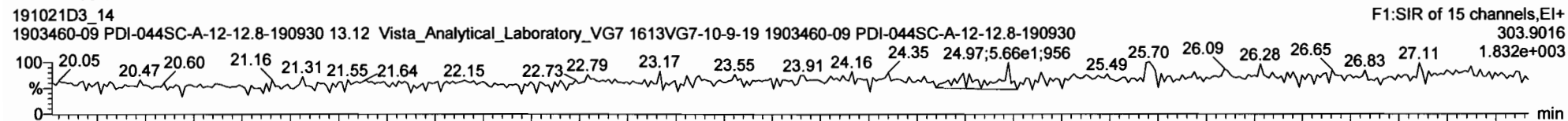
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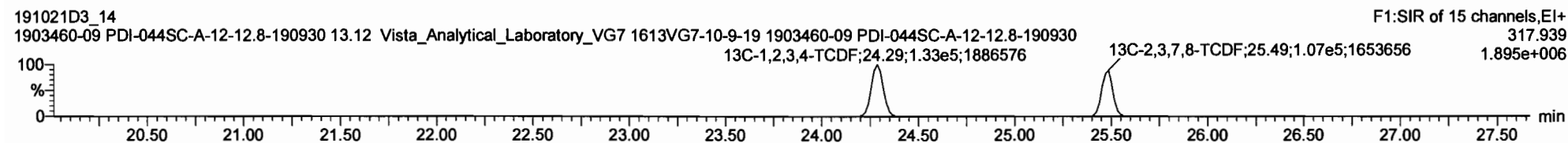
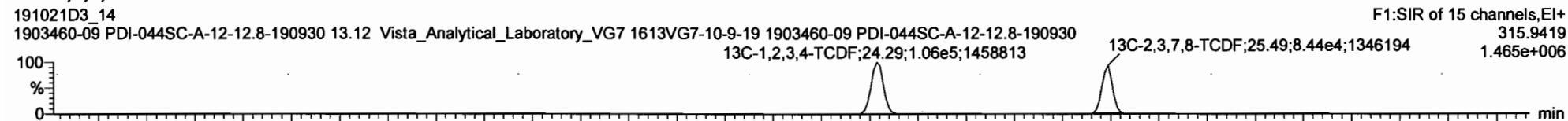
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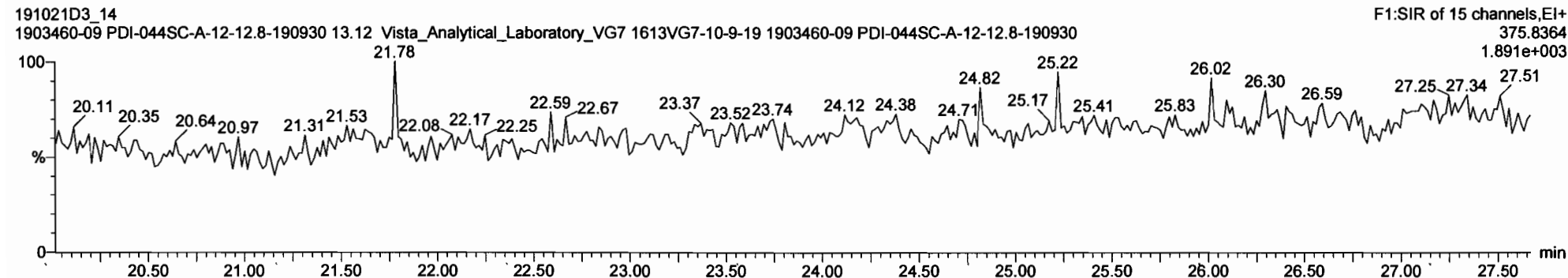
Total Tetra-Furans



13C-2,3,7,8-TCDF



DPE1



Vista Analytical Laboratory

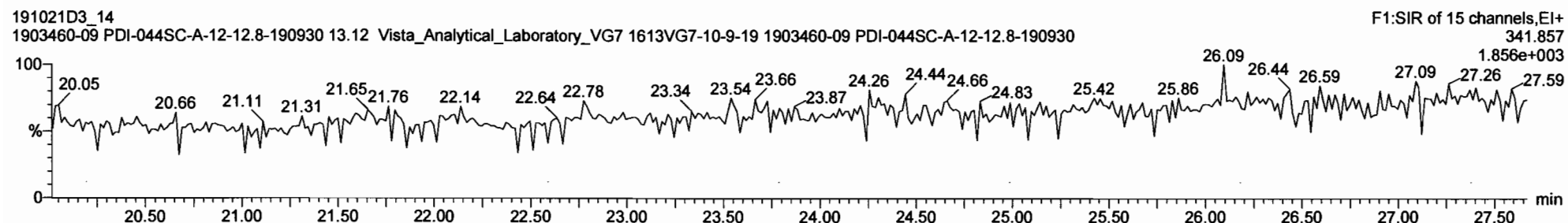
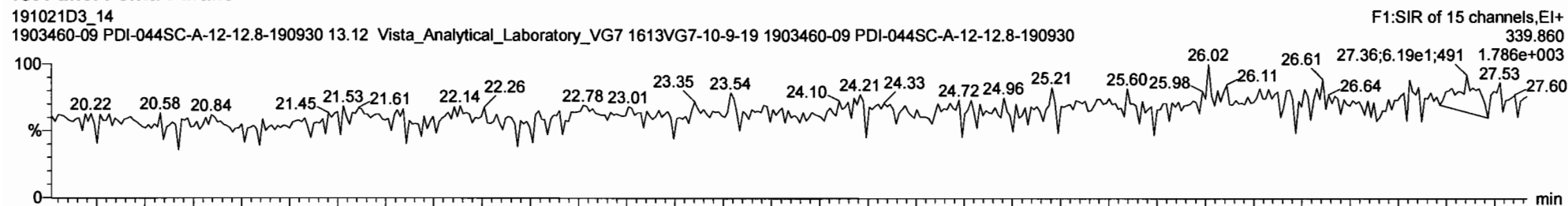
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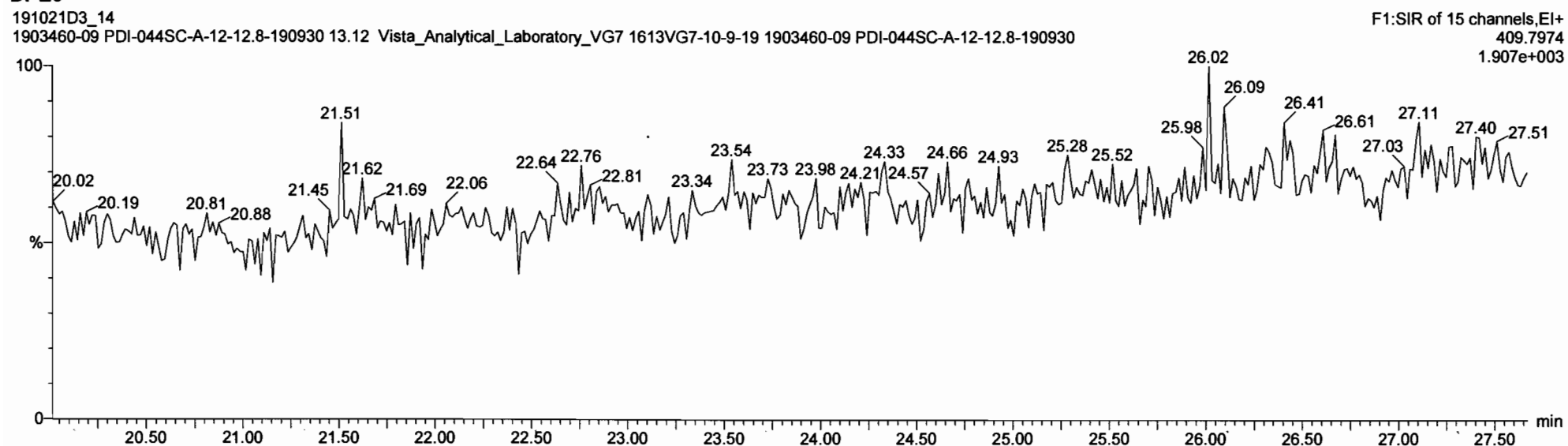
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1st Func. Penta-Furans

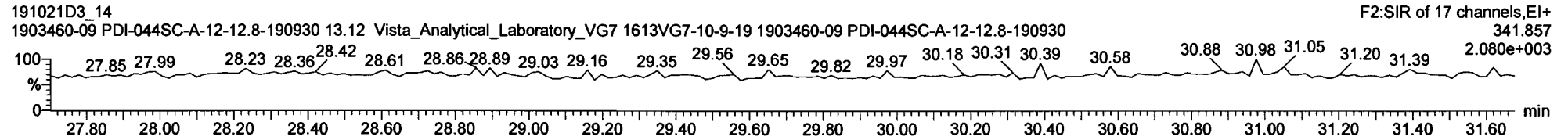
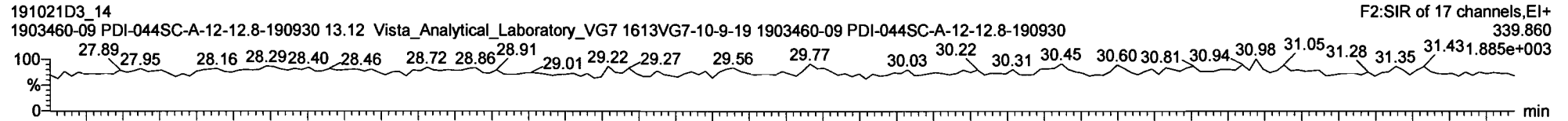


DPE6

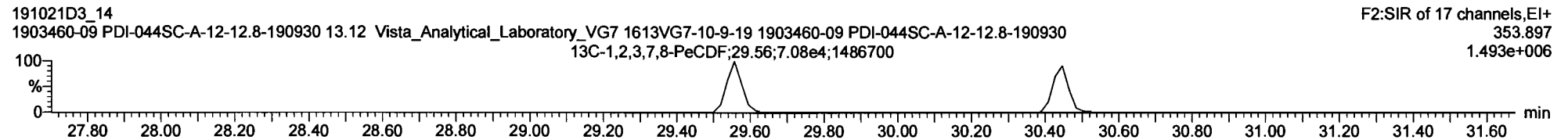
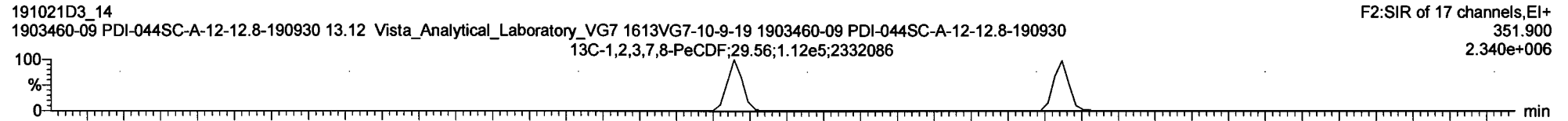


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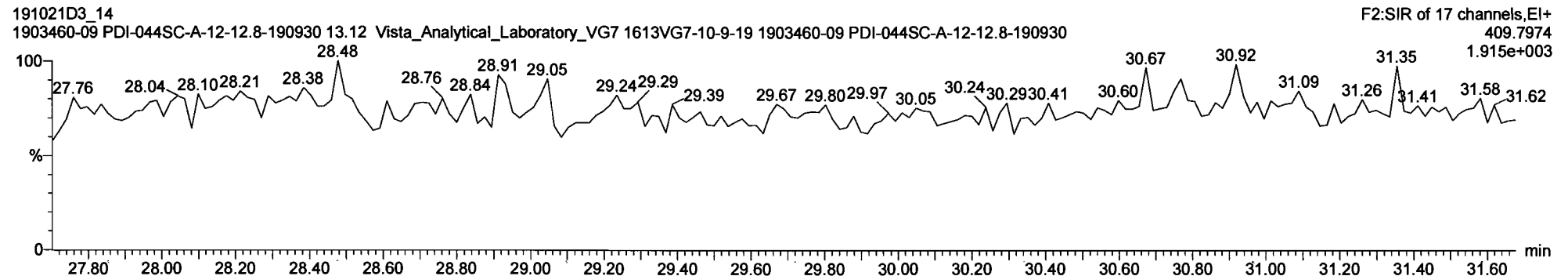
Total Penta-Furans



13C-1,2,3,7,8-PeCDF

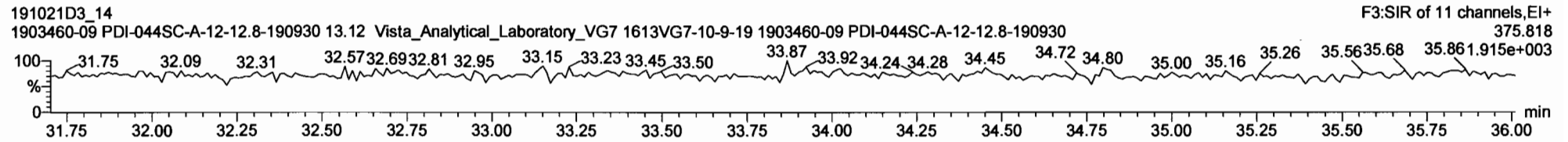
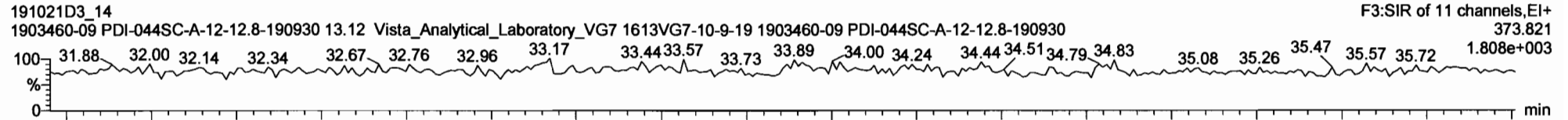


DPE2

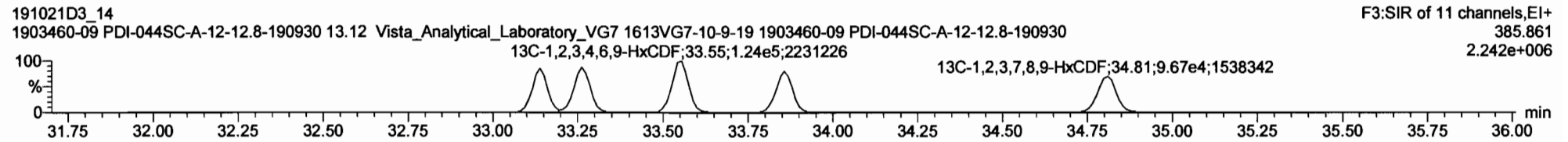
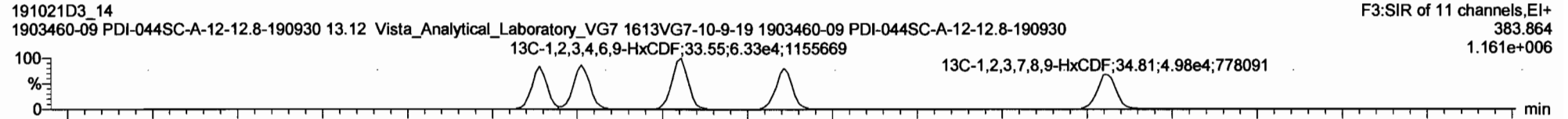


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Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

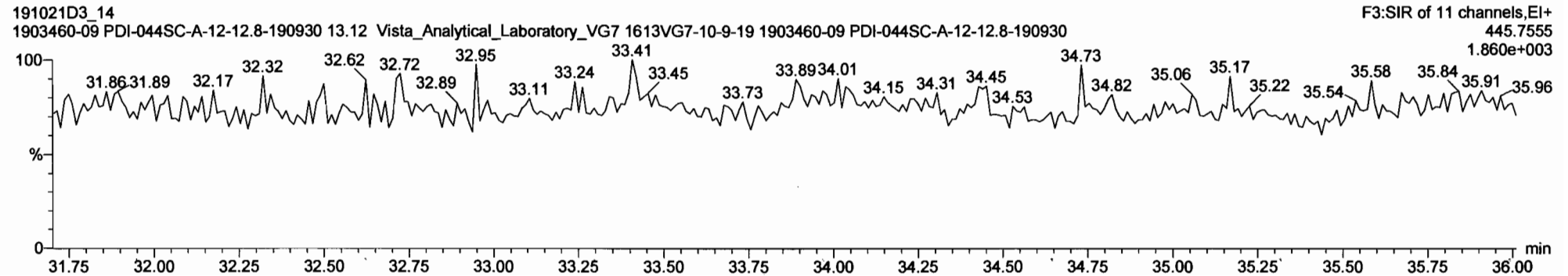
Total Hexa-Furans



13C-1,2,3,4,7,8-HxCDF



DPE3



Vista Analytical Laboratory

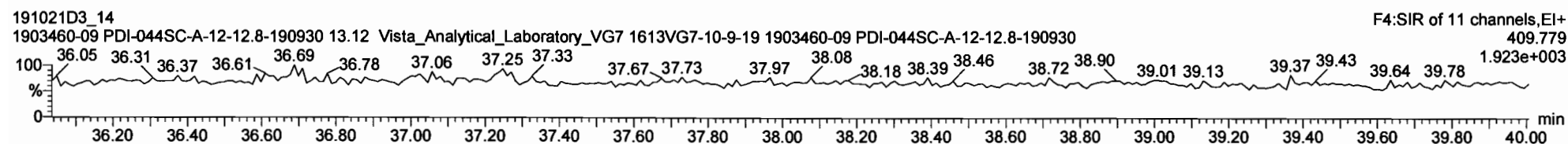
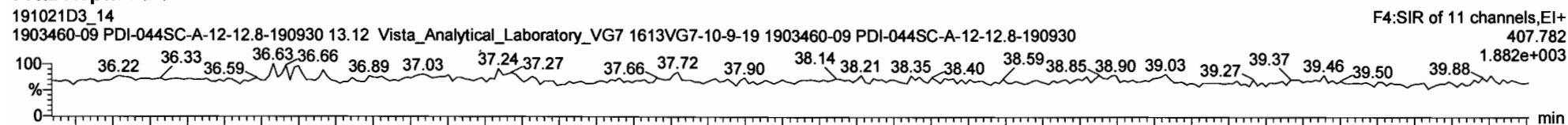
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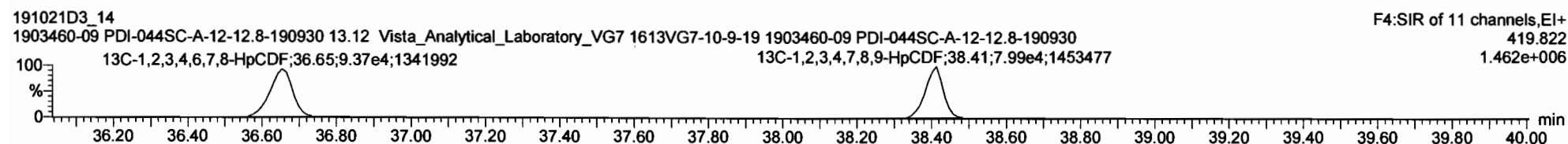
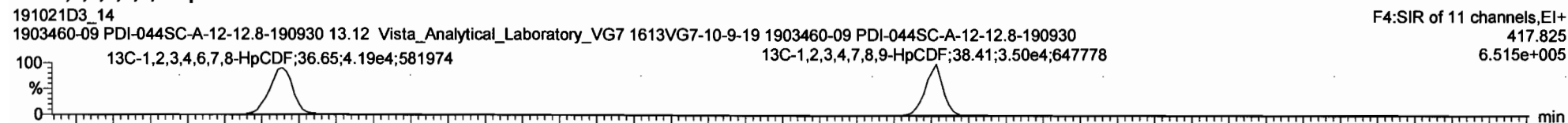
Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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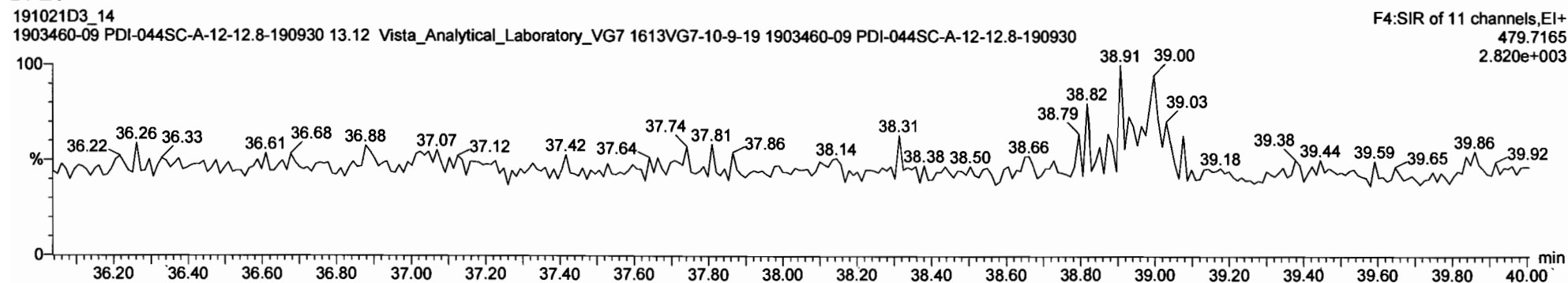
Total Hepta-Furans



13C-1,2,3,4,6,7,8-HpCDF



DPE4



Vista Analytical Laboratory

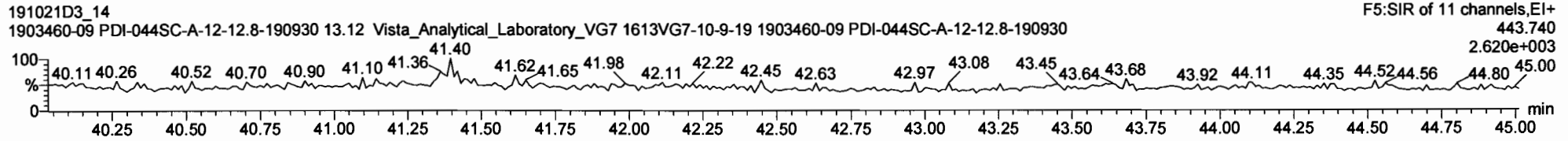
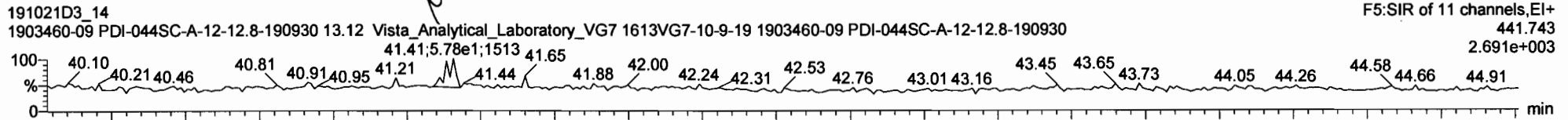
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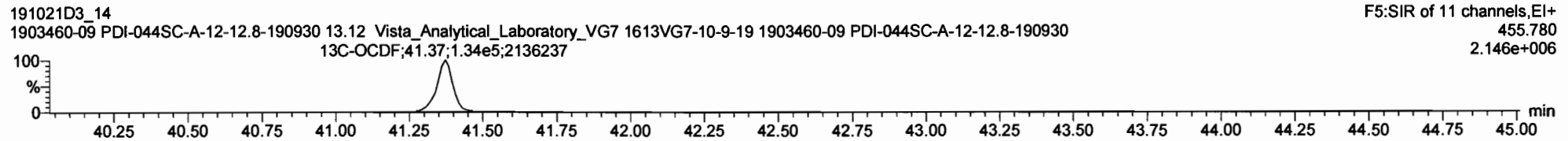
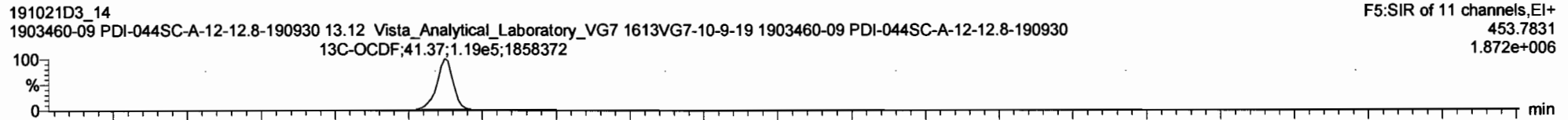
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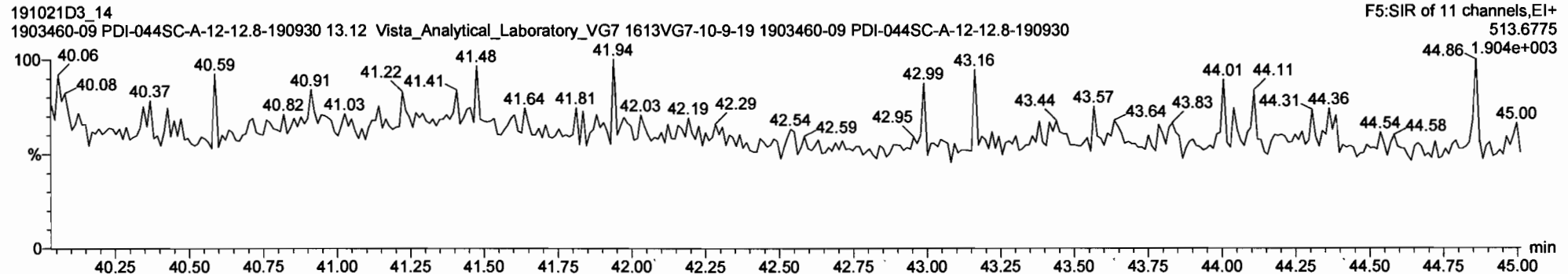
OCDF



13C-OCDF



DPE5



Vista Analytical Laboratory

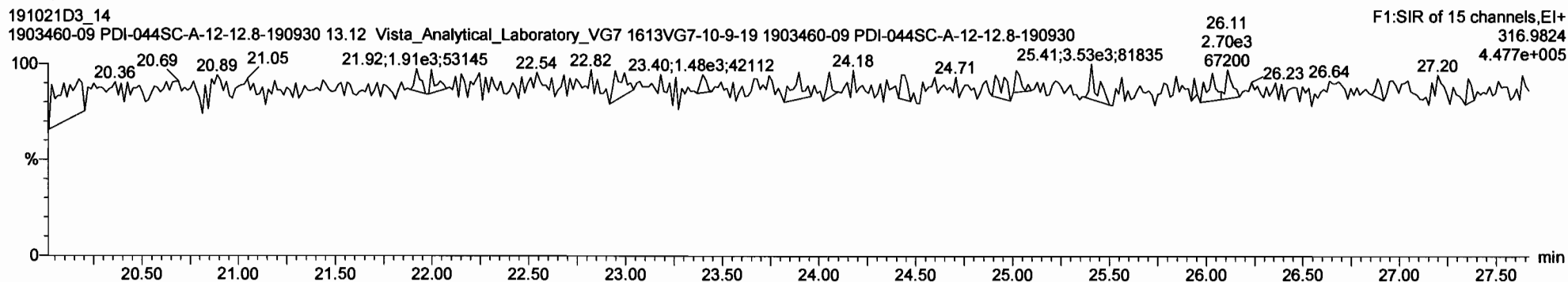
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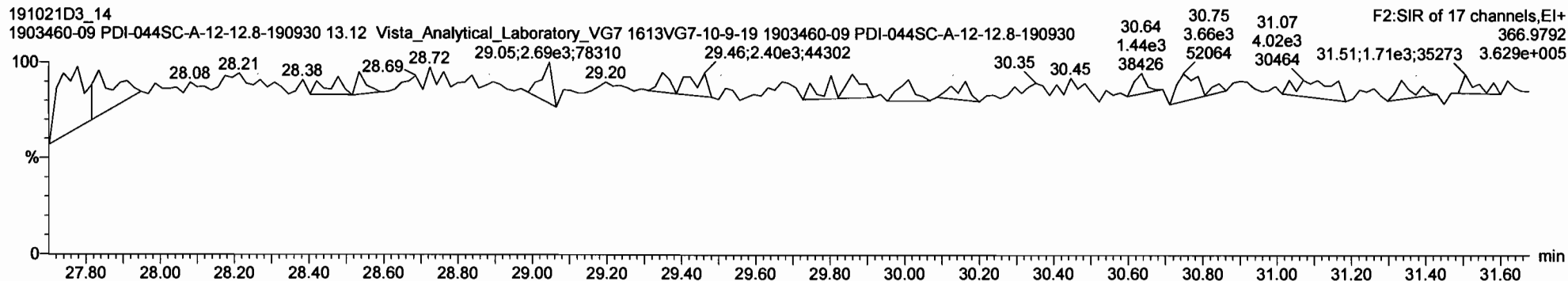
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PFK1



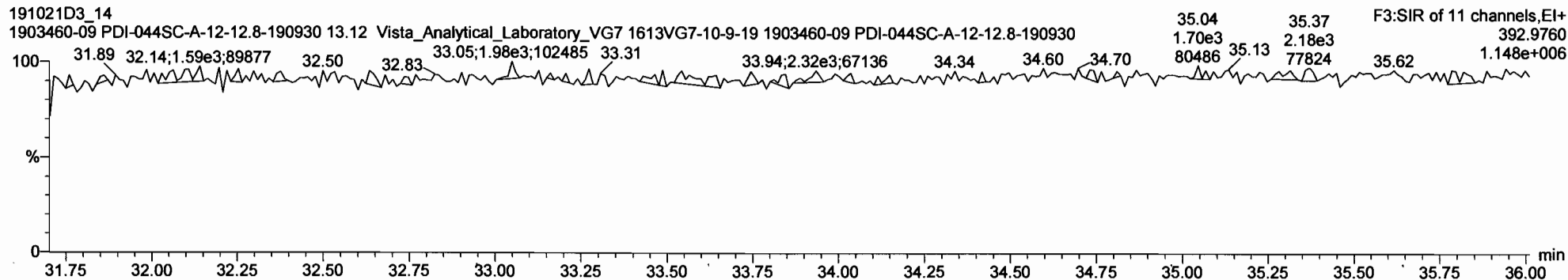
F1:SIR of 15 channels,EI+ 316.9824

PFK2



F2:SIR of 17 channels,EI+ 366.9792

PFK3



F3:SIR of 11 channels,EI+ 392.9760

Vista Analytical Laboratory

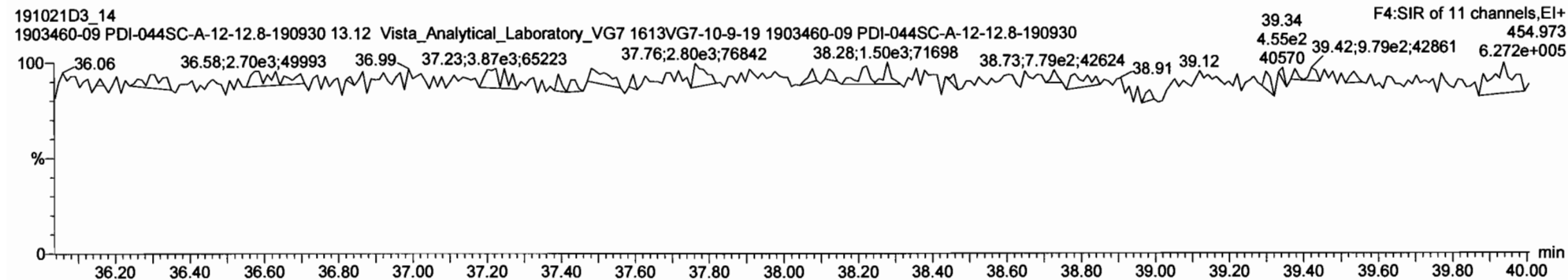
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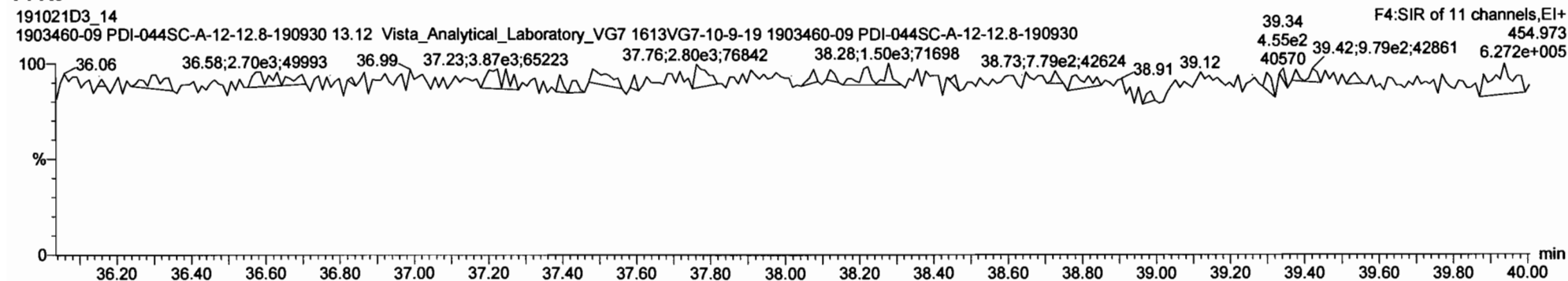
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PFK4



PFK5



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Monday, November 04, 2019 12:08:49 Pacific Standard Time

Printed: Monday, November 04, 2019 12:16:18 Pacific Standard Time

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Description: 1903460-09 PDI-044SC-A-12-12.8-190930 13.12 Vista_Analytical_Laboratory_VG7 1613VG7-10-9-19

CONTINUING CALIBRATION

HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST1910211)3-1

Reviewed By: CT 10/23/19
Initials & Date

End Calibration ID: NA

| | <u>Beg.</u> | <u>End</u> |
|--|--|--|
| Ion abundance within QC limits? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> NA |
| Concentrations within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| TCDD/TCDF Valleys <25% | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| First and last eluters present? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Retention Times within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Verification Std. named correctly? (ST-Year-Month-Day-VG ID) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Forms signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Correct ICAL referenced? | <u>DB</u> | <input type="checkbox"/> |
| <u>Run Log:</u> | | |
| - Correct instrument listed? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Samples within 12 hour clock? | <input checked="" type="checkbox"/> Y | <input type="checkbox"/> N |
| - Bottle position verified? | <input checked="" type="checkbox"/> DB | <input type="checkbox"/> |

| | <u>Beg.</u> | <u>End</u> |
|---|-------------------------------------|--|
| Mass resolution \geq | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> 5k <input type="checkbox"/> 6-8K <input type="checkbox"/> 8K <input checked="" type="checkbox"/> 10K 1614 1699 429 1613/1668/8280 | | |
| Intergrated peaks display correctly? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> NA |
| GC Break <20% | | <input checked="" type="checkbox"/> NA |
| <u>8280 CS1 End Standard:</u> | | |
| - Ratios within limits, S/N <2.5:1, CS1 within 12 hours | | <input checked="" type="checkbox"/> NA |

Comments:

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191021D3-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

| NATIVE ANALYTES | M/Z'S | ION | QC | Pass | CONC. | CONC. |
|---------------------|-----------|--------|-----------|------|-------|------------------------------|
| | FORMING | ABUND. | LIMITS | | FOUND | RANGE (3) |
| | RATIO (1) | RATIO | (2) | | FOUND | (ng/mL) |
| 2,3,7,8-TCDD | M/M+2 | 0.76 | 0.65-0.89 | y | 10.7 | 7.8 - 12.9 8.2 - 12.3 (4) |
| 1,2,3,7,8-PeCDD | M/M+2 | 0.65 | 0.54-0.72 | y | 51.2 | 39.0 - 65.0 |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.19 | 1.05-1.43 | y | 49.3 | 39.0 - 64.0 |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.24 | 1.05-1.43 | y | 49.5 | 39.0 - 64.0 |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.24 | 1.05-1.43 | y | 50.9 | 41.0 - 61.0 |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 0.99 | 0.88-1.20 | y | 49.4 | 43.0 - 58.0 |
| OCDD | M+2/M+4 | 0.90 | 0.76-1.02 | y | 101 | 79.0 - 126.0 |
| 2,3,7,8-TCDF | M/M+2 | 0.80 | 0.65-0.89 | y | 10.0 | 8.4 - 12.0 8.6 - 11.6 (4) |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.61 | 1.32-1.78 | y | 51.8 | 41.0 - 60.0 |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.60 | 1.32-1.78 | y | 50.7 | 41.0 - 61.0 |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.22 | 1.05-1.43 | y | 49.4 | 45.0 - 56.0 |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | y | 49.4 | 44.0 - 57.0 |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.21 | 1.05-1.43 | y | 50.4 | 44.0 - 57.0 |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.20 | 1.05-1.43 | y | 50.4 | 45.0 - 56.0 |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.00 | 0.88-1.20 | y | 48.1 | 45.0 - 55.0 |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.01 | 0.88-1.20 | y | 48.1 | 43.0 - 58.0 |
| OCDF | M+2/M+4 | 0.91 | 0.76-1.02 | y | 99.2 | 63.0 - 159.0 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 10/22/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB 5MS

VER Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

| LABELED COMPOUNDS | M/Z'S FORMING RATIO (1) | ION ABUND. RATIO | QC LIMITS (2) | Pass | CONC. FOUND | CONC. RANGE (ng/mL) |
|-------------------------|-------------------------|------------------|---------------|------|-------------|---------------------|
| 13C-2,3,7,8-TCDD | M/M+2 | 0.77 | 0.65-0.89 | y | 104 | 82.0 - 121.0 |
| 13C-1,2,3,7,8-PeCDD | M/M+2 | 0.63 | 0.54-0.72 | y | 109 | 62.0 - 160.0 |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.28 | 1.05-1.43 | y | 110 | 85.0 - 117.0 |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.26 | 1.05-1.43 | y | 94.5 | 85.0 - 118.0 |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.24 | 1.05-1.43 | y | 102 | 85.0 - 118.0 |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.03 | 0.88-1.20 | y | 113 | 72.0 - 138.0 |
| 13C-OCDD | M/M+2 | 0.90 | 0.76-1.02 | y | 239 | 96.0 - 415.0 |
| 13C-2,3,7,8-TCDF | M+2/M+4 | 0.79 | 0.65-0.89 | y | 98.9 | 71.0 - 140.0 |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.56 | 1.32-1.78 | y | 113 | 76.0 - 130.0 |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.58 | 1.32-1.78 | y | 111 | 77.0 - 130.0 |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.52 | 0.43-0.59 | y | 110 | 76.0 - 131.0 |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 99.8 | 70.0 - 143.0 |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.52 | 0.43-0.59 | y | 102 | 73.0 - 137.0 |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.52 | 0.43-0.59 | y | 106 | 74.0 - 135.0 |
| 13C-1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 0.43 | 0.37-0.51 | y | 109 | 78.0 - 129.0 |
| 13C-1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.43 | 0.37-0.51 | y | 119 | 77.0 - 129.0 |
| 13C-OCDF | M+2/M+4 | 0.91 | 0.76-1.02 | y | 242 | 96.0 - 415.0 |
| CLEANUP STANDARD (3) | | | | | | |
| 37Cl-2,3,7,8-TCDD | | | | | 10.1 | 7.9 - 12.7 |

- (1) See Table 8, Method 1613, for m/z specifications.
- (2) Ion Abundance Ratio Control Limits as specified
- (3) No ion abundance ratio; report concentration found.

Analyst: DB

Date: 10/22/19

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

ZB-5MS IS Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

| ISOMERS | ABSOLUTE RT | ISOMERS | ABSOLUTE RT |
|-------------------------|----------------|-------------------------|----------------|
| 1,3,6,8-TCDD (F) | 22:55 | 1,3,6,8-TCDF (F) | 20:48 |
| 1,2,8,9-TCDD (L) | 27:07 | 1,2,8,9-TCDF (L) | 27:15 |
| 1,2,4,7,9-PeCDD (F) | 28:42 | 1,3,4,6,8-PeCDF (F) | 27:13 |
| 1,2,3,8,9-PeCDD (L) | 31:05 | 1,2,3,8,9-PeCDF (L) | 31:20 |
| 1,2,4,6,7,9-HxCDD (F) | 32:31 | 1,2,3,4,6,8-HxCDF (F) | 31:58 |
| 1,2,3,7,8,9-HxCDD (L) | 34:27 | 1,2,3,7,8,9-HxCDF (L) | 34:50 |
| 1,2,3,4,6,7,9-HpCDD (F) | 37:03 | 1,2,3,4,6,7,8-HpCDF (F) | 36:40 |
| 1,2,3,4,6,7,8-HpCDD (L) | 37:53 | 1,2,3,4,7,8,9-HpCDF (L) | 38:26 |

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

(1) To meet contract requirements, %Valley Height Between Compared
Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: DBDate: 10/22/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

Compounds Using 13C-1234-TCDD as RT Internal Standard

| NATIVE ANALYTES | RETENTION TIME | RRT | RRT |
|---------------------|---------------------|-------|---------------|
| | REFERENCE | | QC LIMITS (1) |
| 2,3,7,8-TCDD | 13C-2,3,7,8-TCDD | 1.001 | 0.999-1.002 |
| 1,2,3,7,8-PeCDD | 13C-1,2,3,7,8-PeCDD | 1.001 | 0.999-1.002 |
| 2,3,7,8-TCDF | 13C-2,3,7,8-TCDF | 1.001 | 0.999-1.003 |
| 1,2,3,7,8-PeCDF | 13C-1,2,3,7,8-PeCDF | 1.000 | 0.999-1.002 |
| 2,3,4,7,8-PeCDF | 13C-2,3,4,7,8-PeCDF | 1.000 | 0.999-1.002 |
| LABELED COMPOUNDS | | | |
| 13C-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.021 | 0.976-1.043 |
| 13C-1,2,3,7,8-PeCDD | 13C-1,2,3,4-TCDD | 1.196 | 1.000-1.567 |
| 13C-2,3,7,8-TCDF | 13C-1,2,3,4-TCDD | 0.991 | 0.923-1.103 |
| 13C-1,2,3,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.151 | 1.000-1.425 |
| 13C-2,3,4,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.185 | 1.011-1.526 |
| 37Cl-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.989-1.052 |

Analyst: DB

Date: 10/22/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191021D3 S#1 Analysis Date: 22-OCT-19 Time: 02:03:33

| NATIVE ANALYTES | RETENTION TIME | RRT | RRT |
|---------------------|-------------------------|-------|---------------|
| | REFERENCE | | QC LIMITS (1) |
| 1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,7,8-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDF | 13C-1,2,3,6,7,8-HxCDF | 1.001 | 0.997-1.005 |
| 2,3,4,6,7,8-HxCDF | 13C-2,3,4,6,7,8-HxCDF | 1.001 | 0.999-1.001 |
| 1,2,3,7,8,9-HxCDF | 13C-1,2,3,7,8,9-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,7,8-HxCDD | 1.001 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDD | 13C-1,2,3,6,7,8-HxCDD | 1.001 | 0.998-1.004 |
| 1,2,3,7,8,9-HxCDD | 13C-1,2,3,7,8,9-HxCDD | 1.000 | 0.998-1.004 |
| 1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 1.000 | 0.999-1.001 |
| 1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 1.000 | 0.999-1.001 |
| 1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,7,8,9-HpCDF | 1.000 | 0.999-1.001 |
| OCDD | 13C-OCDD | 1.000 | 0.999-1.001 |
| OCDF | 13C-OCDF | 1.000 | 0.999-1.001 |

LABELED COMPOUNDS

| | | | |
|-------------------------|-----------------------|-------|-------------|
| 13C-1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.988 | 0.975-1.001 |
| 13C-1,2,3,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.991 | 0.979-1.005 |
| 13C-2,3,4,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.009 | 1.001-1.020 |
| 13C-1,2,3,7,8,9-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.038 | 1.002-1.072 |
| 13C-1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.014 | 1.002-1.026 |
| 13C-1,2,3,6,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.017 | 1.007-1.029 |
| 13C-1,2,3,7,8,9-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.026 | 1.014-1.038 |
| 13C-1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.093 | 1.069-1.111 |
| 13C-1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.145 | 1.098-1.192 |
| 13C-1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,9-HxCDF | 1.129 | 1.117-1.141 |
| 13C-OCDD | 13C-1,2,3,4,6,9-HxCDF | 1.226 | 1.085-1.365 |
| 13C-OCDF | 13C-1,2,3,4,6,9-HxCDF | 1.233 | 1.091-1.371 |

Analyst: DB

Date: 10/22/19

Client ID: 1613 CS3 19C2204
Lab ID: ST191021D3-1

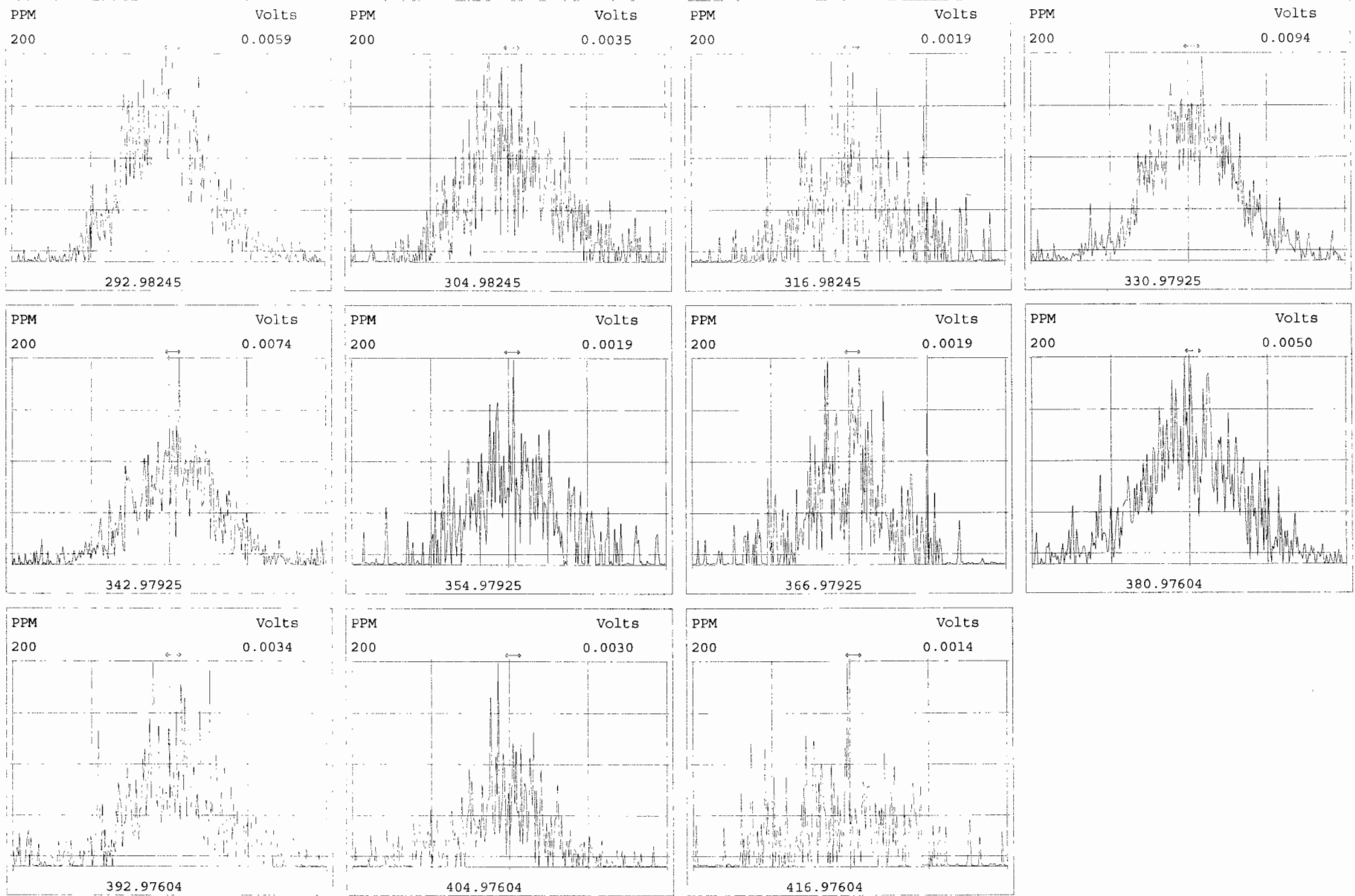
Filename: 191021D3 S:1 Acq:22-OCT-19 02:03:33
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

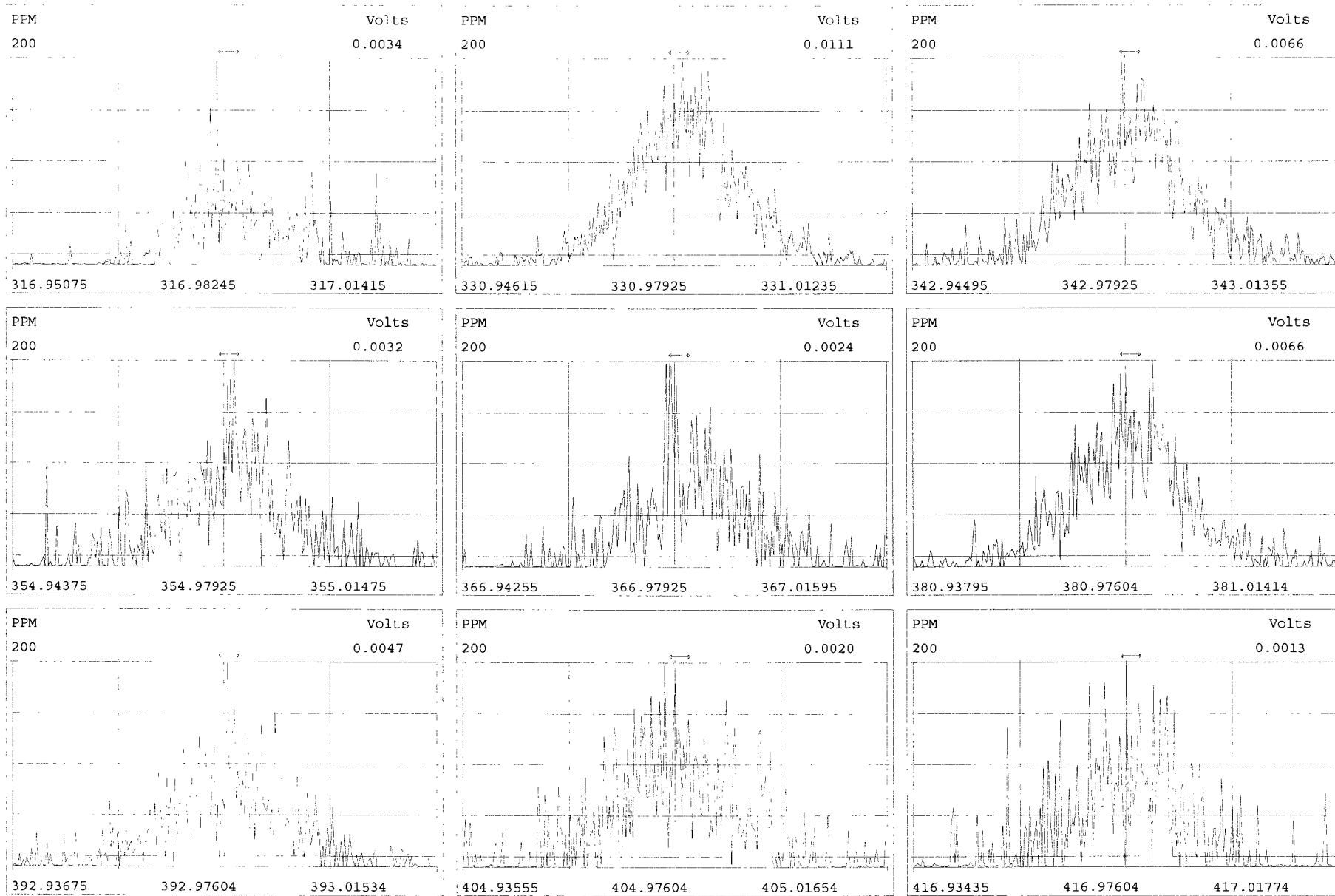
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EndCAL: NA

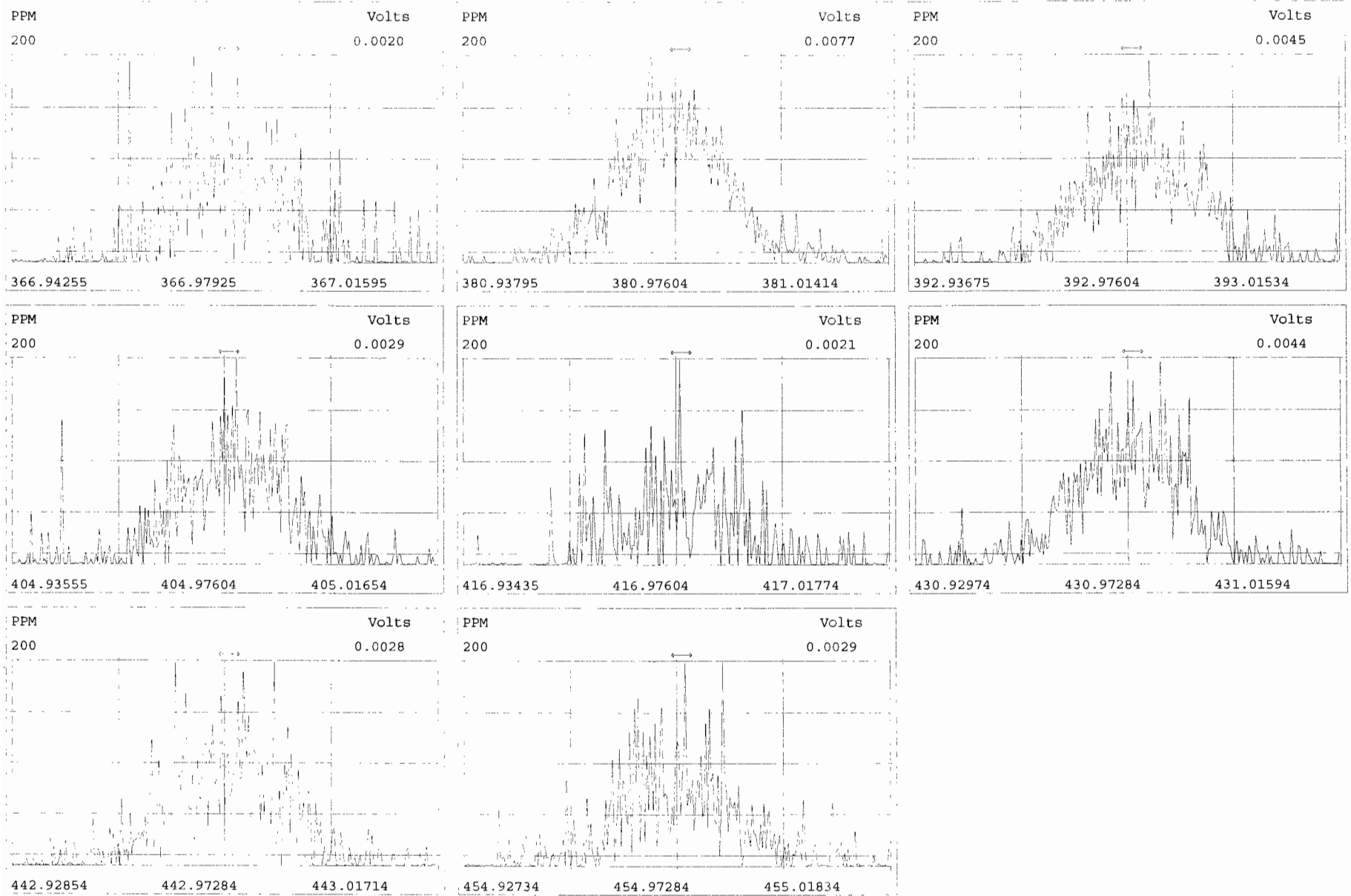
| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL | Name | Conc | EMPC | Qual | noise | DL |
|-----------------------------|----------|--------|------|-------|--------|------|-------|-----|----|---------------------|-----------------------|-----------------------|------|-------|----|
| 2,3,7,8-TCDD | 1.08e+06 | 0.76 y | 0.91 | 26:16 | 10.682 | | * 2.5 | | * | Total Tetra-Dioxins | 75.6 | 75.9 | | * | * |
| 1,2,3,7,8-PeCDD | 4.37e+06 | 0.65 y | 0.90 | 30:44 | 51.220 | | * 2.5 | | * | Total Penta-Dioxins | 195 | 195 | | * | * |
| 1,2,3,4,7,8-HxCDD | 4.51e+06 | 1.19 y | 1.10 | 34:03 | 49.279 | | * 2.5 | | * | Total Hexa-Dioxins | 221 | 223 | | * | * |
| 1,2,3,6,7,8-HxCDD | 4.42e+06 | 1.24 y | 0.94 | 34:09 | 49.457 | | * 2.5 | | * | Total Hepta-Dioxins | 116 | 117 | | * | * |
| 1,2,3,7,8,9-HxCDD | 4.74e+06 | 1.24 y | 0.96 | 34:27 | 50.913 | | * 2.5 | | * | Total Tetra-Furans | 38.8 | 39.4 | | * | * |
| 1,2,3,4,6,7,8-HpCDD | 4.19e+06 | 0.99 y | 0.98 | 37:53 | 49.370 | | * 2.5 | | * | Total Penta-Furans | 219.59 | 219.65 | | * | * |
| OCDD | 7.90e+06 | 0.90 y | 0.96 | 41:10 | 101.19 | | * 2.5 | | * | Total Hexa-Furans | 265 | 265 | | * | * |
| | | | | | | | | | | Total Hepta-Furans | 96.6 | 97.2 | | * | * |
| 2,3,7,8-TCDF | 1.45e+06 | 0.80 y | 0.95 | 25:29 | 10.034 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8-PeCDF | 7.16e+06 | 1.61 y | 0.96 | 29:34 | 51.776 | | * 2.5 | | * | | | | | | |
| 2,3,4,7,8-PeCDF | 7.19e+06 | 1.60 y | 1.01 | 30:27 | 50.716 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8-HxCDF | 6.26e+06 | 1.22 y | 1.18 | 33:09 | 49.355 | | * 2.5 | | * | | | | | | |
| 1,2,3,6,7,8-HxCDF | 6.42e+06 | 1.23 y | 1.07 | 33:17 | 49.381 | | * 2.5 | | * | | | | | | |
| 2,3,4,6,7,8-HxCDF | 6.44e+06 | 1.21 y | 1.11 | 33:52 | 50.406 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8,9-HxCDF | 5.52e+06 | 1.20 y | 1.06 | 34:50 | 50.421 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 5.26e+06 | 1.00 y | 1.13 | 36:40 | 48.128 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | 5.01e+06 | 1.01 y | 1.28 | 38:26 | 48.071 | | * 2.5 | | * | | | | | | |
| OCDF | 9.23e+06 | 0.91 y | 0.95 | 41:23 | 99.211 | | * 2.5 | | * | | | | | | |
| | | | | | | | | | | Rec | Qual | | | | |
| IS 13C-2,3,7,8-TCDD | 1.12e+07 | 0.77 y | 1.10 | 26:15 | 103.71 | | | | | 104 | | | | | |
| IS 13C-1,2,3,7,8-PeCDD | 9.45e+06 | 0.63 y | 0.88 | 30:43 | 109.11 | | | | | 109 | | | | | |
| IS 13C-1,2,3,4,7,8-HxCDD | 8.31e+06 | 1.28 y | 0.64 | 34:01 | 109.92 | | | | | 110 | | | | | |
| IS 13C-1,2,3,6,7,8-HxCDD | 9.52e+06 | 1.26 y | 0.86 | 34:08 | 94.465 | | | | | 94.5 | | | | | |
| IS 13C-1,2,3,7,8,9-HxCDD | 9.69e+06 | 1.24 y | 0.81 | 34:26 | 101.94 | | | | | 102 | | | | | |
| IS 13C-1,2,3,4,6,7,8-HpCDD | 8.67e+06 | 1.03 y | 0.65 | 37:52 | 112.55 | | | | | 113 | | | | | |
| IS 13C-OCDD | 1.63e+07 | 0.90 y | 0.58 | 41:09 | 238.59 | | | | | 119 | | | | | |
| IS 13C-2,3,7,8-TCDF | 1.52e+07 | 0.79 y | 1.03 | 25:28 | 98.886 | | | | | 98.9 | | | | | |
| IS 13C-1,2,3,7,8-PeCDF | 1.44e+07 | 1.56 y | 0.85 | 29:33 | 113.34 | | | | | 113 | | | | | |
| IS 13C-2,3,4,7,8-PeCDF | 1.40e+07 | 1.58 y | 0.85 | 30:27 | 110.83 | | | | | 111 | | | | | |
| IS 13C-1,2,3,4,7,8-HxCDF | 1.08e+07 | 0.52 y | 0.83 | 33:08 | 110.05 | | | | | 110 | | | | | |
| IS 13C-1,2,3,6,7,8-HxCDF | 1.22e+07 | 0.51 y | 1.03 | 33:16 | 99.811 | | | | | 99.8 | | | | | |
| IS 13C-2,3,4,6,7,8-HxCDF | 1.15e+07 | 0.52 y | 0.95 | 33:51 | 102.17 | | | | | 102 | | | | | |
| IS 13C-1,2,3,7,8,9-HxCDF | 1.03e+07 | 0.52 y | 0.83 | 34:49 | 105.71 | | | | | 106 | | | | | |
| IS 13C-1,2,3,4,6,7,8-HpCDF | 9.69e+06 | 0.43 y | 0.76 | 36:40 | 108.55 | | | | | 109 | | | | | |
| IS 13C-1,2,3,4,7,8,9-HpCDF | 8.14e+06 | 0.43 y | 0.58 | 38:25 | 118.84 | | | | | 119 | | | | | |
| IS 13C-OCDF | 1.96e+07 | 0.91 y | 0.69 | 41:22 | 242.07 | | | | | 121 | | | | | |
| C/Up 37C1-2,3,7,8-TCDD | 1.19e+06 | | 1.20 | 26:15 | 10.098 | | | | | 101 | | | | | |
| RS/RT 13C-1,2,3,4-TCDD | 9.82e+06 | 0.79 y | 1.00 | 25:41 | 100.00 | | | | | | Integrations | Reviewed | | | |
| RS 13C-1,2,3,4-TCDF | 1.49e+07 | 0.80 y | 1.00 | 24:16 | 100.00 | | | | | | by | by | | | |
| RS/RT 13C-1,2,3,4,6,9-HxCDF | 1.18e+07 | 0.51 y | 1.00 | 33:33 | 100.00 | | | | | | Analyst: <u>DB</u> | Analyst: <u>CT</u> | | | |
| | | | | | | | | | | | Date: <u>10/22/19</u> | Date: <u>10/23/19</u> | | | |

Vista Analytical Laboratory - Injection Log Run file: 191021D3 Instrument ID: VG-7 GC Column ID: ZB-5MS

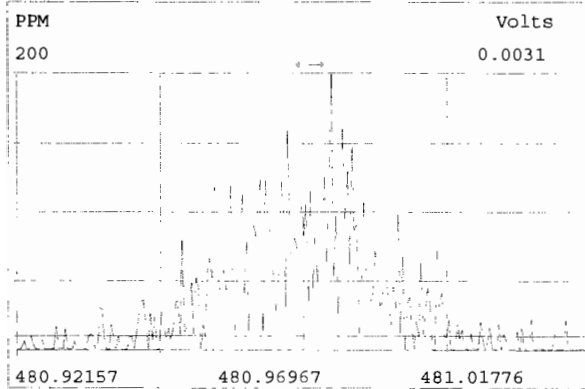
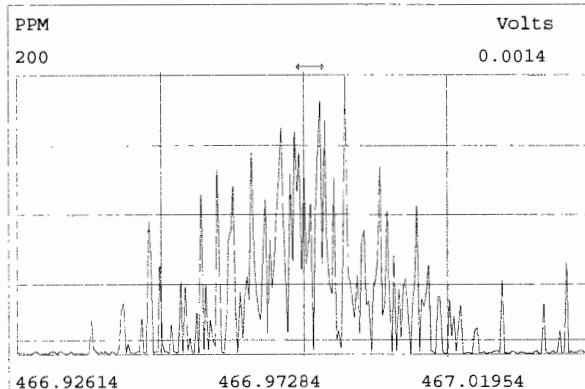
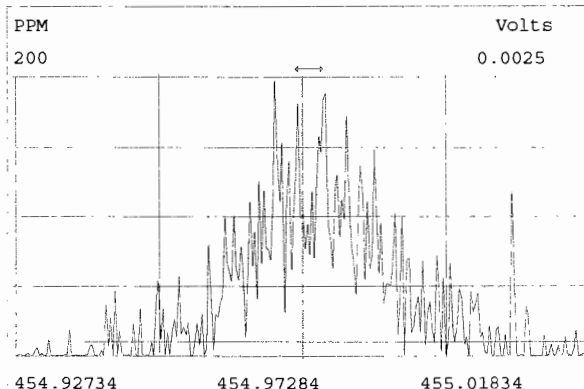
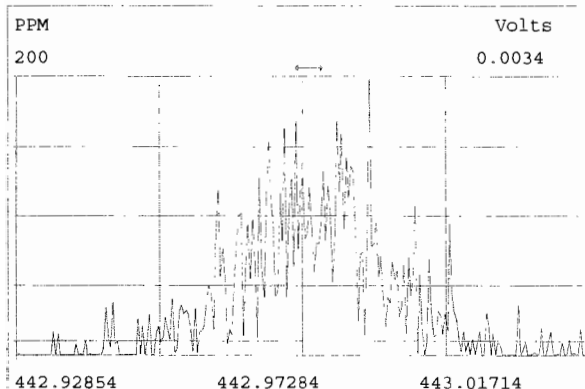
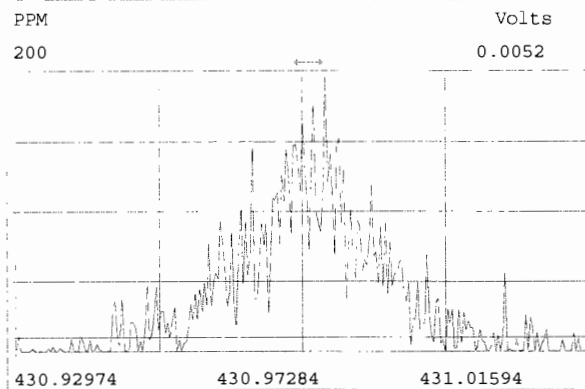
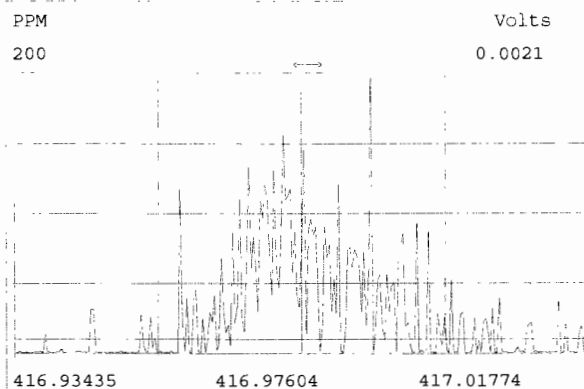
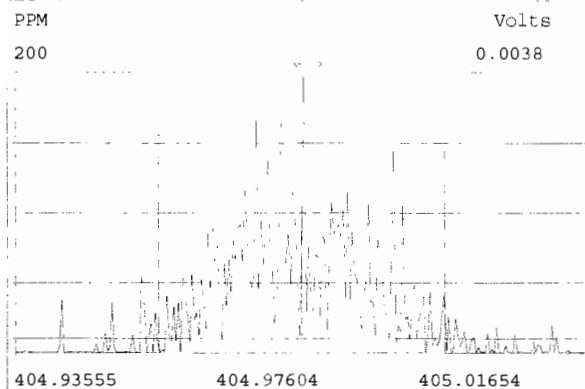
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|-----------|----|---------------|---------|-----------|----------|--------------|------|
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| 191021D3 | 2 | B9J0143-BS1 | DB | 22-OCT-19 | 02:51:29 | ST191021D3-1 | NA |
| 191021D3 | 3 | SOLVENT BLANK | DB | 22-OCT-19 | 03:39:25 | ST191021D3-1 | NA |
| 191021D3 | 4 | B9J0143-BLK1 | DB | 22-OCT-19 | 04:27:22 | ST191021D3-1 | NA |
| 191021D3 | 5 | 1903460-01 | DB | 22-OCT-19 | 05:15:19 | ST191021D3-1 | NA |
| 191021D3 | 6 | 1903460-02 | DB | 22-OCT-19 | 06:03:16 | ST191021D3-1 | NA |
| 191021D3 | 7 | 1903460-03 | DB | 22-OCT-19 | 06:51:07 | ST191021D3-1 | NA |
| 191021D3 | 8 | 1903460-04 | DB | 22-OCT-19 | 07:38:59 | ST191021D3-1 | NA |
| 191021D3 | 9 | 1903460-05 | DB | 22-OCT-19 | 08:26:57 | ST191021D3-1 | NA |
| 191021D3 | 10 | 1903460-06 | DB | 22-OCT-19 | 09:14:53 | ST191021D3-1 | NA |
| 191021D3 | 11 | B9J0143-DUP1 | DB | 22-OCT-19 | 10:02:49 | ST191021D3-1 | NA |
| 191021D3 | 12 | 1903460-07 | DB | 22-OCT-19 | 10:50:45 | ST191021D3-1 | NA |
| 191021D3 | 13 | 1903460-08 | DB | 22-OCT-19 | 11:38:40 | ST191021D3-1 | NA |
| 191021D3 | 14 | 1903460-09 | DB | 22-OCT-19 | 12:26:36 | ST191021D3-1 | NA |

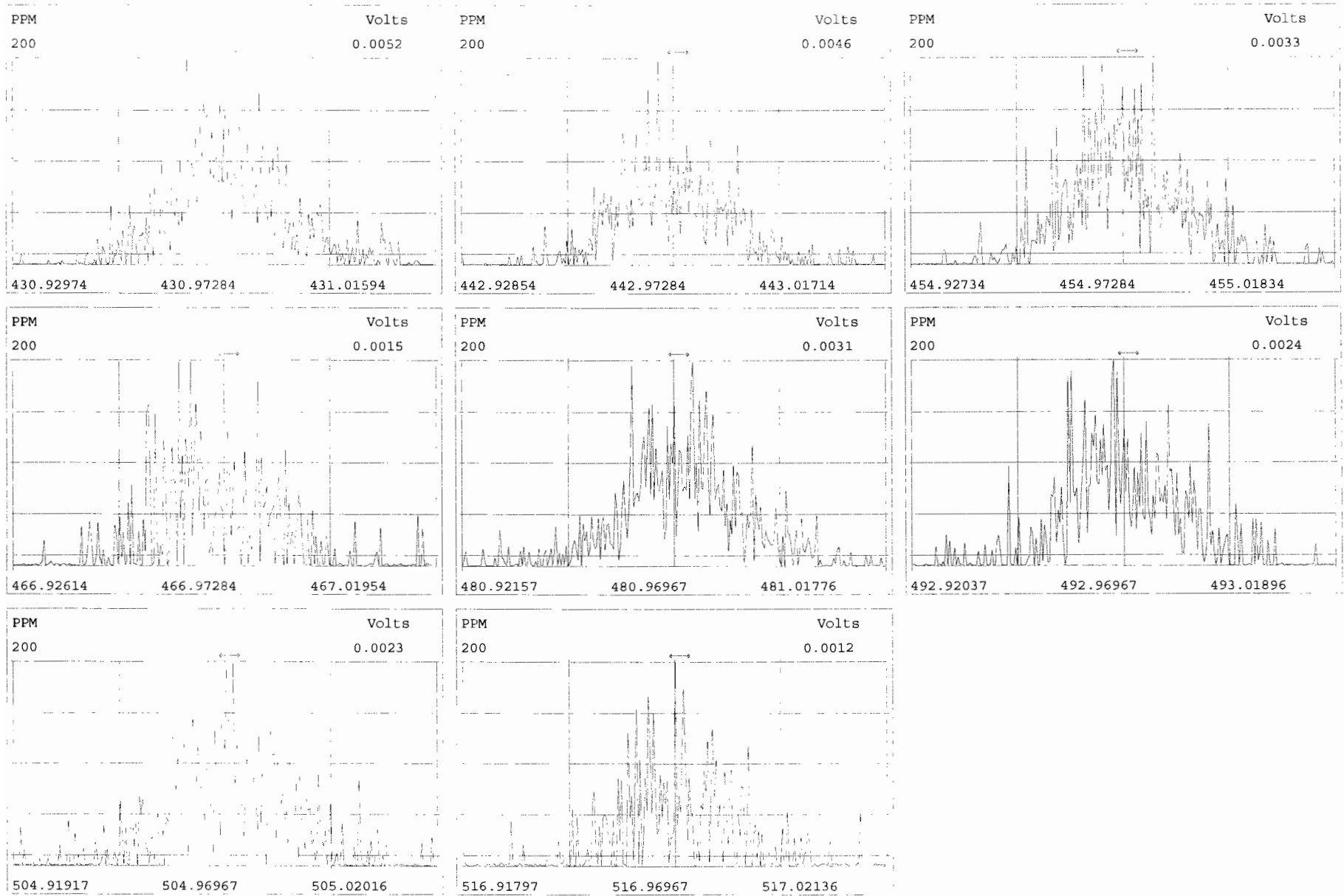




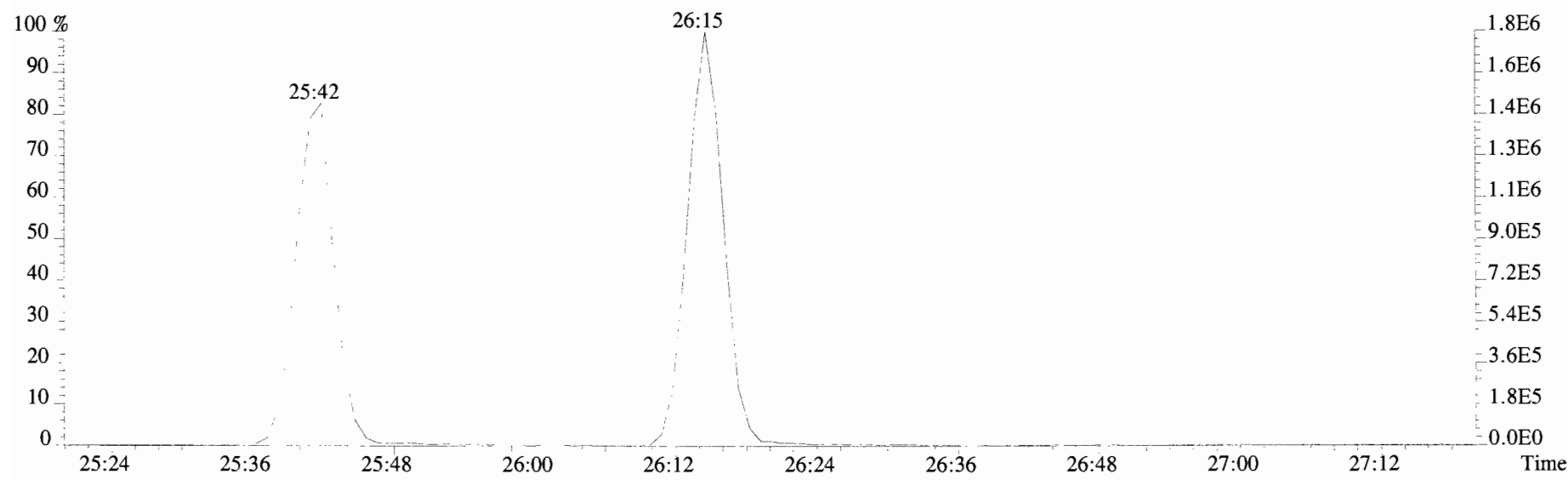
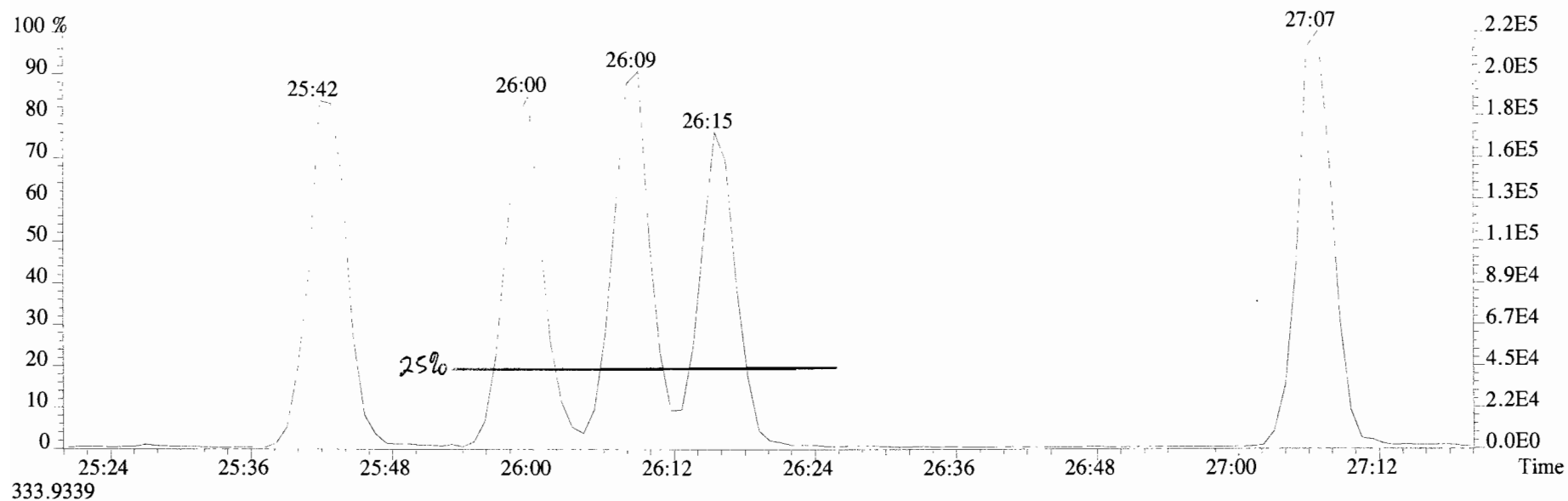


Experiment:OCDD_DB5 Function:4 Reference:PFK

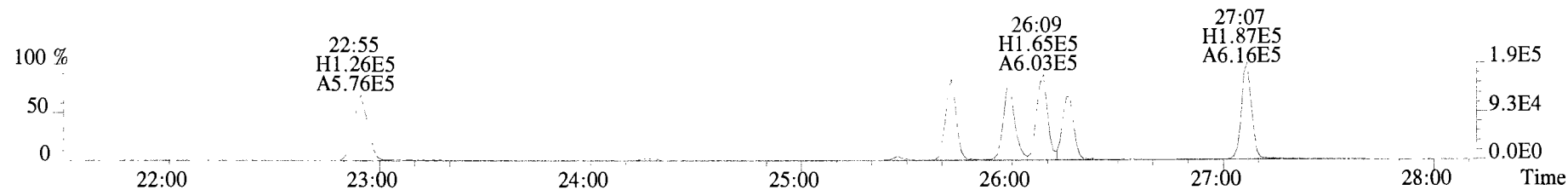




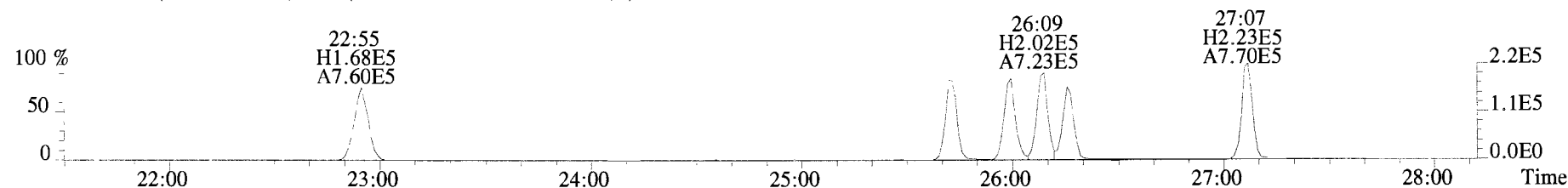
File:191021D3 #1-493 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



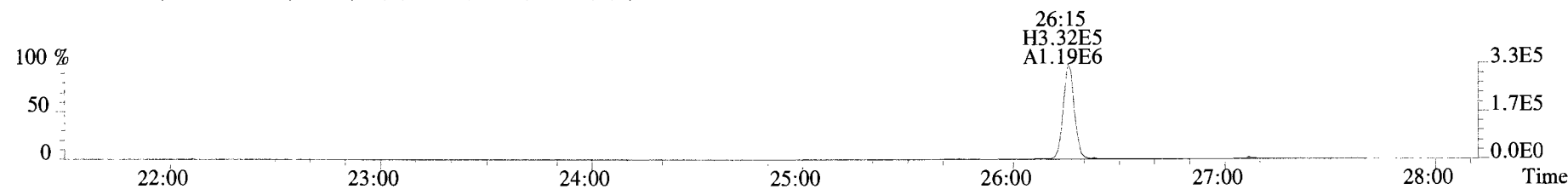
File:191021D3 #1-493 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



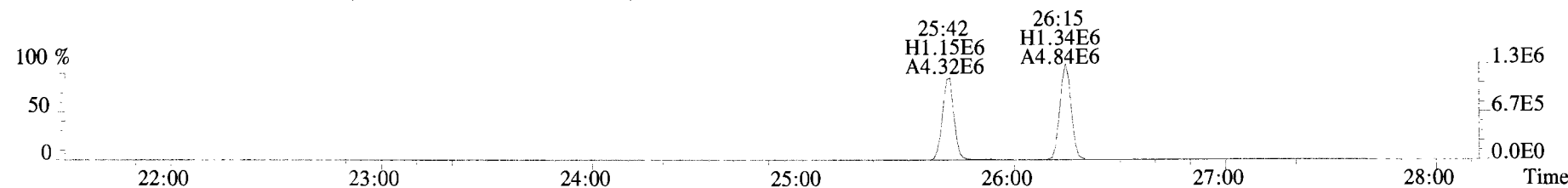
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



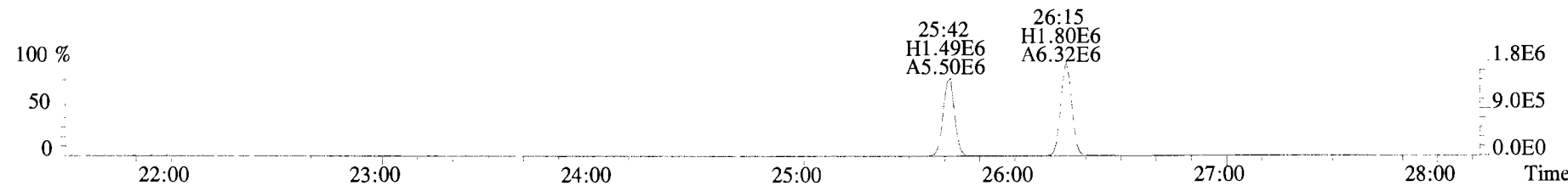
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



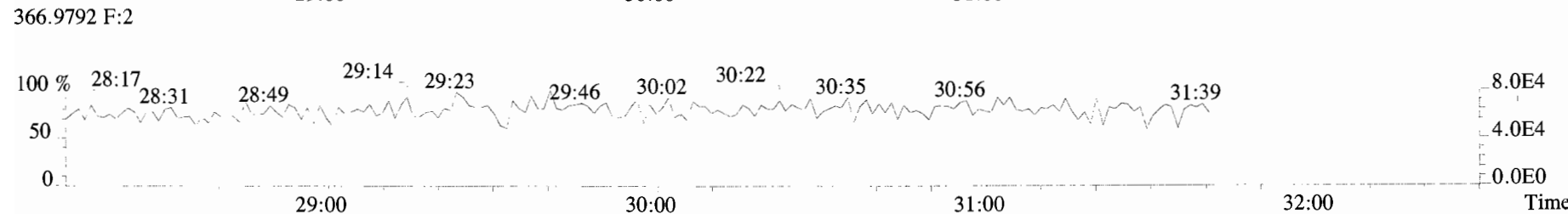
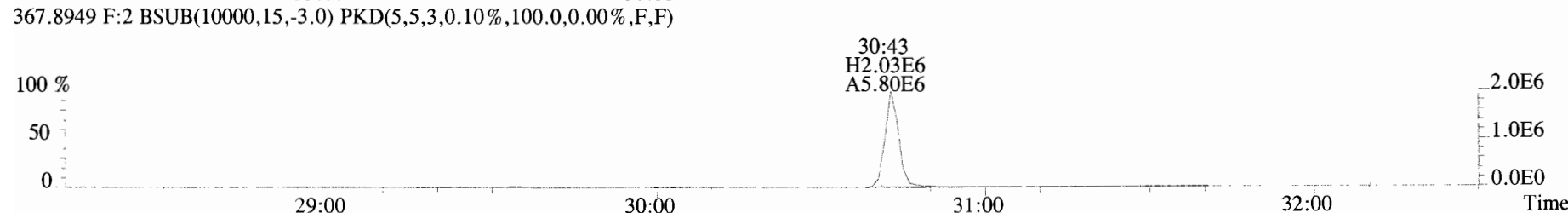
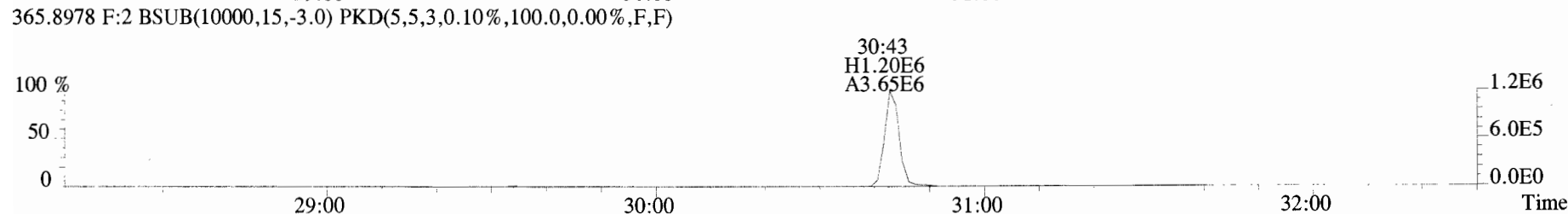
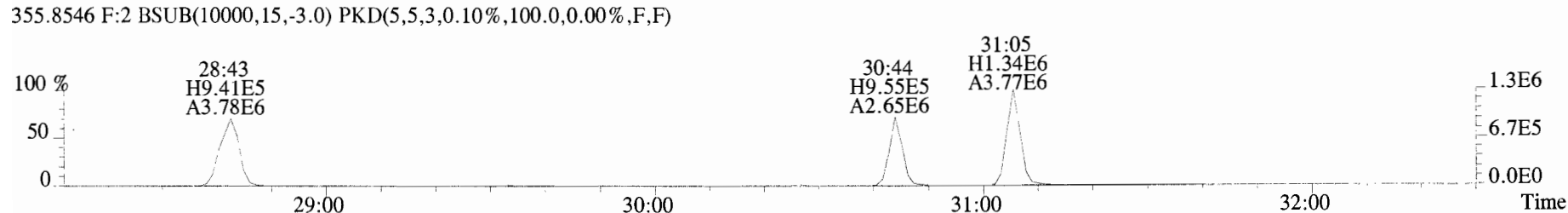
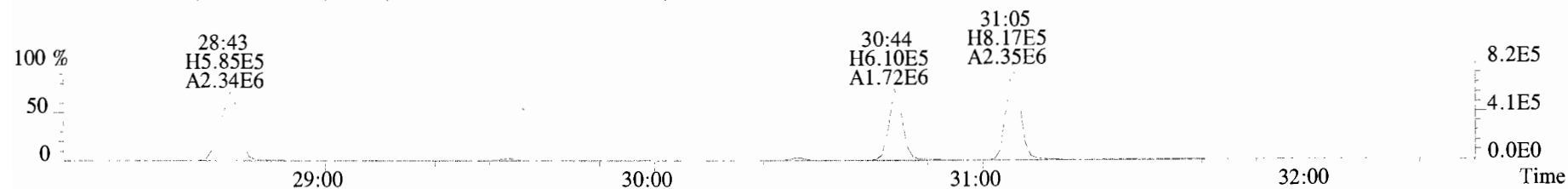
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



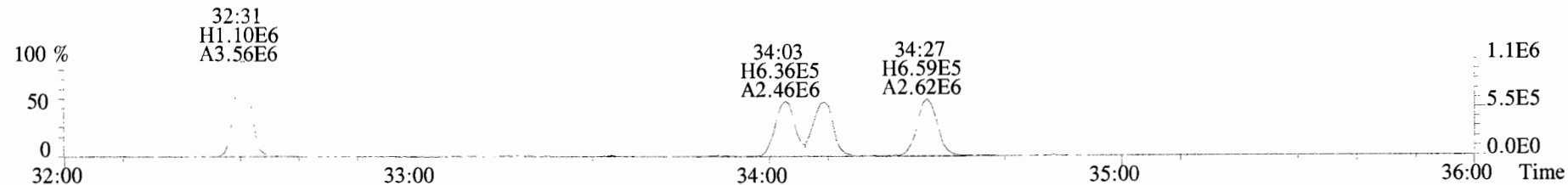
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



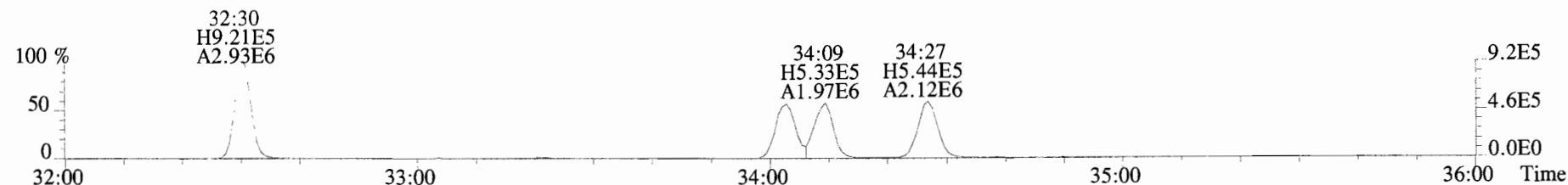
File:191021D3 #1-211 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



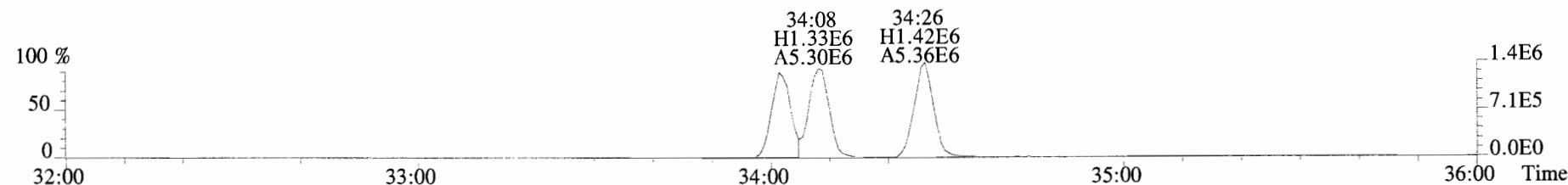
File:191021D3 #1-385 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



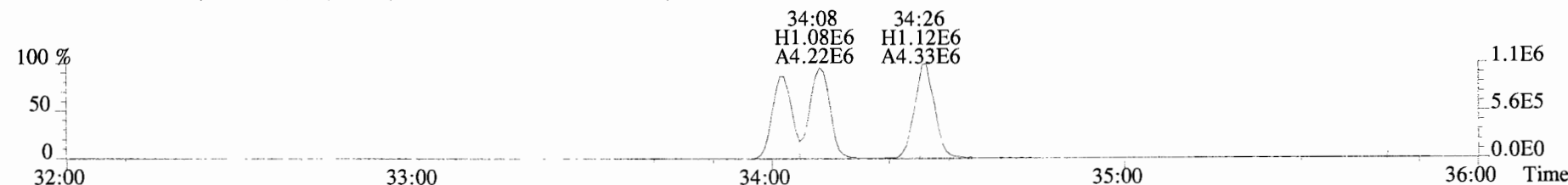
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



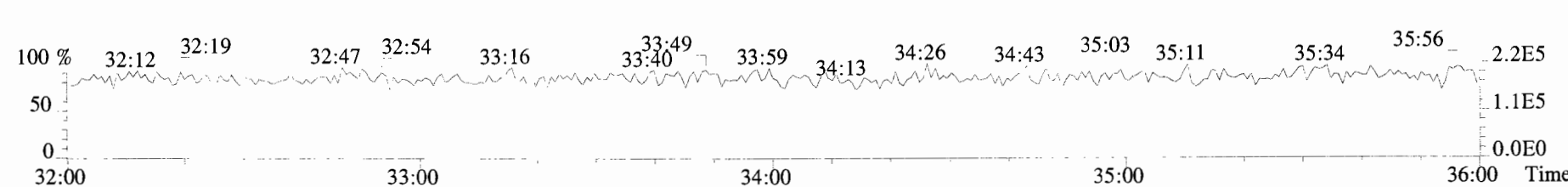
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



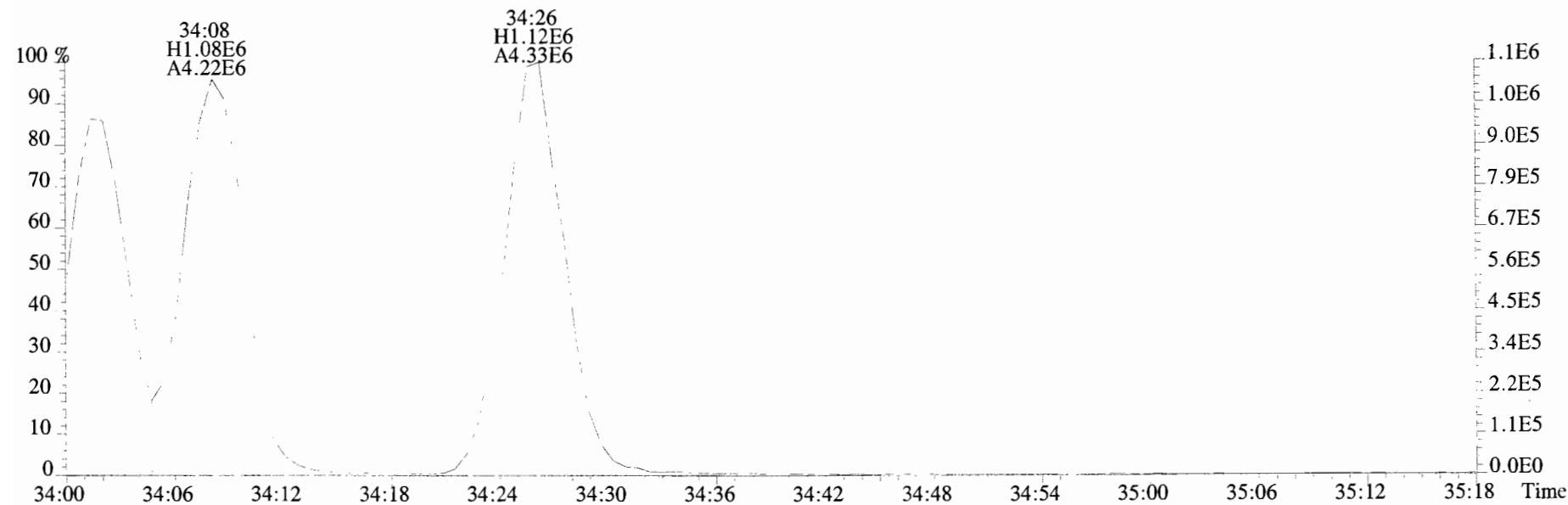
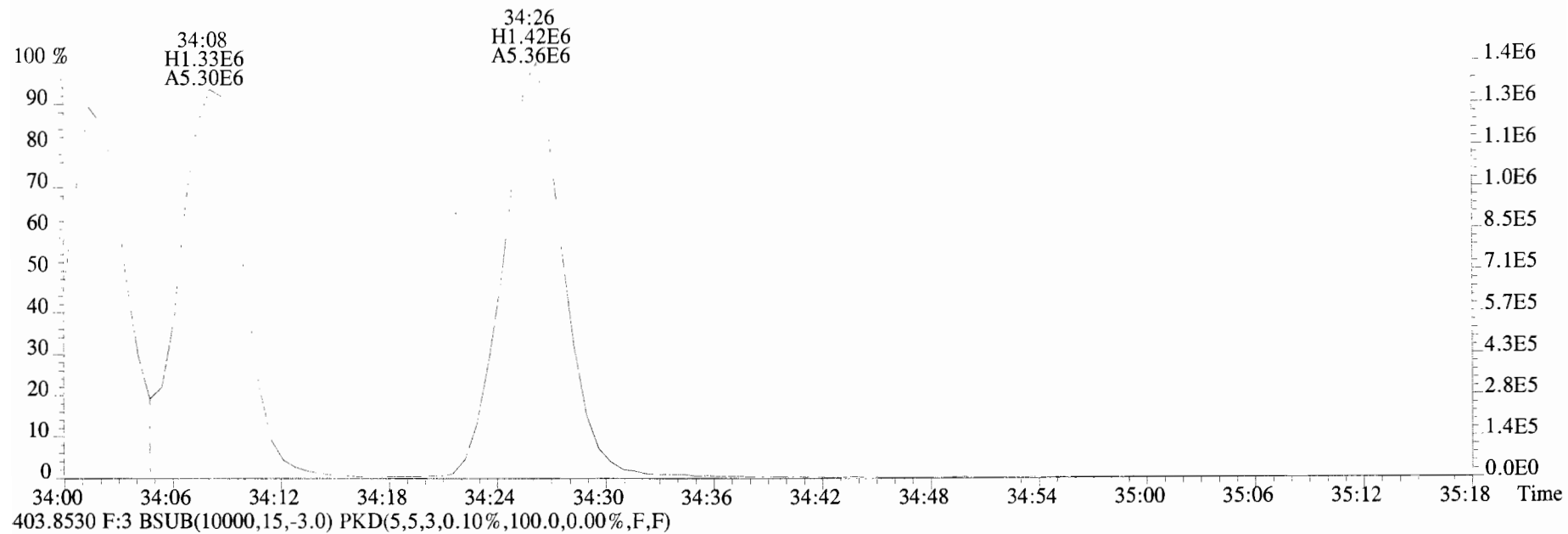
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



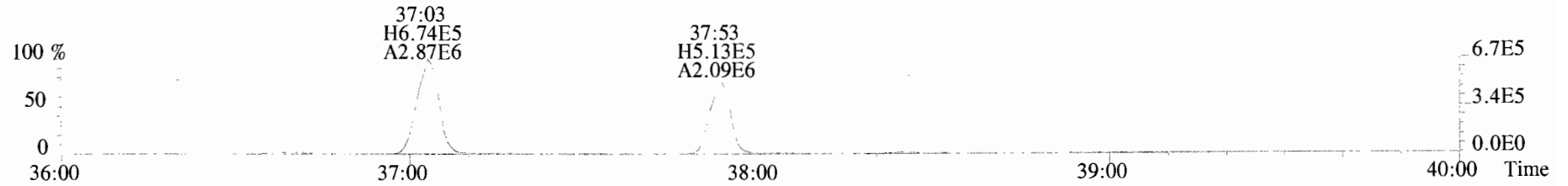
392.9760 F:3



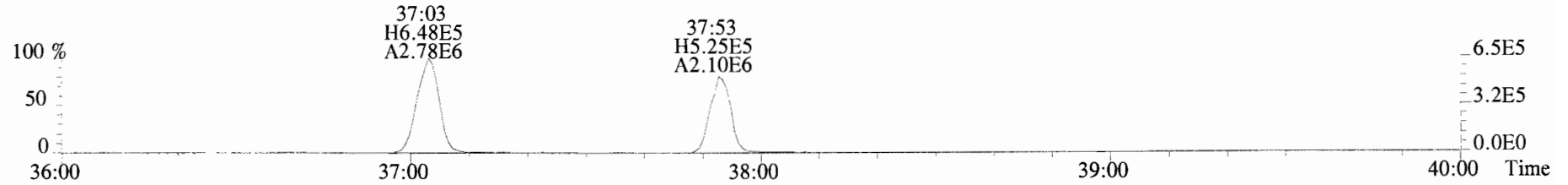
File:191021D3 #1-385 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



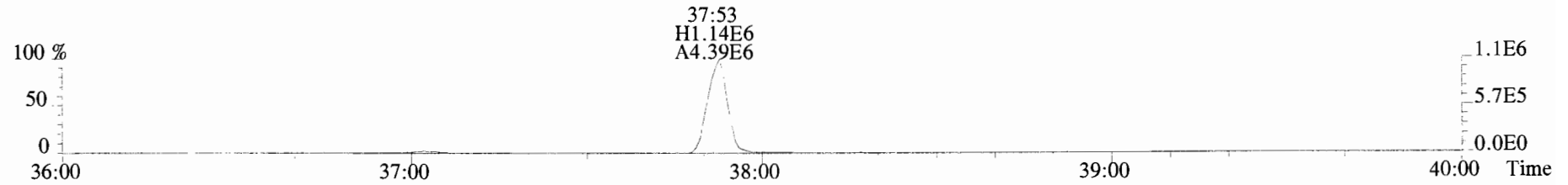
File:191021D3 #1-356 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



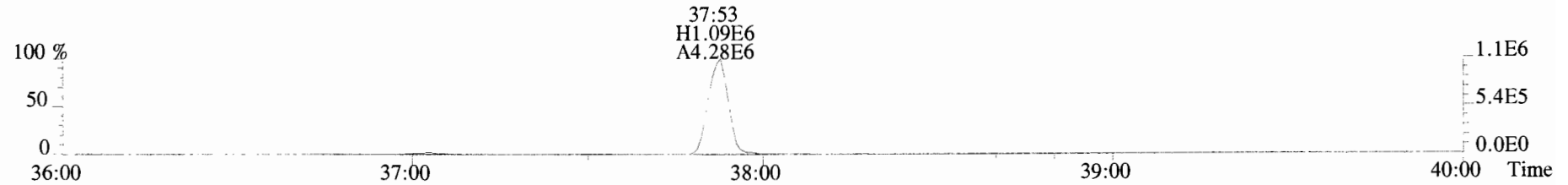
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



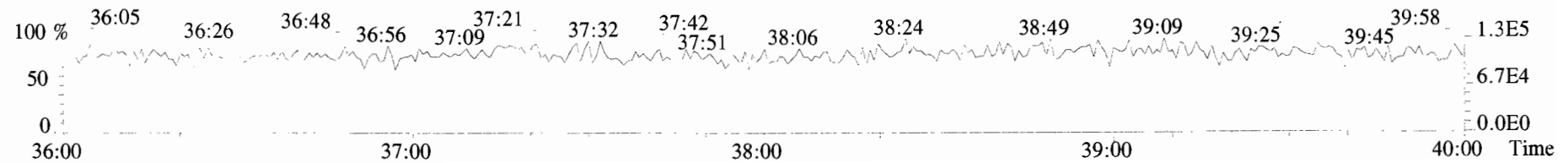
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



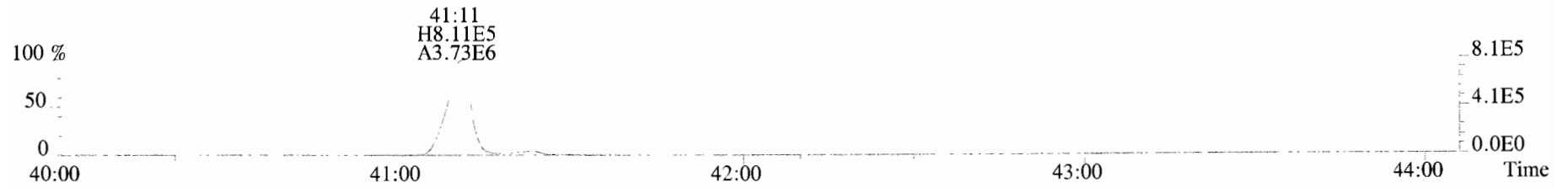
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



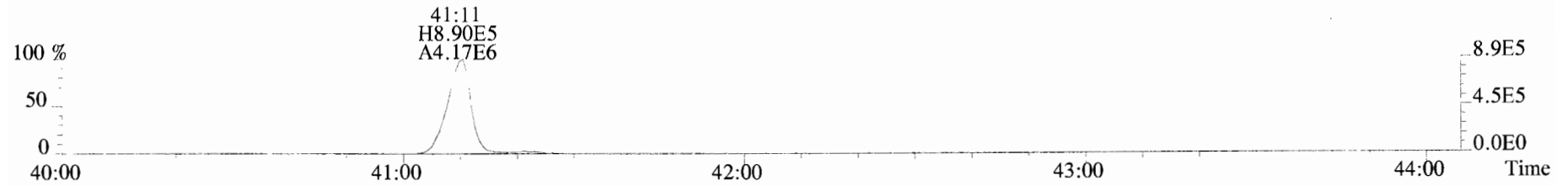
454.9728 F:4



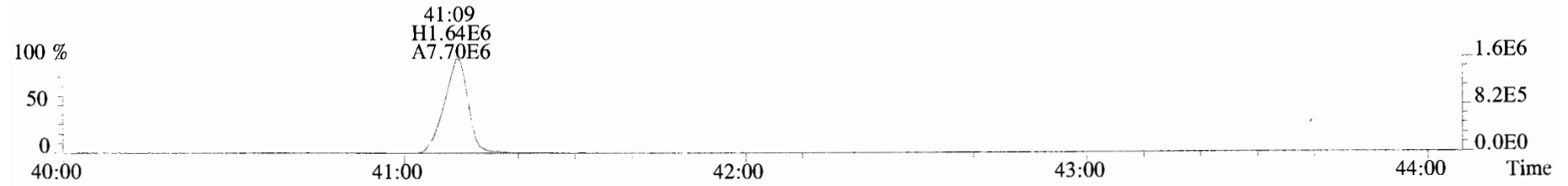
File:191021D3 #1-432 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



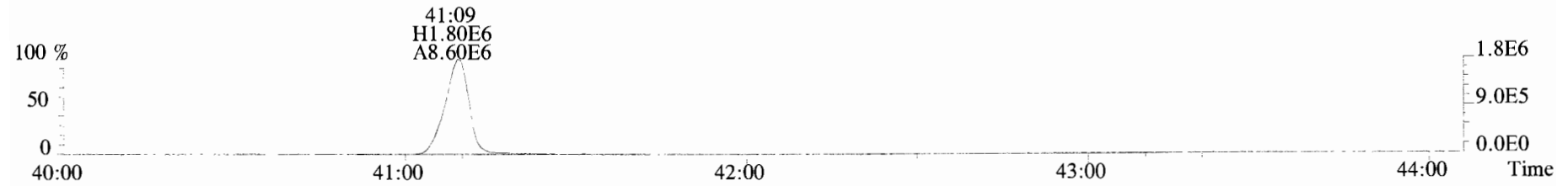
459.7348 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



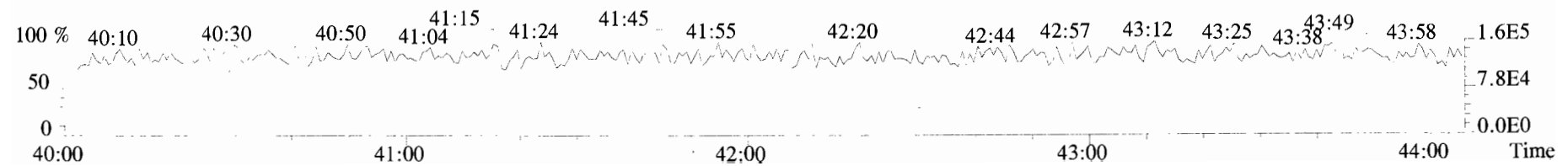
469.7780 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



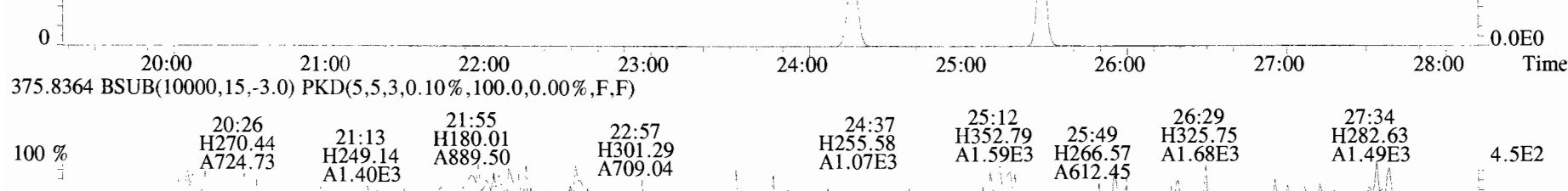
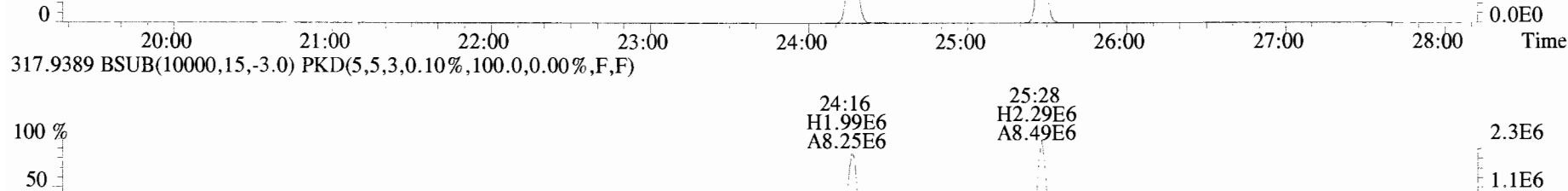
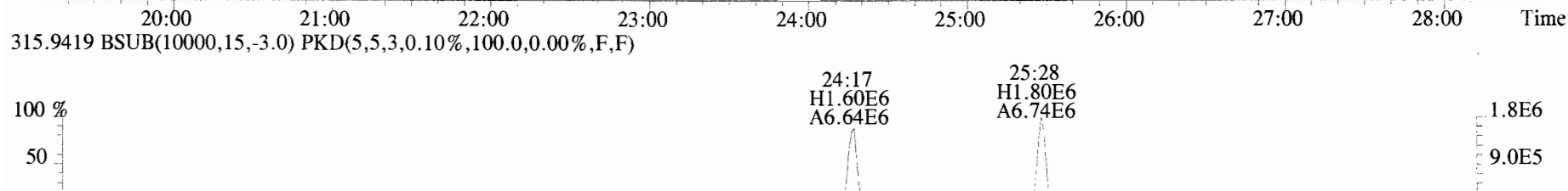
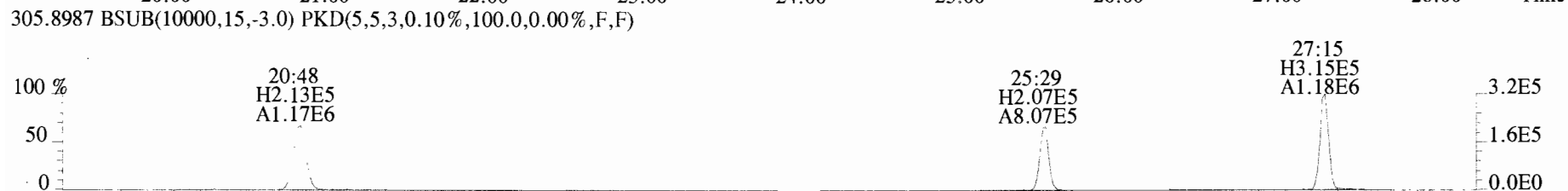
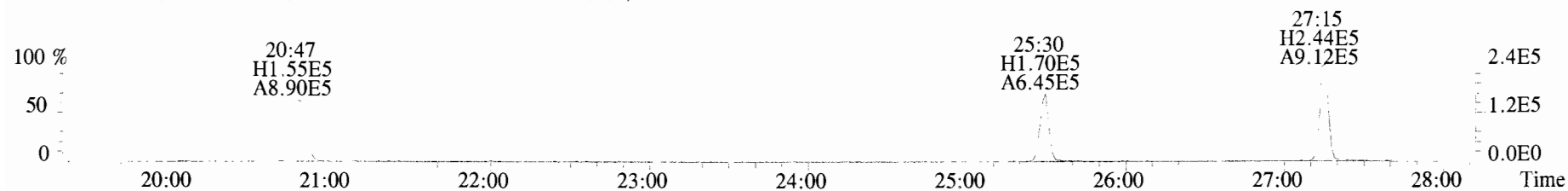
471.7750 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



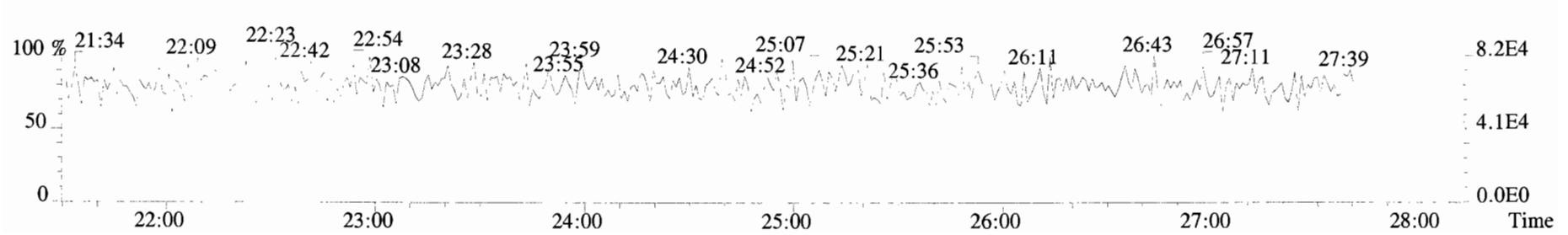
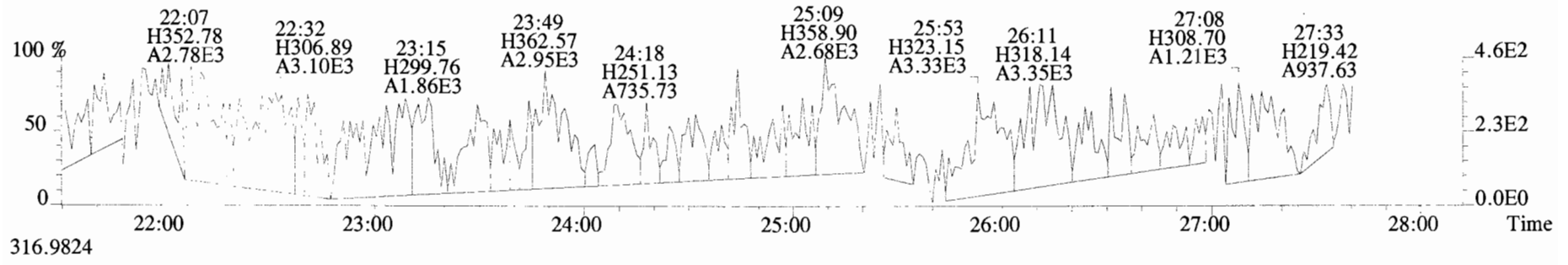
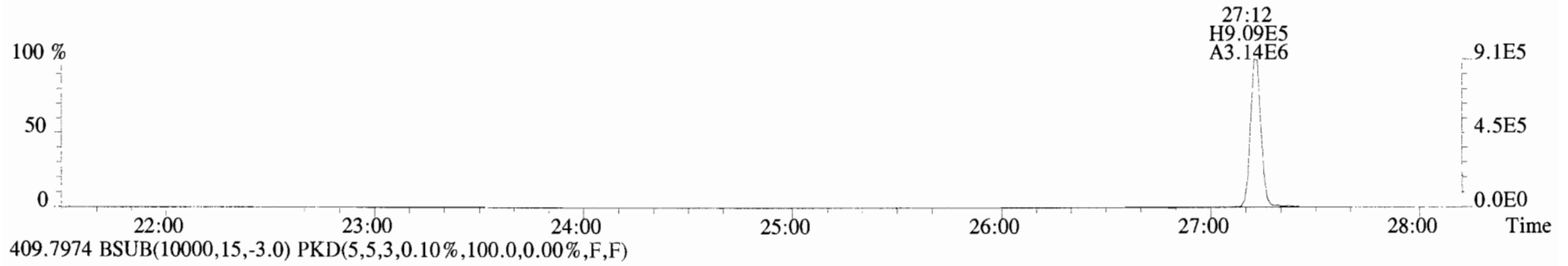
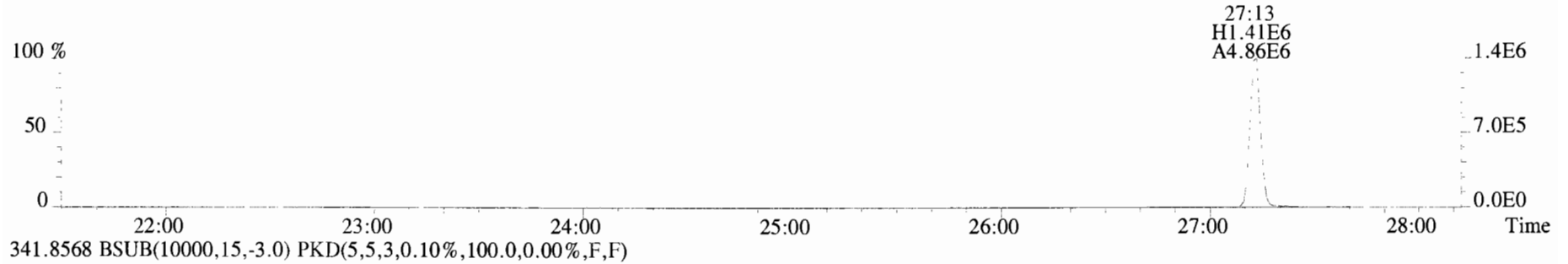
454.9728 F:5



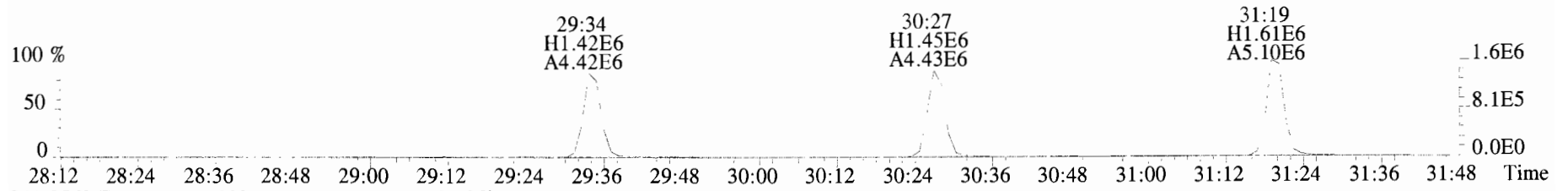
File:191021D3 #1-493 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



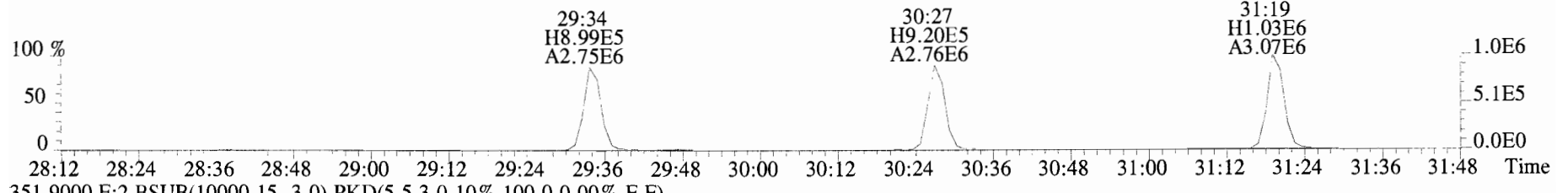
File:191021D3 #1-493 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



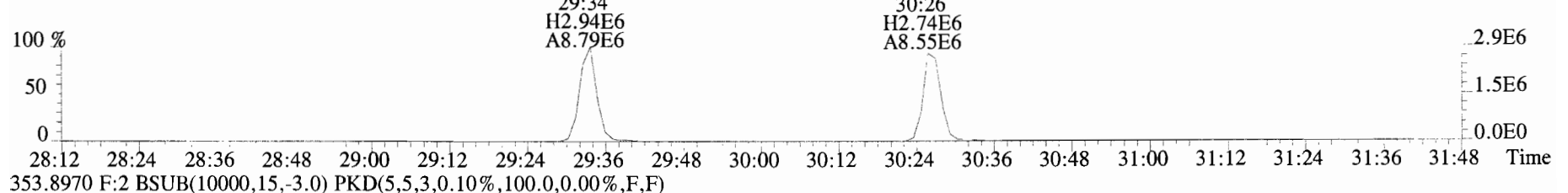
File:191021D3 #1-211 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



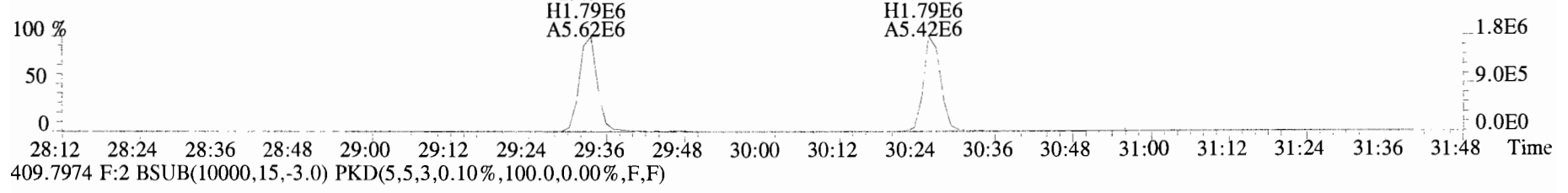
341.8568 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



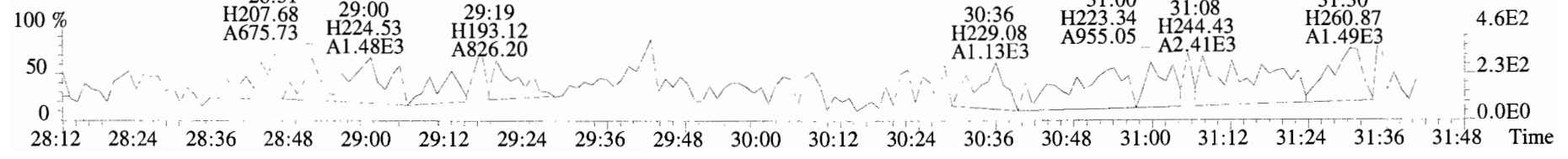
351.9000 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



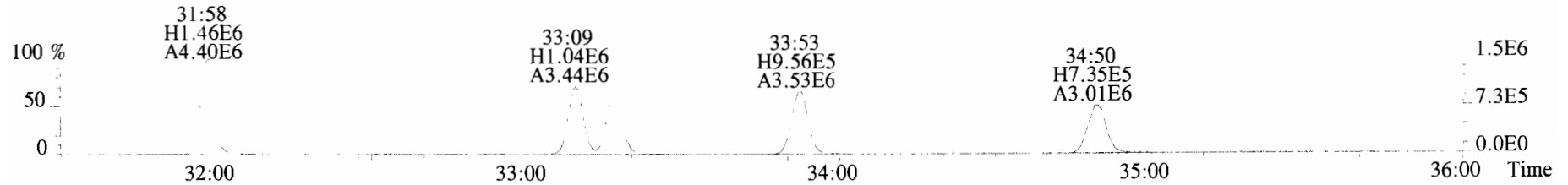
353.8970 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



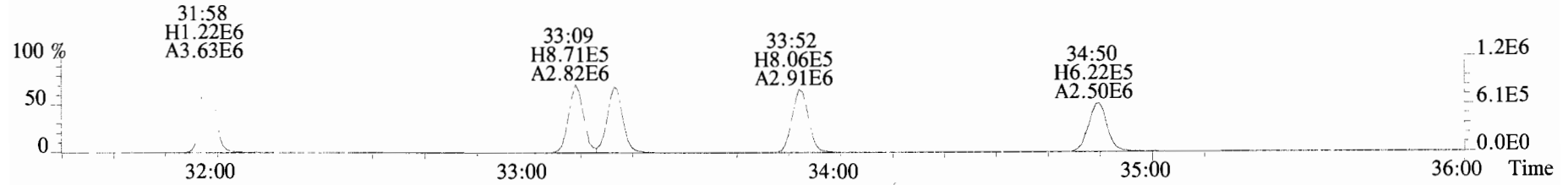
409.7974 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



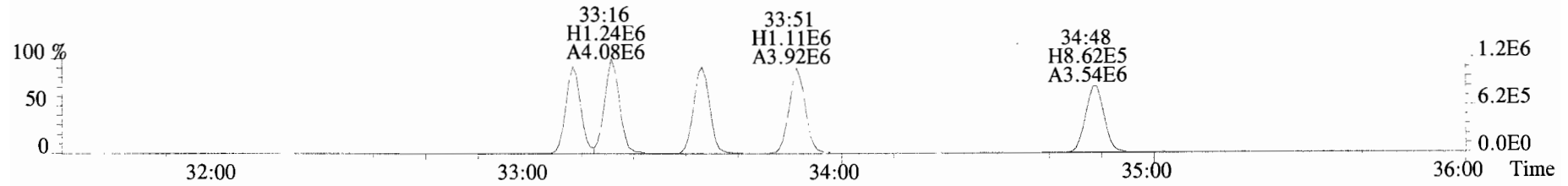
File:191021D3 #1-385 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



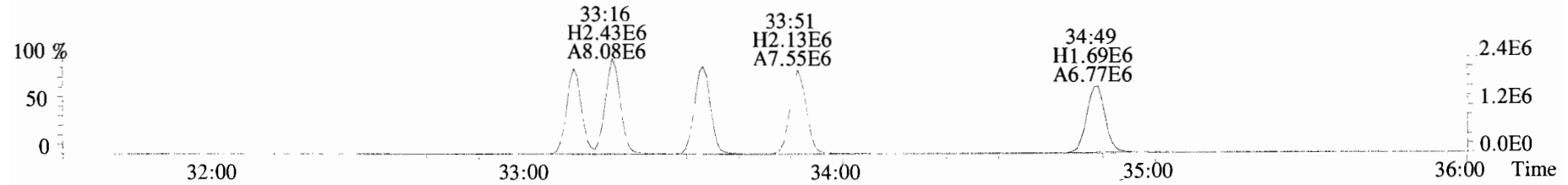
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



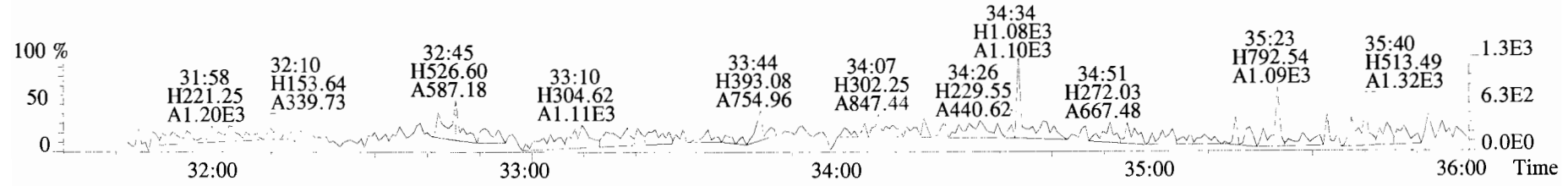
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



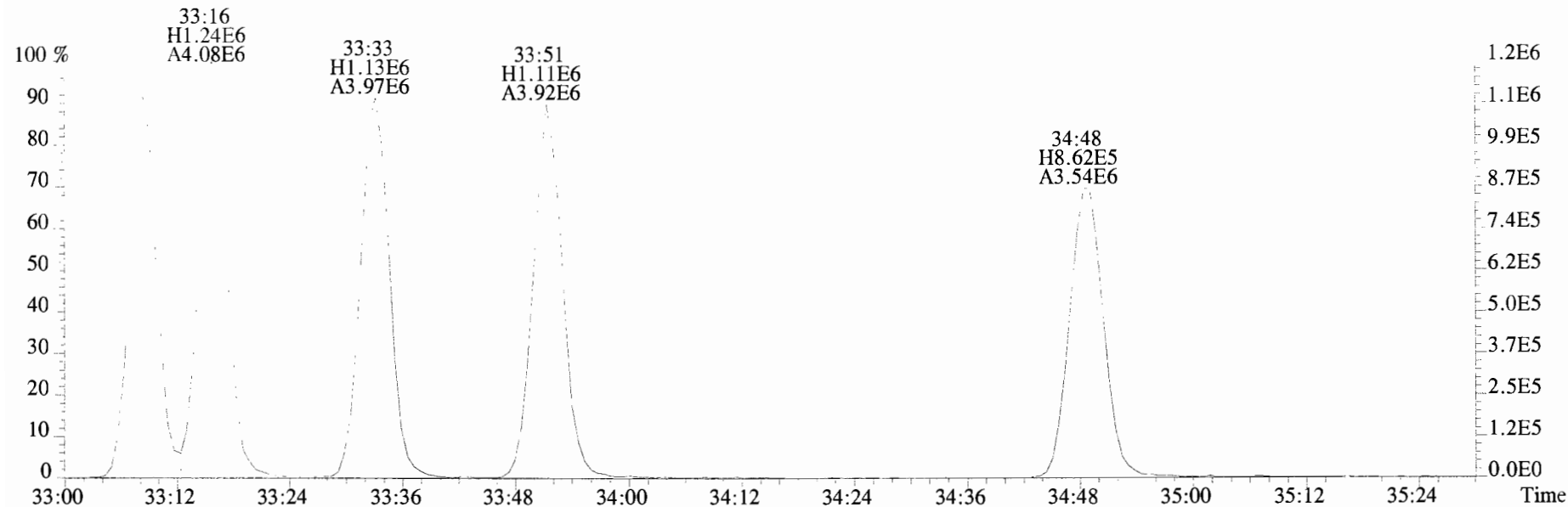
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



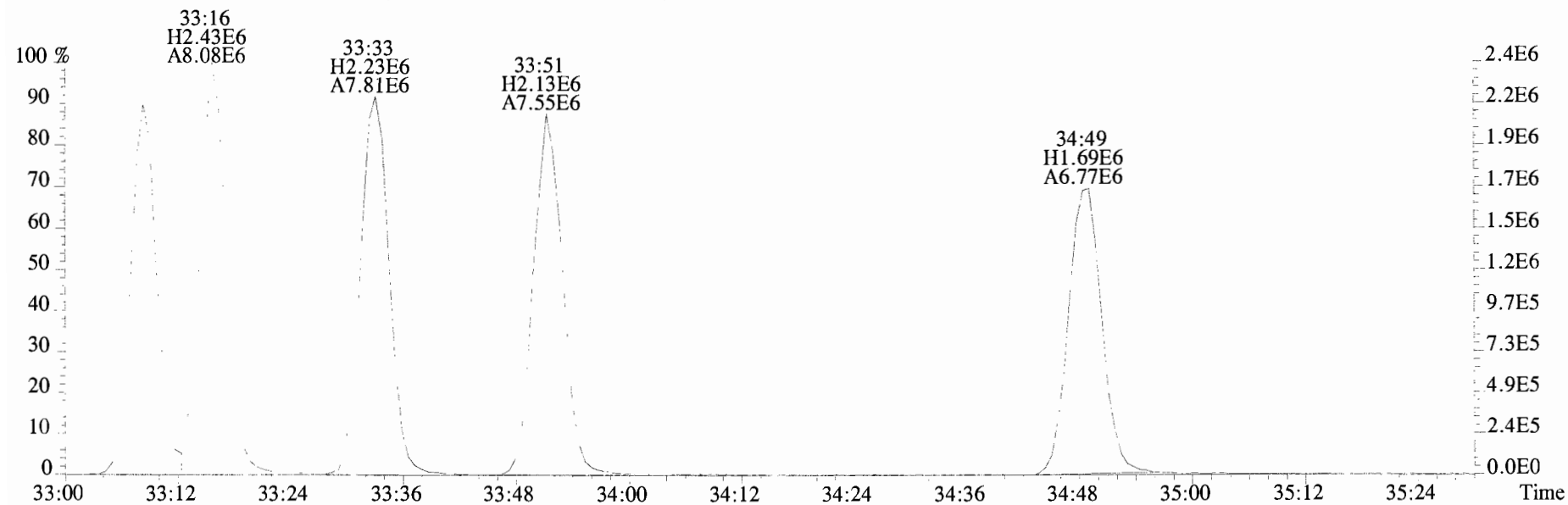
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



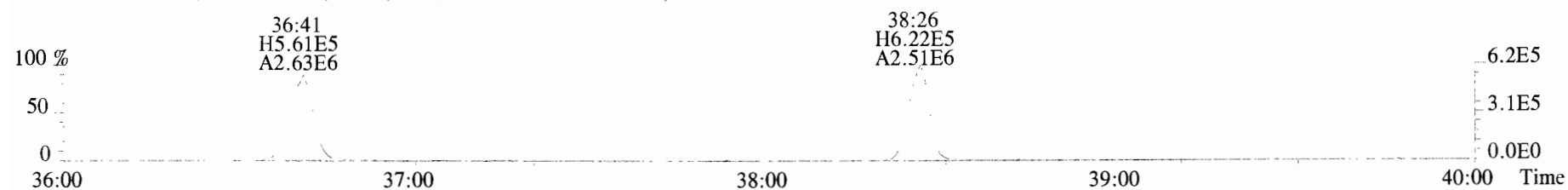
File:191021D3 #1-385 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



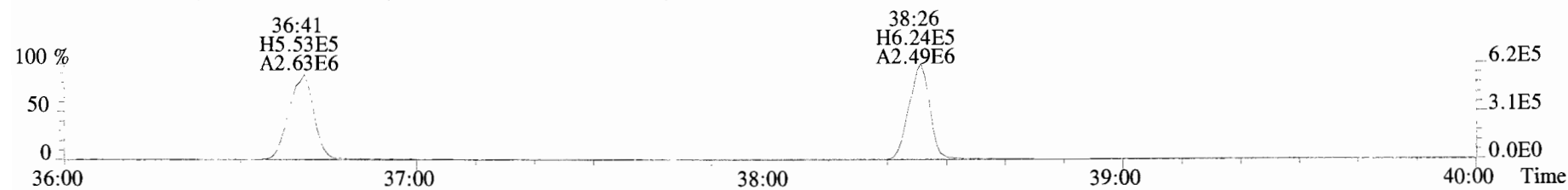
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



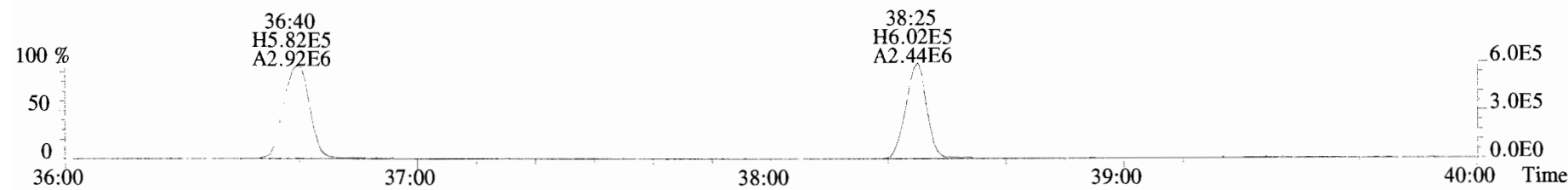
File:191021D3 #1-356 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



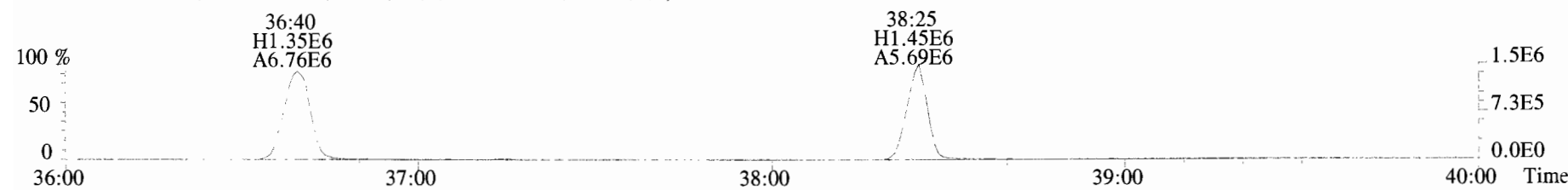
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



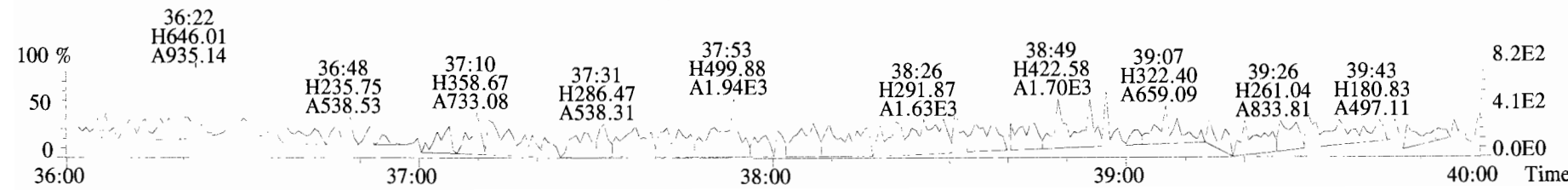
417.8253 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



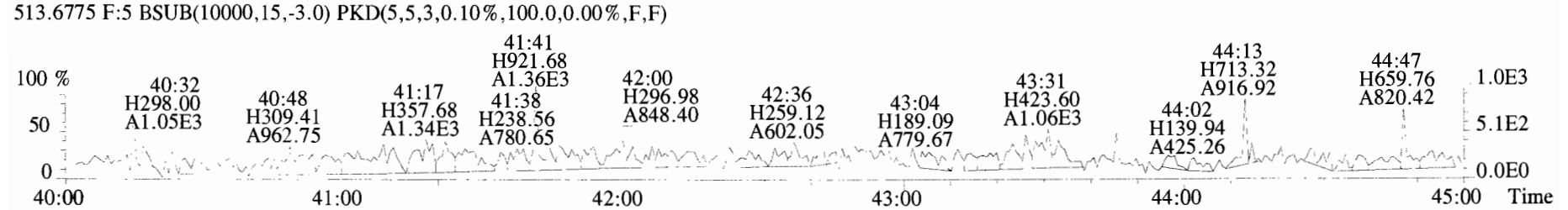
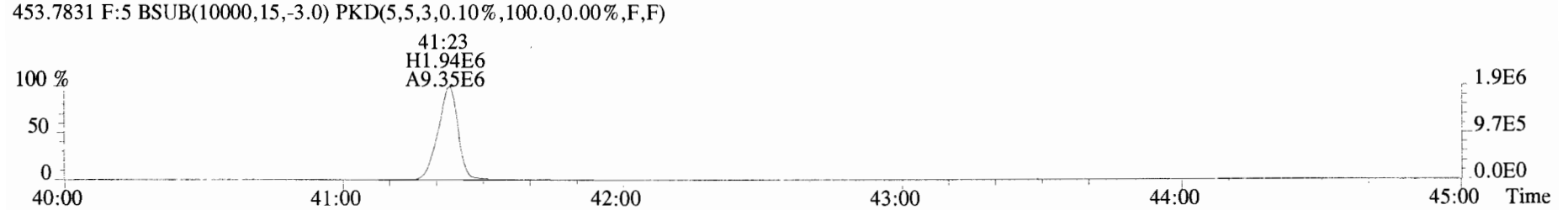
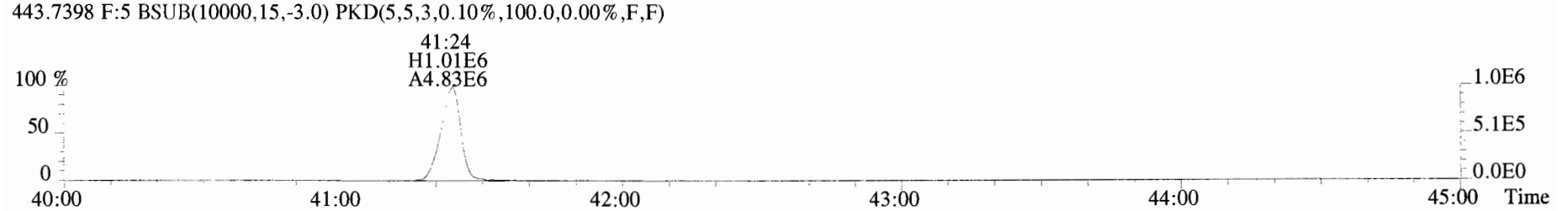
419.8220 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

