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Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC6325

Sampling Date: 05/23/23



Report to:

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Total number of pages in report: 662



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

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Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
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Test results relate only to samples analyzed.

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Sample Summary

AECOM, INC.

Job No: FC6325

N6274223F0104 RH Fire Suppression System
Project No: 60697810

| Sample Number | Collected Date | Time By | Received | Matrix Code | Type | Client Sample ID |
|---------------|----------------|---------|---------------|-------------|--------------|------------------------------|
| FC6325-1 | 05/23/23 | 09:25 | CPCW 05/24/23 | AQ | Ground Water | AF-RHMW225401-WGN01B-2305W4 |
| FC6325-2 | 05/23/23 | 12:42 | MDFS 05/24/23 | AQ | Ground Water | AF-RHMW10-WGN01LF-2305W4 |
| FC6325-3 | 05/23/23 | 10:35 | MD 05/24/23 | AQ | Ground Water | AF-HDMW225303-WGN01LF-2305W4 |

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC.

Job No: FC6325

Site: N6274223F0104 RH Fire Suppression System

Report Date: 6/1/2023 8:17:26 PM

On 05/24/2023, 3 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 2.3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC6325 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ

Batch ID: OP97092

Sample(s) FC6325-1MS, FC6325-2DUP were used as the QC samples indicated.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FC6325
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/23/23



| Lab Sample ID | Client Sample ID | Result/ Analyte | LOQ | LOD | Units | Method |
|---------------|------------------|--------------------|-----|-----|-------|--------|
|---------------|------------------|--------------------|-----|-----|-------|--------|

FC6325-1 AF-RHMW225401-WGN01B-2305W4

| | | | | | |
|------------------------------|--------|-----|------|------|----------------|
| Perfluoropentanoic acid | 1.2 J | 7.3 | 1.8 | ng/l | EPA DRAFT 1633 |
| Perfluorohexanoic acid | 0.88 J | 3.6 | 1.8 | ng/l | EPA DRAFT 1633 |
| Perfluoroheptanoic acid | 0.56 J | 3.6 | 1.8 | ng/l | EPA DRAFT 1633 |
| Perfluorooctanoic acid | 1.2 J | 3.6 | 0.91 | ng/l | EPA DRAFT 1633 |
| Perfluorobutanesulfonic acid | 0.64 J | 3.6 | 1.8 | ng/l | EPA DRAFT 1633 |
| Perfluorohexanesulfonic acid | 0.79 J | 3.6 | 1.8 | ng/l | EPA DRAFT 1633 |

FC6325-2 AF-RHMW10-WGN01LF-2305W4

No hits reported in this sample.

FC6325-3 AF-HDMW225303-WGN01LF-2305W4

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

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| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-RHMW225401-WGN01B-2305W4 | | |
| Lab Sample ID: | FC6325-1 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|-----------|----|----------------|----|----------------|------------|------------------|
| Run #1 | 6Q18655.D | 1 | 06/01/23 09:43 | MV | 05/26/23 10:30 | OP97092 | S6Q279 |
| Run #2 | | | | | | | |

| Run # | Initial Volume | Final Volume |
|--------|----------------|--------------|
| Run #1 | 550 ml | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|--|-------------------------------|--------|-----|------|------|-------|---|
| PERFLUOROALKYL CARBOXYLIC ACIDS | | | | | | | |
| 375-22-4 | Perfluorobutanoic acid | 3.6 U | 15 | 3.6 | 1.7 | ng/l | |
| 2706-90-3 | Perfluoropentanoic acid | 1.2 | 7.3 | 1.8 | 0.85 | ng/l | J |
| 307-24-4 | Perfluorohexanoic acid | 0.88 | 3.6 | 1.8 | 0.45 | ng/l | J |
| 375-85-9 | Perfluoroheptanoic acid | 0.56 | 3.6 | 1.8 | 0.45 | ng/l | J |
| 335-67-1 | Perfluorooctanoic acid | 1.2 | 3.6 | 0.91 | 0.45 | ng/l | J |
| 375-95-1 | Perfluorononanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 335-76-2 | Perfluorodecanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 307-55-1 | Perfluorododecanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 72629-94-8 | Perfluorotridecanoic acid | 1.8 U | 3.6 | 1.8 | 0.76 | ng/l | |
| 376-06-7 | Perfluorotetradecanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| PERFLUOROALKYL SULFONIC ACIDS | | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.64 | 3.6 | 1.8 | 0.45 | ng/l | J |
| 2706-91-4 | Perfluoropentanesulfonic acid | 3.6 U | 4.5 | 3.6 | 1.0 | ng/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.79 | 3.6 | 1.8 | 0.64 | ng/l | J |
| 375-92-8 | Perfluoroheptanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.49 | ng/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.52 | ng/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.58 | ng/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | 3.6 U | 4.5 | 3.6 | 1.0 | ng/l | |
| FLUOROTELOMER SULFONIC ACIDS | | | | | | | |
| 757124-72-4 | 4:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 2.9 | ng/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 3.2 | ng/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 3.7 | ng/l | |
| PERFLUOROOCCTANE SULFONAMIDES | | | | | | | |
| 754-91-6 | PFOSA | 1.8 U | 3.6 | 1.8 | 0.61 | ng/l | |
| 31506-32-8 | MeFOSA | 3.6 U | 7.3 | 3.6 | 0.91 | ng/l | |
| 4151-50-2 | EtFOSA | 3.6 U | 7.3 | 3.6 | 0.91 | ng/l | |

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-RHMW225401-WGN01B-2305W4 | | |
| Lab Sample ID: | FC6325-1 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---------|----------|--------|-----|-----|----|-------|---|
|---------|----------|--------|-----|-----|----|-------|---|

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

| | | | | | | | |
|-----------|---------|-------|-----|-----|------|------|--|
| 2355-31-9 | MeFOSAA | 3.6 U | 4.5 | 3.6 | 0.91 | ng/l | |
| 2991-50-6 | EtFOSAA | 3.6 U | 4.5 | 3.6 | 1.2 | ng/l | |

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

| | | | | | | | |
|------------|--------|------|----|----|-----|------|--|
| 24448-09-7 | MeFOSE | 18 U | 36 | 18 | 4.0 | ng/l | |
| 1691-99-2 | EtFOSE | 18 U | 36 | 18 | 6.7 | ng/l | |

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|----------------|-------|-----|-----|------|------|--|
| 13252-13-6 | HFPO-DA (GenX) | 1.8 U | 3.6 | 1.8 | 0.91 | ng/l | |
| 919005-14-4 | ADONA | 3.6 U | 7.3 | 3.6 | 1.7 | ng/l | |
| 377-73-1 | PFMPA | 1.8 U | 7.3 | 1.8 | 0.91 | ng/l | |
| 863090-89-5 | PFMBA | 3.6 U | 7.3 | 3.6 | 1.0 | ng/l | |
| 151772-58-6 | NFDHA | 3.6 U | 7.3 | 3.6 | 1.1 | ng/l | |

PER and POLYFLUOROETHER SULFONIC ACIDS

| | | | | | | | |
|-------------|----------------------------|-------|-----|-----|------|------|--|
| 756426-58-1 | 9Cl-PF3ONS (F-53B Major) | 3.6 U | 7.3 | 3.6 | 1.3 | ng/l | |
| 763051-92-9 | 11Cl-PF3OUdS (F-53B Minor) | 3.6 U | 7.3 | 3.6 | 1.6 | ng/l | |
| 113507-82-7 | PFEESA | 1.8 U | 7.3 | 1.8 | 0.71 | ng/l | |

FLUOROTELOMER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|-------------------------------|-------|----|-----|-----|------|--|
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 9.1 U | 18 | 9.1 | 4.1 | ng/l | |
| 914637-49-3 | 5:3 Fluorotelomer carboxylate | 18 U | 91 | 18 | 7.9 | ng/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 18 U | 91 | 18 | 7.1 | ng/l | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|---------|
| | 13C4-PFBA | 101% | | 20-150% |
| | 13C5-PFPeA | 113% | | 20-150% |
| | 13C5-PFHxA | 115% | | 20-150% |
| | 13C4-PFHpA | 115% | | 20-150% |
| | 13C8-PFOA | 115% | | 20-150% |
| | 13C9-PFNA | 109% | | 20-150% |
| | 13C6-PFDA | 112% | | 20-150% |
| | 13C7-PFUnDA | 114% | | 20-150% |
| | 13C2-PFDoDA | 103% | | 20-150% |
| | 13C2-PFTeDA | 100% | | 20-150% |
| | 13C3-PFBS | 117% | | 20-150% |
| | 13C3-PFHxS | 108% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

| | | |
|--------------------------|--|--------------------------------|
| Client Sample ID: | AF-RHMW225401-WGN01B-2305W4 | |
| Lab Sample ID: | FC6325-1 | Date Sampled: 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: n/a |
| Project: | N6274223F0104 RH Fire Suppression System | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|---------|
| | 13C8-PFOS | 106% | | 20-150% |
| | 13C8-FOSA | 94% | | 20-150% |
| | d3-MeFOSA | 89% | | 20-150% |
| | d5-EtFOSA | 91% | | 20-150% |
| | d3-MeFOSAA | 111% | | 20-150% |
| | d5-EtFOSAA | 111% | | 20-150% |
| | d7-MeFOSE | 81% | | 20-150% |
| | d9-EtFOSE | 91% | | 20-150% |
| | 13C2-4:2FTS | 117% | | 20-180% |
| | 13C2-6:2FTS | 118% | | 20-180% |
| | 13C2-8:2FTS | 124% | | 20-180% |
| | 13C3-HFPO-DA | 111% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

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| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-RHMW10-WGN01LF-2305W4 | | |
| Lab Sample ID: | FC6325-2 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|-----------|----|----------------|----|----------------|------------|------------------|
| Run #1 | 6Q18657.D | 1 | 06/01/23 10:12 | MV | 05/26/23 10:30 | OP97092 | S6Q279 |
| Run #2 | | | | | | | |

| Run # | Initial Volume | Final Volume |
|--------|----------------|--------------|
| Run #1 | 570 ml | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|--|-------------------------------|--------|-----|------|------|-------|---|
| PERFLUOROALKYL CARBOXYLIC ACIDS | | | | | | | |
| 375-22-4 | Perfluorobutanoic acid | 3.5 U | 14 | 3.5 | 1.7 | ng/l | |
| 2706-90-3 | Perfluoropentanoic acid | 1.8 U | 7.0 | 1.8 | 0.82 | ng/l | |
| 307-24-4 | Perfluorohexanoic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| 375-85-9 | Perfluoroheptanoic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| 335-67-1 | Perfluorooctanoic acid | 0.88 U | 3.5 | 0.88 | 0.44 | ng/l | |
| 375-95-1 | Perfluorononanoic acid | 1.8 U | 3.5 | 1.8 | 0.54 | ng/l | |
| 335-76-2 | Perfluorodecanoic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 1.8 U | 3.5 | 1.8 | 0.53 | ng/l | |
| 307-55-1 | Perfluorododecanoic acid | 1.8 U | 3.5 | 1.8 | 0.53 | ng/l | |
| 72629-94-8 | Perfluorotridecanoic acid | 1.8 U | 3.5 | 1.8 | 0.74 | ng/l | |
| 376-06-7 | Perfluorotetradecanoic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| PERFLUOROALKYL SULFONIC ACIDS | | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | 3.5 U | 4.4 | 3.5 | 0.98 | ng/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.61 | ng/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.44 | ng/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.47 | ng/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.50 | ng/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | 1.8 U | 3.5 | 1.8 | 0.56 | ng/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | 3.5 U | 4.4 | 3.5 | 1.0 | ng/l | |
| FLUOROTELOMER SULFONIC ACIDS | | | | | | | |
| 757124-72-4 | 4:2 Fluorotelomer sulfonate | 7.0 U | 18 | 7.0 | 2.8 | ng/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 7.0 U | 18 | 7.0 | 3.0 | ng/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 7.0 U | 18 | 7.0 | 3.6 | ng/l | |
| PERFLUOROOCCTANE SULFONAMIDES | | | | | | | |
| 754-91-6 | PFOSA | 1.8 U | 3.5 | 1.8 | 0.59 | ng/l | |
| 31506-32-8 | MeFOSA | 3.5 U | 7.0 | 3.5 | 0.88 | ng/l | |
| 4151-50-2 | EtFOSA | 3.5 U | 7.0 | 3.5 | 0.88 | ng/l | |

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

| | | | | |
|-------------------|--|-----------------|---------------|----------|
| Client Sample ID: | AF-RHMW10-WGN01LF-2305W4 | | Date Sampled: | 05/23/23 |
| Lab Sample ID: | FC6325-2 | Date Received: | 05/24/23 | |
| Matrix: | AQ - Ground Water | Percent Solids: | n/a | |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | | | |
| Project: | N6274223F0104 RH Fire Suppression System | | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---------|----------|--------|-----|-----|----|-------|---|
|---------|----------|--------|-----|-----|----|-------|---|

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

| | | | | | | | |
|-----------|---------|-------|-----|-----|------|------|--|
| 2355-31-9 | MeFOSAA | 3.5 U | 4.4 | 3.5 | 0.88 | ng/l | |
| 2991-50-6 | EtFOSAA | 3.5 U | 4.4 | 3.5 | 1.2 | ng/l | |

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

| | | | | | | | |
|------------|--------|------|----|----|-----|------|--|
| 24448-09-7 | MeFOSE | 18 U | 35 | 18 | 3.8 | ng/l | |
| 1691-99-2 | EtFOSE | 18 U | 35 | 18 | 6.5 | ng/l | |

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|----------------|-------|-----|-----|------|------|--|
| 13252-13-6 | HFPO-DA (GenX) | 1.8 U | 3.5 | 1.8 | 0.88 | ng/l | |
| 919005-14-4 | ADONA | 3.5 U | 7.0 | 3.5 | 1.6 | ng/l | |
| 377-73-1 | PFMPA | 1.8 U | 7.0 | 1.8 | 0.88 | ng/l | |
| 863090-89-5 | PFMBA | 3.5 U | 7.0 | 3.5 | 1.0 | ng/l | |
| 151772-58-6 | NFDHA | 3.5 U | 7.0 | 3.5 | 1.1 | ng/l | |

PER and POLYFLUOROETHER SULFONIC ACIDS

| | | | | | | | |
|-------------|----------------------------|-------|-----|-----|------|------|--|
| 756426-58-1 | 9Cl-PF3ONS (F-53B Major) | 3.5 U | 7.0 | 3.5 | 1.2 | ng/l | |
| 763051-92-9 | 11Cl-PF3OUdS (F-53B Minor) | 3.5 U | 7.0 | 3.5 | 1.5 | ng/l | |
| 113507-82-7 | PFEESA | 1.8 U | 7.0 | 1.8 | 0.68 | ng/l | |

FLUOROTELOMER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|-------------------------------|-------|----|-----|-----|------|--|
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 8.8 U | 18 | 8.8 | 4.0 | ng/l | |
| 914637-49-3 | 5:3 Fluorotelomer carboxylate | 18 U | 88 | 18 | 7.7 | ng/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 18 U | 88 | 18 | 6.9 | ng/l | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|--------|
|---------|------------------------|--------|--------|--------|

| | | | | |
|--|-------------|------|--|---------|
| | 13C4-PFBA | 114% | | 20-150% |
| | 13C5-PFPeA | 119% | | 20-150% |
| | 13C5-PFHxA | 117% | | 20-150% |
| | 13C4-PFHpA | 121% | | 20-150% |
| | 13C8-PFOA | 117% | | 20-150% |
| | 13C9-PFNA | 112% | | 20-150% |
| | 13C6-PFDA | 118% | | 20-150% |
| | 13C7-PFUnDA | 112% | | 20-150% |
| | 13C2-PFDoDA | 108% | | 20-150% |
| | 13C2-PFTeDA | 102% | | 20-150% |
| | 13C3-PFBS | 122% | | 20-150% |
| | 13C3-PFHxS | 116% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

| | | | | |
|--------------------------|--|--|------------------------|----------|
| Client Sample ID: | AF-RHMW10-WGN01LF-2305W4 | | Date Sampled: | 05/23/23 |
| Lab Sample ID: | FC6325-2 | | Date Received: | 05/24/23 |
| Matrix: | AQ - Ground Water | | Percent Solids: | n/a |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | | | |
| Project: | N6274223F0104 RH Fire Suppression System | | | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|---------|
| | 13C8-PFOS | 113% | | 20-150% |
| | 13C8-FOSA | 97% | | 20-150% |
| | d3-MeFOSA | 92% | | 20-150% |
| | d5-EtFOSA | 97% | | 20-150% |
| | d3-MeFOSAA | 116% | | 20-150% |
| | d5-EtFOSAA | 106% | | 20-150% |
| | d7-MeFOSE | 93% | | 20-150% |
| | d9-EtFOSE | 103% | | 20-150% |
| | 13C2-4:2FTS | 129% | | 20-180% |
| | 13C2-6:2FTS | 124% | | 20-180% |
| | 13C2-8:2FTS | 119% | | 20-180% |
| | 13C3-HFPO-DA | 118% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Page 1 of 3

| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-HDMW225303-WGN01LF-2305W4 | | |
| Lab Sample ID: | FC6325-3 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| Run # | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------|-----------|----|----------------|----|----------------|------------|------------------|
| Run #1 | 6Q18659.D | 1 | 06/01/23 10:41 | MV | 05/26/23 10:30 | OP97092 | S6Q279 |
| Run #2 | | | | | | | |

| Run # | Initial Volume | Final Volume |
|--------|----------------|--------------|
| Run #1 | 550 ml | 5.0 ml |
| Run #2 | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|--|-------------------------------|--------|-----|------|------|-------|---|
| PERFLUOROALKYL CARBOXYLIC ACIDS | | | | | | | |
| 375-22-4 | Perfluorobutanoic acid | 3.6 U | 15 | 3.6 | 1.7 | ng/l | |
| 2706-90-3 | Perfluoropentanoic acid | 1.8 U | 7.3 | 1.8 | 0.85 | ng/l | |
| 307-24-4 | Perfluorohexanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 375-85-9 | Perfluoroheptanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 335-67-1 | Perfluorooctanoic acid | 0.91 U | 3.6 | 0.91 | 0.45 | ng/l | |
| 375-95-1 | Perfluorononanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 335-76-2 | Perfluorodecanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 2058-94-8 | Perfluoroundecanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 307-55-1 | Perfluorododecanoic acid | 1.8 U | 3.6 | 1.8 | 0.55 | ng/l | |
| 72629-94-8 | Perfluorotridecanoic acid | 1.8 U | 3.6 | 1.8 | 0.76 | ng/l | |
| 376-06-7 | Perfluorotetradecanoic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| PERFLUOROALKYL SULFONIC ACIDS | | | | | | | |
| 375-73-5 | Perfluorobutanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | 3.6 U | 4.5 | 3.6 | 1.0 | ng/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.64 | ng/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.45 | ng/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.49 | ng/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.52 | ng/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | 1.8 U | 3.6 | 1.8 | 0.58 | ng/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | 3.6 U | 4.5 | 3.6 | 1.0 | ng/l | |
| FLUOROTELOMER SULFONIC ACIDS | | | | | | | |
| 757124-72-4 | 4:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 2.9 | ng/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 3.2 | ng/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 7.3 U | 18 | 7.3 | 3.7 | ng/l | |
| PERFLUOROOCCTANE SULFONAMIDES | | | | | | | |
| 754-91-6 | PFOSA | 1.8 U | 3.6 | 1.8 | 0.61 | ng/l | |
| 31506-32-8 | MeFOSA | 3.6 U | 7.3 | 3.6 | 0.91 | ng/l | |
| 4151-50-2 | EtFOSA | 3.6 U | 7.3 | 3.6 | 0.91 | ng/l | |

U = Not detected

LOD = Limit of Detection

J = Indicates an estimated value

LOQ = Limit of Quantitation

DL = Detection Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

Report of Analysis

| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-HDMW225303-WGN01LF-2305W4 | | |
| Lab Sample ID: | FC6325-3 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| CAS No. | Compound | Result | LOQ | LOD | DL | Units | Q |
|---------|----------|--------|-----|-----|----|-------|---|
|---------|----------|--------|-----|-----|----|-------|---|

PERFLUOROOCCTANE SULFONAMIDOACETIC ACIDS

| | | | | | | | |
|-----------|---------|-------|-----|-----|------|------|--|
| 2355-31-9 | MeFOSAA | 3.6 U | 4.5 | 3.6 | 0.91 | ng/l | |
| 2991-50-6 | EtFOSAA | 3.6 U | 4.5 | 3.6 | 1.2 | ng/l | |

PERFLUOROOCCTANE SULFONAMIDO ETHANOLS

| | | | | | | | |
|------------|--------|------|----|----|-----|------|--|
| 24448-09-7 | MeFOSE | 18 U | 36 | 18 | 4.0 | ng/l | |
| 1691-99-2 | EtFOSE | 18 U | 36 | 18 | 6.7 | ng/l | |

PER and POLYFLUOROETHER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|----------------|-------|-----|-----|------|------|--|
| 13252-13-6 | HFPO-DA (GenX) | 1.8 U | 3.6 | 1.8 | 0.91 | ng/l | |
| 919005-14-4 | ADONA | 3.6 U | 7.3 | 3.6 | 1.7 | ng/l | |
| 377-73-1 | PFMPA | 1.8 U | 7.3 | 1.8 | 0.91 | ng/l | |
| 863090-89-5 | PFMBA | 3.6 U | 7.3 | 3.6 | 1.0 | ng/l | |
| 151772-58-6 | NFDHA | 3.6 U | 7.3 | 3.6 | 1.1 | ng/l | |

PER and POLYFLUOROETHER SULFONIC ACIDS

| | | | | | | | |
|-------------|----------------------------|-------|-----|-----|------|------|--|
| 756426-58-1 | 9Cl-PF3ONS (F-53B Major) | 3.6 U | 7.3 | 3.6 | 1.3 | ng/l | |
| 763051-92-9 | 11Cl-PF3OUdS (F-53B Minor) | 3.6 U | 7.3 | 3.6 | 1.6 | ng/l | |
| 113507-82-7 | PFEESA | 1.8 U | 7.3 | 1.8 | 0.71 | ng/l | |

FLUOROTELOMER CARBOXYLIC ACIDS

| | | | | | | | |
|-------------|-------------------------------|-------|----|-----|-----|------|--|
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 9.1 U | 18 | 9.1 | 4.1 | ng/l | |
| 914637-49-3 | 5:3 Fluorotelomer carboxylate | 18 U | 91 | 18 | 7.9 | ng/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 18 U | 91 | 18 | 7.1 | ng/l | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|--------|
|---------|------------------------|--------|--------|--------|

| | | | | |
|--|-------------|------|--|---------|
| | 13C4-PFBA | 120% | | 20-150% |
| | 13C5-PFPeA | 121% | | 20-150% |
| | 13C5-PFHxA | 120% | | 20-150% |
| | 13C4-PFHpA | 121% | | 20-150% |
| | 13C8-PFOA | 120% | | 20-150% |
| | 13C9-PFNA | 116% | | 20-150% |
| | 13C6-PFDA | 112% | | 20-150% |
| | 13C7-PFUnDA | 106% | | 20-150% |
| | 13C2-PFDoDA | 102% | | 20-150% |
| | 13C2-PFTeDA | 98% | | 20-150% |
| | 13C3-PFBS | 116% | | 20-150% |
| | 13C3-PFHxS | 111% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

| | | | |
|-------------------|--|-----------------|----------|
| Client Sample ID: | AF-HDMW225303-WGN01LF-2305W4 | | |
| Lab Sample ID: | FC6325-3 | Date Sampled: | 05/23/23 |
| Matrix: | AQ - Ground Water | Date Received: | 05/24/23 |
| Method: | EPA DRAFT 1633 EPA 1633 DRAFT | Percent Solids: | n/a |
| Project: | N6274223F0104 RH Fire Suppression System | | |

| CAS No. | ID Standard Recoveries | Run# 1 | Run# 2 | Limits |
|---------|------------------------|--------|--------|---------|
| | 13C8-PFOS | 115% | | 20-150% |
| | 13C8-FOSA | 98% | | 20-150% |
| | d3-MeFOSA | 100% | | 20-150% |
| | d5-EtFOSA | 109% | | 20-150% |
| | d3-MeFOSAA | 106% | | 20-150% |
| | d5-EtFOSAA | 112% | | 20-150% |
| | d7-MeFOSE | 101% | | 20-150% |
| | d9-EtFOSE | 115% | | 20-150% |
| | 13C2-4:2FTS | 128% | | 20-180% |
| | 13C2-6:2FTS | 125% | | 20-180% |
| | 13C2-8:2FTS | 111% | | 20-180% |
| | 13C3-HFPO-DA | 122% | | 20-150% |

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits



Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

| Client / Reporting Information | | Project Information | | Analytical Information | | | | | | | | | | Matrix Codes | | | |
|--|--------------------------------|--|------|--|--------|--|--------------|-----------------------------|-----|------|-------|--------------|-----------|---|------|--|--|
| Company Name: AECOM | | Project Name: N6274223F0104 RH Fire Suppression System | | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">PFAS EPA Draft 1633</div> </div> | | | | | | | | | | DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OL - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe | | | |
| Address: 1001 Bishop St. ste 1600 | | Street | | | | | | | | | | | | | | | |
| City: Honolulu State: HI Zip: 96813 | | City Honolulu State Hawaii | | | | | | | | | | | | | | | |
| Project Contact: Katie Abbott Email: katie.abbott@aecom.com Project Manager: Watson Tanji Email: watson.tanji@aecom.com Phone #: 303-796-4624 / 808-954-4512 | | Project # 60697810 Fax # | | | | | | | | | | | | | | | |
| Sampler(s) Name(s) (Printed) Sampler 1: <i>Crishan Perez</i> Sampler 2: <i>Chris Womack</i> | | Client Purchase Order # | | | | | | | | | | | | | | | |
| SGS Orlando Sample # | Field ID / Point of Collection | DATE | TIME | SAMPLED BY: | MATRIX | TOTAL # OF BOTTLES | OTHER | NOPE | PCU | NOCH | INCH3 | PSG4 | NACH-ZNAC | DI WATER | NECH | | |
| 1 | AF-RHMMW225401-WGN01B-2305W4 | 5/23/23 | 0925 | CE, CW, ML | GW | 3 | | X | | | | | | | | | |
| Turnaround Time (Business days) | | Data Deliverable Information | | | | Comments / Remarks | | | | | | | | | | | |
| 10 Day (Business) 7 Day <input checked="" type="checkbox"/> 5 Day 3 Day RUSH 2 Day RUSH 1 Day RUSH Other | | Approved By: / Date: | | <input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S | | EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United Ams 016-94627602 | | | | | | | | | | | |
| Rush T/A Data Available VIA Email or Lablink | | | | | | | | | | | | | | | | | |
| Sample Custody must be documented below each time samples change possession, including courier delivery. | | | | | | | | | | | | | | | | | |
| Relinquished by/Sampler/Affiliation | Date Time: | Received By/Affiliation | | | | Relinquished By/Affiliation | Date Time: | Received By/Affiliation | | | | | | | | | |
| 1 Crishan Perez / AECOM | 5/23/23 1:15 | 2 <i>Chris Womack</i> AECOM | | | | 3 <i>Chris Womack</i> AECOM | 5/23/23 1:50 | 4 <i>Chris Womack</i> AECOM | | | | 5/23/23 1:50 | | | | | |
| Relinquished by/Affiliation | Date Time: | Received By/Affiliation | | | | Relinquished By/Affiliation | Date Time: | Received By/Affiliation | | | | | | | | | |
| 5 | | 6 | | | | 7 | | 8 | | | | | | | | | |
| Lab Use Only : Cooler Temperature (s) Celsius (corrected): <i>2.426</i> | | | | | | | | | | | | | | | | | |

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SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC6325

: 2305W4AFSG03

SGS - ORLANDO JOB # :

PAGE 1 OF 1

| Client / Reporting Information | | Project Information | | Analytical Information | | | | | | | | | | Matrix Codes | | | | |
|--|--------------------------------|--|----------------------------------|--|-------------------------|--|-----------|-------------------------|-----------------------------|-----------|-------------------------|-----------------------------|------------|---|-----------------------------|-----------|-------------------------|--|
| Company Name: AECOM | | Project Name: N6274223F0104 RH Fire Suppression System | | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 5px;">PFAS EPA Draft: 1633</div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;"> MS 12/23 </div> </div> | | | | | | | | | | DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe | | | | |
| Address: 1001 Bishop St. ste 1600 | | Street | | | | | | | | | | | | | | | | |
| City: Honolulu State: HI Zip: 96813 | | City Honolulu State Hawaii | | | | | | | | | | | | | | | | |
| Project Contact: Katie Abbott Email: katie.abbott@aecom.com | | Project # 60697810 | | | | | | | | | | | | | | | | |
| Project Manager: Watson Tanji Email: watson.tanji@aecom.com | | Fax # | | | | | | | | | | | | | | | | |
| Sampler(s) Name(s) (Printed) Sampler 1: <i>Micayla Deyano</i> Sampler 2: <i>Pina Sprick</i> | | Client Purchase Order # | | | | | | | | | | | | | | | | |
| SGS Orlando Sample # | Field ID / Point of Collection | COLLECTION | | | CONTAINER INFORMATION | | | | | | | | | | LAB USE ONLY | | | |
| | | DATE | TIME | SAMPLED BY | MATRIX | TOTAL # OF BOTTLES | OTHER | NOVE | IC | NIOSH | INCS | PERCH | NIOSH-ZINC | IN WATER | | MECH | | |
| 2 | AF-RHMW10-WGN01LF-2305W4 | 05/23/23 | 12:42 | MSFC | GW | 3 | | X | | | | | | | | | | |
| Turnaround Time (Business days) | | Data Deliverable Information | | | | Comments / Remarks | | | | | | | | | | | | |
| 10 Day (Business) _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____ | | Approved By: / Date: _____ <input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S | | | | EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW Printed AVE SIC-9466102 | | | | | | | | | | | | |
| Rush T/A Data Available VIA Email or Lablink | | Sample Custody must be documented below each time samples change possession, including courier delivery. | | | | | | | | | | | | | | | | |
| Relinquished by Sampler/Affiliation | Date Time | Received By/Affiliation | Relinquished By/Affiliation | Date Time | Received By/Affiliation | Relinquished By/Affiliation | Date Time | Received By/Affiliation | Relinquished By/Affiliation | Date Time | Received By/Affiliation | Relinquished By/Affiliation | Date Time | Received By/Affiliation | Relinquished By/Affiliation | Date Time | Received By/Affiliation | |
| 1 <i>MSFC</i> | 05/23/23 | 2 <i>Brittany Tommez / AECOM</i> | 3 <i>Brittany Tommez / AECOM</i> | 5/23/23 1550 | 4 <i>MSFC</i> | 5 | | 6 | 7 | | 8 | | | | | | | |
| Lab Use Only : Cooler Temperature (s) Celsius (corrected): | | http://www.sgs.com/en/terms-and-conditions | | | | | | | | | | | | | | | | |

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FC6325: Chain of Custody

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SGS North America Inc - Orlando
Chain of Custody

4405 Vineyard Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

FC6325

COC #: 2305W4AFSG04

SGS - ORLANDO JOB #:

PAGE 1 OF 1

| Client / Reporting Information | | | Project Information | | | Analytical Information | | | | | | | | | | | | Matrix Codes |
|---|--------------------------------|------------|--|----------------------------|-----------------------|--|-------|-----------------------------|----|-------------------|------|-------------------------|-----------|------------|------|--|--------------|---|
| Company Name: AECOM | | | Project Name: N6274223F0104 RH Fire Suppression System | | | <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">PFAS EPA Draft 1633</div> <div style="text-align: center;"> <p>4WD 5/23/23</p> </div> </div> | | | | | | | | | | | | DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe |
| Address: 1001 Bishop St. ste 1600 | | | Street | | | | | | | | | | | | | | | |
| City: Honolulu State: HI Zip: 96813 | | | City: Honolulu State: Hawaii | | | | | | | | | | | | | | | |
| Project Contact: Katie Abbott Email: katie.abbott@aecom.com | | | Project # 60697810 | | | | | | | | | | | | | | | |
| Project Manager: Watson Tanji Email: watson.tanji@aecom.com | | | Fax # | | | | | | | | | | | | | | | |
| Sampler 1: DeBarns Sampler 2: Viardos | | | Client Purchase Order # | | | | | | | | | | | | | | | |
| SGS Orlando Sample # | Field ID / Point of Collection | COLLECTION | | | CONTAINER INFORMATION | | | | | | | | | | | | LAB USE ONLY | |
| | | DATE | TIME | SAMPLED BY | MATRIX | TOTAL # OF BOTTLES | OTHER | NONE | PC | NH ₄ H | PHOS | PERC | NACH-ZNAC | D/WATER | MEDH | | | |
| 3 | AF-HDMW225303-WGN01LF-2305W4 | 5/23/23 | 10:35 | MD | GW | 3 | X | | | | | | | | | | | |
| | | | | MD | | | | | | | | | | | | | | |
| Turnaround Time (Business days) | | | Data Deliverable Information | | | Comments / Remarks | | | | | | | | | | | | |
| 10 Day (Business) _____ Approved By: / Date: _____ 7 Day _____ <input checked="" type="checkbox"/> 5 Day _____ 3 Day RUSH _____ 2 Day RUSH _____ 1 Day RUSH _____ Other _____ | | | <input type="checkbox"/> COMMERCIAL "A" (RESULTS ONLY) <input type="checkbox"/> COMMERCIAL "B" (RESULTS PLUS QC) <input type="checkbox"/> REDT1 (EPA LEVEL 3) <input checked="" type="checkbox"/> FULLT1 (EPA LEVEL 4) <input checked="" type="checkbox"/> EDD'S | | | EDMS upload database: JBPHE EDMS Coverage: AFFF Assessment Sampling GW United RWIS 01L-94667602 | | | | | | | | | | | | |
| Rush T/A Data Available VIA Email or Lablink | | | | | | | | | | | | | | | | | | |
| Relinquished by Sampler/Affiliation | | Date Time: | | Received By/Affiliation | | Date Time: | | Relinquished By/Affiliation | | Date Time: | | Received By/Affiliation | | Date Time: | | | | |
| 1 M. DeBarns / AECOM | | 5/23/23 | | 2 Brittany Tominez / AECOM | | 5/23/23 | | 3 Brittany Tominez / AECOM | | 5/23/23 | | 4 [Signature] / SHG | | 5/23/23 | | | | |
| 5 | | | | 6 | | | | 7 | | | | 8 | | | | | | |
| Lab Use Only: Cooler Temperature (s) Celsius (corrected): | | | | | | | | | | | | | | | | | | |
| http://www.sgs.com/en/terms-and-conditions | | | | | | | | | | | | | | | | | | |

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FC6325: Chain of Custody

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SGS Sample Receipt Summary

Job Number: FC6325

Client: AECOM

Project: N6274223F0104 RH Fire Suppression System

Date / Time Received: 5/24/2023 10:00:00 AM

Delivery Method: United Cargo/Airspace

Airbill #s: United Cargo AWB #: 016-94667602

Therm ID: IR 1;

Therm CF: -0.1;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (2.3);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #s: pH 0-3 230320 pH 10-12 _____ Other: (Specify) pH 1.0 - 12.0 222221
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS

Date: 5/24/2023 10:00:00 A

Reviewer: CD

Date: 5/26/2023

FC6325: Chain of Custody

Page 4 of 4

QC Evaluation: DOD QSM5.x Limits

Job Number: FC6325
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 05/23/23

| QC Sample ID | CAS# | Analyte | Sample Result Type | Result Type | Units | Limits |
|--------------|------|---------|--------------------|-------------|-------|--------|
|--------------|------|---------|--------------------|-------------|-------|--------|

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC6325

5.2
5

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Injection Standard Area Summaries
- TDCA Retention Time Checks
- Ion Ratio Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-IBLK | 6Q18594.D | 1 | 05/31/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 375-22-4 | Perfluorobutanoic acid | ND | 0.016 | 0.0019 | ug/l | |
| 2706-90-3 | Perfluoropentanoic acid | ND | 0.0080 | 0.00094 | ug/l | |
| 307-24-4 | Perfluorohexanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.0040 | 0.00061 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.0040 | 0.00084 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | ND | 0.0050 | 0.0011 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.0040 | 0.00070 | ug/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.0040 | 0.00054 | ug/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | ND | 0.0040 | 0.00057 | ug/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | ND | 0.0040 | 0.00064 | ug/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | ND | 0.0050 | 0.0011 | ug/l | |
| 757124-72-44:2 | Fluorotelomer sulfonate | ND | 0.020 | 0.0032 | ug/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0035 | ug/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0041 | ug/l | |
| 754-91-6 | PFOSA | ND | 0.0040 | 0.00067 | ug/l | |
| 31506-32-8 | MeFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 4151-50-2 | EtFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 2355-31-9 | MeFOSAA | ND | 0.0050 | 0.0010 | ug/l | |
| 2991-50-6 | EtFOSAA | ND | 0.0050 | 0.0013 | ug/l | |
| 24448-09-7 | MeFOSE | ND | 0.040 | 0.0044 | ug/l | |
| 1691-99-2 | EtFOSE | ND | 0.040 | 0.0074 | ug/l | |
| 13252-13-6 | HFPO-DA (GenX) | ND | 0.0040 | 0.0010 | ug/l | |
| 919005-14-4 | ADONA | ND | 0.0080 | 0.0019 | ug/l | |
| 377-73-1 | PFMPA | ND | 0.0080 | 0.0010 | ug/l | |
| 863090-89-5 | PFMBA | ND | 0.0080 | 0.0011 | ug/l | |
| 151772-58-6 | NFDHA | ND | 0.0080 | 0.0012 | ug/l | |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | ND | 0.0080 | 0.0014 | ug/l | |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | ND | 0.0080 | 0.0018 | ug/l | |

Instrument Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-IBLK | 6Q18594.D | 1 | 05/31/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 113507-82-7 | PFEESA | ND | 0.0080 | 0.00078 | ug/l | |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | ND | 0.020 | 0.0045 | ug/l | |
| 914637-49-35:3 | Fluorotelomer carboxylate | ND | 0.10 | 0.0087 | ug/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | ND | 0.10 | 0.0079 | ug/l | |

| CAS No. | ID Standard Recoveries | Limits |
|---------|------------------------|--------------|
| | 13C4-PFBA | 100% 20-150% |
| | 13C5-PFPeA | 103% 20-150% |
| | 13C5-PFHxA | 103% 20-150% |
| | 13C4-PFHpA | 102% 20-150% |
| | 13C8-PFOA | 98% 20-150% |
| | 13C9-PFNA | 92% 20-150% |
| | 13C6-PFDA | 89% 20-150% |
| | 13C7-PFUnDA | 97% 20-150% |
| | 13C2-PFDoDA | 97% 20-150% |
| | 13C2-PFTeDA | 89% 20-150% |
| | 13C3-PFBS | 103% 20-150% |
| | 13C3-PFHxS | 103% 20-150% |
| | 13C8-PFOS | 96% 20-150% |
| | 13C8-FOSA | 105% 20-150% |
| | d3-MeFOSA | 100% 20-150% |
| | d5-EtFOSA | 102% 20-150% |
| | d3-MeFOSAA | 99% 20-150% |
| | d5-EtFOSAA | 102% 20-150% |
| | d7-MeFOSE | 102% 20-150% |
| | d9-EtFOSE | 103% 20-150% |
| | 13C2-4:2FTS | 107% 20-180% |
| | 13C2-6:2FTS | 104% 20-180% |
| | 13C2-8:2FTS | 111% 20-180% |
| | 13C3-HFPO-DA | 100% 20-150% |

6.1.1
6

Continuing Calibration Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-ICCB | 6Q18654.D | 1 | 06/01/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 375-22-4 | Perfluorobutanoic acid | ND | 0.016 | 0.0019 | ug/l | |
| 2706-90-3 | Perfluoropentanoic acid | ND | 0.0080 | 0.00094 | ug/l | |
| 307-24-4 | Perfluorohexanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.0040 | 0.00061 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.0040 | 0.00084 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | ND | 0.0050 | 0.0011 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.0040 | 0.00070 | ug/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.0040 | 0.00054 | ug/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | ND | 0.0040 | 0.00057 | ug/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | ND | 0.0040 | 0.00064 | ug/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | ND | 0.0050 | 0.0011 | ug/l | |
| 757124-72-44:2 | Fluorotelomer sulfonate | ND | 0.020 | 0.0032 | ug/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0035 | ug/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0041 | ug/l | |
| 754-91-6 | PFOSA | ND | 0.0040 | 0.00067 | ug/l | |
| 31506-32-8 | MeFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 4151-50-2 | EtFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 2355-31-9 | MeFOSAA | ND | 0.0050 | 0.0010 | ug/l | |
| 2991-50-6 | EtFOSAA | ND | 0.0050 | 0.0013 | ug/l | |
| 24448-09-7 | MeFOSE | ND | 0.040 | 0.0044 | ug/l | |
| 1691-99-2 | EtFOSE | ND | 0.040 | 0.0074 | ug/l | |
| 13252-13-6 | HFPO-DA (GenX) | ND | 0.0040 | 0.0010 | ug/l | |
| 919005-14-4 | ADONA | ND | 0.0080 | 0.0019 | ug/l | |
| 377-73-1 | PFMPA | ND | 0.0080 | 0.0010 | ug/l | |
| 863090-89-5 | PFMBA | ND | 0.0080 | 0.0011 | ug/l | |
| 151772-58-6 | NFDHA | ND | 0.0080 | 0.0012 | ug/l | |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | ND | 0.0080 | 0.0014 | ug/l | |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | ND | 0.0080 | 0.0018 | ug/l | |

Continuing Calibration Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-ICCB | 6Q18654.D | 1 | 06/01/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 113507-82-7 | PFEESA | ND | 0.0080 | 0.00078 | ug/l | |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | ND | 0.020 | 0.0045 | ug/l | |
| 914637-49-35:3 | Fluorotelomer carboxylate | ND | 0.10 | 0.0087 | ug/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | ND | 0.10 | 0.0079 | ug/l | |

| CAS No. | ID Standard Recoveries | Limits |
|---------|------------------------|--------------|
| | 13C4-PFBA | 99% 20-150% |
| | 13C5-PFPeA | 101% 20-150% |
| | 13C5-PFHxA | 102% 20-150% |
| | 13C4-PFHpA | 105% 20-150% |
| | 13C8-PFOA | 106% 20-150% |
| | 13C9-PFNA | 96% 20-150% |
| | 13C6-PFDA | 91% 20-150% |
| | 13C7-PFUnDA | 98% 20-150% |
| | 13C2-PFDoDA | 95% 20-150% |
| | 13C2-PFTeDA | 93% 20-150% |
| | 13C3-PFBS | 102% 20-150% |
| | 13C3-PFHxS | 105% 20-150% |
| | 13C8-PFOS | 100% 20-150% |
| | 13C8-FOSA | 102% 20-150% |
| | d3-MeFOSA | 99% 20-150% |
| | d5-EtFOSA | 104% 20-150% |
| | d3-MeFOSAA | 106% 20-150% |
| | d5-EtFOSAA | 102% 20-150% |
| | d7-MeFOSE | 104% 20-150% |
| | d9-EtFOSE | 99% 20-150% |
| | 13C2-4:2FTS | 108% 20-180% |
| | 13C2-6:2FTS | 110% 20-180% |
| | 13C2-8:2FTS | 115% 20-180% |
| | 13C3-HFPO-DA | 98% 20-150% |

Method Blank Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-MB | 6Q18646.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 375-22-4 | Perfluorobutanoic acid | ND | 0.016 | 0.0019 | ug/l | |
| 2706-90-3 | Perfluoropentanoic acid | ND | 0.0080 | 0.00094 | ug/l | |
| 307-24-4 | Perfluorohexanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.0040 | 0.00061 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.0040 | 0.00084 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | ND | 0.0050 | 0.0011 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.0040 | 0.00070 | ug/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.0040 | 0.00054 | ug/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | ND | 0.0040 | 0.00057 | ug/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | ND | 0.0040 | 0.00064 | ug/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | ND | 0.0050 | 0.0011 | ug/l | |
| 757124-72-44:2 | Fluorotelomer sulfonate | ND | 0.020 | 0.0032 | ug/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0035 | ug/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0041 | ug/l | |
| 754-91-6 | PFOSA | ND | 0.0040 | 0.00067 | ug/l | |
| 31506-32-8 | MeFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 4151-50-2 | EtFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 2355-31-9 | MeFOSAA | ND | 0.0050 | 0.0010 | ug/l | |
| 2991-50-6 | EtFOSAA | ND | 0.0050 | 0.0013 | ug/l | |
| 24448-09-7 | MeFOSE | ND | 0.040 | 0.0044 | ug/l | |
| 1691-99-2 | EtFOSE | ND | 0.040 | 0.0074 | ug/l | |
| 13252-13-6 | HFPO-DA (GenX) | ND | 0.0040 | 0.0010 | ug/l | |
| 919005-14-4 | ADONA | ND | 0.0080 | 0.0019 | ug/l | |
| 377-73-1 | PFMPA | ND | 0.0080 | 0.0010 | ug/l | |
| 863090-89-5 | PFMBA | ND | 0.0080 | 0.0011 | ug/l | |
| 151772-58-6 | NFDHA | ND | 0.0080 | 0.0012 | ug/l | |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | ND | 0.0080 | 0.0014 | ug/l | |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | ND | 0.0080 | 0.0018 | ug/l | |

Method Blank Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-MB | 6Q18646.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 113507-82-7 | PFEESA | ND | 0.0080 | 0.00078 | ug/l | |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | ND | 0.020 | 0.0045 | ug/l | |
| 914637-49-35:3 | Fluorotelomer carboxylate | ND | 0.10 | 0.0087 | ug/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | ND | 0.10 | 0.0079 | ug/l | |

| CAS No. | ID Standard Recoveries | Limits |
|---------|------------------------|--------------|
| | 13C4-PFBA | 113% 20-150% |
| | 13C5-PFPeA | 115% 20-150% |
| | 13C5-PFHxA | 112% 20-150% |
| | 13C4-PFHpA | 118% 20-150% |
| | 13C8-PFOA | 113% 20-150% |
| | 13C9-PFNA | 105% 20-150% |
| | 13C6-PFDA | 113% 20-150% |
| | 13C7-PFUnDA | 114% 20-150% |
| | 13C2-PFDoDA | 110% 20-150% |
| | 13C2-PFTeDA | 107% 20-150% |
| | 13C3-PFBS | 113% 20-150% |
| | 13C3-PFHxS | 114% 20-150% |
| | 13C8-PFOS | 116% 20-150% |
| | 13C8-FOSA | 81% 20-150% |
| | d3-MeFOSA | 82% 20-150% |
| | d5-EtFOSA | 92% 20-150% |
| | d3-MeFOSAA | 115% 20-150% |
| | d5-EtFOSAA | 109% 20-150% |
| | d7-MeFOSE | 74% 20-150% |
| | d9-EtFOSE | 92% 20-150% |
| | 13C2-4:2FTS | 127% 20-180% |
| | 13C2-6:2FTS | 128% 20-180% |
| | 13C2-8:2FTS | 113% 20-180% |
| | 13C3-HFPO-DA | 110% 20-150% |

Continuing Calibration Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-ICCB | 6Q18643.D | 1 | 06/01/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97092-BS, OP97092-LLBS, OP97092-MB

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 375-22-4 | Perfluorobutanoic acid | ND | 0.016 | 0.0019 | ug/l | |
| 2706-90-3 | Perfluoropentanoic acid | ND | 0.0080 | 0.00094 | ug/l | |
| 307-24-4 | Perfluorohexanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-85-9 | Perfluoroheptanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 335-67-1 | Perfluorooctanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-95-1 | Perfluorononanoic acid | ND | 0.0040 | 0.00061 | ug/l | |
| 335-76-2 | Perfluorodecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2058-94-8 | Perfluoroundecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 307-55-1 | Perfluorododecanoic acid | ND | 0.0040 | 0.00060 | ug/l | |
| 72629-94-8 | Perfluorotridecanoic acid | ND | 0.0040 | 0.00084 | ug/l | |
| 376-06-7 | Perfluorotetradecanoic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 375-73-5 | Perfluorobutanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 2706-91-4 | Perfluoropentanesulfonic acid | ND | 0.0050 | 0.0011 | ug/l | |
| 355-46-4 | Perfluorohexanesulfonic acid | ND | 0.0040 | 0.00070 | ug/l | |
| 375-92-8 | Perfluoroheptanesulfonic acid | ND | 0.0040 | 0.00050 | ug/l | |
| 1763-23-1 | Perfluorooctanesulfonic acid | ND | 0.0040 | 0.00054 | ug/l | |
| 68259-12-1 | Perfluorononanesulfonic acid | ND | 0.0040 | 0.00057 | ug/l | |
| 335-77-3 | Perfluorodecanesulfonic acid | ND | 0.0040 | 0.00064 | ug/l | |
| 79780-39-5 | Perfluorododecanesulfonic aci | ND | 0.0050 | 0.0011 | ug/l | |
| 757124-72-44:2 | Fluorotelomer sulfonate | ND | 0.020 | 0.0032 | ug/l | |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0035 | ug/l | |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | ND | 0.020 | 0.0041 | ug/l | |
| 754-91-6 | PFOSA | ND | 0.0040 | 0.00067 | ug/l | |
| 31506-32-8 | MeFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 4151-50-2 | EtFOSA | ND | 0.0080 | 0.0010 | ug/l | |
| 2355-31-9 | MeFOSAA | ND | 0.0050 | 0.0010 | ug/l | |
| 2991-50-6 | EtFOSAA | ND | 0.0050 | 0.0013 | ug/l | |
| 24448-09-7 | MeFOSE | ND | 0.040 | 0.0044 | ug/l | |
| 1691-99-2 | EtFOSE | ND | 0.040 | 0.0074 | ug/l | |
| 13252-13-6 | HFPO-DA (GenX) | ND | 0.0040 | 0.0010 | ug/l | |
| 919005-14-4 | ADONA | ND | 0.0080 | 0.0019 | ug/l | |
| 377-73-1 | PFMPA | ND | 0.0080 | 0.0010 | ug/l | |
| 863090-89-5 | PFMBA | ND | 0.0080 | 0.0011 | ug/l | |
| 151772-58-6 | NFDHA | ND | 0.0080 | 0.0012 | ug/l | |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | ND | 0.0080 | 0.0014 | ug/l | |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | ND | 0.0080 | 0.0018 | ug/l | |

Continuing Calibration Blank

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|-------------|-----------|----|----------|----|-----------|------------|------------------|
| S6Q279-ICCB | 6Q18643.D | 1 | 06/01/23 | MV | n/a | n/a | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

OP97092-BS, OP97092-LLBS, OP97092-MB

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|----------------|-------------------------------|--------|--------|---------|-------|---|
| 113507-82-7 | PFEESA | ND | 0.0080 | 0.00078 | ug/l | |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | ND | 0.020 | 0.0045 | ug/l | |
| 914637-49-35:3 | Fluorotelomer carboxylate | ND | 0.10 | 0.0087 | ug/l | |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | ND | 0.10 | 0.0079 | ug/l | |

| CAS No. | ID Standard Recoveries | Limits |
|---------|------------------------|--------------|
| | 13C4-PFBA | 100% 20-150% |
| | 13C5-PFPeA | 103% 20-150% |
| | 13C5-PFHxA | 105% 20-150% |
| | 13C4-PFHpA | 104% 20-150% |
| | 13C8-PFOA | 105% 20-150% |
| | 13C9-PFNA | 101% 20-150% |
| | 13C6-PFDA | 95% 20-150% |
| | 13C7-PFUnDA | 104% 20-150% |
| | 13C2-PFDoDA | 96% 20-150% |
| | 13C2-PFTeDA | 97% 20-150% |
| | 13C3-PFBS | 106% 20-150% |
| | 13C3-PFHxS | 102% 20-150% |
| | 13C8-PFOS | 98% 20-150% |
| | 13C8-FOSA | 100% 20-150% |
| | d3-MeFOSA | 96% 20-150% |
| | d5-EtFOSA | 100% 20-150% |
| | d3-MeFOSAA | 99% 20-150% |
| | d5-EtFOSAA | 102% 20-150% |
| | d7-MeFOSE | 100% 20-150% |
| | d9-EtFOSE | 99% 20-150% |
| | 13C2-4:2FTS | 110% 20-180% |
| | 13C2-6:2FTS | 112% 20-180% |
| | 13C2-8:2FTS | 116% 20-180% |
| | 13C3-HFPO-DA | 100% 20-150% |

6.1.4

6

Blank Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-LLBS | 6Q18645.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|----------------|-------------------------------|---------------|-------------|----------|--------|
| 375-22-4 | Perfluorobutanoic acid | 0.03 | 0.0320 | 107 | 40-150 |
| 2706-90-3 | Perfluoropentanoic acid | 0.015 | 0.0162 | 108 | 40-150 |
| 307-24-4 | Perfluorohexanoic acid | 0.0075 | 0.0078 | 104 | 40-150 |
| 375-85-9 | Perfluoroheptanoic acid | 0.0075 | 0.0080 | 107 | 40-150 |
| 335-67-1 | Perfluorooctanoic acid | 0.0075 | 0.0082 | 109 | 40-150 |
| 375-95-1 | Perfluorononanoic acid | 0.0075 | 0.0076 | 101 | 40-150 |
| 335-76-2 | Perfluorodecanoic acid | 0.0075 | 0.0081 | 108 | 40-150 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.0075 | 0.0082 | 109 | 40-150 |
| 307-55-1 | Perfluorododecanoic acid | 0.0075 | 0.0076 | 101 | 40-150 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.0075 | 0.0079 | 105 | 40-150 |
| 376-06-7 | Perfluorotetradecanoic acid | 0.0075 | 0.0083 | 111 | 40-150 |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.00665 | 0.0071 | 107 | 40-150 |
| 2706-91-4 | Perfluoropentanesulfonic acid | 0.00706 | 0.0074 | 105 | 40-150 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.00686 | 0.0074 | 108 | 40-150 |
| 375-92-8 | Perfluoroheptanesulfonic acid | 0.00715 | 0.0077 | 108 | 40-150 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.00696 | 0.0077 | 111 | 40-150 |
| 68259-12-1 | Perfluorononanesulfonic acid | 0.00722 | 0.0075 | 104 | 40-150 |
| 335-77-3 | Perfluorodecanesulfonic acid | 0.00724 | 0.0079 | 109 | 40-150 |
| 79780-39-5 | Perfluorododecanesulfonic aci | 0.00728 | 0.0078 | 107 | 40-150 |
| 757124-72-44:2 | Fluorotelomer sulfonate | 0.0281 | 0.0308 | 110 | 40-150 |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 0.0285 | 0.0313 | 110 | 40-150 |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 0.0288 | 0.0280 | 97 | 40-150 |
| 754-91-6 | PFOSA | 0.0075 | 0.0077 | 103 | 40-150 |
| 31506-32-8 | MeFOSA | 0.015 | 0.0158 | 105 | 40-150 |
| 4151-50-2 | EtFOSA | 0.015 | 0.0149 | 99 | 40-150 |
| 2355-31-9 | MeFOSAA | 0.0075 | 0.0080 | 107 | 40-150 |
| 2991-50-6 | EtFOSAA | 0.0075 | 0.0083 | 111 | 40-150 |
| 24448-09-7 | MeFOSE | 0.0375 | 0.0372 | 99 | 40-150 |
| 1691-99-2 | EtFOSE | 0.0375 | 0.0365 | 97 | 40-150 |
| 13252-13-6 | HFPO-DA (GenX) | 0.015 | 0.0166 | 111 | 40-150 |
| 919005-14-4 | ADONA | 0.0142 | 0.0159 | 112 | 40-150 |
| 377-73-1 | PFMPA | 0.015 | 0.0163 | 109 | 40-150 |
| 863090-89-5 | PFMBA | 0.015 | 0.0163 | 109 | 40-150 |
| 151772-58-6 | NFDHA | 0.015 | 0.0159 | 106 | 40-150 |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | 0.014 | 0.0157 | 112 | 40-150 |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | 0.0142 | 0.0157 | 111 | 40-150 |

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-LLBS | 6Q18645.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|----------------|-------------------------------|------------|----------|-------|--------|
| 113507-82-7 | PFEESA | 0.0134 | 0.0131 | 98 | 40-150 |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 0.0375 | 0.0288 | 77 | 40-150 |
| 914637-49-35:3 | Fluorotelomer carboxylate | 0.188 | 0.170 | 91 | 40-150 |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 0.188 | 0.183 | 98 | 40-150 |

| CAS No. | ID Standard Recoveries | BSP | Limits |
|---------|------------------------|------|---------|
| | 13C4-PFBA | 113% | 20-150% |
| | 13C5-PFPeA | 118% | 20-150% |
| | 13C5-PFHxA | 122% | 20-150% |
| | 13C4-PFHpA | 117% | 20-150% |
| | 13C8-PFOA | 115% | 20-150% |
| | 13C9-PFNA | 114% | 20-150% |
| | 13C6-PFDA | 113% | 20-150% |
| | 13C7-PFUnDA | 116% | 20-150% |
| | 13C2-PFDoDA | 115% | 20-150% |
| | 13C2-PFTeDA | 108% | 20-150% |
| | 13C3-PFBS | 109% | 20-150% |
| | 13C3-PFHxS | 109% | 20-150% |
| | 13C8-PFOS | 114% | 20-150% |
| | 13C8-FOSA | 80% | 20-150% |
| | d3-MeFOSA | 81% | 20-150% |
| | d5-EtFOSA | 88% | 20-150% |
| | d3-MeFOSAA | 122% | 20-150% |
| | d5-EtFOSAA | 110% | 20-150% |
| | d7-MeFOSE | 76% | 20-150% |
| | d9-EtFOSE | 89% | 20-150% |
| | 13C2-4:2FTS | 111% | 20-180% |
| | 13C2-6:2FTS | 118% | 20-180% |
| | 13C2-8:2FTS | 122% | 20-180% |
| | 13C3-HFPO-DA | 113% | 20-150% |

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-BS | 6Q18644.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|----------------|-------------------------------|---------------|-------------|----------|--------|
| 375-22-4 | Perfluorobutanoic acid | 0.1 | 0.108 | 108 | 40-150 |
| 2706-90-3 | Perfluoropentanoic acid | 0.05 | 0.0527 | 105 | 40-150 |
| 307-24-4 | Perfluorohexanoic acid | 0.025 | 0.0262 | 105 | 40-150 |
| 375-85-9 | Perfluoroheptanoic acid | 0.025 | 0.0260 | 104 | 40-150 |
| 335-67-1 | Perfluorooctanoic acid | 0.025 | 0.0279 | 112 | 40-150 |
| 375-95-1 | Perfluorononanoic acid | 0.025 | 0.0256 | 102 | 40-150 |
| 335-76-2 | Perfluorodecanoic acid | 0.025 | 0.0264 | 106 | 40-150 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.025 | 0.0275 | 110 | 40-150 |
| 307-55-1 | Perfluorododecanoic acid | 0.025 | 0.0266 | 106 | 40-150 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.025 | 0.0266 | 106 | 40-150 |
| 376-06-7 | Perfluorotetradecanoic acid | 0.025 | 0.0263 | 105 | 40-150 |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.0222 | 0.0224 | 101 | 40-150 |
| 2706-91-4 | Perfluoropentanesulfonic acid | 0.0235 | 0.0250 | 106 | 40-150 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.0229 | 0.0248 | 109 | 40-150 |
| 375-92-8 | Perfluoroheptanesulfonic acid | 0.0238 | 0.0239 | 100 | 40-150 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.0232 | 0.0230 | 99 | 40-150 |
| 68259-12-1 | Perfluorononanesulfonic acid | 0.0241 | 0.0232 | 96 | 40-150 |
| 335-77-3 | Perfluorodecanesulfonic acid | 0.0241 | 0.0229 | 95 | 40-150 |
| 79780-39-5 | Perfluorododecanesulfonic aci | 0.0243 | 0.0235 | 97 | 40-150 |
| 757124-72-44:2 | Fluorotelomer sulfonate | 0.0938 | 0.0973 | 104 | 40-150 |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 0.095 | 0.107 | 113 | 40-150 |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 0.096 | 0.0934 | 97 | 40-150 |
| 754-91-6 | PFOSA | 0.025 | 0.0249 | 100 | 40-150 |
| 31506-32-8 | MeFOSA | 0.05 | 0.0524 | 105 | 40-150 |
| 4151-50-2 | EtFOSA | 0.05 | 0.0510 | 102 | 40-150 |
| 2355-31-9 | MeFOSAA | 0.025 | 0.0281 | 112 | 40-150 |
| 2991-50-6 | EtFOSAA | 0.025 | 0.0277 | 111 | 40-150 |
| 24448-09-7 | MeFOSE | 0.125 | 0.128 | 102 | 40-150 |
| 1691-99-2 | EtFOSE | 0.125 | 0.127 | 102 | 40-150 |
| 13252-13-6 | HFPO-DA (GenX) | 0.05 | 0.0519 | 104 | 40-150 |
| 919005-14-4 | ADONA | 0.0473 | 0.0515 | 109 | 40-150 |
| 377-73-1 | PFMPA | 0.05 | 0.0264 | 53 | 40-150 |
| 863090-89-5 | PFMBA | 0.05 | 0.0556 | 111 | 40-150 |
| 151772-58-6 | NFDHA | 0.05 | 0.0535 | 107 | 40-150 |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | 0.0468 | 0.0512 | 110 | 40-150 |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | 0.0473 | 0.0499 | 106 | 40-150 |

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-BS | 6Q18644.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|----------------|-------------------------------|------------|----------|-------|--------|
| 113507-82-7 | PFEESA | 0.0445 | 0.0480 | 108 | 40-150 |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 0.125 | 0.0580 | 46 | 40-150 |
| 914637-49-35:3 | Fluorotelomer carboxylate | 0.625 | 0.602 | 96 | 40-150 |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 0.625 | 0.632 | 101 | 40-150 |

| CAS No. | ID Standard Recoveries | BSP | Limits |
|---------|------------------------|------|---------|
| | 13C4-PFBA | 27% | 20-150% |
| | 13C5-PFPeA | 104% | 20-150% |
| | 13C5-PFHxA | 112% | 20-150% |
| | 13C4-PFHpA | 110% | 20-150% |
| | 13C8-PFOA | 109% | 20-150% |
| | 13C9-PFNA | 108% | 20-150% |
| | 13C6-PFDA | 106% | 20-150% |
| | 13C7-PFUnDA | 105% | 20-150% |
| | 13C2-PFDoDA | 105% | 20-150% |
| | 13C2-PFTeDA | 100% | 20-150% |
| | 13C3-PFBS | 110% | 20-150% |
| | 13C3-PFHxS | 106% | 20-150% |
| | 13C8-PFOS | 119% | 20-150% |
| | 13C8-FOSA | 87% | 20-150% |
| | d3-MeFOSA | 91% | 20-150% |
| | d5-EtFOSA | 93% | 20-150% |
| | d3-MeFOSAA | 115% | 20-150% |
| | d5-EtFOSAA | 111% | 20-150% |
| | d7-MeFOSE | 77% | 20-150% |
| | d9-EtFOSE | 91% | 20-150% |
| | 13C2-4:2FTS | 118% | 20-180% |
| | 13C2-6:2FTS | 108% | 20-180% |
| | 13C2-8:2FTS | 120% | 20-180% |
| | 13C3-HFPO-DA | 108% | 20-150% |

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-MS | 6Q18656.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |
| FC6325-1 | 6Q18655.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | FC6325-1 ug/l | Spike Q | MS ug/l | MS % | Limits | |
|----------------|-------------------------------|------------------|------------|------------|---------|--------|--------|
| 375-22-4 | Perfluorobutanoic acid | 0.015 U | | 0.0926 | 0.102 | 110 | 40-150 |
| 2706-90-3 | Perfluoropentanoic acid | 0.0012 J | | 0.0463 | 0.0508 | 107 | 40-150 |
| 307-24-4 | Perfluorohexanoic acid | 0.00088 J | | 0.0231 | 0.0259 | 108 | 40-150 |
| 375-85-9 | Perfluoroheptanoic acid | 0.00056 J | | 0.0231 | 0.0248 | 105 | 40-150 |
| 335-67-1 | Perfluorooctanoic acid | 0.0012 J | | 0.0231 | 0.0264 | 109 | 40-150 |
| 375-95-1 | Perfluorononanoic acid | 0.0036 U | | 0.0231 | 0.0254 | 110 | 40-150 |
| 335-76-2 | Perfluorodecanoic acid | 0.0036 U | | 0.0231 | 0.0241 | 104 | 40-150 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.0036 U | | 0.0231 | 0.0235 | 102 | 40-150 |
| 307-55-1 | Perfluorododecanoic acid | 0.0036 U | | 0.0231 | 0.0264 | 114 | 40-150 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.0036 U | | 0.0231 | 0.0258 | 111 | 40-150 |
| 376-06-7 | Perfluorotetradecanoic acid | 0.0036 U | | 0.0231 | 0.0268 | 116 | 40-150 |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.00064 J | | 0.0205 | 0.0226 | 107 | 40-150 |
| 2706-91-4 | Perfluoropentanesulfonic acid | 0.0045 U | | 0.0218 | 0.0230 | 106 | 40-150 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.00079 J | | 0.0212 | 0.0224 | 102 | 40-150 |
| 375-92-8 | Perfluoroheptanesulfonic acid | 0.0036 U | | 0.0221 | 0.0234 | 106 | 40-150 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.0036 U | | 0.0215 | 0.0250 | 116 | 40-150 |
| 68259-12-1 | Perfluorononanesulfonic acid | 0.0036 U | | 0.0223 | 0.0229 | 103 | 40-150 |
| 335-77-3 | Perfluorodecanesulfonic acid | 0.0036 U | | 0.0223 | 0.0231 | 103 | 40-150 |
| 79780-39-5 | Perfluorododecanesulfonic aci | 0.0045 U | | 0.0225 | 0.0227 | 101 | 40-150 |
| 757124-72-44:2 | Fluorotelomer sulfonate | 0.018 U | | 0.0868 | 0.0939 | 108 | 40-150 |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 0.018 U | | 0.088 | 0.105 | 119 | 40-150 |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 0.018 U | | 0.0889 | 0.0987 | 111 | 40-150 |
| 754-91-6 | PFOSA | 0.0036 U | | 0.0231 | 0.0255 | 110 | 40-150 |
| 31506-32-8 | MeFOSA | 0.0073 U | | 0.0463 | 0.0494 | 107 | 40-150 |
| 4151-50-2 | EtFOSA | 0.0073 U | | 0.0463 | 0.0473 | 102 | 40-150 |
| 2355-31-9 | MeFOSAA | 0.0045 U | | 0.0231 | 0.0263 | 114 | 40-150 |
| 2991-50-6 | EtFOSAA | 0.0045 U | | 0.0231 | 0.0299 | 129 | 40-150 |
| 24448-09-7 | MeFOSE | 0.036 U | | 0.116 | 0.124 | 107 | 40-150 |
| 1691-99-2 | EtFOSE | 0.036 U | | 0.116 | 0.118 | 102 | 40-150 |
| 13252-13-6 | HFPO-DA (GenX) | 0.0036 U | | 0.0463 | 0.0520 | 112 | 40-150 |
| 919005-14-4 | ADONA | 0.0073 U | | 0.0438 | 0.0486 | 111 | 40-150 |
| 377-73-1 | PFMPA | 0.0073 U | | 0.0463 | 0.0487 | 105 | 40-150 |
| 863090-89-5 | PFMBA | 0.0073 U | | 0.0463 | 0.0504 | 109 | 40-150 |
| 151772-58-6 | NFDHA | 0.0073 U | | 0.0463 | 0.0527 | 114 | 40-150 |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | 0.0073 U | | 0.0433 | 0.0491 | 113 | 40-150 |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | 0.0073 U | | 0.0438 | 0.0451 | 103 | 40-150 |

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-MS | 6Q18656.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |
| FC6325-1 | 6Q18655.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | FC6325-1 ug/l | Spike Q | MS ug/l | MS % | Limits |
|----------------|-------------------------------|------------------|------------|------------|---------|--------|
| 113507-82-7 | PFEESA | 0.0073 U | 0.0412 | 0.0465 | 113 | 40-150 |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 0.018 U | 0.116 | 0.0921 | 80 | 40-150 |
| 914637-49-35:3 | Fluorotelomer carboxylate | 0.091 U | 0.579 | 0.599 | 104 | 40-150 |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 0.091 U | 0.579 | 0.636 | 110 | 40-150 |

| CAS No. | ID Standard Recoveries | MS | FC6325-1 | Limits |
|---------|------------------------|------|----------|---------|
| | 13C4-PFBA | 76% | 101% | 20-150% |
| | 13C5-PFPeA | 116% | 113% | 20-150% |
| | 13C5-PFHxA | 112% | 115% | 20-150% |
| | 13C4-PFHpA | 116% | 115% | 20-150% |
| | 13C8-PFOA | 118% | 115% | 20-150% |
| | 13C9-PFNA | 113% | 109% | 20-150% |
| | 13C6-PFDA | 113% | 112% | 20-150% |
| | 13C7-PFUnDA | 116% | 114% | 20-150% |
| | 13C2-PFDoDA | 104% | 103% | 20-150% |
| | 13C2-PFTeDA | 98% | 100% | 20-150% |
| | 13C3-PFBS | 107% | 117% | 20-150% |
| | 13C3-PFHxS | 108% | 108% | 20-150% |
| | 13C8-PFOS | 113% | 106% | 20-150% |
| | 13C8-FOSA | 97% | 94% | 20-150% |
| | d3-MeFOSA | 97% | 89% | 20-150% |
| | d5-EtFOSA | 100% | 91% | 20-150% |
| | d3-MeFOSAA | 115% | 111% | 20-150% |
| | d5-EtFOSAA | 108% | 111% | 20-150% |
| | d7-MeFOSE | 91% | 81% | 20-150% |
| | d9-EtFOSE | 104% | 91% | 20-150% |
| | 13C2-4:2FTS | 112% | 117% | 20-180% |
| | 13C2-6:2FTS | 101% | 118% | 20-180% |
| | 13C2-8:2FTS | 115% | 124% | 20-180% |
| | 13C3-HFPO-DA | 114% | 111% | 20-150% |

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-DUP1 | 6Q18658.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |
| FC6325-2 | 6Q18657.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | FC6325-2 ug/l | DUP Q ug/l | Q | RPD | Limits |
|----------------|-------------------------------|------------------|---------------|---|-----|--------|
| 375-22-4 | Perfluorobutanoic acid | 0.014 U | ND | | nc | 30 |
| 2706-90-3 | Perfluoropentanoic acid | 0.0070 U | ND | | nc | 30 |
| 307-24-4 | Perfluorohexanoic acid | 0.0035 U | ND | | nc | 30 |
| 375-85-9 | Perfluoroheptanoic acid | 0.0035 U | ND | | nc | 30 |
| 335-67-1 | Perfluorooctanoic acid | 0.0035 U | ND | | nc | 30 |
| 375-95-1 | Perfluorononanoic acid | 0.0035 U | ND | | nc | 30 |
| 335-76-2 | Perfluorodecanoic acid | 0.0035 U | ND | | nc | 30 |
| 2058-94-8 | Perfluoroundecanoic acid | 0.0035 U | ND | | nc | 30 |
| 307-55-1 | Perfluorododecanoic acid | 0.0035 U | ND | | nc | 30 |
| 72629-94-8 | Perfluorotridecanoic acid | 0.0035 U | ND | | nc | 30 |
| 376-06-7 | Perfluorotetradecanoic acid | 0.0035 U | ND | | nc | 30 |
| 375-73-5 | Perfluorobutanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 2706-91-4 | Perfluoropentanesulfonic acid | 0.0044 U | ND | | nc | 30 |
| 355-46-4 | Perfluorohexanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 375-92-8 | Perfluoroheptanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 1763-23-1 | Perfluorooctanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 68259-12-1 | Perfluorononanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 335-77-3 | Perfluorodecanesulfonic acid | 0.0035 U | ND | | nc | 30 |
| 79780-39-5 | Perfluorododecanesulfonic aci | 0.0044 U | ND | | nc | 30 |
| 757124-72-44:2 | Fluorotelomer sulfonate | 0.018 U | ND | | nc | 30 |
| 27619-97-2 | 6:2 Fluorotelomer sulfonate | 0.018 U | ND | | nc | 30 |
| 39108-34-4 | 8:2 Fluorotelomer sulfonate | 0.018 U | ND | | nc | 30 |
| 754-91-6 | PFOSA | 0.0035 U | ND | | nc | 30 |
| 31506-32-8 | MeFOSA | 0.0070 U | ND | | nc | 30 |
| 4151-50-2 | EtFOSA | 0.0070 U | ND | | nc | 30 |
| 2355-31-9 | MeFOSAA | 0.0044 U | ND | | nc | 30 |
| 2991-50-6 | EtFOSAA | 0.0044 U | ND | | nc | 30 |
| 24448-09-7 | MeFOSE | 0.035 U | ND | | nc | 30 |
| 1691-99-2 | EtFOSE | 0.035 U | ND | | nc | 30 |
| 13252-13-6 | HFPO-DA (GenX) | 0.0035 U | ND | | nc | 30 |
| 919005-14-4 | ADONA | 0.0070 U | ND | | nc | 30 |
| 377-73-1 | PFMPA | 0.0070 U | ND | | nc | 30 |
| 863090-89-5 | PFMBA | 0.0070 U | ND | | nc | 30 |
| 151772-58-6 | NFDHA | 0.0070 U | ND | | nc | 30 |
| 756426-58-19 | Cl-PF3ONS (F-53B Major) | 0.0070 U | ND | | nc | 30 |
| 763051-92-91 | Cl-PF3OUdS (F-53B Minor) | 0.0070 U | ND | | nc | 30 |

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|--------------|-----------|----|----------|----|-----------|------------|------------------|
| OP97092-DUP1 | 6Q18658.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |
| FC6325-2 | 6Q18657.D | 1 | 06/01/23 | MV | 05/26/23 | OP97092 | S6Q279 |

The QC reported here applies to the following samples:

Method: EPA DRAFT 1633

FC6325-1, FC6325-2, FC6325-3

| CAS No. | Compound | FC6325-2 ug/l | DUP Q ug/l | Q RPD | Limits |
|----------------|-------------------------------|------------------|---------------|-------|--------|
| 113507-82-7 | PFEESA | 0.0070 U | ND | nc | 30 |
| 356-02-5 | 3:3 Fluorotelomer carboxylate | 0.018 U | ND | nc | 30 |
| 914637-49-35:3 | Fluorotelomer carboxylate | 0.088 U | ND | nc | 30 |
| 812-70-4 | 7:3 Fluorotelomer carboxylate | 0.088 U | ND | nc | 30 |

| CAS No. | ID Standard Recoveries | DUP | FC6325-2 | Limits |
|---------|------------------------|------|----------|---------|
| | 13C4-PFBA | 112% | 114% | 20-150% |
| | 13C5-PFPeA | 121% | 119% | 20-150% |
| | 13C5-PFHxA | 121% | 117% | 20-150% |
| | 13C4-PFHpA | 119% | 121% | 20-150% |
| | 13C8-PFOA | 119% | 117% | 20-150% |
| | 13C9-PFNA | 112% | 112% | 20-150% |
| | 13C6-PFDA | 112% | 118% | 20-150% |
| | 13C7-PFUnDA | 108% | 112% | 20-150% |
| | 13C2-PFDoDA | 98% | 108% | 20-150% |
| | 13C2-PFTeDA | 101% | 102% | 20-150% |
| | 13C3-PFBS | 117% | 122% | 20-150% |
| | 13C3-PFHxS | 113% | 116% | 20-150% |
| | 13C8-PFOS | 117% | 113% | 20-150% |
| | 13C8-FOSA | 91% | 97% | 20-150% |
| | d3-MeFOSA | 94% | 92% | 20-150% |
| | d5-EtFOSA | 95% | 97% | 20-150% |
| | d3-MeFOSAA | 121% | 116% | 20-150% |
| | d5-EtFOSAA | 115% | 106% | 20-150% |
| | d7-MeFOSE | 92% | 93% | 20-150% |
| | d9-EtFOSE | 103% | 103% | 20-150% |
| | 13C2-4:2FTS | 121% | 129% | 20-180% |
| | 13C2-6:2FTS | 122% | 124% | 20-180% |
| | 13C2-8:2FTS | 119% | 119% | 20-180% |
| | 13C3-HFPO-DA | 120% | 118% | 20-150% |

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|--------------|-----------------|----------------|
| Check Std: | S6Q279-CC279 | Injection Date: | 06/01/23 |
| Lab File ID: | 6Q18641.D | Injection Time: | 06:20 |
| Instrument ID: | GCMS6Q | Method: | EPA DRAFT 1633 |

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|--------------------------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Initial Cal ^b | 76326 | 2.81 | 63211 | 5.41 | 101509 | 7.03 | 52533 | 7.54 | 35697 | 8.03 |
| Check Std ^c | 80817 | 2.83 | 66120 | 5.41 | 105546 | 7.03 | 53000 | 7.54 | 37745 | 8.03 |
| Upper Limit ^d | 152652 | 3.23 | 126422 | 5.81 | 203018 | 7.43 | 105066 | 7.94 | 71394 | 8.43 |
| Lower Limit ^e | 22898 | 2.43 | 18963 | 5.01 | 30453 | 6.63 | 15760 | 7.14 | 10709 | 7.63 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | DF ^a |
|------------------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|-----------------|
| S6Q279-ICCB | 76340 | 2.81 | 61441 | 5.41 | 100813 | 7.03 | 51823 | 7.54 | 37309 | 8.01 | 1 |
| S6Q279-ICCB | 76340 | 2.81 | 61441 | 5.41 | 100813 | 7.03 | 51823 | 7.54 | 37309 | 8.01 | 1 |
| OP97092-BS | 63367 | 2.86 | 49525 | 5.42 | 78049 | 7.03 | 41876 | 7.54 | 28322 | 8.03 | 1 |
| OP97092-LLBS | 63104 | 2.86 | 48398 | 5.41 | 77978 | 7.03 | 41800 | 7.54 | 27768 | 8.03 | 1 |
| OP97092-MB | 62328 | 2.86 | 49161 | 5.42 | 78577 | 7.03 | 41515 | 7.54 | 28301 | 8.03 | 1 |
| ZZZZZZ | 59033 | 2.86 | 46609 | 5.42 | 71547 | 7.03 | 39514 | 7.54 | 24906 | 8.03 | 1 |
| ZZZZZZ | 62940 | 2.86 | 48153 | 5.42 | 71420 | 7.03 | 42215 | 7.54 | 28192 | 8.03 | 1 |
| FC5963-8 | 62258 | 2.86 | 49387 | 5.42 | 78600 | 7.03 | 44766 | 7.54 | 28539 | 8.03 | 1 |
| OP97092-DUP2 | 65044 | 2.86 | 49528 | 5.42 | 82318 | 7.03 | 42521 | 7.54 | 30313 | 8.03 | 1 |
| ZZZZZZ | 63563 | 2.86 | 50015 | 5.42 | 82609 | 7.03 | 43382 | 7.54 | 29392 | 8.03 | 1 |

- IS 1 = 13C3-PFBA
- IS 2 = 13C2-PFHxA
- IS 3 = 13C4-PFOA
- IS 4 = 13C5-PFNA
- IS 5 = 13C2-PFDA

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|--------------|-----------------|----------------|
| Check Std: | S6Q279-CC279 | Injection Date: | 06/01/23 |
| Lab File ID: | 6Q18641.D | Injection Time: | 06:20 |
| Instrument ID: | GCMS6Q | Method: | EPA DRAFT 1633 |

| | IS 6 AREA | RT | IS 7 AREA | RT |
|--------------------------|--------------|------|--------------|------|
| Initial Cal ^b | 10927 | 7.13 | 18109 | 8.16 |
| Check Std ^c | 11033 | 7.13 | 18957 | 8.16 |
| Upper Limit ^d | 21854 | 7.53 | 36218 | 8.56 |
| Lower Limit ^e | 3278 | 6.73 | 5433 | 7.76 |

| Lab Sample ID | IS 6 AREA | RT | IS 7 AREA | RT | DF ^a |
|------------------|--------------|------|--------------|------|-----------------|
| S6Q279-ICCB | 10560 | 7.13 | 18139 | 8.18 | 1 |
| S6Q279-ICCB | 10560 | 7.13 | 18139 | 8.18 | 1 |
| OP97092-BS | 8622 | 7.13 | 13383 | 8.18 | 1 |
| OP97092-LLBS | 8957 | 7.13 | 13830 | 8.18 | 1 |
| OP97092-MB | 8437 | 7.13 | 13735 | 8.18 | 1 |
| ZZZZZZ | 7967 | 7.13 | 13692 | 8.18 | 1 |
| ZZZZZZ | 7786 | 7.13 | 14171 | 8.18 | 1 |
| FC5963-8 | 8528 | 7.13 | 14238 | 8.18 | 1 |
| OP97092-DUP2 | 8748 | 7.13 | 15304 | 8.18 | 1 |
| ZZZZZZ | 9016 | 7.13 | 18422 | 8.18 | 1 |

IS 6 = 18O2-PFHXS
 IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.1
6

Injection Standard Area Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|--------------|-----------------|----------------|
| Check Std: | S6Q279-CC279 | Injection Date: | 06/01/23 |
| Lab File ID: | 6Q18653.D | Injection Time: | 09:14 |
| Instrument ID: | GCMS6Q | Method: | EPA DRAFT 1633 |

| | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT |
|--------------------------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
| Initial Cal ^b | 76326 | 2.81 | 63211 | 5.41 | 101509 | 7.03 | 52533 | 7.54 | 35697 | 8.03 |
| Check Std ^c | 80824 | 2.81 | 65823 | 5.41 | 109869 | 7.03 | 55056 | 7.54 | 38549 | 8.03 |
| Upper Limit ^d | 152652 | 3.21 | 126422 | 5.81 | 203018 | 7.43 | 105066 | 7.94 | 71394 | 8.43 |
| Lower Limit ^e | 22898 | 2.41 | 18963 | 5.01 | 30453 | 6.63 | 15760 | 7.14 | 10709 | 7.63 |

| Lab Sample ID | IS 1 AREA | RT | IS 2 AREA | RT | IS 3 AREA | RT | IS 4 AREA | RT | IS 5 AREA | RT | DF ^a |
|------------------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|-----------------|
| S6Q279-ICCB | 76893 | 2.81 | 62187 | 5.41 | 100403 | 7.03 | 54054 | 7.54 | 37284 | 8.03 | 1 |
| FC6325-1 | 63623 | 2.86 | 51564 | 5.42 | 80743 | 7.01 | 43044 | 7.54 | 28995 | 8.03 | 1 |
| OP97092-MS | 63647 | 2.86 | 48843 | 5.42 | 77126 | 7.03 | 40762 | 7.54 | 28582 | 8.03 | 1 |
| FC6325-2 | 62364 | 2.88 | 49069 | 5.42 | 77595 | 7.03 | 41888 | 7.54 | 27152 | 8.03 | 1 |
| OP97092-DUP1 | 64019 | 2.86 | 49091 | 5.42 | 78407 | 7.03 | 42812 | 7.54 | 28950 | 8.03 | 1 |
| FC6325-3 | 58528 | 2.86 | 46662 | 5.42 | 74382 | 7.03 | 39680 | 7.54 | 26366 | 8.03 | 1 |
| ZZZZZZ | 70050 | 2.81 | 56500 | 5.41 | 90195 | 7.03 | 49160 | 7.54 | 34885 | 8.03 | 5 |
| ZZZZZZ | 61970 | 2.81 | 54020 | 5.41 | 75620 | 7.03 | 42370 | 7.54 | 28250 | 8.01 | 10 |
| ZZZZZZ | 72143 | 2.86 | 56579 | 5.42 | 92052 | 7.03 | 48343 | 7.56 | 32092 | 8.03 | 1 |
| ZZZZZZ | 67600 | 2.86 | 53516 | 5.42 | 81996 | 7.03 | 45318 | 7.56 | 29684 | 8.03 | 1 |

IS 1 = 13C3-PFBA
 IS 2 = 13C2-PFHxA
 IS 3 = 13C4-PFOA
 IS 4 = 13C5-PFNA
 IS 5 = 13C2-PFDA

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.2
6

Injection Standard Area Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|--------------|-----------------|----------------|
| Check Std: | S6Q279-CC279 | Injection Date: | 06/01/23 |
| Lab File ID: | 6Q18653.D | Injection Time: | 09:14 |
| Instrument ID: | GCMS6Q | Method: | EPA DRAFT 1633 |

| | IS 6 AREA | RT | IS 7 AREA | RT |
|--------------------------|--------------|------|--------------|------|
| Initial Cal ^b | 10927 | 7.13 | 18109 | 8.16 |
| Check Std ^c | 11225 | 7.13 | 18611 | 8.18 |
| Upper Limit ^d | 21854 | 7.53 | 36218 | 8.58 |
| Lower Limit ^e | 3278 | 6.73 | 5433 | 7.78 |

| Lab Sample ID | IS 6 AREA | RT | IS 7 AREA | RT | DF ^a |
|------------------|--------------|------|--------------|------|-----------------|
| S6Q279-ICCB | 10612 | 7.13 | 17692 | 8.18 | 1 |
| FC6325-1 | 8686 | 7.13 | 14538 | 8.18 | 1 |
| OP97092-MS | 9089 | 7.13 | 13726 | 8.18 | 1 |
| FC6325-2 | 8244 | 7.13 | 14046 | 8.18 | 1 |
| OP97092-DUP1 | 8877 | 7.13 | 13925 | 8.18 | 1 |
| FC6325-3 | 8314 | 7.13 | 13174 | 8.18 | 1 |
| ZZZZZZ | 10310 | 7.12 | 15165 | 8.18 | 5 |
| ZZZZZZ | 9140 | 7.13 | 16360 | 8.18 | 10 |
| ZZZZZZ | 9813 | 7.13 | 17413 | 8.18 | 1 |
| ZZZZZZ | 9045 | 7.13 | 14907 | 8.18 | 1 |

IS 6 = 18O2-PFHXS
 IS 7 = 13C4-PFOS

- (a) Sample areas corrected for dilution where applicable.
- (b) Initial Cal is: S6Q279-ICC279 6Q18589.D 05/31/23 17:59. Area is AVERAGE of initial cal points.
- (c) Check Std Limit = -70 to +100% of initial cal area.
- (d) Upper Limit = +100% of initial standard area; Retention time + 0.4 minutes of check standard.
- (e) Lower Limit = -70% of initial standard area; Retention time -0.4 minutes of check standard.

6.5.2
6

TDCA Retention Time Check

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|-----------|-----------------|----------|
| Sample: | S6Q279-RT | Injection Date: | 05/31/23 |
| Lab File ID: | 6Q18583.D | Injection Time: | 16:32 |
| Instrument ID: | GCMS6Q | | |

| Compound | RT (min) | RT Difference | Low Limit |
|----------|-------------|------------------|--------------|
| PFOS | 8.178 | -- | -- |
| TDCA | 6.762 | 1.416 | 1.000 |
| TCDCA | 6.601 | 1.577 | 1.000 |
| TUDCA | 5.735 | 2.443 | 1.000 |

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|------------------|----------------|------------------|------------------|-----------------|--|
| S6Q279-IC279 | 6Q18585.D | 05/31/23 | 17:01 | 00:29 | Mass Calibration Verification |
| S6Q279-IC279 | 6Q18586.D | 05/31/23 | 17:16 | 00:44 | Initial cal 1 |
| S6Q279-IC279 | 6Q18587.D | 05/31/23 | 17:30 | 00:58 | Initial cal 2 |
| S6Q279-IC279 | 6Q18588.D | 05/31/23 | 17:45 | 01:13 | Initial cal 3 |
| S6Q279-ICC279 | 6Q18589.D | 05/31/23 | 17:59 | 01:27 | Initial cal 4 |
| S6Q279-IC279 | 6Q18590.D | 05/31/23 | 18:14 | 01:42 | Initial cal 5 |
| S6Q279-IC279 | 6Q18591.D | 05/31/23 | 18:28 | 01:56 | Initial cal 6 |
| S6Q279-IC279 | 6Q18592.D | 05/31/23 | 18:43 | 02:11 | Initial cal 7 |
| S6Q279-IC279 | 6Q18593.D | 05/31/23 | 18:57 | 02:25 | Initial cal 8 |
| S6Q279-IBLK | 6Q18594.D | 05/31/23 | 19:12 | 02:40 | Instrument Blank |
| S6Q279-IBLK | 6Q18594.D | 05/31/23 | 19:12 | 02:40 | Instrument Blank |
| S6Q279-ICV279 | 6Q18595.D | 05/31/23 | 19:26 | 02:54 | Initial cal verification 4 |
| S6Q279-ICV279 | 6Q18596.D | 05/31/23 | 19:41 | 03:09 | Initial cal verification 20 |
| S6Q279-CC279 | 6Q18597.D | 05/31/23 | 19:55 | 03:23 | Continuing cal 4 |
| S6Q279-CC279 | 6Q18598.D | 05/31/23 | 20:10 | 03:38 | Continuing cal 1.0LL |
| OP97070-BS | 6Q18599.D | 05/31/23 | 20:24 | 03:52 | Blank Spike |
| OP97070-LLBS | 6Q18600.D | 05/31/23 | 20:39 | 04:07 | Blank Spike |
| OP97070-MB | 6Q18601.D | 05/31/23 | 20:53 | 04:21 | Method Blank |
| FC6278-1 | 6Q18602.D | 05/31/23 | 21:08 | 04:36 | (used for QC only; not part of job FC6325) |
| OP97070-MS | 6Q18603.D | 05/31/23 | 21:22 | 04:50 | Matrix Spike |
| ZZZZZZ | 6Q18604.D | 05/31/23 | 21:37 | 05:05 | (unrelated sample) |
| FC6278-3 | 6Q18605.D | 05/31/23 | 21:51 | 05:19 | (used for QC only; not part of job FC6325) |
| OP97070-DUP | 6Q18606.D | 05/31/23 | 22:06 | 05:34 | Duplicate |
| ZZZZZZ | 6Q18607.D | 05/31/23 | 22:20 | 05:48 | (unrelated sample) |
| ZZZZZZ | 6Q18608.D | 05/31/23 | 22:35 | 06:03 | (unrelated sample) |
| S6Q279-CC279 | 6Q18609.D | 05/31/23 | 22:49 | 06:17 | Continuing cal 4 |
| S6Q279-ICCB | 6Q18610.D | 05/31/23 | 23:04 | 06:32 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18610.D | 05/31/23 | 23:04 | 06:32 | Continuing Calibration Blank |
| ZZZZZZ | 6Q18611.D | 05/31/23 | 23:18 | 06:46 | (unrelated sample) |
| OP97024-BS | 6Q18612.D | 05/31/23 | 23:32 | 07:00 | Blank Spike |
| OP97024-LLBS | 6Q18613.D | 05/31/23 | 23:47 | 07:15 | Blank Spike |
| OP97024-MB | 6Q18614.D | 06/01/23 | 00:01 | 07:29 | Method Blank |
| FC6086-1 | 6Q18615.D | 06/01/23 | 00:16 | 07:44 | (used for QC only; not part of job FC6325) |
| OP97024-MS | 6Q18616.D | 06/01/23 | 00:30 | 07:58 | Matrix Spike |

TDCA Retention Time Check

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|-----------|-----------------|----------|
| Sample: | S6Q279-RT | Injection Date: | 05/31/23 |
| Lab File ID: | 6Q18583.D | Injection Time: | 16:32 |
| Instrument ID: | GCMS6Q | | |

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---------------|-------------|---------------|---------------|--------------|--|
| OP97024-MSD | 6Q18617.D | 06/01/23 | 00:45 | 08:13 | Matrix Spike Duplicate |
| ZZZZZZ | 6Q18618.D | 06/01/23 | 00:59 | 08:27 | (unrelated sample) |
| ZZZZZZ | 6Q18619.D | 06/01/23 | 01:14 | 08:42 | (unrelated sample) |
| ZZZZZZ | 6Q18620.D | 06/01/23 | 01:28 | 08:56 | (unrelated sample) |
| S6Q279-CC279 | 6Q18621.D | 06/01/23 | 01:43 | 09:11 | Continuing cal 4 |
| S6Q279-ICCB | 6Q18622.D | 06/01/23 | 01:57 | 09:25 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18622.D | 06/01/23 | 01:57 | 09:25 | Continuing Calibration Blank |
| ZZZZZZ | 6Q18623.D | 06/01/23 | 02:12 | 09:40 | (unrelated sample) |
| ZZZZZZ | 6Q18624.D | 06/01/23 | 02:26 | 09:54 | (unrelated sample) |
| ZZZZZZ | 6Q18625.D | 06/01/23 | 02:41 | 10:09 | (unrelated sample) |
| ZZZZZZ | 6Q18626.D | 06/01/23 | 02:55 | 10:23 | (unrelated sample) |
| ZZZZZZ | 6Q18627.D | 06/01/23 | 03:10 | 10:38 | (unrelated sample) |
| ZZZZZZ | 6Q18628.D | 06/01/23 | 03:24 | 10:52 | (unrelated sample) |
| ZZZZZZ | 6Q18629.D | 06/01/23 | 03:39 | 11:07 | (unrelated sample) |
| ZZZZZZ | 6Q18630.D | 06/01/23 | 03:53 | 11:21 | (unrelated sample) |
| ZZZZZZ | 6Q18631.D | 06/01/23 | 04:08 | 11:36 | (unrelated sample) |
| ZZZZZZ | 6Q18632.D | 06/01/23 | 04:22 | 11:50 | (unrelated sample) |
| S6Q279-CC279 | 6Q18633.D | 06/01/23 | 04:37 | 12:05 | Continuing cal 4 |
| S6Q279-ICCB | 6Q18634.D | 06/01/23 | 04:51 | 12:19 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18634.D | 06/01/23 | 04:51 | 12:19 | Continuing Calibration Blank |
| ZZZZZZ | 6Q18635.D | 06/01/23 | 05:06 | 12:34 | (unrelated sample) |
| ZZZZZZ | 6Q18636.D | 06/01/23 | 05:20 | 12:48 | (unrelated sample) |
| ZZZZZZ | 6Q18637.D | 06/01/23 | 05:35 | 13:03 | (unrelated sample) |
| ZZZZZZ | 6Q18638.D | 06/01/23 | 05:49 | 13:17 | (unrelated sample) |
| ZZZZZZ | 6Q18639.D | 06/01/23 | 06:04 | 13:32 | (unrelated sample) |
| S6Q279-CC279 | 6Q18641.D | 06/01/23 | 06:20 | 13:48 | Continuing cal 4 |
| S6Q279-CC279 | 6Q18642.D | 06/01/23 | 06:35 | 14:03 | Continuing cal 1.0LL |
| S6Q279-ICCB | 6Q18643.D | 06/01/23 | 06:49 | 14:17 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18643.D | 06/01/23 | 06:49 | 14:17 | Continuing Calibration Blank |
| OP97092-BS | 6Q18644.D | 06/01/23 | 07:03 | 14:31 | Blank Spike |
| OP97092-LLBS | 6Q18645.D | 06/01/23 | 07:18 | 14:46 | Blank Spike |
| OP97092-MB | 6Q18646.D | 06/01/23 | 07:32 | 15:00 | Method Blank |
| ZZZZZZ | 6Q18647.D | 06/01/23 | 07:47 | 15:15 | (unrelated sample) |
| ZZZZZZ | 6Q18648.D | 06/01/23 | 08:01 | 15:29 | (unrelated sample) |
| FC5963-8 | 6Q18650.D | 06/01/23 | 08:30 | 15:58 | (used for QC only; not part of job FC6325) |
| OP97092-DUP2 | 6Q18651.D | 06/01/23 | 08:45 | 16:13 | Duplicate |
| ZZZZZZ | 6Q18652.D | 06/01/23 | 08:59 | 16:27 | (unrelated sample) |
| S6Q279-CC279 | 6Q18653.D | 06/01/23 | 09:14 | 16:42 | Continuing cal 4 |
| S6Q279-ICCB | 6Q18654.D | 06/01/23 | 09:28 | 16:56 | Continuing Calibration Blank |
| FC6325-1 | 6Q18655.D | 06/01/23 | 09:43 | 17:11 | AF-RHMW225401-WGN01B-2305W4 |
| OP97092-MS | 6Q18656.D | 06/01/23 | 09:57 | 17:25 | Matrix Spike |
| FC6325-2 | 6Q18657.D | 06/01/23 | 10:12 | 17:40 | AF-RHMW10-WGN01LF-2305W4 |
| OP97092-DUP1 | 6Q18658.D | 06/01/23 | 10:26 | 17:54 | Duplicate |
| FC6325-3 | 6Q18659.D | 06/01/23 | 10:41 | 18:09 | AF-HDMW225303-WGN01LF-2305W4 |

6.6.1

6

TDCA Retention Time Check

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | | |
|----------------|-----------|-----------------|----------|
| Sample: | S6Q279-RT | Injection Date: | 05/31/23 |
| Lab File ID: | 6Q18583.D | Injection Time: | 16:32 |
| Instrument ID: | GCMS6Q | | |

| Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed | Hours Lapsed | Client Sample ID |
|---------------|-------------|---------------|---------------|--------------|------------------------------|
| ZZZZZZ | 6Q18660.D | 06/01/23 | 10:55 | 18:23 | (unrelated sample) |
| ZZZZZZ | 6Q18661.D | 06/01/23 | 11:10 | 18:38 | (unrelated sample) |
| ZZZZZZ | 6Q18662.D | 06/01/23 | 11:24 | 18:52 | (unrelated sample) |
| ZZZZZZ | 6Q18663.D | 06/01/23 | 11:39 | 19:07 | (unrelated sample) |
| S6Q279-CC279 | 6Q18665.D | 06/01/23 | 12:08 | 19:36 | Continuing cal 4 |
| S6Q279-ICCB | 6Q18666.D | 06/01/23 | 12:22 | 19:50 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18666.D | 06/01/23 | 12:22 | 19:50 | Continuing Calibration Blank |
| ZZZZZZ | 6Q18667.D | 06/01/23 | 12:37 | 20:05 | (unrelated sample) |
| ZZZZZZ | 6Q18668.D | 06/01/23 | 12:51 | 20:19 | (unrelated sample) |
| ZZZZZZ | 6Q18669.D | 06/01/23 | 13:06 | 20:34 | (unrelated sample) |
| S6Q279-ECC279 | 6Q18670.D | 06/01/23 | 13:20 | 20:48 | Ending cal 4 |
| S6Q279-ICCB | 6Q18671.D | 06/01/23 | 13:35 | 21:03 | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18671.D | 06/01/23 | 13:35 | 21:03 | Continuing Calibration Blank |

6.6.1

6

Ion Ratio Summary

Job Number: FC6325
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S6Q279 Method: EPA DRAFT 1633

| Lab Sample ID | Lab File ID | Ion Ratios | | | | | |
|---------------|-------------|------------|-------|-------|------|------|-------|
| | | PFPeA | PFHxA | PFHpA | PFOA | PFBS | PFHxS |
| S6Q279-ICC279 | 6Q18589.D | 0 | 5.1 | 16.4 | 17.1 | 37.9 | 47.3 |
| FC6325-1 | 6Q18655.D | 0 | 5.3 | 16 | 11.9 | 30.8 | 48.1 |
| FC6325-2 | 6Q18657.D | | | | | | |
| FC6325-3 | 6Q18659.D | | | | | | |

6.7.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | |
|------------------------|------------|
| Method: EPA DRAFT 1633 | Matrix: AQ |
|------------------------|------------|

Samples and QC shown here apply to the above method

| Lab Sample ID | Lab File ID | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 |
|---------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|
| FC6325-1 | 6Q18655.D | 101 | 113 | 115 | 115 | 115 | 109 | 112 | 114 |
| FC6325-2 | 6Q18657.D | 114 | 119 | 117 | 121 | 117 | 112 | 118 | 112 |
| FC6325-3 | 6Q18659.D | 120 | 121 | 120 | 121 | 120 | 116 | 112 | 106 |
| OP97092-BS | 6Q18644.D | 27 | 104 | 112 | 110 | 109 | 108 | 106 | 105 |
| OP97092-DUP1 | 6Q18658.D | 112 | 121 | 121 | 119 | 119 | 112 | 112 | 108 |
| OP97092-LLBS | 6Q18645.D | 113 | 118 | 122 | 117 | 115 | 114 | 113 | 116 |
| OP97092-MB | 6Q18646.D | 113 | 115 | 112 | 118 | 113 | 105 | 113 | 114 |
| OP97092-MS | 6Q18656.D | 76 | 116 | 112 | 116 | 118 | 113 | 113 | 116 |
| S6Q279-IBLK | 6Q18594.D | 100 | 103 | 103 | 102 | 98 | 92 | 89 | 97 |
| S6Q279-ICCB | 6Q18654.D | 99 | 101 | 102 | 105 | 106 | 96 | 91 | 98 |
| S6Q279-ICCB | 6Q18643.D | 100 | 103 | 105 | 104 | 105 | 101 | 95 | 104 |

Isotope Dilution Standards

Recovery Limits

| | |
|------------------|---------|
| S1 = 13C4-PFBA | 20-150% |
| S2 = 13C5-PFPeA | 20-150% |
| S3 = 13C5-PFHxA | 20-150% |
| S4 = 13C4-PFHpA | 20-150% |
| S5 = 13C8-PFOA | 20-150% |
| S6 = 13C9-PFNA | 20-150% |
| S7 = 13C6-PFDA | 20-150% |
| S8 = 13C7-PFUnDA | 20-150% |

Isotope Dilution Standard Recovery Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | |
|------------------------|------------|
| Method: EPA DRAFT 1633 | Matrix: AQ |
|------------------------|------------|

Samples and QC shown here apply to the above method

| Lab Sample ID | Lab File ID | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 |
|---------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|
| FC6325-1 | 6Q18655.D | 103 | 100 | 117 | 108 | 106 | 94 | 89 | 91 |
| FC6325-2 | 6Q18657.D | 108 | 102 | 122 | 116 | 113 | 97 | 92 | 97 |
| FC6325-3 | 6Q18659.D | 102 | 98 | 116 | 111 | 115 | 98 | 100 | 109 |
| OP97092-BS | 6Q18644.D | 105 | 100 | 110 | 106 | 119 | 87 | 91 | 93 |
| OP97092-DUP1 | 6Q18658.D | 98 | 101 | 117 | 113 | 117 | 91 | 94 | 95 |
| OP97092-LLBS | 6Q18645.D | 115 | 108 | 109 | 109 | 114 | 80 | 81 | 88 |
| OP97092-MB | 6Q18646.D | 110 | 107 | 113 | 114 | 116 | 81 | 82 | 92 |
| OP97092-MS | 6Q18656.D | 104 | 98 | 107 | 108 | 113 | 97 | 97 | 100 |
| S6Q279-IBLK | 6Q18594.D | 97 | 89 | 103 | 103 | 96 | 105 | 100 | 102 |
| S6Q279-ICCB | 6Q18654.D | 95 | 93 | 102 | 105 | 100 | 102 | 99 | 104 |
| S6Q279-ICCB | 6Q18643.D | 96 | 97 | 106 | 102 | 98 | 100 | 96 | 100 |

| Isotope Dilution Standards | Recovery Limits |
|----------------------------|-----------------|
| S9 = 13C2-PFDoDA | 20-150% |
| S10 = 13C2-PFTeDA | 20-150% |
| S11 = 13C3-PFBS | 20-150% |
| S12 = 13C3-PFHxS | 20-150% |
| S13 = 13C8-PFOS | 20-150% |
| S14 = 13C8-FOSA | 20-150% |
| S15 = d3-MeFOSA | 20-150% |
| S16 = d5-EtFOSA | 20-150% |

6.8.1

6

Isotope Dilution Standard Recovery Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | |
|------------------------|------------|
| Method: EPA DRAFT 1633 | Matrix: AQ |
|------------------------|------------|

Samples and QC shown here apply to the above method

| Lab Sample ID | Lab File ID | S17 | S18 | S19 | S20 | S21 | S22 | S23 | S24 |
|---------------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|
| FC6325-1 | 6Q18655.D | 111 | 111 | 81 | 91 | 117 | 118 | 124 | 111 |
| FC6325-2 | 6Q18657.D | 116 | 106 | 93 | 103 | 129 | 124 | 119 | 118 |
| FC6325-3 | 6Q18659.D | 106 | 112 | 101 | 115 | 128 | 125 | 111 | 122 |
| OP97092-BS | 6Q18644.D | 115 | 111 | 77 | 91 | 118 | 108 | 120 | 108 |
| OP97092-DUP1 | 6Q18658.D | 121 | 115 | 92 | 103 | 121 | 122 | 119 | 120 |
| OP97092-LLBS | 6Q18645.D | 122 | 110 | 76 | 89 | 111 | 118 | 122 | 113 |
| OP97092-MB | 6Q18646.D | 115 | 109 | 74 | 92 | 127 | 128 | 113 | 110 |
| OP97092-MS | 6Q18656.D | 115 | 108 | 91 | 104 | 112 | 101 | 115 | 114 |
| S6Q279-IBLK | 6Q18594.D | 99 | 102 | 102 | 103 | 107 | 104 | 111 | 100 |
| S6Q279-ICCB | 6Q18654.D | 106 | 102 | 104 | 99 | 108 | 110 | 115 | 98 |
| S6Q279-ICCB | 6Q18643.D | 99 | 102 | 100 | 99 | 110 | 112 | 116 | 100 |

Isotope Dilution Standards

Recovery Limits

| | |
|--------------------|---------|
| S17 = d3-MeFOSAA | 20-150% |
| S18 = d5-EtFOSAA | 20-150% |
| S19 = d7-MeFOSE | 20-150% |
| S20 = d9-EtFOSE | 20-150% |
| S21 = 13C2-4:2FTS | 20-180% |
| S22 = 13C2-6:2FTS | 20-180% |
| S23 = 13C2-8:2FTS | 20-180% |
| S24 = 13C3-HFPO-DA | 20-150% |

Initial Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

| Method Path | Method File | Batch Name | Last Calib Update | Calibration Files | Level Name | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Avg RF | %RSD | | |
|---|---|---|---|---|---|---|----------|----------|----------|---------------|-------------|--------|--------|--------|-------|--|--|
| D:\MassHunter\Methods | 1633_053123_S6Q279_quantmethod.xml | D:\MassHunter\Data\053123_1633_S6Q279 | 6/11/2023 10:30:25 AM | D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d | 1 | 0.3753 | 0.3334 | 0.3219 | 0.3137 | 0.3170 | 0.3291 | 0.3376 | 0.3206 | 0.3311 | 5.928 | | |
| D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d | D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d | | | | | | | | | | | |
| Compound | Curve Fit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Avg RF | %RSD | | | | | | |
| I M4-PFBA | Avg RF | 0.3753 | 0.3334 | 0.3219 | 0.3137 | 0.3170 | 0.3291 | 0.3376 | 0.3206 | 0.3311 | 5.928 | | | | | | |
| T PFBA | | | | | | | | | | | | | | | | | |
| I M5-PFPeA | Avg RF | 0.7081 | 0.6363 | 0.6350 | 0.6089 | 0.6049 | 0.6302 | 0.6425 | 0.6190 | 0.6356 | 5.068 | | | | | | |
| T PFMPA | Avg RF | 0.0863 | 0.0769 | 0.0759 | 0.0726 | 0.0726 | 0.0764 | 0.0777 | 0.0764 | 0.0769 | 5.562 | | | | | | |
| T 3:3FTCA | Avg RF | 1.2962 | 1.2068 | 1.1733 | 1.1429 | 1.1467 | 1.1930 | 1.1954 | 1.1530 | 1.2009 | 6.870 | | | | | | |
| T PFPeA | Avg RF | 0.9475 | 0.8203 | 0.8090 | 0.7809 | 0.7790 | 0.8137 | 0.8106 | 0.7773 | 0.8173 | 6.776 | | | | | | |
| T PFMBa | | | | | | | | | | | | | | | | | |
| I M5-PFHxA | Avg RF | 0.1255 | 0.1045 | 0.1003 | 0.0957 | 0.0984 | 0.0992 | 0.0981 | 0.0958 | 0.1022 | 9.605 | | | | | | |
| T NFDHA | Avg RF | 0.9569 | 0.8366 | 0.7860 | 0.8138 | 0.8001 | 0.8241 | 0.8423 | 0.8553 | 0.8394 | 6.266 | | | | | | |
| T PFHxA | Avg RF | 1.1788 | 1.0306 | 1.0200 | 1.0337 | 1.0745 | 1.0758 | 1.0553 | 1.0552 | 1.0655 | 4.699 | | | | | | |
| T PFEEsA | Avg RF | 0.1801 | 0.1551 | 0.1462 | 0.1433 | 0.1409 | 0.1457 | 0.1500 | 0.1465 | 0.1510 | 8.295 | | | | | | |
| T 5:3FTCA | Avg RF | 0.1170 | 0.1068 | 0.0947 | 0.1010 | 0.1022 | 0.1020 | 0.1045 | 0.0991 | 0.1034 | 6.340 | | | | | | |
| T 7:3FTCA | | | | | | | | | | | | | | | | | |
| I M4-PFHpA | Avg RF | 1.2923 | 1.0943 | 1.0924 | 1.0209 | 1.0772 | 1.0930 | 1.0798 | 1.1005 | 1.1063 | 7.165 | | | | | | |
| T PFHpA | | | | | | | | | | | | | | | | | |
| I M8-PFOA | Avg RF | 1.1279 | 1.0893 | 1.0165 | 1.0390 | 1.0020 | 1.0999 | 1.0964 | 1.0686 | 1.0674 | 4.148 | | | | | | |
| T PFOA | | | | | | | | | | | | | | | | | |
| I M9-PFNA | Avg RF | 1.0714 | 0.8740 | 0.8546 | 0.7861 | 0.8477 | 0.8845 | 0.8665 | 0.9012 | 0.8857 | 9.309 | | | | | | |
| T PFNA | | | | | | | | | | | | | | | | | |
| I M6-PFDA | Avg RF | 1.7245 | 1.4816 | 1.2708 | 1.4351 | 1.3572 | 1.4333 | 1.4380 | 1.4541 | 1.4493 | 8.948 | | | | | | |
| T PFDA | | | | | | | | | | | | | | | | | |
| I M7-PFUnDA | Avg RF | 0.9140 | 0.8348 | 0.7848 | 0.7448 | 0.8124 | 0.8179 | 0.8375 | 0.7519 | 0.8122 | 6.658 | | | | | | |
| T PFUnDA | | | | | | | | | | | | | | | | | |
| I M2-PFDODA | | | | | | | | | | | | | | | | | |

Generated at 10:31 AM on 6/1/2023

Page 1 of 4



Initial Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

| Compound | Curve Fit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Avg RF | %RSD |
|----------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| T PFDoDA | Avg RF | 0.9985 | 0.8696 | 0.8524 | 0.8384 | 0.8018 | 0.8576 | 0.8750 | 0.7732 | 0.8583 | 7.747 |
| T PFTfDA | Avg RF | 1.0429 | 0.8646 | 0.8388 | 0.8777 | 0.8411 | 0.8620 | 0.8561 | 0.7527 | 0.8670 | 9.326 |
| I M2-PFTeDA | Avg RF | 1.4406 | 1.1849 | 1.2263 | 1.2265 | 1.1335 | 1.2310 | 1.2517 | 1.1424 | 1.2296 | 7.768 |
| T PFTeDA | Avg RF | | | | | ISTD | | | | | |
| I M8-FOSA | Avg RF | 1.0086 | 0.8973 | 0.8409 | 0.8318 | 0.8197 | 0.8415 | 0.8613 | 0.8220 | 0.8654 | 7.284 |
| T FOSA | Avg RF | | | | | ISTD | | | | | |
| I M3-PFBS | Avg RF | 0.9711 | 0.8510 | 0.8226 | 0.8216 | 0.7977 | 0.8209 | 0.8641 | 0.8552 | 0.8505 | 6.288 |
| T PFBS | Avg RF | | | | | ISTD | | | | | |
| I M3-PFHxS | Avg RF | 1.3123 | 1.1962 | 1.0851 | 1.0839 | 1.0466 | 1.1083 | 1.1071 | 1.0743 | 1.1267 | 7.703 |
| T PFPeS | Avg RF | 1.2945 | 1.1639 | 1.1673 | 1.1064 | 1.0631 | 1.1201 | 1.0969 | 1.0341 | 1.1308 | 7.093 |
| T PFHxS | Avg RF | | | | | ISTD | | | | | |
| I M8-PFOS | Avg RF | 1.4789 | 1.2675 | 1.1993 | 1.0852 | 1.1390 | 1.0672 | 1.2016 | 1.1506 | 1.1987 | 10.892 |
| T PFHpS | Avg RF | 1.3623 | 1.1070 | 1.1656 | 1.0866 | 1.1021 | 1.0525 | 1.1549 | 1.1102 | 1.1427 | 8.378 |
| T PFOS | Avg RF | 1.2813 | 0.9838 | 1.0179 | 0.9325 | 0.9544 | 0.8893 | 1.0303 | 0.9381 | 1.0034 | 12.102 |
| T PFNS | Avg RF | 0.7640 | 0.6739 | 0.6370 | 0.5956 | 0.6037 | 0.5499 | 0.5985 | 0.5772 | 0.6250 | 10.786 |
| T PFDS | Avg RF | 0.3275 | 0.2854 | 0.2940 | 0.2532 | 0.2608 | 0.2471 | 0.2840 | 0.2696 | 0.2777 | 9.364 |
| T PFDoDS | Avg RF | | | | | ISTD | | | | | |
| I M2-4:2FTS | Avg RF | 8.0870 | 6.9217 | 7.4430 | 7.2990 | 6.9249 | 7.3091 | 7.4912 | 6.6284 | 7.2630 | 6.158 |
| T 4:2FTS | Avg RF | | | | | ISTD | | | | | |
| I M2-6:2FTS | Avg RF | 5.7336 | 5.0095 | 4.7009 | 4.8193 | 4.8783 | 5.1016 | 4.9196 | 4.1446 | 4.9134 | 8.983 |
| T 6:2FTS | Avg RF | | | | | ISTD | | | | | |
| I M2-8:2FTS | Avg RF | 3.4484 | 2.6471 | 3.0533 | 2.7503 | 2.4593 | 2.7779 | 2.8341 | 2.2782 | 2.7811 | 12.877 |
| T 8:2FTS | Avg RF | | | | | ISTD | | | | | |
| I M3-MeFOSAA | Avg RF | 1.0257 | 1.0983 | 1.0637 | 1.0126 | 0.9408 | 0.9902 | 1.0671 | 1.0266 | 1.0281 | 4.794 |
| T MeFOSAA | Avg RF | | | | | ISTD | | | | | |
| I M3-HFO-DA | Avg RF | 0.9559 | 0.8428 | 0.8608 | 0.8520 | 0.7887 | 0.8050 | 0.8606 | 0.8148 | 0.8476 | 6.060 |
| T HFO-DA | Avg RF | 15.27 | 13.21 | 13.51 | 13.30 | 12.89 | 12.60 | 13.06 | 12.41 | 13.28 | 6.642 |
| T ADONA | Avg RF | 6.5990 | 5.6552 | 6.0195 | 6.1012 | 5.7387 | 5.6701 | 5.8761 | 5.6375 | 5.9122 | 5.538 |
| T 9Cl-PF3ONS | Avg RF | 4.1075 | 3.7206 | 3.8988 | 3.8689 | 3.5814 | 3.7069 | 3.6084 | 3.5242 | 3.7521 | 5.197 |
| T 11Cl-PF3OUds | Avg RF | | | | | ISTD | | | | | |
| I M5-EFOSAA | Avg RF | 0.7783 | 0.5873 | 0.6203 | 0.6043 | 0.6320 | 0.6471 | 0.6662 | 0.6107 | 0.6433 | 9.316 |
| T EFOSAA | Avg RF | | | | | ISTD | | | | | |
| I M7-MeFOSE | Avg RF | 1.1693 | 0.9542 | 0.9662 | 0.9575 | 0.8976 | 1.0115 | 1.0020 | 0.9899 | 0.9935 | 7.989 |
| T MeFOSE | Avg RF | | | | | ISTD | | | | | |
| I M9-EFOSE | Avg RF | 1.2705 | 1.1375 | 1.1135 | 1.0713 | 1.0794 | 1.0696 | 1.1120 | 1.0687 | 1.1153 | 6.068 |
| T EFOSE | Avg RF | | | | | ISTD | | | | | |

Generated at 10:31 AM on 6/1/2023

Page 2 of 4

Initial Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

| Compound | Curve Fit | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Avg RF | %RSD |
|---------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| I M5-EFOSA | | 1.2909 | 1.2385 | 1.1332 | 1.1413 | 1.0935 | 1.1354 | 1.1466 | 1.1429 | 1.1653 | 5.386 |
| T EFOSA | | | | | | | | | | | |
| I M3-MeFOSA | | 1.0470 | 0.9671 | 0.9071 | 0.8783 | 0.9155 | 0.8916 | 0.9095 | 0.8388 | 0.9193 | 6.855 |
| T MeFOSA | | | | | | | | | | | |
| I 13C4-PFOS | | 0.8100 | 0.8287 | 0.7710 | 0.7163 | 0.8928 | 0.8880 | 0.7954 | 0.7540 | 0.8070 | 7.677 |
| S d3-MeFOSAA | | 0.7359 | 0.8012 | 0.7842 | 0.7648 | 0.8042 | 0.9118 | 0.7903 | 0.8150 | 0.8009 | 6.405 |
| S 13C8-PFOS | | 0.7143 | 0.7249 | 0.7594 | 0.6844 | 0.7348 | 0.7588 | 0.7165 | 0.7772 | 0.7338 | 4.113 |
| S d5-EFOSAA | | 1.8329 | 1.9012 | 1.9605 | 1.7592 | 1.9169 | 2.0451 | 1.9313 | 1.8988 | 1.9057 | 4.437 |
| S 13C8-FOSA | | 0.5998 | 0.6443 | 0.6491 | 0.5895 | 0.6575 | 0.6626 | 0.6213 | 0.5990 | 0.6279 | 4.638 |
| S d7-MeFOSE | | 0.7296 | 0.7511 | 0.7727 | 0.7224 | 0.7553 | 0.8328 | 0.7819 | 0.8328 | 0.7723 | 5.464 |
| S d3-MeFOSA | | 0.8200 | 0.8092 | 0.8446 | 0.7733 | 0.8314 | 0.8997 | 0.8109 | 0.7807 | 0.8212 | 4.826 |
| S d9-EFOSE | | 0.7336 | 0.7115 | 0.7362 | 0.6797 | 0.7540 | 0.7718 | 0.7326 | 0.7305 | 0.7312 | 3.741 |
| S d5-EFOSA | | | | | | | | | | | |
| I 13C3-PFBA | | 1.1914 | 1.1940 | 1.1862 | 1.2012 | 1.1945 | 1.1898 | 1.1853 | 1.1841 | 1.1908 | 0.482 |
| S 13C4-PFBA | | | | | | | | | | | |
| I 18O2-PFHxS | | 0.1829 | 0.1808 | 0.1759 | 0.1672 | 0.1717 | 0.1586 | 0.1574 | 0.1396 | 0.1668 | 8.653 |
| S 13C2-4:2FTS | | 2.2616 | 2.2535 | 2.2849 | 2.2131 | 2.2673 | 2.1694 | 2.2469 | 2.0037 | 2.2126 | 4.148 |
| S 13C3-PFBS | | 0.2556 | 0.2670 | 0.2617 | 0.2435 | 0.2479 | 0.2221 | 0.2326 | 0.2067 | 0.2421 | 8.503 |
| S 13C2-6:2FTS | | 1.4111 | 1.4364 | 1.3855 | 1.3833 | 1.4199 | 1.3438 | 1.4474 | 1.3457 | 1.3966 | 2.785 |
| S 13C3-PFHxS | | 0.2513 | 0.2680 | 0.2412 | 0.2507 | 0.2682 | 0.2307 | 0.2325 | 0.2222 | 0.2456 | 6.935 |
| S 13C2-8:2FTS | | | | | | | | | | | |
| I 13C4-PFOA | | 0.9443 | 0.9211 | 0.9529 | 0.9481 | 0.9538 | 0.9088 | 0.9525 | 0.9109 | 0.9365 | 2.088 |
| S 13C8-PFOA | | | | | | | | | | | |
| I 13C2-PFDA | | 0.7319 | 0.7442 | 0.7405 | 0.7276 | 0.7348 | 0.7057 | 0.7585 | 0.7167 | 0.7325 | 2.233 |
| S 13C6-PFDA | | 0.9494 | 0.9427 | 0.8792 | 0.9983 | 0.9496 | 0.8972 | 0.9576 | 0.9015 | 0.9344 | 4.175 |
| S 13C7-PFUDA | | 0.8602 | 0.8799 | 0.8272 | 0.8746 | 0.8934 | 0.8360 | 0.8722 | 0.9015 | 0.8681 | 2.990 |
| S 13C2-PFDODA | | 0.4778 | 0.4652 | 0.4524 | 0.4759 | 0.4967 | 0.4534 | 0.4810 | 0.4765 | 0.4724 | 3.139 |
| S 13C2-PFTeDA | | | | | | | | | | | |
| I 13C5-PFNA | | 0.8117 | 0.8501 | 0.8290 | 0.7576 | 0.8634 | 0.7797 | 0.8420 | 0.8565 | 0.8238 | 4.626 |
| S 13C9-PFNA | | | | | | | | | | | |
| I 13C2-PFHxA | | 0.4878 | 0.4887 | 0.4942 | 0.4761 | 0.4912 | 0.4846 | 0.4891 | 0.4784 | 0.4863 | 1.284 |
| S 13C5-PPeA | | 1.0756 | 1.0822 | 1.0877 | 1.0424 | 1.0526 | 1.0638 | 1.0560 | 1.0063 | 1.0583 | 2.464 |
| S 13C5-PFHxA | | 0.1681 | 0.1651 | 0.1611 | 0.1558 | 0.1643 | 0.1660 | 0.1674 | 0.1664 | 0.1643 | 2.455 |
| S 13C3-HPOD-A | | 0.9719 | 0.9961 | 0.9930 | 0.9741 | 0.9714 | 0.9757 | 0.9993 | 0.9469 | 0.9786 | 1.760 |
| S 13C4-PFHpA | | | | | | | | | | | |

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICC279
 Lab FileID: 6Q18589.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

| Compound | Curve Fit | Curve Fit Formula | %RSE |
|----------------|-----------|-------------------|------|
| S 13C4-PBBA | Linear | y = 1.190803 * x | |
| S 13C5-PFPeA | Linear | y = 0.486251 * x | |
| S 13C2-4:2FTS | Linear | y = 0.166755 * x | |
| S 13C3-PFBS | Linear | y = 2.212557 * x | |
| S 13C5-PFHxA | Linear | y = 1.058308 * x | |
| S 13C3-HFPO-DA | Linear | y = 0.164282 * x | |
| S 13C4-PFHpA | Linear | y = 0.978557 * x | |
| S 13C8-PFOA | Linear | y = 0.242136 * x | |
| S 13C3-PFHxS | Linear | y = 0.936537 * x | |
| S 13C9-PFNA | Linear | y = 1.396640 * x | |
| S 13C2-8:2FTS | Linear | y = 0.823767 * x | |
| S 13C6-PEDA | Linear | y = 0.245600 * x | |
| S d3-MeFOSAA | Linear | y = 0.732501 * x | |
| S 13C8-PFOS | Linear | y = 0.800922 * x | |
| S d5-EFOSAA | Linear | y = 0.807010 * x | |
| S 13C7-PFUInDA | Linear | y = 0.733798 * x | |
| S 13C2-PFDODA | Linear | y = 0.934423 * x | |
| S 13C8-FOSA | Linear | y = 0.868119 * x | |
| S 13C2-PFTeDA | Linear | y = 1.905749 * x | |
| S d7-MeFOSE | Linear | y = 0.472355 * x | |
| S d3-MeFOSA | Linear | y = 0.627877 * x | |
| S d9-EFOSE | Linear | y = 0.772326 * x | |
| S d5-EFOSA | Linear | y = 0.821228 * x | |
| S d5-EFOSA | Linear | y = 0.731236 * x | |

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18595
 Type : QC
 Level : 4

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.244 | 4.9 | 104.9 |
| 13C2-6:2FTS | 5.000 | 5.043 | 0.9 | 100.9 |
| 13C2-8:2FTS | 5.000 | 4.830 | -3.4 | 96.6 |
| 13C2-PFDoDA | 1.250 | 1.242 | -0.6 | 99.4 |
| 13C2-PFTeDA | 1.250 | 1.207 | -3.4 | 96.6 |
| 13C3-PFBS | 2.500 | 2.497 | -0.1 | 99.9 |
| 13C3-PFHxS | 2.500 | 2.402 | -3.9 | 96.1 |
| 13C4-PFBA | 10.000 | 10.030 | 0.3 | 100.3 |
| 13C4-PFHpA | 2.500 | 2.556 | 2.2 | 102.2 |
| 13C5-PFHxA | 2.500 | 2.564 | 2.6 | 102.6 |
| 13C5-PFPeA | 5.000 | 5.005 | 0.1 | 100.1 |
| 13C6-PFDA | 1.250 | 1.208 | -3.4 | 96.6 |
| 13C7-PFUnDA | 1.250 | 1.319 | 5.5 | 105.5 |
| 13C8-FOSA | 2.500 | 2.530 | 1.2 | 101.2 |
| 13C8-PFOA | 2.500 | 2.436 | -2.6 | 97.4 |
| 13C8-PFOS | 2.500 | 2.359 | -5.7 | 94.3 |
| 13C9-PFNA | 1.250 | 1.216 | -2.7 | 97.3 |
| 4:2FTS | 9.375 | 9.353 | -0.2 | 99.8 |
| 6:2FTS | 9.500 | 10.523 | 10.8 | 110.8 |
| 8:2FTS | 9.600 | 10.500 | 9.4 | 109.4 |
| d3-MeFOSAA | 5.000 | 4.955 | -0.9 | 99.1 |
| EtFOSAA | 2.500 | 2.553 | 2.1 | 102.1 |
| FOSA | 2.500 | 2.593 | 3.7 | 103.7 |
| MeFOSAA | 2.500 | 2.732 | 9.3 | 109.3 |
| PFBA | 10.000 | 10.538 | 5.4 | 105.4 |
| PFBS | 2.218 | 2.208 | -0.4 | 99.6 |
| PFDA | 2.500 | 2.624 | 5.0 | 105.0 |
| PFDoDA | 2.500 | 2.513 | 0.5 | 100.5 |
| PFDS | 2.413 | 2.631 | 9.1 | 109.1 |
| PFHpA | 2.500 | 2.606 | 4.2 | 104.2 |
| PFHpS | 2.383 | 2.489 | 4.5 | 104.5 |
| PFHxA | 2.500 | 2.609 | 4.3 | 104.3 |
| PFHxS | 2.285 | 2.439 | 6.7 | 106.7 |
| PFNA | 2.500 | 2.682 | 7.3 | 107.3 |
| PFNS | 2.405 | 2.489 | 3.5 | 103.5 |
| PFOA | 2.500 | 2.460 | -1.6 | 98.4 |
| PFOS | 2.320 | 2.528 | 8.9 | 108.9 |

Initial Calibration Verification

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18595.D

| | | | | |
|--------------|--------|----------|------|-------|
| PFPeA | 5.000 | 5.240 | 4.8 | 104.8 |
| PFPeS | 2.353 | 2.646 | 12.4 | 112.4 |
| PFTeDA | 2.500 | 2.623 | 4.9 | 104.9 |
| PFTTrDA | 2.500 | 2.480 | -0.8 | 99.2 |
| PFUnDA | 2.500 | 2.447 | -2.1 | 97.9 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 4.725 | 4.990 | 5.6 | 105.6 |
| 13C3-HFPO-DA | 10.000 | 10.055 | 0.6 | 100.6 |
| 9C1-PF3ONS | 4.675 | 5.075 | 8.5 | 108.5 |
| ADONA | 4.725 | 4.958 | 4.9 | 104.9 |
| HFPO-DA | 5.000 | 5.043 | 0.9 | 100.9 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 12.480 | 13.044 | 4.5 | 104.5 |
| 5:3FTCA | 62.400 | 65.313 | 4.7 | 104.7 |
| 7:3FTCA | 62.400 | 63.718 | 2.1 | 102.1 |
| d3-MeFOSA | 2.500 | 2.313 | -7.5 | 92.5 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 5.000 | 5.247 | 4.9 | 104.9 |
| EtFOSE | 12.500 | 13.586 | 8.7 | 108.7 |
| MeFOSA | 5.000 | 5.552 | 11.0 | 111.0 |
| MeFOSE | 12.500 | 14.017 | 12.1 | 112.1 |
| PFDoDS | 2.425 | 2.625 | 8.3 | 108.3 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 5.241 | 4.8 | 104.8 |
| d7-MeFOSE | 25.000 | 23.341 | -6.6 | 93.4 |
| d9-EtFOSE | 25.000 | 23.664 | -5.3 | 94.7 |
| d5-EtFOSA | 2.500 | 2.431 | -2.8 | 97.2 |
| NFDHA | 5.000 | 5.179 | 3.6 | 103.6 |
| PFMBA | 5.000 | 5.221 | 4.4 | 104.4 |
| PFMPA | 5.000 | 5.272 | 5.4 | 105.4 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEESA | 4.450 | 4.483 | 0.7 | 100.7 |

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18596
 Type : QC
 Level : 20

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.060 | 1.2 | 101.2 |
| 13C2-6:2FTS | 5.000 | 4.998 | 0.0 | 100.0 |
| 13C2-8:2FTS | 5.000 | 5.235 | 4.7 | 104.7 |
| 13C2-PFDoDA | 1.250 | 1.343 | 7.4 | 107.4 |
| 13C2-PFTeDA | 1.250 | 1.348 | 7.8 | 107.8 |
| 13C3-PFBS | 2.500 | 2.461 | -1.5 | 98.5 |
| 13C3-PFHxS | 2.500 | 2.393 | -4.3 | 95.7 |
| 13C4-PFBA | 10.000 | 10.011 | 0.1 | 100.1 |
| 13C4-PFHpA | 2.500 | 2.610 | 4.4 | 104.4 |
| 13C5-PFHxA | 2.500 | 2.632 | 5.3 | 105.3 |
| 13C5-PFPeA | 5.000 | 5.264 | 5.3 | 105.3 |
| 13C6-PFDA | 1.250 | 1.243 | -0.6 | 99.4 |
| 13C7-PFUnDA | 1.250 | 1.231 | -1.5 | 98.5 |
| 13C8-FOSA | 2.500 | 2.434 | -2.7 | 97.3 |
| 13C8-PFOA | 2.500 | 2.524 | 0.9 | 100.9 |
| 13C8-PFOS | 2.500 | 2.449 | -2.0 | 98.0 |
| 13C9-PFNA | 1.250 | 1.238 | -1.0 | 99.0 |
| 4:2FTS | 20.000 | 19.446 | -2.8 | 97.2 |
| 6:2FTS | 20.000 | 20.311 | 1.6 | 101.6 |
| 8:2FTS | 20.000 | 18.119 | -9.4 | 90.6 |
| d3-MeFOSAA | 5.000 | 4.725 | -5.5 | 94.5 |
| EtFOSAA | 20.000 | 21.165 | 5.8 | 105.8 |
| FOSA | 20.000 | 17.735 | -11.3 | 88.7 |
| MeFOSAA | 20.000 | 20.900 | 4.5 | 104.5 |
| PFBA | 20.000 | 19.012 | -4.9 | 95.1 |
| PFBS | 20.000 | 19.907 | -0.5 | 99.5 |
| PFDA | 20.000 | 20.127 | 0.6 | 100.6 |
| PFDoDA | 20.000 | 17.291 | -13.5 | 86.5 |
| PFDS | 20.000 | 18.650 | -6.8 | 93.2 |
| PFHpA | 20.000 | 19.314 | -3.4 | 96.6 |
| PFHpS | 20.000 | 19.127 | -4.4 | 95.6 |
| PFHxA | 20.000 | 18.145 | -9.3 | 90.7 |
| PFHxS | 20.000 | 20.599 | 3.0 | 103.0 |
| PFNA | 20.000 | 20.844 | 4.2 | 104.2 |
| PFNS | 20.000 | 19.768 | -1.2 | 98.8 |
| PFOA | 20.000 | 19.191 | -4.0 | 96.0 |
| PFOS | 20.000 | 16.710 | -16.5 | 83.5 |

Initial Calibration Verification

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-ICV279
 Lab FileID: 6Q18596.D

| | | | | |
|--------------|---------|----------|-------|-------|
| PFPeA | 20.000 | 19.672 | -1.6 | 98.4 |
| PFPeS | 20.000 | 19.453 | -2.7 | 97.3 |
| PFTeDA | 20.000 | 18.975 | -5.1 | 94.9 |
| PFTrDA | 20.000 | 15.949 | -20.3 | 79.7 |
| PFUnDA | 20.000 | 18.688 | -6.6 | 93.4 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 20.000 | 19.529 | -2.4 | 97.6 |
| 13C3-HFPO-DA | 10.000 | 10.672 | 6.7 | 106.7 |
| 9C1-PF3ONS | 20.000 | 20.061 | 0.3 | 100.3 |
| ADONA | 20.000 | 17.293 | -13.5 | 86.5 |
| HFPO-DA | 20.000 | 18.531 | -7.3 | 92.7 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 20.000 | 18.811 | -5.9 | 94.1 |
| 5:3FTCA | 20.000 | 19.622 | -1.9 | 98.1 |
| 7:3FTCA | 20.000 | 18.808 | -6.0 | 94.0 |
| d3-MeFOSA | 2.500 | 2.344 | -6.3 | 93.7 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 20.000 | 17.622 | -11.9 | 88.1 |
| EtFOSE | 100.000 | 99.231 | -0.8 | 99.2 |
| MeFOSA | 20.000 | 19.231 | -3.8 | 96.2 |
| MeFOSE | 100.000 | 97.876 | -2.1 | 97.9 |
| PFDoDS | 20.000 | 17.693 | -11.5 | 88.5 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 4.588 | -8.2 | 91.8 |
| d7-MeFOSE | 25.000 | 24.607 | -1.6 | 98.4 |
| d9-EtFOSE | 25.000 | 24.277 | -2.9 | 97.1 |
| d5-EtFOSA | 2.500 | 2.494 | -0.2 | 99.8 |
| NFDHA | 20.000 | 18.999 | -5.0 | 95.0 |
| PFMBA | 20.000 | 19.590 | -2.1 | 97.9 |
| PFMPA | 20.000 | 19.542 | -2.3 | 97.7 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 20.000 | 16.821 | -15.9 | 84.1 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18597.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18597
 Type : QC
 Level : 4