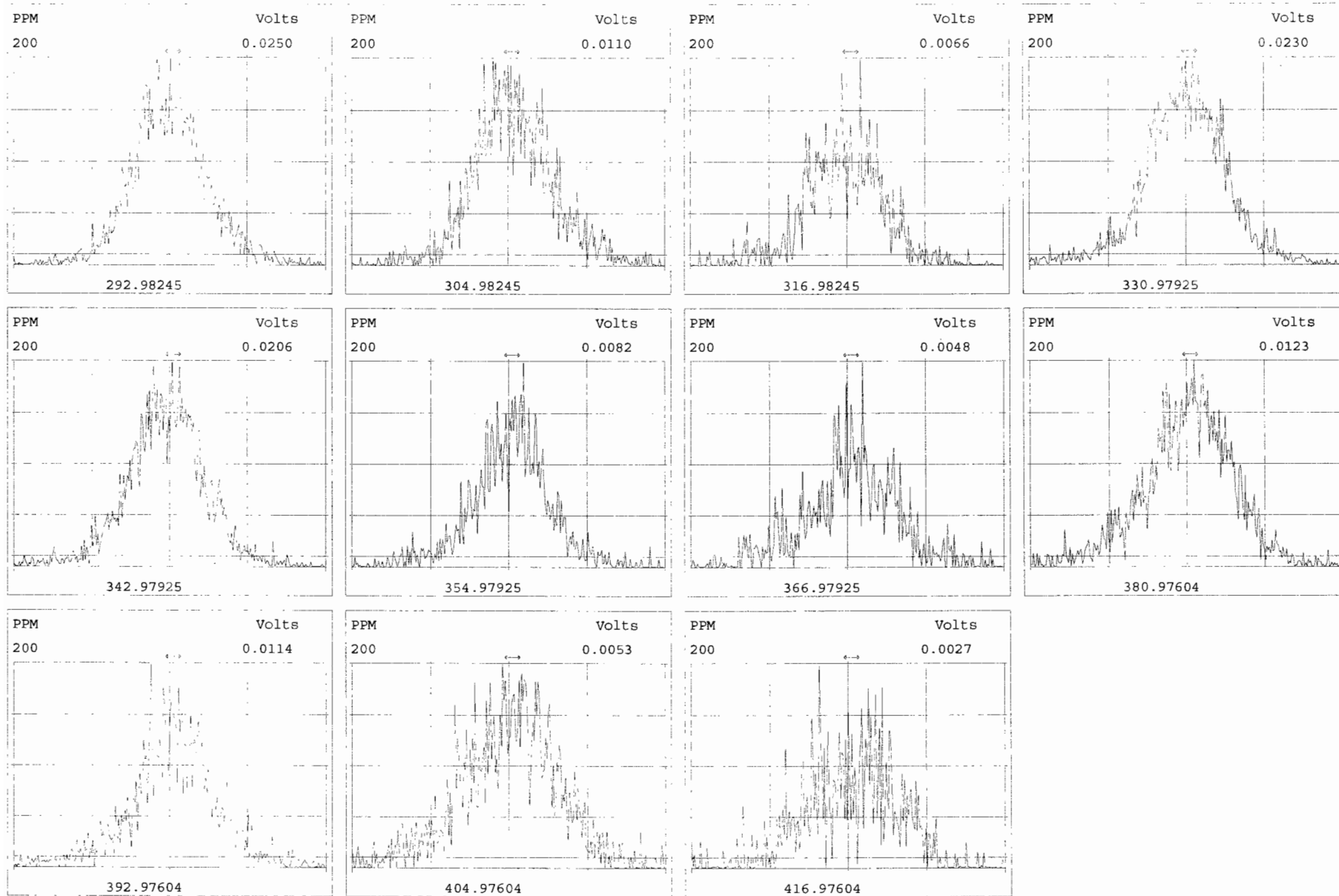


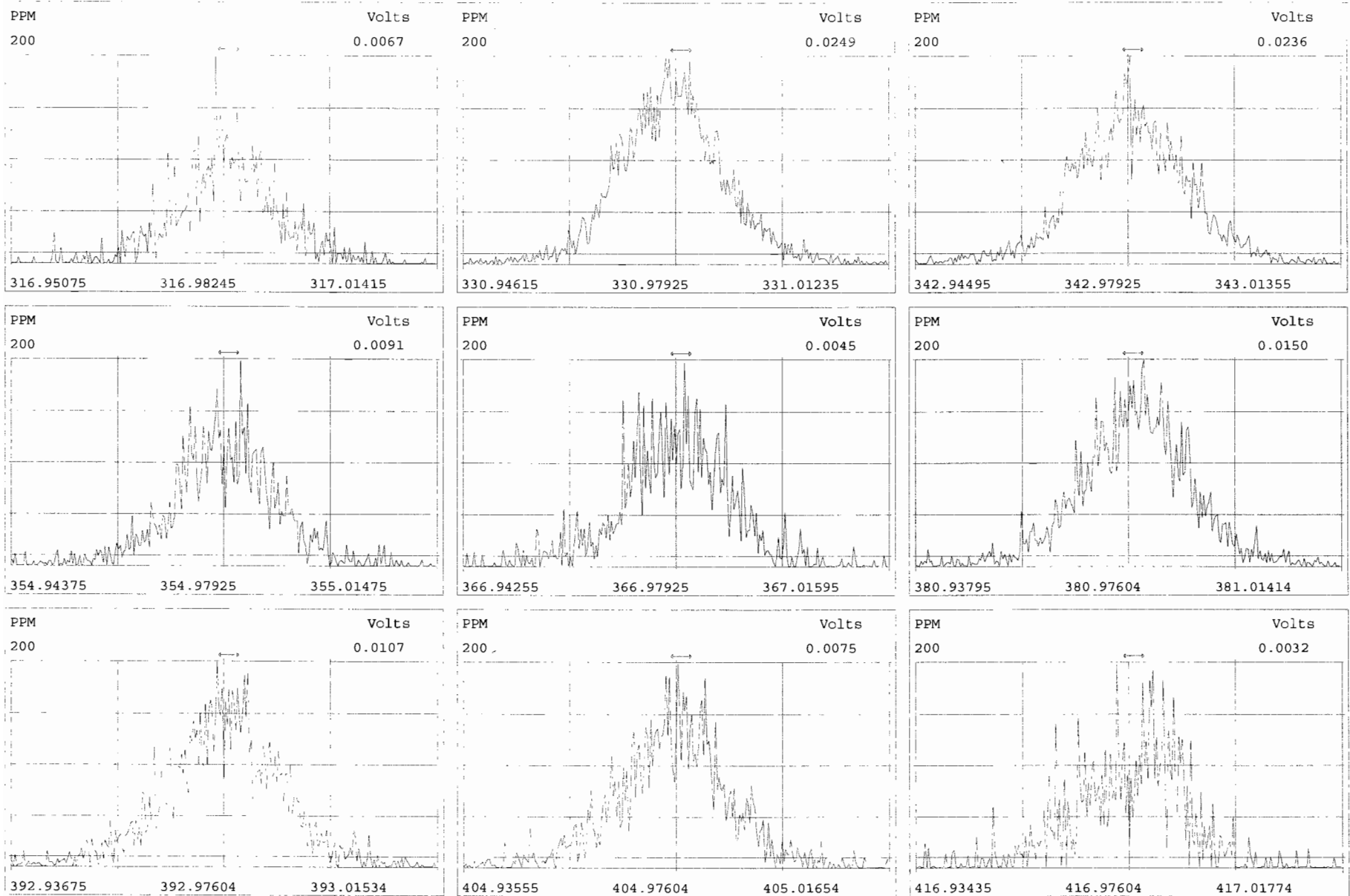
479.7165 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



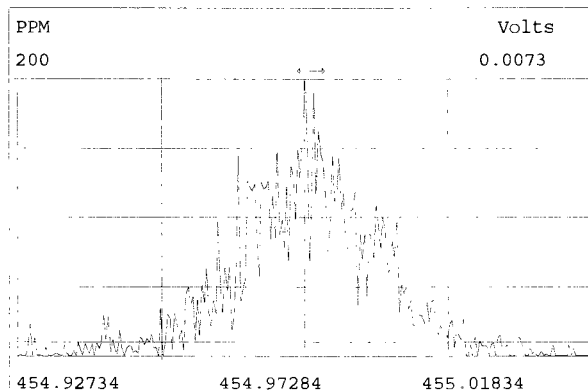
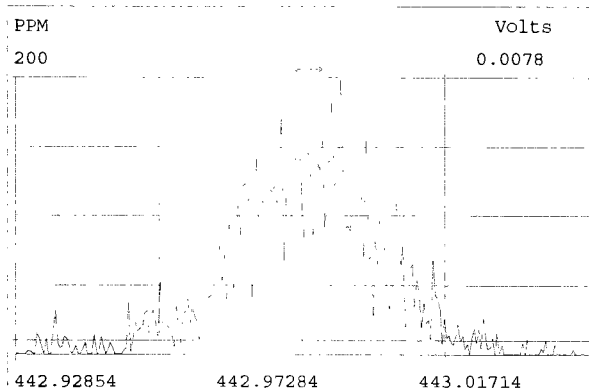
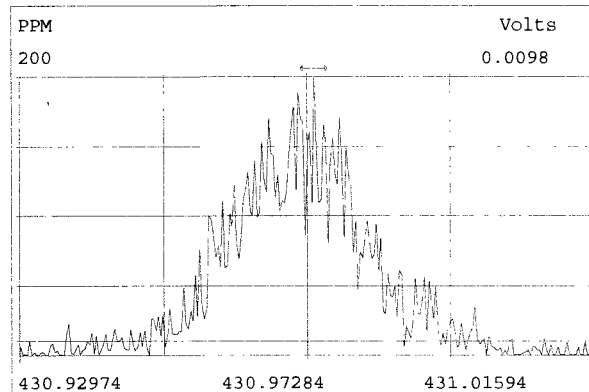
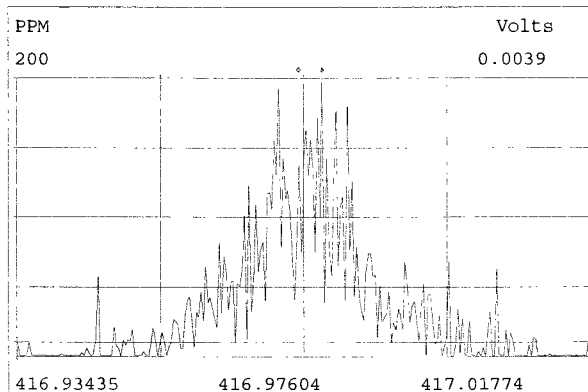
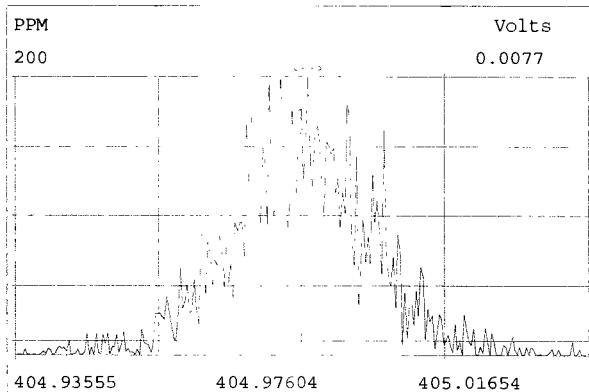
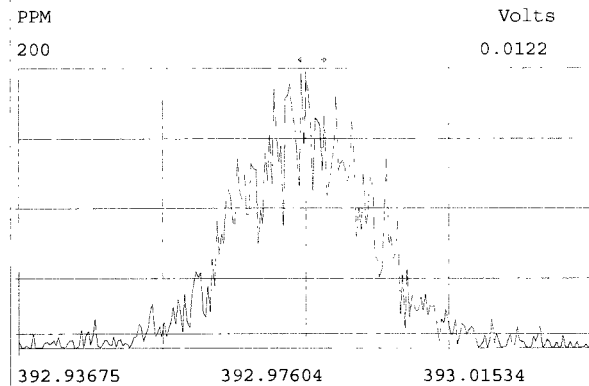
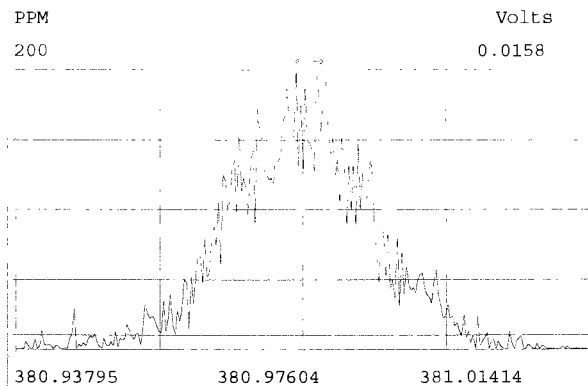
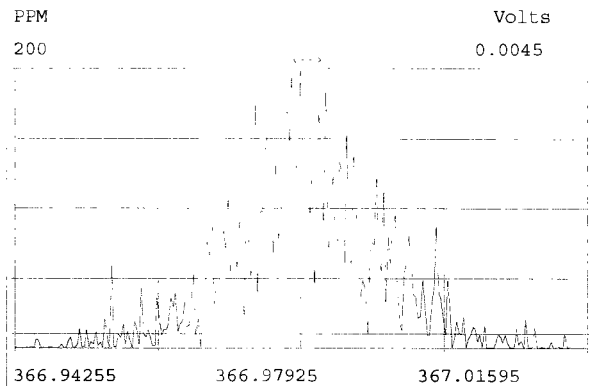
File:191021D3 #1-432 Acq:22-OCT-2019 02:03:33 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191021D3-1 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

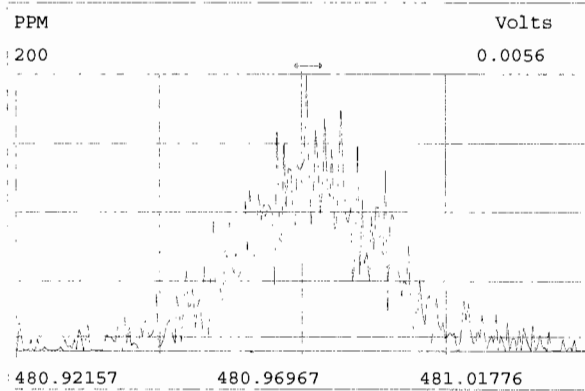
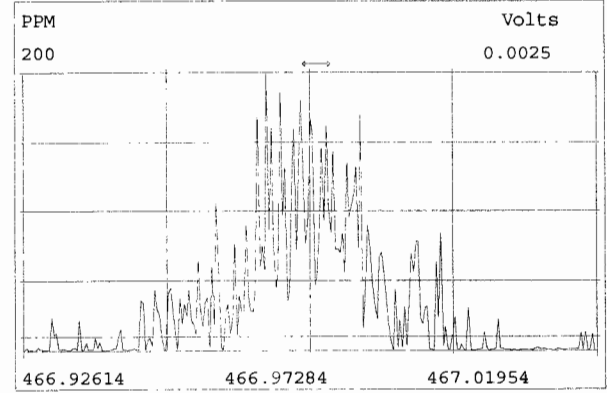
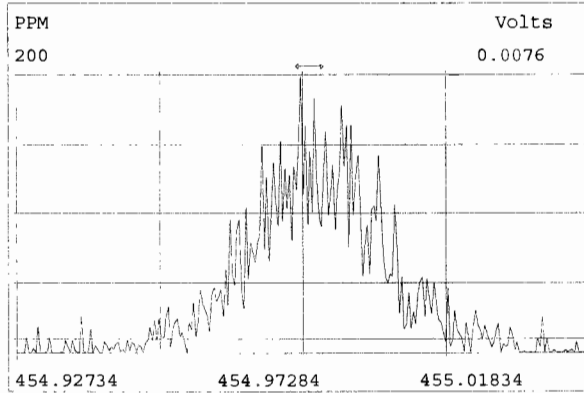
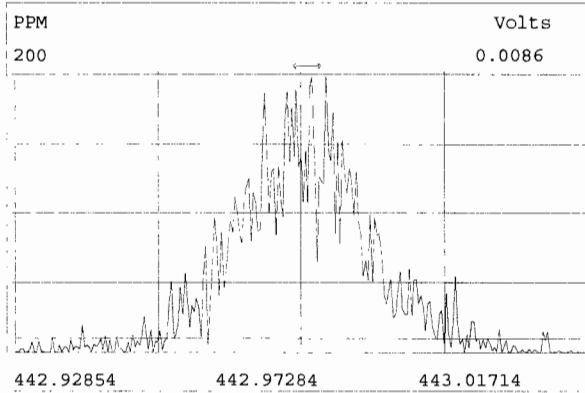
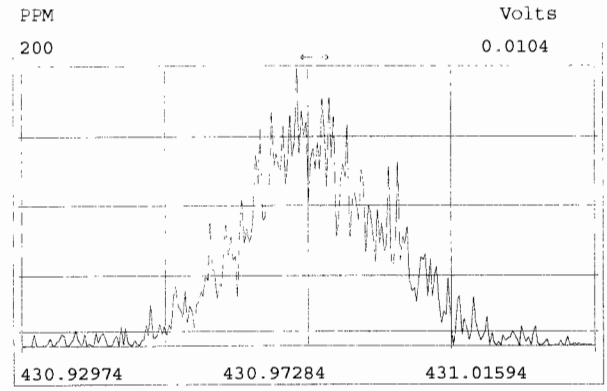
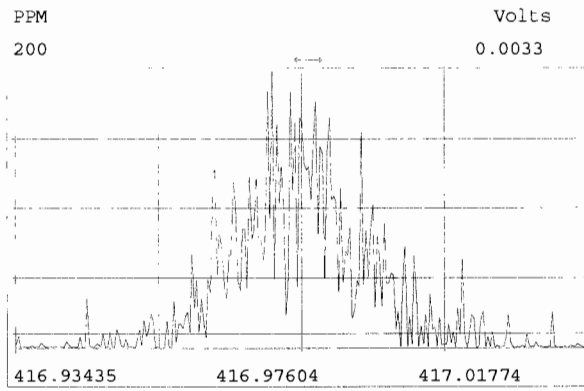
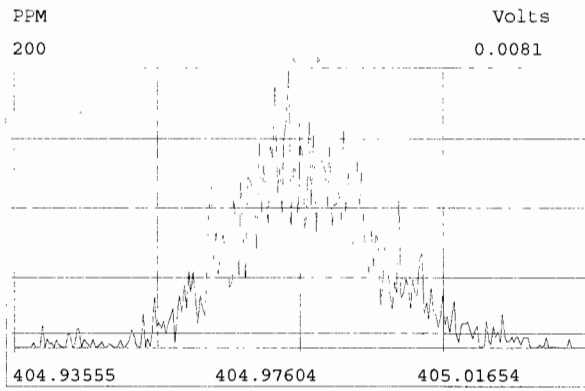


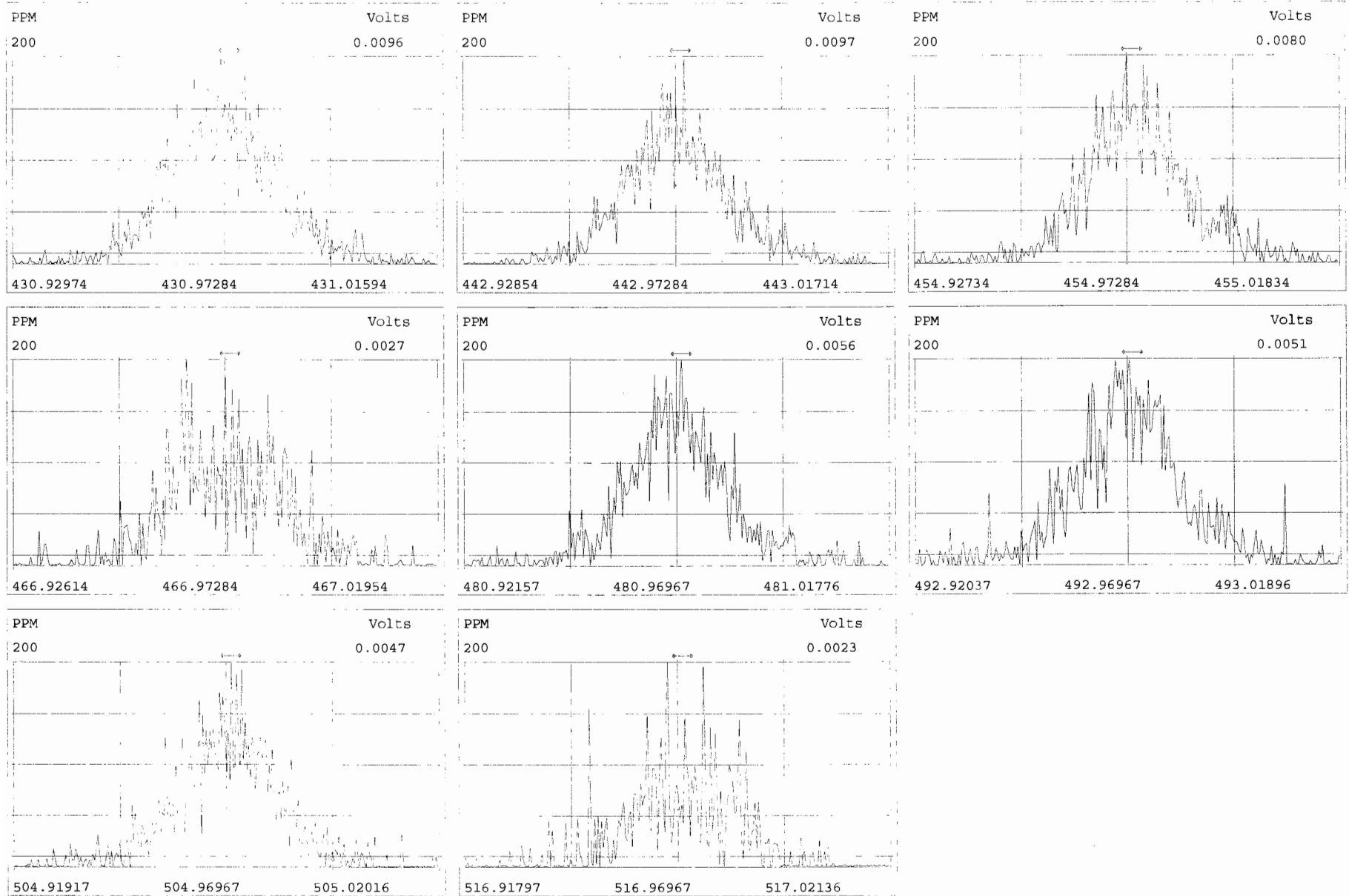




Experiment:OCDD_DB5 Function:3 Reference:PFK







HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191029D1-1

Reviewed By: AT 10/30/19

Initials & Date

End Calibration ID: NA

| | <u>Beg.</u> | <u>End</u> |
|--|---|-------------------------------------|
| Ion abundance within QC limits? | <input checked="" type="checkbox"/> | <input type="checkbox"/> NA |
| Concentrations within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| TCDD/TCDF Valleys <25% | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| First and last eluters present? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Retention Times within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Verification Std. named correctly? (ST-Year-Month-Day-VG ID) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Forms signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Correct ICAL referenced? | <u>DB</u> | <input type="checkbox"/> |
| <u>Run Log:</u> | | |
| - Correct instrument listed? | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Samples within 12 hour clock? | <input checked="" type="checkbox"/> (Y) | <input type="checkbox"/> N |
| - Bottle position verified? | <u>DB</u> | <input type="checkbox"/> |

Mass resolution \geq

5k 6-8K 8K 10K
 1614 1699 429 1613/1668/8280

| | | |
|---|-------------------------------------|-----------------------------|
| Intergrated peaks display correctly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> NA |
| GC Break <20% | <input type="checkbox"/> NA | |

8280 CS1 End Standard:

- Ratios within limits, S/N <2.5:1, CS1 within 12 hours

NA

Comments:

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory

Episode No.:

CCAL ID: ST191029D1-1

Contract No.:

SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

| NATIVE ANALYTES | M/Z'S | ION | QC | Pass | CONC. FOUND | CONC. RANGE (3) (ng/mL) |
|---------------------|----------------------|-----------------|---------------|------|----------------|-------------------------------|
| | FORMING RATIO (1) | ABUND. RATIO | LIMITS (2) | | | |
| 2,3,7,8-TCDD | M/M+2 | 0.76 | 0.65-0.89 | y | 10.8 | 7.8 - 12.9 |
| 1,2,3,7,8-PeCDD | M/M+2 | 0.61 | 0.54-0.72 | y | 51.0 | 8.2 - 12.3 (4) 39.0 - 65.0 |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.21 | 1.05-1.43 | y | 50.9 | 39.0 - 64.0 |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.21 | 1.05-1.43 | y | 50.3 | 39.0 - 64.0 |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.20 | 1.05-1.43 | y | 51.5 | 41.0 - 61.0 |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.05 | 0.88-1.20 | y | 48.5 | 43.0 - 58.0 |
| OCDD | M+2/M+4 | 0.90 | 0.76-1.02 | y | 103 | 79.0 - 126.0 |
| 2,3,7,8-TCDF | M/M+2 | 0.79 | 0.65-0.89 | y | 9.21 | 8.4 - 12.0 8.6 - 11.6 (4) |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.58 | 1.32-1.78 | y | 52.2 | 41.0 - 60.0 |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.56 | 1.32-1.78 | y | 50.9 | 41.0 - 61.0 |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | y | 47.9 | 45.0 - 56.0 |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.26 | 1.05-1.43 | y | 47.2 | 44.0 - 57.0 |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | y | 48.9 | 44.0 - 57.0 |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.22 | 1.05-1.43 | y | 48.4 | 45.0 - 56.0 |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 0.99 | 0.88-1.20 | y | 46.7 | 45.0 - 55.0 |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.02 | 0.88-1.20 | y | 46.4 | 43.0 - 58.0 |
| OCDF | M+2/M+4 | 0.90 | 0.76-1.02 | y | 94.9 | 63.0 - 159.0 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DBDate: 10/29/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

| Labeled Compounds | M/Z'S | ION | QC | Pass | CONC. FOUND | CONC. RANGE (ng/mL) |
|-------------------------|----------------------|-----------------|---------------|------|----------------|---------------------------|
| | FORMING RATIO (1) | ABUND. RATIO | LIMITS (2) | | | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.78 | 0.65-0.89 | y | 112 | 82.0 - 121.0 |
| 13C-1,2,3,7,8-PeCDD | M/M+2 | 0.61 | 0.54-0.72 | y | 103 | 62.0 - 160.0 |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.31 | 1.05-1.43 | y | 110 | 85.0 - 117.0 |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.31 | 1.05-1.43 | y | 98.2 | 85.0 - 118.0 |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.27 | 1.05-1.43 | y | 99.8 | 85.0 - 118.0 |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.07 | 0.88-1.20 | y | 110 | 72.0 - 138.0 |
| 13C-OCDD | M/M+2 | 0.90 | 0.76-1.02 | y | 218 | 96.0 - 415.0 |
| 13C-2,3,7,8-TCDF | M+2/M+4 | 0.82 | 0.65-0.89 | y | 103 | 71.0 - 140.0 |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.57 | 1.32-1.78 | y | 106 | 76.0 - 130.0 |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.56 | 1.32-1.78 | y | 106 | 77.0 - 130.0 |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.50 | 0.43-0.59 | y | 106 | 76.0 - 131.0 |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 101 | 70.0 - 143.0 |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 103 | 73.0 - 137.0 |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 104 | 74.0 - 135.0 |
| 13C-1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 0.44 | 0.37-0.51 | y | 103 | 78.0 - 129.0 |
| 13C-1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.45 | 0.37-0.51 | y | 110 | 77.0 - 129.0 |
| 13C-OCDF | M+2/M+4 | 0.87 | 0.76-1.02 | y | 223 | 96.0 - 415.0 |
| CLEANUP STANDARD (3) | | | | | | |
| 37Cl-2,3,7,8-TCDD | | | | | 10.2 | 7.9 - 12.7 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified

(3) No ion abundance ratio; report concentration found.

Analyst: DB

Date: 10/29/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

Compounds Using 13C-1234-TCDD as RT Internal Standard

| NATIVE ANALYTES | RETENTION TIME | | RRT | QC LIMITS (1) |
|-----------------|---------------------|--|-------|---------------|
| | REFERENCE | | | |
| 2,3,7,8-TCDD | 13C-2,3,7,8-TCDD | | 1.001 | 0.999-1.002 |
| 1,2,3,7,8-PeCDD | 13C-1,2,3,7,8-PeCDD | | 1.001 | 0.999-1.002 |
| 2,3,7,8-TCDF | 13C-2,3,7,8-TCDF | | 1.001 | 0.999-1.003 |
| 1,2,3,7,8-PeCDF | 13C-1,2,3,7,8-PeCDF | | 1.000 | 0.999-1.002 |
| 2,3,4,7,8-PeCDF | 13C-2,3,4,7,8-PeCDF | | 1.000 | 0.999-1.002 |

LABELED COMPOUNDS

| | | | |
|---------------------|------------------|-------|-------------|
| 13C-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.976-1.043 |
| 13C-1,2,3,7,8-PeCDD | 13C-1,2,3,4-TCDD | 1.198 | 1.000-1.567 |
| 13C-2,3,7,8-TCDF | 13C-1,2,3,4-TCDD | 0.992 | 0.923-1.103 |
| 13C-1,2,3,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.152 | 1.000-1.425 |
| 13C-2,3,4,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.187 | 1.011-1.526 |
| 37Cl-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.989-1.052 |

Analyst: DB

Date: 10/29/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

| NATIVE ANALYTES | RETENTION TIME | | RRT | QC LIMITS (1) |
|---------------------|-------------------------|-------|-------------|---------------|
| | REFERENCE | RRT | RRT | |
| 1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,7,8-HxCDF | 1.000 | 0.999-1.001 | |
| 1,2,3,6,7,8-HxCDF | 13C-1,2,3,6,7,8-HxCDF | 1.000 | 0.997-1.005 | |
| 2,3,4,6,7,8-HxCDF | 13C-2,3,4,6,7,8-HxCDF | 1.001 | 0.999-1.001 | |
| 1,2,3,7,8,9-HxCDF | 13C-1,2,3,7,8,9-HxCDF | 1.000 | 0.999-1.001 | |
| 1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,7,8-HxCDD | 1.001 | 0.999-1.001 | |
| 1,2,3,6,7,8-HxCDD | 13C-1,2,3,6,7,8-HxCDD | 1.001 | 0.998-1.004 | |
| 1,2,3,7,8,9-HxCDD | 13C-1,2,3,7,8,9-HxCDD | 1.000 | 0.998-1.004 | |
| 1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 1.000 | 0.999-1.001 | |
| 1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 1.000 | 0.999-1.001 | |
| 1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,7,8,9-HpCDF | 1.000 | 0.999-1.001 | |
| OCDD | 13C-OCDD | 1.000 | 0.999-1.001 | |
| OCDF | 13C-OCDF | 1.000 | 0.999-1.001 | |

LABELED COMPOUNDS

| | | | |
|-------------------------|-----------------------|-------|-------------|
| 13C-1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.988 | 0.975-1.001 |
| 13C-1,2,3,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.992 | 0.979-1.005 |
| 13C-2,3,4,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.009 | 1.001-1.020 |
| 13C-1,2,3,7,8,9-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.038 | 1.002-1.072 |
| 13C-1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.014 | 1.002-1.026 |
| 13C-1,2,3,6,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.018 | 1.007-1.029 |
| 13C-1,2,3,7,8,9-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.027 | 1.014-1.038 |
| 13C-1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.093 | 1.069-1.111 |
| 13C-1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.146 | 1.098-1.192 |
| 13C-1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,9-HxCDF | 1.130 | 1.117-1.141 |
| 13C-OCDD | 13C-1,2,3,4,6,9-HxCDF | 1.229 | 1.085-1.365 |
| 13C-OCDF | 13C-1,2,3,4,6,9-HxCDF | 1.236 | 1.091-1.371 |

Analyst: DB

Date: 10/29/19

Client ID: 1613 CS? 19C2204
Lab ID: ST191029D1-1

Filename: ^91029D1 S:1 Acq:29-OCT-19 10:15:38
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

ConCal: ST191029D1-1
EndCAL: NA

| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL | Name | Conc | EMPC | Qual | noise | DL |
|---------------------|-------------------------|----------|--------|-------|--------|--------|-------|-----|----|-----------------------|--------|--------|-----------------------|-------|----------|
| 2,3,7,8-TCDD | 8.83e+05 | 0.76 y | 0.91 | 26:14 | 10.833 | | * 2.5 | | * | Total Tetra-Dioxins | 73.5 | 74.3 | * | * | |
| 1,2,3,7,8-PeCDD | 3.04e+06 | 0.61 y | 0.90 | 30:45 | 50.988 | | * 2.5 | | * | Total Penta-Dioxins | 193 | 194 | * | * | |
| 1,2,3,4,7,8-HxCDD | 3.04e+06 | 1.21 y | 1.10 | 34:04 | 50.856 | | * 2.5 | | * | Total Hexa-Dioxins | 227 | 227 | * | * | |
| 1,2,3,6,7,8-HxCDD | 3.04e+06 | 1.21 y | 0.94 | 34:11 | 50.256 | | * 2.5 | | * | Total Hepta-Dioxins | 115 | 116 | * | * | |
| 1,2,3,7,8,9-HxCDD | 3.06e+06 | 1.20 y | 0.96 | 34:28 | 51.544 | | * 2.5 | | * | Total Tetra-Furans | 34.7 | 35.8 | * | * | |
| 1,2,3,4,6,7,8-HpCDD | 2.61e+06 | 1.05 y | 0.98 | 37:57 | 48.519 | | * 2.5 | | * | Total Penta-Furans | 229.18 | 229.26 | * | * | |
| OCDD | 4.78e+06 | 0.90 y | 0.96 | 41:16 | 102.73 | | * 2.5 | | * | Total Hexa-Furans | 256 | 256 | * | * | |
| | | | | | | | | | | Total Hepta-Furans | 93.9 | 95.5 | * | * | |
| 2,3,7,8-TCDF | 9.94e+05 | 0.79 y | 0.95 | 25:27 | 9.2148 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8-PeCDF | 4.83e+06 | 1.58 y | 0.96 | 29:34 | 52.152 | | * 2.5 | | * | | | | | | |
| 2,3,4,7,8-PeCDF | 4.94e+06 | 1.56 y | 1.01 | 30:28 | 50.886 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8-HxCDF | 3.81e+06 | 1.23 y | 1.18 | 33:10 | 47.883 | | * 2.5 | | * | | | | | | |
| 1,2,3,6,7,8-HxCDF | 4.06e+06 | 1.26 y | 1.07 | 33:18 | 47.222 | | * 2.5 | | * | | | | | | |
| 2,3,4,6,7,8-HxCDF | 4.10e+06 | 1.23 y | 1.11 | 33:54 | 48.936 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8,9-HxCDF | 3.41e+06 | 1.22 y | 1.06 | 34:51 | 48.406 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 3.15e+06 | 0.99 y | 1.13 | 36:42 | 46.665 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | 2.90e+06 | 1.02 y | 1.28 | 38:30 | 46.357 | | * 2.5 | | * | | | | | | |
| OCDF | 5.29e+06 | 0.90 y | 0.95 | 41:30 | 94.854 | | * 2.5 | | * | | | | | | |
| IS | 13C-2,3,7,8-TCDD | 9.01e+06 | 0.78 y | 1.10 | 26:13 | 112.45 | | | | Rec | | | Qual | | |
| IS | 13C-1,2,3,7,8-PeCDD | 6.61e+06 | 0.61 y | 0.88 | 30:44 | 102.57 | | | | 112 | | | 103 | | |
| IS | 13C-1,2,3,4,7,8-HxCDD | 5.43e+06 | 1.31 y | 0.64 | 34:03 | 110.27 | | | | 110 | | | 110 | | |
| IS | 13C-1,2,3,6,7,8-HxCDD | 6.44e+06 | 1.31 y | 0.86 | 34:10 | 98.225 | | | | 98.2 | | | 98.2 | | |
| IS | 13C-1,2,3,7,8,9-HxCDD | 6.17e+06 | 1.27 y | 0.81 | 34:28 | 99.839 | | | | 99.8 | | | 99.8 | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 5.50e+06 | 1.07 y | 0.65 | 37:56 | 109.71 | | | | 110 | | | 110 | | |
| IS | 13C-OCDD | 9.71e+06 | 0.90 y | 0.58 | 41:16 | 218.37 | | | | 109 | | | 109 | | |
| IS | 13C-2,3,7,8-TCDF | 1.14e+07 | 0.82 y | 1.03 | 25:26 | 103.27 | | | | 103 | | | 103 | | |
| IS | 13C-1,2,3,7,8-PeCDF | 9.65e+06 | 1.57 y | 0.85 | 29:33 | 106.34 | | | | 106 | | | 106 | | |
| IS | 13C-2,3,4,7,8-PeCDF | 9.56e+06 | 1.56 y | 0.85 | 30:27 | 106.27 | | | | 106 | | | 106 | | |
| IS | 13C-1,2,3,4,7,8-HxCDF | 6.76e+06 | 0.50 y | 0.83 | 33:09 | 106.08 | | | | 106 | | | 106 | | |
| IS | 13C-1,2,3,6,7,8-HxCDF | 8.04e+06 | 0.51 y | 1.03 | 33:17 | 101.38 | | | | 101 | | | 101 | | |
| IS | 13C-2,3,4,6,7,8-HxCDF | 7.52e+06 | 0.51 y | 0.95 | 33:53 | 102.86 | | | | 103 | | | 103 | | |
| IS | 13C-1,2,3,7,8,9-HxCDF | 6.63e+06 | 0.51 y | 0.83 | 34:50 | 104.48 | | | | 104 | | | 104 | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 6.00e+06 | 0.44 y | 0.76 | 36:42 | 103.24 | | | | 103 | | | 103 | | |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 4.88e+06 | 0.45 y | 0.58 | 38:29 | 109.51 | | | | 110 | | | 110 | | |
| IS | 13C-OCDF | 1.18e+07 | 0.87 y | 0.69 | 41:29 | 222.81 | | | | 111 | | | 111 | | |
| C/Up | 37Cl-2,3,7,8-TCDD | 8.97e+05 | | 1.20 | 26:14 | 10.243 | | | | 102 | | | Integrations | | Reviewed |
| RS/RT | 13C-1,2,3,4-TCDD | 7.31e+06 | 0.77 y | 1.00 | 25:39 | 100.00 | | | | | | | by | | by |
| RS | 13C-1,2,3,4-TCDF | 1.06e+07 | 0.81 y | 1.00 | 24:13 | 100.00 | | | | Analyst: <u>DB</u> | | | Analyst: <u>CT</u> | | |
| RS/RT | 13C-1,2,3,4,6,9-HxCDF | 7.67e+06 | 0.52 y | 1.00 | 33:34 | 100.00 | | | | Date: <u>10/29/19</u> | | | Date: <u>10/30/19</u> | | |

Vista Analytical Laboratory - Injection Log Run file: 191029D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

| Data file | S# | Sample ID | Analyst | Acq date | Acq time | CCal | ECal |
|-----------|----|---------------|---------|-----------|----------|--------------|------|
| 191029D1 | 1 | ST191029D1-1 | DB | 29-OCT-19 | 10:15:38 | ST191029D1-1 | NA |
| 191029D1 | 2 | B9J0132-BS1 | DB | 29-OCT-19 | 11:03:33 | ST191029D1-1 | NA |
| 191029D1 | 3 | B9J0286-BS1 | DB | 29-OCT-19 | 11:51:28 | ST191029D1-1 | NA |
| 191029D1 | 4 | B9J0253-BS1 | DB | 29-OCT-19 | 12:39:19 | ST191029D1-1 | NA |
| 191029D1 | 5 | SOLVENT BLANK | DB | 29-OCT-19 | 13:27:14 | ST191029D1-1 | NA |
| 191029D1 | 6 | B9J0286-BLK1 | DB | 29-OCT-19 | 14:15:00 | ST191029D1-1 | NA |
| 191029D1 | 7 | B9J0253-BLK1 | DB | 29-OCT-19 | 15:02:56 | ST191029D1-1 | NA |
| 191029D1 | 8 | 1903259-01RE1 | DB | 29-OCT-19 | 15:50:41 | ST191029D1-1 | NA |
| 191029D1 | 9 | 1903259-03RE1 | DB | 29-OCT-19 | 16:38:36 | ST191029D1-1 | NA |
| 191029D1 | 10 | 1903566-01RE1 | DB | 29-OCT-19 | 17:26:30 | ST191029D1-1 | NA |
| 191029D1 | 11 | 1903285-01@5X | DB | 29-OCT-19 | 18:14:19 | ST191029D1-1 | NA |
| 191029D1 | 12 | 1903285-02@5X | DB | 29-OCT-19 | 19:02:03 | ST191029D1-1 | NA |
| 191029D1 | 13 | 1903285-03@5X | DB | 29-OCT-19 | 19:49:46 | ST191029D1-1 | NA |
| 191029D1 | 14 | 1903420-11 | DB | 29-OCT-19 | 20:37:30 | ST191029D1-1 | NA |
| 191029D1 | 15 | 1903460-08RE1 | DB | 29-OCT-19 | 21:25:15 | ST191029D1-1 | NA |

FORM 5
 PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.: \

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

ZB-5MS IS Data Filename: 191029D1 S#1 Analysis Date: 29-OCT-19 Time: 10:15:38

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

| ISOMERS | ABSOLUTE RT | ISOMERS | ABSOLUTE RT |
|-------------------------|-------------|-------------------------|-------------|
| 1,3,6,8-TCDD (F) | 22:51 | 1,3,6,8-TCDF (F) | 20:43 |
| 1,2,8,9-TCDD (L) | 27:05 | 1,2,8,9-TCDF (L) | 27:14 |
| 1,2,4,7,9-PeCDD (F) | 28:42 | 1,3,4,6,8-PeCDF (F) | 27:12 |
| 1,2,3,8,9-PeCDD (L) | 31:06 | 1,2,3,8,9-PeCDF (L) | 31:20 |
| 1,2,4,6,7,9-HxCDD (F) | 32:31 | 1,2,3,4,6,8-HxCDF (F) | 31:59 |
| 1,2,3,7,8,9-HxCDD (L) | 34:28 | 1,2,3,7,8,9-HxCDF (L) | 34:51 |
| 1,2,3,4,6,7,9-HpCDD (F) | 37:06 | 1,2,3,4,6,7,8-HpCDF (F) | 36:42 |
| 1,2,3,4,6,7,8-HpCDD (L) | 37:57 | 1,2,3,4,7,8,9-HpCDF (L) | 38:30 |

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

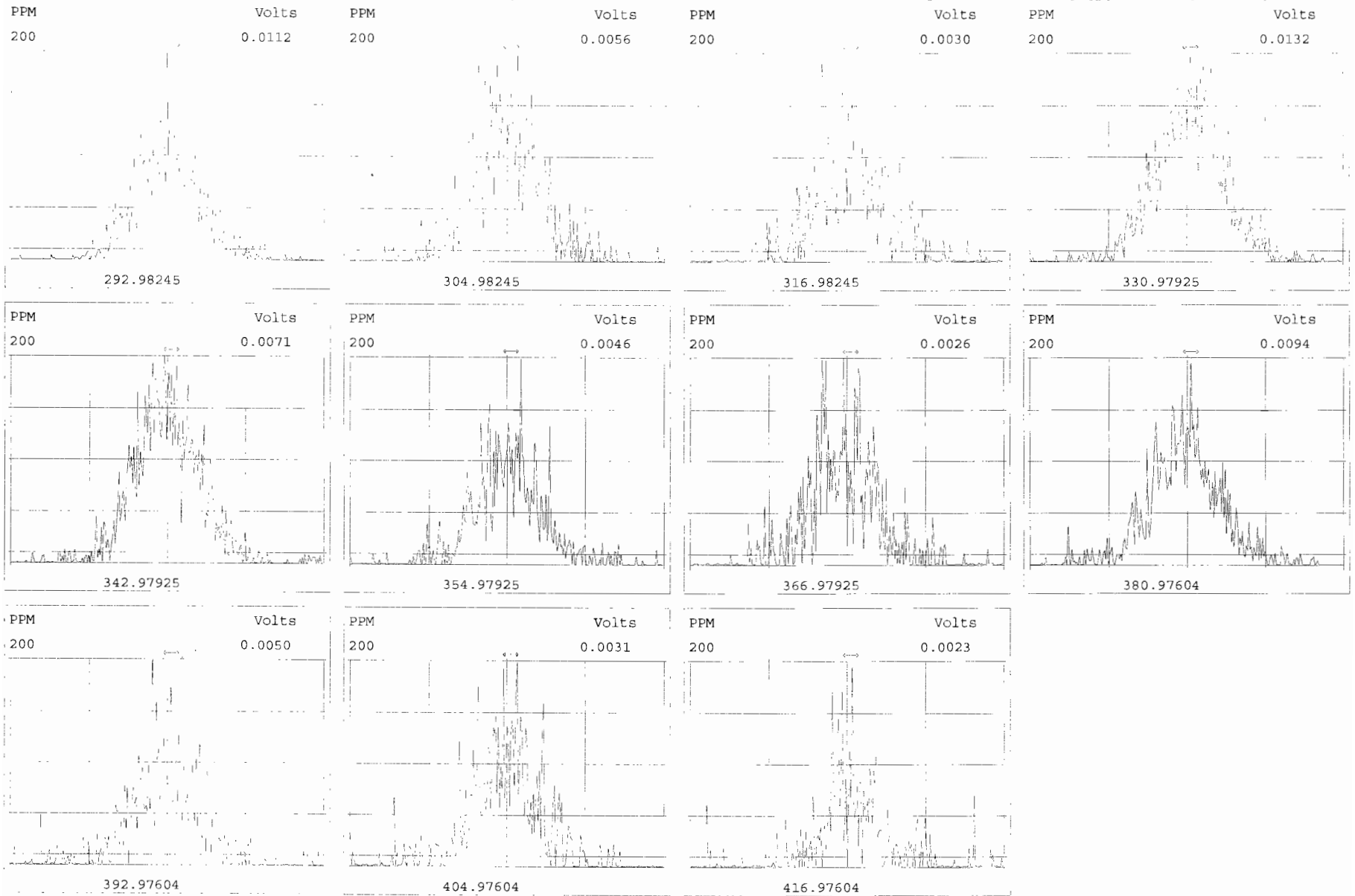
% VALLEY HEIGHT
 BETWEEN
 COMPARED PEAKS (1)

<25%

(1) To meet contract requirements, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

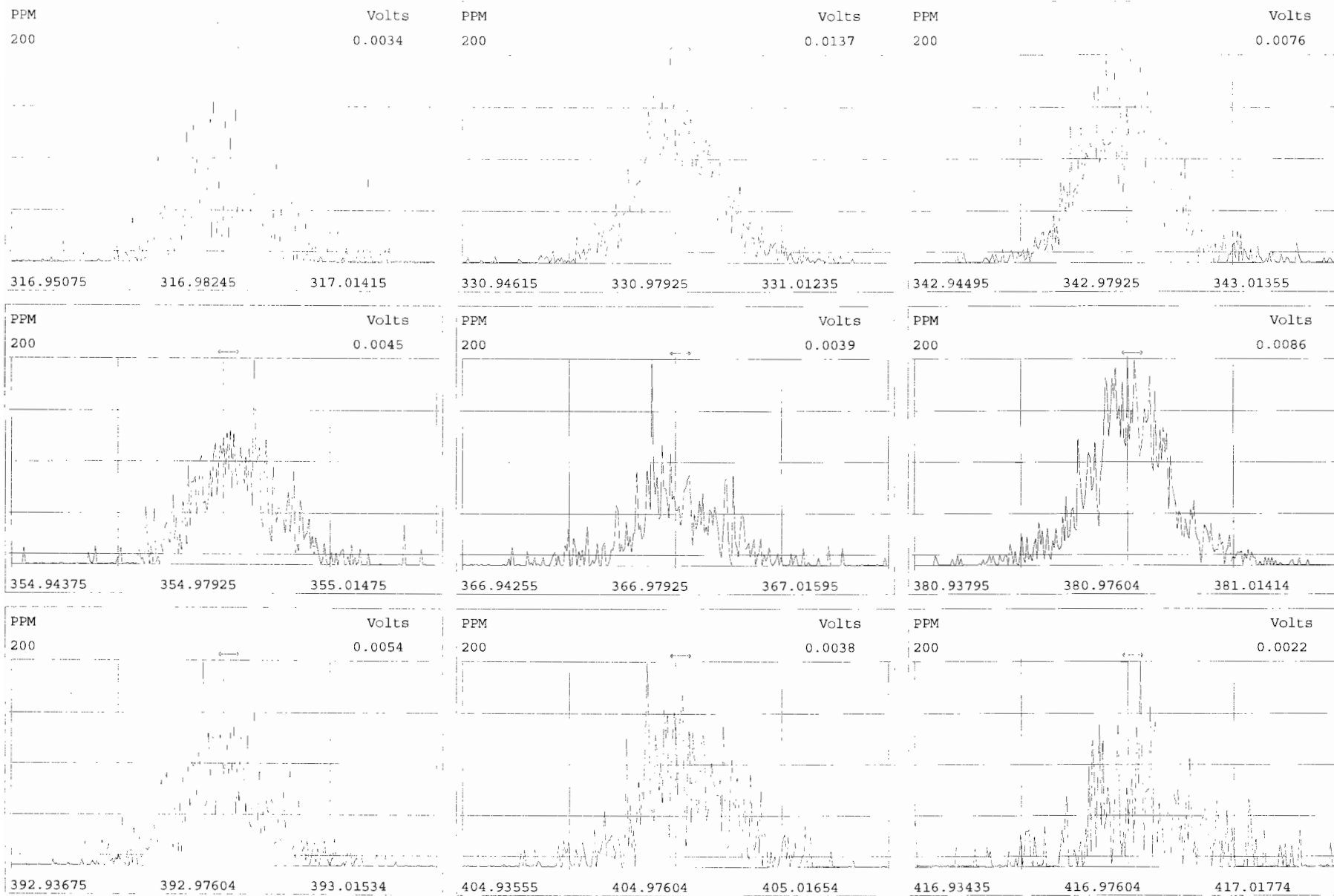
Analyst: DB

Date: 10/29/19



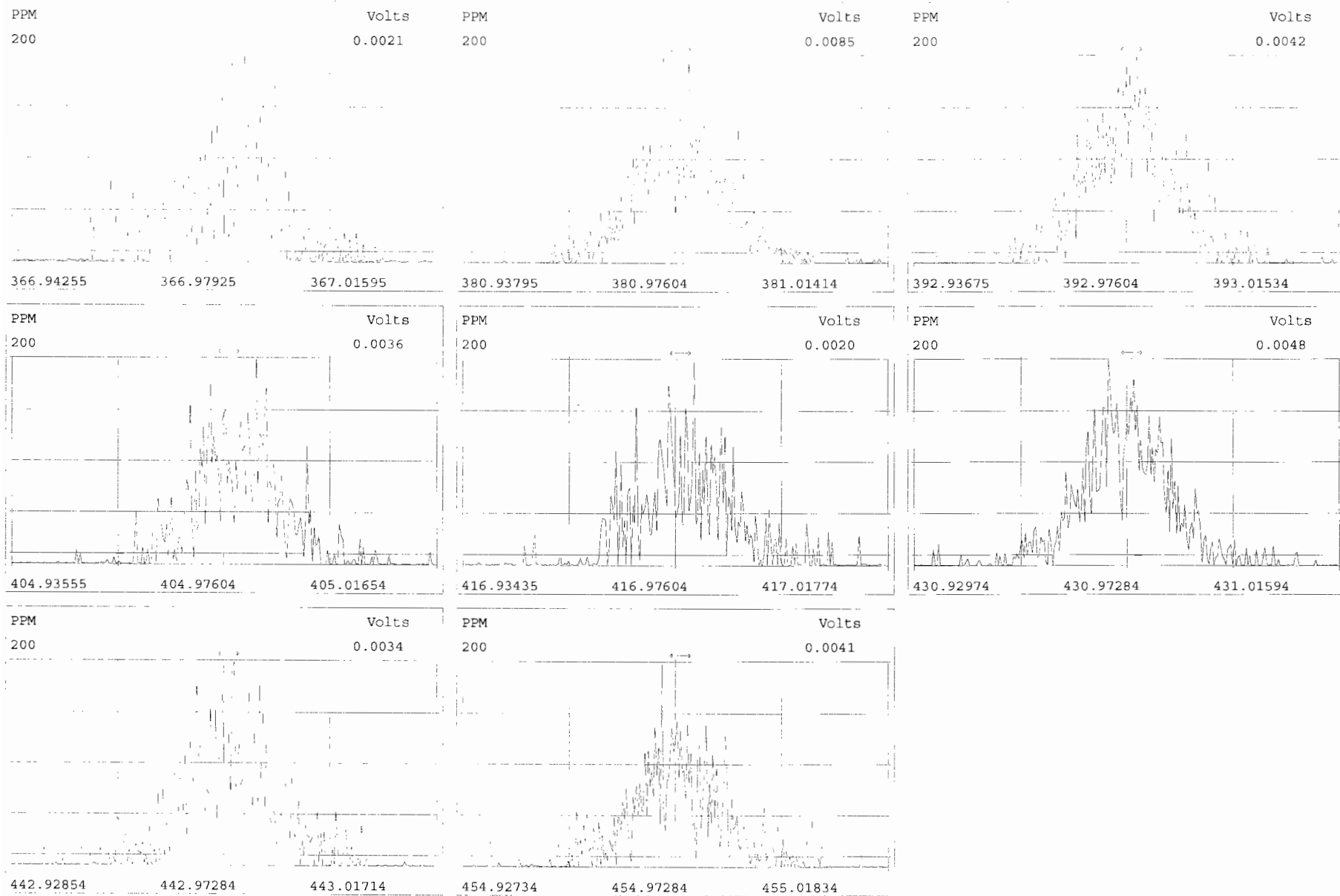
Peak Locate Examination:29-OCT-2019:10:11 File:191029D1

Experiment:OCDD_DB5 Function:2 Reference:PFK



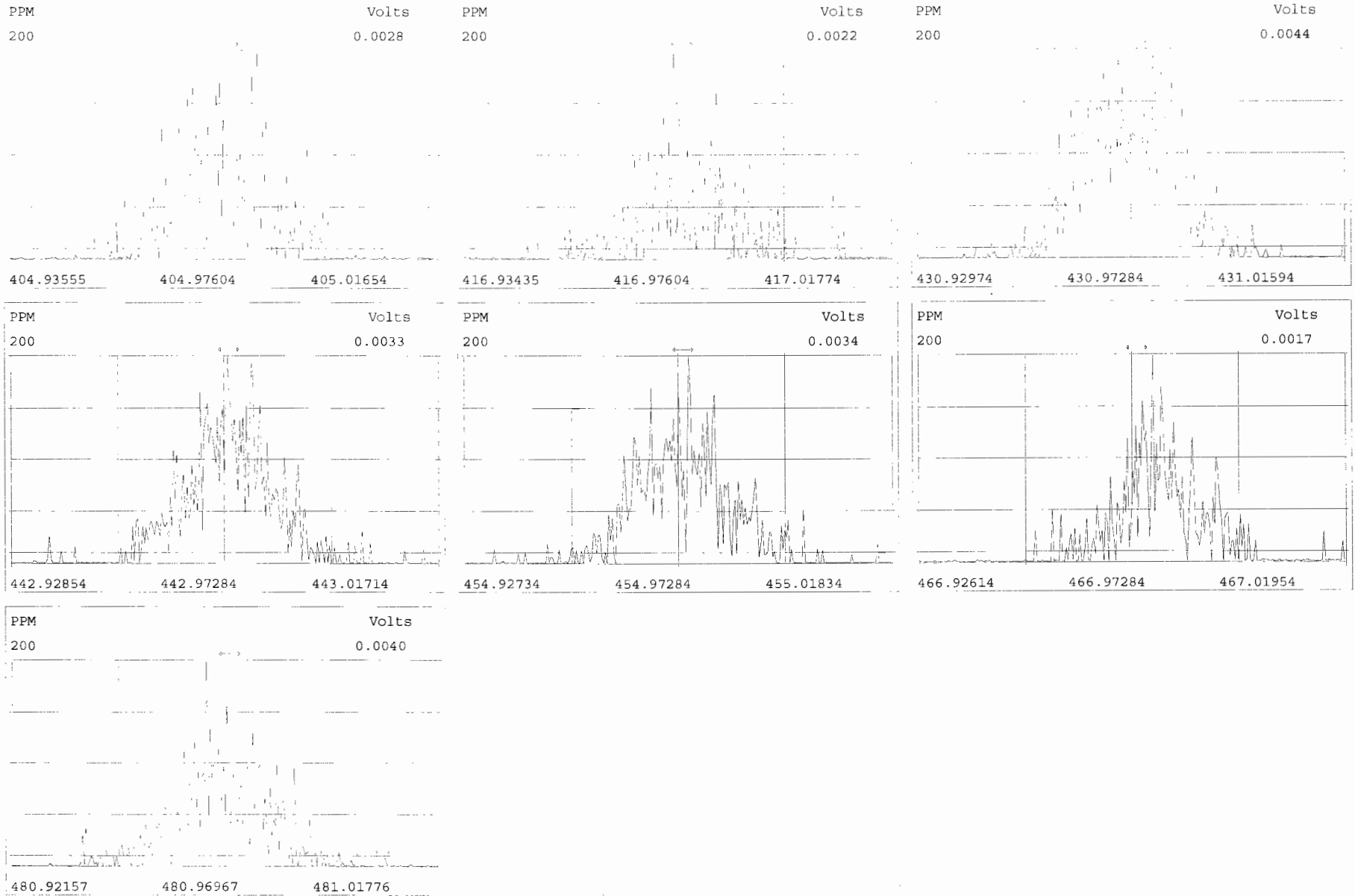
Peak Locate Examination:29-OCT-2019:10:12 File:191029D1

Experiment:OCDD_DB5 Function:3 Reference:PFK



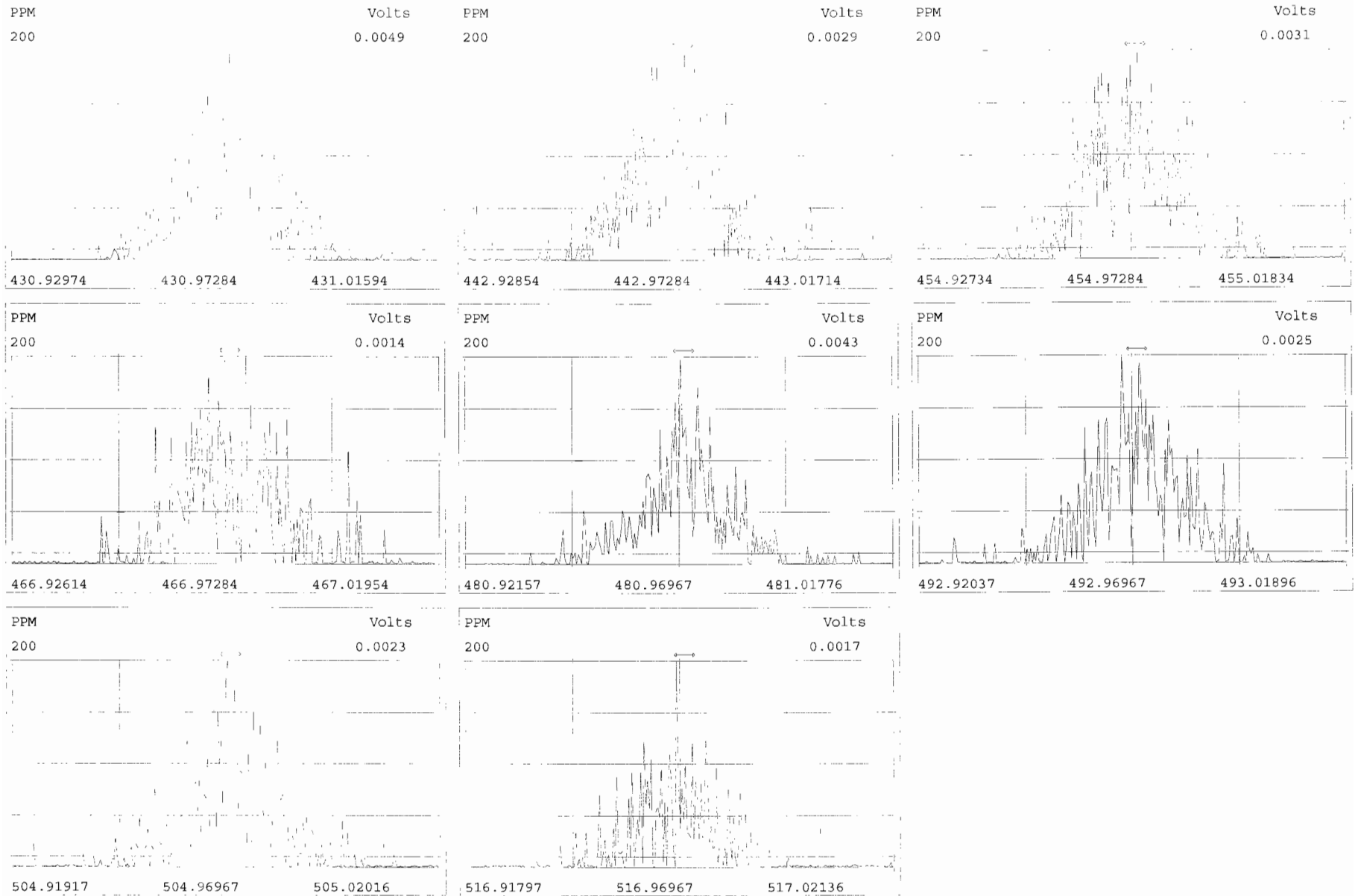
Peak Locate Examination:29-OCT-2019:10:13 File:191029D1

Experiment:OCDD_DB5 Function:4 Reference:PFK

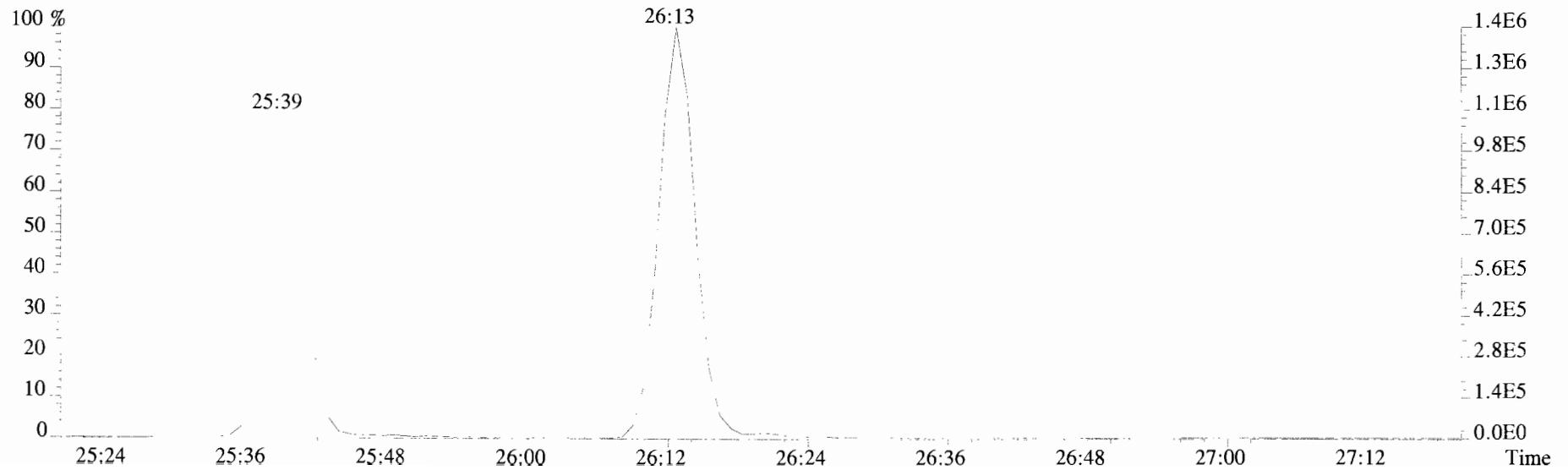
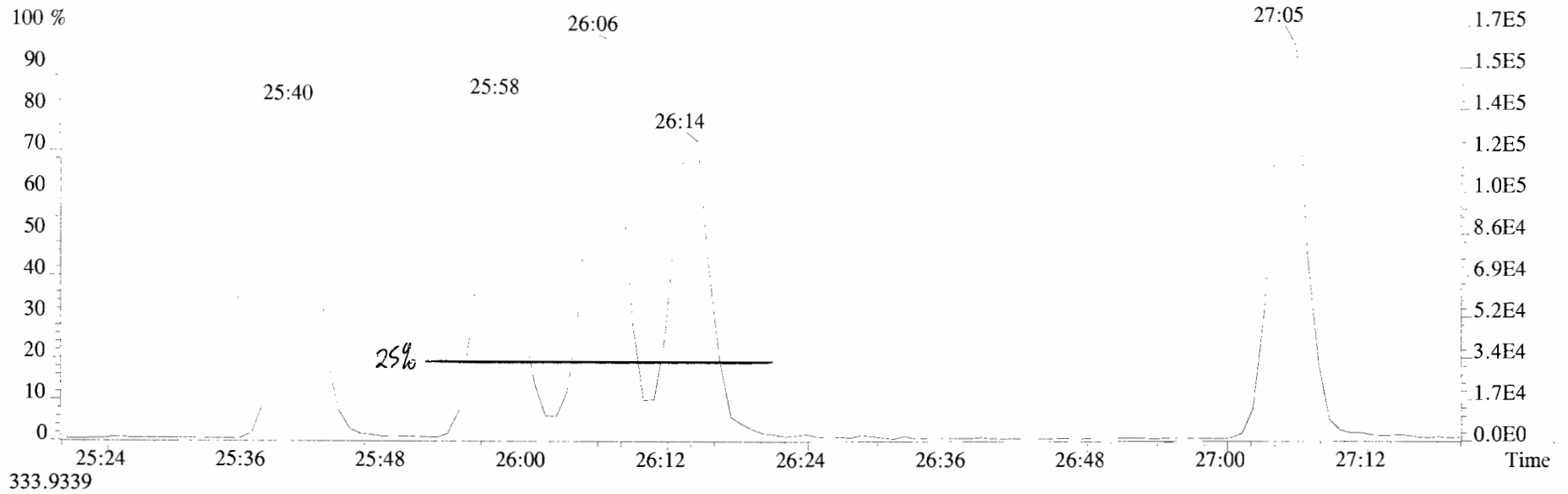


Peak Locate Examination:29 OCT 2019:10:14 File:191029D1

Experiment:OCDD_DB5 Function:5 Reference:PFK



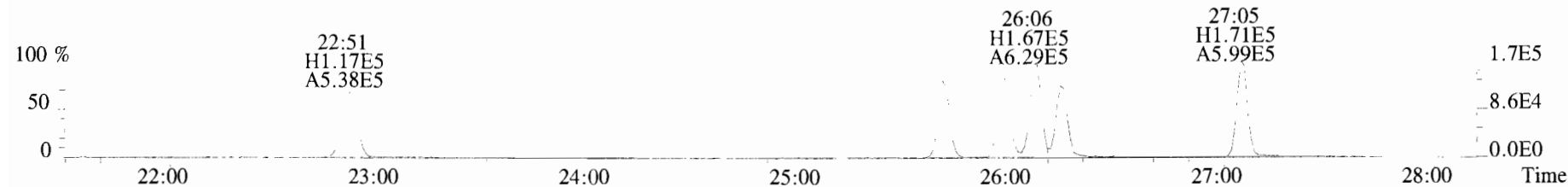
File:191029D1 #1-493 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



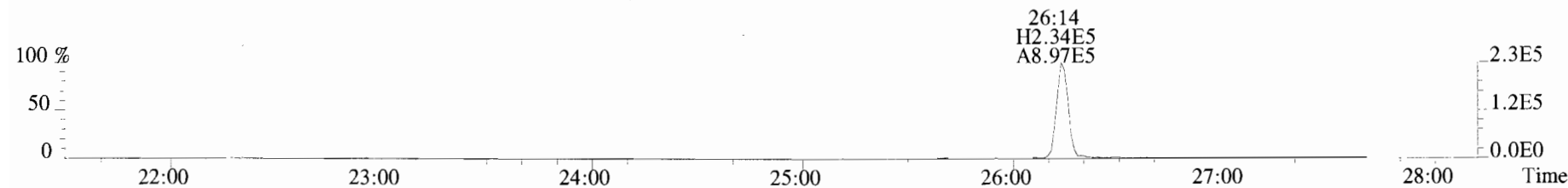
File:191029D1 #1-493 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



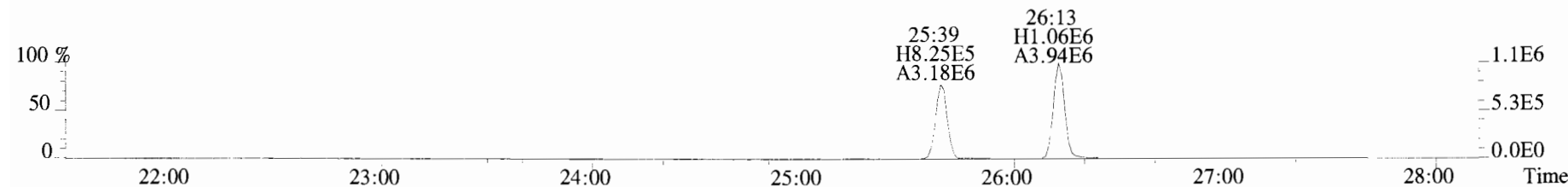
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



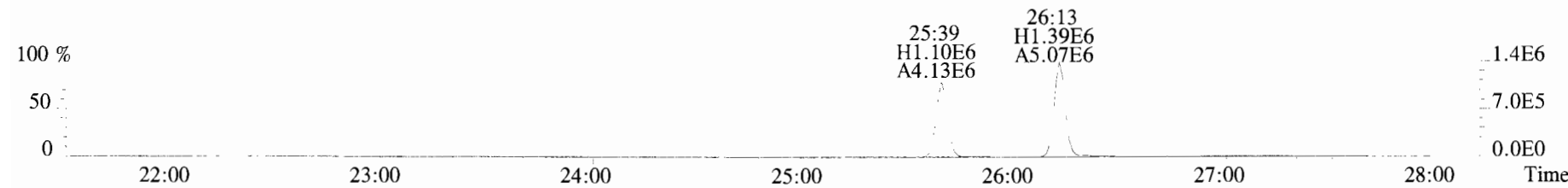
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



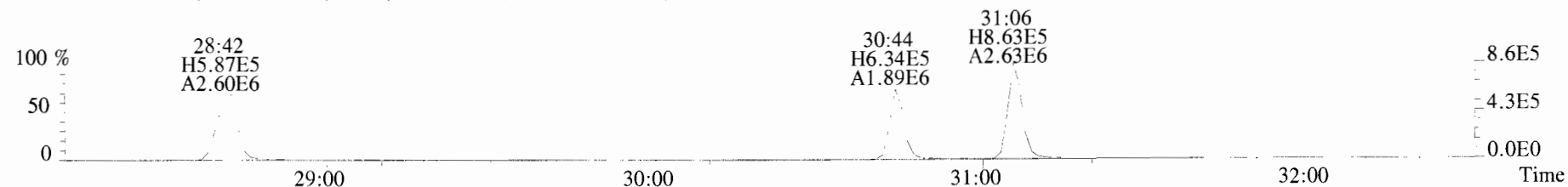
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



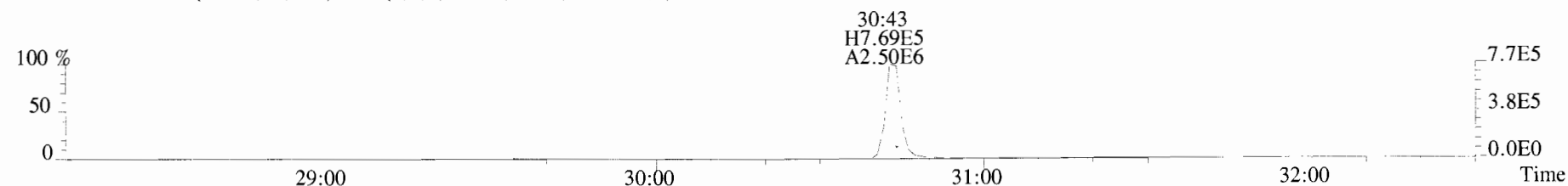
File:191029D1 #1-211 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



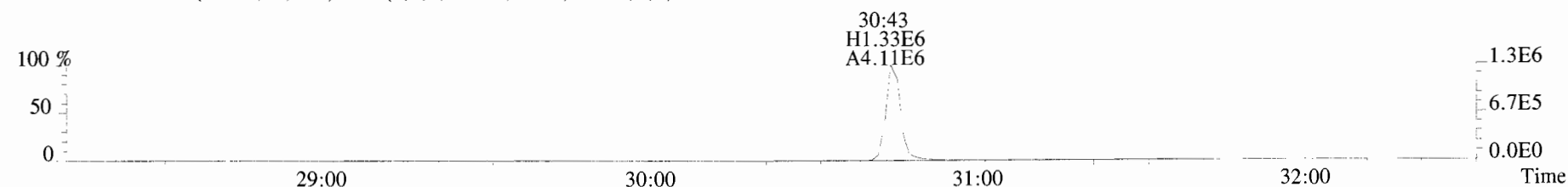
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



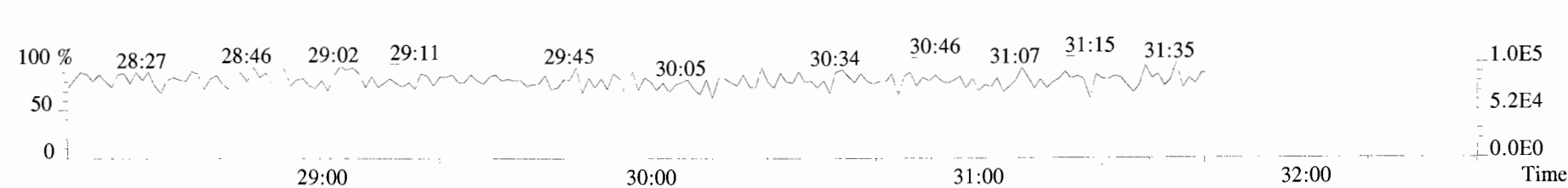
365.8978 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



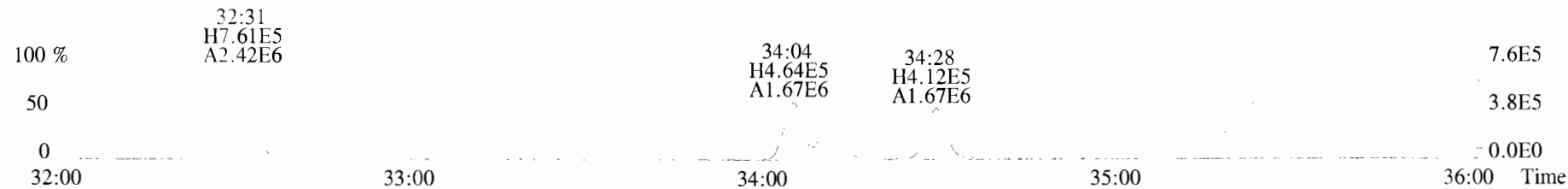
367.8949 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



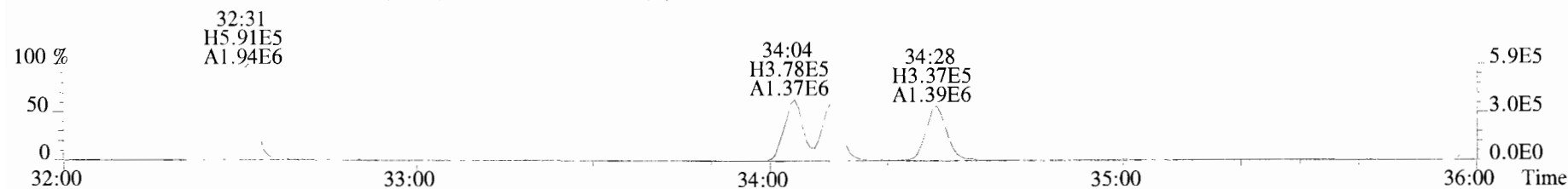
366.9792 F:2



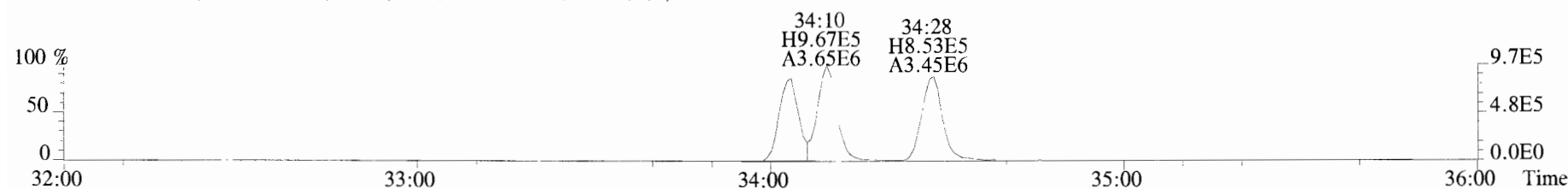
File:191029D1 #1-385 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaF
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



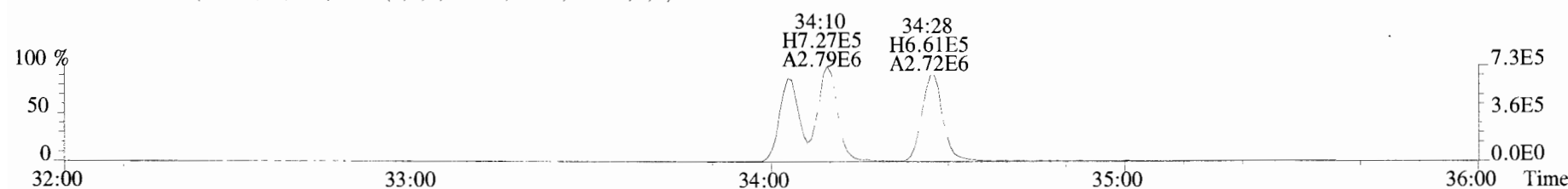
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



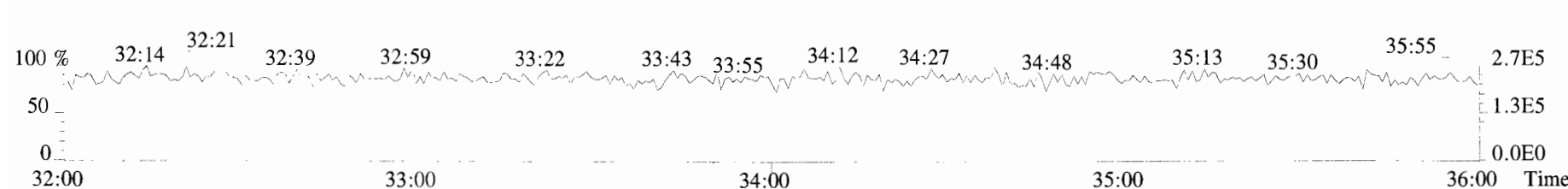
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



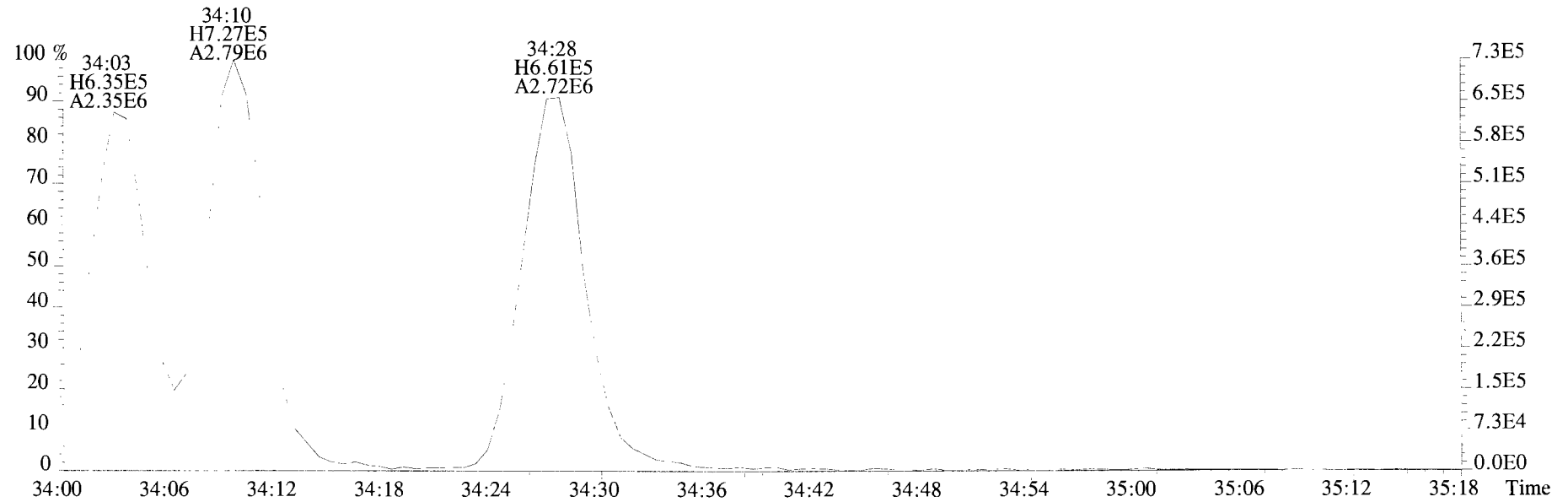
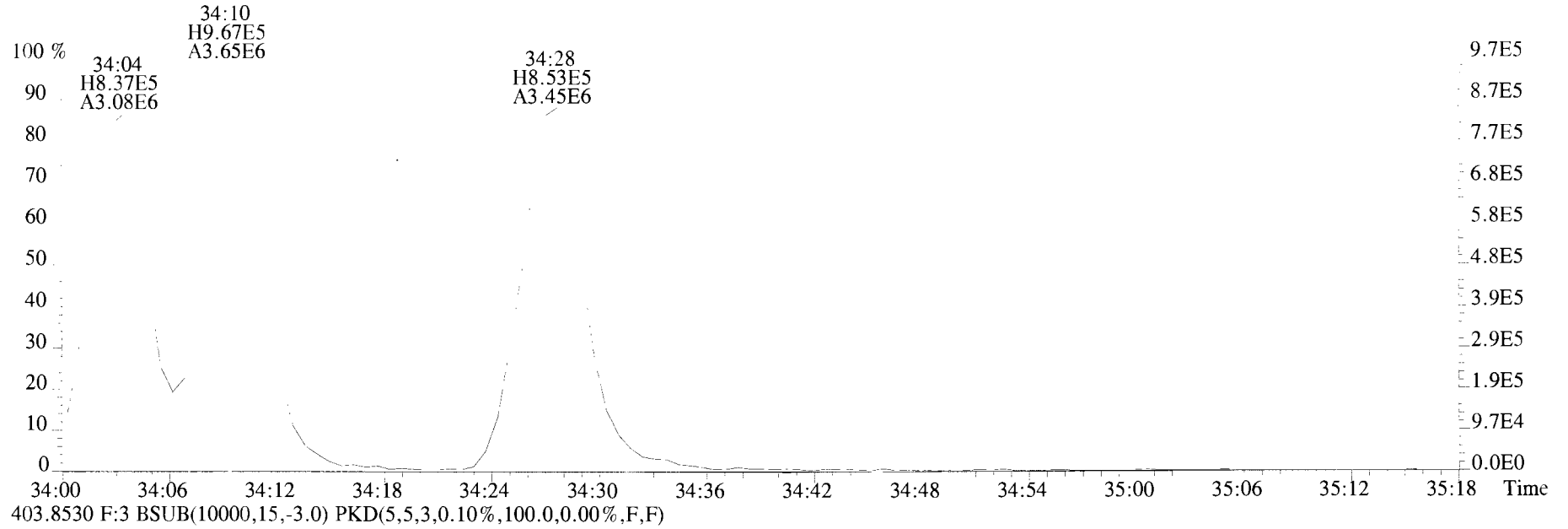
403.8530 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



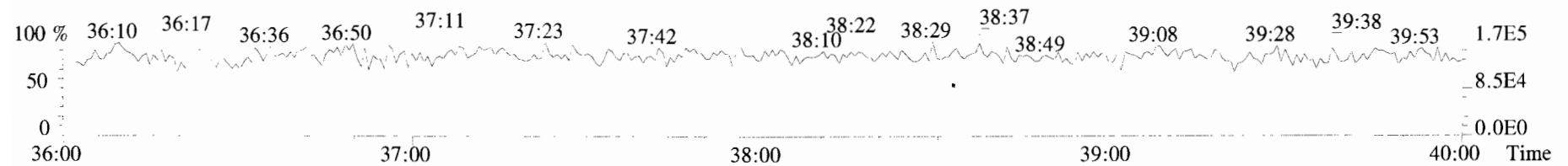
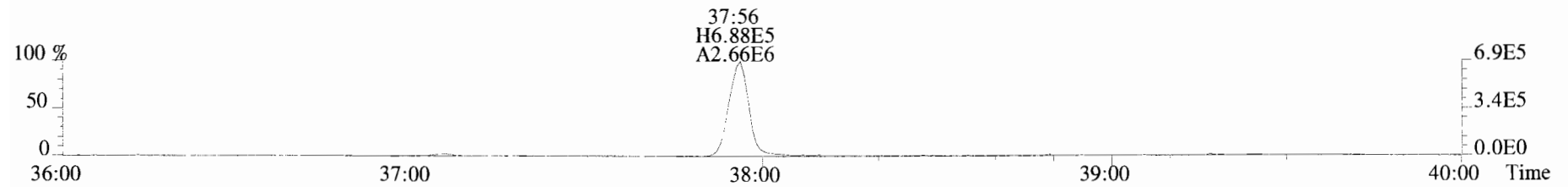
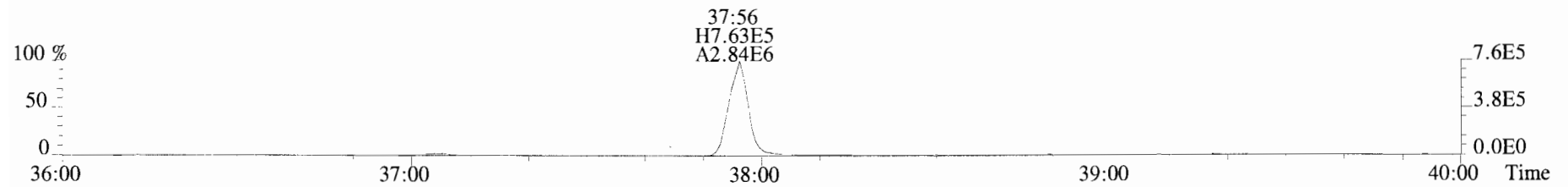
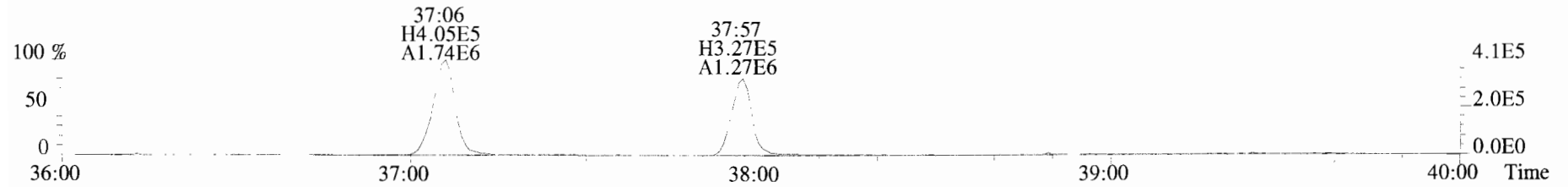
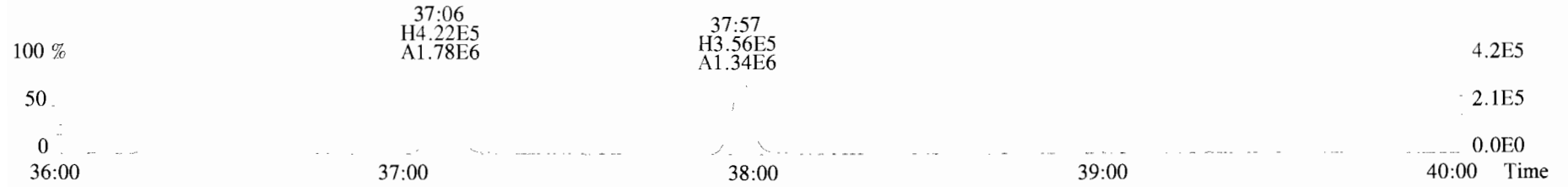
392.9760 F:3



File:191029D1 #1-385 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



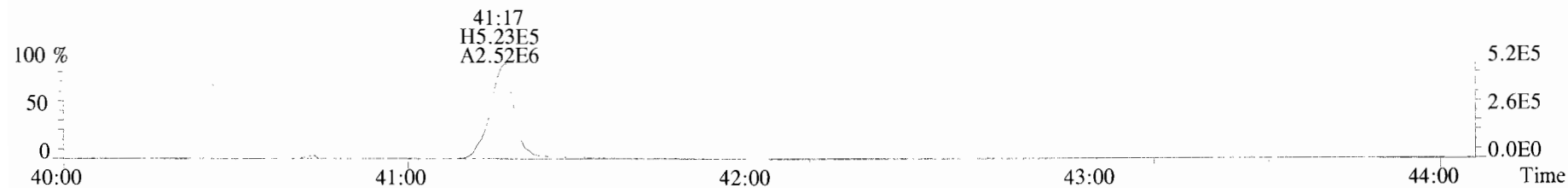
File:191029D1 #1-356 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



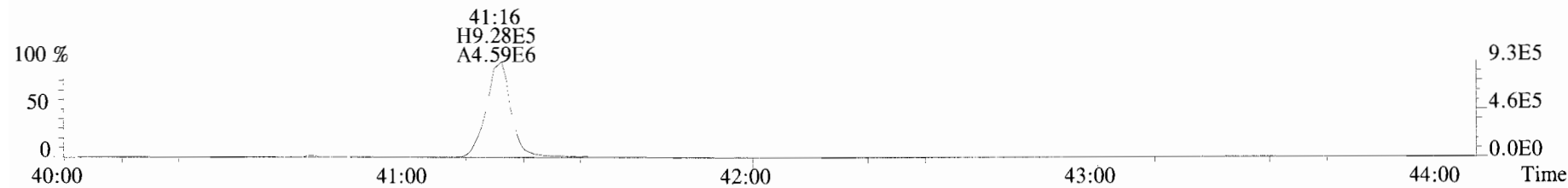
File:191029D1 #1-432 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



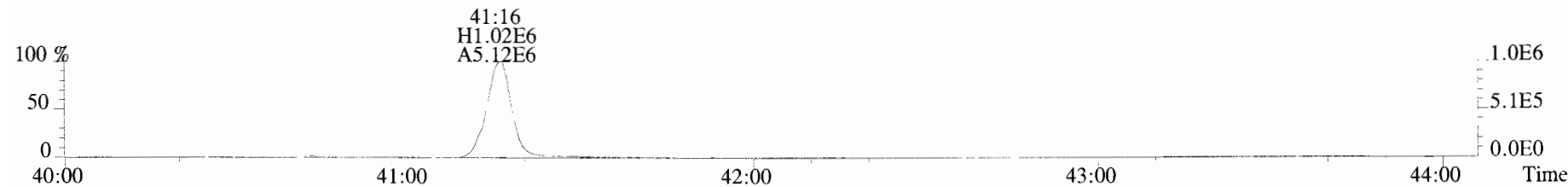
459.7348 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



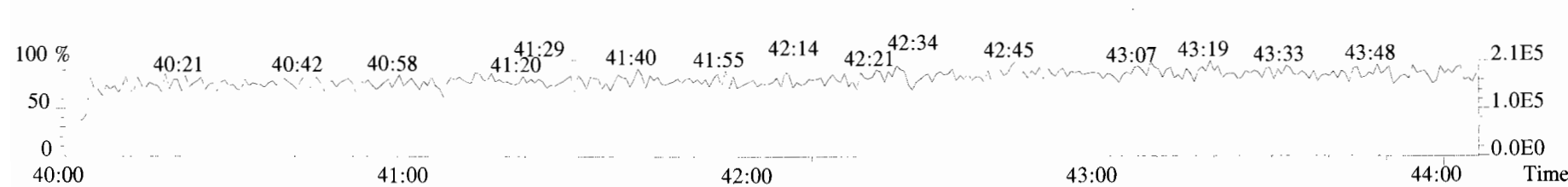
469.7780 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



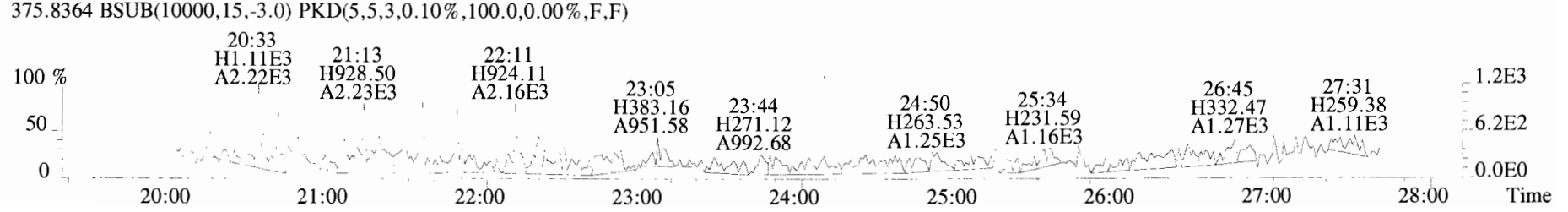
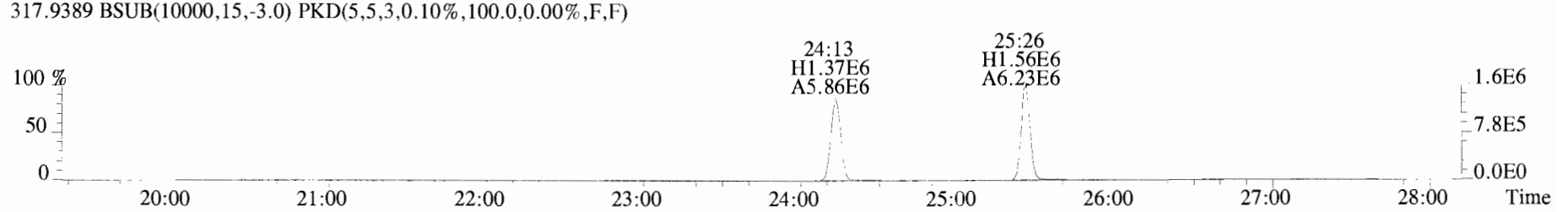
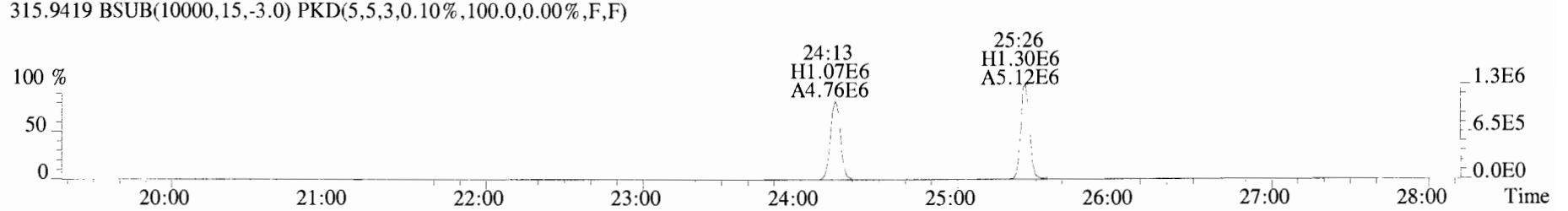
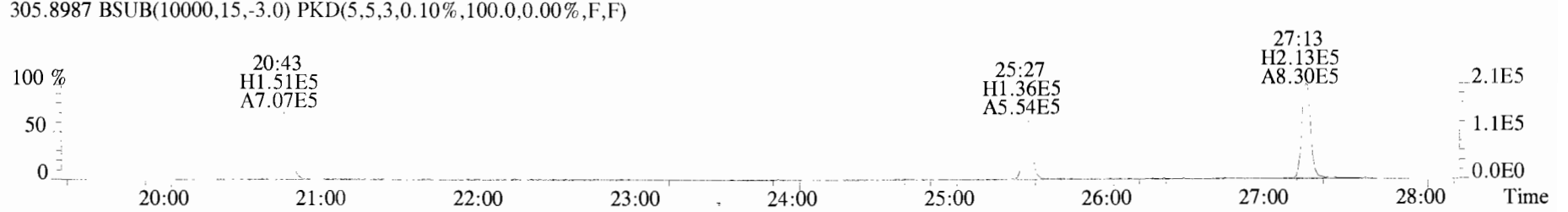
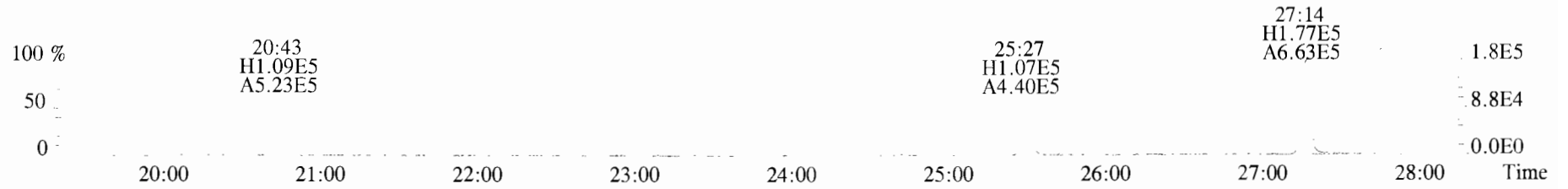
471.7750 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



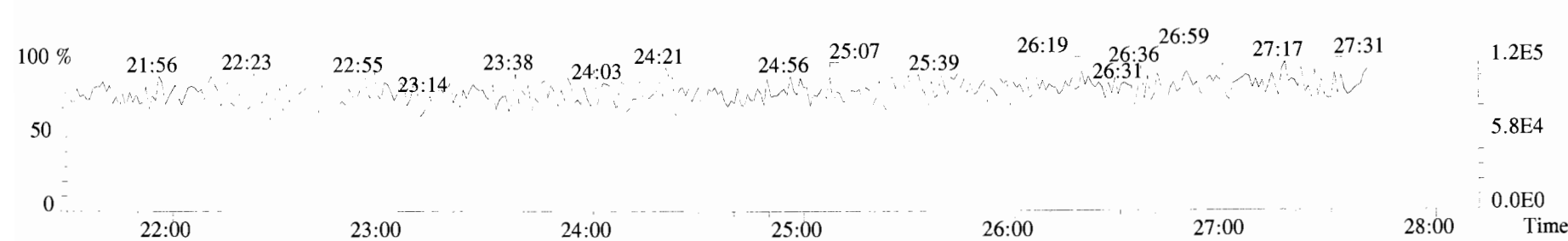
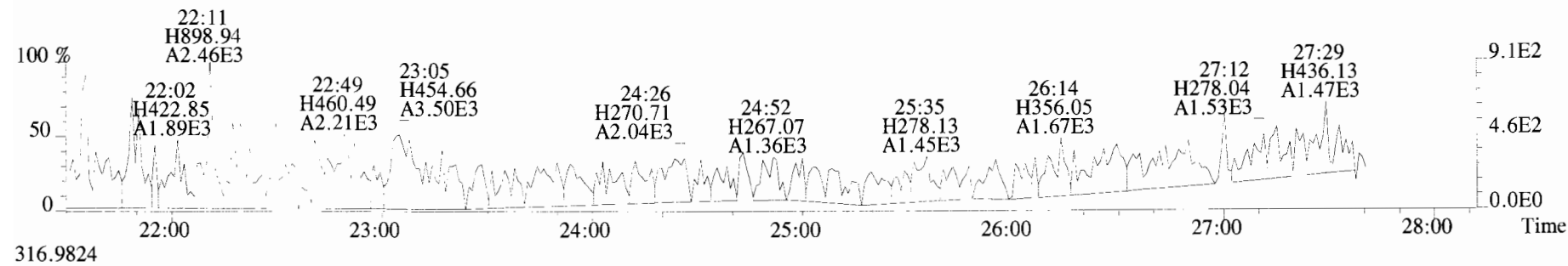
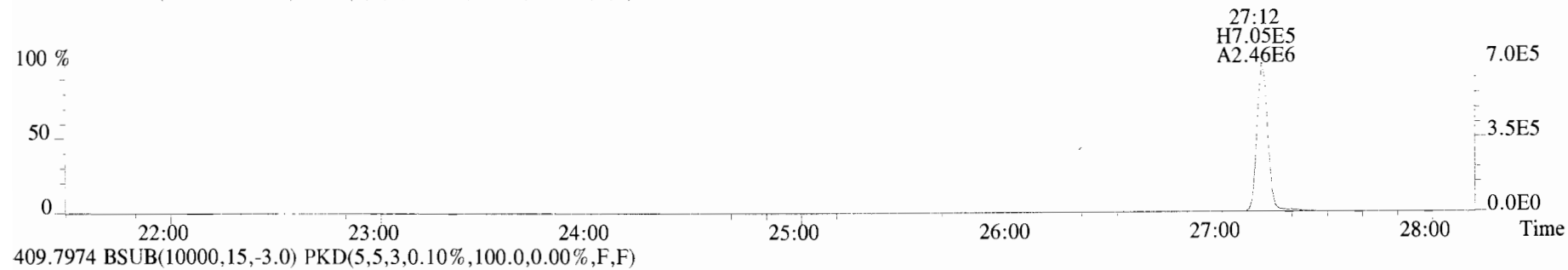
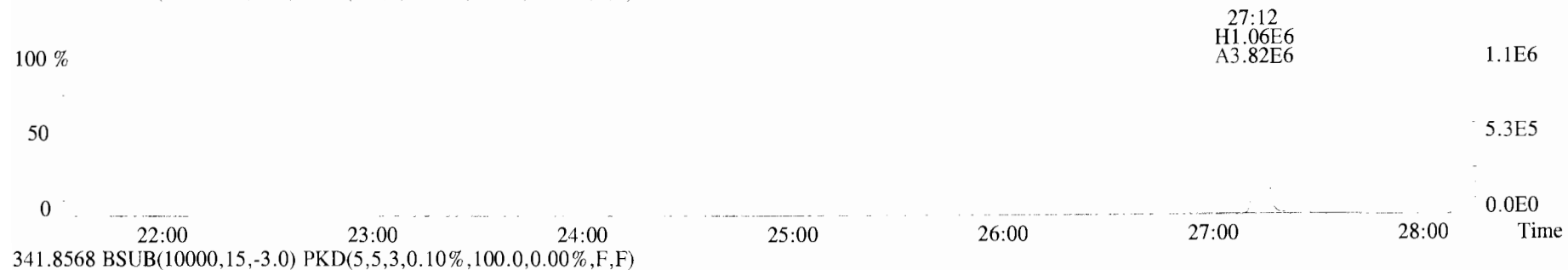
454.9728 F:5



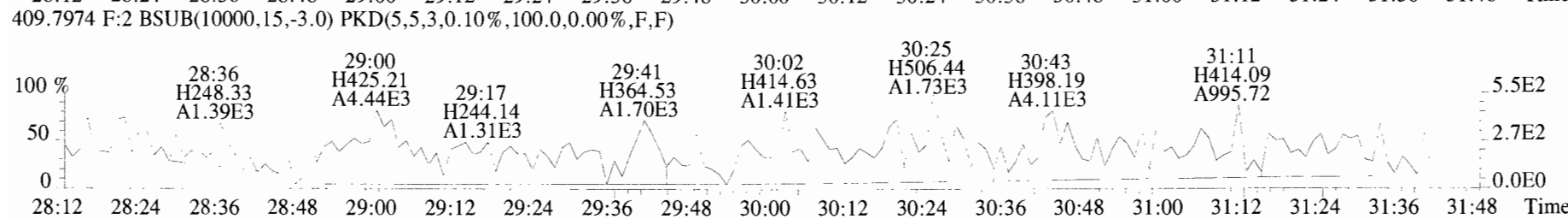
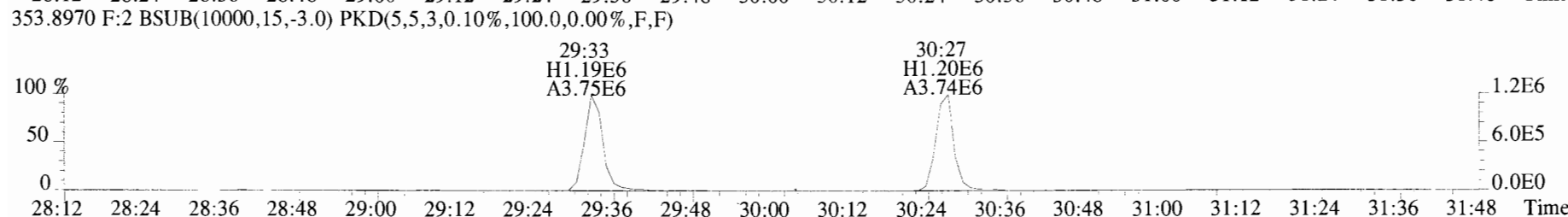
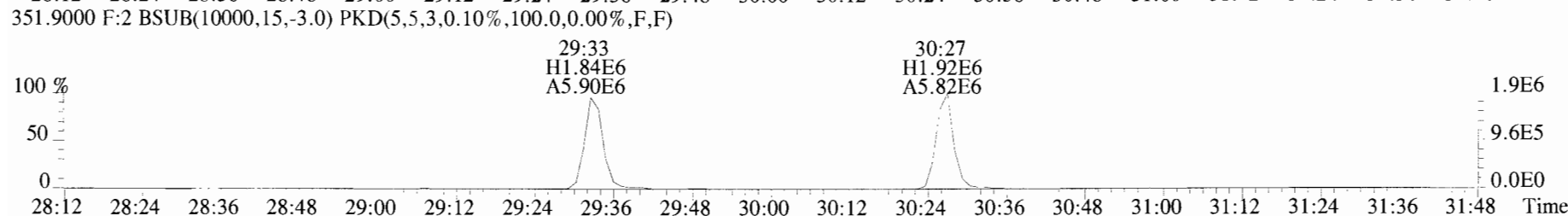
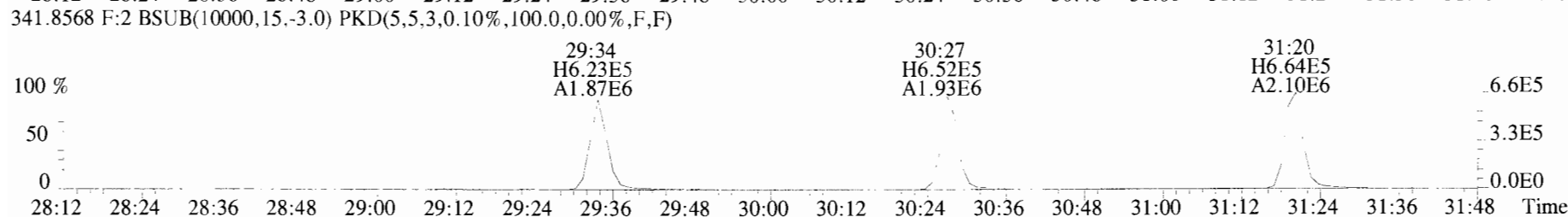
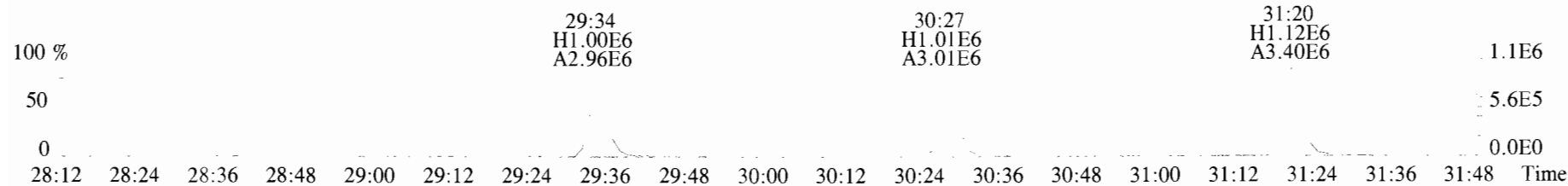
File:191029D1 #1-493 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



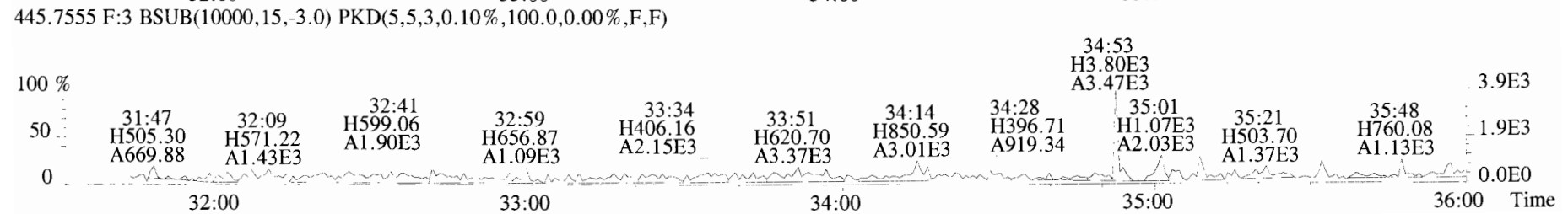
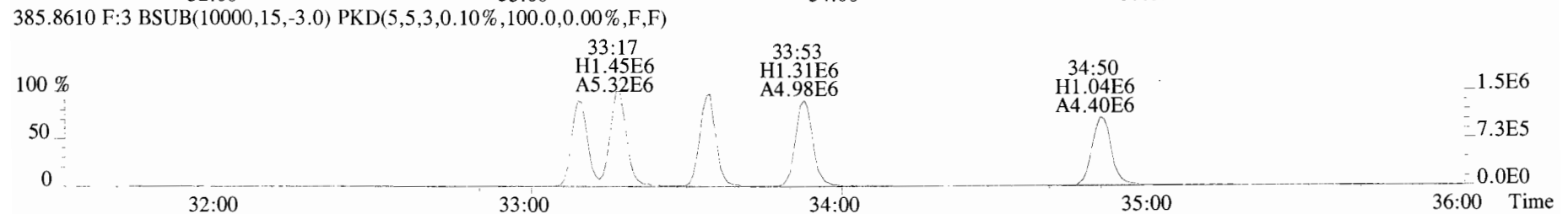
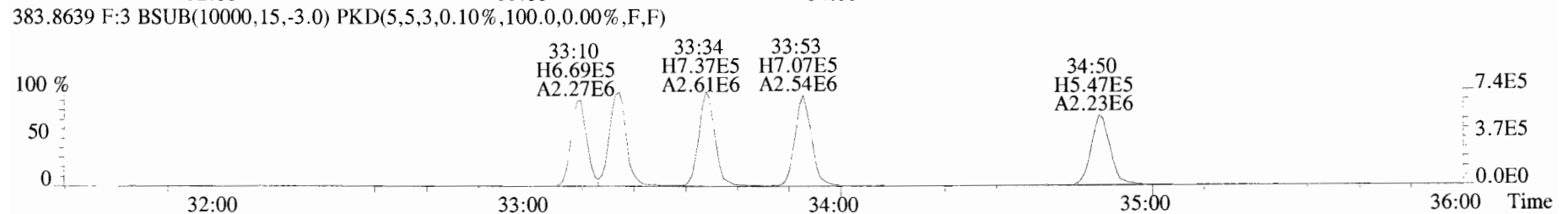
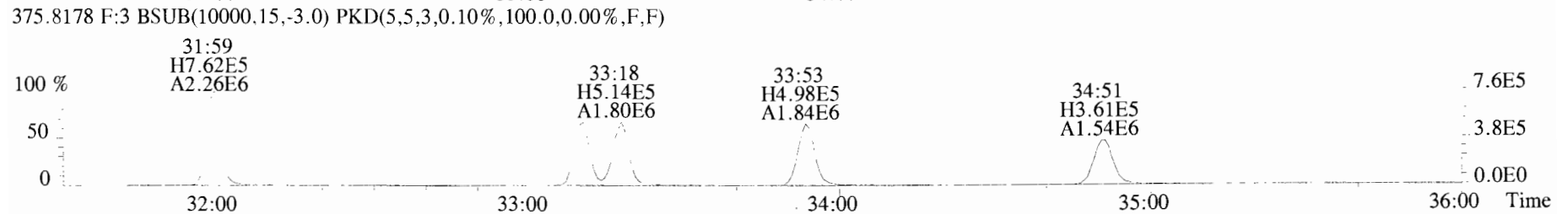
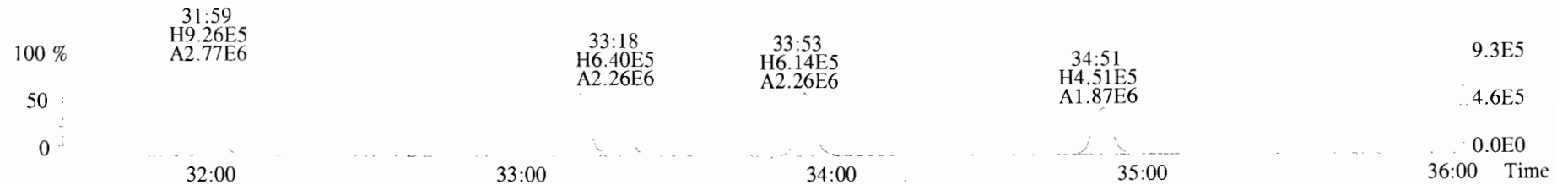
File:191029D1 #1-493 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 BSUB(10000,15,-3.0) PKD(5.5,3,0.10%,100.0,0.00%,F,F)



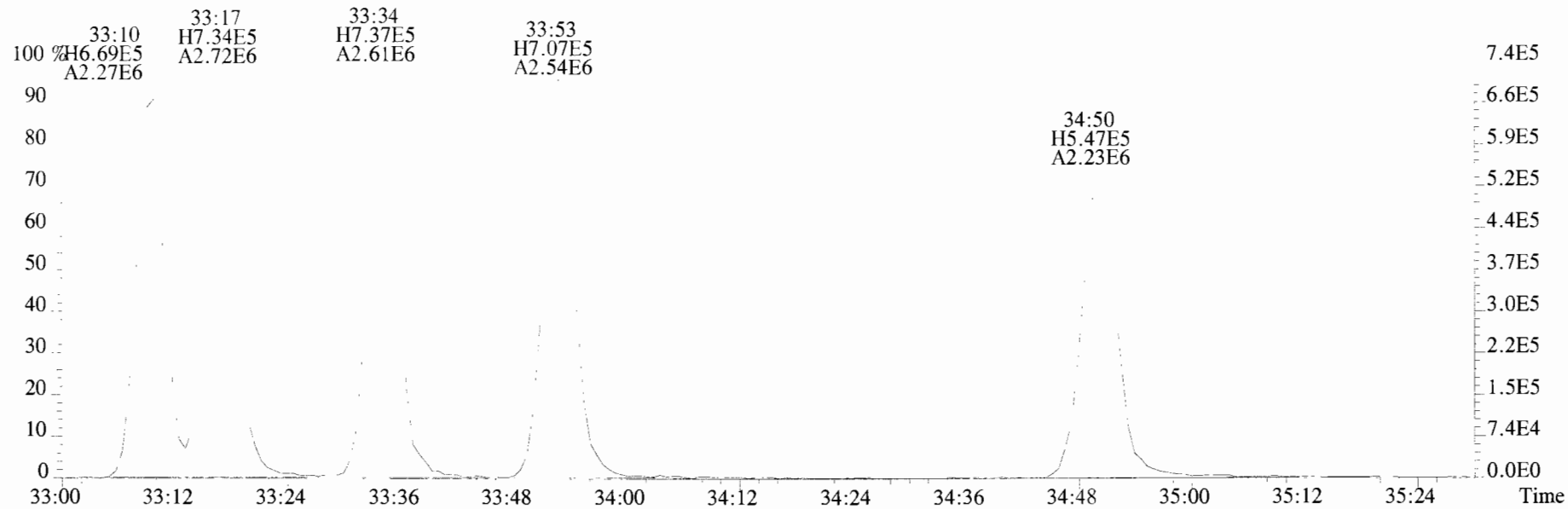
File:191029D1 #1-211 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



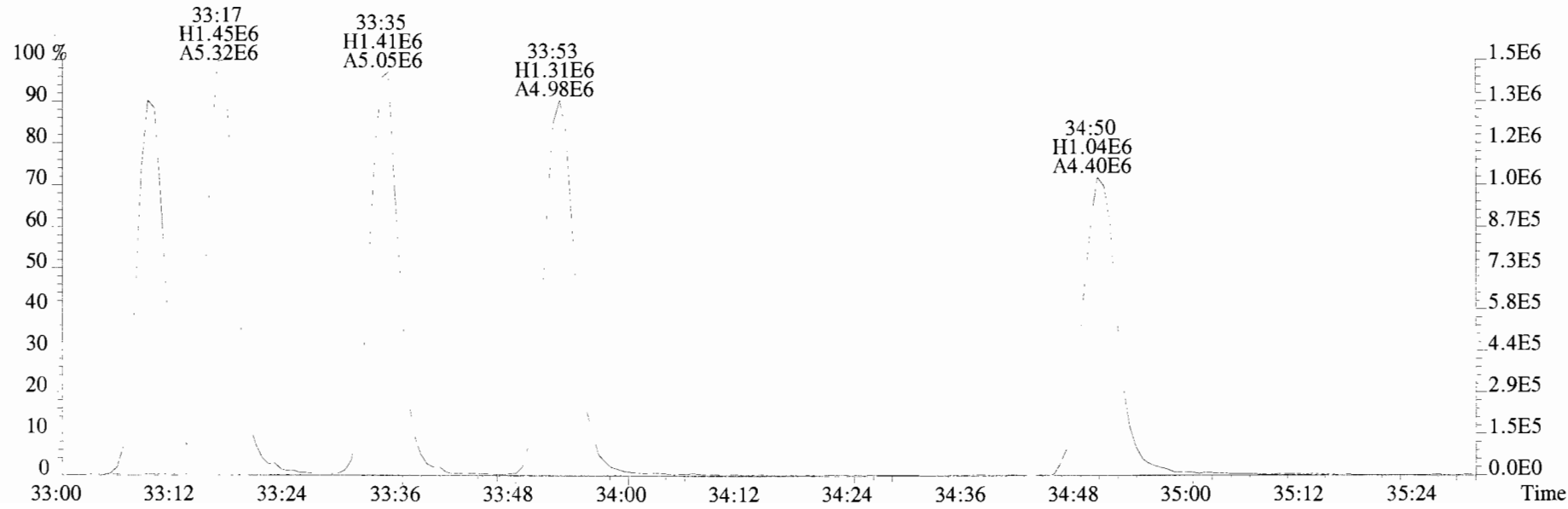
File:191029D1 #1-385 Acq:29-OCT-2019 10:15:38 GC FI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



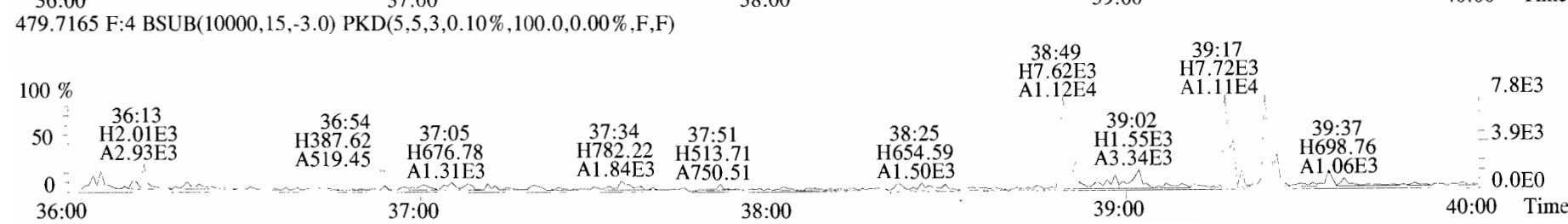
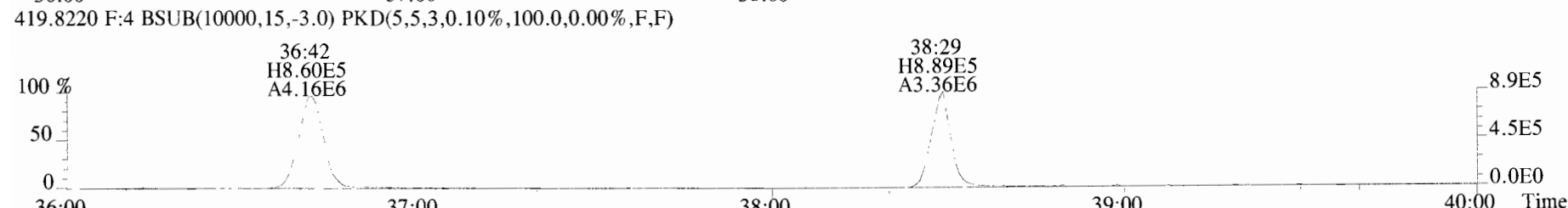
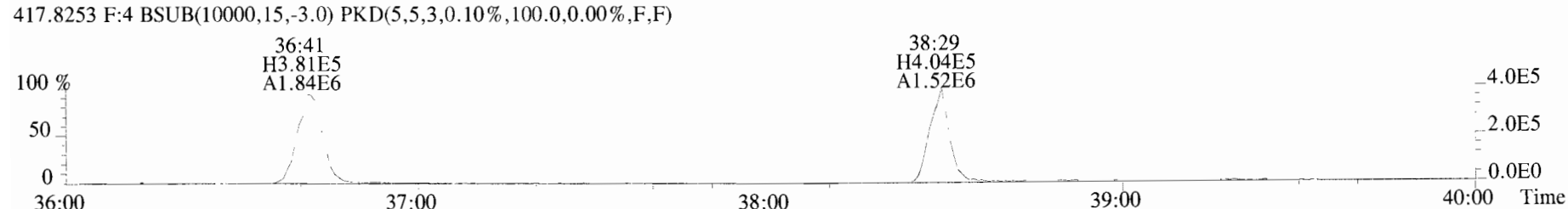
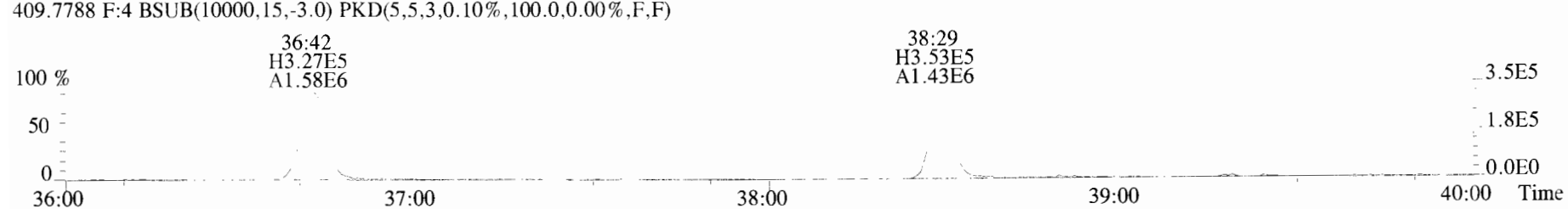
File:191029D1 #1-385 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



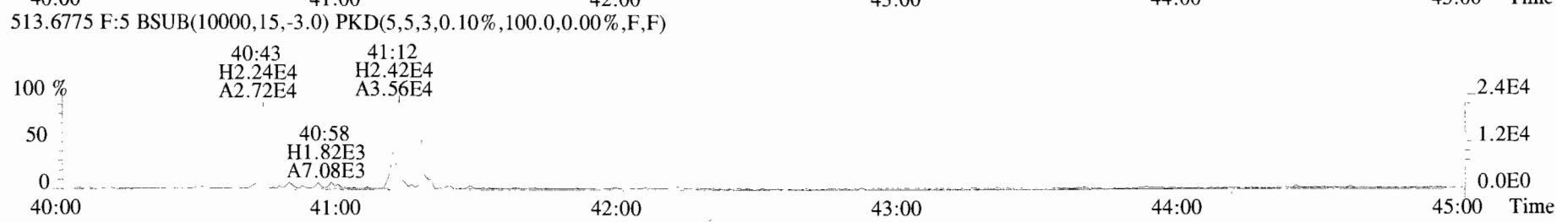
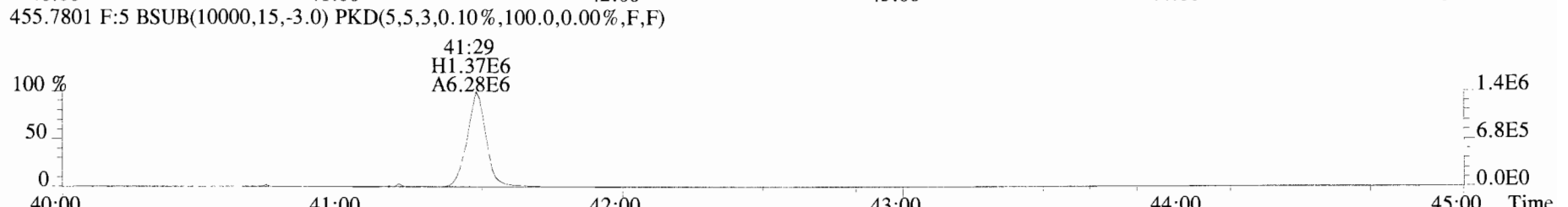
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191029D1 #1-356 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

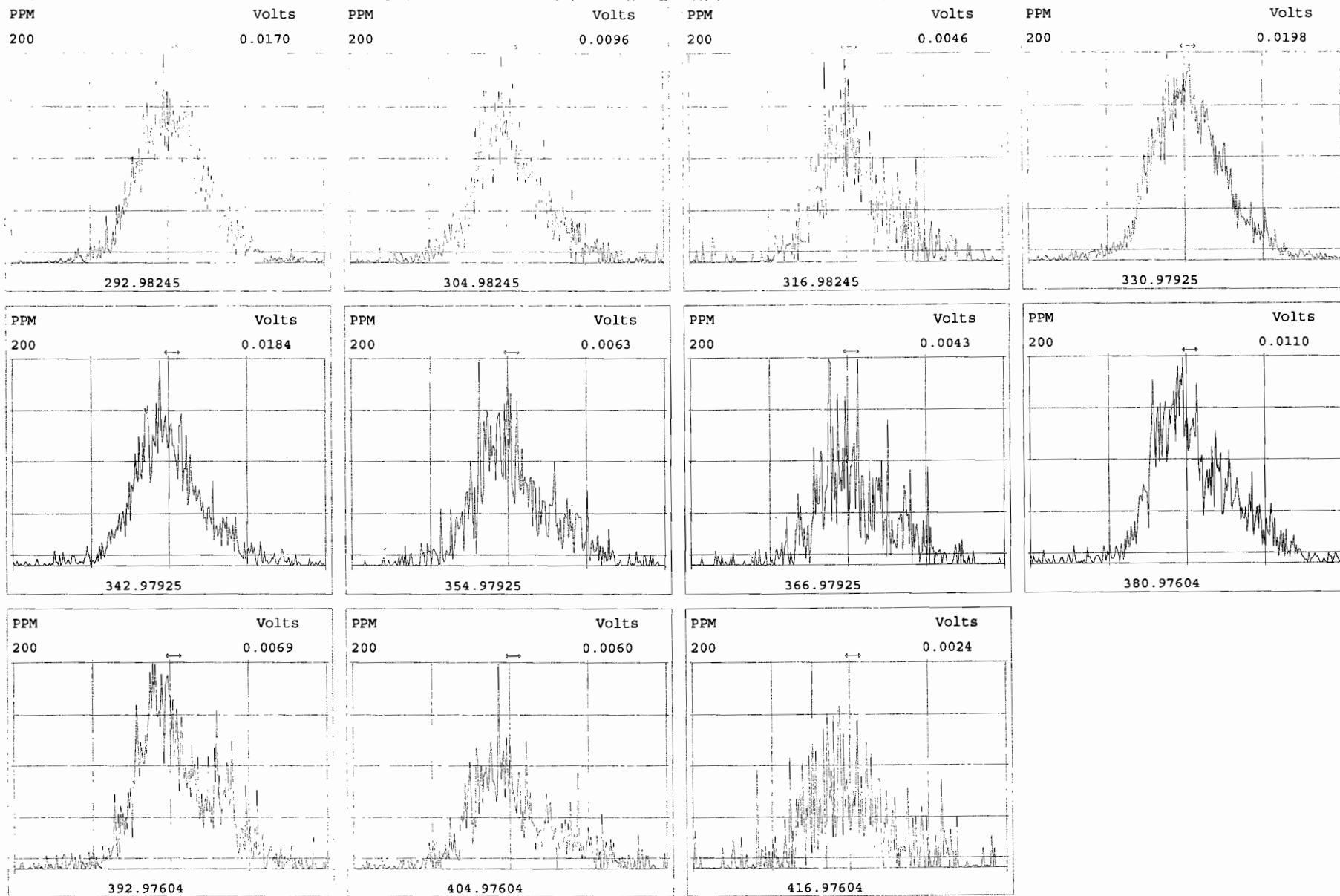


File:191029D1 #1-432 Acq:29-OCT-2019 10:15:38 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191029D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



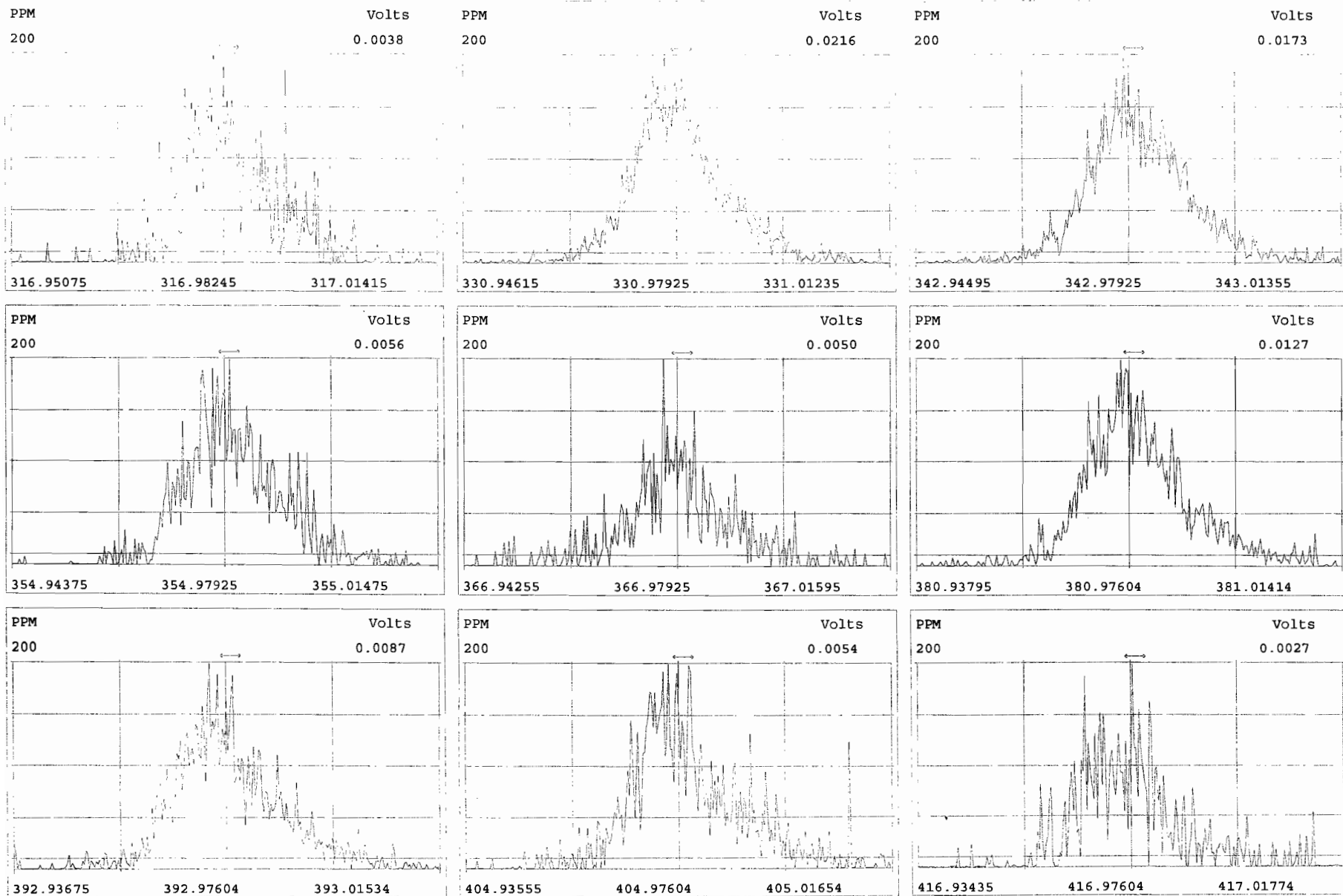
Peak Locate Examination:29-OCT-2019:22:22 File:RES_CHECK

Experiment:OCDD_DB5 Function:1 Reference:PFK



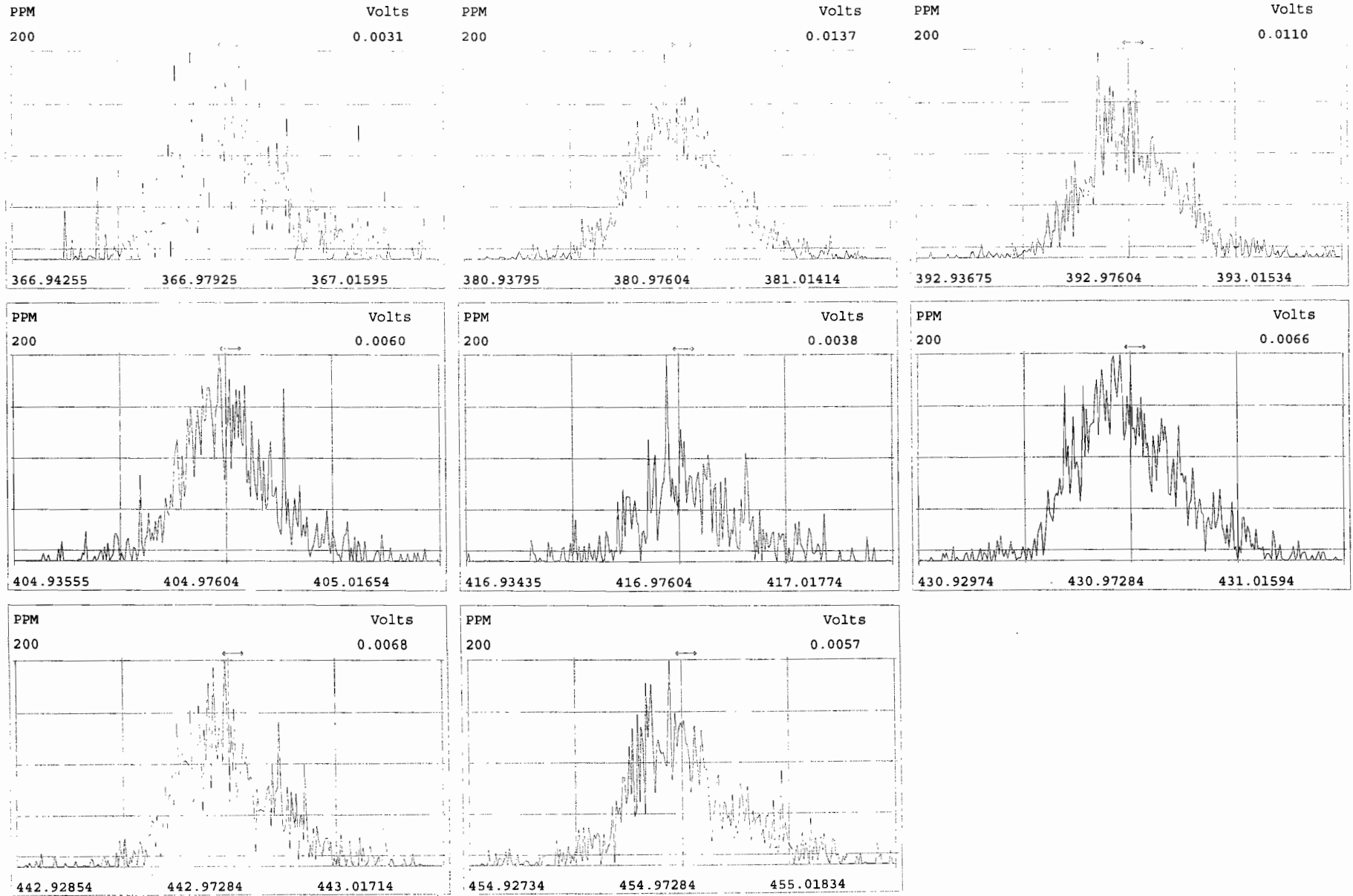
Peak Locate Examination:29-OCT-2019:22:23 File:RES_CHECK

Experiment:OCDD_DB5 Function:2 Reference:PFK



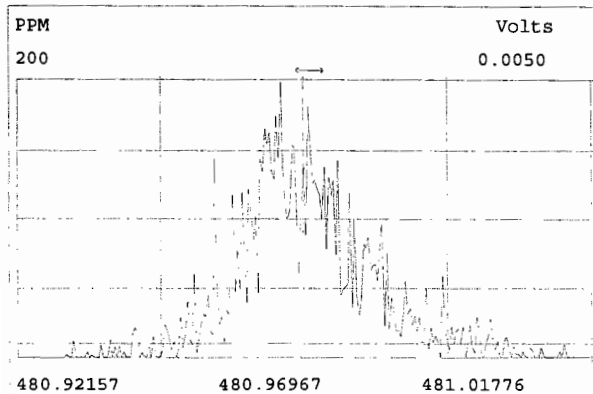
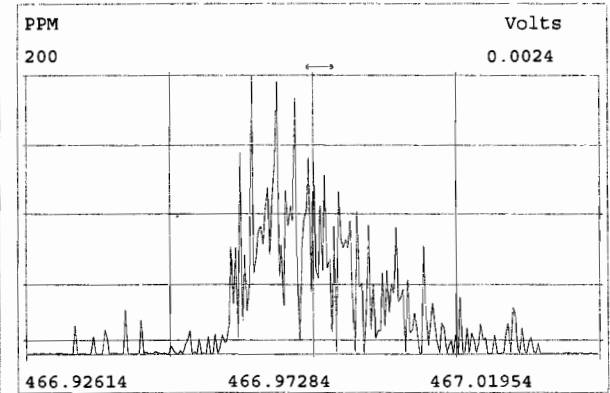
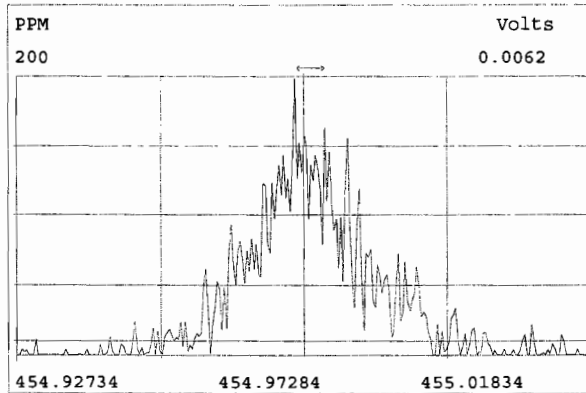
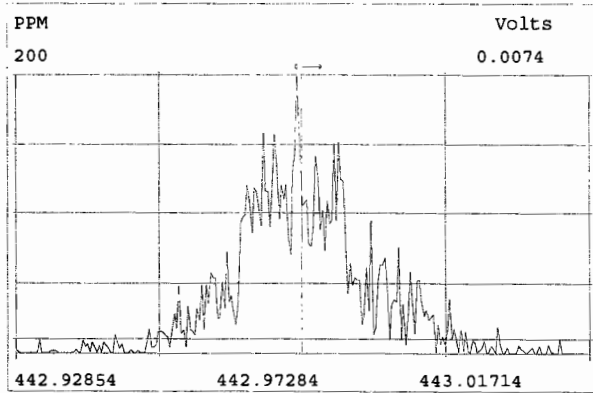
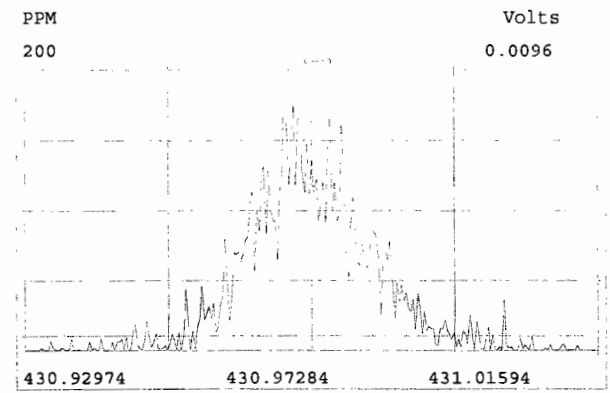
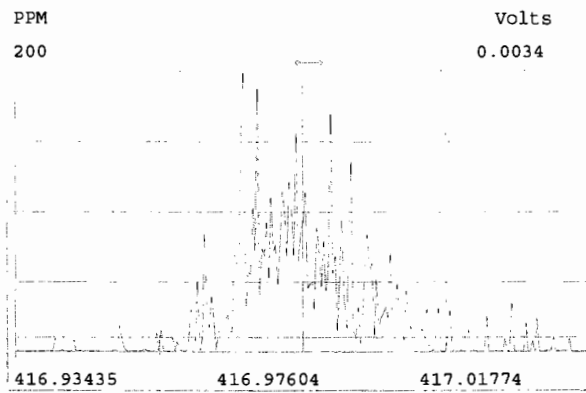
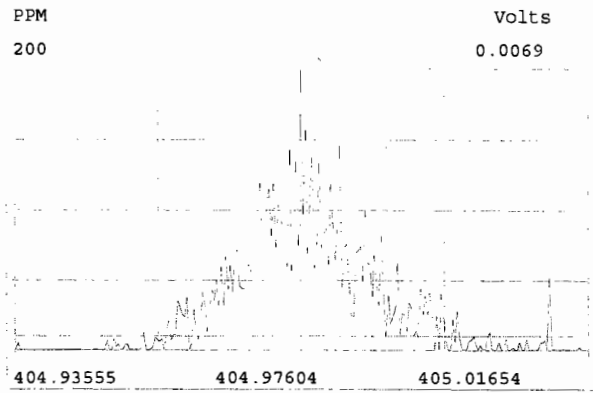
Peak Locate Examination:29-OCT-2019:22:24 File:RES_CHECK

Experiment:OCDD_DB5 Function:3 Reference:PFK



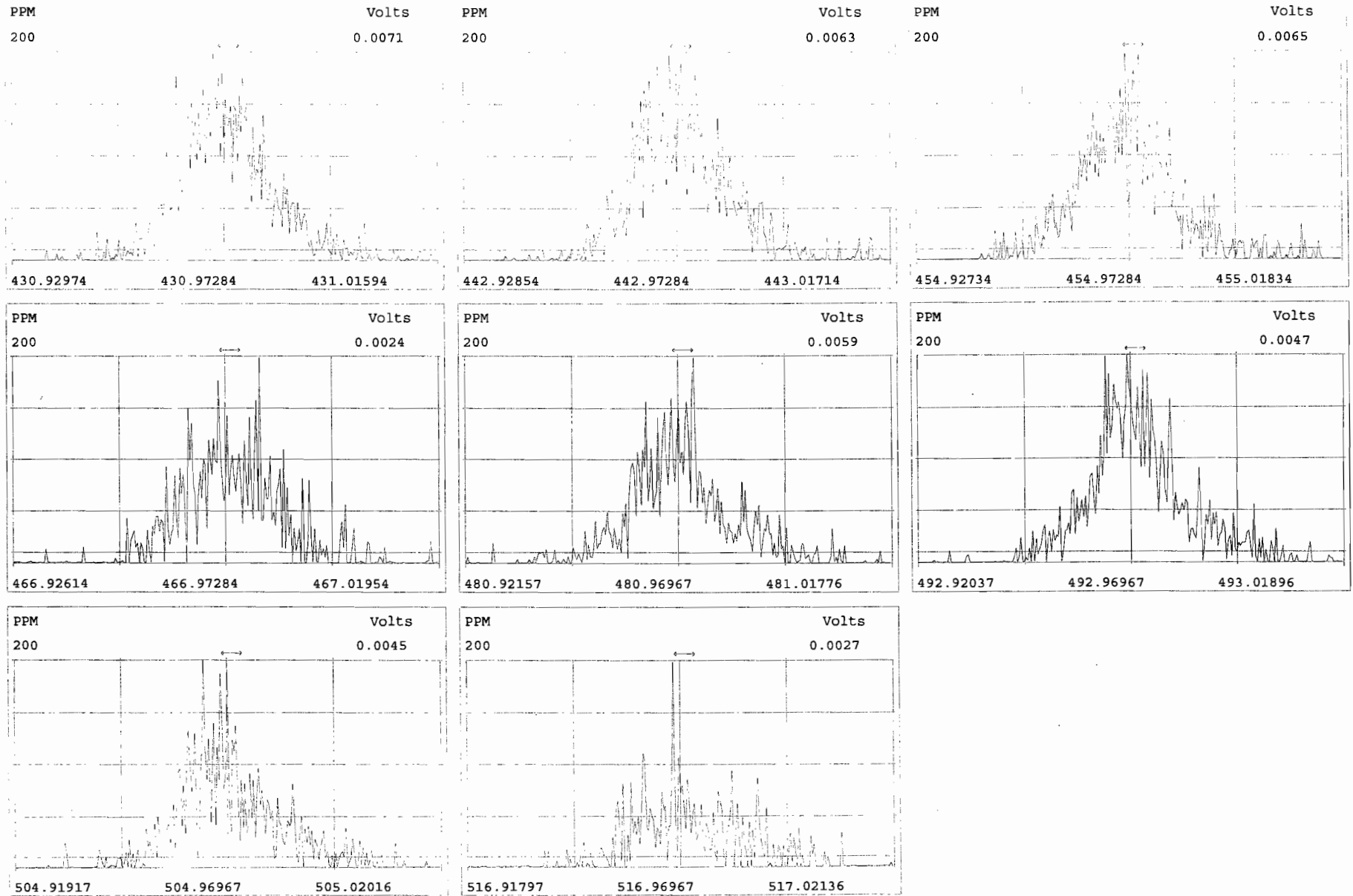
Peak Locate Examination:29-OCT-2019:22:25 File:RES_CHECK

Experiment:OCDD_DB5 Function:4 Reference:PFK



Peak Locate Examination:29-OCT-2019:22:26 File:RES_CHECK

Experiment:OCDD_DB5 Function:5 Reference:PFK



HRMS CALIBRATION STANDARDS REVIEW CHECKLIST

Beg. Calibration ID: ST191106D1-1

Reviewed By: CT 11/07/19
Initials & Date

End Calibration ID: NA

| | <u>Beg.</u> | <u>End</u> | | <u>Beg.</u> | <u>End</u> |
|---|-------------------------------------|-------------------------------------|--|-------------------------------------|-------------------------------------|
| Ion abundance within QC limits? | <input checked="" type="checkbox"/> | <input type="checkbox" value="NA"/> | Mass resolution \geq | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Concentrations within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> 5k <input type="checkbox"/> 6-8K <input type="checkbox"/> 8K <input checked="" type="checkbox"/> 10K 1614 1699 429 1613/1668/8280 | | |
| TCDD/TCDF Valleys <25% | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Intergrated peaks display correctly? | <input checked="" type="checkbox"/> | <input type="checkbox" value="NA"/> |
| First and last eluters present? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | GC Break <20% | <input type="checkbox" value="NA"/> | |
| Retention Times within criteria? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <u>8280 CS1 End Standard:</u> | | |
| Verification Std. named correctly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | - Ratios within limits, S/N <2.5:1, CS1 within 12 hours | <input type="checkbox" value="NA"/> | |
| (ST-Year-Month-Day-VG ID) | | | | | |
| Forms signed and dated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Comments: | <div style="height: 150px;"></div> | |
| Correct ICAL referenced? | <input type="checkbox" value="DB"/> | <input type="checkbox"/> | | | |
| <u>Run Log:</u> | | | | | |
| - Correct instrument listed? | <input checked="" type="checkbox"/> | <input type="checkbox" value="V"/> | | | |
| - Samples within 12 hour clock? | <input type="checkbox" value="Y"/> | <input type="checkbox" value="N"/> | | | |
| - Bottle position verified? | <u>DB</u> | | | | |

Vista Analytical Laboratory - Injection Log Run file: 191106D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

| Data file | S# | Sample ID | Analyst | Acq date | Acq time | CCal | ECal |
|-----------|----|------------------|---------|----------|----------|--------------|------|
| 191106D1 | 1 | ST191106D1-1 | DB | 6-NOV-19 | 11:41:40 | ST191106D1-1 | NA |
| 191106D1 | 2 | SOLVENT BLANK | DB | 6-NOV-19 | 12:29:34 | ST191106D1-1 | NA |
| 191106D1 | 3 | 1903565-05RE1@5X | DB | 6-NOV-19 | 13:17:30 | ST191106D1-1 | NA |
| 191106D1 | 4 | 1903565-16RE1 | DB | 6-NOV-19 | 14:05:25 | ST191106D1-1 | NA |
| 191106D1 | 5 | 1903460-03 | DB | 6-NOV-19 | 14:53:21 | ST191106D1-1 | NA |
| 191106D1 | 6 | 1903651-05 | DB | 6-NOV-19 | 15:41:12 | ST191106D1-1 | NA |
| 191106D1 | 7 | 1903651-06 | DB | 6-NOV-19 | 16:29:02 | ST191106D1-1 | NA |
| 191106D1 | 8 | 1903651-07 | DB | 6-NOV-19 | 17:16:52 | ST191106D1-1 | NA |
| 191106D1 | 9 | 1903653-01 | DB | 6-NOV-19 | 18:04:47 | ST191106D1-1 | NA |
| 191106D1 | 10 | B9J0312-DUP2 | DB | 6-NOV-19 | 18:52:31 | ST191106D1-1 | NA |
| 191106D1 | 11 | 1903653-02 | DB | 6-NOV-19 | 19:40:15 | ST191106D1-1 | NA |
| 191106D1 | 12 | 1903653-03 | DB | 6-NOV-19 | 20:28:00 | ST191106D1-1 | NA |
| 191106D1 | 13 | 1903653-04 | DB | 6-NOV-19 | 21:15:43 | ST191106D1-1 | NA |
| 191106D1 | 14 | 1903431-01 | DB | 6-NOV-19 | 22:03:32 | ST191106D1-1 | NA |
| 191106D1 | 15 | 1903431-02 | DB | 6-NOV-19 | 22:51:22 | ST191106D1-1 | NA |

FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: ST191106D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-SMS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

| NATIVE ANALYTES | M/Z'S | ION | QC | Pass | CONC. FOUND | CONC. RANGE (3) (ng/mL) |
|---------------------|----------------------|-----------------|---------------|------|----------------|-------------------------------|
| | FORMING RATIO (1) | ABUND. RATIO | LIMITS (2) | | | |
| 2,3,7,8-TCDD | M/M+2 | 0.77 | 0.65-0.89 | y | 11.4 | 7.8 - 12.9 |
| 1,2,3,7,8-PeCDD | M/M+2 | 0.63 | 0.54-0.72 | y | 50.5 | 8.2 - 12.3 (4) 39.0 - 65.0 |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.25 | 1.05-1.43 | y | 50.5 | 39.0 - 64.0 |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.29 | 1.05-1.43 | y | 50.1 | 39.0 - 64.0 |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.26 | 1.05-1.43 | y | 50.3 | 41.0 - 61.0 |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.02 | 0.88-1.20 | y | 46.8 | 43.0 - 58.0 |
| OCDD | M+2/M+4 | 0.87 | 0.76-1.02 | y | 98.8 | 79.0 - 126.0 |
| 2,3,7,8-TCDF | M/M+2 | 0.72 | 0.65-0.89 | y | 8.85 | 8.4 - 12.0 8.6 - 11.6 (4) |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.54 | 1.32-1.78 | y | 55.7 | 41.0 - 60.0 |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.52 | 1.32-1.78 | y | 54.2 | 41.0 - 61.0 |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | y | 48.9 | 45.0 - 56.0 |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | y | 47.7 | 44.0 - 57.0 |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.25 | 1.05-1.43 | y | 50.1 | 44.0 - 57.0 |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.26 | 1.05-1.43 | y | 47.8 | 45.0 - 56.0 |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.03 | 0.88-1.20 | y | 47.2 | 45.0 - 55.0 |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.04 | 0.88-1.20 | y | 47.7 | 43.0 - 58.0 |
| OCDF | M+2/M+4 | 0.86 | 0.76-1.02 | y | 96.1 | 63.0 - 159.0 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 11/6/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

| LABELLED COMPOUNDS | M/Z'S FORMING RATIO (1) | ION ABUND. RATIO | QC LIMITS (2) | Pass | CONC. FOUND | CONC. RANGE (ng/mL) |
|-------------------------|-------------------------------|------------------------|---------------------|------|----------------|---------------------------|
| 13C-2,3,7,8-TCDD | M/M+2 | 0.84 | 0.65-0.89 | y | 95.1 | 82.0 - 121.0 |
| 13C-1,2,3,7,8-PeCDD | M/M+2 | 0.63 | 0.54-0.72 | y | 98.8 | 62.0 - 160.0 |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.33 | 1.05-1.43 | y | 112 | 85.0 - 117.0 |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.30 | 1.05-1.43 | y | 97.2 | 85.0 - 118.0 |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.26 | 1.05-1.43 | y | 99.5 | 85.0 - 118.0 |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.05 | 0.88-1.20 | y | 107 | 72.0 - 138.0 |
| 13C-OCDD | M/M+2 | 0.89 | 0.76-1.02 | y | 241 | 96.0 - 415.0 |
| 13C-2,3,7,8-TCDF | M+2/M+4 | 0.77 | 0.65-0.89 | y | 103 | 71.0 - 140.0 |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.62 | 1.32-1.78 | y | 95.4 | 76.0 - 130.0 |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.62 | 1.32-1.78 | y | 92.6 | 77.0 - 130.0 |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 108 | 76.0 - 131.0 |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 103 | 70.0 - 143.0 |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 102 | 73.0 - 137.0 |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.52 | 0.43-0.59 | y | 105 | 74.0 - 135.0 |
| 13C-1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 0.44 | 0.37-0.51 | y | 97.5 | 78.0 - 129.0 |
| 13C-1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.44 | 0.37-0.51 | y | 106 | 77.0 - 129.0 |
| 13C-OCDF | M+2/M+4 | 0.86 | 0.76-1.02 | y | 242 | 96.0 - 415.0 |
| CLEANUP STANDARD (3) | | | | | | |
| 37Cl-2,3,7,8-TCDD | | | | | 9.45 | 7.9 - 12.7 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified

(3) No ion abundance ratio; report concentration found.