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.349 | 7.0 | 107.0 |
| 13C2-6:2FTS | 5.000 | 5.372 | 7.4 | 107.4 |
| 13C2-8:2FTS | 5.000 | 5.146 | 2.9 | 102.9 |
| 13C2-PFDoDA | 1.250 | 1.148 | -8.2 | 91.8 |
| 13C2-PFTeDA | 1.250 | 1.213 | -2.9 | 97.1 |
| 13C3-PFBS | 2.500 | 2.537 | 1.5 | 101.5 |
| 13C3-PFHxS | 2.500 | 2.417 | -3.3 | 96.7 |
| 13C4-PFBA | 10.000 | 9.949 | -0.5 | 99.5 |
| 13C4-PFHpA | 2.500 | 2.551 | 2.0 | 102.0 |
| 13C5-PFHxA | 2.500 | 2.570 | 2.8 | 102.8 |
| 13C5-PFPeA | 5.000 | 5.086 | 1.7 | 101.7 |
| 13C6-PFDA | 1.250 | 1.165 | -6.8 | 93.2 |
| 13C7-PFUnDA | 1.250 | 1.242 | -0.7 | 99.3 |
| 13C8-FOSA | 2.500 | 2.463 | -1.5 | 98.5 |
| 13C8-PFOA | 2.500 | 2.541 | 1.6 | 101.6 |
| 13C8-PFOS | 2.500 | 2.442 | -2.3 | 97.7 |
| 13C9-PFNA | 1.250 | 1.184 | -5.3 | 94.7 |
| 4:2FTS | 9.375 | 8.679 | -7.4 | 92.6 |
| 6:2FTS | 9.500 | 9.189 | -3.3 | 96.7 |
| 8:2FTS | 9.600 | 9.191 | -4.3 | 95.7 |
| d3-MeFOSAA | 5.000 | 5.002 | 0.0 | 100.0 |
| EtFOSAA | 2.500 | 2.554 | 2.1 | 102.1 |
| FOSA | 2.500 | 2.337 | -6.5 | 93.5 |
| MeFOSAA | 2.500 | 2.355 | -5.8 | 94.2 |
| PFBA | 10.000 | 9.597 | -4.0 | 96.0 |
| PFBS | 2.218 | 2.117 | -4.5 | 95.5 |
| PFDA | 2.500 | 2.531 | 1.3 | 101.3 |
| PFDoDA | 2.500 | 2.507 | 0.3 | 100.3 |
| PFDS | 2.413 | 2.160 | -10.5 | 89.5 |
| PFHpA | 2.500 | 2.325 | -7.0 | 93.0 |
| PFHpS | 2.383 | 2.243 | -5.9 | 94.1 |
| PFHxA | 2.500 | 2.360 | -5.6 | 94.4 |
| PFHxS | 2.285 | 2.227 | -2.5 | 97.5 |
| PFNA | 2.500 | 2.596 | 3.8 | 103.8 |
| PFNS | 2.405 | 2.177 | -9.5 | 90.5 |
| PFOA | 2.500 | 2.418 | -3.3 | 96.7 |
| PFOS | 2.320 | 2.149 | -7.4 | 92.6 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18597.D

| | | | | |
|--------------|--------|----------|------|-------|
| PFPeA | 5.000 | 4.803 | -3.9 | 96.1 |
| PFPeS | 2.353 | 2.386 | 1.4 | 101.4 |
| PFTeDA | 2.500 | 2.348 | -6.1 | 93.9 |
| PFTTrDA | 2.500 | 2.529 | 1.2 | 101.2 |
| PFUnDA | 2.500 | 2.306 | -7.8 | 92.2 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 4.725 | 4.645 | -1.7 | 98.3 |
| 13C3-HFPO-DA | 10.000 | 9.968 | -0.3 | 99.7 |
| 9C1-PF3ONS | 4.675 | 4.776 | 2.2 | 102.2 |
| ADONA | 4.725 | 4.622 | -2.2 | 97.8 |
| HFPO-DA | 5.000 | 4.743 | -5.1 | 94.9 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 12.480 | 11.793 | -5.5 | 94.5 |
| 5:3FTCA | 62.400 | 59.219 | -5.1 | 94.9 |
| 7:3FTCA | 62.400 | 60.802 | -2.6 | 97.4 |
| d3-MeFOSA | 2.500 | 2.333 | -6.7 | 93.3 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 5.000 | 4.586 | -8.3 | 91.7 |
| EtFOSE | 12.500 | 12.021 | -3.8 | 96.2 |
| MeFOSA | 5.000 | 5.049 | 1.0 | 101.0 |
| MeFOSE | 12.500 | 11.924 | -4.6 | 95.4 |
| PFDoDS | 2.425 | 2.340 | -3.5 | 96.5 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 4.729 | -5.4 | 94.6 |
| d7-MeFOSE | 25.000 | 24.447 | -2.2 | 97.8 |
| d9-EtFOSE | 25.000 | 24.396 | -2.4 | 97.6 |
| d5-EtFOSA | 2.500 | 2.489 | -0.4 | 99.6 |
| NFDHA | 5.000 | 4.649 | -7.0 | 93.0 |
| PFMBA | 5.000 | 4.733 | -5.3 | 94.7 |
| PFMPA | 5.000 | 4.792 | -4.2 | 95.8 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEESA | 4.450 | 4.246 | -4.6 | 95.4 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18598.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18598
 Type : QC
 Level : 1

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.495 | 9.9 | 109.9 |
| 13C2-6:2FTS | 5.000 | 5.184 | 3.7 | 103.7 |
| 13C2-8:2FTS | 5.000 | 5.048 | 1.0 | 101.0 |
| 13C2-PFDoDA | 1.250 | 1.242 | -0.7 | 99.3 |
| 13C2-PFTeDA | 1.250 | 1.226 | -1.9 | 98.1 |
| 13C3-PFBS | 2.500 | 2.606 | 4.2 | 104.2 |
| 13C3-PFHxS | 2.500 | 2.569 | 2.7 | 102.7 |
| 13C4-PFBA | 10.000 | 9.952 | -0.5 | 99.5 |
| 13C4-PFHpA | 2.500 | 2.542 | 1.7 | 101.7 |
| 13C5-PFHxA | 2.500 | 2.466 | -1.3 | 98.7 |
| 13C5-PFPeA | 5.000 | 4.999 | 0.0 | 100.0 |
| 13C6-PFDA | 1.250 | 1.198 | -4.1 | 95.9 |
| 13C7-PFUnDA | 1.250 | 1.222 | -2.3 | 97.7 |
| 13C8-FOSA | 2.500 | 2.479 | -0.8 | 99.2 |
| 13C8-PFOA | 2.500 | 2.408 | -3.7 | 96.3 |
| 13C8-PFOS | 2.500 | 2.444 | -2.2 | 97.8 |
| 13C9-PFNA | 1.250 | 1.276 | 2.1 | 102.1 |
| 4:2FTS | 0.750 | 0.888 | 18.5 | 118.5 |
| 6:2FTS | 0.760 | 0.915 | 20.4 | 120.4 |
| 8:2FTS | 0.768 | 0.846 | 10.2 | 110.2 |
| d3-MeFOSAA | 5.000 | 4.735 | -5.3 | 94.7 |
| EtFOSAA | 0.200 | 0.258 | 29.2 | 129.2 |
| FOSA | 0.200 | 0.227 | 13.3 | 113.3 |
| MeFOSAA | 0.200 | 0.235 | 17.7 | 117.7 |
| PFBA | 0.800 | 0.909 | 13.7 | 113.7 |
| PFBS | 0.177 | 0.207 | 17.0 | 117.0 |
| PFDA | 0.200 | 0.222 | 11.0 | 111.0 |
| PFDoDA | 0.200 | 0.228 | 14.2 | 114.2 |
| PFDS | 0.193 | 0.227 | 17.6 | 117.6 |
| PFHpA | 0.200 | 0.224 | 11.8 | 111.8 |
| PFHpS | 0.191 | 0.221 | 15.8 | 115.8 |
| PFHxA | 0.200 | 0.228 | 13.8 | 113.8 |
| PFHxS | 0.183 | 0.224 | 22.5 | 122.5 |
| PFNA | 0.200 | 0.204 | 1.9 | 101.9 |
| PFNS | 0.192 | 0.219 | 13.9 | 113.9 |
| PFOA | 0.200 | 0.211 | 5.3 | 105.3 |
| PFOS | 0.186 | 0.224 | 20.2 | 120.2 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18598.D

| | | | | |
|--------------|--------|----------|------|-------|
| PFPeA | 0.400 | 0.458 | 14.6 | 114.6 |
| PFPeS | 0.188 | 0.218 | 16.1 | 116.1 |
| PFTeDA | 0.200 | 0.229 | 14.3 | 114.3 |
| PFTTrDA | 0.200 | 0.247 | 23.6 | 123.6 |
| PFUnDA | 0.200 | 0.245 | 22.3 | 122.3 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 0.378 | 0.401 | 6.1 | 106.1 |
| 13C3-HFPO-DA | 10.000 | 10.046 | 0.5 | 100.5 |
| 9C1-PF3ONS | 0.367 | 0.432 | 17.7 | 117.7 |
| ADONA | 0.378 | 0.429 | 13.5 | 113.5 |
| HFPO-DA | 0.400 | 0.455 | 13.7 | 113.7 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 0.998 | 1.143 | 14.5 | 114.5 |
| 5:3FTCA | 4.992 | 5.882 | 17.8 | 117.8 |
| 7:3FTCA | 4.992 | 6.104 | 22.3 | 122.3 |
| d3-MeFOSA | 2.500 | 2.387 | -4.5 | 95.5 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 0.400 | 0.471 | 17.7 | 117.7 |
| EtFOSE | 1.000 | 1.109 | 10.9 | 110.9 |
| MeFOSA | 0.400 | 0.483 | 20.7 | 120.7 |
| MeFOSE | 1.000 | 1.191 | 19.1 | 119.1 |
| PFDoDS | 0.194 | 0.225 | 15.9 | 115.9 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 4.745 | -5.1 | 94.9 |
| d7-MeFOSE | 25.000 | 24.126 | -3.5 | 96.5 |
| d9-EtFOSE | 25.000 | 24.519 | -1.9 | 98.1 |
| d5-EtFOSA | 2.500 | 2.363 | -5.5 | 94.5 |
| NFDHA | 0.400 | 0.457 | 14.1 | 114.1 |
| PFMBA | 0.400 | 0.447 | 11.8 | 111.8 |
| PFMPA | 0.400 | 0.450 | 12.5 | 112.5 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 0.356 | 0.409 | 14.9 | 114.9 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18641.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18641
 Type : QC
 Level : 4

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.787 | 15.7 | 115.7 |
| 13C2-6:2FTS | 5.000 | 5.574 | 11.5 | 111.5 |
| 13C2-8:2FTS | 5.000 | 5.490 | 9.8 | 109.8 |
| 13C2-PFDoDA | 1.250 | 1.287 | 2.9 | 102.9 |
| 13C2-PFTeDA | 1.250 | 1.234 | -1.3 | 98.7 |
| 13C3-PFBS | 2.500 | 2.564 | 2.6 | 102.6 |
| 13C3-PFHxS | 2.500 | 2.619 | 4.7 | 104.7 |
| 13C4-PFBA | 10.000 | 10.059 | 0.6 | 100.6 |
| 13C4-PFHpA | 2.500 | 2.581 | 3.3 | 103.3 |
| 13C5-PFHxA | 2.500 | 2.456 | -1.8 | 98.2 |
| 13C5-PFPeA | 5.000 | 5.039 | 0.8 | 100.8 |
| 13C6-PFDA | 1.250 | 1.257 | 0.6 | 100.6 |
| 13C7-PFUnDA | 1.250 | 1.247 | -0.2 | 99.8 |
| 13C8-FOSA | 2.500 | 2.596 | 3.8 | 103.8 |
| 13C8-PFOA | 2.500 | 2.562 | 2.5 | 102.5 |
| 13C8-PFOS | 2.500 | 2.404 | -3.8 | 96.2 |
| 13C9-PFNA | 1.250 | 1.291 | 3.3 | 103.3 |
| 4:2FTS | 9.375 | 8.810 | -6.0 | 94.0 |
| 6:2FTS | 9.500 | 8.851 | -6.8 | 93.2 |
| 8:2FTS | 9.600 | 9.583 | -0.2 | 99.8 |
| d3-MeFOSAA | 5.000 | 4.567 | -8.7 | 91.3 |
| EtFOSAA | 2.500 | 2.529 | 1.2 | 101.2 |
| FOSA | 2.500 | 2.270 | -9.2 | 90.8 |
| MeFOSAA | 2.500 | 2.778 | 11.1 | 111.1 |
| PFBA | 10.000 | 9.575 | -4.2 | 95.8 |
| PFBS | 2.218 | 2.087 | -5.9 | 94.1 |
| PFDA | 2.500 | 2.448 | -2.1 | 97.9 |
| PFDoDA | 2.500 | 2.306 | -7.8 | 92.2 |
| PFDS | 2.413 | 2.354 | -2.4 | 97.6 |
| PFHpA | 2.500 | 2.266 | -9.4 | 90.6 |
| PFHpS | 2.383 | 2.365 | -0.8 | 99.2 |
| PFHxA | 2.500 | 2.376 | -5.0 | 95.0 |
| PFHxS | 2.285 | 2.124 | -7.1 | 92.9 |
| PFNA | 2.500 | 2.385 | -4.6 | 95.4 |
| PFNS | 2.405 | 2.236 | -7.0 | 93.0 |
| PFOA | 2.500 | 2.330 | -6.8 | 93.2 |
| PFOS | 2.320 | 2.278 | -1.8 | 98.2 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18641.D

| | | | | |
|--------------|--------|----------|------|-------|
| PFPeA | 5.000 | 4.760 | -4.8 | 95.2 |
| PFPeS | 2.353 | 2.224 | -5.5 | 94.5 |
| PFTeDA | 2.500 | 2.432 | -2.7 | 97.3 |
| PFTTrDA | 2.500 | 2.383 | -4.7 | 95.3 |
| PFUnDA | 2.500 | 2.443 | -2.3 | 97.7 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 4.725 | 4.510 | -4.5 | 95.5 |
| 13C3-HFPO-DA | 10.000 | 9.720 | -2.8 | 97.2 |
| 9C1-PF3ONS | 4.675 | 4.497 | -3.8 | 96.2 |
| ADONA | 4.725 | 4.707 | -0.4 | 99.6 |
| HFPO-DA | 5.000 | 4.746 | -5.1 | 94.9 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 12.480 | 11.766 | -5.7 | 94.3 |
| 5:3FTCA | 62.400 | 59.921 | -4.0 | 96.0 |
| 7:3FTCA | 62.400 | 62.181 | -0.4 | 99.6 |
| d3-MeFOSA | 2.500 | 2.423 | -3.1 | 96.9 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 5.000 | 4.638 | -7.2 | 92.8 |
| EtFOSE | 12.500 | 11.663 | -6.7 | 93.3 |
| MeFOSA | 5.000 | 4.914 | -1.7 | 98.3 |
| MeFOSE | 12.500 | 11.975 | -4.2 | 95.8 |
| PFDoDS | 2.425 | 2.342 | -3.4 | 96.6 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 4.760 | -4.8 | 95.2 |
| d7-MeFOSE | 25.000 | 25.277 | 1.1 | 101.1 |
| d9-EtFOSE | 25.000 | 25.763 | 3.1 | 103.1 |
| d5-EtFOSA | 2.500 | 2.566 | 2.6 | 102.6 |
| NFDHA | 5.000 | 4.788 | -4.2 | 95.8 |
| PFMBA | 5.000 | 4.801 | -4.0 | 96.0 |
| PFMPA | 5.000 | 4.781 | -4.4 | 95.6 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 4.450 | 4.399 | -1.2 | 98.8 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18642.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18642
 Type : QC
 Level : 1

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.576 | 11.5 | 111.5 |
| 13C2-6:2FTS | 5.000 | 5.617 | 12.3 | 112.3 |
| 13C2-8:2FTS | 5.000 | 5.122 | 2.4 | 102.4 |
| 13C2-PFDoDA | 1.250 | 1.234 | -1.3 | 98.7 |
| 13C2-PFTeDA | 1.250 | 1.258 | 0.7 | 100.7 |
| 13C3-PFBS | 2.500 | 2.538 | 1.5 | 101.5 |
| 13C3-PFHxS | 2.500 | 2.474 | -1.0 | 99.0 |
| 13C4-PFBA | 10.000 | 9.994 | -0.1 | 99.9 |
| 13C4-PFHpA | 2.500 | 2.649 | 6.0 | 106.0 |
| 13C5-PFHxA | 2.500 | 2.597 | 3.9 | 103.9 |
| 13C5-PFPeA | 5.000 | 5.101 | 2.0 | 102.0 |
| 13C6-PFDA | 1.250 | 1.267 | 1.3 | 101.3 |
| 13C7-PFUnDA | 1.250 | 1.335 | 6.8 | 106.8 |
| 13C8-FOSA | 2.500 | 2.451 | -1.9 | 98.1 |
| 13C8-PFOA | 2.500 | 2.619 | 4.7 | 104.7 |
| 13C8-PFOS | 2.500 | 2.412 | -3.5 | 96.5 |
| 13C9-PFNA | 1.250 | 1.316 | 5.2 | 105.2 |
| 4:2FTS | 0.750 | 0.894 | 19.1 | 119.1 |
| 6:2FTS | 0.760 | 0.866 | 13.9 | 113.9 |
| 8:2FTS | 0.768 | 0.951 | 23.9 | 123.9 |
| d3-MeFOSAA | 5.000 | 4.811 | -3.8 | 96.2 |
| EtFOSAA | 0.200 | 0.238 | 19.2 | 119.2 |
| FOSA | 0.200 | 0.220 | 10.2 | 110.2 |
| MeFOSAA | 0.200 | 0.242 | 21.0 | 121.0 |
| PFBA | 0.800 | 0.919 | 14.9 | 114.9 |
| PFBS | 0.177 | 0.216 | 21.9 | 121.9 |
| PFDA | 0.200 | 0.211 | 5.6 | 105.6 |
| PFDoDA | 0.200 | 0.221 | 10.7 | 110.7 |
| PFDS | 0.193 | 0.206 | 6.7 | 106.7 |
| PFHpA | 0.200 | 0.219 | 9.3 | 109.3 |
| PFHpS | 0.191 | 0.228 | 19.2 | 119.2 |
| PFHxA | 0.200 | 0.215 | 7.3 | 107.3 |
| PFHxS | 0.183 | 0.213 | 16.5 | 116.5 |
| PFNA | 0.200 | 0.204 | 1.9 | 101.9 |
| PFNS | 0.192 | 0.207 | 7.9 | 107.9 |
| PFOA | 0.200 | 0.218 | 9.2 | 109.2 |
| PFOS | 0.186 | 0.220 | 18.2 | 118.2 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18642.D

| | | | | |
|--------------|--------|----------|------|-------|
| PFPeA | 0.400 | 0.475 | 18.8 | 118.8 |
| PFPeS | 0.188 | 0.226 | 20.1 | 120.1 |
| PFTeDA | 0.200 | 0.236 | 17.8 | 117.8 |
| PFTTrDA | 0.200 | 0.227 | 13.7 | 113.7 |
| PFUnDA | 0.200 | 0.207 | 3.5 | 103.5 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 0.378 | 0.442 | 16.8 | 116.8 |
| 13C3-HFPO-DA | 10.000 | 9.958 | -0.4 | 99.6 |
| 9C1-PF3ONS | 0.367 | 0.438 | 19.1 | 119.1 |
| ADONA | 0.378 | 0.476 | 25.9 | 125.9 |
| HFPO-DA | 0.400 | 0.430 | 7.6 | 107.6 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 0.998 | 1.134 | 13.5 | 113.5 |
| 5:3FTCA | 4.992 | 5.900 | 18.2 | 118.2 |
| 7:3FTCA | 4.992 | 5.954 | 19.3 | 119.3 |
| d3-MeFOSA | 2.500 | 2.320 | -7.2 | 92.8 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 0.400 | 0.462 | 15.5 | 115.5 |
| EtFOSE | 1.000 | 1.184 | 18.4 | 118.4 |
| MeFOSA | 0.400 | 0.478 | 19.5 | 119.5 |
| MeFOSE | 1.000 | 1.138 | 13.8 | 113.8 |
| PFDoDS | 0.194 | 0.223 | 15.1 | 115.1 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 4.926 | -1.5 | 98.5 |
| d7-MeFOSE | 25.000 | 23.636 | -5.5 | 94.5 |
| d9-EtFOSE | 25.000 | 23.225 | -7.1 | 92.9 |
| d5-EtFOSA | 2.500 | 2.465 | -1.4 | 98.6 |
| NFDHA | 0.400 | 0.452 | 12.9 | 112.9 |
| PFMBA | 0.400 | 0.448 | 11.9 | 111.9 |
| PFMPA | 0.400 | 0.451 | 12.6 | 112.6 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 0.356 | 0.392 | 10.2 | 110.2 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18653.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18653
 Type : QC
 Level : 4

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.551 | 11.0 | 111.0 |
| 13C2-6:2FTS | 5.000 | 5.468 | 9.4 | 109.4 |
| 13C2-8:2FTS | 5.000 | 5.429 | 8.6 | 108.6 |
| 13C2-PFDoDA | 1.250 | 1.184 | -5.3 | 94.7 |
| 13C2-PFTeDA | 1.250 | 1.256 | 0.4 | 100.4 |
| 13C3-PFBS | 2.500 | 2.578 | 3.1 | 103.1 |
| 13C3-PFHxS | 2.500 | 2.584 | 3.3 | 103.3 |
| 13C4-PFBA | 10.000 | 10.062 | 0.6 | 100.6 |
| 13C4-PFHpA | 2.500 | 2.556 | 2.2 | 102.2 |
| 13C5-PFHxA | 2.500 | 2.580 | 3.2 | 103.2 |
| 13C5-PFPeA | 5.000 | 5.059 | 1.2 | 101.2 |
| 13C6-PFDA | 1.250 | 1.250 | 0.0 | 100.0 |
| 13C7-PFUnDA | 1.250 | 1.249 | 0.0 | 100.0 |
| 13C8-FOSA | 2.500 | 2.486 | -0.6 | 99.4 |
| 13C8-PFOA | 2.500 | 2.431 | -2.7 | 97.3 |
| 13C8-PFOS | 2.500 | 2.540 | 1.6 | 101.6 |
| 13C9-PFNA | 1.250 | 1.316 | 5.3 | 105.3 |
| 4:2FTS | 9.375 | 8.760 | -6.6 | 93.4 |
| 6:2FTS | 9.500 | 8.951 | -5.8 | 94.2 |
| 8:2FTS | 9.600 | 8.518 | -11.3 | 88.7 |
| d3-MeFOSAA | 5.000 | 4.903 | -1.9 | 98.1 |
| EtFOSAA | 2.500 | 2.312 | -7.5 | 92.5 |
| FOSA | 2.500 | 2.341 | -6.4 | 93.6 |
| MeFOSAA | 2.500 | 2.566 | 2.7 | 102.7 |
| PFBA | 10.000 | 9.668 | -3.3 | 96.7 |
| PFBS | 2.218 | 2.048 | -7.7 | 92.3 |
| PFDA | 2.500 | 2.376 | -5.0 | 95.0 |
| PFDoDA | 2.500 | 2.442 | -2.3 | 97.7 |
| PFDS | 2.413 | 2.179 | -9.7 | 90.3 |
| PFHpA | 2.500 | 2.283 | -8.7 | 91.3 |
| PFHpS | 2.383 | 2.170 | -8.9 | 91.1 |
| PFHxA | 2.500 | 2.297 | -8.1 | 91.9 |
| PFHxS | 2.285 | 2.060 | -9.9 | 90.1 |
| PFNA | 2.500 | 2.259 | -9.6 | 90.4 |
| PFNS | 2.405 | 2.268 | -5.7 | 94.3 |
| PFOA | 2.500 | 2.295 | -8.2 | 91.8 |
| PFOS | 2.320 | 2.122 | -8.5 | 91.5 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18653.D

| | | | | |
|--------------|--------|----------|-------|-------|
| PFPeA | 5.000 | 4.744 | -5.1 | 94.9 |
| PFPeS | 2.353 | 2.177 | -7.5 | 92.5 |
| PFTeDA | 2.500 | 2.368 | -5.3 | 94.7 |
| PFTTrDA | 2.500 | 2.464 | -1.4 | 98.6 |
| PFUnDA | 2.500 | 2.229 | -10.8 | 89.2 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 4.725 | 4.485 | -5.1 | 94.9 |
| 13C3-HFPO-DA | 10.000 | 10.168 | 1.7 | 101.7 |
| 9C1-PF3ONS | 4.675 | 4.312 | -7.8 | 92.2 |
| ADONA | 4.725 | 4.372 | -7.5 | 92.5 |
| HFPO-DA | 5.000 | 4.546 | -9.1 | 90.9 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 12.480 | 11.783 | -5.6 | 94.4 |
| 5:3FTCA | 62.400 | 57.165 | -8.4 | 91.6 |
| 7:3FTCA | 62.400 | 62.037 | -0.6 | 99.4 |
| d3-MeFOSA | 2.500 | 2.409 | -3.6 | 96.4 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 5.000 | 4.678 | -6.4 | 93.6 |
| EtFOSE | 12.500 | 11.816 | -5.5 | 94.5 |
| MeFOSA | 5.000 | 5.029 | 0.6 | 100.6 |
| MeFOSE | 12.500 | 11.768 | -5.9 | 94.1 |
| PFDoDS | 2.425 | 2.271 | -6.4 | 93.6 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 5.445 | 8.9 | 108.9 |
| d7-MeFOSE | 25.000 | 25.559 | 2.2 | 102.2 |
| d9-EtFOSE | 25.000 | 25.461 | 1.8 | 101.8 |
| d5-EtFOSA | 2.500 | 2.581 | 3.2 | 103.2 |
| NFDHA | 5.000 | 4.782 | -4.4 | 95.6 |
| PFMBA | 5.000 | 4.693 | -6.1 | 93.9 |
| PFMPA | 5.000 | 4.818 | -3.6 | 96.4 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 4.450 | 4.148 | -6.8 | 93.2 |

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18665.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053123_1633_S6Q279\S6Q279.batch.bin

Level ID: Calibration File

1:D:\MassHunter\Data\053123_1633_S6Q279\6Q18586.d
 2:D:\MassHunter\Data\053123_1633_S6Q279\6Q18587.d
 3:D:\MassHunter\Data\053123_1633_S6Q279\6Q18588.d
 4:D:\MassHunter\Data\053123_1633_S6Q279\6Q18589.d
 5:D:\MassHunter\Data\053123_1633_S6Q279\6Q18590.d
 6:D:\MassHunter\Data\053123_1633_S6Q279\6Q18591.d
 7:D:\MassHunter\Data\053123_1633_S6Q279\6Q18592.d
 8:D:\MassHunter\Data\053123_1633_S6Q279\6Q18593.d

Data File: 6Q18665
 Type : QC
 Level : 4

| Cpnd Name | Exp. Conc | Final Conc | Dev % | Area % |
|-------------|-----------|------------|-------|--------|
| 13C2-4:2FTS | 5.000 | 5.197 | 3.9 | 103.9 |
| 13C2-6:2FTS | 5.000 | 5.097 | 1.9 | 101.9 |
| 13C2-8:2FTS | 5.000 | 5.133 | 2.7 | 102.7 |
| 13C2-PFDoDA | 1.250 | 1.293 | 3.4 | 103.4 |
| 13C2-PFTeDA | 1.250 | 1.320 | 5.6 | 105.6 |
| 13C3-PFBS | 2.500 | 2.510 | 0.4 | 100.4 |
| 13C3-PFHxS | 2.500 | 2.414 | -3.4 | 96.6 |
| 13C4-PFBA | 10.000 | 9.967 | -0.3 | 99.7 |
| 13C4-PFHpA | 2.500 | 2.620 | 4.8 | 104.8 |
| 13C5-PFHxA | 2.500 | 2.492 | -0.3 | 99.7 |
| 13C5-PFPeA | 5.000 | 5.011 | 0.2 | 100.2 |
| 13C6-PFDA | 1.250 | 1.346 | 7.6 | 107.6 |
| 13C7-PFUnDA | 1.250 | 1.368 | 9.5 | 109.5 |
| 13C8-FOSA | 2.500 | 2.428 | -2.9 | 97.1 |
| 13C8-PFOA | 2.500 | 2.547 | 1.9 | 101.9 |
| 13C8-PFOS | 2.500 | 2.451 | -2.0 | 98.0 |
| 13C9-PFNA | 1.250 | 1.239 | -0.9 | 99.1 |
| 4:2FTS | 9.375 | 9.205 | -1.8 | 98.2 |
| 6:2FTS | 9.500 | 9.692 | 2.0 | 102.0 |
| 8:2FTS | 9.600 | 9.527 | -0.8 | 99.2 |
| d3-MeFOSAA | 5.000 | 4.926 | -1.5 | 98.5 |
| EtFOSAA | 2.500 | 2.424 | -3.0 | 97.0 |
| FOSA | 2.500 | 2.357 | -5.7 | 94.3 |
| MeFOSAA | 2.500 | 2.595 | 3.8 | 103.8 |
| PFBA | 10.000 | 9.684 | -3.2 | 96.8 |
| PFBS | 2.218 | 2.067 | -6.8 | 93.2 |
| PFDA | 2.500 | 2.365 | -5.4 | 94.6 |
| PFDoDA | 2.500 | 2.359 | -5.6 | 94.4 |
| PFDS | 2.413 | 2.222 | -7.9 | 92.1 |
| PFHpA | 2.500 | 2.243 | -10.3 | 89.7 |
| PFHpS | 2.383 | 2.254 | -5.4 | 94.6 |
| PFHxA | 2.500 | 2.426 | -3.0 | 97.0 |
| PFHxS | 2.285 | 2.274 | -0.5 | 99.5 |
| PFNA | 2.500 | 2.390 | -4.4 | 95.6 |
| PFNS | 2.405 | 2.196 | -8.7 | 91.3 |
| PFOA | 2.500 | 2.260 | -9.6 | 90.4 |
| PFOS | 2.320 | 2.129 | -8.2 | 91.8 |

Continuing Calibration Summary

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

Sample: S6Q279-CC279
 Lab FileID: 6Q18665.D

| | | | | |
|--------------|--------|----------|-------|-------|
| PFPeA | 5.000 | 4.773 | -4.5 | 95.5 |
| PFPeS | 2.353 | 2.248 | -4.5 | 95.5 |
| PFTeDA | 2.500 | 2.435 | -2.6 | 97.4 |
| PFTTrDA | 2.500 | 2.470 | -1.2 | 98.8 |
| PFUnDA | 2.500 | 2.229 | -10.9 | 89.1 |
| M4-PFBA | --- | --ISTD-- | | |
| M5-PFPeA | --- | --ISTD-- | | |
| M5-PFHxA | --- | --ISTD-- | | |
| M4-PFHpA | --- | --ISTD-- | | |
| M8-PFOA | --- | --ISTD-- | | |
| M9-PFNA | --- | --ISTD-- | | |
| M6-PFDA | --- | --ISTD-- | | |
| M7-PFUnDA | --- | --ISTD-- | | |
| M2-PFDoDA | --- | --ISTD-- | | |
| M2-PFTeDA | --- | --ISTD-- | | |
| M8-FOSA | --- | --ISTD-- | | |
| M3-PFBS | --- | --ISTD-- | | |
| M3-PFHxS | --- | --ISTD-- | | |
| M8-PFOS | --- | --ISTD-- | | |
| M2-4:2FTS | --- | --ISTD-- | | |
| M2-6:2FTS | --- | --ISTD-- | | |
| M2-8:2FTS | --- | --ISTD-- | | |
| M3-MeFOSAA | --- | --ISTD-- | | |
| 11C1-PF3OUdS | 4.725 | 4.554 | -3.6 | 96.4 |
| 13C3-HFPO-DA | 10.000 | 9.752 | -2.5 | 97.5 |
| 9C1-PF3ONS | 4.675 | 4.643 | -0.7 | 99.3 |
| ADONA | 4.725 | 4.489 | -5.0 | 95.0 |
| HFPO-DA | 5.000 | 4.920 | -1.6 | 98.4 |
| M3-HFPO-DA | --- | --ISTD-- | | |
| 3:3FTCA | 12.480 | 11.805 | -5.4 | 94.6 |
| 5:3FTCA | 62.400 | 59.342 | -4.9 | 95.1 |
| 7:3FTCA | 62.400 | 60.144 | -3.6 | 96.4 |
| d3-MeFOSA | 2.500 | 2.348 | -6.1 | 93.9 |
| M5-EtFOSAA | --- | --ISTD-- | | |
| M7-MeFOSE | --- | --ISTD-- | | |
| M9-EtFOSE | --- | --ISTD-- | | |
| M5-EtFOSA | --- | --ISTD-- | | |
| EtFOSA | 5.000 | 4.836 | -3.3 | 96.7 |
| EtFOSE | 12.500 | 11.985 | -4.1 | 95.9 |
| MeFOSA | 5.000 | 4.852 | -3.0 | 97.0 |
| MeFOSE | 12.500 | 11.814 | -5.5 | 94.5 |
| PFDoDS | 2.425 | 2.265 | -6.6 | 93.4 |
| M3-MeFOSA | --- | --ISTD-- | | |
| d5-EtFOSAA | 5.000 | 5.109 | 2.2 | 102.2 |
| d7-MeFOSE | 25.000 | 24.665 | -1.3 | 98.7 |
| d9-EtFOSE | 25.000 | 24.467 | -2.1 | 97.9 |
| d5-EtFOSA | 2.500 | 2.444 | -2.2 | 97.8 |
| NFDHA | 5.000 | 4.724 | -5.5 | 94.5 |
| PFMBA | 5.000 | 4.724 | -5.5 | 94.5 |
| PFMPA | 5.000 | 4.775 | -4.5 | 95.5 |
| 13C4-PFOS | --- | --ISTD-- | | |
| 13C3-PFBA | --- | --ISTD-- | | |
| 18O2-PFHxS | --- | --ISTD-- | | |
| 13C4-PFOA | --- | --ISTD-- | | |
| 13C2-PFDA | --- | --ISTD-- | | |
| 13C5-PFNA | --- | --ISTD-- | | |
| 13C2-PFHxA | --- | --ISTD-- | | |
| PFEEESA | 4.450 | 4.255 | -4.4 | 95.6 |

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| Run ID: S6Q279 | Method: EPA DRAFT 1633 | Instrument ID: GCMS6Q | | |
|----------------|------------------------|-----------------------|---------------|--|
| Lab Sample ID | Lab File ID | Date/Time Analyzed | Prep QC Batch | Client Sample ID |
| S6Q279-RT | 6Q18583.D | 05/31/23 16:32 | n/a | Retention Time Marker |
| S6Q279-RT | 6Q18584.D | 05/31/23 16:47 | n/a | Retention Time Marker |
| S6Q279-IC279 | 6Q18585.D | 05/31/23 17:01 | n/a | Mass Calibration Verification |
| S6Q279-IC279 | 6Q18586.D | 05/31/23 17:16 | n/a | Initial cal 1 |
| S6Q279-IC279 | 6Q18587.D | 05/31/23 17:30 | n/a | Initial cal 2 |
| S6Q279-IC279 | 6Q18588.D | 05/31/23 17:45 | n/a | Initial cal 3 |
| S6Q279-ICC279 | 6Q18589.D | 05/31/23 17:59 | n/a | Initial cal 4 |
| S6Q279-IC279 | 6Q18590.D | 05/31/23 18:14 | n/a | Initial cal 5 |
| S6Q279-IC279 | 6Q18591.D | 05/31/23 18:28 | n/a | Initial cal 6 |
| S6Q279-IC279 | 6Q18592.D | 05/31/23 18:43 | n/a | Initial cal 7 |
| S6Q279-IC279 | 6Q18593.D | 05/31/23 18:57 | n/a | Initial cal 8 |
| S6Q279-IBLK | 6Q18594.D | 05/31/23 19:12 | n/a | Instrument Blank |
| S6Q279-IBLK | 6Q18594.D | 05/31/23 19:12 | n/a | Instrument Blank |
| S6Q279-ICV279 | 6Q18595.D | 05/31/23 19:26 | n/a | Initial cal verification 4 |
| S6Q279-ICV279 | 6Q18596.D | 05/31/23 19:41 | n/a | Initial cal verification 20 |
| S6Q279-CC279 | 6Q18597.D | 05/31/23 19:55 | n/a | Continuing cal 4 |
| S6Q279-CC279 | 6Q18598.D | 05/31/23 20:10 | n/a | Continuing cal 1.0LL |
| OP97070-BS | 6Q18599.D | 05/31/23 20:24 | OP97070 | Blank Spike |
| OP97070-LLBS | 6Q18600.D | 05/31/23 20:39 | OP97070 | Blank Spike |
| OP97070-MB | 6Q18601.D | 05/31/23 20:53 | OP97070 | Method Blank |
| FC6278-1 | 6Q18602.D | 05/31/23 21:08 | OP97070 | (used for QC only; not part of job FC6325) |
| OP97070-MS | 6Q18603.D | 05/31/23 21:22 | OP97070 | Matrix Spike |
| ZZZZZZ | 6Q18604.D | 05/31/23 21:37 | OP97070 | (unrelated sample) |
| FC6278-3 | 6Q18605.D | 05/31/23 21:51 | OP97070 | (used for QC only; not part of job FC6325) |
| OP97070-DUP | 6Q18606.D | 05/31/23 22:06 | OP97070 | Duplicate |
| ZZZZZZ | 6Q18607.D | 05/31/23 22:20 | OP97070 | (unrelated sample) |
| ZZZZZZ | 6Q18608.D | 05/31/23 22:35 | OP97070 | (unrelated sample) |
| S6Q279-CC279 | 6Q18609.D | 05/31/23 22:49 | n/a | Continuing cal 4 |
| S6Q279-ICCB | 6Q18610.D | 05/31/23 23:04 | n/a | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18610.D | 05/31/23 23:04 | n/a | Continuing Calibration Blank |
| ZZZZZZ | 6Q18611.D | 05/31/23 23:18 | OP97070 | (unrelated sample) |
| OP97024-BS | 6Q18612.D | 05/31/23 23:32 | OP97024 | Blank Spike |
| OP97024-LLBS | 6Q18613.D | 05/31/23 23:47 | OP97024 | Blank Spike |
| OP97024-MB | 6Q18614.D | 06/01/23 00:01 | OP97024 | Method Blank |
| FC6086-1 | 6Q18615.D | 06/01/23 00:16 | OP97024 | (used for QC only; not part of job FC6325) |
| OP97024-MS | 6Q18616.D | 06/01/23 00:30 | OP97024 | Matrix Spike |
| OP97024-MSD | 6Q18617.D | 06/01/23 00:45 | OP97024 | Matrix Spike Duplicate |
| ZZZZZZ | 6Q18618.D | 06/01/23 00:59 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18619.D | 06/01/23 01:14 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18620.D | 06/01/23 01:28 | OP97024 | (unrelated sample) |
| S6Q279-CC279 | 6Q18621.D | 06/01/23 01:43 | n/a | Continuing cal 4 |
| S6Q279-ICCB | 6Q18622.D | 06/01/23 01:57 | n/a | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18622.D | 06/01/23 01:57 | n/a | Continuing Calibration Blank |
| ZZZZZZ | 6Q18623.D | 06/01/23 02:12 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18624.D | 06/01/23 02:26 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18625.D | 06/01/23 02:41 | OP97024 | (unrelated sample) |

Run Sequence Report

Job Number: FC6325
 Account: AECOMCOD AECOM, INC.
 Project: N6274223F0104 RH Fire Suppression System

| | | |
|----------------|------------------------|-----------------------|
| Run ID: S6Q279 | Method: EPA DRAFT 1633 | Instrument ID: GCMS6Q |
|----------------|------------------------|-----------------------|

| Lab Sample ID | Lab File ID | Date/Time Analyzed | Prep QC Batch | Client Sample ID |
|---------------|-------------|--------------------|---------------|--|
| ZZZZZZ | 6Q18626.D | 06/01/23 02:55 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18627.D | 06/01/23 03:10 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18628.D | 06/01/23 03:24 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18629.D | 06/01/23 03:39 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18630.D | 06/01/23 03:53 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18631.D | 06/01/23 04:08 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18632.D | 06/01/23 04:22 | OP97024 | (unrelated sample) |
| S6Q279-CC279 | 6Q18633.D | 06/01/23 04:37 | n/a | Continuing cal 4 |
| S6Q279-ICCB | 6Q18634.D | 06/01/23 04:51 | n/a | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18634.D | 06/01/23 04:51 | n/a | Continuing Calibration Blank |
| ZZZZZZ | 6Q18635.D | 06/01/23 05:06 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18636.D | 06/01/23 05:20 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18637.D | 06/01/23 05:35 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18638.D | 06/01/23 05:49 | OP97024 | (unrelated sample) |
| ZZZZZZ | 6Q18639.D | 06/01/23 06:04 | OP97024 | (unrelated sample) |
| S6Q279-CC279 | 6Q18641.D | 06/01/23 06:20 | n/a | Continuing cal 4 |
| S6Q279-CC279 | 6Q18642.D | 06/01/23 06:35 | n/a | Continuing cal 1.0LL |
| S6Q279-ICCB | 6Q18643.D | 06/01/23 06:49 | n/a | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18643.D | 06/01/23 06:49 | n/a | Continuing Calibration Blank |
| OP97092-BS | 6Q18644.D | 06/01/23 07:03 | OP97092 | Blank Spike |
| OP97092-LLBS | 6Q18645.D | 06/01/23 07:18 | OP97092 | Blank Spike |
| OP97092-MB | 6Q18646.D | 06/01/23 07:32 | OP97092 | Method Blank |
| ZZZZZZ | 6Q18647.D | 06/01/23 07:47 | OP97092 | (unrelated sample) |
| ZZZZZZ | 6Q18648.D | 06/01/23 08:01 | OP97092 | (unrelated sample) |
| FC5963-8 | 6Q18650.D | 06/01/23 08:30 | OP97092 | (used for QC only; not part of job FC6325) |
| OP97092-DUP2 | 6Q18651.D | 06/01/23 08:45 | OP97092 | Duplicate |
| ZZZZZZ | 6Q18652.D | 06/01/23 08:59 | OP97092 | (unrelated sample) |
| S6Q279-CC279 | 6Q18653.D | 06/01/23 09:14 | n/a | Continuing cal 4 |
| S6Q279-ICCB | 6Q18654.D | 06/01/23 09:28 | n/a | Continuing Calibration Blank |
| FC6325-1 | 6Q18655.D | 06/01/23 09:43 | OP97092 | AF-RHMW225401-WGN01B-2305W4 |
| OP97092-MS | 6Q18656.D | 06/01/23 09:57 | OP97092 | Matrix Spike |
| FC6325-2 | 6Q18657.D | 06/01/23 10:12 | OP97092 | AF-RHMW10-WGN01LF-2305W4 |
| OP97092-DUP1 | 6Q18658.D | 06/01/23 10:26 | OP97092 | Duplicate |
| FC6325-3 | 6Q18659.D | 06/01/23 10:41 | OP97092 | AF-HDMW225303-WGN01LF-2305W4 |
| ZZZZZZ | 6Q18660.D | 06/01/23 10:55 | OP97093 | (unrelated sample) |
| ZZZZZZ | 6Q18661.D | 06/01/23 11:10 | OP97093 | (unrelated sample) |
| ZZZZZZ | 6Q18662.D | 06/01/23 11:24 | OP97093 | (unrelated sample) |
| ZZZZZZ | 6Q18663.D | 06/01/23 11:39 | OP97070 | (unrelated sample) |
| S6Q279-CC279 | 6Q18665.D | 06/01/23 12:08 | n/a | Continuing cal 4 |
| S6Q279-ICCB | 6Q18666.D | 06/01/23 12:22 | n/a | Continuing Calibration Blank |
| S6Q279-ICCB | 6Q18666.D | 06/01/23 12:22 | n/a | Continuing Calibration Blank |
| ZZZZZZ | 6Q18667.D | 06/01/23 12:37 | OP97092 | (unrelated sample) |
| ZZZZZZ | 6Q18668.D | 06/01/23 12:51 | OP97092 | (unrelated sample) |
| ZZZZZZ | 6Q18669.D | 06/01/23 13:06 | OP96957 | (unrelated sample) |
| S6Q279-ECC279 | 6Q18670.D | 06/01/23 13:20 | n/a | Ending cal 4 |
| S6Q279-ICCB | 6Q18671.D | 06/01/23 13:35 | n/a | Continuing Calibration Blank |

6-10-1

6

Run Sequence Report

Job Number: FC6325
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

| | | |
|-----------------------|-------------------------------|------------------------------|
| Run ID: S6Q279 | Method: EPA DRAFT 1633 | Instrument ID: GCMS6Q |
|-----------------------|-------------------------------|------------------------------|

| Lab Sample ID | Lab File ID | Date/Time Analyzed | Prep QC Batch | Client Sample ID |
|----------------------|--------------------|---------------------------|----------------------|------------------------------|
| S6Q279-ICCB | 6Q18671.D | 06/01/23 13:35 | n/a | Continuing Calibration Blank |

6.10.1

6

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18655.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:43:22 AM
 Sample Name : FC6325-1
 Vial : P2-B1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,550,,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 153426 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 56517 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 62744 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 58172 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 86736 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 38715 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 23862 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30967 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 26008 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13708 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 26002 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 22535 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13138 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12368 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3385 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4960 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5282 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 26123 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 37771 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 23638 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 73970 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 108566 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9718 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10040 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 14538 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 63623 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8686 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.013 | 417.1 -> 372.0 | 80743 | 2.50 µg/L | -0.013 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 28995 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 43044 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 51564 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3385 | 5.84 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 116.8% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4960 | 5.90 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 117.9% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5282 | 6.19 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 123.8% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 26008 | 1.29 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 103.3% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13708 | 1.25 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.1% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 22535 | 2.93 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 117.3% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13138 | 2.71 µg/L | 0.000 |

7.1.1
7

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 108.3% | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 153426 | 10.13 µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.3% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 58172 | 2.88 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.3% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 62744 | 2.87 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.0% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 56517 | 5.64 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 112.7% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 23862 | 1.40 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.4% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30967 | 1.43 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 114.3% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 26002 | 2.35 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.9% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 86736 | 2.87 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 114.7% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12368 | 2.66 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 106.2% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 38715 | 1.36 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 109.2% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 26123 | 5.57 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 111.3% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 37771 | 11.15 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 111.5% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10040 | 2.24 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 89.4% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 23638 | 5.54 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 110.8% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 73970 | 20.26 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 81.0% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 108566 | 22.73 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 90.9% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9718 | 2.29 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 91.4% | |

7.11
7

| Target Compounds | RT | Transition | Response | Conc. Units | QValue |
|------------------|-------|----------------|----------|-------------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | |
| | | 327.1 -> 80.9 | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | |
| | | 427.1 -> 80.9 | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | |
| | | 527.1 -> 80.8 | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | |
| | | 584.2 -> 526.0 | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | |
| | | 498.1 -> 478.0 | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | |
| | | 570.1 -> 483.0 | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | 5.335 | 298.7 -> 79.9 | 541 | 0.07 µg/L | 91 |
| | | 298.7 -> 98.8 | 167 | | |
| PFDA | 8.608 | 512.9 -> 469.0 | 0 | µg/L m | 1 |
| | | 512.9 -> 219.0 | 0 | | |
| PFDODA | 8.836 | 613.1 -> 569.0 | 0 | µg/L m | 1 |
| | | 613.1 -> 319.0 | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |



Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|-------|----------------|----------|-----------|-------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | | | | |
| | | 363.1 -> 319.0 | 1587 | 0.06 µg/L | m | 98 |
| PFHpS | - | 363.1 -> 169.0 | 254 | | | |
| | | 449.0 -> 79.9 | - | N.D. | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | | | | |
| | | 313.0 -> 269.0 | 2036 | 0.10 µg/L | | 97 |
| PFHxS | 7.119 | 313.0 -> 118.9 | 109 | | | |
| | | 398.7 -> 79.9 | 517 | 0.09 µg/L | m | 99 |
| PFNA | 7.994 | 398.7 -> 98.9 | 249 | | | |
| | | 463.0 -> 419.0 | 0 | µg/L | m | 1 |
| PFNS | - | 463.0 -> 219.0 | 0 | | | |
| | | 548.8 -> 79.9 | - | N.D. | | |
| PFOA | 7.028 | 548.8 -> 98.9 | | | | |
| | | 413.0 -> 369.0 | 4701 | 0.13 µg/L | m | 88 |
| PFOS | - | 413.0 -> 169.0 | 557 | | | |
| | | 498.9 -> 79.9 | - | N.D. | | |
| PFPeA | 4.224 | 498.9 -> 98.8 | | | | |
| | | 263.0 -> 219.0 | 1771 | 0.13 µg/L | m | 100 |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | | |
| | | 349.1 -> 98.9 | | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | | |
| | | 713.1 -> 168.9 | | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | | |
| | | 663.0 -> 168.9 | | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | | |
| | | 563.1 -> 269.1 | | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | | |
| | | 632.9 -> 452.9 | | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | | |
| | | 532.8 -> 353.0 | | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | | |
| | | 376.9 -> 84.8 | | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | | |
| | | 284.9 -> 184.9 | | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | | |
| | | 241.0 -> 117.0 | | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | | |
| | | 341.0 -> 217.0 | | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | | |
| | | 441.0 -> 336.9 | | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | | |
| | | 526.0 -> 169.0 | | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | | |
| | | 511.9 -> 219.0 | - | N.D. | | |
| MeFOSA | - | 511.9 -> 169.0 | | | | |
| | | 616.1 -> 58.9 | - | N.D. | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | | |
| | | 699.1 -> 98.8 | | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | | |
| | | 295.0 -> 84.9 | | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | | |
| | | 229.0 -> 84.9 | - | N.D. | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | | |
| | | 314.8 -> 82.9 | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.1.1
7

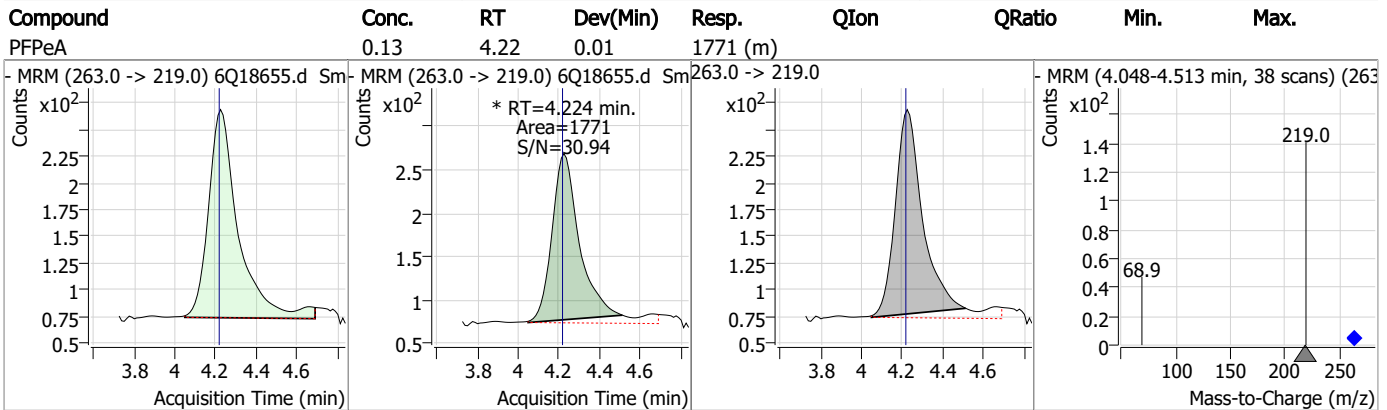
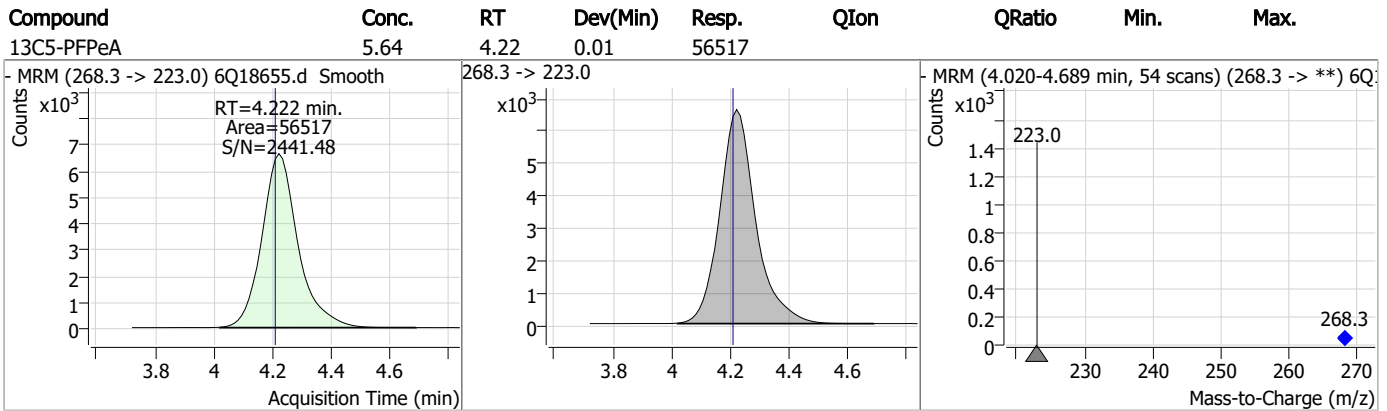
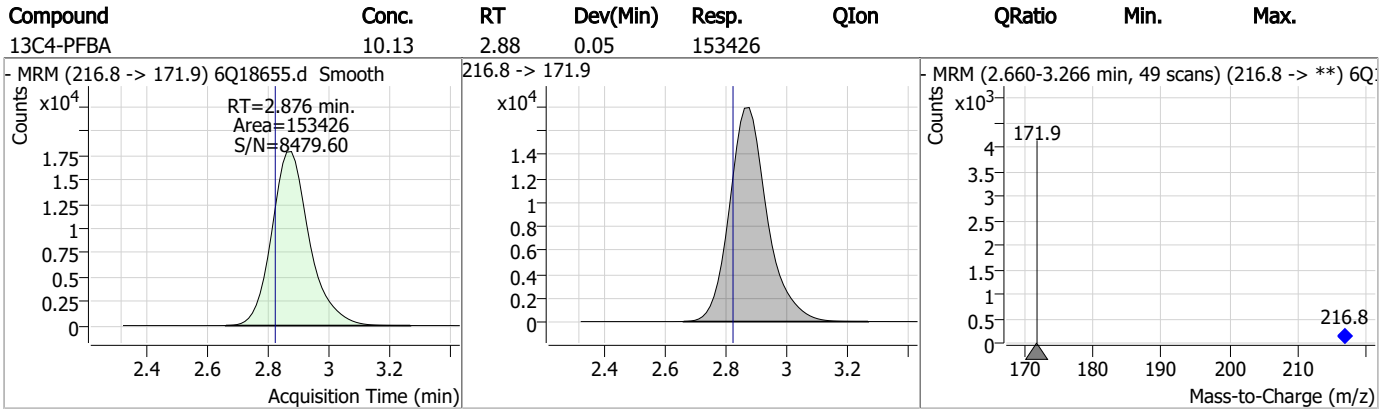
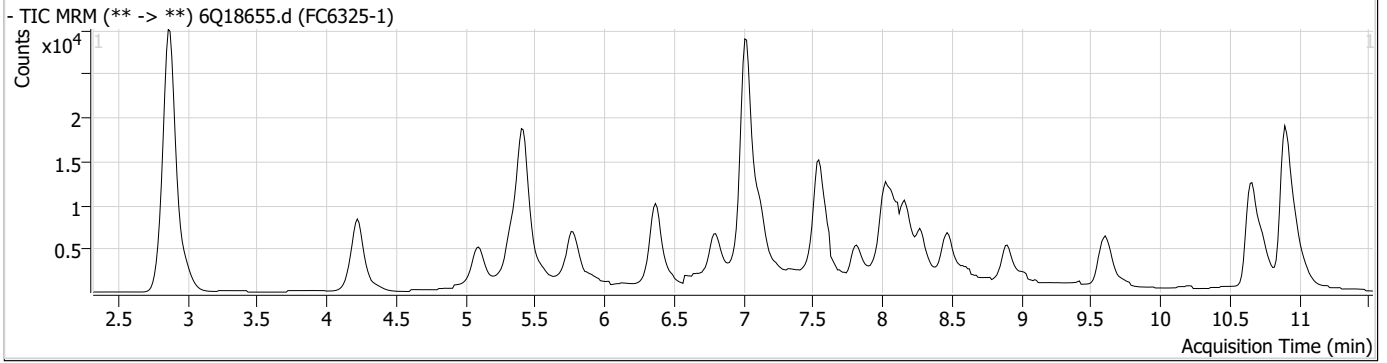
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

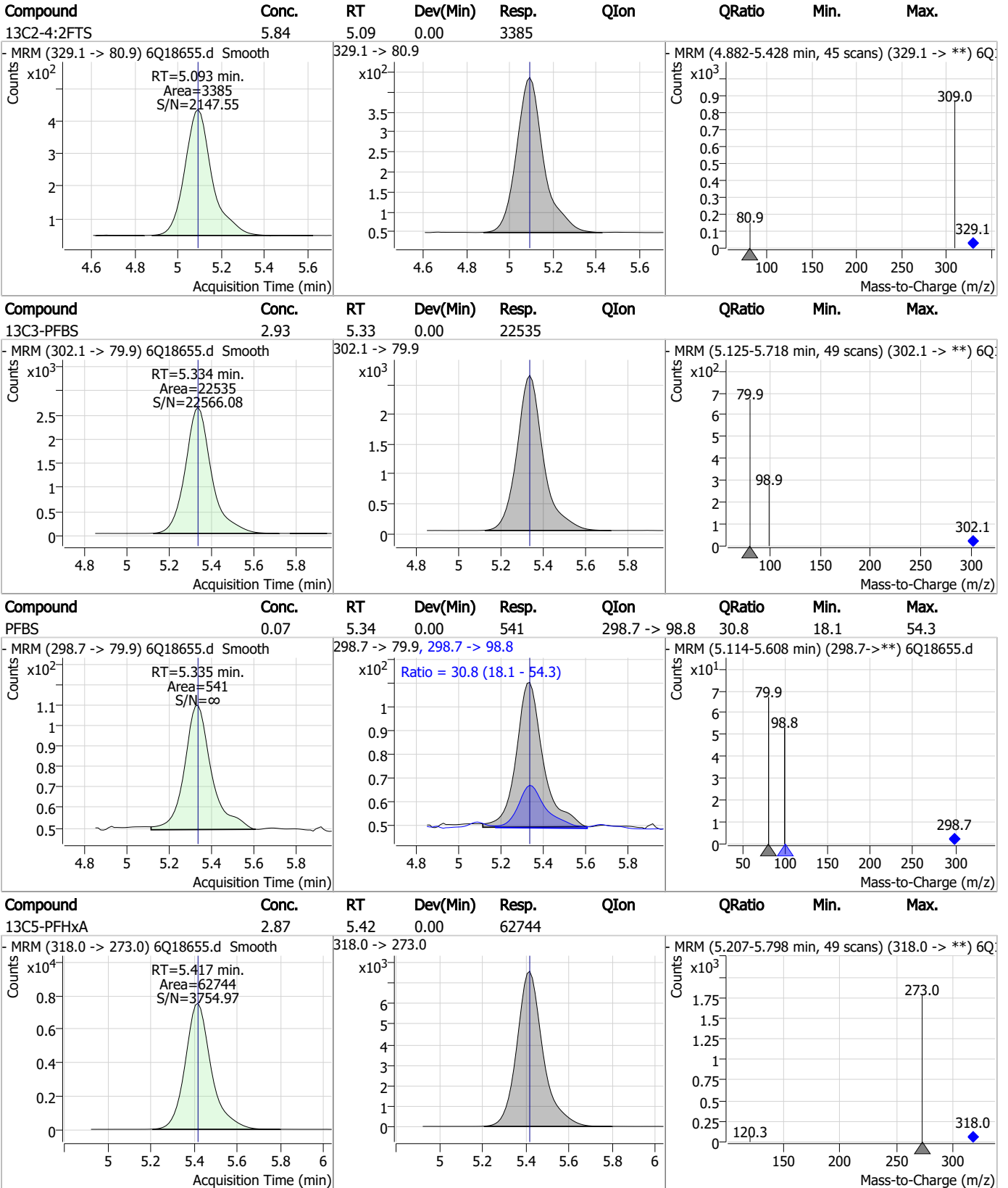
7.1.1
7



Perfluorinated Compounds by LC/MS/MS

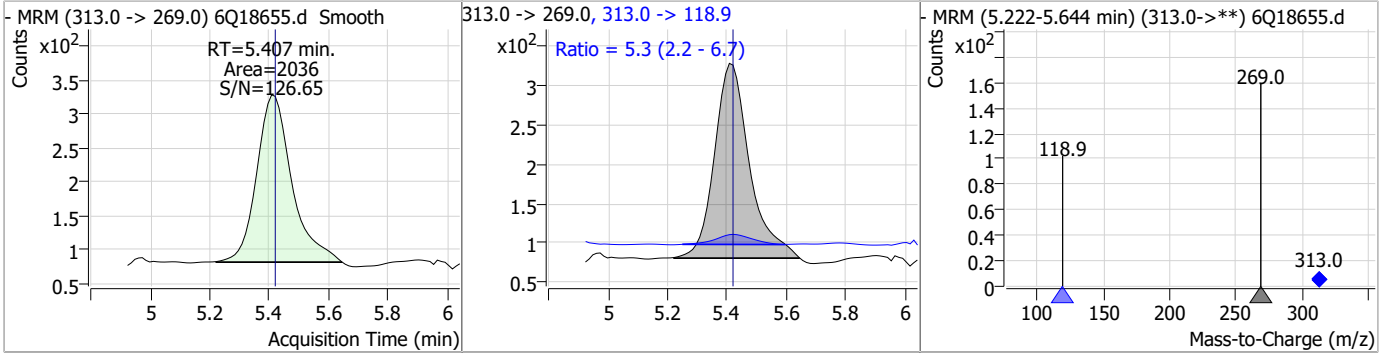


Perfluorinated Compounds by LC/MS/MS

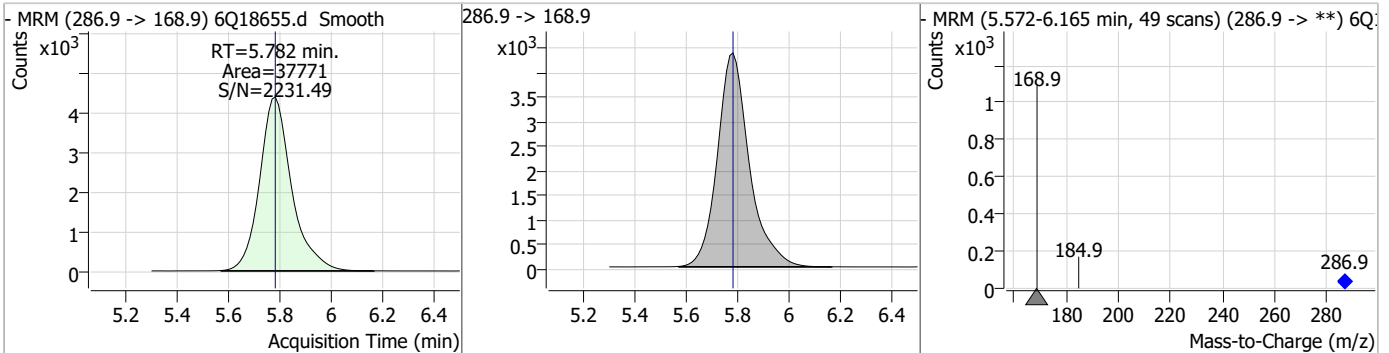


Perfluorinated Compounds by LC/MS/MS

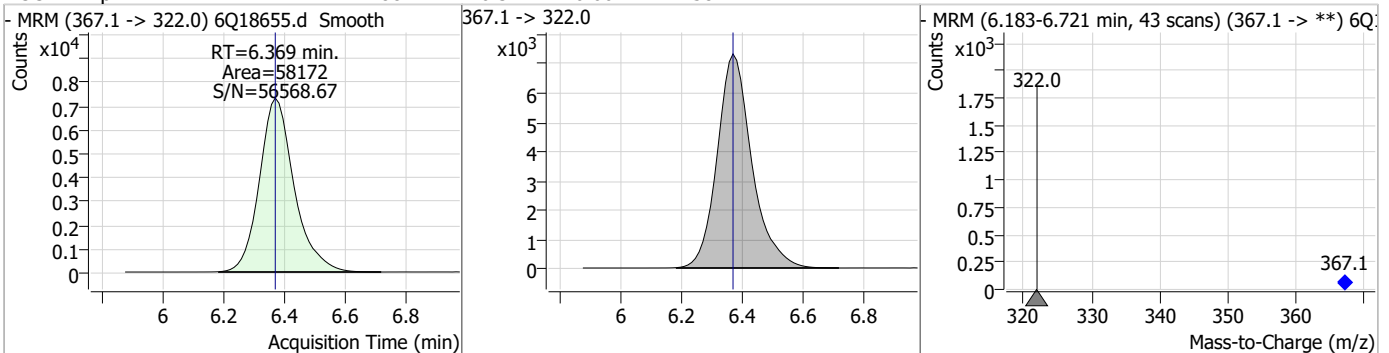
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 0.10 | 5.41 | -0.01 | 2036 | 313.0 -> 118.9 | 5.3 | 2.2 | 6.7 |



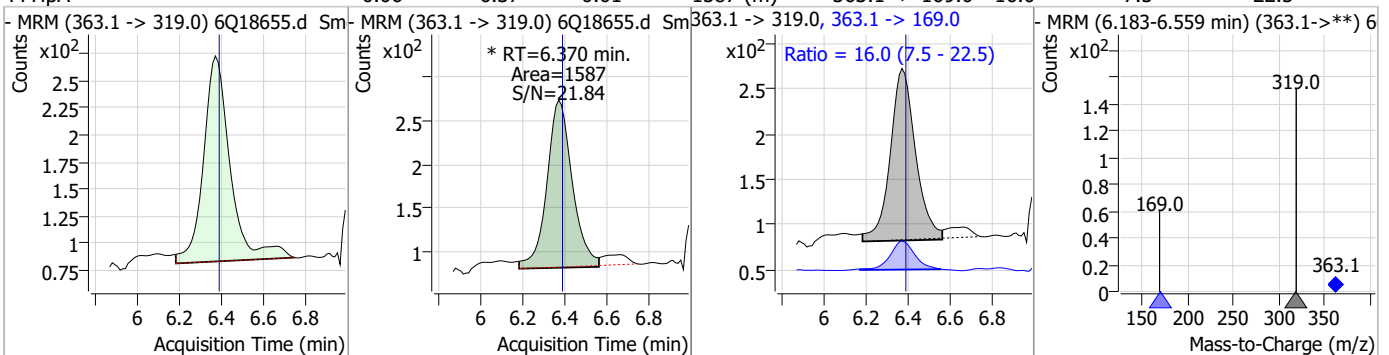
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 11.15 | 5.78 | 0.00 | 37771 | | | | |