Analyst: DB

Date: 11/6/19

FORM 5
PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

ZB-5MS IS Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

| ISOMERS | ABSOLUTE RT | ISOMERS | ABSOLUTE RT |
|-------------------------|-------------|-------------------------|-------------|
| 1,3,6,8-TCDD (F) | 22:54 | 1,3,6,8-TCDF (F) | 20:47 |
| 1,2,8,9-TCDD (L) | 27:07 | 1,2,8,9-TCDF (L) | 27:15 |
| 1,2,4,7,9-PeCDD (F) | 28:43 | 1,3,4,6,8-PeCDF (F) | 27:13 |
| 1,2,3,8,9-PeCDD (L) | 31:07 | 1,2,3,8,9-PeCDF (L) | 31:21 |
| 1,2,4,6,7,9-HxCDD (F) | 32:32 | 1,2,3,4,6,8-HxCDF (F) | 31:60 |
| 1,2,3,7,8,9-HxCDD (L) | 34:29 | 1,2,3,7,8,9-HxCDF (L) | 34:51 |
| 1,2,3,4,6,7,9-HpCDD (F) | 37:05 | 1,2,3,4,6,7,8-HpCDF (F) | 36:43 |
| 1,2,3,4,6,7,8-HpCDD (L) | 37:55 | 1,2,3,4,7,8,9-HpCDF (L) | 38:28 |

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

(1) To meet contract requirements, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

Analyst: DB

Date: 11/6/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

Compounds Using 13C-1234-TCDD as RT Internal Standard

| NATIVE ANALYTES | RETENTION TIME | RRT | RRT |
|-----------------|---------------------|-------|---------------|
| | REFERENCE | | QC LIMITS (1) |
| 2,3,7,8-TCDD | 13C-2,3,7,8-TCDD | 1.001 | 0.999-1.002 |
| 1,2,3,7,8-PeCDD | 13C-1,2,3,7,8-PeCDD | 1.001 | 0.999-1.002 |
| 2,3,7,8-TCDF | 13C-2,3,7,8-TCDF | 1.001 | 0.999-1.003 |
| 1,2,3,7,8-PeCDF | 13C-1,2,3,7,8-PeCDF | 1.000 | 0.999-1.002 |
| 2,3,4,7,8-PeCDF | 13C-2,3,4,7,8-PeCDF | 1.000 | 0.999-1.002 |

LABELED COMPOUNDS

| | | | |
|---------------------|------------------|-------|-------------|
| 13C-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.976-1.043 |
| 13C-1,2,3,7,8-PeCDD | 13C-1,2,3,4-TCDD | 1.196 | 1.000-1.567 |
| 13C-2,3,7,8-TCDF | 13C-1,2,3,4-TCDD | 0.991 | 0.923-1.103 |
| 13C-1,2,3,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.151 | 1.000-1.425 |
| 13C-2,3,4,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.186 | 1.011-1.526 |
| 37Cl-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.989-1.052 |

Analyst: DB

Date: 11/6/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191106D1 S#1 Analysis Date: 6-NOV-19 Time: 11:41:40

| NATIVE ANALYTES | RETENTION TIME REFERENCE | RRT | RRT QC LIMITS (1) |
|---------------------|-----------------------------|-------|----------------------|
| 1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,7,8-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDF | 13C-1,2,3,6,7,8-HxCDF | 1.001 | 0.997-1.005 |
| 2,3,4,6,7,8-HxCDF | 13C-2,3,4,6,7,8-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,7,8,9-HxCDF | 13C-1,2,3,7,8,9-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,7,8-HxCDD | 1.000 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDD | 13C-1,2,3,6,7,8-HxCDD | 1.001 | 0.998-1.004 |
| 1,2,3,7,8,9-HxCDD | 13C-1,2,3,7,8,9-HxCDD | 1.000 | 0.998-1.004 |
| 1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 1.000 | 0.999-1.001 |
| 1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 1.000 | 0.999-1.001 |
| 1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,7,8,9-HpCDF | 1.000 | 0.999-1.001 |
| OCDD | 13C-OCDD | 1.000 | 0.999-1.001 |
| OCDF | 13C-OCDF | 1.000 | 0.999-1.001 |

LABELED COMPOUNDS

| | | | |
|-------------------------|-----------------------|-------|-------------|
| 13C-1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.988 | 0.975-1.001 |
| 13C-1,2,3,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.991 | 0.979-1.005 |
| 13C-2,3,4,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.009 | 1.001-1.020 |
| 13C-1,2,3,7,8,9-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.038 | 1.002-1.072 |
| 13C-1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.014 | 1.002-1.026 |
| 13C-1,2,3,6,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.017 | 1.007-1.029 |
| 13C-1,2,3,7,8,9-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.026 | 1.014-1.038 |
| 13C-1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.093 | 1.069-1.111 |
| 13C-1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.145 | 1.098-1.192 |
| 13C-1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,9-HxCDF | 1.129 | 1.117-1.141 |
| 13C-OCDD | 13C-1,2,3,4,6,9-HxCDF | 1.227 | 1.085-1.365 |
| 13C-OCDF | 13C-1,2,3,4,6,9-HxCDF | 1.234 | 1.091-1.371 |

Analyst: DB

Date: 11/6/19

Client ID: 1613 CS3 19C2204
Lab ID: ST191106D1-1

Filename: 191106D1 S:1 Acq: 6-NOV-19 11:41:40
GC Column ID: ZB-5MS ICal: 1613VG7-10-9-19 wt/vol: 1.000

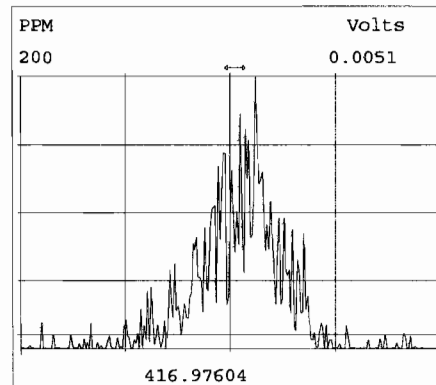
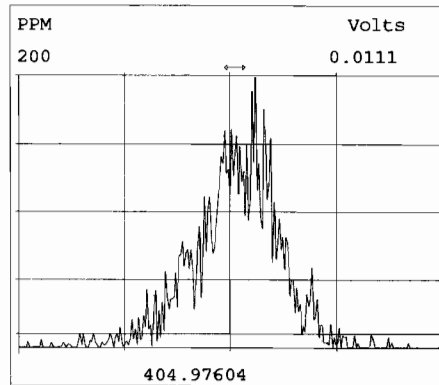
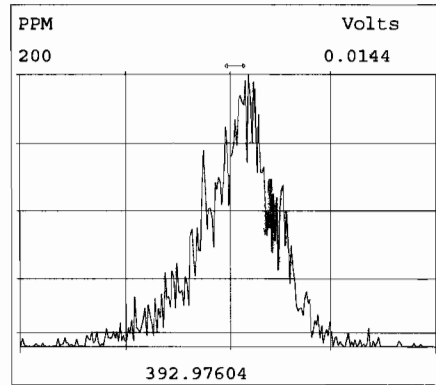
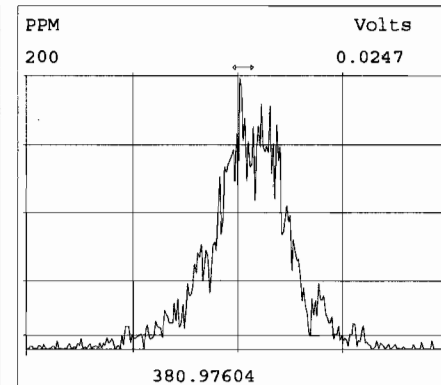
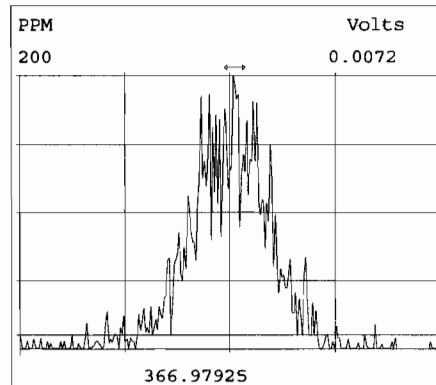
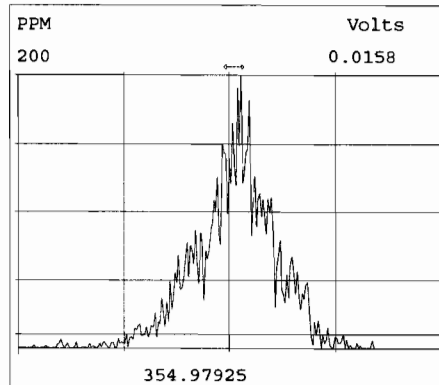
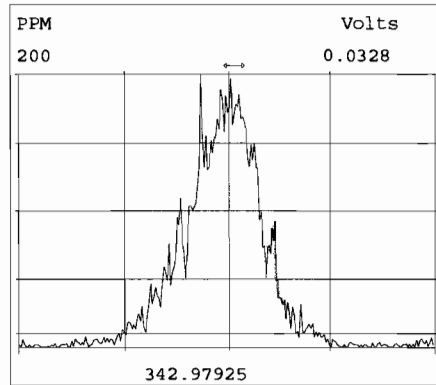
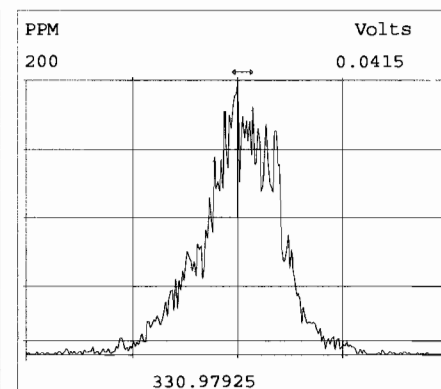
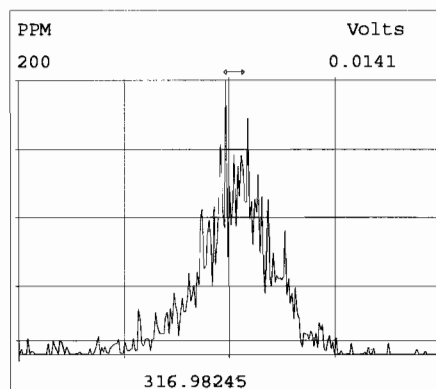
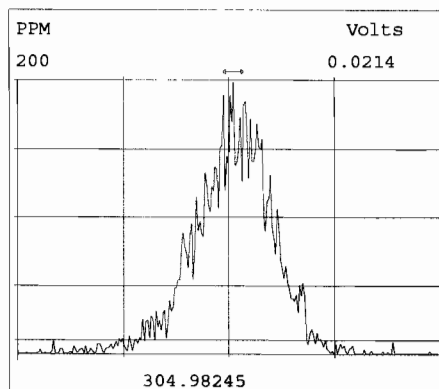
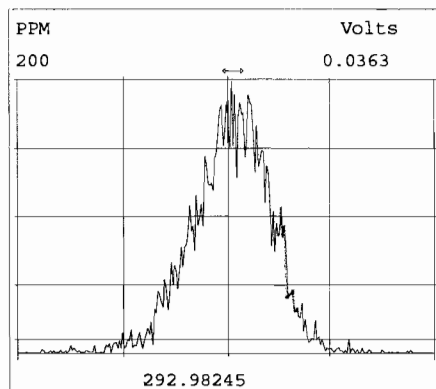
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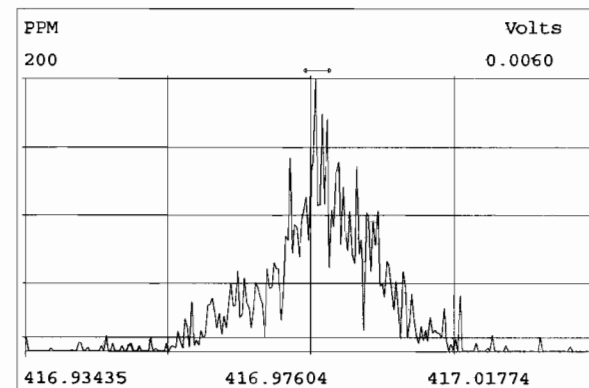
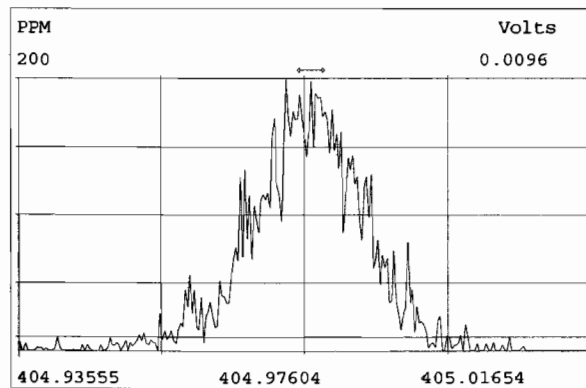
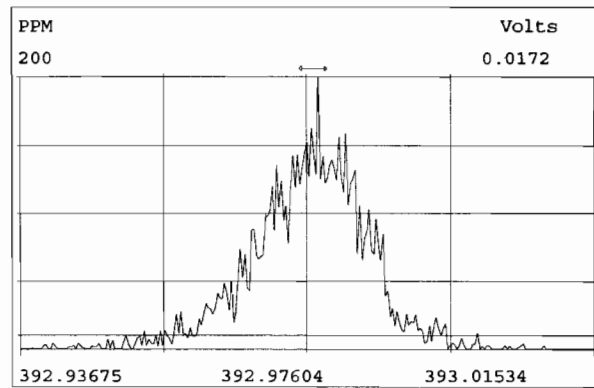
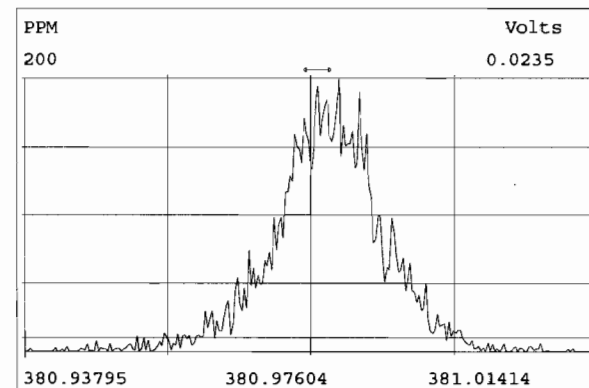
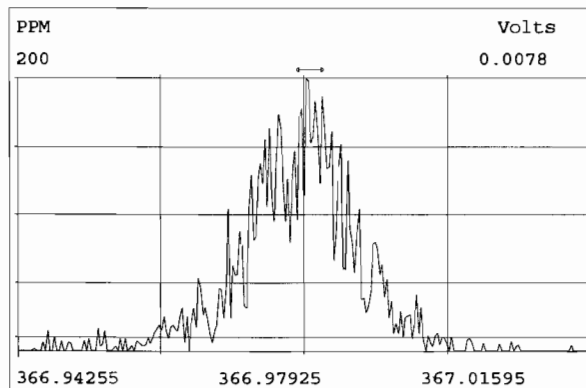
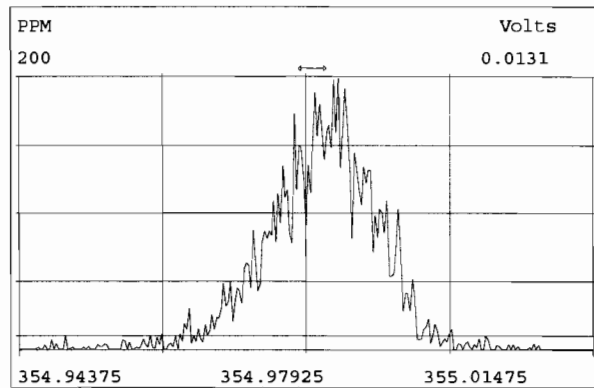
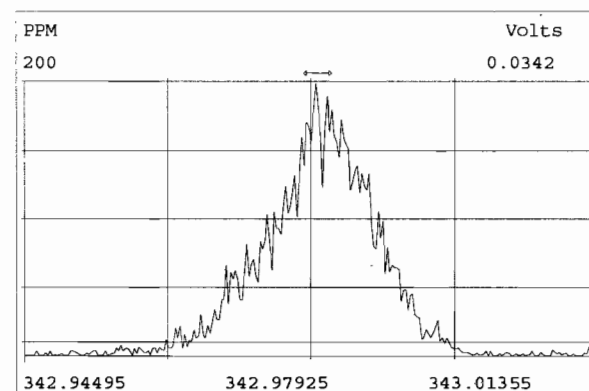
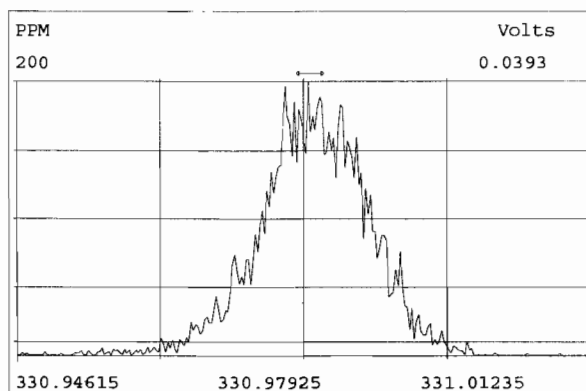
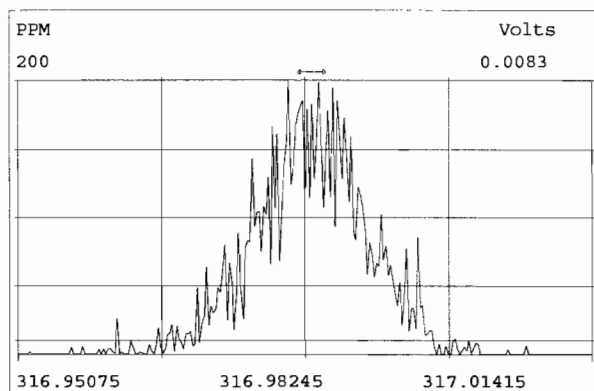
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|-----------------------------|----------|--------|------|-------|--------|------|-------|-----|----|---------------------|--------|--------|------|-------|----|
| 2,3,7,8-TCDD | 6.82e+05 | 0.77 y | 0.91 | 26:16 | 11.450 | | * 2.5 | | * | Total Tetra-Dioxins | 86.8 | 87.8 | * | * | |
| 1,2,3,7,8-PeCDD | 2.51e+06 | 0.63 y | 0.90 | 30:45 | 50.469 | | * 2.5 | | * | Total Penta-Dioxins | 198 | 198 | * | * | |
| 1,2,3,4,7,8-HxCDD | 2.74e+06 | 1.25 y | 1.10 | 34:04 | 50.478 | | * 2.5 | | * | Total Hexa-Dioxins | 222 | 223 | * | * | |
| 1,2,3,6,7,8-HxCDD | 2.68e+06 | 1.29 y | 0.94 | 34:11 | 50.148 | | * 2.5 | | * | Total Hepta-Dioxins | 122 | 123 | * | * | |
| 1,2,3,7,8,9-HxCDD | 2.65e+06 | 1.26 y | 0.96 | 34:29 | 50.280 | | * 2.5 | | * | Total Tetra-Furans | 34.0 | 34.9 | * | * | |
| 1,2,3,4,6,7,8-HpCDD | 2.19e+06 | 1.02 y | 0.98 | 37:55 | 46.849 | | * 2.5 | | * | Total Penta-Furans | 238.77 | 240.08 | * | * | |
| OCDD | 4.52e+06 | 0.87 y | 0.96 | 41:14 | 98.839 | | * 2.5 | | * | Total Hexa-Furans | 257 | 258 | * | * | |
| | | | | | | | | | | Total Hepta-Furans | 95.3 | 96.2 | * | * | |
| 2,3,7,8-TCDF | 9.41e+05 | 0.72 y | 0.95 | 25:29 | 8.8480 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8-PeCDF | 4.56e+06 | 1.54 y | 0.96 | 29:35 | 55.662 | | * 2.5 | | * | | | | | | |
| 2,3,4,7,8-PeCDF | 4.51e+06 | 1.52 y | 1.01 | 30:28 | 54.177 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8-HxCDF | 3.55e+06 | 1.24 y | 1.18 | 33:10 | 48.899 | | * 2.5 | | * | | | | | | |
| 1,2,3,6,7,8-HxCDF | 3.70e+06 | 1.23 y | 1.07 | 33:18 | 47.690 | | * 2.5 | | * | | | | | | |
| 2,3,4,6,7,8-HxCDF | 3.72e+06 | 1.25 y | 1.11 | 33:54 | 50.074 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8,9-HxCDF | 3.02e+06 | 1.26 y | 1.06 | 34:51 | 47.785 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 2.69e+06 | 1.03 y | 1.13 | 36:43 | 47.193 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | 2.58e+06 | 1.04 y | 1.28 | 38:28 | 47.715 | | * 2.5 | | * | | | | | | |
| OCDF | 5.18e+06 | 0.86 y | 0.95 | 41:27 | 96.090 | | * 2.5 | | * | | | | | | |
| | | | | | | | | | | Rec | Qual | | | | |
| IS 13C-2,3,7,8-TCDD | 6.58e+06 | 0.84 y | 1.10 | 26:15 | 95.114 | | | | | 95.1 | | | | | |
| IS 13C-1,2,3,7,8-PeCDD | 5.51e+06 | 0.63 y | 0.88 | 30:44 | 98.847 | | | | | 98.8 | | | | | |
| IS 13C-1,2,3,4,7,8-HxCDD | 4.94e+06 | 1.33 y | 0.64 | 34:03 | 112.46 | | | | | 112 | | | | | |
| IS 13C-1,2,3,6,7,8-HxCDD | 5.68e+06 | 1.30 y | 0.86 | 34:10 | 97.212 | | | | | 97.2 | | | | | |
| IS 13C-1,2,3,7,8,9-HxCDD | 5.48e+06 | 1.26 y | 0.81 | 34:28 | 99.459 | | | | | 99.5 | | | | | |
| IS 13C-1,2,3,4,6,7,8-HpCDD | 4.78e+06 | 1.05 y | 0.65 | 37:55 | 106.99 | | | | | 107 | | | | | |
| IS 13C-OCDD | 9.54e+06 | 0.89 y | 0.58 | 41:13 | 240.70 | | | | | 120 | | | | | |
| IS 13C-2,3,7,8-TCDF | 1.12e+07 | 0.77 y | 1.03 | 25:28 | 103.38 | | | | | 103 | | | | | |
| IS 13C-1,2,3,7,8-PeCDF | 8.53e+06 | 1.62 y | 0.85 | 29:34 | 95.413 | | | | | 95.4 | | | | | |
| IS 13C-2,3,4,7,8-PeCDF | 8.21e+06 | 1.62 y | 0.85 | 30:28 | 92.617 | | | | | 92.6 | | | | | |
| IS 13C-1,2,3,4,7,8-HxCDF | 6.17e+06 | 0.51 y | 0.83 | 33:10 | 108.47 | | | | | 108 | | | | | |
| IS 13C-1,2,3,6,7,8-HxCDF | 7.26e+06 | 0.51 y | 1.03 | 33:17 | 102.72 | | | | | 103 | | | | | |
| IS 13C-2,3,4,6,7,8-HxCDF | 6.68e+06 | 0.51 y | 0.95 | 33:53 | 102.49 | | | | | 102 | | | | | |
| IS 13C-1,2,3,7,8,9-HxCDF | 5.95e+06 | 0.52 y | 0.83 | 34:51 | 105.22 | | | | | 105 | | | | | |
| IS 13C-1,2,3,4,6,7,8-HpCDF | 5.05e+06 | 0.44 y | 0.76 | 36:42 | 97.470 | | | | | 97.5 | | | | | |
| IS 13C-1,2,3,4,7,8,9-HpCDF | 4.22e+06 | 0.44 y | 0.58 | 38:27 | 106.34 | | | | | 106 | | | | | |
| IS 13C-OCDF | 1.14e+07 | 0.86 y | 0.69 | 41:26 | 241.89 | | | | | 121 | | | | | |
| C/Up 37C1-2,3,7,8-TCDD | 7.15e+05 | | 1.20 | 26:16 | 9.4475 | | | | | 94.5 | | | | | |
| RS/RT 13C-1,2,3,4-TCDD | 6.32e+06 | 0.86 y | 1.00 | 25:41 | 100.00 | | | | | | | | | | |
| RS 13C-1,2,3,4-TCDF | 1.05e+07 | 0.80 y | 1.00 | 24:16 | 100.00 | | | | | | | | | | |
| RS/RT 13C-1,2,3,4,6,9-HxCDF | 6.84e+06 | 0.51 y | 1.00 | 33:35 | 100.00 | | | | | | | | | | |

Integrations
by DB
Analyst: DB
Date: 11/6/19
Reviewed
by CT
Analyst: CT
Date: 11/07/19

Vista Analytical Laboratory - Injection Log Run file: 191106D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

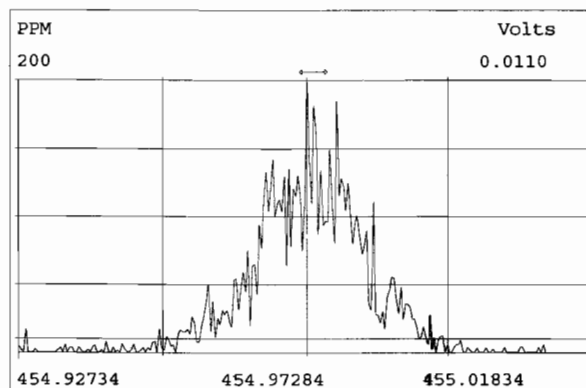
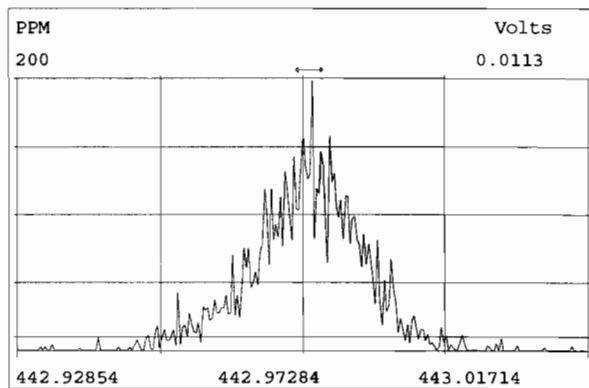
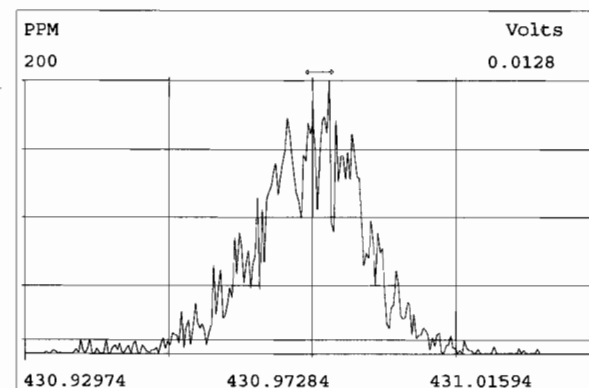
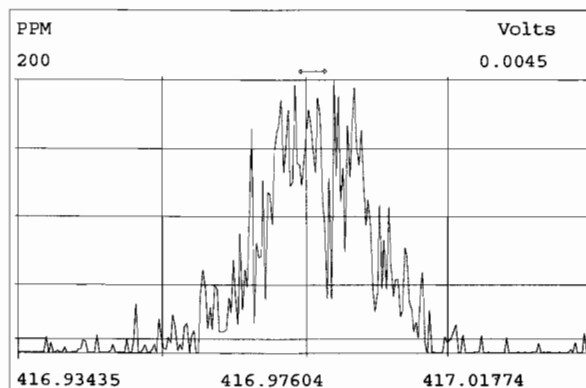
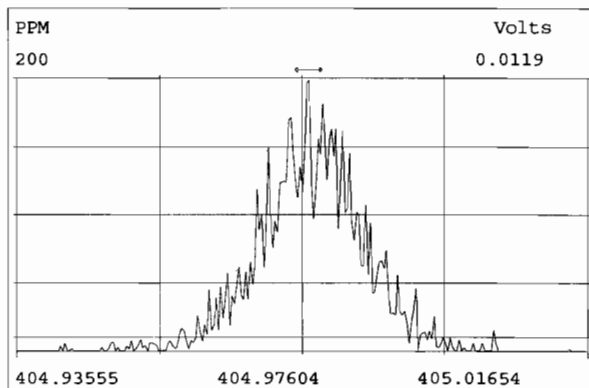
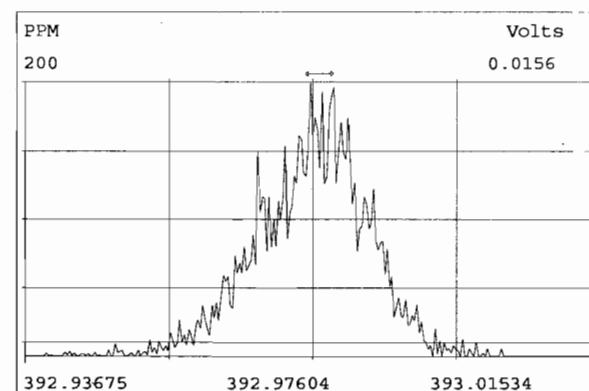
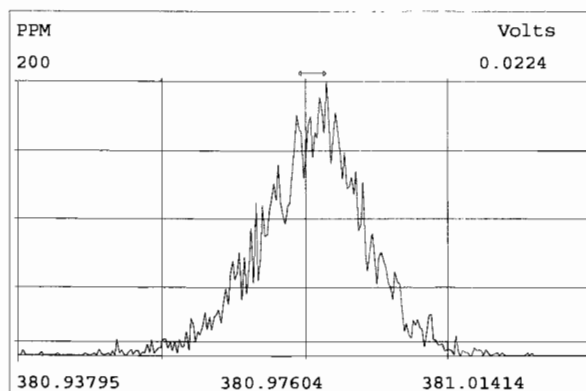
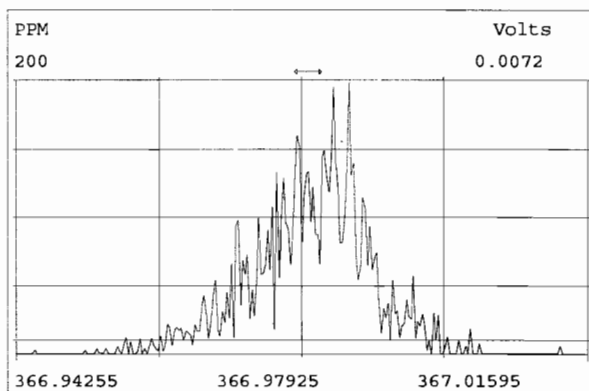
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| 191106D1 | 4 | 1903565-16RE1 | DB | 6-NOV-19 | 14:05:25 | ST191106D1-1 | NA |
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| 191106D1 | 7 | 1903651-06 | DB | 6-NOV-19 | 16:29:02 | ST191106D1-1 | NA |
| 191106D1 | 8 | 1903651-07 | DB | 6-NOV-19 | 17:16:52 | ST191106D1-1 | NA |
| 191106D1 | 9 | 1903653-01 | DB | 6-NOV-19 | 18:04:47 | ST191106D1-1 | NA |
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| 191106D1 | 12 | 1903653-03 | DB | 6-NOV-19 | 20:28:00 | ST191106D1-1 | NA |
| 191106D1 | 13 | 1903653-04 | DB | 6-NOV-19 | 21:15:43 | ST191106D1-1 | NA |
| 191106D1 | 14 | 1903431-01 | DB | 6-NOV-19 | 22:03:32 | ST191106D1-1 | NA |
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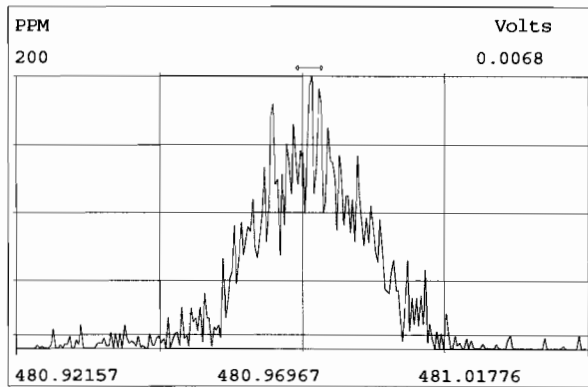
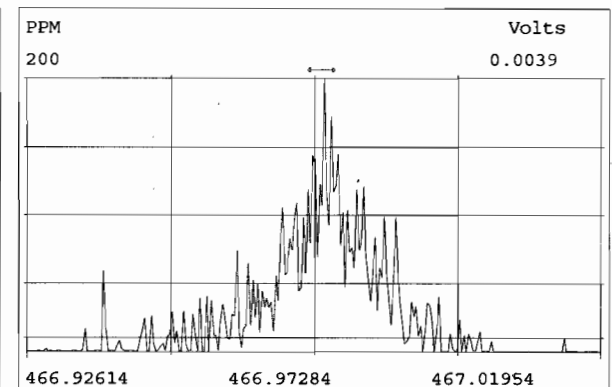
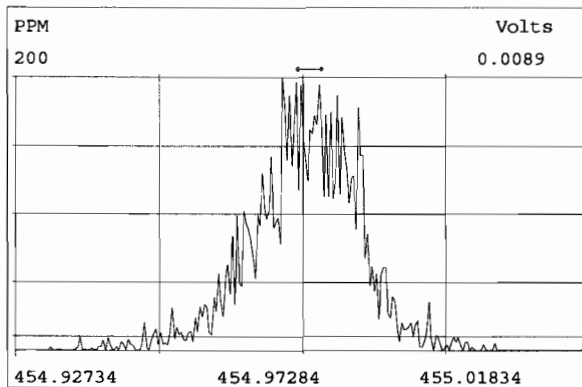
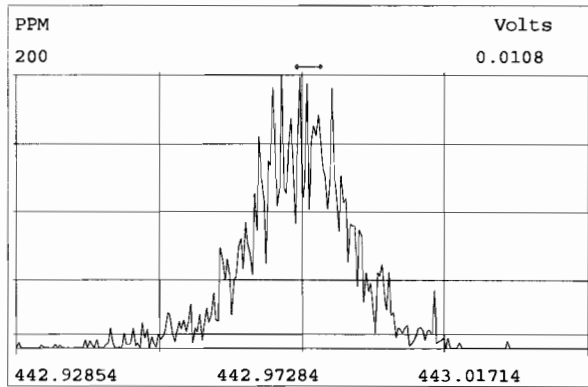
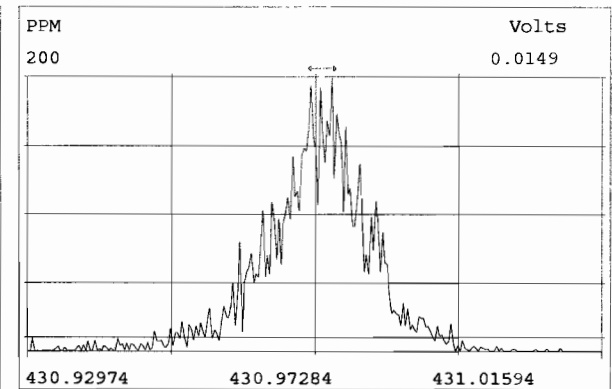
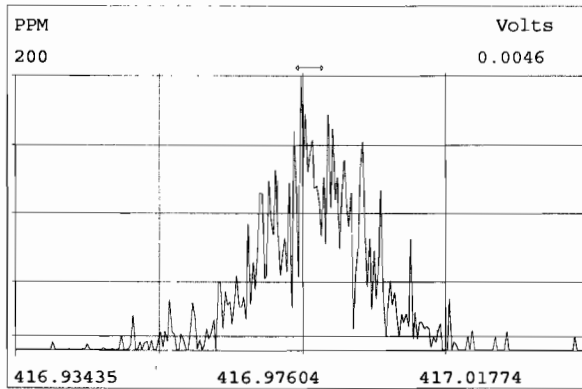
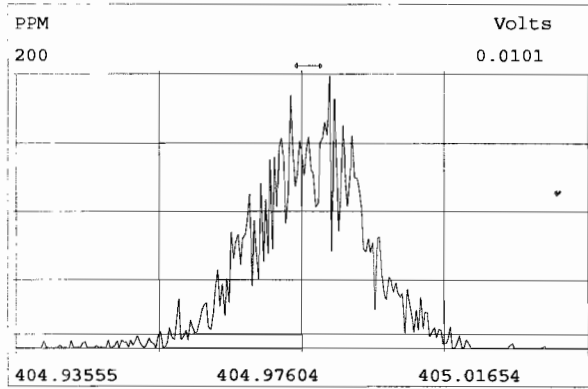
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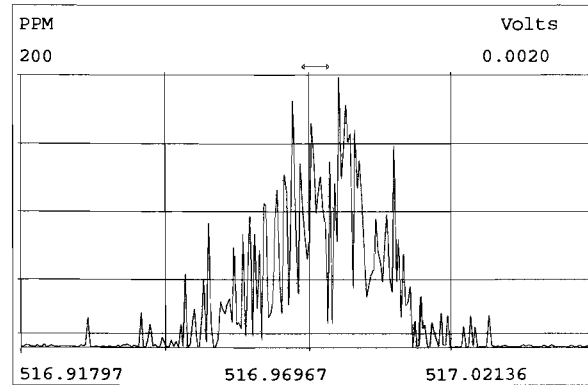
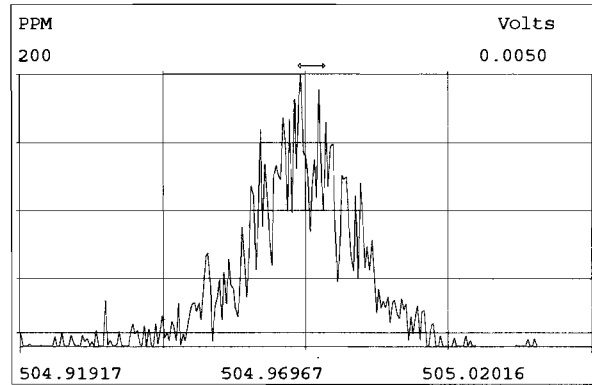
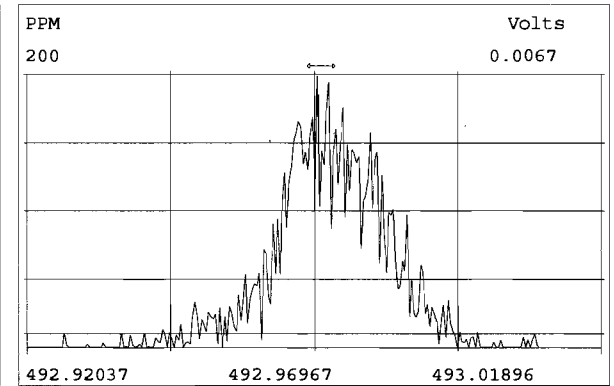
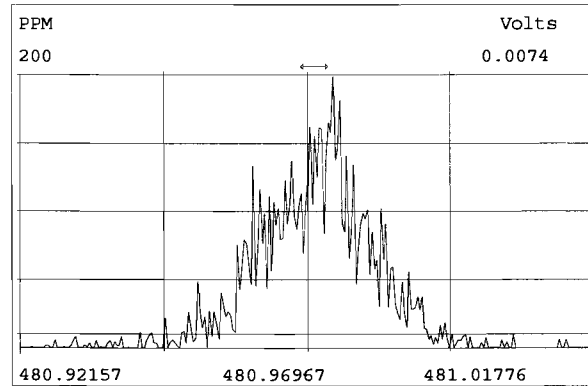
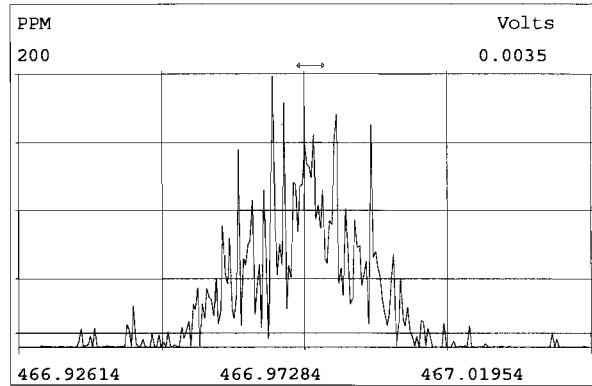
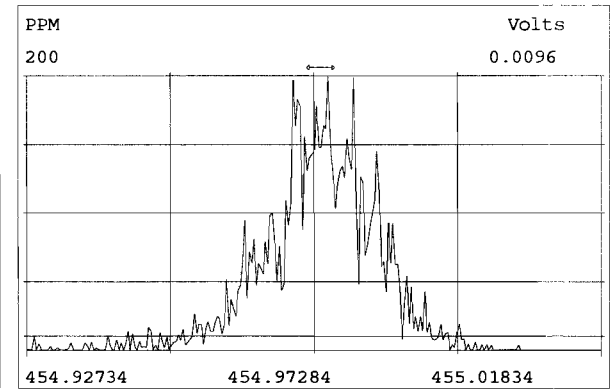
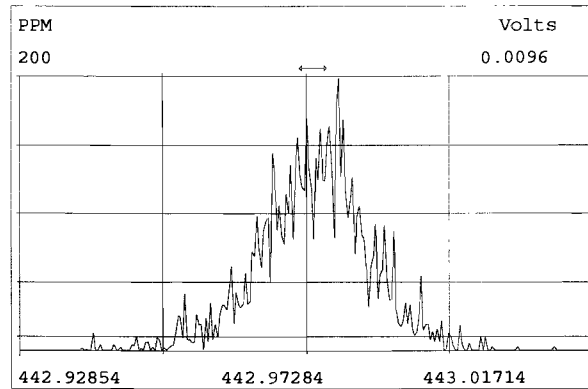
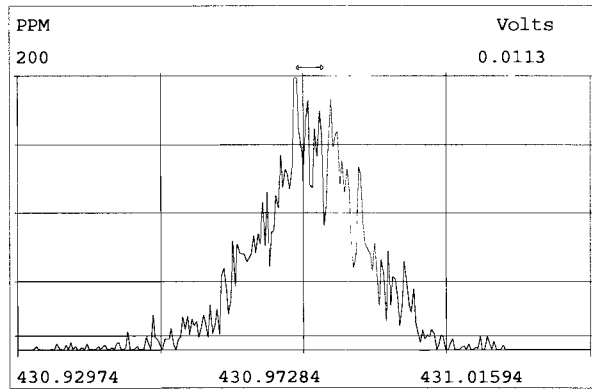
Experiment:OCDD_DB5 Function:3 Reference:PFK



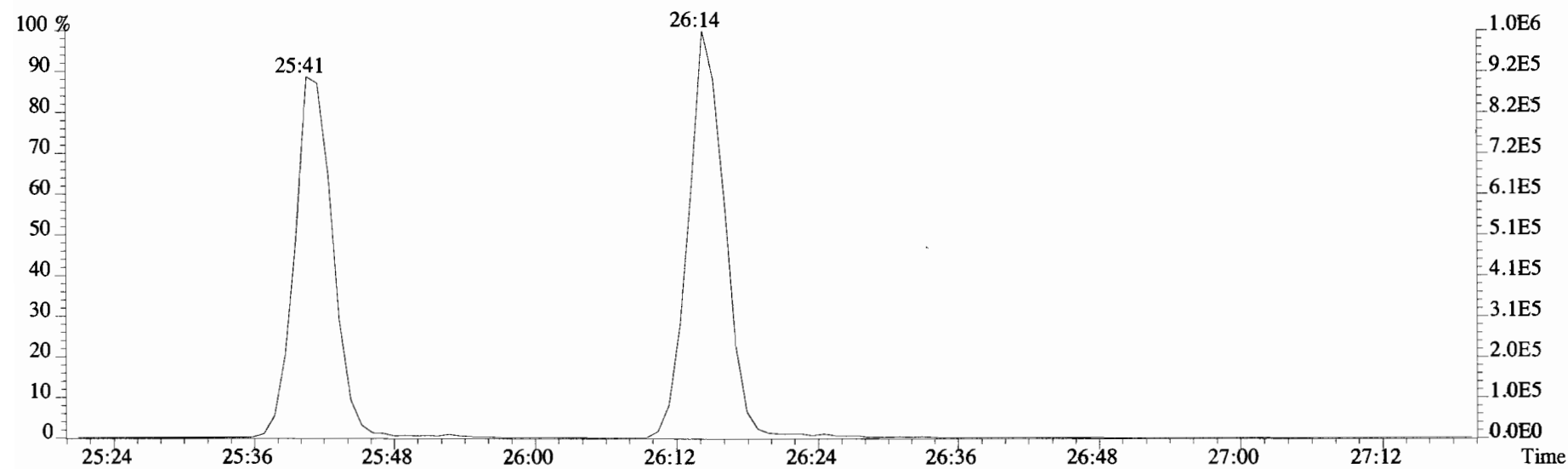
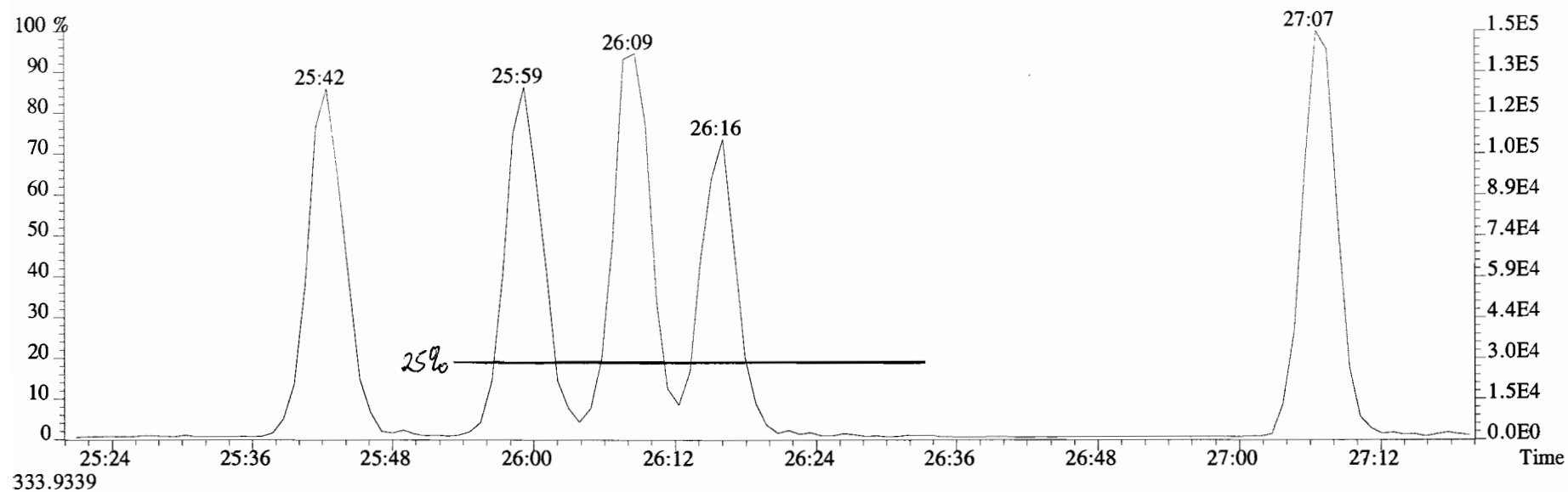
Peak Locate Examination: 6-NOV-2019:11:40 File:191106D1

Experiment:OCDD_DB5 Function:4 Reference:PFK

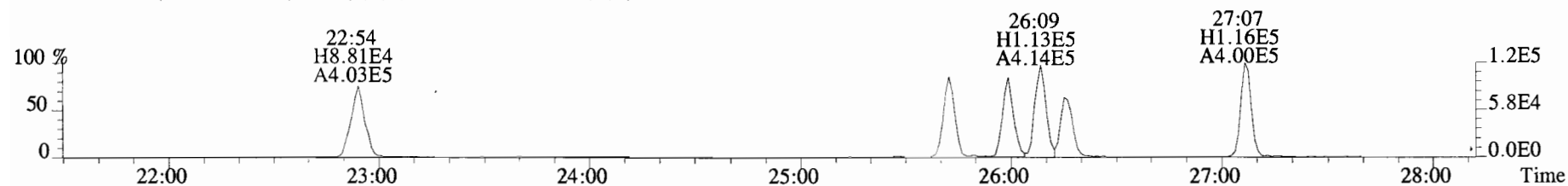




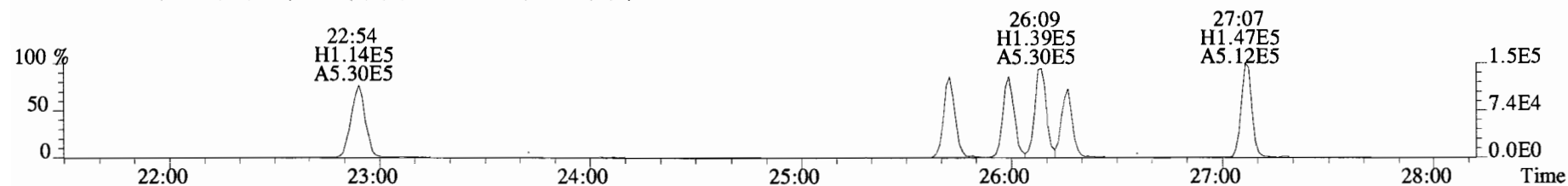
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
321.8936



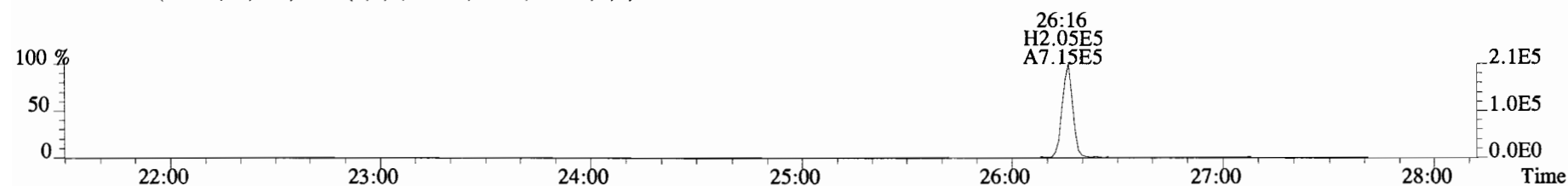
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



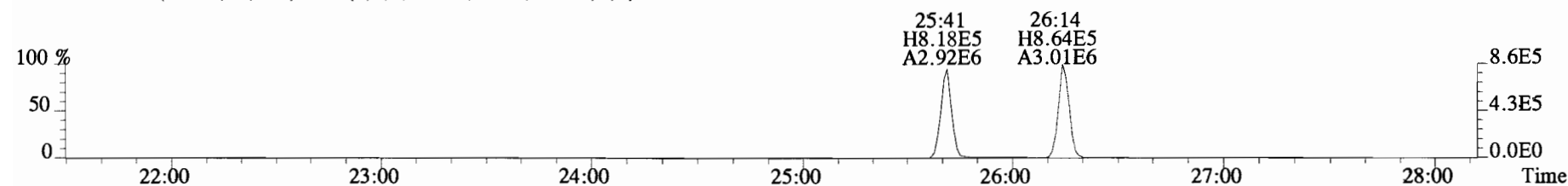
321.8936 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



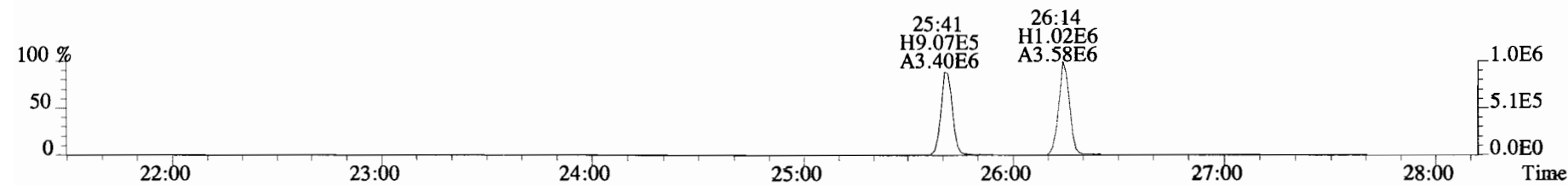
327.8847 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



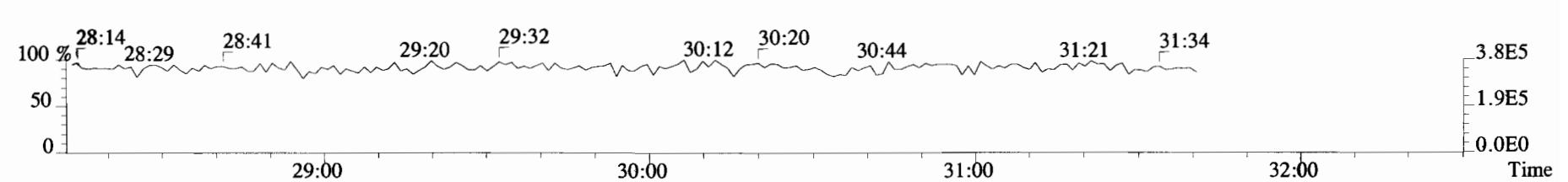
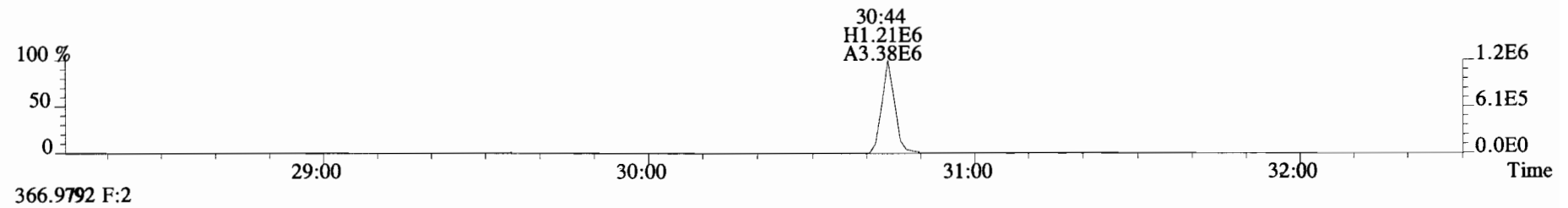
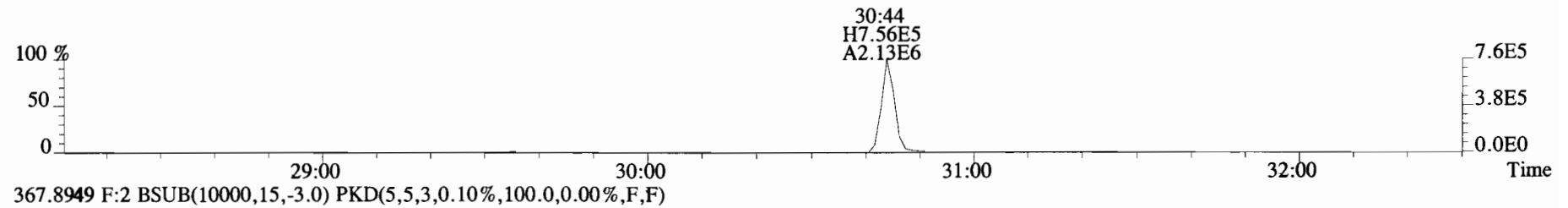
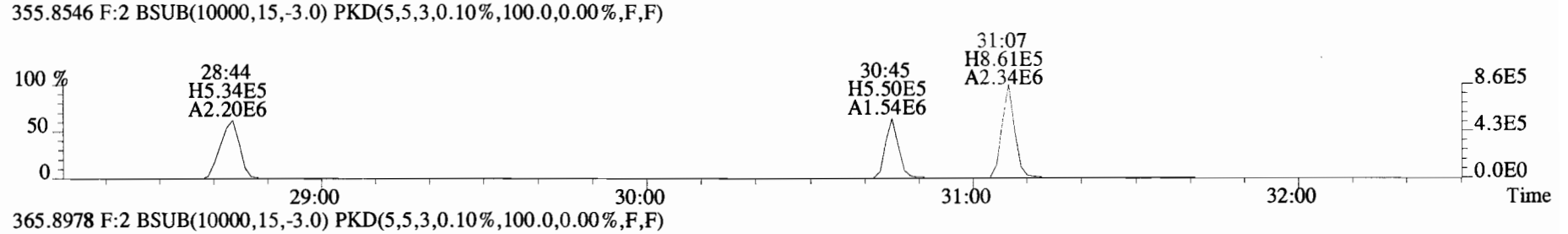
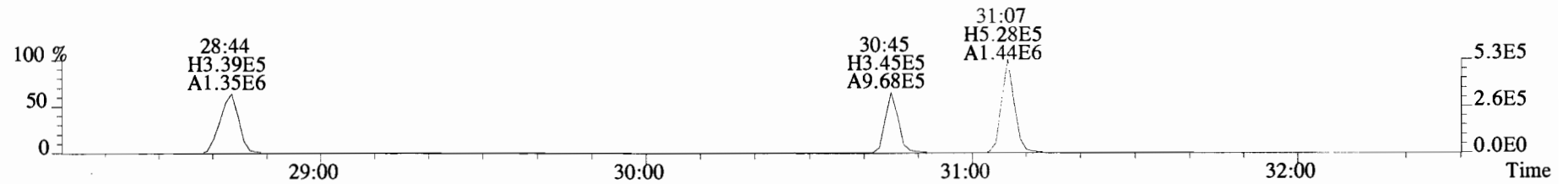
331.9368 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



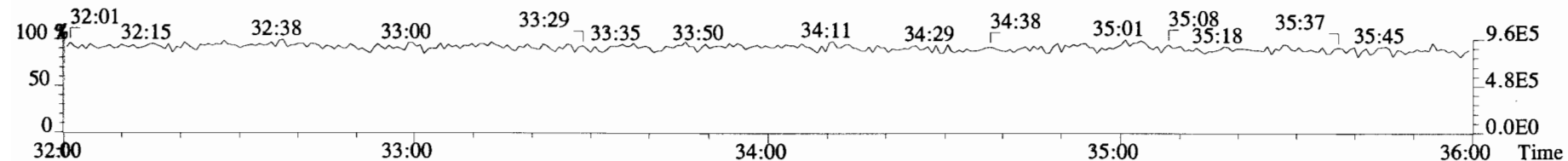
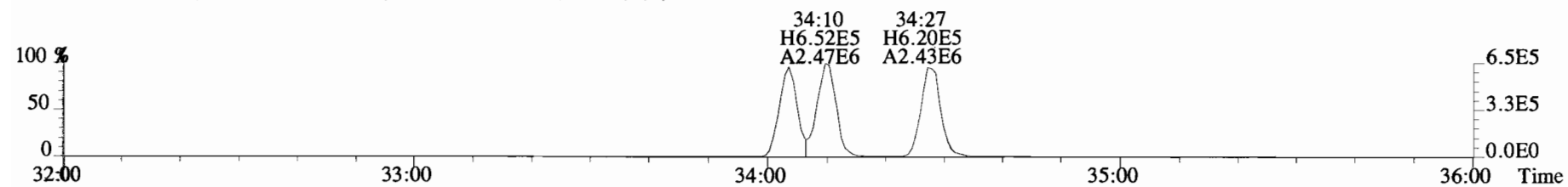
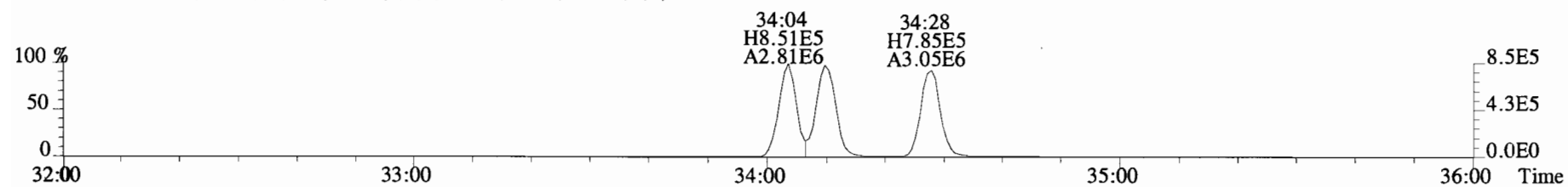
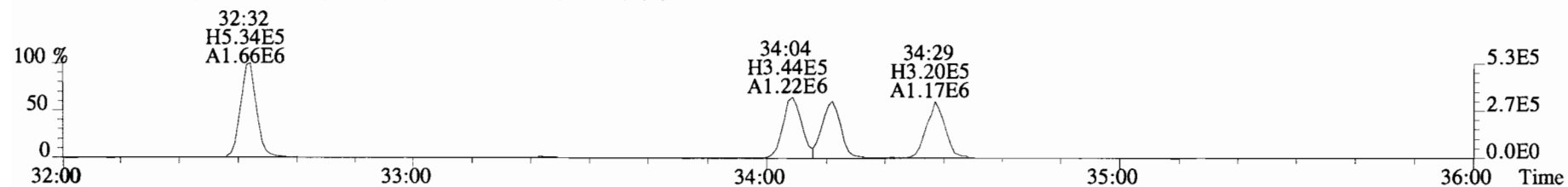
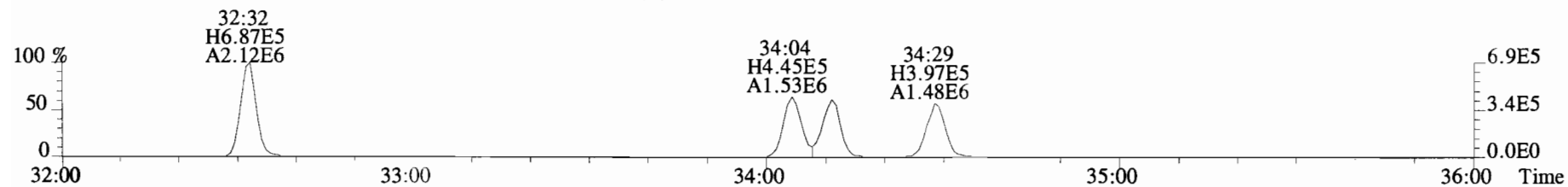
333.9339 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



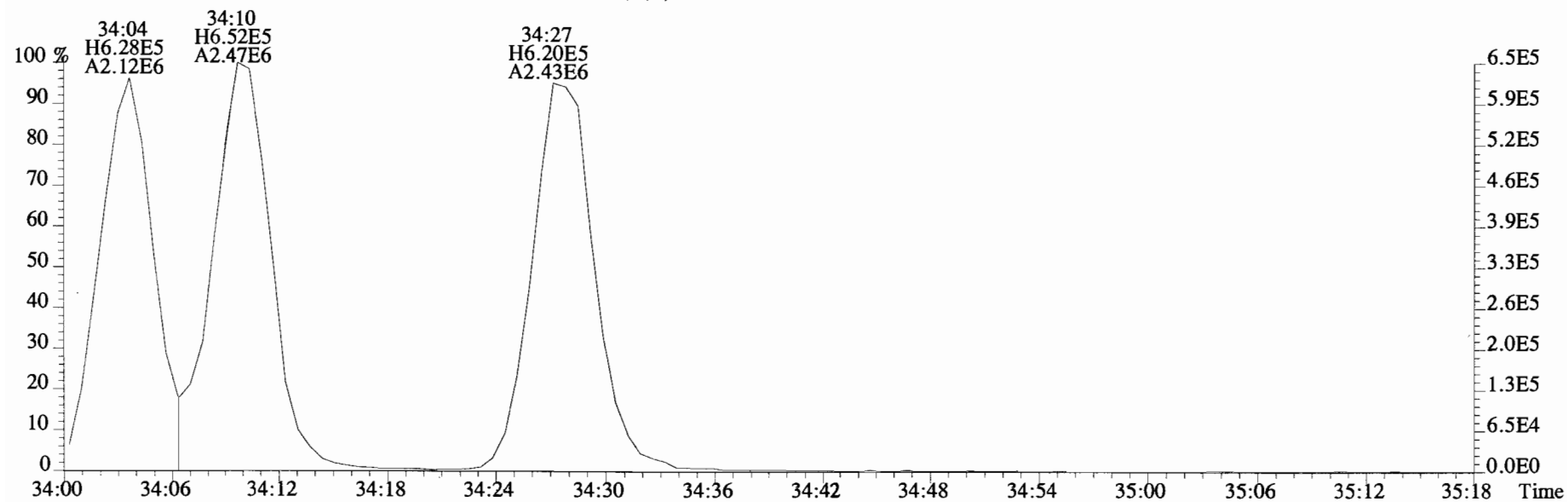
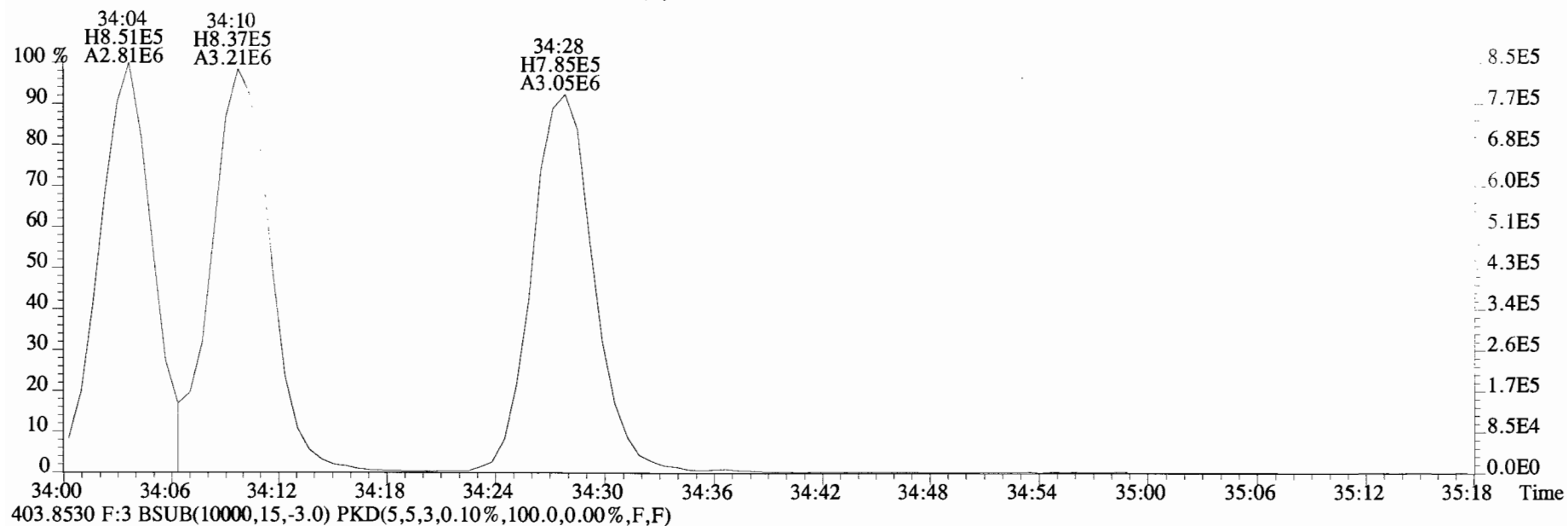
File:191106D1 #1-211 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



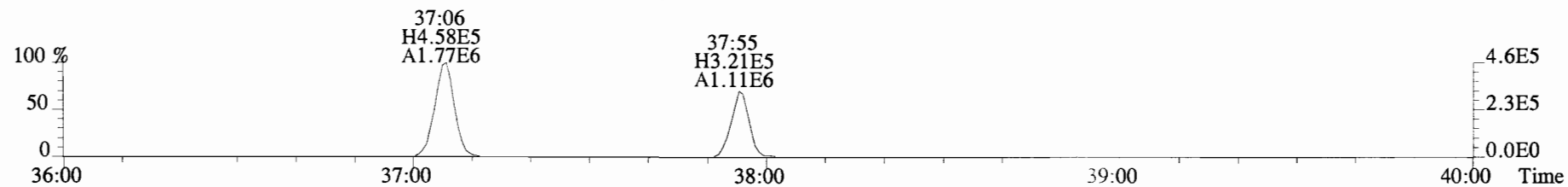
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



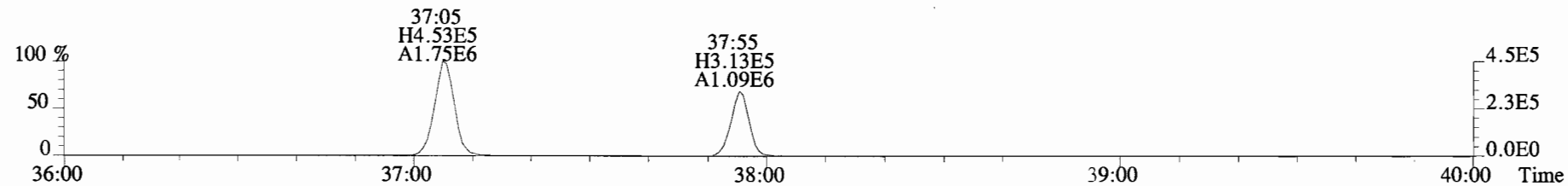
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 F:3 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



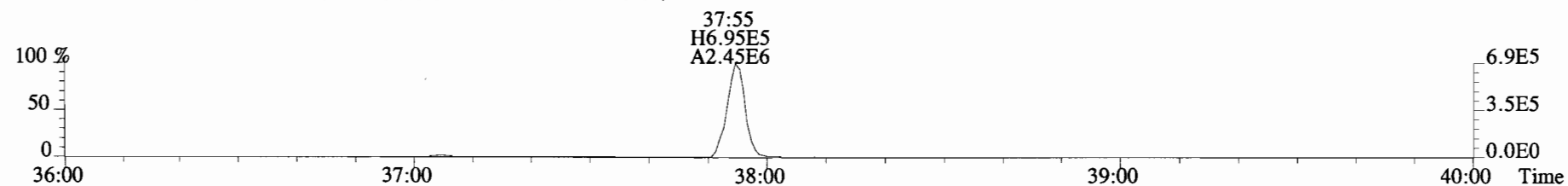
File:191106D1 #1-356 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



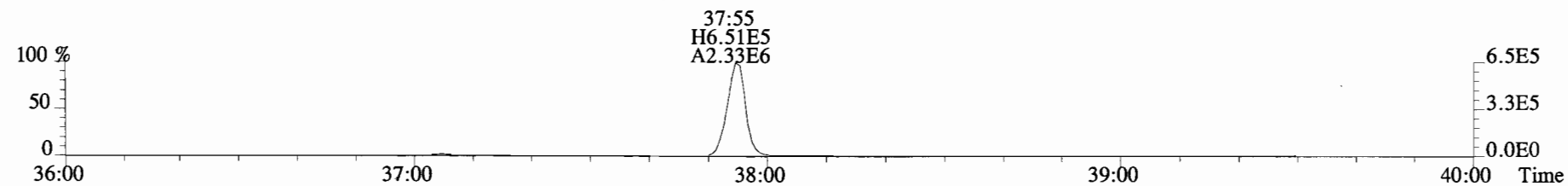
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



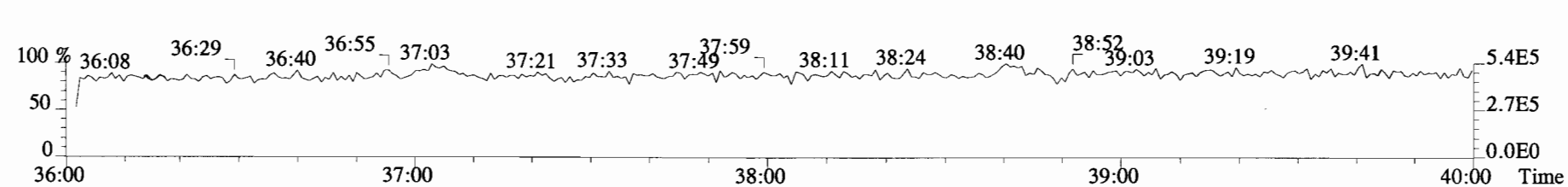
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



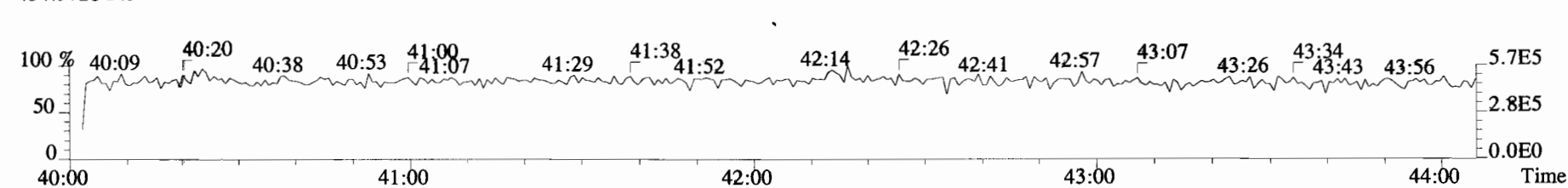
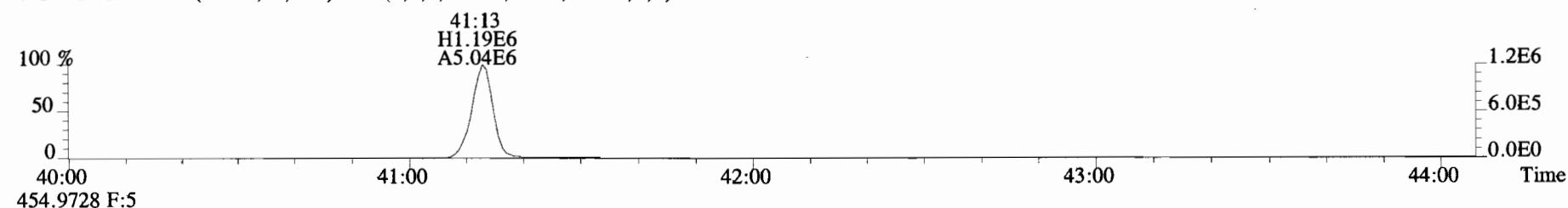
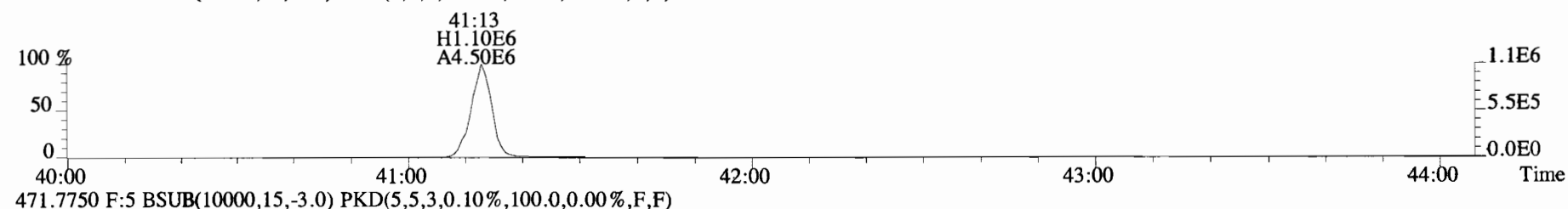
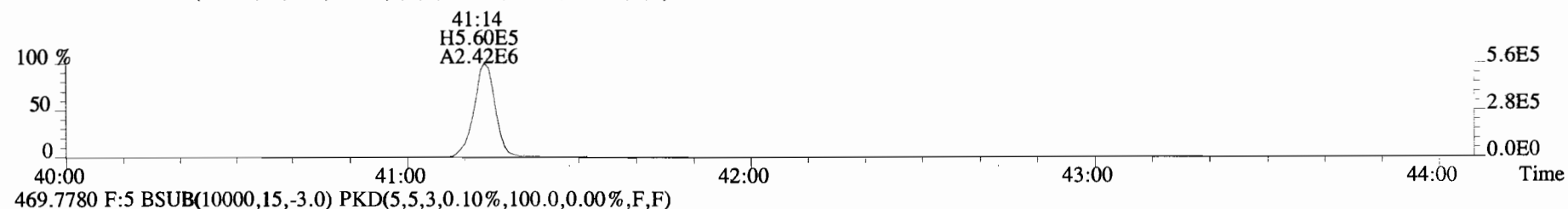
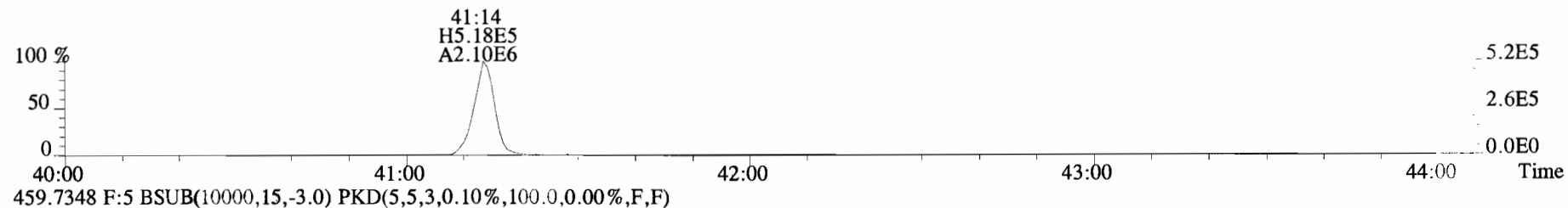
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



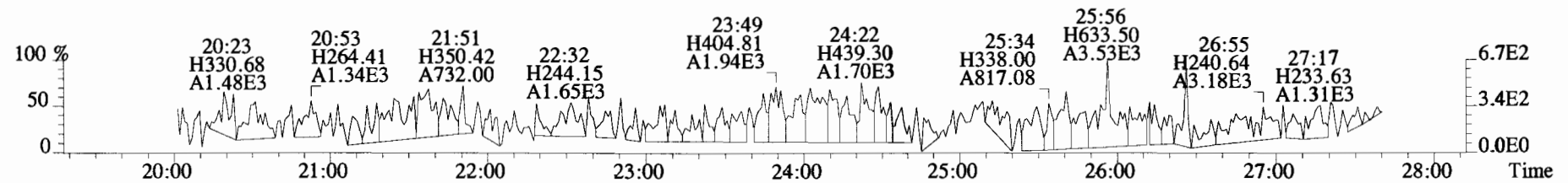
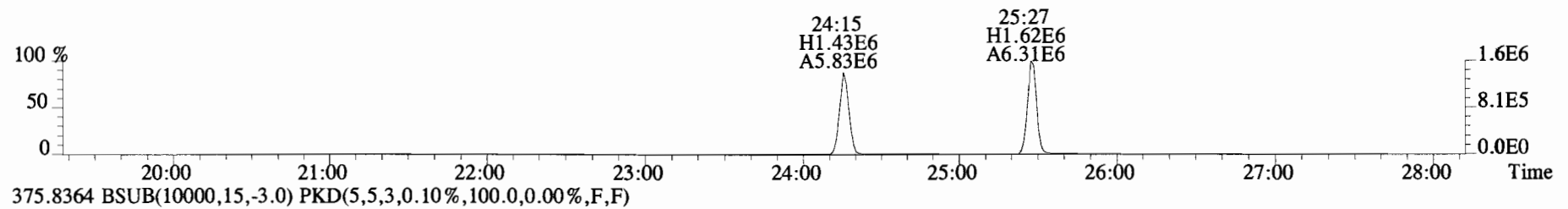
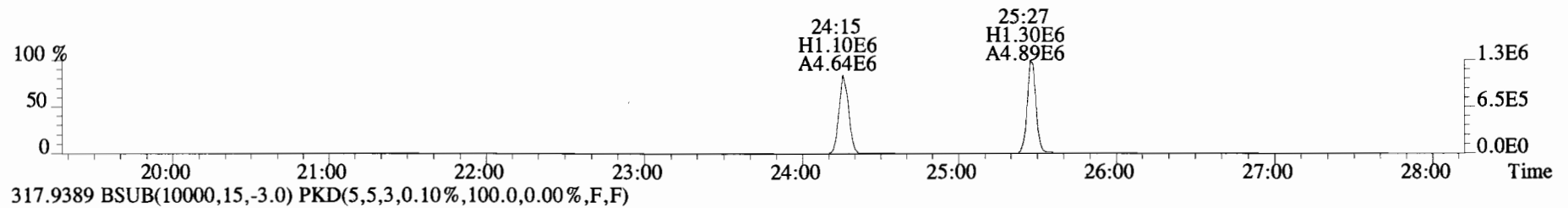
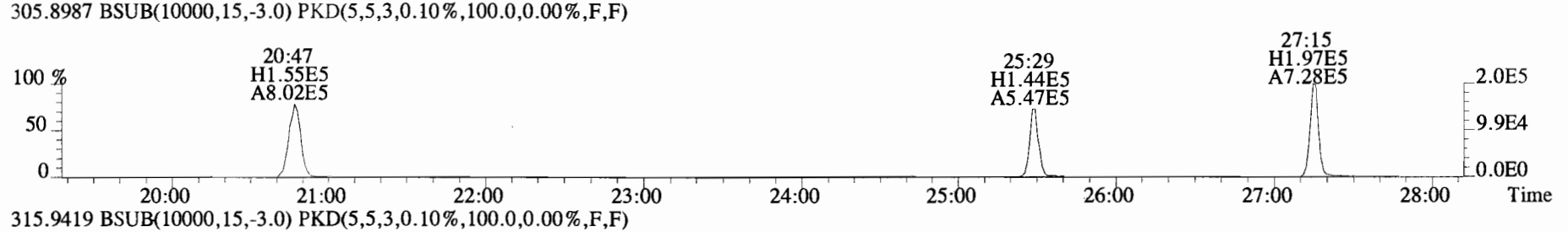
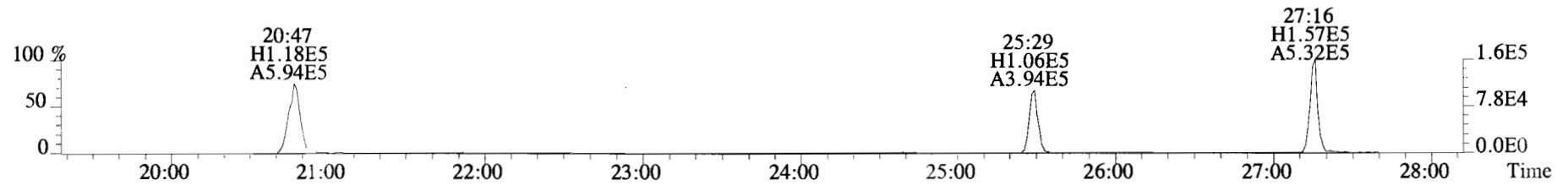
454.9728 F:4



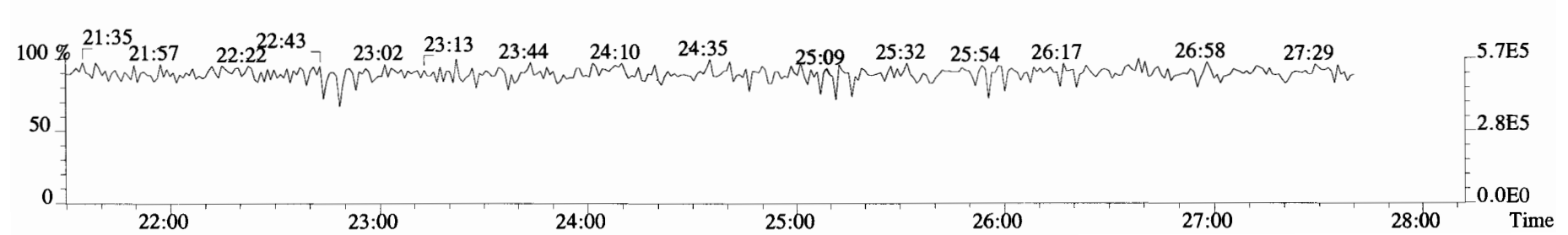
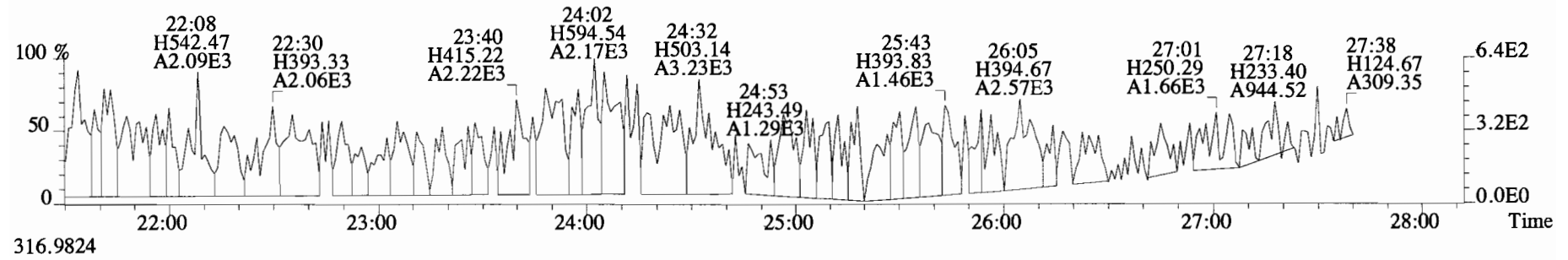
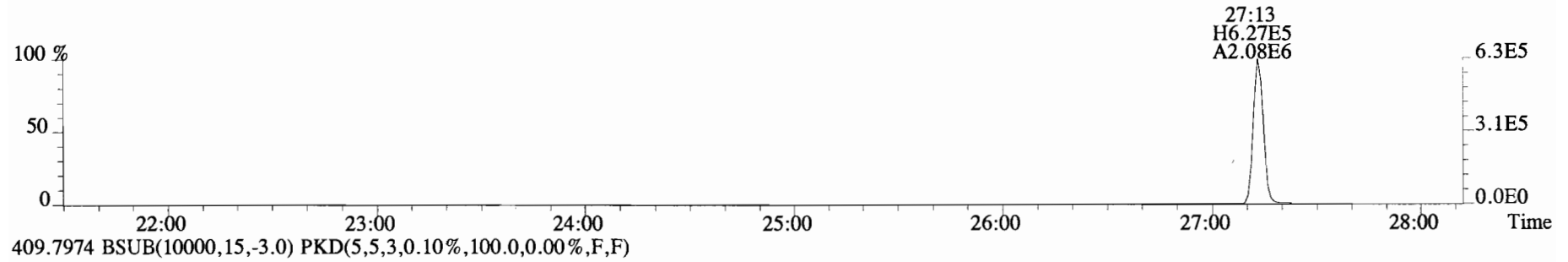
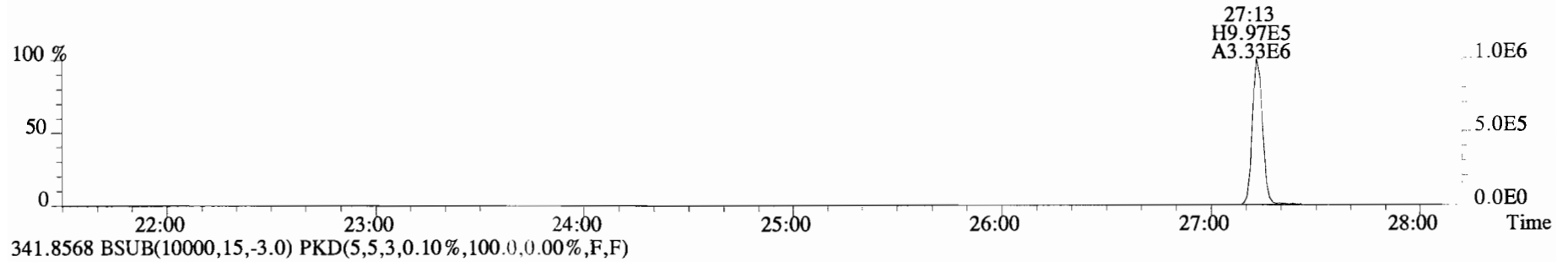
File:191106D1 #1-431 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



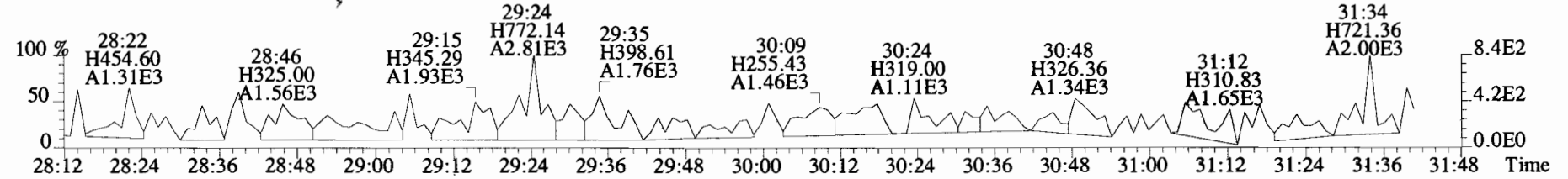
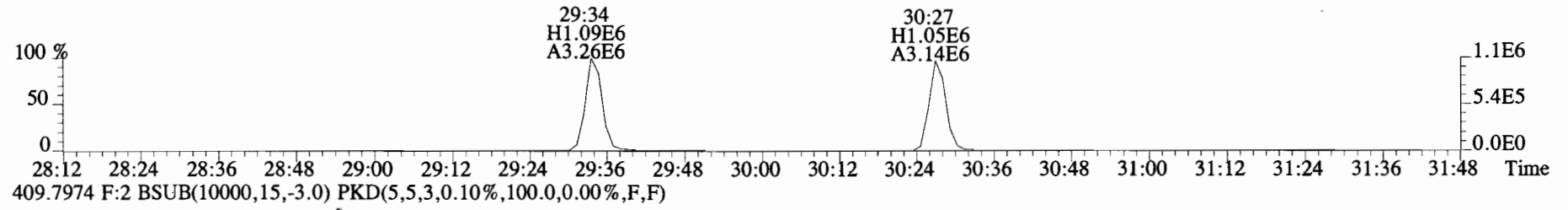
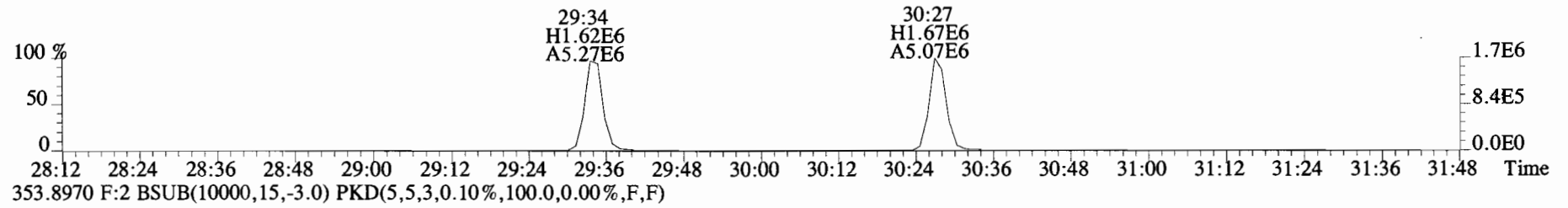
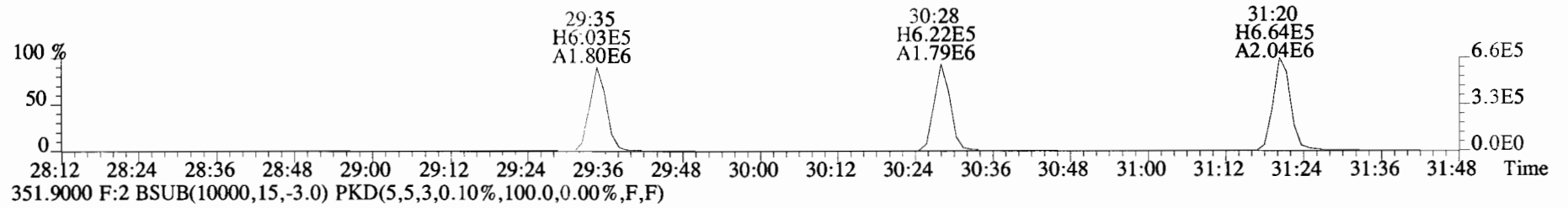
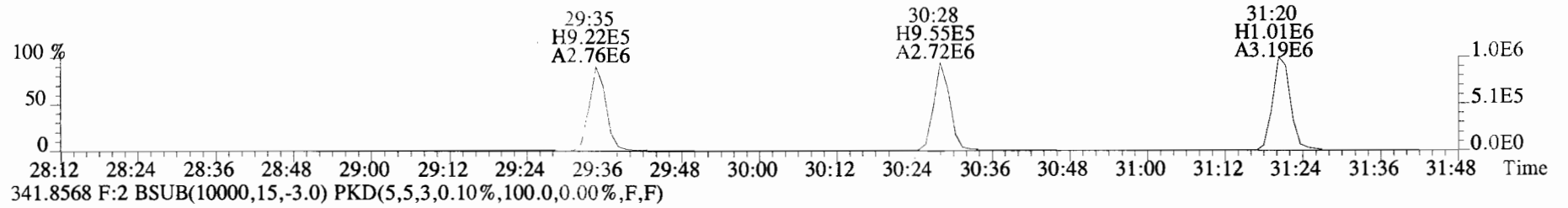
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



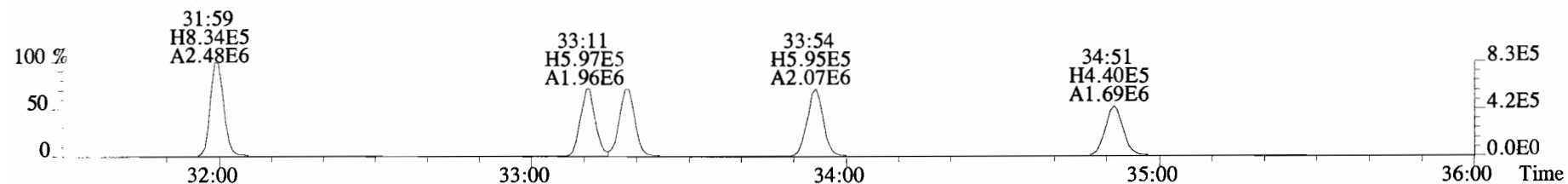
File:191106D1 #1-492 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



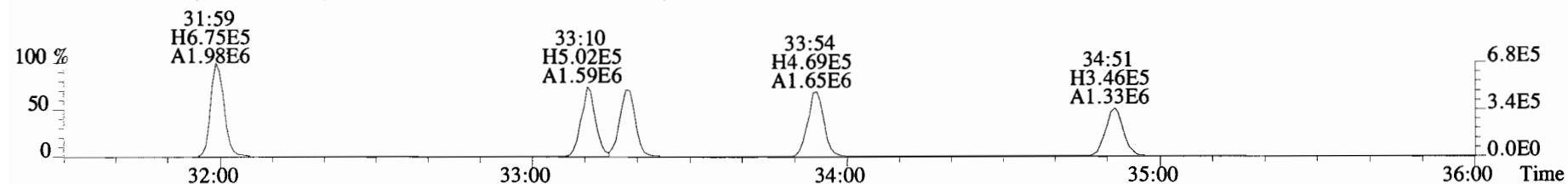
File:191106D1 #1-211 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata_Analytical_Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



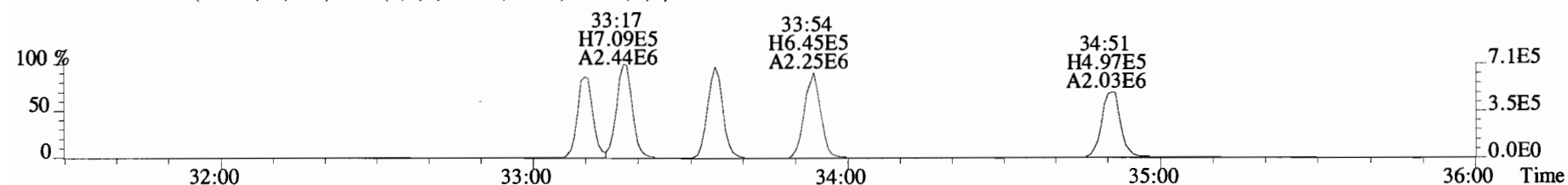
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
 373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



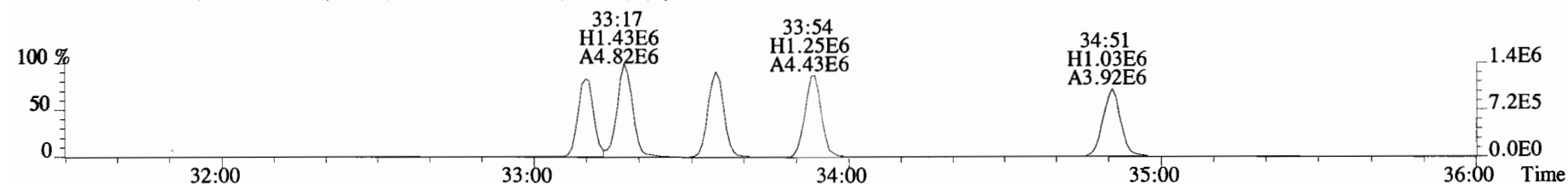
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



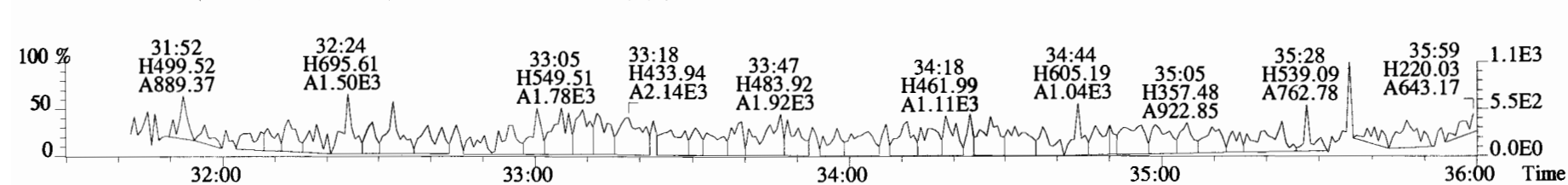
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



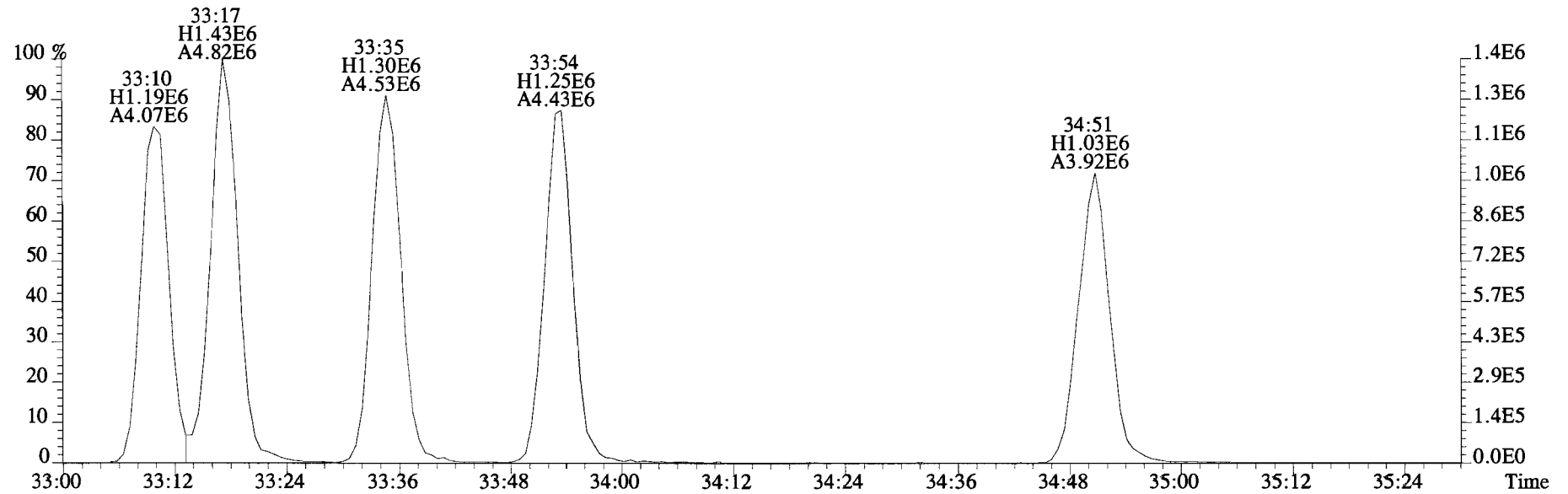
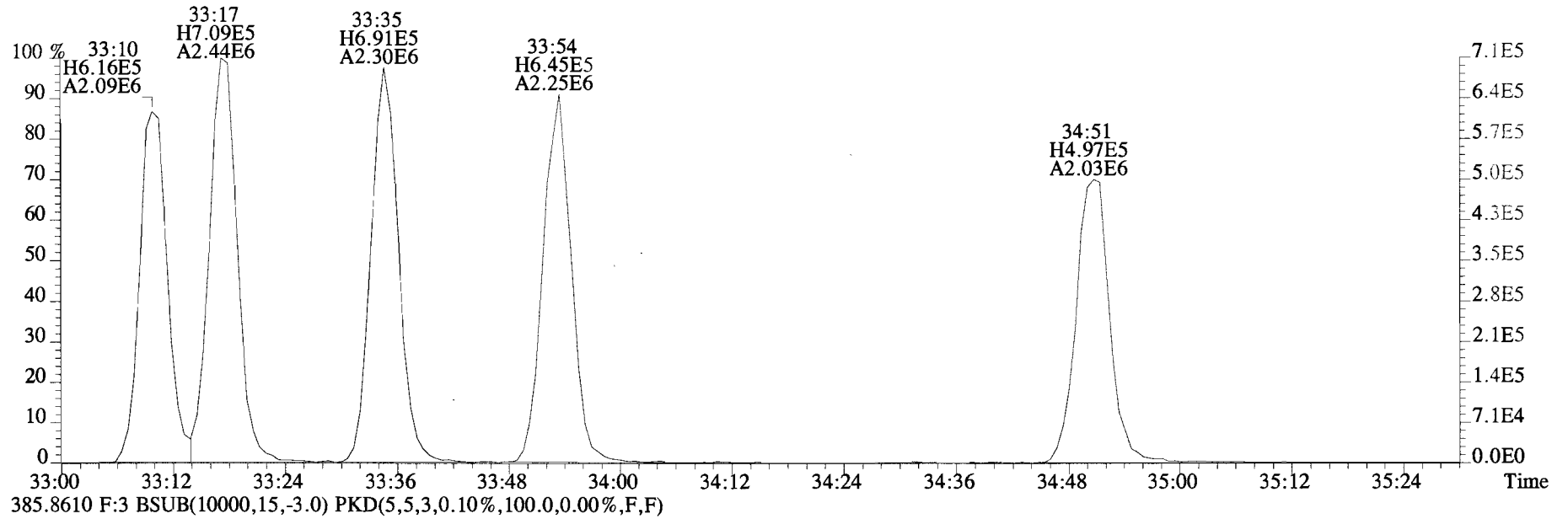
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



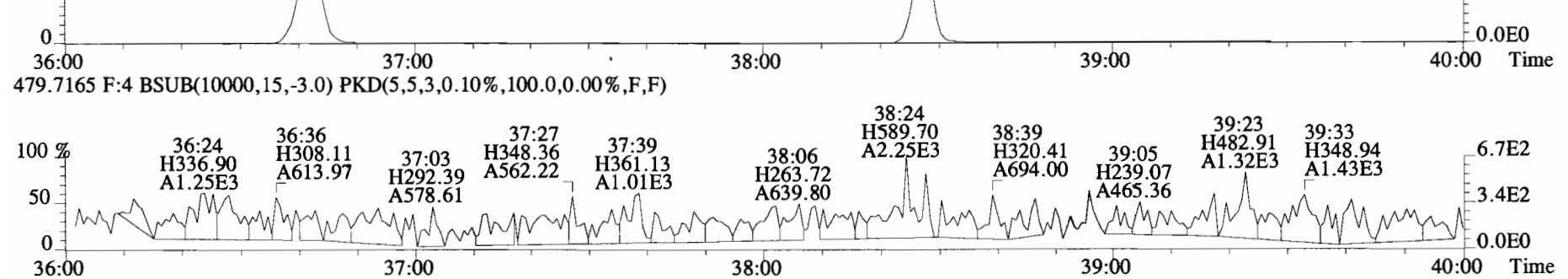
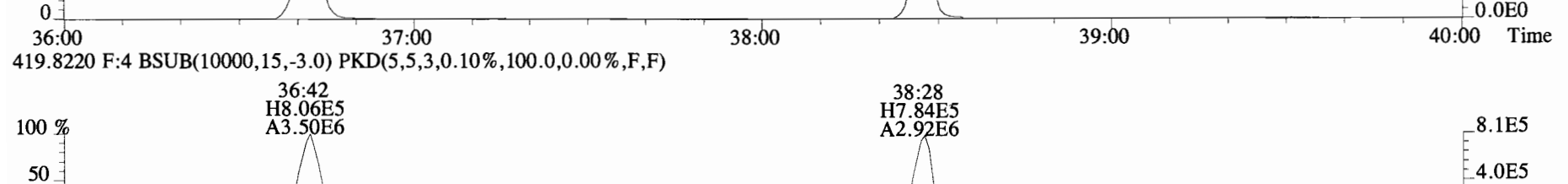
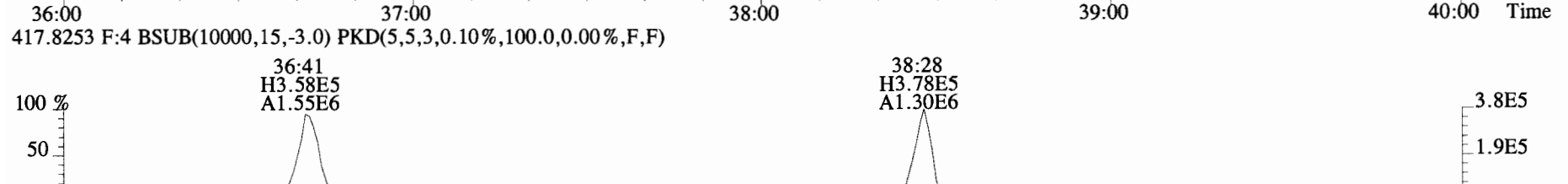
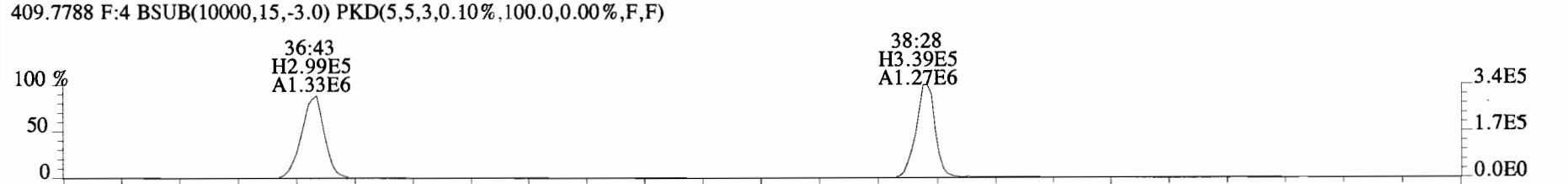
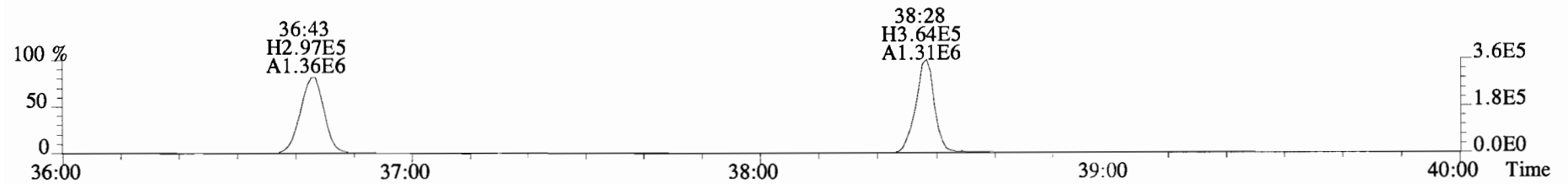
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



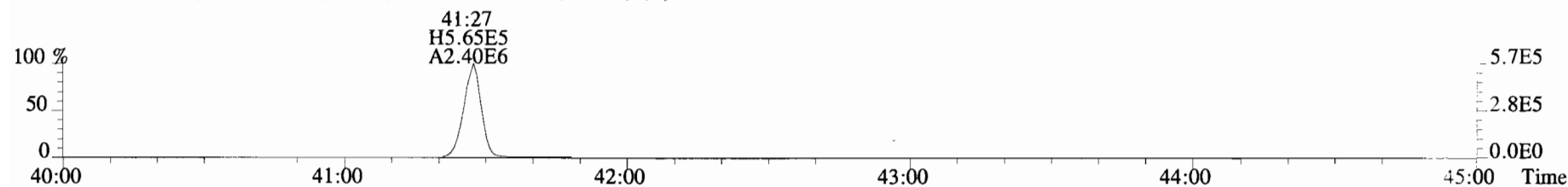
File:191106D1 #1-384 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



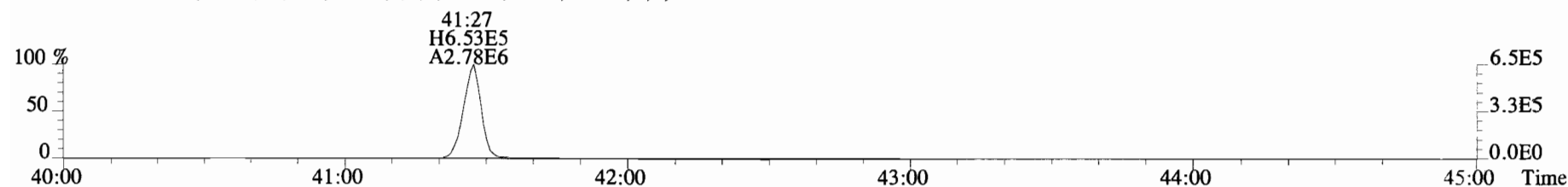
File:191106D1 #1-356 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%.100.0,0.00%,F,F)



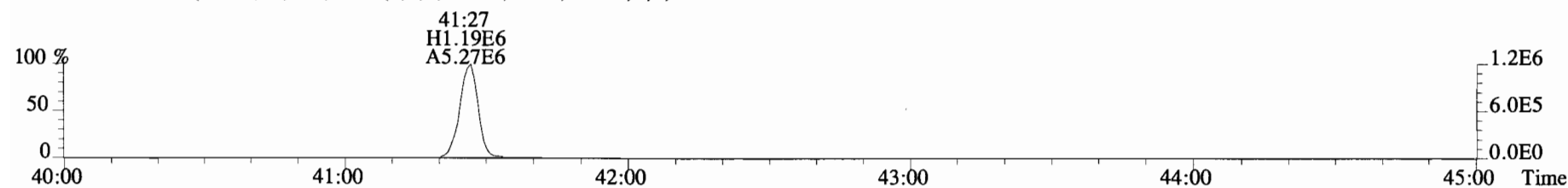
File:191106D1 #1-431 Acq: 6-NOV-2019 11:41:40 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Viata Analytical Laboratory_VG7 Text:ST191106D1-1 1613 CS3 19C2204 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



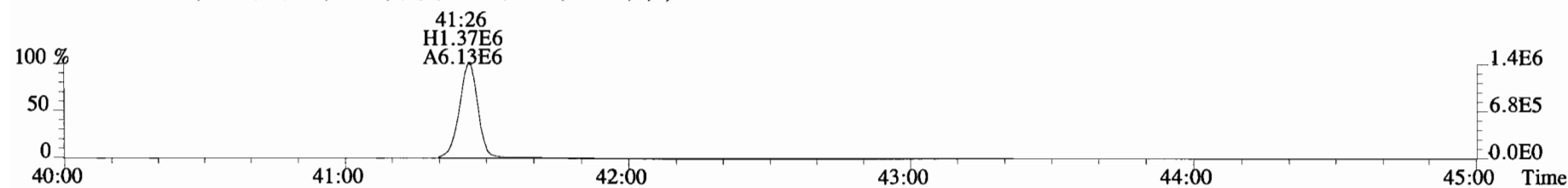
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



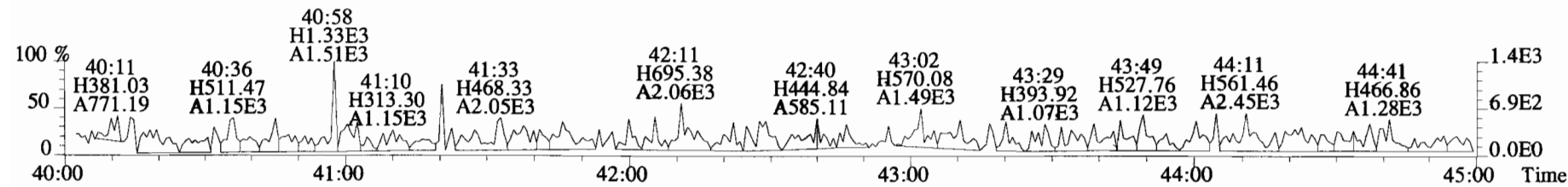
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

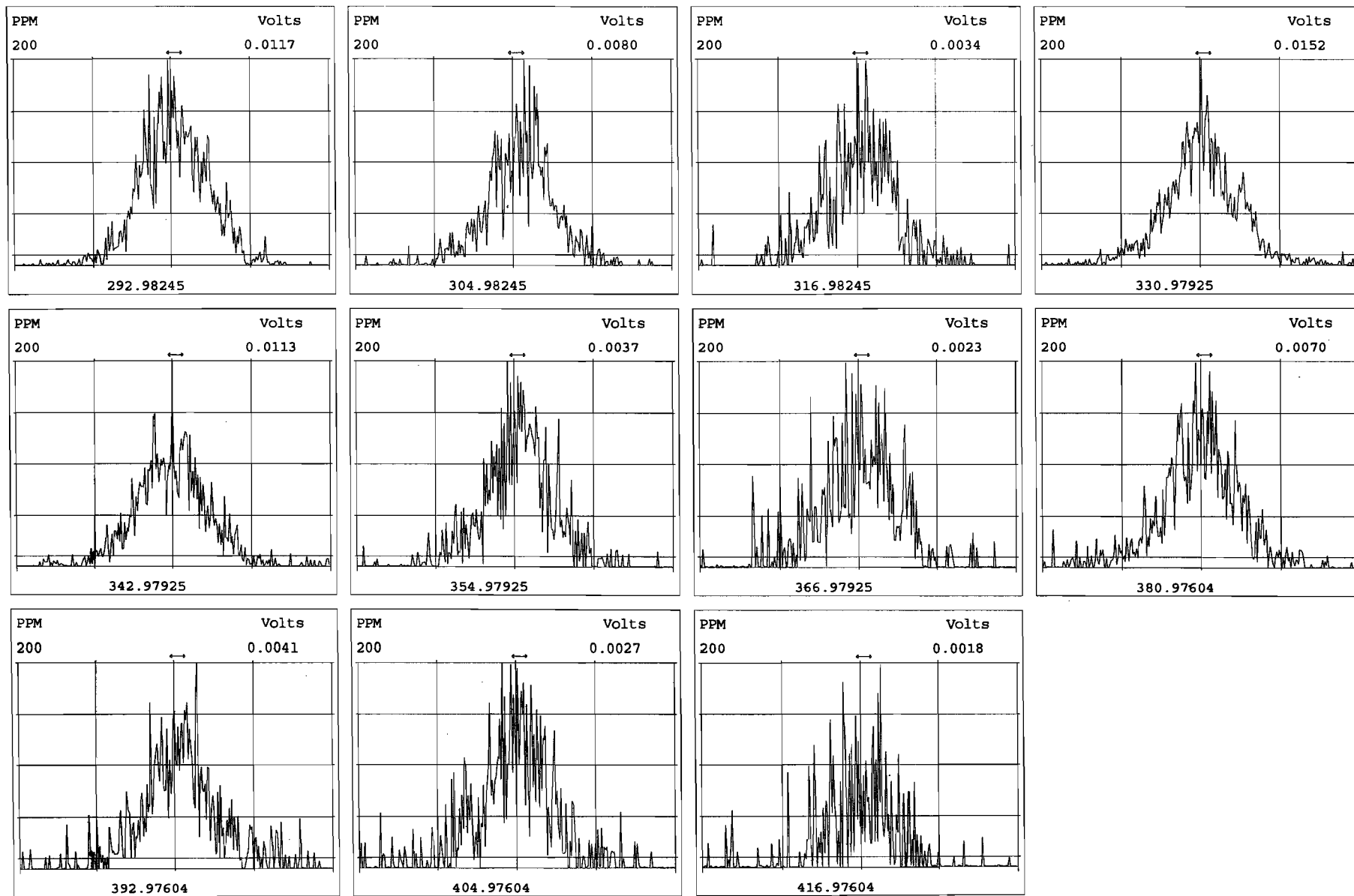


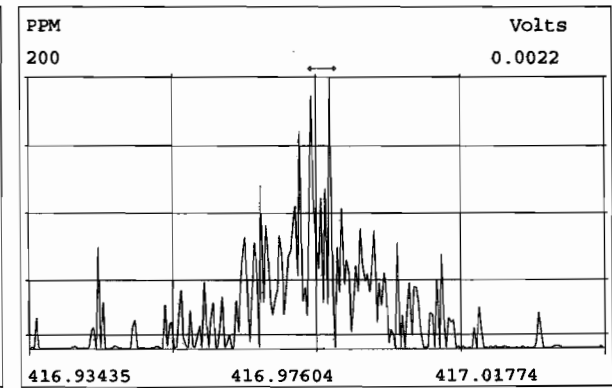
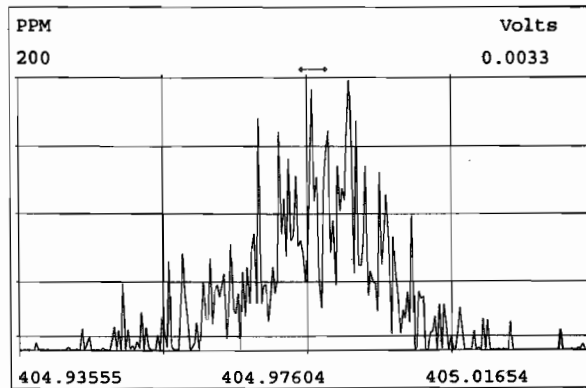
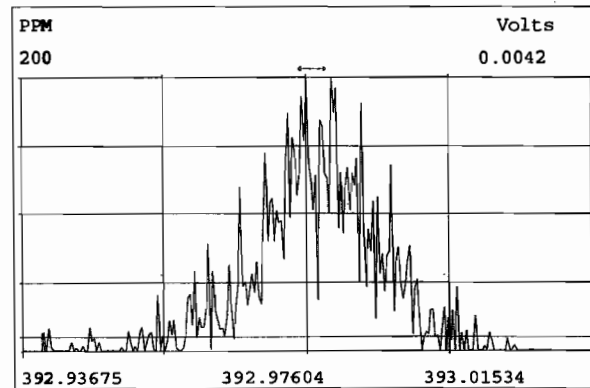
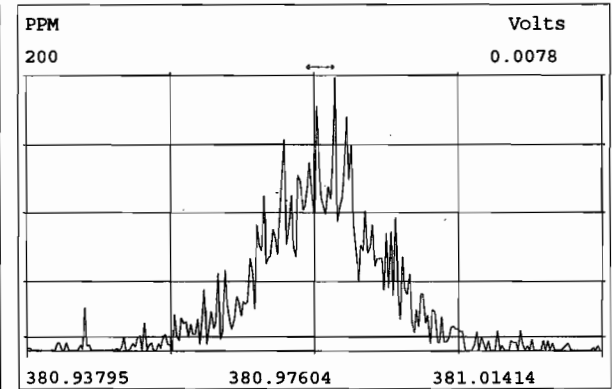
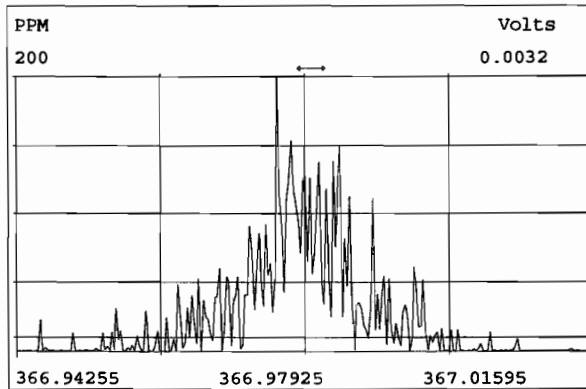
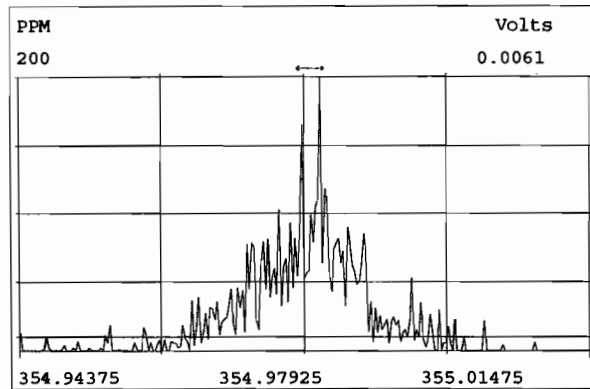
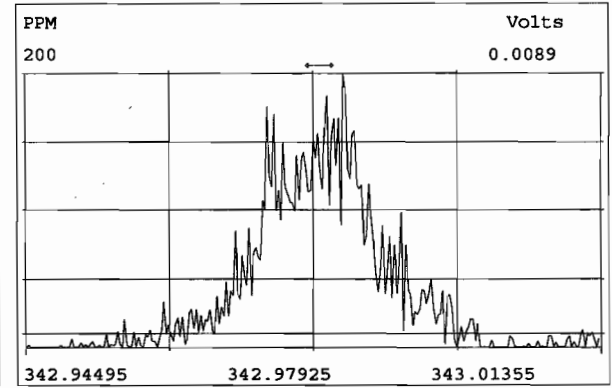
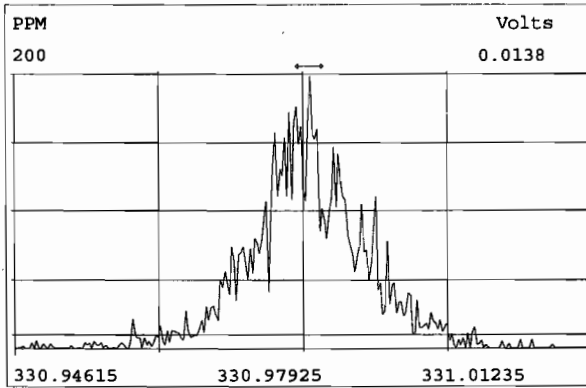
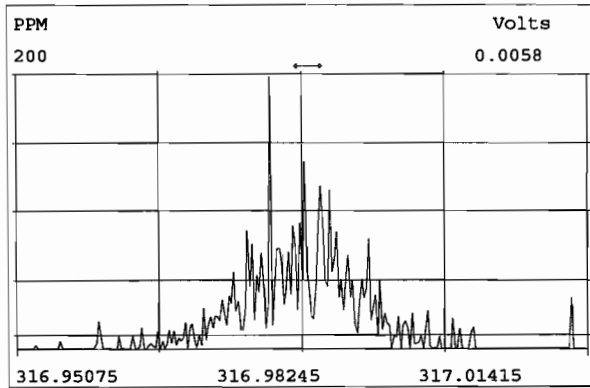
455.7801 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

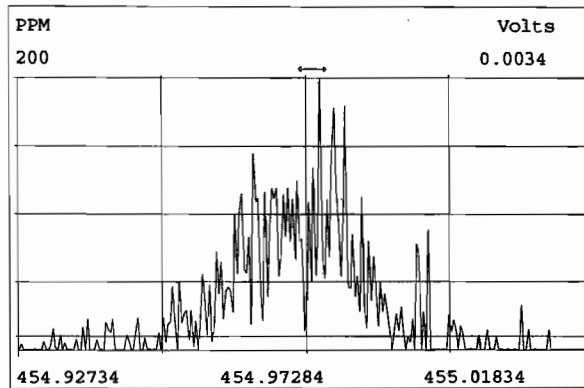
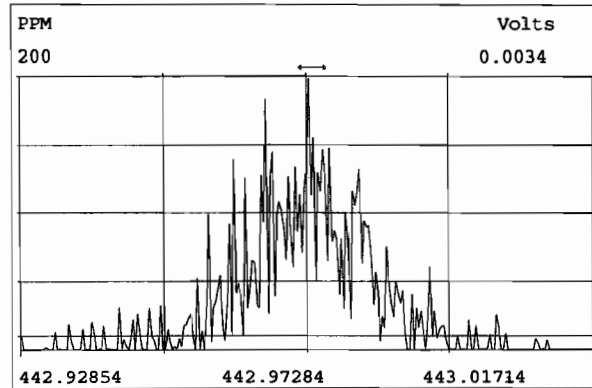
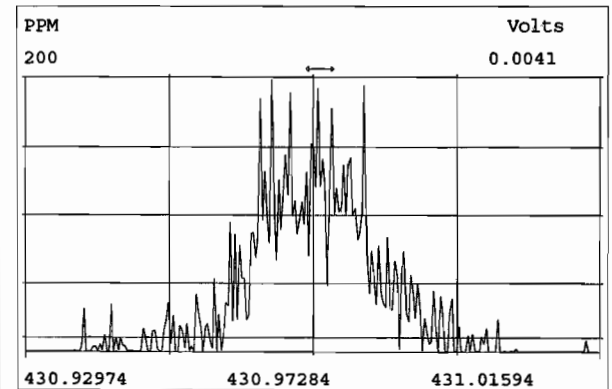
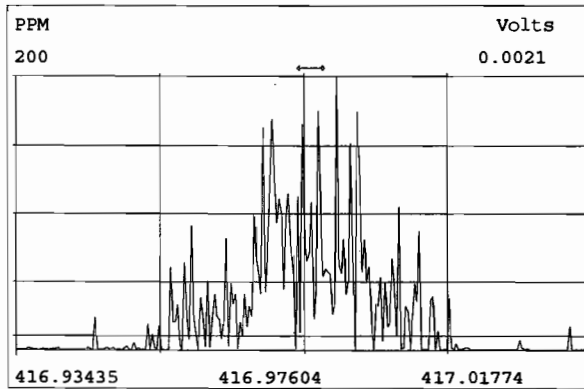
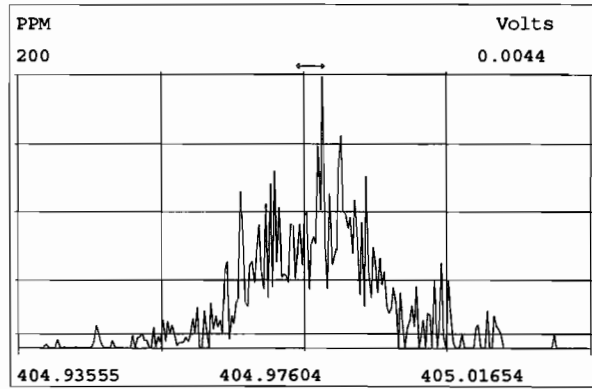
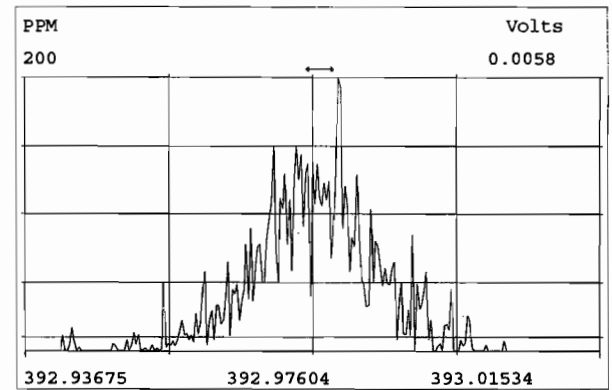
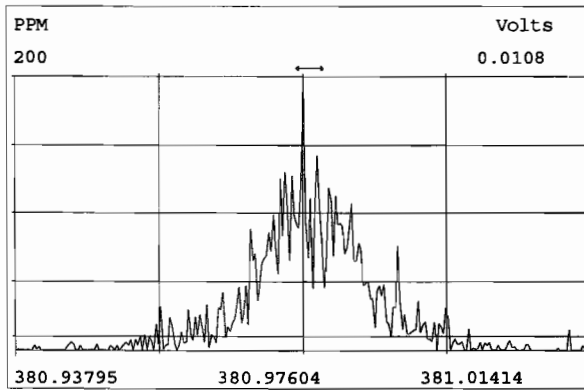
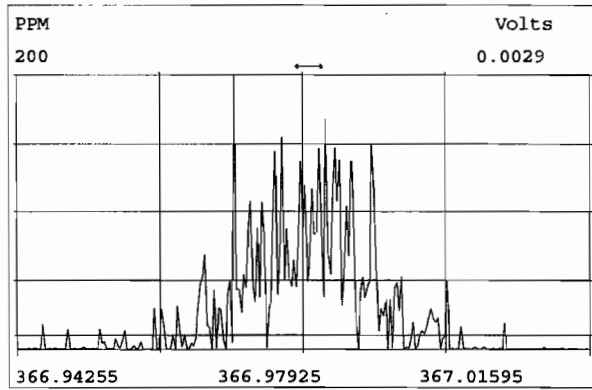