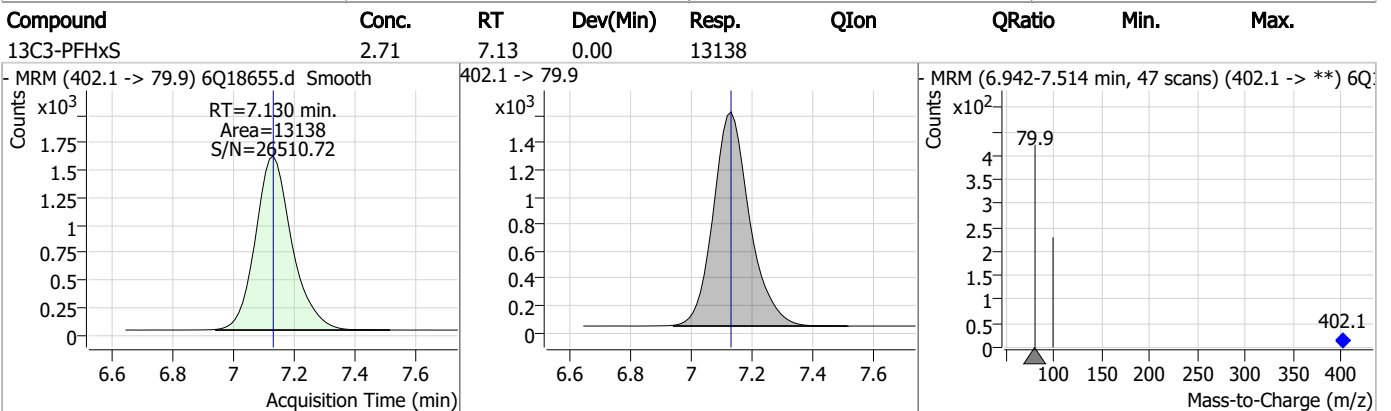
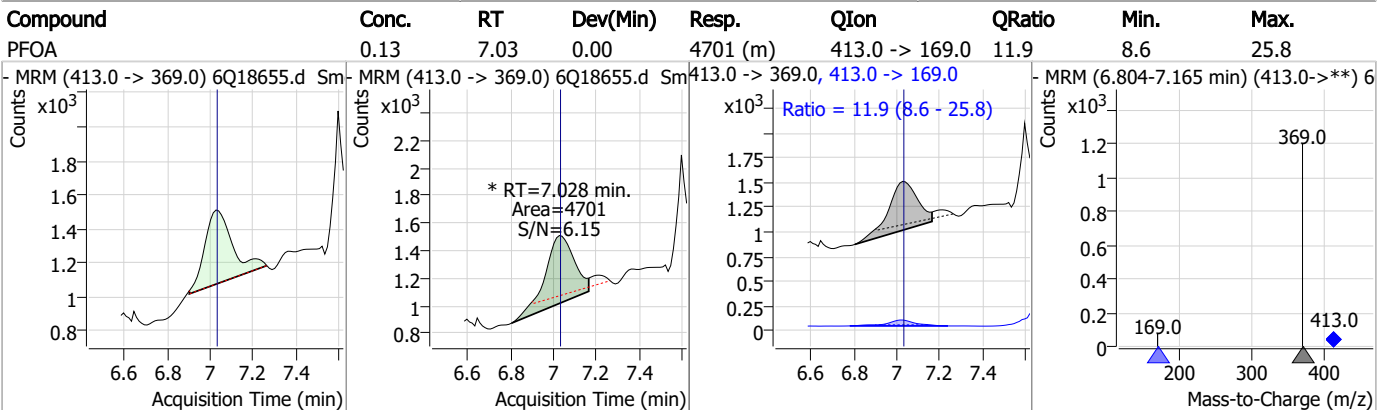
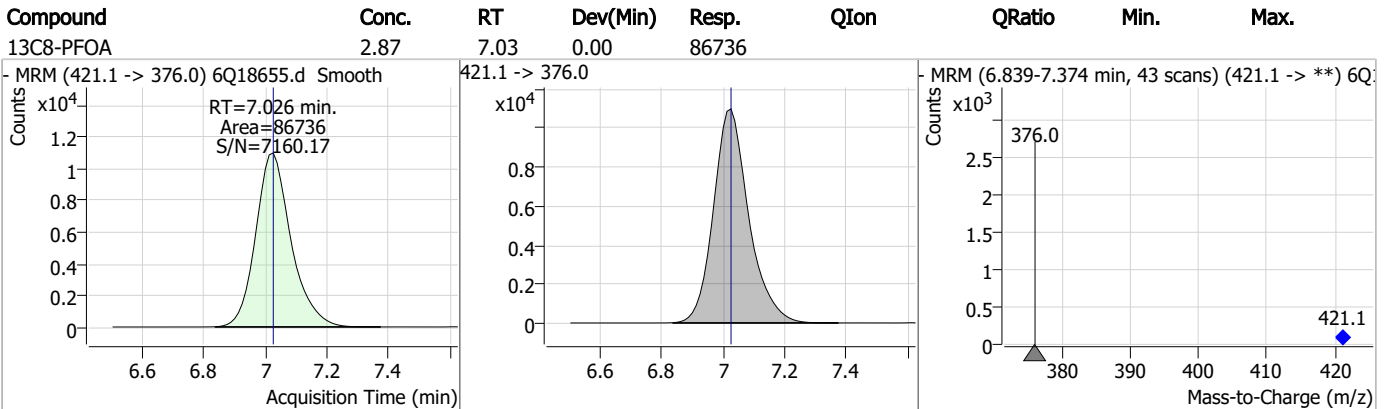
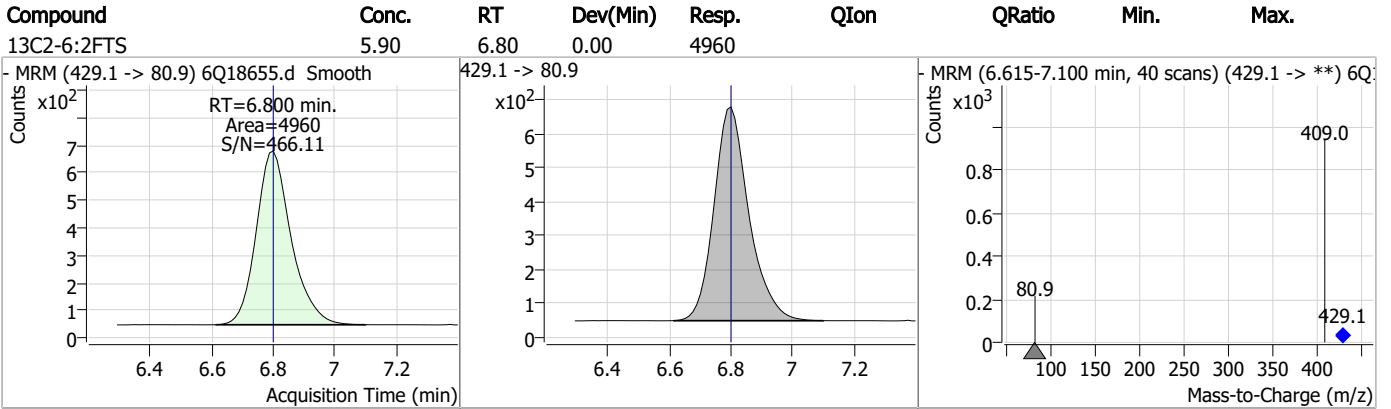
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C4-PFHpA | 2.88 | 6.37 | 0.00 | 58172 | | | | |



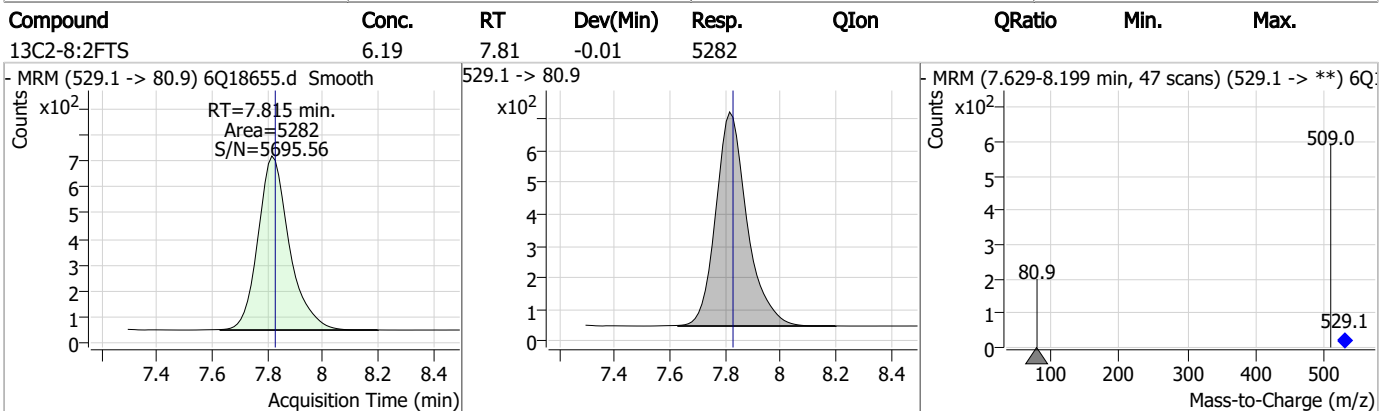
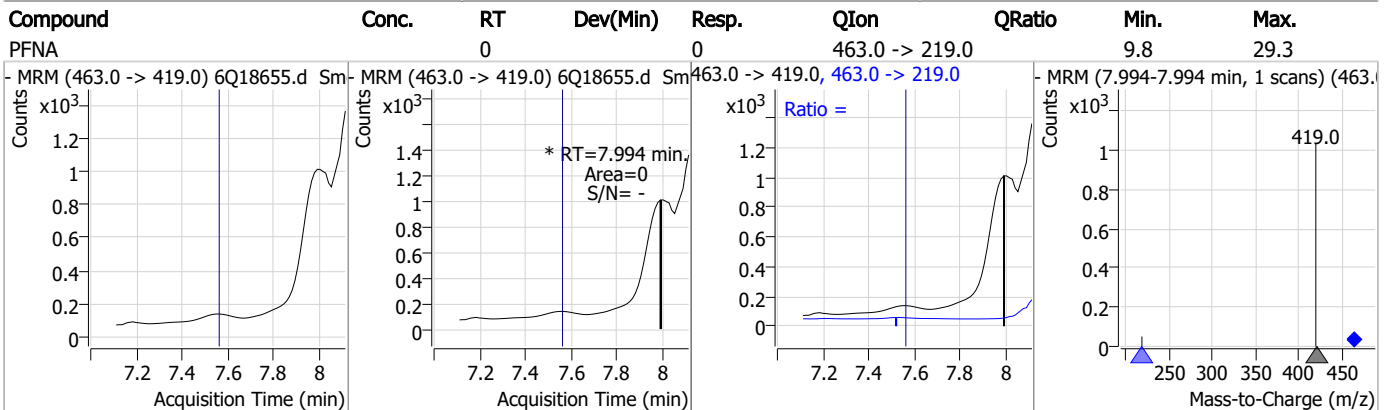
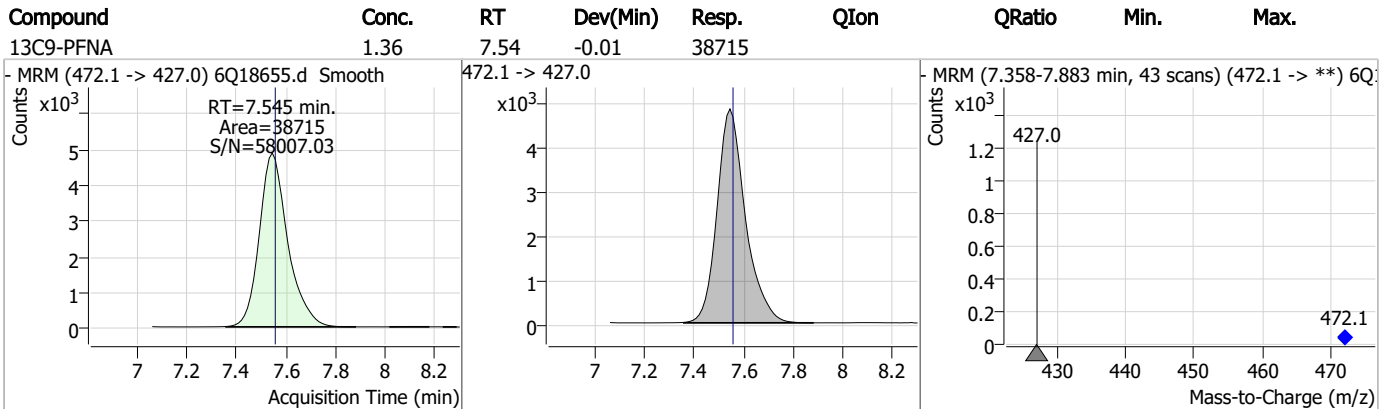
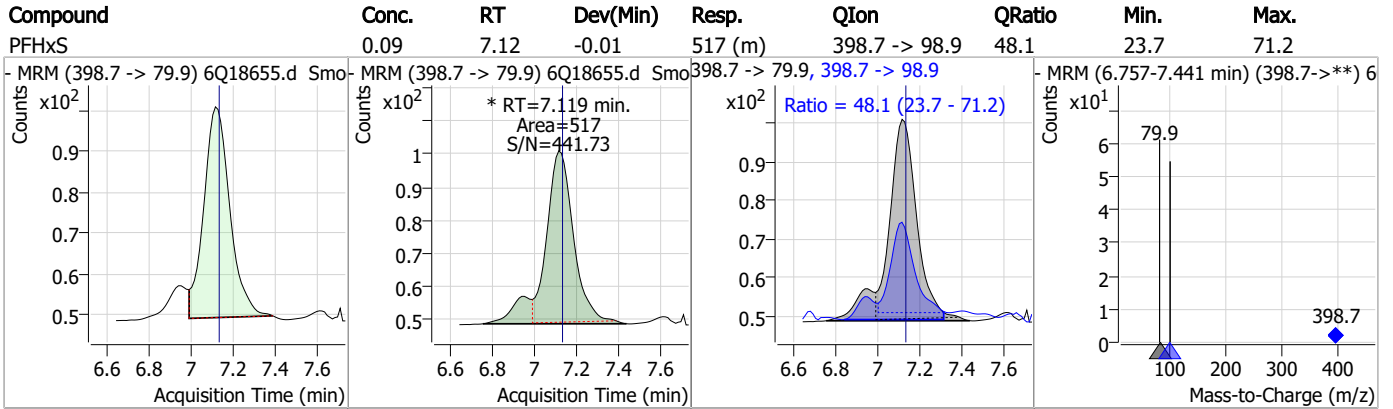
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|----------|----------------|--------|------|------|
| PFHpA | 0.06 | 6.37 | -0.01 | 1587 (m) | 363.1 -> 169.0 | 16.0 | 7.5 | 22.5 |



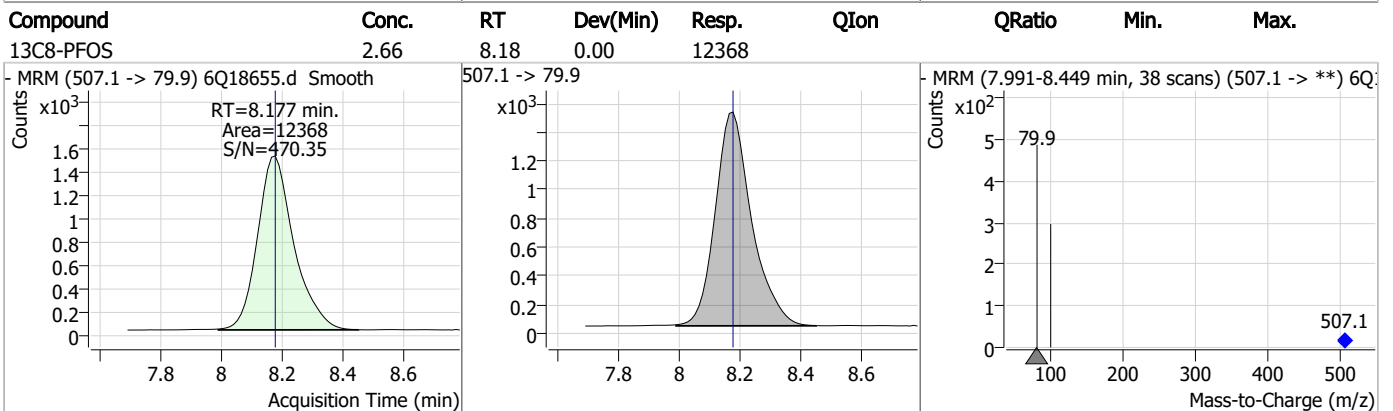
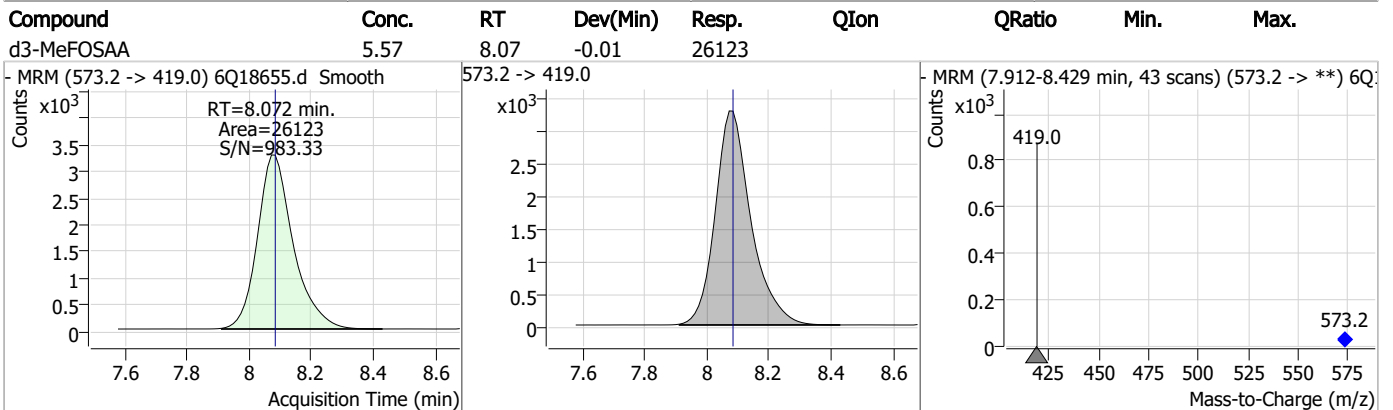
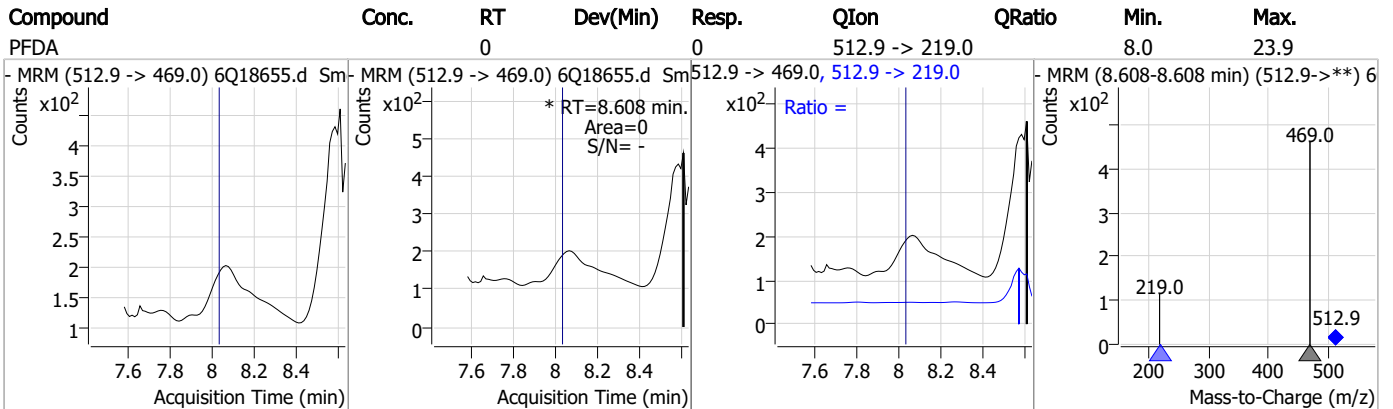
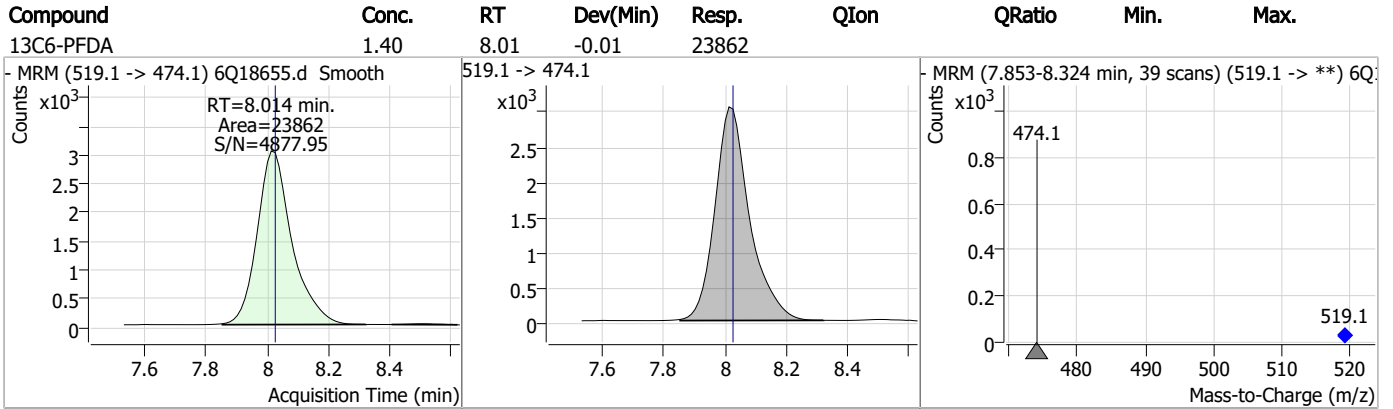
Perfluorinated Compounds by LC/MS/MS



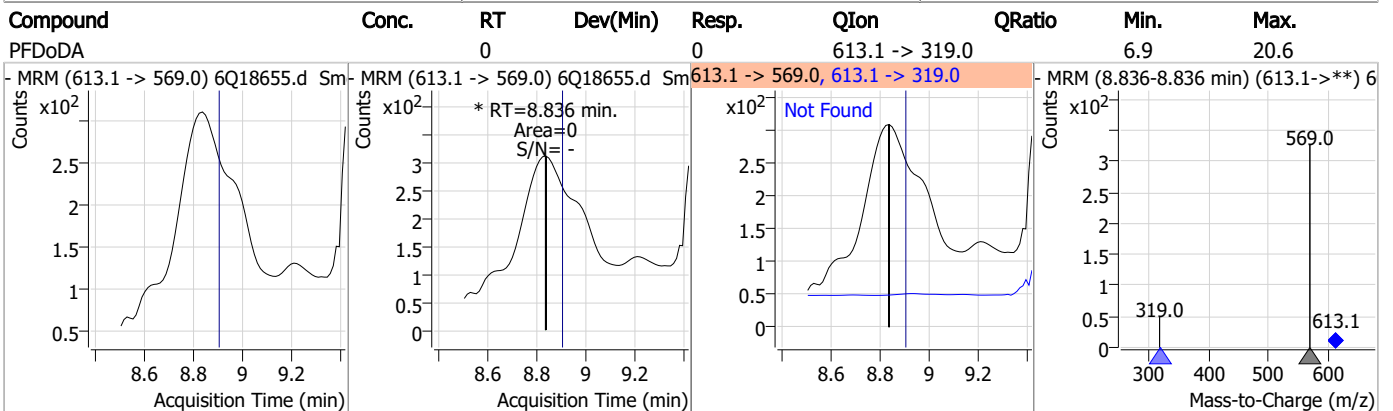
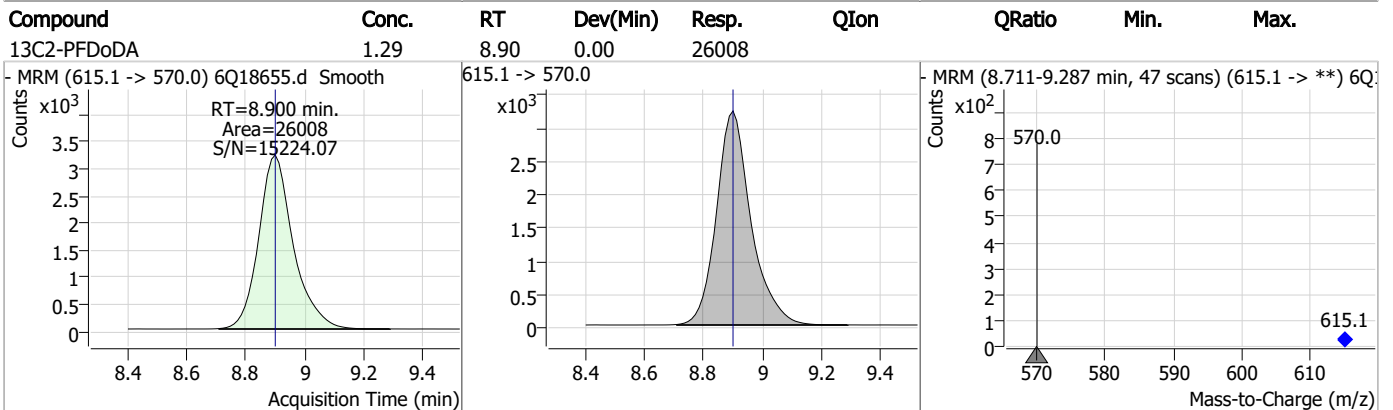
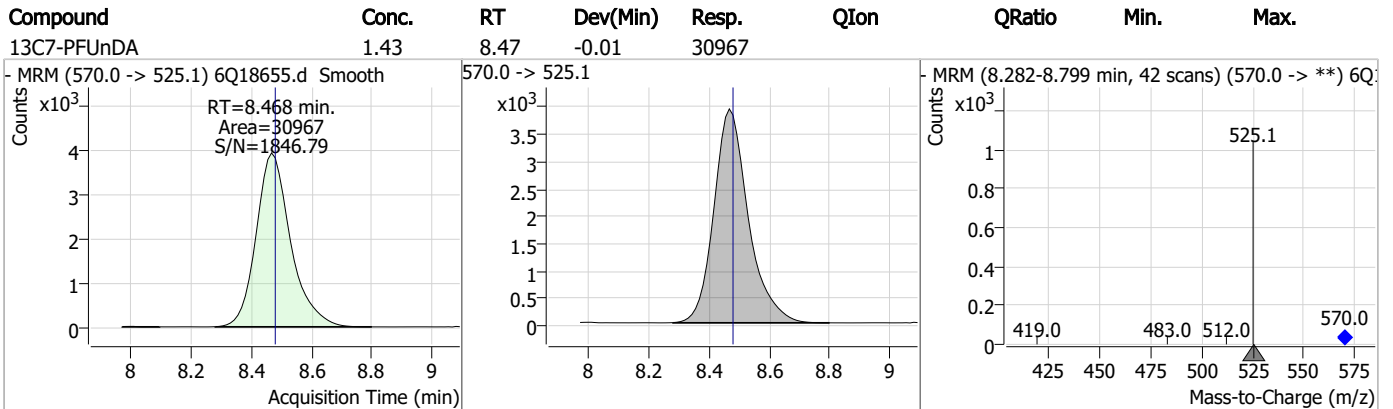
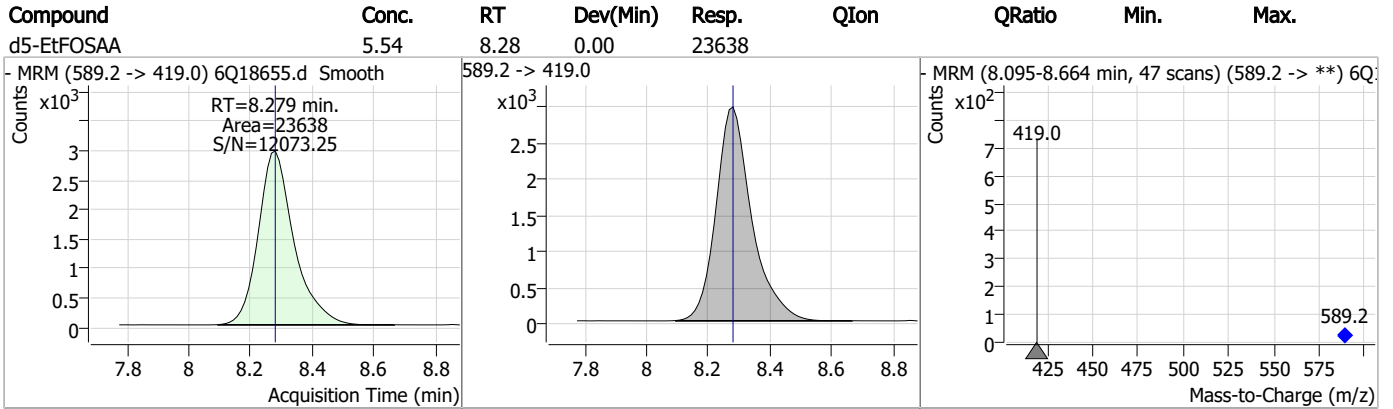
Perfluorinated Compounds by LC/MS/MS



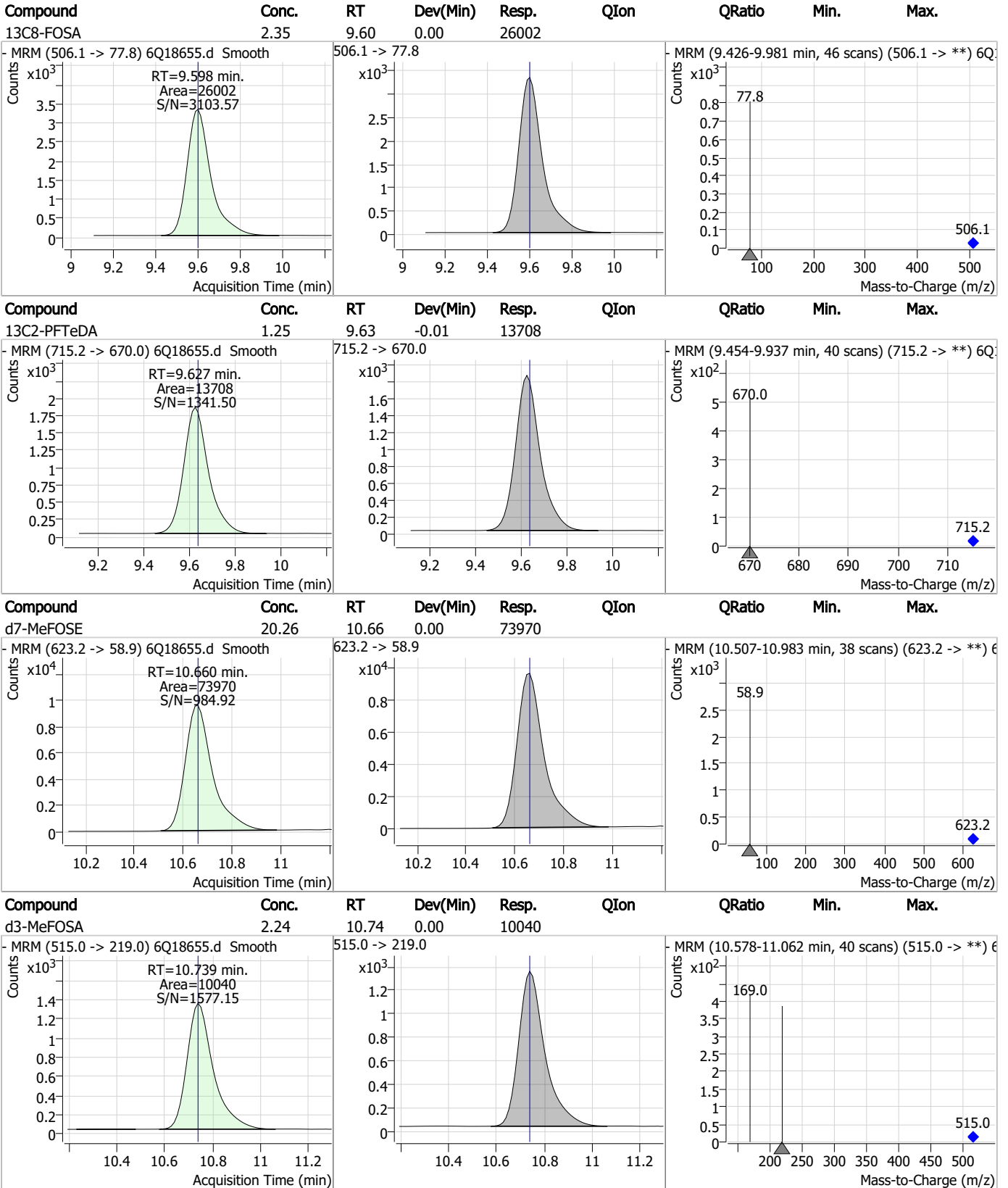
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

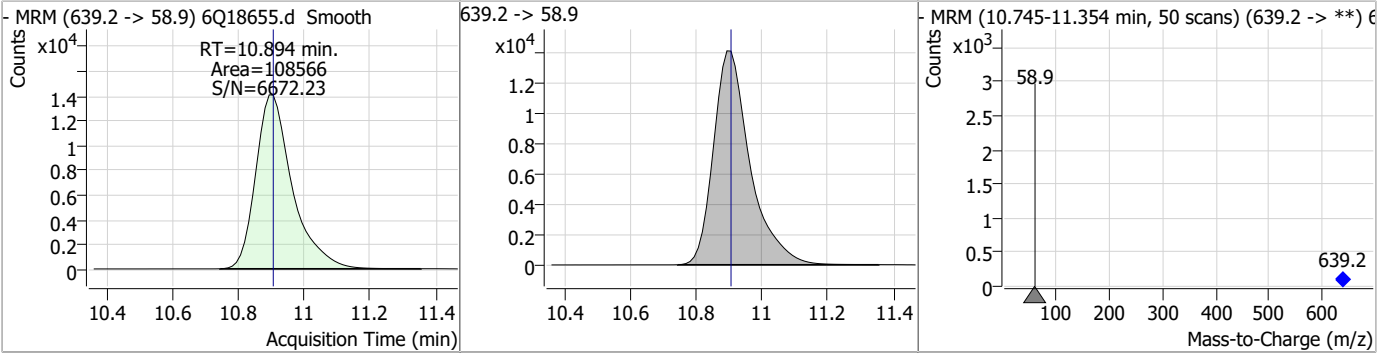


Perfluorinated Compounds by LC/MS/MS

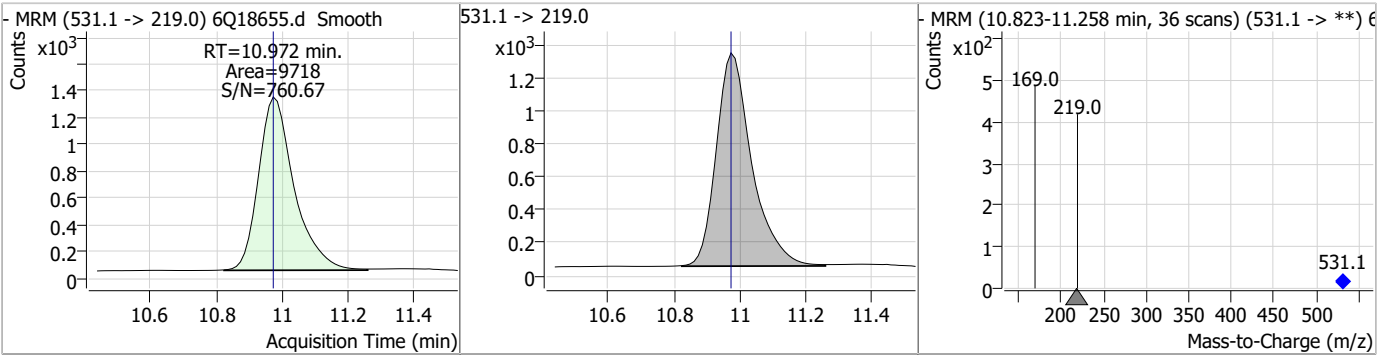


Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 22.73 | 10.89 | -0.01 | 108566 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.29 | 10.97 | 0.00 | 9718 | | | | |



7.1.1
7

Manual Integration Approval Summary

Sample Number: FC6325-1 Method: EPA DRAFT 1633
Lab FileID: 6Q18655.D Analyst approved: 06/01/23 14:15 Martha Valls
Injection Time: 06/01/23 09:43 Supervisor approved: 06/01/23 16:37 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|-----------------------------|
| Perfluoropentanoic acid | 2706-90-3 | | 4.22 | Poor instrument integration |
| Perfluoroheptanoic acid | 375-85-9 | | 6.37 | Poor instrument integration |
| Perfluorooctanoic acid | 335-67-1 | | 7.03 | Split peak |
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.12 | Split peak |

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18657.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:12:19 AM
 Sample Name : FC6325-2
 Vial : P2-B3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,570,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 169555 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 56760 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 60701 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 57931 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 85114 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 38554 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23522 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 28426 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25368 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13063 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 26031 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 22198 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13401 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12750 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3548 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4970 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4828 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 26313 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38027 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21749 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 82397 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 119243 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10014 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 9926 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 14046 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.879 | 216.0 -> 172.0 | 62364 | 5.00 µg/L | 0.052 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8244 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 77595 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 27152 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 41888 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 49069 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3548 | 6.45 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 129.0% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4970 | 6.22 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 124.5% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4828 | 5.96 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 119.2% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25368 | 1.35 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 107.6% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13063 | 1.27 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 101.8% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 22198 | 3.04 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 121.7% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13401 | 2.91 µg/L | 0.000 |

7.12
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 116.4% | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 169555 | 11.42 µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 114.2% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 57931 | 3.02 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 120.6% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 60701 | 2.92 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 116.9% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 56760 | 5.95 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 118.9% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23522 | 1.48 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 118.3% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 28426 | 1.40 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.0% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 26031 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 85114 | 2.93 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 117.1% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12750 | 2.83 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.3% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 38554 | 1.40 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 111.7% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 26313 | 5.80 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 116.1% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38027 | 11.79 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 117.9% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 9926 | 2.29 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 91.5% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21749 | 5.28 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 105.5% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 82397 | 23.36 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 93.4% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 119243 | 25.84 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 103.4% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10014 | 2.44 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.5% | |

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7

| Target Compounds | RT | Transition | Response | Conc. Units | QValue |
|------------------|-------|----------------|----------|-------------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | |
| | | 327.1 -> 80.9 | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | |
| | | 427.1 -> 80.9 | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | |
| | | 527.1 -> 80.8 | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | |
| | | 584.2 -> 526.0 | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | |
| | | 498.1 -> 478.0 | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | |
| | | 570.1 -> 483.0 | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 | - | N.D. | |
| | | 298.7 -> 98.8 | | | |
| PFDA | 8.584 | 512.9 -> 469.0 | 0 | µg/L m | 1 |
| | | 512.9 -> 219.0 | 0 | | |
| PFDODA | - | 613.1 -> 569.0 | - | N.D. | |
| | | 613.1 -> 319.0 | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |



Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | |
| | | 363.1 -> 319.0 | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | |
| | | 449.0 -> 79.9 | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | |
| | | 313.0 -> 269.0 | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | |
| | | 398.7 -> 79.9 | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | |
| | | 463.0 -> 419.0 | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | |
| | | 548.8 -> 79.9 | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | |
| | | 413.0 -> 369.0 | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | |
| | | 498.9 -> 79.9 | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | |
| | | 263.0 -> 219.0 | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| | | 511.9 -> 219.0 | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | |
| | | 616.1 -> 58.9 | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | |
| | | 229.0 -> 84.9 | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

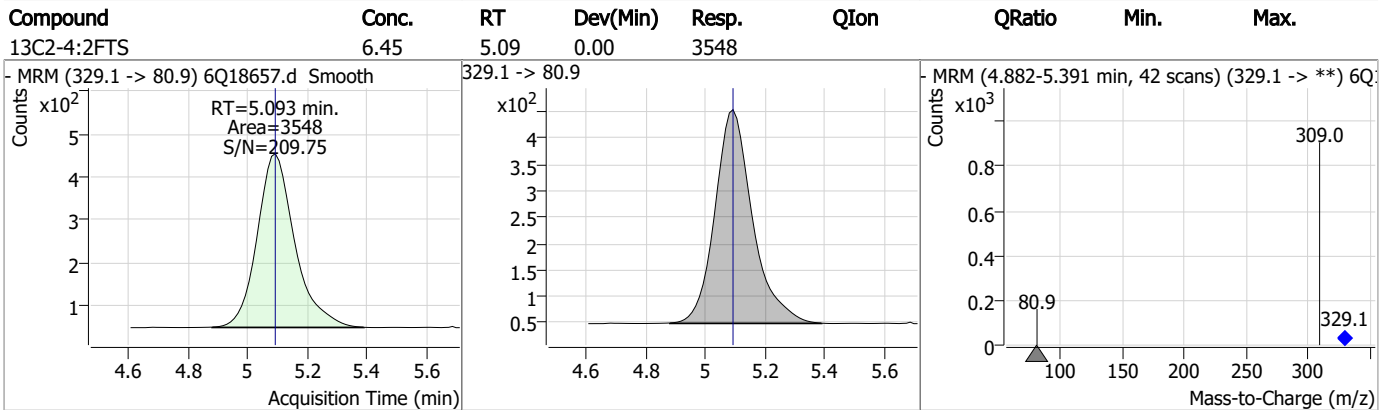
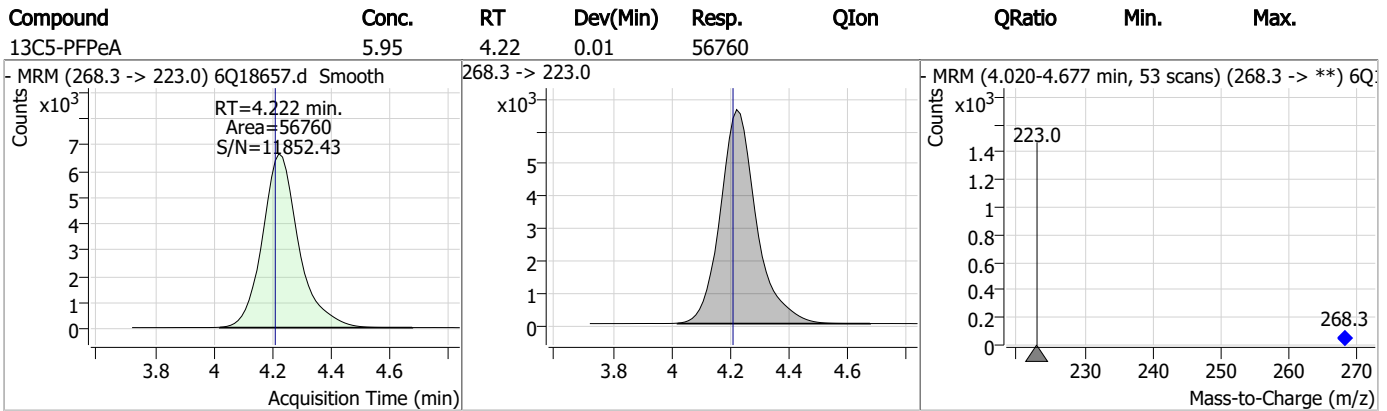
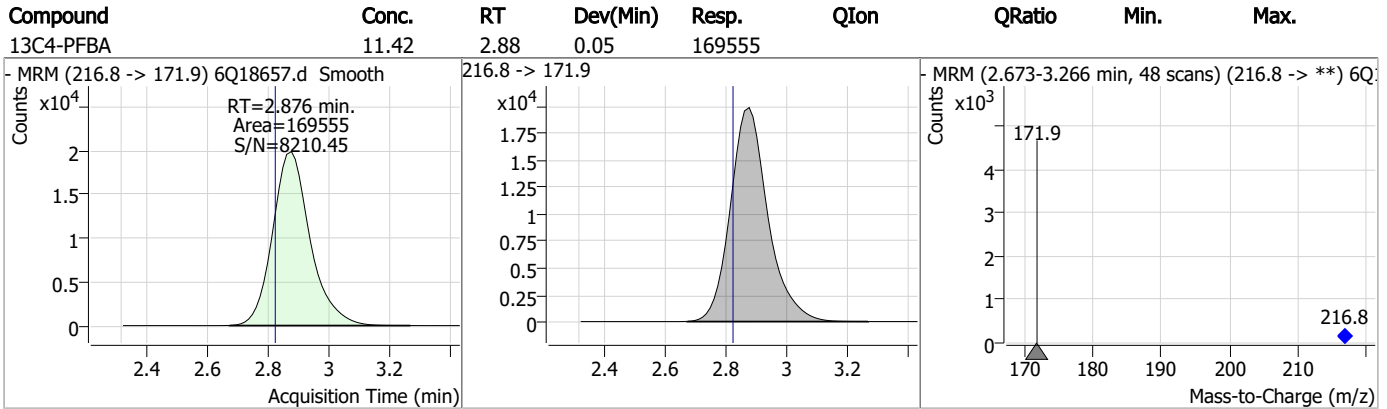
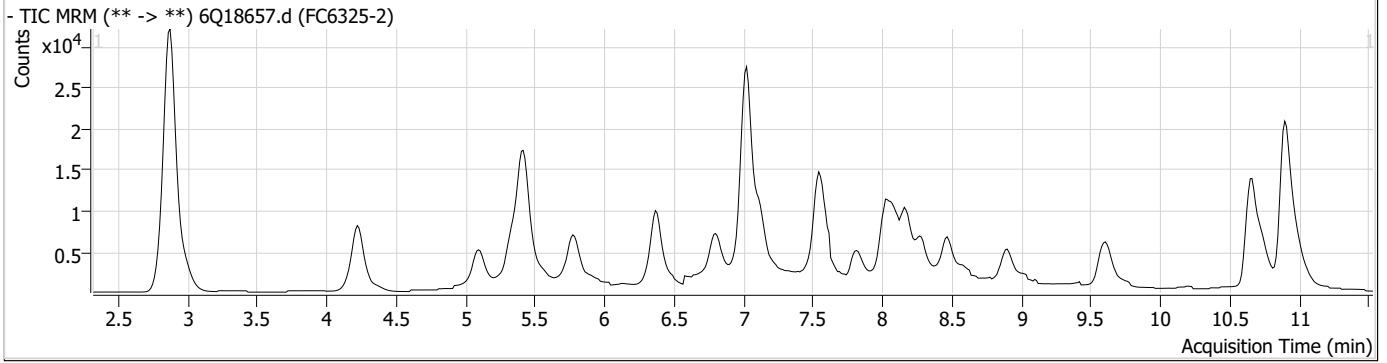
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

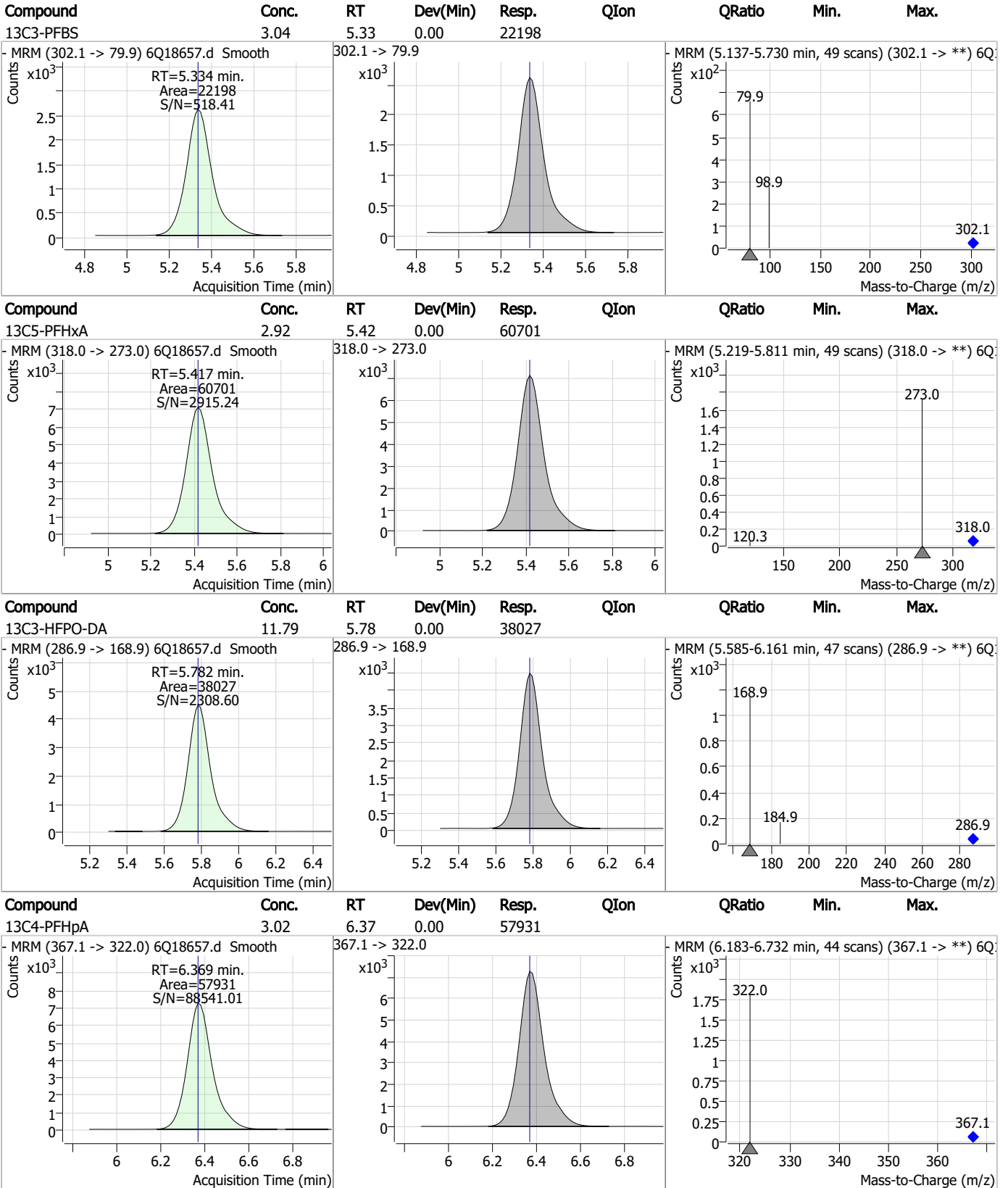
7.1.2
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Perfluorinated Compounds by LC/MS/MS

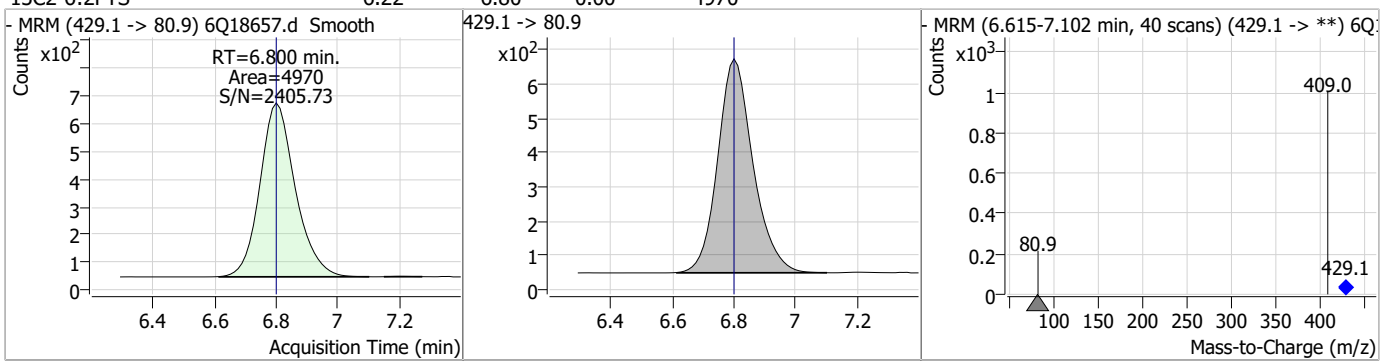


Perfluorinated Compounds by LC/MS/MS

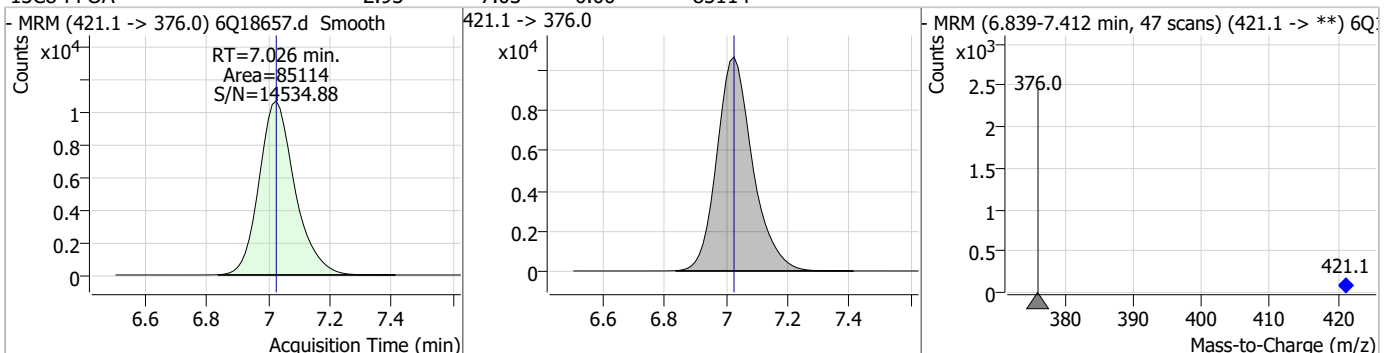


Perfluorinated Compounds by LC/MS/MS

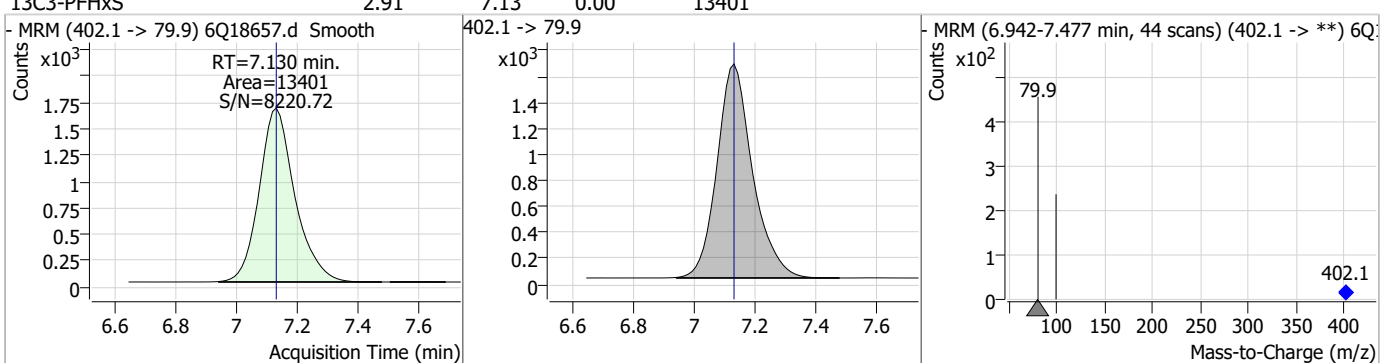
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|----|----------|-------|------|--------|------|------|
|----------|-------|----|----------|-------|------|--------|------|------|



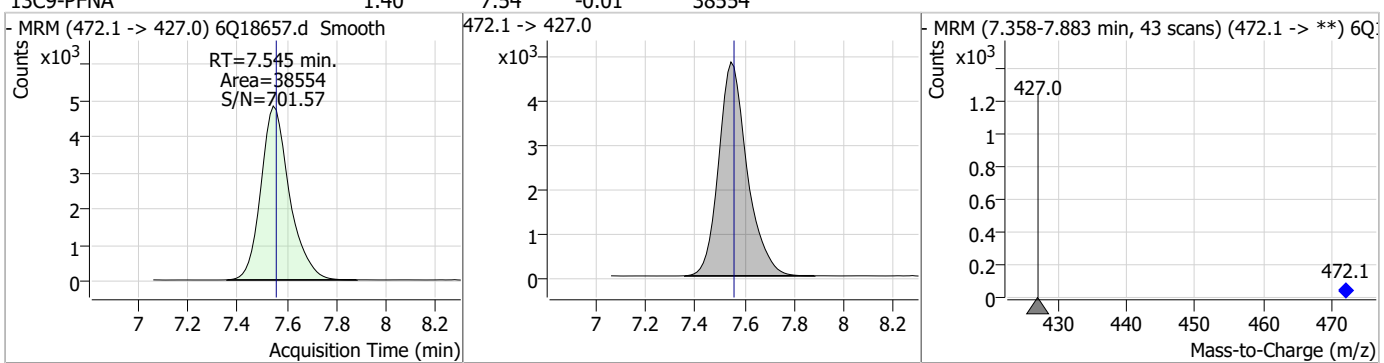
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|----|----------|-------|------|--------|------|------|
|----------|-------|----|----------|-------|------|--------|------|------|



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|----|----------|-------|------|--------|------|------|
|----------|-------|----|----------|-------|------|--------|------|------|

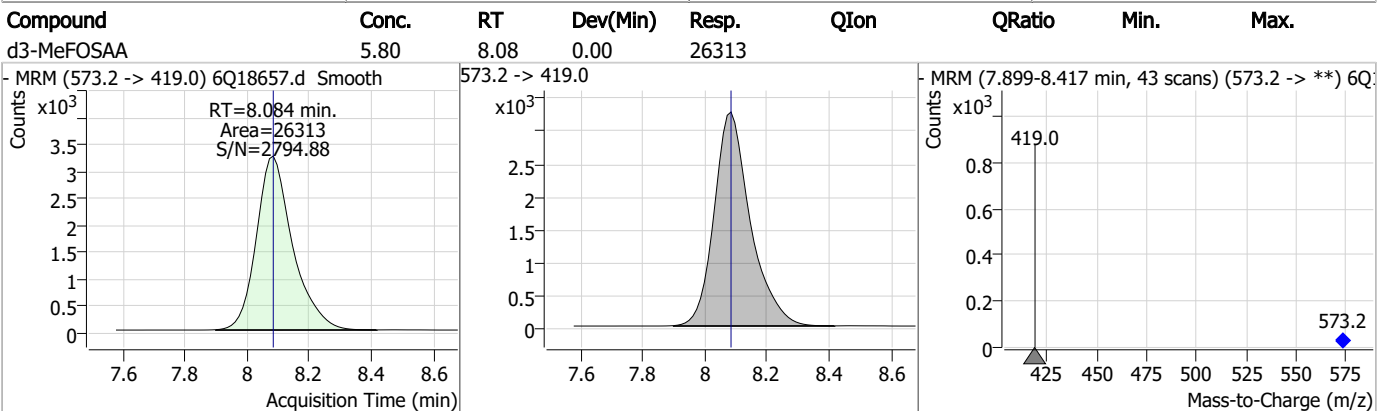
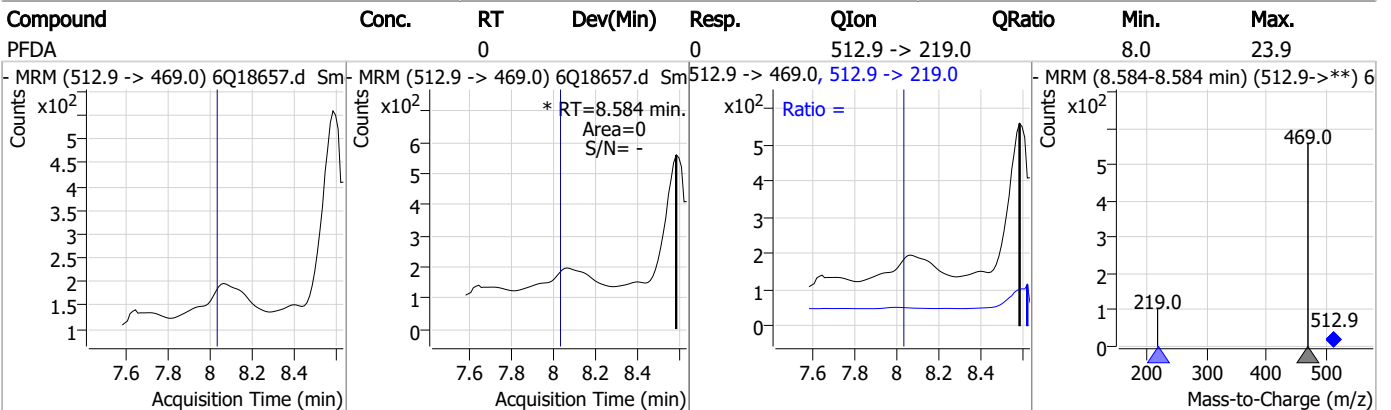
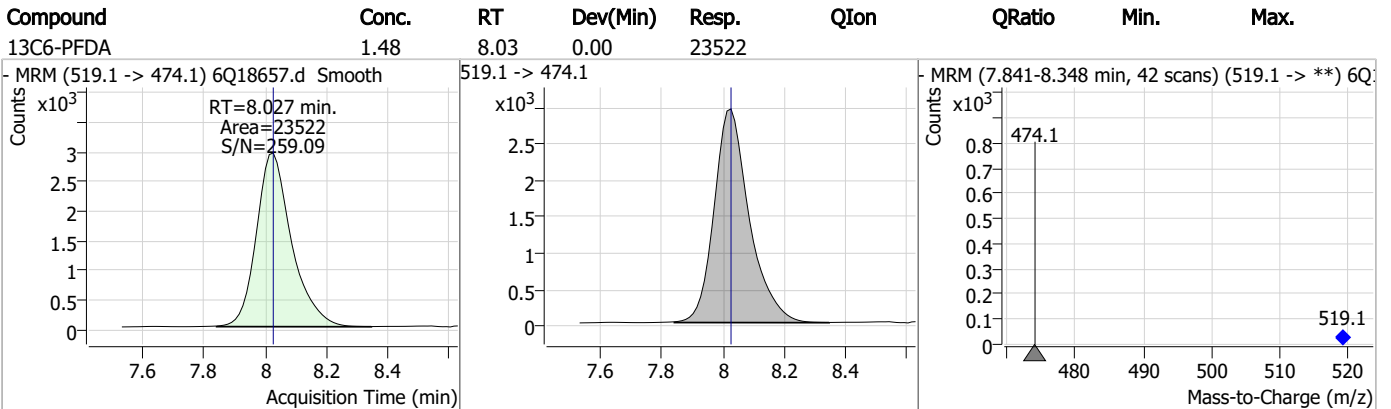
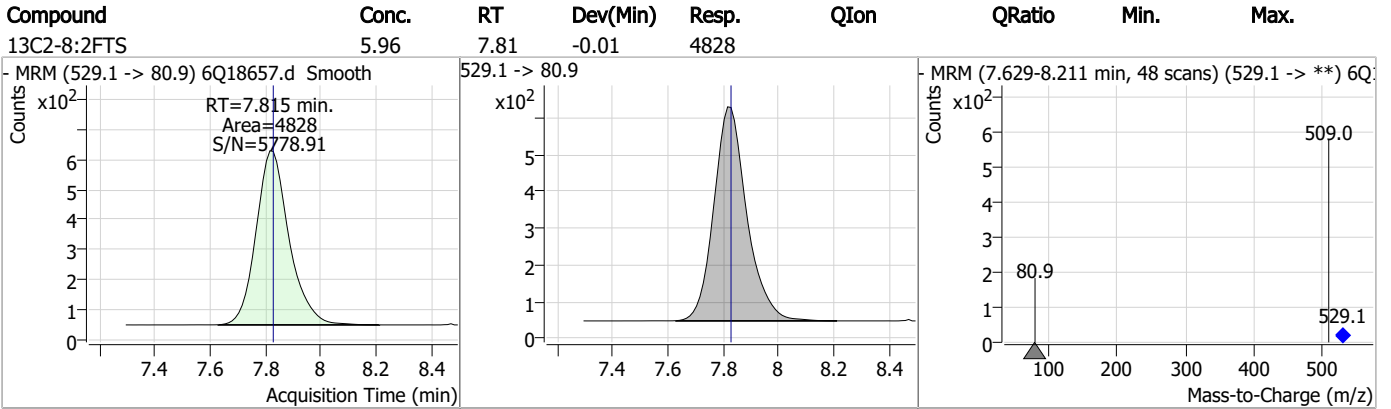


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|----|----------|-------|------|--------|------|------|
|----------|-------|----|----------|-------|------|--------|------|------|



7.1.2
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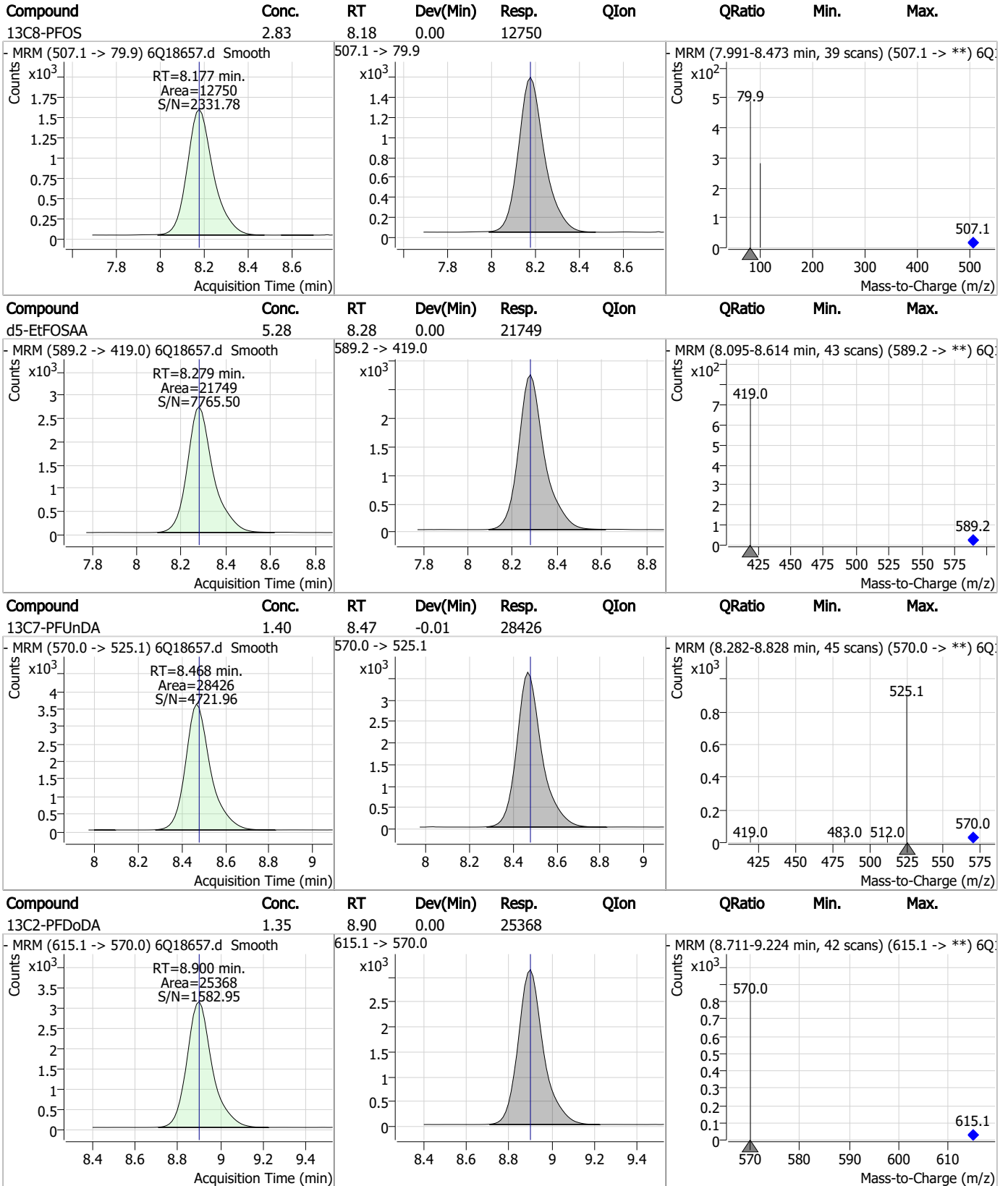
Perfluorinated Compounds by LC/MS/MS