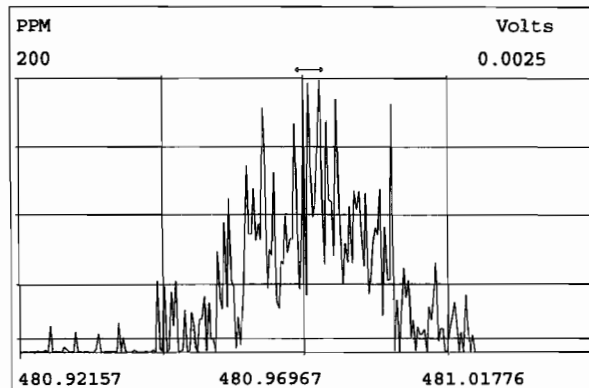
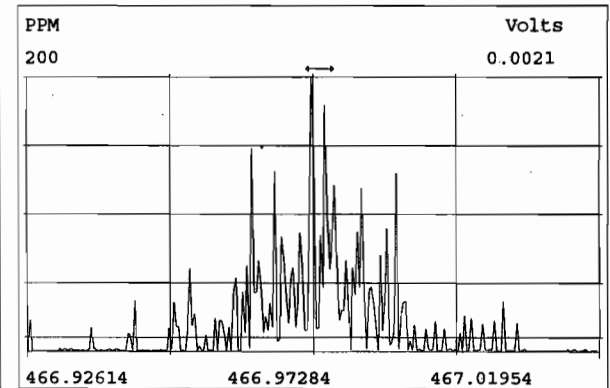
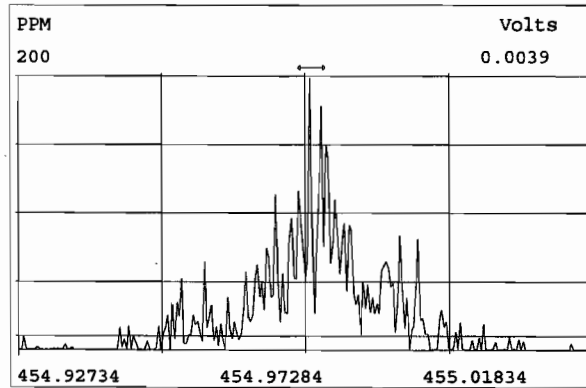
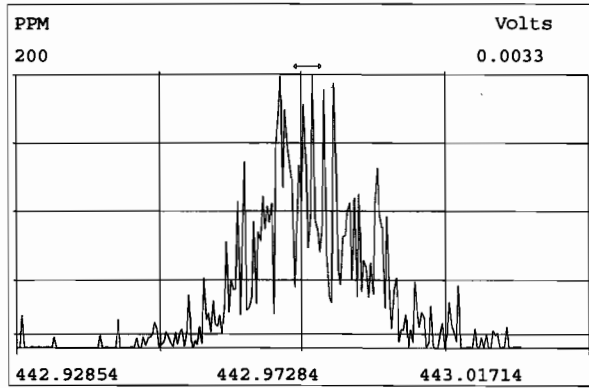
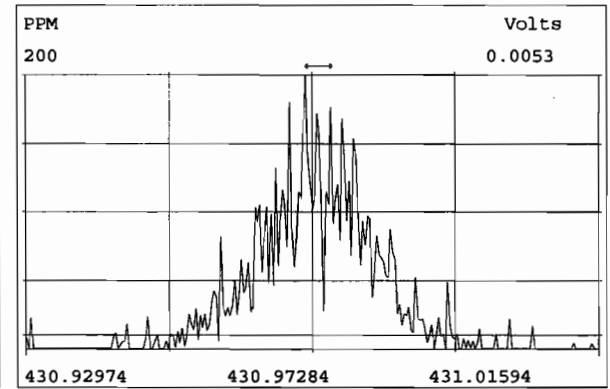
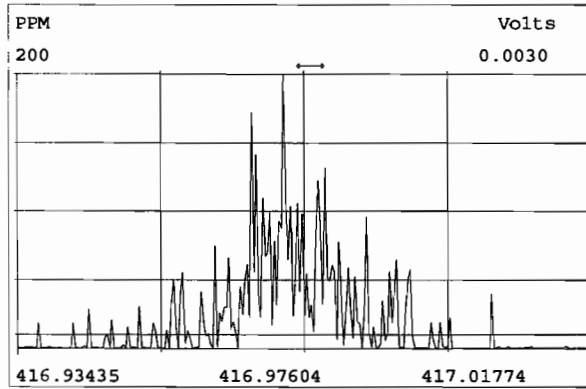
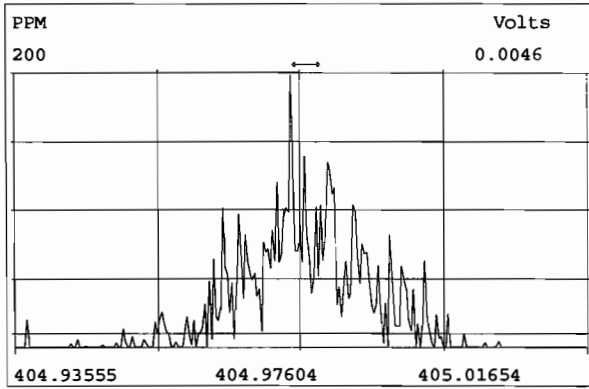
Peak Locate Examination: 6-NOV-2019:23:50 File:RES_CHECK

Experiment:OCDD_DB5 Function:3 Reference:PFK



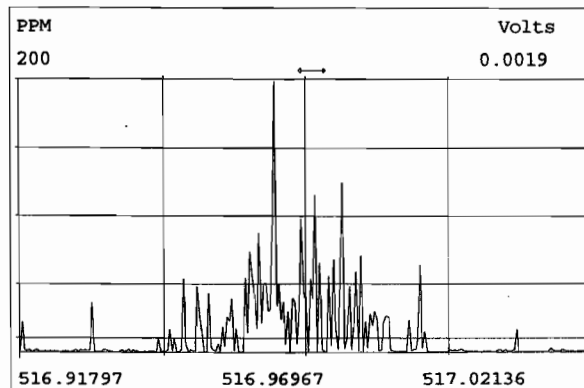
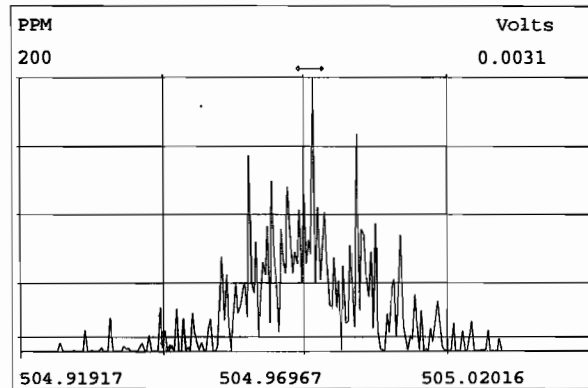
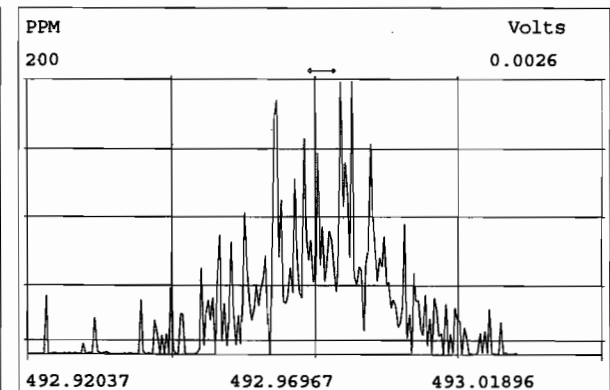
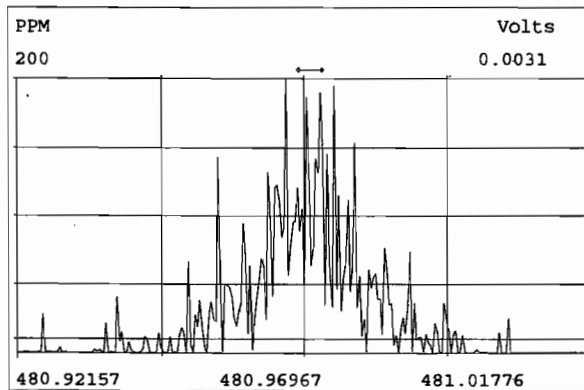
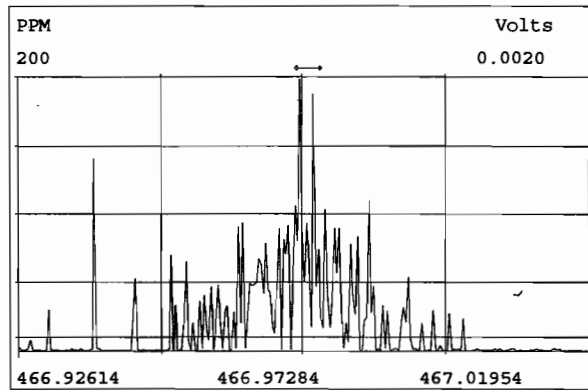
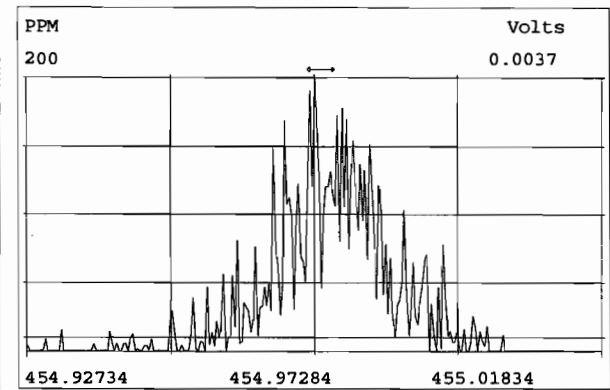
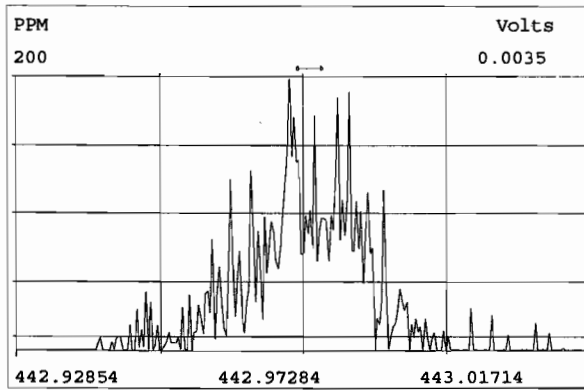
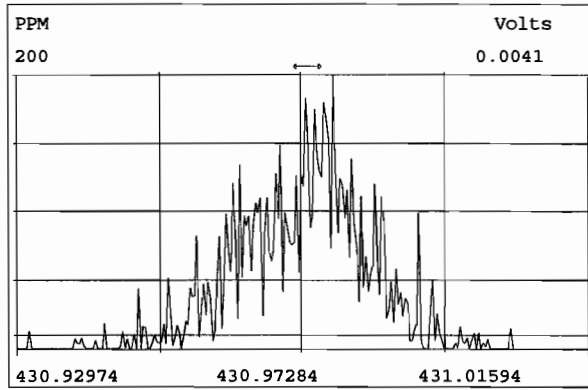
Peak Locate Examination: 6-NOV-2019:23:51 File:RES_CHECK

Experiment:OCDD_DB5 Function:4 Reference:PFK



Peak Locate Examination: 6-NOV-2019:23:52 File:RES_CHECK

Experiment:OCDD_DB5 Function:5 Reference:PFK



INITIAL CALIBRATION

Data filename: 191009D1
 Samp# 1 0.25 Samp# 2 0.50 Samp# 3 2.0 Samp# 4 10 Samp# 5 40 Samp# 6 300

| Name | Mean RRF | %RSD | RRF#1 | RRF#2 | RRF#3 | RRF#4 | RRF#5 | RRF#6 |
|-------------------------|----------|---------|-------|-------|-------|-------|-------|-------|
| 2,3,7,8-TCDD | 0.9053 | 7.55 % | 0.84 | 0.83 | 0.87 | 0.99 | 0.92 | 0.98 |
| 1,2,3,7,8-PeCDD | 0.9027 | 4.95 % | 0.86 | 0.87 | 0.88 | 0.88 | 0.96 | 0.96 |
| 1,2,3,4,7,8-HxCDD | 1.1013 | 3.97 % | 1.12 | 1.13 | 1.03 | 1.08 | 1.09 | 1.15 |
| 1,2,3,6,7,8-HxCDD | 0.9386 | 7.68 % | 0.83 | 0.88 | 1.01 | 0.92 | 0.98 | 1.00 |
| 1,2,3,7,8,9-HxCDD | 0.9613 | 4.62 % | 0.95 | 0.90 | 0.93 | 0.95 | 1.00 | 1.03 |
| 1,2,3,4,6,7,8-HpCDD | 0.9794 | 5.84 % | 0.90 | 0.97 | 0.95 | 0.96 | 1.03 | 1.06 |
| OCDD | 0.9585 | 4.07 % | 0.93 | 0.94 | 0.92 | 0.94 | 1.01 | 1.01 |
| 2,3,7,8-TCDF | 0.9501 | 8.27 % | 1.09 | 0.90 | 0.89 | 0.89 | 0.95 | 0.99 |
| 1,2,3,7,8-PeCDF | 0.9603 | 4.05 % | 0.94 | 0.94 | 0.92 | 0.95 | 1.00 | 1.01 |
| 2,3,4,7,8-PeCDF | 1.0148 | 3.01 % | 1.00 | 0.99 | 1.00 | 1.00 | 1.03 | 1.07 |
| 1,2,3,4,7,8-HxCDF | 1.1768 | 4.35 % | 1.23 | 1.11 | 1.15 | 1.14 | 1.20 | 1.24 |
| 1,2,3,6,7,8-HxCDF | 1.0689 | 3.63 % | 1.01 | 1.07 | 1.06 | 1.05 | 1.12 | 1.11 |
| 2,3,4,6,7,8-HxCDF | 1.1136 | 5.58 % | 1.06 | 1.03 | 1.12 | 1.11 | 1.16 | 1.20 |
| 1,2,3,7,8,9-HxCDF | 1.0616 | 3.91 % | 1.05 | 1.02 | 1.02 | 1.06 | 1.08 | 1.13 |
| 1,2,3,4,6,7,8-HpCDF | 1.1276 | 3.90 % | 1.13 | 1.13 | 1.06 | 1.10 | 1.17 | 1.18 |
| 1,2,3,4,7,8,9-HpCDF | 1.2799 | 3.29 % | 1.30 | 1.24 | 1.25 | 1.25 | 1.31 | 1.34 |
| OCDF | 0.9472 | 3.80 % | 0.95 | 0.92 | 0.91 | 0.92 | 1.00 | 0.98 |
| 13C-2,3,7,8-TCDD | 1.0954 | 1.91 % | 1.11 | 1.08 | 1.06 | 1.10 | 1.12 | 1.11 |
| 13C-1,2,3,7,8-PeCDD | 0.8814 | 5.11 % | 0.89 | 0.86 | 0.83 | 0.86 | 0.89 | 0.96 |
| 13C-1,2,3,4,7,8-HxCDD | 0.6421 | 10.35 % | 0.65 | 0.60 | 0.58 | 0.61 | 0.65 | 0.77 |
| 13C-1,2,3,6,7,8-HxCDD | 0.8555 | 4.13 % | 0.86 | 0.87 | 0.82 | 0.87 | 0.80 | 0.90 |
| 13C-1,2,3,7,8,9-HxCDD | 0.8066 | 5.57 % | 0.84 | 0.80 | 0.76 | 0.80 | 0.76 | 0.88 |
| 13C-1,2,3,4,6,7,8-HpCDD | 0.6539 | 9.07 % | 0.70 | 0.63 | 0.59 | 0.62 | 0.63 | 0.75 |
| 13C-OCDD | 0.5797 | 10.98 % | 0.60 | 0.52 | 0.53 | 0.55 | 0.59 | 0.69 |
| 13C-2,3,7,8-TCDF | 1.0349 | 1.62 % | 1.04 | 1.00 | 1.03 | 1.05 | 1.04 | 1.04 |
| 13C-1,2,3,7,8-PeCDF | 0.8542 | 4.58 % | 0.84 | 0.82 | 0.82 | 0.87 | 0.86 | 0.92 |
| 13C-2,3,4,7,8-PeCDF | 0.8471 | 3.79 % | 0.81 | 0.84 | 0.83 | 0.84 | 0.85 | 0.91 |
| 13C-1,2,3,4,7,8-HxCDF | 0.8317 | 8.50 % | 0.76 | 0.80 | 0.79 | 0.86 | 0.83 | 0.96 |
| 13C-1,2,3,6,7,8-HxCDF | 1.0344 | 5.35 % | 1.00 | 1.03 | 1.03 | 1.03 | 0.98 | 1.14 |
| 13C-2,3,4,6,7,8-HxCDF | 0.9533 | 6.17 % | 0.94 | 0.94 | 0.90 | 0.93 | 0.93 | 1.07 |
| 13C-1,2,3,7,8,9-HxCDF | 0.8277 | 8.68 % | 0.82 | 0.80 | 0.77 | 0.78 | 0.83 | 0.96 |
| 13C-1,2,3,4,6,7,8-HpCDF | 0.7575 | 6.47 % | 0.76 | 0.73 | 0.72 | 0.75 | 0.73 | 0.85 |
| 13C-1,2,3,4,7,8,9-HpCDF | 0.5812 | 8.97 % | 0.62 | 0.54 | 0.52 | 0.55 | 0.58 | 0.66 |
| 13C-OCDF | 0.6890 | 12.48 % | 0.69 | 0.62 | 0.62 | 0.65 | 0.72 | 0.85 |
| 37Cl-2,3,7,8-TCDD | 1.1977 | 8.83 % | 1.40 | 1.16 | 1.16 | 1.11 | 1.15 | 1.21 |
| 13C-1,2,3,4-TCDD | 1.0000 | 0.00 % | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 13C-1,2,3,4-TCDF | 1.0000 | 0.00 % | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| 13C-1,2,3,4,6,9-HxCDF | 1.0000 | 0.00 % | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

DB CT
 10/10/19 10/10/19

Filename: 191009D1 S: 1 Acquired: 9-OCT-19 16:13:04
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-1 1613 CS0 19C2201

| Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|-----|-------|-------------------------|--------|----------|--------|-------|--------|
| 1 | Unk | 2,3,7,8-TCDD | 0.25 | 1.97e+04 | 0.80 y | 26:32 | - 0.84 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 1.25 | 8.06e+04 | 0.62 y | 30:54 | - 0.86 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 1.25 | 7.34e+04 | 1.23 y | 34:16 | - 1.12 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 1.25 | 7.23e+04 | 1.12 y | 34:23 | - 0.83 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 1.25 | 8.01e+04 | 1.19 y | 34:43 | - 0.95 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 1.25 | 6.39e+04 | 1.06 y | 38:05 | - 0.90 |
| 7 | Unk | OCDD | 2.50 | 1.14e+05 | 0.95 y | 41:28 | - 0.93 |
| 8 | Unk | 2,3,7,8-TCDF | 0.25 | 3.62e+04 | 0.85 y | 25:49 | - 1.09 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 1.25 | 1.26e+05 | 1.52 y | 29:46 | - 0.94 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 1.25 | 1.31e+05 | 1.52 y | 30:40 | - 1.00 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 1.25 | 9.36e+04 | 1.22 y | 33:22 | - 1.23 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 1.25 | 1.02e+05 | 1.11 y | 33:29 | - 1.01 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 1.25 | 1.01e+05 | 1.30 y | 34:07 | - 1.06 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 1.25 | 8.74e+04 | 1.10 y | 35:08 | - 1.05 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 1.25 | 8.63e+04 | 1.01 y | 36:57 | - 1.13 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 1.25 | 8.18e+04 | 1.14 y | 38:40 | - 1.30 |
| 17 | Unk | OCDF | 2.50 | 1.32e+05 | 0.94 y | 41:43 | - 0.95 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 9.40e+06 | 0.78 y | 26:32 | - 1.11 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 7.48e+06 | 0.62 y | 30:55 | - 0.89 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 5.24e+06 | 1.19 y | 34:15 | - 0.65 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 6.96e+06 | 1.32 y | 34:22 | - 0.86 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 6.74e+06 | 1.31 y | 34:42 | - 0.84 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 5.68e+06 | 1.05 y | 38:05 | - 0.70 |
| 42 | IS | 13C-OCDD | 200.00 | 9.75e+06 | 0.88 y | 41:28 | - 0.60 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.33e+07 | 0.79 y | 25:49 | - 1.04 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 1.07e+07 | 1.58 y | 29:46 | - 0.84 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 1.05e+07 | 1.58 y | 30:39 | - 0.81 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 6.11e+06 | 0.51 y | 33:21 | - 0.76 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 8.04e+06 | 0.50 y | 33:29 | - 1.00 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 7.61e+06 | 0.50 y | 34:07 | - 0.94 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 6.66e+06 | 0.48 y | 35:07 | - 0.82 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 6.12e+06 | 0.42 y | 36:57 | - 0.76 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 5.02e+06 | 0.45 y | 38:41 | - 0.62 |
| 52 | IS | 13C-OCDF | 200.00 | 1.11e+07 | 0.90 y | 41:43 | - 0.69 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 0.25 | 2.97e+04 | | 26:33 | - 1.40 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 8.45e+06 | 0.80 y | 25:59 | - 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.28e+07 | 0.79 y | 24:39 | - 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 8.07e+06 | 0.52 y | 33:47 | - 1.00 |

DB
10/10/14

Filename: 191009D1 S: 2 Acquired: 9-OCT-19 17:00:45
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-2 1613 CS1 19C2202

| | Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|----|-------|-------------------------|--------|----------|--------|-------|----|------|
| 1 | Unk | 2,3,7,8-TCDD | 0.50 | 3.54e+04 | 0.78 y | 26:34 | - | 0.83 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 2.50 | 1.46e+05 | 0.60 y | 30:56 | - | 0.87 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 2.50 | 1.25e+05 | 1.20 y | 34:16 | - | 1.13 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 2.50 | 1.40e+05 | 1.22 y | 34:23 | - | 0.88 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 2.50 | 1.33e+05 | 1.15 y | 34:43 | - | 0.90 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 2.50 | 1.13e+05 | 0.97 y | 38:06 | - | 0.97 |
| 7 | Unk | OCDD | 5.00 | 1.78e+05 | 0.90 y | 41:28 | - | 0.94 |
| 8 | Unk | 2,3,7,8-TCDF | 0.50 | 5.25e+04 | 0.74 y | 25:51 | - | 0.90 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 2.50 | 2.25e+05 | 1.59 y | 29:48 | - | 0.94 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 2.50 | 2.42e+05 | 1.50 y | 30:40 | - | 0.99 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 2.50 | 1.62e+05 | 1.16 y | 33:22 | - | 1.11 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 2.50 | 2.03e+05 | 1.20 y | 33:30 | - | 1.07 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 2.50 | 1.79e+05 | 1.30 y | 34:07 | - | 1.03 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 2.50 | 1.49e+05 | 1.24 y | 35:08 | - | 1.02 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 2.50 | 1.51e+05 | 0.91 y | 36:57 | - | 1.13 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 2.50 | 1.23e+05 | 0.94 y | 38:41 | - | 1.24 |
| 17 | Unk | OCDF | 5.00 | 2.09e+05 | 0.91 y | 41:43 | - | 0.92 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 8.50e+06 | 0.78 y | 26:34 | - | 1.08 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 6.74e+06 | 0.63 y | 30:56 | - | 0.86 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 4.41e+06 | 1.38 y | 34:16 | - | 0.60 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 6.35e+06 | 1.20 y | 34:23 | - | 0.87 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 5.87e+06 | 1.26 y | 34:42 | - | 0.80 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 4.64e+06 | 1.05 y | 38:05 | - | 0.63 |
| 42 | IS | 13C-OCDD | 200.00 | 7.58e+06 | 0.89 y | 41:28 | - | 0.52 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.17e+07 | 0.80 y | 25:51 | - | 1.00 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 9.60e+06 | 1.59 y | 29:48 | - | 0.82 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 9.80e+06 | 1.58 y | 30:40 | - | 0.84 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 5.84e+06 | 0.52 y | 33:21 | - | 0.80 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 7.58e+06 | 0.51 y | 33:29 | - | 1.03 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 6.92e+06 | 0.51 y | 34:07 | - | 0.94 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 5.84e+06 | 0.49 y | 35:08 | - | 0.80 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 5.38e+06 | 0.43 y | 36:57 | - | 0.73 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 3.99e+06 | 0.43 y | 38:41 | - | 0.54 |
| 52 | IS | 13C-OCDF | 200.00 | 9.05e+06 | 0.88 y | 41:43 | - | 0.62 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 0.50 | 4.55e+04 | | 26:34 | - | 1.16 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 7.86e+06 | 0.77 y | 26:01 | - | 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.17e+07 | 0.83 y | 24:41 | - | 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 7.33e+06 | 0.52 y | 33:47 | - | 1.00 |

DB
10/10/19

Filename: 191009D1 S: 3 Acquired: 9-OCT-19 17:48:27
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-3 1613 CS2 19C2203

| | Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|----|-------|-------------------------|--------|----------|--------|-------|----|------|
| 1 | Unk | 2,3,7,8-TCDD | 2.00 | 1.35e+05 | 0.74 y | 26:33 | - | 0.87 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 10.00 | 5.33e+05 | 0.64 y | 30:56 | - | 0.88 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 10.00 | 3.94e+05 | 1.22 y | 34:16 | - | 1.03 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 10.00 | 5.50e+05 | 1.25 y | 34:23 | - | 1.01 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 10.00 | 4.71e+05 | 1.36 y | 34:43 | - | 0.93 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 10.00 | 3.70e+05 | 1.02 y | 38:06 | - | 0.95 |
| 7 | Unk | OCDD | 20.00 | 6.41e+05 | 0.90 y | 41:29 | - | 0.92 |
| 8 | Unk | 2,3,7,8-TCDF | 2.00 | 1.90e+05 | 0.83 y | 25:49 | - | 0.89 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 10.00 | 7.88e+05 | 1.58 y | 29:47 | - | 0.92 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 10.00 | 8.71e+05 | 1.56 y | 30:40 | - | 1.00 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 10.00 | 6.02e+05 | 1.14 y | 33:22 | - | 1.15 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 10.00 | 7.20e+05 | 1.27 y | 33:30 | - | 1.06 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 10.00 | 6.66e+05 | 1.26 y | 34:08 | - | 1.12 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 10.00 | 5.16e+05 | 1.16 y | 35:08 | - | 1.02 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 10.00 | 5.02e+05 | 1.05 y | 36:57 | - | 1.06 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 10.00 | 4.31e+05 | 1.08 y | 38:41 | - | 1.25 |
| 17 | Unk | OCDF | 20.00 | 7.38e+05 | 0.91 y | 41:44 | - | 0.91 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 7.73e+06 | 0.78 y | 26:33 | - | 1.06 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 6.03e+06 | 0.62 y | 30:55 | - | 0.83 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 3.81e+06 | 1.24 y | 34:15 | - | 0.58 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 5.44e+06 | 1.28 y | 34:22 | - | 0.82 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 5.03e+06 | 1.21 y | 34:42 | - | 0.76 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 3.89e+06 | 1.09 y | 38:05 | - | 0.59 |
| 42 | IS | 13C-OCDD | 200.00 | 6.97e+06 | 0.90 y | 41:28 | - | 0.53 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.08e+07 | 0.82 y | 25:49 | - | 1.03 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 8.55e+06 | 1.59 y | 29:47 | - | 0.82 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 8.70e+06 | 1.59 y | 30:40 | - | 0.83 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 5.22e+06 | 0.49 y | 33:21 | - | 0.79 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 6.80e+06 | 0.51 y | 33:29 | - | 1.03 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 5.93e+06 | 0.52 y | 34:07 | - | 0.90 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 5.05e+06 | 0.51 y | 35:08 | - | 0.77 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 4.73e+06 | 0.44 y | 36:57 | - | 0.72 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 3.46e+06 | 0.45 y | 38:41 | - | 0.52 |
| 52 | IS | 13C-OCDF | 200.00 | 8.15e+06 | 0.92 y | 41:44 | - | 0.62 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 2.00 | 1.69e+05 | | 26:33 | - | 1.16 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 7.29e+06 | 0.77 y | 25:59 | - | 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.04e+07 | 0.82 y | 24:39 | - | 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 6.60e+06 | 0.52 y | 33:47 | - | 1.00 |

DB
10/10/19

Filename: 191009D1 S: 4 Acquired: 9-OCT-19 18:36:09
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-4 1613 CS3 19C2204

| | Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|----|-------|-------------------------|--------|----------|--------|-------|----|------|
| 1 | Unk | 2,3,7,8-TCDD | 10.00 | 8.37e+05 | 0.80 y | 26:35 | - | 0.99 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 50.00 | 2.94e+06 | 0.61 y | 30:56 | - | 0.88 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 50.00 | 2.38e+06 | 1.21 y | 34:16 | - | 1.08 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 50.00 | 2.90e+06 | 1.19 y | 34:23 | - | 0.92 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 50.00 | 2.74e+06 | 1.24 y | 34:42 | - | 0.95 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 50.00 | 2.15e+06 | 1.03 y | 38:05 | - | 0.96 |
| 7 | Unk | OCDD | 100.00 | 3.73e+06 | 0.91 y | 41:28 | - | 0.94 |
| 8 | Unk | 2,3,7,8-TCDF | 10.00 | 1.05e+06 | 0.80 y | 25:51 | - | 0.89 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 50.00 | 4.65e+06 | 1.59 y | 29:47 | - | 0.95 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 50.00 | 4.70e+06 | 1.68 y | 30:40 | - | 1.00 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 50.00 | 3.52e+06 | 1.24 y | 33:21 | - | 1.14 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 50.00 | 3.92e+06 | 1.25 y | 33:29 | - | 1.05 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 50.00 | 3.74e+06 | 1.22 y | 34:07 | - | 1.11 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 50.00 | 3.00e+06 | 1.19 y | 35:07 | - | 1.06 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 50.00 | 2.97e+06 | 1.04 y | 36:57 | - | 1.10 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 50.00 | 2.49e+06 | 1.07 y | 38:41 | - | 1.25 |
| 17 | Unk | OCDF | 100.00 | 4.33e+06 | 0.91 y | 41:43 | - | 0.92 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 8.46e+06 | 0.74 y | 26:33 | - | 1.10 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 6.66e+06 | 0.62 y | 30:55 | - | 0.86 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 4.42e+06 | 1.25 y | 34:15 | - | 0.61 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 6.30e+06 | 1.28 y | 34:22 | - | 0.87 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 5.76e+06 | 1.27 y | 34:41 | - | 0.80 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 4.47e+06 | 1.05 y | 38:05 | - | 0.62 |
| 42 | IS | 13C-OCDD | 200.00 | 7.90e+06 | 0.94 y | 41:27 | - | 0.55 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.18e+07 | 0.79 y | 25:50 | - | 1.05 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 9.79e+06 | 1.62 y | 29:47 | - | 0.87 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 9.43e+06 | 1.61 y | 30:39 | - | 0.84 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 6.19e+06 | 0.50 y | 33:21 | - | 0.86 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 7.47e+06 | 0.51 y | 33:29 | - | 1.03 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 6.75e+06 | 0.49 y | 34:06 | - | 0.93 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 5.64e+06 | 0.49 y | 35:07 | - | 0.78 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 5.40e+06 | 0.43 y | 36:55 | - | 0.75 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 3.99e+06 | 0.44 y | 38:40 | - | 0.55 |
| 52 | IS | 13C-OCDF | 200.00 | 9.37e+06 | 0.89 y | 41:43 | - | 0.65 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 10.00 | 8.56e+05 | | 26:35 | - | 1.11 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 7.70e+06 | 0.75 y | 26:00 | - | 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.13e+07 | 0.82 y | 24:41 | - | 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 7.23e+06 | 0.51 y | 33:47 | - | 1.00 |

DB

10/10/19

Filename: 191009D1 S: 5 Acquired: 9-OCT-19 19:23:46
Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
Sample text: ST191009D1-5 1613 CS4 19C2205

| | Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|----|-------|-------------------------|--------|----------|--------|-------|----|------|
| 1 | Unk | 2,3,7,8-TCDD | 40.00 | 3.53e+06 | 0.81 y | 26:35 | - | 0.92 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 200.00 | 1.48e+07 | 0.63 y | 30:55 | - | 0.96 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 200.00 | 1.19e+07 | 1.19 y | 34:15 | - | 1.09 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 200.00 | 1.34e+07 | 1.20 y | 34:22 | - | 0.98 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 200.00 | 1.30e+07 | 1.18 y | 34:41 | - | 1.00 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 200.00 | 1.10e+07 | 1.03 y | 38:04 | - | 1.03 |
| 7 | Unk | OCDD | 400.00 | 2.03e+07 | 0.91 y | 41:26 | - | 1.01 |
| 8 | Unk | 2,3,7,8-TCDF | 40.00 | 5.17e+06 | 0.77 y | 25:52 | - | 0.95 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 200.00 | 2.24e+07 | 1.58 y | 29:47 | - | 1.00 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 200.00 | 2.29e+07 | 1.55 y | 30:40 | - | 1.03 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 200.00 | 1.69e+07 | 1.21 y | 33:21 | - | 1.20 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 200.00 | 1.85e+07 | 1.21 y | 33:29 | - | 1.12 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 200.00 | 1.83e+07 | 1.21 y | 34:06 | - | 1.16 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 200.00 | 1.53e+07 | 1.22 y | 35:06 | - | 1.08 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 200.00 | 1.46e+07 | 1.04 y | 36:56 | - | 1.17 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 200.00 | 1.30e+07 | 1.05 y | 38:39 | - | 1.31 |
| 17 | Unk | OCDF | 400.00 | 2.42e+07 | 0.91 y | 41:41 | - | 1.00 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 9.63e+06 | 0.75 y | 26:34 | - | 1.12 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 7.72e+06 | 0.63 y | 30:54 | - | 0.89 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 5.48e+06 | 1.31 y | 34:14 | - | 0.65 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 6.83e+06 | 1.22 y | 34:21 | - | 0.80 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 6.48e+06 | 1.26 y | 34:40 | - | 0.76 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 5.36e+06 | 1.08 y | 38:03 | - | 0.63 |
| 42 | IS | 13C-OCDD | 200.00 | 1.01e+07 | 0.91 y | 41:25 | - | 0.59 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.36e+07 | 0.80 y | 25:51 | - | 1.04 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 1.12e+07 | 1.57 y | 29:46 | - | 0.86 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 1.11e+07 | 1.52 y | 30:39 | - | 0.85 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 7.05e+06 | 0.50 y | 33:20 | - | 0.83 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 8.28e+06 | 0.49 y | 33:28 | - | 0.98 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 7.90e+06 | 0.51 y | 34:05 | - | 0.93 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 7.08e+06 | 0.51 y | 35:06 | - | 0.83 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 6.23e+06 | 0.46 y | 36:55 | - | 0.73 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 4.95e+06 | 0.44 y | 38:38 | - | 0.58 |
| 52 | IS | 13C-OCDF | 200.00 | 1.22e+07 | 0.90 y | 41:40 | - | 0.72 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 40.00 | 3.96e+06 | | 26:35 | - | 1.15 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 8.64e+06 | 0.78 y | 26:00 | - | 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.30e+07 | 0.83 y | 24:41 | - | 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 8.48e+06 | 0.51 y | 33:46 | - | 1.00 |

DB
10/10/19

Filename: 191009D1 S: 6 Acquired: 9-OCT-19 20:11:17
 Run: 191009D1 Analyte: Cal: 1613VG7-10-9-19 Results:
 Sample text: ST191009D1-6 1613 CS5 19C2206

| | Typ | Name | Amount | Resp | RA | RT | RF | RRF |
|----|-------|-------------------------|---------|----------|--------|-------|----|------|
| 1 | Unk | 2,3,7,8-TCDD | 300.00 | 2.80e+07 | 0.81 y | 26:35 | - | 0.98 |
| 2 | Unk | 1,2,3,7,8-PeCDD | 1500.00 | 1.19e+08 | 0.62 y | 30:55 | - | 0.96 |
| 3 | Unk | 1,2,3,4,7,8-HxCDD | 1500.00 | 1.04e+08 | 1.22 y | 34:15 | - | 1.15 |
| 4 | Unk | 1,2,3,6,7,8-HxCDD | 1500.00 | 1.07e+08 | 1.21 y | 34:22 | - | 1.00 |
| 5 | Unk | 1,2,3,7,8,9-HxCDD | 1500.00 | 1.06e+08 | 1.23 y | 34:41 | - | 1.03 |
| 6 | Unk | 1,2,3,4,6,7,8-HpCDD | 1500.00 | 9.32e+07 | 1.05 y | 38:03 | - | 1.06 |
| 7 | Unk | OCDD | 3000.00 | 1.64e+08 | 0.92 y | 41:25 | - | 1.01 |
| 8 | Unk | 2,3,7,8-TCDF | 300.00 | 3.95e+07 | 0.79 y | 25:52 | - | 0.99 |
| 9 | Unk | 1,2,3,7,8-PeCDF | 1500.00 | 1.79e+08 | 1.58 y | 29:47 | - | 1.01 |
| 10 | Unk | 2,3,4,7,8-PeCDF | 1500.00 | 1.86e+08 | 1.57 y | 30:39 | - | 1.07 |
| 11 | Unk | 1,2,3,4,7,8-HxCDF | 1500.00 | 1.40e+08 | 1.20 y | 33:21 | - | 1.24 |
| 12 | Unk | 1,2,3,6,7,8-HxCDF | 1500.00 | 1.48e+08 | 1.21 y | 33:29 | - | 1.11 |
| 13 | Unk | 2,3,4,6,7,8-HxCDF | 1500.00 | 1.51e+08 | 1.22 y | 34:06 | - | 1.20 |
| 14 | Unk | 1,2,3,7,8,9-HxCDF | 1500.00 | 1.28e+08 | 1.25 y | 35:06 | - | 1.13 |
| 15 | Unk | 1,2,3,4,6,7,8-HpCDF | 1500.00 | 1.18e+08 | 1.03 y | 36:55 | - | 1.18 |
| 16 | Unk | 1,2,3,4,7,8,9-HpCDF | 1500.00 | 1.04e+08 | 1.05 y | 38:38 | - | 1.34 |
| 17 | Unk | OCDF | 3000.00 | 1.96e+08 | 0.91 y | 41:40 | - | 0.98 |
| 36 | IS | 13C-2,3,7,8-TCDD | 100.00 | 9.53e+06 | 0.73 y | 26:33 | - | 1.11 |
| 37 | IS | 13C-1,2,3,7,8-PeCDD | 100.00 | 8.28e+06 | 0.64 y | 30:54 | - | 0.96 |
| 38 | IS | 13C-1,2,3,4,7,8-HxCDD | 100.00 | 6.01e+06 | 1.21 y | 34:14 | - | 0.77 |
| 39 | IS | 13C-1,2,3,6,7,8-HxCDD | 100.00 | 7.08e+06 | 1.32 y | 34:21 | - | 0.90 |
| 40 | IS | 13C-1,2,3,7,8,9-HxCDD | 100.00 | 6.90e+06 | 1.26 y | 34:39 | - | 0.88 |
| 41 | IS | 13C-1,2,3,4,6,7,8-HpCDD | 100.00 | 5.86e+06 | 1.08 y | 38:03 | - | 0.75 |
| 42 | IS | 13C-OCDD | 200.00 | 1.08e+07 | 0.92 y | 41:25 | - | 0.69 |
| 43 | IS | 13C-2,3,7,8-TCDF | 100.00 | 1.33e+07 | 0.80 y | 25:51 | - | 1.04 |
| 44 | IS | 13C-1,2,3,7,8-PeCDF | 100.00 | 1.18e+07 | 1.59 y | 29:46 | - | 0.92 |
| 45 | IS | 13C-2,3,4,7,8-PeCDF | 100.00 | 1.16e+07 | 1.60 y | 30:38 | - | 0.91 |
| 46 | IS | 13C-1,2,3,4,7,8-HxCDF | 100.00 | 7.52e+06 | 0.51 y | 33:20 | - | 0.96 |
| 47 | IS | 13C-1,2,3,6,7,8-HxCDF | 100.00 | 8.92e+06 | 0.50 y | 33:28 | - | 1.14 |
| 48 | IS | 13C-2,3,4,6,7,8-HxCDF | 100.00 | 8.38e+06 | 0.51 y | 34:05 | - | 1.07 |
| 49 | IS | 13C-1,2,3,7,8,9-HxCDF | 100.00 | 7.57e+06 | 0.52 y | 35:05 | - | 0.96 |
| 50 | IS | 13C-1,2,3,4,6,7,8-HpCDF | 100.00 | 6.70e+06 | 0.43 y | 36:54 | - | 0.85 |
| 51 | IS | 13C-1,2,3,4,7,8,9-HpCDF | 100.00 | 5.19e+06 | 0.43 y | 38:37 | - | 0.66 |
| 52 | IS | 13C-OCDF | 200.00 | 1.33e+07 | 0.89 y | 41:39 | - | 0.85 |
| 53 | C/Up | 37Cl-2,3,7,8-TCDD | 199.98 | 2.09e+07 | | 26:35 | - | 1.21 |
| 54 | RS/RT | 13C-1,2,3,4-TCDD | 100.00 | 8.62e+06 | 0.76 y | 26:01 | - | 1.00 |
| 55 | RS | 13C-1,2,3,4-TCDF | 100.00 | 1.27e+07 | 0.84 y | 24:41 | - | 1.00 |
| 56 | RS/RT | 13C-1,2,3,4,6,9-HxCDF | 100.00 | 7.85e+06 | 0.49 y | 33:45 | - | 1.00 |

DB

10/10/19

Run: 191009D1 Analyte: Cal: 1613VG7-10 9-19 Inst. ID: VG-7

Data filename: 191009D1

| Samp# 1 | Samp# 2 | Samp# 3 | Samp# 4 | Samp# 5 | Samp# 6 |
|---------|---------|---------|---------|---------|---------|
| 0.25 | 0.50 | 2.0 | 10 | 40 | 300 |

| Name | Mean RRF | %RSD | RRF#1 | RRF#2 | RRF#3 | RRF#4 | RRF#5 | RRF#6 |
|------------------------|----------|--------|-------|-------|-------|-------|-------|-------|
| Total Tetra-Dioxins | 0.9053 | 7.55 % | 0.84 | 0.83 | 0.87 | 0.99 | 0.92 | 0.98 |
| TCDD EMPC | 0.9053 | 7.55 % | 0.84 | 0.83 | 0.87 | 0.99 | 0.92 | 0.98 |
| Total Penta-Dioxins | 0.9027 | 4.95 % | 0.86 | 0.87 | 0.88 | 0.88 | 0.96 | 0.96 |
| PeCDD EMPC | 0.9027 | 4.95 % | 0.86 | 0.87 | 0.88 | 0.88 | 0.96 | 0.96 |
| Total Hexa-Dioxins | 0.9918 | 4.02 % | 0.95 | 0.96 | 0.99 | 0.97 | 1.02 | 1.06 |
| HxCDD EMPC | 0.9918 | 4.02 % | 0.95 | 0.96 | 0.99 | 0.97 | 1.02 | 1.06 |
| Total Hepta-Dioxins | 0.9794 | 5.84 % | 0.90 | 0.97 | 0.95 | 0.96 | 1.03 | 1.06 |
| HpCDD EMPC | 0.9794 | 5.84 % | 0.90 | 0.97 | 0.95 | 0.96 | 1.03 | 1.06 |
| Total Tetra-Furans | 0.9501 | 8.27 % | 1.09 | 0.90 | 0.89 | 0.89 | 0.95 | 0.99 |
| TCDF EMPC | 0.9501 | 8.27 % | 1.09 | 0.90 | 0.89 | 0.89 | 0.95 | 0.99 |
| 1st Func. Penta-Furans | 0.9875 | 3.40 % | 0.97 | 0.96 | 0.96 | 0.97 | 1.02 | 1.04 |
| 1st Func. PeCDF EMPC | 0.9875 | 3.40 % | 0.97 | 0.96 | 0.96 | 0.97 | 1.02 | 1.04 |
| Total Penta-Furans | 0.9875 | 3.40 % | 0.97 | 0.96 | 0.96 | 0.97 | 1.02 | 1.04 |
| PeCDF EMPC | 0.9875 | 3.40 % | 0.97 | 0.96 | 0.96 | 0.97 | 1.02 | 1.04 |
| Total Hexa-Furans | 1.1033 | 3.70 % | 1.08 | 1.06 | 1.09 | 1.09 | 1.14 | 1.17 |
| HxCDF EMPC | 1.1033 | 3.70 % | 1.08 | 1.06 | 1.09 | 1.09 | 1.14 | 1.17 |
| Total Hepta-Furans | 1.1937 | 3.56 % | 1.21 | 1.17 | 1.14 | 1.16 | 1.23 | 1.25 |
| HpCDF EMPC | 1.1937 | 3.56 % | 1.21 | 1.17 | 1.14 | 1.16 | 1.23 | 1.25 |

DB
10/10/19

Run: 191009D1

Analyte:

Cal: 1613VG7-10-9-19

Inst. ID: VG-7

Data filename: 191009D1

| Samp# 1 | Samp# 2 | Samp# 3 | Samp# 4 | Samp# 5 | Samp# 6 |
|---------|---------|---------|---------|---------|---------|
| 0.25 | 0.50 | 2.0 | 10 | 40 | 300 |

RRT Limits

| Name | Lower | Upper | RRT#1 | RRT#2 | RRT#3 | RRT#4 | RRT#5 | RRT#6 |
|-------------------------|-------|--------|-------|-------|-------|-------|-------|-------|
| 2,3,7,8-TCDD | 0.999 | -1.002 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 | 1.001 |
| 1,2,3,7,8-PeCDD | 0.999 | -1.002 | 0.999 | 1.000 | 1.001 | 1.001 | 1.001 | 1.001 |
| 1,2,3,4,7,8-HxCDD | 0.999 | -1.001 | 1.000 | 1.000 | 1.001 | 1.000 | 1.000 | 1.000 |
| 1,2,3,6,7,8-HxCDD | 0.998 | -1.004 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 | 1.000 |
| 1,2,3,7,8,9-HxCDD | 0.998 | -1.004 | 1.001 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 |
| 1,2,3,4,6,7,8-HpCDD | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| OCDD | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | | | | | | | | |
| 2,3,7,8-TCDF | 0.999 | -1.003 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 | 1.001 |
| 1,2,3,7,8-PeCDF | 0.999 | -1.002 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.001 |
| 2,3,4,7,8-PeCDF | 0.999 | -1.002 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 | 1.001 |
| 1,2,3,4,7,8-HxCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1,2,3,6,7,8-HxCDF | 0.997 | -1.005 | 1.000 | 1.000 | 1.001 | 1.000 | 1.000 | 1.000 |
| 2,3,4,6,7,8-HxCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.001 | 1.001 | 1.000 |
| 1,2,3,7,8,9-HxCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| 1,2,3,4,6,7,8-HpCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.001 | 1.000 | 1.000 |
| 1,2,3,4,7,8,9-HpCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| OCDF | 0.999 | -1.001 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | | | | | | | | |
| 13C-2,3,7,8-TCDD | 0.976 | -1.043 | 1.022 | 1.022 | 1.022 | 1.021 | 1.021 | 1.021 |
| 13C-1,2,3,7,8-PeCDD | 1.000 | -1.567 | 1.190 | 1.189 | 1.190 | 1.189 | 1.188 | 1.188 |
| 13C-1,2,3,4,7,8-HxCDD | 1.002 | -1.026 | 1.014 | 1.014 | 1.014 | 1.014 | 1.014 | 1.014 |
| 13C-1,2,3,6,7,8-HxCDD | 1.007 | -1.029 | 1.017 | 1.018 | 1.018 | 1.017 | 1.017 | 1.018 |
| 13C-1,2,3,7,8,9-HxCDD | 1.014 | -1.038 | 1.027 | 1.027 | 1.027 | 1.027 | 1.027 | 1.027 |
| 13C-1,2,3,4,6,7,8-HpCDD | 1.117 | -1.141 | 1.127 | 1.127 | 1.128 | 1.127 | 1.127 | 1.127 |
| 13C-OCDD | 1.085 | -1.365 | 1.227 | 1.227 | 1.228 | 1.227 | 1.227 | 1.227 |
| 13C-2,3,7,8-TCDF | 0.923 | -1.103 | 0.994 | 0.994 | 0.994 | 0.994 | 0.994 | 0.994 |
| 13C-1,2,3,7,8-PeCDF | 1.000 | -1.425 | 1.146 | 1.146 | 1.146 | 1.145 | 1.145 | 1.144 |
| 13C-2,3,4,7,8-PeCDF | 1.011 | -1.526 | 1.180 | 1.179 | 1.180 | 1.179 | 1.178 | 1.178 |
| 13C-1,2,3,4,7,8-HxCDF | 0.975 | -1.001 | 0.987 | 0.987 | 0.987 | 0.987 | 0.987 | 0.987 |
| 13C-1,2,3,6,7,8-HxCDF | 0.979 | -1.005 | 0.991 | 0.991 | 0.991 | 0.991 | 0.991 | 0.991 |
| 13C-2,3,4,6,7,8-HxCDF | 1.001 | -1.020 | 1.010 | 1.010 | 1.010 | 1.009 | 1.009 | 1.010 |
| 13C-1,2,3,7,8,9-HxCDF | 1.002 | -1.072 | 1.040 | 1.040 | 1.040 | 1.039 | 1.039 | 1.039 |
| 13C-1,2,3,4,6,7,8-HpCDF | 1.069 | -1.111 | 1.093 | 1.093 | 1.094 | 1.093 | 1.093 | 1.093 |
| 13C-1,2,3,4,7,8,9-HpCDF | 1.098 | -1.192 | 1.145 | 1.145 | 1.145 | 1.145 | 1.144 | 1.144 |
| 13C-OCDF | 1.091 | -1.371 | 1.235 | 1.234 | 1.235 | 1.235 | 1.234 | 1.234 |
| | | | | | | | | |
| 37Cl-2,3,7,8-TCDD | 0.989 | -1.052 | 1.022 | 1.021 | 1.022 | 1.022 | 1.022 | 1.022 |
| | | | | | | | | |
| 13C-1,2,3,4-TCDD | 0.000 | -0.000 | * | * | * | * | * | * |
| 13C-1,2,3,4-TCDF | 0.000 | -0.000 | * | * | * | * | * | * |
| 13C-1,2,3,4,6,9-HxCDF | 0.000 | -0.000 | * | * | * | * | * | * |

D)B
10/10/19

FORM 5

PCDD/PCDF RT WINDOW AND ISOMER SPECIFICITY STANDARDS

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Instrument ID: VG-7 Initial Calibration Date: 10-9-19

RT Window Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

ZB-5MS IS Data Filename: 191009D1 S#4 Analysis Date: 9-OCT-19 Time: 18:36:09

DB_225 IS Data Filename: Analysis Date: Time:

ZB-5MS RT WINDOW DEFINING STANDARDS RESULTS

| ISOMERS | ABSOLUTE RT | ISOMERS | ABSOLUTE RT |
|-------------------------|-------------|-------------------------|-------------|
| 1,3,6,8-TCDD (F) | 23:24 | 1,3,6,8-TCDF (F) | 21:25 |
| 1,2,8,9-TCDD (L) | 27:24 | 1,2,8,9-TCDF (L) | 27:33 |
| 1,2,4,7,9-PeCDD (F) | 28:55 | 1,3,4,6,8-PeCDF (F) | 27:28 |
| 1,2,3,8,9-PeCDD (L) | 31:17 | 1,2,3,8,9-PeCDF (L) | 31:32 |
| 1,2,4,6,7,9-HxCDD (F) | 32:41 | 1,2,3,4,6,8-HxCDF (F) | 32:08 |
| 1,2,3,7,8,9-HxCDD (L) | 34:42 | 1,2,3,7,8,9-HxCDF (L) | 35:07 |
| 1,2,3,4,6,7,9-HpCDD (F) | 37:16 | 1,2,3,4,6,7,8-HpCDF (F) | 36:57 |
| 1,2,3,4,6,7,8-HpCDD (L) | 38:05 | 1,2,3,4,7,8,9-HpCDF (L) | 38:41 |

(F) = First eluting isomer (ZB-5MS); (L) = Last eluting isomer (ZB-5MS).

=====

ISOMER SPECIFICITY (IS) TEST STANDARD RESULTS

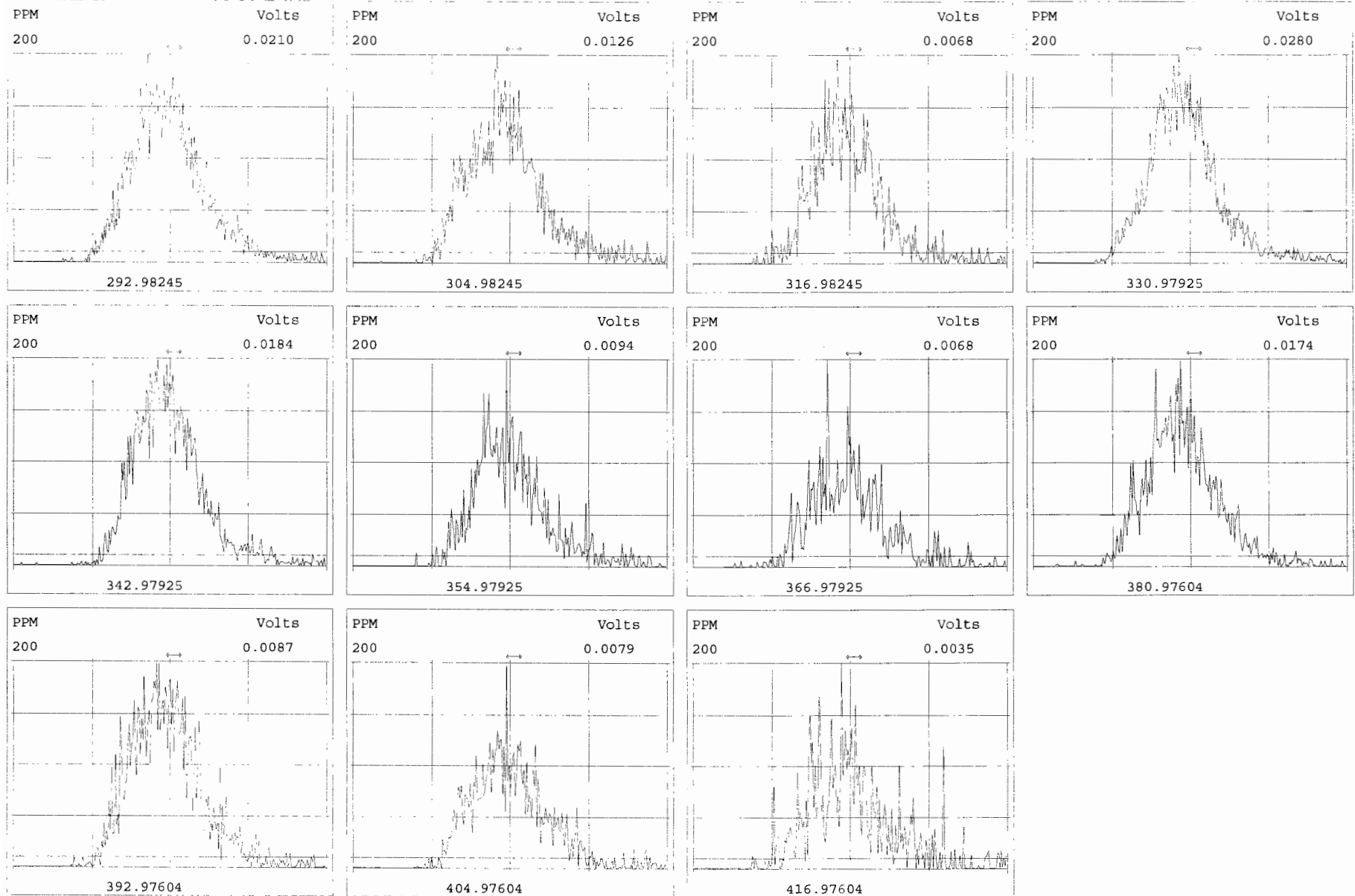
% VALLEY HEIGHT
BETWEEN
COMPARED PEAKS (1)

<25%

(1) To meet contract requirements, %Valley Height Between Compared Peaks shall not exceed 25% (section 15.4.2.2, Method 1613).

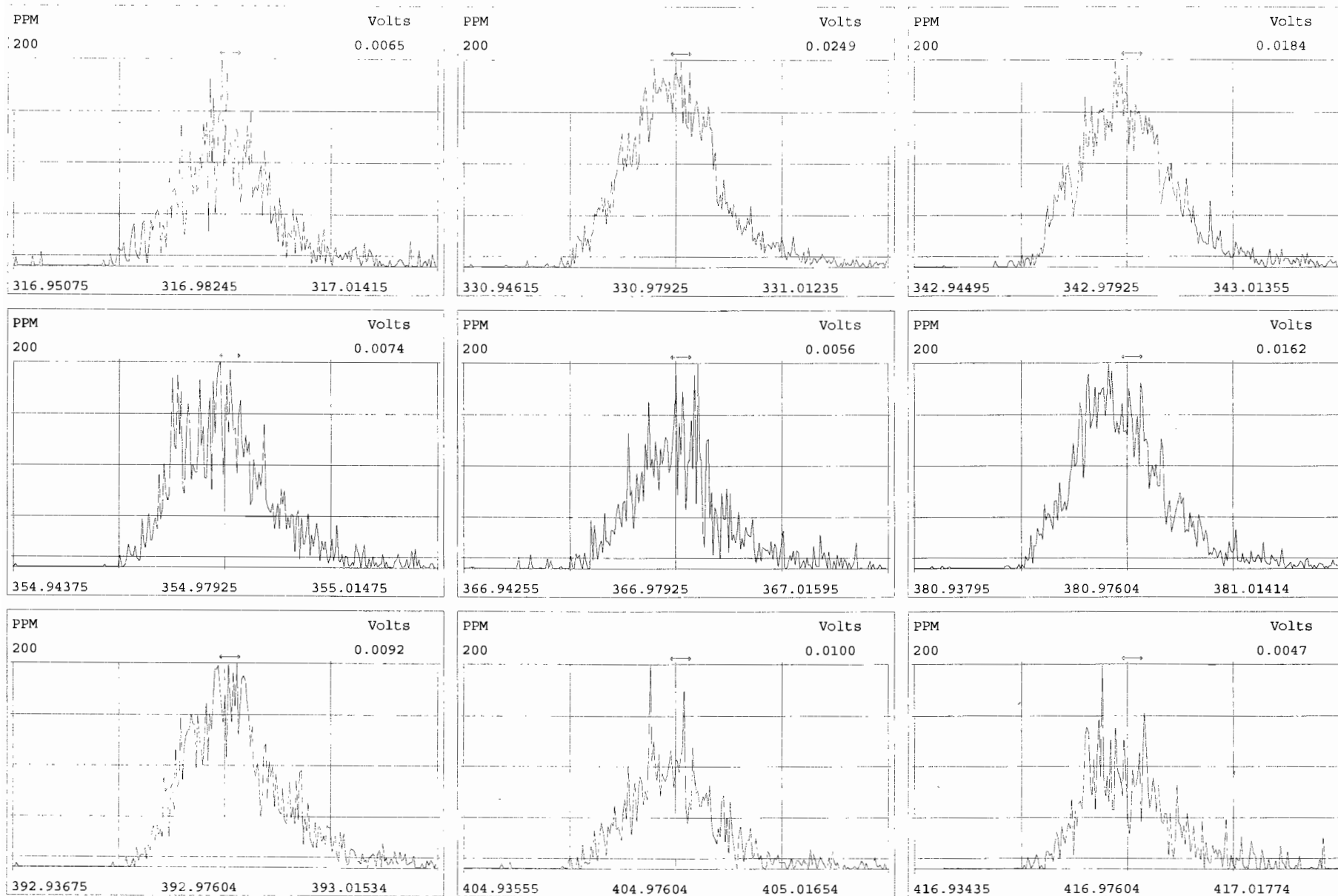
Analyst: DB

Date: 10/10/19



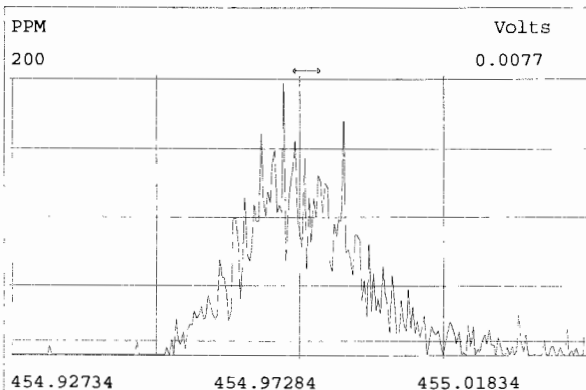
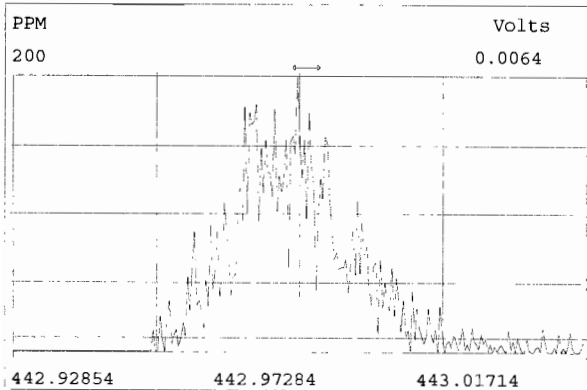
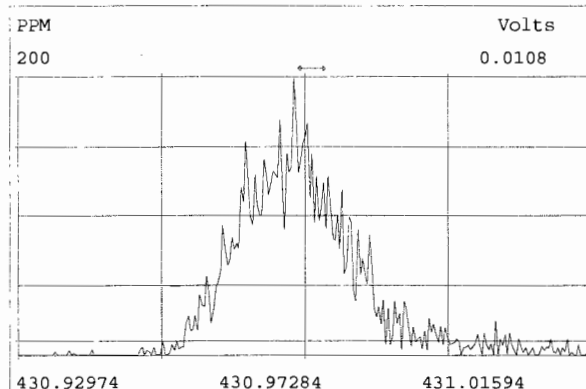
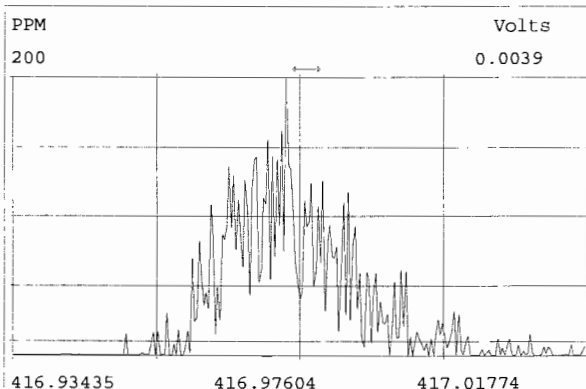
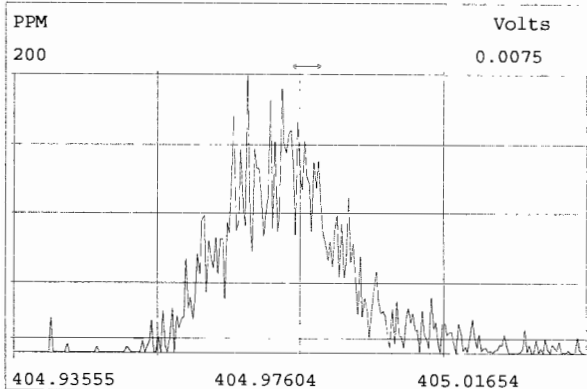
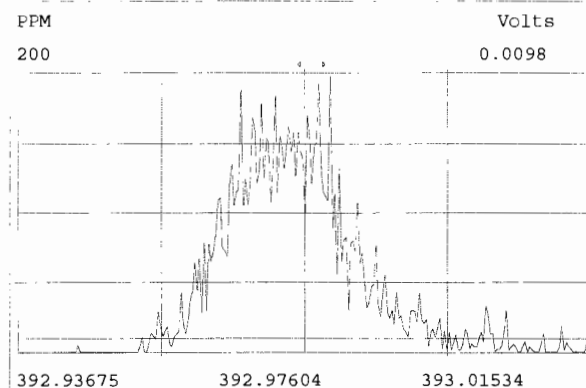
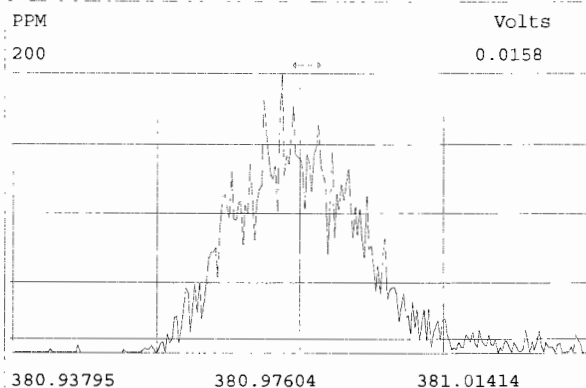
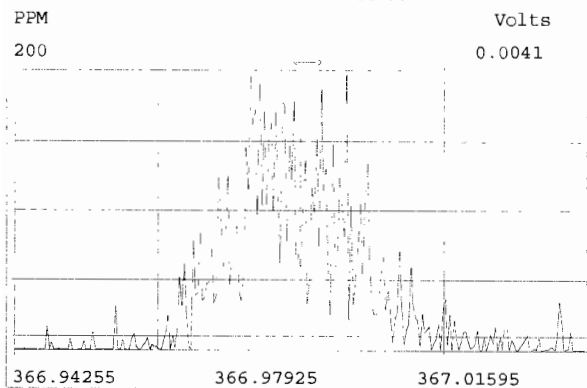
Peak Locate Examination: 9-OCT-2019:16:10 File:191009D1

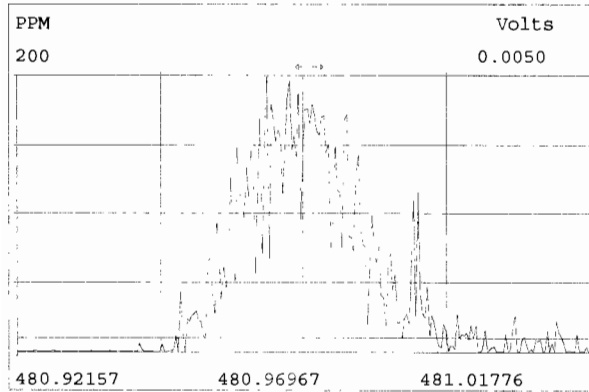
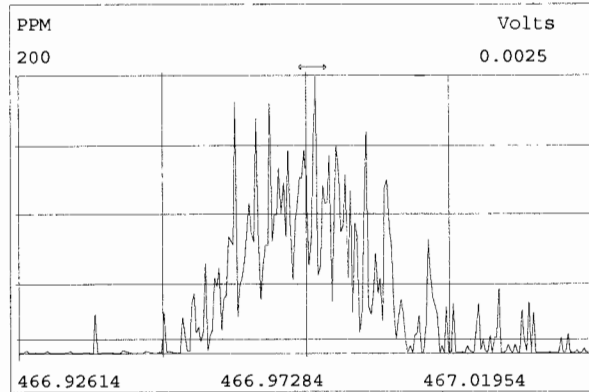
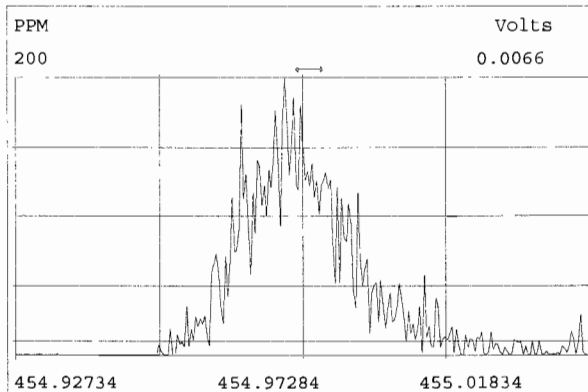
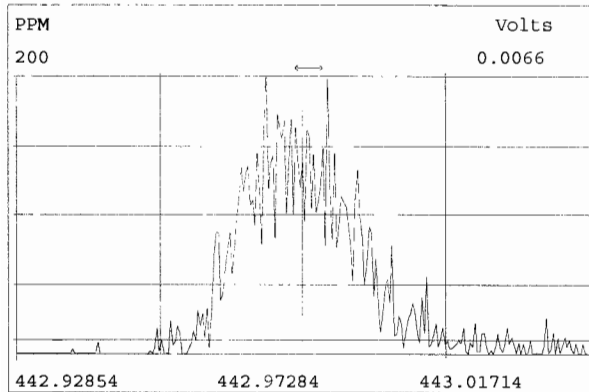
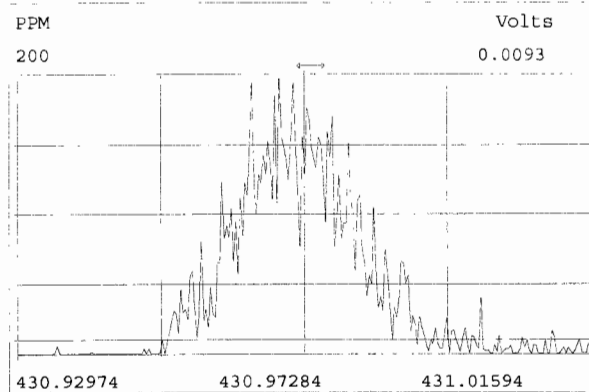
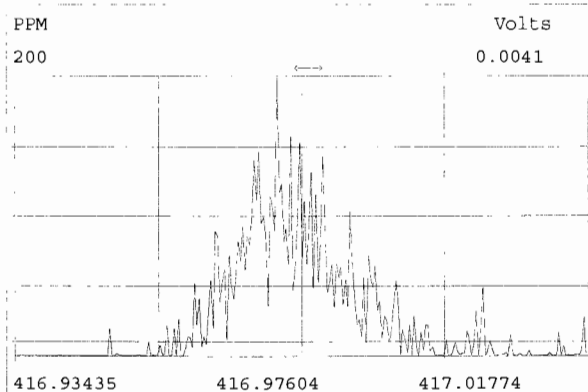
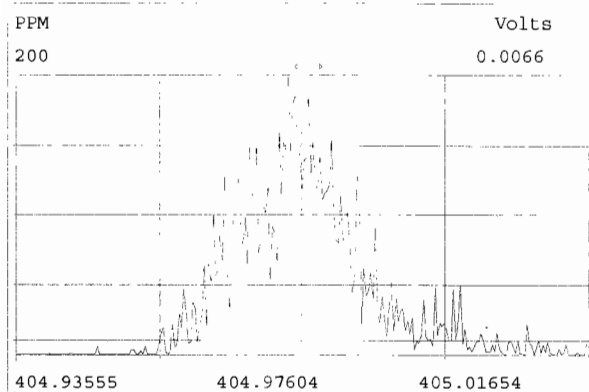
Experiment:OCDD_DB5 Function:2 Reference:PFK

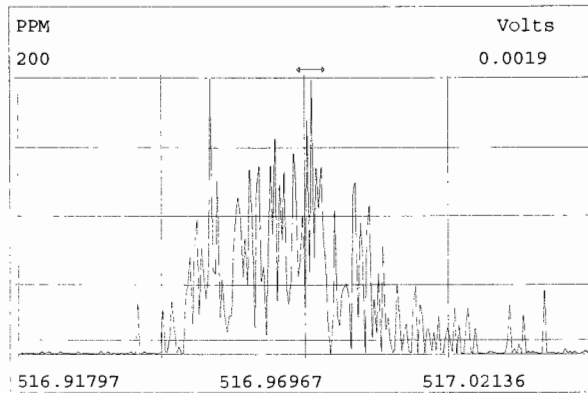
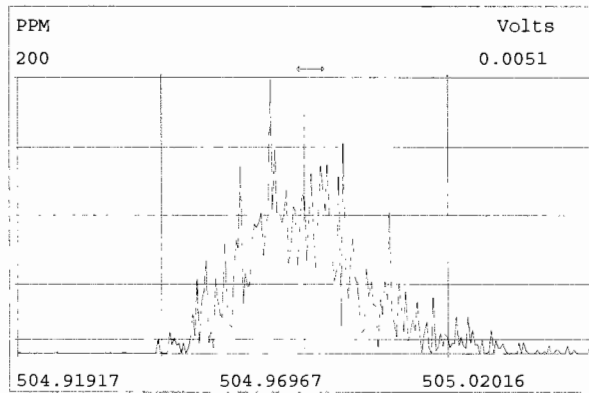
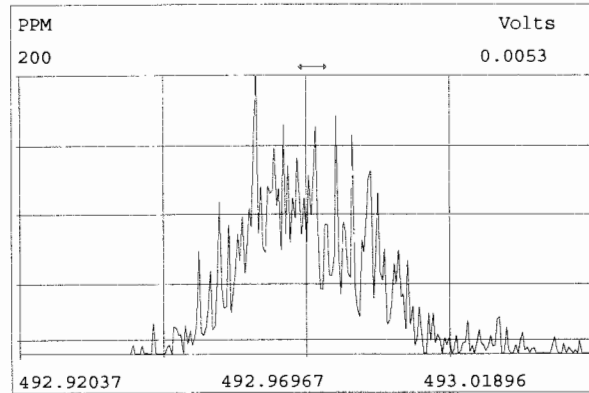
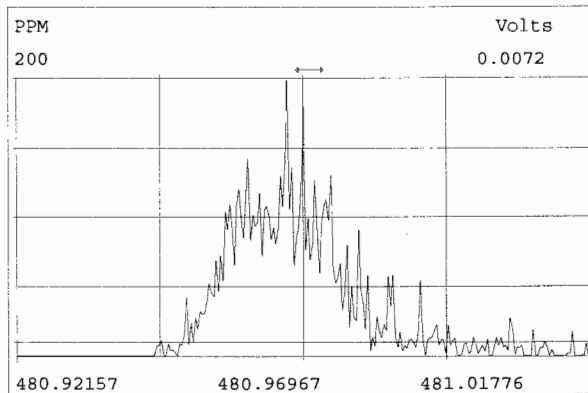
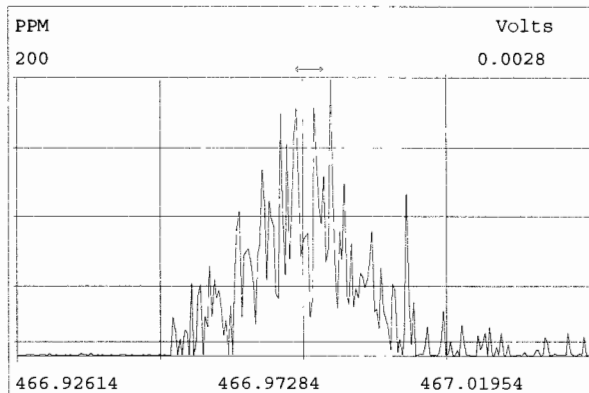
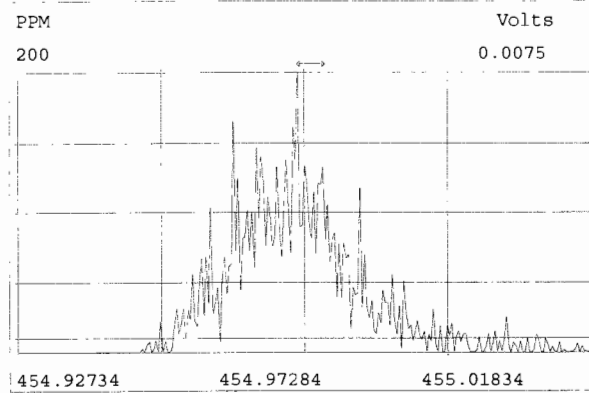
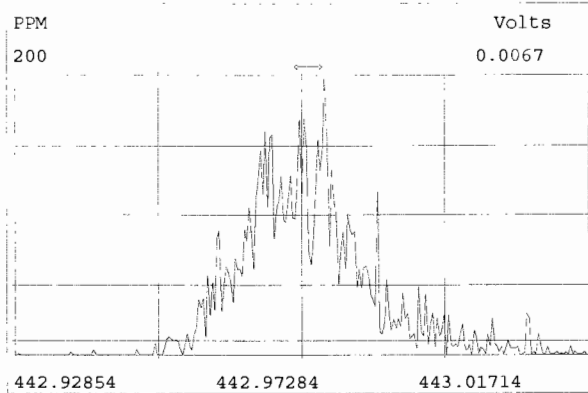
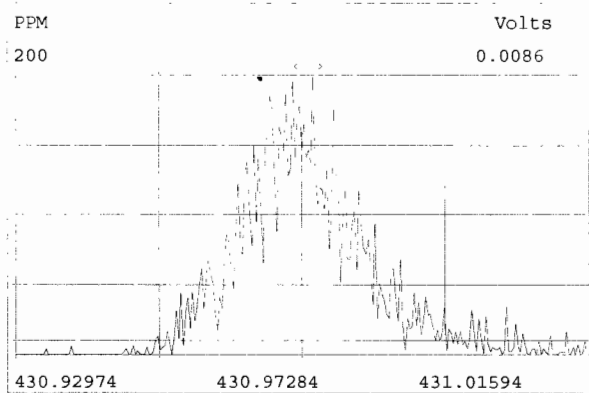


Peak Locate Examination: 9-OCT-2019:16:11 File:191009D1

Experiment:OCDD_DB5 Function:3 Reference:PFK



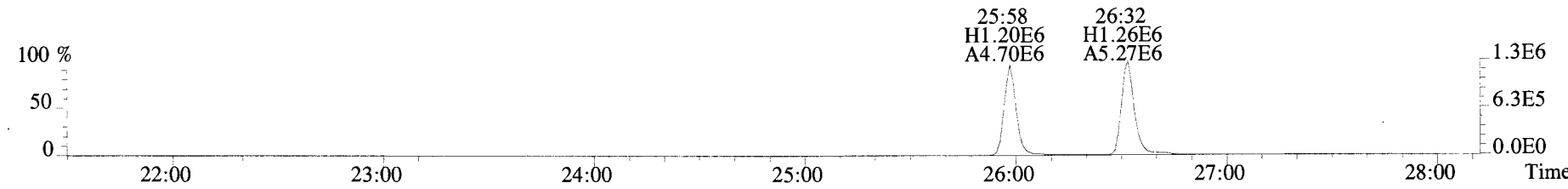
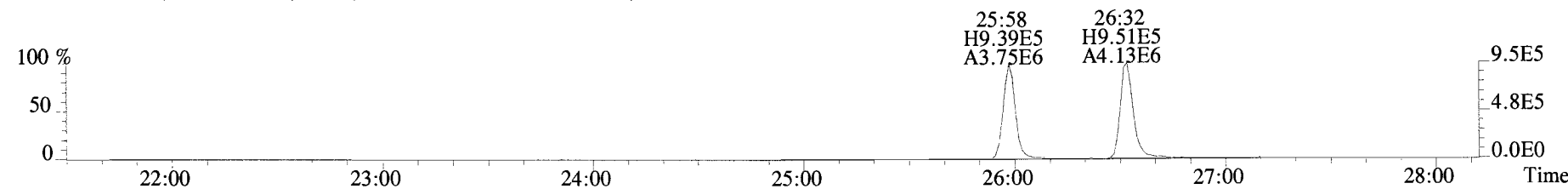
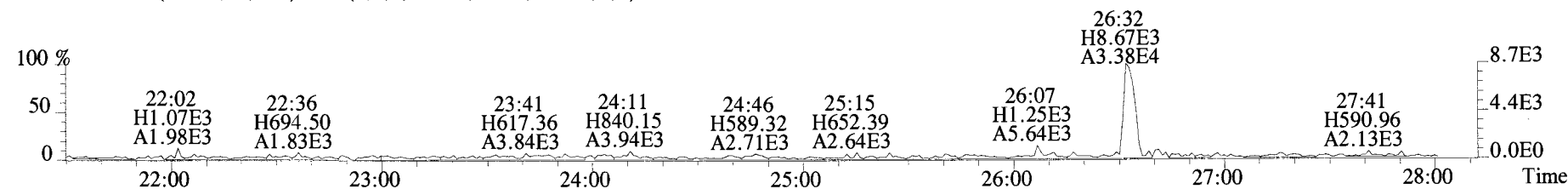
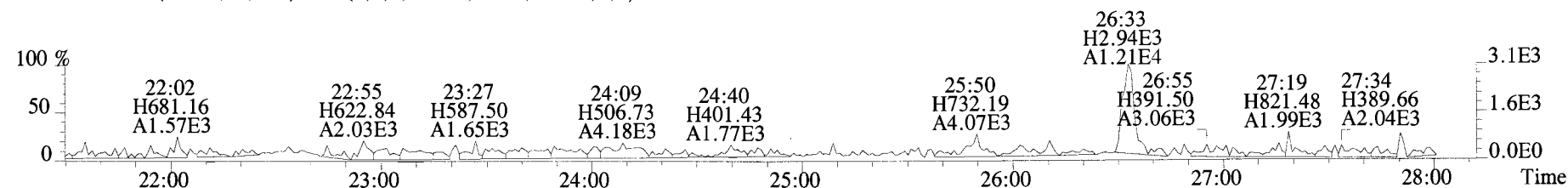
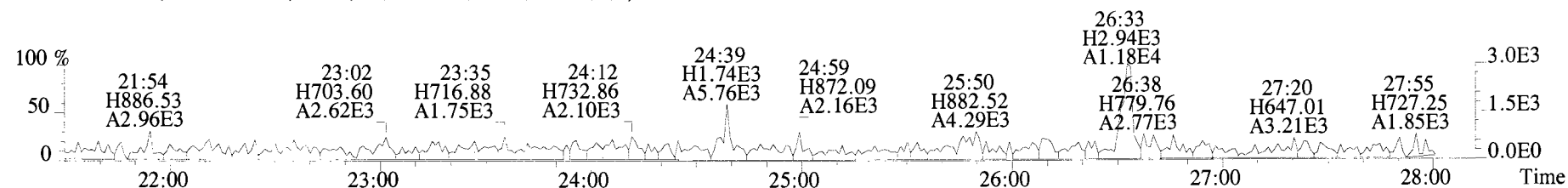




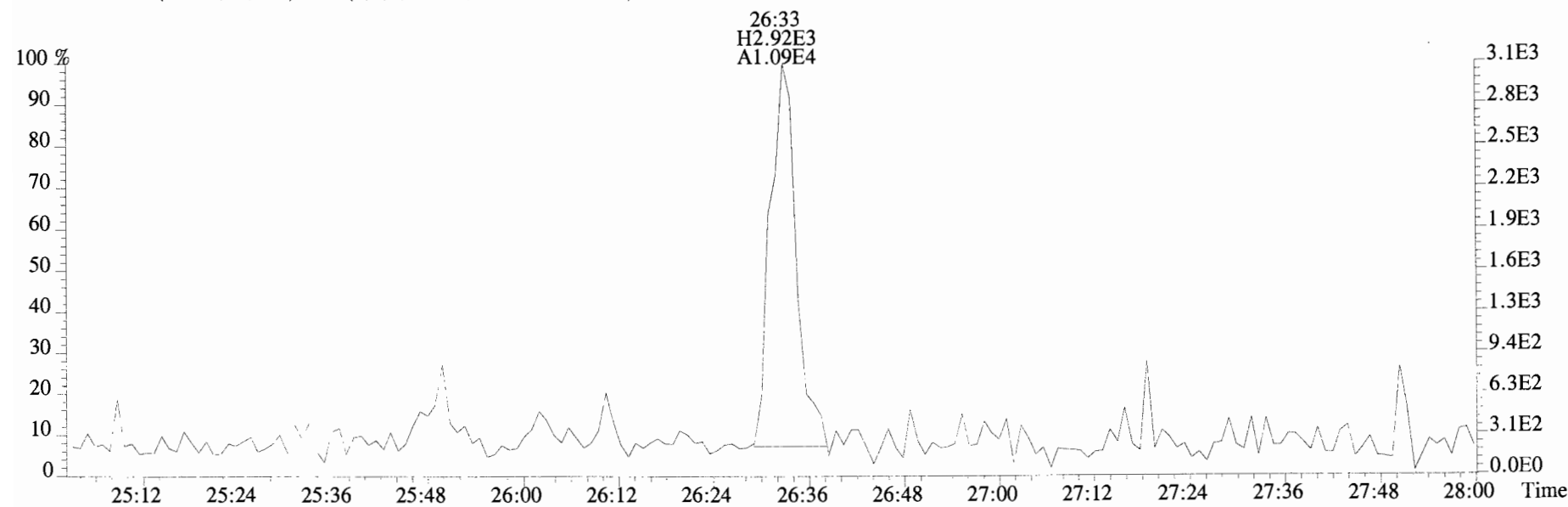
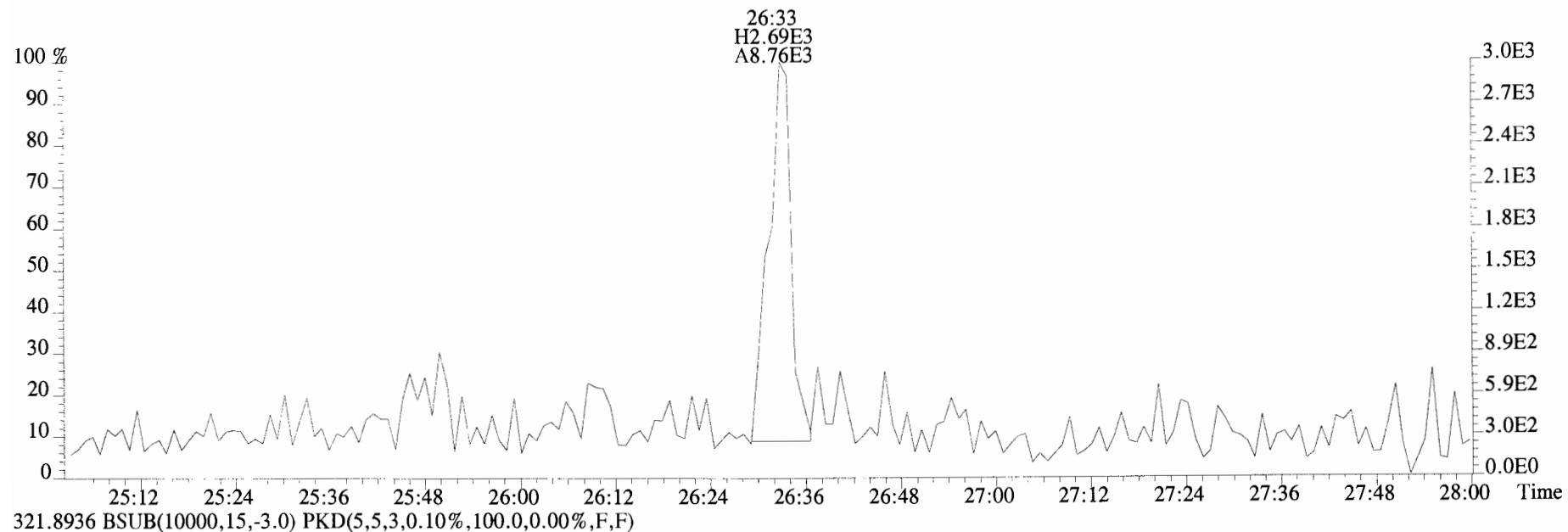
Vista Analytical Laboratory - Injection Log Run file: 191009D1 Instrument ID: VG-7 GC Column ID: ZB-5MS

| Data file | S# | Sample ID | Analyst | Acq date | Acq time | CCal | ECal |
|-----------|----|-----------------|---------|-----------|----------|--------------|------|
| 191009D1 | 1 | ST191009D1-1 | DB | 9-OCT-19 | 16:13:04 | ST191009D1-4 | NA |
| 191009D1 | 2 | ST191009D1-2 | DB | 9-OCT-19 | 17:00:45 | ST191009D1-4 | NA |
| 191009D1 | 3 | ST191009D1-3 | DB | 9-OCT-19 | 17:48:27 | ST191009D1-4 | NA |
| 191009D1 | 4 | ST191009D1-4 | DB | 9-OCT-19 | 18:36:09 | ST191009D1-4 | NA |
| 191009D1 | 5 | ST191009D1-5 | DB | 9-OCT-19 | 19:23:46 | ST191009D1-4 | NA |
| 191009D1 | 6 | ST191009D1-6 | DB | 9-OCT-19 | 20:11:17 | ST191009D1-4 | NA |
| 191009D1 | 7 | SOLVENT BLANK | DB | 9-OCT-19 | 20:58:57 | ST191009D1-4 | NA |
| 191009D1 | 8 | SS191009D1-1 | DB | 9-OCT-19 | 21:46:34 | ST191009D1-4 | NA |
| 191009D1 | 9 | B9J0001-BS1 | DB | 9-OCT-19 | 22:34:09 | ST191009D1-4 | NA |
| 191009D1 | 10 | SOLVENT BLANK | DB | 9-OCT-19 | 23:21:45 | ST191009D1-4 | NA |
| 191009D1 | 11 | B9J0001-BLK1 | DB | 10-OCT-19 | 00:09:30 | ST191009D1-4 | NA |
| 191009D1 | 12 | QC191007D1-1 | DB | 10-OCT-19 | 00:57:00 | ST191009D1-4 | NA |
| 191009D1 | 13 | 1903285-08 | DB | 10-OCT-19 | 01:44:36 | ST191009D1-4 | NA |
| 191009D1 | 14 | 1903285-09 | DB | 10-OCT-19 | 02:32:11 | ST191009D1-4 | NA |
| 191009D1 | 15 | 1903285-10 | DB | 10-OCT-19 | 03:19:47 | ST191009D1-4 | NA |
| 191009D1 | 16 | 1903103-02@5X | DB | 10-OCT-19 | 04:07:23 | ST191009D1-4 | NA |
| 191009D1 | 17 | 1903103-01@5X | DB | 10-OCT-19 | 04:54:54 | ST191009D1-4 | NA |
| 191009D1 | 18 | B9I0240-DUP1@5X | DB | 10-OCT-19 | 05:42:38 | ST191009D1-4 | NA |

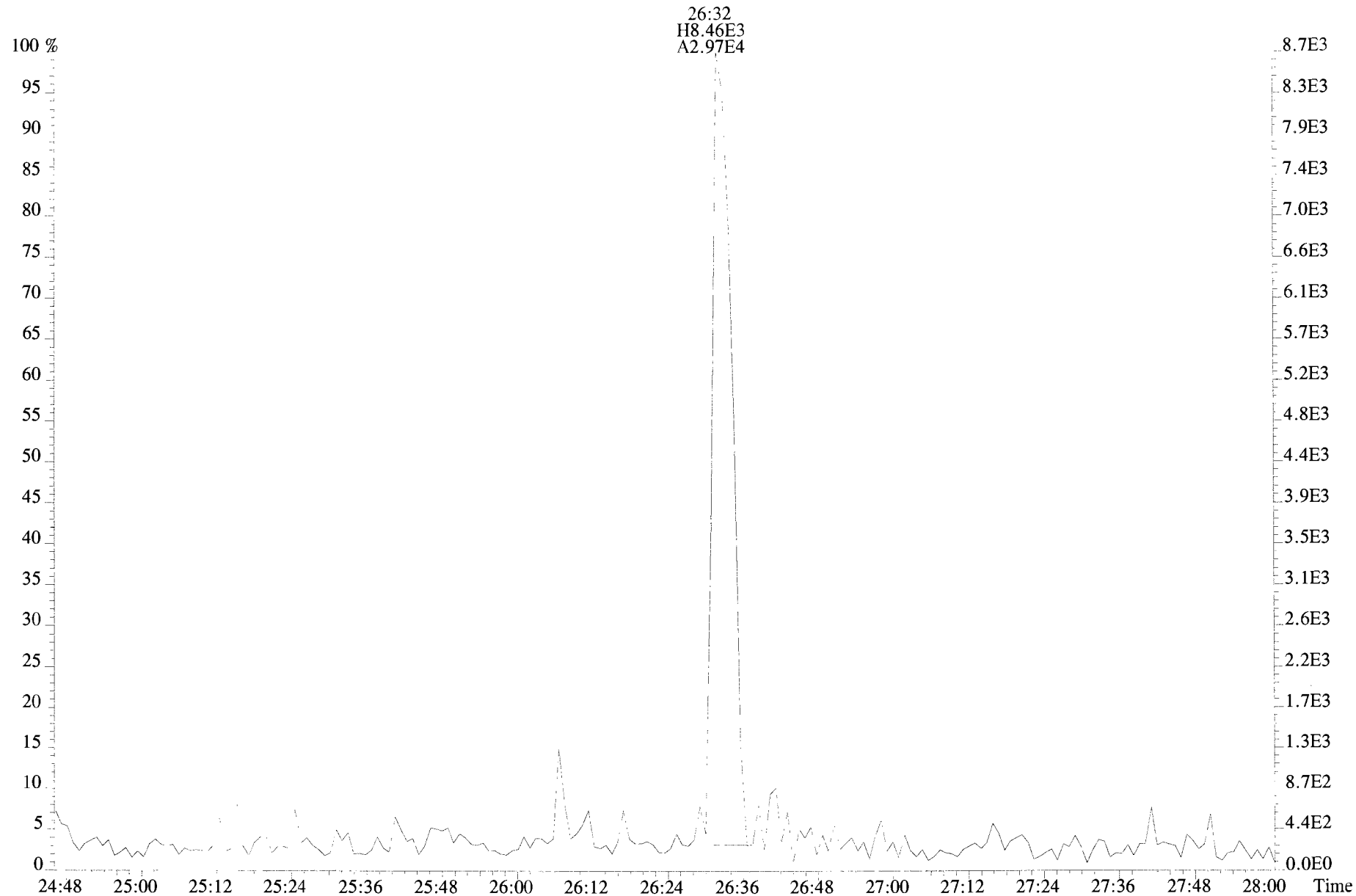
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



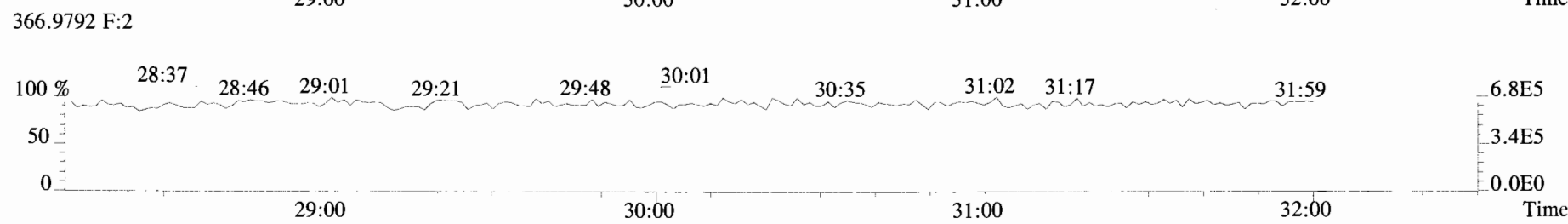
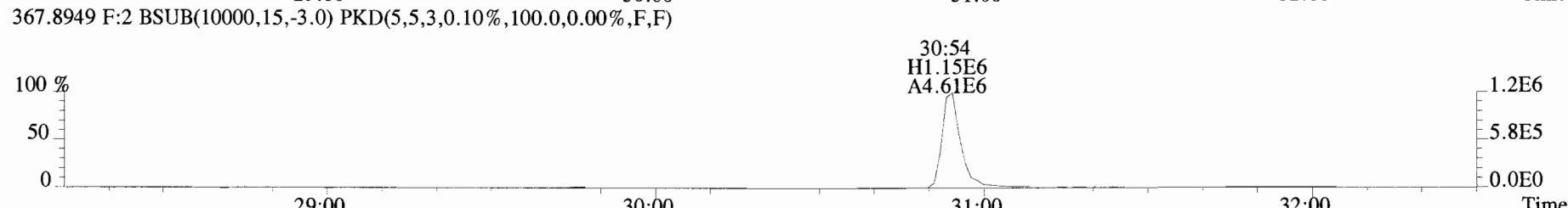
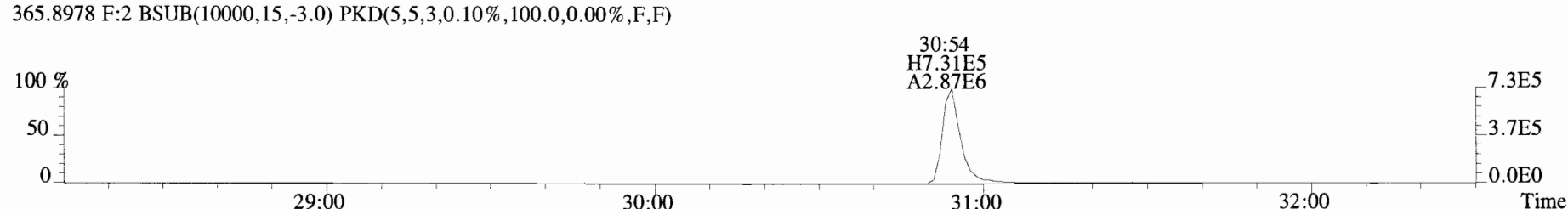
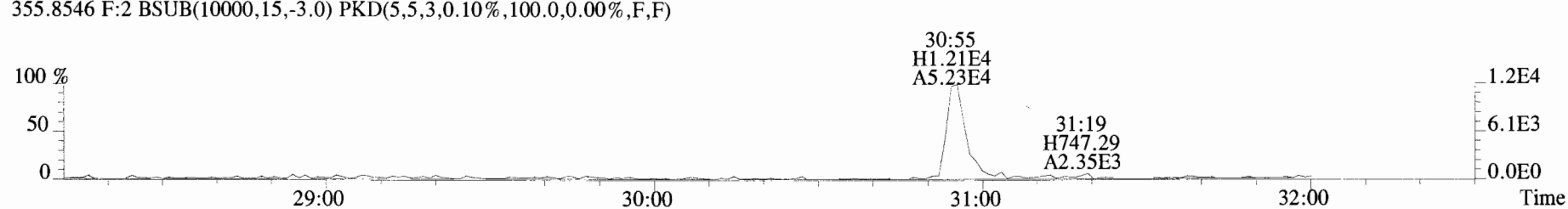
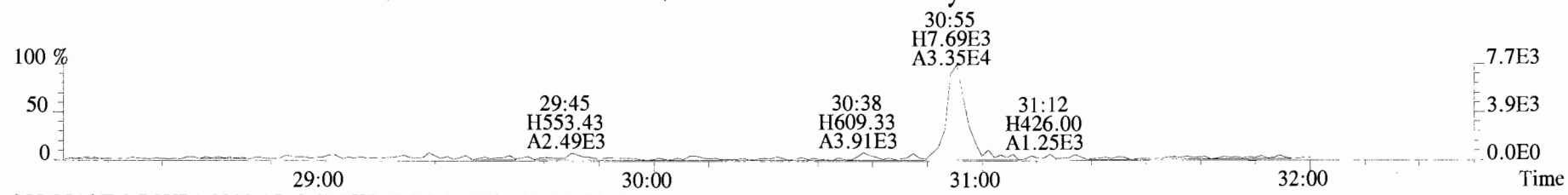
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
319.8965 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



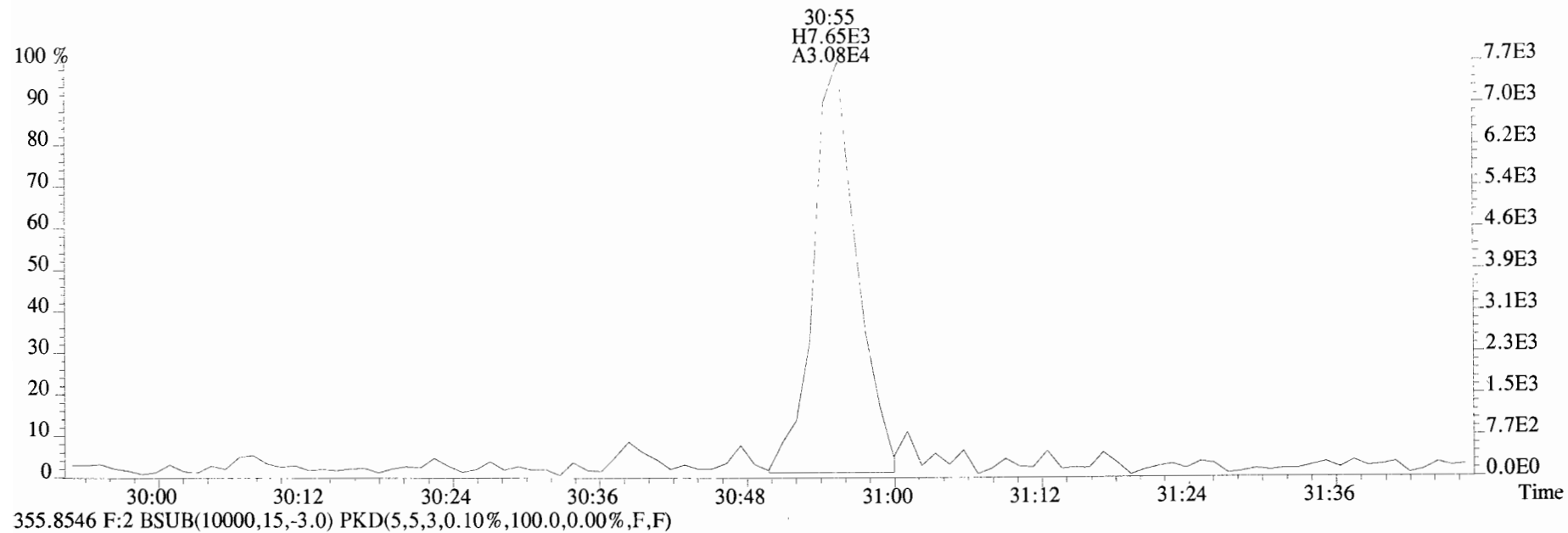
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
327.8847 BSUB(10000,15,-3.0)



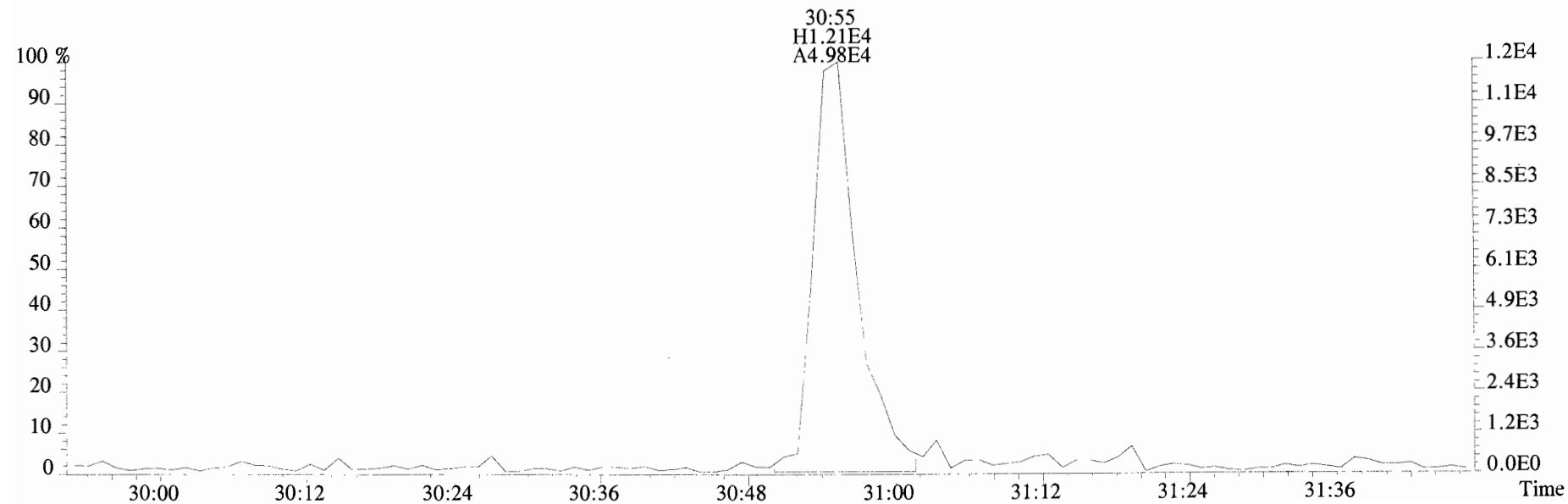
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



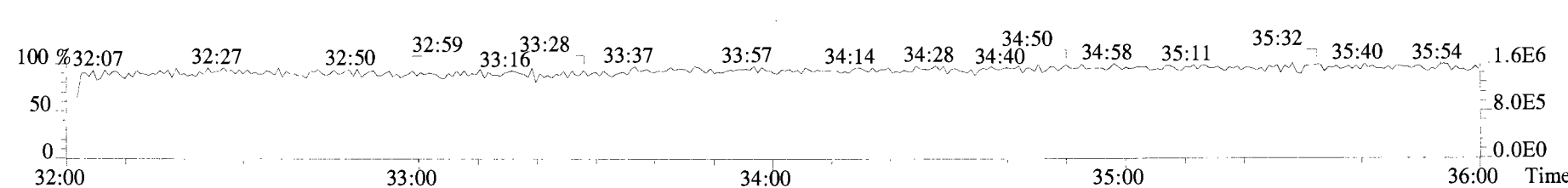
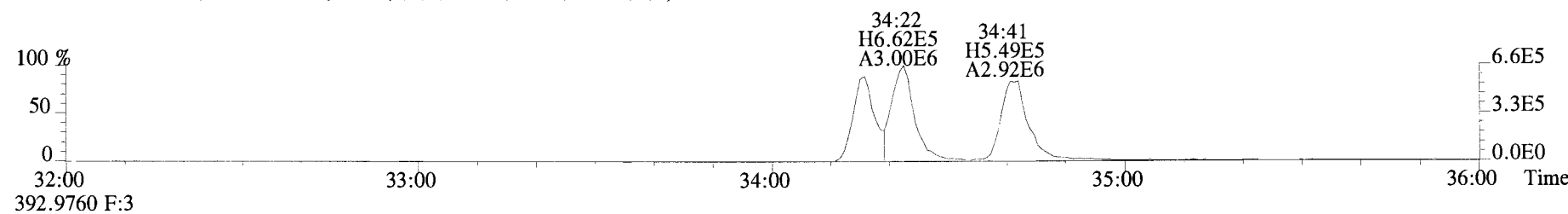
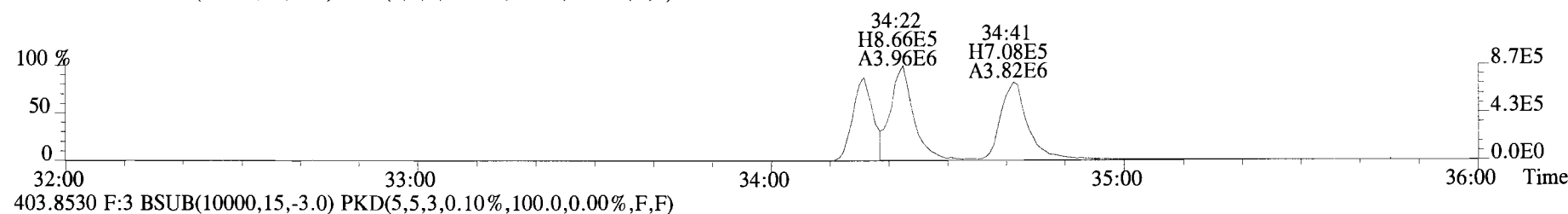
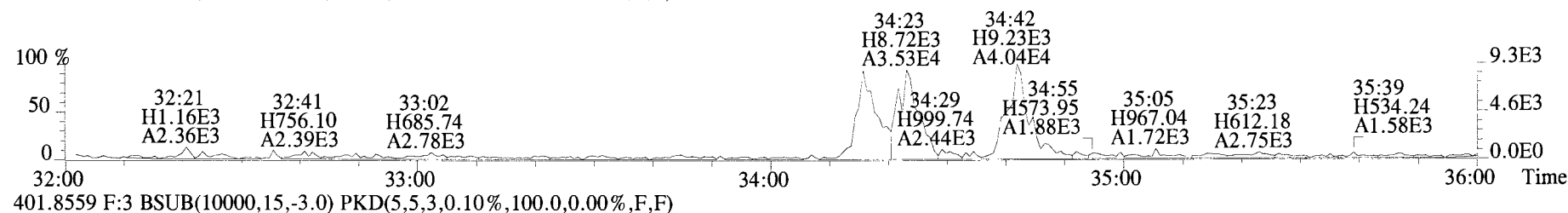
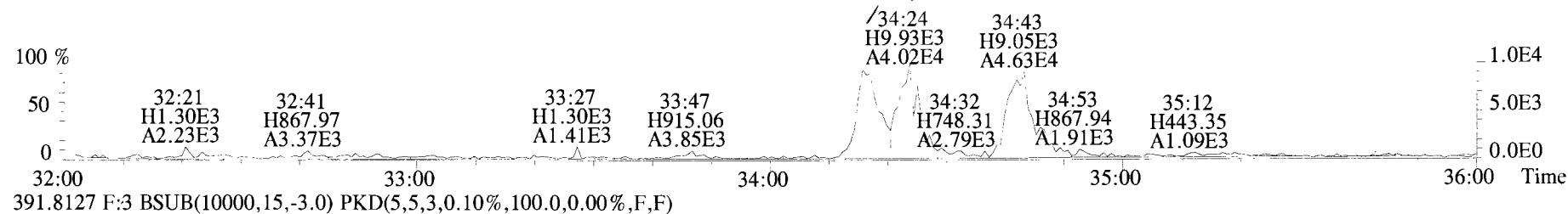
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
353.8576 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



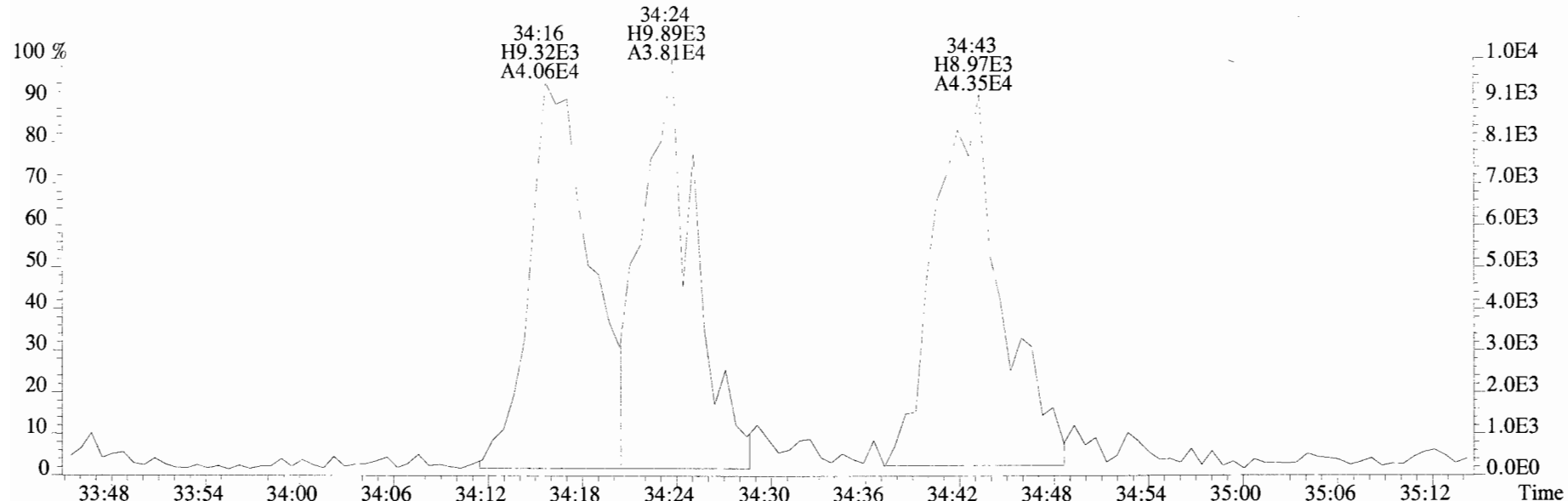
355.8546 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



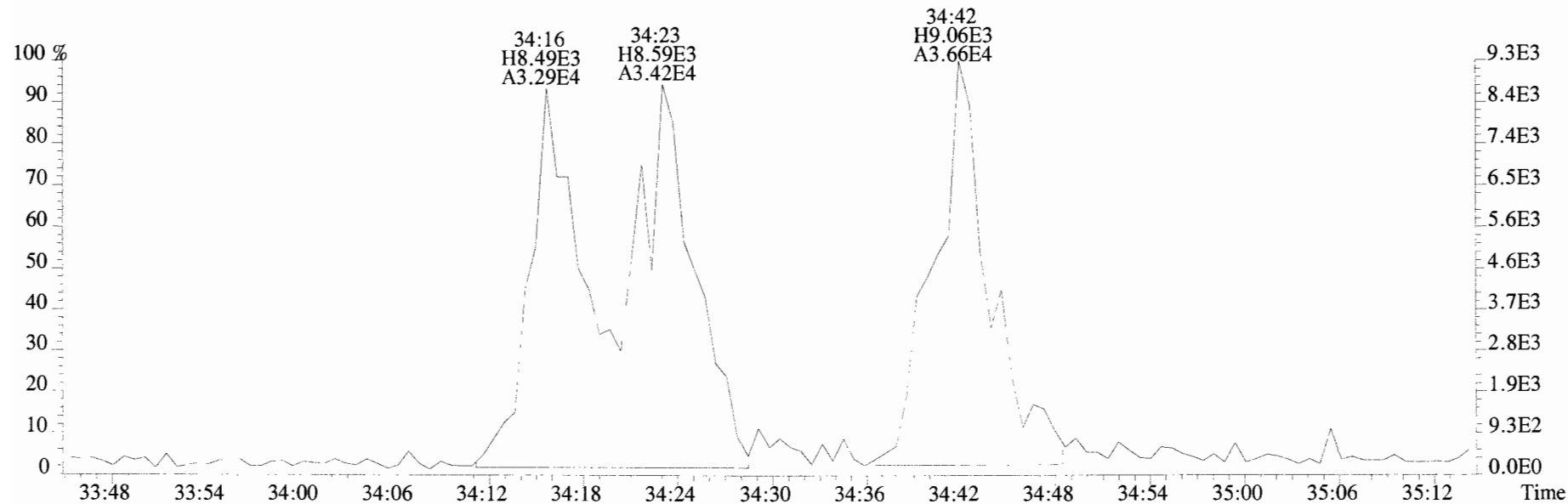
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



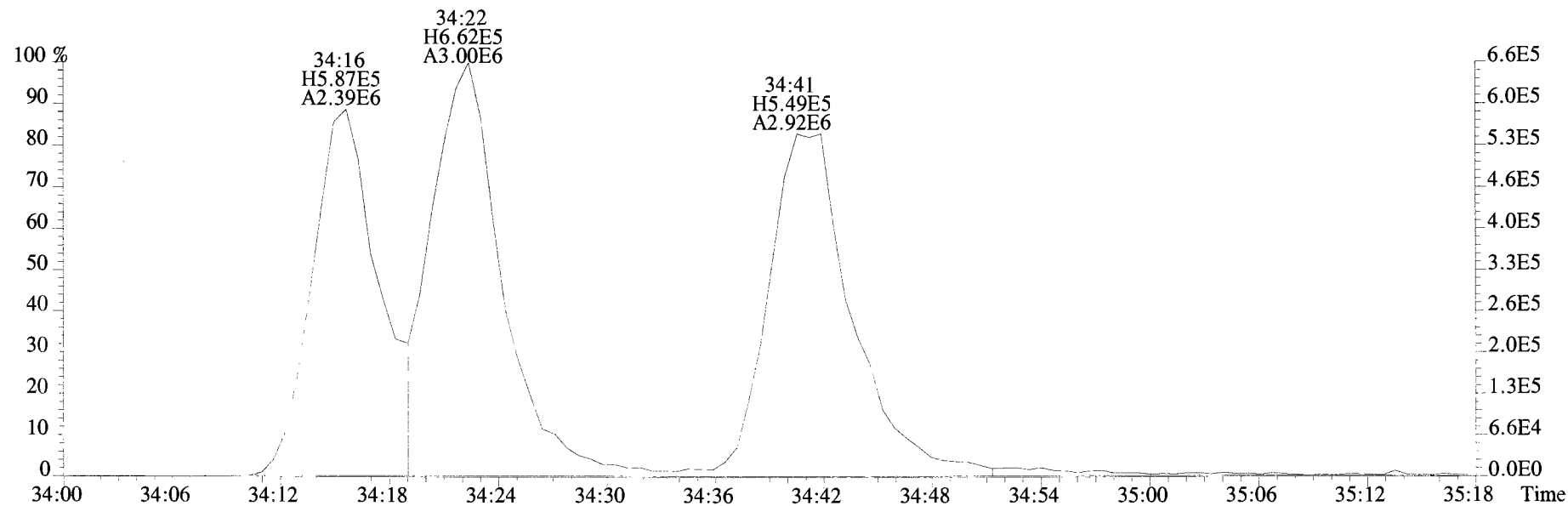
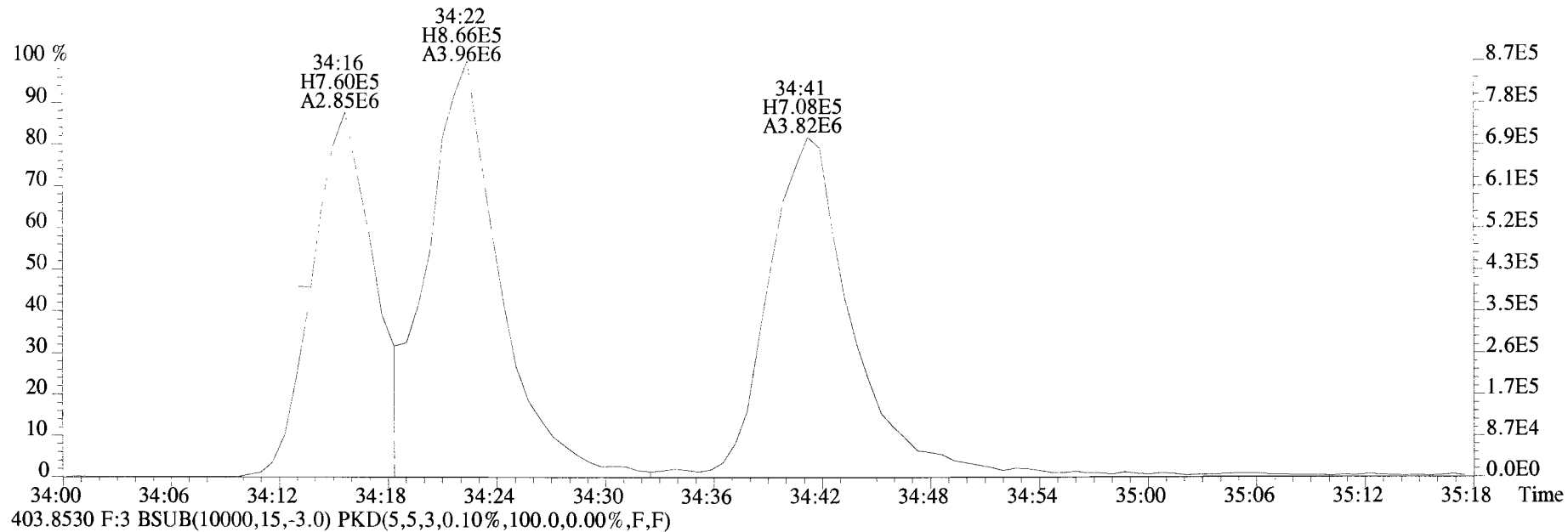
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
389.8156 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



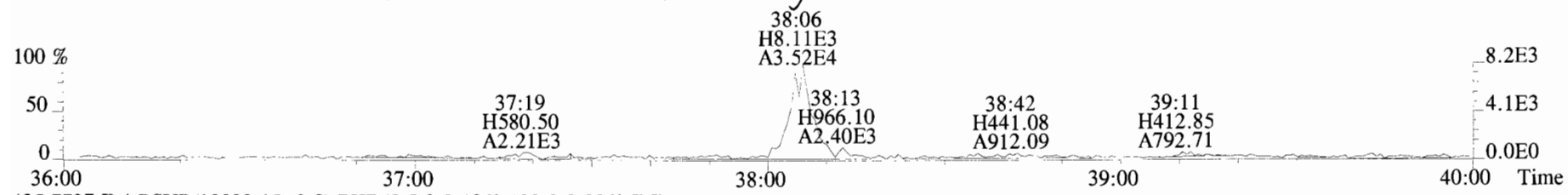
391.8127 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



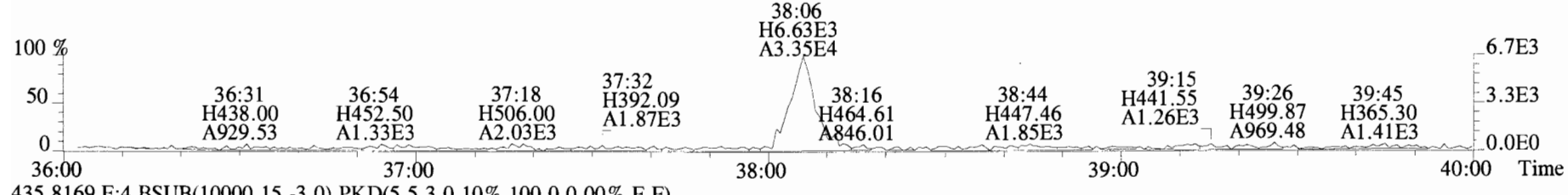
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
401.8559 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



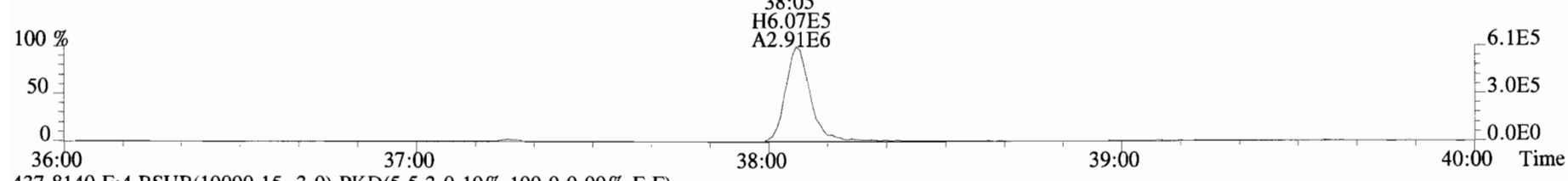
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



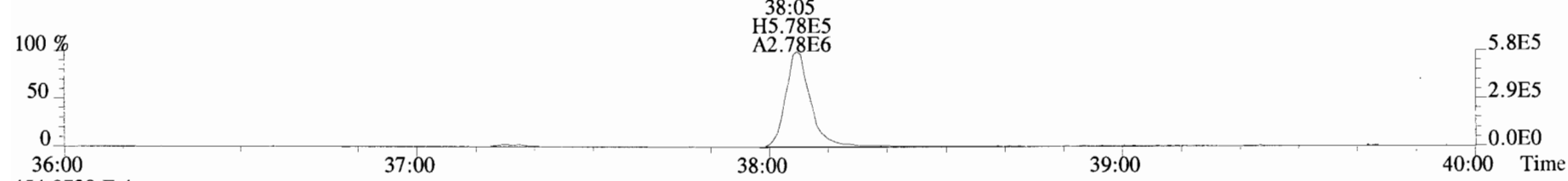
425.7737 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



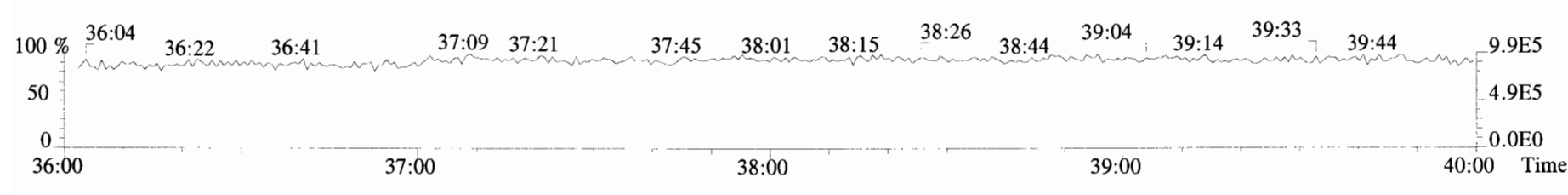
435.8169 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



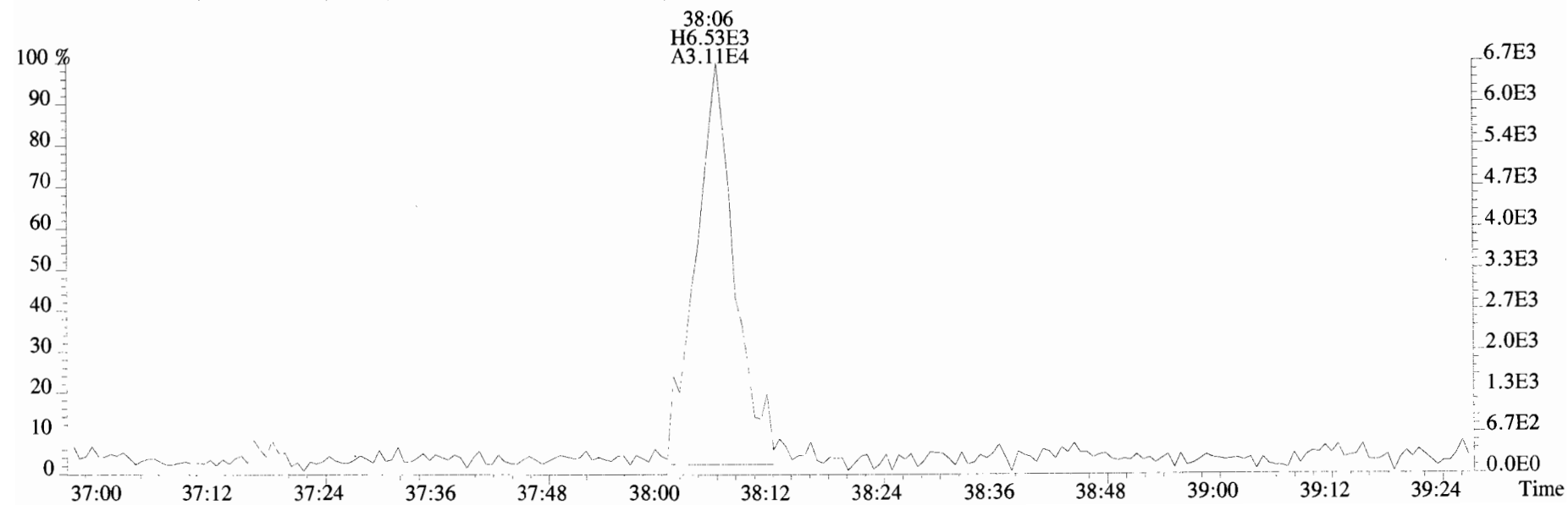
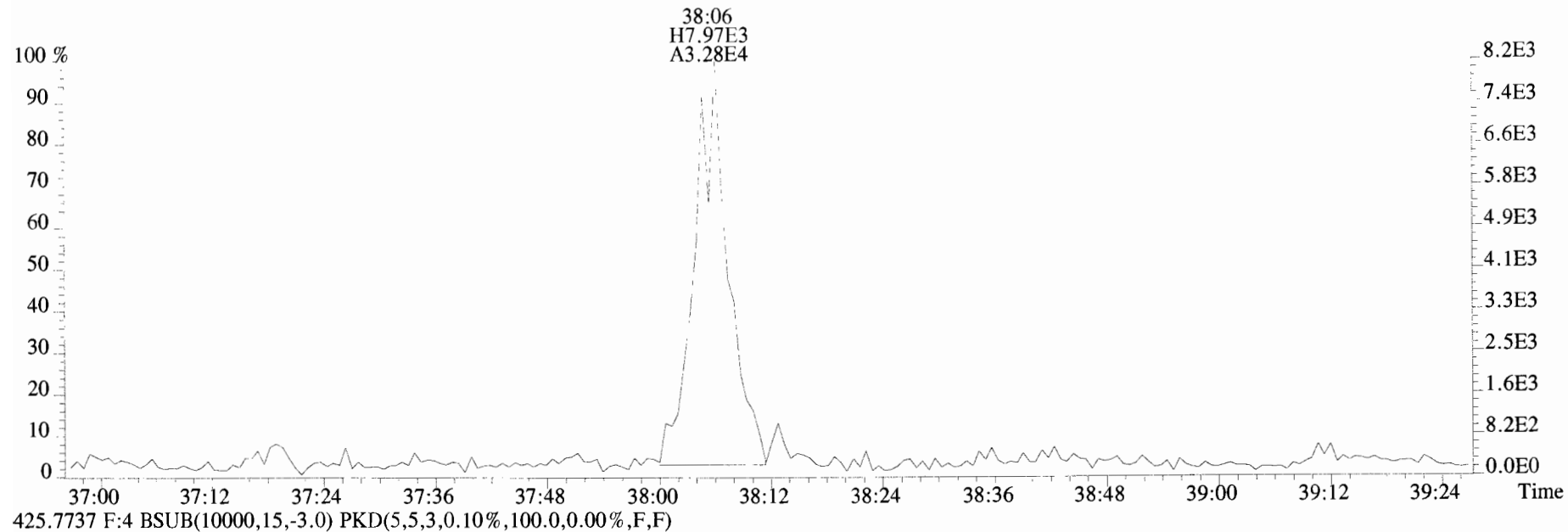
437.8140 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



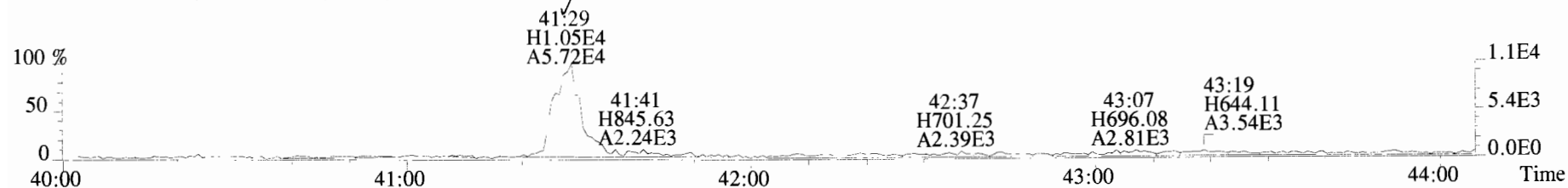
454.9728 F:4



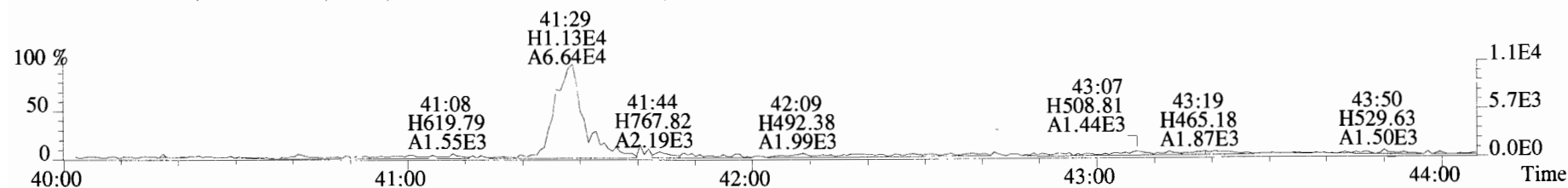
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
423.7767 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



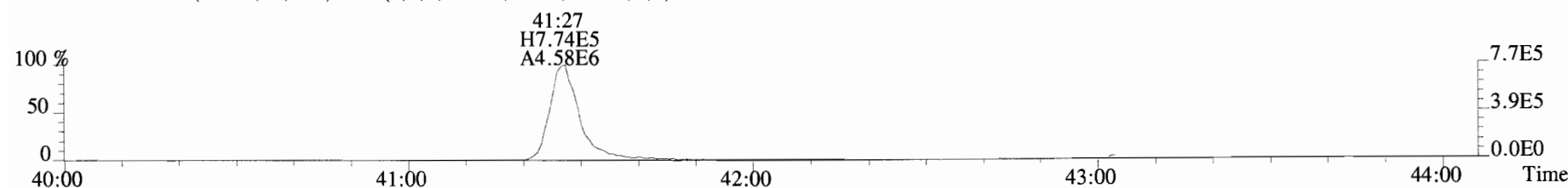
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



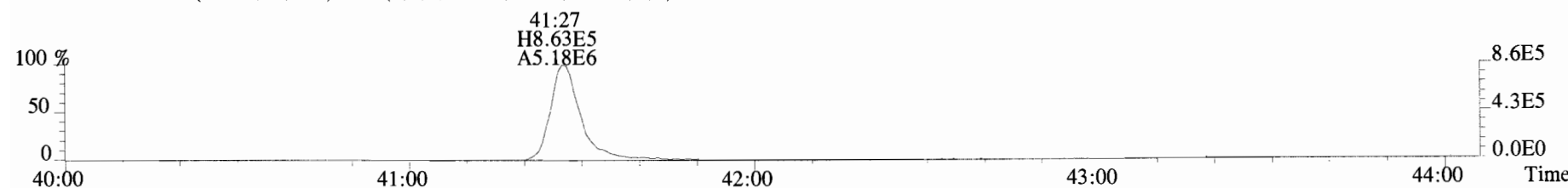
459.7348 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



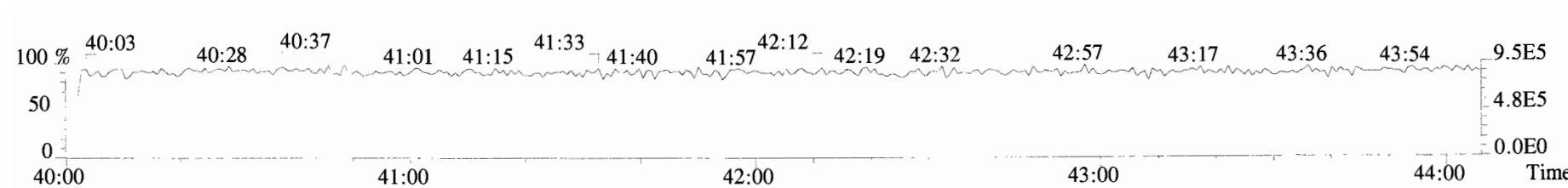
469.7780 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



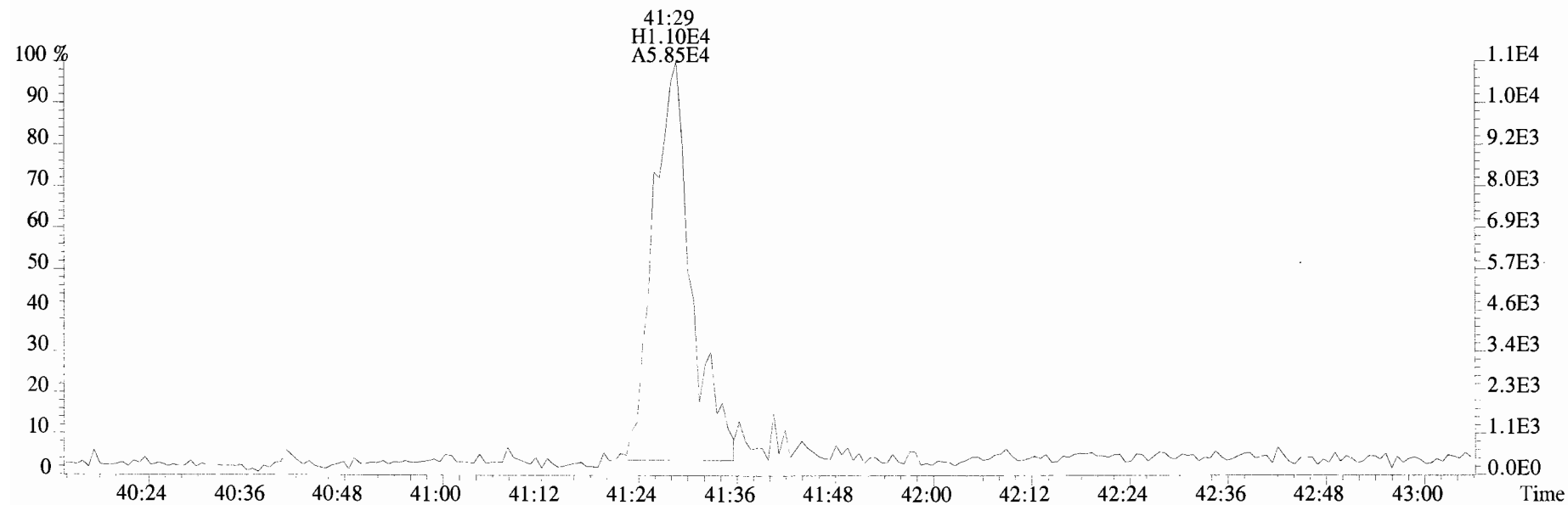
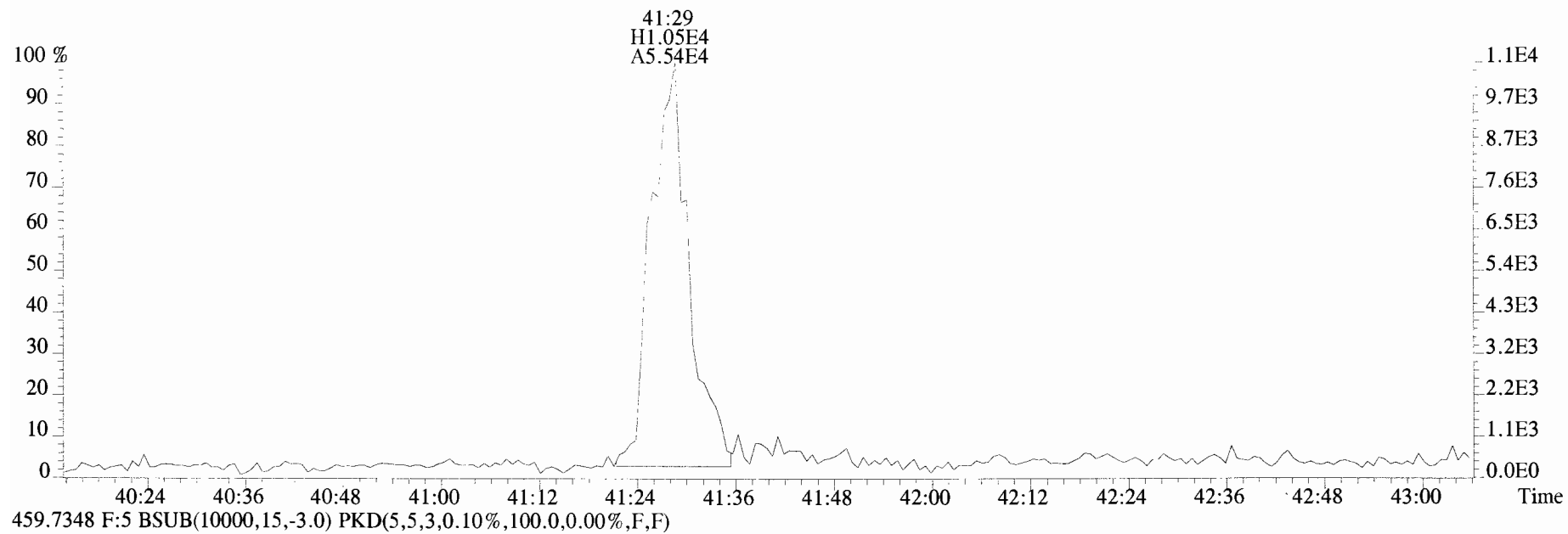
471.7750 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