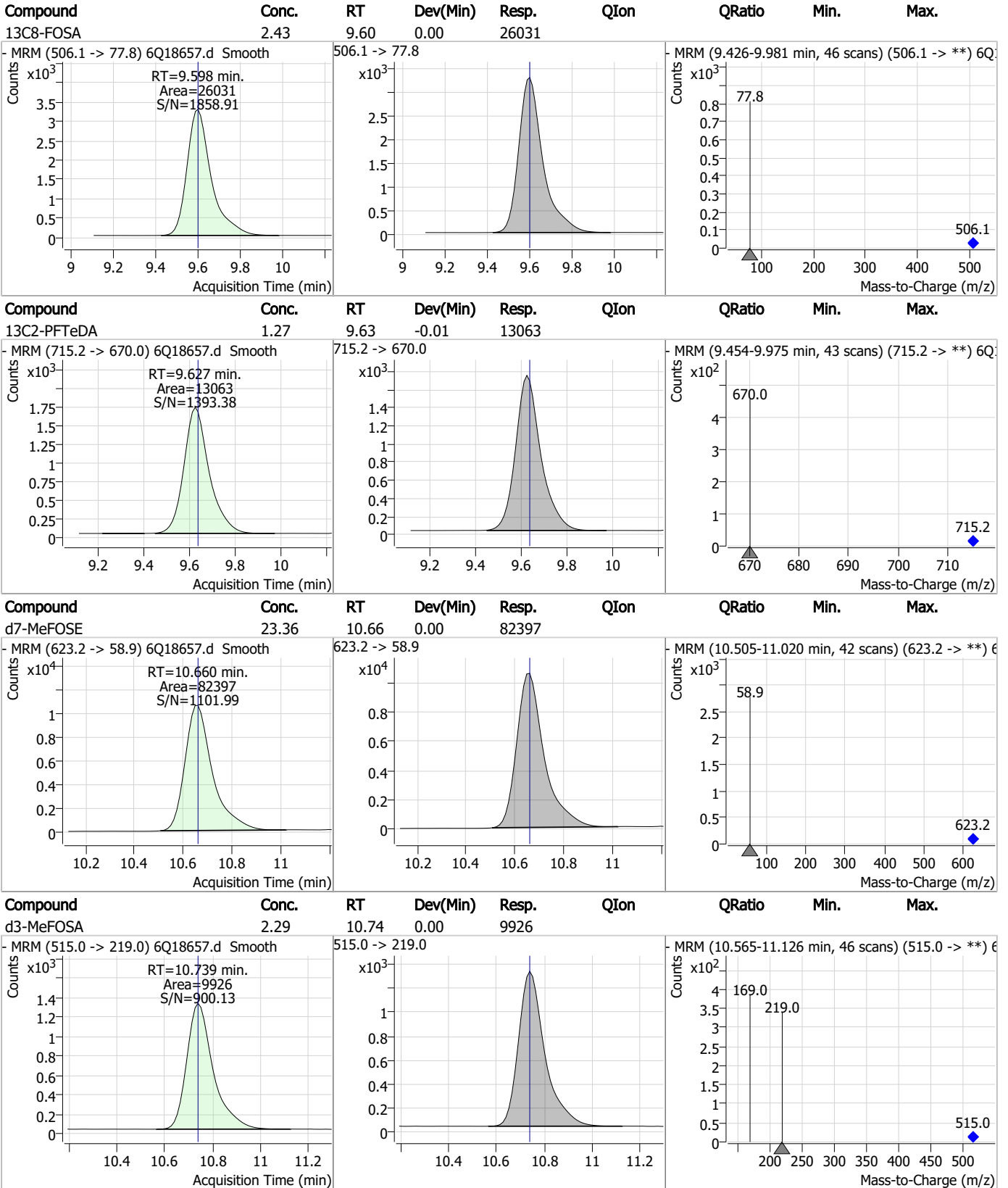
7.1.2

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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

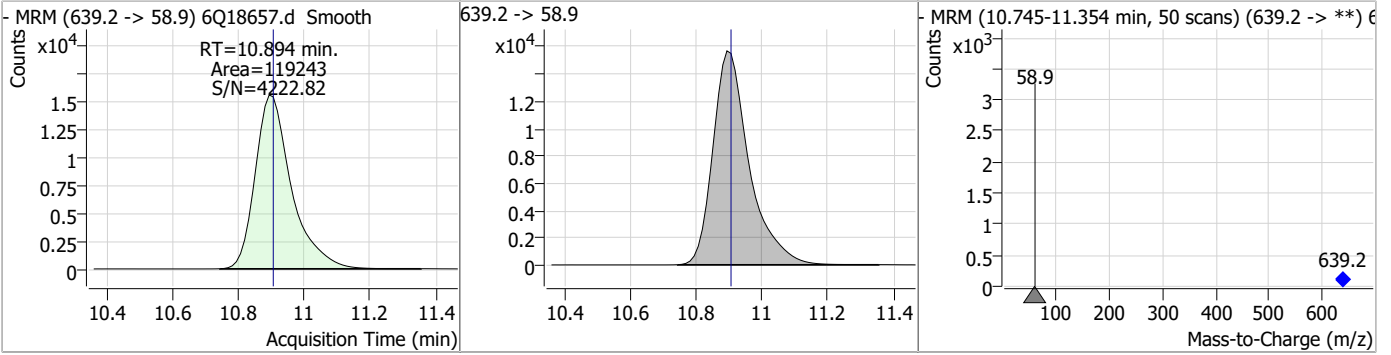


7.1.2

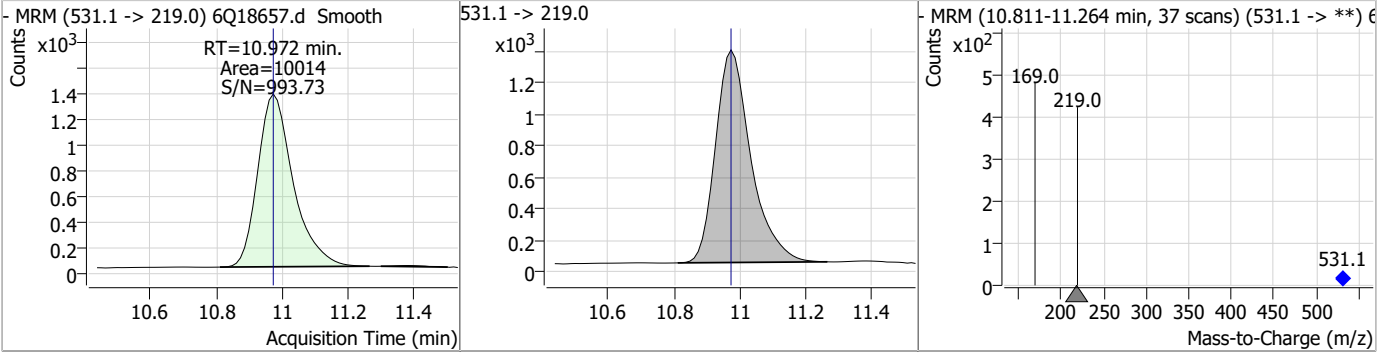
7

Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 25.84 | 10.89 | -0.01 | 119243 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.44 | 10.97 | 0.00 | 10014 | | | | |



7.1.2
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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18659.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:41:19 AM
 Sample Name : FC6325-3
 Vial : P2-B5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,550,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 166973 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 54935 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 59146 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 55465 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 83418 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 37904 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 21628 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 26051 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 23399 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 12158 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 24670 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 21351 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 12885 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12177 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3561 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5045 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4520 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 22519 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 37368 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21711 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 83241 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 124389 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10482 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10218 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13174 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 58528 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8314 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 74382 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 26366 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 39680 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 46662 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3561 | 6.42 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 128.4% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5045 | 6.27 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 125.3% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4520 | 5.53 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 110.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 23399 | 1.28 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 102.2% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 12158 | 1.22 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 97.6% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 21351 | 2.90 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 116.1% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 12885 | 2.77 µg/L | 0.000 |



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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|-------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 111.0% | | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 166973 | 11.98 | µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 119.8% | | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 55465 | 3.04 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 121.5% | | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 59146 | 2.99 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 119.8% | | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 54935 | 6.05 | µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 121.1% | | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 21628 | 1.40 | µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.0% | | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 26051 | 1.32 | µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 105.7% | | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 24670 | 2.46 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.3% | | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 83418 | 2.99 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 119.7% | | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12177 | 2.89 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.4% | | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 37904 | 1.45 | µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 116.0% | | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 22519 | 5.30 | µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 105.9% | | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 37368 | 12.19 | µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 121.9% | | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10218 | 2.51 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.4% | | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21711 | 5.61 | µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 112.3% | | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 83241 | 25.16 | µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 124389 | 28.74 | µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 115.0% | | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10482 | 2.72 | µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 108.8% | | |

Target Compounds

| Compound | RT | Transition | Response | Conc. | Units | QValue |
|----------|-------|----------------|----------|-------|-------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | | |
| | | 327.1 -> 80.9 | | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | | |
| | | 427.1 -> 80.9 | | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | | |
| | | 527.1 -> 80.8 | | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | | |
| | | 584.2 -> 526.0 | | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | | |
| | | 498.1 -> 478.0 | | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | | |
| | | 570.1 -> 483.0 | | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | | |
| PFBS | - | 298.7 -> 79.9 | - | N.D. | | |
| | | 298.7 -> 98.8 | | | | |
| PFDA | 8.608 | 512.9 -> 469.0 | 0 | µg/L | m | 1 |
| | | 512.9 -> 219.0 | 0 | | | |
| PFDODA | - | 613.1 -> 569.0 | - | N.D. | | |
| | | 613.1 -> 319.0 | | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | | |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | |
| | | 363.1 -> 319.0 | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | |
| | | 449.0 -> 79.9 | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | |
| | | 313.0 -> 269.0 | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | |
| | | 398.7 -> 79.9 | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | |
| | | 463.0 -> 419.0 | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | |
| | | 548.8 -> 79.9 | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | |
| | | 413.0 -> 369.0 | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | |
| | | 498.9 -> 79.9 | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | |
| | | 263.0 -> 219.0 | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| | | 511.9 -> 219.0 | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | |
| | | 616.1 -> 58.9 | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | |
| | | 229.0 -> 84.9 | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

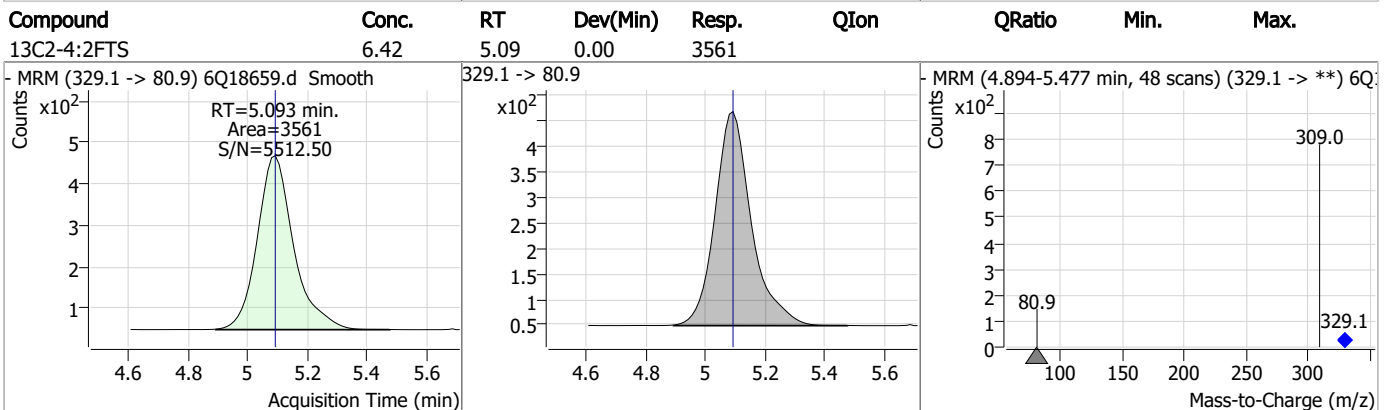
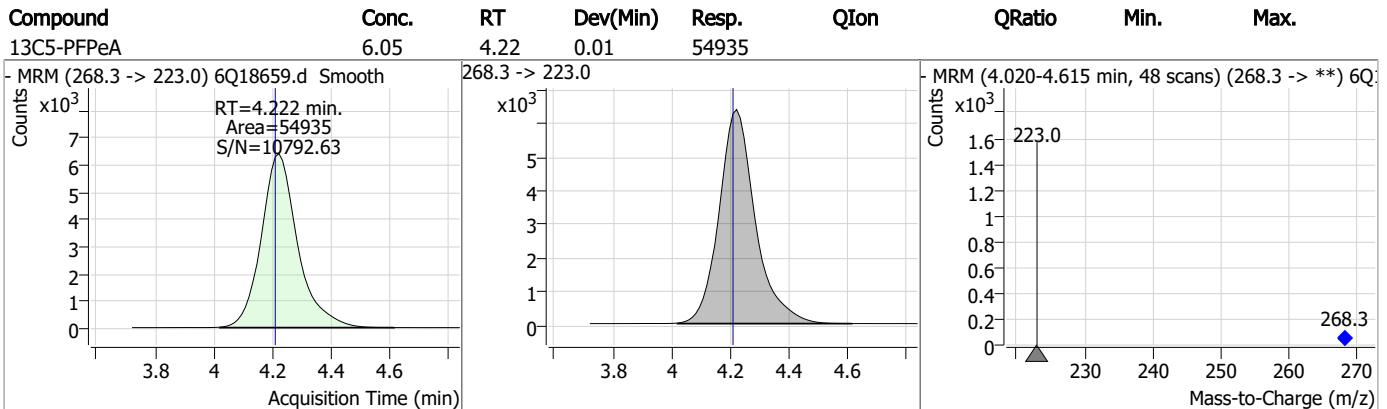
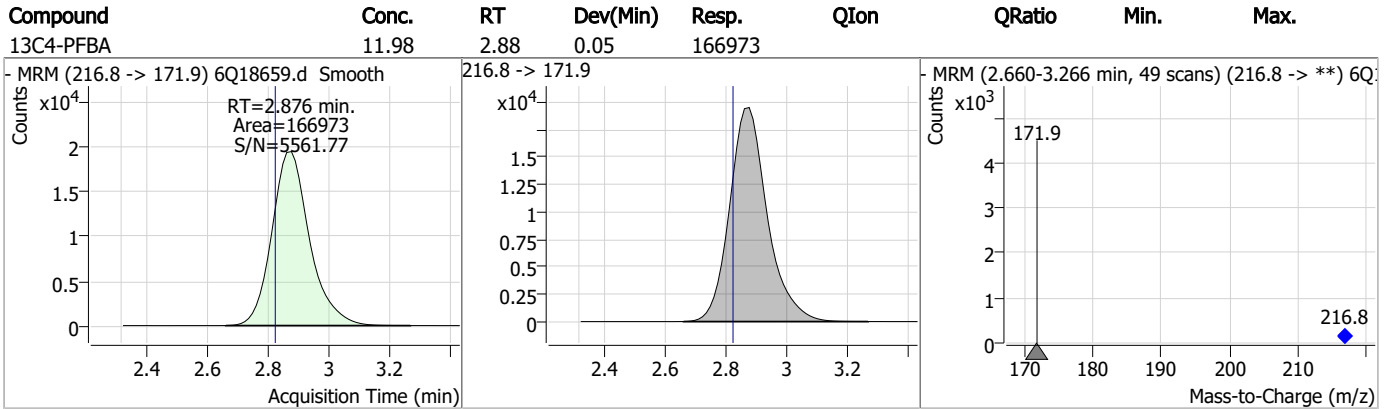
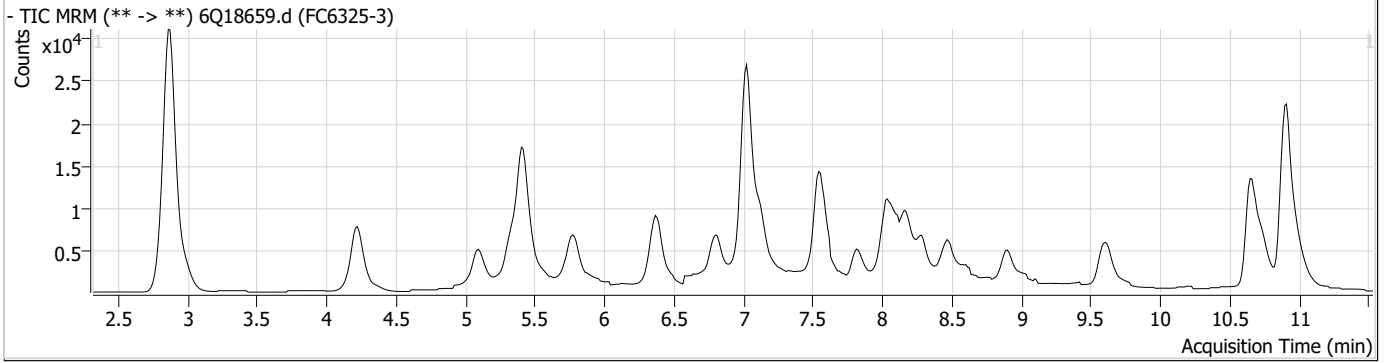
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.1.3
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Perfluorinated Compounds by LC/MS/MS



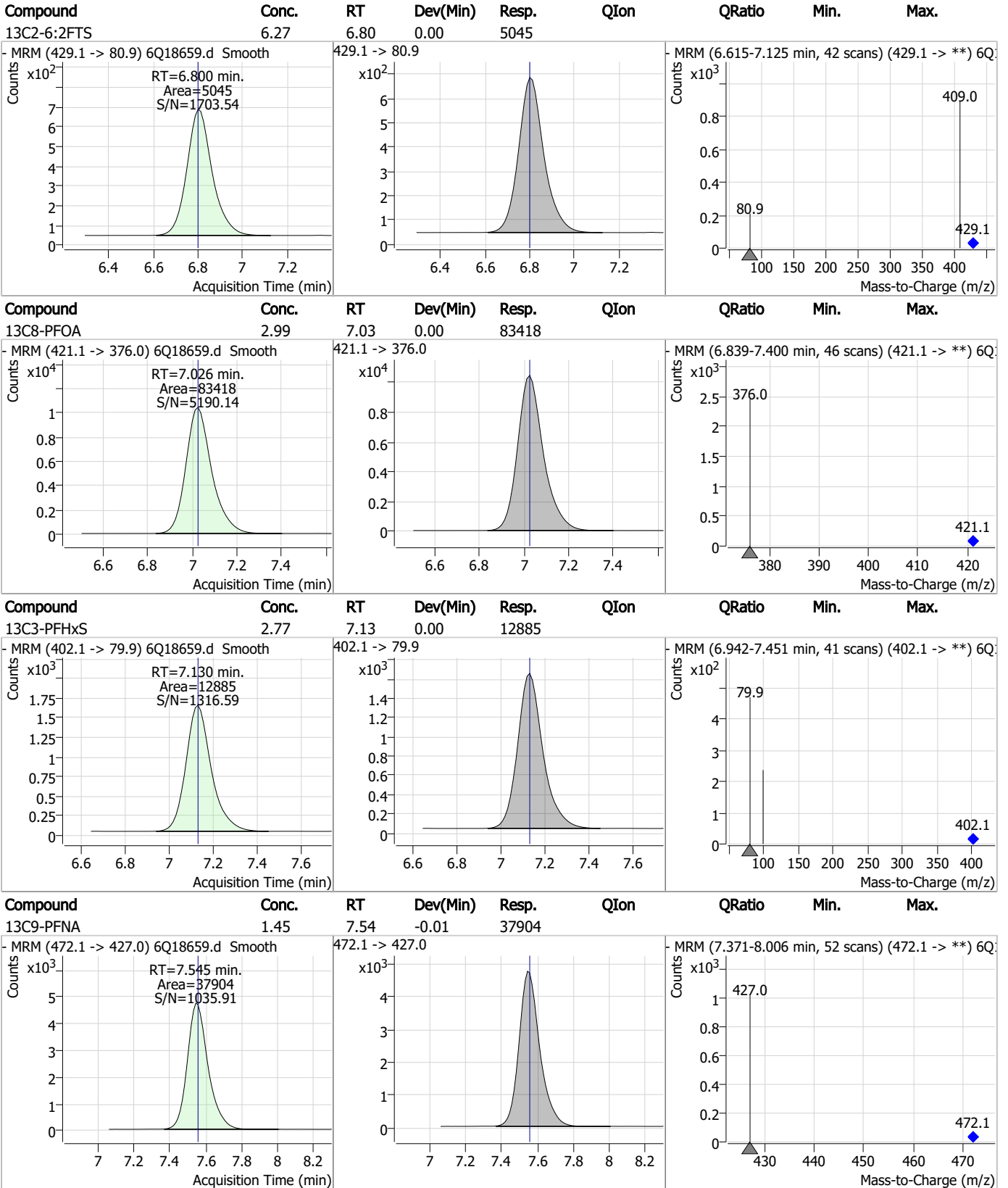
Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-PFBS | 2.90 | 5.33 | 0.00 | 21351 | | | | |
| | | | | | | | | |
| 13C5-PFHxA | 2.99 | 5.42 | 0.00 | 59146 | | | | |
| | | | | | | | | |
| 13C3-HFPO-DA | 12.19 | 5.78 | 0.00 | 37368 | | | | |
| | | | | | | | | |
| 13C4-PFHpA | 3.04 | 6.37 | 0.00 | 55465 | | | | |
| | | | | | | | | |

7.1.3

7

Perfluorinated Compounds by LC/MS/MS

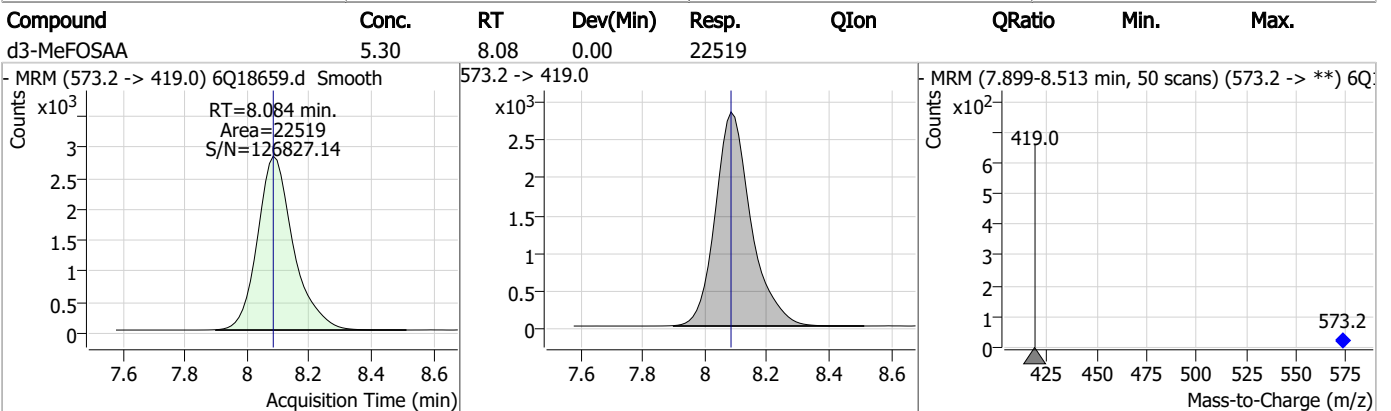
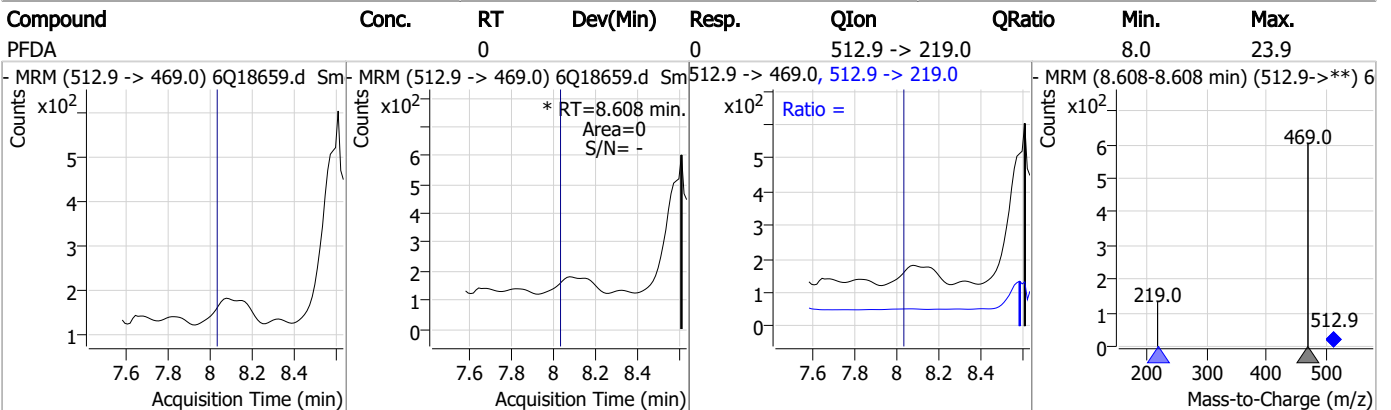
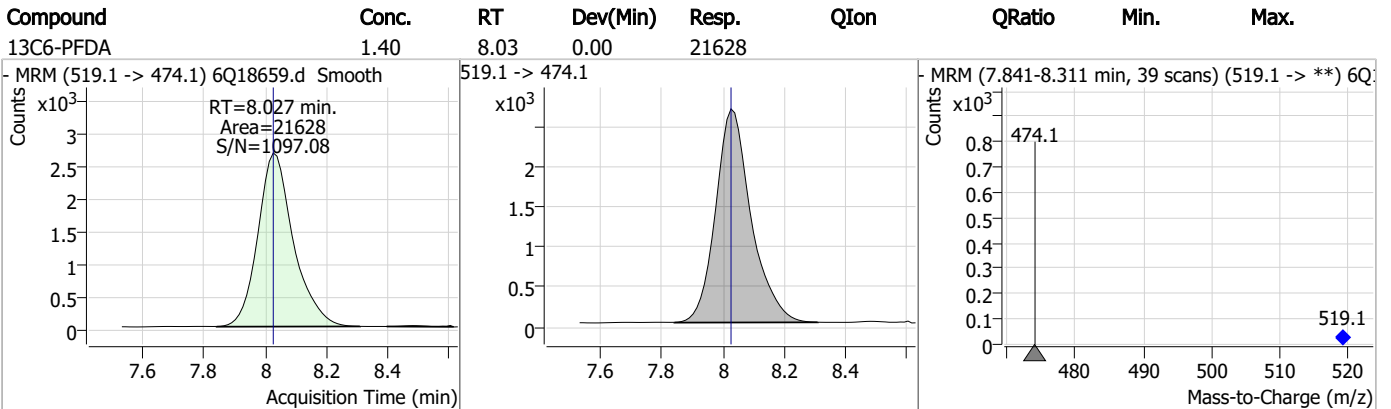
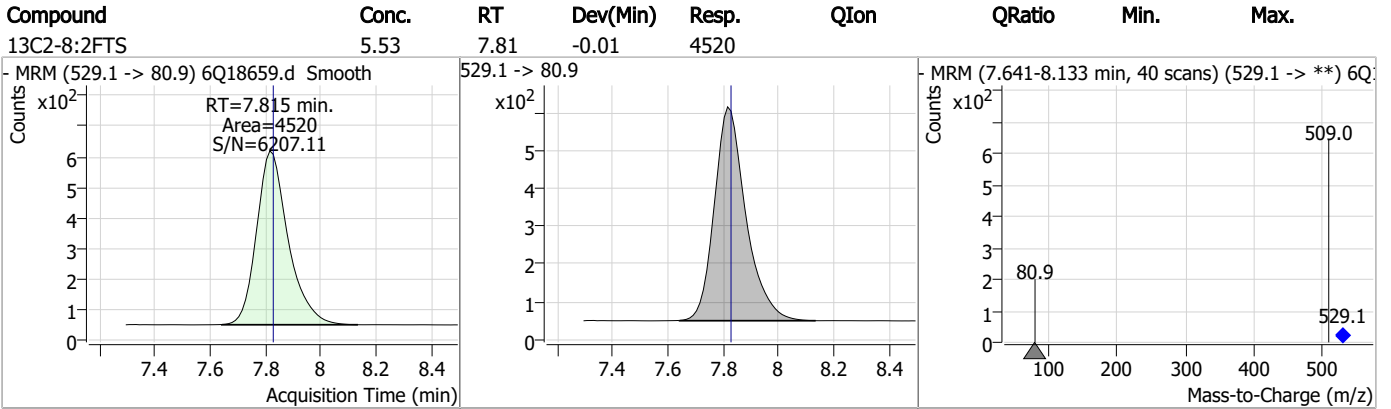


7.1.3

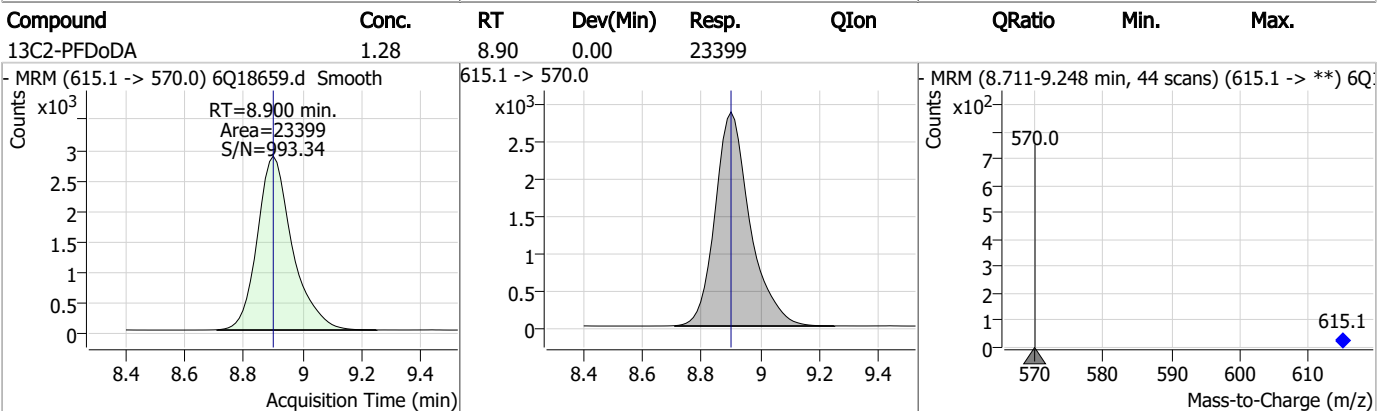
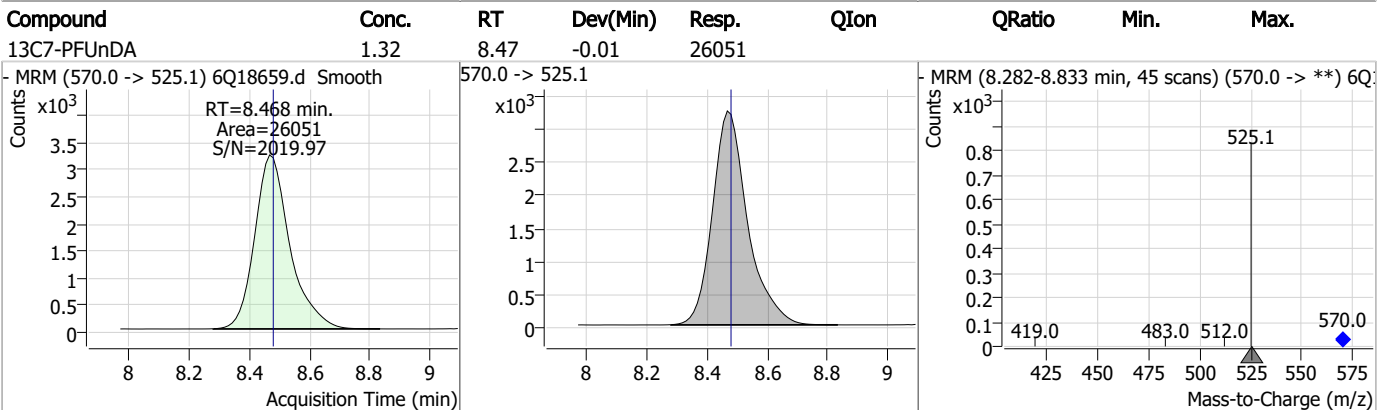
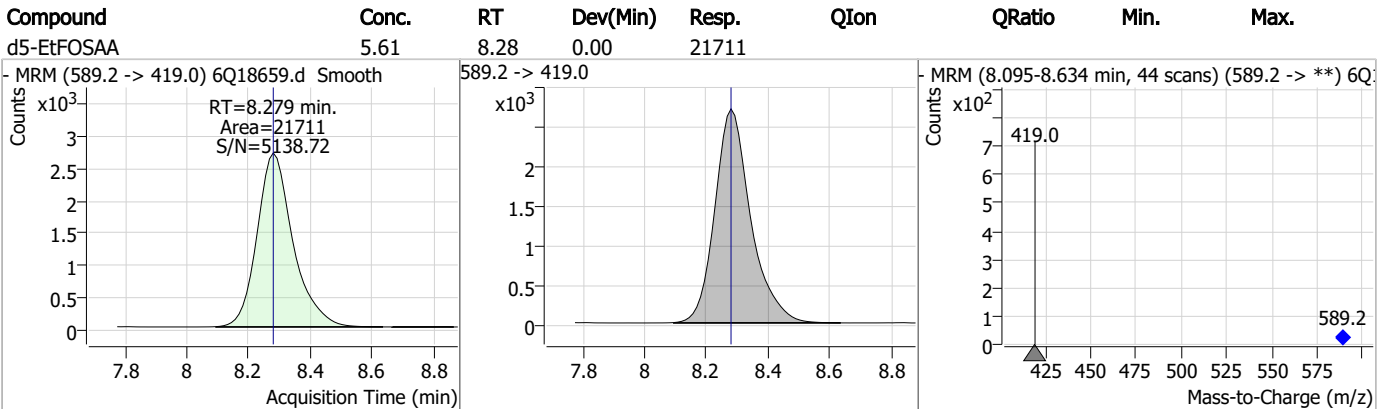
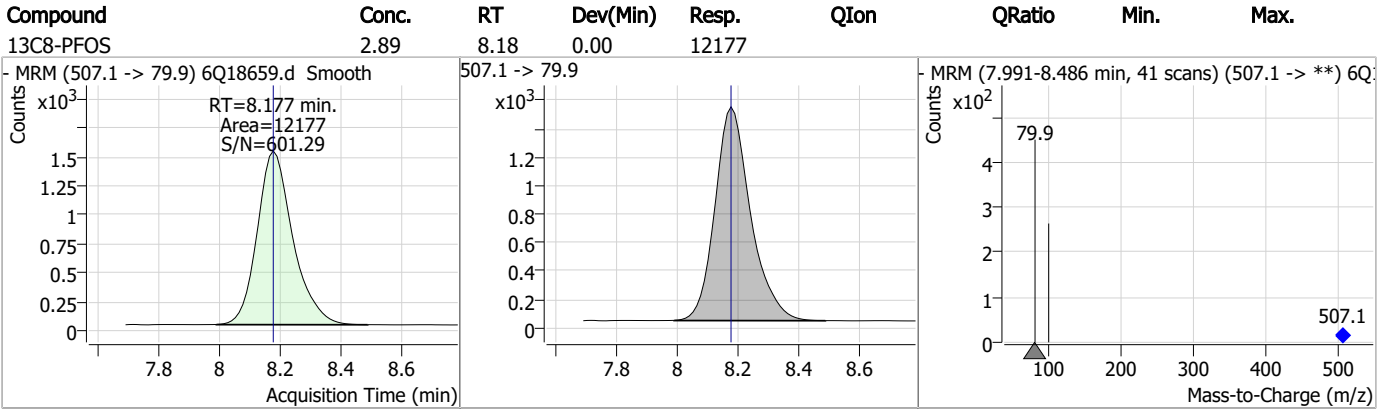
7



Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

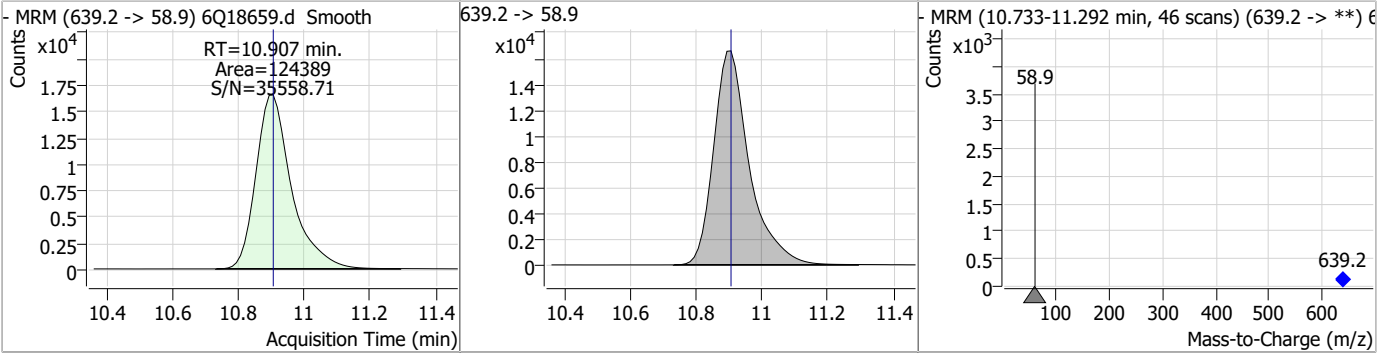


Perfluorinated Compounds by LC/MS/MS

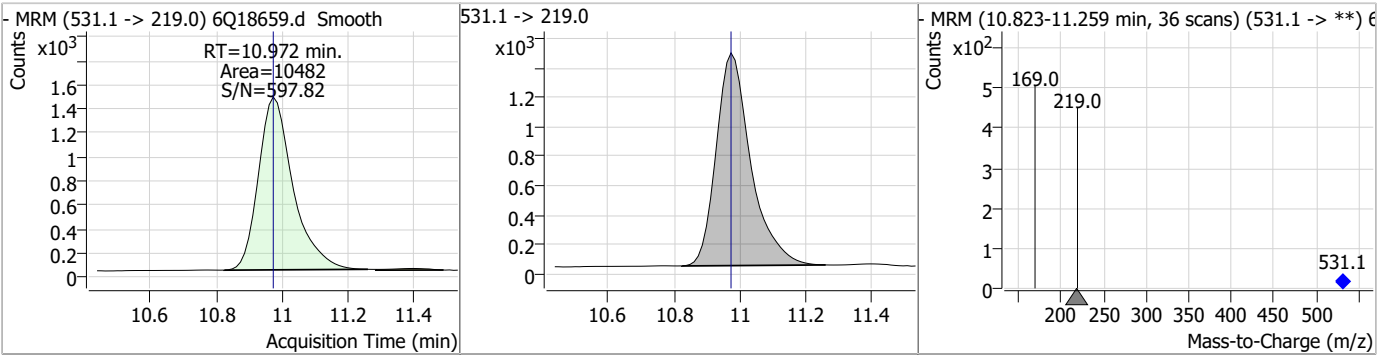
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|-------|----------|-------|------|--------|------|------|
| 13C8-FOSA | 2.46 | 9.60 | 0.00 | 24670 | | | | |
| | | | | | | | | |
| 13C2-PFTeDA | 1.22 | 9.63 | -0.01 | 12158 | | | | |
| | | | | | | | | |
| d7-MeFOSE | 25.16 | 10.66 | 0.00 | 83241 | | | | |
| | | | | | | | | |
| d3-MeFOSA | 2.51 | 10.74 | 0.00 | 10218 | | | | |
| | | | | | | | | |

Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 28.74 | 10.91 | 0.00 | 124389 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.72 | 10.97 | 0.00 | 10482 | | | | |



7.1.3

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18646.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:32:57 AM
 Sample Name : op97092-mb
 Vial : P2-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.860 | 216.8 -> 171.9 | 167223 | 10.00 µg/L | 0.037 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 54800 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 58117 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 56612 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 83202 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 35826 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23409 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30121 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 26928 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 14273 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 21087 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 21038 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13426 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12744 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3566 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5239 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4667 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25397 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 35425 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21910 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 64140 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 104222 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9225 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 8726 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13735 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 62328 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8437 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 78577 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 28301 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 41515 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 49161 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3566 | 6.34 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 126.7% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5239 | 6.41 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 128.2% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4667 | 5.63 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 112.6% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 26928 | 1.37 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 109.6% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 14273 | 1.33 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 106.8% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 21038 | 2.82 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 112.7% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13426 | 2.85 µg/L | 0.000 |

7.2.1
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.9% | |
| 13C4-PFBA | 2.860 | 216.8 -> 171.9 | 167223 | 11.27 µg/L | 0.037 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 112.7% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 56612 | 2.94 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 117.7% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 58117 | 2.79 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 111.7% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 54800 | 5.73 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 114.6% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23409 | 1.41 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.9% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30121 | 1.42 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 113.9% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 21087 | 2.01 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 80.6% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 83202 | 2.83 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.1% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12744 | 2.90 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.8% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 35826 | 1.31 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 104.8% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25397 | 5.73 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 114.6% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 35425 | 10.97 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 109.7% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 8726 | 2.06 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 82.3% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21910 | 5.43 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 108.7% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 64140 | 18.59 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 74.4% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 104222 | 23.10 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 92.4% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9225 | 2.30 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 91.8% | |

Target Compounds

| Compound | RT | Transition | Response | Conc. Units | QValue |
|----------|-------|----------------|----------|-------------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | |
| | | 327.1 -> 80.9 | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | |
| | | 427.1 -> 80.9 | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | |
| | | 527.1 -> 80.8 | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | |
| | | 584.2 -> 526.0 | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | |
| | | 498.1 -> 478.0 | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | |
| | | 570.1 -> 483.0 | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 | - | N.D. | |
| | | 298.7 -> 98.8 | | | |
| PFDA | 8.584 | 512.9 -> 469.0 | 0 | µg/L m | 1 |
| | | 512.9 -> 219.0 | 0 | | |
| PFDODA | - | 613.1 -> 569.0 | - | N.D. | |
| | | 613.1 -> 319.0 | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| | | 599.0 -> 98.8 | | | |
| PFHpA | - | 363.1 -> 319.0 | - | N.D. | |
| | | 363.1 -> 169.0 | | | |
| PFHpS | - | 449.0 -> 79.9 | - | N.D. | |
| | | 449.0 -> 98.9 | | | |
| PFHxA | - | 313.0 -> 269.0 | - | N.D. | |
| | | 313.0 -> 118.9 | | | |
| PFHxS | - | 398.7 -> 79.9 | - | N.D. | |
| | | 398.7 -> 98.9 | | | |
| PFNA | - | 463.0 -> 419.0 | - | N.D. | |
| | | 463.0 -> 219.0 | | | |
| PFNS | - | 548.8 -> 79.9 | - | N.D. | |
| | | 548.8 -> 98.9 | | | |
| PFOA | - | 413.0 -> 369.0 | - | N.D. | |
| | | 413.0 -> 169.0 | | | |
| PFOS | - | 498.9 -> 79.9 | - | N.D. | |
| | | 498.9 -> 98.8 | | | |
| PFPeA | - | 263.0 -> 219.0 | - | N.D. | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| MeFOSA | - | 511.9 -> 219.0 | - | N.D. | |
| | | 511.9 -> 169.0 | | | |
| MeFOSE | - | 616.1 -> 58.9 | - | N.D. | |
| PFDoDS | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| NFDHA | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| PFMBA | - | 279.0 -> 85.1 | - | N.D. | |
| PFMPA | - | 229.0 -> 84.9 | - | N.D. | |
| PFEESA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.2.1
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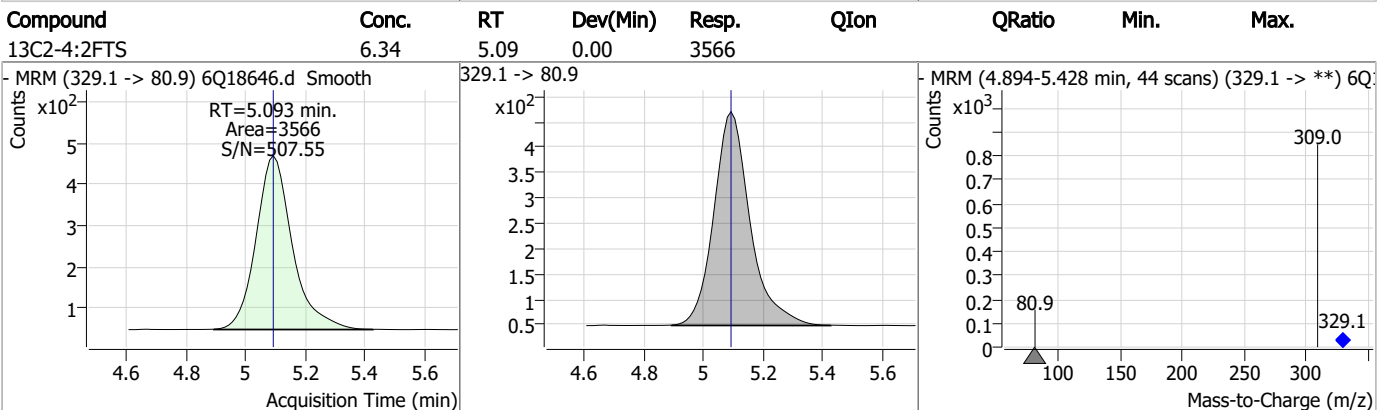
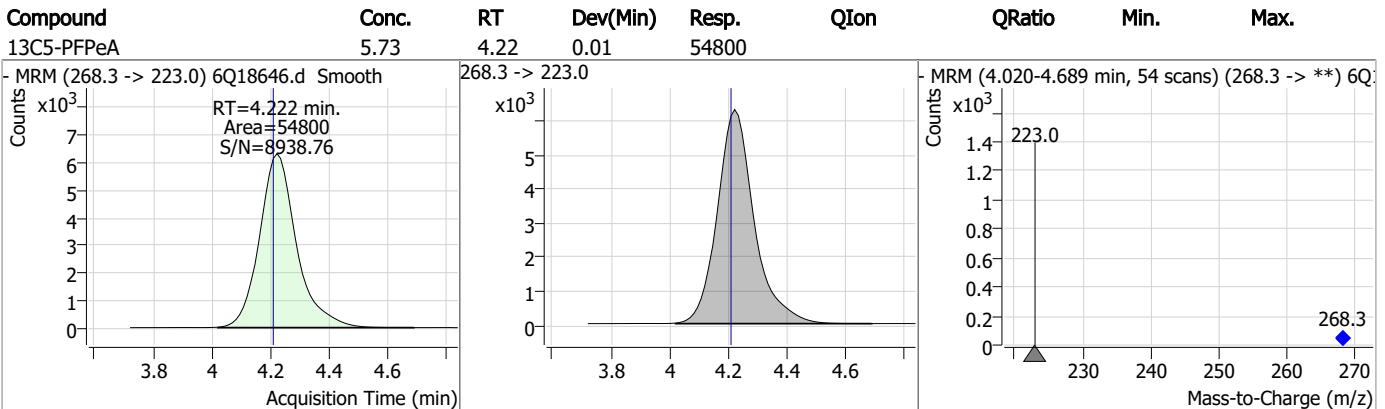
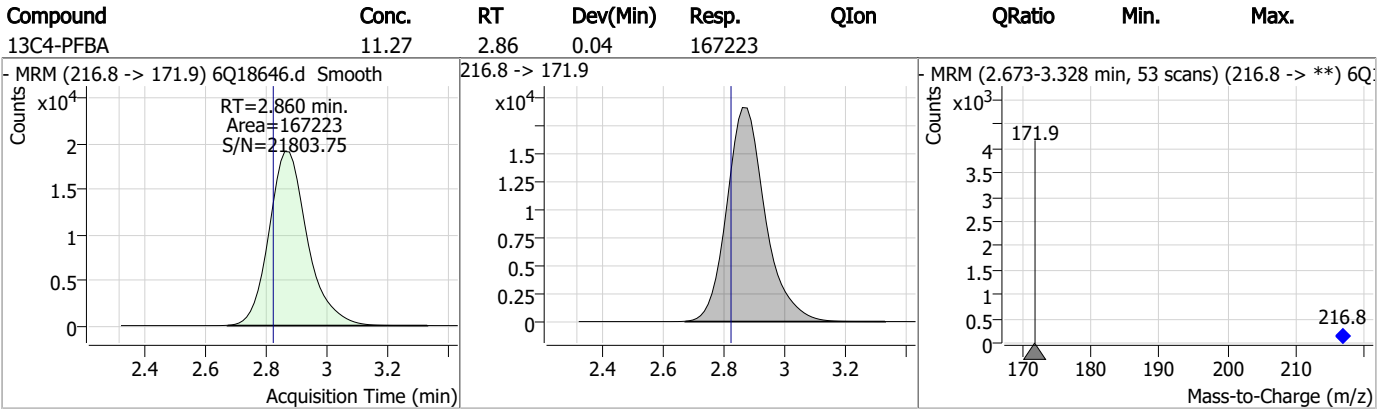
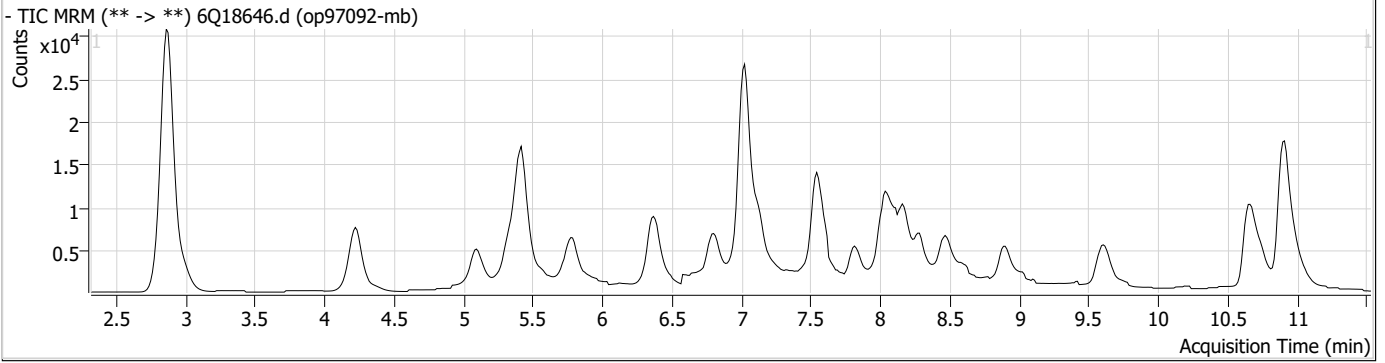
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

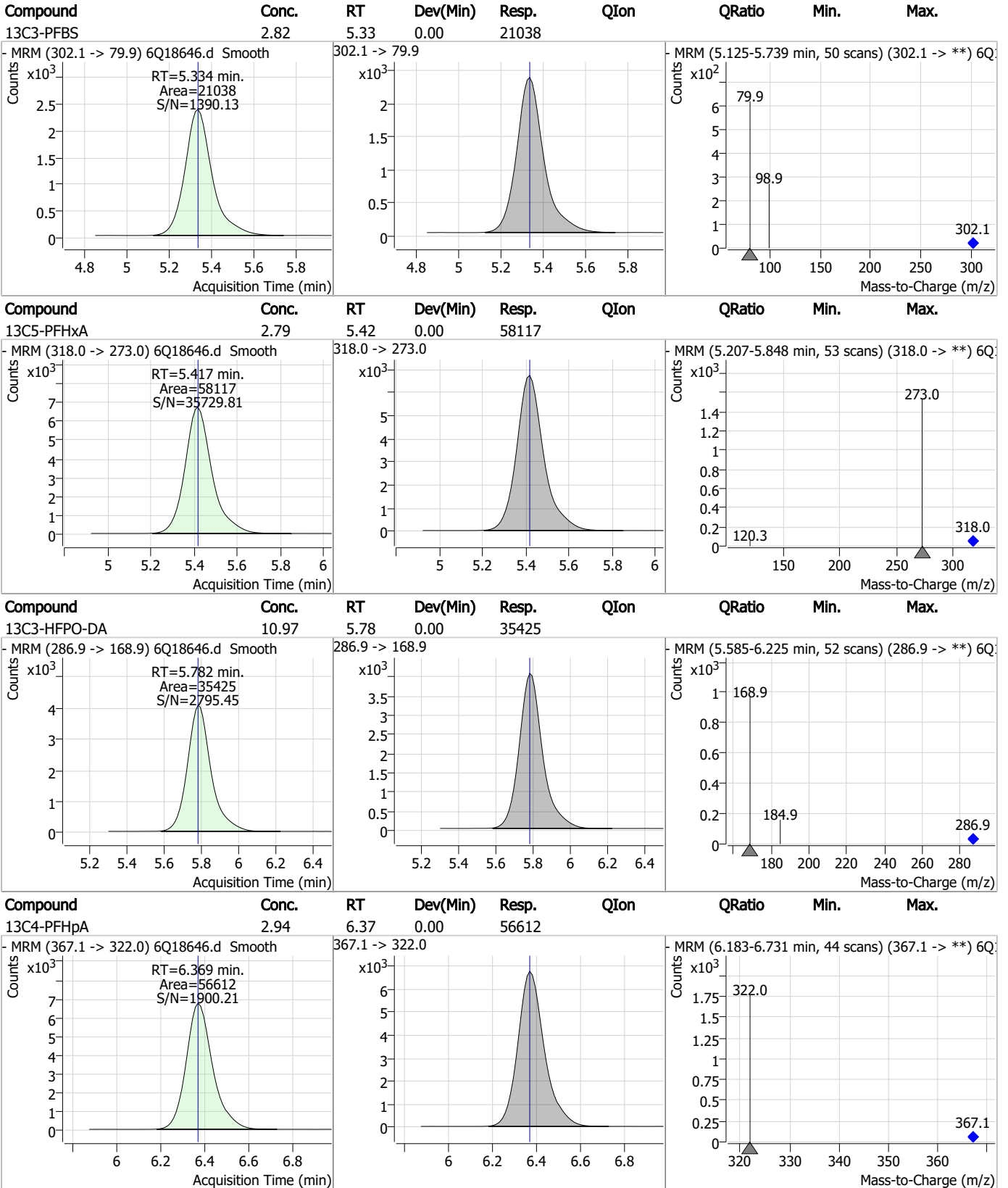
7.2.1

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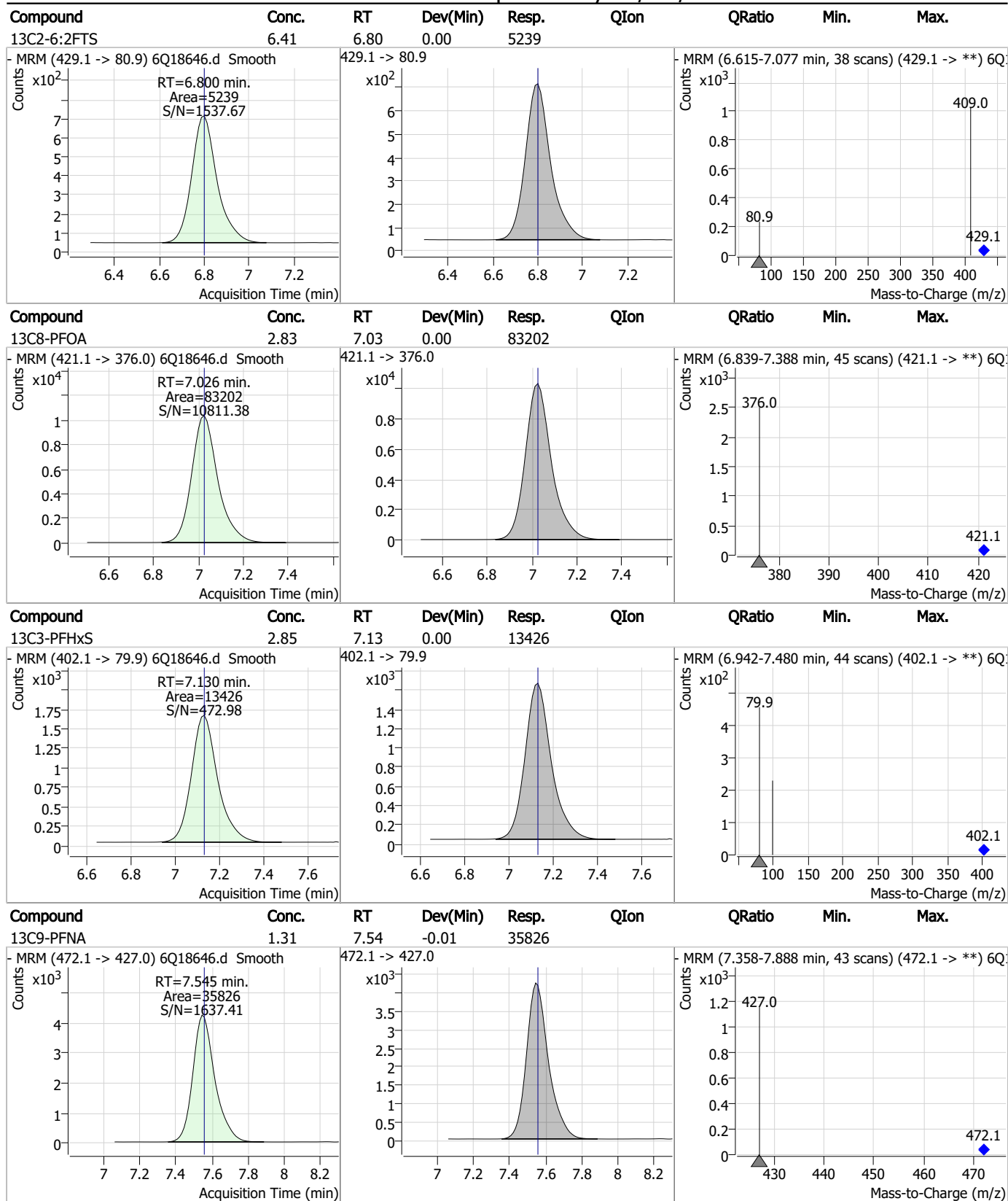
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



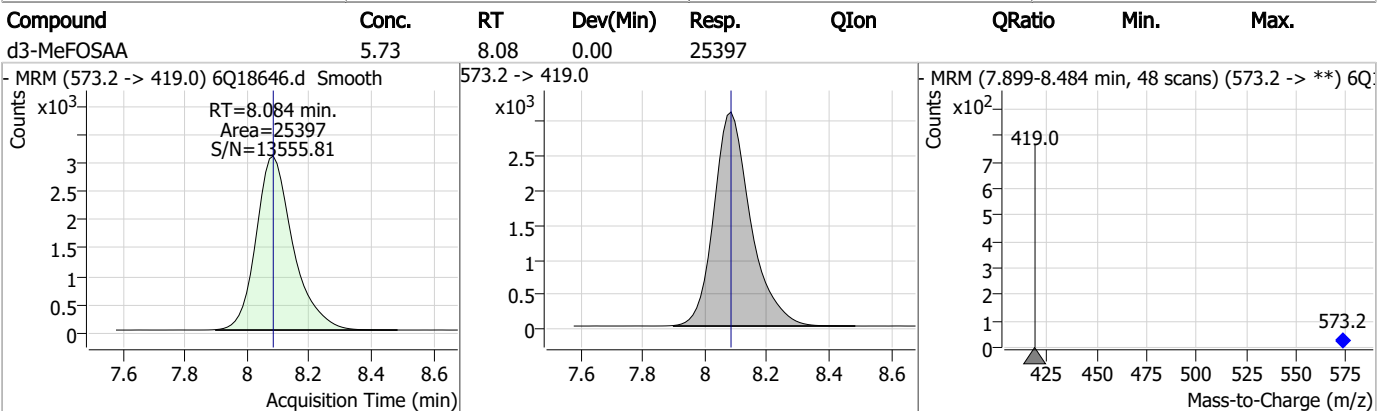
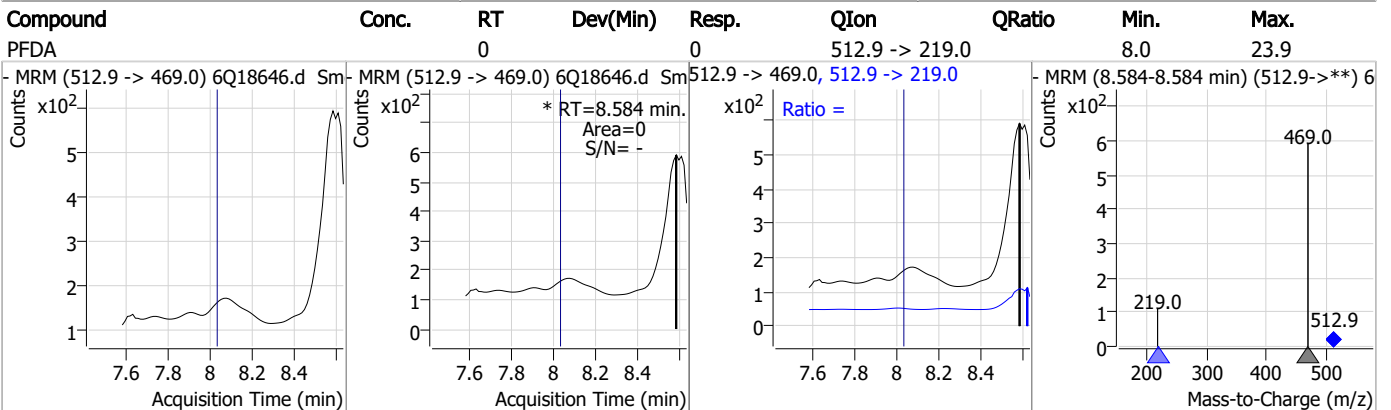
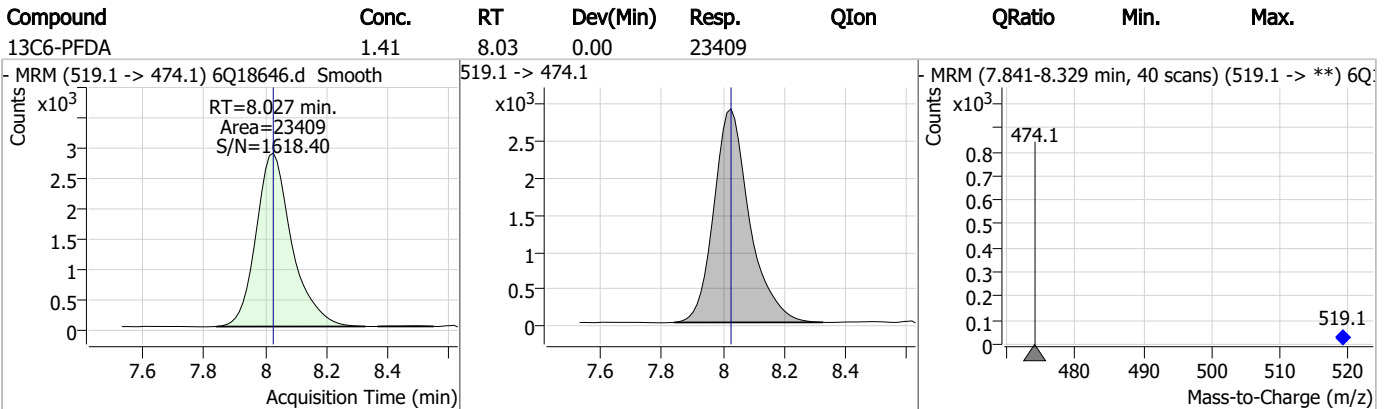
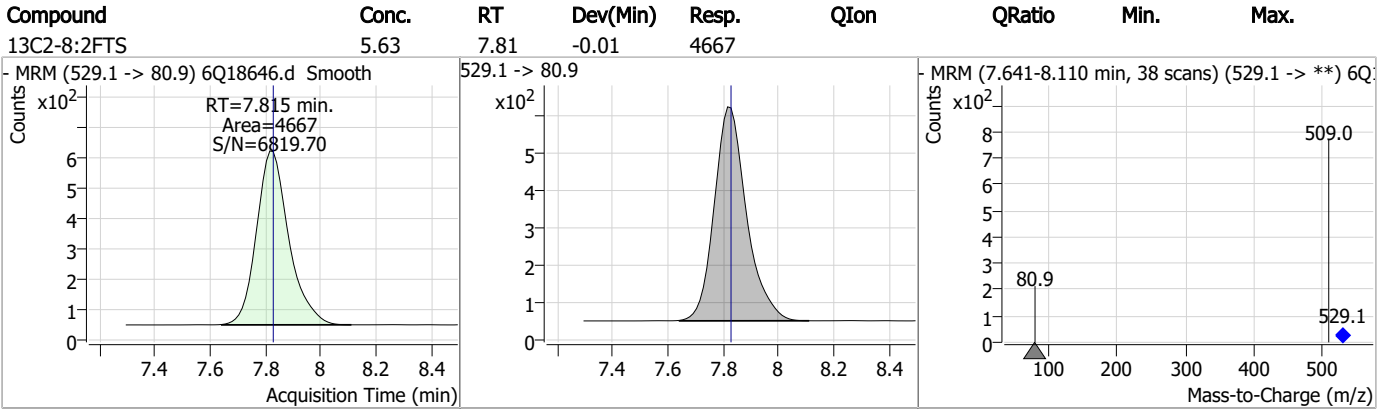
Perfluorinated Compounds by LC/MS/MS



7.2.1



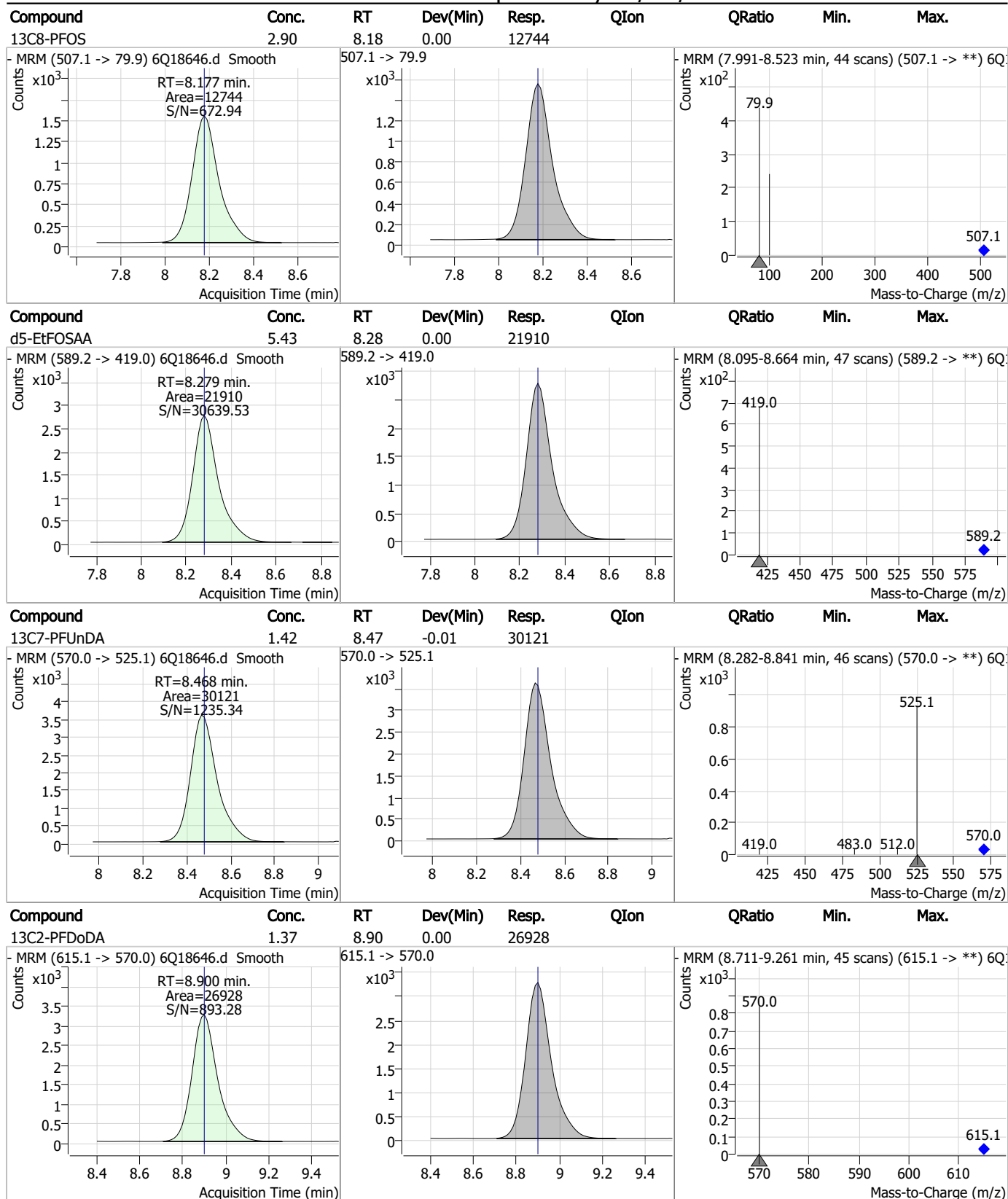
Perfluorinated Compounds by LC/MS/MS



7.2.1

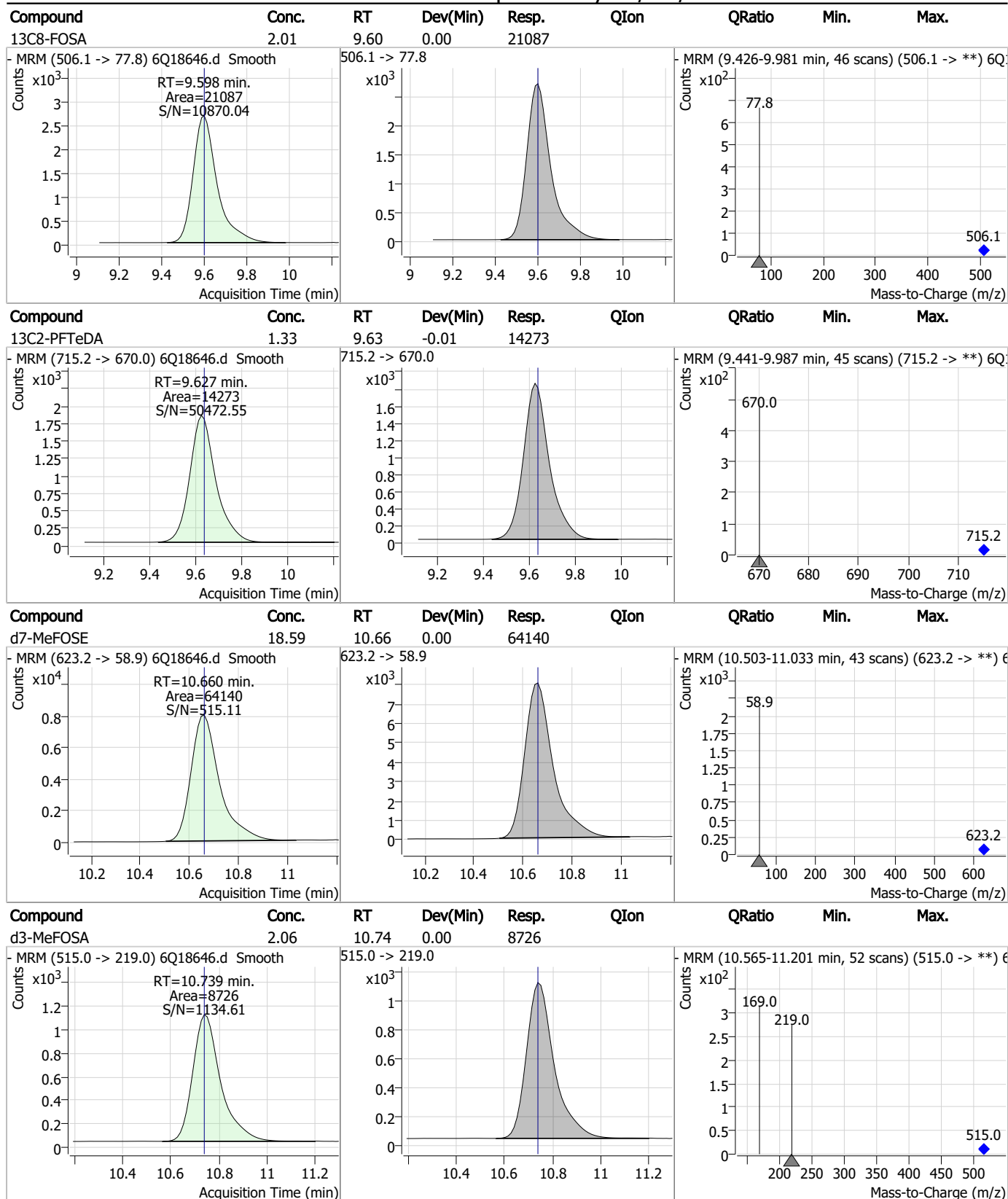
7

Perfluorinated Compounds by LC/MS/MS



7.2.1
7

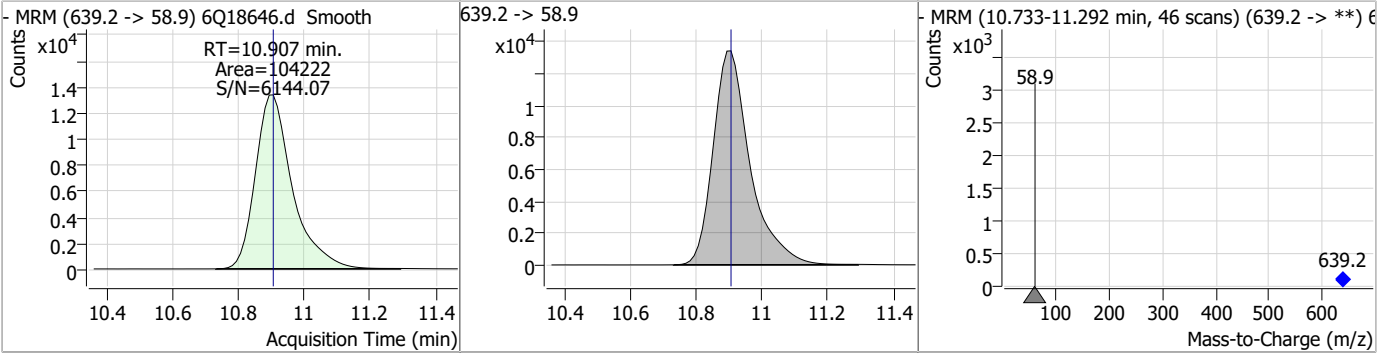
Perfluorinated Compounds by LC/MS/MS



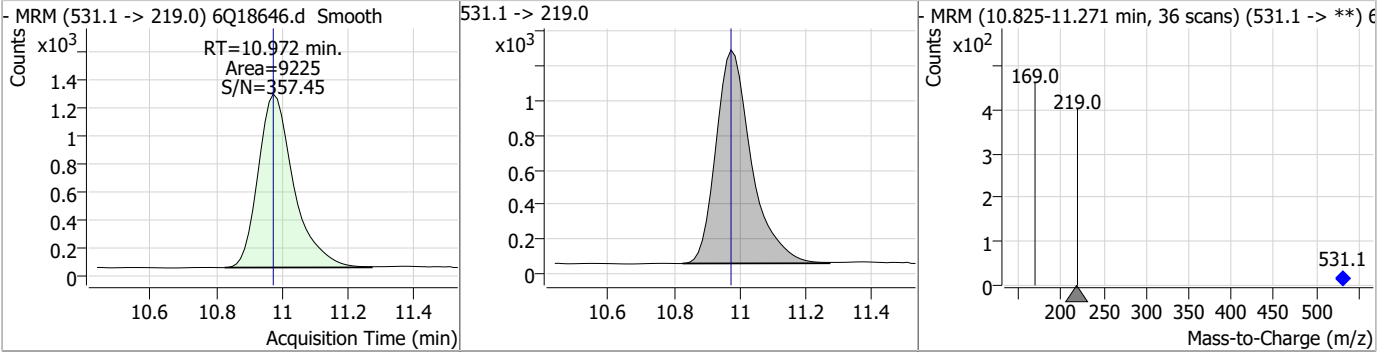
7.2.1
7

Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 23.10 | 10.91 | 0.00 | 104222 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.30 | 10.97 | 0.00 | 9225 | | | | |



7.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18594.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:12:17 PM
 Sample Name : iblk
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.810 | 216.8 -> 171.9 | 176076 | 10.00 µg/L | -0.012 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 59176 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 64334 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 58800 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 89528 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 41427 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23595 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 32728 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30564 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15240 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.586 | 506.1 -> 77.8 | 34223 | 2.50 µg/L | -0.012 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 23754 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 14962 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 13248 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3737 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5275 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5690 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27469 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38767 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25600 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 109771 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 144772 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12768 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13247 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17146 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 73621 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10439 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 97872 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 36246 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 54548 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 59107 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3737 | 5.37 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 107.4% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5275 | 5.22 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 104.3% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5690 | 5.55 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 111.0% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30564 | 1.21 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 97.1% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15240 | 1.11 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 89.0% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 23754 | 2.57 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.8% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 14962 | 2.57 µg/L | 0.000 |

7.22
7



Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.6% | |
| 13C4-PFBA | 2.810 | 216.8 -> 171.9 | 176076 | 10.04 µg/L | -0.012 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.4% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 58800 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 64334 | 2.57 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.8% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 59176 | 5.15 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.9% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23595 | 1.11 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 88.9% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 32728 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.6% | |
| 13C8-FOSA | 9.586 | 506.1 -> 77.8 | 34223 | 2.62 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.7% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 89528 | 2.44 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.7% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 13248 | 2.41 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.5% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 41427 | 1.15 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 92.2% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27469 | 4.96 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 99.3% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38767 | 9.98 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13247 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25600 | 5.09 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 109771 | 25.49 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 102.0% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 144772 | 25.70 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 102.8% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12768 | 2.55 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.8% | |

7.22
7

Target Compounds

QValue

| | | | | | |
|---------|---|----------------------------------|---|------|--|
| 4:2FTS | - | 327.1 -> 307.0 327.1 -> 80.9 | - | N.D. | |
| 6:2FTS | - | 427.1 -> 407.0 427.1 -> 80.9 | - | N.D. | |
| 8:2FTS | - | 527.1 -> 507.0 527.1 -> 80.8 | - | N.D. | |
| EtFOSAA | - | 584.2 -> 419.1 584.2 -> 526.0 | - | N.D. | |
| FOSA | - | 498.1 -> 77.9 498.1 -> 478.0 | - | N.D. | |
| MeFOSAA | - | 570.1 -> 419.0 570.1 -> 483.0 | - | N.D. | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 298.7 -> 98.8 | - | N.D. | |
| PFDA | - | 512.9 -> 469.0 512.9 -> 219.0 | - | N.D. | |
| PFDODA | - | 613.1 -> 569.0 613.1 -> 319.0 | - | N.D. | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |



Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | |
| | | 363.1 -> 319.0 | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | |
| | | 449.0 -> 79.9 | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | |
| | | 313.0 -> 269.0 | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | |
| | | 398.7 -> 79.9 | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | |
| | | 463.0 -> 419.0 | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | |
| | | 548.8 -> 79.9 | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | |
| | | 413.0 -> 369.0 | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | |
| | | 498.9 -> 79.9 | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | |
| | | 263.0 -> 219.0 | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| | | 511.9 -> 219.0 | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | |
| | | 616.1 -> 58.9 | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | |
| | | 229.0 -> 84.9 | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



7.2.2
7

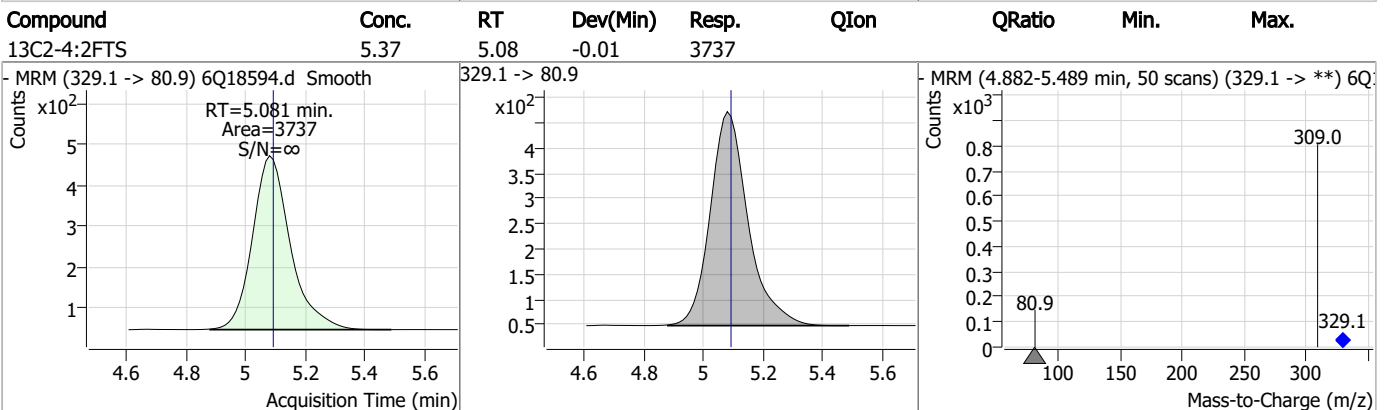
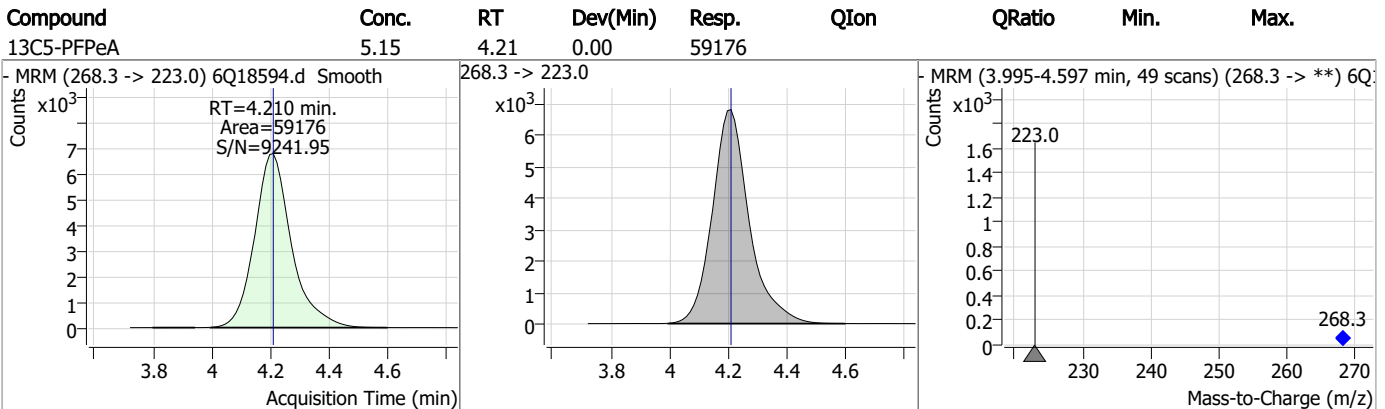
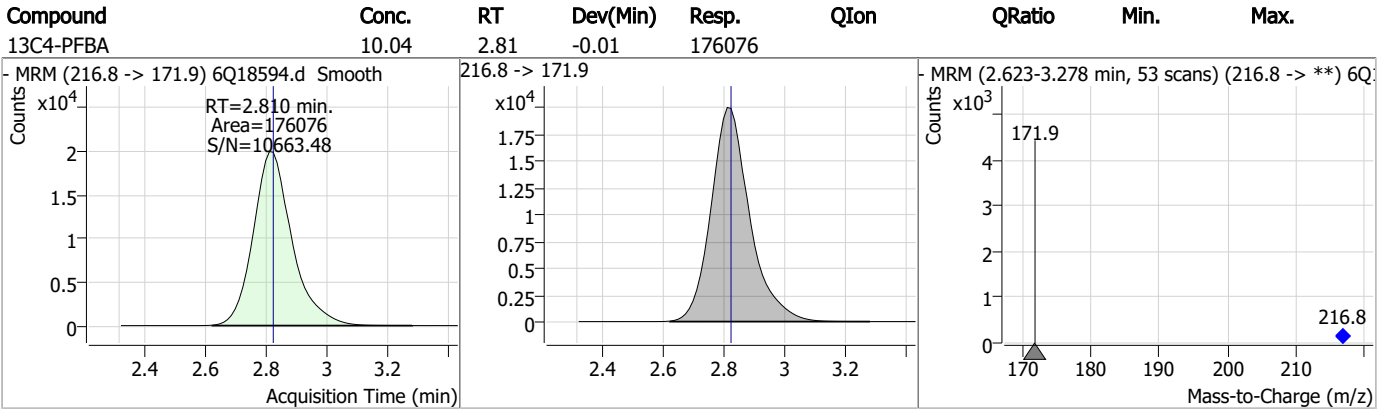
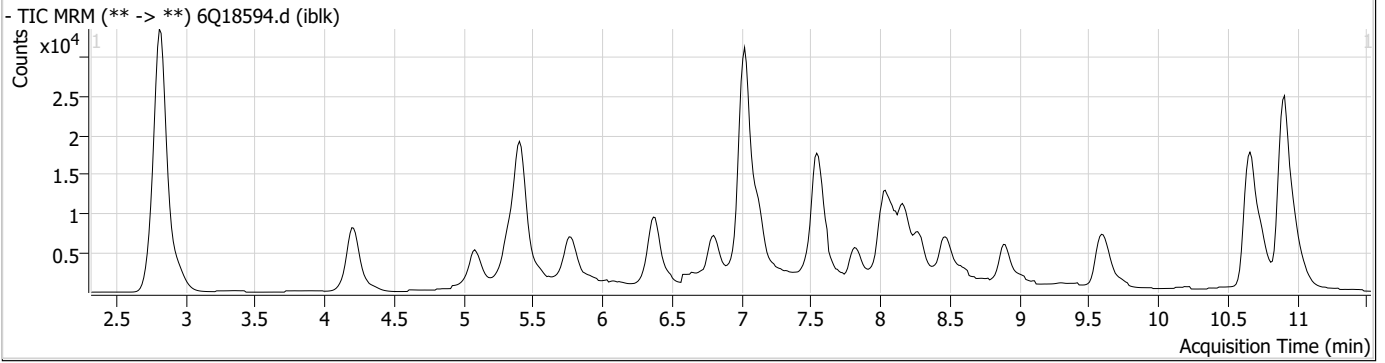
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

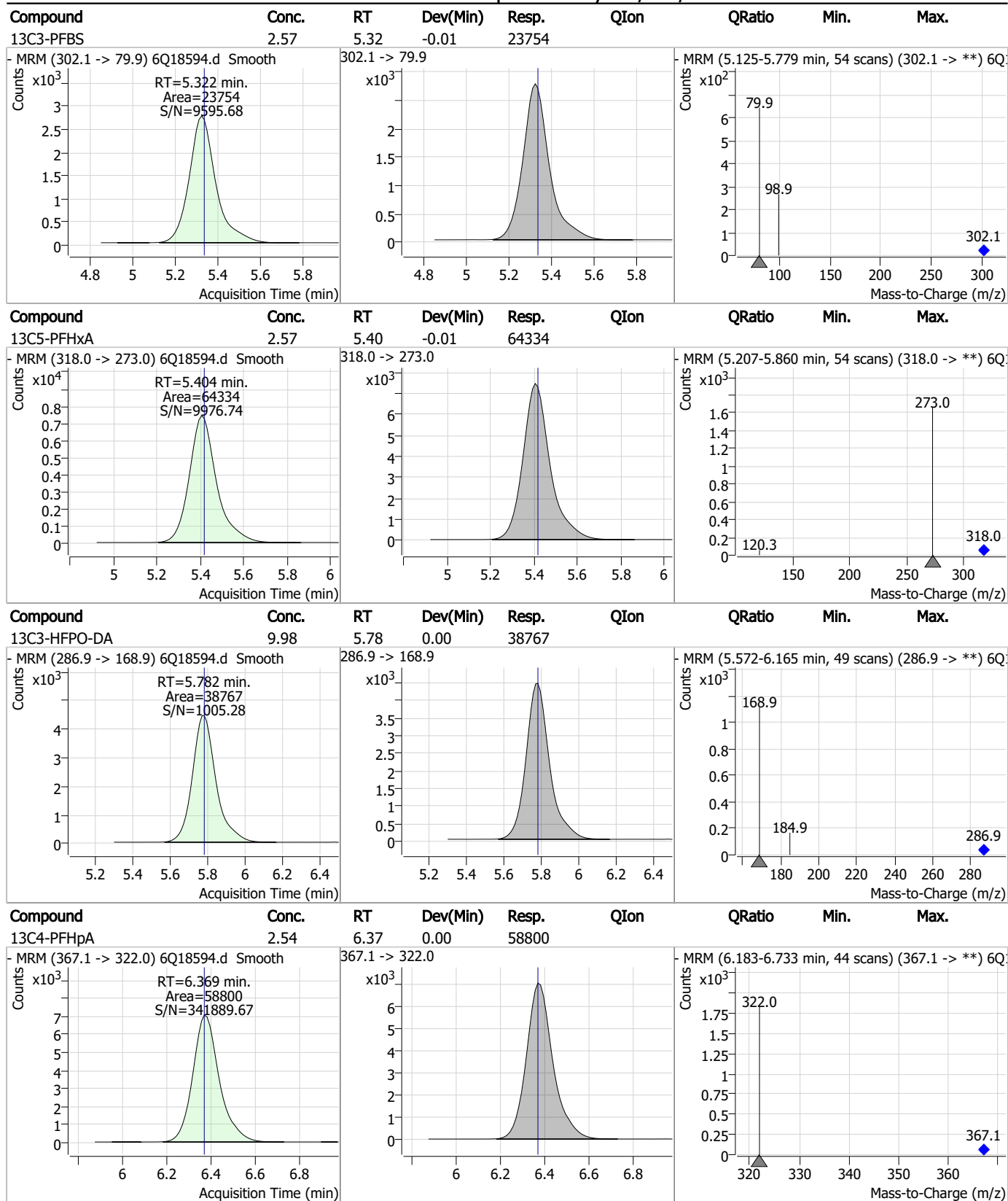
7.2.2

7

Perfluorinated Compounds by LC/MS/MS

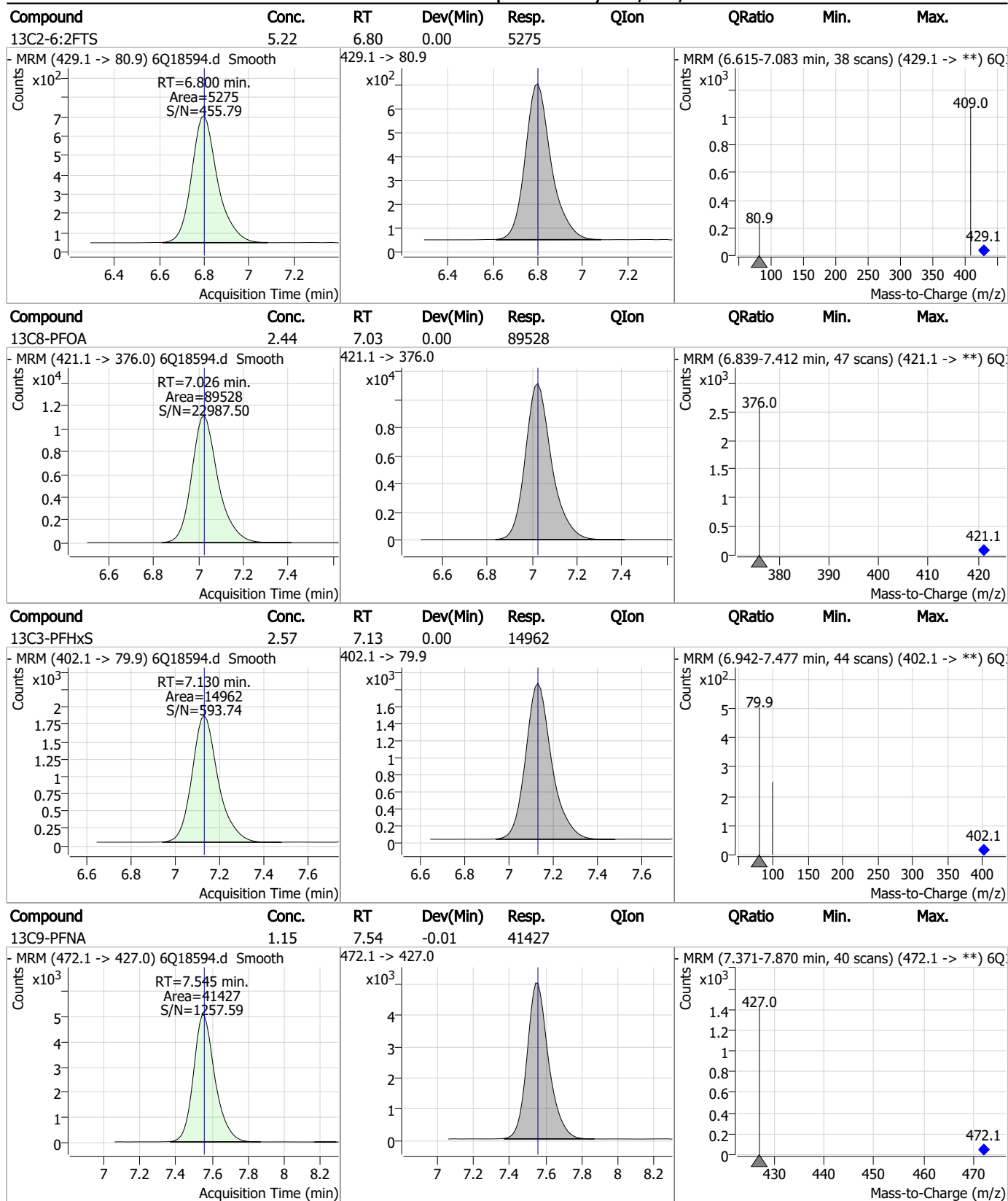


Perfluorinated Compounds by LC/MS/MS



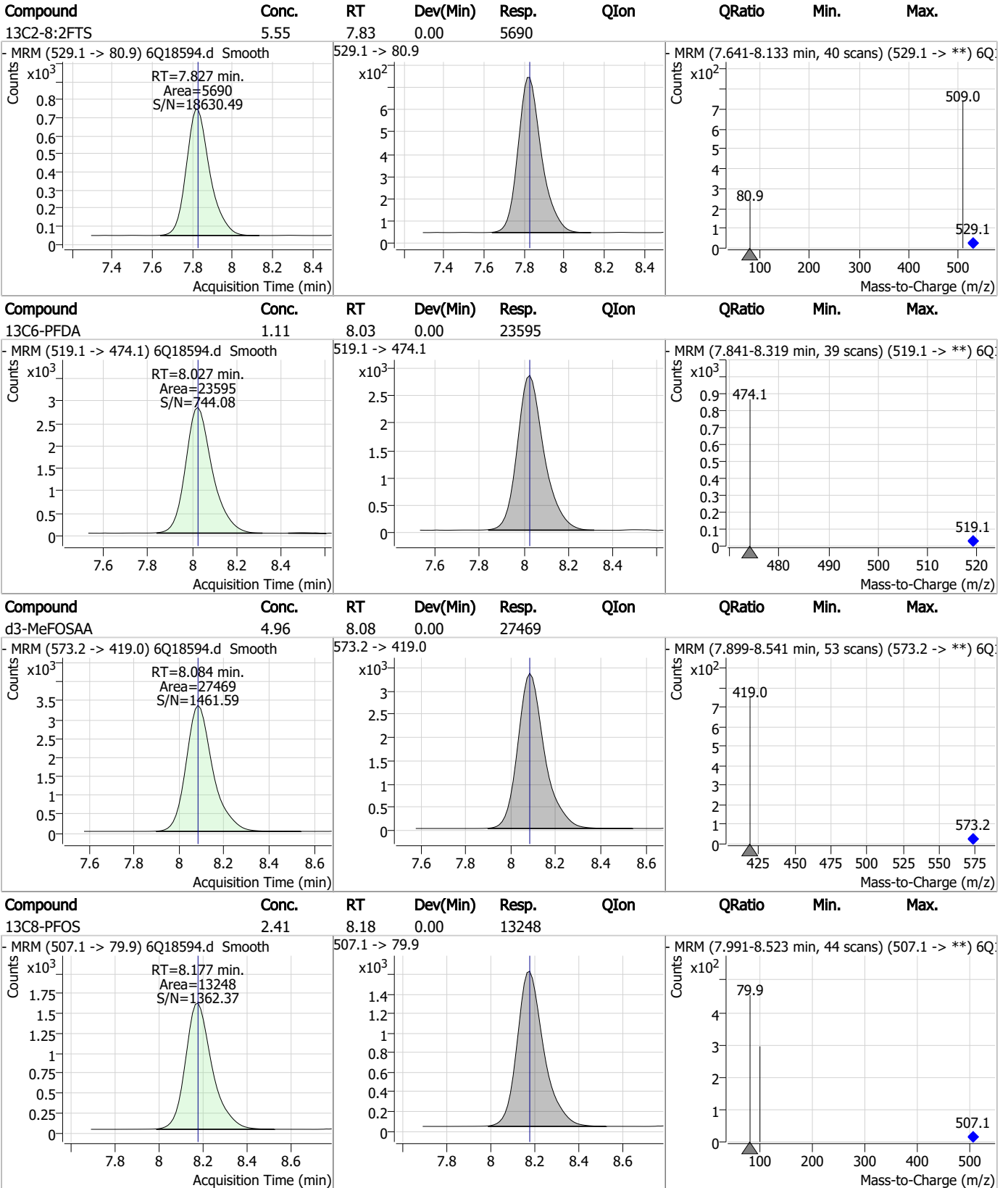
7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.22
7

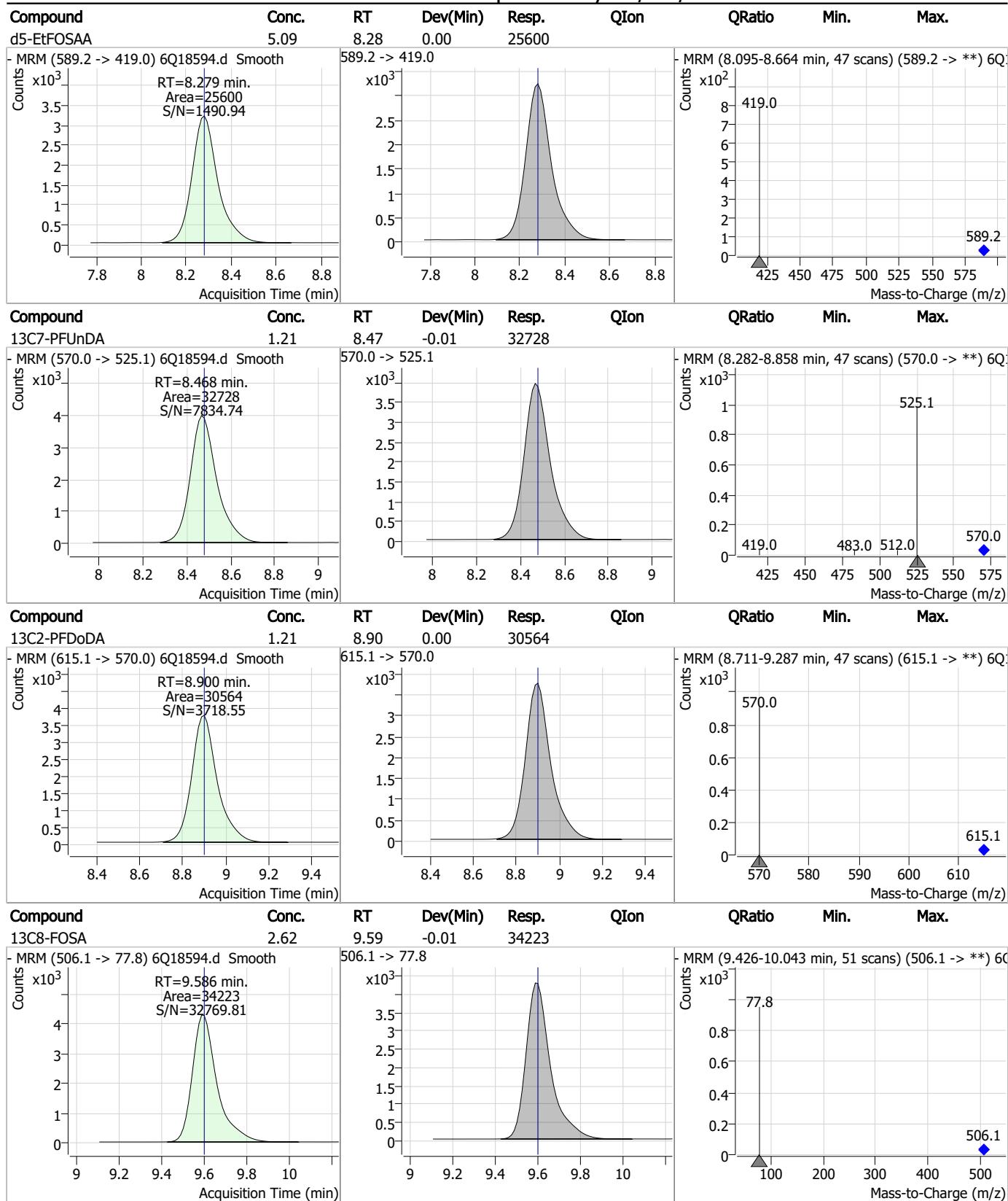
Perfluorinated Compounds by LC/MS/MS



7.2.2

7

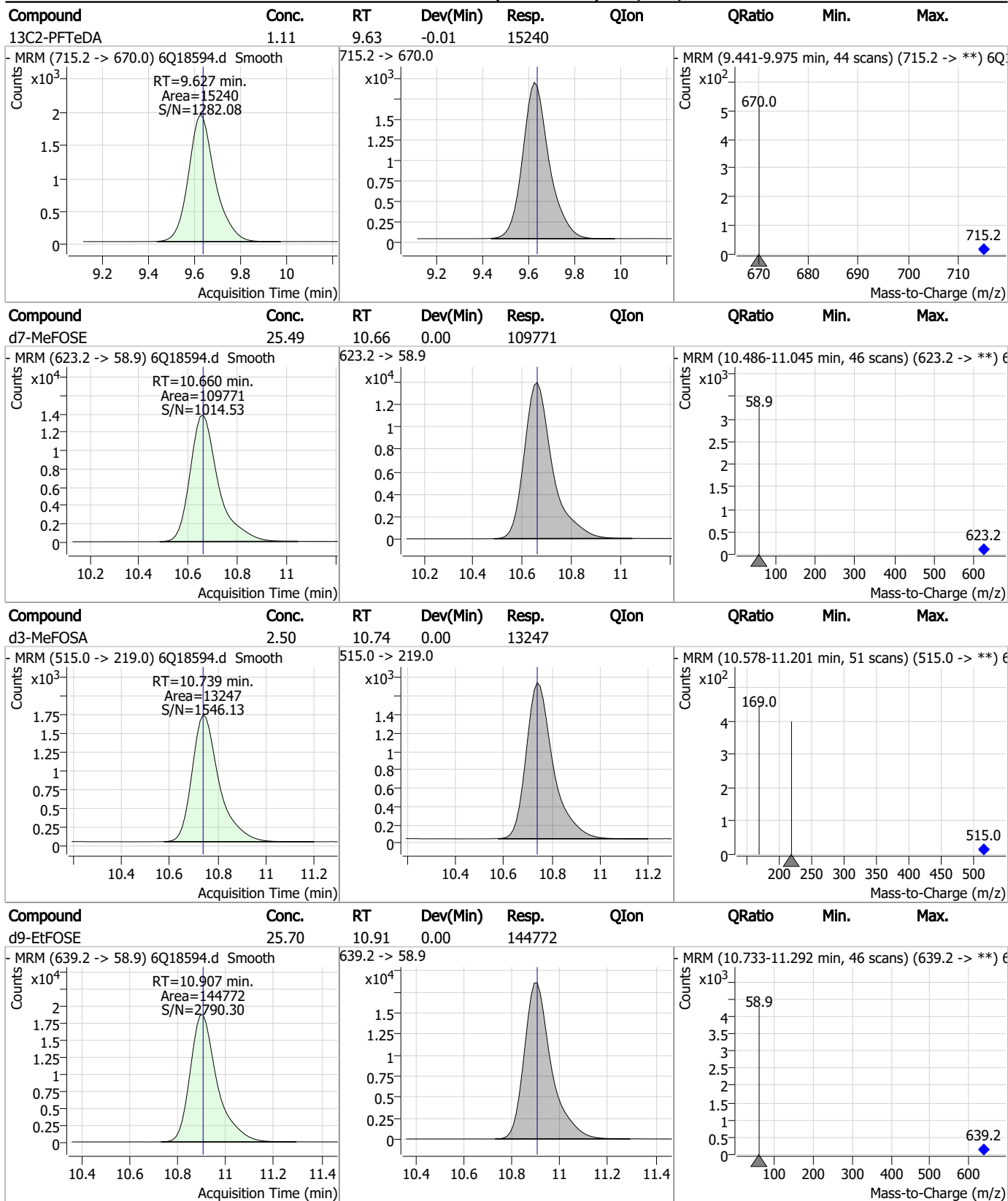
Perfluorinated Compounds by LC/MS/MS



7.2.2
7

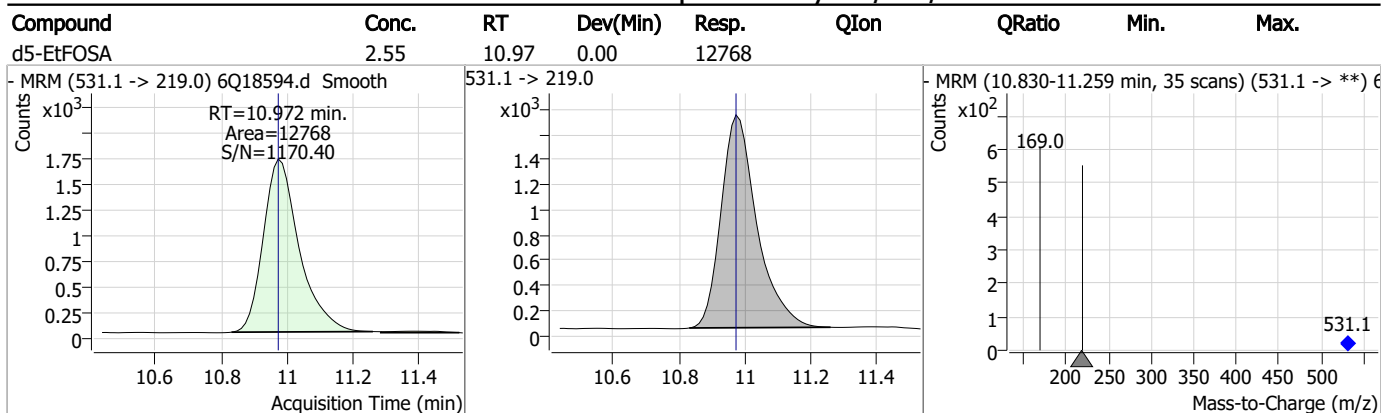


Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS



7.2.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18654.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:28:53 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.810 | 216.8 -> 171.9 | 181253 | 10.00 µg/L | -0.012 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 60788 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 67031 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 64030 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 99544 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 42936 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 24749 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 34147 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30886 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16325 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 34464 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 23837 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15570 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14233 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3829 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5669 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 6001 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30248 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 39973 | 10.00 µg/L | -0.012 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26401 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 115640 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 143934 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13484 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13550 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17692 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 76893 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10612 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 100403 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 37284 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 54054 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 62187 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3829 | 5.41 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 108.2% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5669 | 5.52 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 110.3% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 6001 | 5.76 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 115.1% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30886 | 1.19 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 95.4% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16325 | 1.16 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 92.7% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 23837 | 2.54 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.5% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15570 | 2.63 µg/L | 0.000 |

7.2.3
7

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.1% | |
| 13C4-PFBA | 2.810 | 216.8 -> 171.9 | 181253 | 9.90 µg/L | -0.012 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.0% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 64030 | 2.63 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.2% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 67031 | 2.55 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.9% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 60788 | 5.03 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 24749 | 1.13 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 90.6% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 34147 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 98.0% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 34464 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 99544 | 2.65 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.9% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14233 | 2.51 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.4% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 42936 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.4% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30248 | 5.30 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 105.9% | |
| 13C3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 39973 | 9.78 µg/L | -0.012 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13550 | 2.48 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.2% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26401 | 5.08 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 115640 | 26.02 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 104.1% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 143934 | 24.77 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 99.1% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13484 | 2.61 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.2% | |

| Target Compounds | RT | Transition | Response | Conc. Units | QValue |
|------------------|-------|----------------|----------|-------------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | |
| | | 327.1 -> 80.9 | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | |
| | | 427.1 -> 80.9 | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | |
| | | 527.1 -> 80.8 | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | |
| | | 584.2 -> 526.0 | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | |
| | | 498.1 -> 478.0 | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | |
| | | 570.1 -> 483.0 | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 | - | N.D. | |
| | | 298.7 -> 98.8 | | | |
| PFDA | 8.608 | 512.9 -> 469.0 | 0 | µg/L m | 1 |
| | | 512.9 -> 219.0 | 0 | | |
| PFDODA | - | 613.1 -> 569.0 | - | N.D. | |
| | | 613.1 -> 319.0 | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |

7.2.3
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | |
| | | 363.1 -> 319.0 | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | |
| | | 449.0 -> 79.9 | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | |
| | | 313.0 -> 269.0 | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | |
| | | 398.7 -> 79.9 | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | |
| | | 463.0 -> 419.0 | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | |
| | | 548.8 -> 79.9 | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | |
| | | 413.0 -> 369.0 | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | |
| | | 498.9 -> 79.9 | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | |
| | | 263.0 -> 219.0 | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| | | 511.9 -> 219.0 | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | |
| | | 616.1 -> 58.9 | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | |
| | | 229.0 -> 84.9 | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.2.3
7

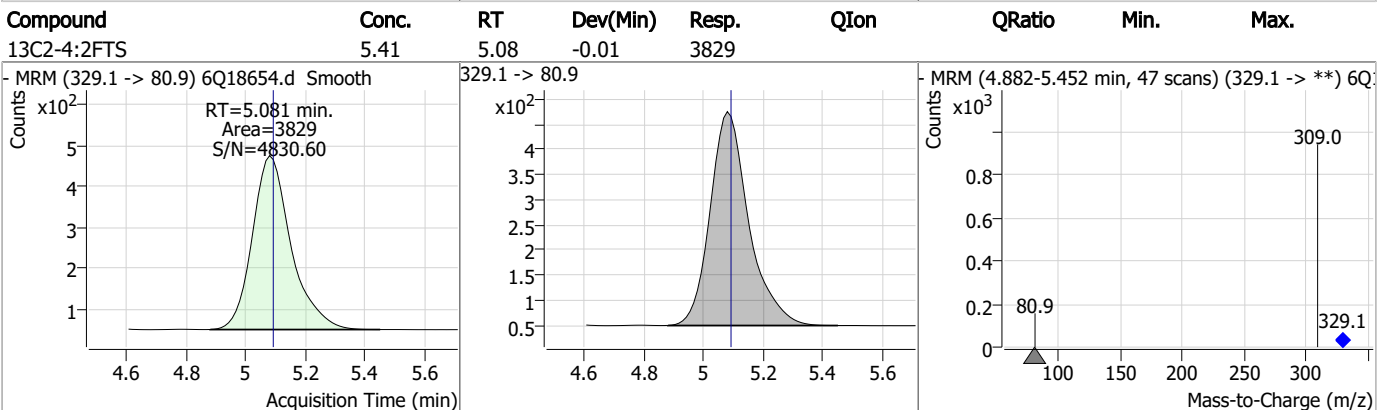
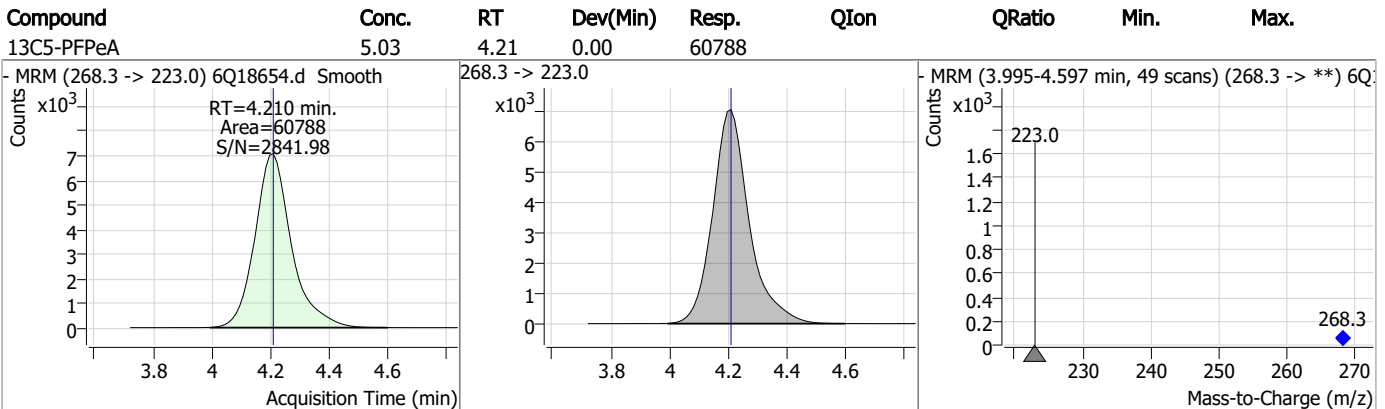
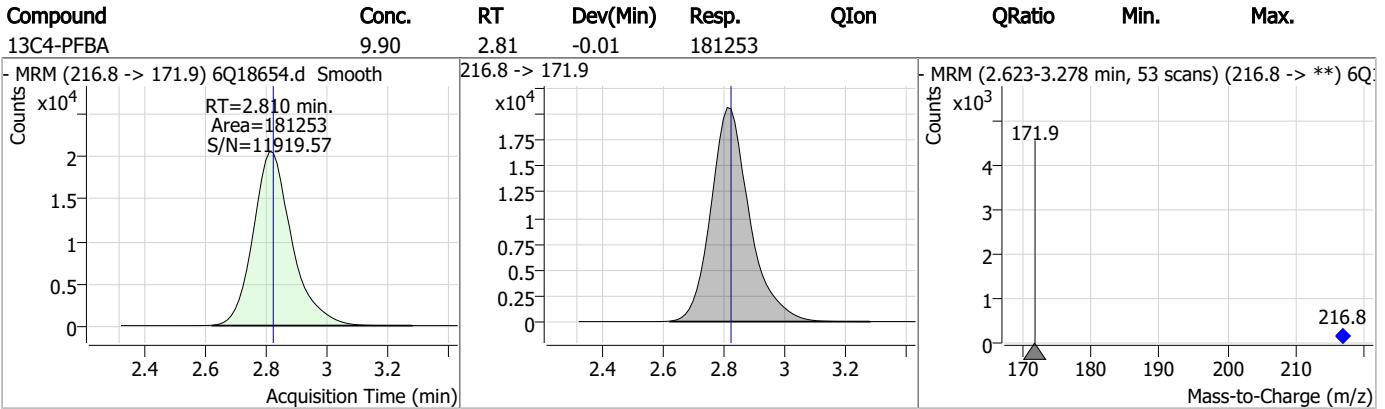
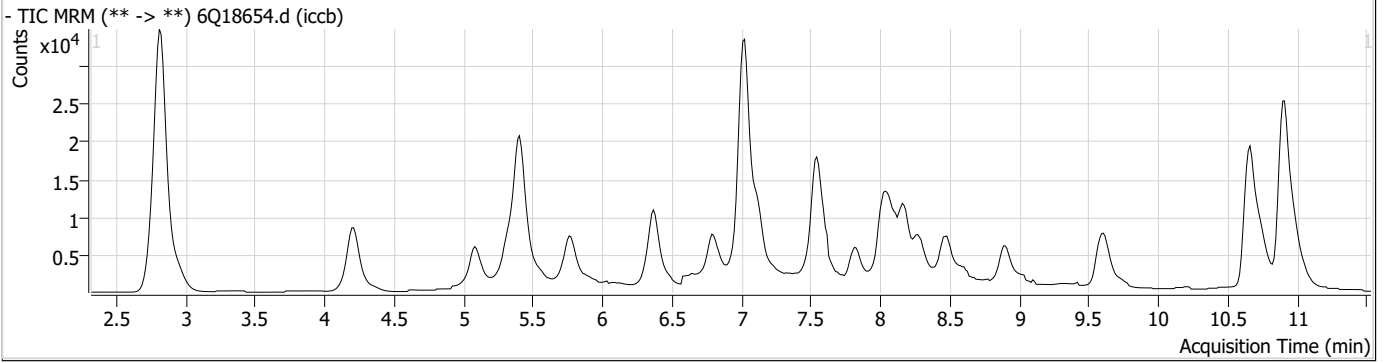
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

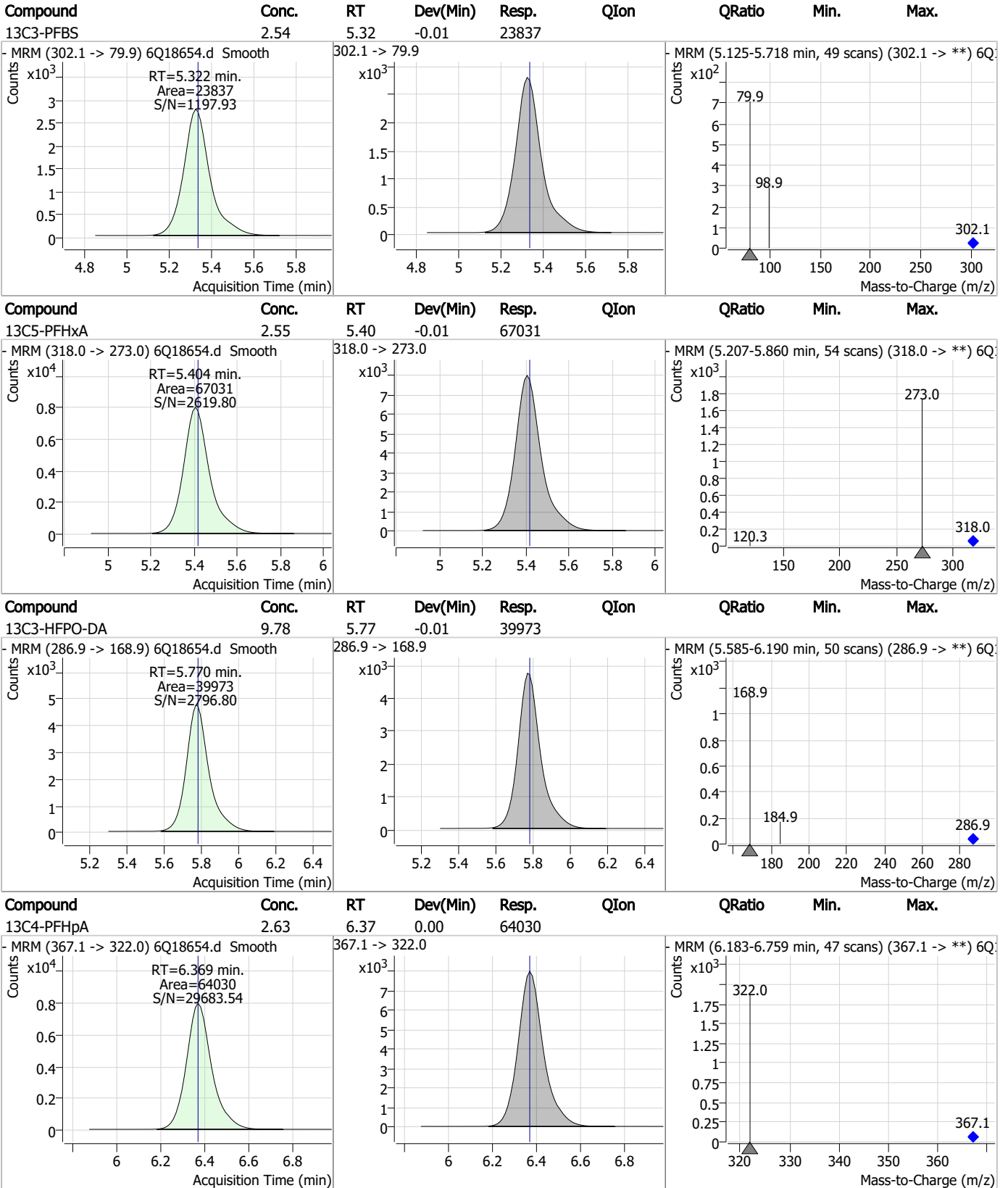
7.2.3

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.2.3

7



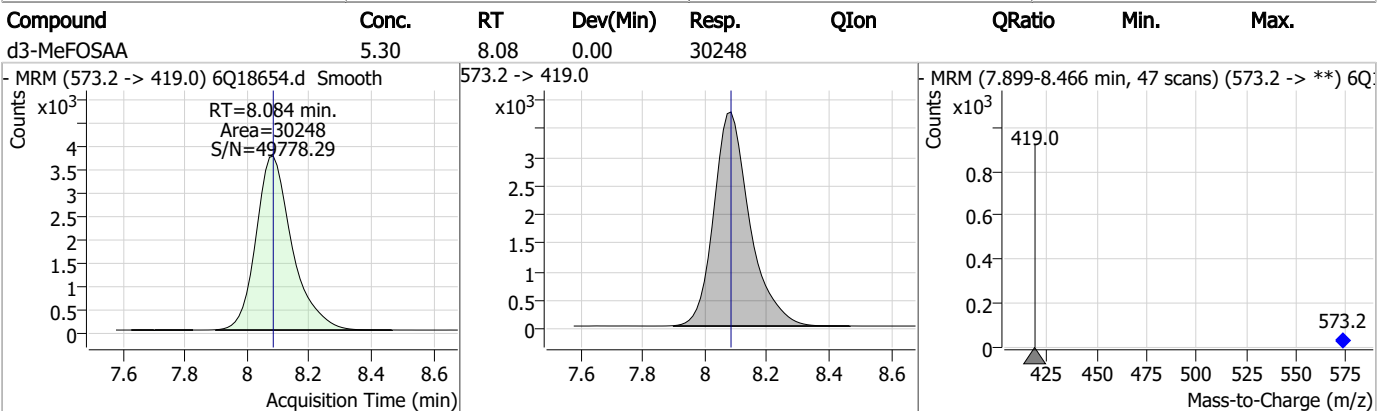
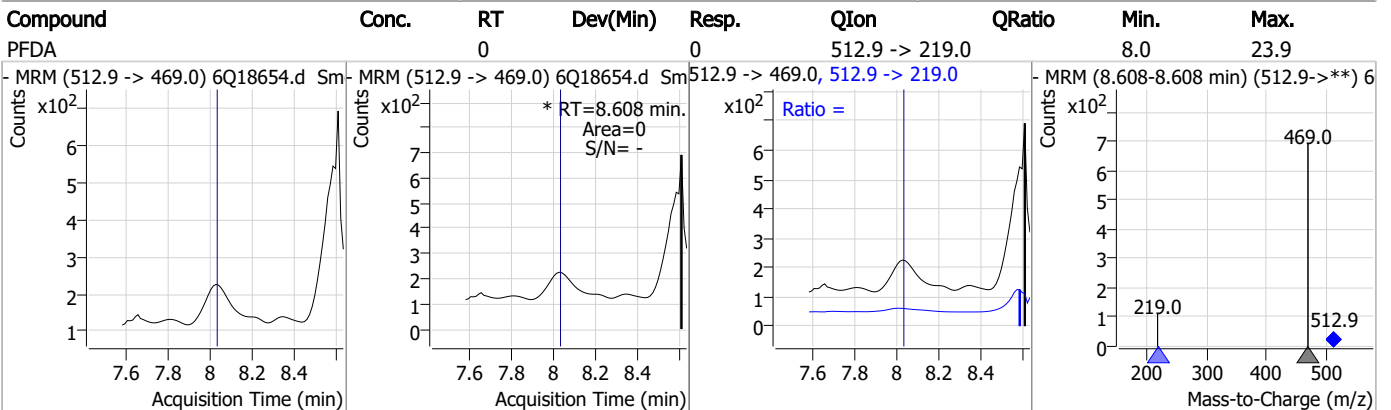
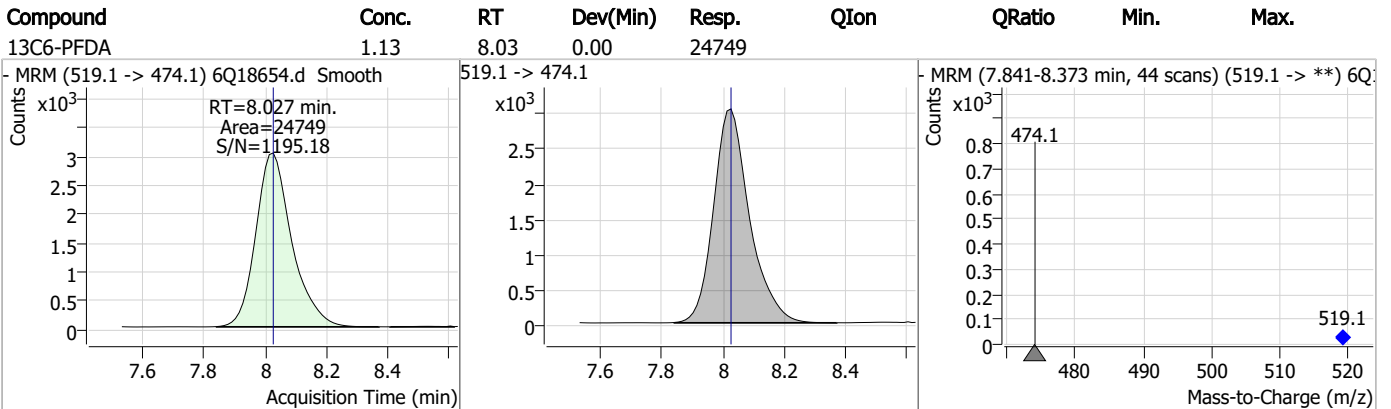
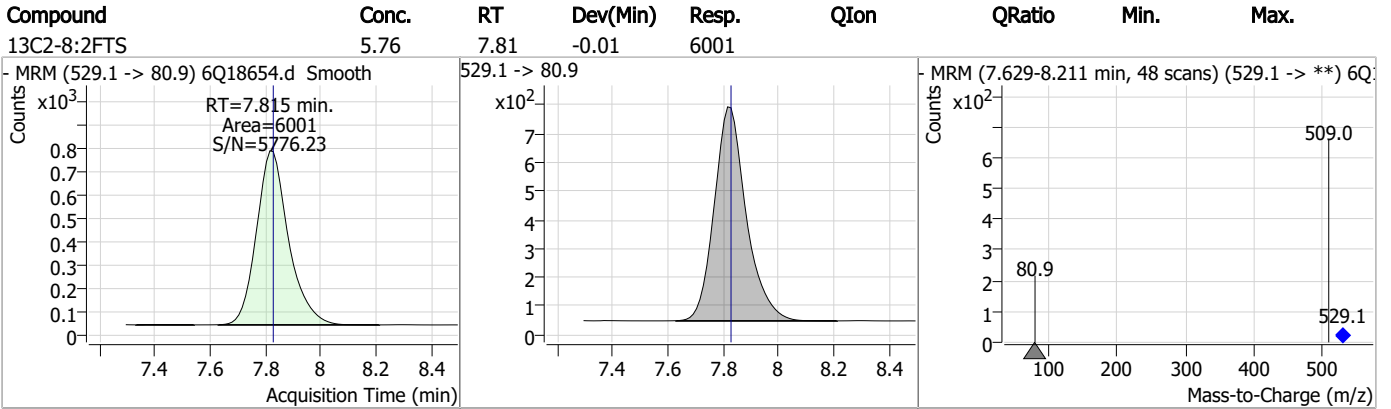
Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C2-6:2FTS | 5.52 | 6.80 | 0.00 | 5669 | | | | |
| | | | | | | | | |
| 13C8-PFOA | 2.65 | 7.03 | 0.00 | 99544 | | | | |
| | | | | | | | | |
| 13C3-PFHxS | 2.63 | 7.13 | 0.00 | 15570 | | | | |
| | | | | | | | | |
| 13C9-PFNA | 1.21 | 7.54 | -0.01 | 42936 | | | | |
| | | | | | | | | |

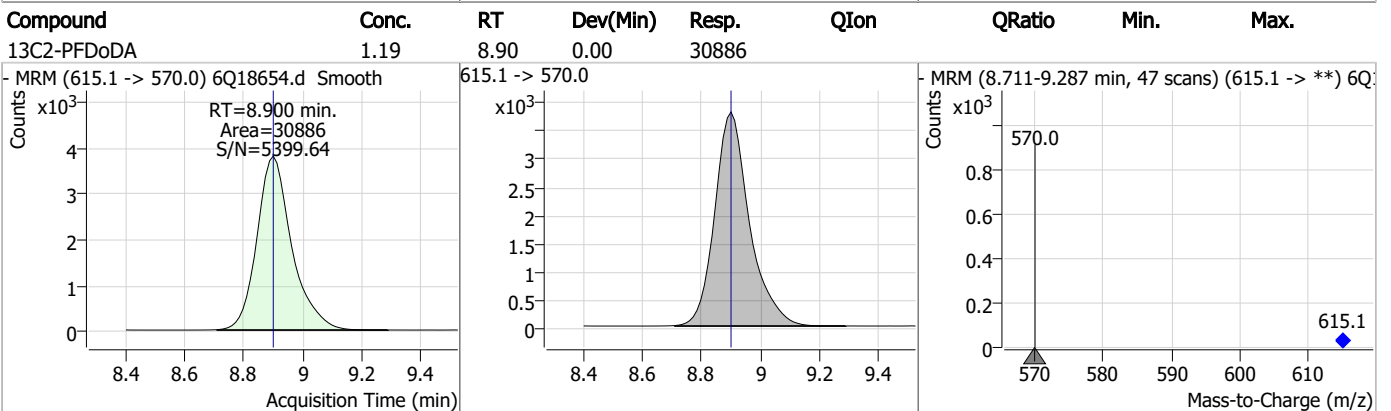
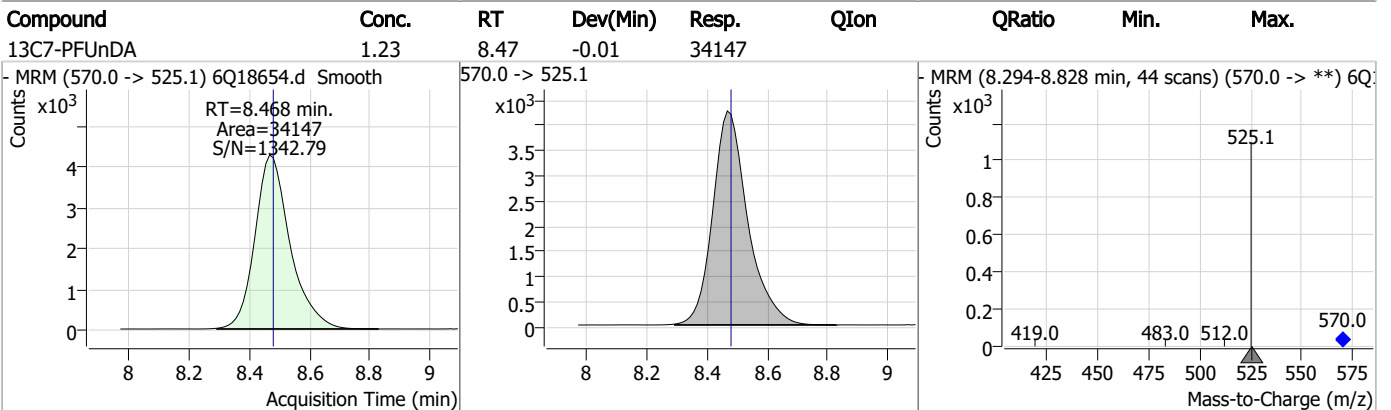
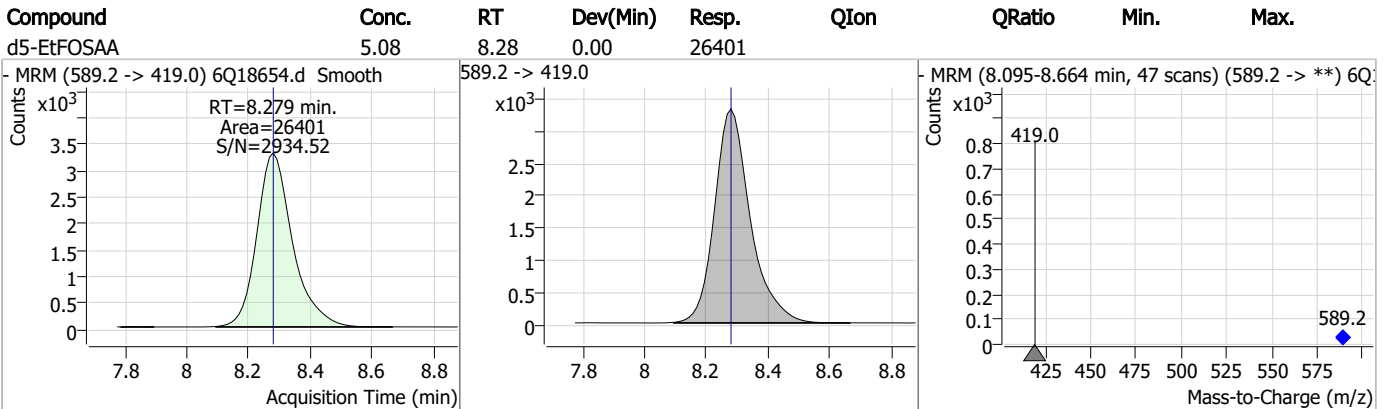
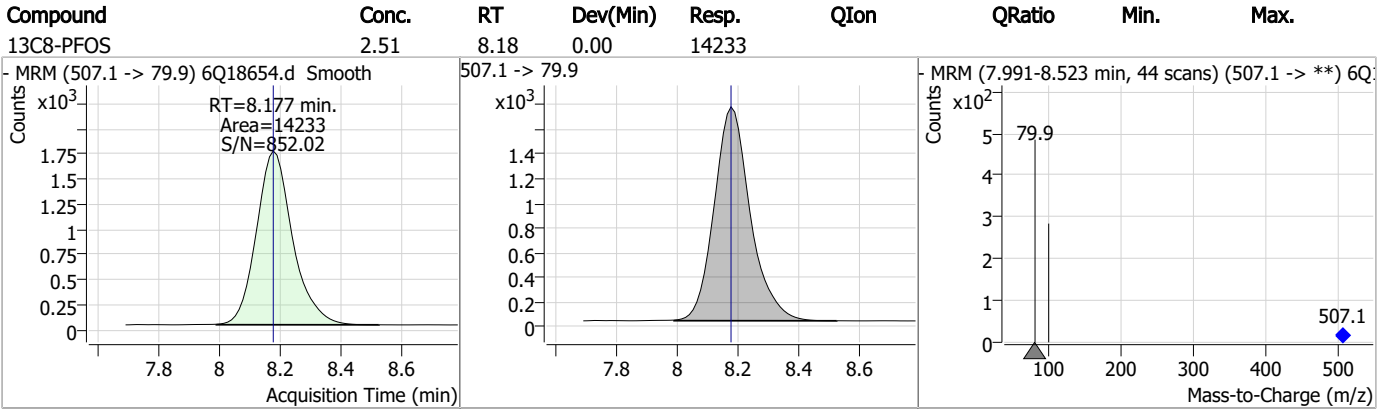
7.2.3
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Perfluorinated Compounds by LC/MS/MS