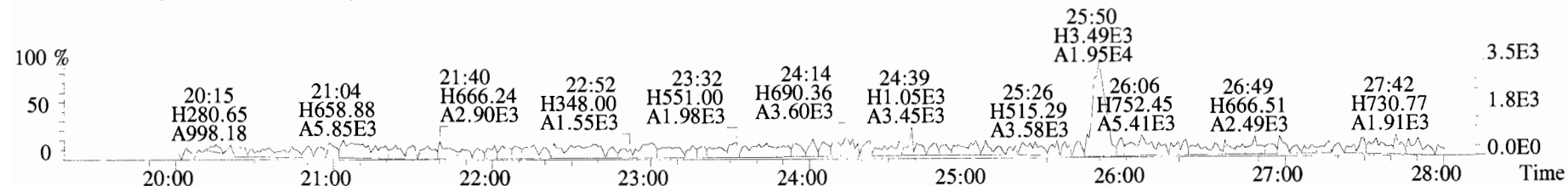
454.9728 F:5



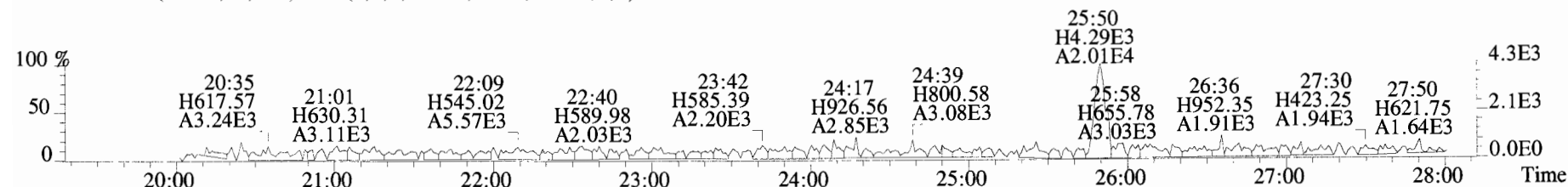
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
457.7377 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



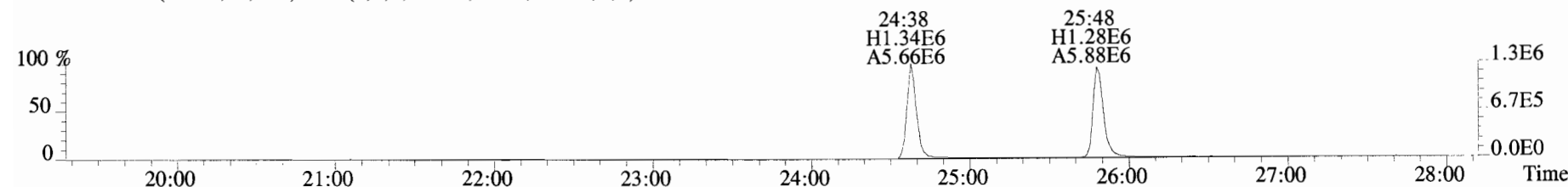
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
 303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



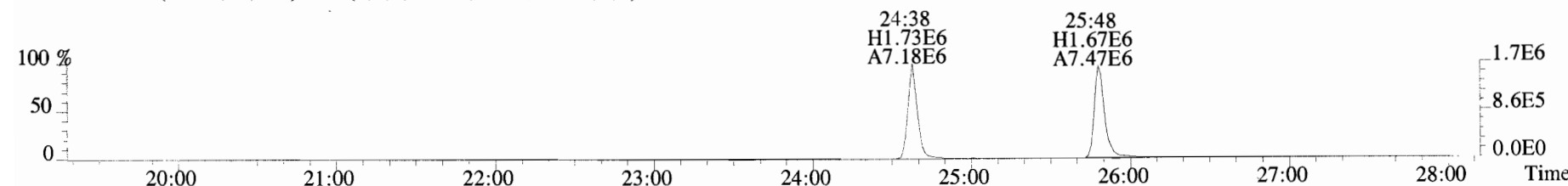
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



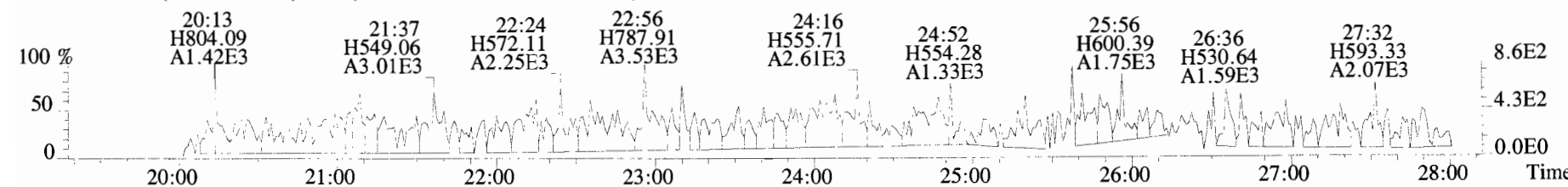
315.9419 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



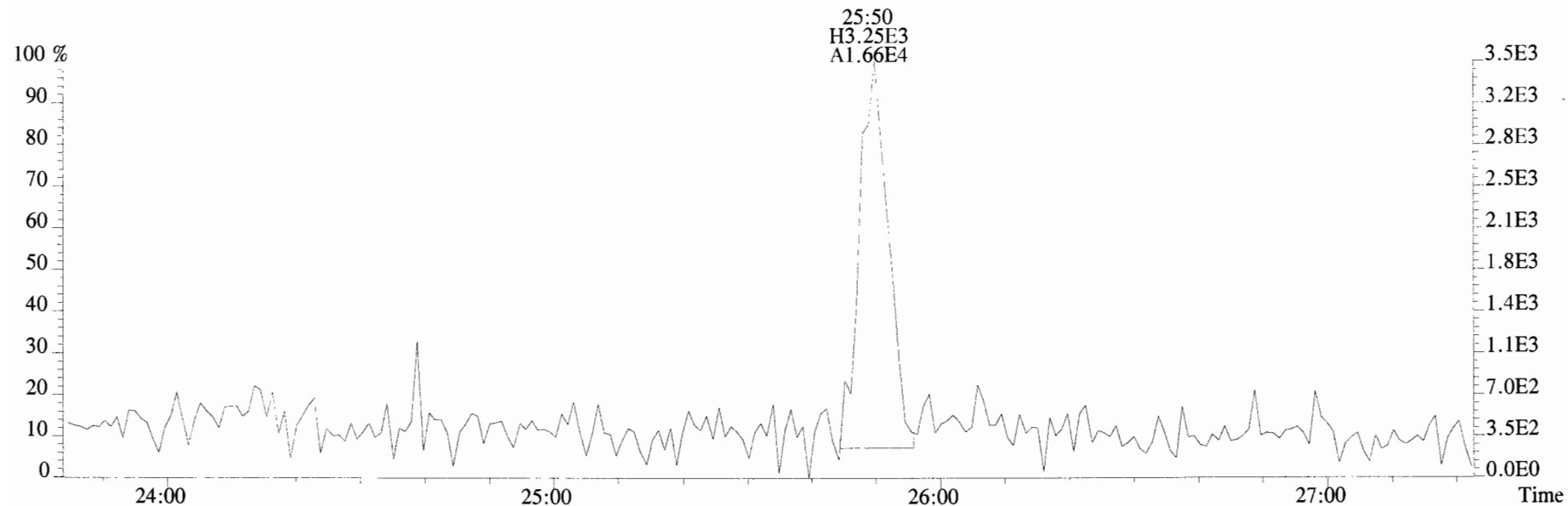
317.9389 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



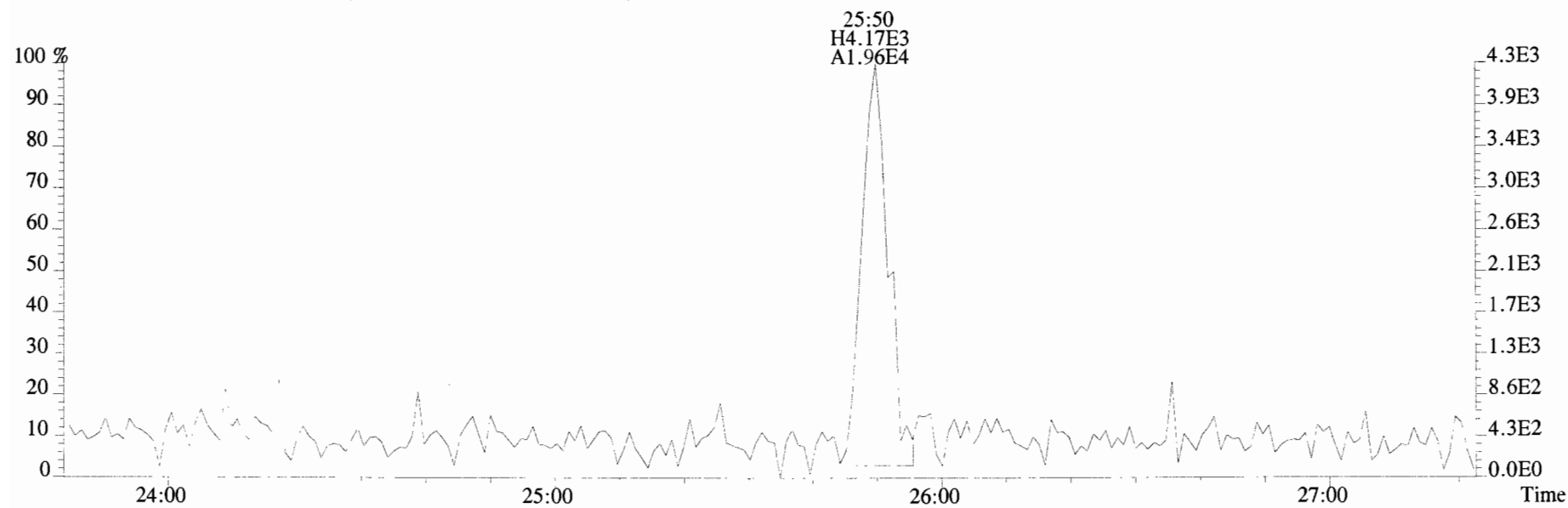
375.8364 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



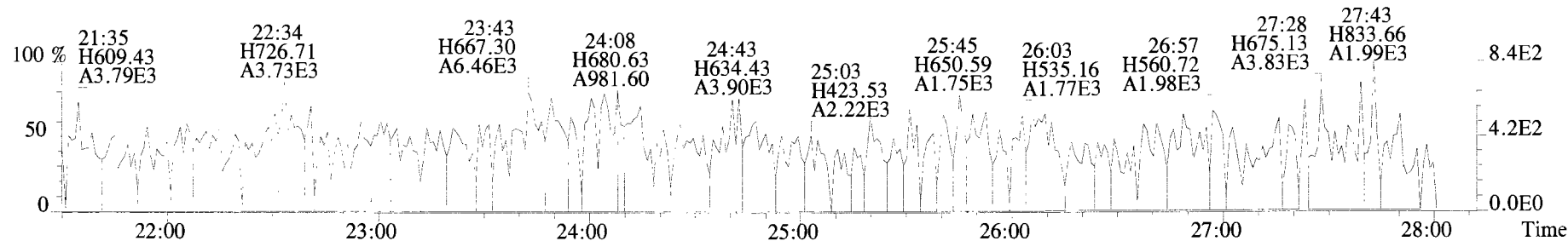
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
303.9016 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



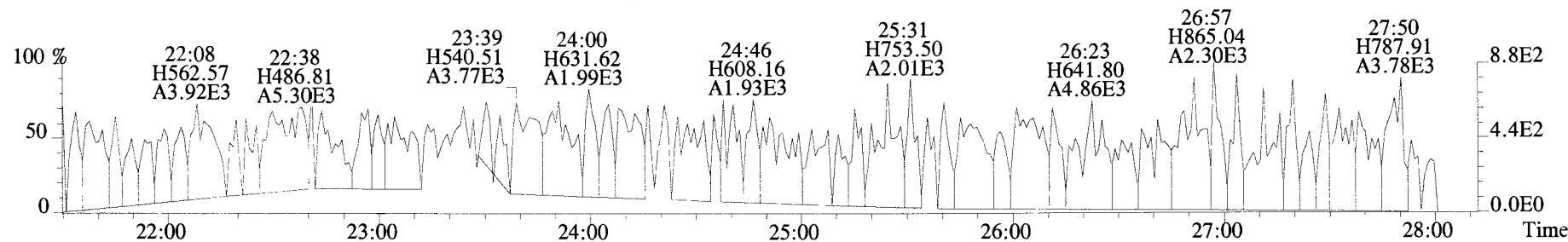
305.8987 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



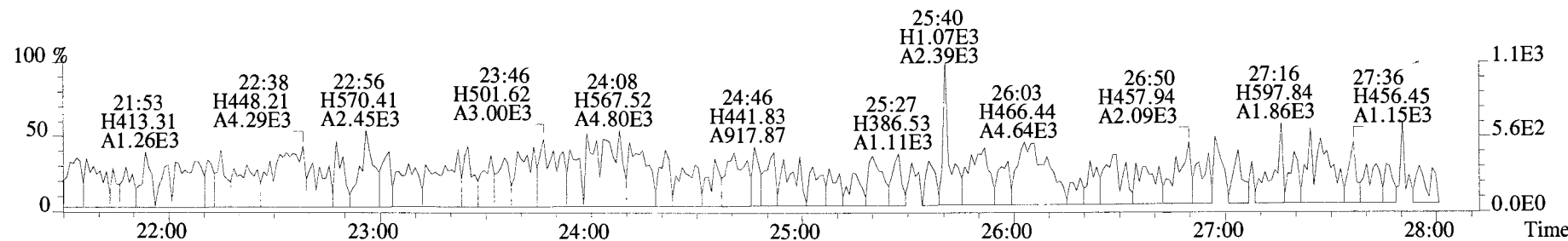
File:191009D1 #1-514 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
339.8597 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



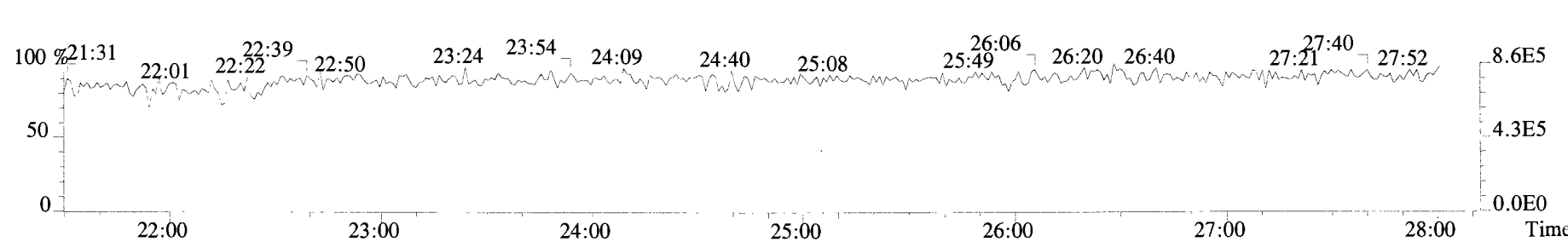
341.8568 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



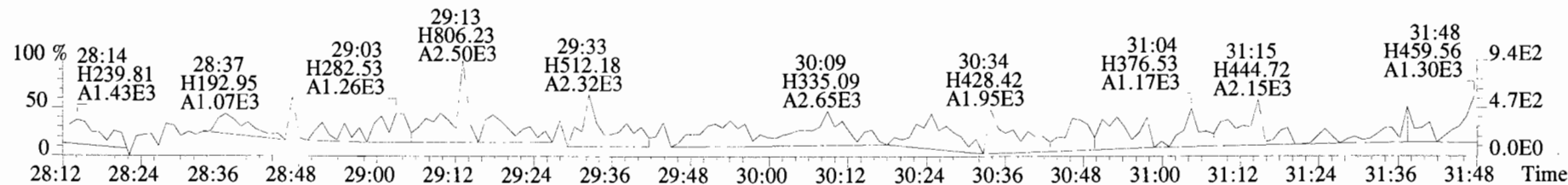
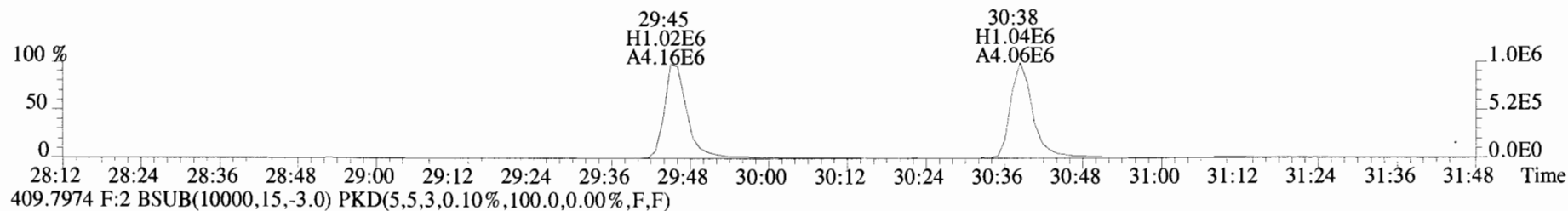
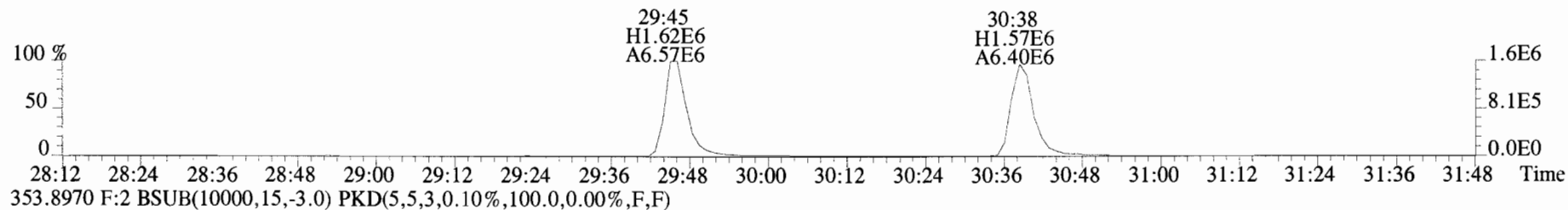
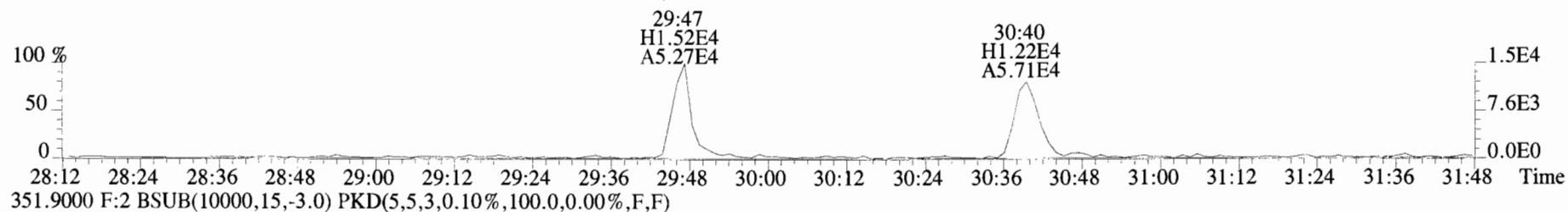
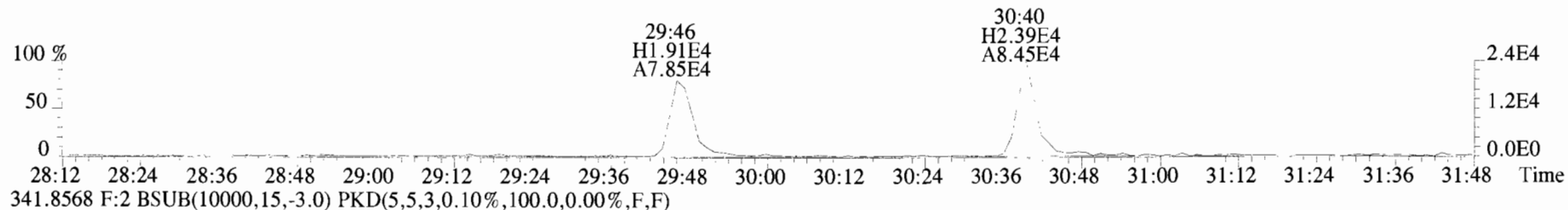
409.7974 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



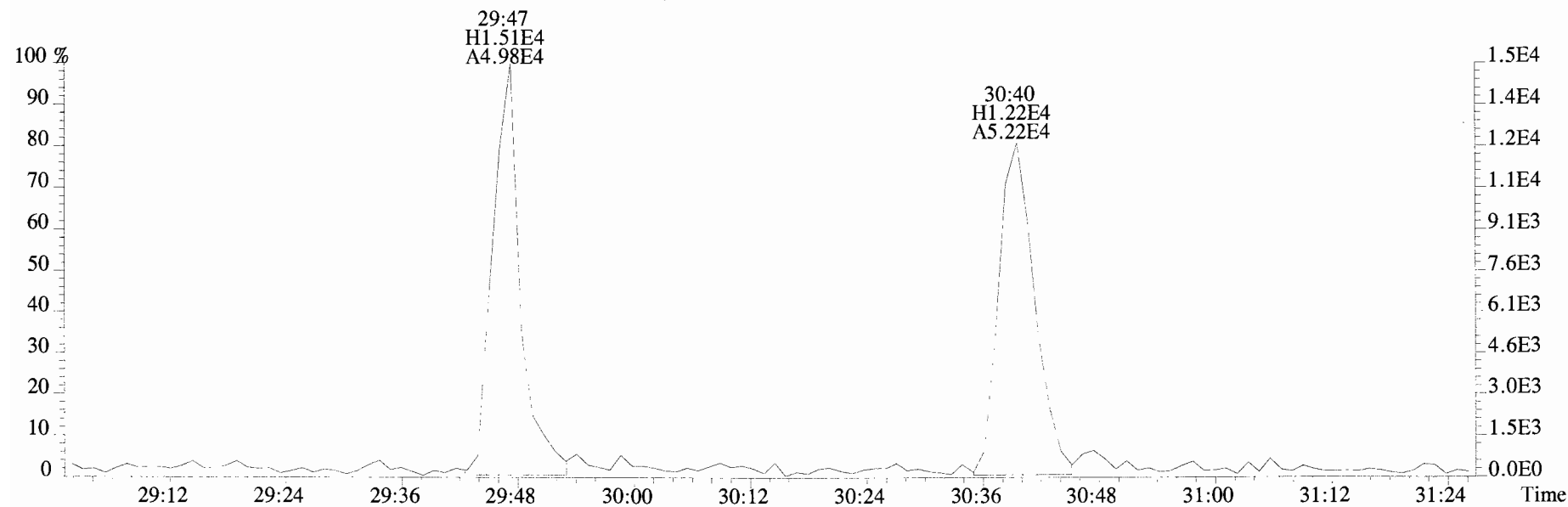
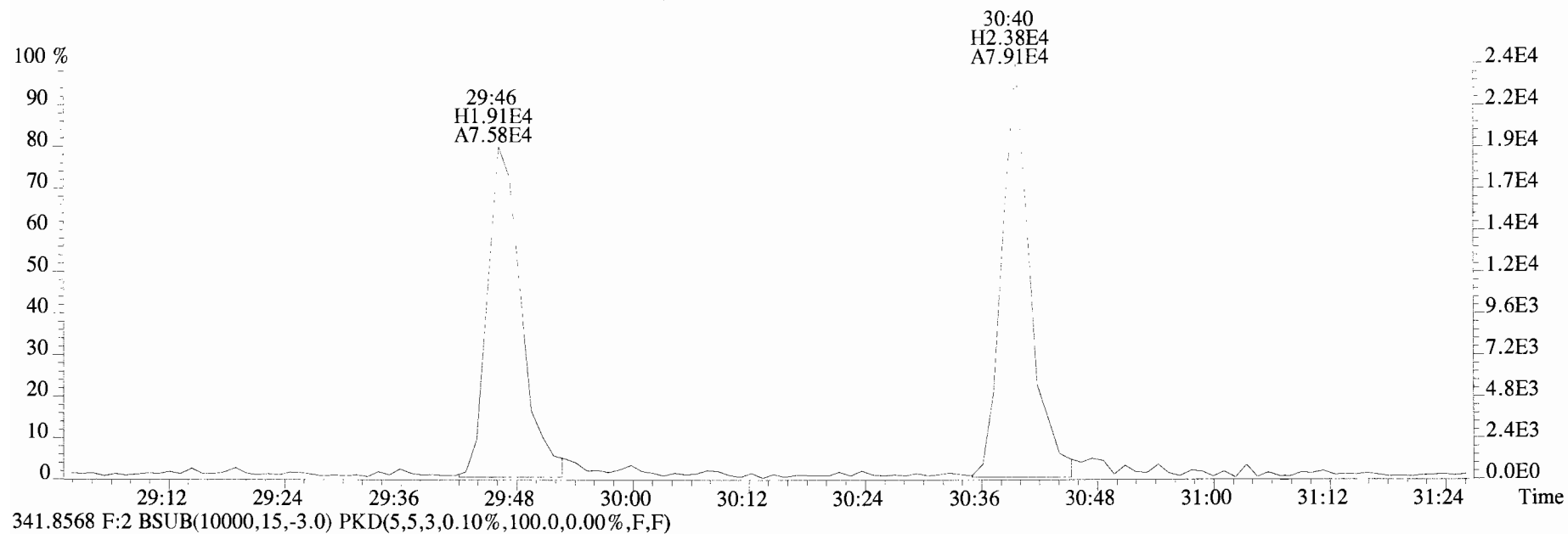
316.9824



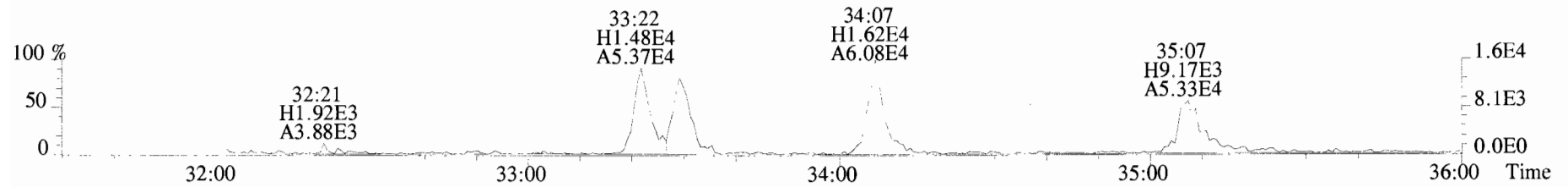
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



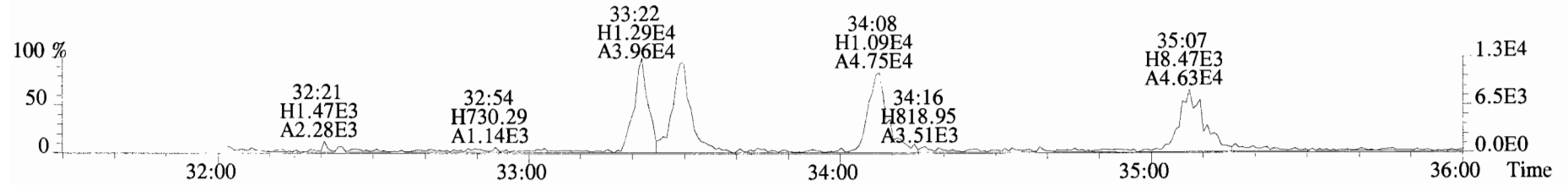
File:191009D1 #1-210 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
339.8597 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



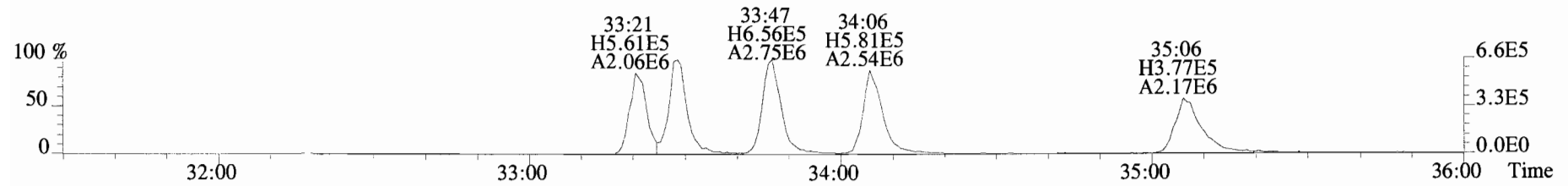
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
373.8207 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



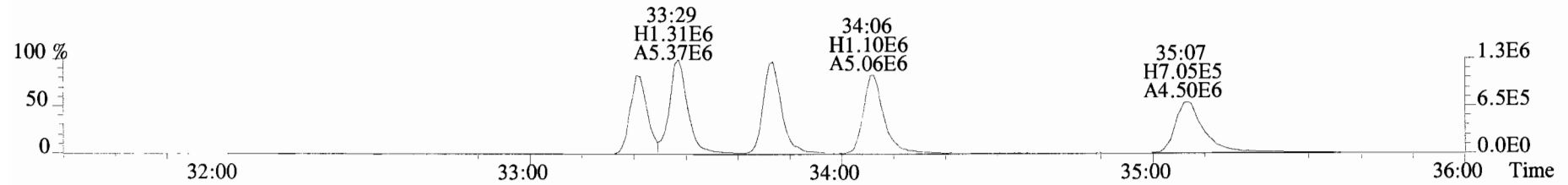
375.8178 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



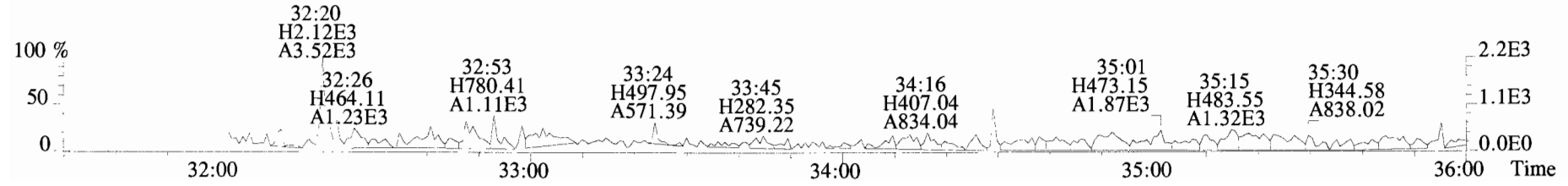
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



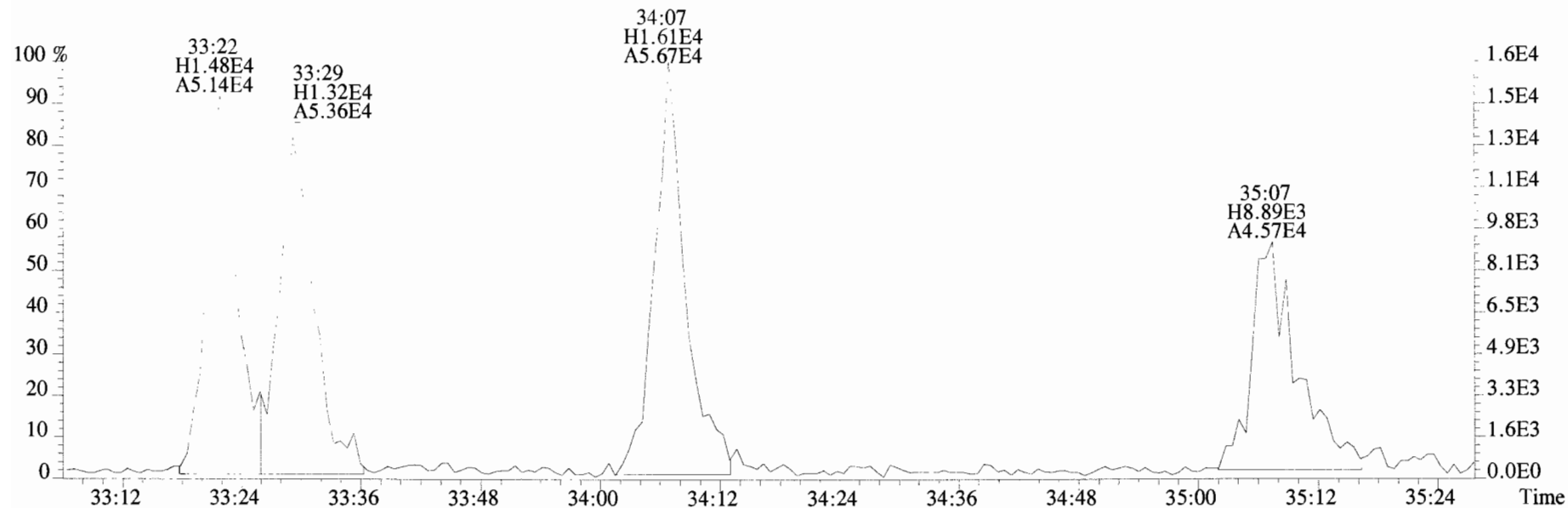
385.8610 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



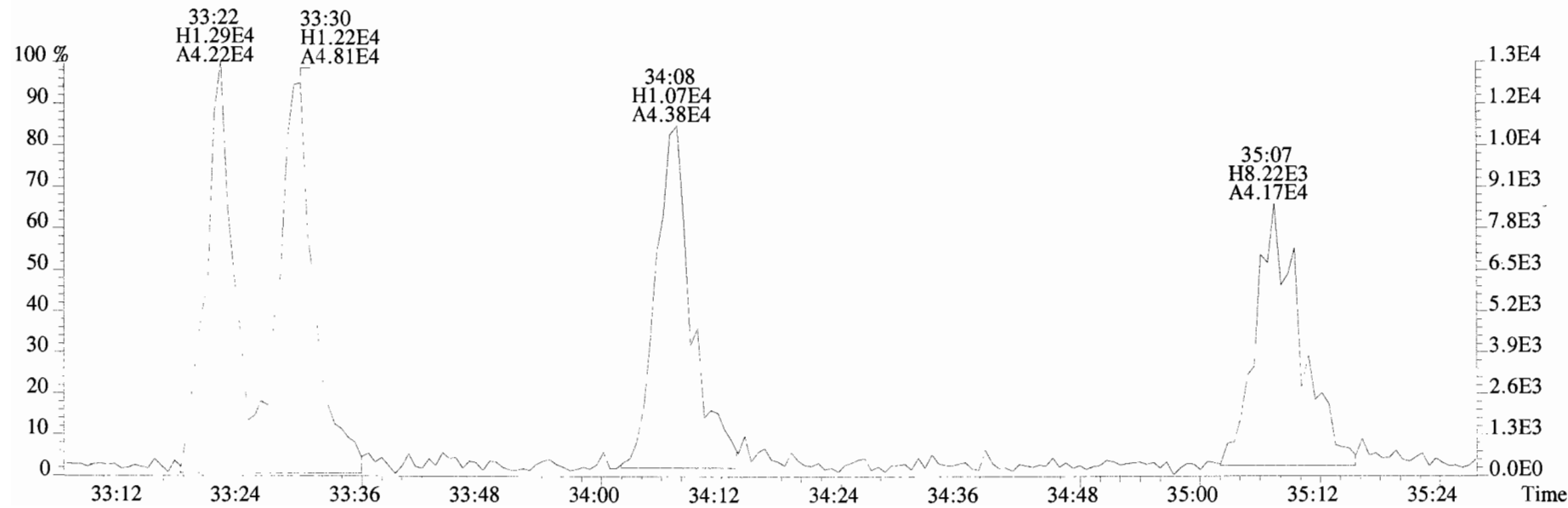
445.7555 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



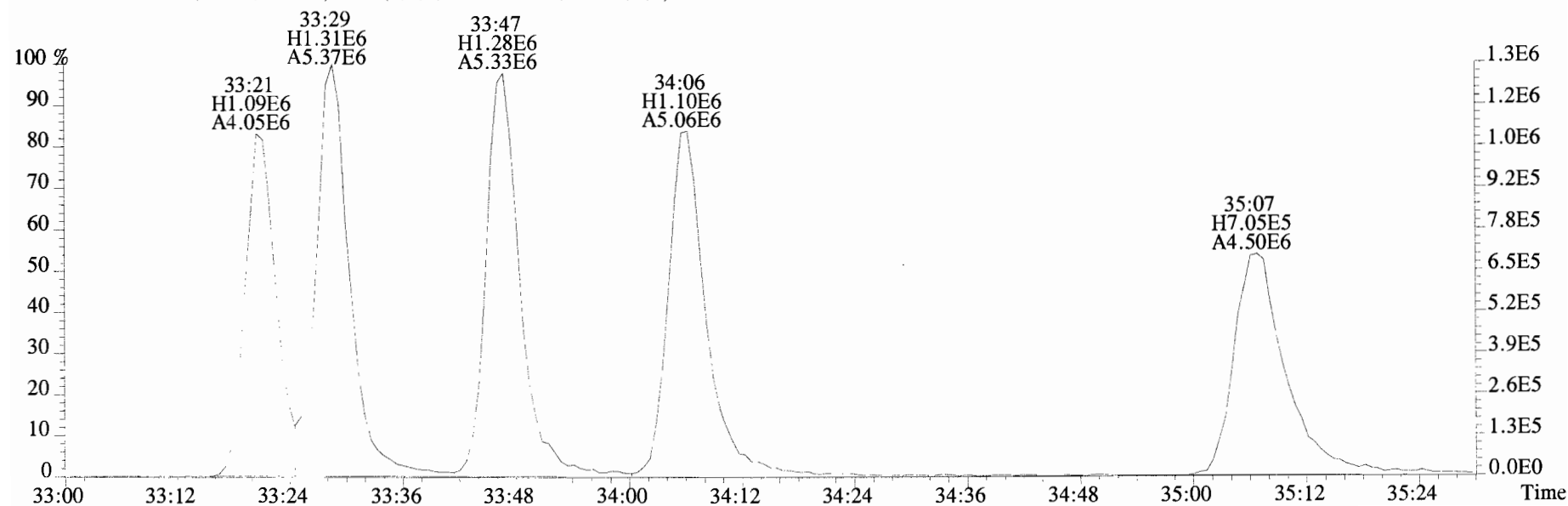
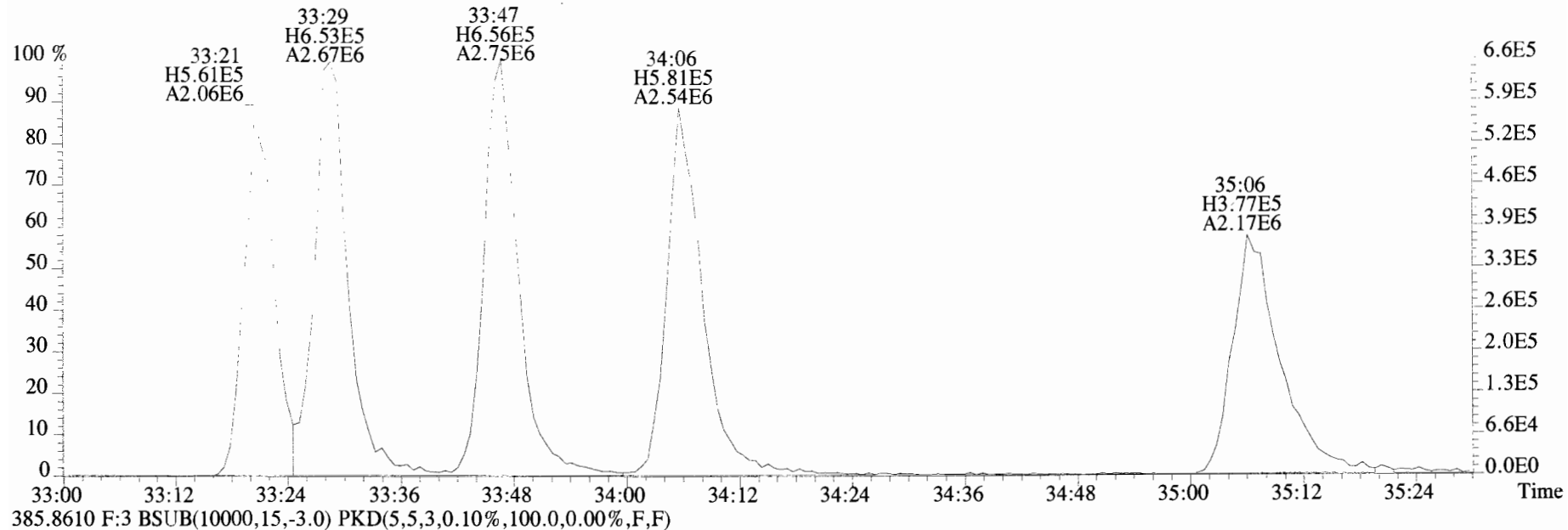
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
373.8207 F:3 BSUB(10000,15,-3.0)



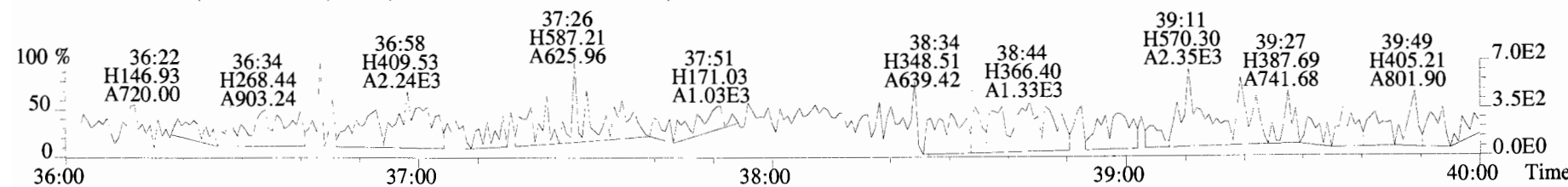
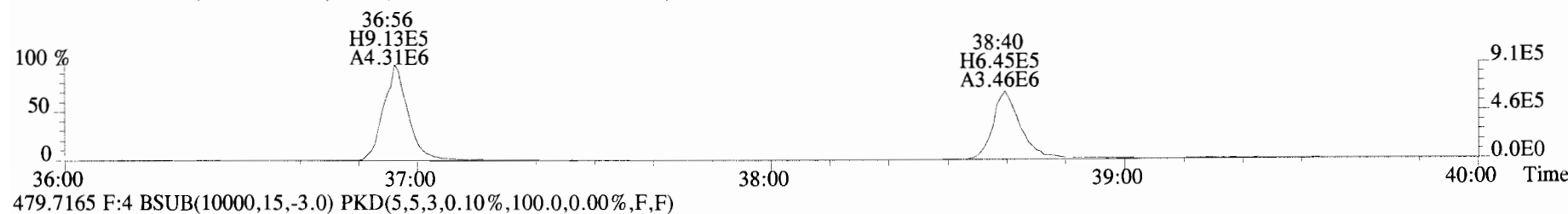
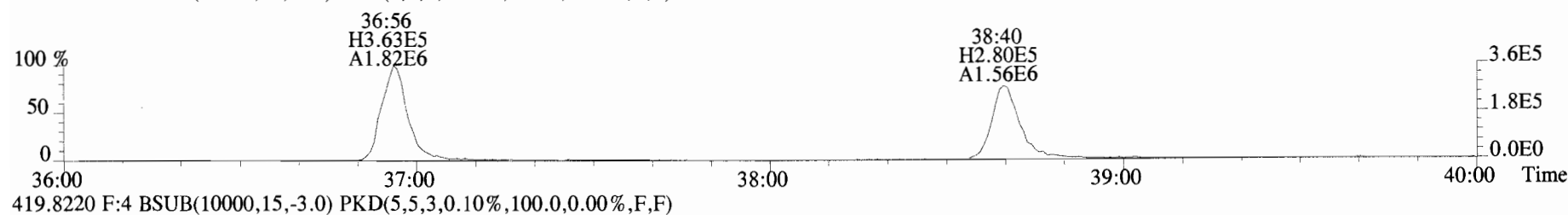
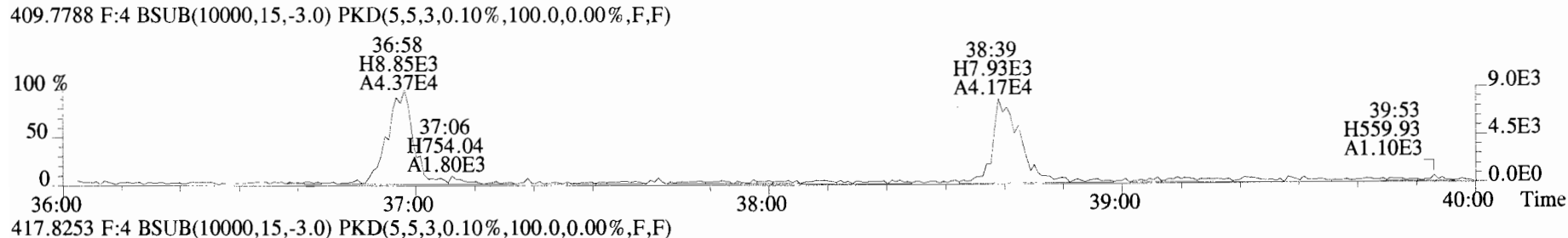
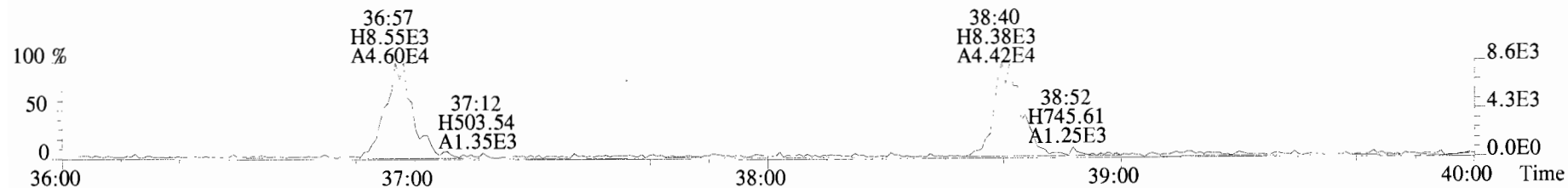
375.8178 F:3 BSUB(10000,15,-3.0)



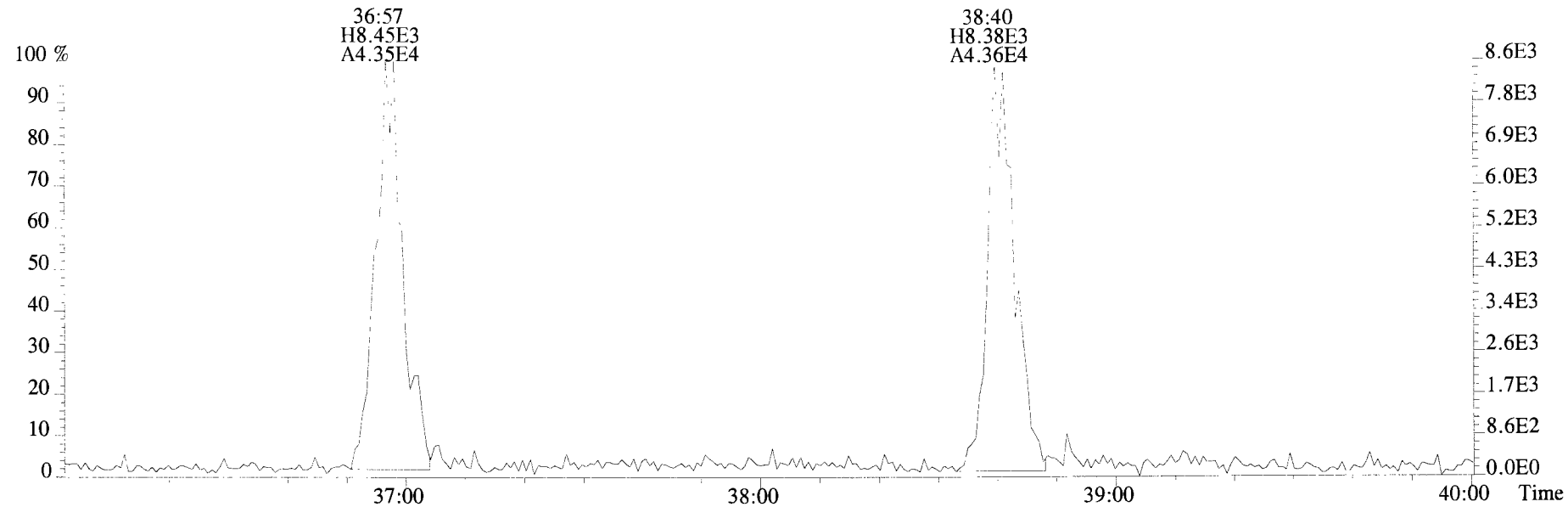
File:191009D1 #1-356 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
383.8639 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



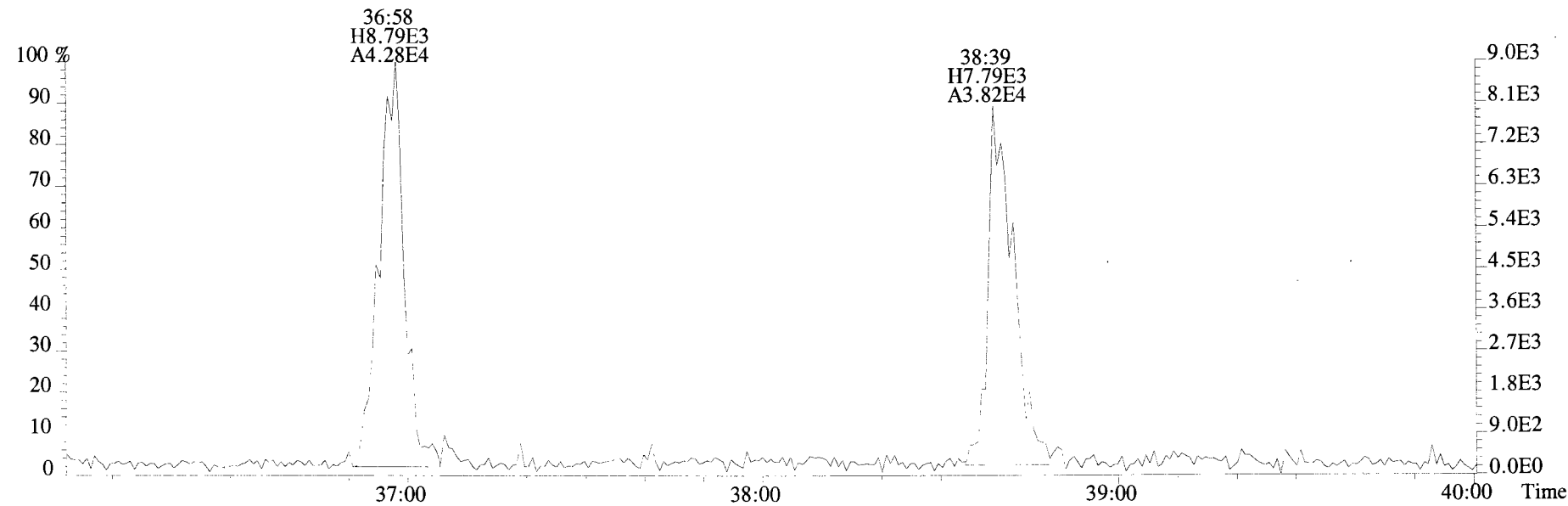
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



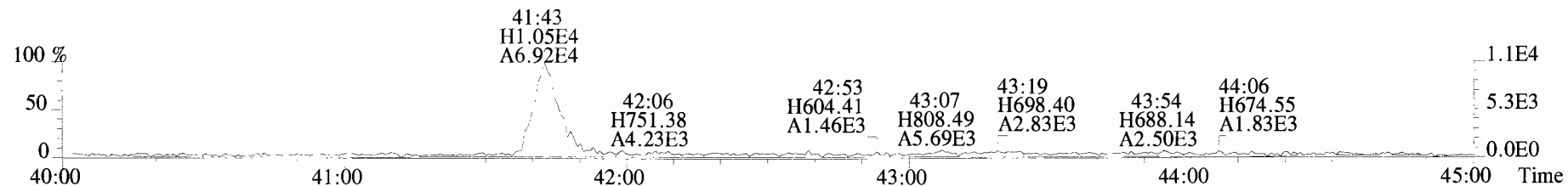
File:191009D1 #1-355 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
407.7818 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



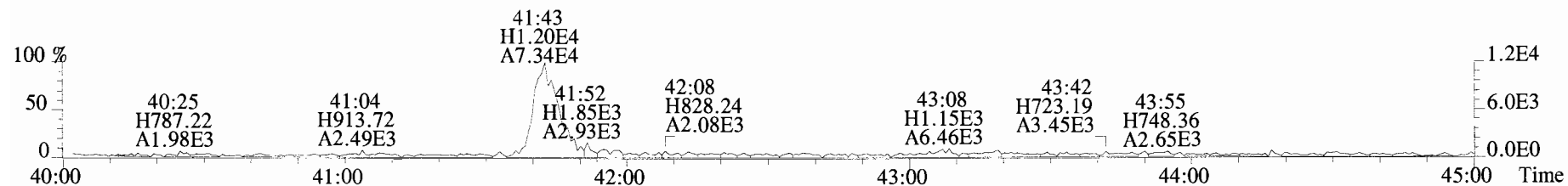
409.7788 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



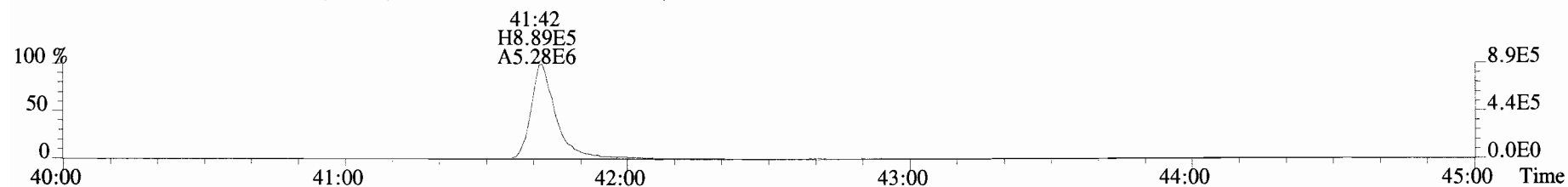
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



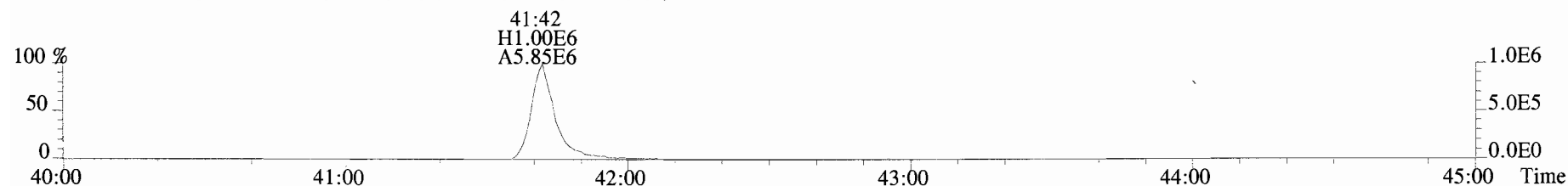
443.7398 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



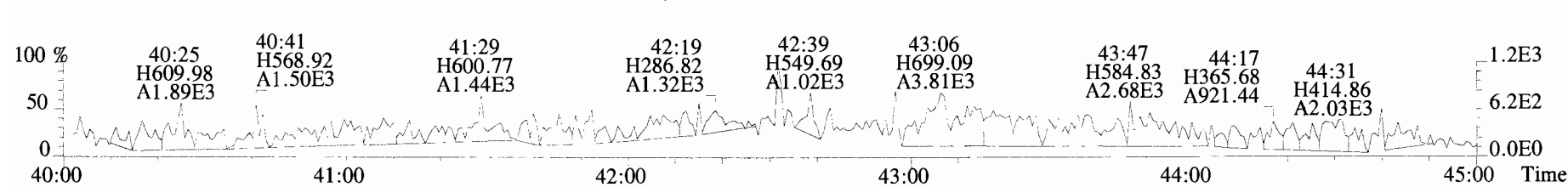
453.7831 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



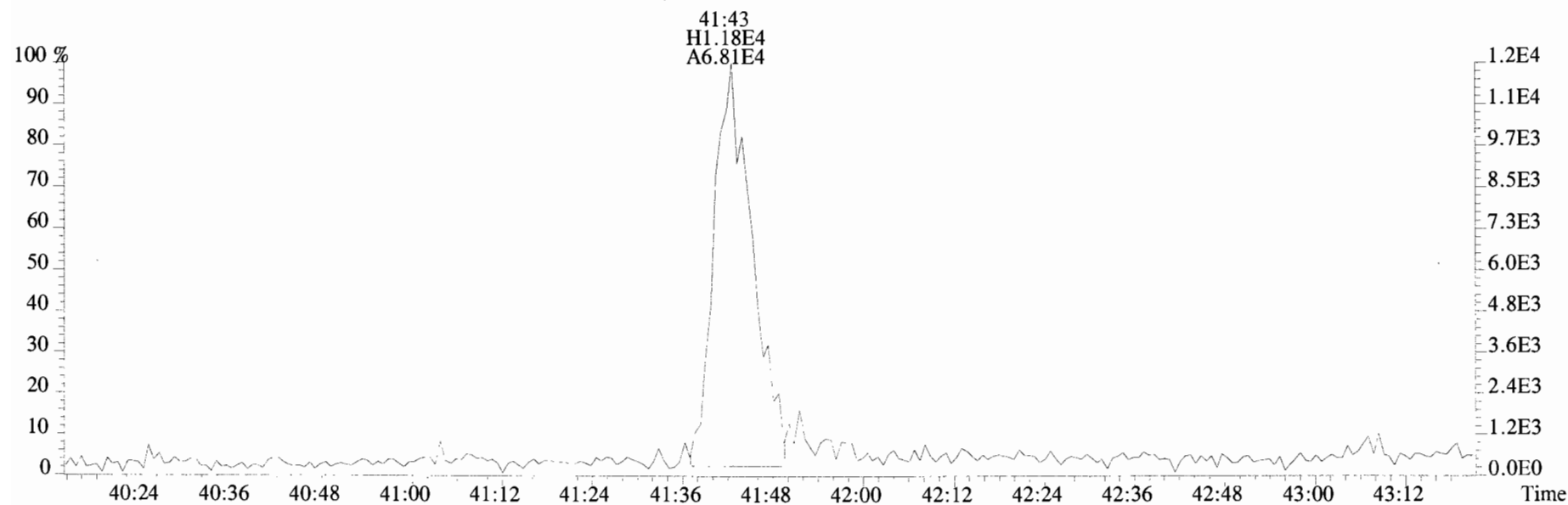
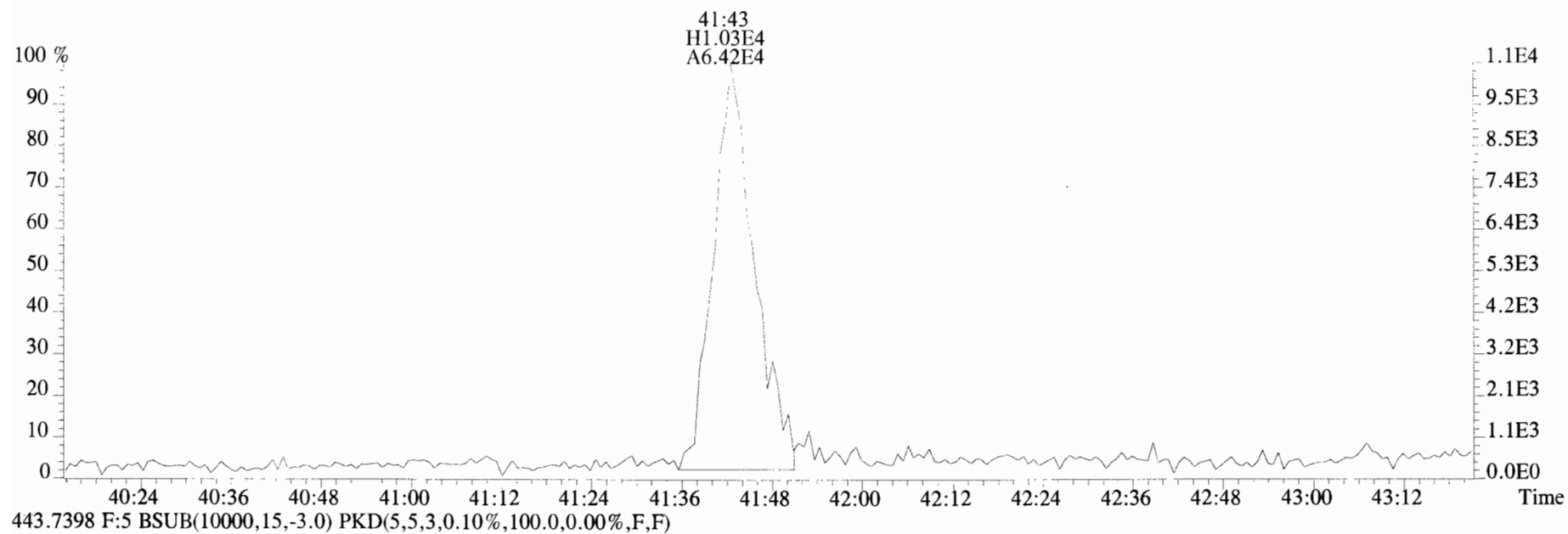
455.7801 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



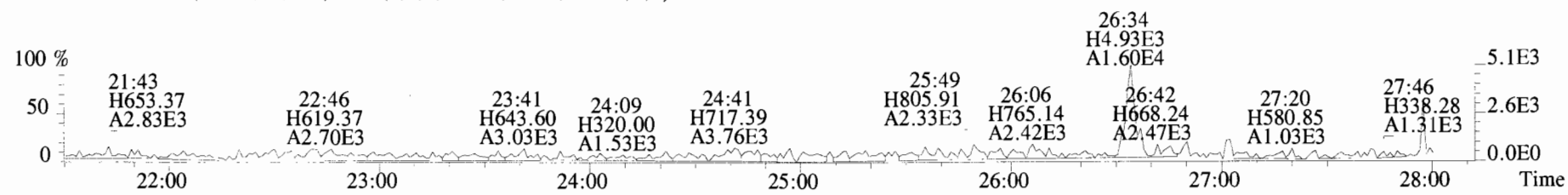
513.6775 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



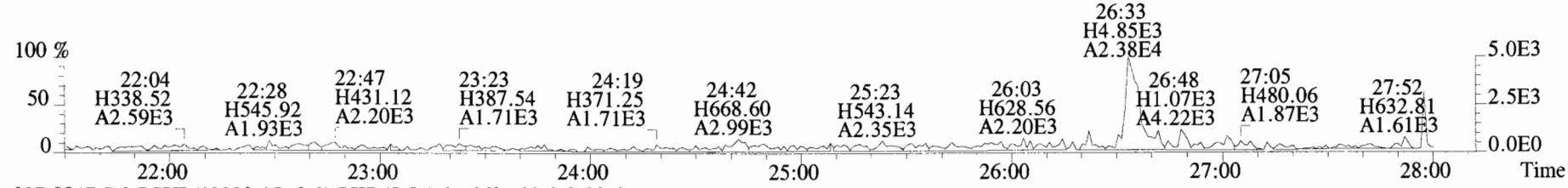
File:191009D1 #1-432 Acq: 9-OCT-2019 16:13:04 GC EI+ Voltage SIR Autospec-UltimaE
Sample#1 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-1 1613 CS0 19C2201 Exp:OCDD_DB5
441.7428 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



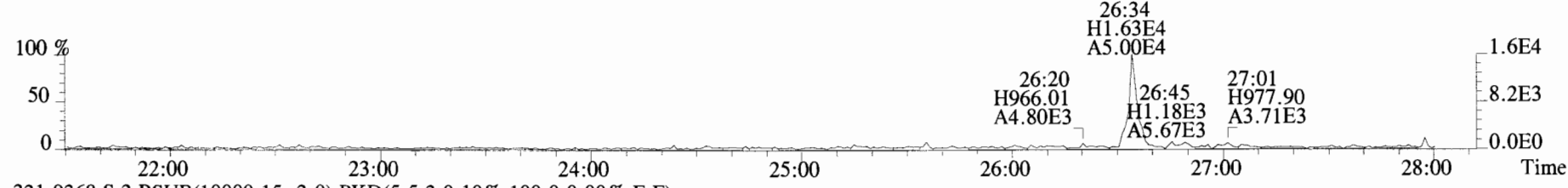
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



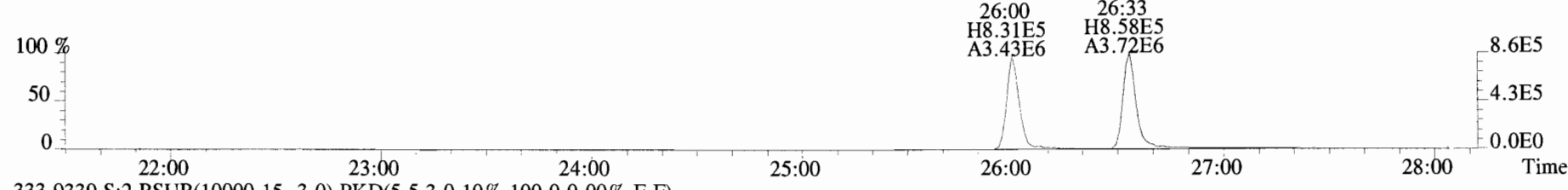
321.8936 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



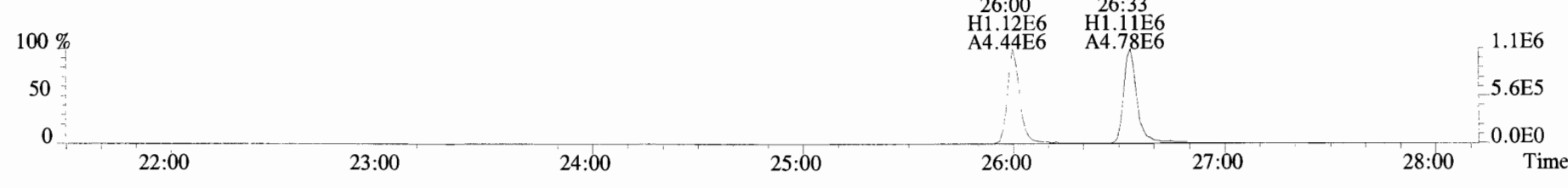
327.8847 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



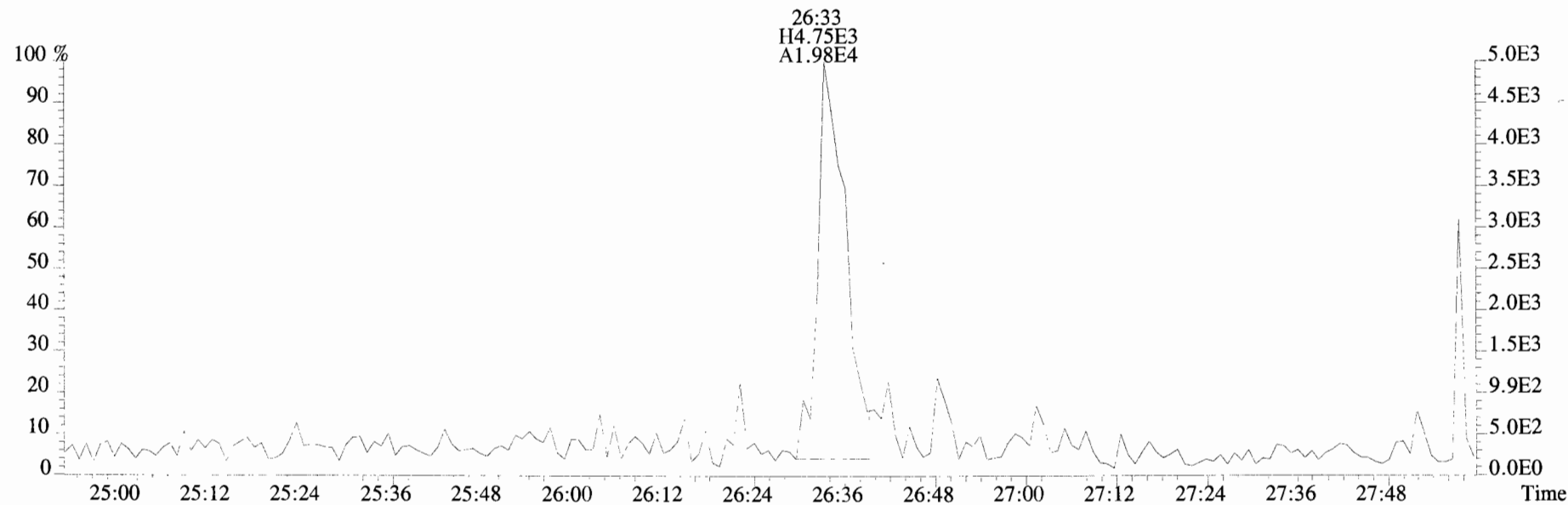
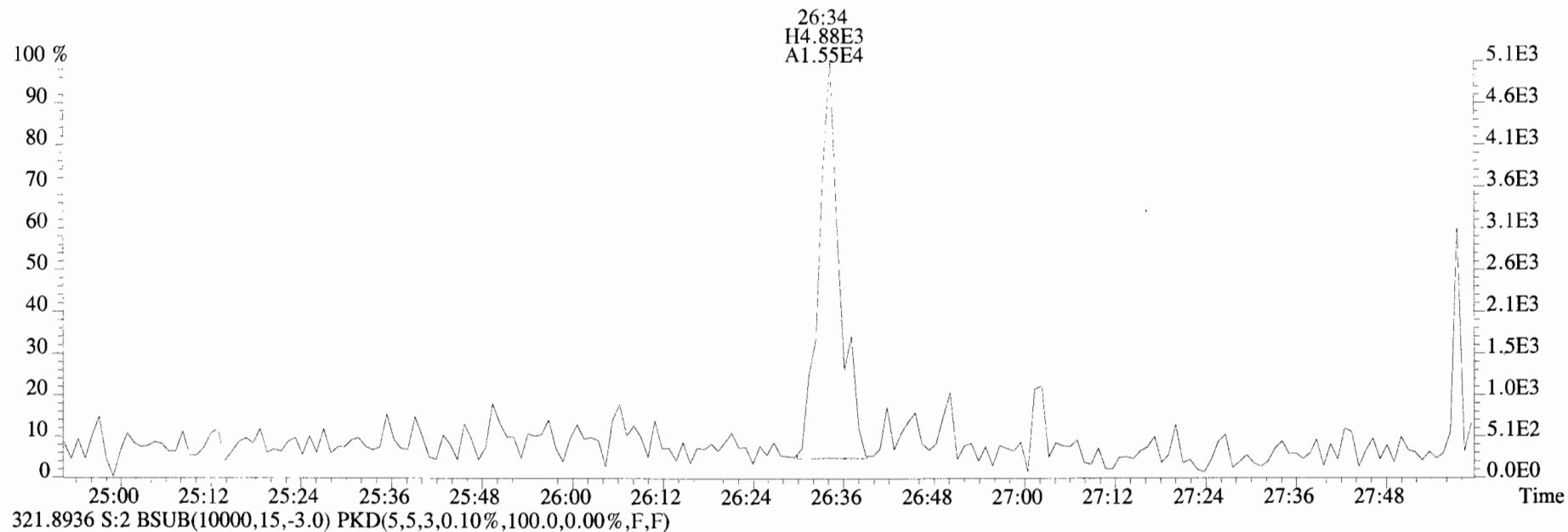
331.9368 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



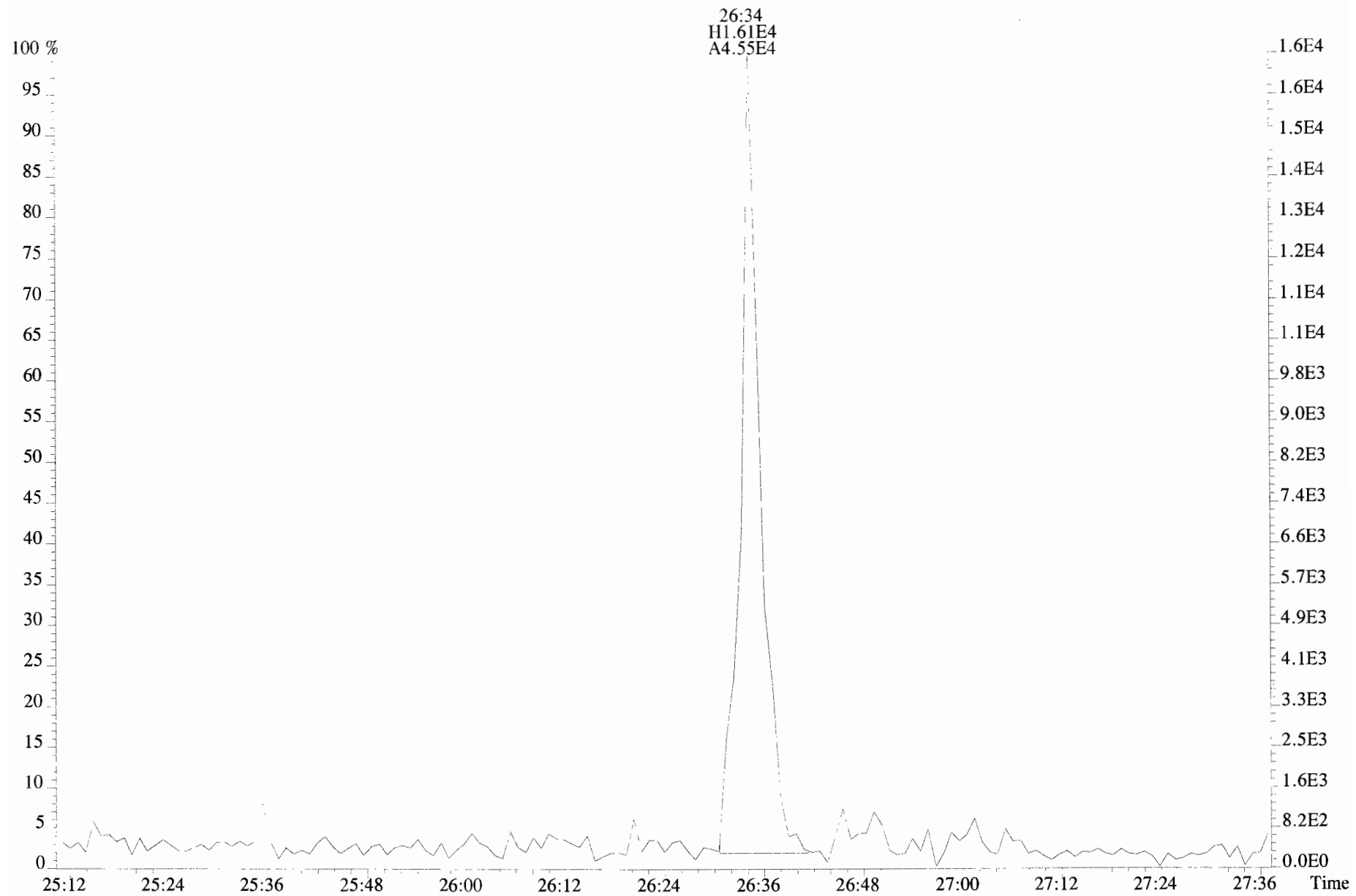
333.9339 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



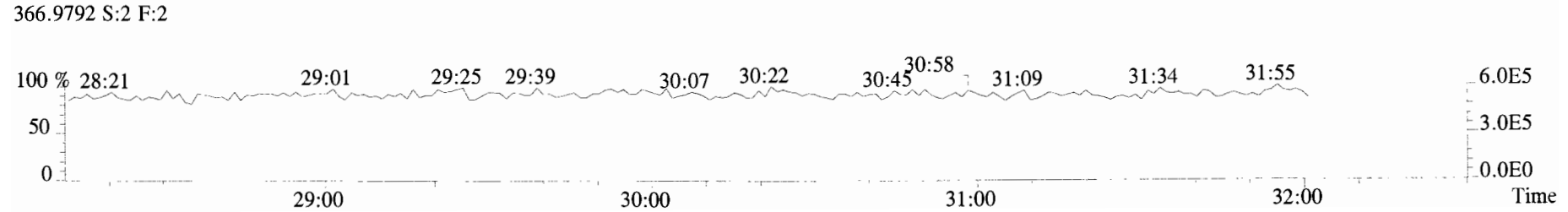
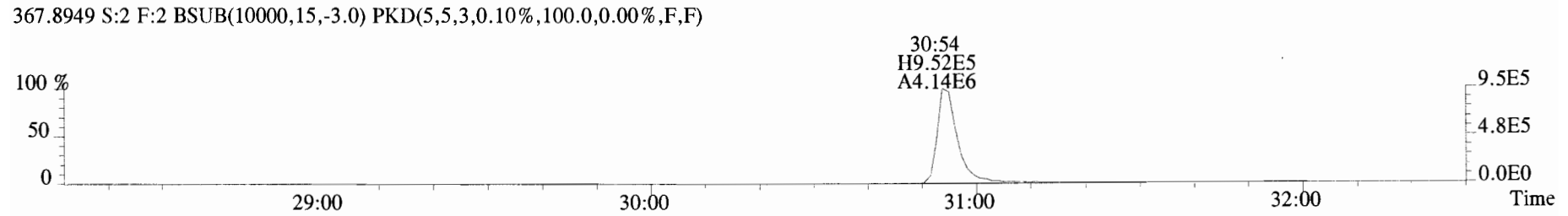
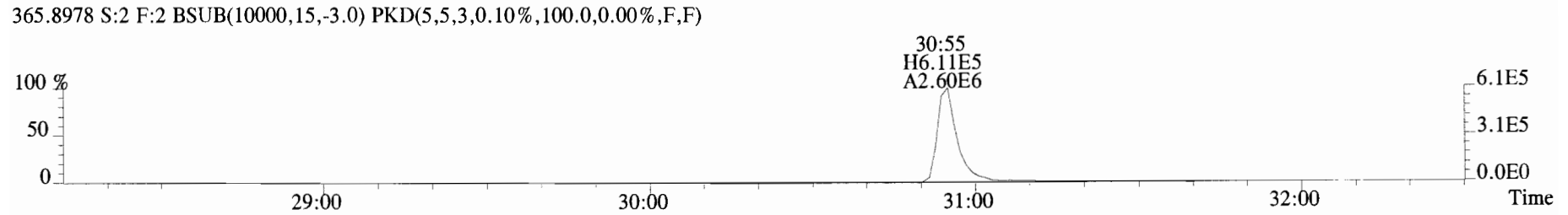
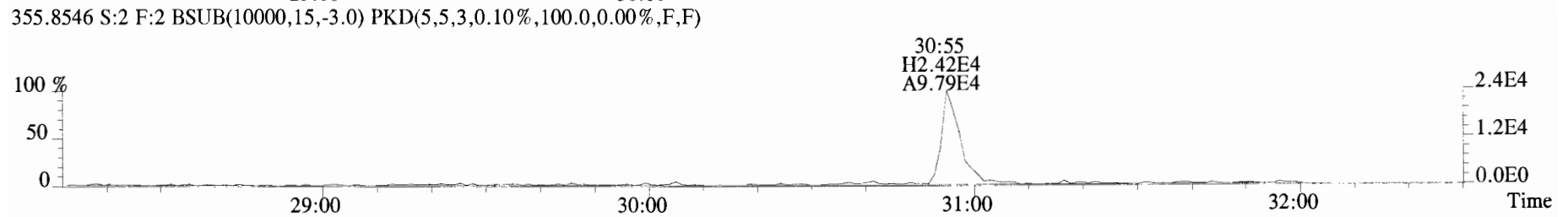
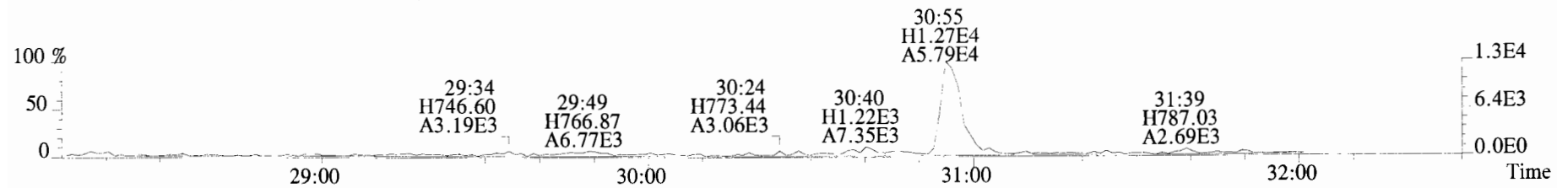
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
319.8965 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



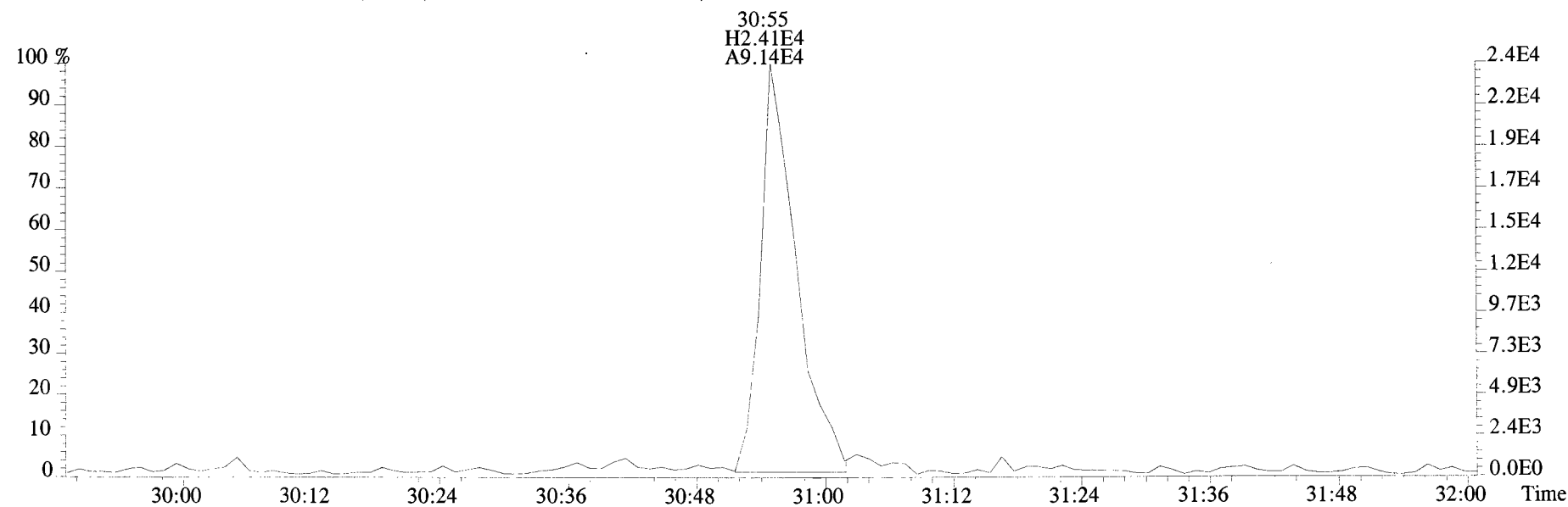
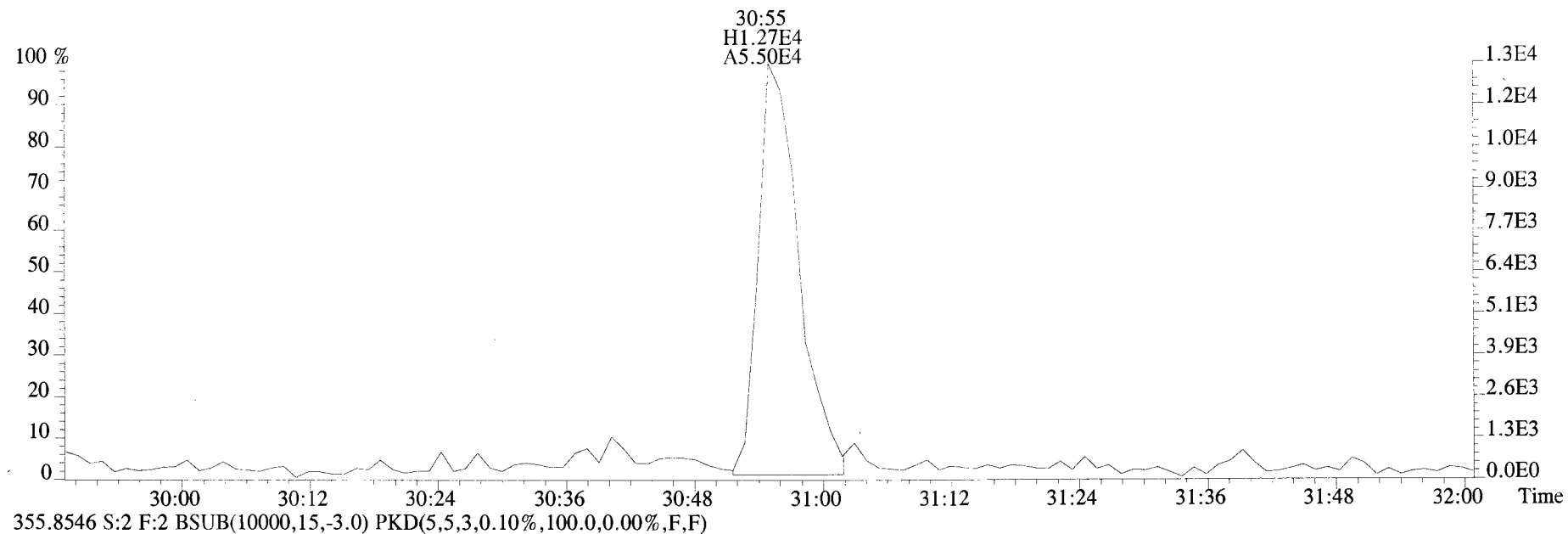
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
327.8847 S:2 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



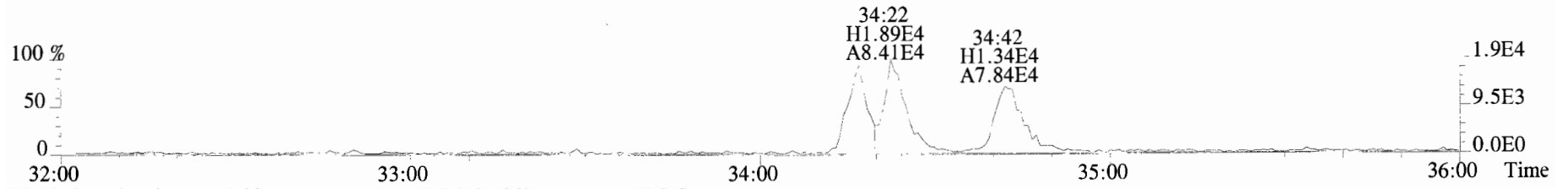
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



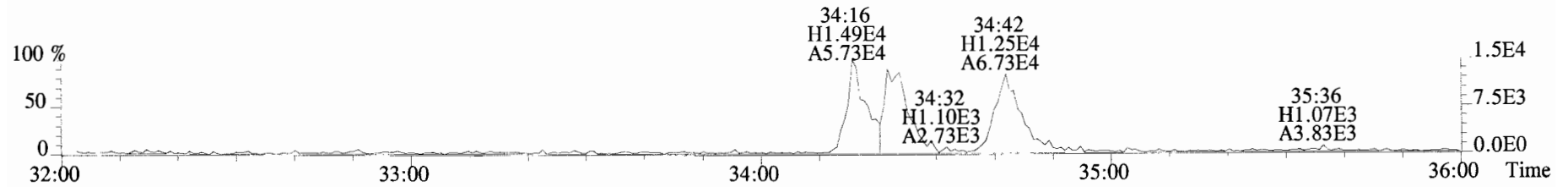
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
353.8576 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



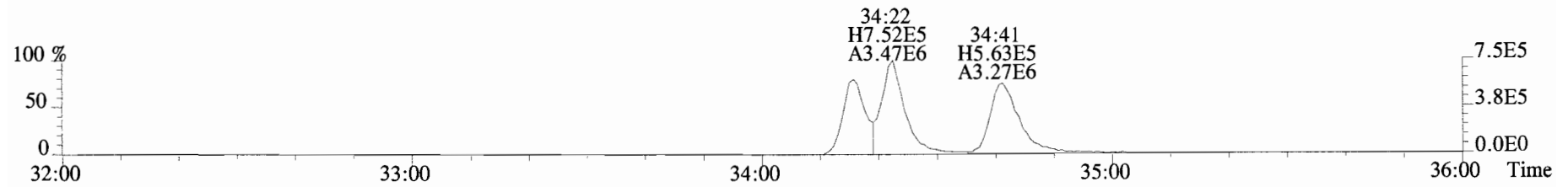
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
389.8156 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



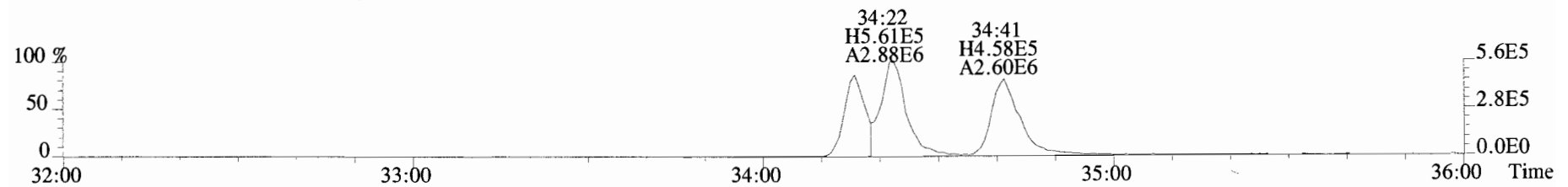
391.8127 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



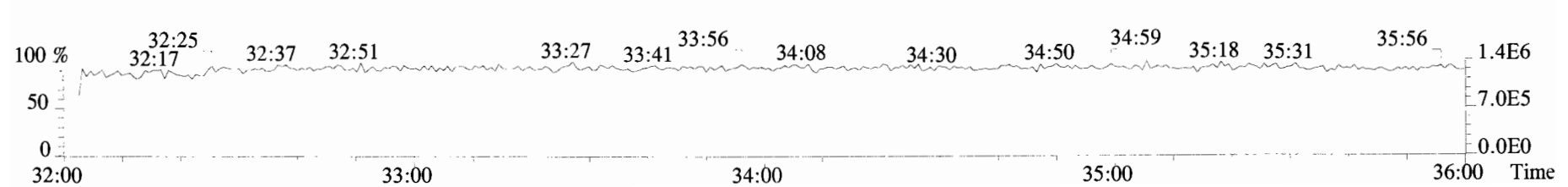
401.8559 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



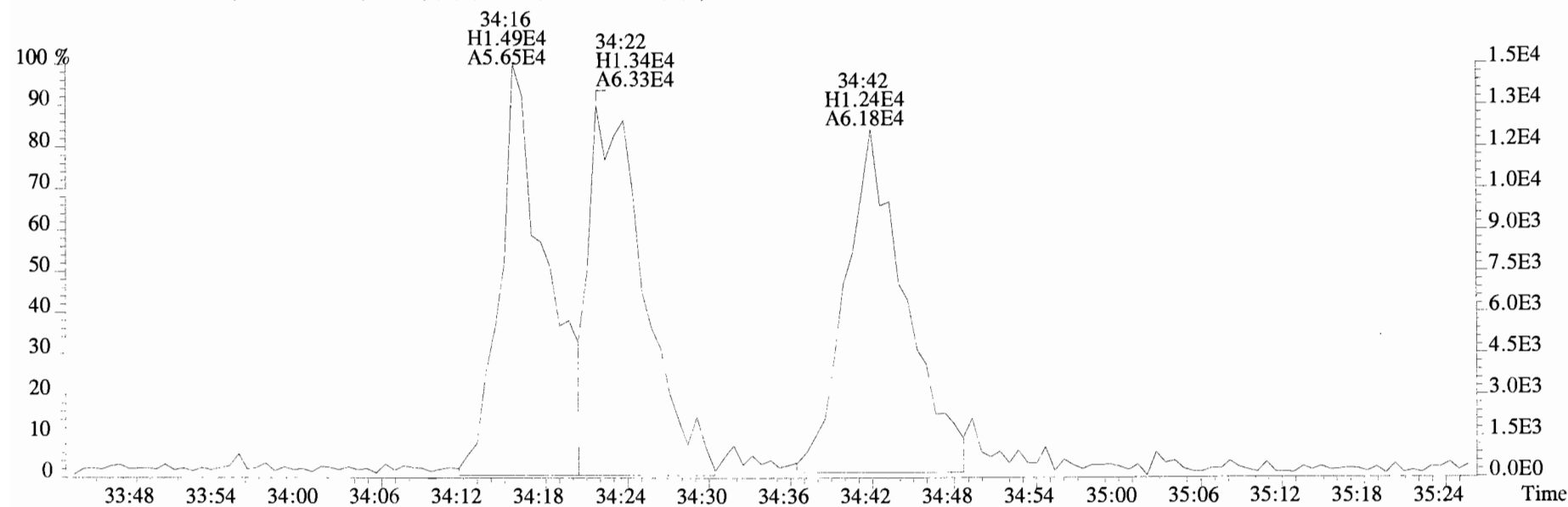
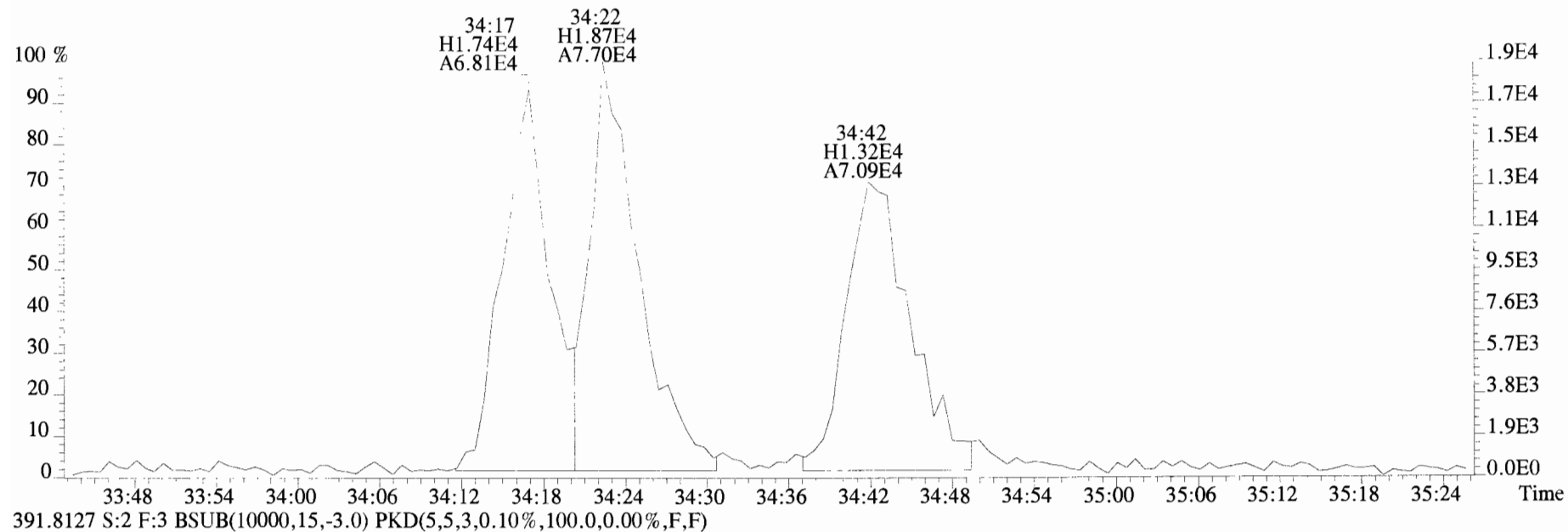
403.8530 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



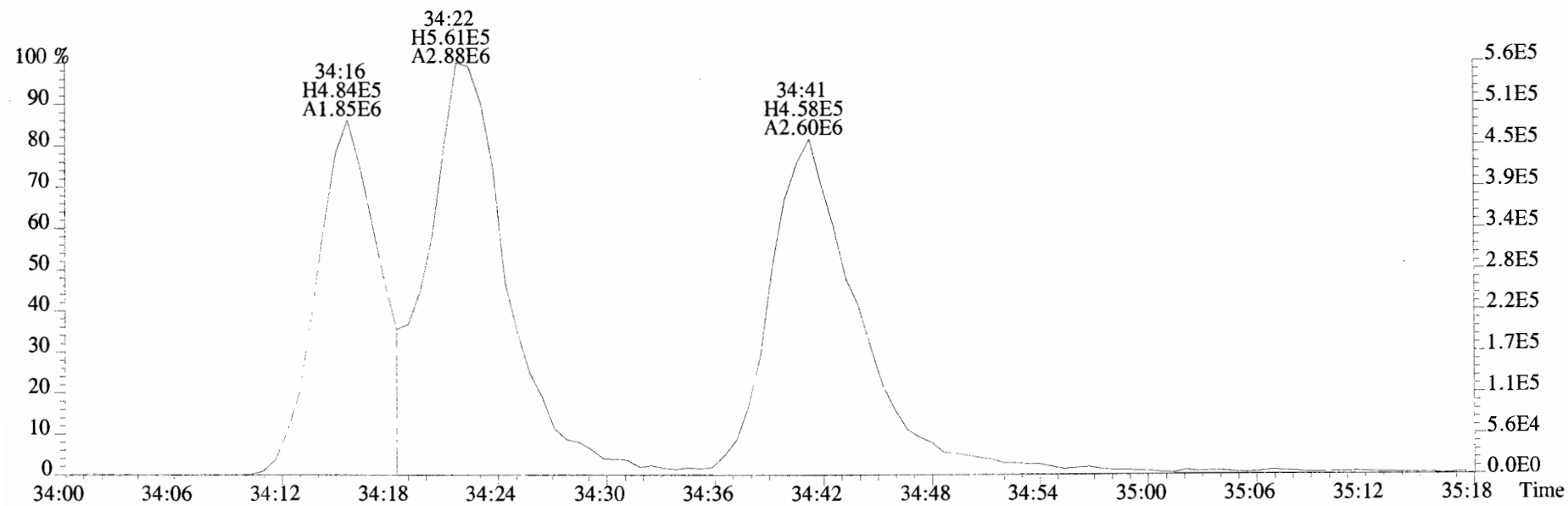
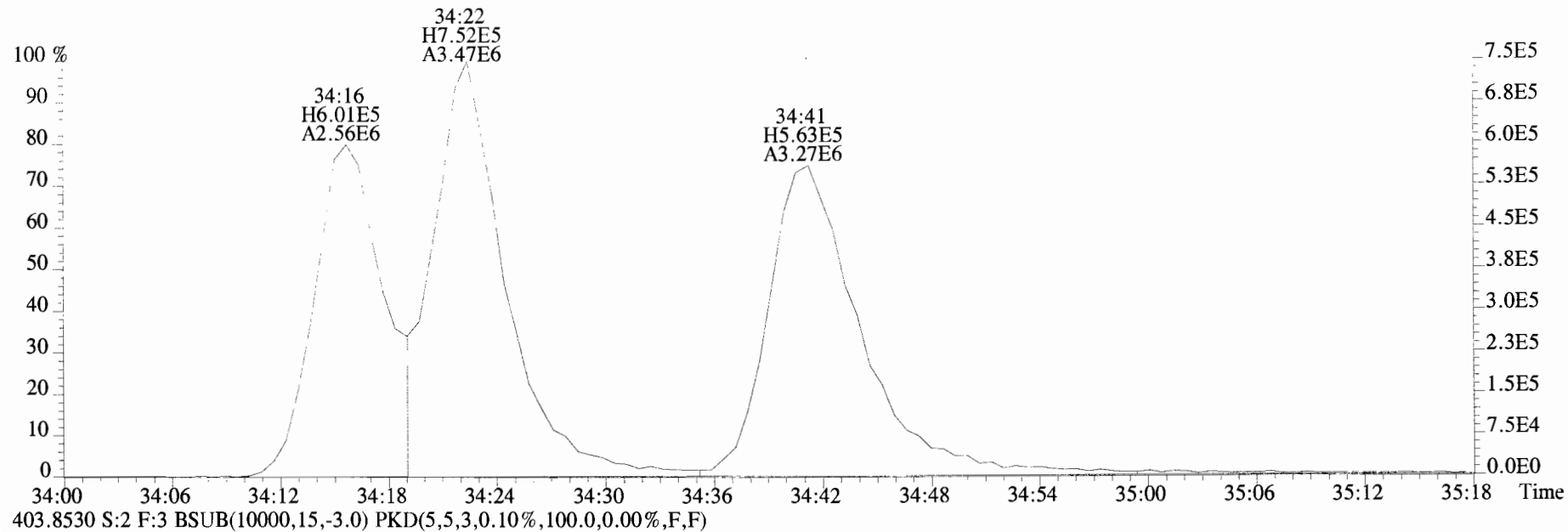
392.9760 S:2 F:3



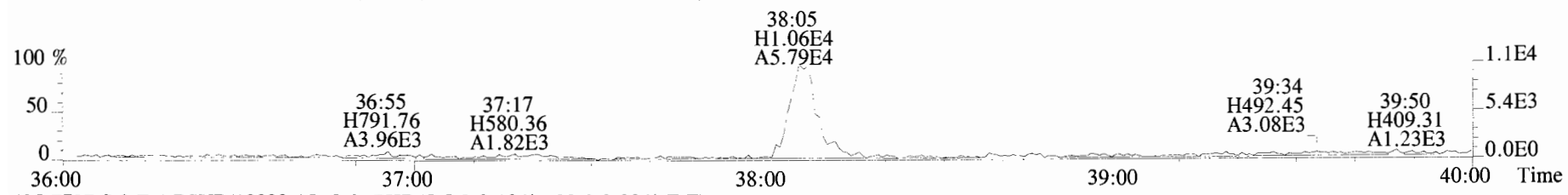
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
389.8156 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



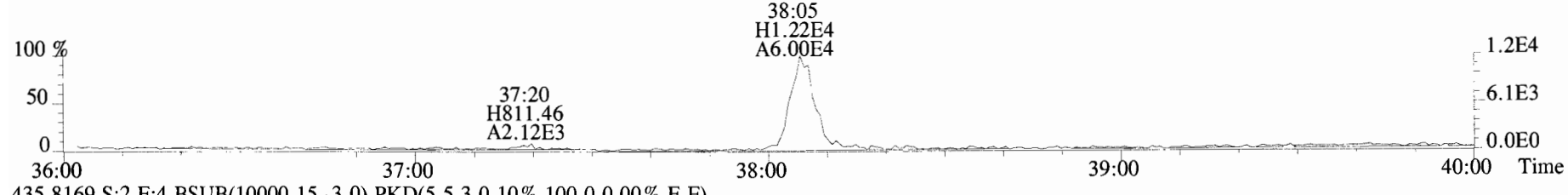
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
401.8559 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



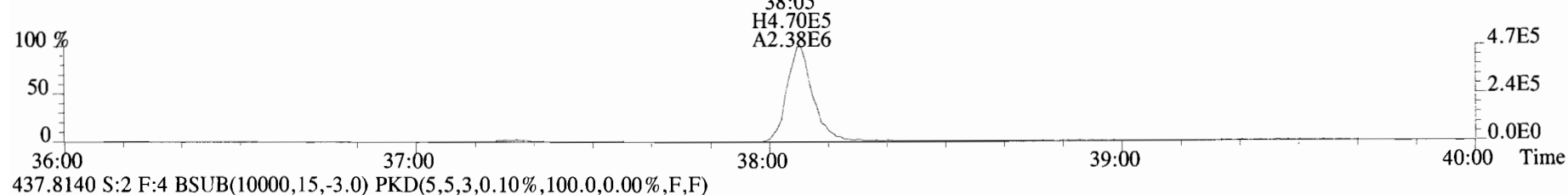
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
423.7767 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



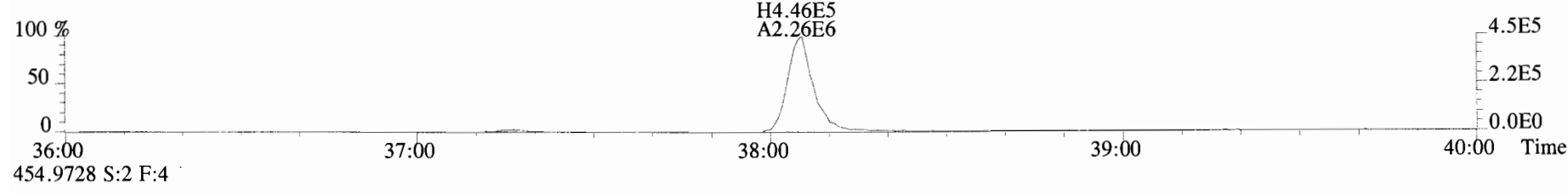
425.7737 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



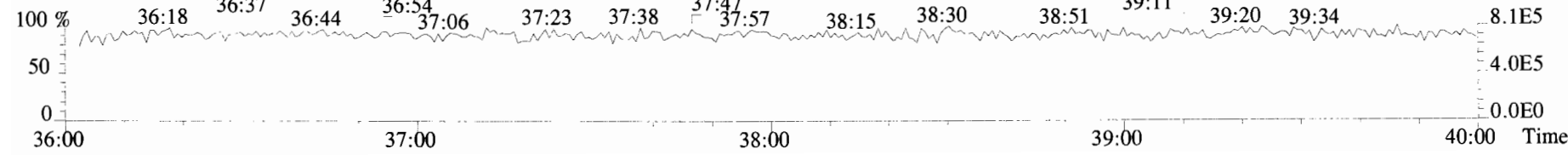
435.8169 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



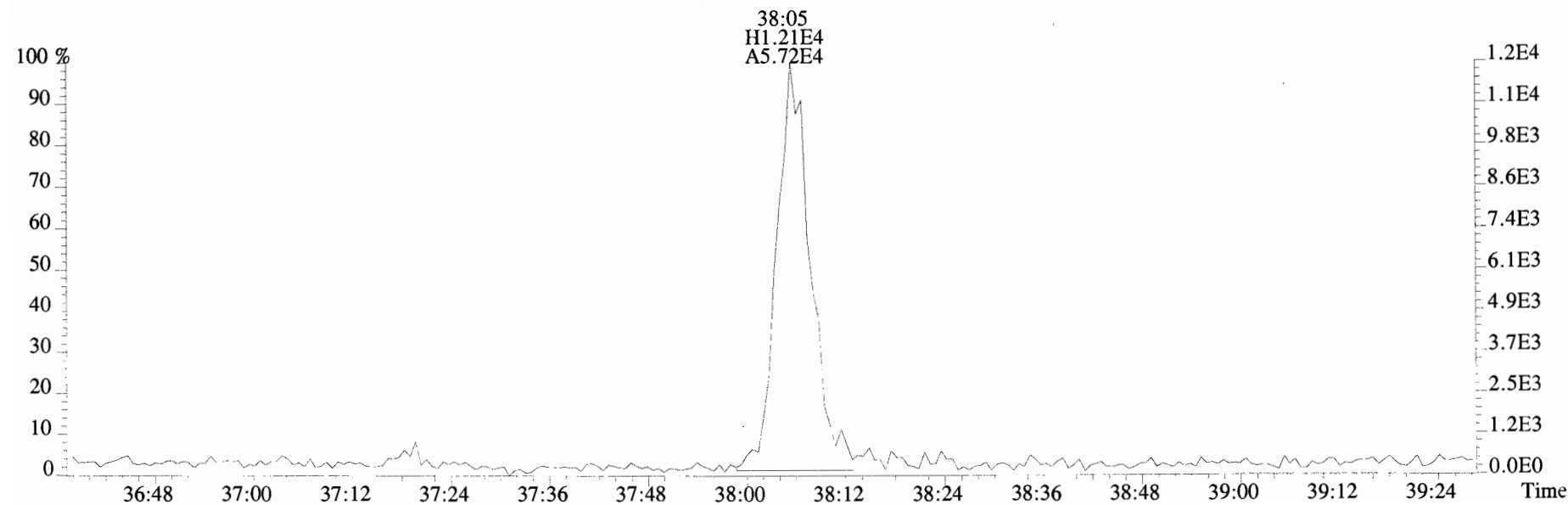
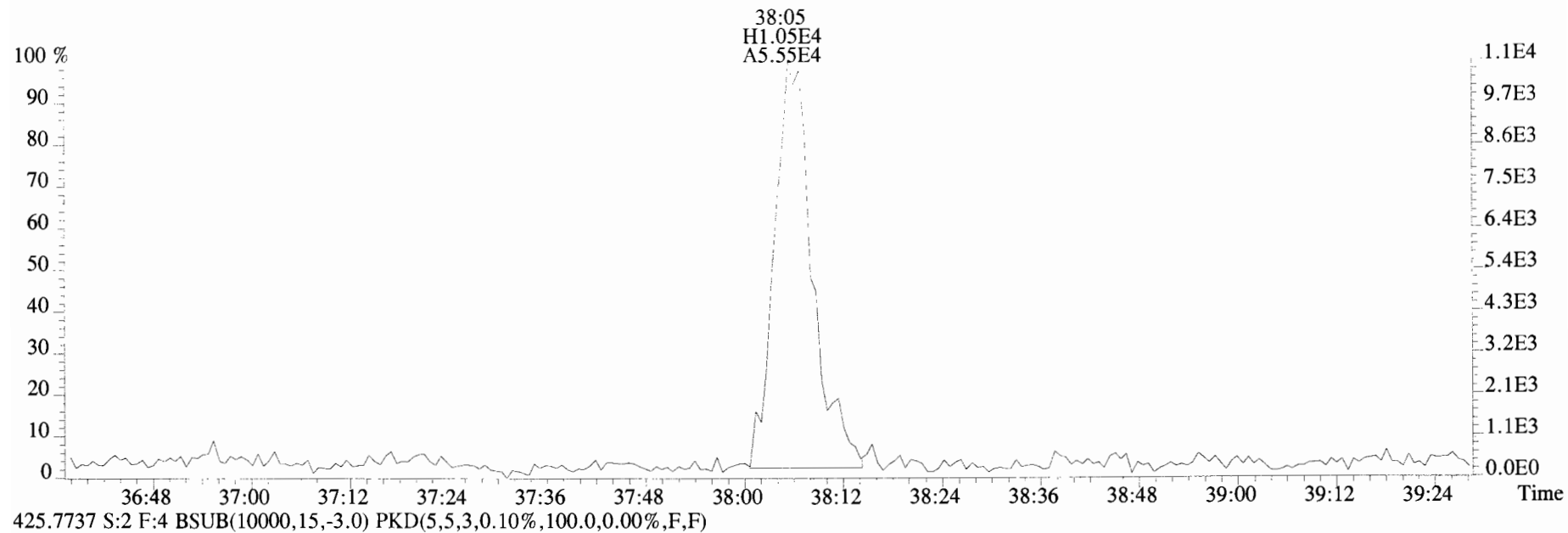
437.8140 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



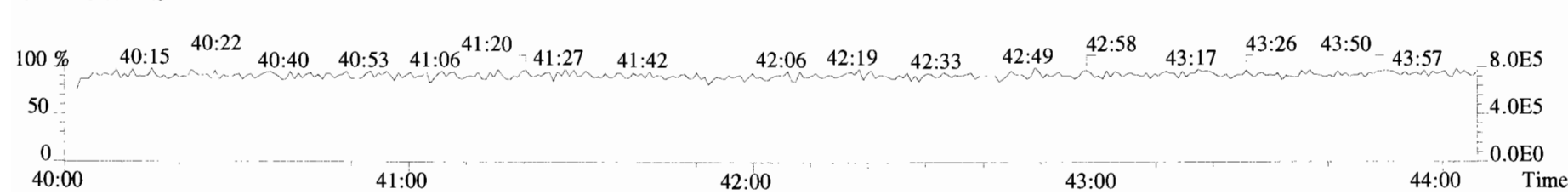
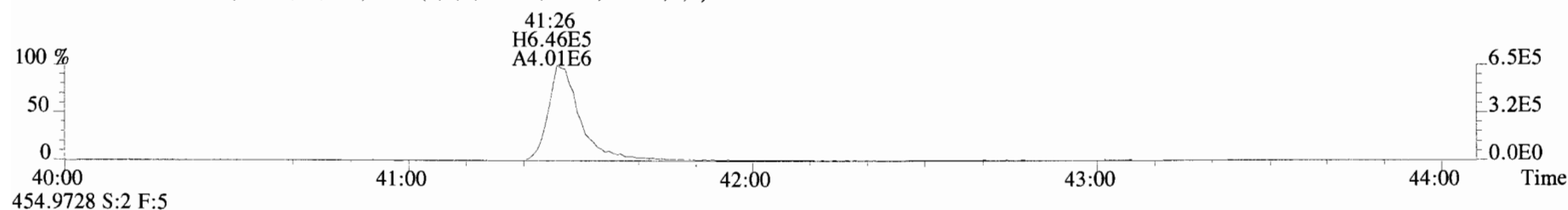
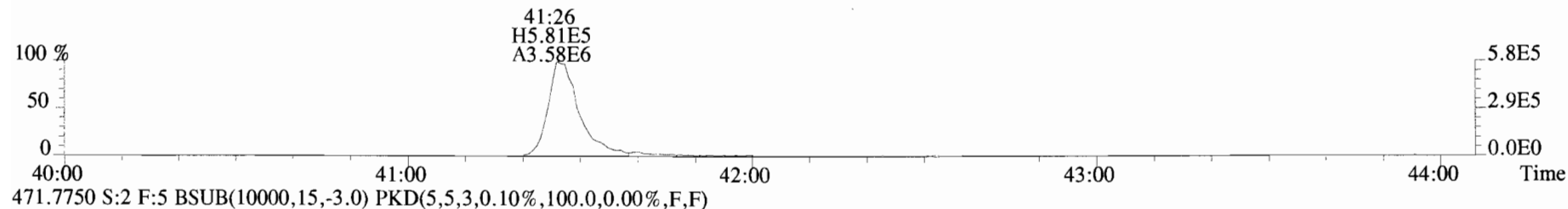
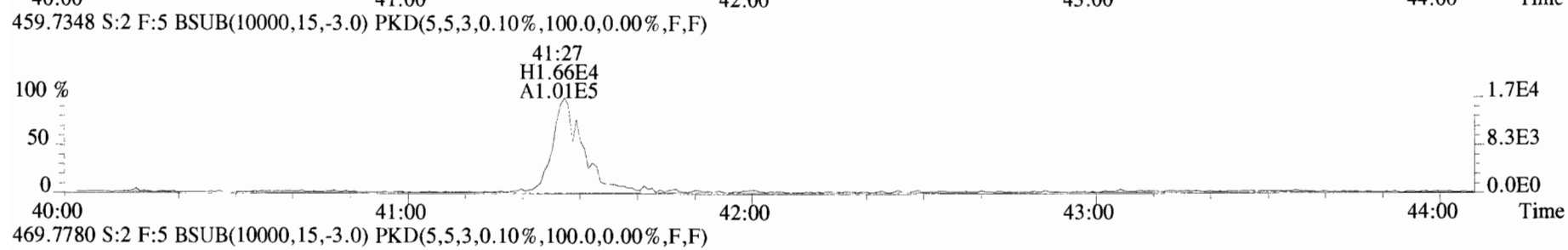
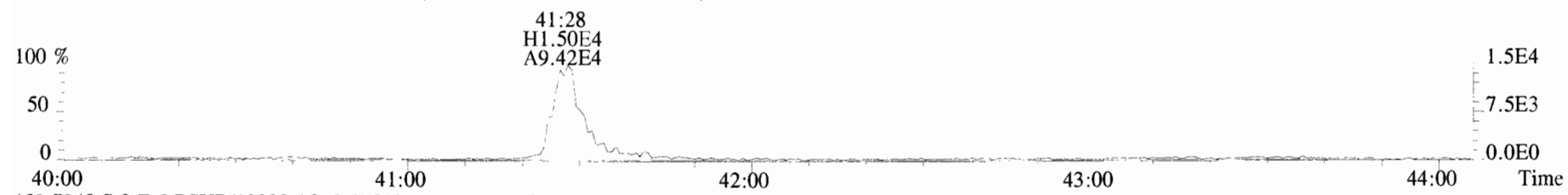
454.9728 S:2 F:4



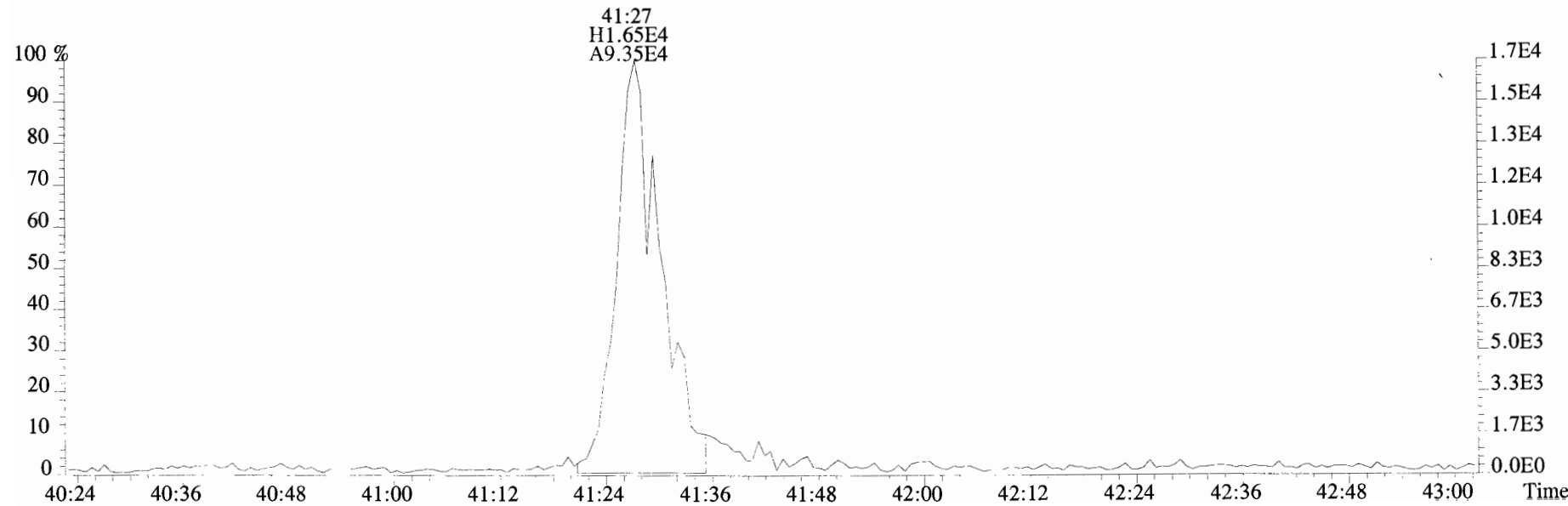
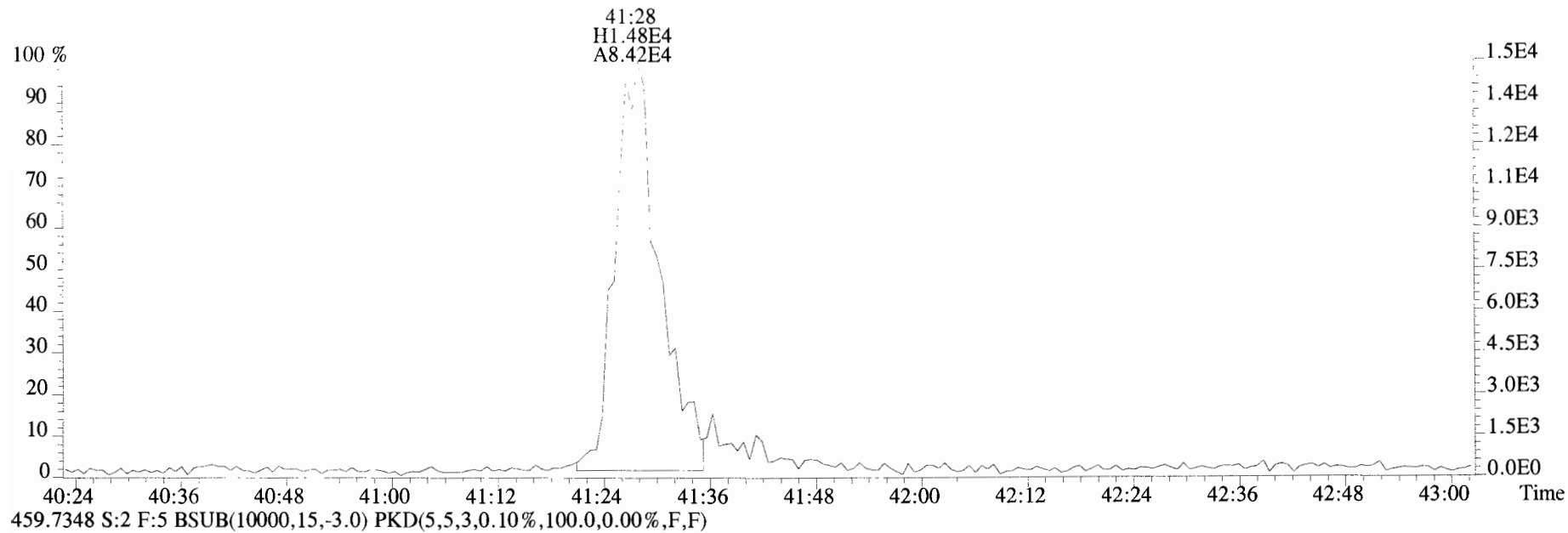
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
423.7767 S:2 F:4 BSub(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



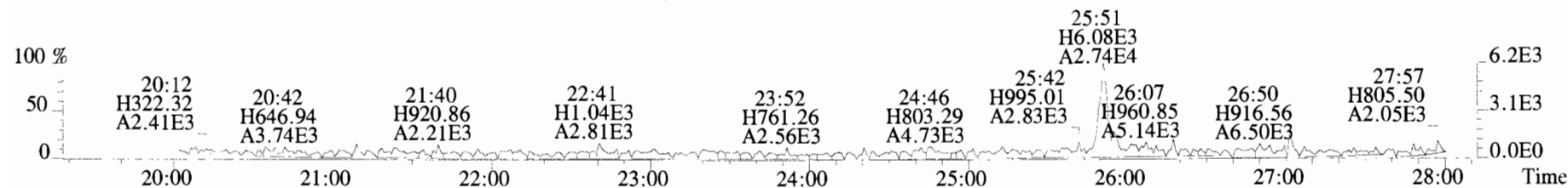
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



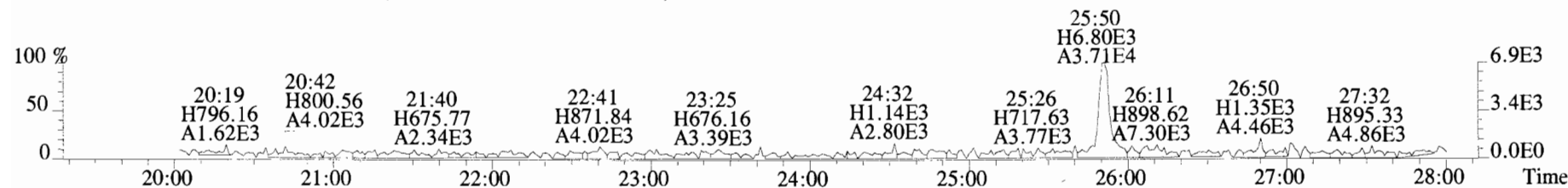
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
457.7377 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



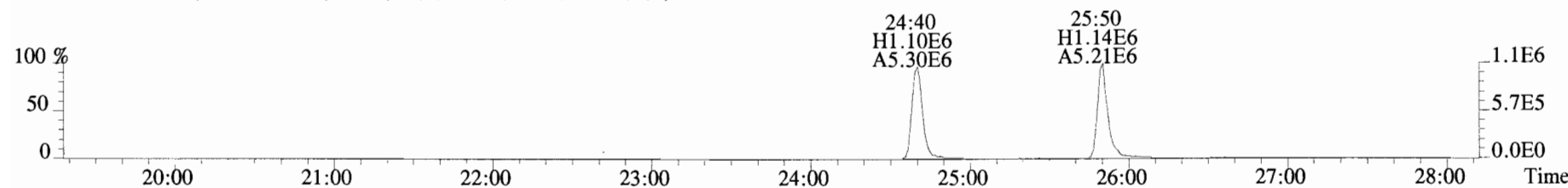
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



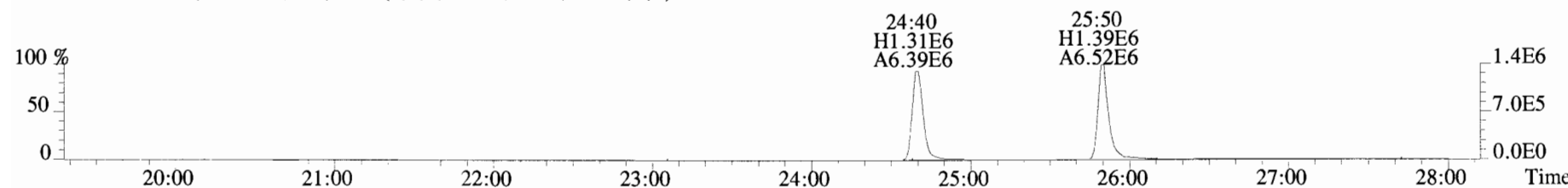
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



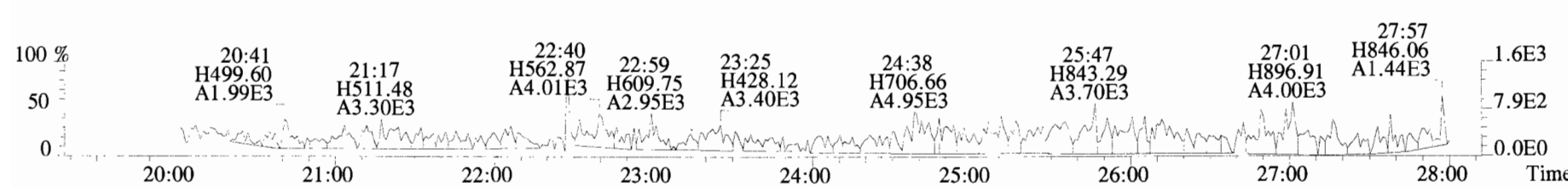
315.9419 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



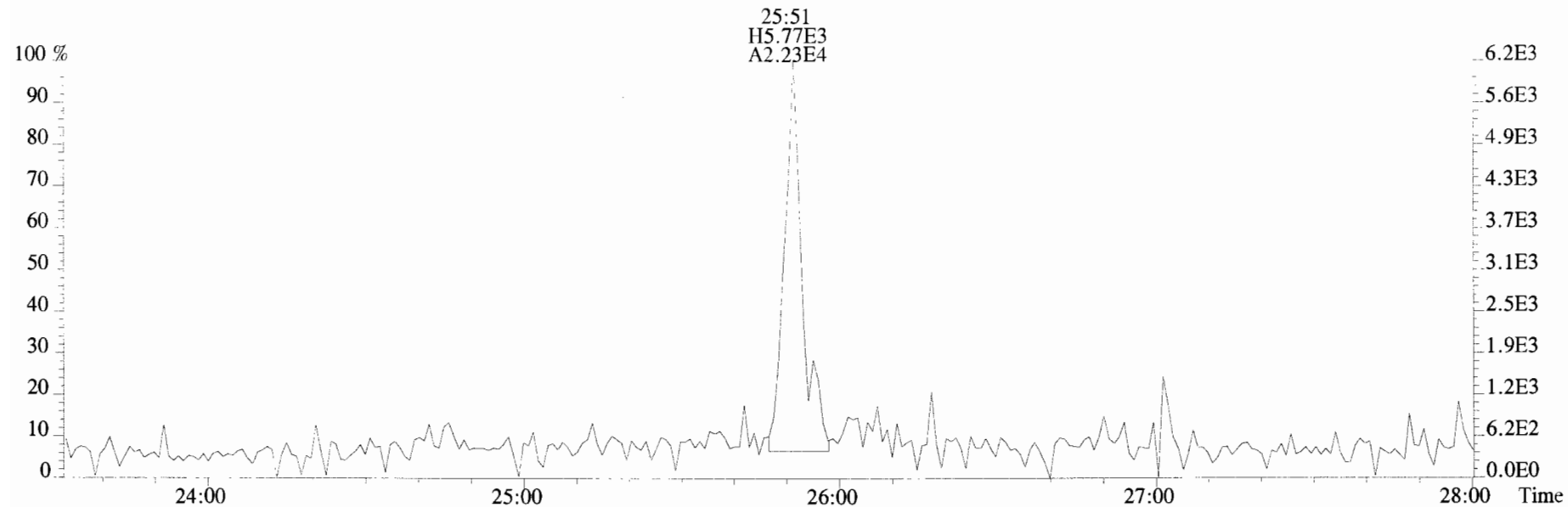
317.9389 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



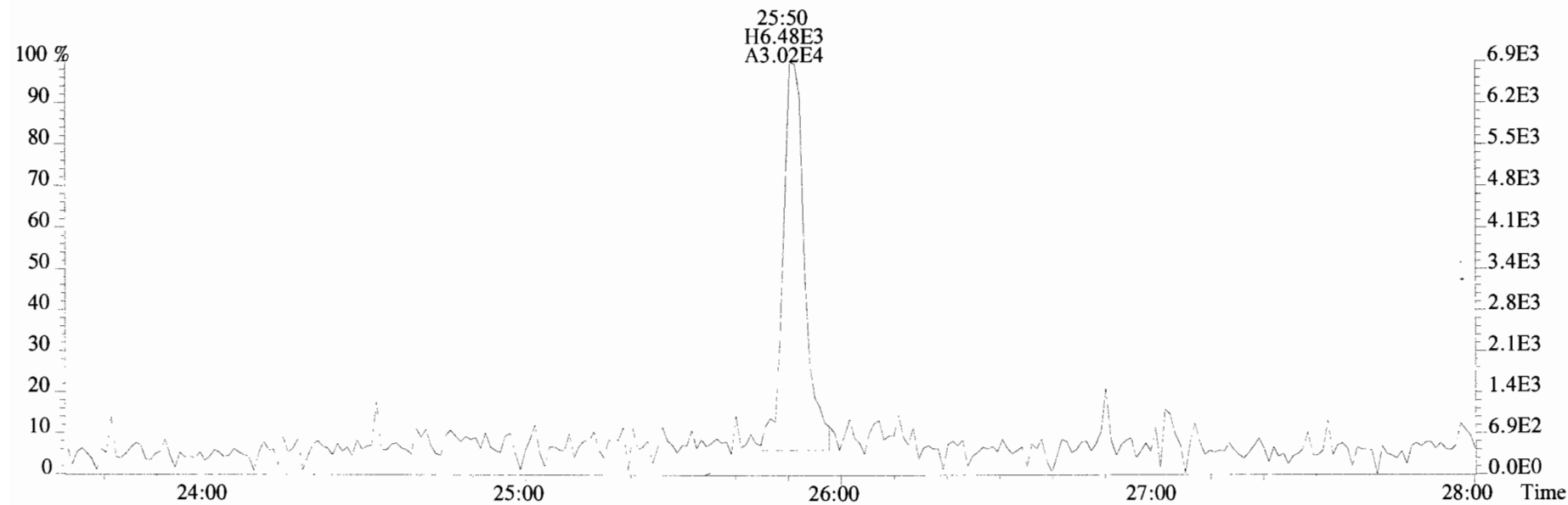
375.8364 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



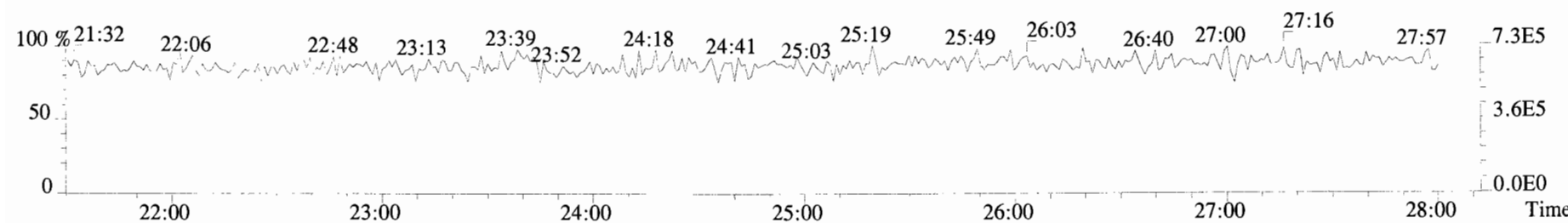
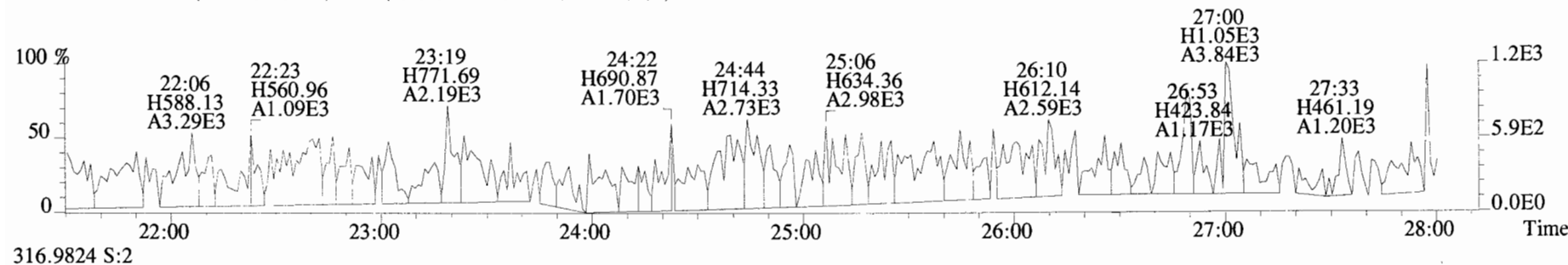
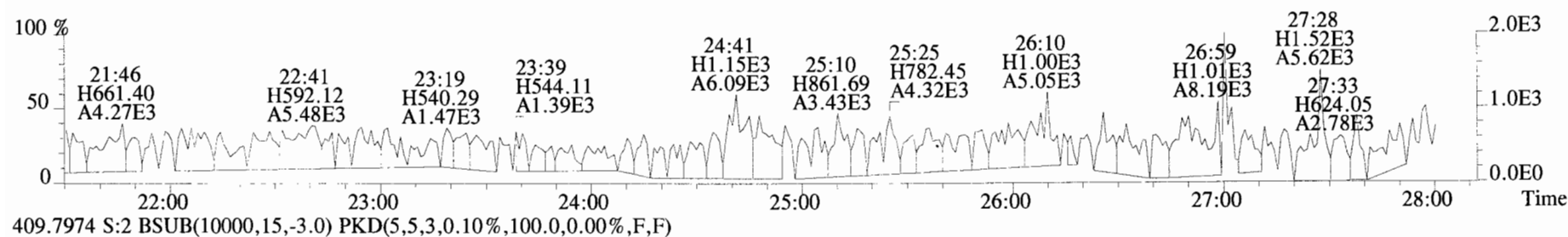
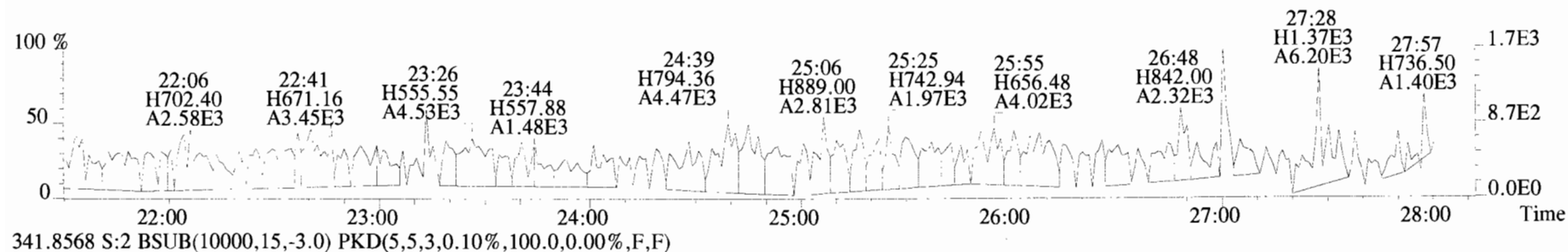
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
303.9016 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



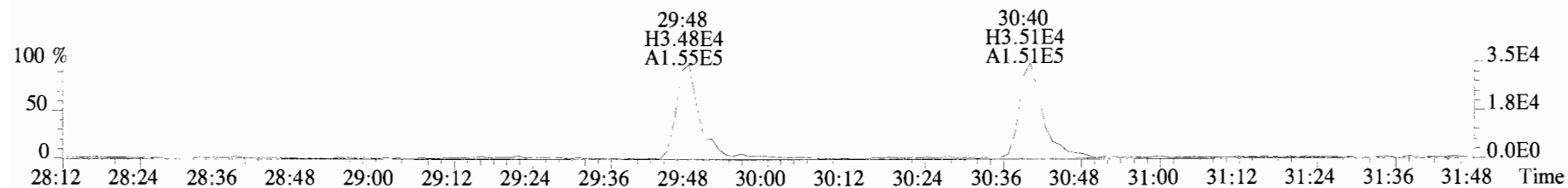
305.8987 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



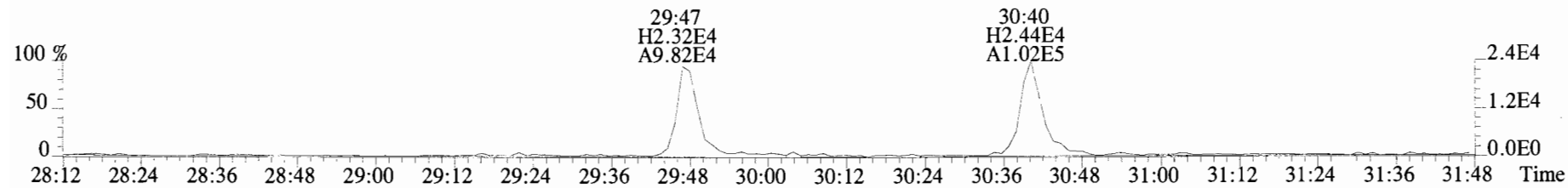
File:191009D1 #1-513 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 339.8597 S:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



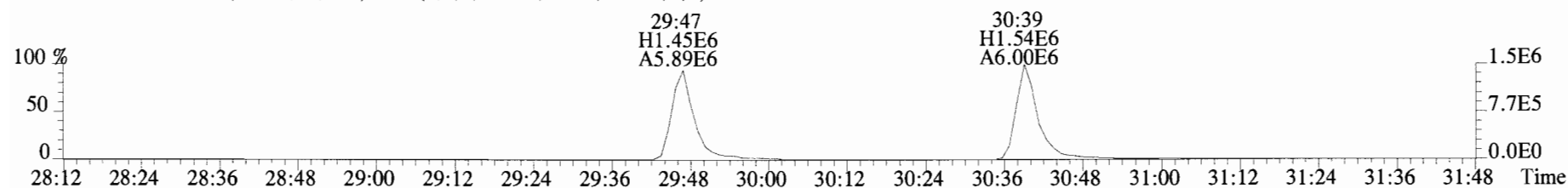
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