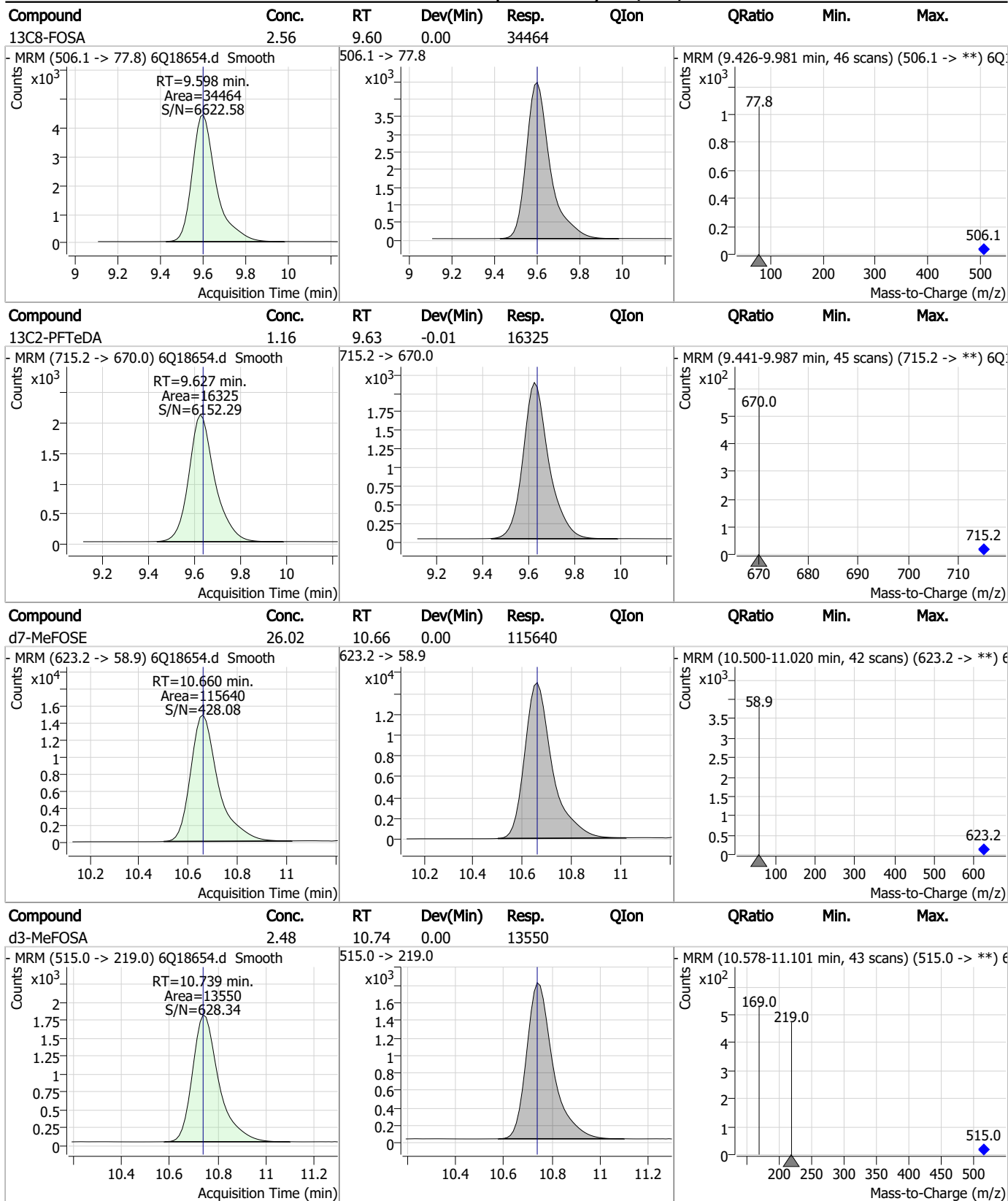
Perfluorinated Compounds by LC/MS/MS



7.2.3

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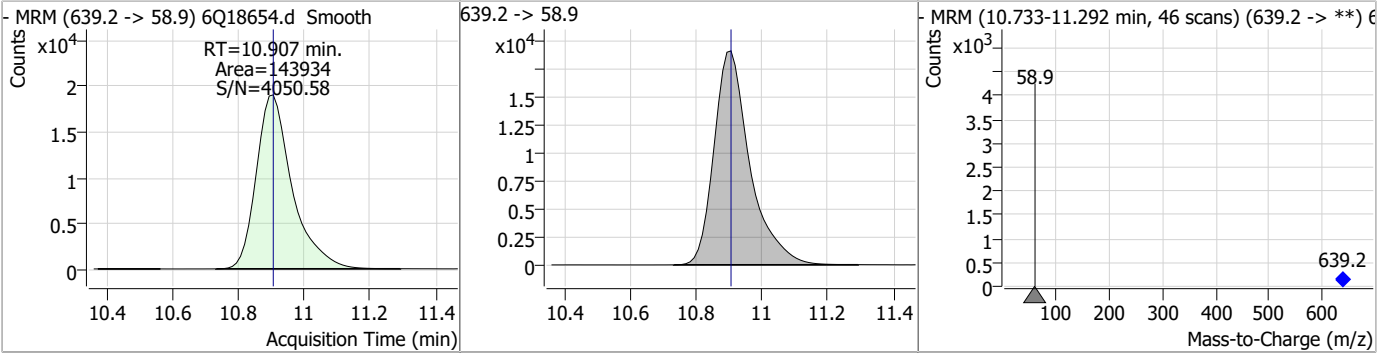
Perfluorinated Compounds by LC/MS/MS



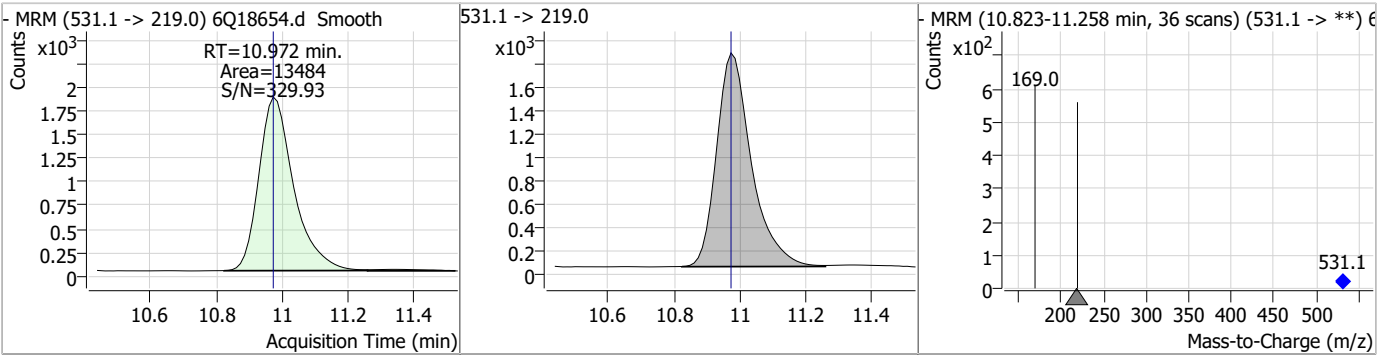
7.2.3
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Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 24.77 | 10.91 | 0.00 | 143934 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.61 | 10.97 | 0.00 | 13484 | | | | |



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18643.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:49:31 AM
 Sample Name : iccb
 Vial : P1-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 181409 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 61451 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 68545 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 62426 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 99039 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 42973 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 26075 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36244 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31127 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17112 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 34447 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 24805 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.118 | 402.1 -> 79.9 | 14991 | 2.50 µg/L | -0.012 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14276 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3861 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5732 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 6001 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 29088 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40281 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27155 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 114054 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 147237 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13213 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13471 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 18139 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 76340 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10560 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 100813 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.014 | 515.1 -> 470.1 | 37309 | 1.25 µg/L | -0.013 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 51823 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 61441 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3861 | 5.48 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.6% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5732 | 5.60 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 112.1% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 6001 | 5.78 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 115.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31127 | 1.20 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 96.1% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17112 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 97.1% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 24805 | 2.65 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 106.2% | | |
| 13C3-PFHxS | 7.118 | 402.1 -> 79.9 | 14991 | 2.54 µg/L | -0.012 |

7.2.4
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------------------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 181409 | 9.98 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 62426 | 2.60 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.8% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 68545 | 2.64 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.4% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 61451 | 5.14 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.8% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 26075 | 1.19 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 95.4% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36244 | 1.30 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 104.0% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 34447 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 99039 | 2.62 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.9% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14276 | 2.46 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.3% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 42973 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.7% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 29088 | 4.97 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 99.4% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40281 | 9.98 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13471 | 2.40 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.2% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27155 | 5.10 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.0% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 114054 | 25.04 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 100.1% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 147237 | 24.71 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.8% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13213 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.6% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | - | 327.1 -> 307.0 327.1 -> 80.9 | - | N.D. | |
| 6:2FTS | - | 427.1 -> 407.0 427.1 -> 80.9 | - | N.D. | |
| 8:2FTS | - | 527.1 -> 507.0 527.1 -> 80.8 | - | N.D. | |
| EtFOSAA | - | 584.2 -> 419.1 584.2 -> 526.0 | - | N.D. | |
| FOSA | - | 498.1 -> 77.9 498.1 -> 478.0 | - | N.D. | |
| MeFOSAA | - | 570.1 -> 419.0 570.1 -> 483.0 | - | N.D. | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 298.7 -> 98.8 | - | N.D. | |
| PFDA | 8.571 | 512.9 -> 469.0 512.9 -> 219.0 | 0 0 | µg/L m | 1 |
| PFDODA | - | 613.1 -> 569.0 613.1 -> 319.0 | - | N.D. | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |

7.2.4
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|----|----------------|----------|-------|-------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | | |
| | | 363.1 -> 319.0 | | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | | |
| | | 449.0 -> 79.9 | | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | | |
| | | 313.0 -> 269.0 | | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | | |
| | | 398.7 -> 79.9 | | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | | |
| | | 463.0 -> 419.0 | | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | | |
| | | 548.8 -> 79.9 | | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | | |
| | | 413.0 -> 369.0 | | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | | |
| | | 498.9 -> 79.9 | | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | | |
| | | 263.0 -> 219.0 | | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | | |
| | | 349.1 -> 98.9 | | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | | |
| | | 713.1 -> 168.9 | | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | | |
| | | 663.0 -> 168.9 | | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | | |
| | | 563.1 -> 269.1 | | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | | |
| | | 632.9 -> 452.9 | | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | | |
| | | 532.8 -> 353.0 | | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | | |
| | | 376.9 -> 84.8 | | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | | |
| | | 284.9 -> 184.9 | | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | | |
| | | 241.0 -> 117.0 | | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | | |
| | | 341.0 -> 217.0 | | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | | |
| | | 441.0 -> 336.9 | | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | | |
| | | 526.0 -> 169.0 | | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | | |
| | | 511.9 -> 219.0 | | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | | |
| | | 616.1 -> 58.9 | | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | | |
| | | 699.1 -> 98.8 | | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | | |
| | | 295.0 -> 84.9 | | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | | |
| | | 229.0 -> 84.9 | | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | | |
| | | 314.8 -> 82.9 | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.2.4
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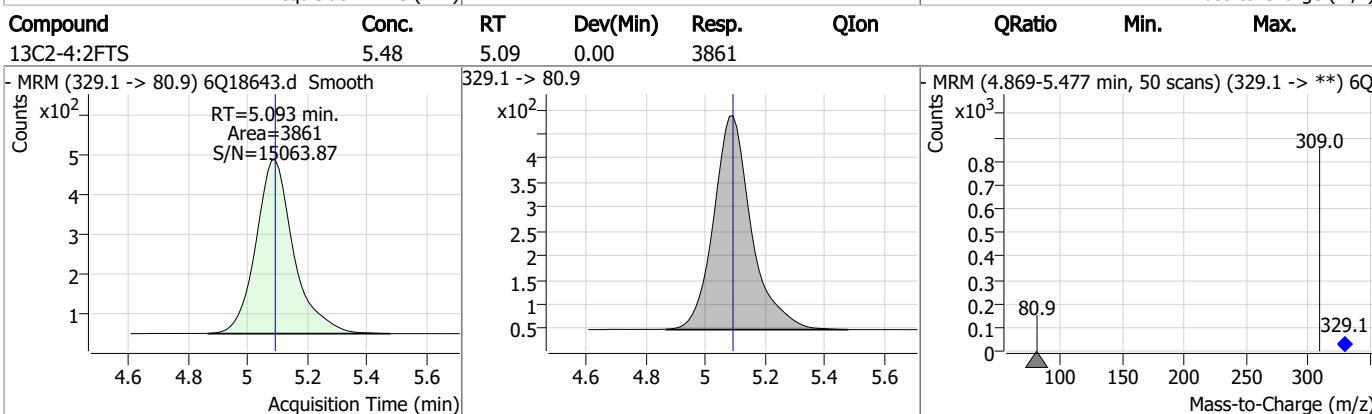
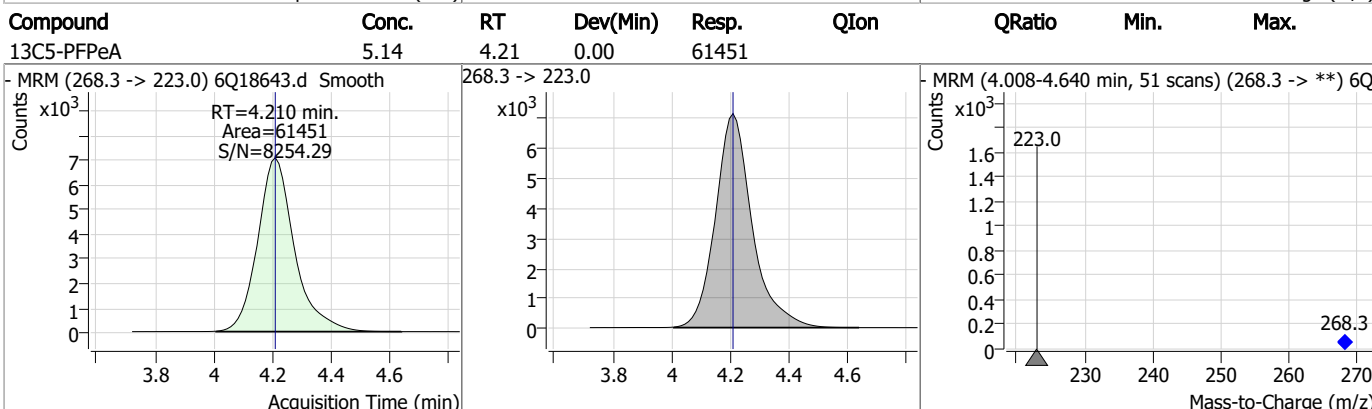
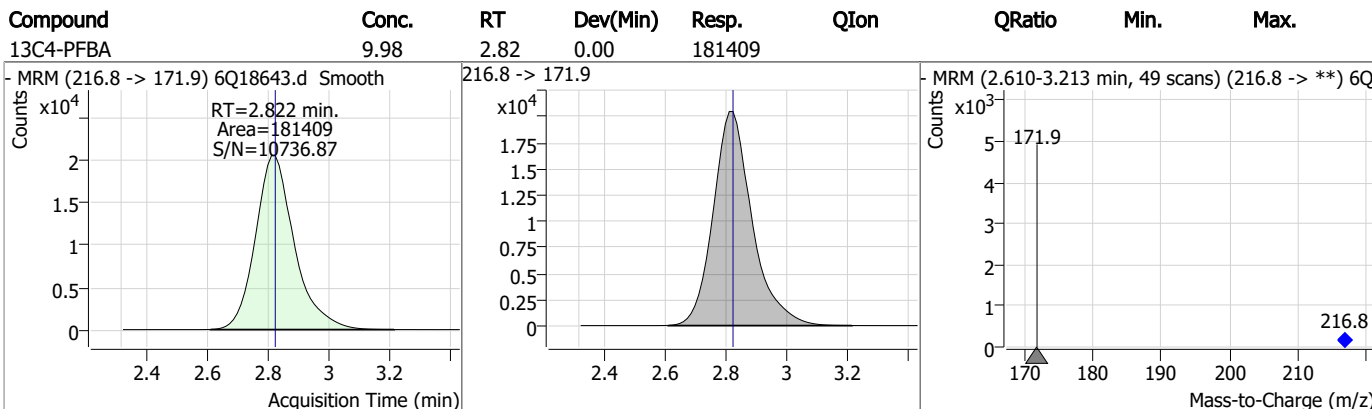
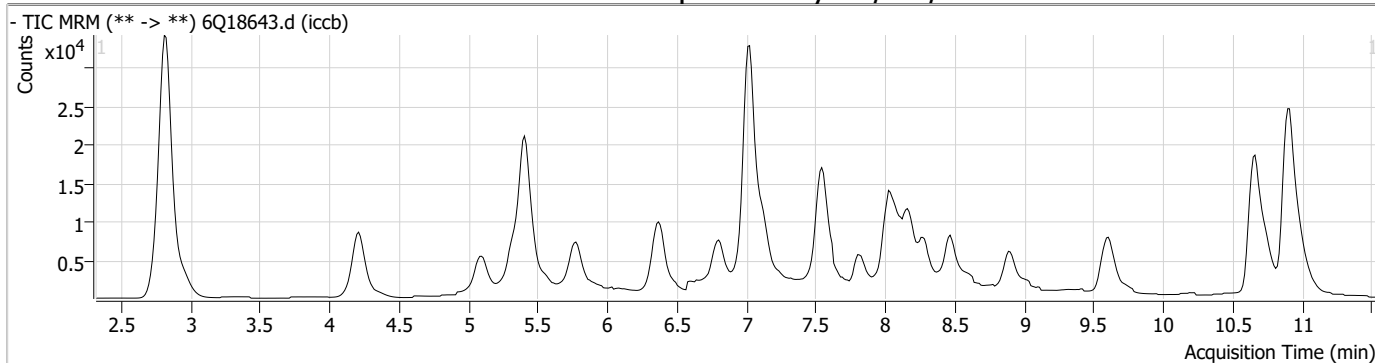
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.2.4

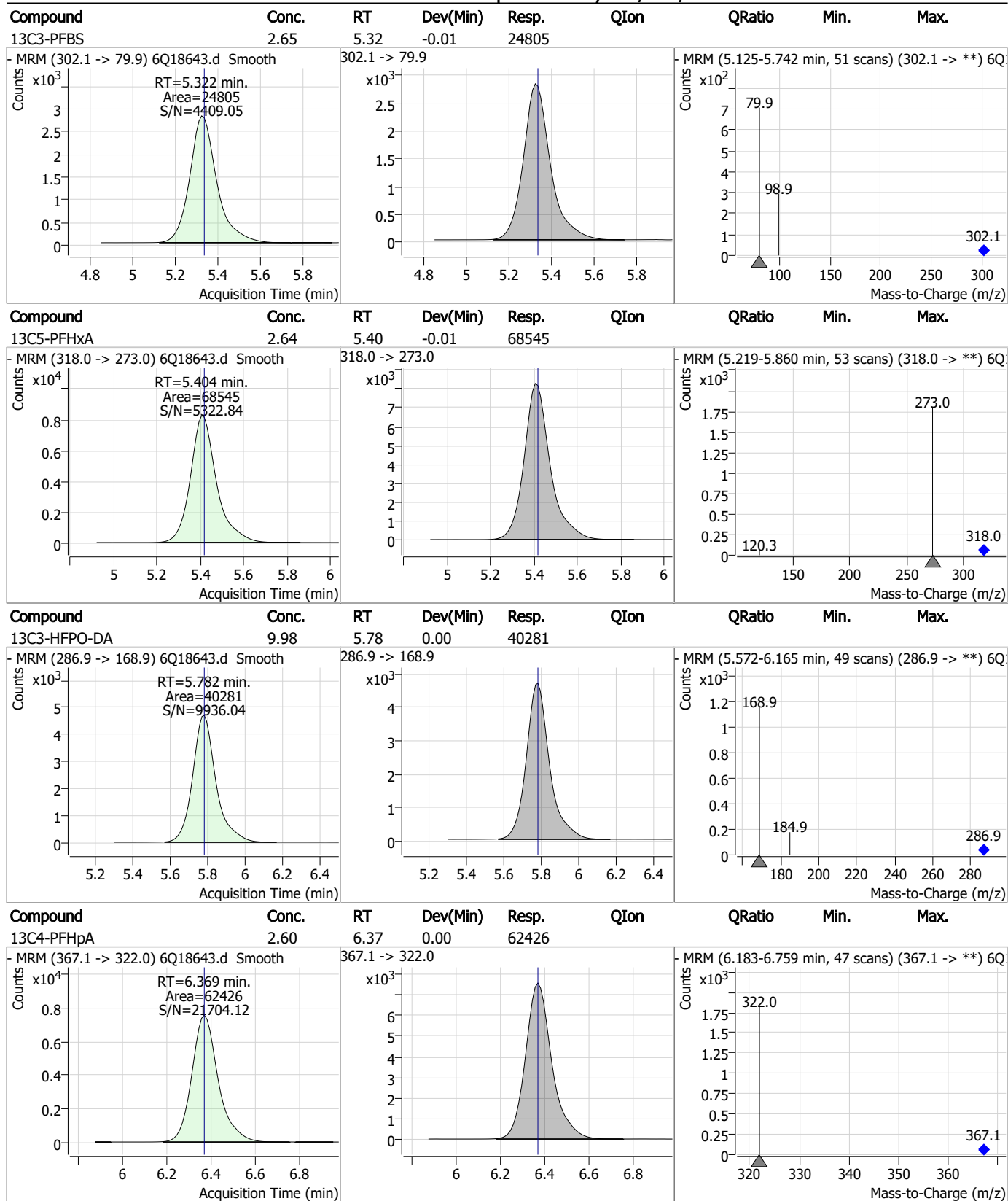
7

Perfluorinated Compounds by LC/MS/MS



7.2.4
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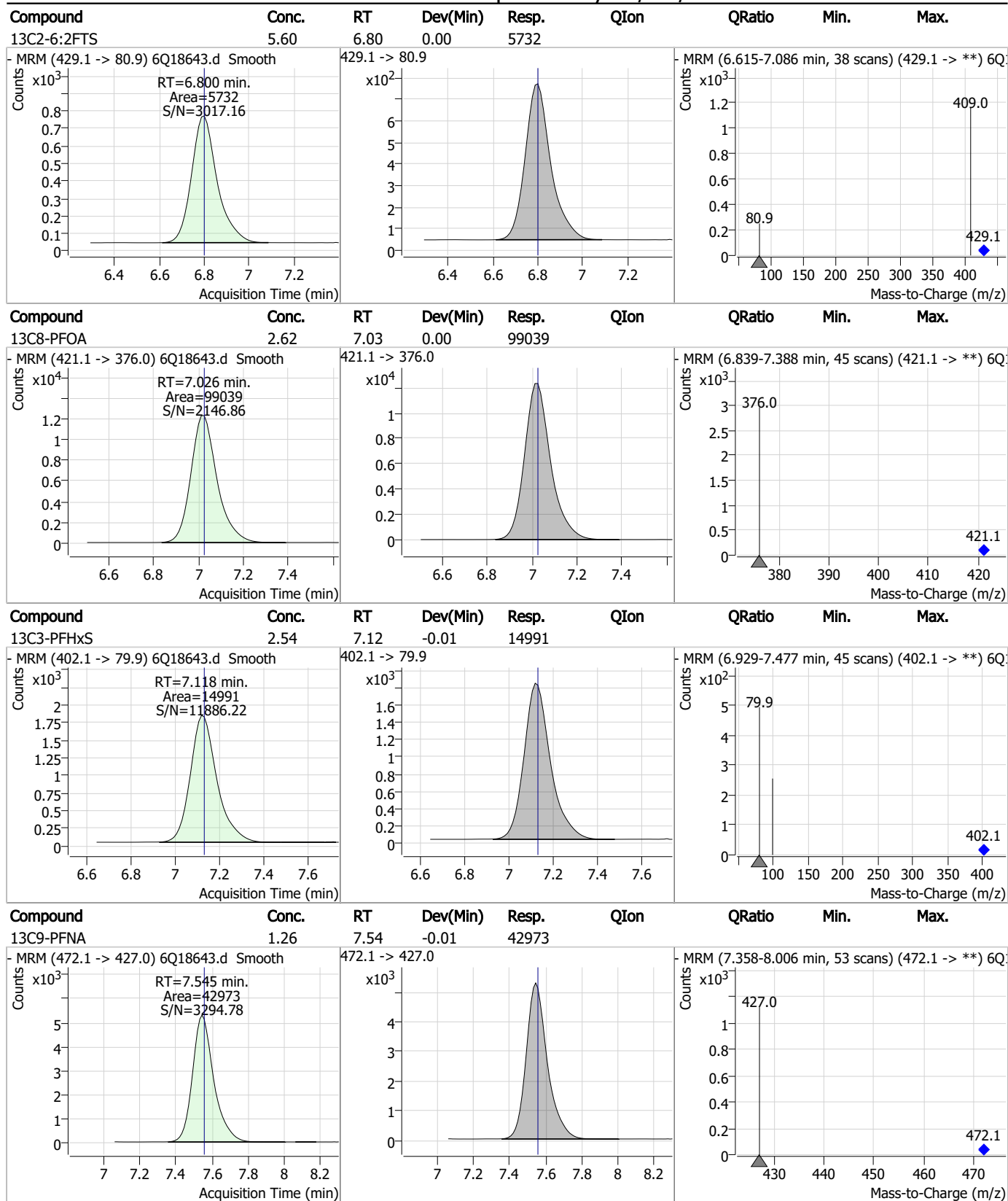
Perfluorinated Compounds by LC/MS/MS



7.24
7

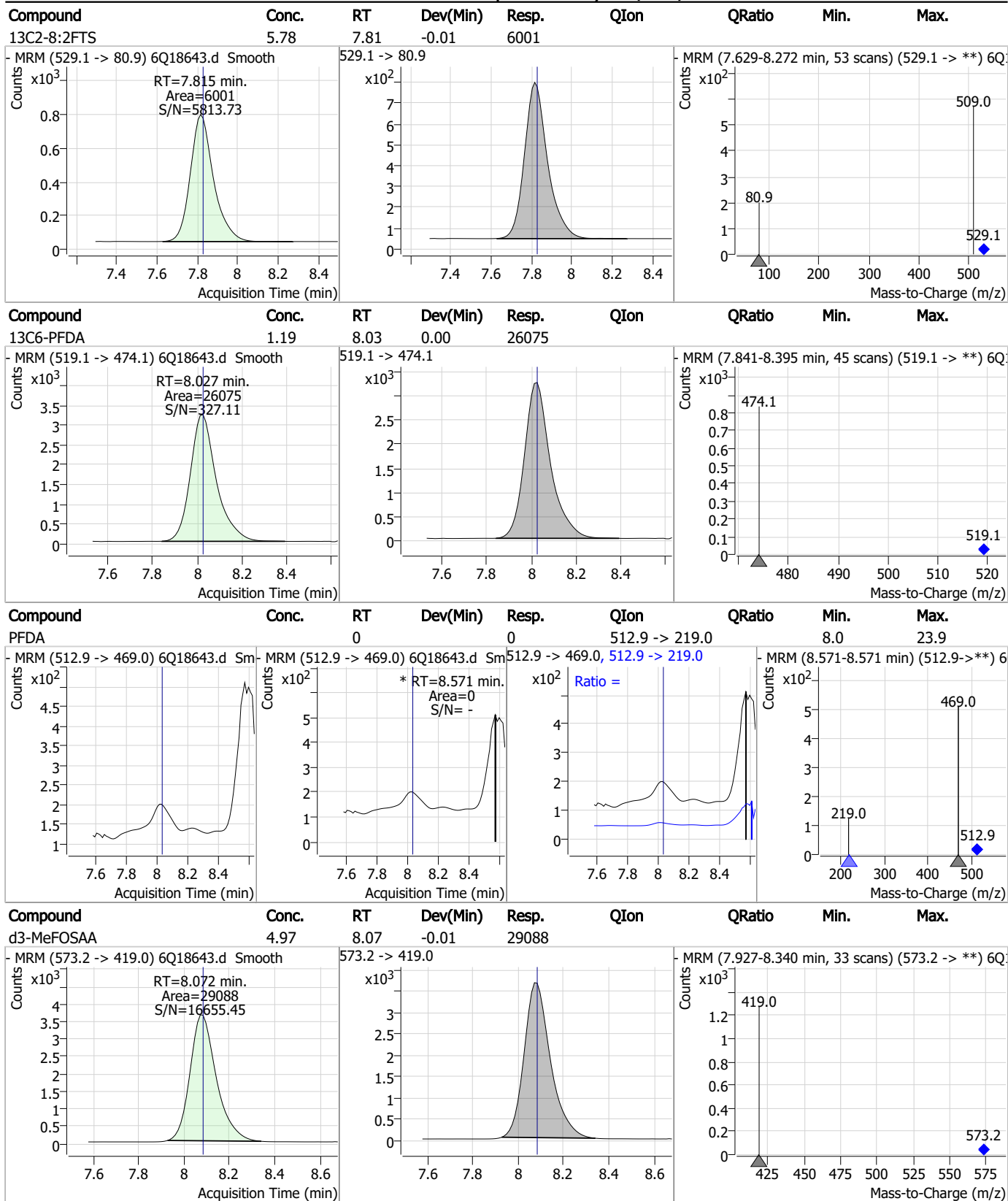


Perfluorinated Compounds by LC/MS/MS



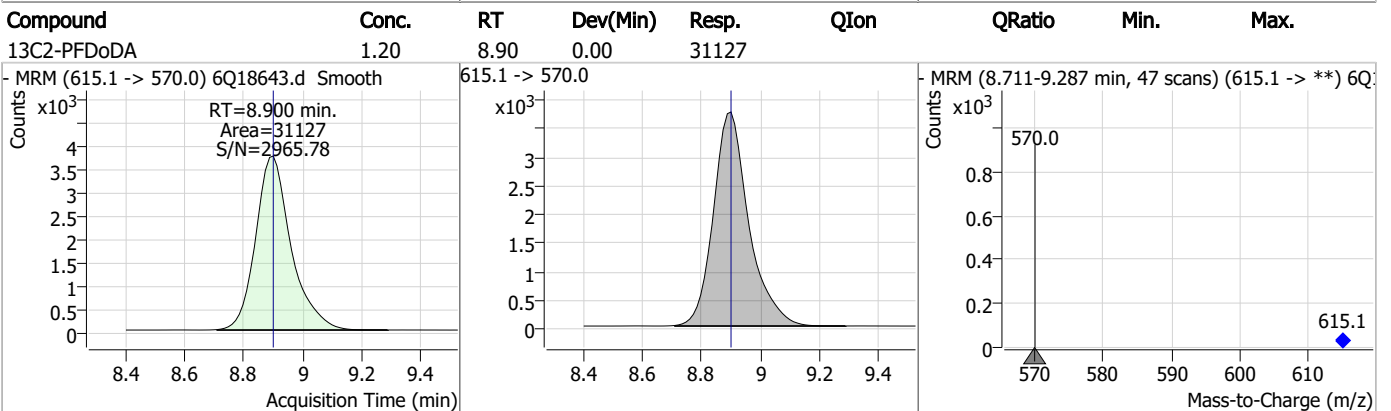
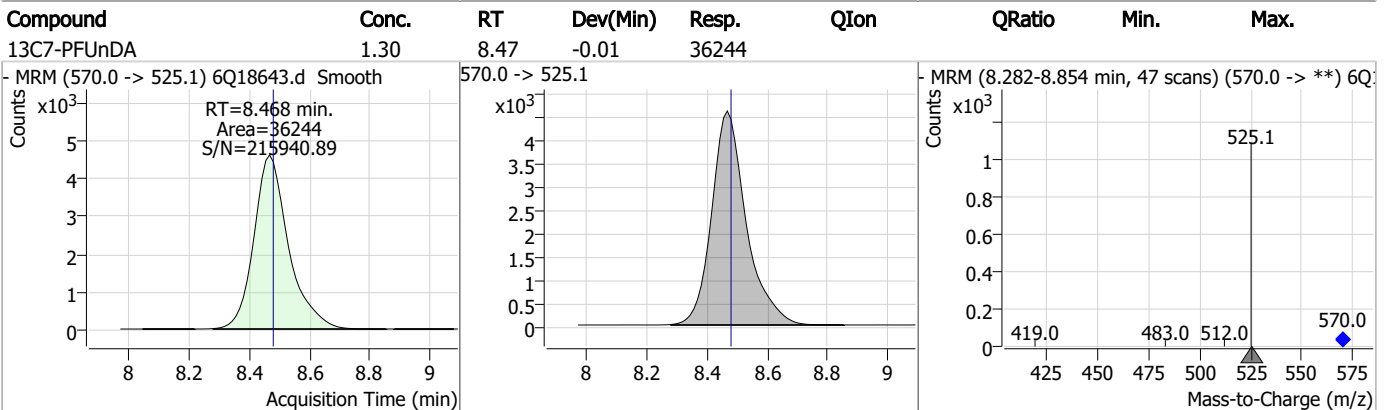
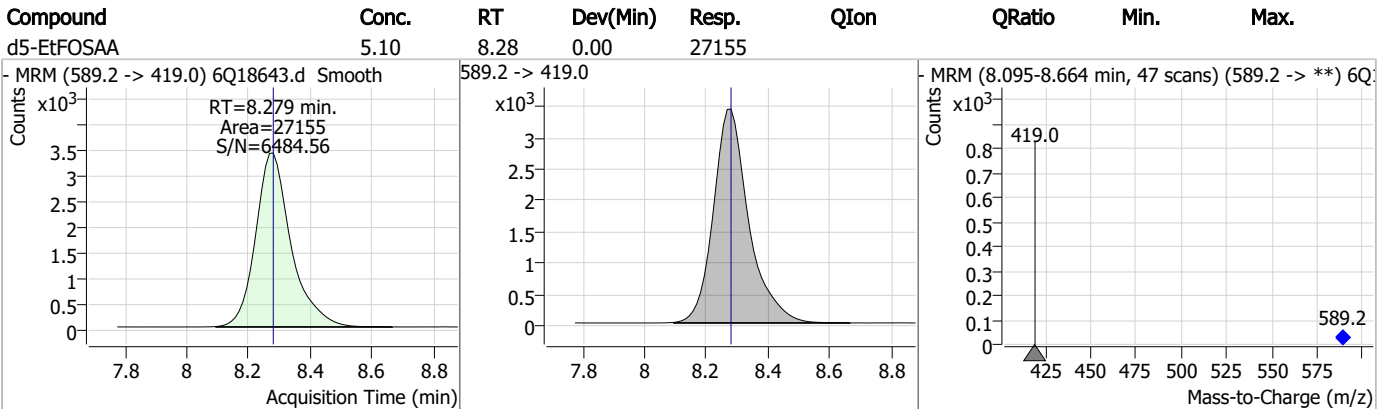
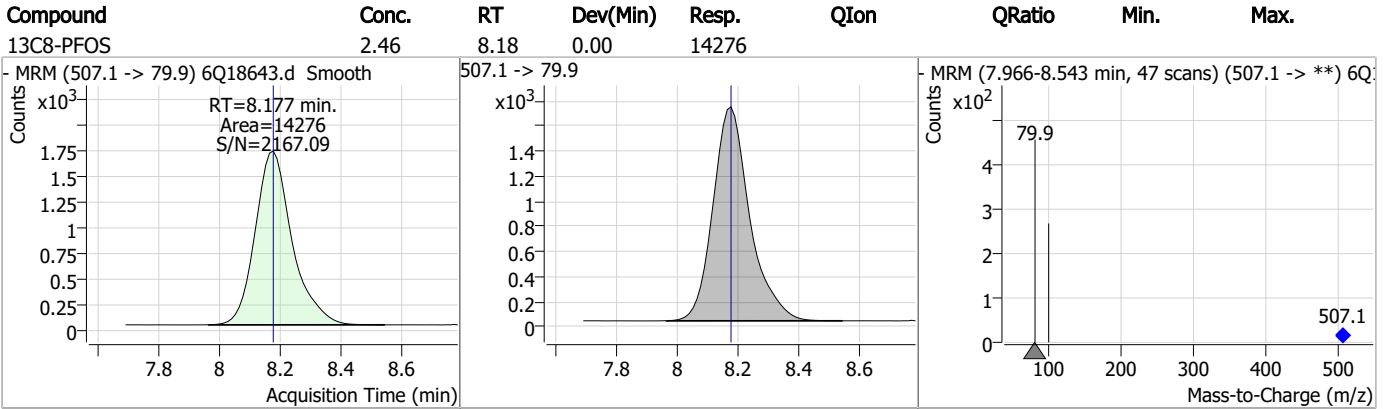
7.2.4
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Perfluorinated Compounds by LC/MS/MS

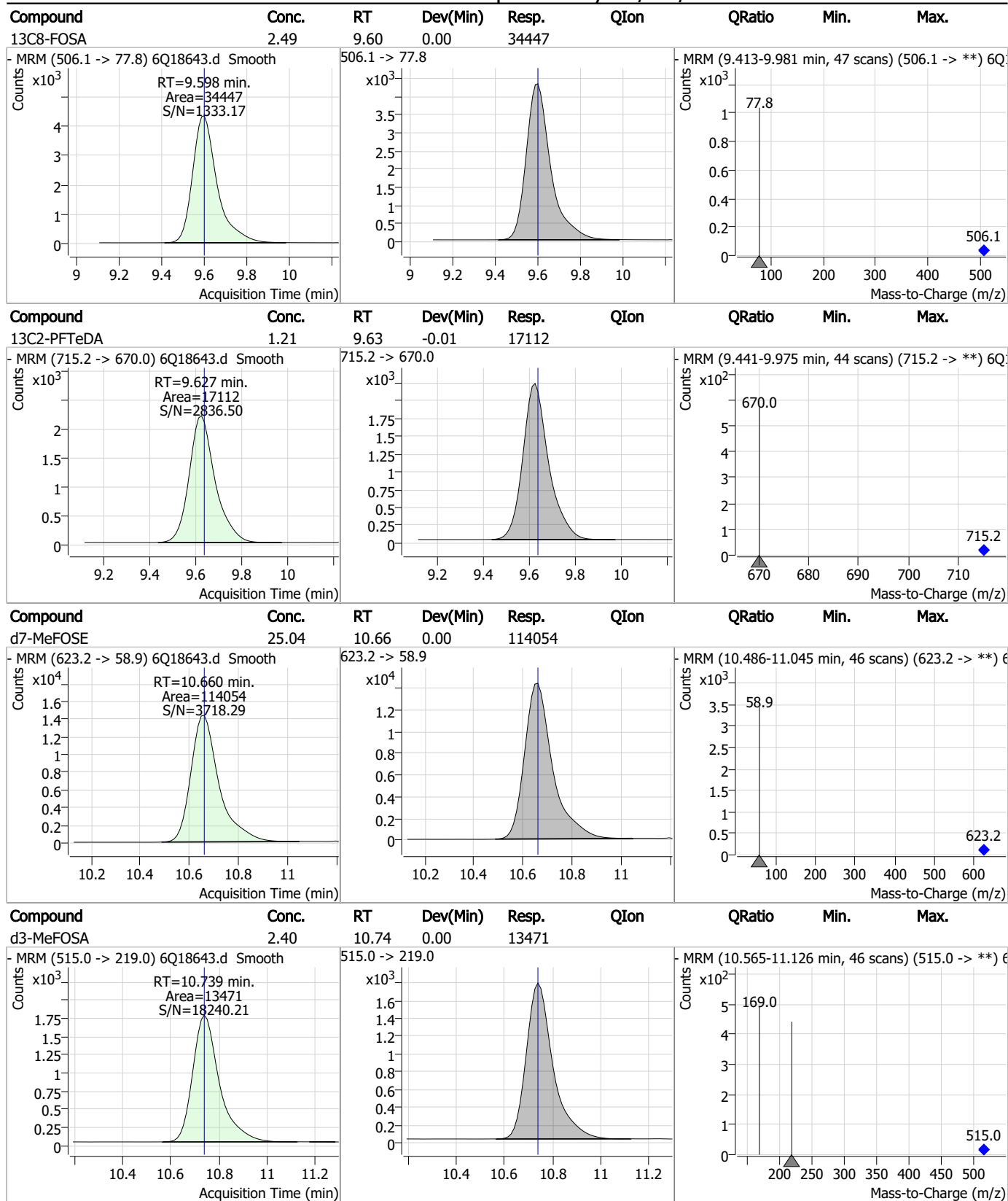


7.2.4
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Perfluorinated Compounds by LC/MS/MS



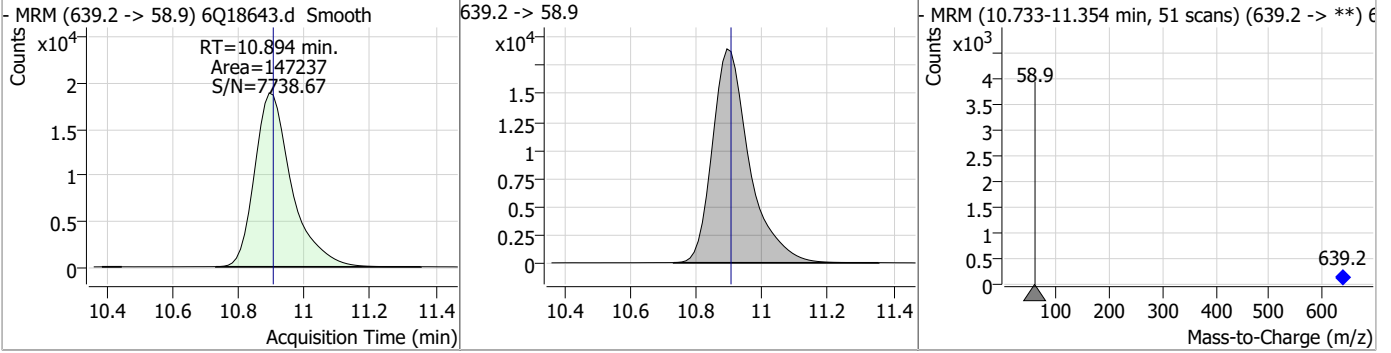
Perfluorinated Compounds by LC/MS/MS



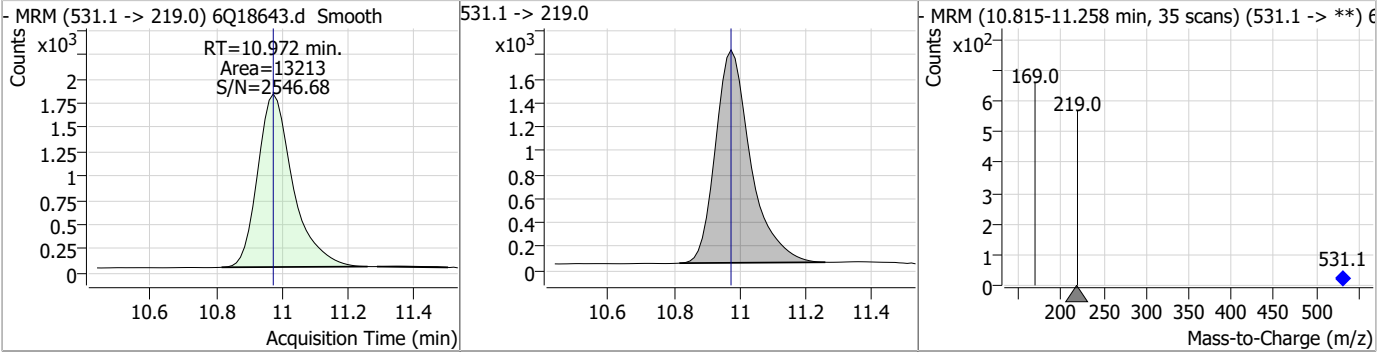
7.2.4
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Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 24.71 | 10.89 | -0.01 | 147237 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.49 | 10.97 | 0.00 | 13213 | | | | |



7.2.4

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18644.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:03:59 AM
 Sample Name : op97092-bs
 Vial : P2-A1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.860 | 216.8 -> 171.9 | 41475 | 10.00 µg/L | 0.037 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 50145 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 58533 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 53183 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 79719 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 37258 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 22033 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 27811 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25927 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13444 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 22270 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 20977 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 12715 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12722 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3380 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4502 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5070 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 24754 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 34990 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21761 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 64659 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 99475 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9145 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 9376 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13383 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 63367 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8622 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 78049 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 28322 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 41876 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 49525 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3380 | 5.88 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 117.5% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4502 | 5.39 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 107.8% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5070 | 5.99 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 119.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25927 | 1.32 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 105.5% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13444 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.5% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 20977 | 2.75 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 110.0% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 12715 | 2.64 µg/L | 0.000 |

7.3.1
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.6% | |
| 13C4-PFBA | 2.860 | 216.8 -> 171.9 | 41475 | 2.75 µg/L | 0.037 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 27.5% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 53183 | 2.74 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 109.7% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 58533 | 2.79 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 111.7% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 50145 | 5.21 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 104.1% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 22033 | 1.33 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 106.2% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 27811 | 1.31 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 105.1% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 22270 | 2.18 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 87.3% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 79719 | 2.73 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 109.1% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12722 | 2.97 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 118.7% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 37258 | 1.35 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 108.0% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 24754 | 5.73 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 114.6% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 34990 | 10.75 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 107.5% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 9376 | 2.27 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 90.7% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 21761 | 5.54 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 110.8% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 64659 | 19.24 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 76.9% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 99475 | 22.63 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 90.5% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9145 | 2.34 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.4% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 47778 | 9.73 µg/L | 96 |
| | | 327.1 -> 80.9 | 17827 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 47513 | 10.74 µg/L | 100 |
| | | 427.1 -> 80.9 | 16059 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 26337 | 9.34 µg/L | 93 |
| | | 527.1 -> 80.8 | 10013 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 7754 | 2.77 µg/L | 94 |
| | | 584.2 -> 526.0 | 4526 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 19169 | 2.49 µg/L | 98 |
| | | 498.1 -> 478.0 | 712 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 14292 | 2.81 µg/L | 99 |
| | | 570.1 -> 483.0 | 2812 | | |
| PFBA | 2.868 | 212.8 -> 168.9 | 14767 | 10.75 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 15981 | 2.24 µg/L | 98 |
| | | 298.7 -> 98.8 | 5942 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 67485 | 2.64 µg/L | 98 |
| | | 512.9 -> 219.0 | 11289 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 47267 | 2.66 µg/L | 97 |
| | | 613.1 -> 319.0 | 6953 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 7287 | 2.29 µg/L | 98 |

7.3.1
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| | | 599.0 -> 98.8 | 3657 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 61113 | 2.60 | µg/L | 98 |
| | | 363.1 -> 169.0 | 9620 | | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 14604 | 2.39 | µg/L | 98 |
| | | 449.0 -> 98.9 | 6976 | | | |
| PFHxA | 5.420 | 313.0 -> 269.0 | 51559 | 2.62 | µg/L | 98 |
| | | 313.0 -> 118.9 | 2619 | | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 14276 | 2.48 | µg/L | m 100 |
| | | 398.7 -> 98.9 | 6784 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 67602 | 2.56 | µg/L | 99 |
| | | 463.0 -> 219.0 | 12956 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 11845 | 2.32 | µg/L | 90 |
| | | 548.8 -> 98.9 | 6561 | | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 95075 | 2.79 | µg/L | 98 |
| | | 413.0 -> 169.0 | 15690 | | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 13351 | 2.30 | µg/L | m 97 |
| | | 498.9 -> 98.8 | 6812 | | | |
| PFPeA | 4.224 | 263.0 -> 219.0 | 63469 | 5.27 | µg/L | 100 |
| PFPeS | 6.422 | 349.1 -> 79.9 | 14344 | 2.50 | µg/L | 98 |
| | | 349.1 -> 98.9 | 6586 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 34841 | 2.63 | µg/L | 98 |
| | | 713.1 -> 168.9 | 2945 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 47790 | 2.66 | µg/L | 96 |
| | | 663.0 -> 168.9 | 5105 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 49629 | 2.75 | µg/L | 98 |
| | | 563.1 -> 269.1 | 8057 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 65449 | 4.99 | µg/L | 99 |
| | | 632.9 -> 452.9 | 19960 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 105969 | 5.12 | µg/L | 96 |
| | | 532.8 -> 353.0 | 32512 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 239358 | 5.15 | µg/L | 100 |
| | | 376.9 -> 84.8 | 63946 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 15392 | 5.19 | µg/L | 95 |
| | | 284.9 -> 184.9 | 1773 | | | |
| 3:3FTCA | 3.709 | 241.0 -> 177.0 | 4471 | 5.80 | µg/L | 97 |
| | | 241.0 -> 117.0 | 596 | | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 212864 | 60.21 | µg/L | 95 |
| | | 341.0 -> 217.0 | 159129 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 152964 | 63.18 | µg/L | 100 |
| | | 441.0 -> 336.9 | 337912 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 21720 | 5.10 | µg/L | 96 |
| | | 526.0 -> 169.0 | 27915 | | | |
| EtFOSE | 10.920 | 630.0 -> 58.9 | 56185 | 12.66 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 18060 | 5.24 | µg/L | 96 |
| | | 511.9 -> 169.0 | 24874 | | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 32913 | 12.81 | µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 3322 | 2.35 | µg/L | 98 |
| | | 699.1 -> 98.8 | 1821 | | | |
| NFDHA | 5.299 | 295.0 -> 201.0 | 12791 | 5.35 | µg/L | 98 |
| | | 295.0 -> 84.9 | 3306 | | | |
| PFMBA | 4.638 | 279.0 -> 85.1 | 45555 | 5.56 | µg/L | 100 |
| PFMPA | 3.388 | 229.0 -> 84.9 | 16823 | 2.64 | µg/L | 100 |
| PFEESA | 5.875 | 314.8 -> 134.9 | 119674 | 4.80 | µg/L | 98 |
| | | 314.8 -> 82.9 | 3965 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.3.1
7

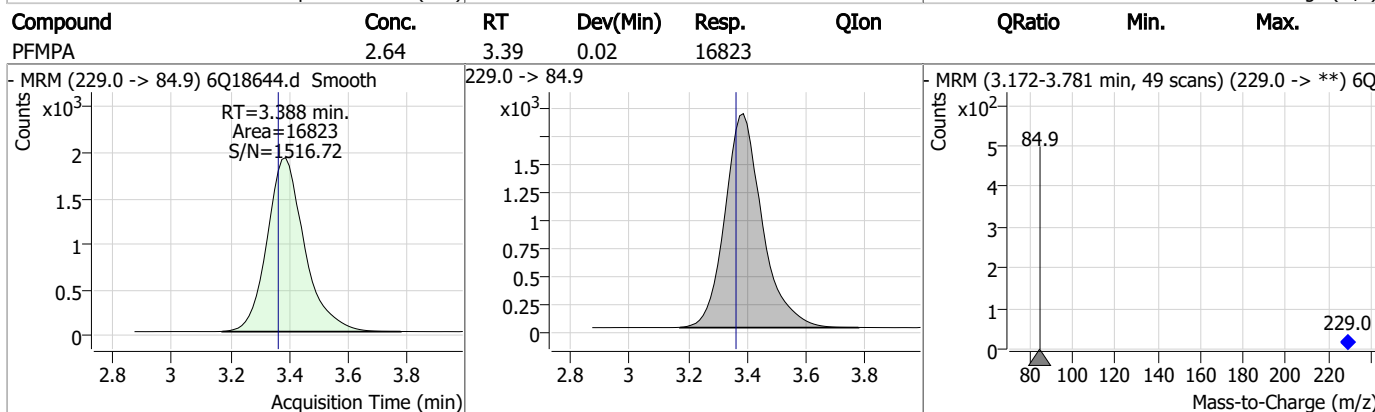
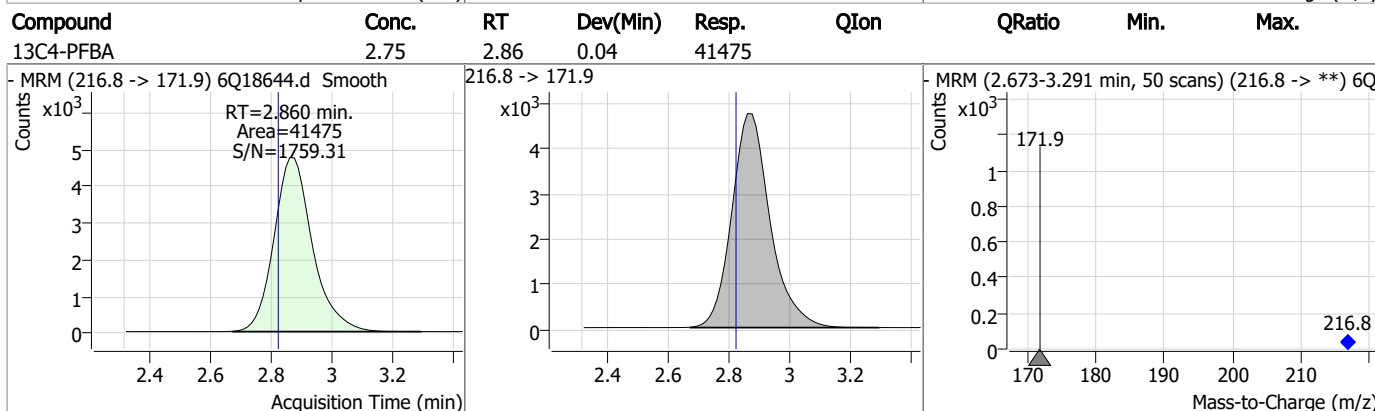
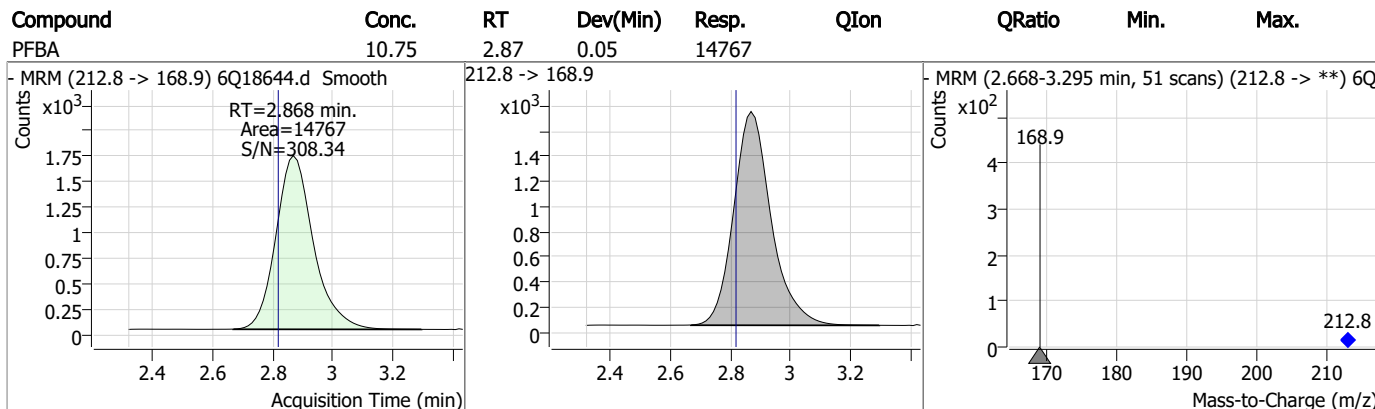
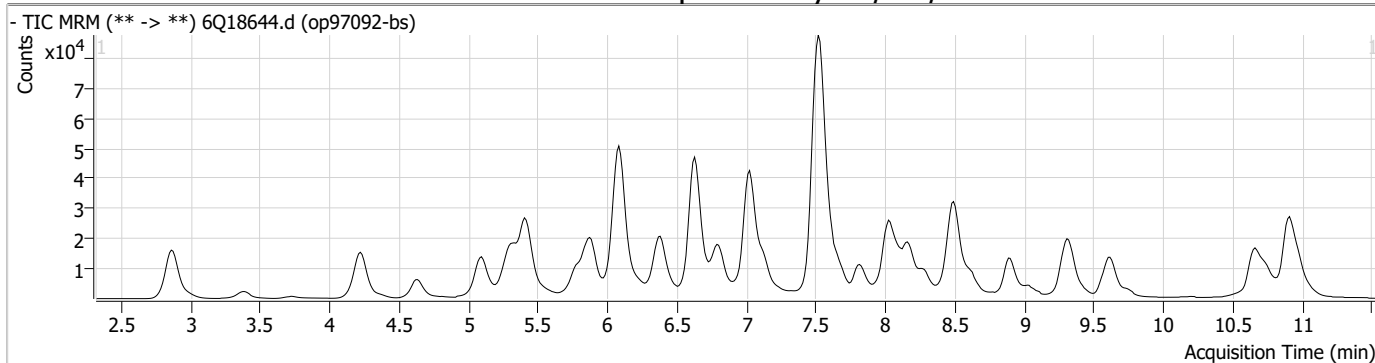
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.3.1

7

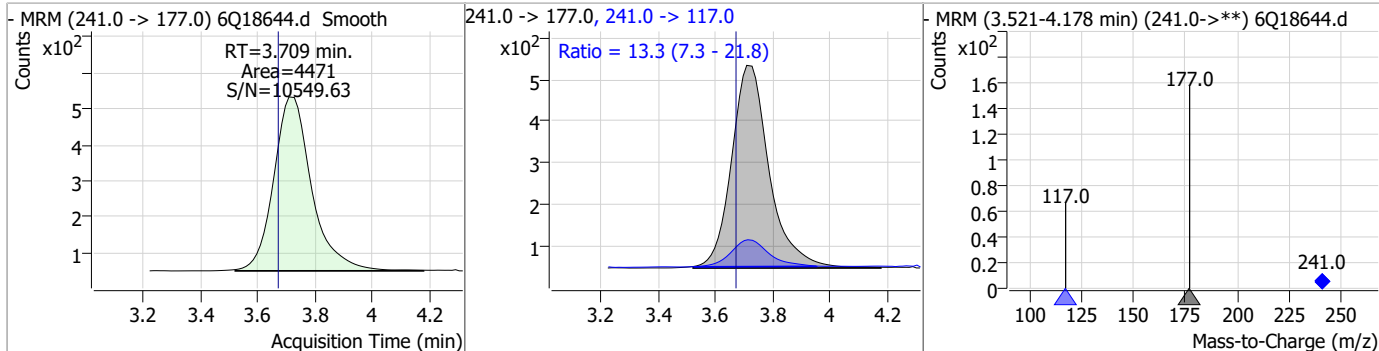
Perfluorinated Compounds by LC/MS/MS



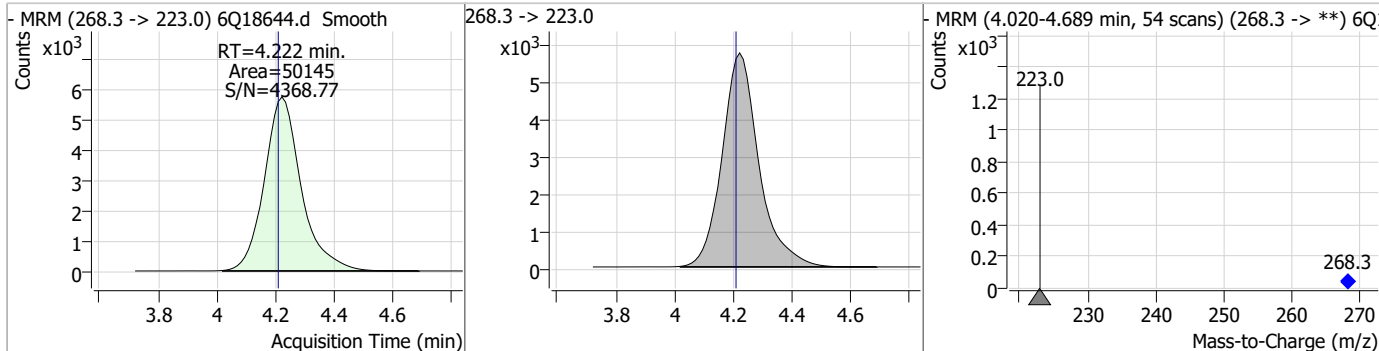
7.3.1
7

Perfluorinated Compounds by LC/MS/MS

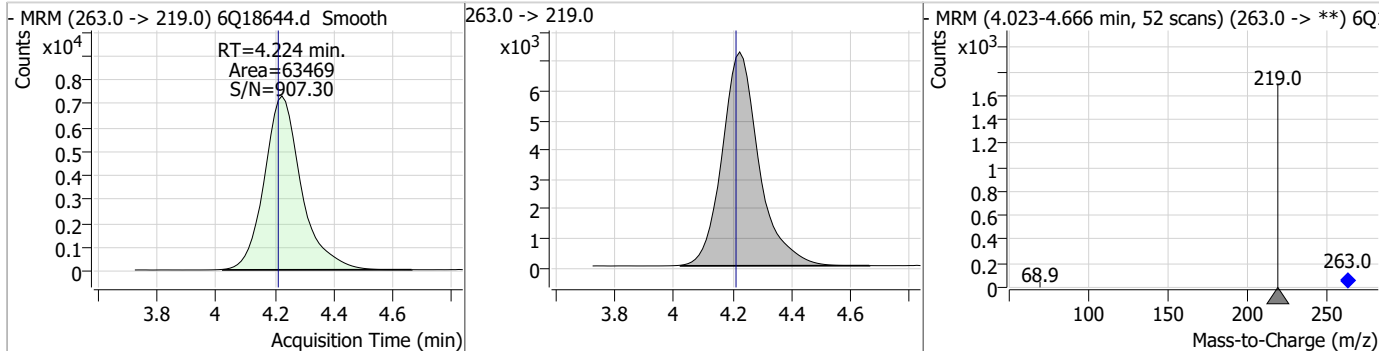
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 5.80 | 3.71 | 0.04 | 4471 | 241.0 -> 117.0 | 13.3 | 7.3 | 21.8 |



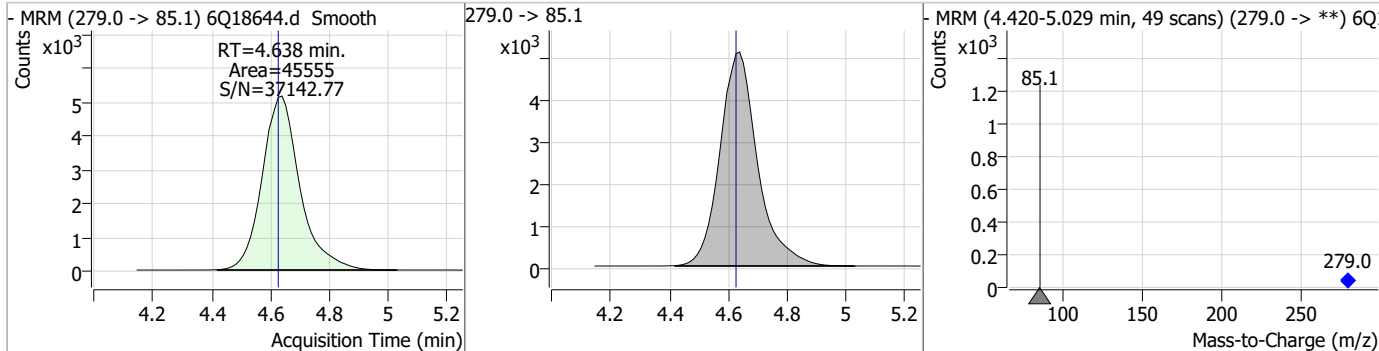
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFPeA | 5.21 | 4.22 | 0.01 | 50145 | 268.3 -> 223.0 | | | |



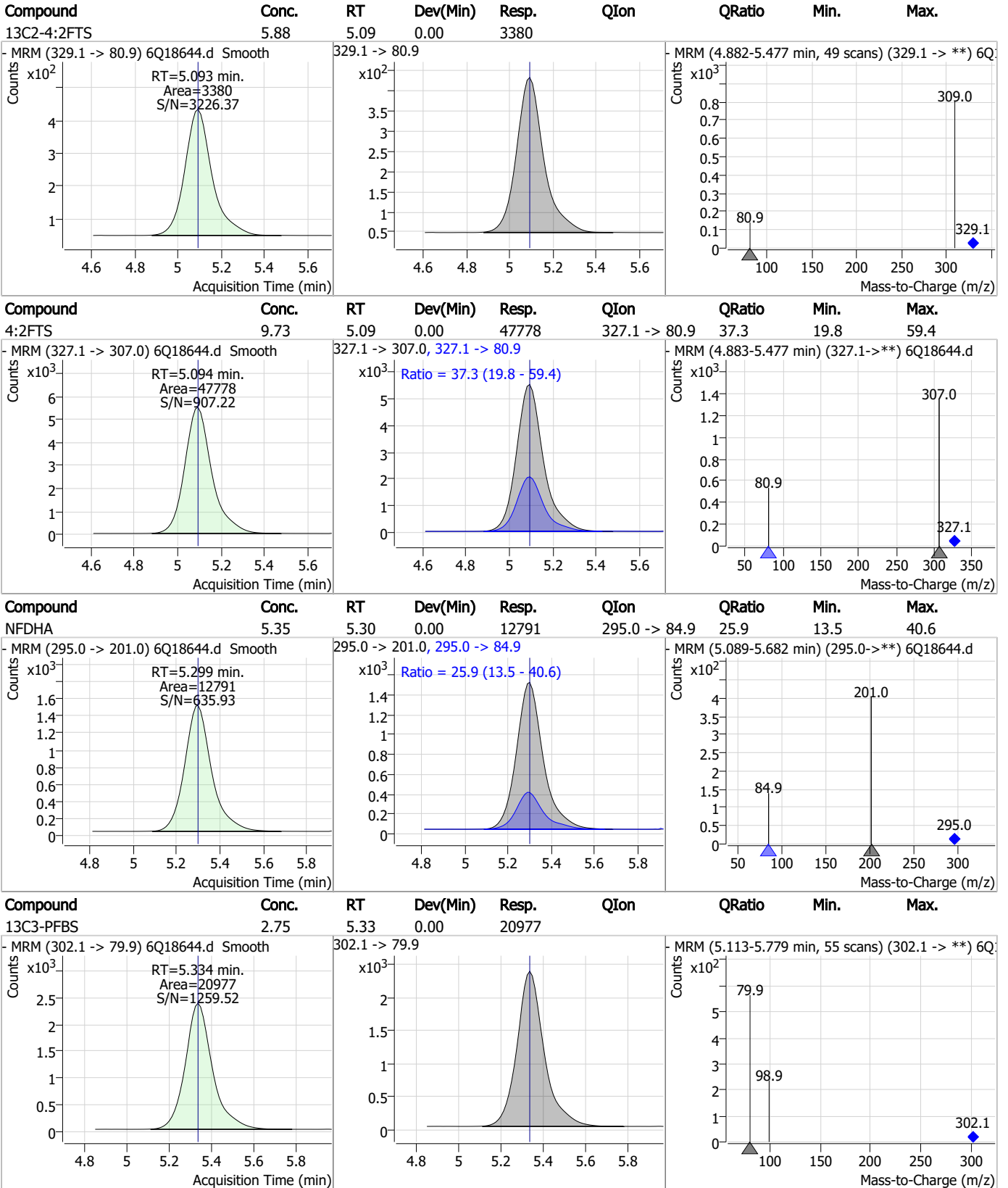
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFPeA | 5.27 | 4.22 | 0.01 | 63469 | 263.0 -> 219.0 | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFMBA | 5.56 | 4.64 | 0.01 | 45555 | 279.0 -> 85.1 | | | |