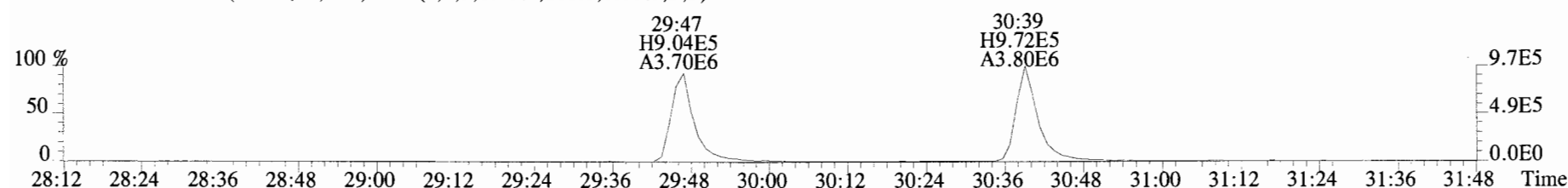
341.8568 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



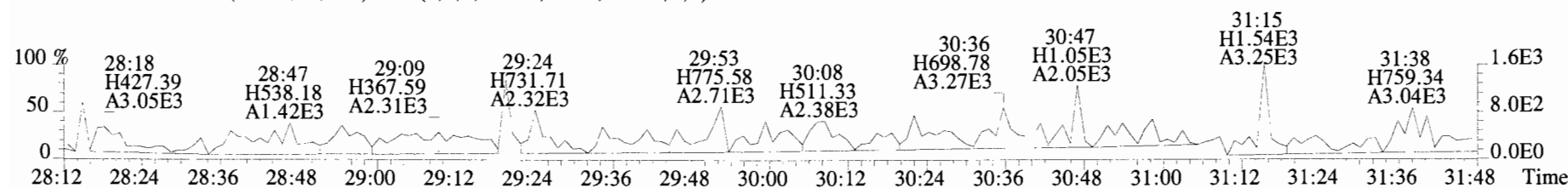
351.9000 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



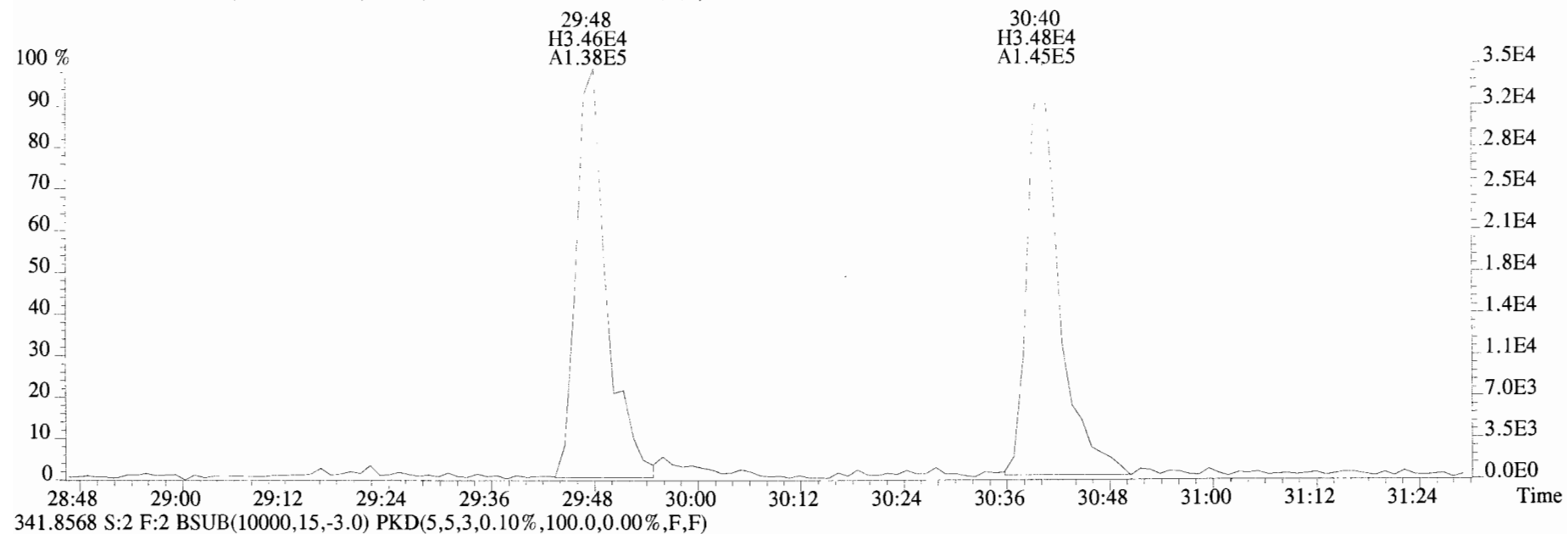
353.8970 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



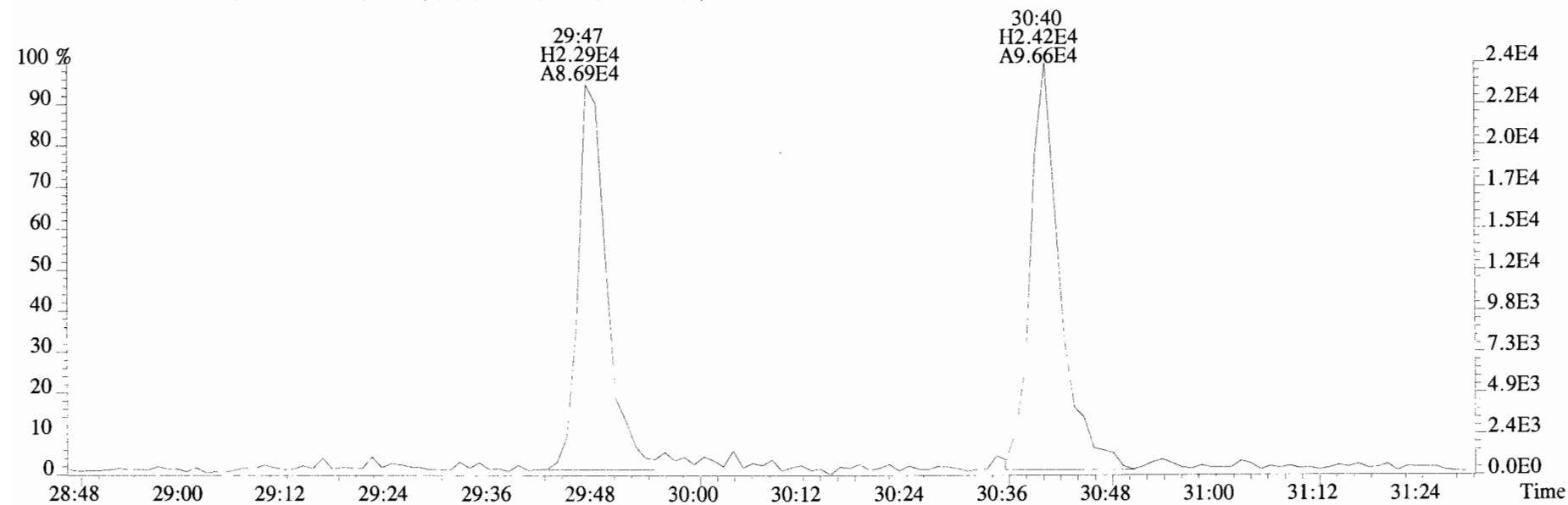
409.7974 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



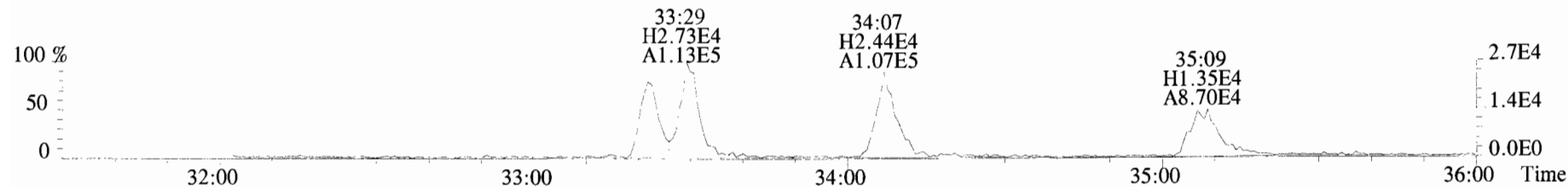
File:191009D1 #1-211 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
339.8597 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



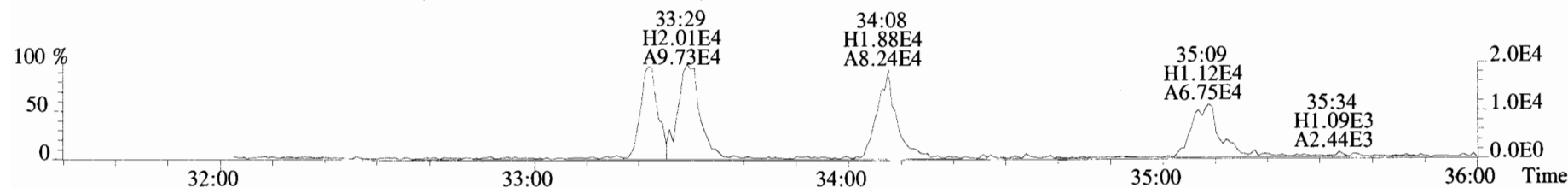
341.8568 S:2 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



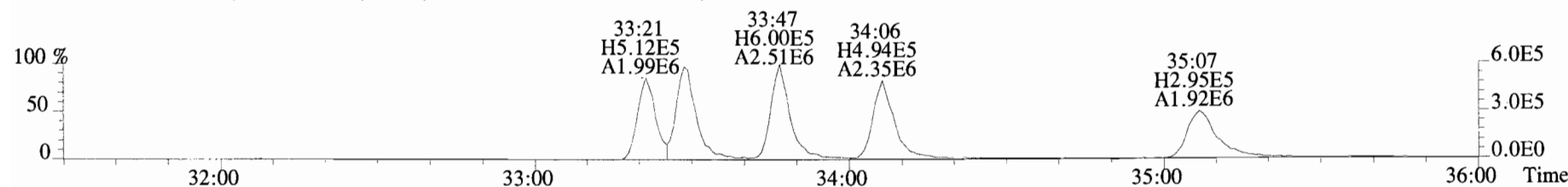
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



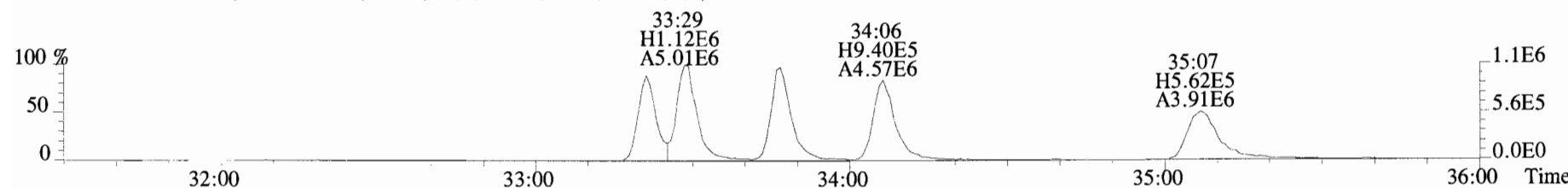
375.8178 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



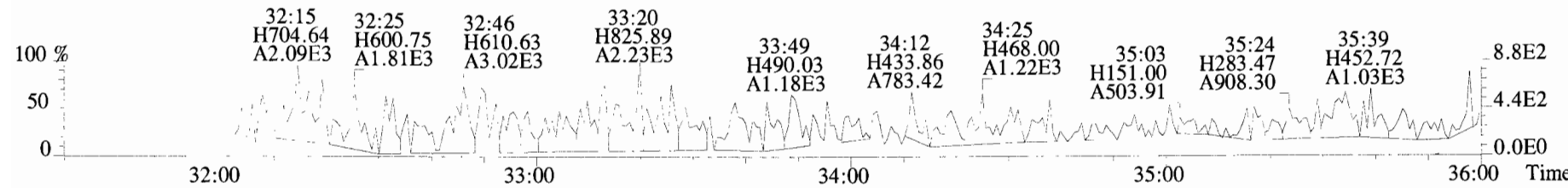
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



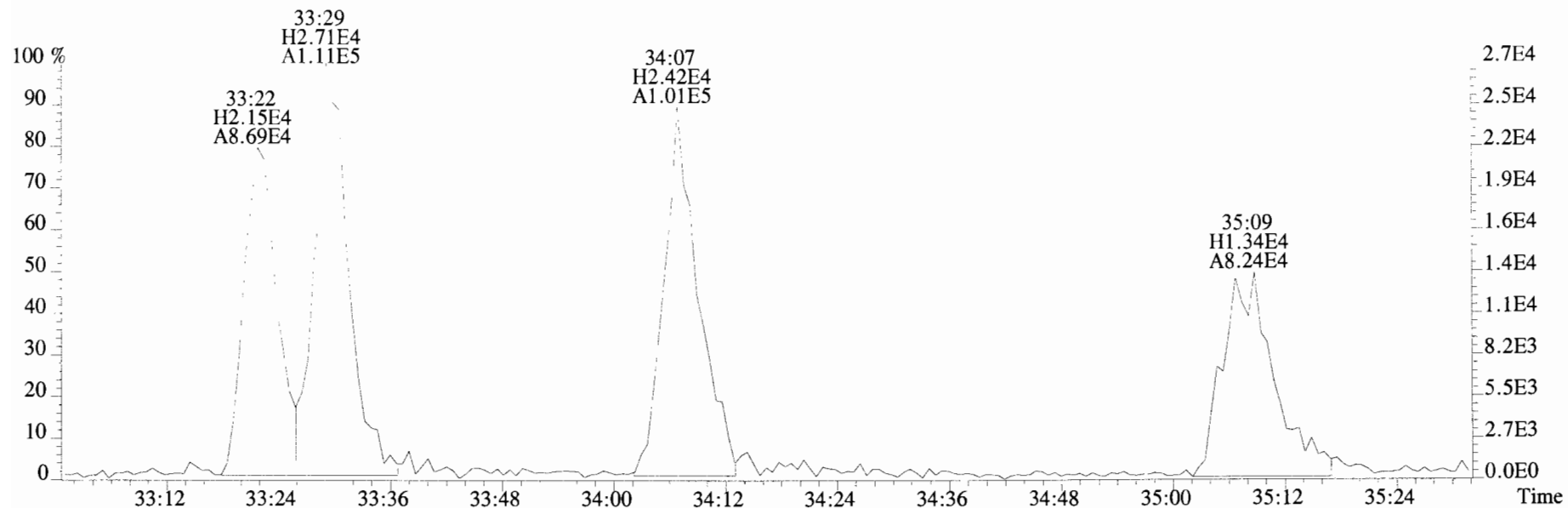
385.8610 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



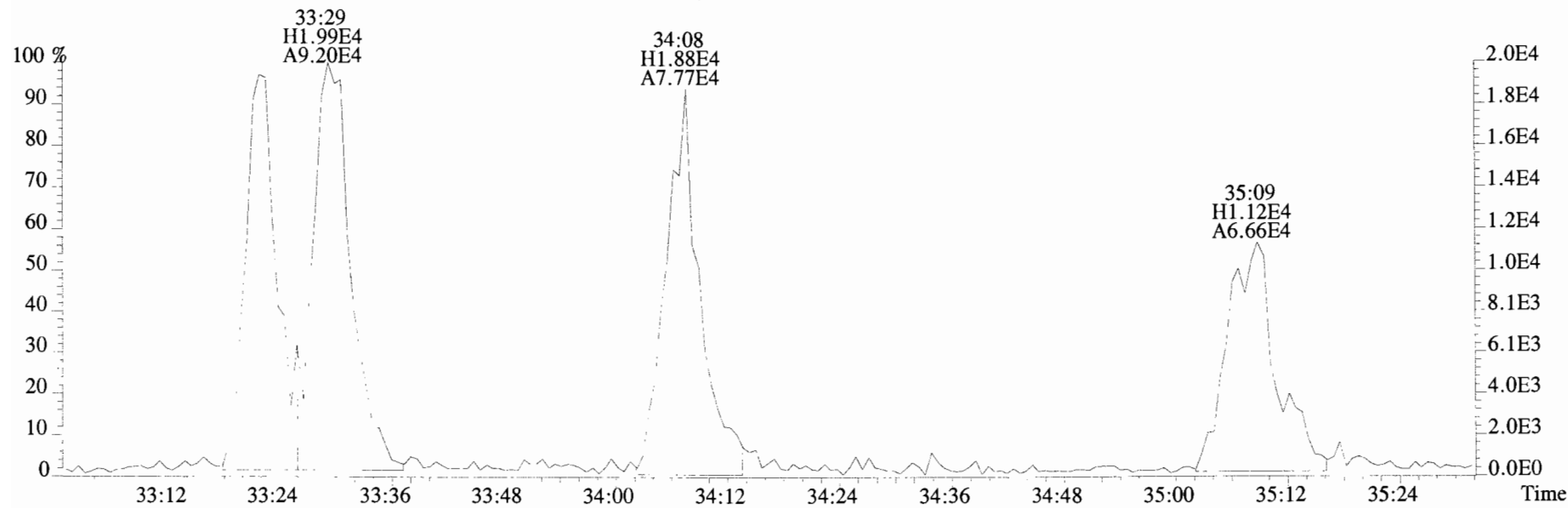
445.7555 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



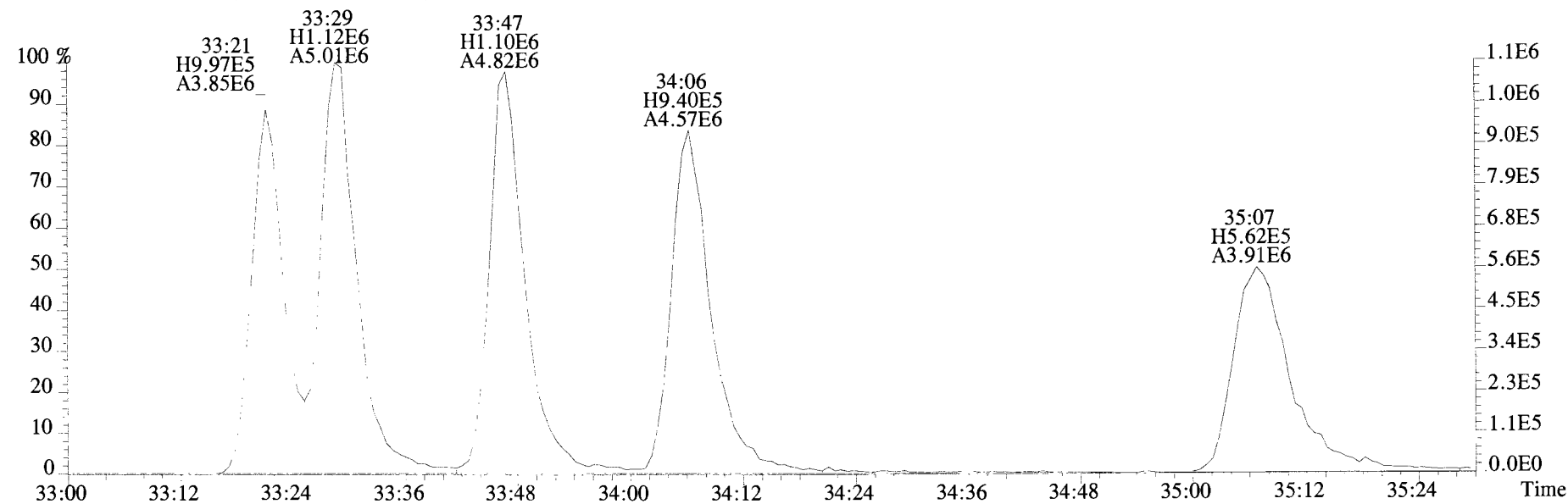
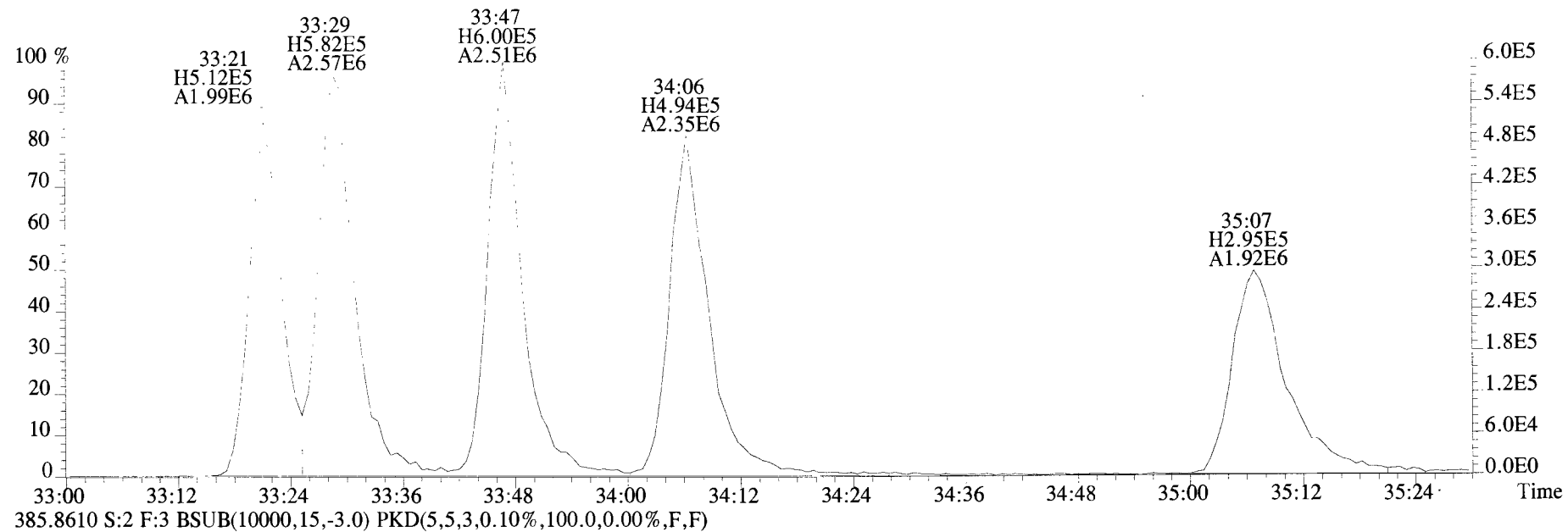
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
373.8207 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



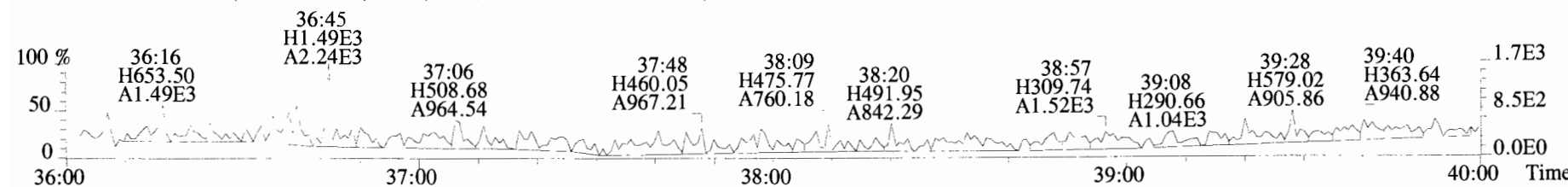
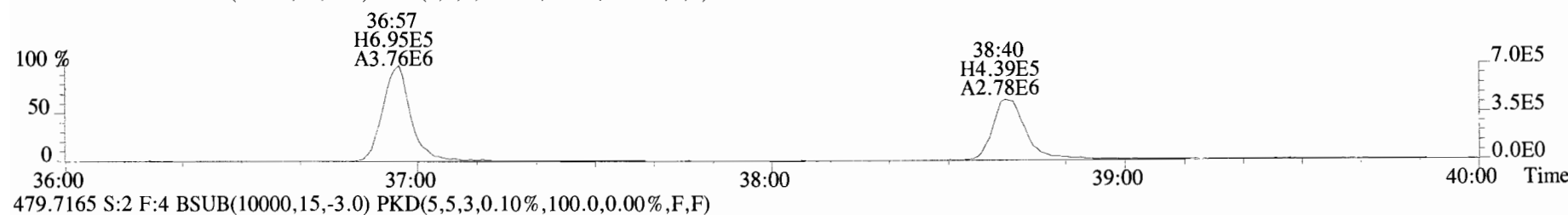
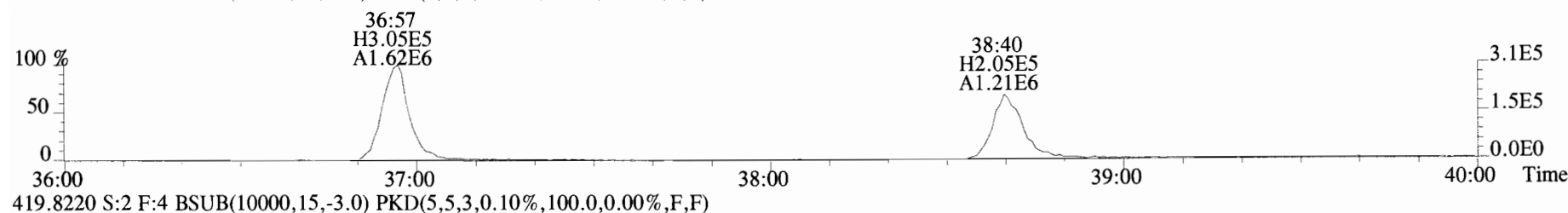
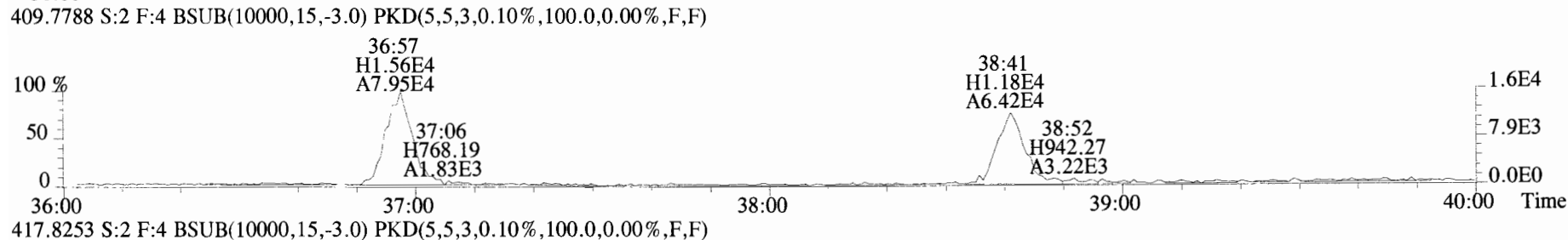
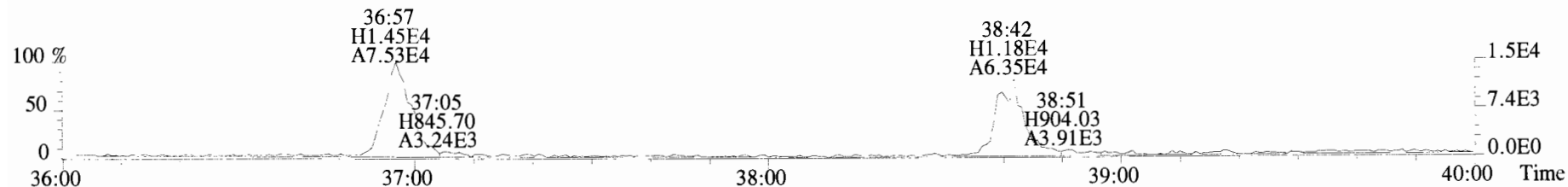
375.8178 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



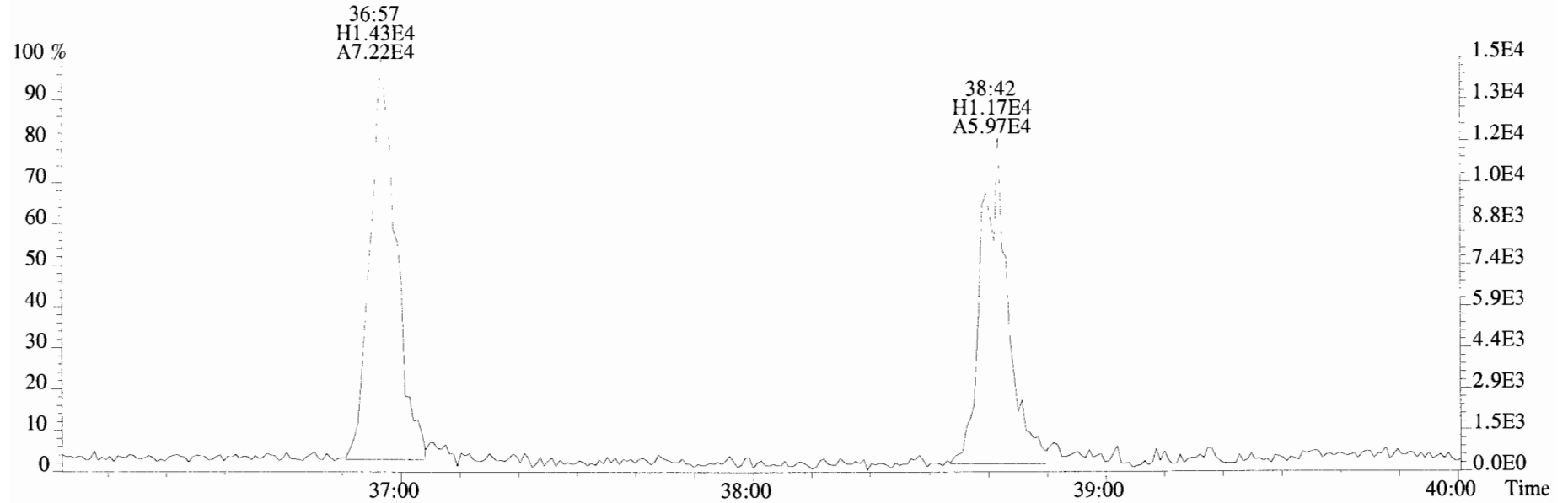
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
383.8639 S:2 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



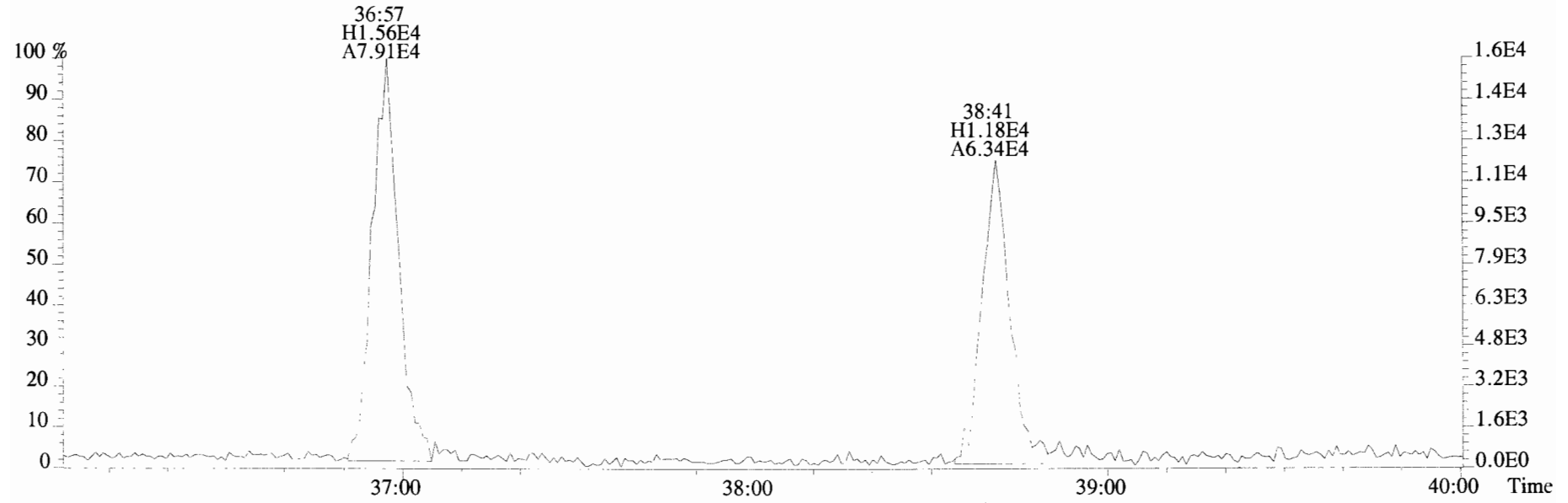
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



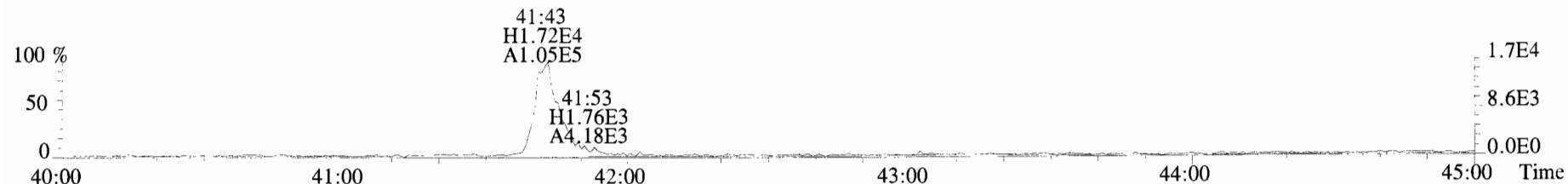
File:191009D1 #1-355 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
407.7818 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



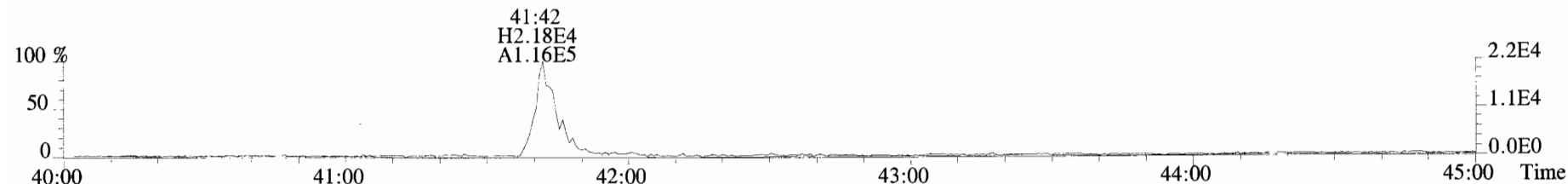
409.7788 S:2 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



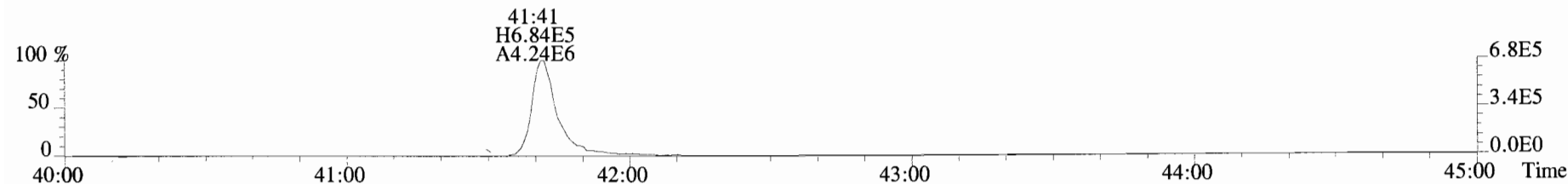
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#2 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
 441.7428 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



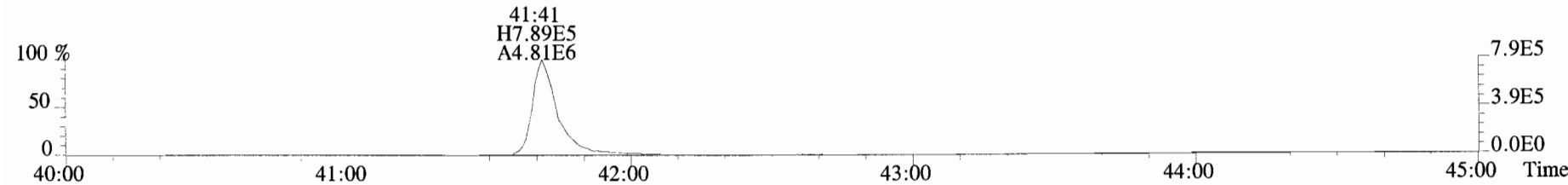
443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



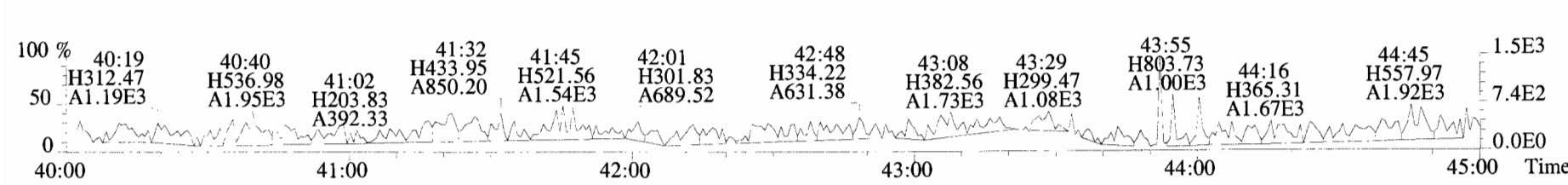
453.7831 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



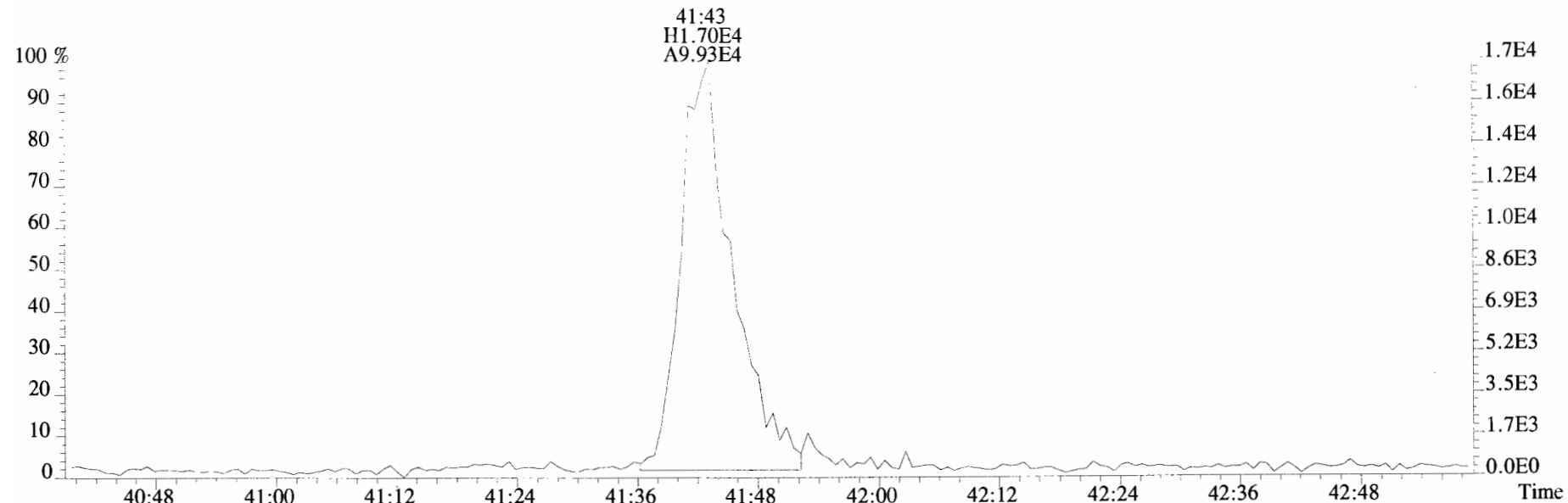
455.7801 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



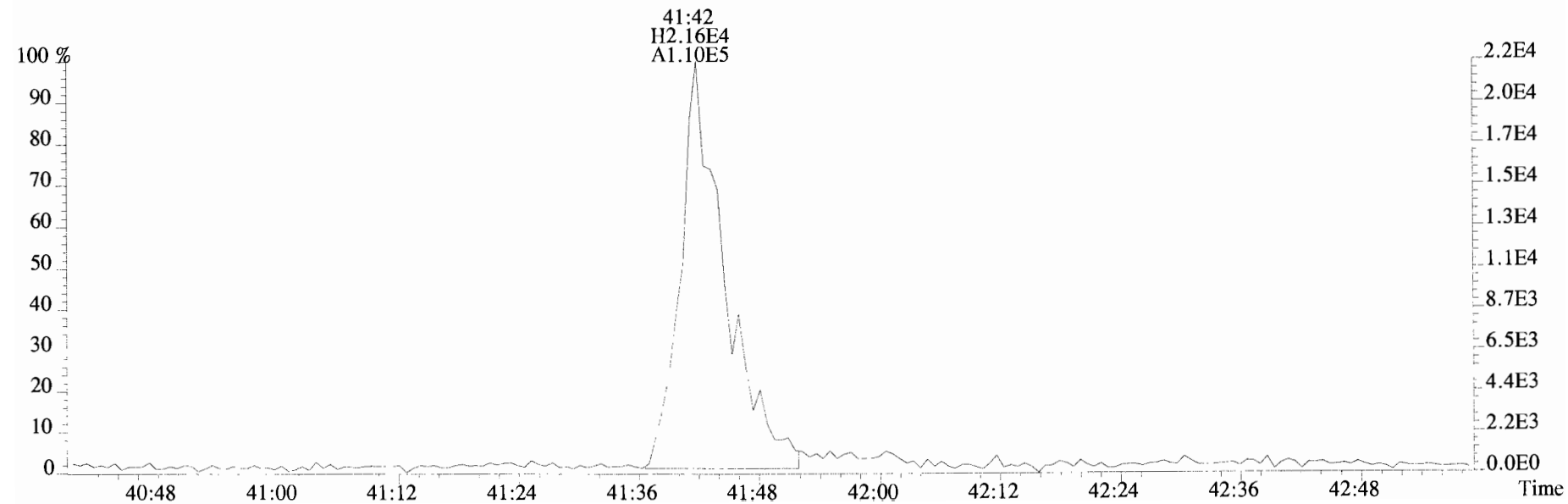
513.6775 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



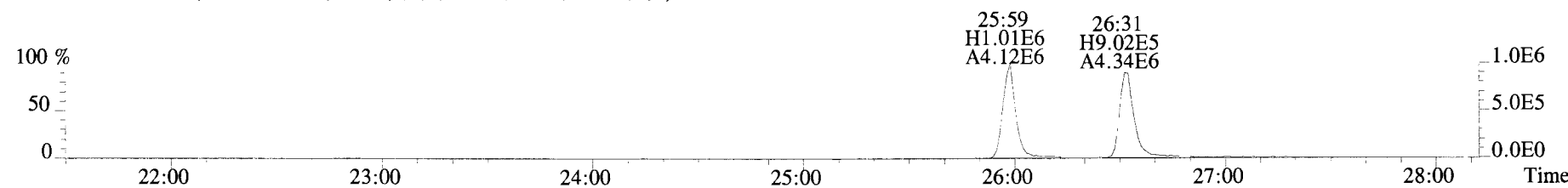
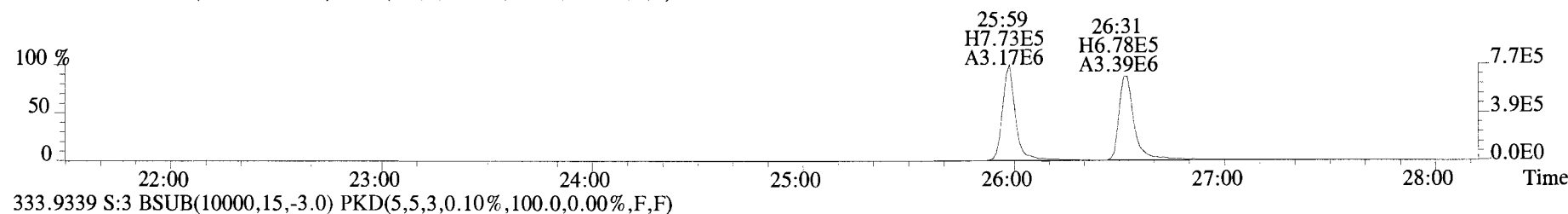
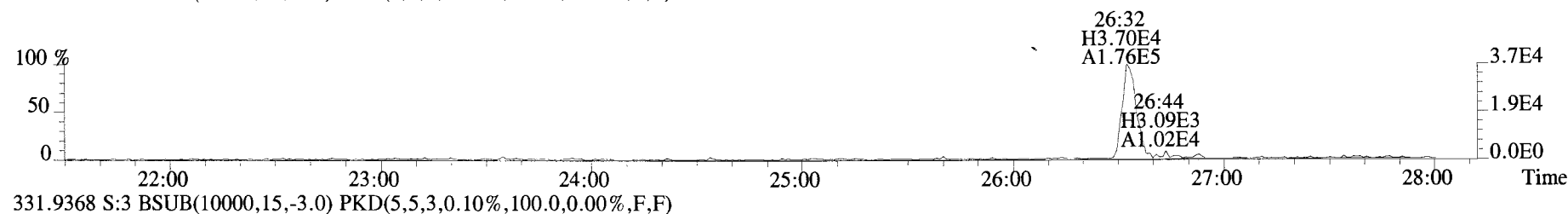
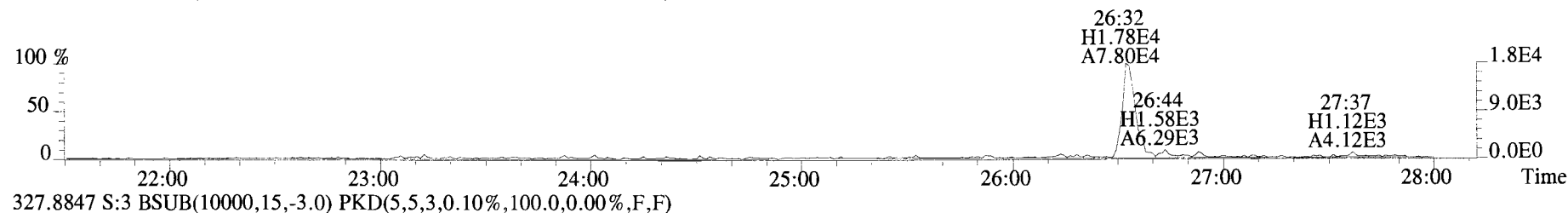
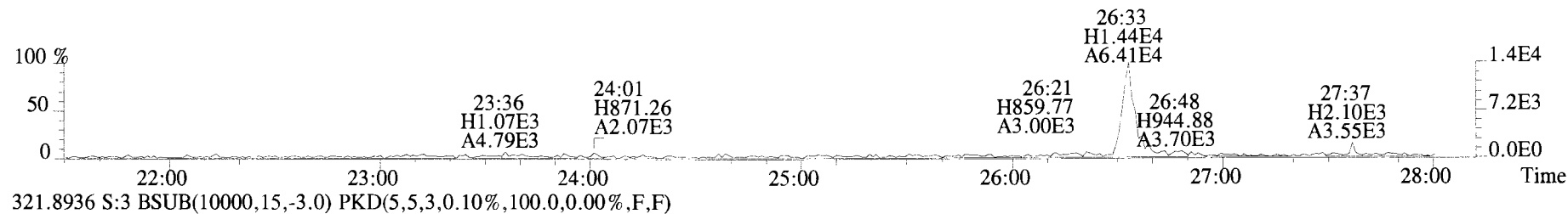
File:191009D1 #1-432 Acq: 9-OCT-2019 17:00:45 GC EI+ Voltage SIR Autospec-UltimaE
Sample#2 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-2 1613 CS1 19C2202 Exp:OCDD_DB5
441.7428 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



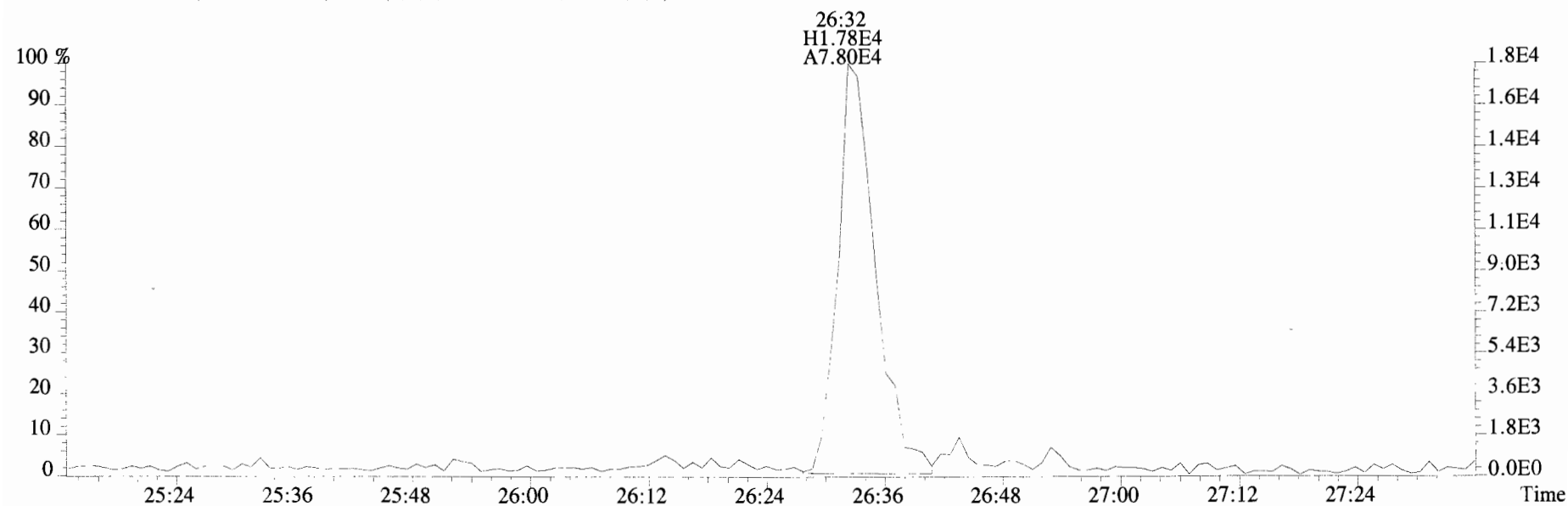
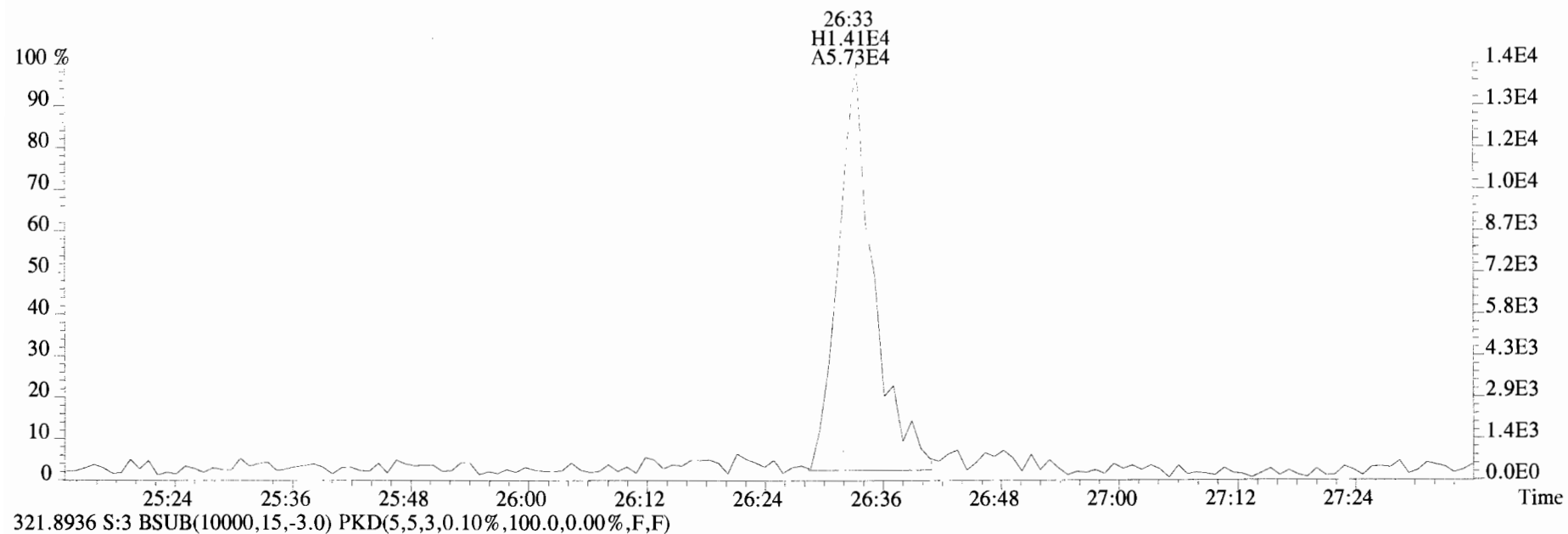
443.7398 S:2 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



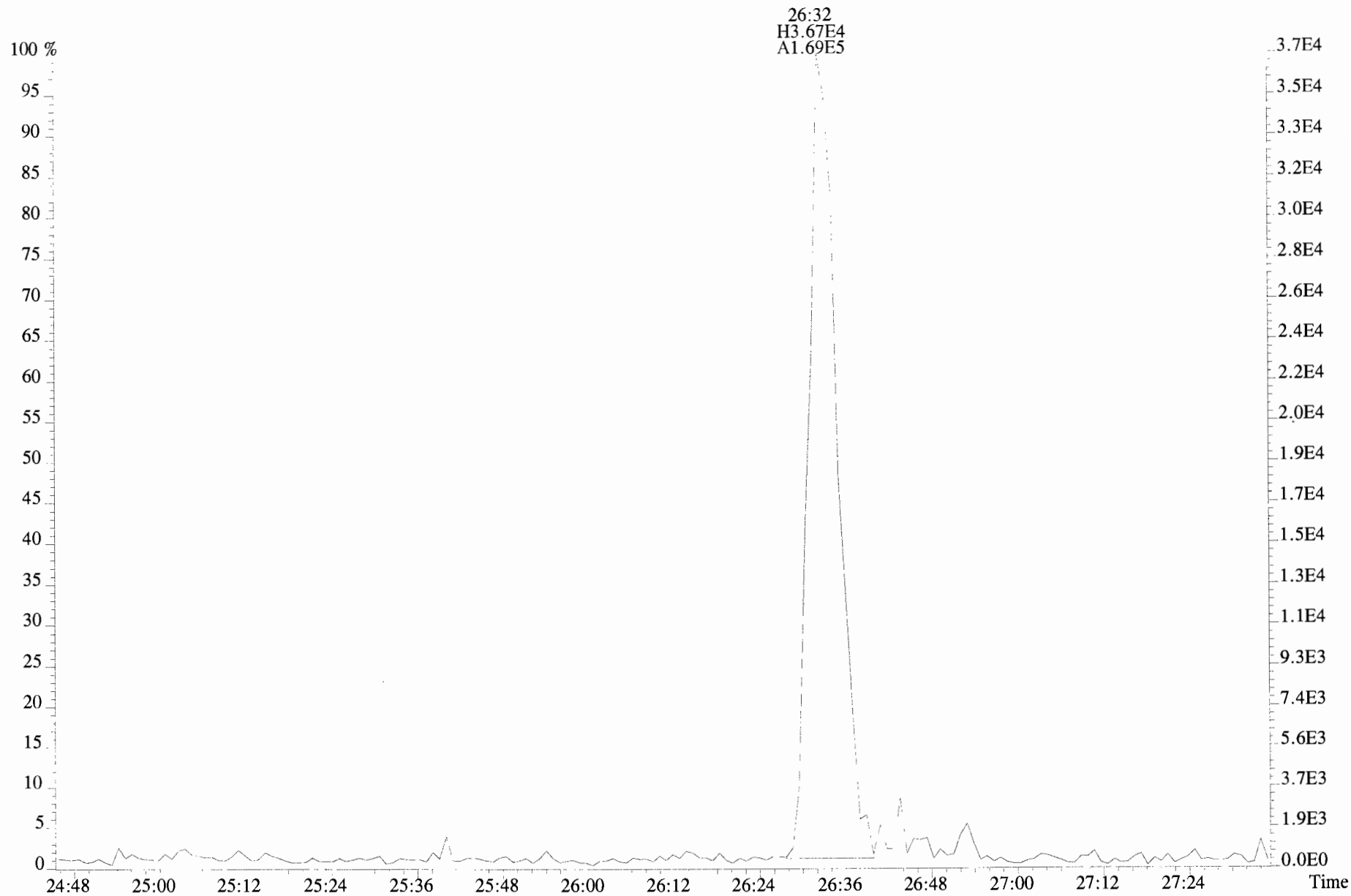
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



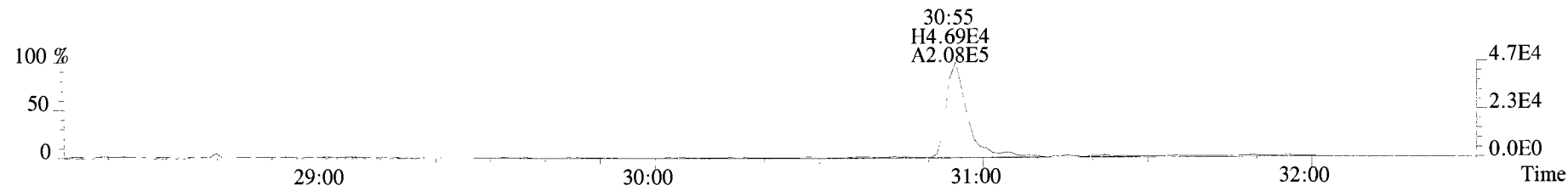
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
319.8965 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



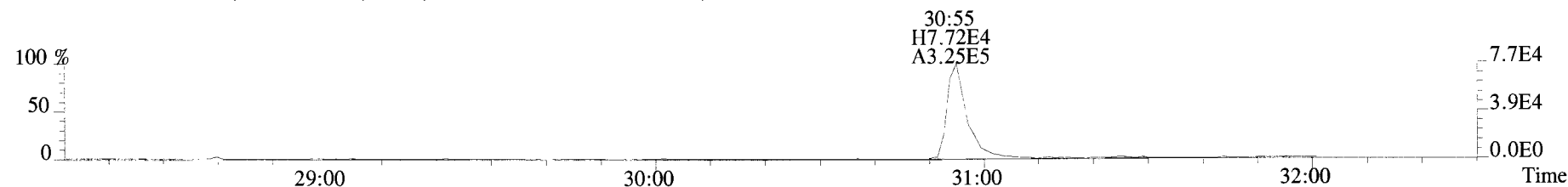
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
327.8847 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



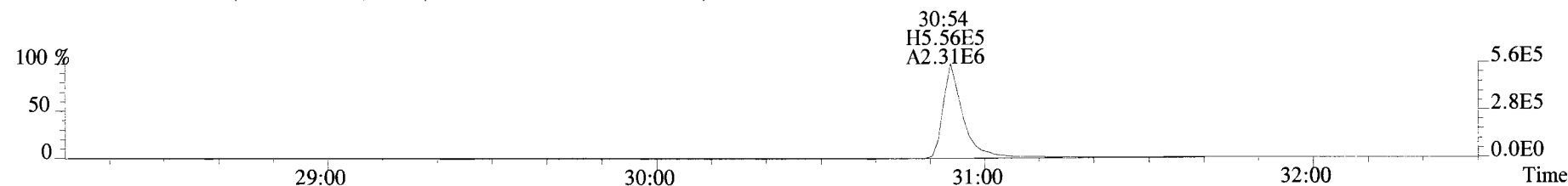
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
353.8576 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



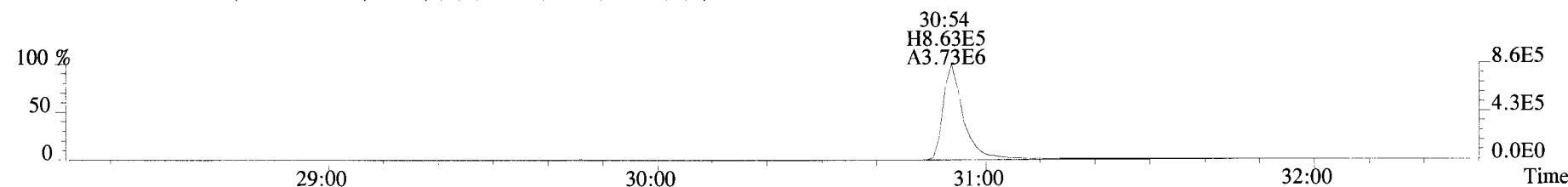
355.8546 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



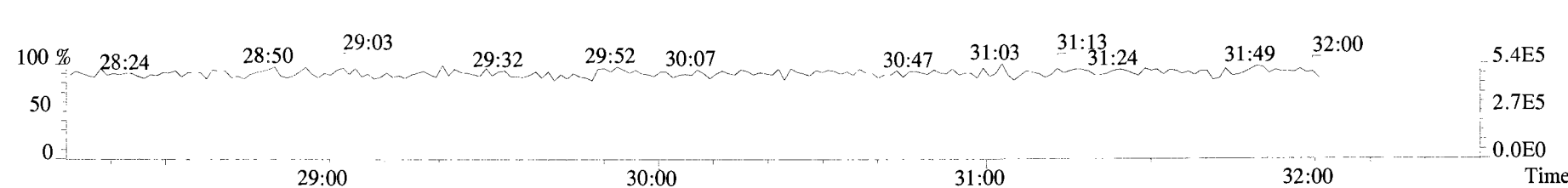
365.8978 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



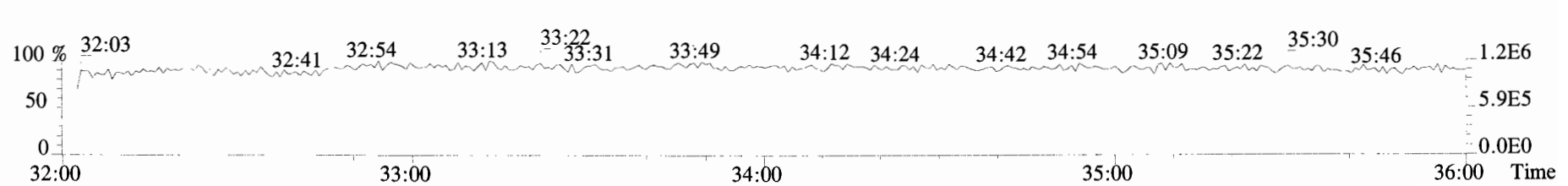
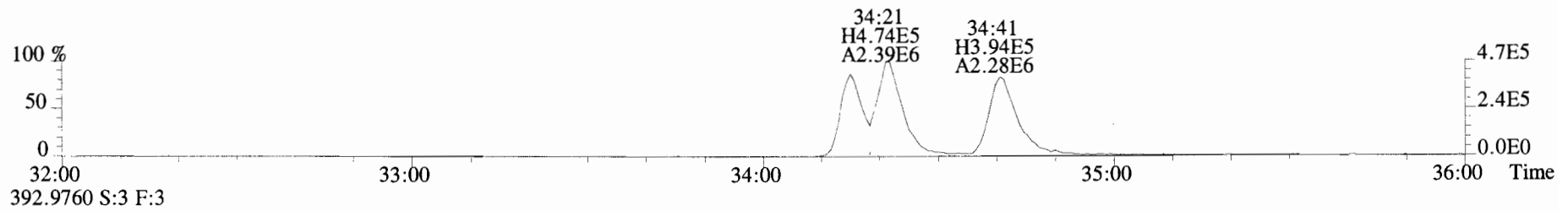
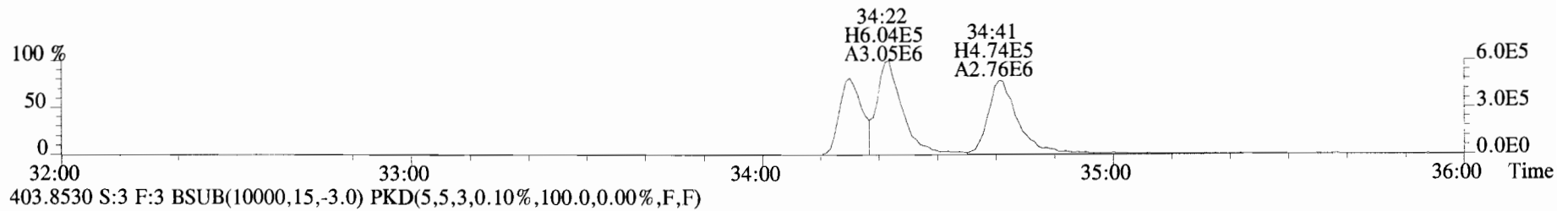
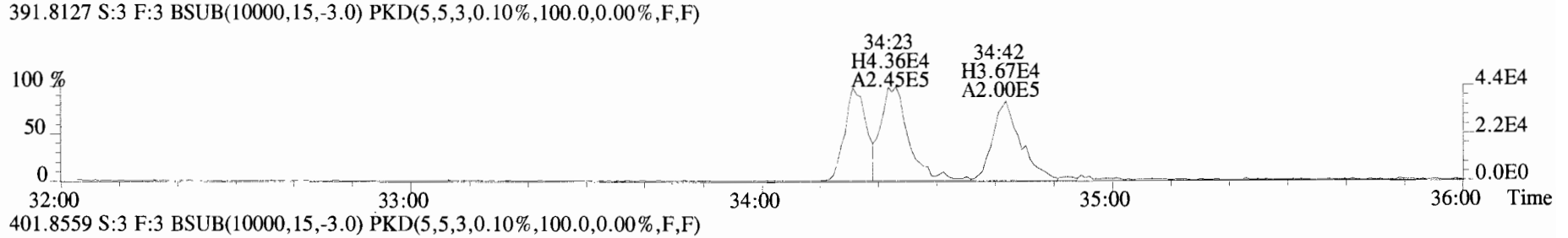
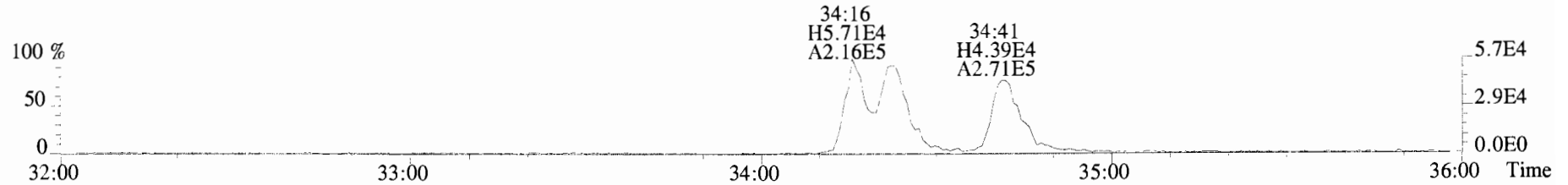
367.8949 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



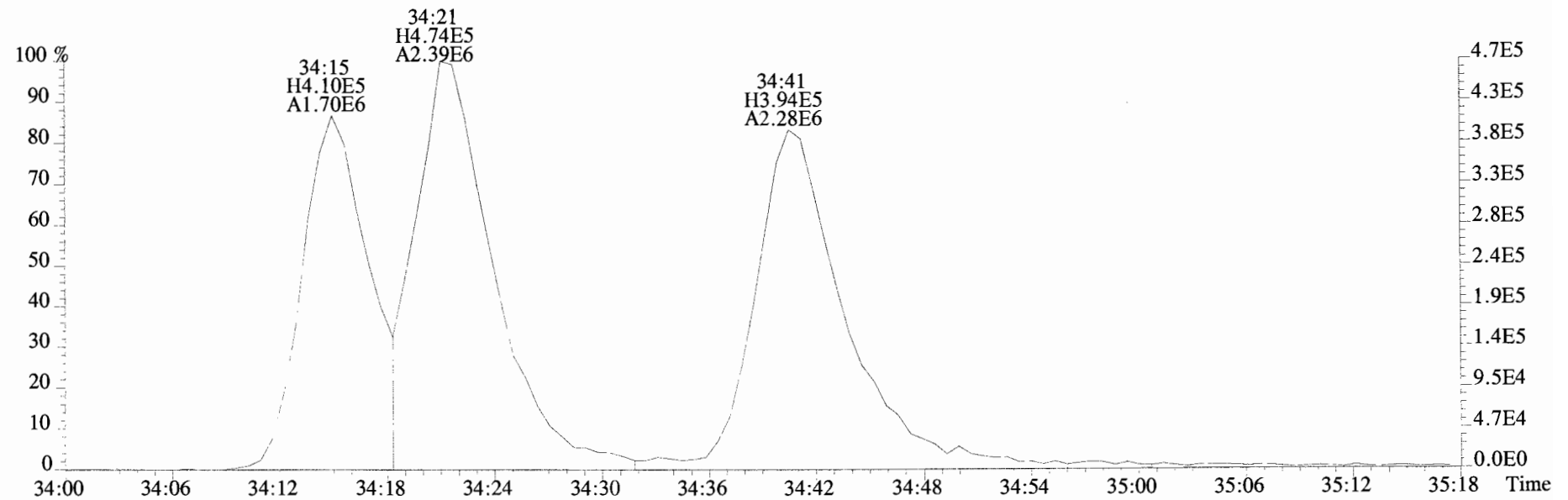
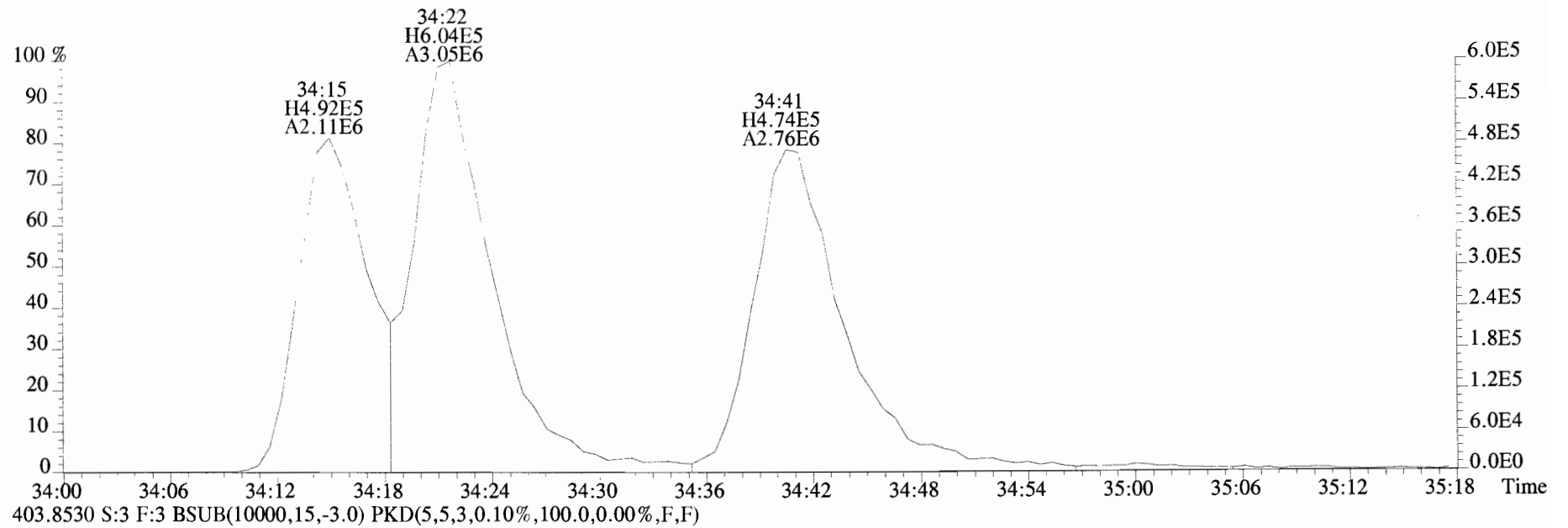
366.9792 S:3 F:2



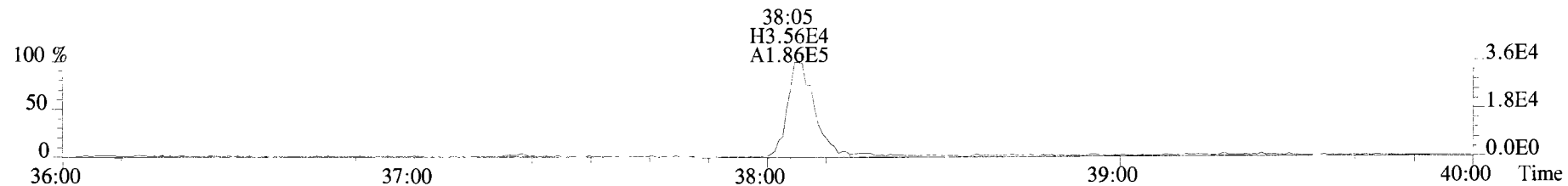
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
389.8156 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



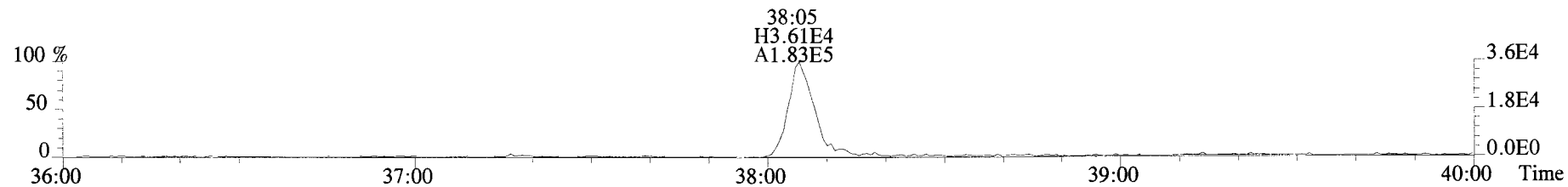
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
401.8559 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



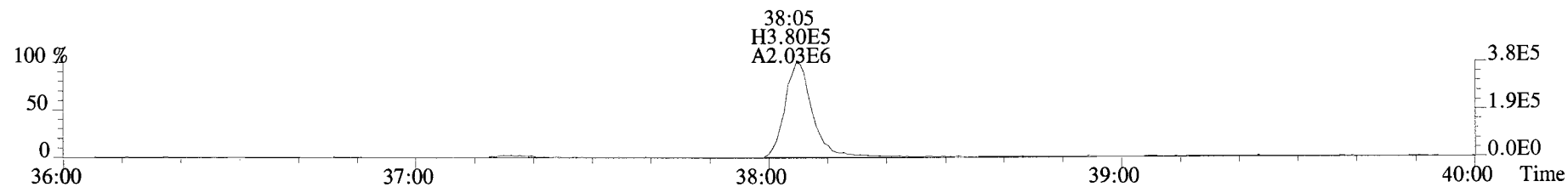
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
423.7767 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



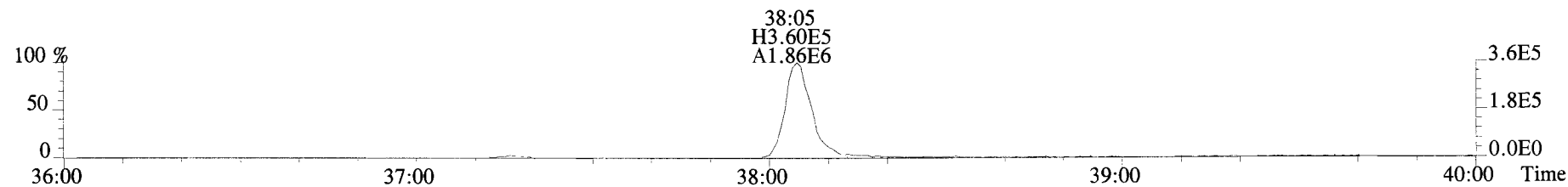
425.7737 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



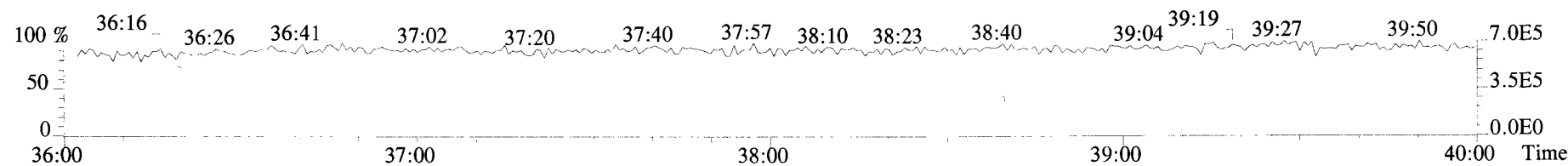
435.8169 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



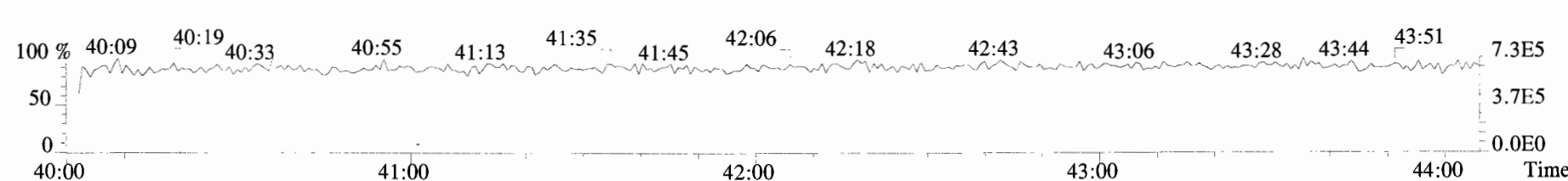
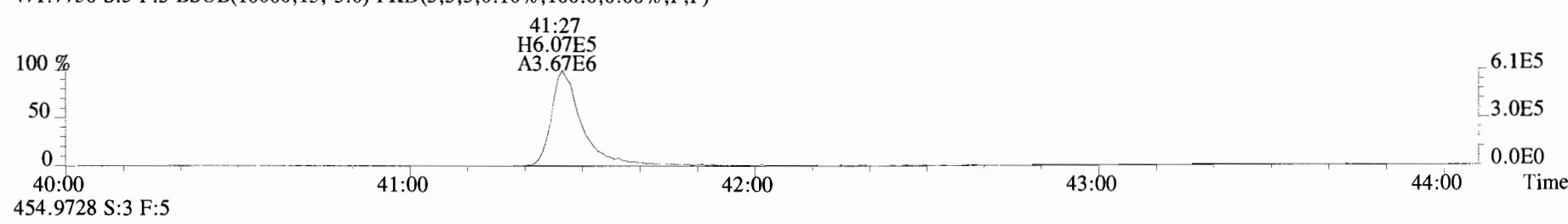
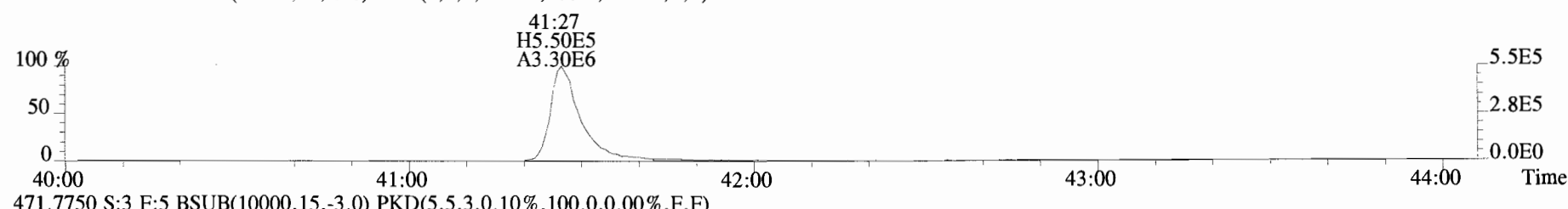
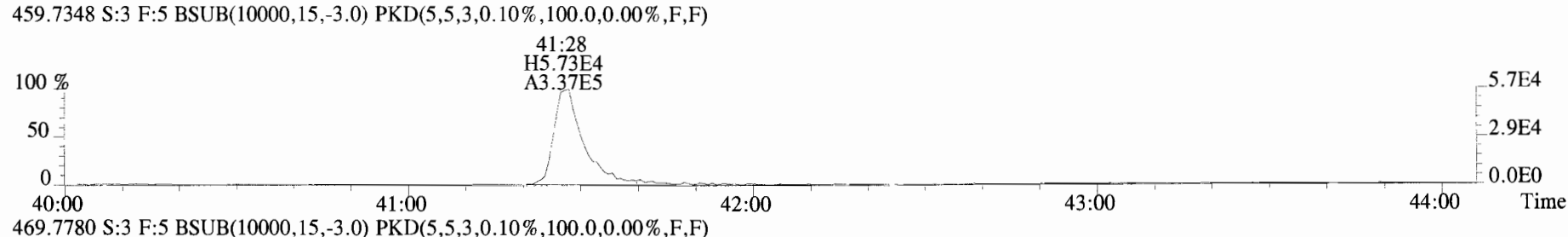
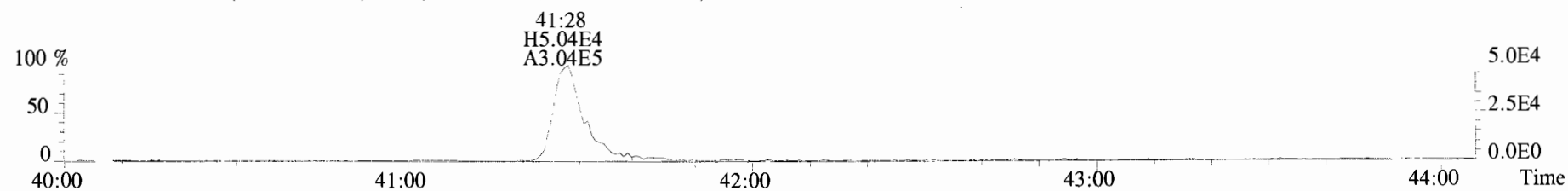
437.8140 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



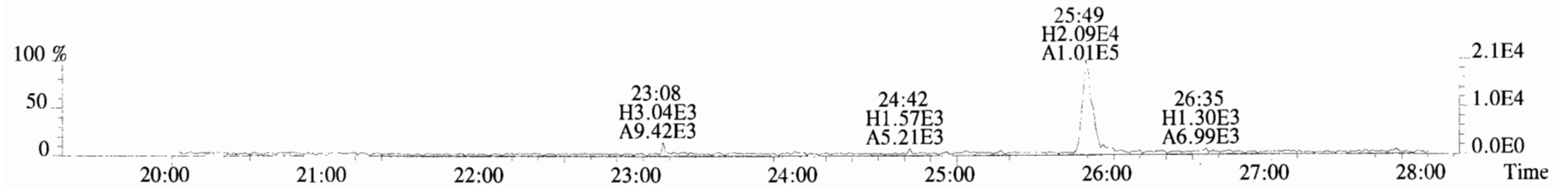
454.9728 S:3 F:4



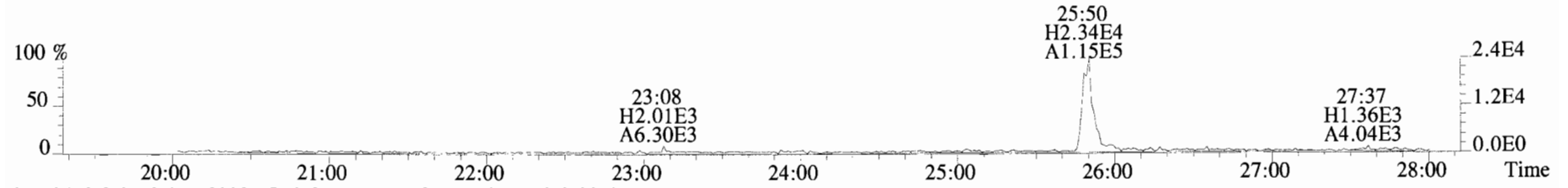
File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
457.7377 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



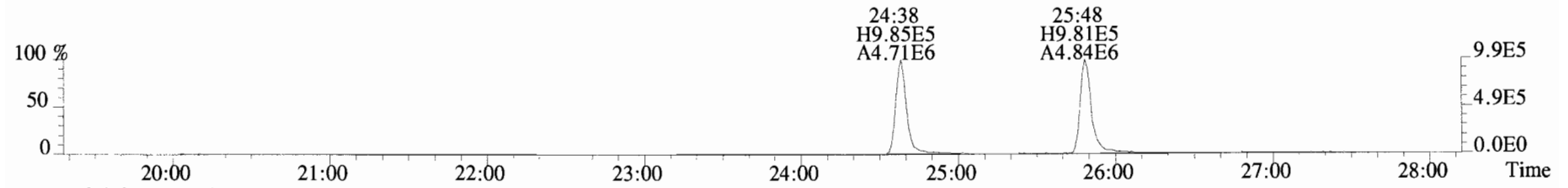
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
 303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



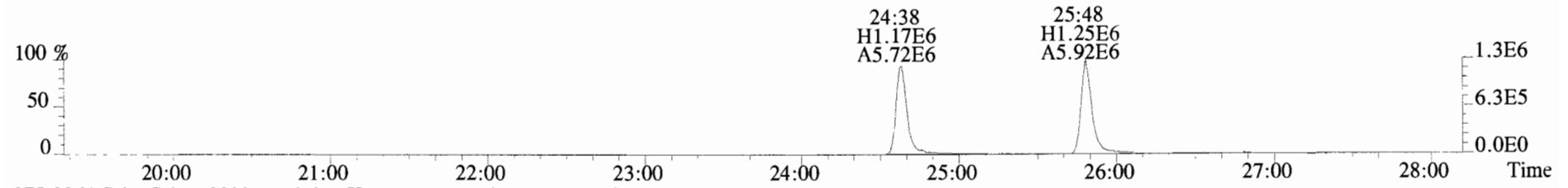
305.8987 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



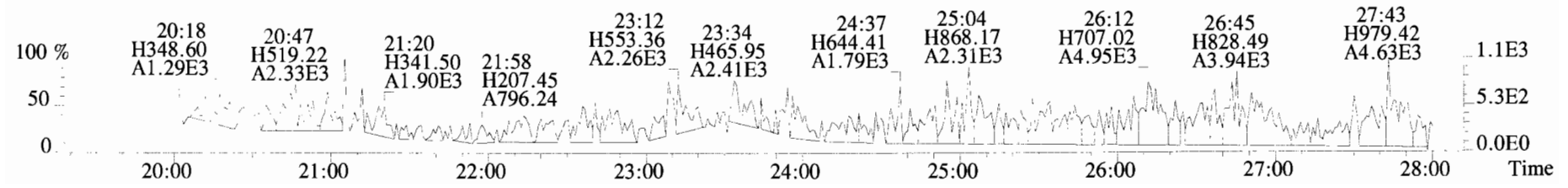
315.9419 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



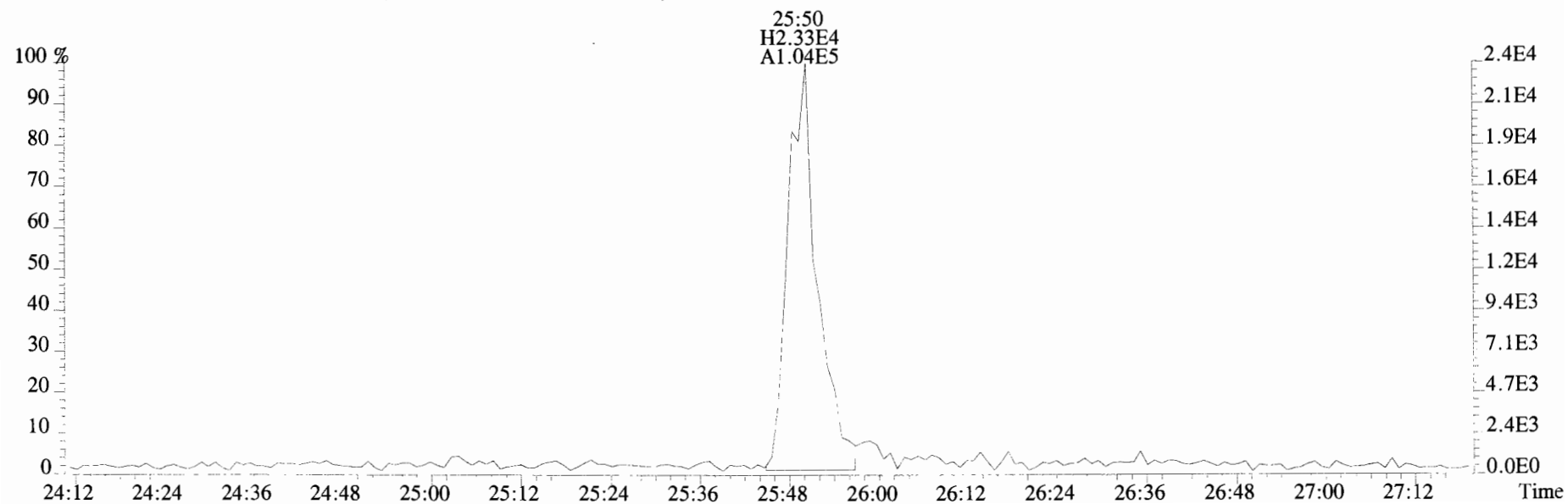
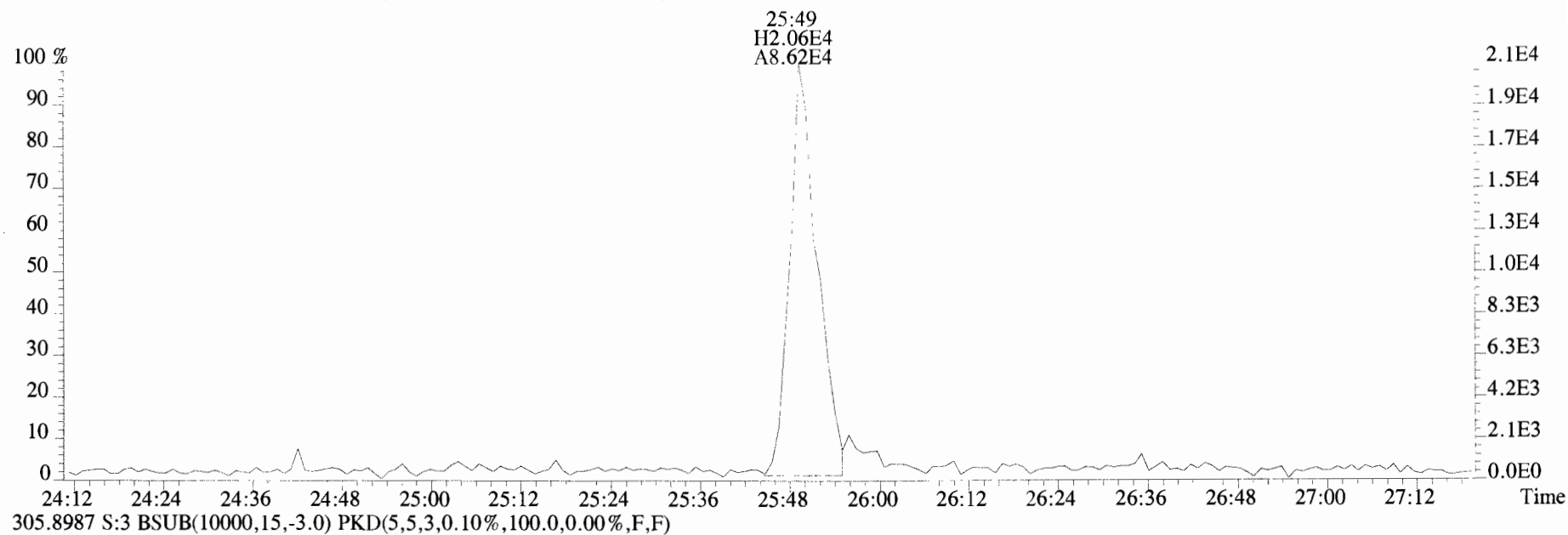
317.9389 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



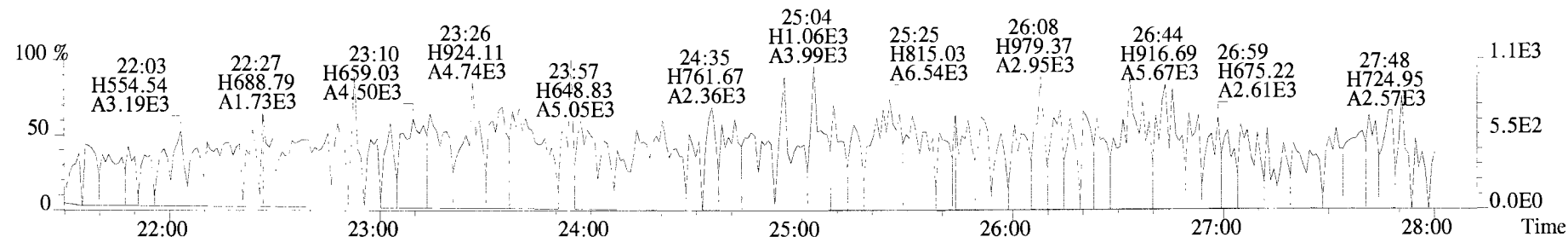
375.8364 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



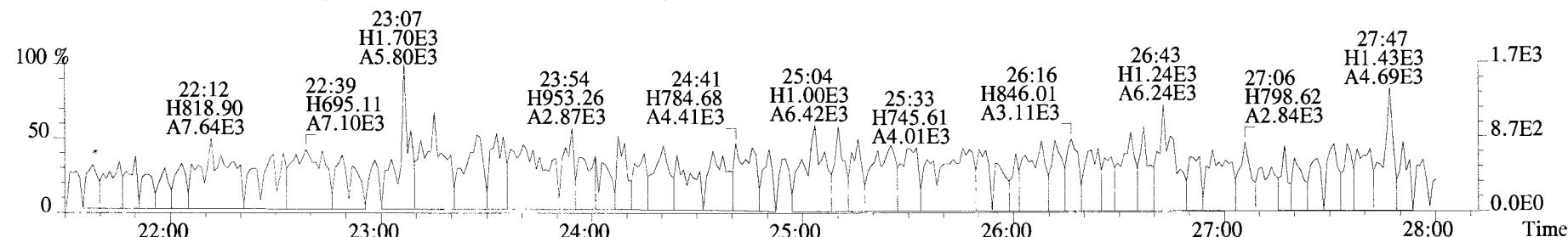
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
303.9016 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



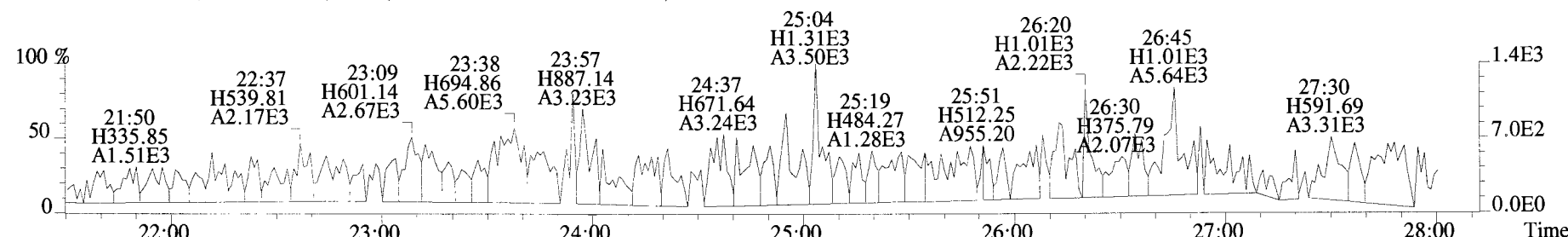
File:191009D1 #1-513 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
339.8597 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



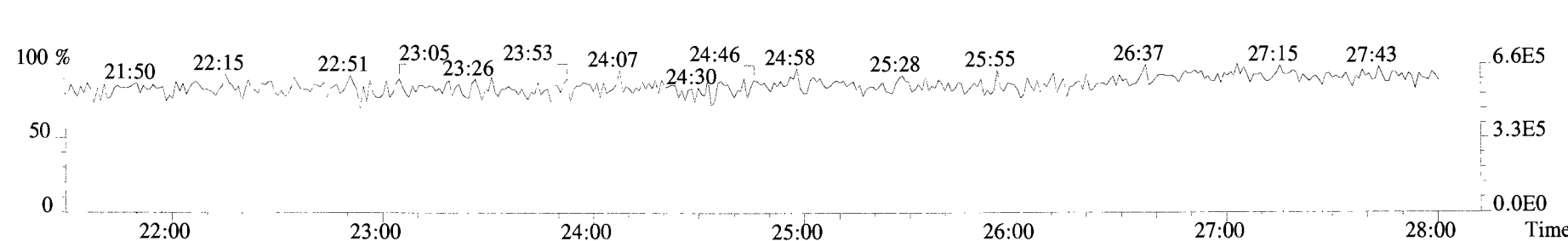
341.8568 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



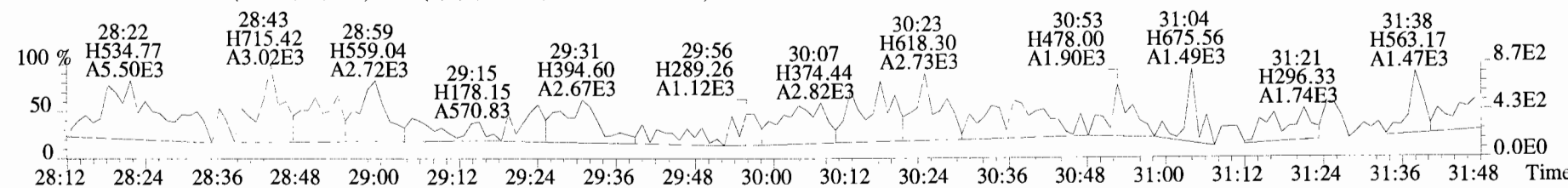
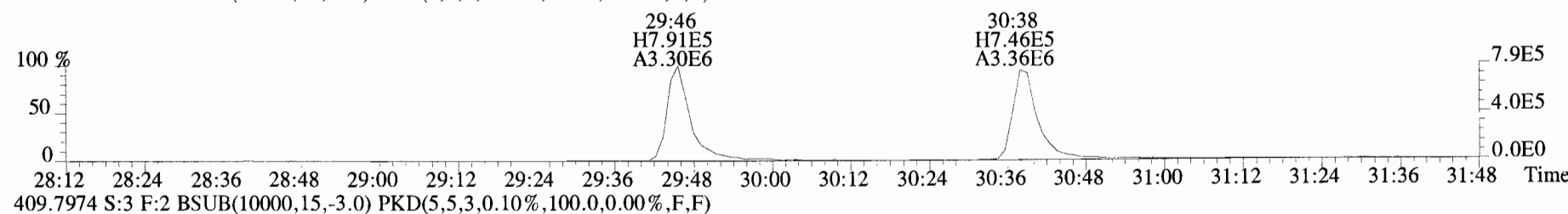
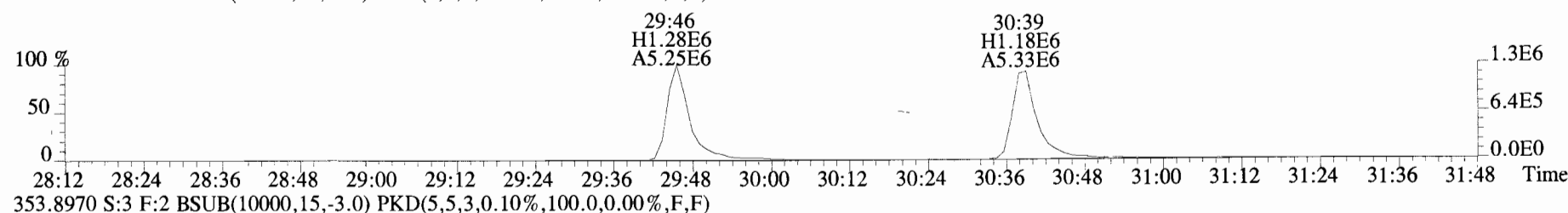
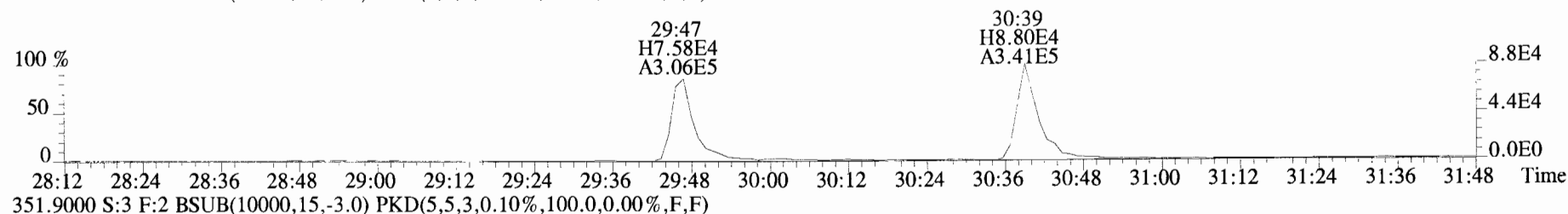
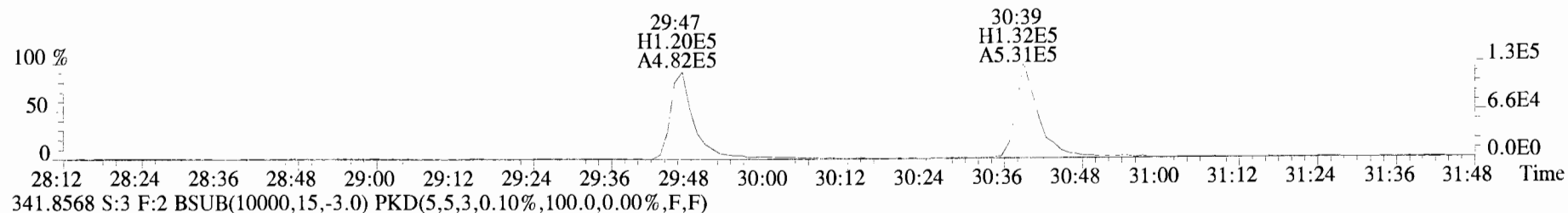
409.7974 S:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



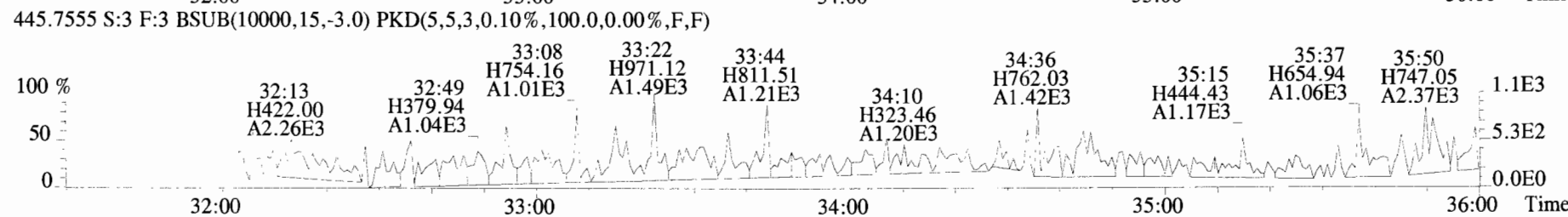
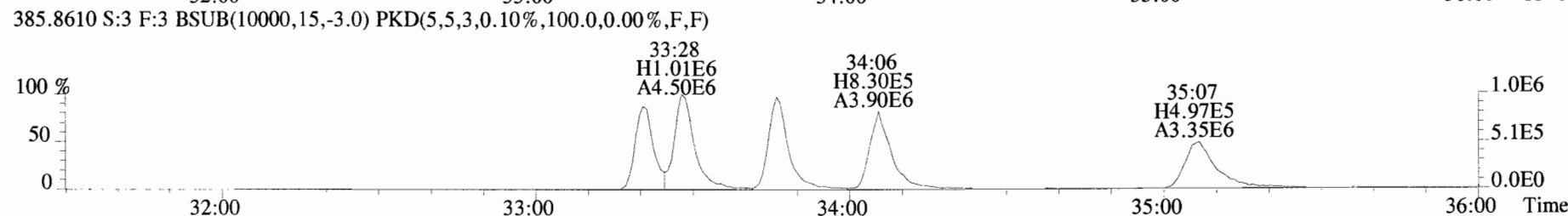
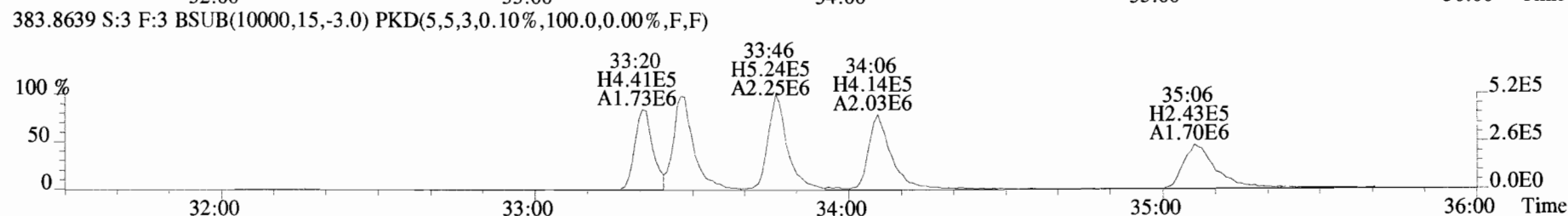
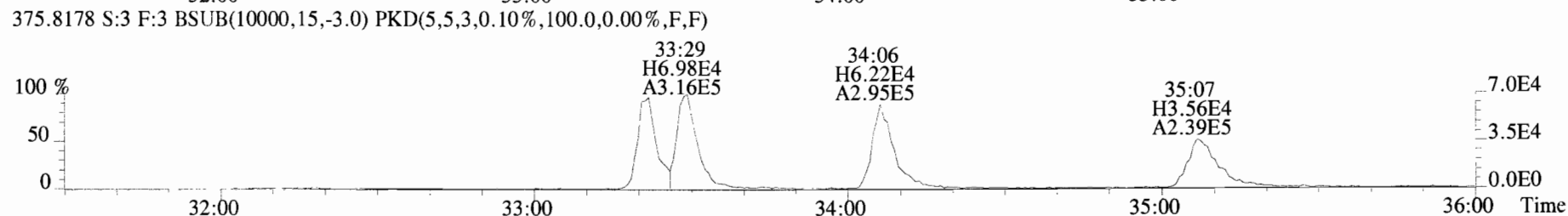
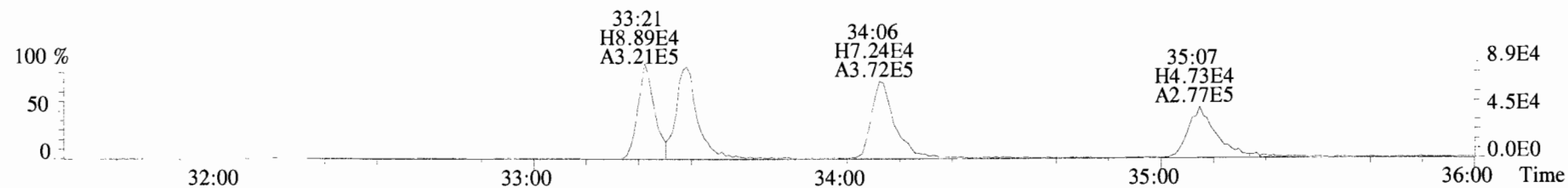
316.9824 S:3



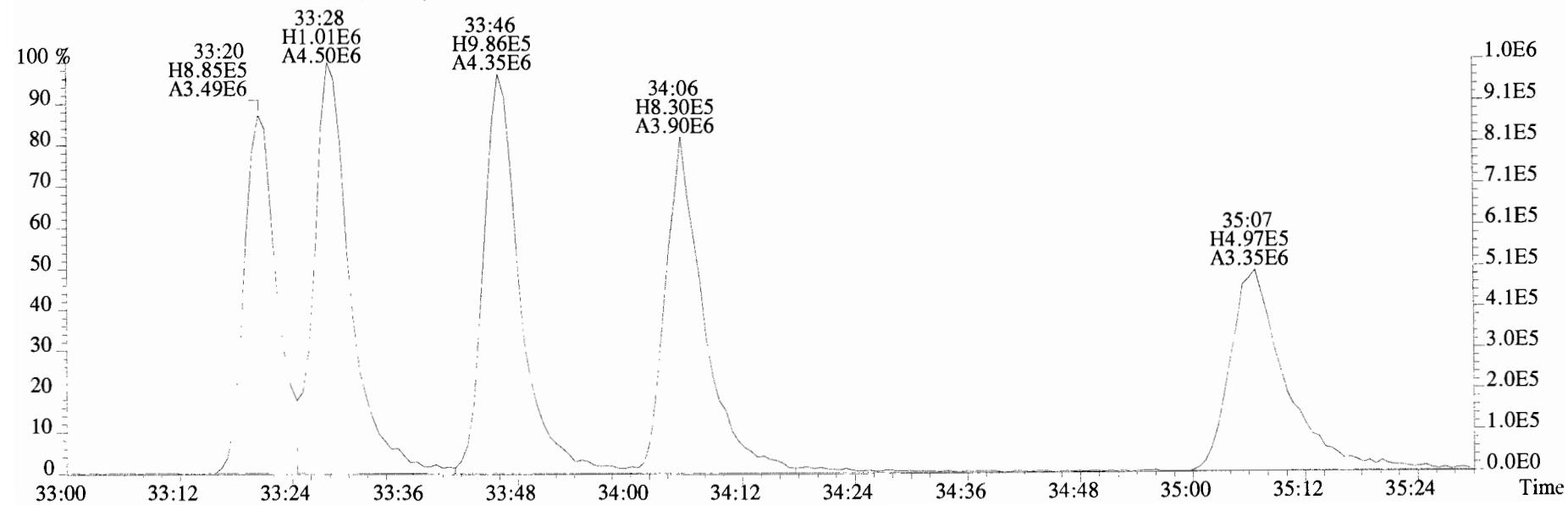
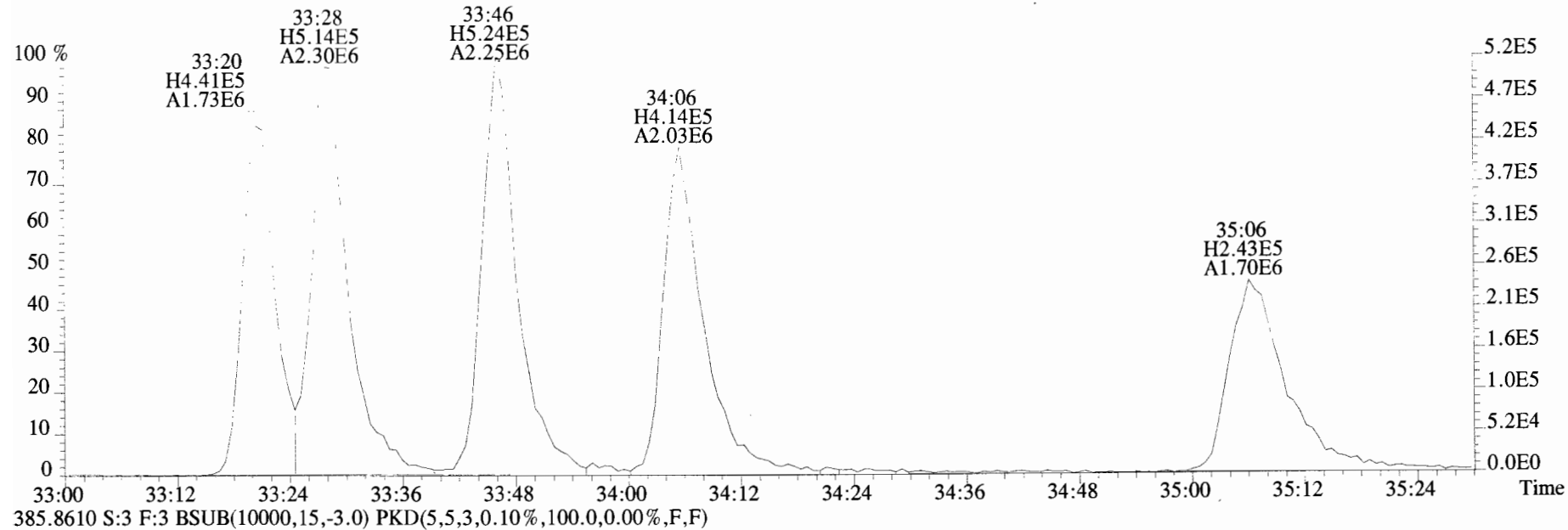
File:191009D1 #1-211 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
 339.8597 S:3 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



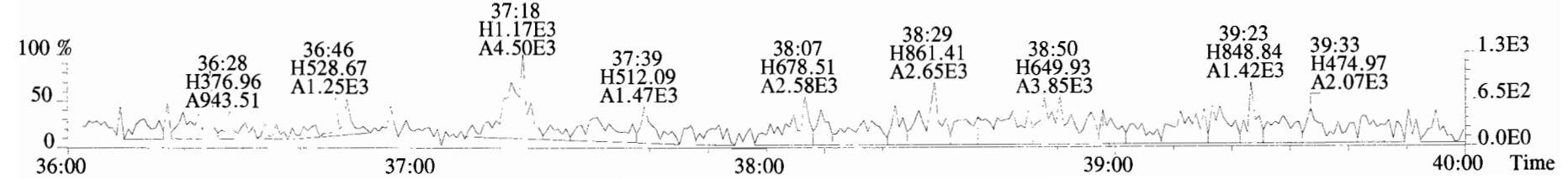
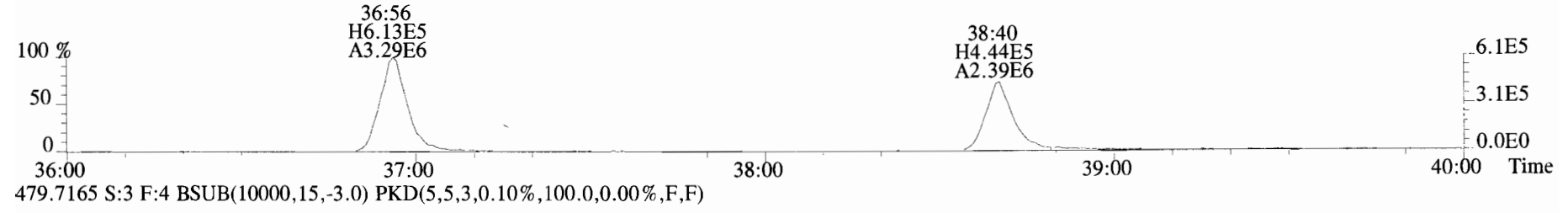
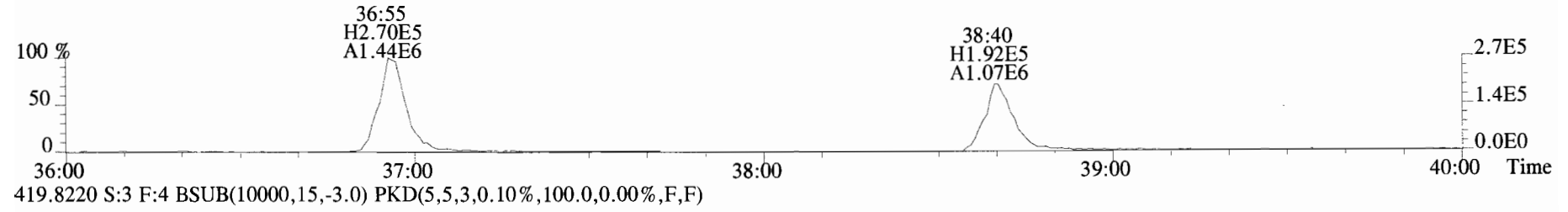
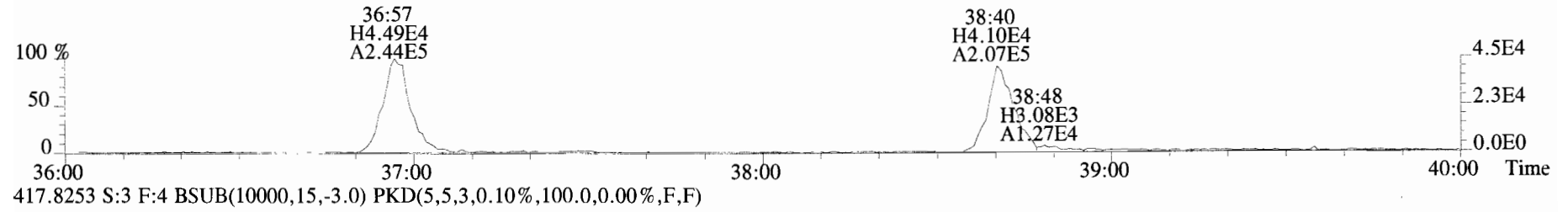
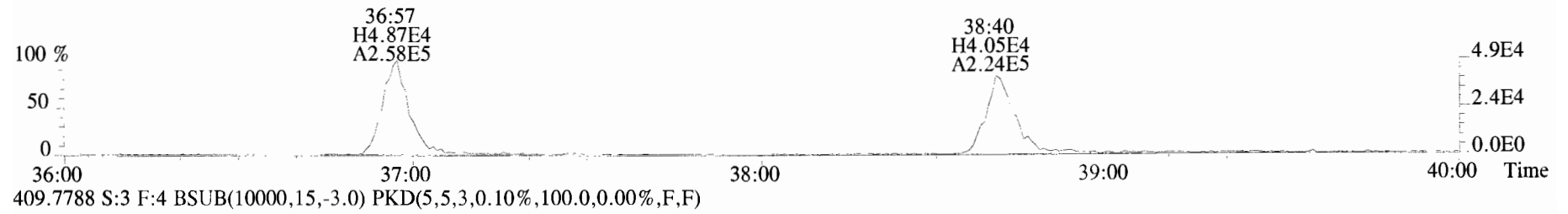
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
 373.8207 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



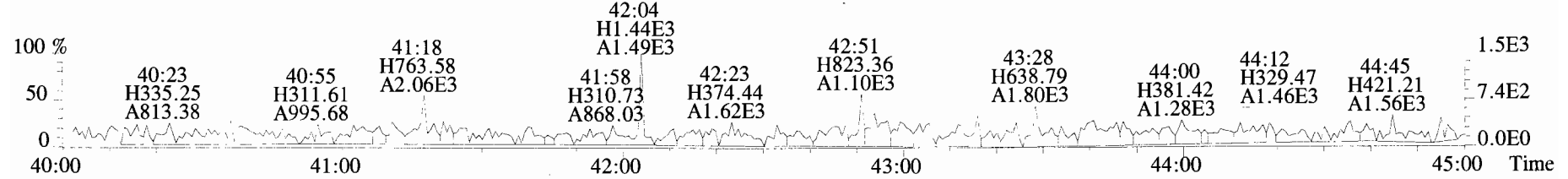
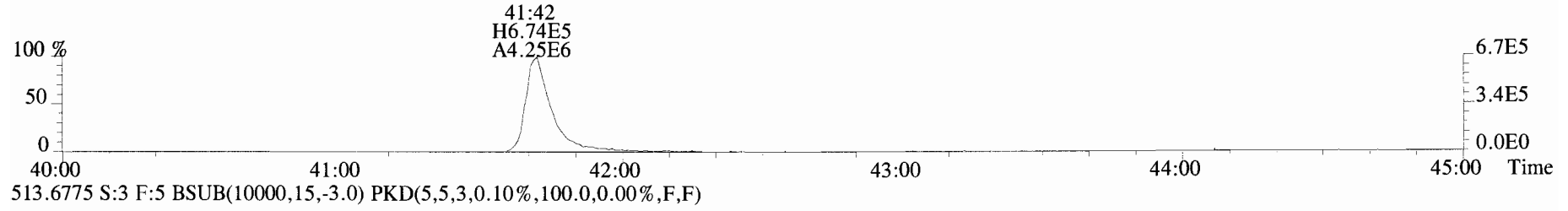
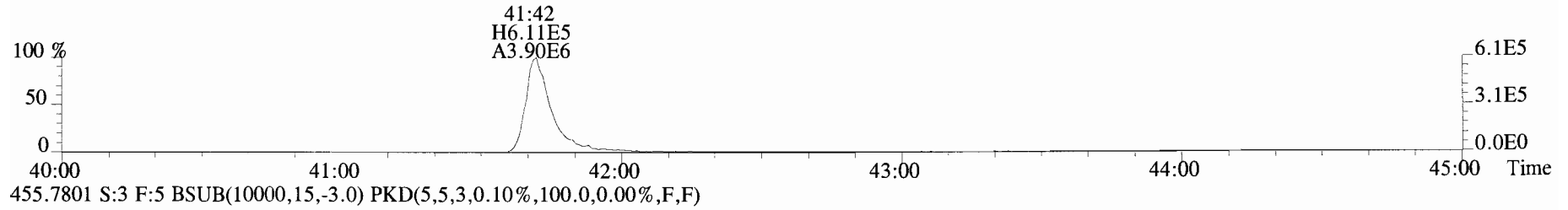
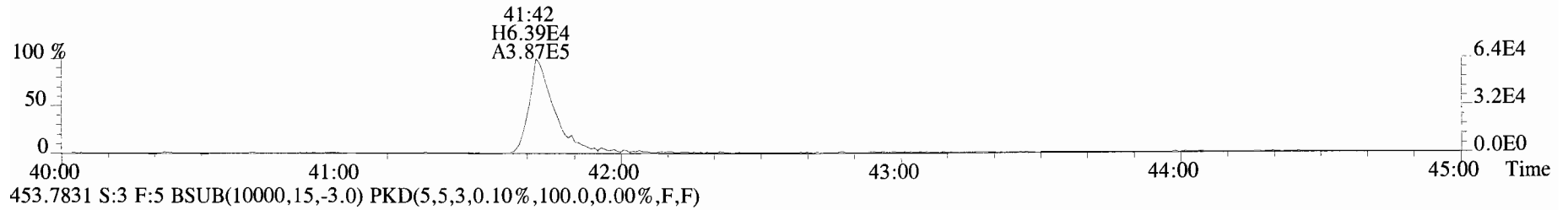
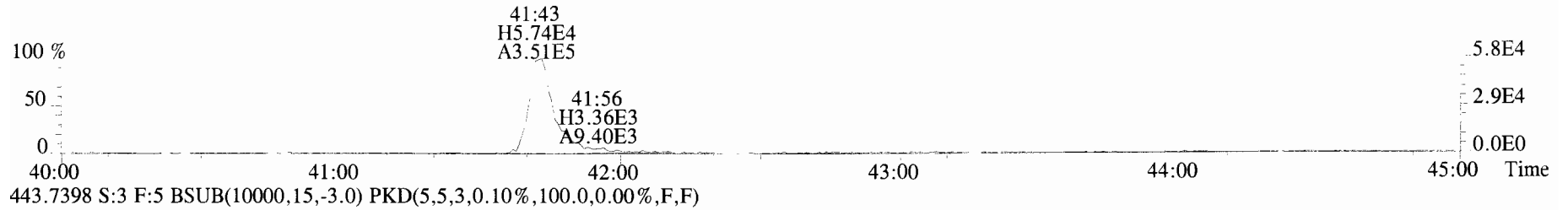
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
383.8639 S:3 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



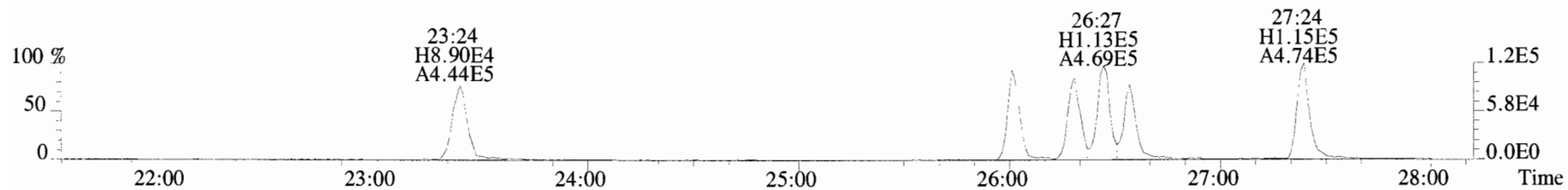
File:191009D1 #1-355 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
407.7818 S:3 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



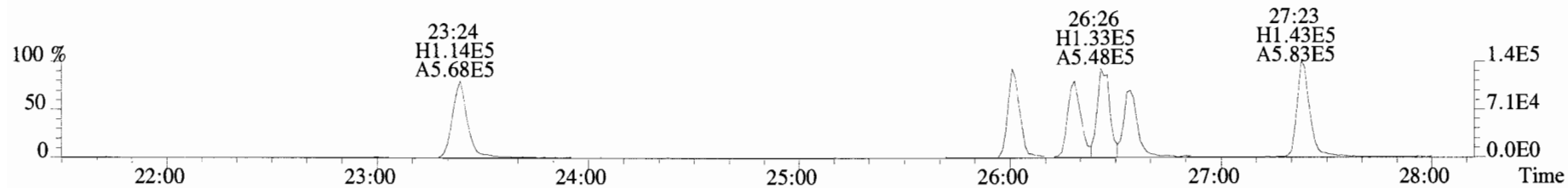
File:191009D1 #1-432 Acq: 9-OCT-2019 17:48:27 GC EI+ Voltage SIR Autospec-UltimaE
Sample#3 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-3 1613 CS2 19C2203 Exp:OCDD_DB5
441.7428 S:3 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



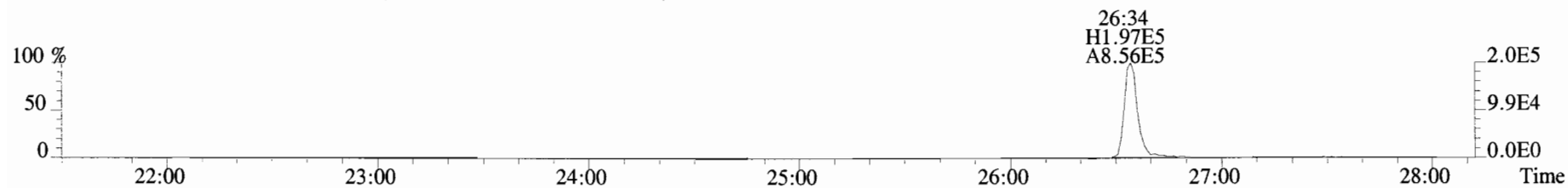
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
319.8965 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



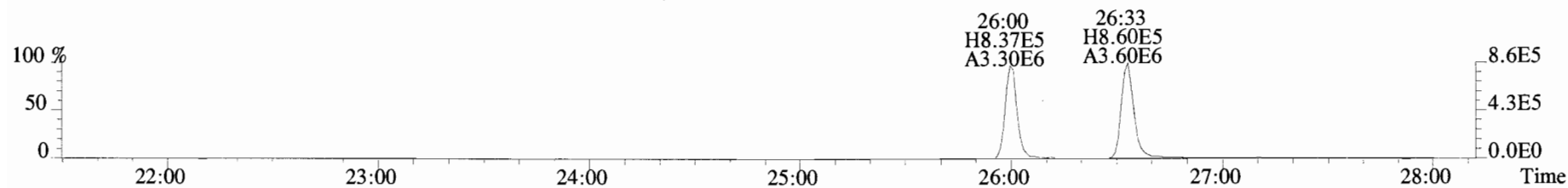
321.8936 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



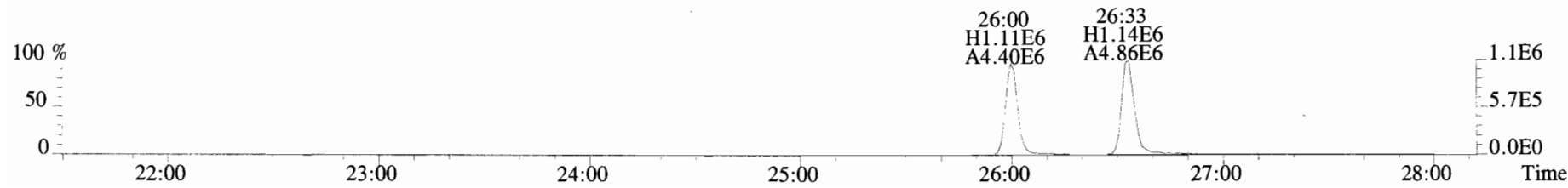
327.8847 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



331.9368 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



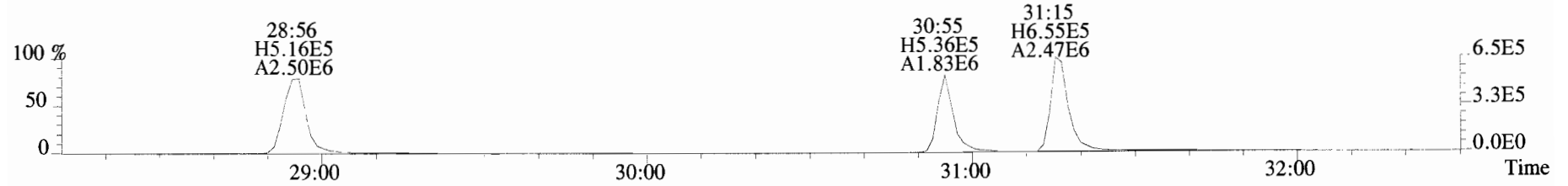
333.9339 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



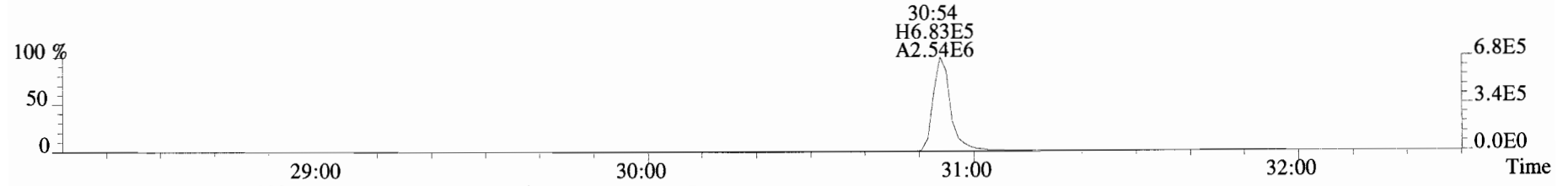
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
353.8576 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



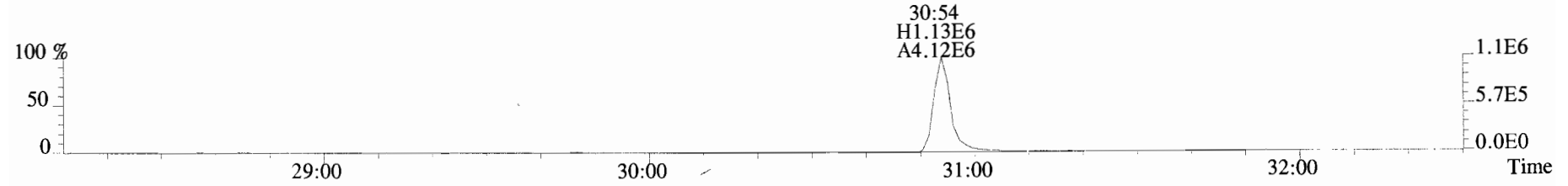
355.8546 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



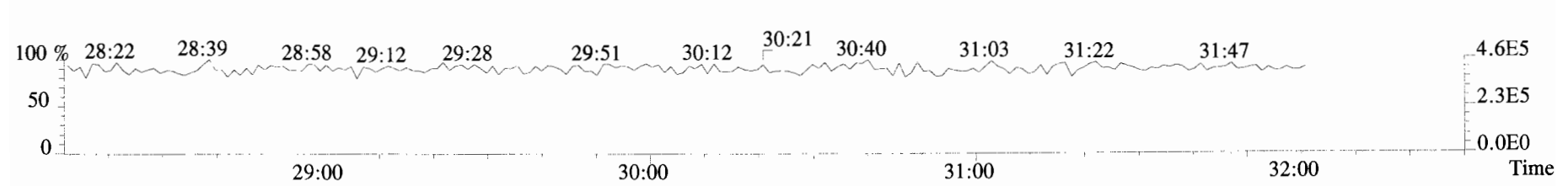
365.8978 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



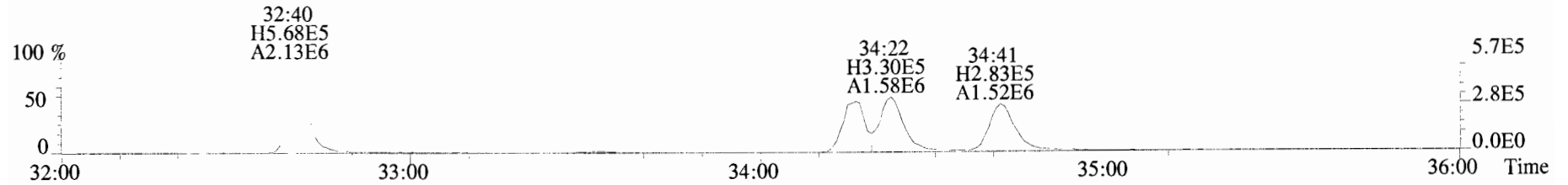
367.8949 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



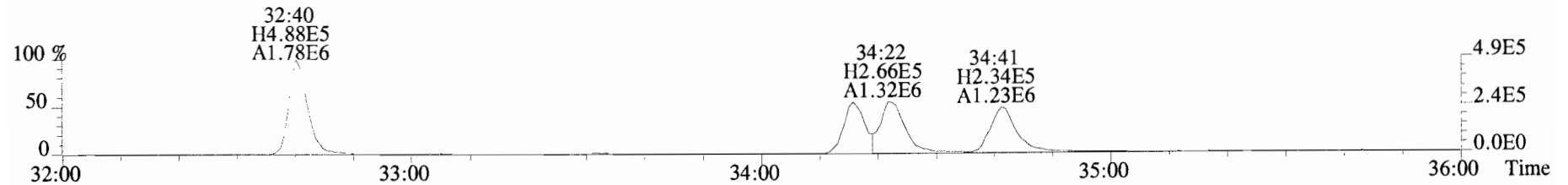
366.9792 S:4 F:2



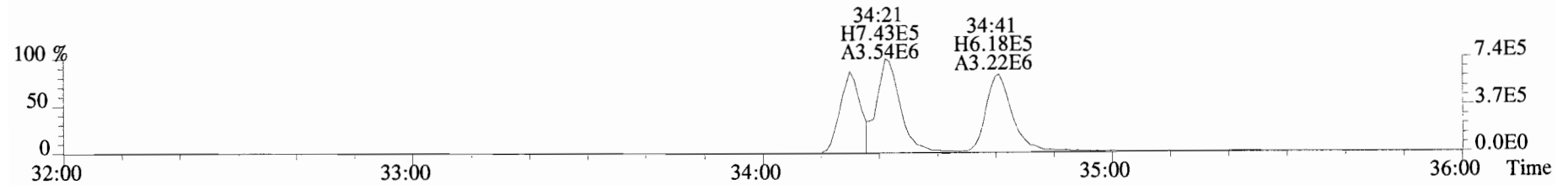
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
389.8156 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



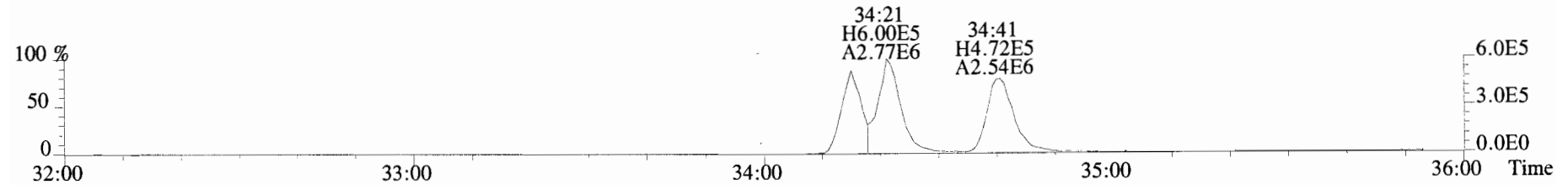
391.8127 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



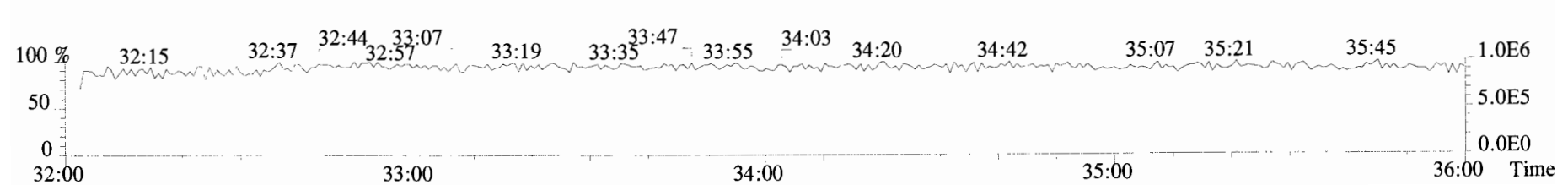
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



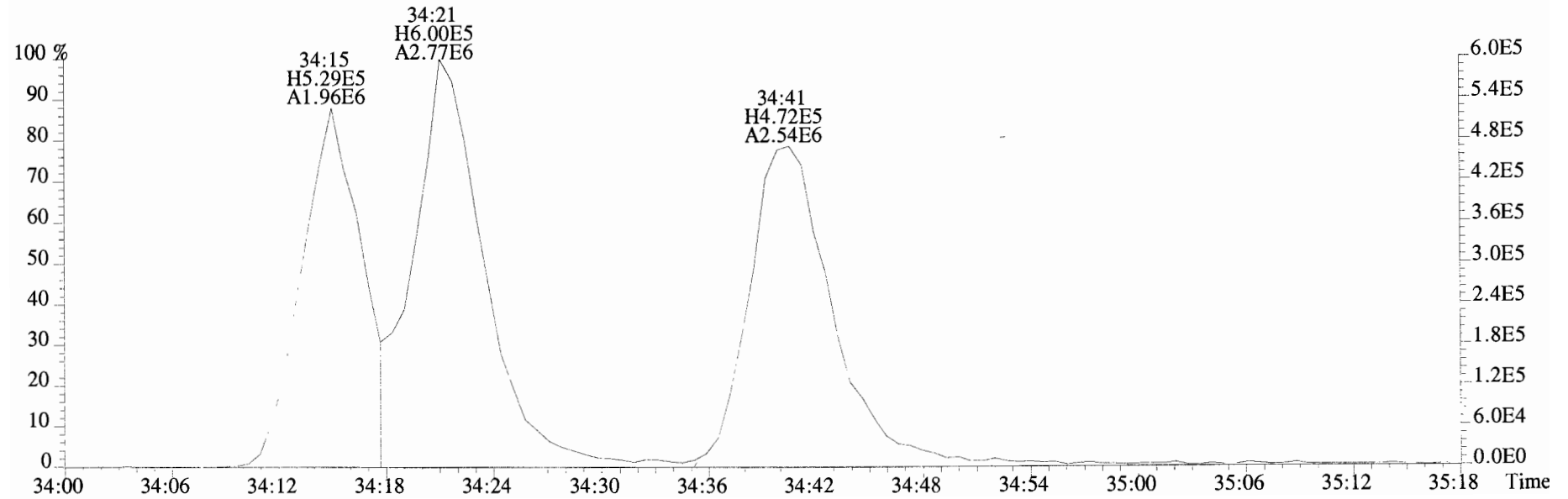
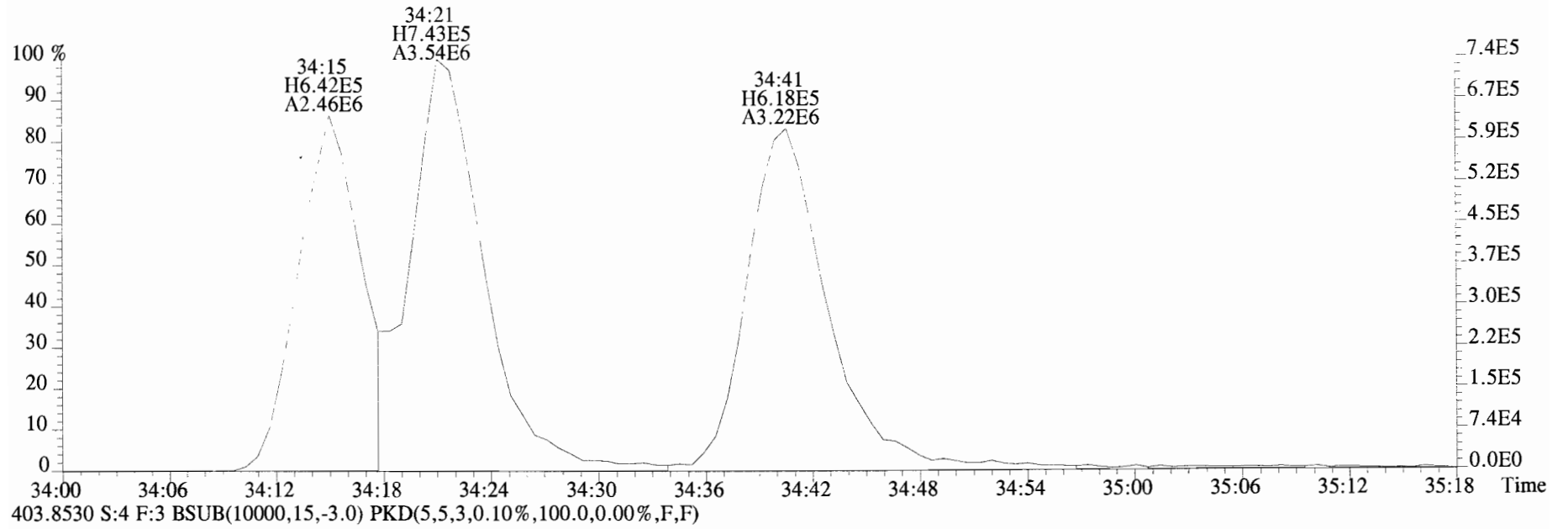
403.8530 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



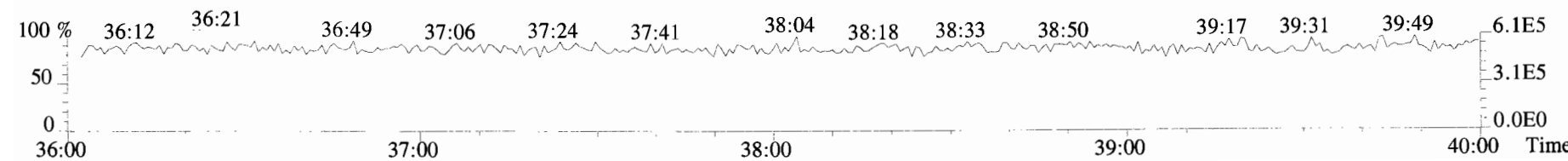
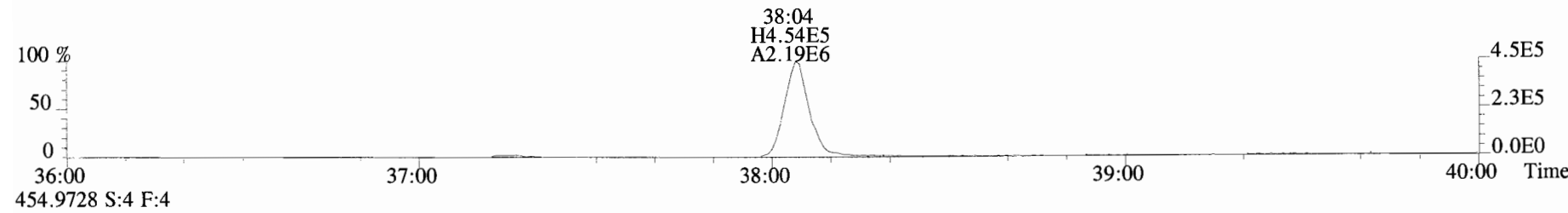
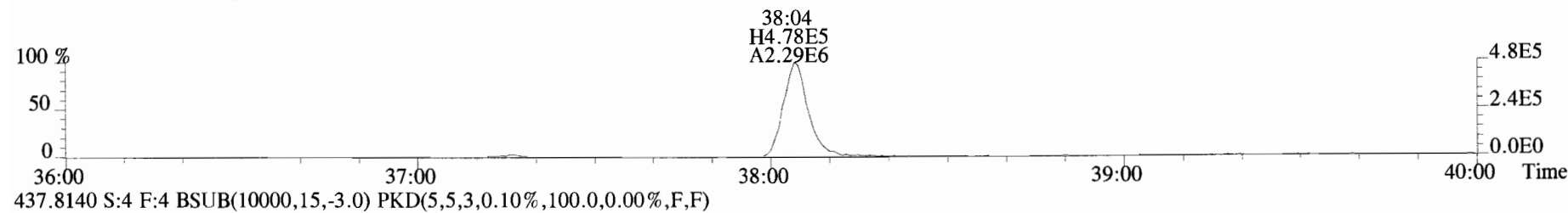
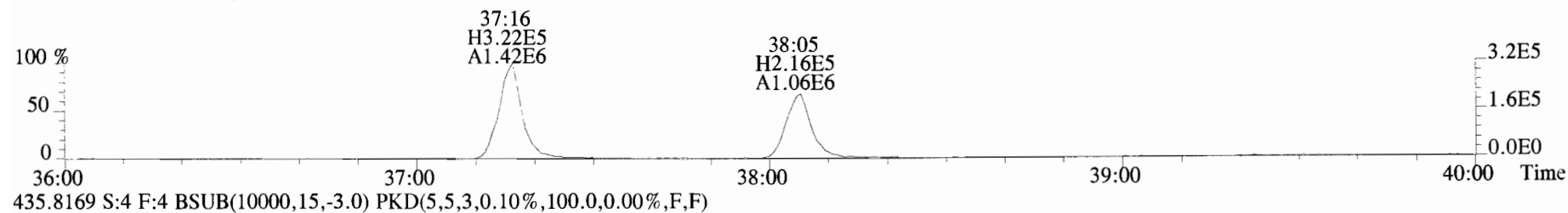
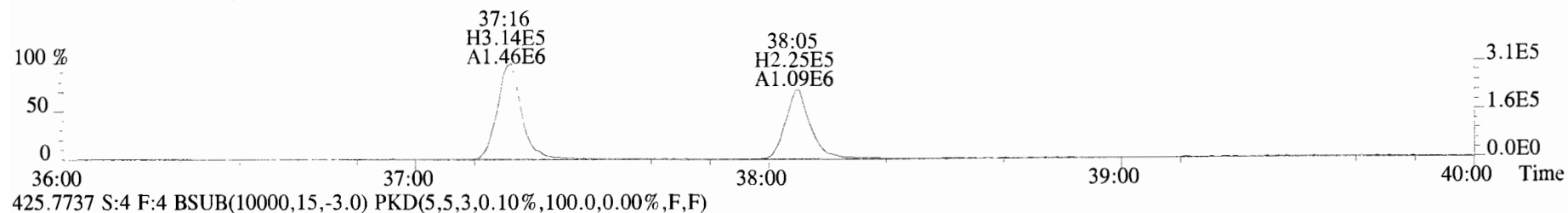
392.9760 S:4 F:3



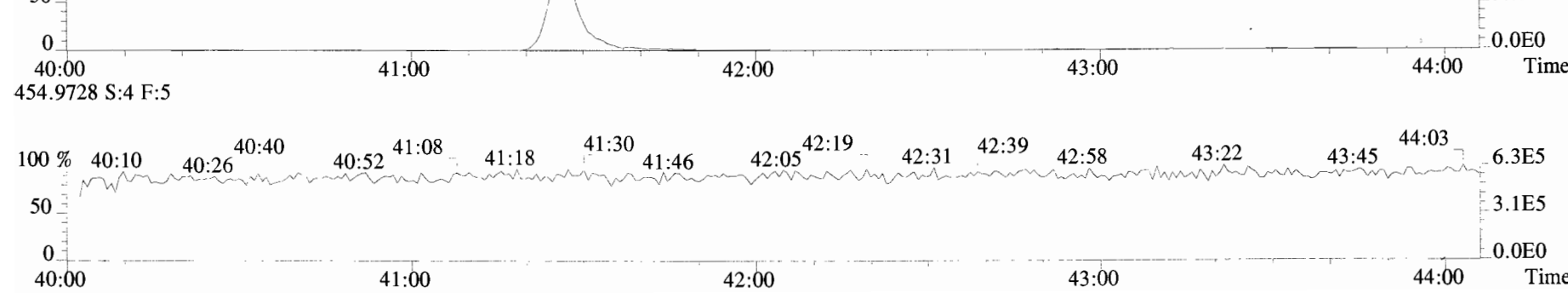
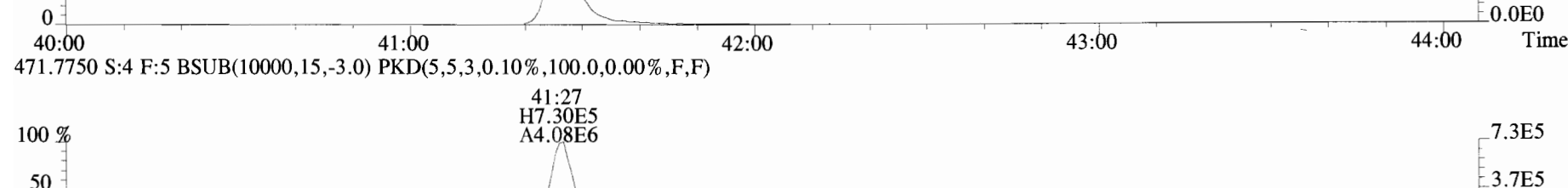
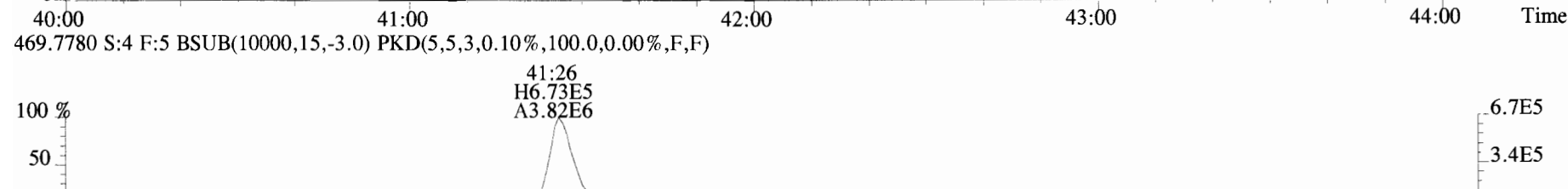
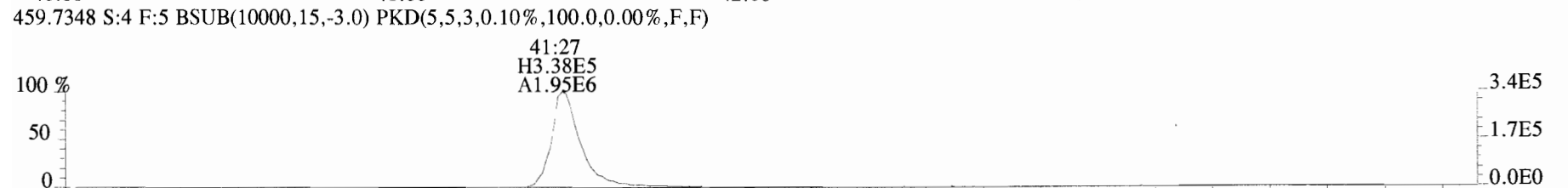
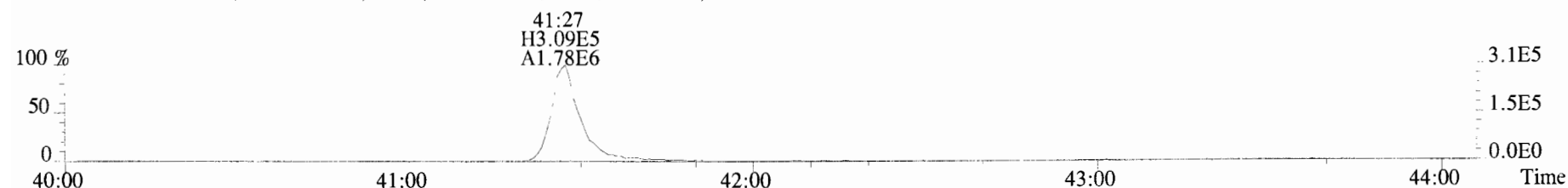
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
401.8559 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



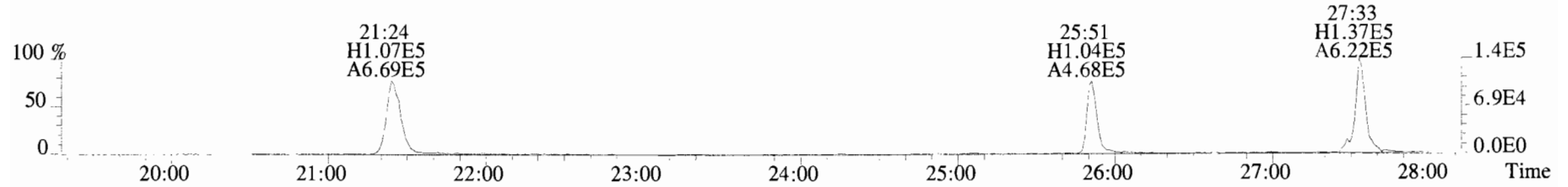
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
423.7767 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



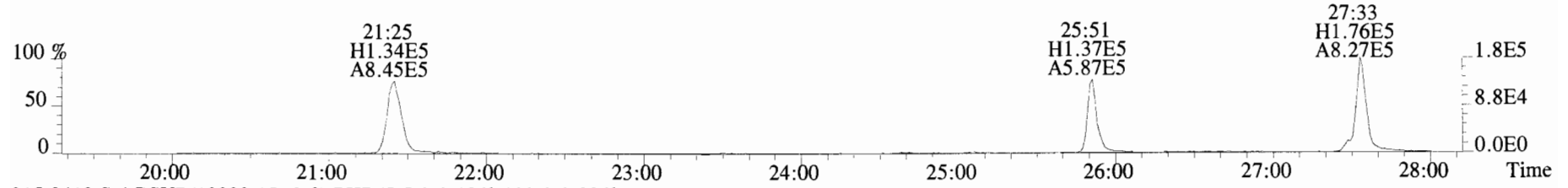
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
457.7377 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



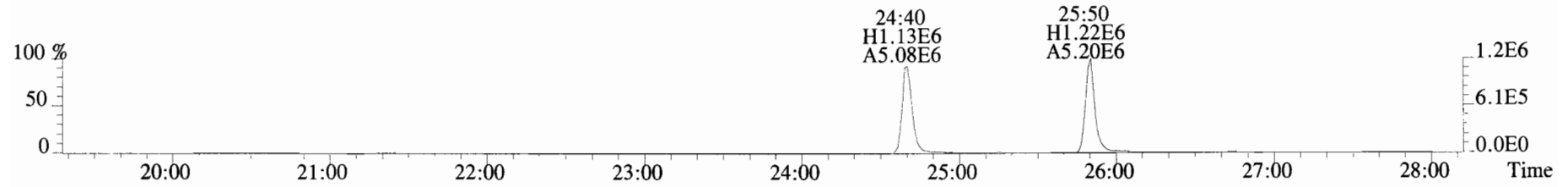
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
 303.9016 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



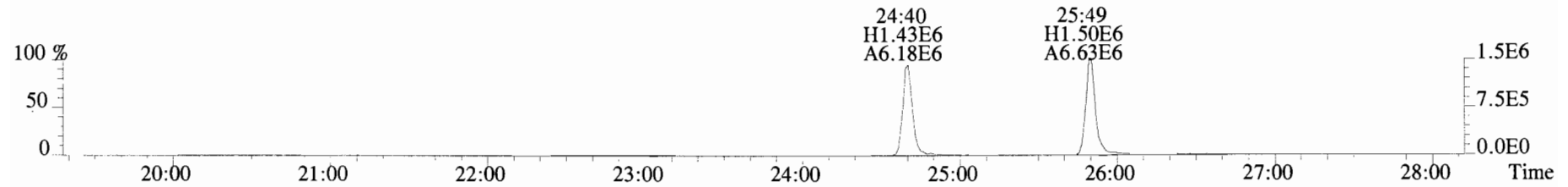
305.8987 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



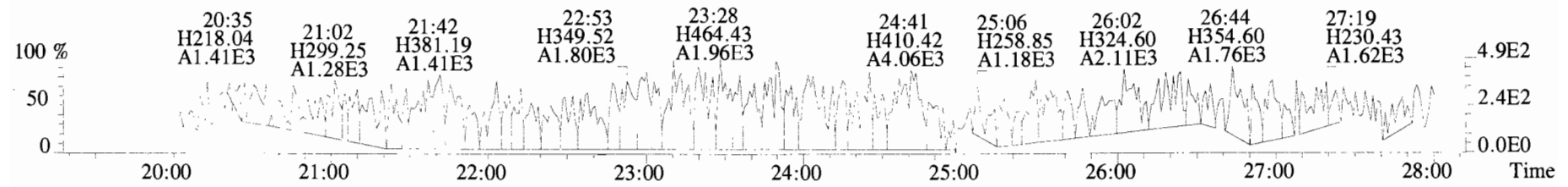
315.9419 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



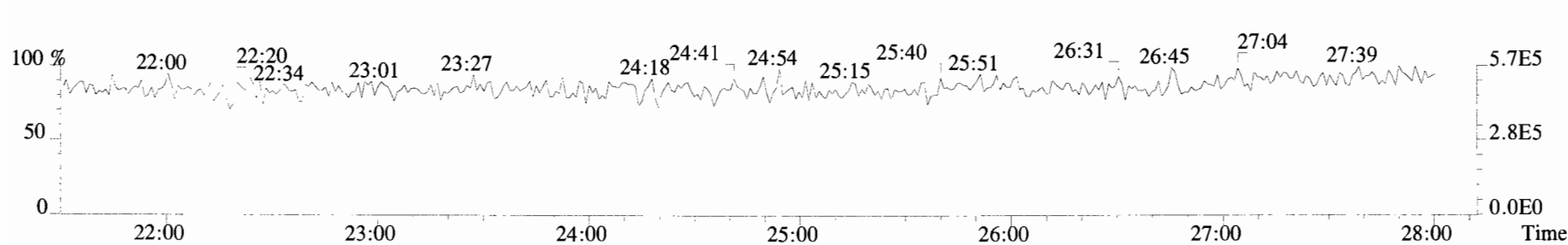
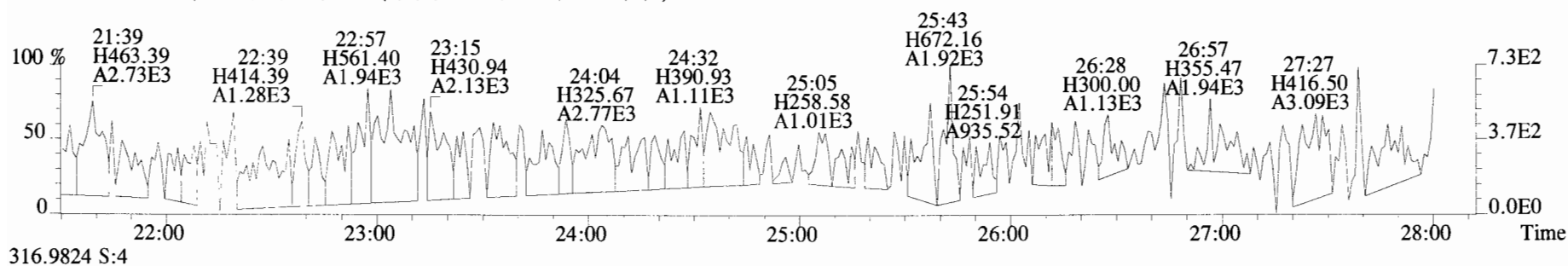
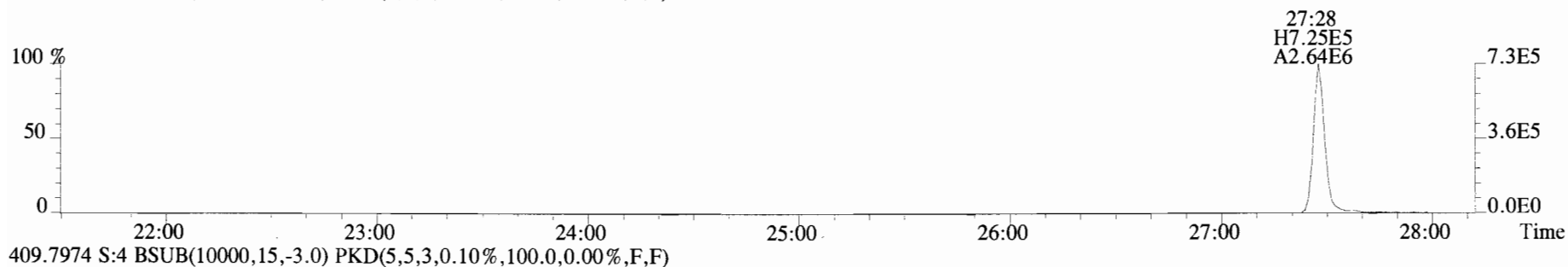
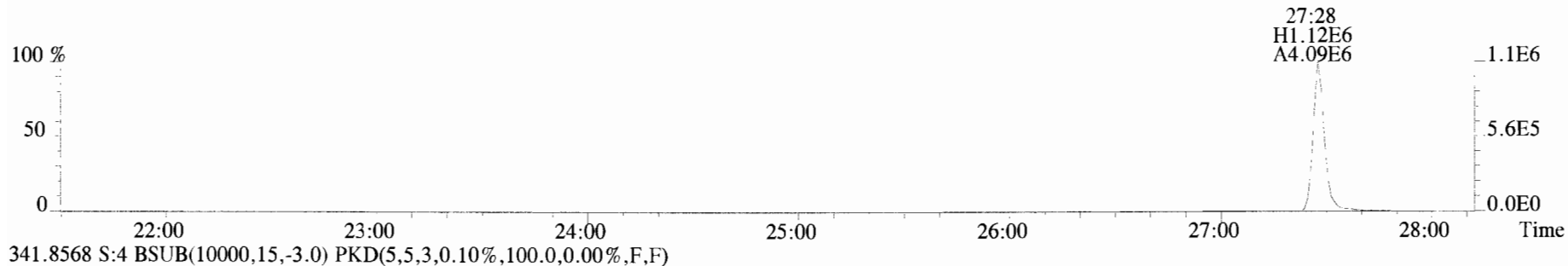
317.9389 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



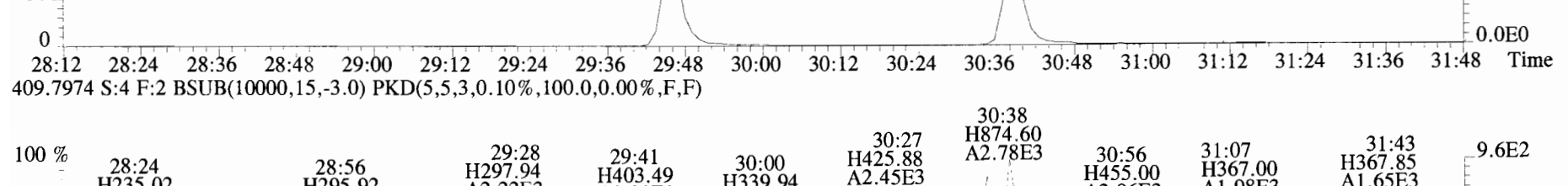
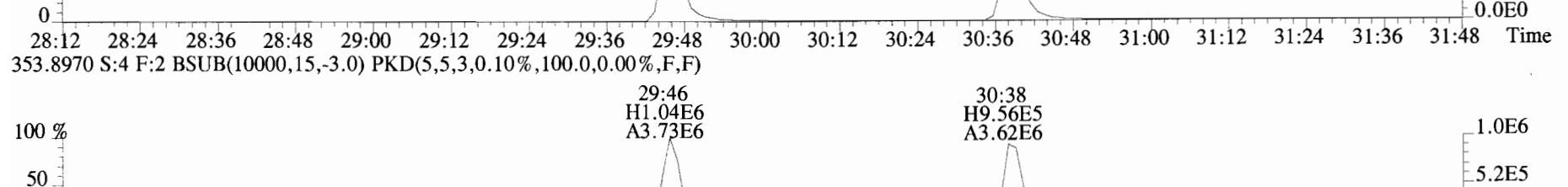
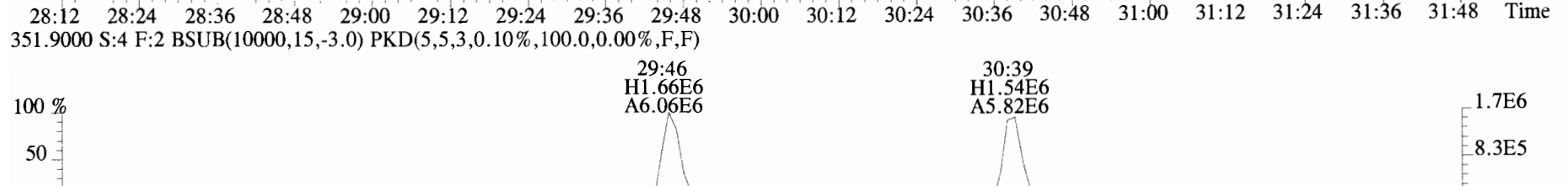
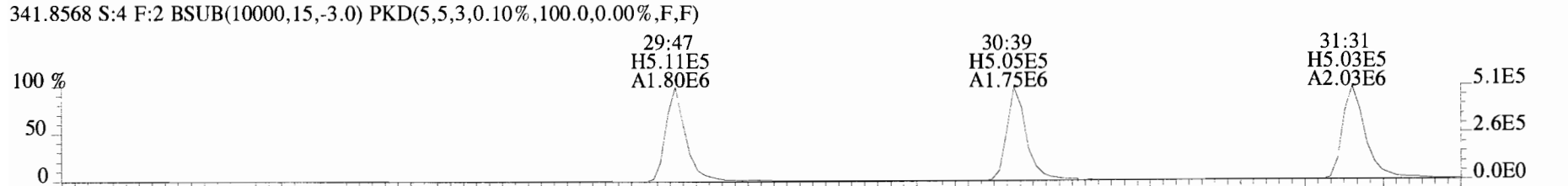
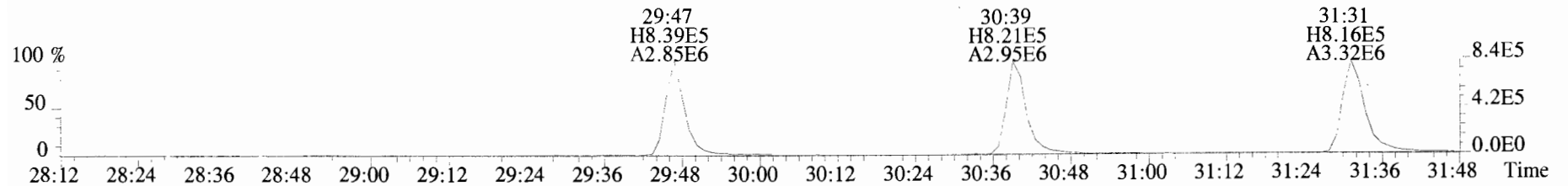
375.8364 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



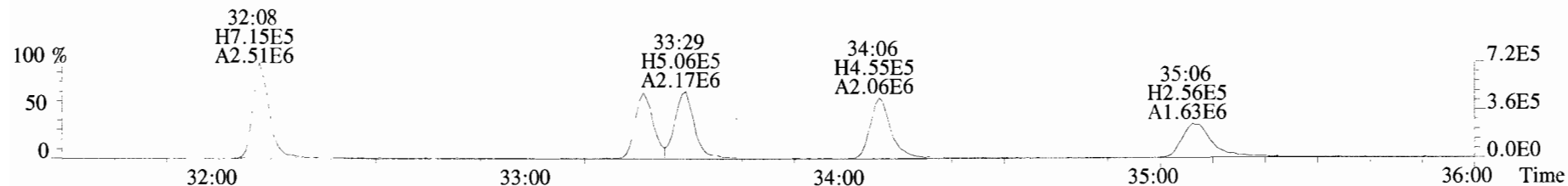
File:191009D1 #1-513 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
 339.8597 S:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



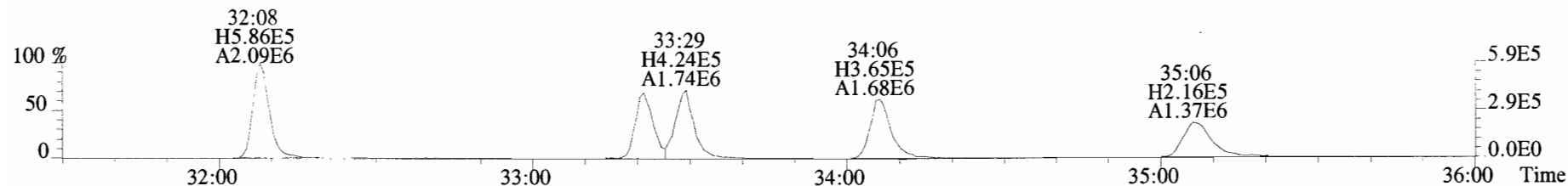
File:191009D1 #1-211 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
339.8597 S:4 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



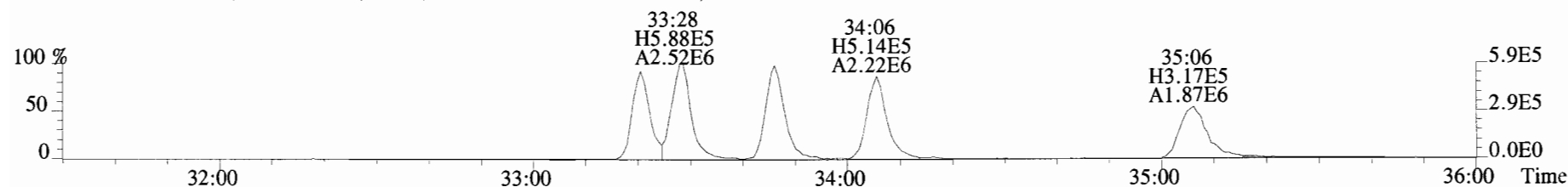
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
373.8207 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



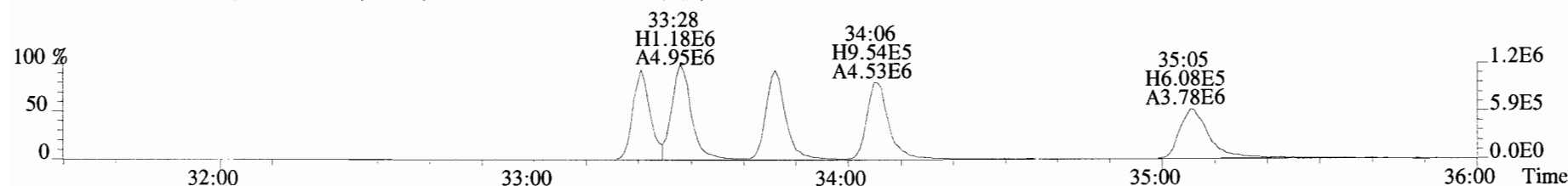
375.8178 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



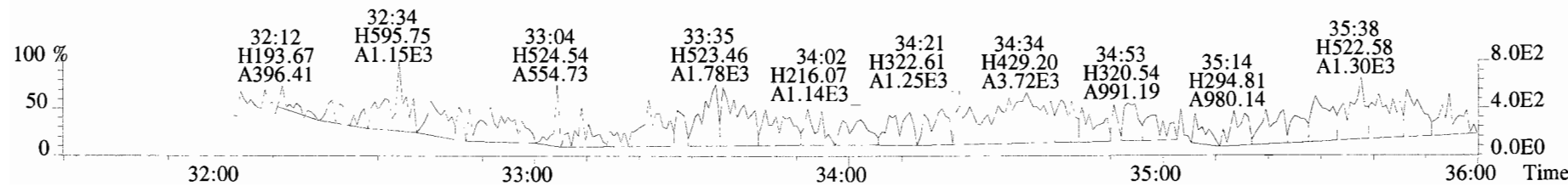
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



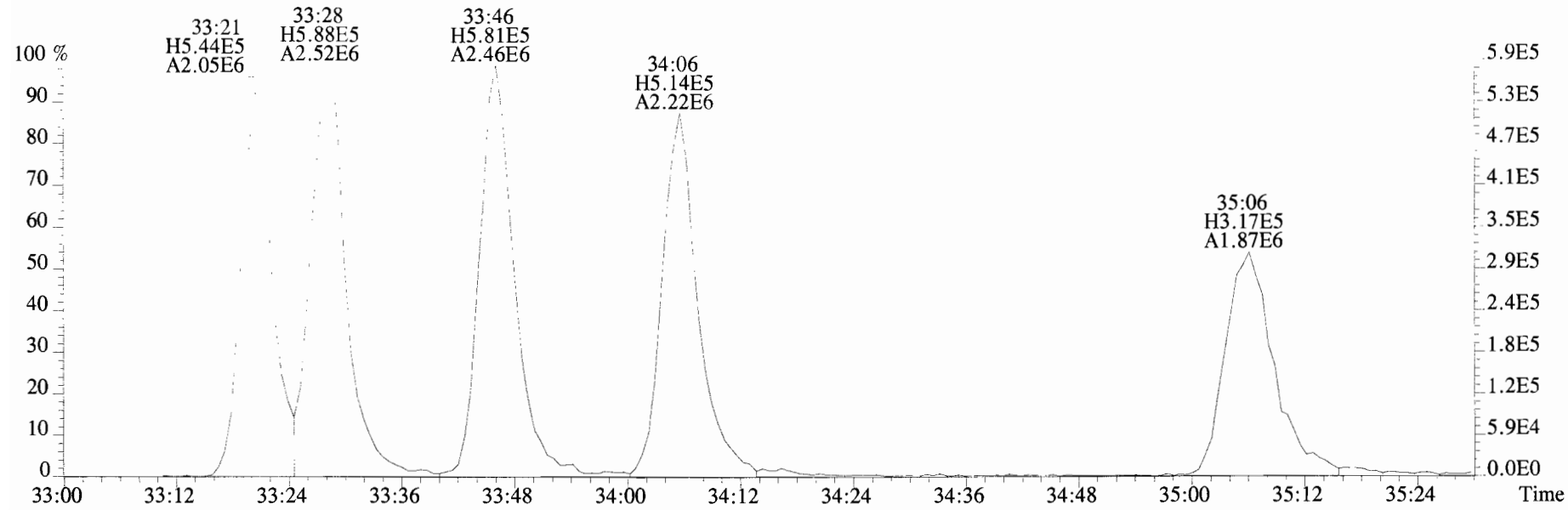
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



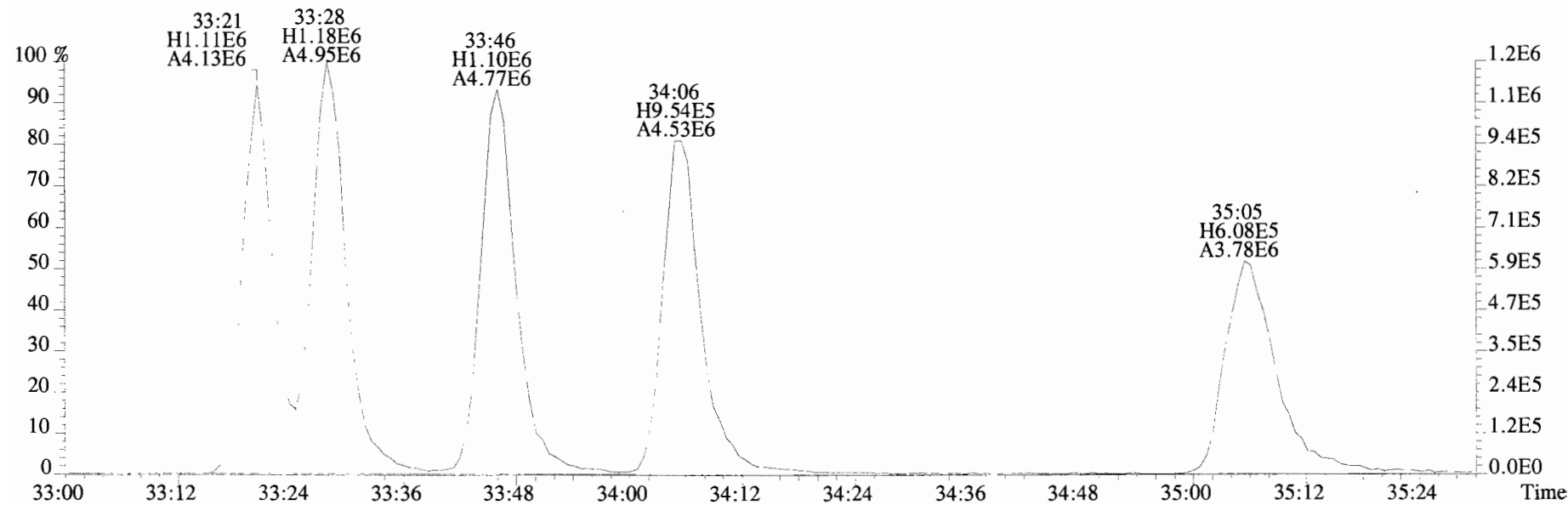
445.7555 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



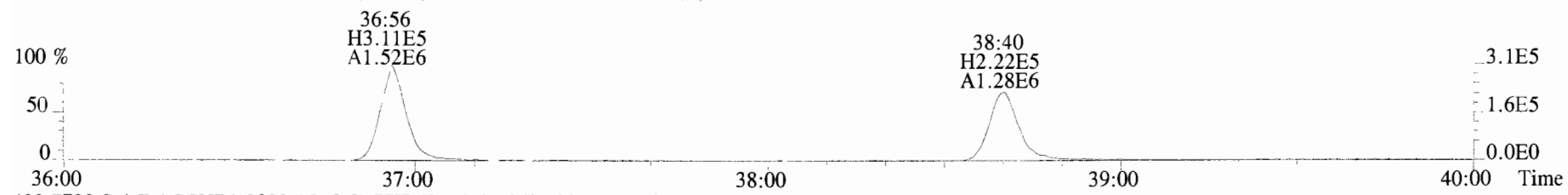
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
Sample#4 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
383.8639 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



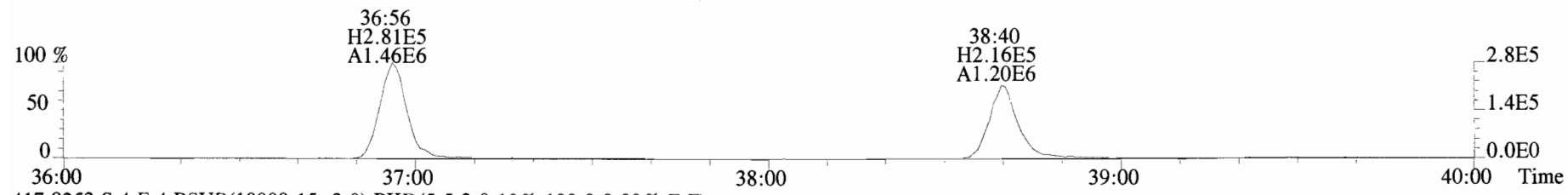
385.8610 S:4 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



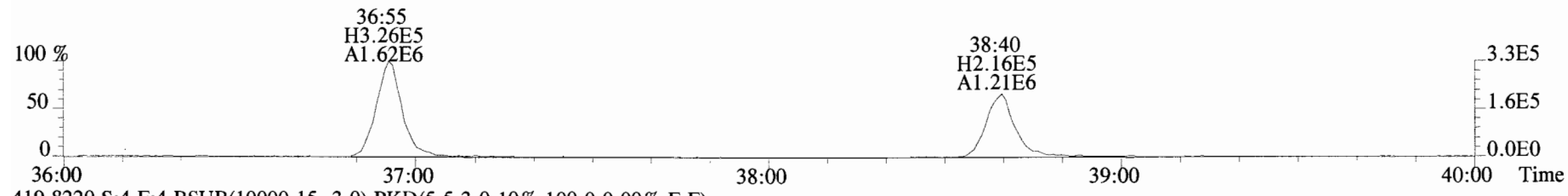
File:191009D1 #1-355 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
 407.7818 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



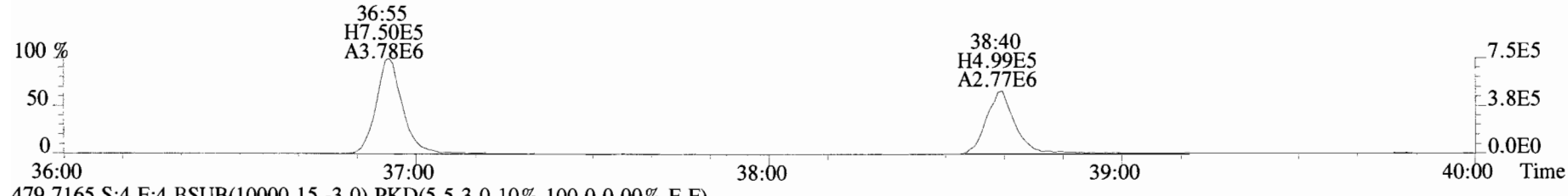
409.7788 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



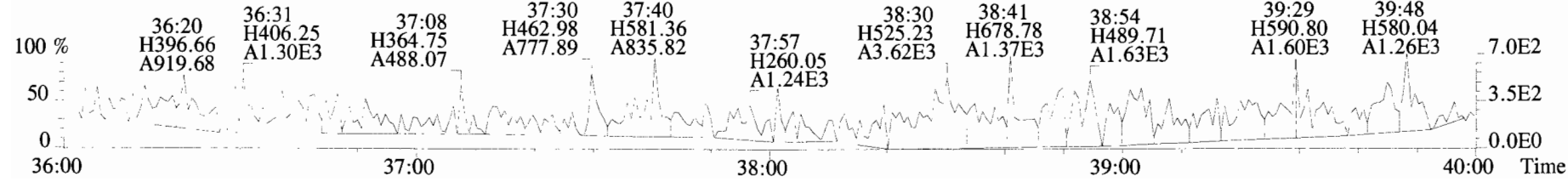
417.8253 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



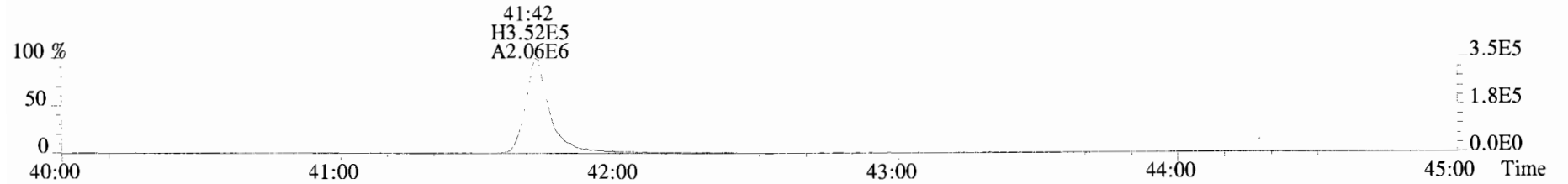
419.8220 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



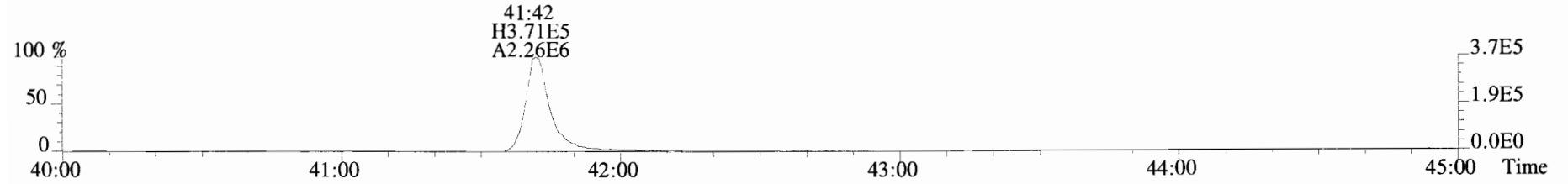
479.7165 S:4 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



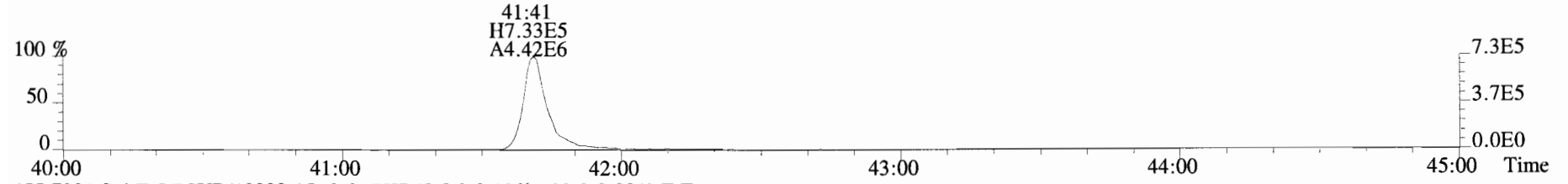
File:191009D1 #1-432 Acq: 9-OCT-2019 18:36:09 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#4 File Text:Vista Analytical_Laboratory_VG7 Text:ST191009D1-4 1613 CS3 19C2204 Exp:OCDD_DB5
 441.7428 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



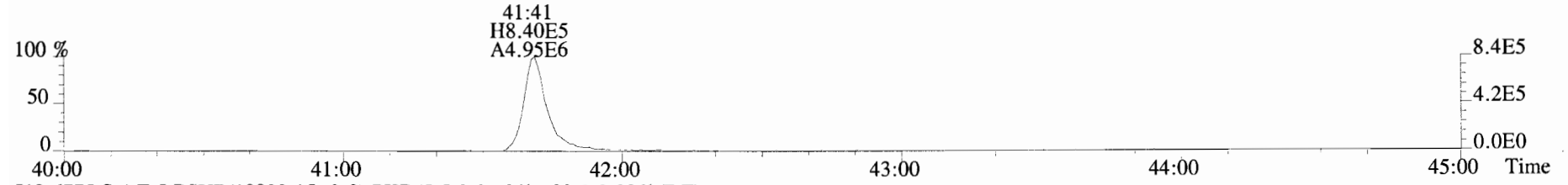
443.7398 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



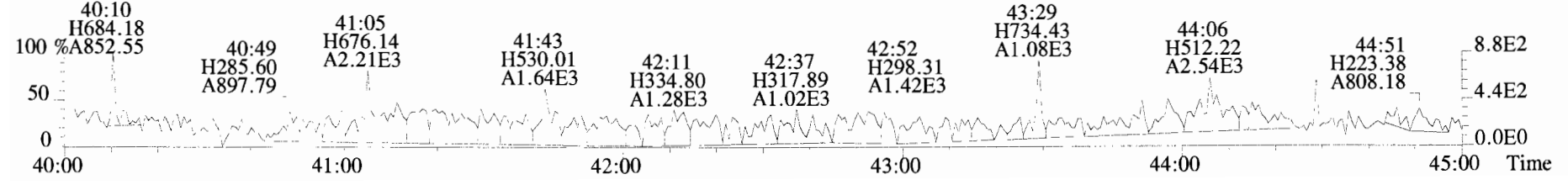
453.7831 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



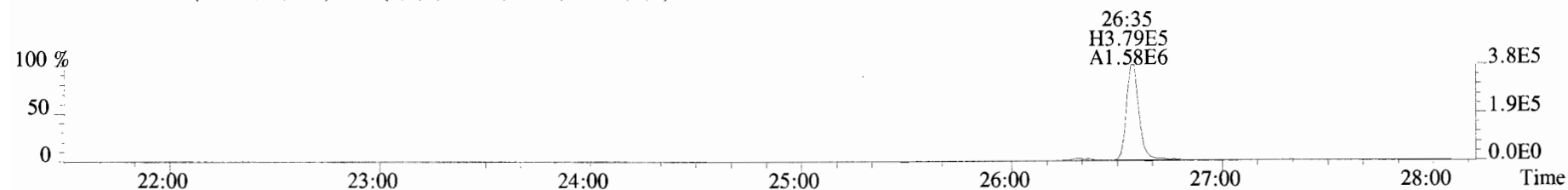
455.7801 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



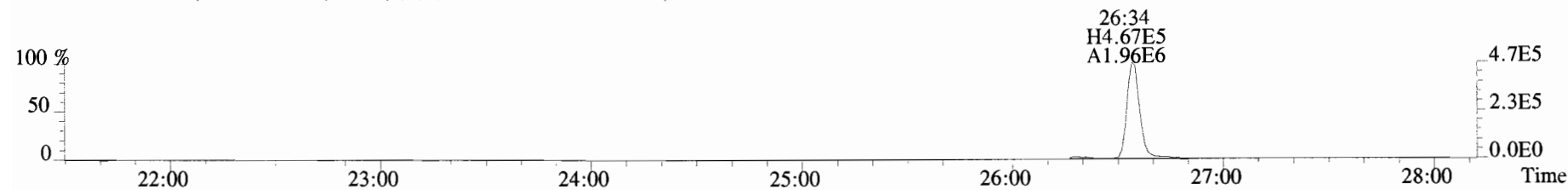
513.6775 S:4 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



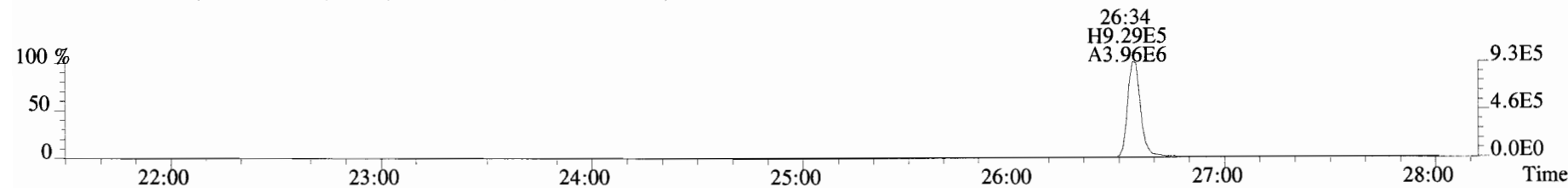
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
319.8965 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



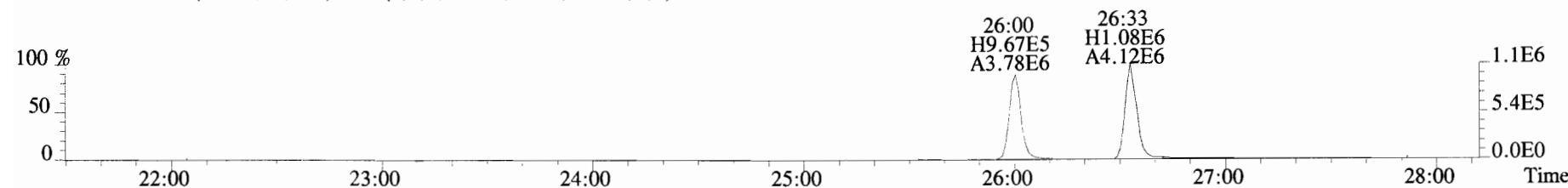
321.8936 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



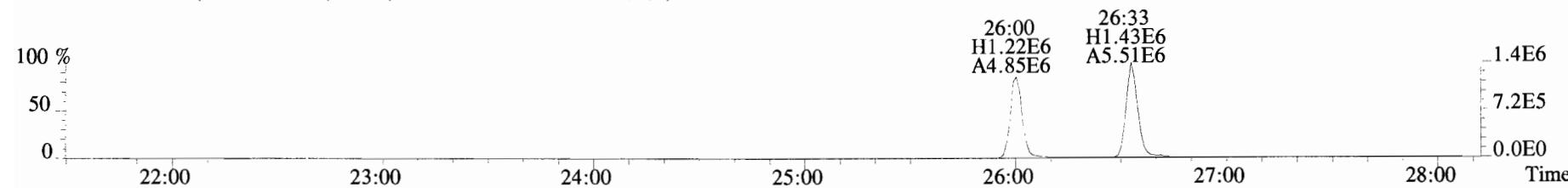
327.8847 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



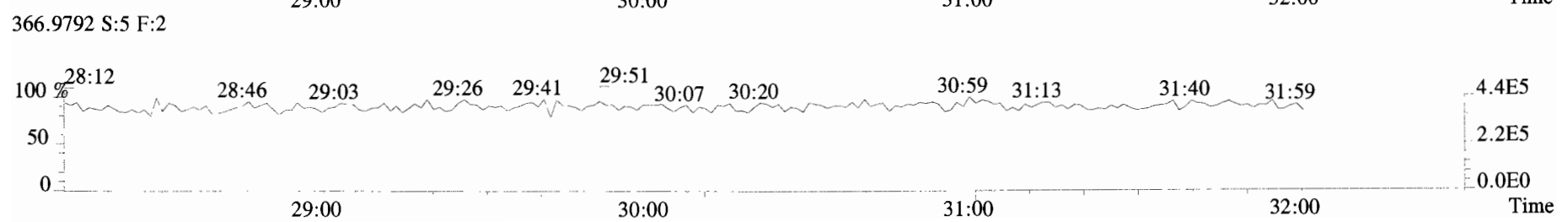
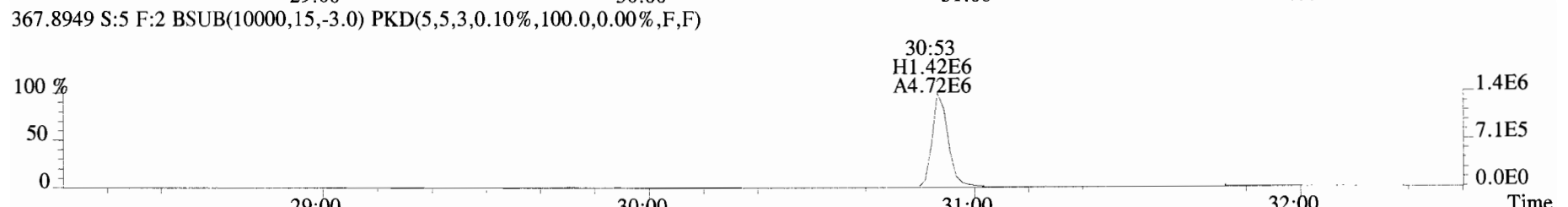
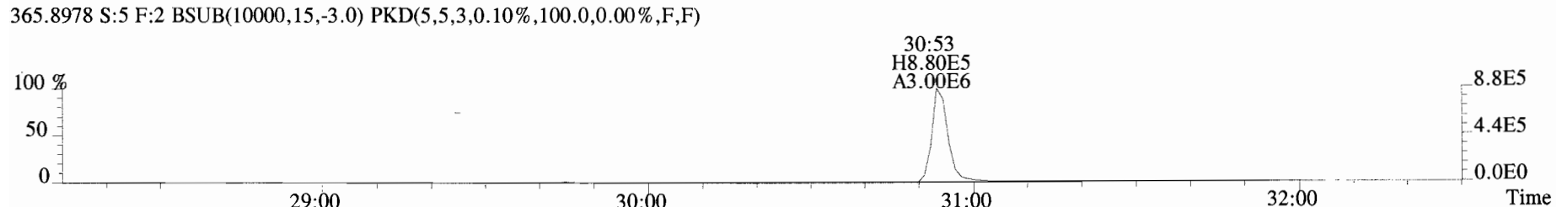
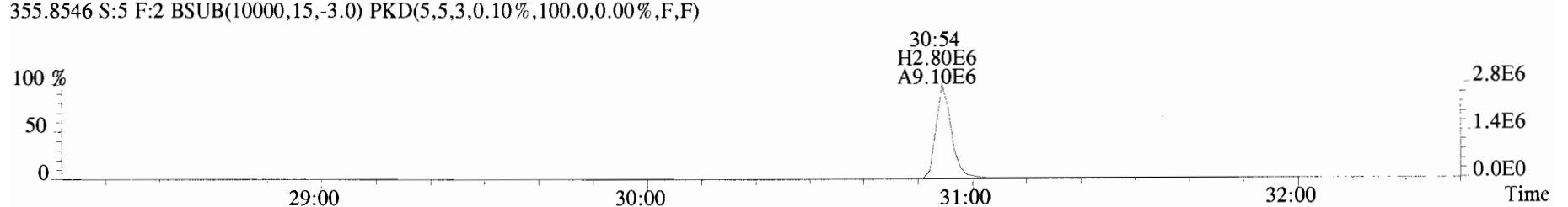
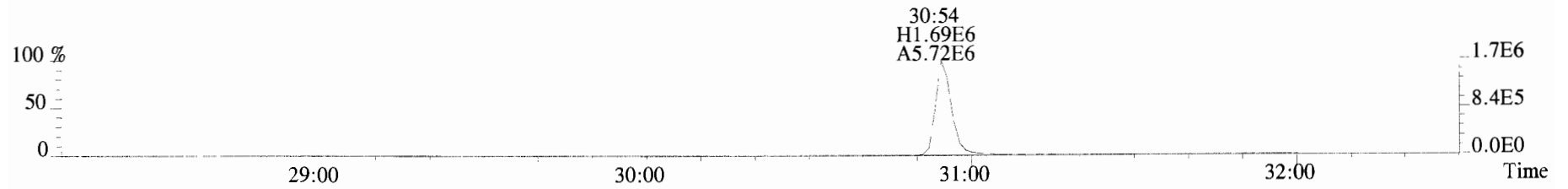
331.9368 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



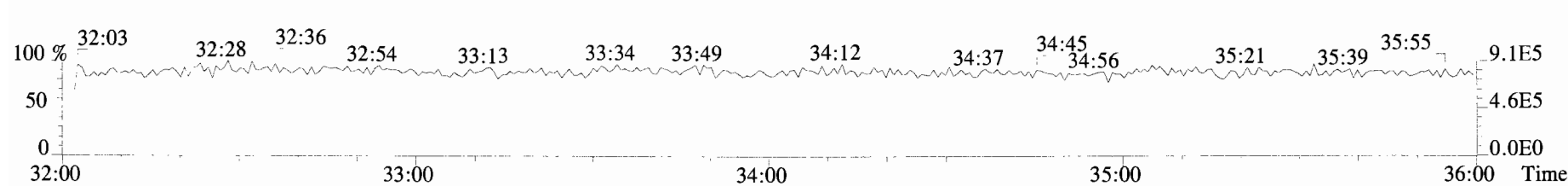
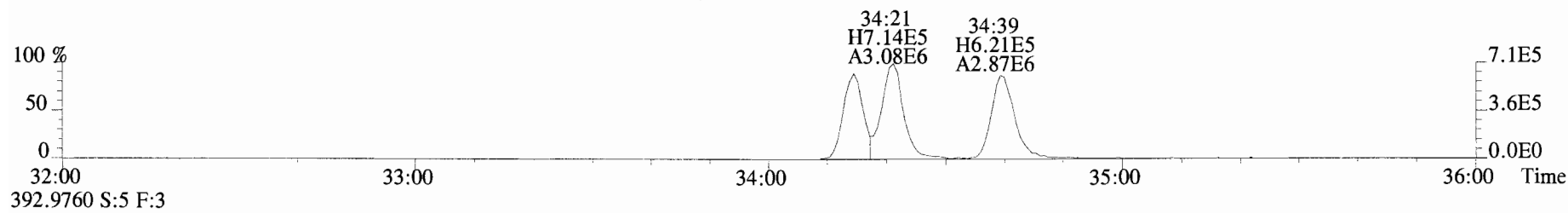
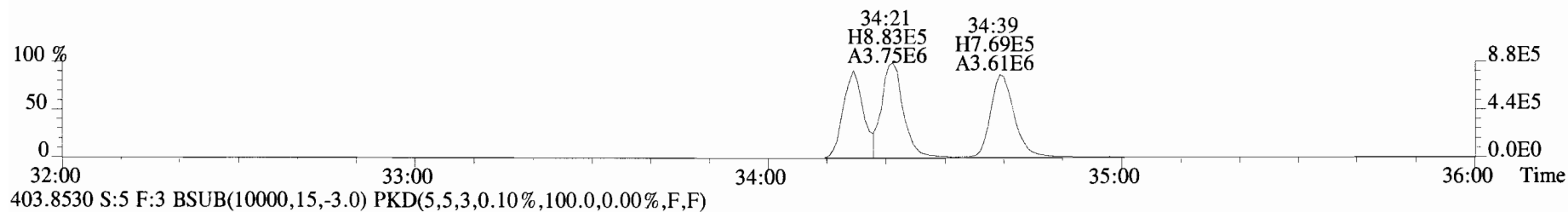
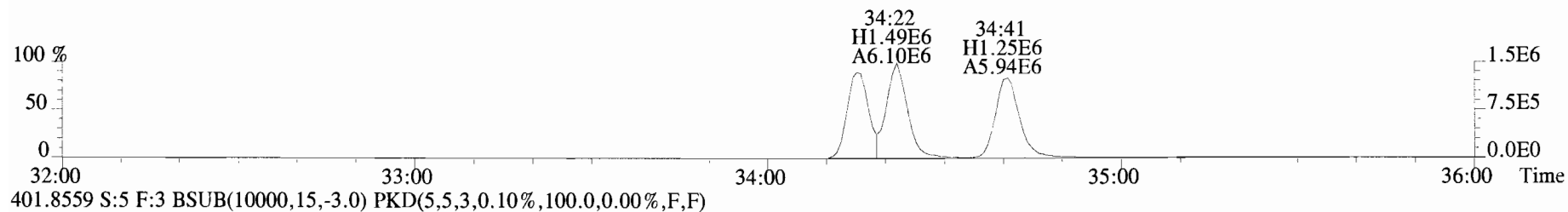
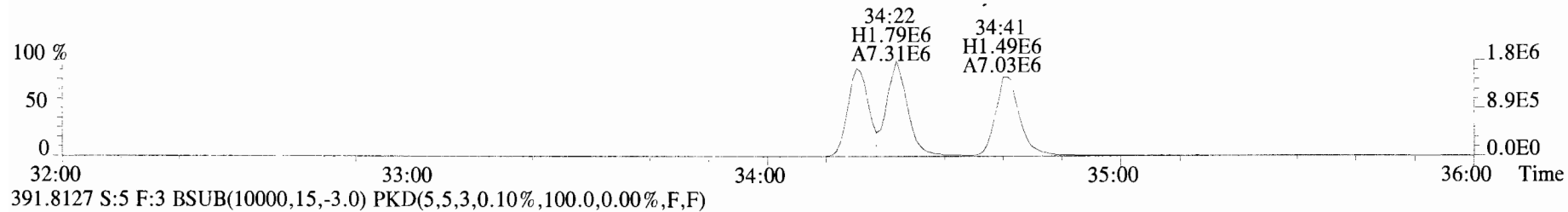
333.9339 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



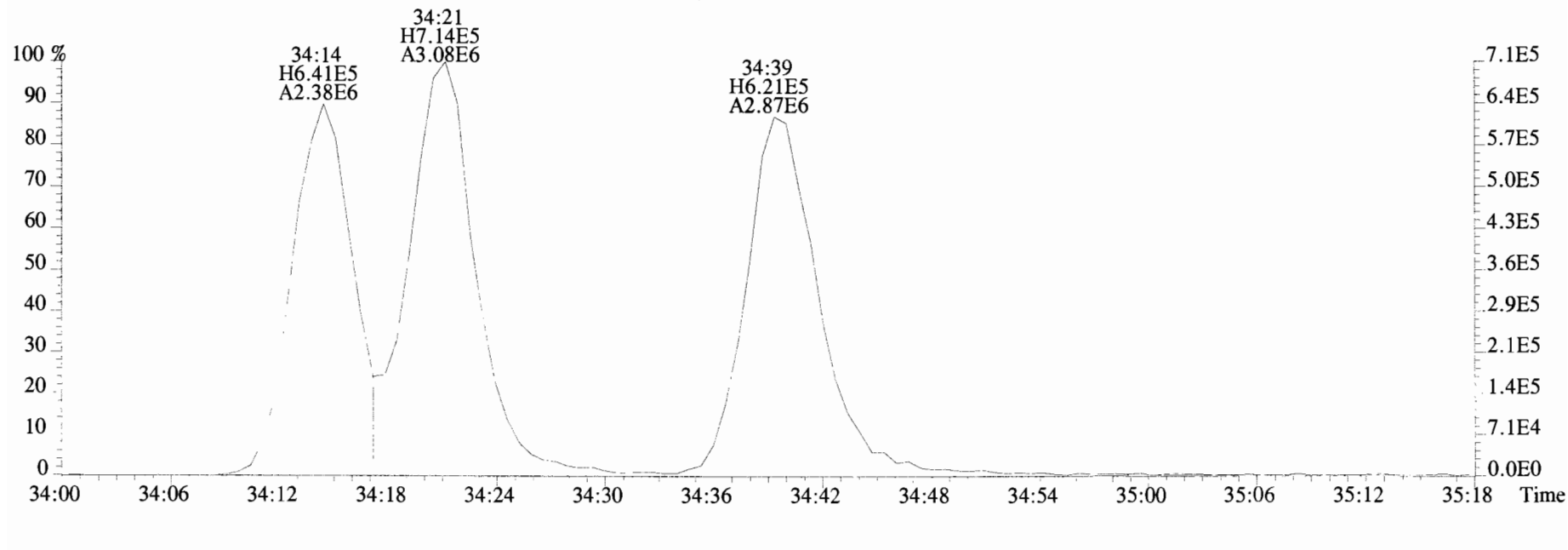
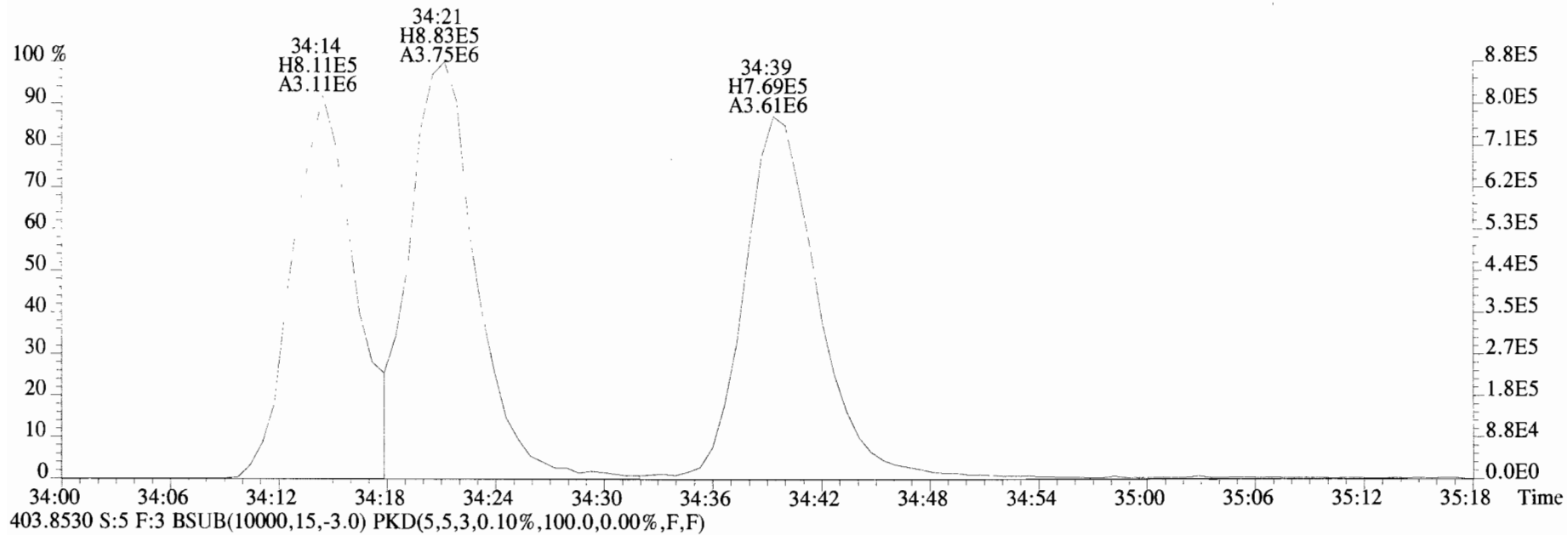
File:191009D1 #1-210 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
353.8576 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



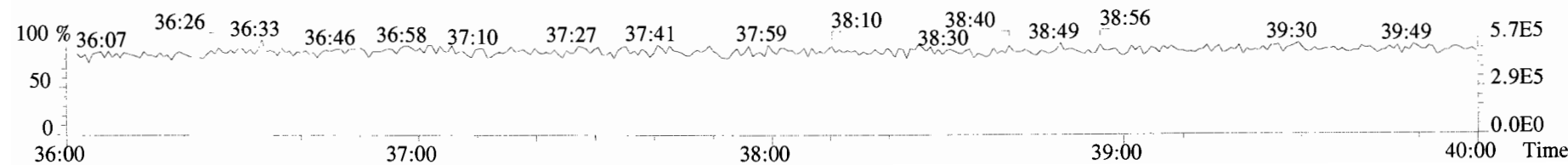
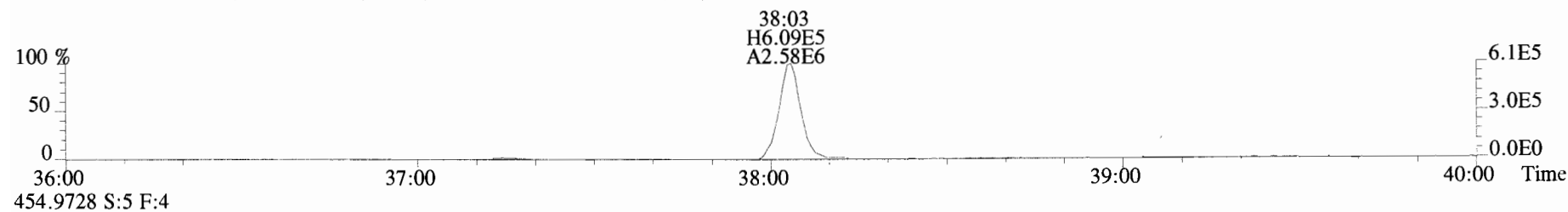
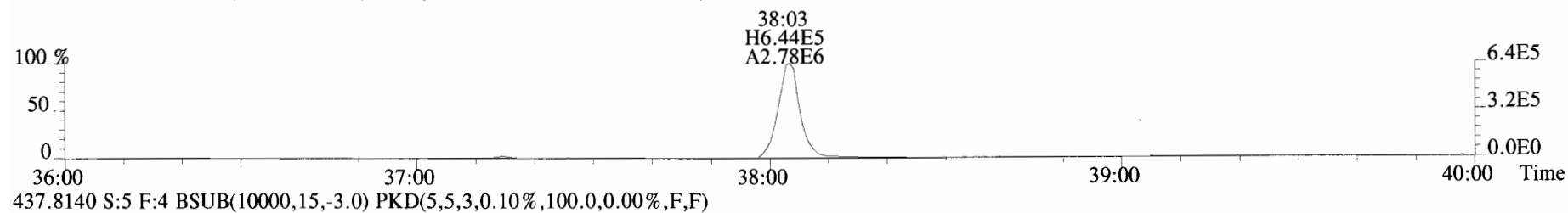
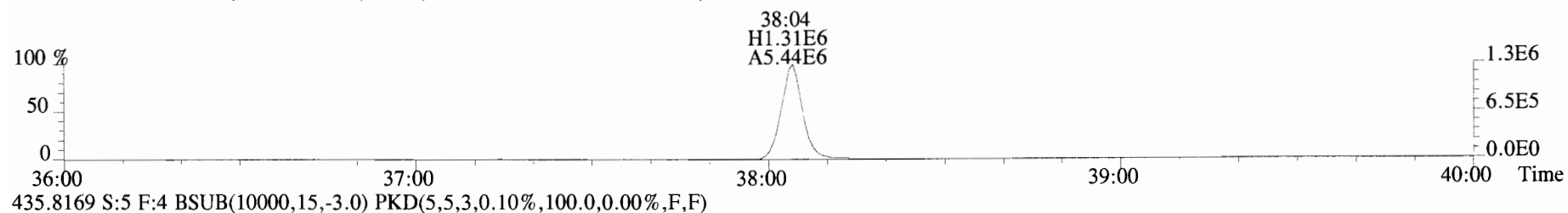
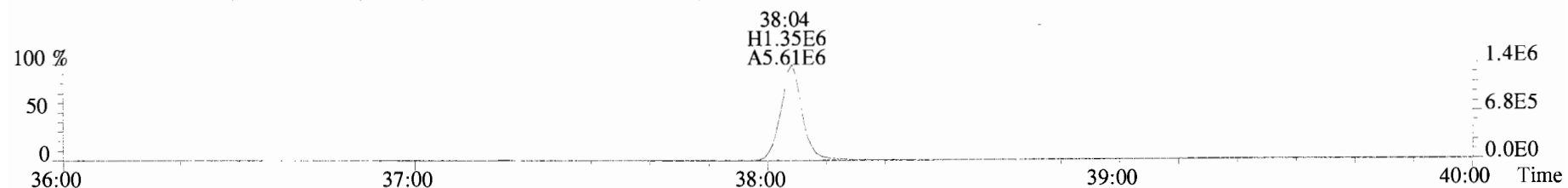
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
389.8156 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



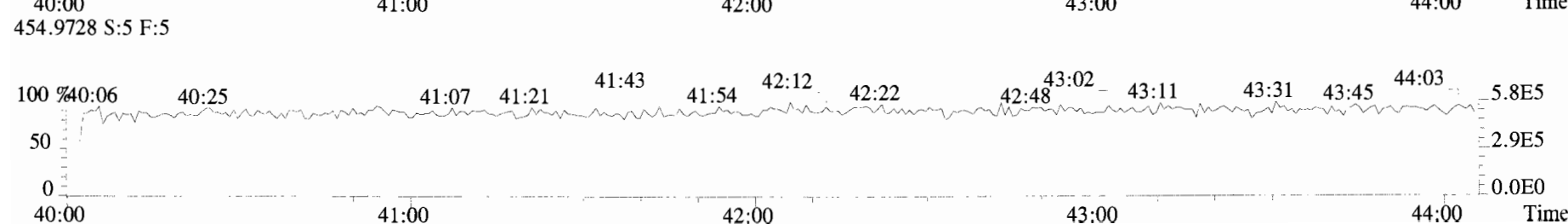
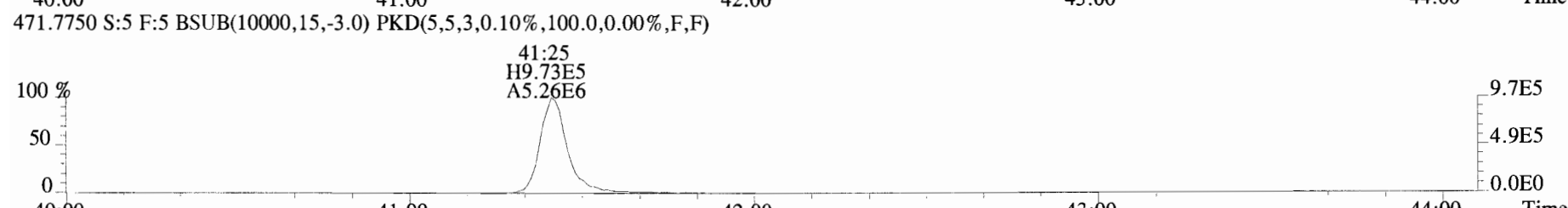
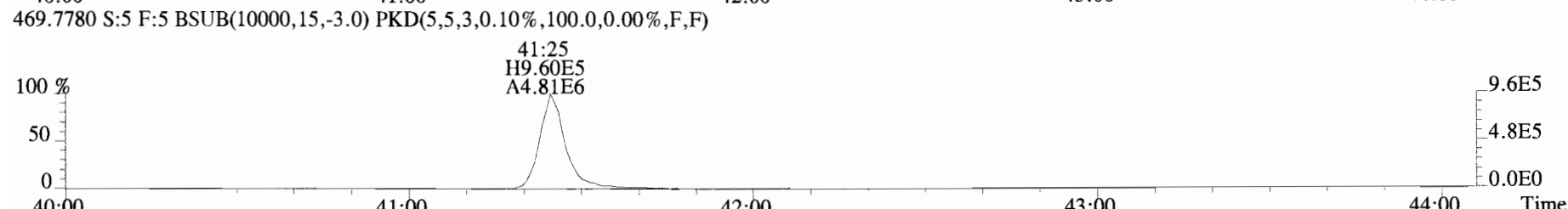
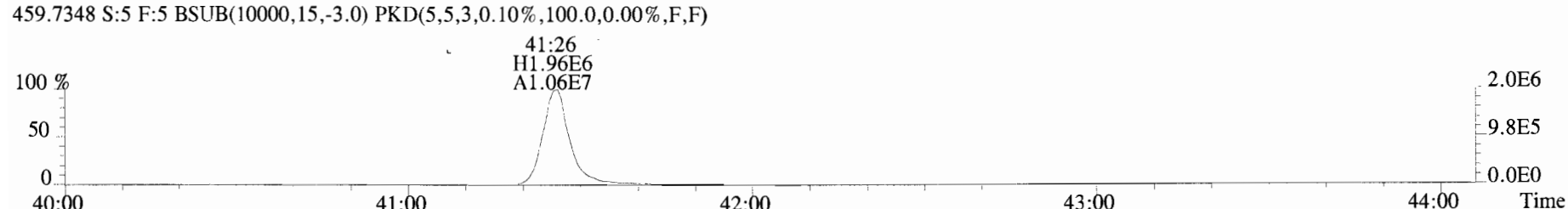
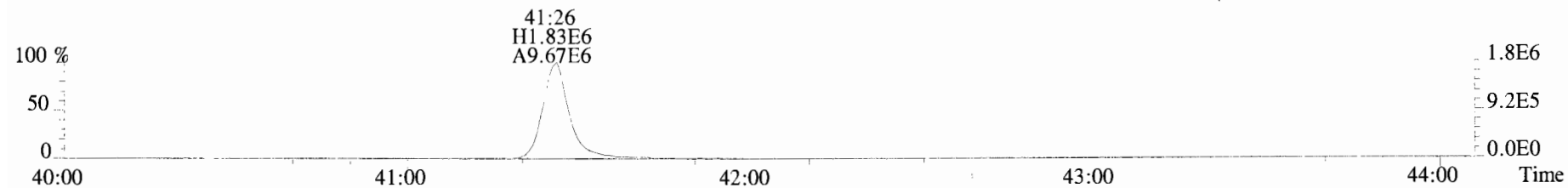
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
401.8559 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



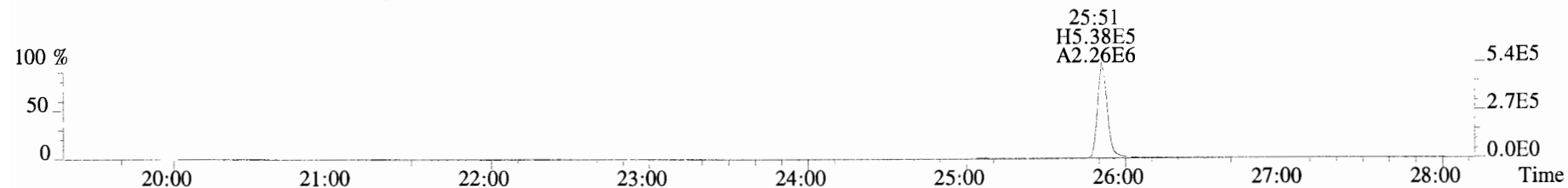
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista_Analytical_Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
423.7767 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



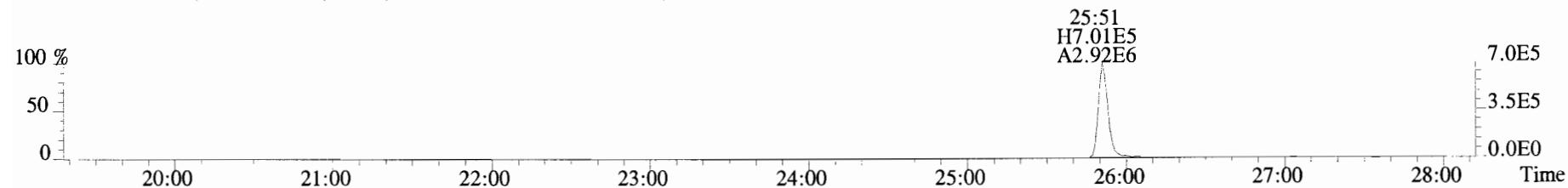
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
457.7377 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



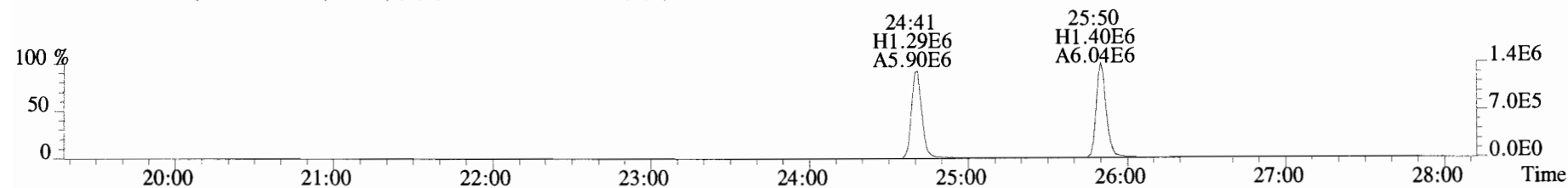
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
303.9016 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



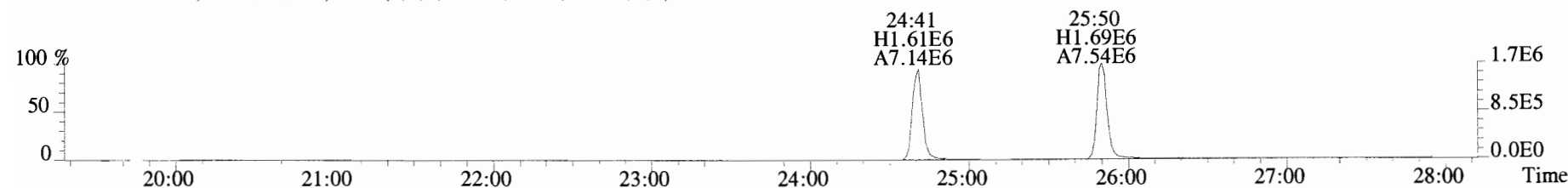
305.8987 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



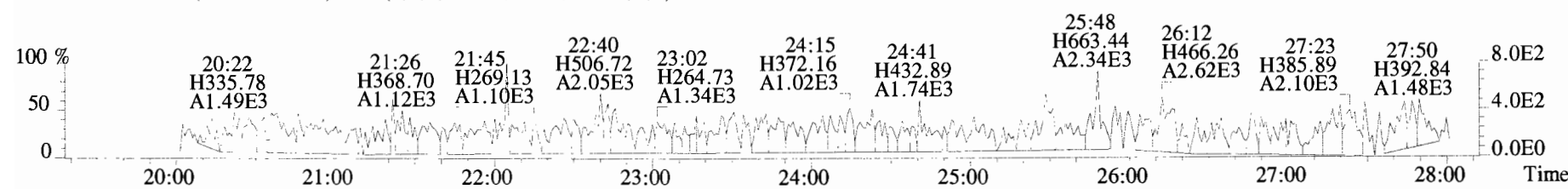
315.9419 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



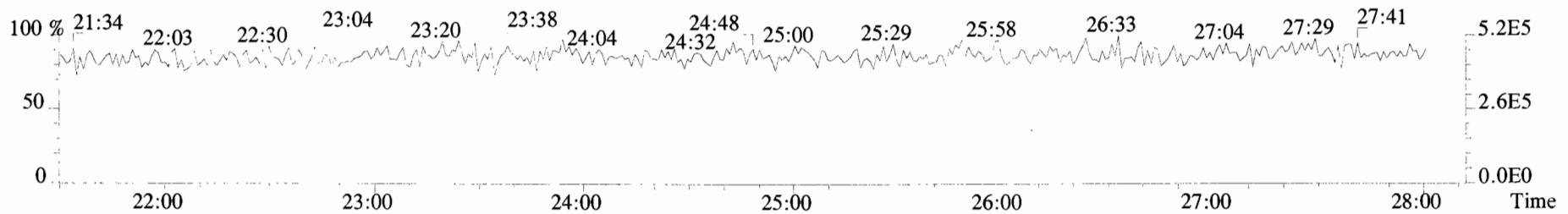
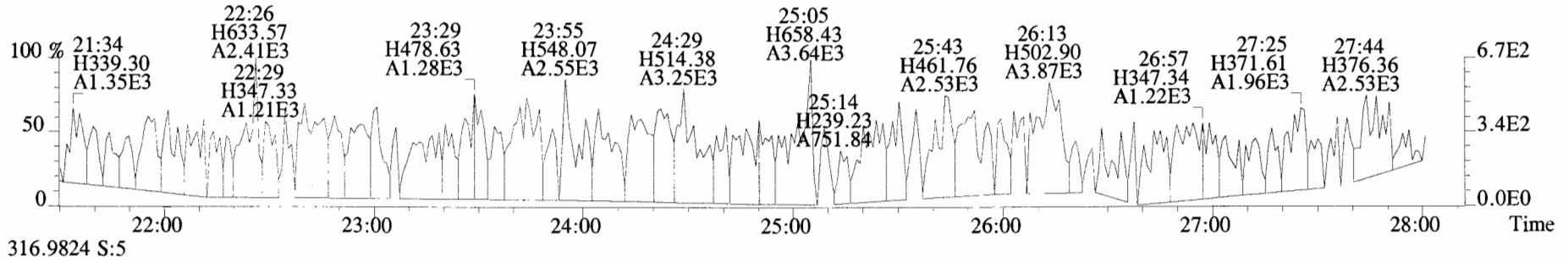
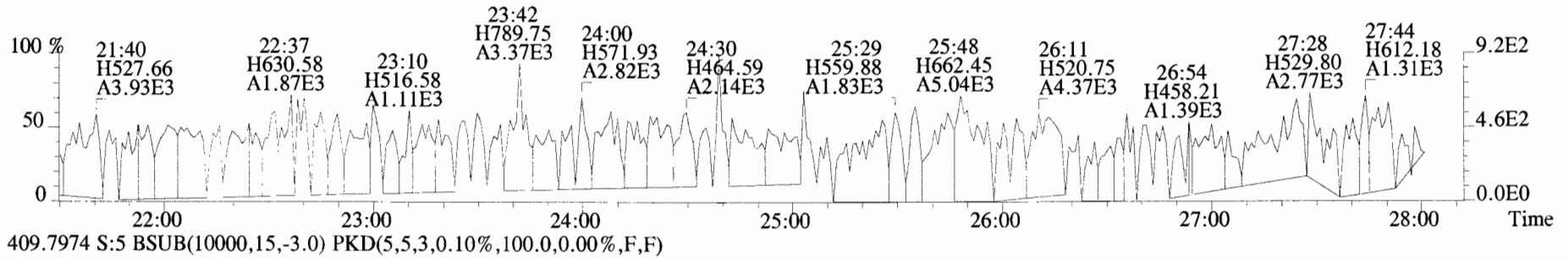
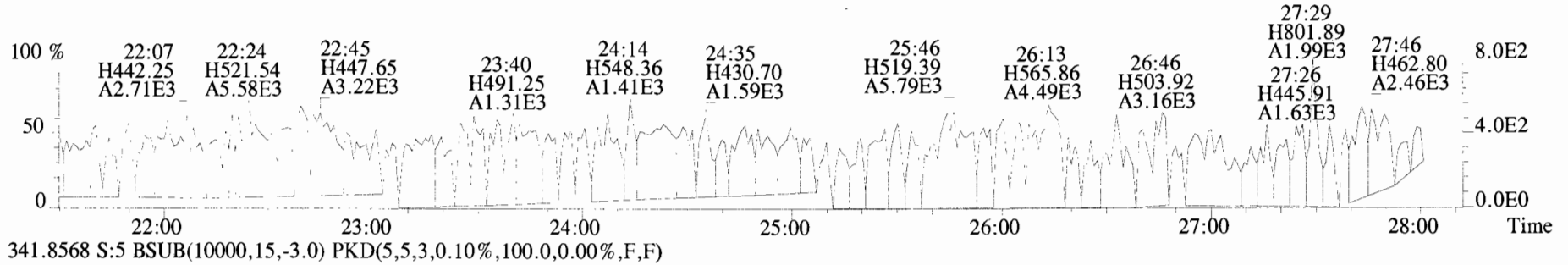
317.9389 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



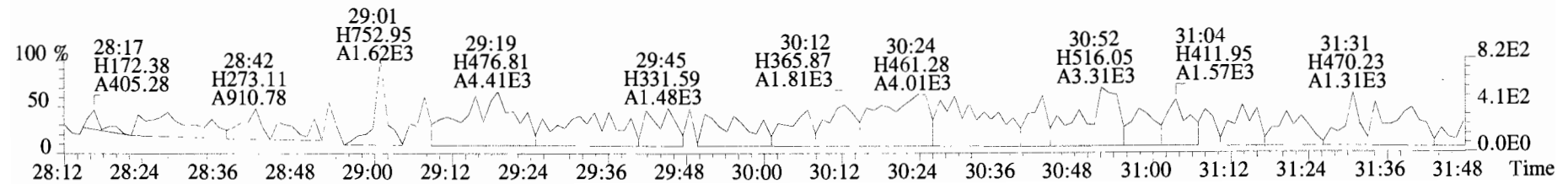
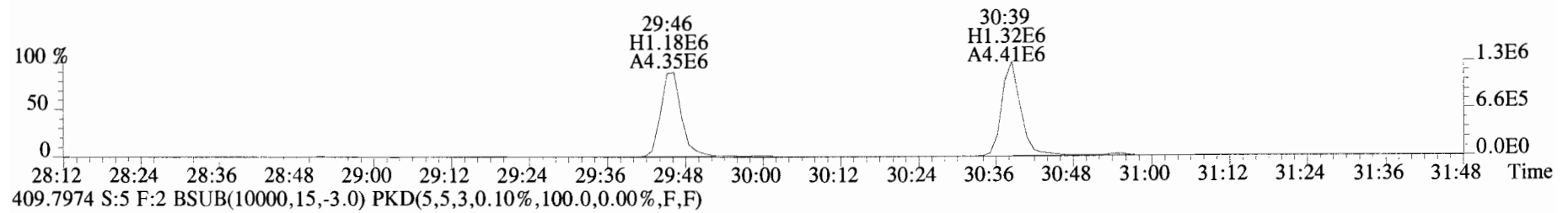
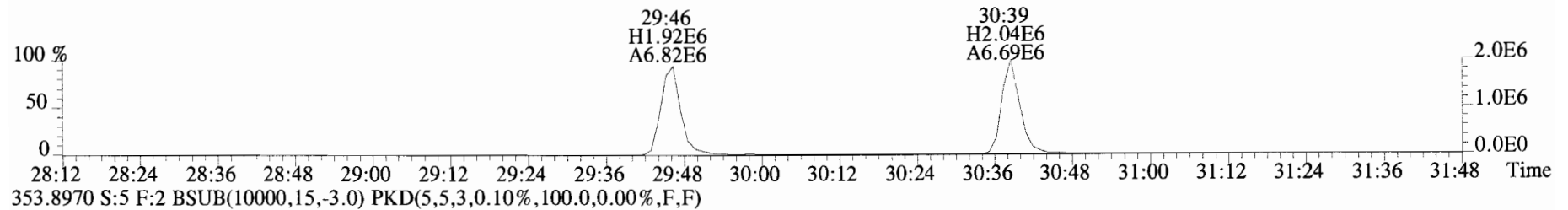
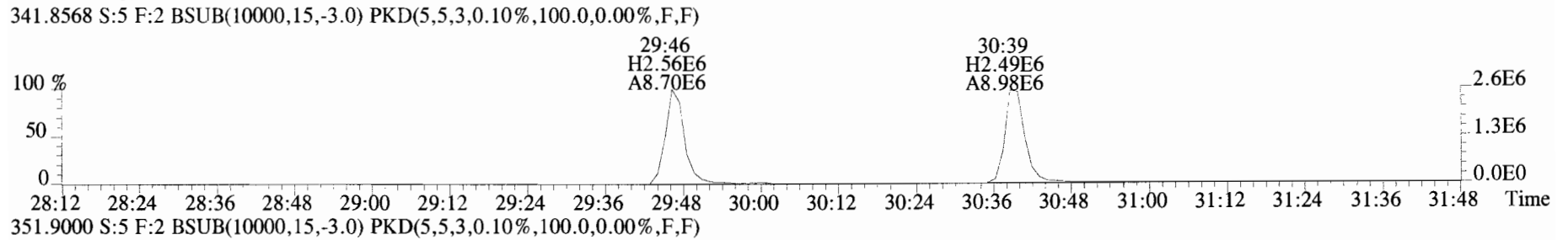
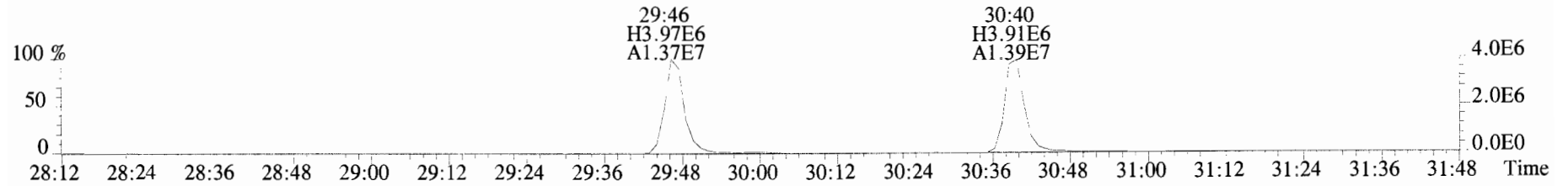
375.8364 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



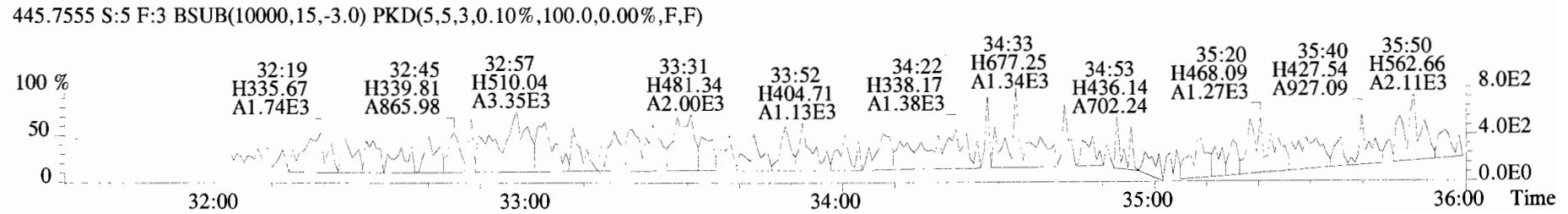
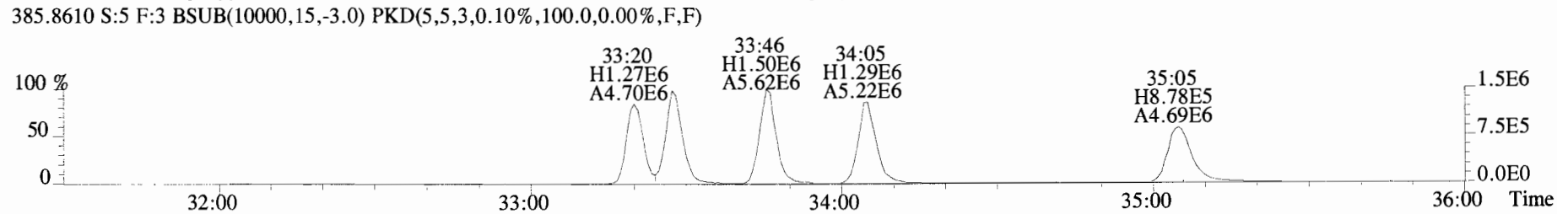
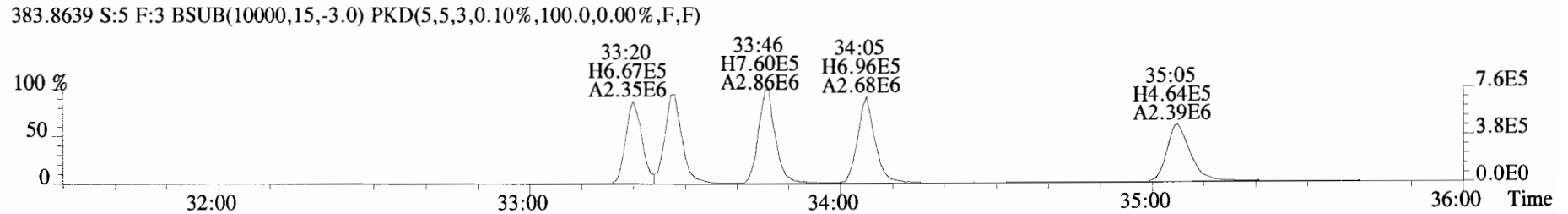
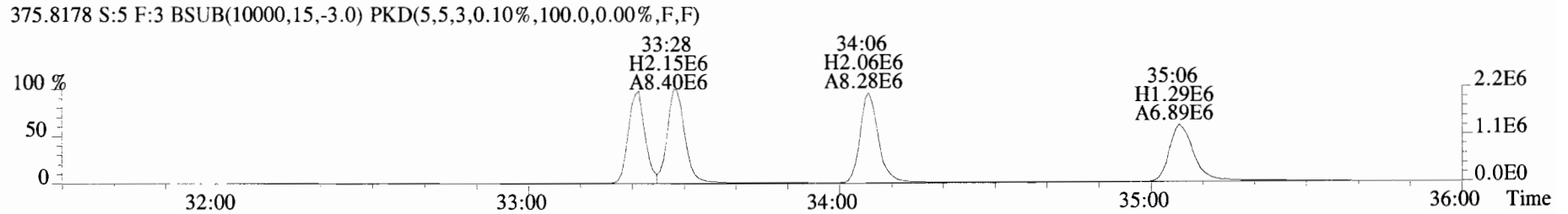
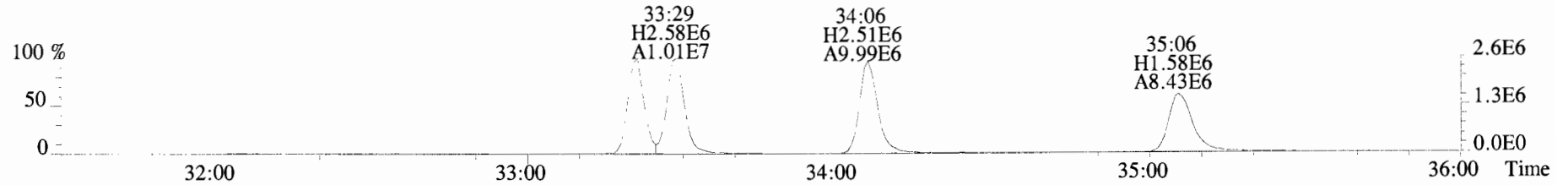
File:191009D1 #1-514 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
339.8597 S:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



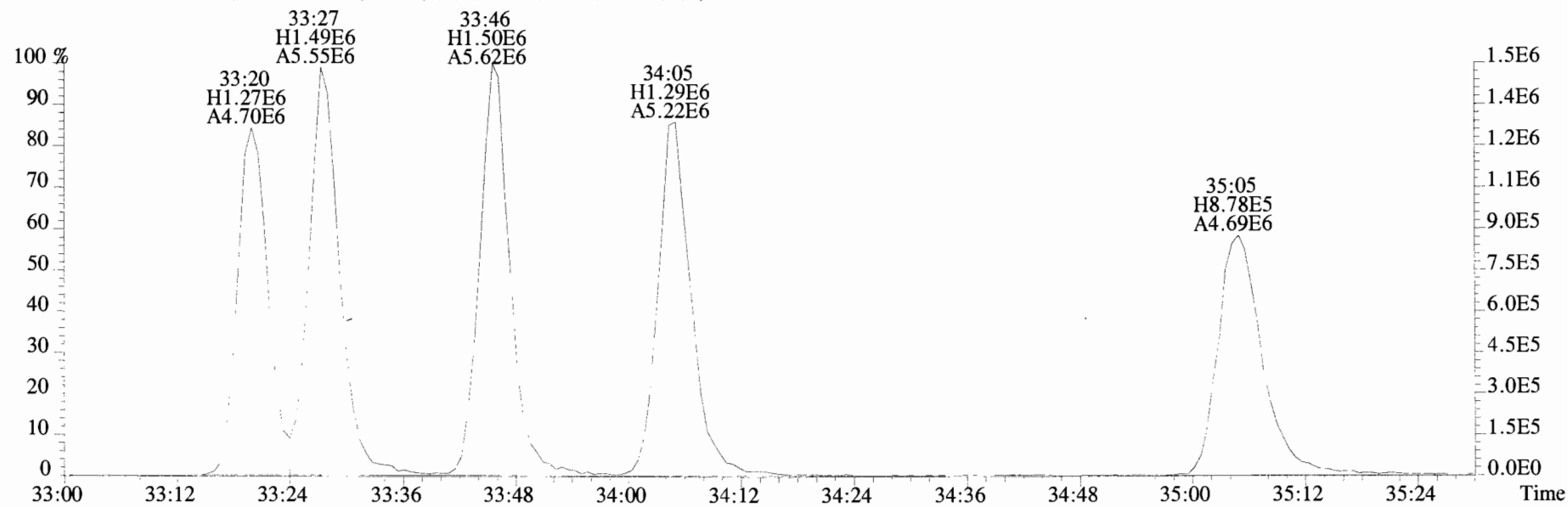
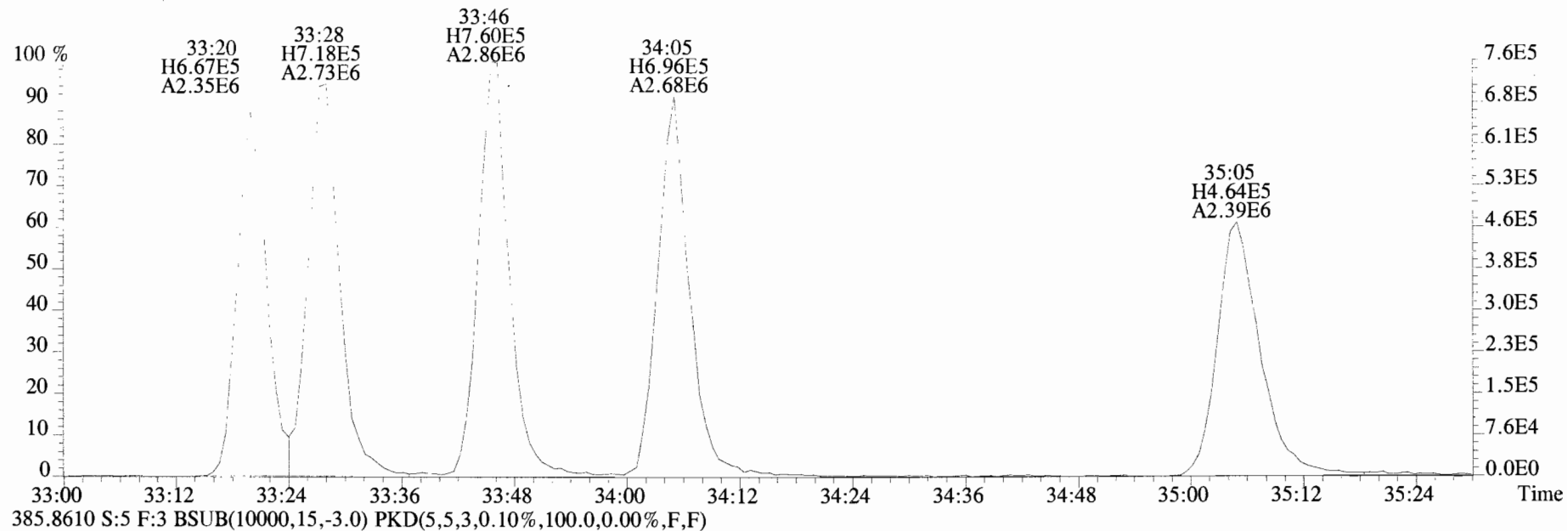
File:191009D1 #1-210 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
339.8597 S:5 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



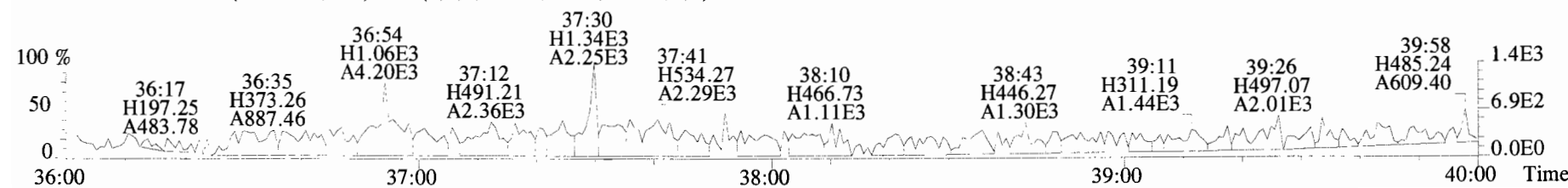
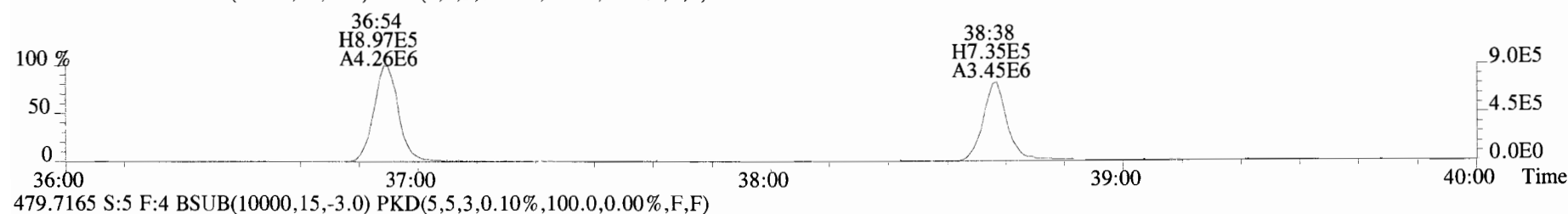
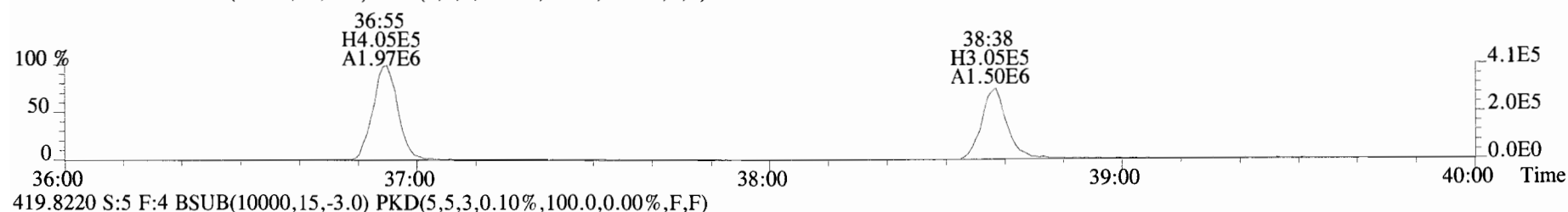
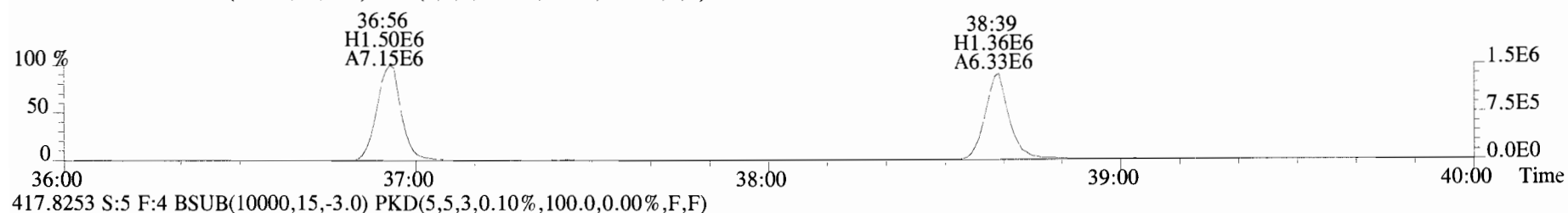
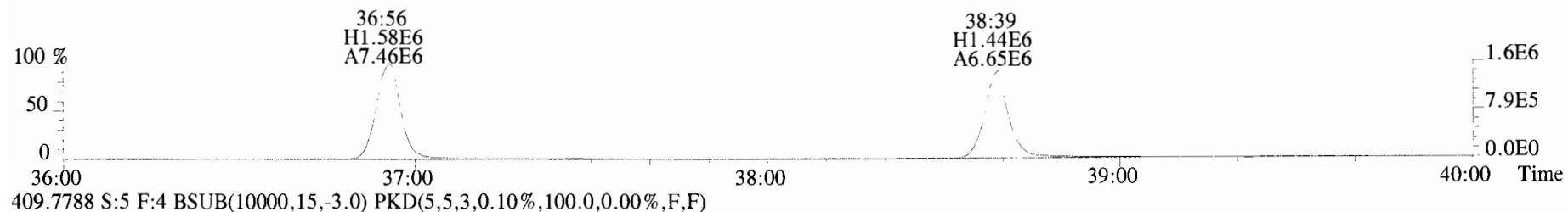
File:191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#5 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
 373.8207 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



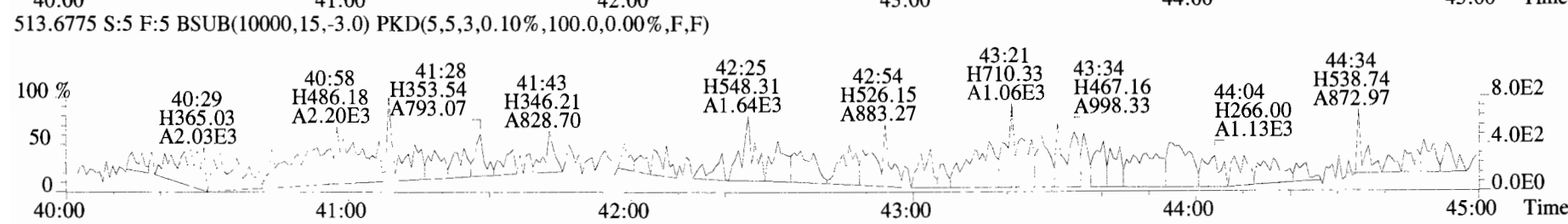
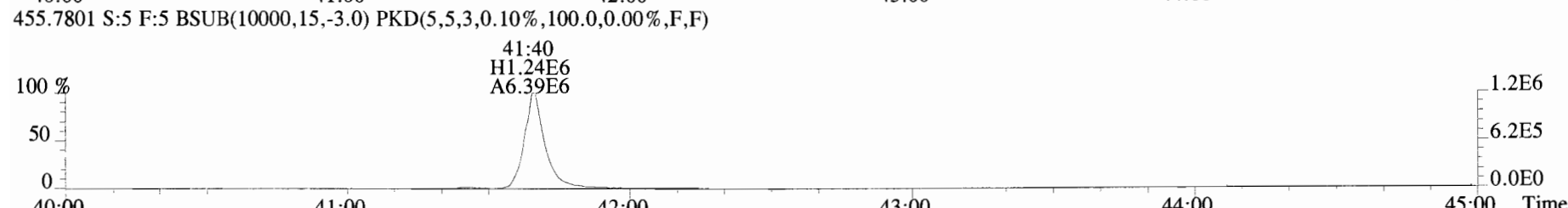
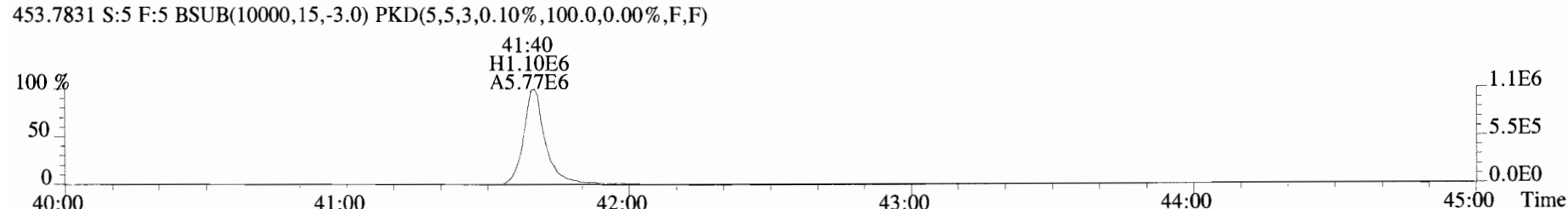
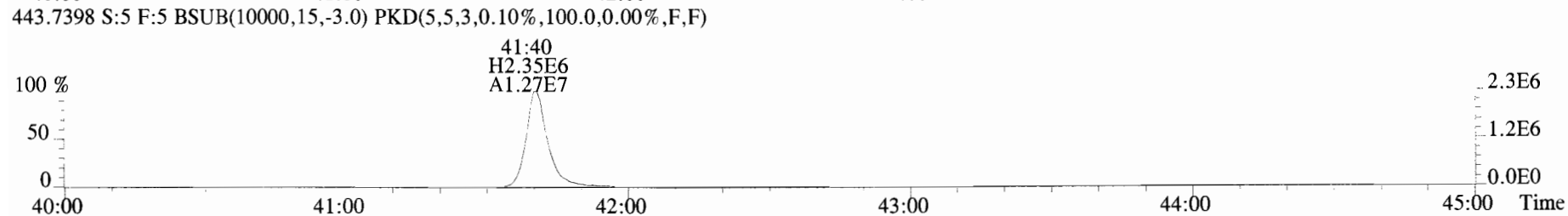
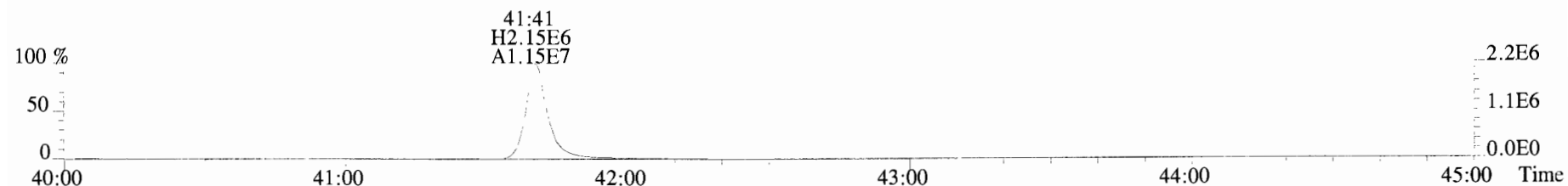
File: 191009D1 #1-355 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory VG7 Text: ST191009D1-5 1613 CS4 19C2205 Exp: OCDD_DB5
383.8639 S:5 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



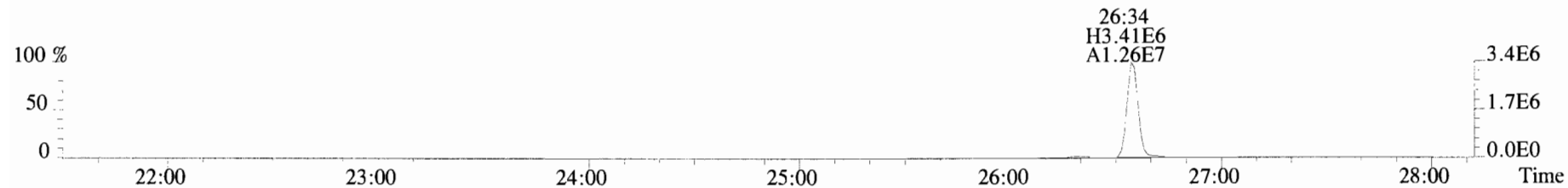
File:191009D1 #1-356 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text: Vista Analytical Laboratory_VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
407.7818 S:5 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



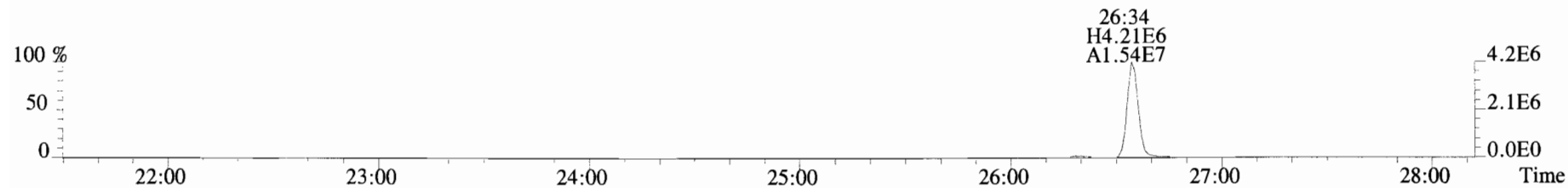
File:191009D1 #1-431 Acq: 9-OCT-2019 19:23:46 GC EI+ Voltage SIR Autospec-UltimaE
Sample#5 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-5 1613 CS4 19C2205 Exp:OCDD_DB5
441.7428 S:5 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



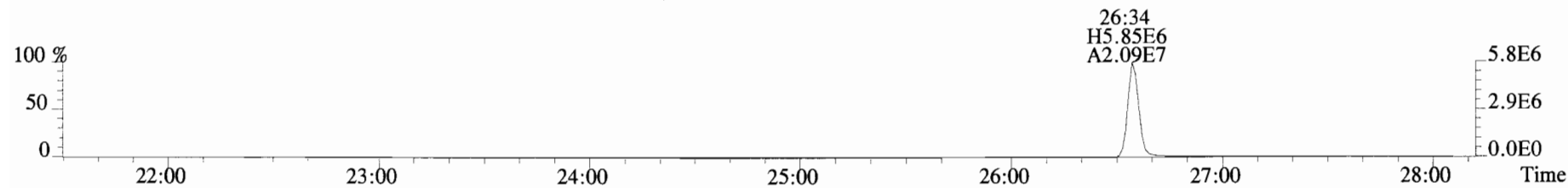
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
319.8965 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



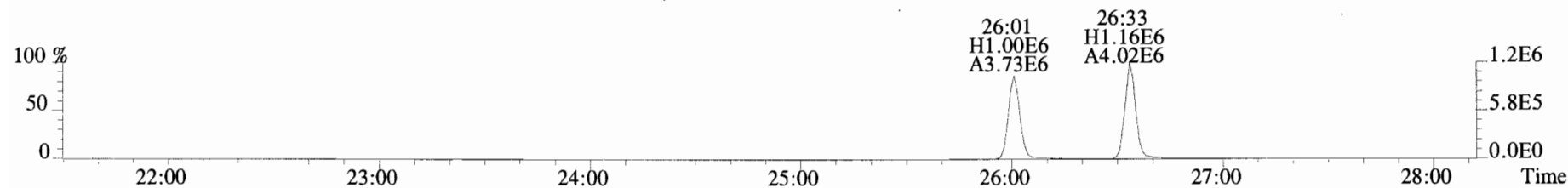
321.8936 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



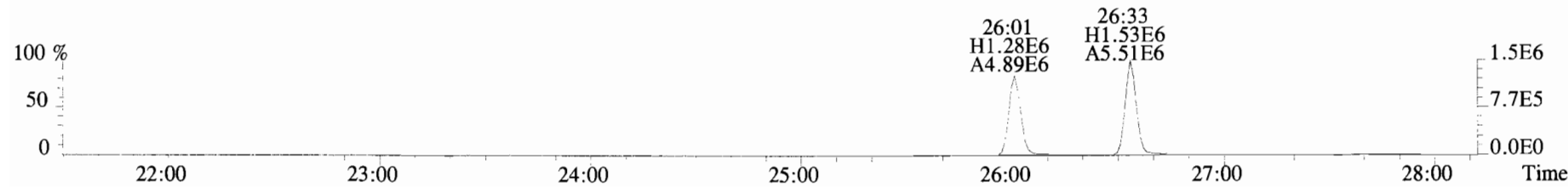
327.8847 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



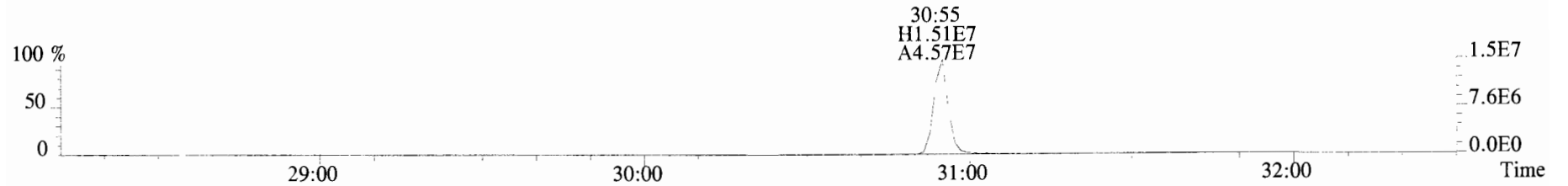
331.9368 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



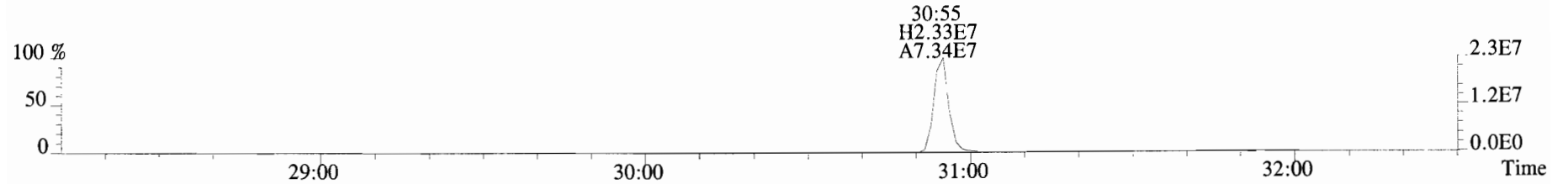
333.9339 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



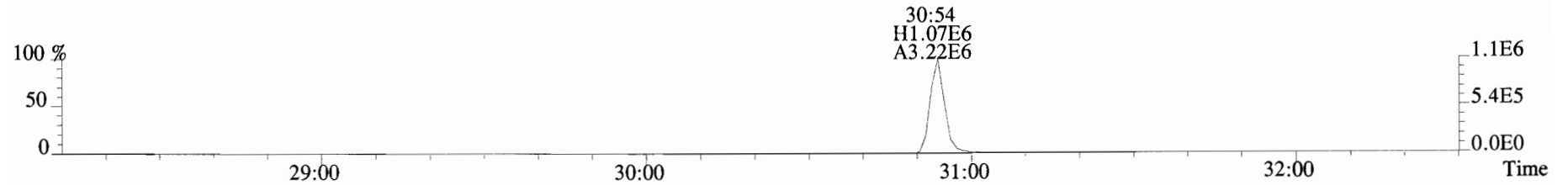
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
353.8576 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



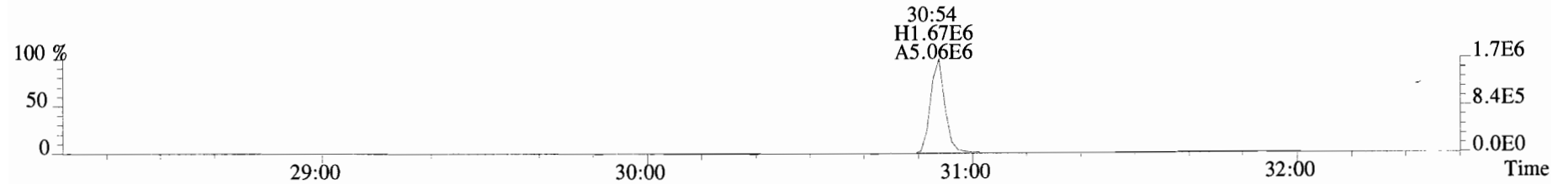
355.8546 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



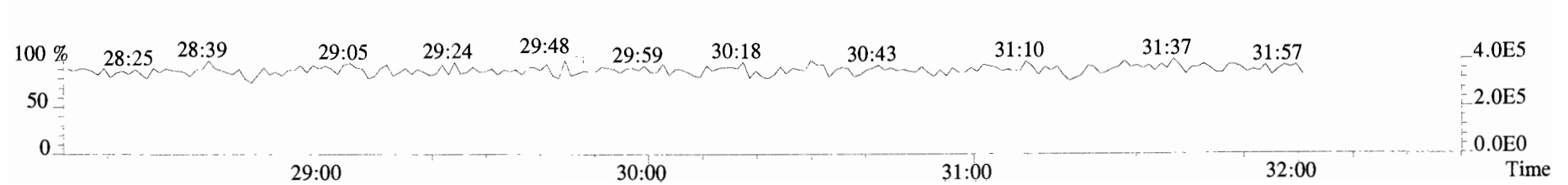
365.8978 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



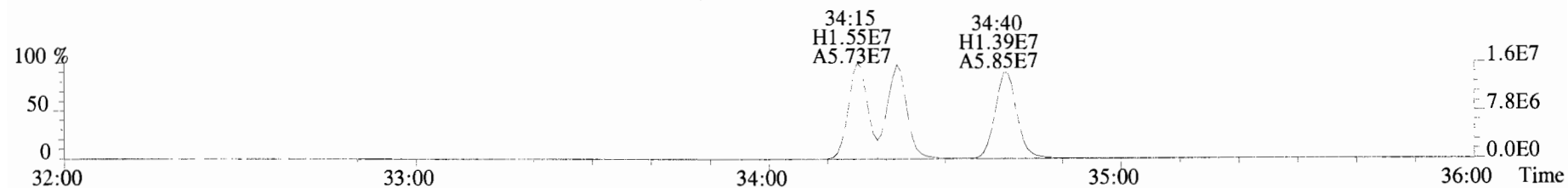
367.8949 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



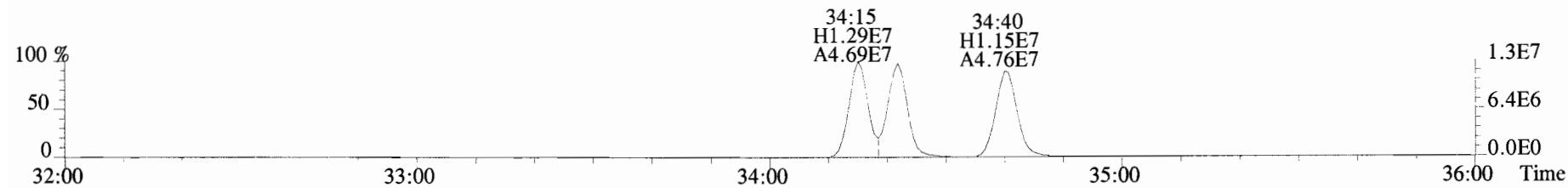
366.9792 S:6 F:2



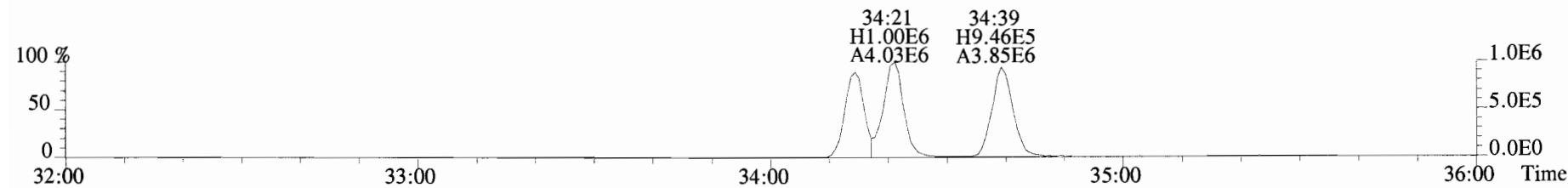
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
389.8156 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



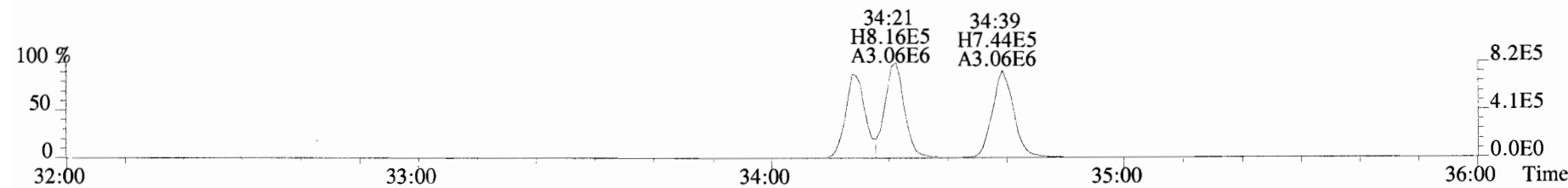
391.8127 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



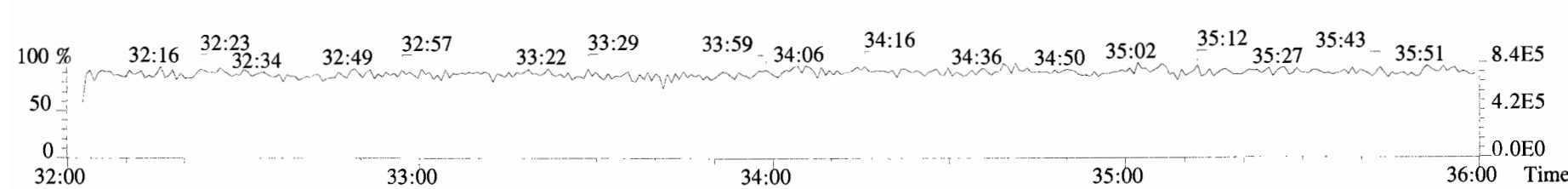
401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



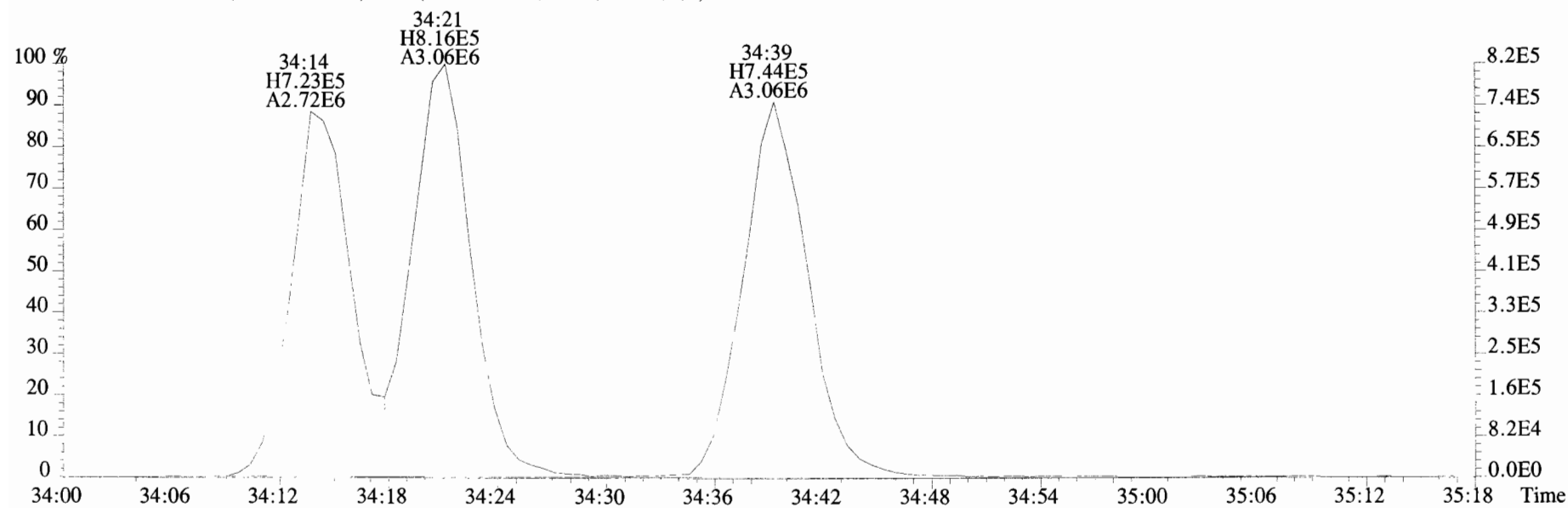
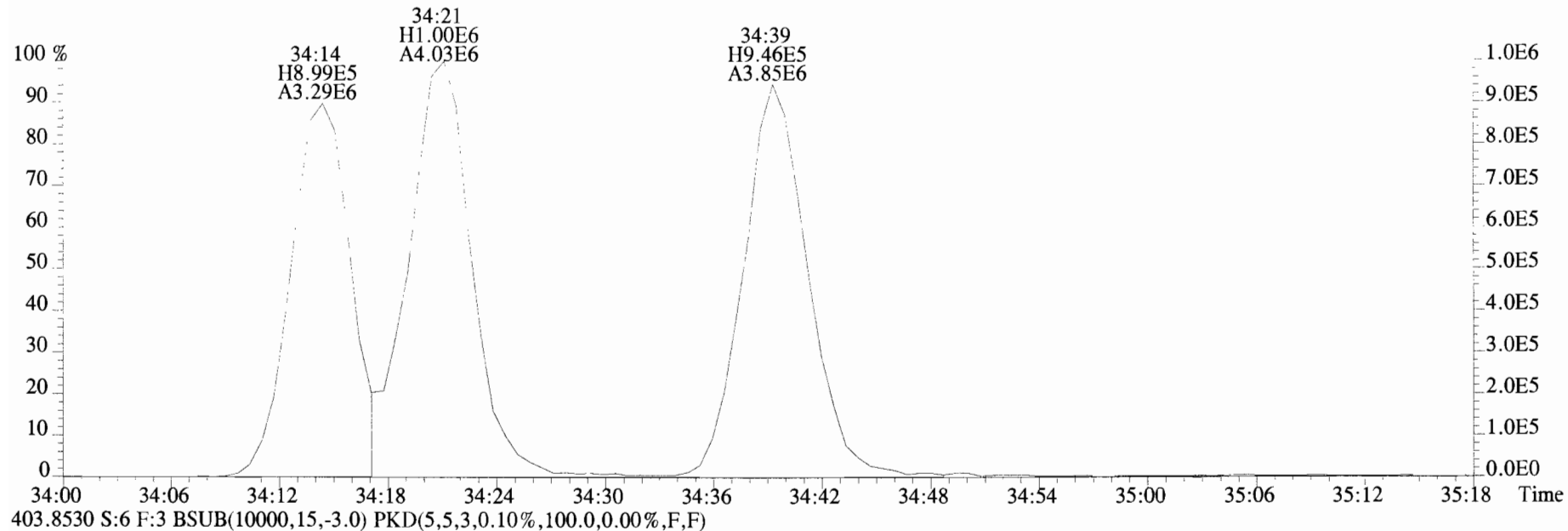
403.8530 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



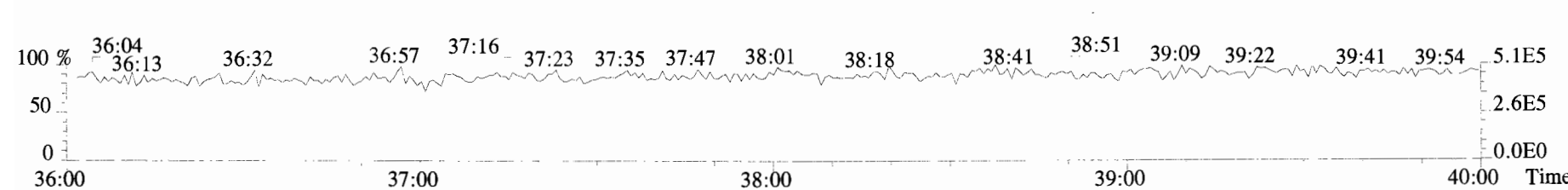
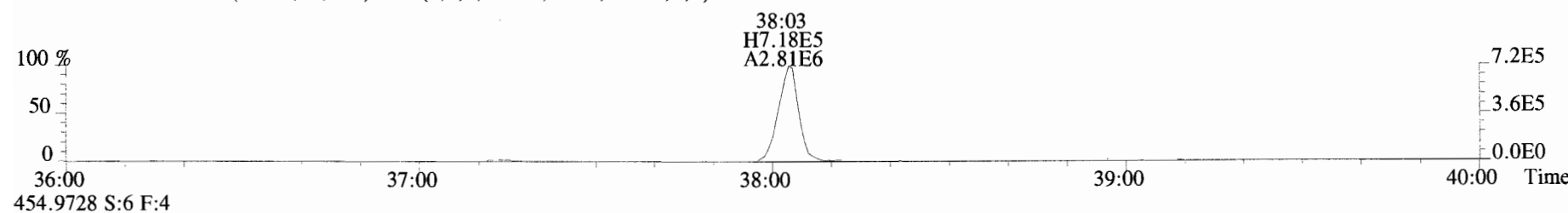
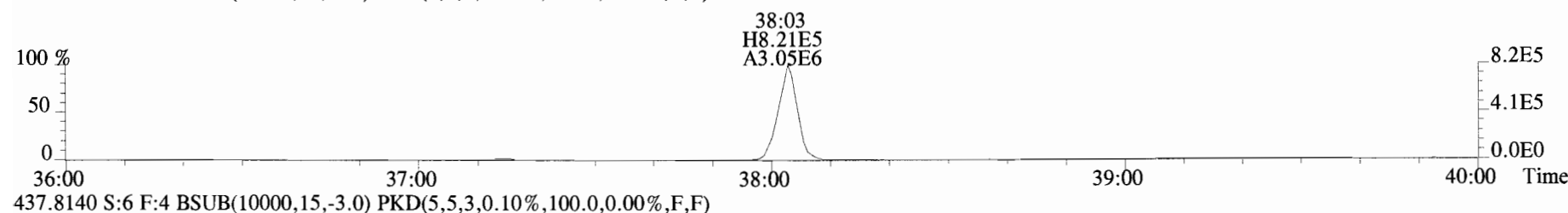
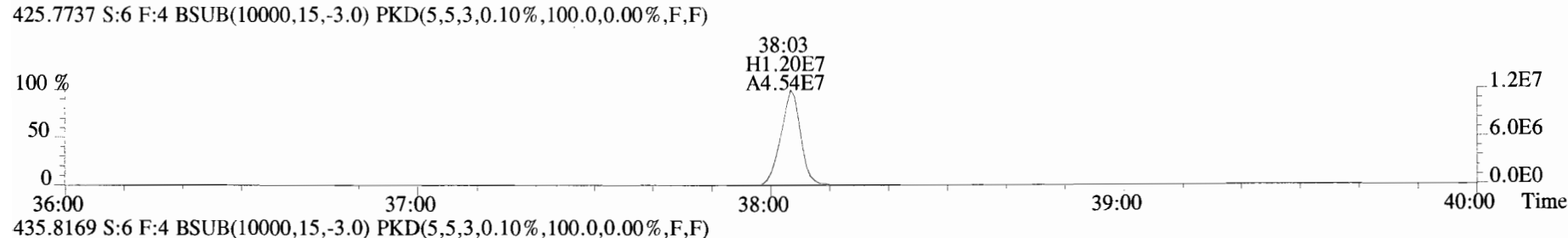
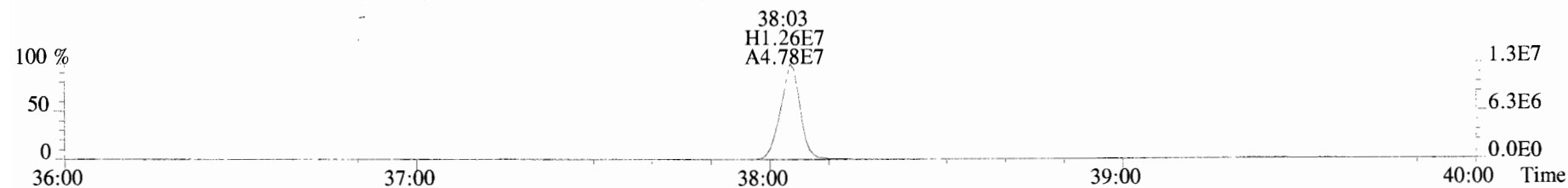
392.9760 S:6 F:3



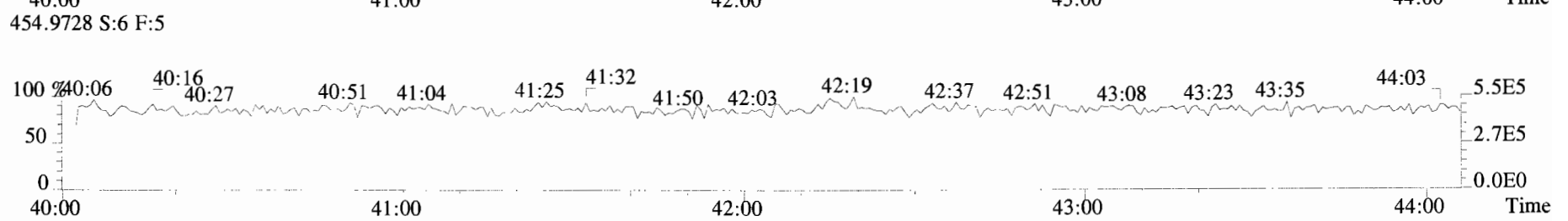
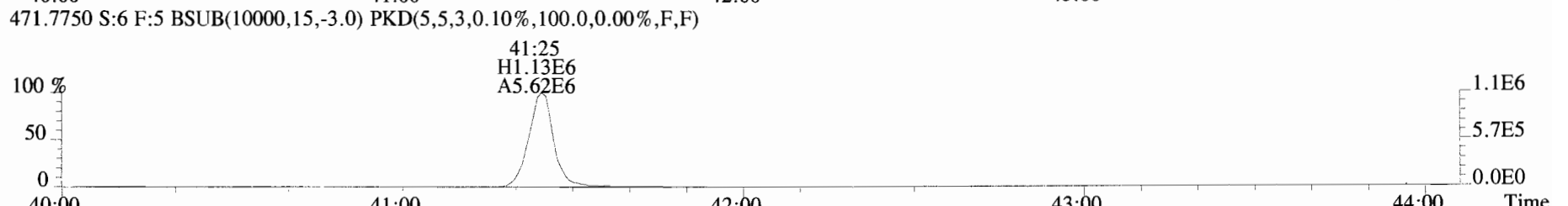
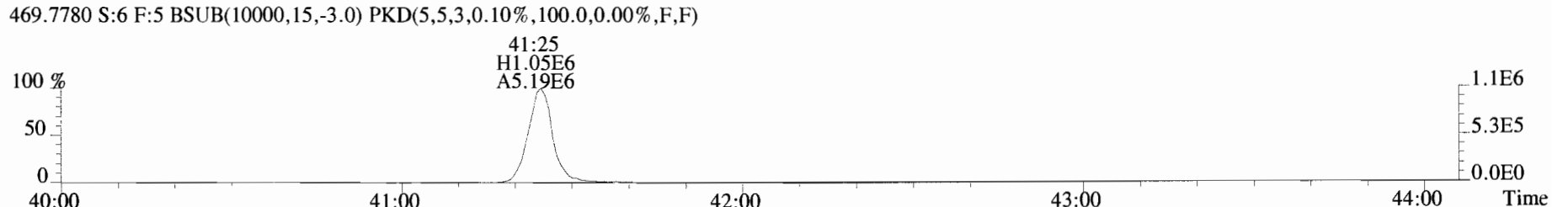
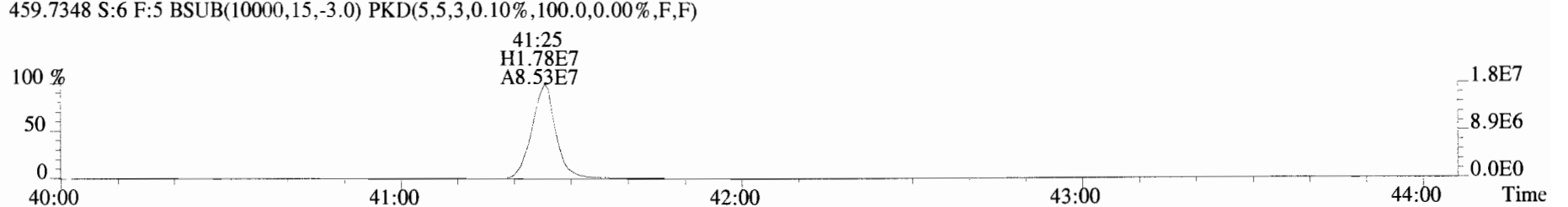
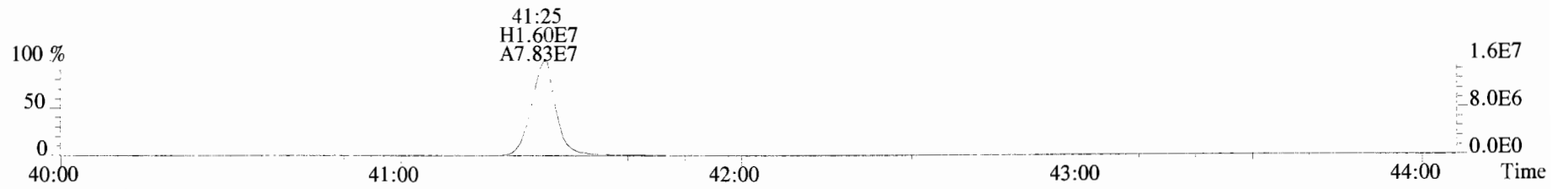
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401.8559 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



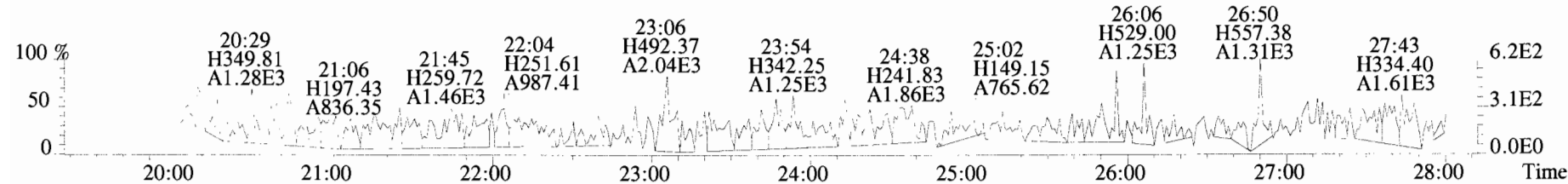
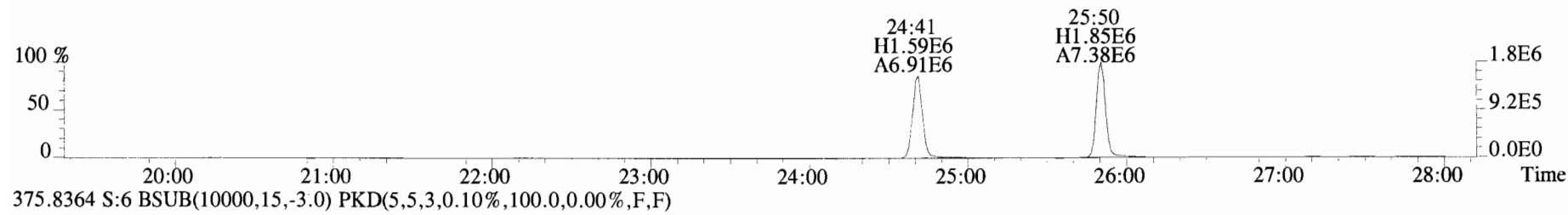
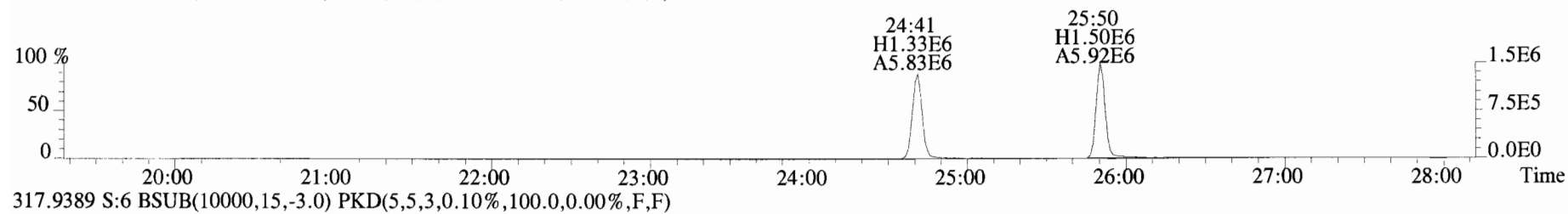
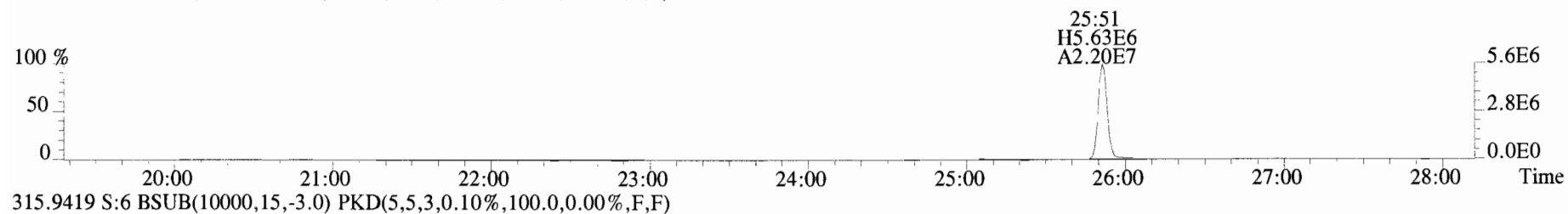
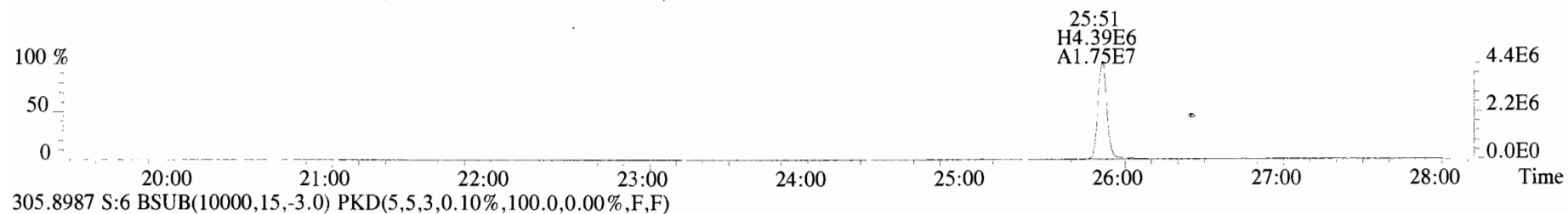
File:191009D1 #1-356 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
423.7767 S:6 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



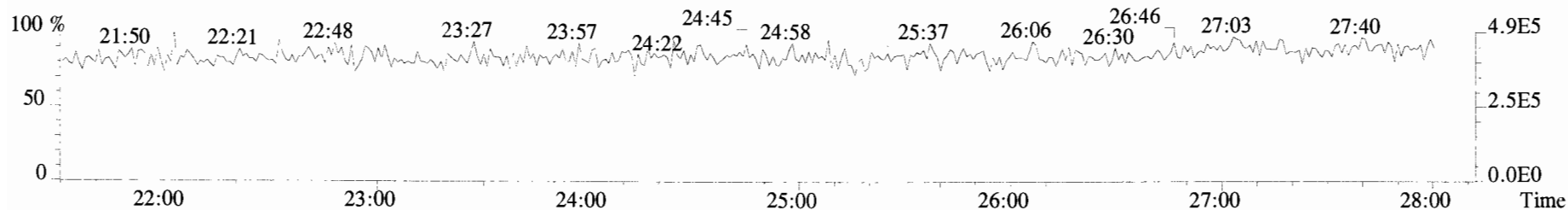
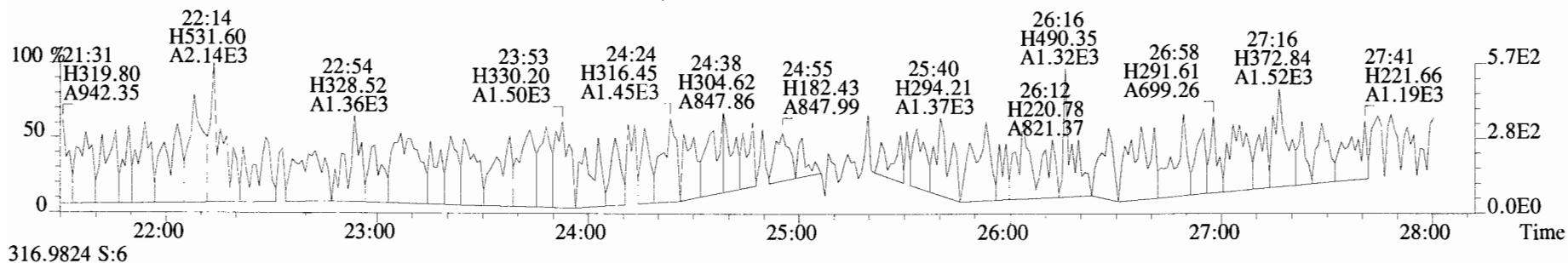
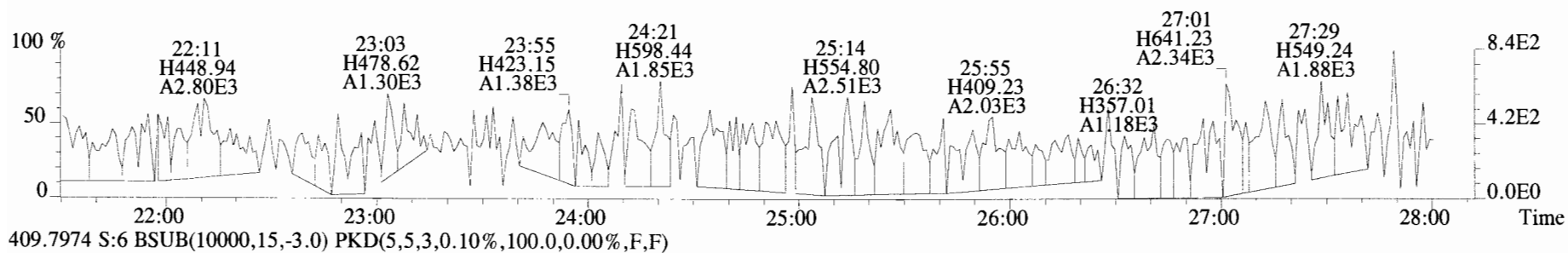
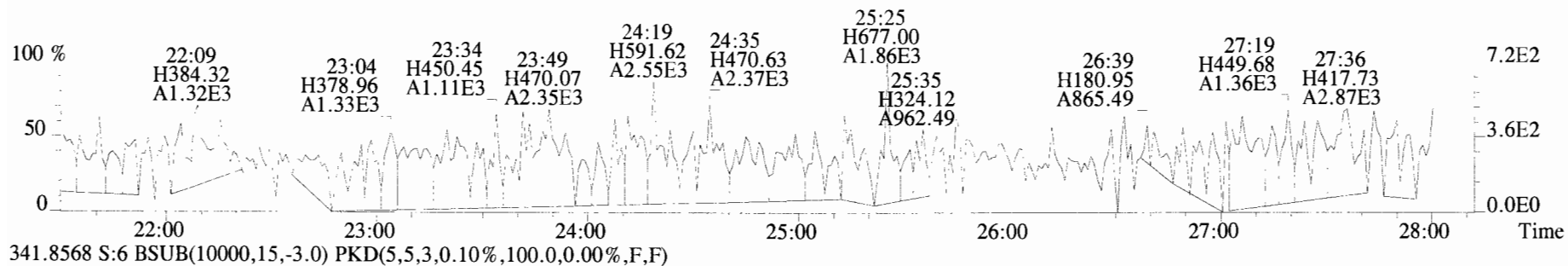
File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
457.7377 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



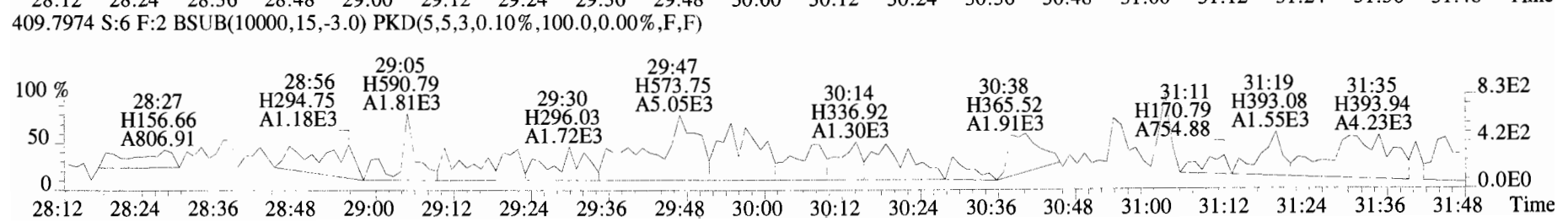
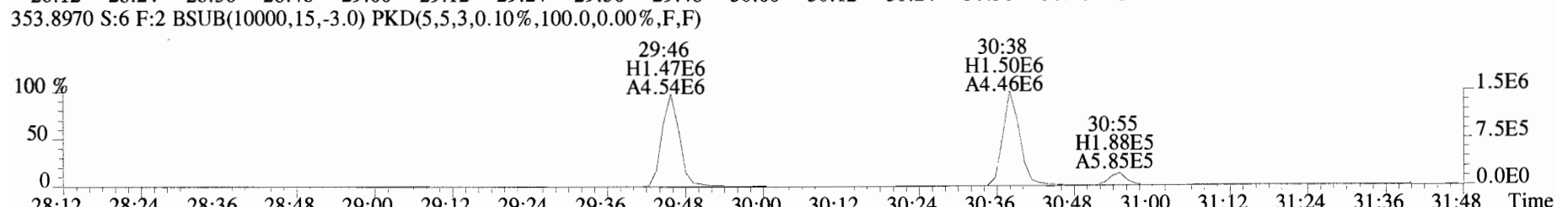
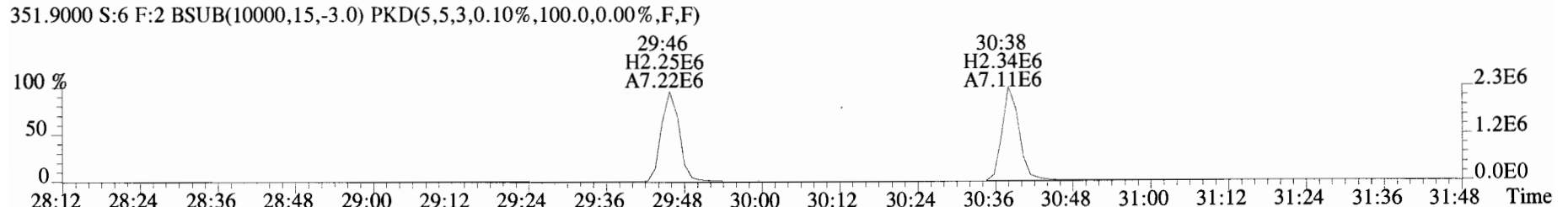
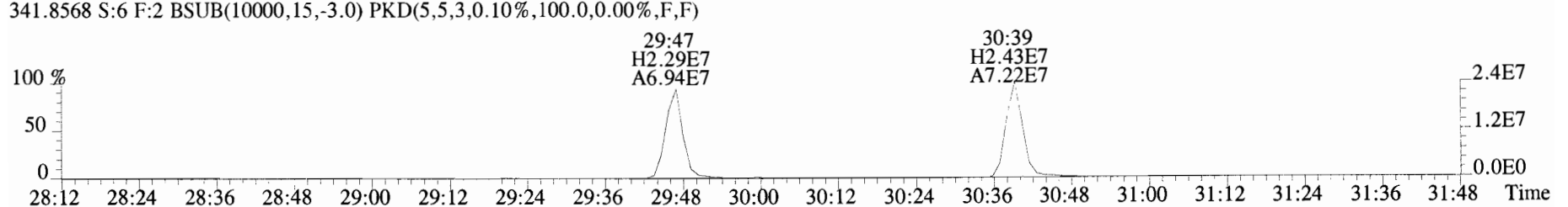
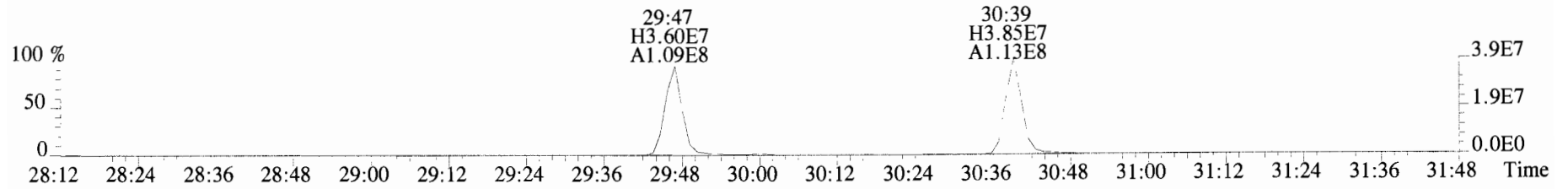
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista_Analytical_Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
303.9016 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



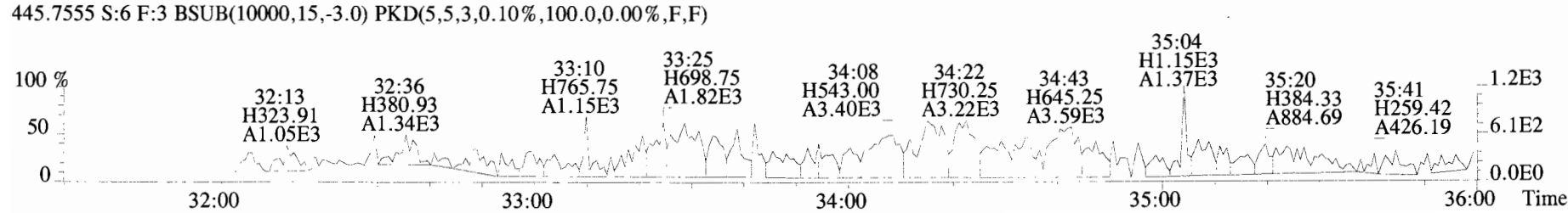
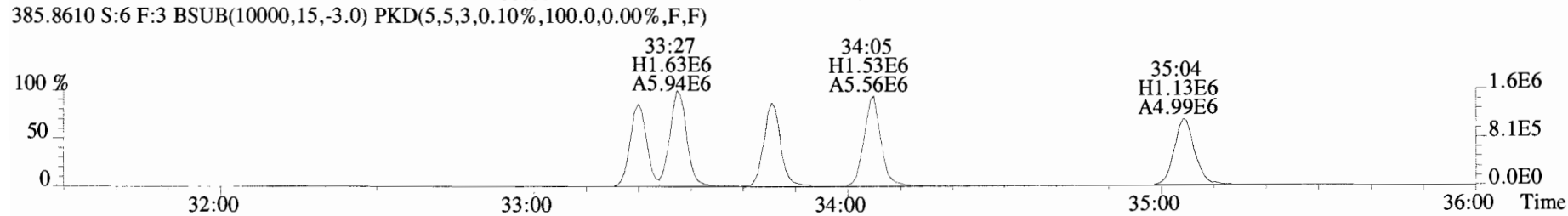
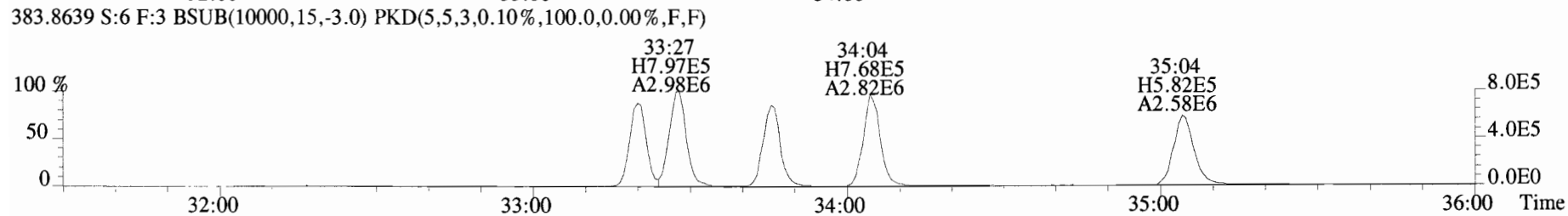
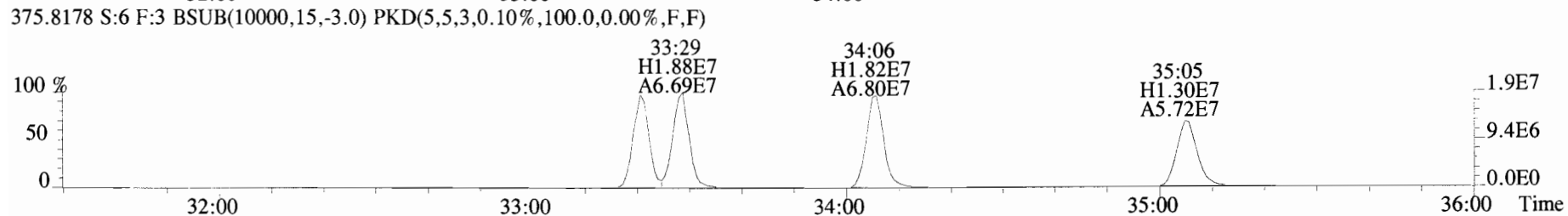
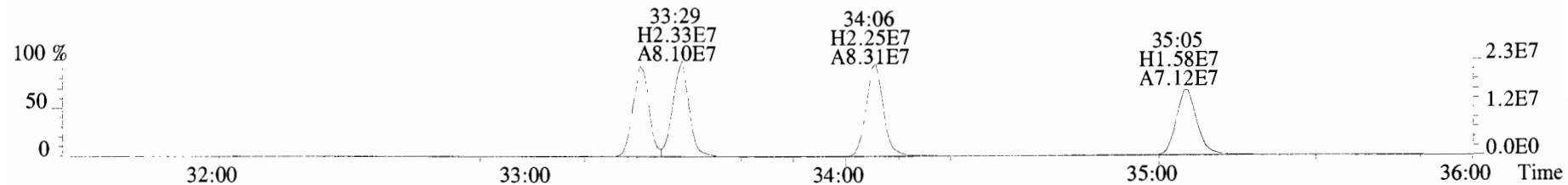
File:191009D1 #1-513 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
339.8597 S:6 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



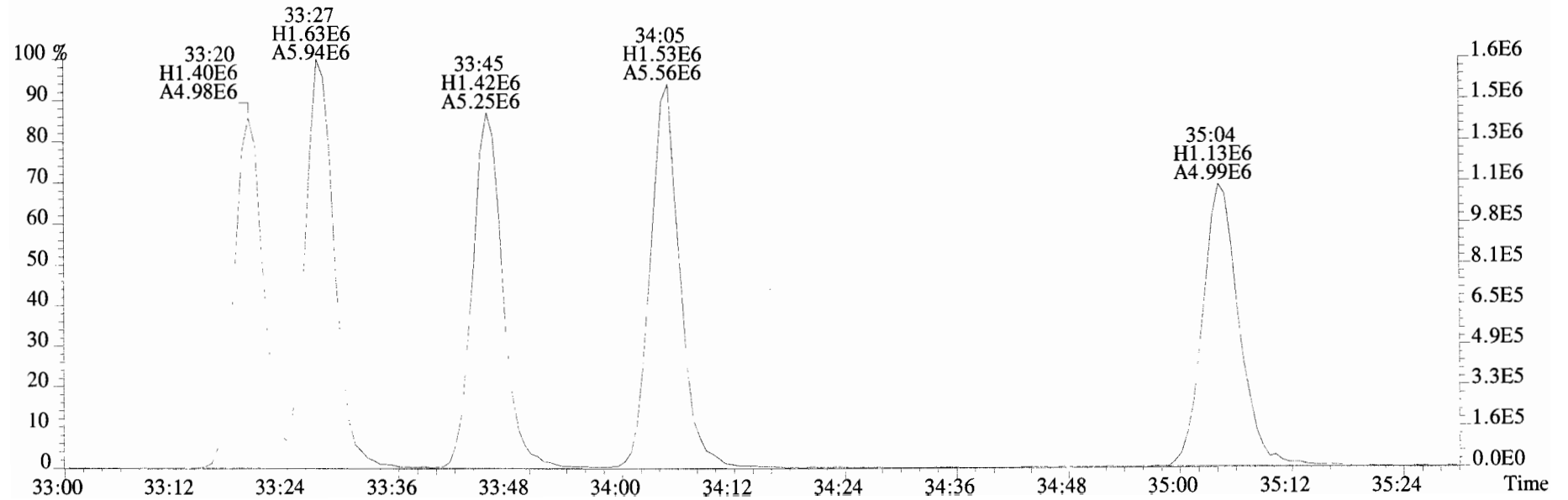
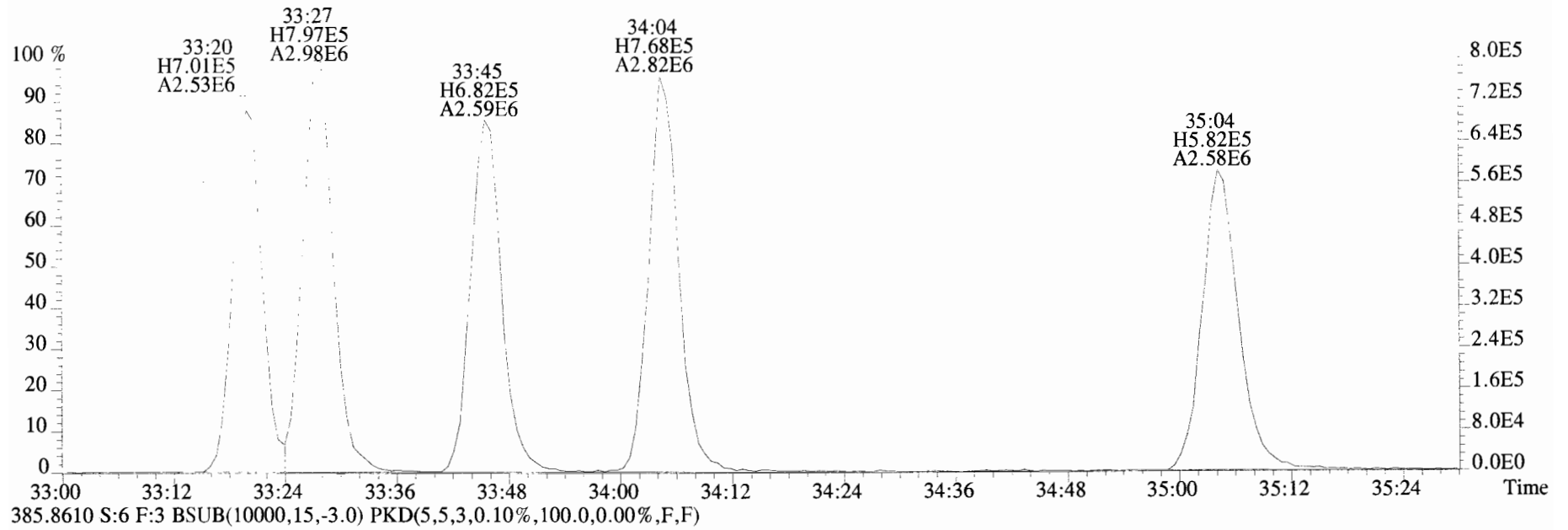
File:191009D1 #1-211 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
339.8597 S:6 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



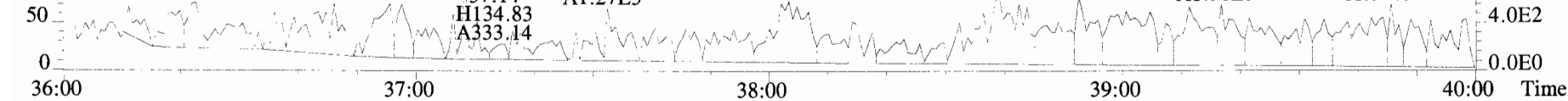
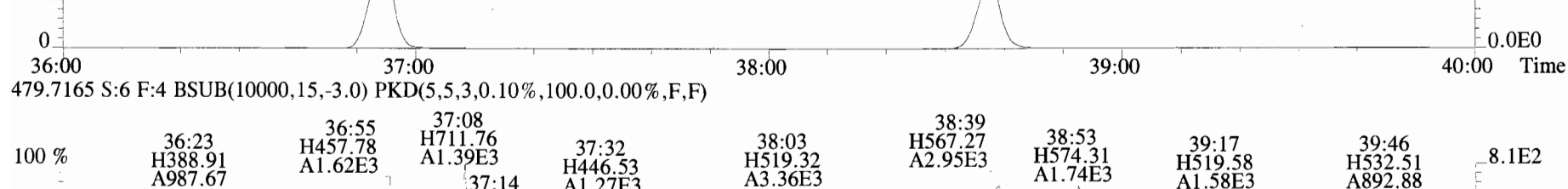
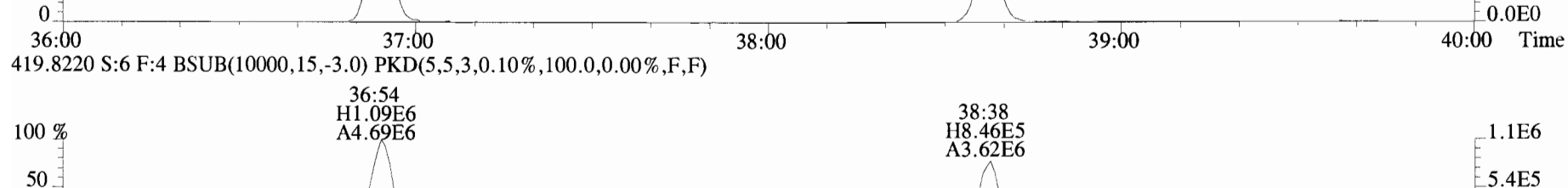
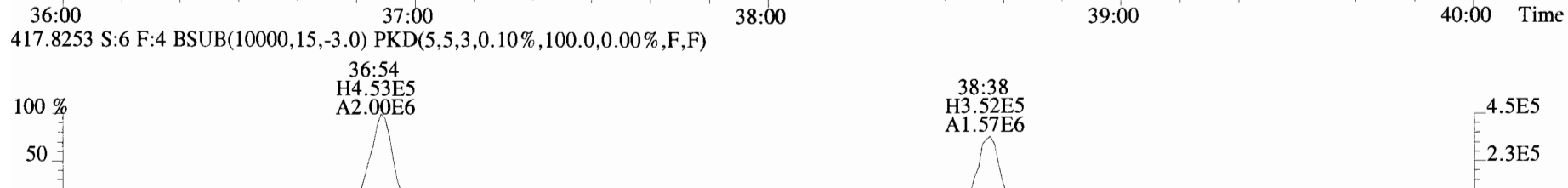
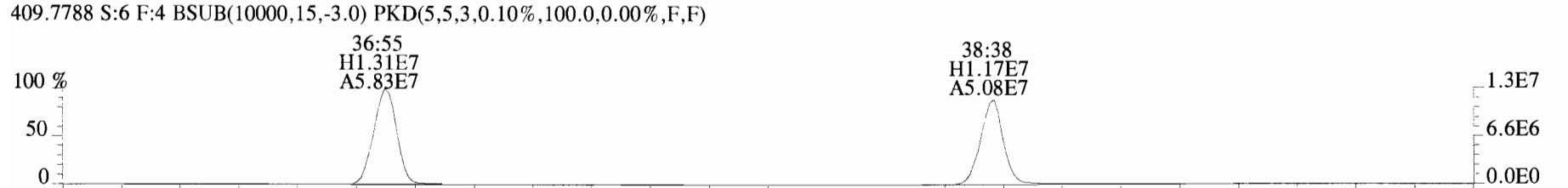
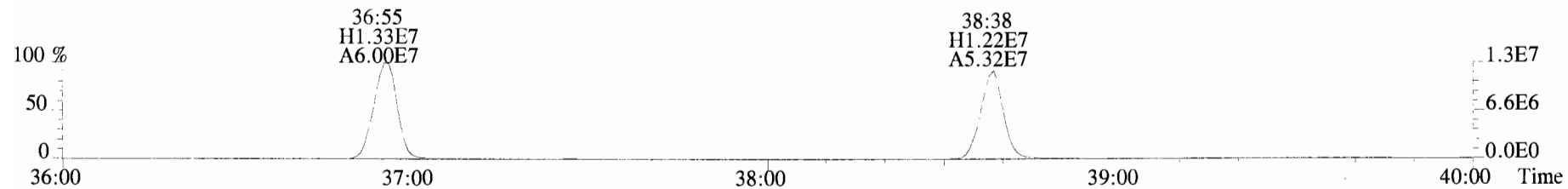
File:191009D1 #1-354 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
 373.8207 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



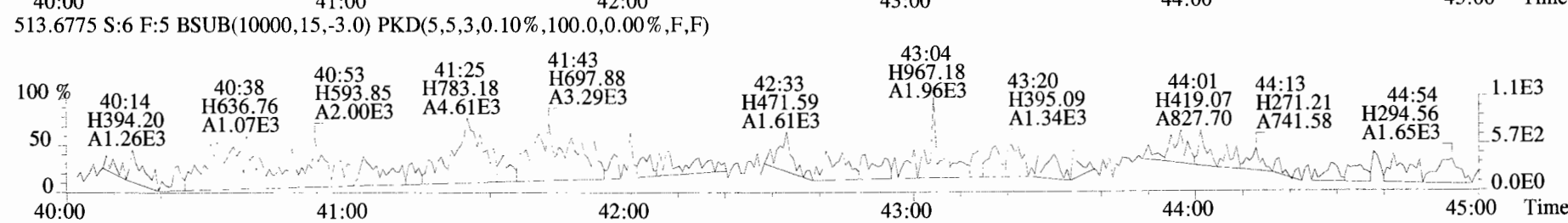
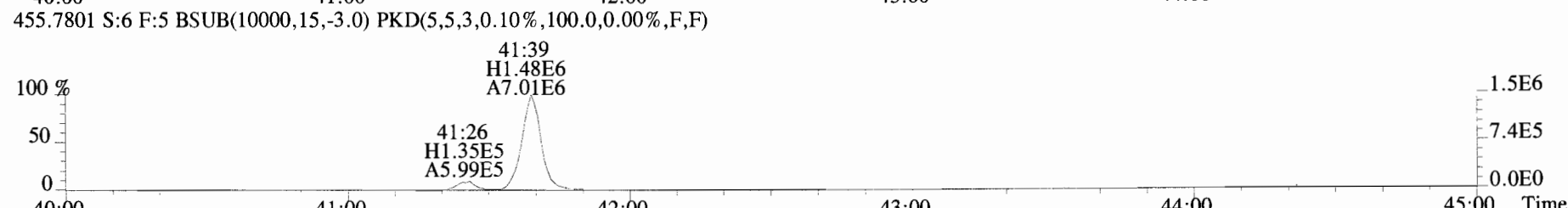
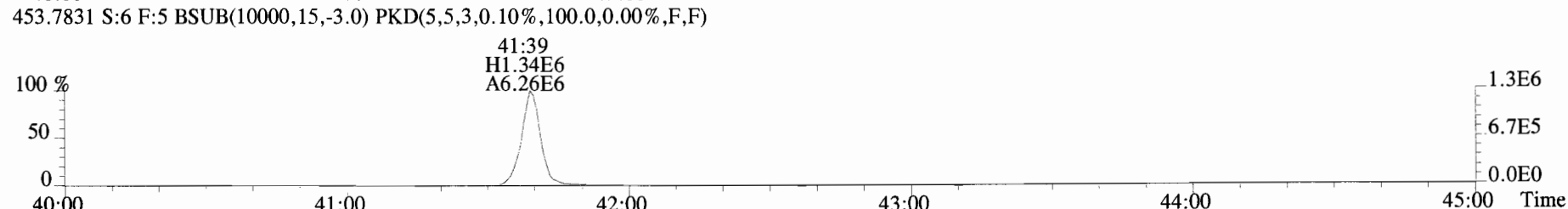
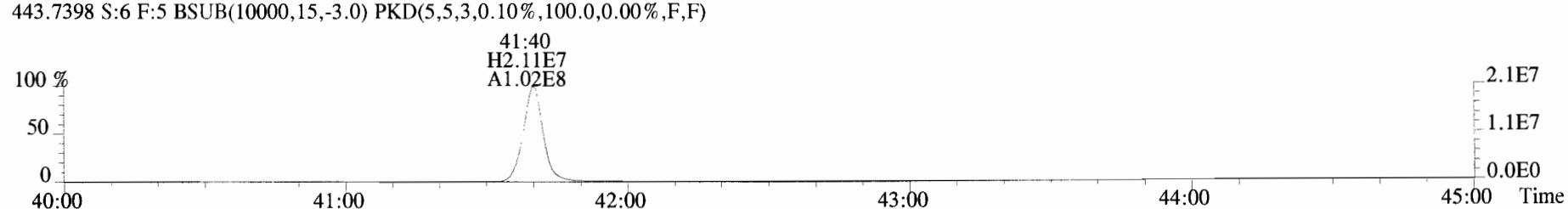
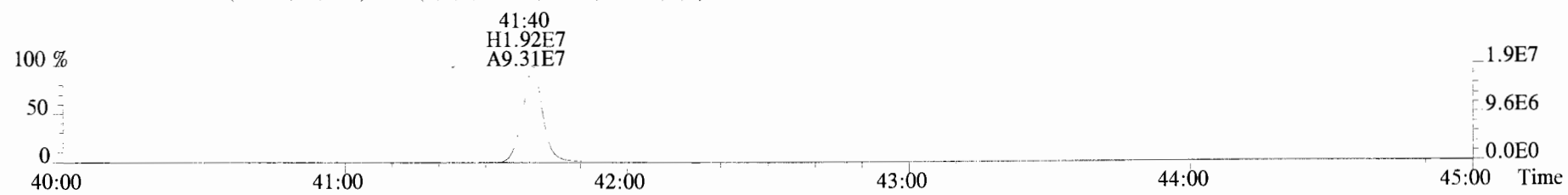
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Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
383.8639 S:6 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191009D1 #1-356 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#6 File Text:Vista Analytical Laboratory VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
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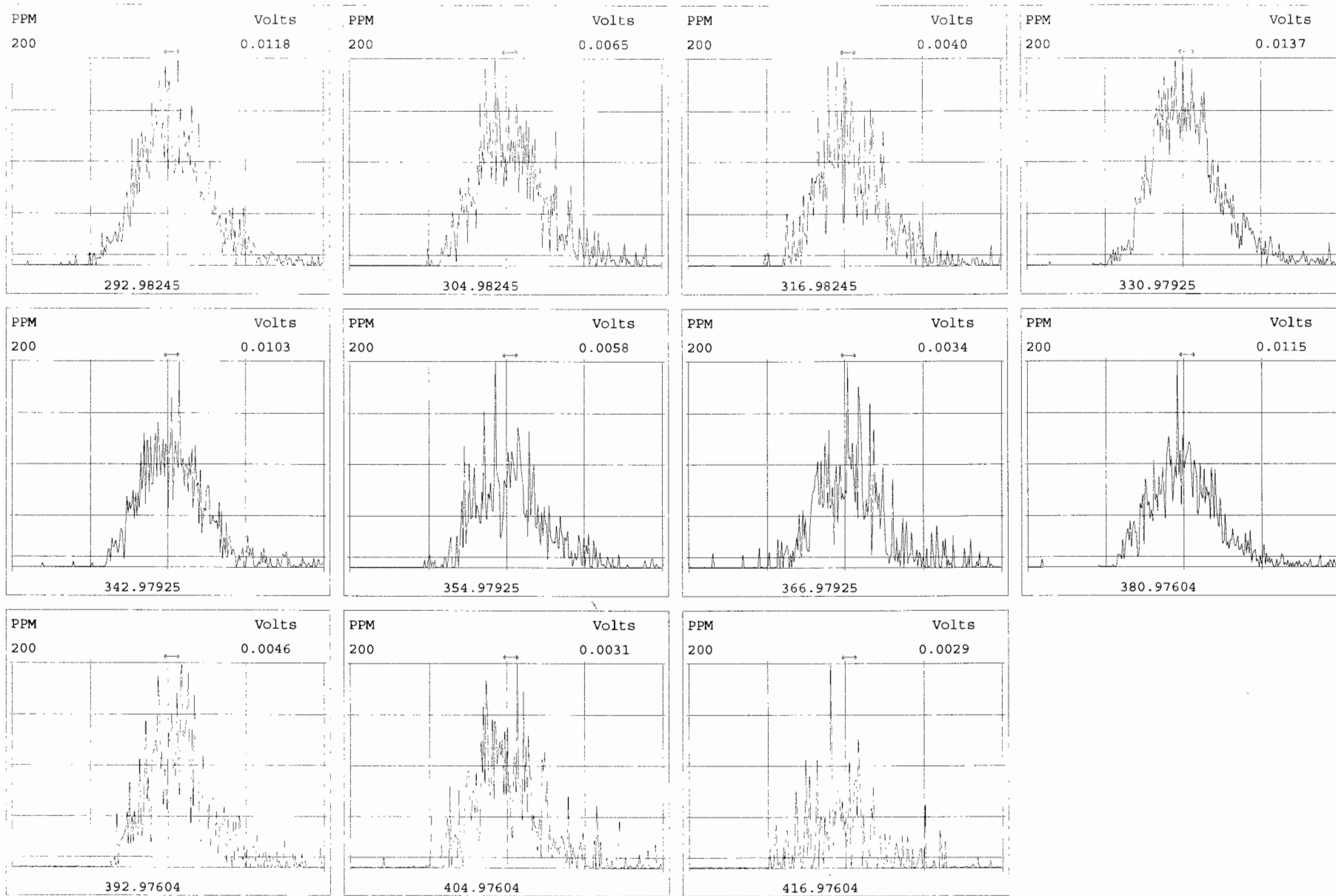


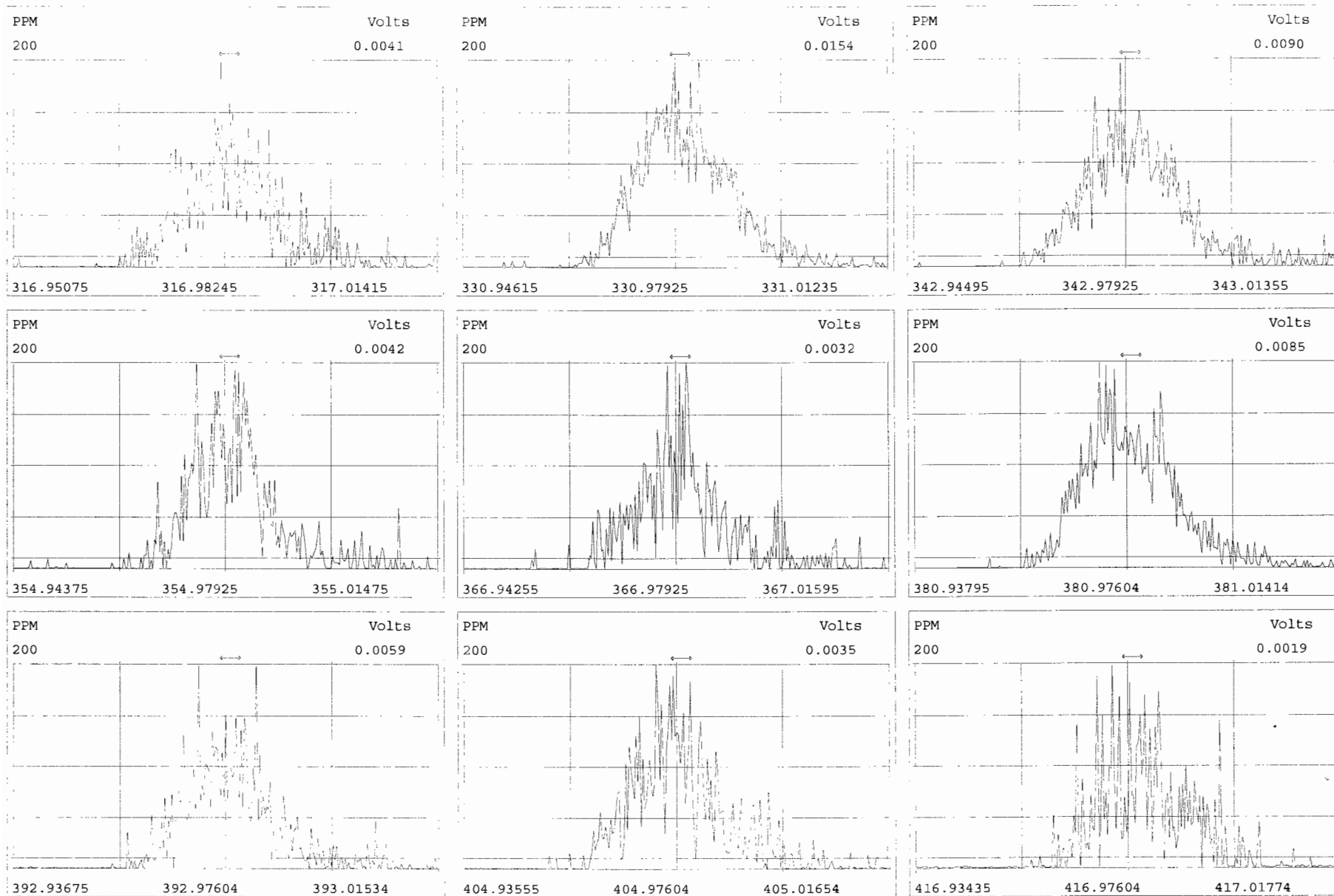
File:191009D1 #1-431 Acq: 9-OCT-2019 20:11:17 GC EI+ Voltage SIR Autospec-UltimaE
Sample#6 File Text:Vista Analytical Laboratory_VG7 Text:ST191009D1-6 1613 CS5 19C2206 Exp:OCDD_DB5
441.7428 S:6 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

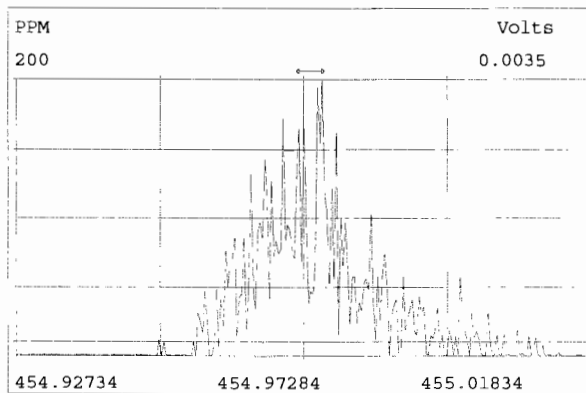
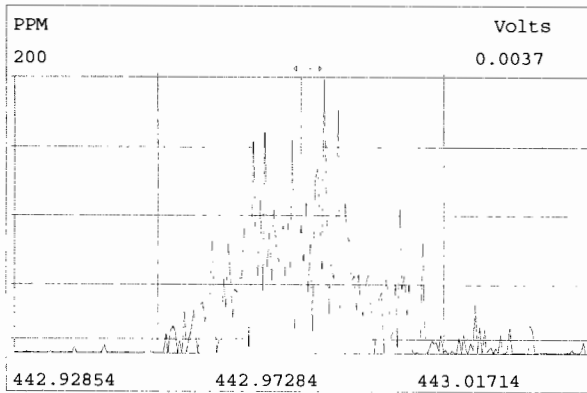
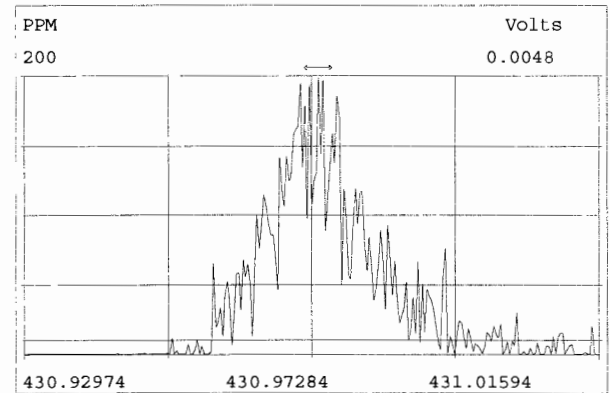
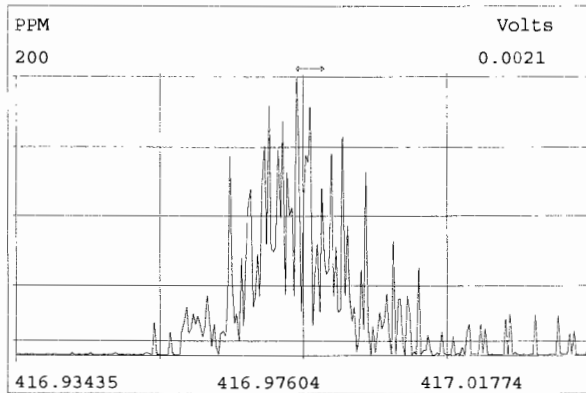
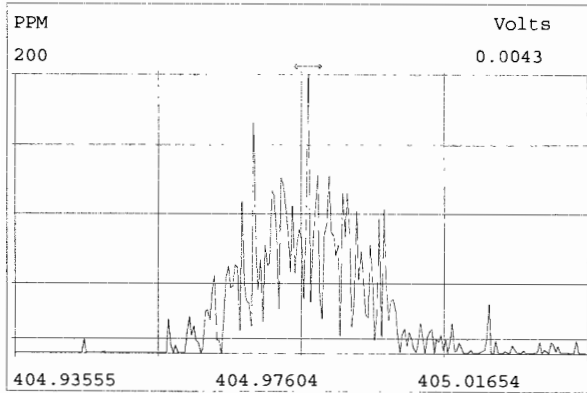
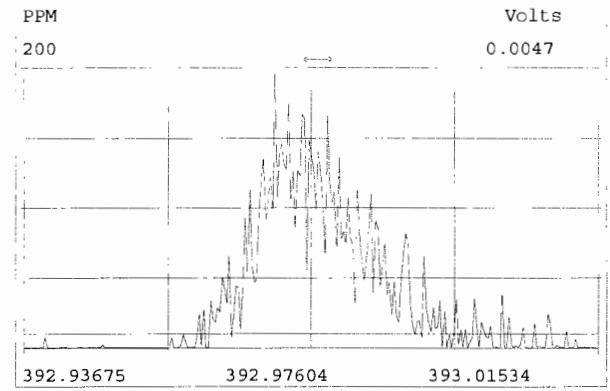
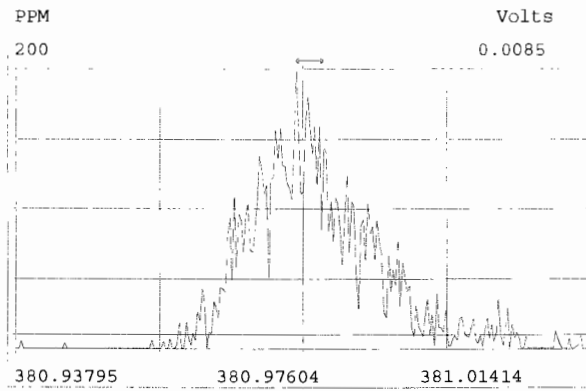
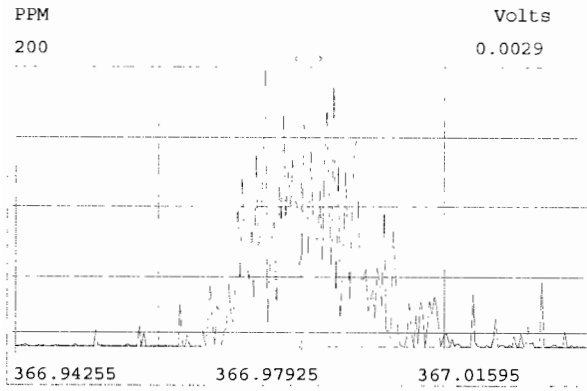


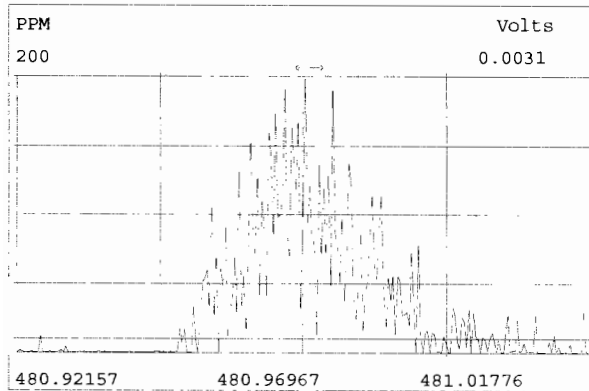
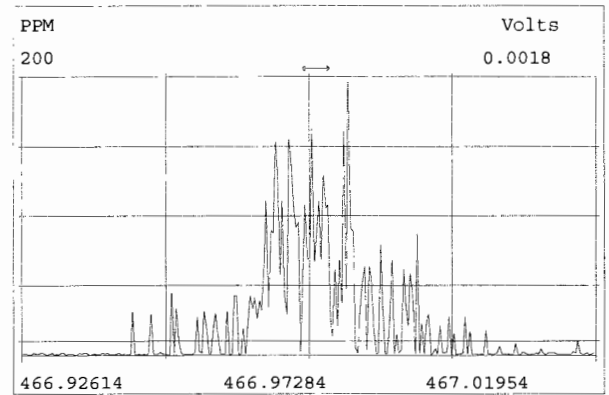
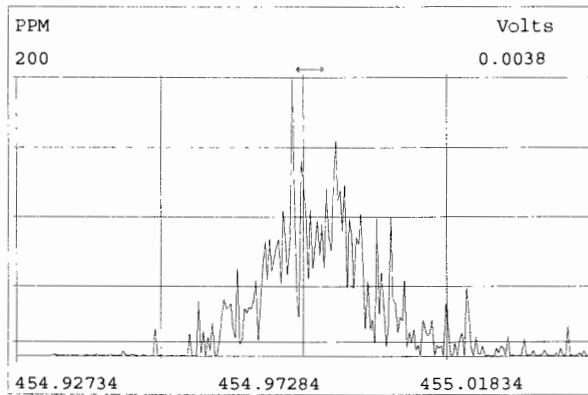
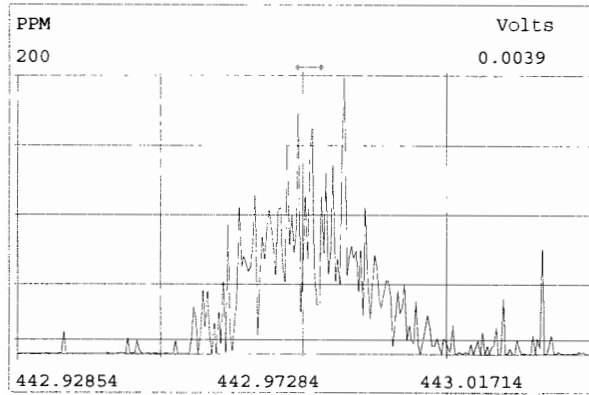
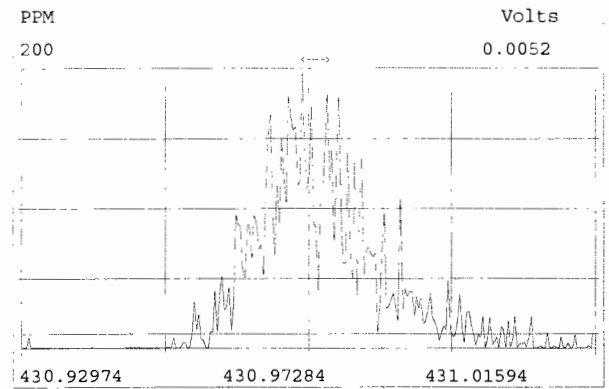
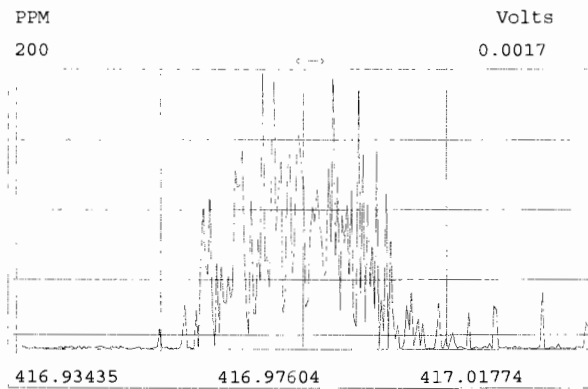
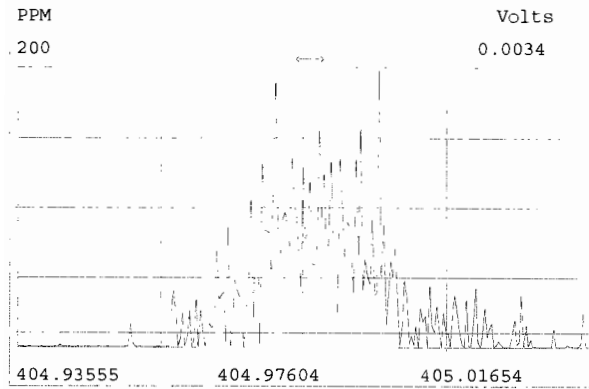
Peak Locate Examination:10-OCT-2019:06:40 File:RES_CHECK

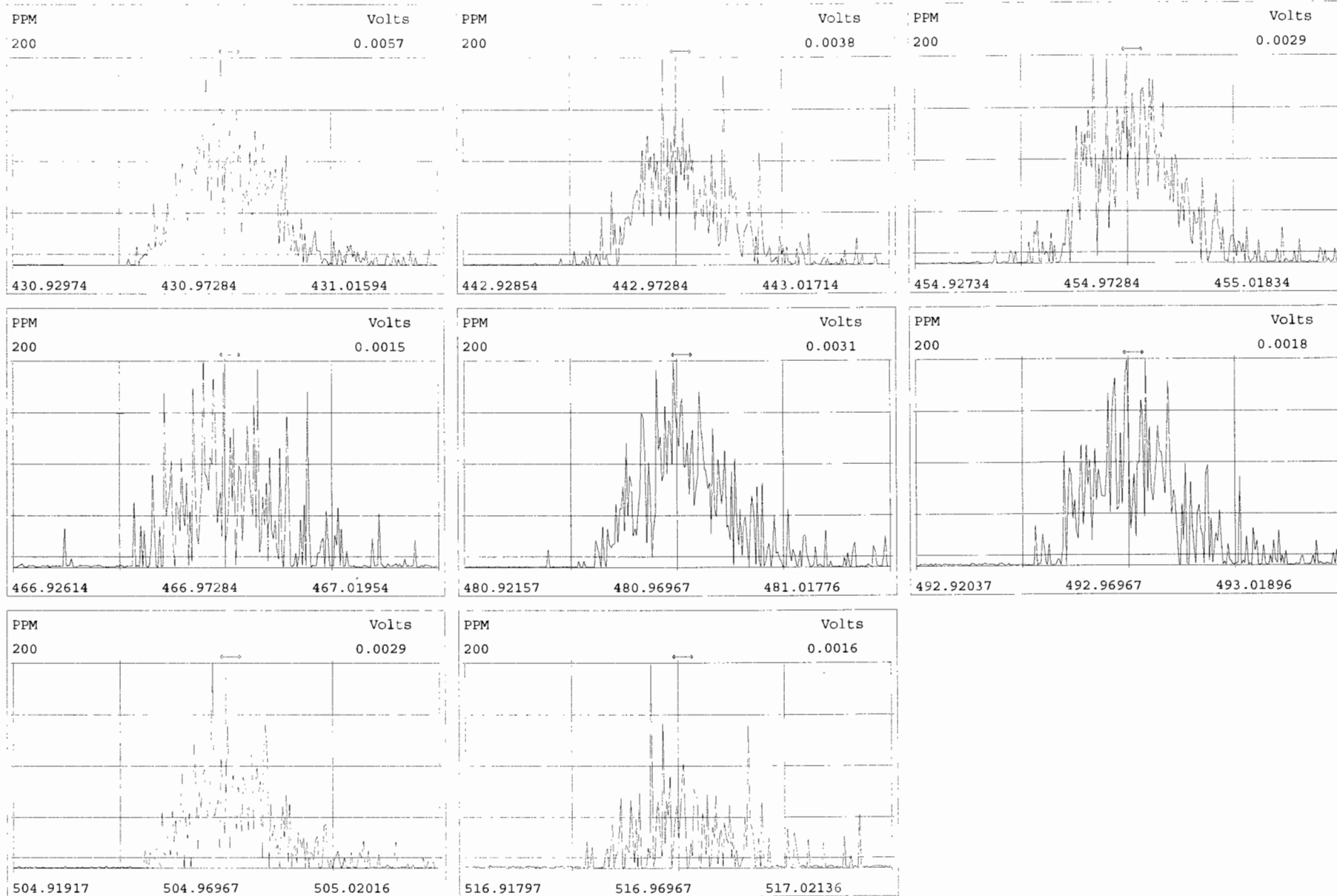
Experiment:OCDD_DB5 Function:1 Reference:PFK











FORM 4A
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

CCAL ID: SS191009D1-1

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7

GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

| NATIVE ANALYTES | M/Z'S | ION | QC | Pass | CONC. | CONC. |
|---------------------|-----------|--------|-----------|------|-------|------------------------------|
| | FORMING | ABUND. | LIMITS | | FOUND | RANGE (3) |
| | RATIO (1) | RATIO | (2) | | FOUND | (ng/mL) |
| 2,3,7,8-TCDD | M/M+2 | 0.83 | 0.65-0.89 | y | 10.2 | 7.8 - 12.9 8.2 - 12.3 (4) |
| 1,2,3,7,8-PeCDD | M/M+2 | 0.63 | 0.54-0.72 | y | 51.3 | 39.0 - 65.0 |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.31 | 1.05-1.43 | y | 48.9 | 39.0 - 64.0 |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.18 | 1.05-1.43 | y | 52.4 | 39.0 - 64.0 |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.17 | 1.05-1.43 | y | 50.4 | 41.0 - 61.0 |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.02 | 0.88-1.20 | y | 51.9 | 43.0 - 58.0 |
| OCDD | M+2/M+4 | 0.92 | 0.76-1.02 | y | 105 | 79.0 - 126.0 |
| 2,3,7,8-TCDF | M/M+2 | 0.78 | 0.65-0.89 | y | 10.3 | 8.4 - 12.0 8.6 - 11.6 (4) |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.54 | 1.32-1.78 | y | 50.2 | 41.0 - 60.0 |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.60 | 1.32-1.78 | y | 56.7 | 41.0 - 61.0 |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.22 | 1.05-1.43 | y | 51.1 | 45.0 - 56.0 |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | y | 51.5 | 44.0 - 57.0 |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.20 | 1.05-1.43 | y | 51.5 | 44.0 - 57.0 |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | y | 50.9 | 45.0 - 56.0 |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | y | 53.0 | 45.0 - 55.0 |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | y | 50.2 | 43.0 - 58.0 |
| OCDF | M+2/M+4 | 0.92 | 0.76-1.02 | y | 102 | 63.0 - 159.0 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified in Table 9, Method 1613.

(3) Contract-required concentration range as specified in Table 6, Method 1613.

(4) Contract-required concentration range as specified in Table 6a, Method 1613, for tetras only.

Analyst: DB

Date: 10/10/19

FORM 4B
PCDD/PCDF CALIBRATION VERIFICATION

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

| LABELLED COMPOUNDS | M/Z'S FORMING RATIO (1) | ION ABUND. RATIO | QC LIMITS (2) | Pass | CONC. FOUND | CONC. RANGE (ng/mL) |
|---|-------------------------------|------------------------|---------------------|------|----------------|---------------------------|
| 13C-2,3,7,8-TCDD | M/M+2 | 0.72 | 0.65-0.89 | y | 100 | 82.0 - 121.0 |
| 13C-1,2,3,7,8-PeCDD | M/M+2 | 0.64 | 0.54-0.72 | y | 101 | 62.0 - 160.0 |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.23 | 1.05-1.43 | y | 95.9 | 85.0 - 117.0 |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.25 | 1.05-1.43 | y | 95.6 | 85.0 - 118.0 |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.26 | 1.05-1.43 | y | 94.3 | 85.0 - 118.0 |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.06 | 0.88-1.20 | y | 91.7 | 72.0 - 138.0 |
| 13C-OCDD | M/M+2 | 0.92 | 0.76-1.02 | y | 190 | 96.0 - 415.0 |
| 13C-2,3,7,8-TCDF | M+2/M+4 | 0.78 | 0.65-0.89 | y | 97.2 | 71.0 - 140.0 |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.62 | 1.32-1.78 | y | 97.4 | 76.0 - 130.0 |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.59 | 1.32-1.78 | y | 96.6 | 77.0 - 130.0 |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 102 | 76.0 - 131.0 |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 101 | 70.0 - 143.0 |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 97.1 | 73.0 - 137.0 |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | y | 99.0 | 74.0 - 135.0 |
| 13C-1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 0.43 | 0.37-0.51 | y | 96.6 | 78.0 - 129.0 |
| 13C-1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.44 | 0.37-0.51 | y | 102 | 77.0 - 129.0 |
| 13C-OCDF | M+2/M+4 | 0.88 | 0.76-1.02 | y | 197 | 96.0 - 415.0 |
| CLEANUP STANDARD (3) 37Cl-2,3,7,8-TCDD | | | | | 9.08 | 7.9 - 12.7 |

(1) See Table 8, Method 1613, for m/z specifications.

(2) Ion Abundance Ratio Control Limits as specified

(3) No ion abundance ratio; report concentration found.

Analyst: DB

Date: 10/10/19

FORM 6A
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

Compounds Using 13C-1234-TCDD as RT Internal Standard

| NATIVE ANALYTES | RETENTION TIME | RRT | RRT |
|---------------------|---------------------|-------|---------------|
| | REFERENCE | | QC LIMITS (1) |
| 2,3,7,8-TCDD | 13C-2,3,7,8-TCDD | 1.001 | 0.999-1.002 |
| 1,2,3,7,8-PeCDD | 13C-1,2,3,7,8-PeCDD | 1.000 | 0.999-1.002 |
| 2,3,7,8-TCDF | 13C-2,3,7,8-TCDF | 1.001 | 0.999-1.003 |
| 1,2,3,7,8-PeCDF | 13C-1,2,3,7,8-PeCDF | 1.000 | 0.999-1.002 |
| 2,3,4,7,8-PeCDF | 13C-2,3,4,7,8-PeCDF | 1.000 | 0.999-1.002 |
| LABELED COMPOUNDS | | | |
| 13C-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.976-1.043 |
| 13C-1,2,3,7,8-PeCDD | 13C-1,2,3,4-TCDD | 1.189 | 1.000-1.567 |
| 13C-2,3,7,8-TCDF | 13C-1,2,3,4-TCDD | 0.994 | 0.923-1.103 |
| 13C-1,2,3,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.145 | 1.000-1.425 |
| 13C-2,3,4,7,8-PeCDF | 13C-1,2,3,4-TCDD | 1.179 | 1.011-1.526 |
| 37Cl-2,3,7,8-TCDD | 13C-1,2,3,4-TCDD | 1.022 | 0.989-1.052 |

Analyst: DB

Date: 10/10/19

FORM 6B
PCDD/PCDF RELATIVE RETENTION TIMES

Lab Name: Vista Analytical Laboratory Episode No.:

Contract No.: SAS No.:

Initial Calibration Date: 10-9-19

Instrument ID: VG-7 GC Column ID: ZB-5MS

VER Data Filename: 191009D1 S#8 Analysis Date: 9-OCT-19 Time: 21:46:34

| NATIVE ANALYTES | RETENTION TIME | RRT | RRT |
|---------------------|-------------------------|-------|---------------|
| | REFERENCE | | QC LIMITS (1) |
| 1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,7,8-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDF | 13C-1,2,3,6,7,8-HxCDF | 1.000 | 0.997-1.005 |
| 2,3,4,6,7,8-HxCDF | 13C-2,3,4,6,7,8-HxCDF | 1.000 | 0.999-1.001 |
| 1,2,3,7,8,9-HxCDF | 13C-1,2,3,7,8,9-HxCDF | 1.001 | 0.999-1.001 |
| 1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,7,8-HxCDD | 1.001 | 0.999-1.001 |
| 1,2,3,6,7,8-HxCDD | 13C-1,2,3,6,7,8-HxCDD | 1.000 | 0.998-1.004 |
| 1,2,3,7,8,9-HxCDD | 13C-1,2,3,7,8,9-HxCDD | 1.001 | 0.998-1.004 |
| 1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 1.000 | 0.999-1.001 |
| 1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 1.000 | 0.999-1.001 |
| 1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,7,8,9-HpCDF | 1.000 | 0.999-1.001 |
| OCDD | 13C-OCDD | 1.000 | 0.999-1.001 |
| OCDF | 13C-OCDF | 1.000 | 0.999-1.001 |

LABELED COMPOUNDS

| | | | |
|-------------------------|-----------------------|-------|-------------|
| 13C-1,2,3,4,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.987 | 0.975-1.001 |
| 13C-1,2,3,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 0.991 | 0.979-1.005 |
| 13C-2,3,4,6,7,8-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.010 | 1.001-1.020 |
| 13C-1,2,3,7,8,9-HxCDF | 13C-1,2,3,4,6,9-HxCDF | 1.040 | 1.002-1.072 |
| 13C-1,2,3,4,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.014 | 1.002-1.026 |
| 13C-1,2,3,6,7,8-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.018 | 1.007-1.029 |
| 13C-1,2,3,7,8,9-HxCDD | 13C-1,2,3,4,6,9-HxCDF | 1.027 | 1.014-1.038 |
| 13C-1,2,3,4,6,7,8-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.093 | 1.069-1.111 |
| 13C-1,2,3,4,7,8,9-HpCDF | 13C-1,2,3,4,6,9-HxCDF | 1.145 | 1.098-1.192 |
| 13C-1,2,3,4,6,7,8-HpCDD | 13C-1,2,3,4,6,9-HxCDF | 1.127 | 1.117-1.141 |
| 13C-OCDD | 13C-1,2,3,4,6,9-HxCDF | 1.227 | 1.085-1.365 |
| 13C-OCDF | 13C-1,2,3,4,6,9-HxCDF | 1.235 | 1.091-1.371 |

Analyst: DB

Date: 10/10/19

Client ID: 1613 SSS 19C2207
Lab ID: SS191009D1-1

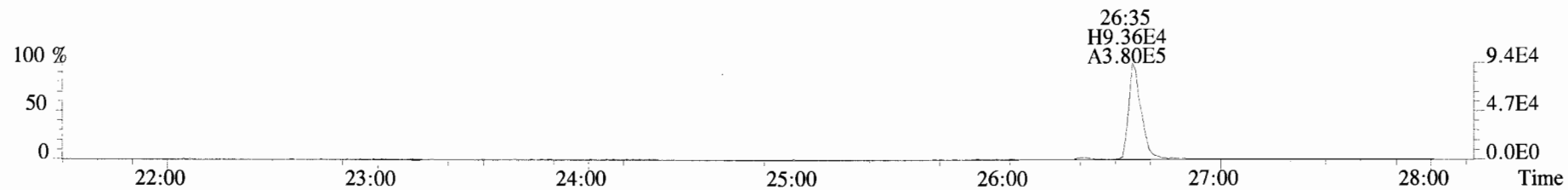
Filename: 191009D1 S:8 Acq: 9-OCT-19 21:46:34
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ConCal: ST191009D1-4
EndCAL: NA

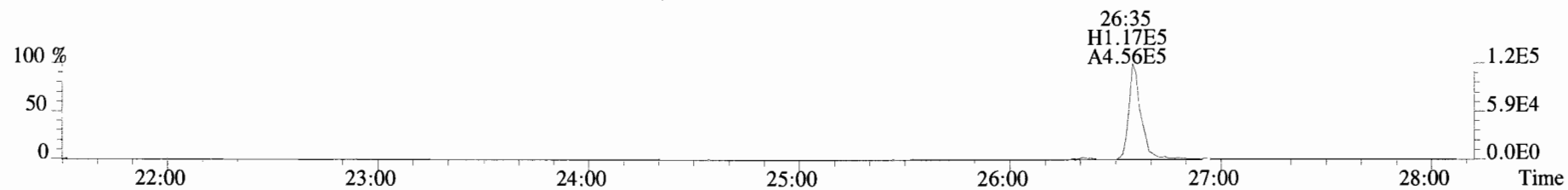
| Name | Resp | RA | RRF | RT | Conc | Qual | noise | Fac | DL | Name | Conc | EMPC | Qual | noise | DL |
|---------------------|-------------------------|----------|--------|-------|--------|--------|-------|-----|----|---------------------|--------|--------|------|-------|----|
| 2,3,7,8-TCDD | 8.36e+05 | 0.83 y | 0.91 | 26:36 | 10.234 | | * 2.5 | | * | Total Tetra-Dioxins | 10.4 | 11.4 | | * | * |
| 1,2,3,7,8-PeCDD | 3.38e+06 | 0.63 y | 0.90 | 30:57 | 51.323 | | * 2.5 | | * | Total Penta-Dioxins | 51.4 | 51.7 | | * | * |
| 1,2,3,4,7,8-HxCDD | 2.55e+06 | 1.31 y | 1.10 | 34:18 | 48.909 | | * 2.5 | | * | Total Hexa-Dioxins | 153 | 153 | | * | * |
| 1,2,3,6,7,8-HxCDD | 3.09e+06 | 1.18 y | 0.94 | 34:24 | 52.378 | | * 2.5 | | * | Total Hepta-Dioxins | 53.5 | 54.4 | | * | * |
| 1,2,3,7,8,9-HxCDD | 2.83e+06 | 1.17 y | 0.96 | 34:44 | 50.434 | | * 2.5 | | * | Total Tetra-Furans | 10.7 | 11.4 | | * | * |
| 1,2,3,4,6,7,8-HpCDD | 2.34e+06 | 1.02 y | 0.98 | 38:07 | 51.915 | | * 2.5 | | * | Total Penta-Furans | 110.38 | 111.73 | | * | * |
| OCDD | 4.27e+06 | 0.92 y | 0.96 | 41:30 | 105.37 | | * 2.5 | | * | Total Hexa-Furans | 205 | 207 | | * | * |
| | | | | | | | | | | Total Hepta-Furans | 104 | 106 | | * | * |
| 2,3,7,8-TCDF | 1.24e+06 | 0.78 y | 0.95 | 25:53 | 10.342 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8-PeCDF | 5.03e+06 | 1.54 y | 0.96 | 29:48 | 50.200 | | * 2.5 | | * | | | | | | |
| 2,3,4,7,8-PeCDF | 5.90e+06 | 1.60 y | 1.01 | 30:42 | 56.719 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8-HxCDF | 3.94e+06 | 1.22 y | 1.18 | 33:23 | 51.086 | | * 2.5 | | * | | | | | | |
| 1,2,3,6,7,8-HxCDF | 4.44e+06 | 1.23 y | 1.07 | 33:31 | 51.491 | | * 2.5 | | * | | | | | | |
| 2,3,4,6,7,8-HxCDF | 4.08e+06 | 1.20 y | 1.11 | 34:08 | 51.474 | | * 2.5 | | * | | | | | | |
| 1,2,3,7,8,9-HxCDF | 3.40e+06 | 1.24 y | 1.06 | 35:10 | 50.903 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 3.36e+06 | 1.05 y | 1.13 | 36:58 | 53.010 | | * 2.5 | | * | | | | | | |
| 1,2,3,4,7,8,9-HpCDF | 2.94e+06 | 1.05 y | 1.28 | 38:42 | 50.216 | | * 2.5 | | * | | | | | | |
| OCDF | 5.04e+06 | 0.92 y | 0.95 | 41:45 | 102.23 | | * 2.5 | | * | | | | | | |
| IS | 13C-2,3,7,8-TCDD | 9.02e+06 | 0.72 y | 1.10 | 26:35 | 100.49 | | | | Rec | Qual | | | | |
| IS | 13C-1,2,3,7,8-PeCDD | 7.29e+06 | 0.64 y | 0.88 | 30:56 | 100.87 | | | | 100 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDD | 4.73e+06 | 1.23 y | 0.64 | 34:16 | 95.948 | | | | 101 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDD | 6.28e+06 | 1.25 y | 0.86 | 34:24 | 95.558 | | | | 95.9 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDD | 5.85e+06 | 1.26 y | 0.81 | 34:43 | 94.306 | | | | 95.6 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDD | 4.61e+06 | 1.06 y | 0.65 | 38:06 | 91.680 | | | | 94.3 | | | | | |
| IS | 13C-OCDD | 8.45e+06 | 0.92 y | 0.58 | 41:29 | 189.68 | | | | 91.7 | | | | | |
| IS | 13C-2,3,7,8-TCDF | 1.26e+07 | 0.78 y | 1.03 | 25:52 | 97.199 | | | | 94.8 | | | | | |
| IS | 13C-1,2,3,7,8-PeCDF | 1.04e+07 | 1.62 y | 0.85 | 29:48 | 97.425 | | | | 97.2 | | | | | |
| IS | 13C-2,3,4,7,8-PeCDF | 1.03e+07 | 1.59 y | 0.85 | 30:41 | 96.649 | | | | 97.4 | | | | | |
| IS | 13C-1,2,3,4,7,8-HxCDF | 6.55e+06 | 0.51 y | 0.83 | 33:22 | 102.43 | | | | 96.6 | | | | | |
| IS | 13C-1,2,3,6,7,8-HxCDF | 8.06e+06 | 0.51 y | 1.03 | 33:30 | 101.42 | | | | 102 | | | | | |
| IS | 13C-2,3,4,6,7,8-HxCDF | 7.11e+06 | 0.51 y | 0.95 | 34:08 | 97.073 | | | | 101 | | | | | |
| IS | 13C-1,2,3,7,8,9-HxCDF | 6.30e+06 | 0.51 y | 0.83 | 35:09 | 98.999 | | | | 97.1 | | | | | |
| IS | 13C-1,2,3,4,6,7,8-HpCDF | 5.62e+06 | 0.43 y | 0.76 | 36:57 | 96.588 | | | | 99.0 | | | | | |
| IS | 13C-1,2,3,4,7,8,9-HpCDF | 4.58e+06 | 0.44 y | 0.58 | 38:42 | 102.46 | | | | 96.6 | | | | | |
| IS | 13C-OCDF | 1.04e+07 | 0.88 y | 0.69 | 41:44 | 196.65 | | | | 102 | | | | | |
| C/Up | 37Cl-2,3,7,8-TCDD | 8.91e+05 | | 1.20 | 26:36 | 9.0817 | | | | 98.3 | | | | | |
| RS/RT | 13C-1,2,3,4-TCDD | 8.20e+06 | 0.76 y | 1.00 | 26:01 | 100.00 | | | | | | | | | |
| RS | 13C-1,2,3,4-TCDF | 1.25e+07 | 0.82 y | 1.00 | 24:42 | 100.00 | | | | | | | | | |
| RS/RT | 13C-1,2,3,4,6,9-HxCDF | 7.68e+06 | 0.50 y | 1.00 | 33:48 | 100.00 | | | | | | | | | |

Integrations
by DB
Analyst: DB
Reviewed
by CT
Analyst: CT
Date: 10/10/19
Date: 10/10/19

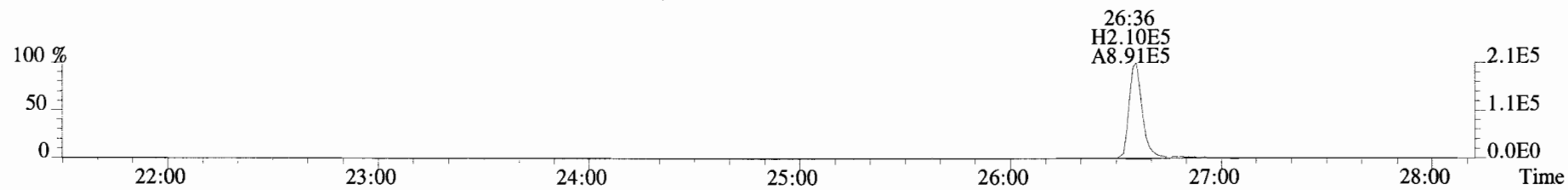
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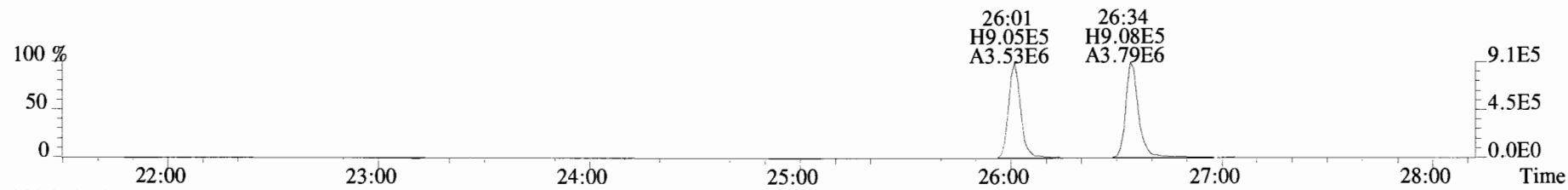
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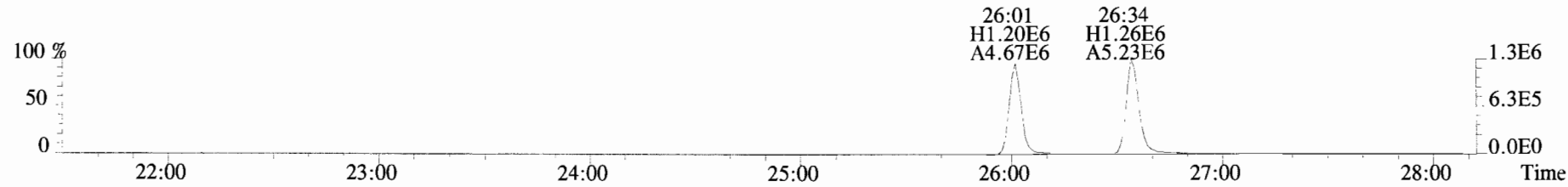
327.8847 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



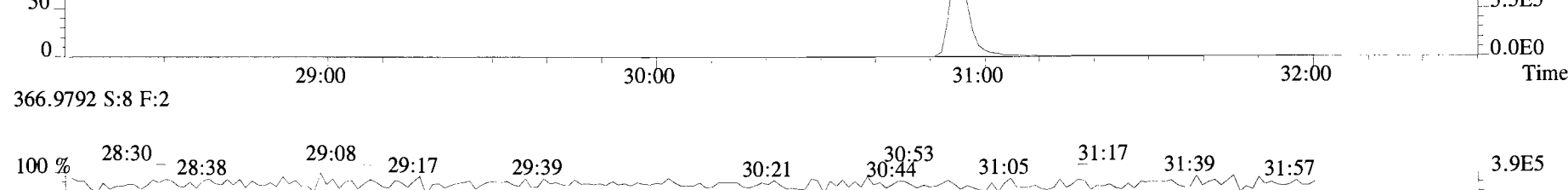
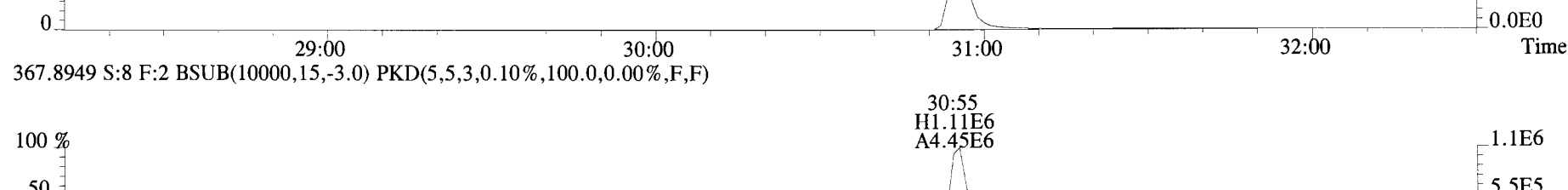
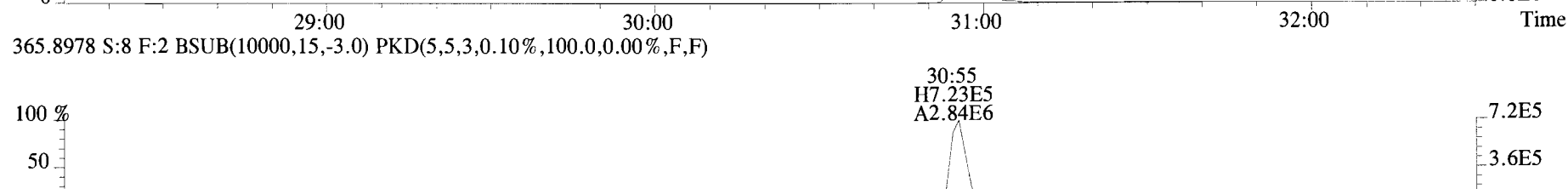
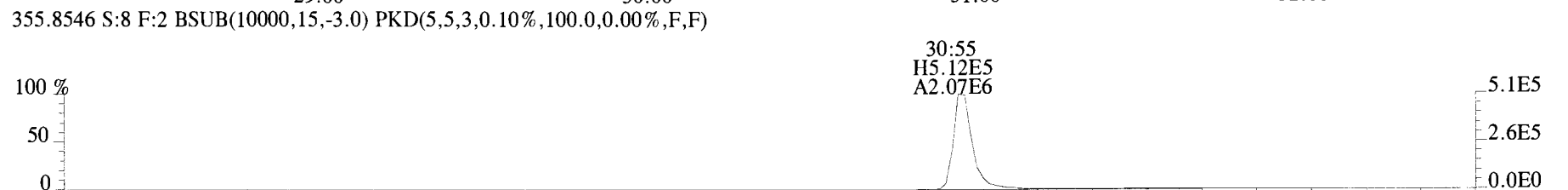
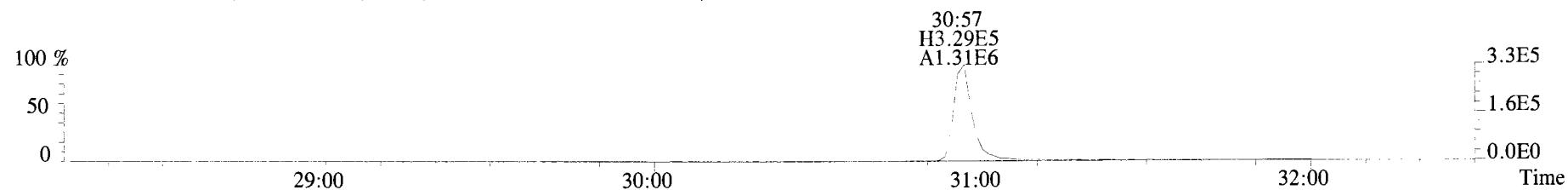
331.9368 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



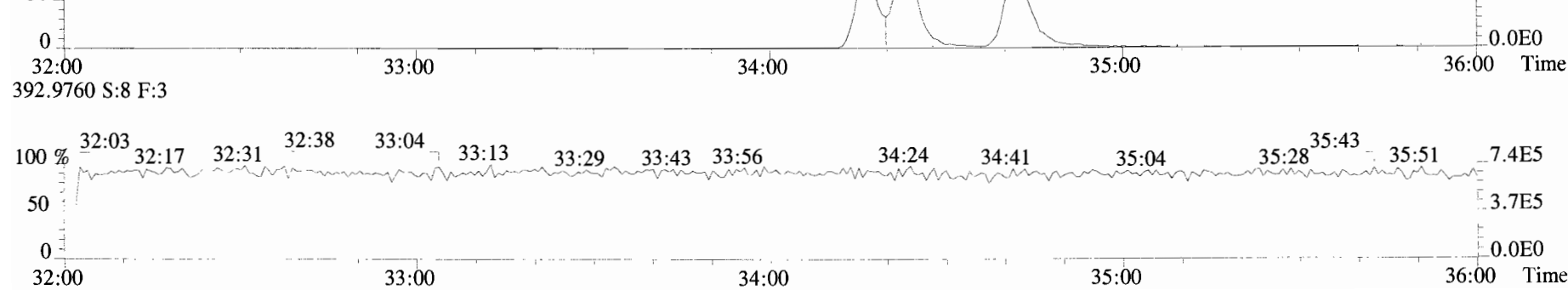
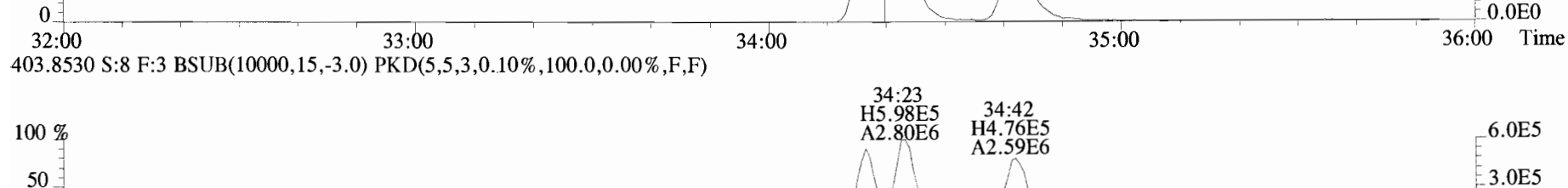
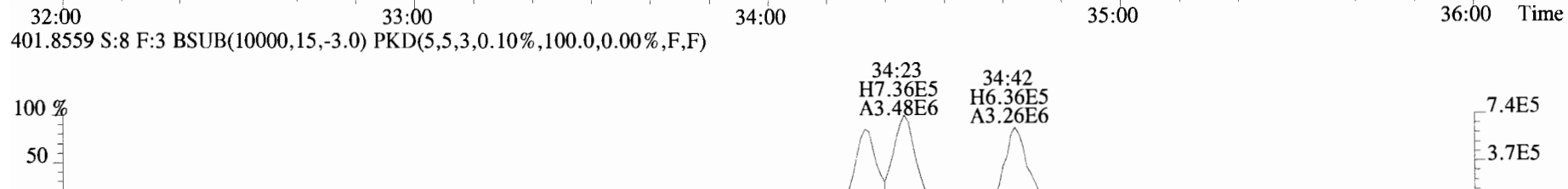
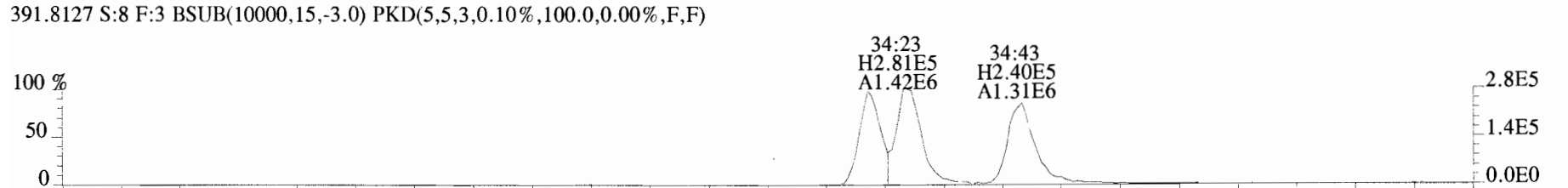
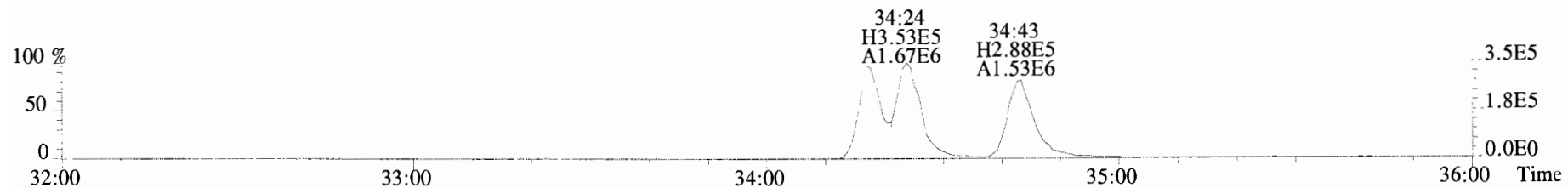
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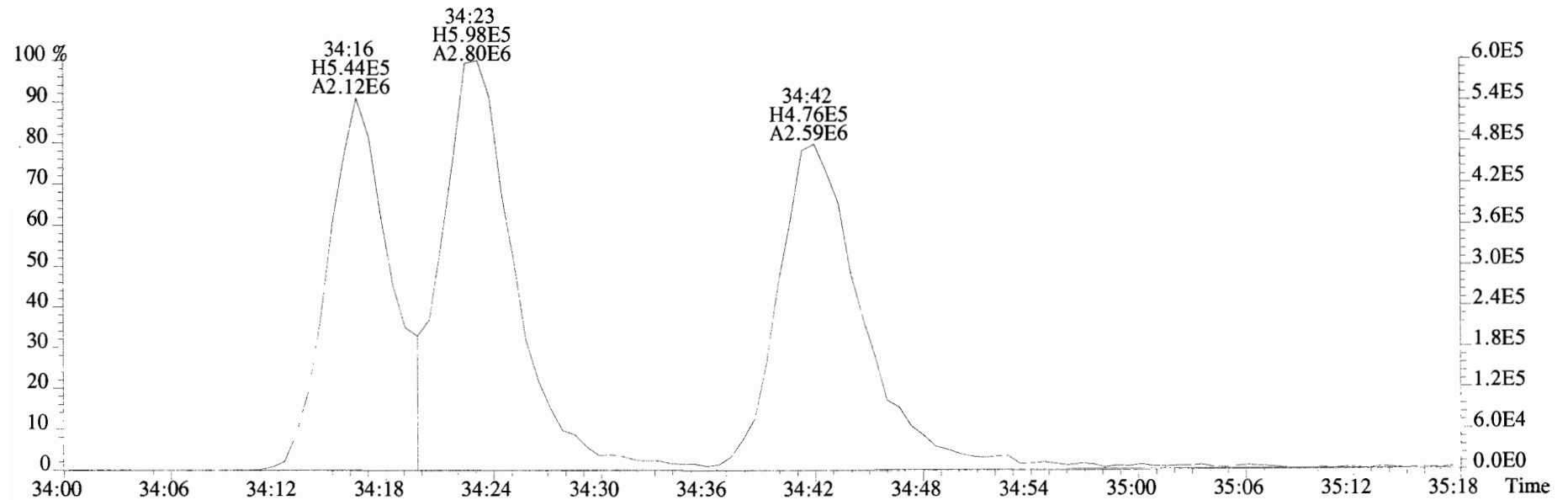
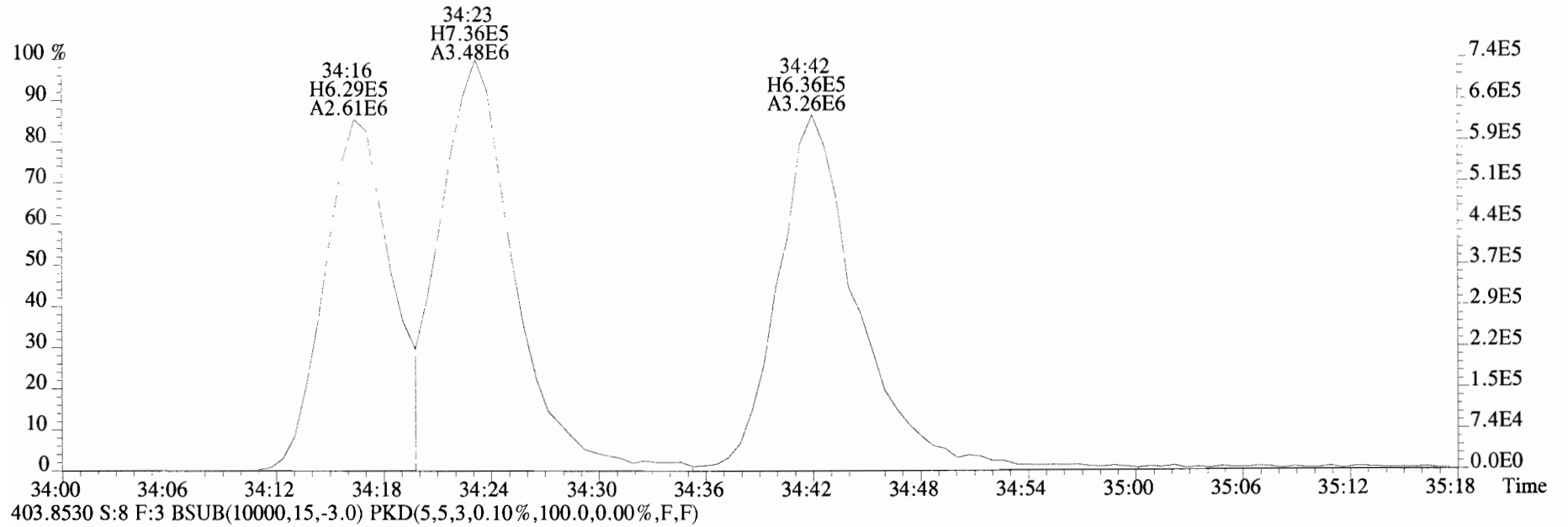
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353.8576 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



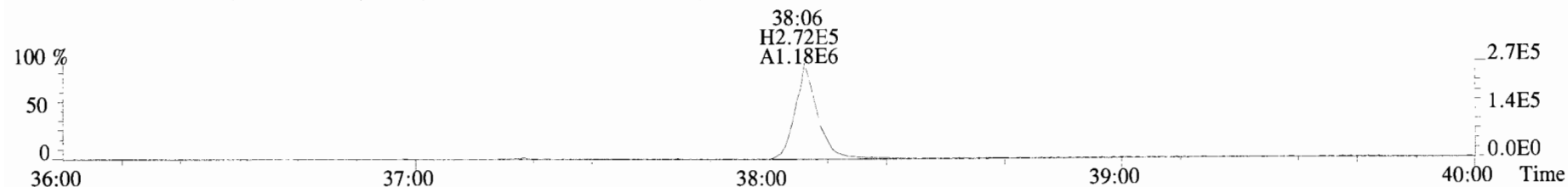
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Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
389.8156 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



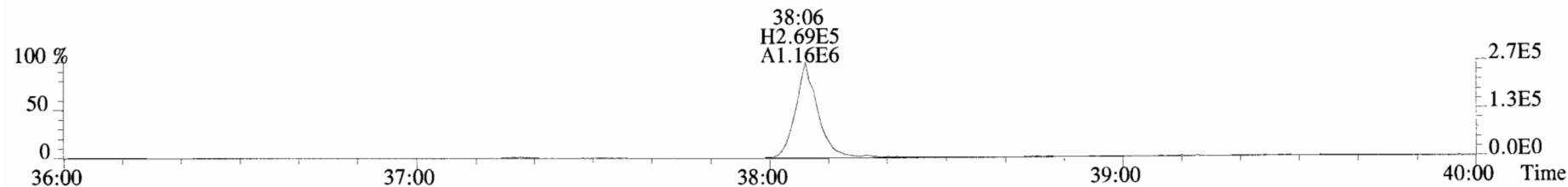
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Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
401.8559 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



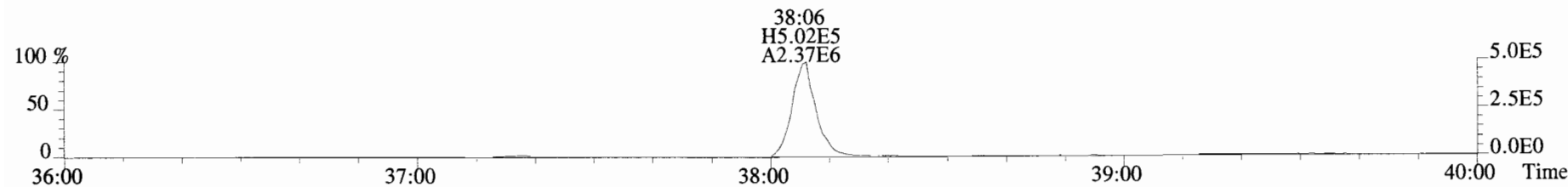
File:191009D1 #1-356 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
423.7767 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



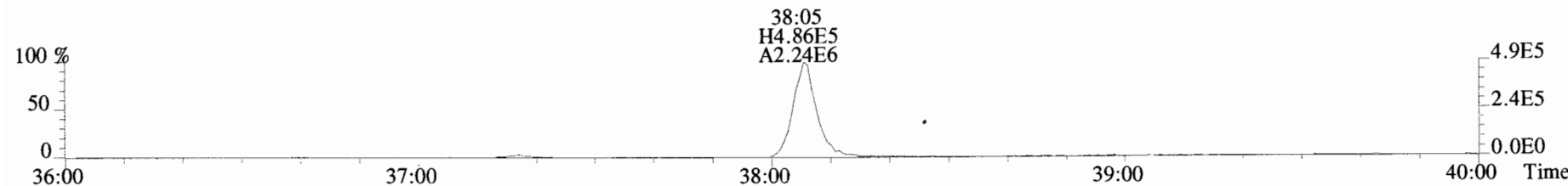
425.7737 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



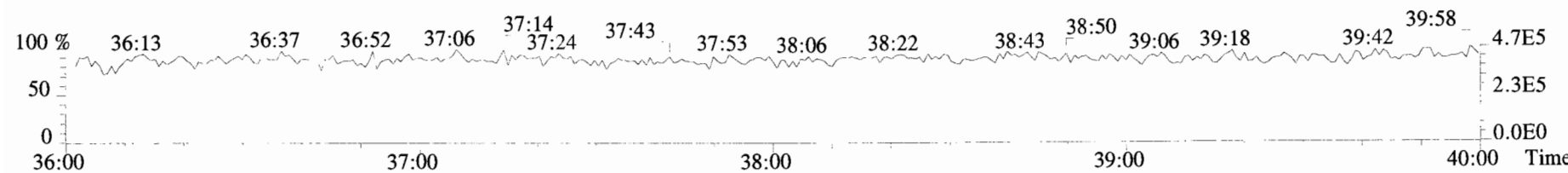
435.8169 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



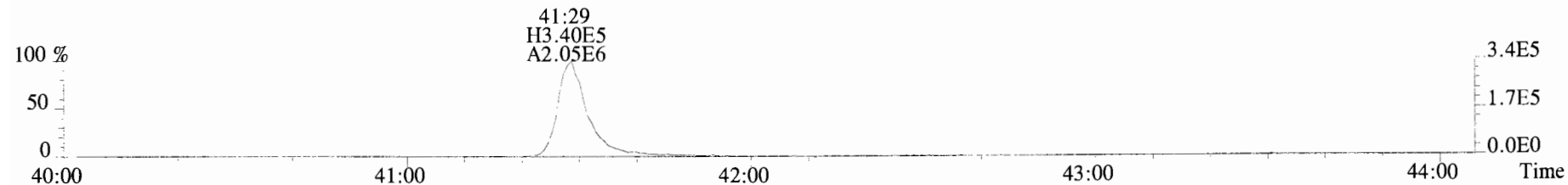
437.8140 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



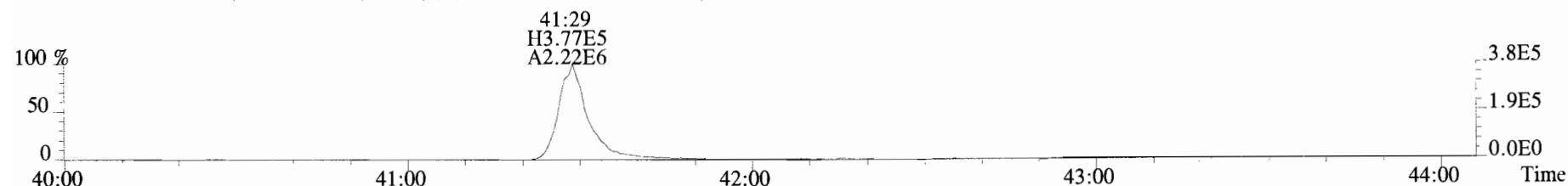
454.9728 S:8 F:4



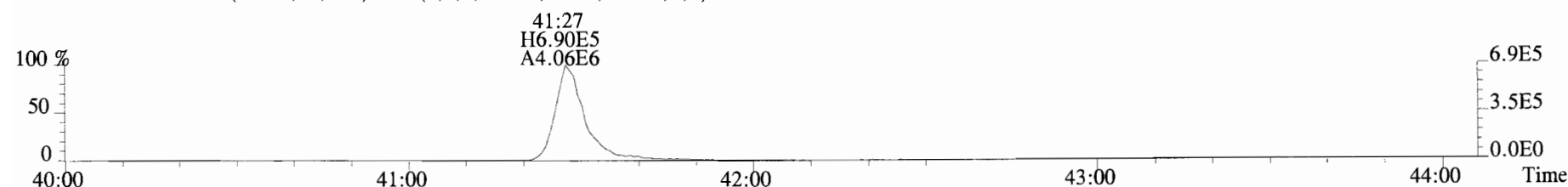
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Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
457.7377 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



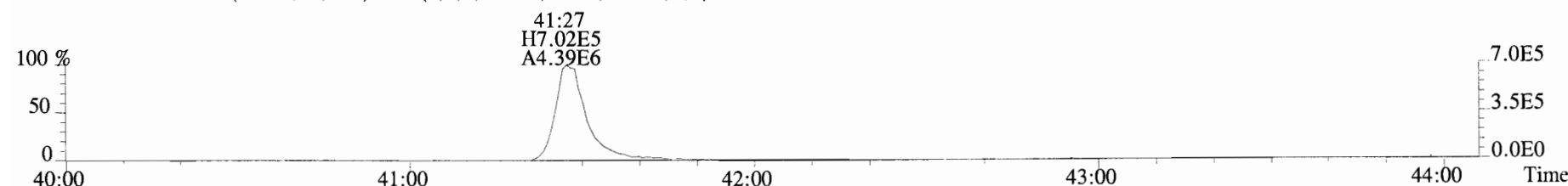
459.7348 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



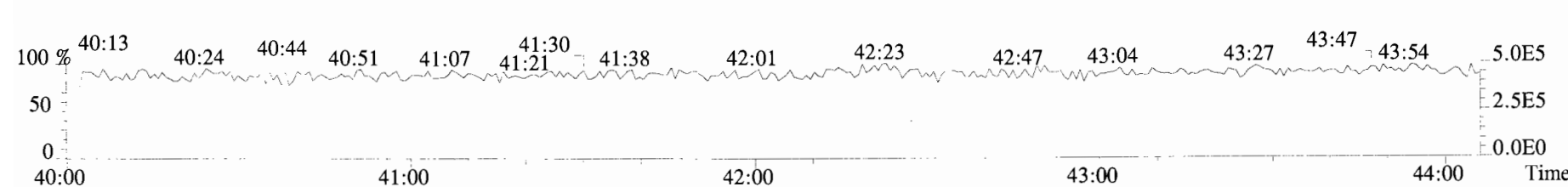
469.7780 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



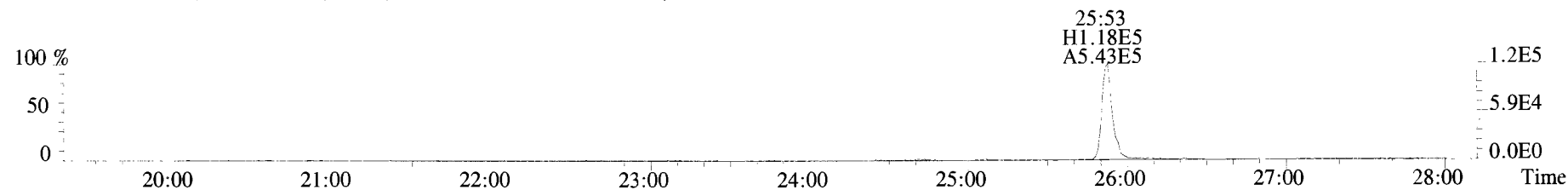
471.7750 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



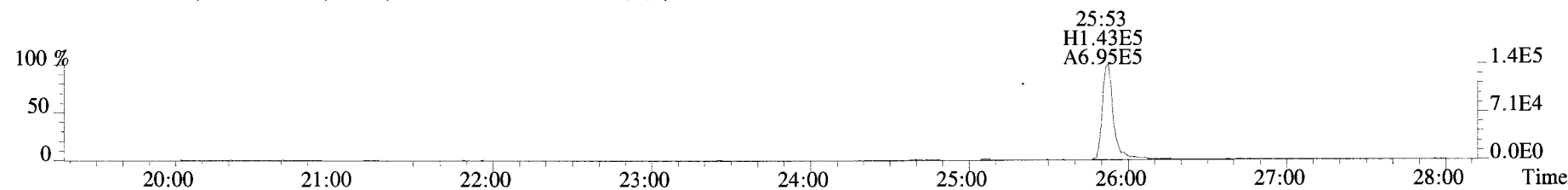
454.9728 S:8 F:5



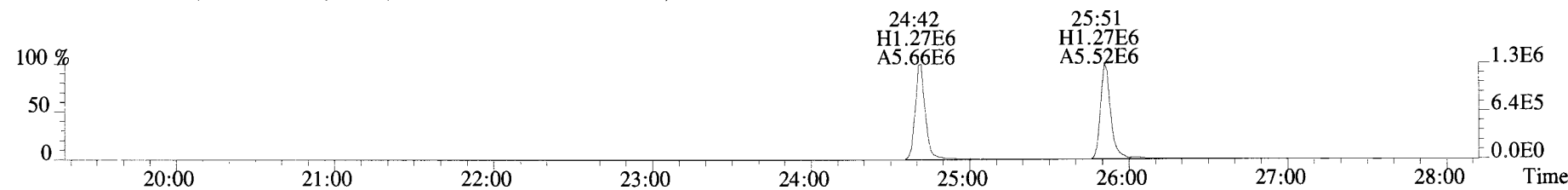
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text: Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
303.9016 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



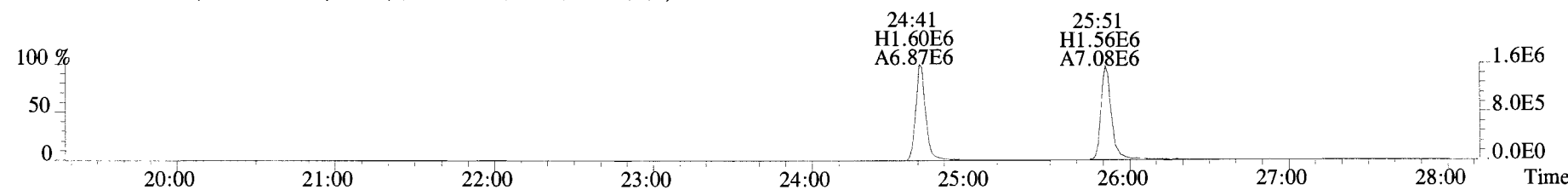
305.8987 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



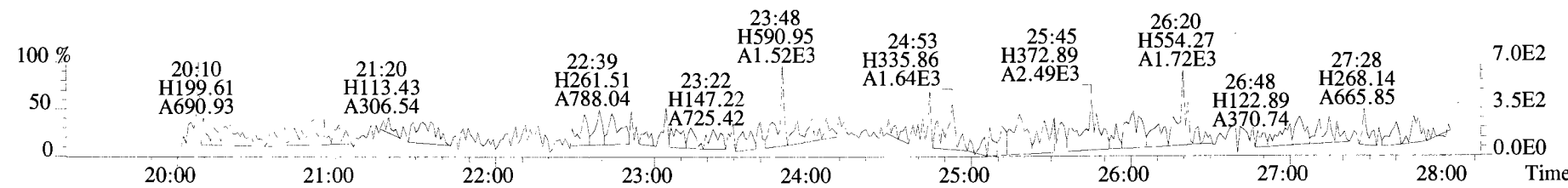
315.9419 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



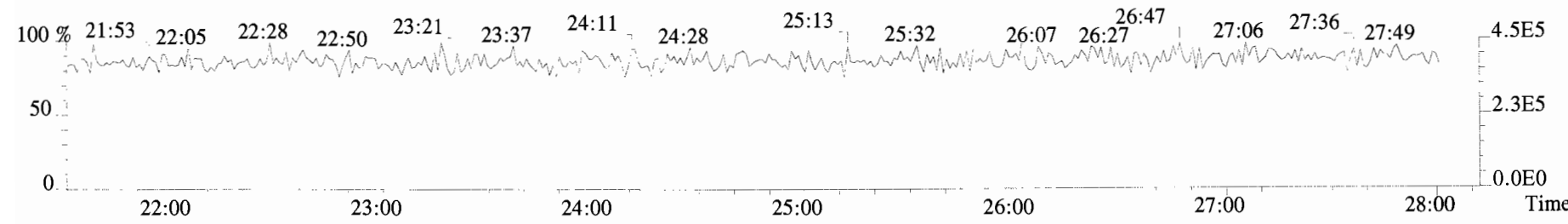
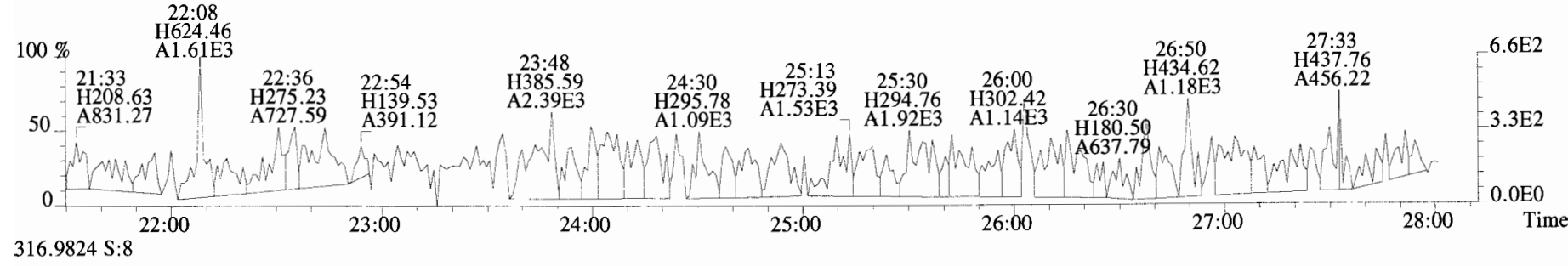
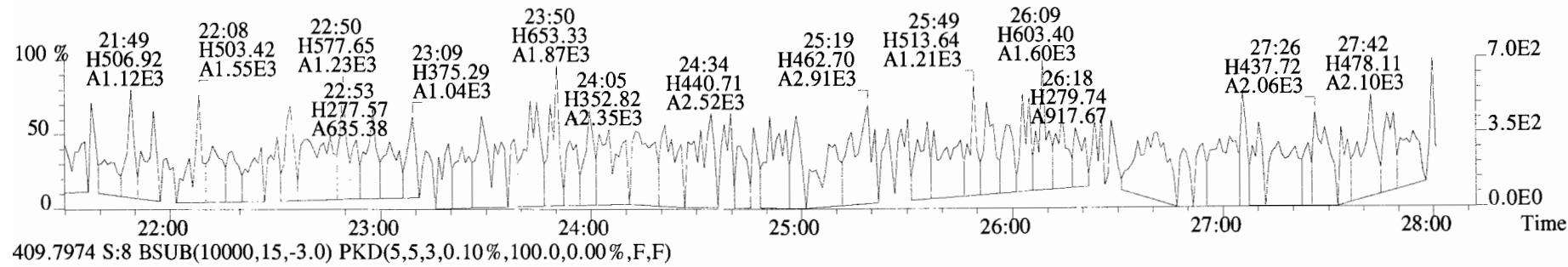
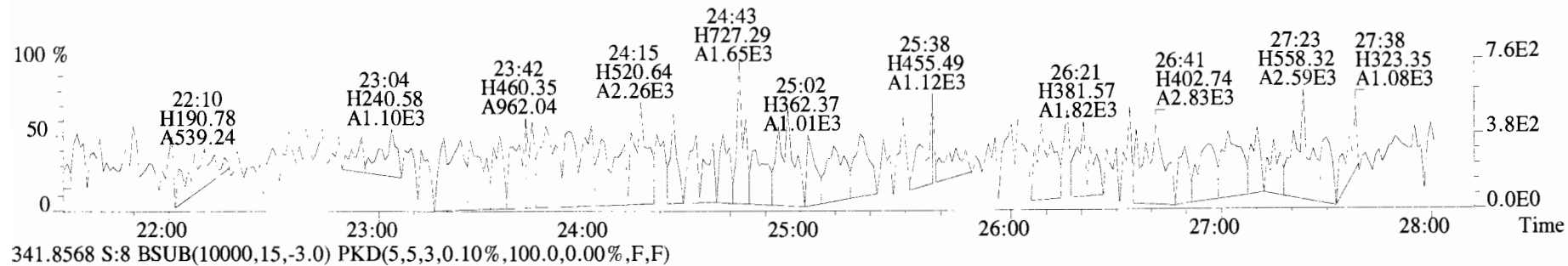
317.9389 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



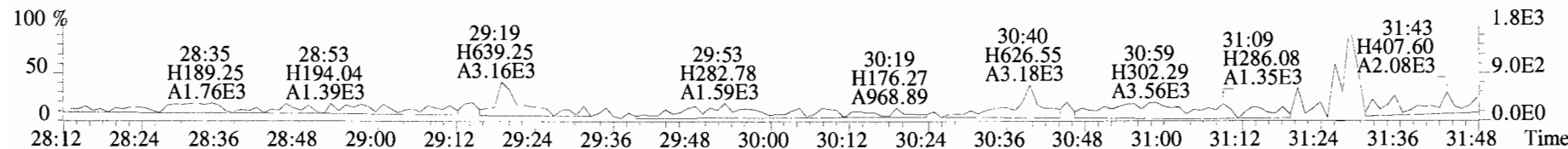
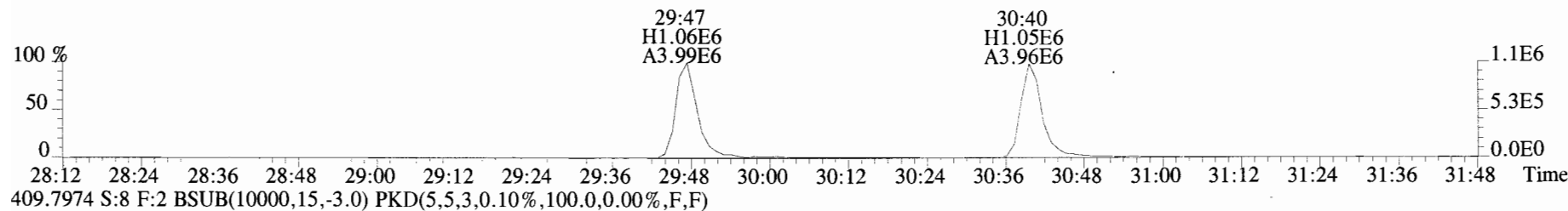
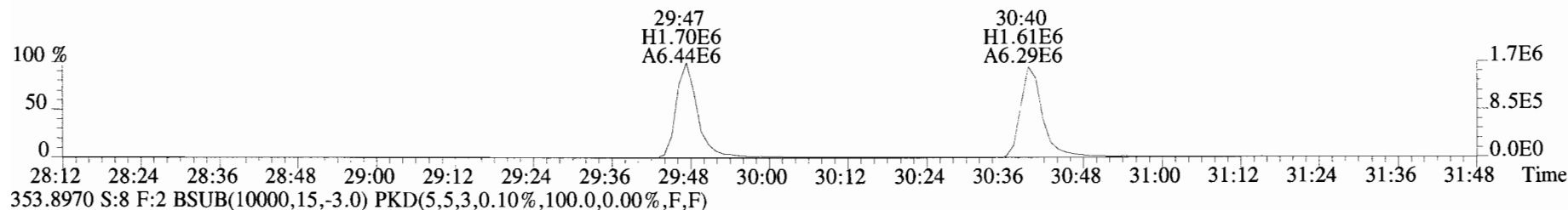
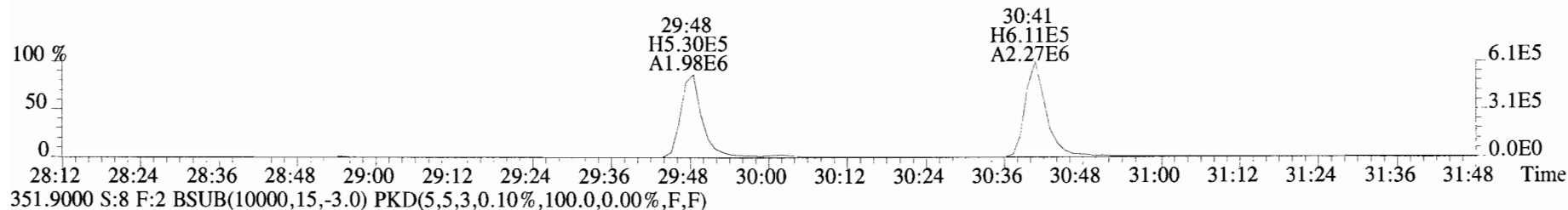
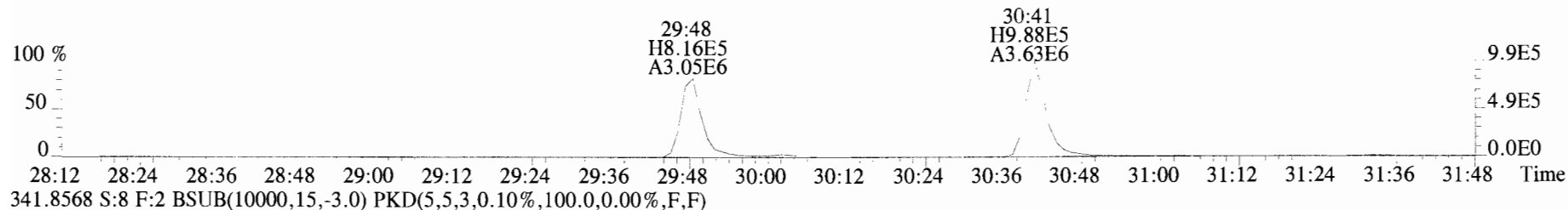
375.8364 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



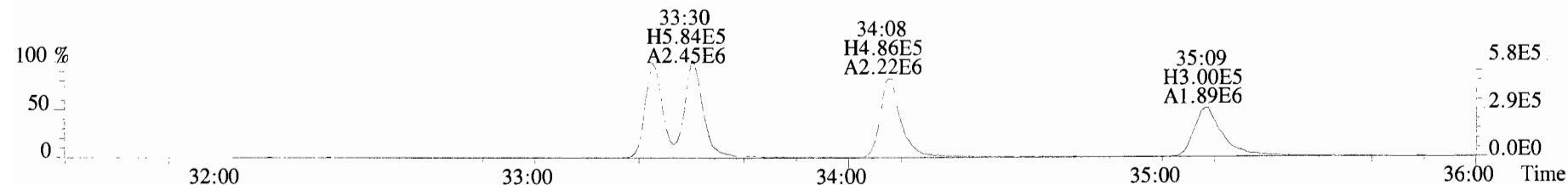
File:191009D1 #1-514 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
 339.8597 S:8 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



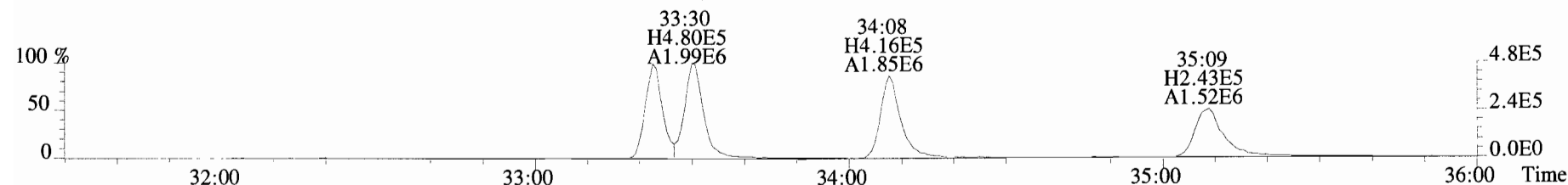
File:191009D1 #1-210 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
339.8597 S:8 F:2 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



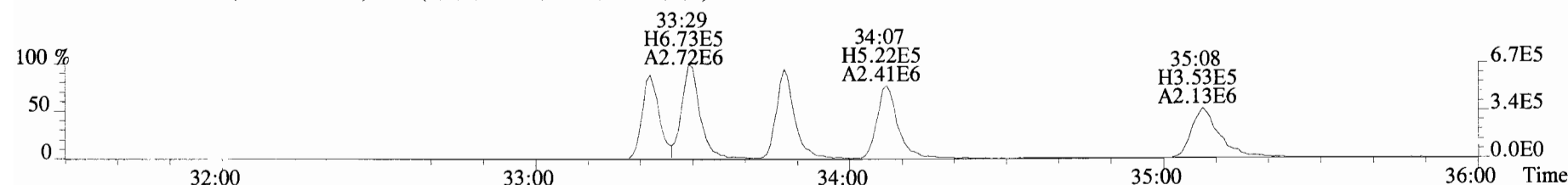
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
373.8207 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



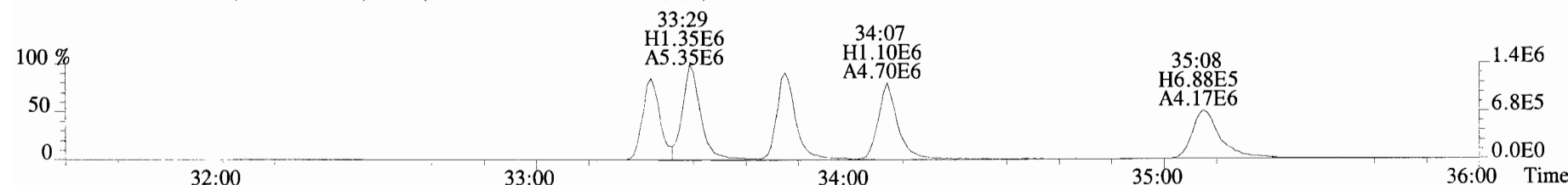
375.8178 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



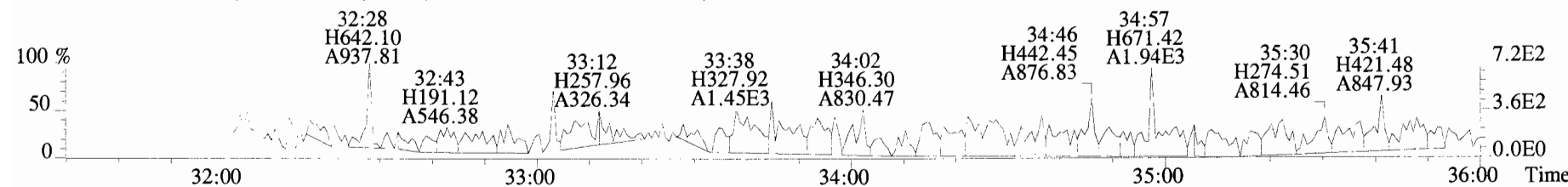
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



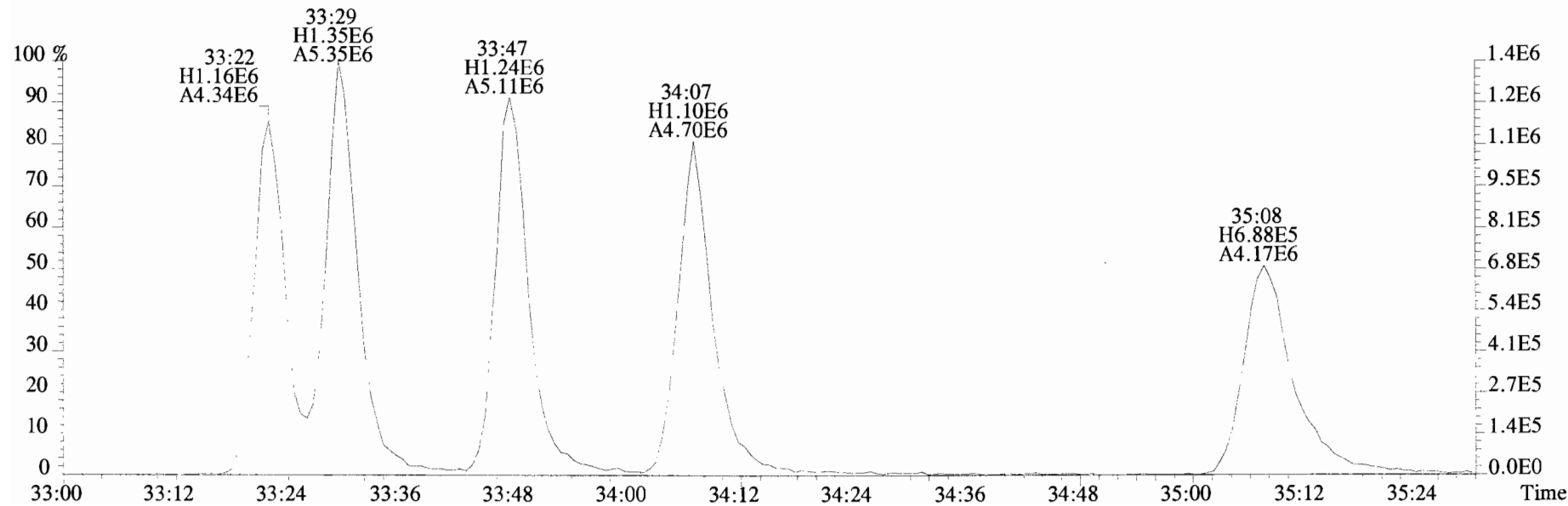
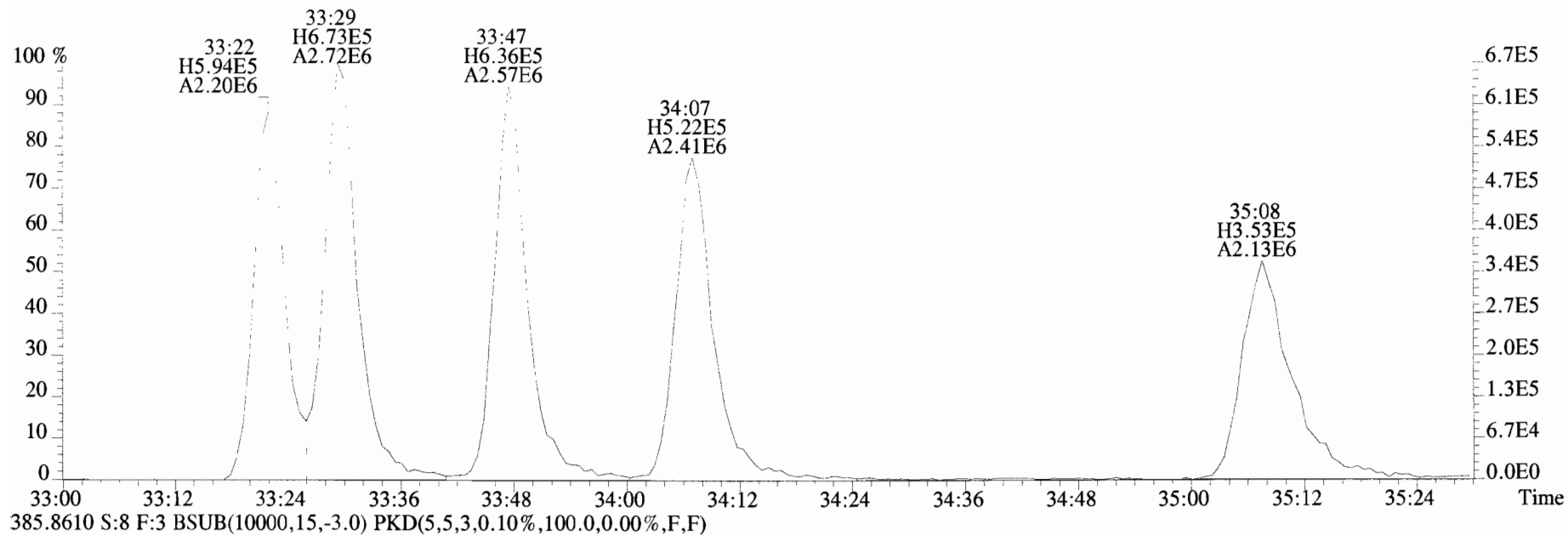
385.8610 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



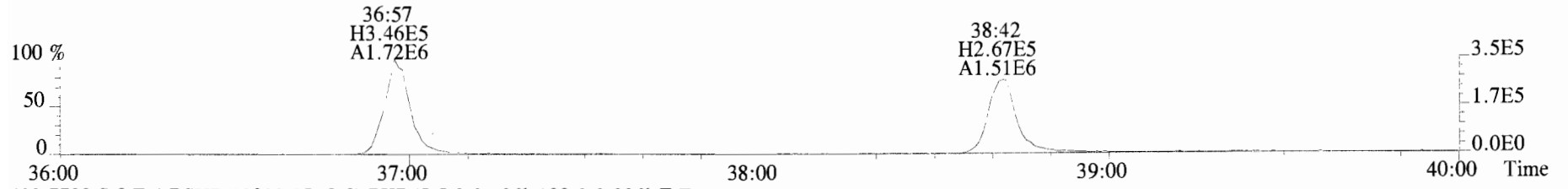
445.7555 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



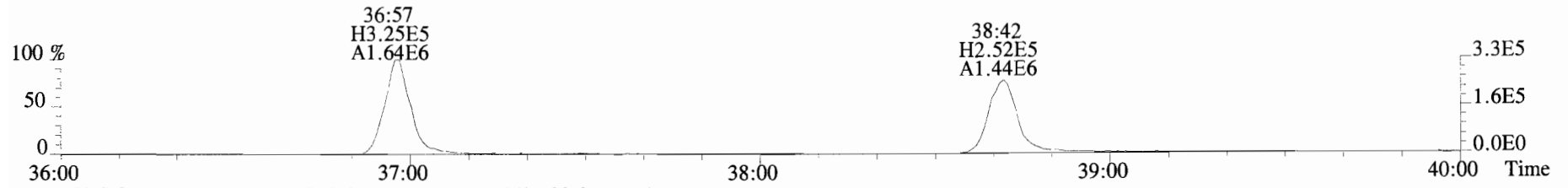
File:191009D1 #1-355 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
383.8639 S:8 F:3 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



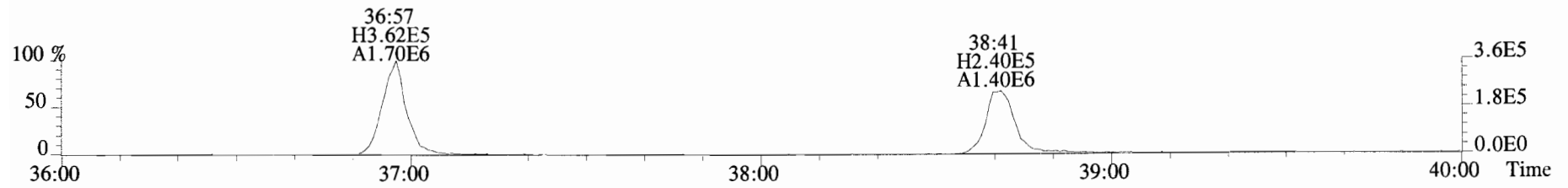
File:191009D1 #1-356 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
 Sample#8 File Text:Vista Analytical Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
 407.7818 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



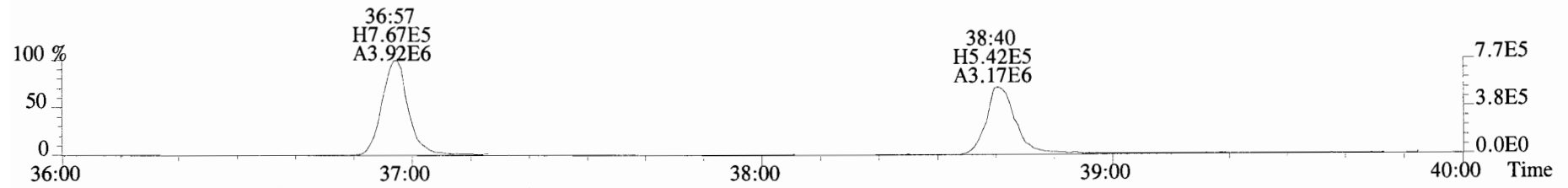
409.7788 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



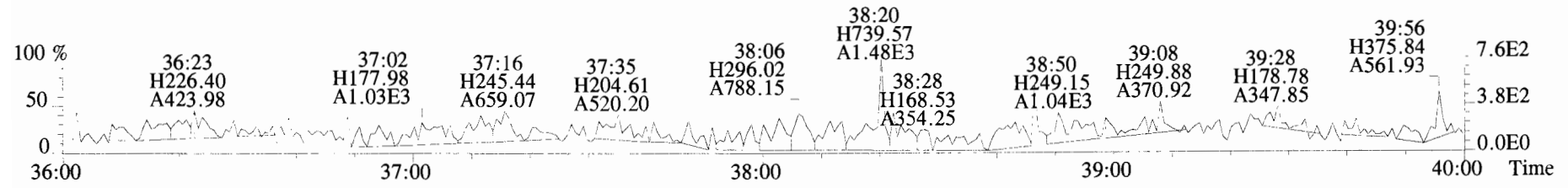
417.8253 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



419.8220 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



479.7165 S:8 F:4 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)



File:191009D1 #1-431 Acq: 9-OCT-2019 21:46:34 GC EI+ Voltage SIR Autospec-UltimaE
Sample#8 File Text:Vista_Analytical_Laboratory_VG7 Text:SS191009D1-1 1613 SSS 19C2207 Exp:OCDD_DB5
441.7428 S:8 F:5 BSUB(10000,15,-3.0) PKD(5,5,3,0.10%,100.0,0.00%,F,F)