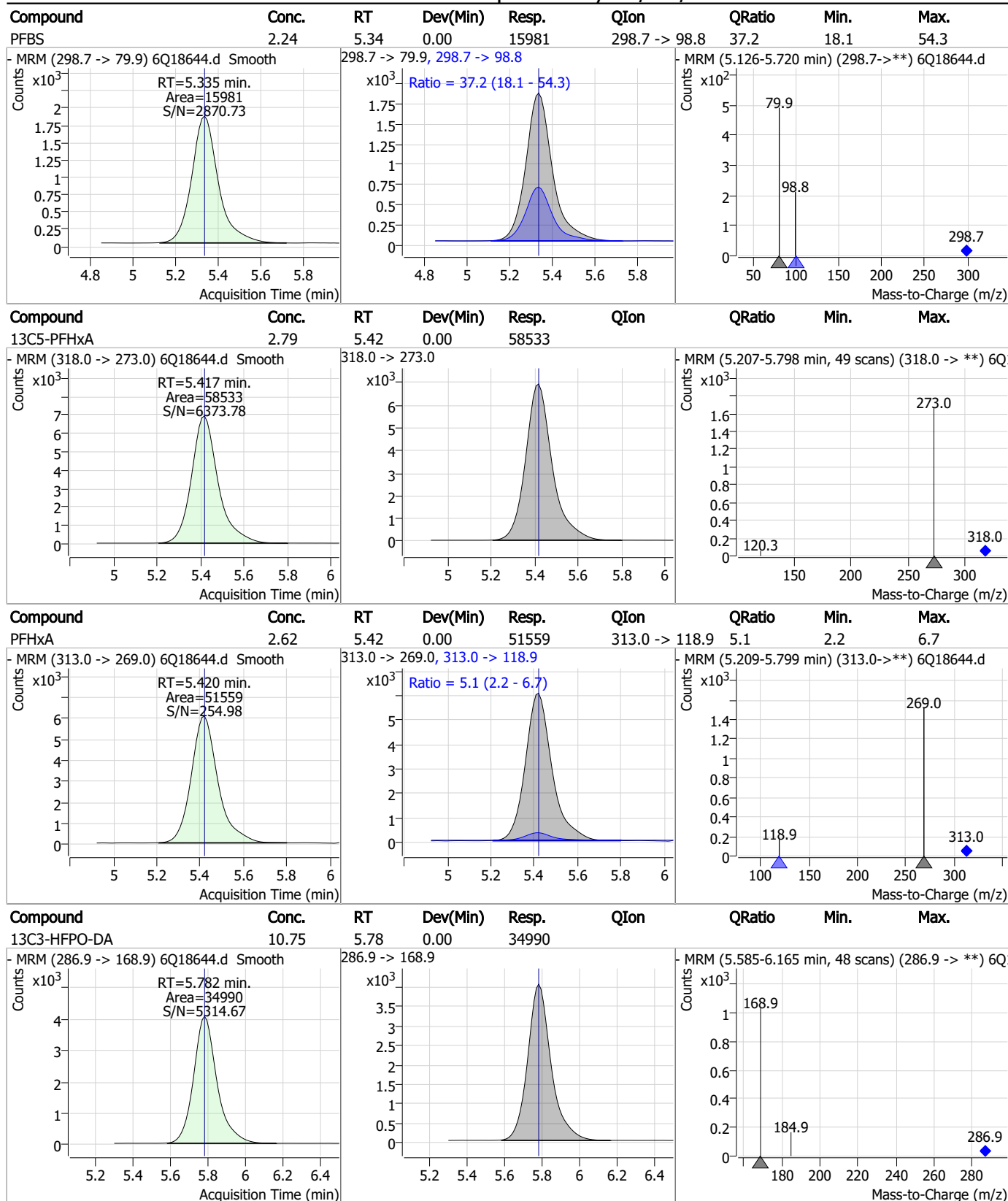
Perfluorinated Compounds by LC/MS/MS



7.3.1

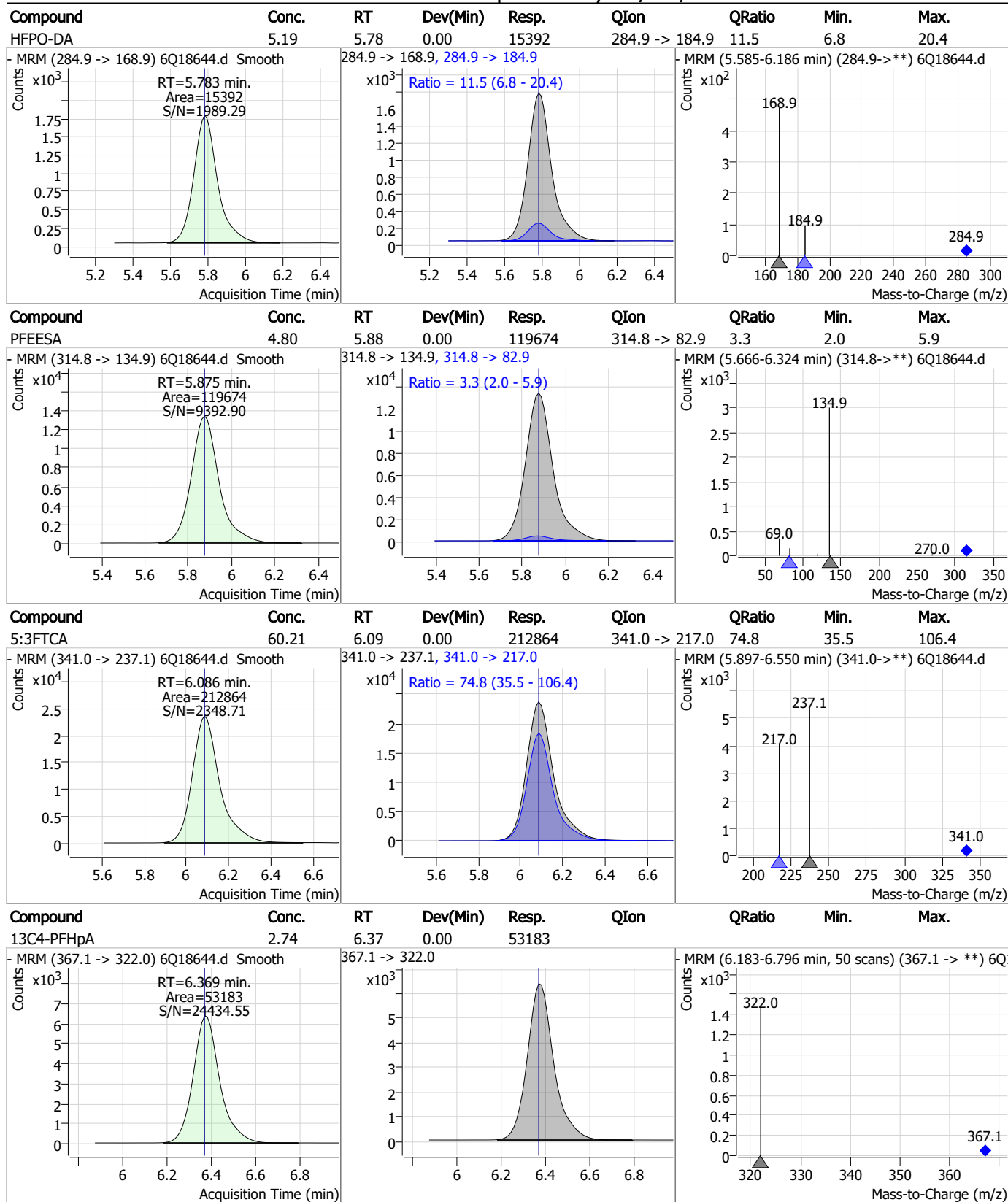
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Perfluorinated Compounds by LC/MS/MS



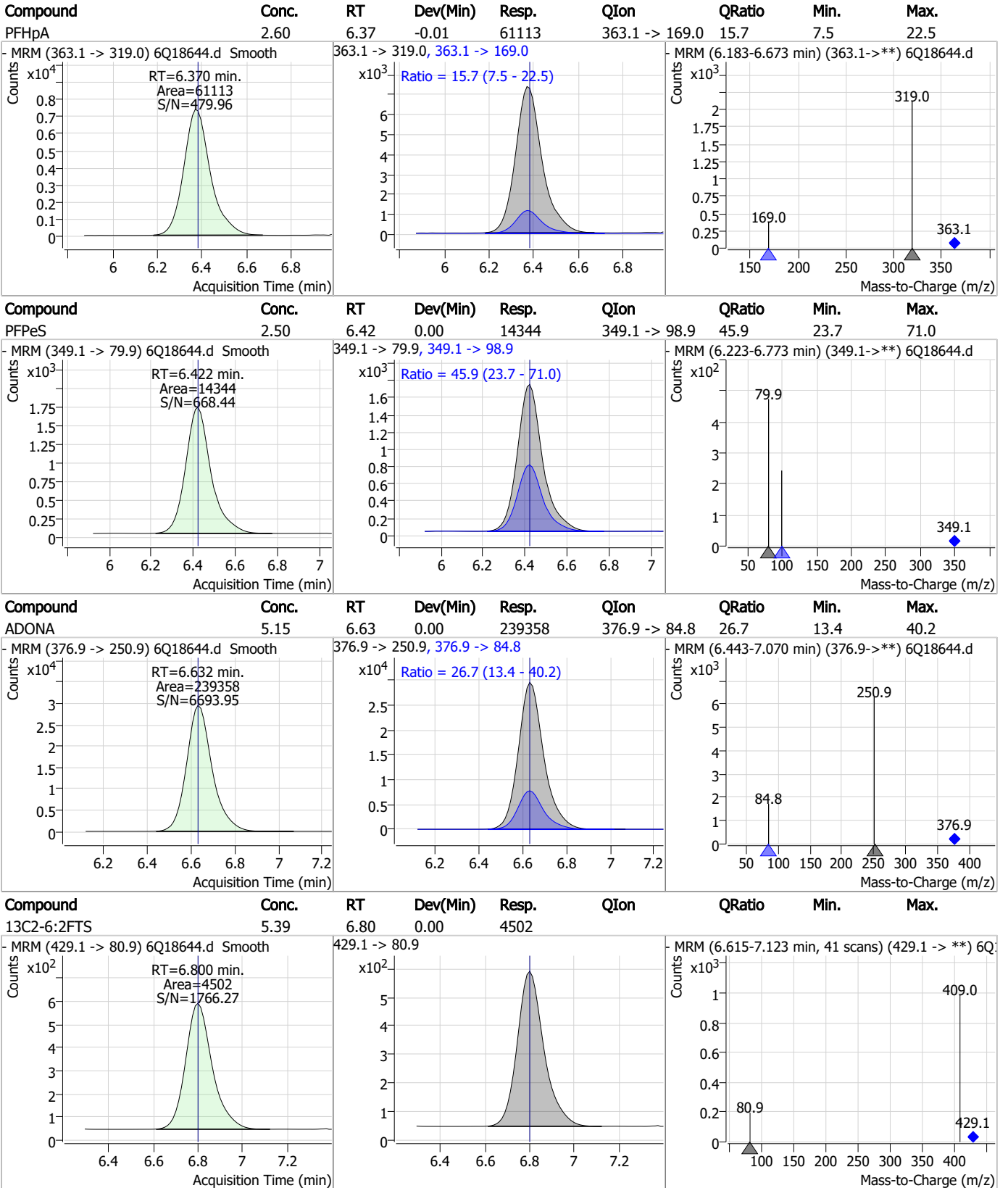
7.3.1
7

Perfluorinated Compounds by LC/MS/MS



7.3.1
7

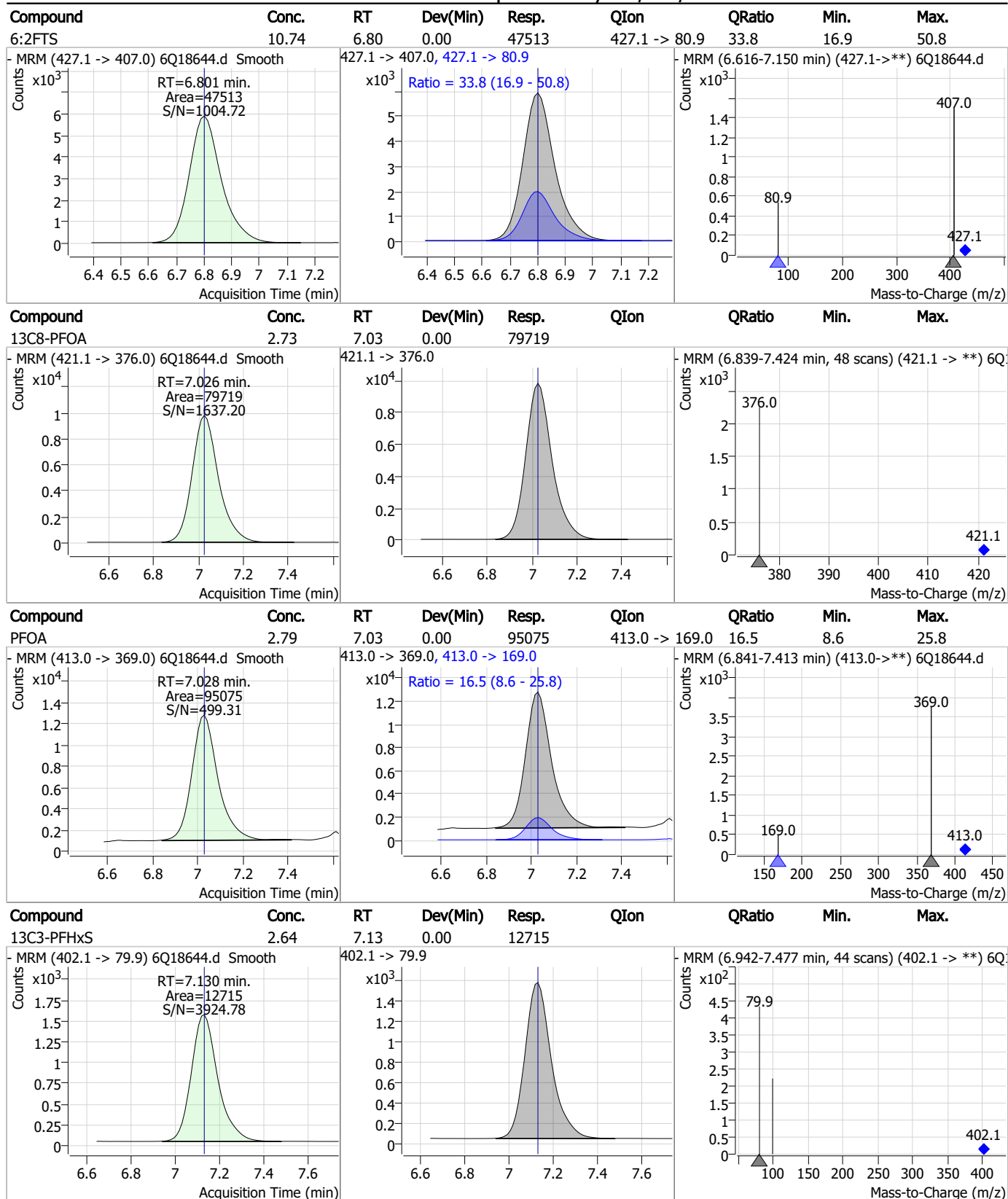
Perfluorinated Compounds by LC/MS/MS



7.3.1

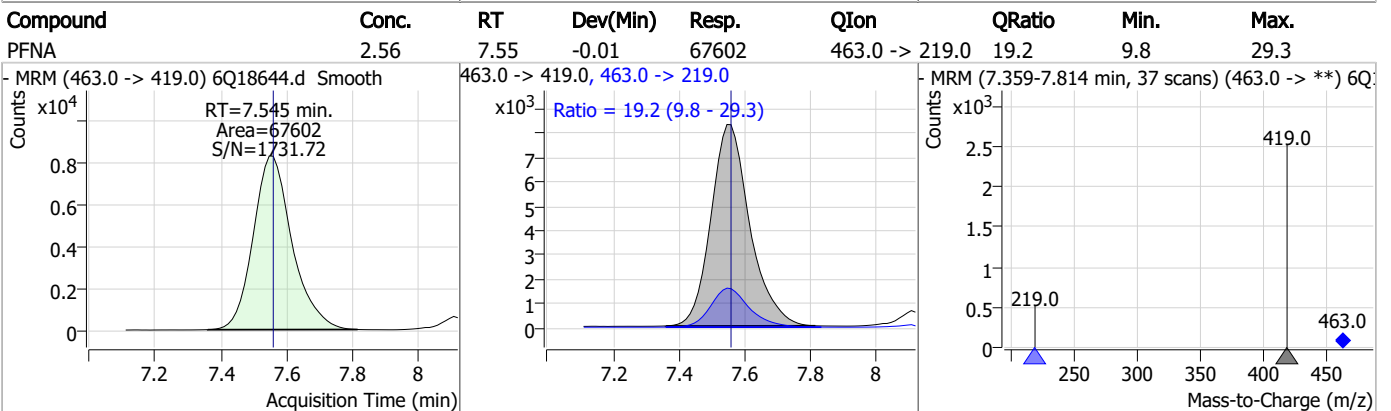
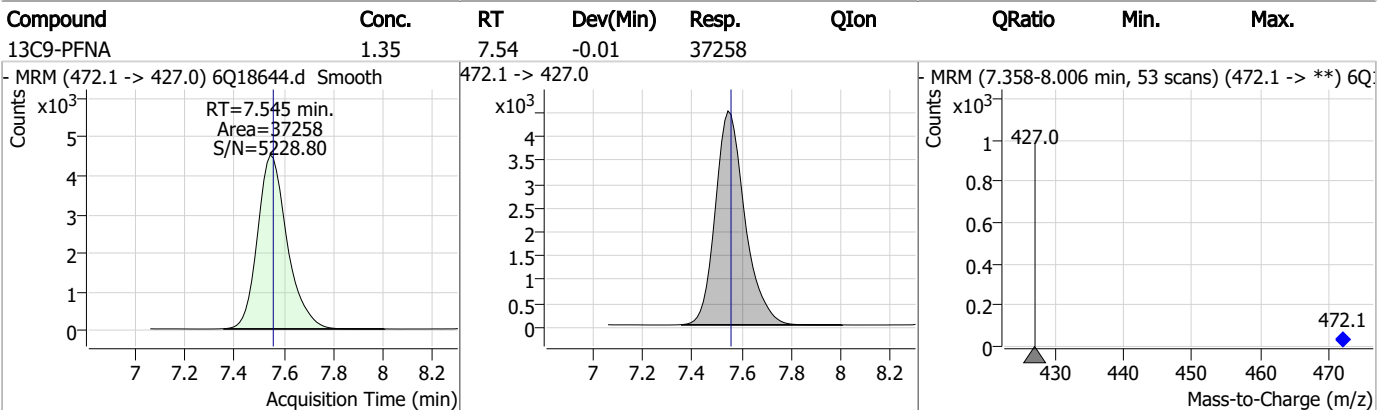
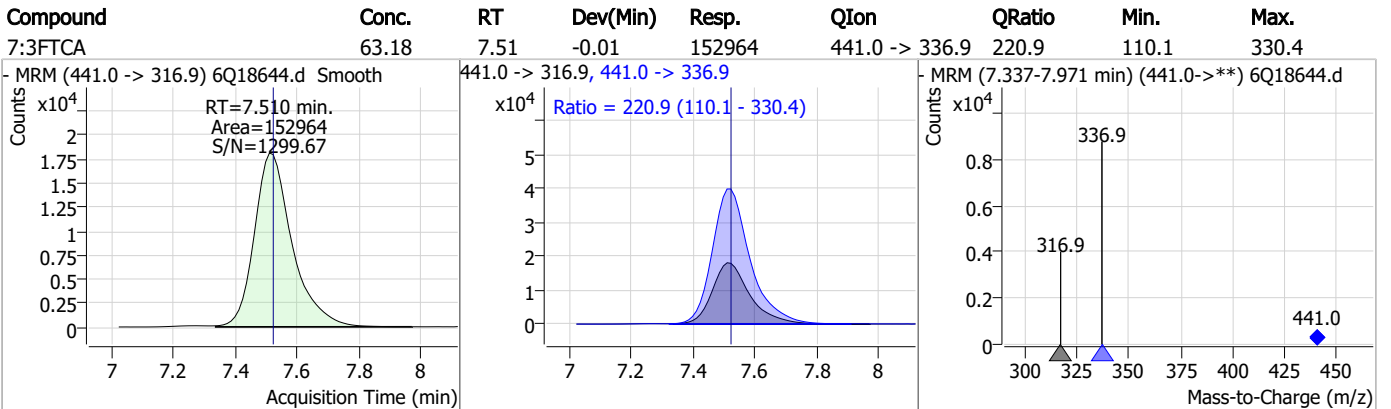
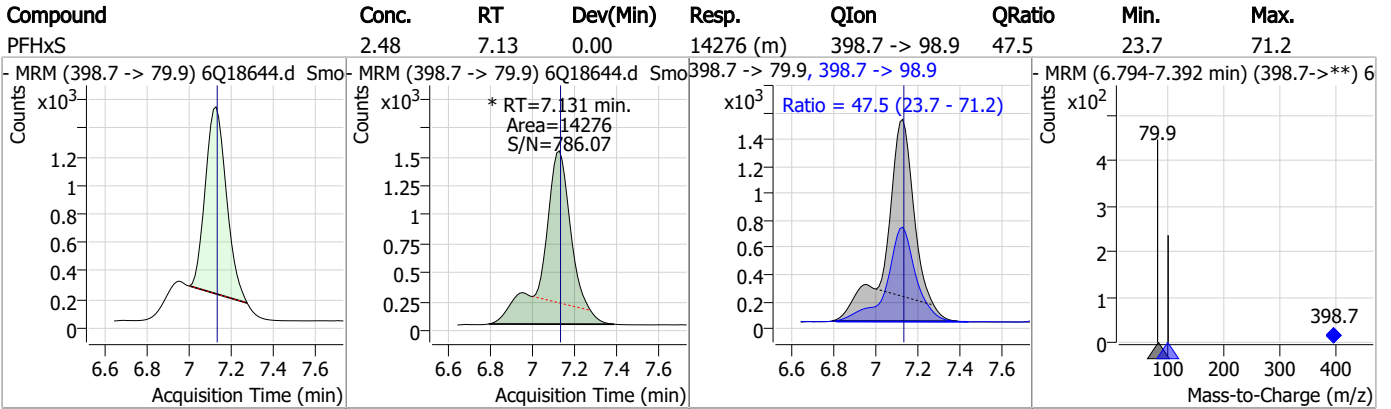
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Perfluorinated Compounds by LC/MS/MS

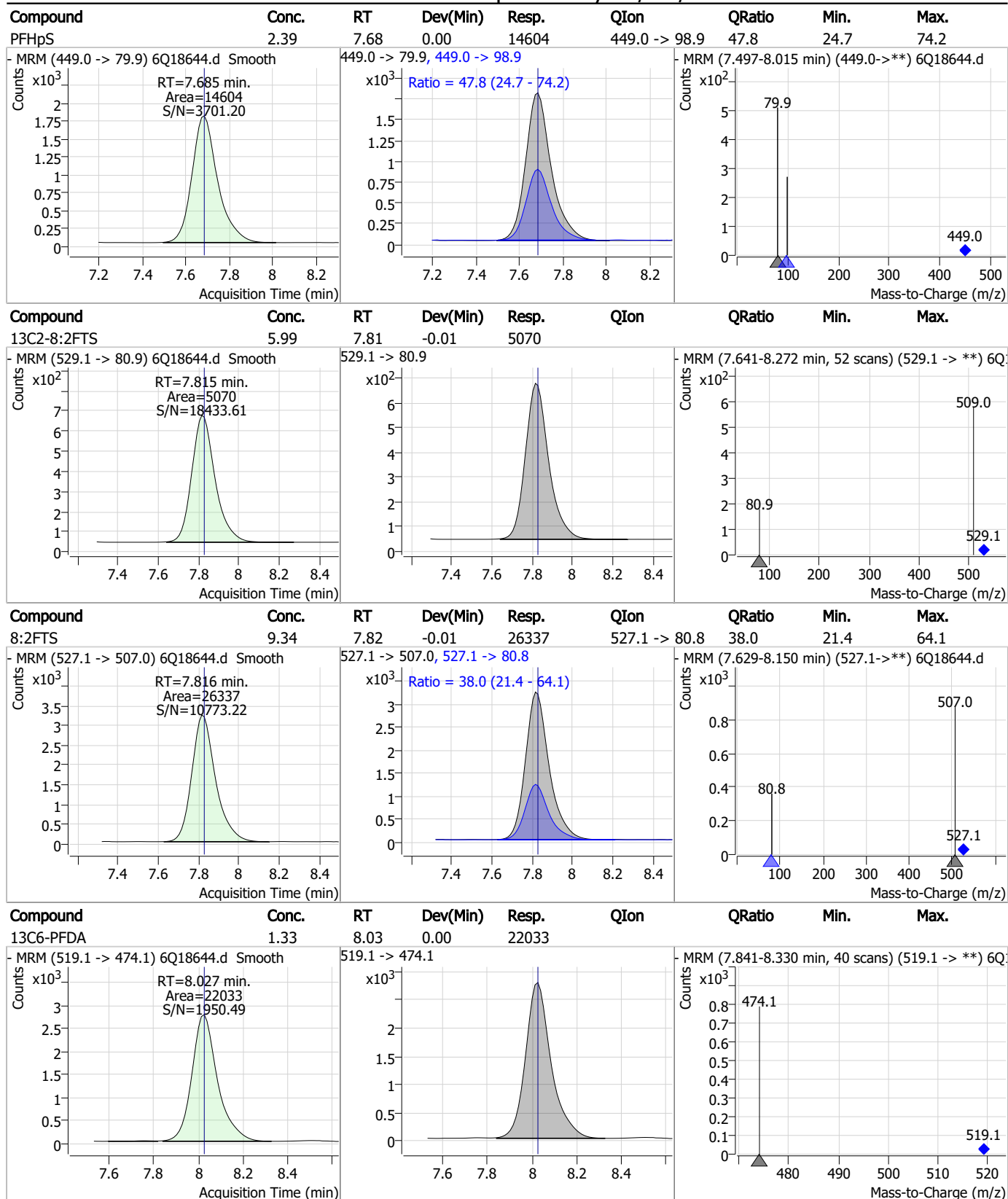


7.3.1
7

Perfluorinated Compounds by LC/MS/MS

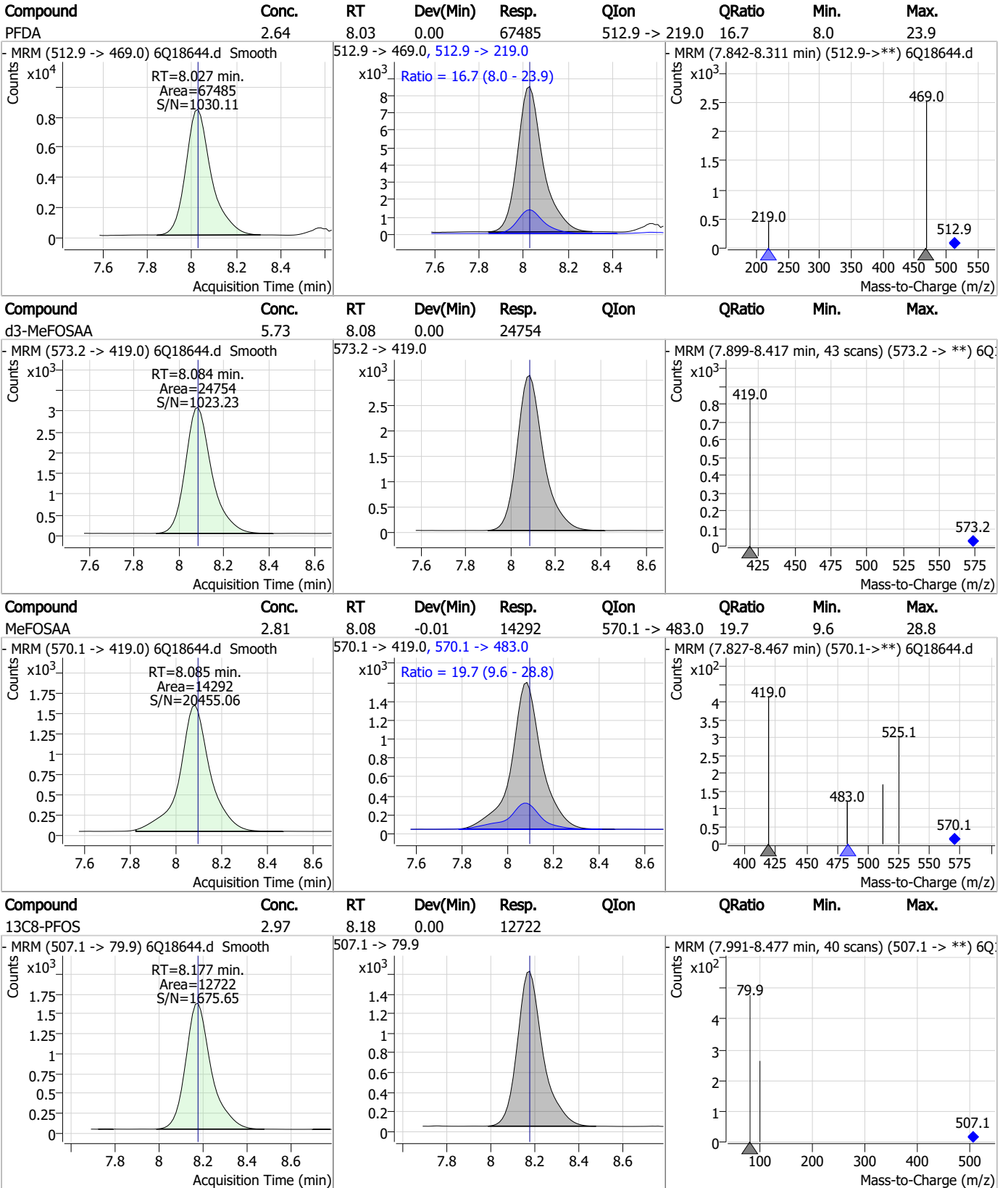


Perfluorinated Compounds by LC/MS/MS



7.3.1
7

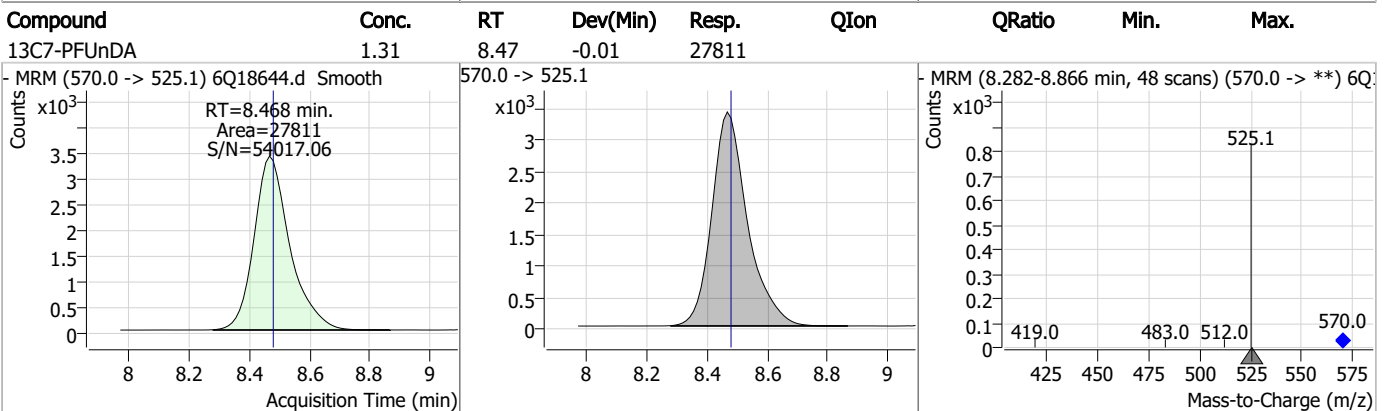
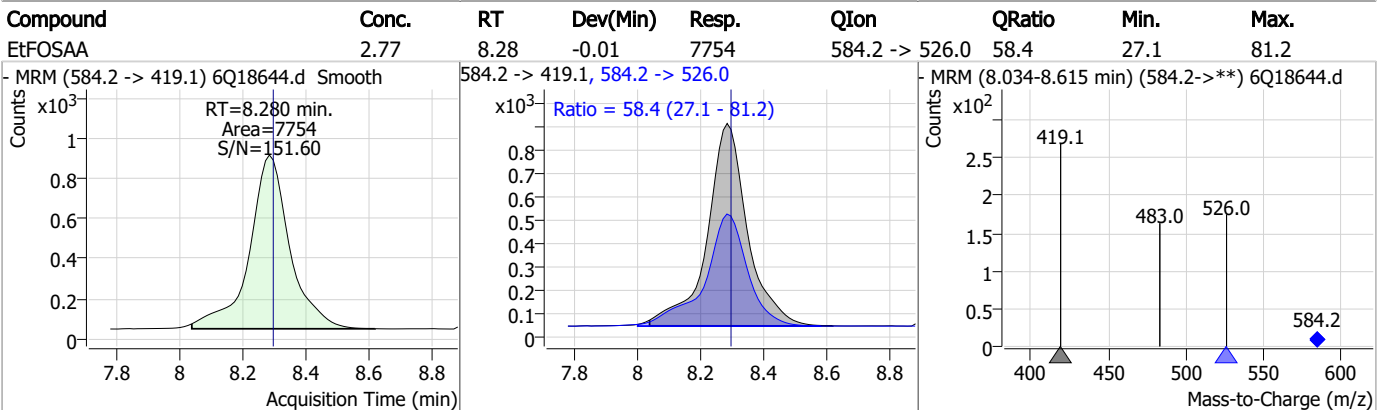
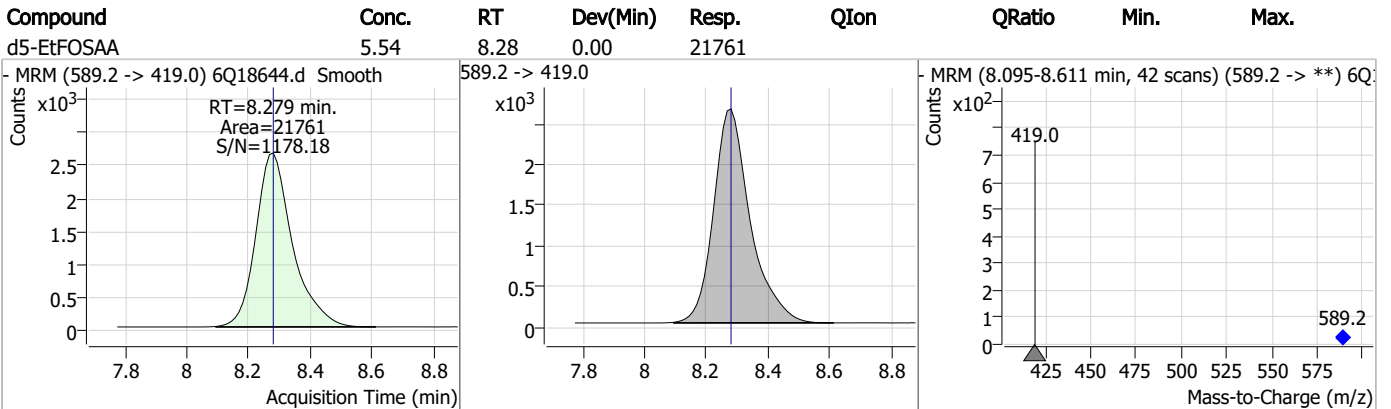
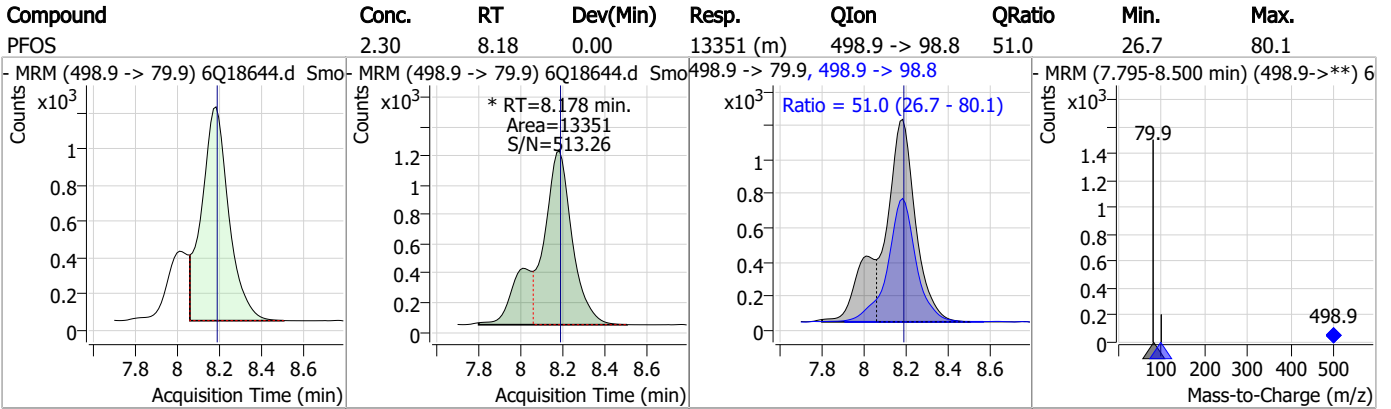
Perfluorinated Compounds by LC/MS/MS



7.3.1

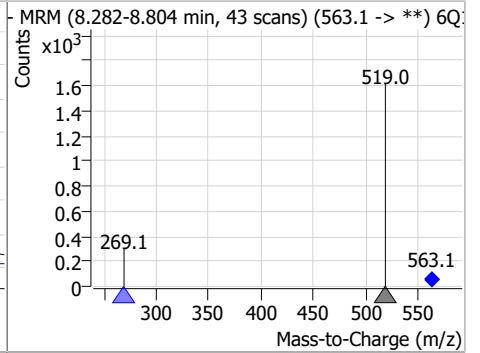
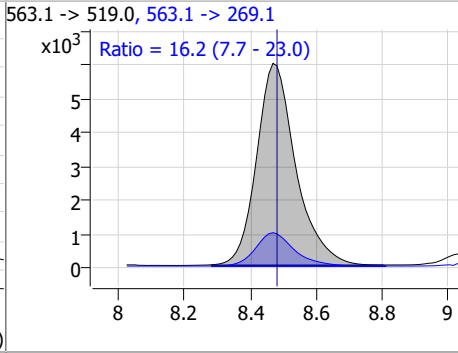
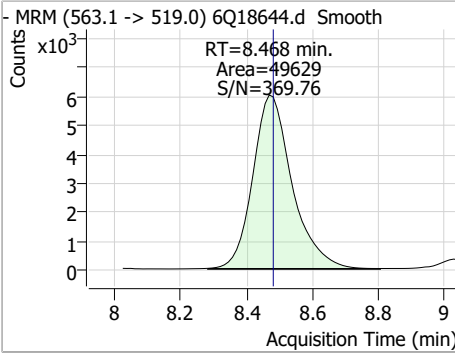
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Perfluorinated Compounds by LC/MS/MS

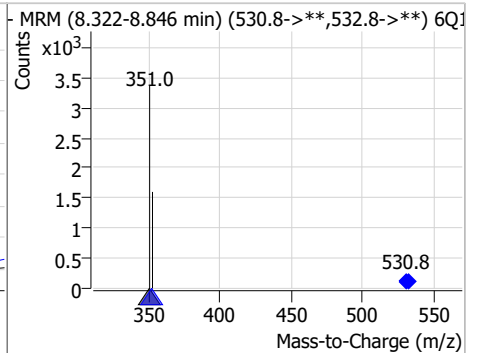
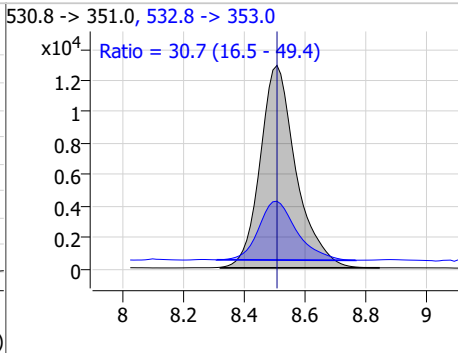
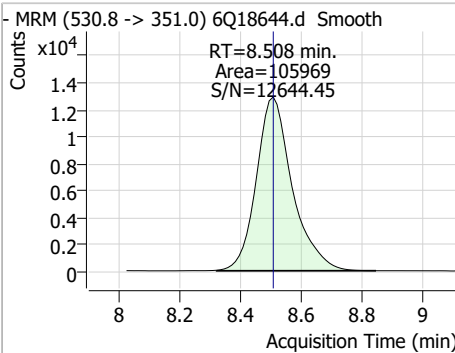


Perfluorinated Compounds by LC/MS/MS

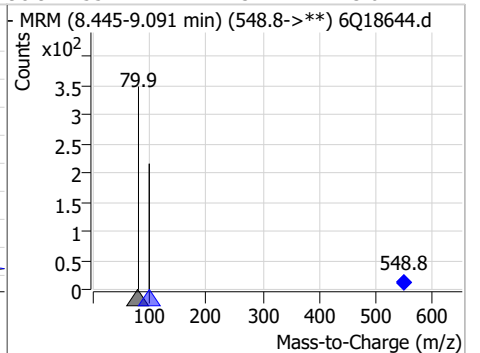
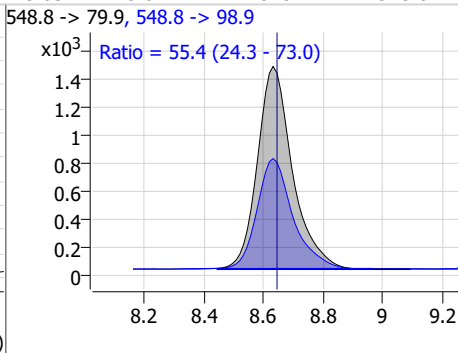
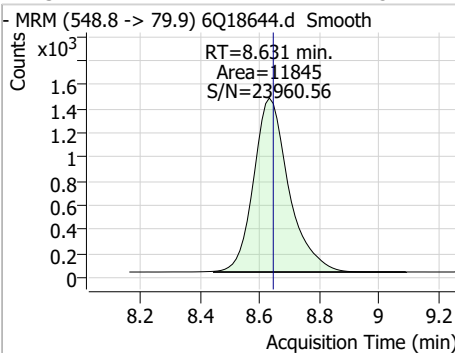
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFUnDA | 2.75 | 8.47 | -0.01 | 49629 | 563.1 -> 269.1 | 16.2 | 7.7 | 23.0 |



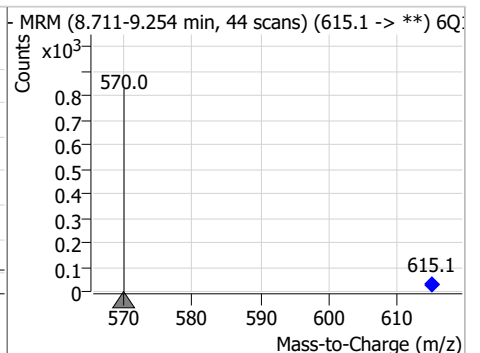
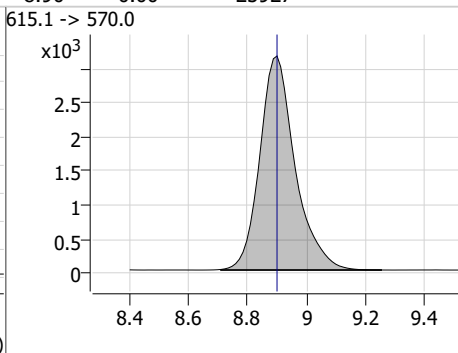
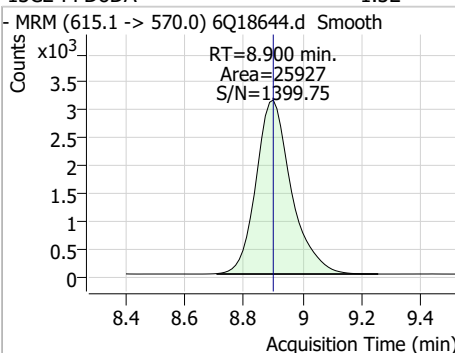
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|--------|----------------|--------|------|------|
| 9CI-PF3ONS | 5.12 | 8.51 | 0.00 | 105969 | 532.8 -> 353.0 | 30.7 | 16.5 | 49.4 |



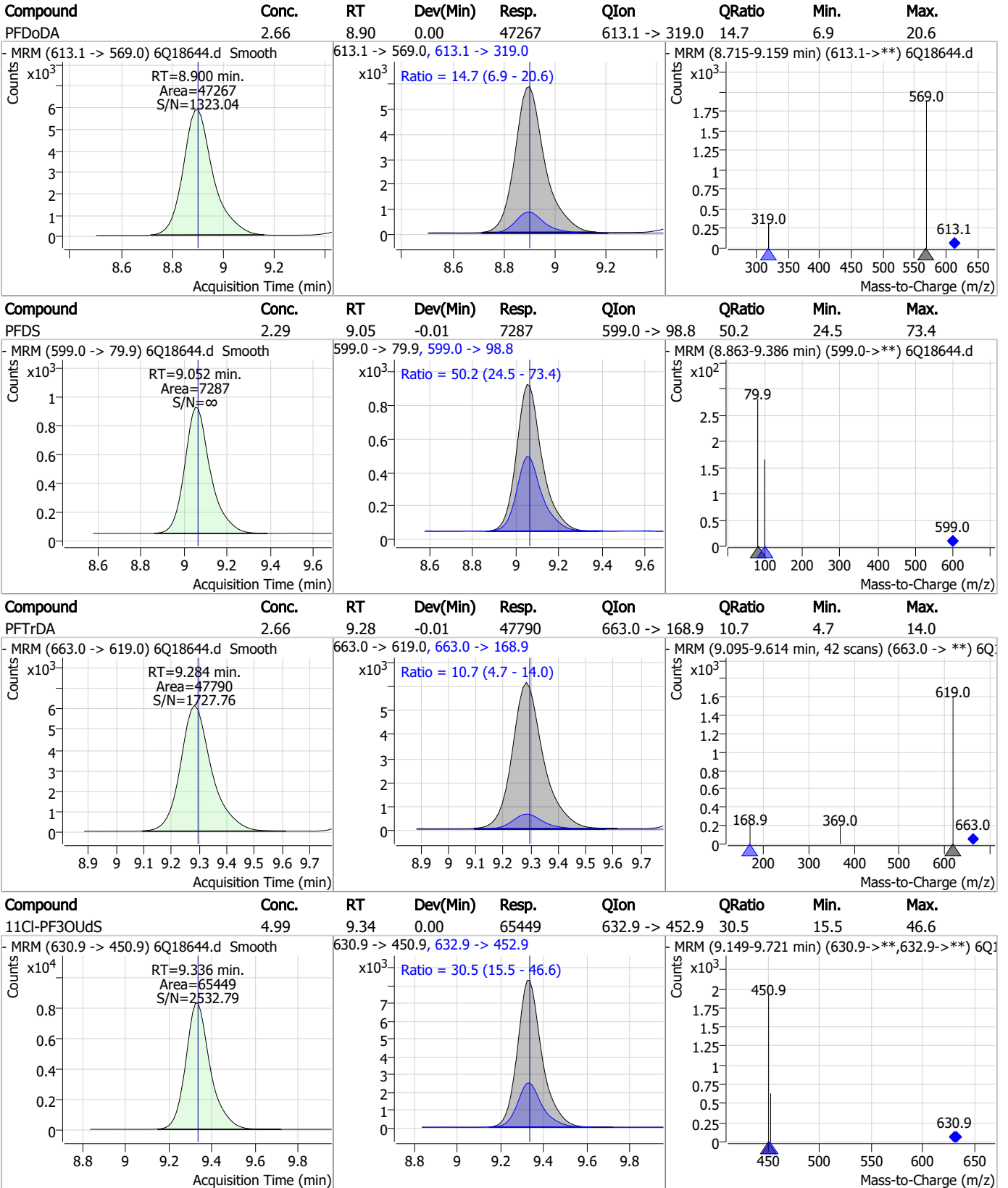
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFNS | 2.32 | 8.63 | -0.01 | 11845 | 548.8 -> 98.9 | 55.4 | 24.3 | 73.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.32 | 8.90 | 0.00 | 25927 | 615.1 -> 570.0 | | | |

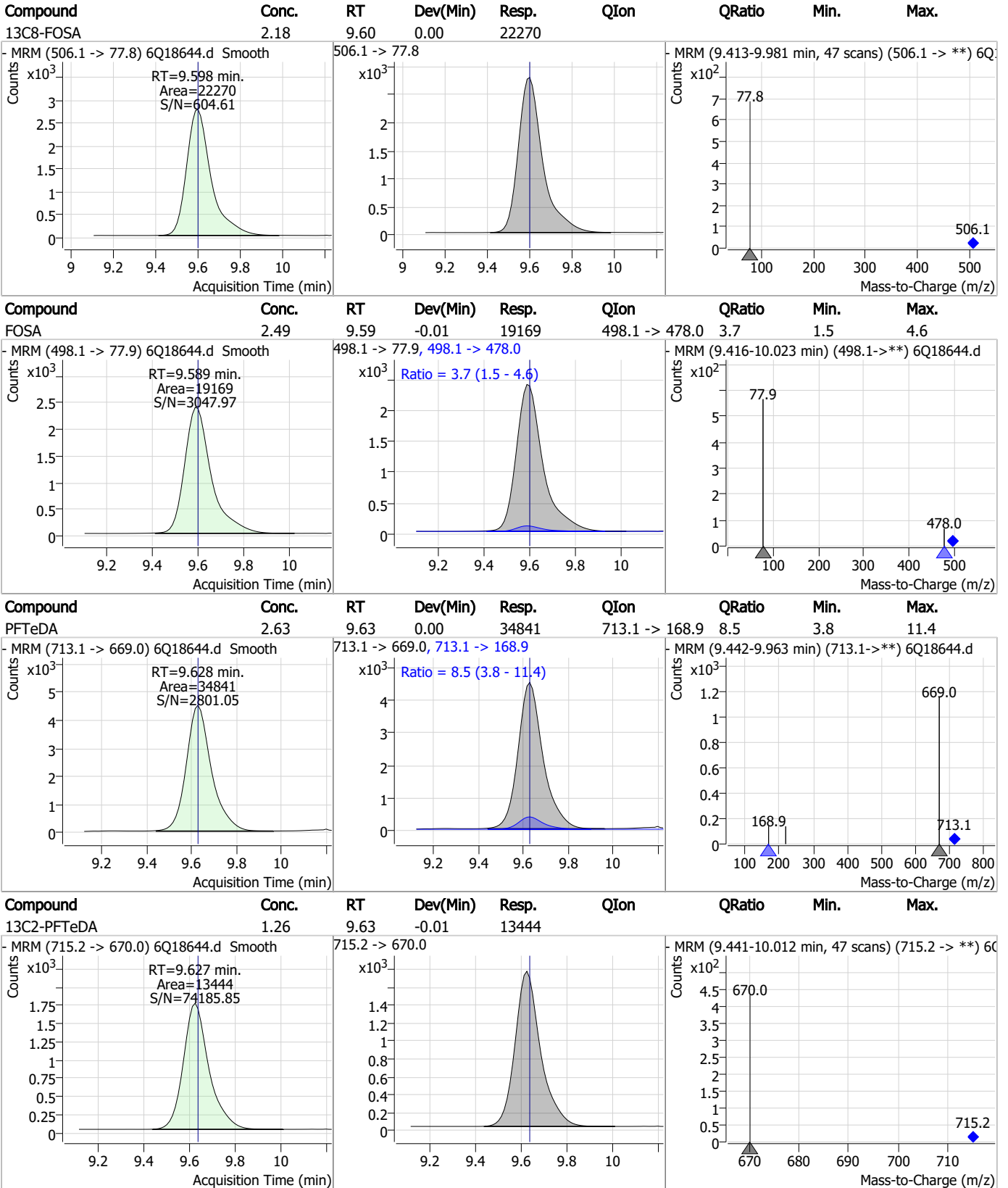


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



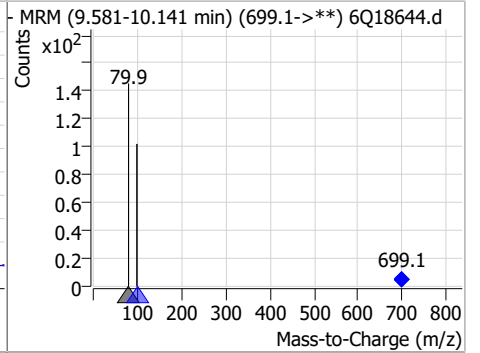
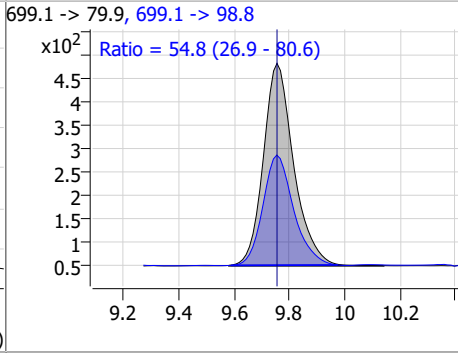
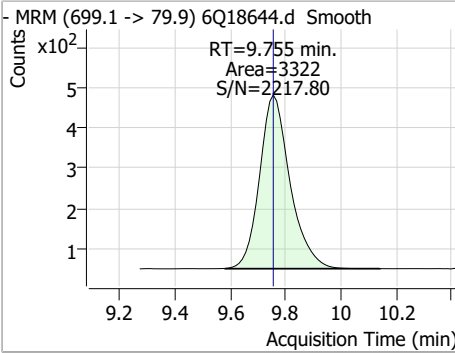
7.3.1

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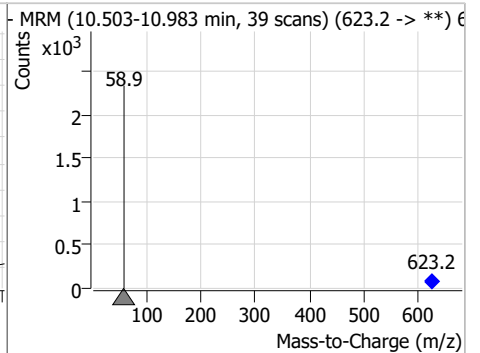
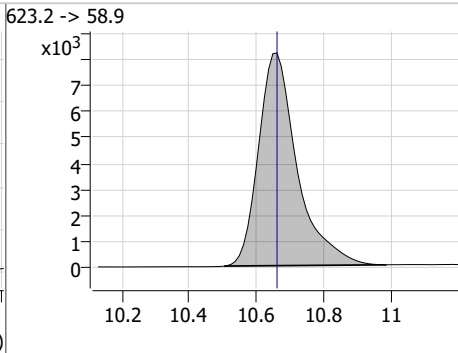
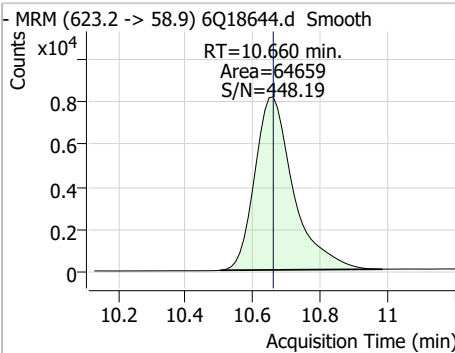


Perfluorinated Compounds by LC/MS/MS

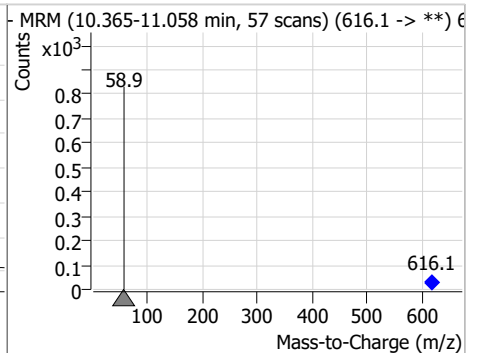
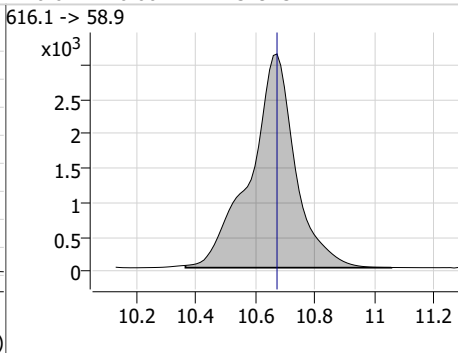
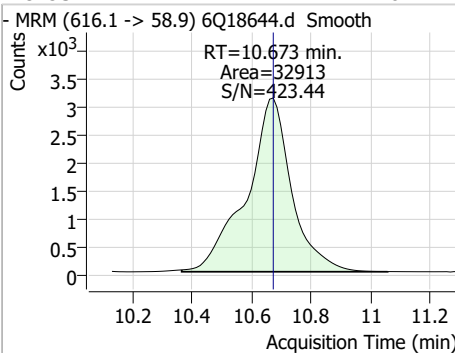
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 2.35 | 9.75 | 0.00 | 3322 | 699.1 -> 98.8 | 54.8 | 26.9 | 80.6 |



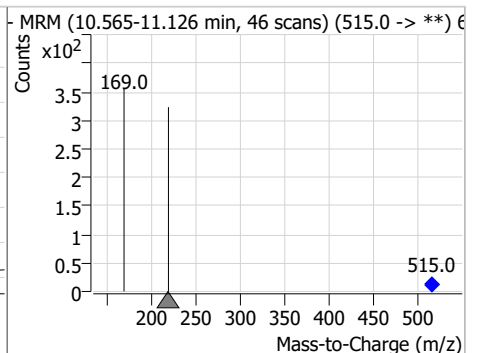
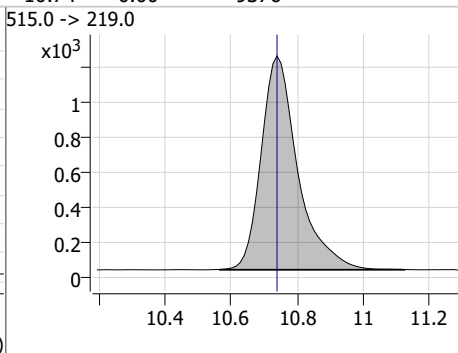
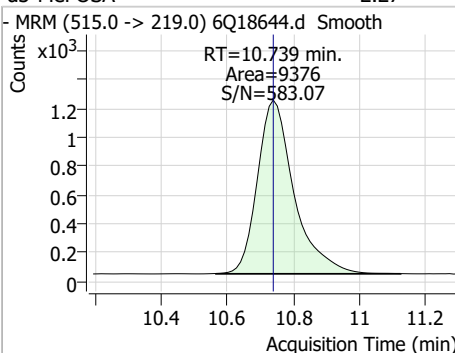
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d7-MeFOSE | 19.24 | 10.66 | 0.00 | 64659 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 12.81 | 10.67 | 0.00 | 32913 | | | | |

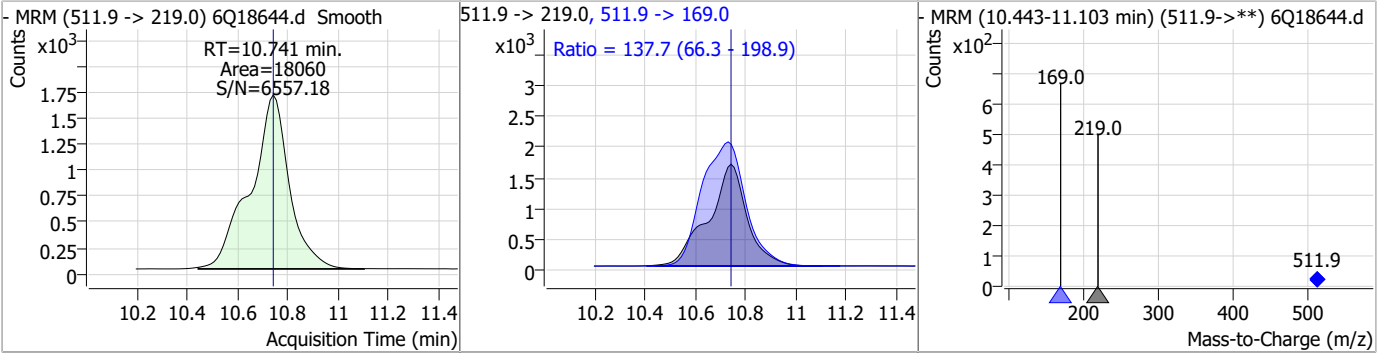


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.27 | 10.74 | 0.00 | 9376 | | | | |

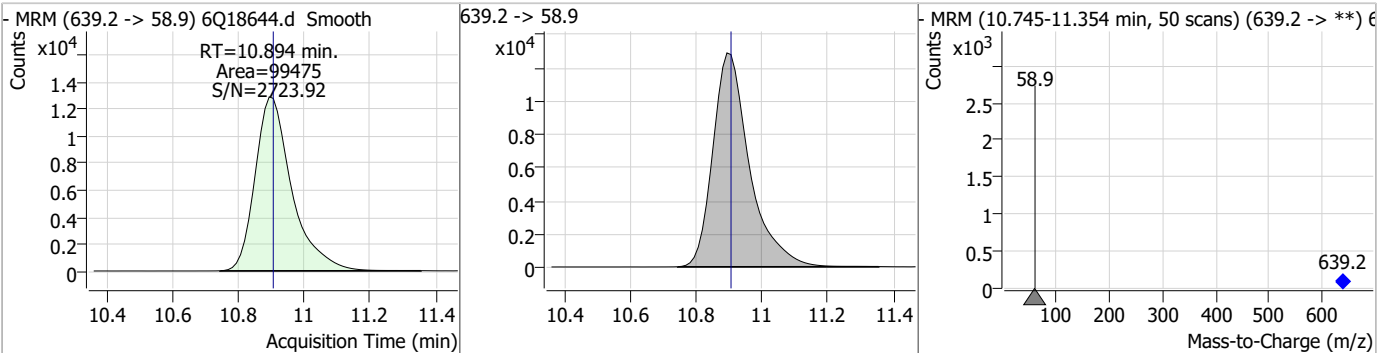


Perfluorinated Compounds by LC/MS/MS

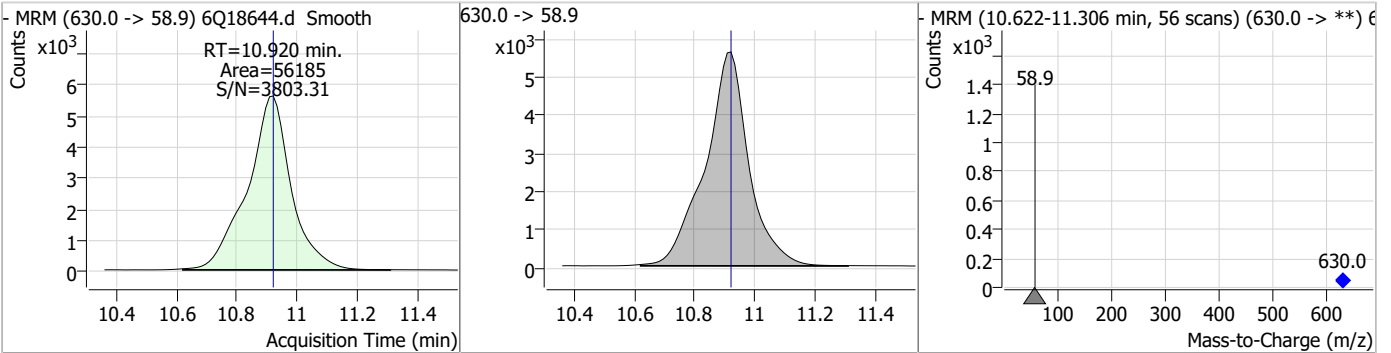
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|----------------|--------|------|-------|
| MeFOFA | 5.24 | 10.74 | 0.00 | 18060 | 511.9 -> 169.0 | 137.7 | 66.3 | 198.9 |



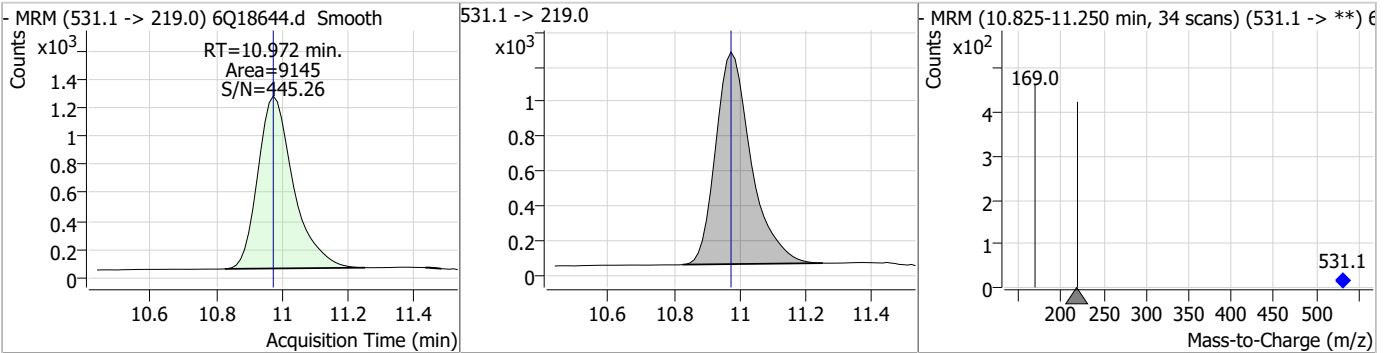
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d9-EtFOSE | 22.63 | 10.89 | -0.01 | 99475 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| EtFOSE | 12.66 | 10.92 | 0.00 | 56185 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.34 | 10.97 | 0.00 | 9145 | | | | |

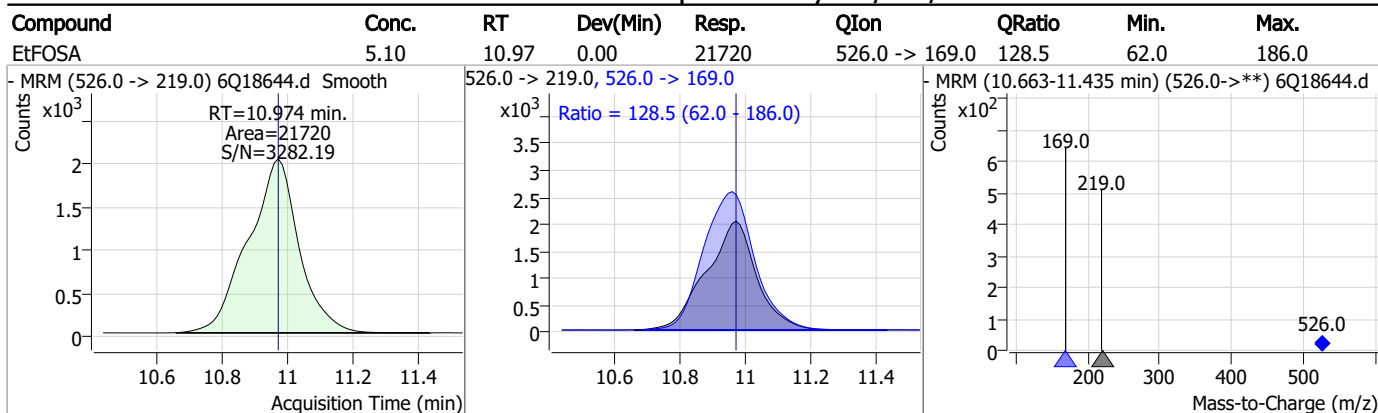


7.3.1

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Perfluorinated Compounds by LC/MS/MS



7.3.1
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Manual Integration Approval Summary

Sample Number: OP97092-BS Method: EPA DRAFT 1633
Lab FileID: 6Q18644.D Analyst approved: 06/01/23 19:33 Norman Farmer
Injection Time: 06/01/23 07:03 Supervisor approved: 06/01/23 19:35 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.18 | Split peak |

7.3.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18645.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 7:18:28 AM
 Sample Name : op97092-llbs:3
 Vial : P2-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 169524 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 55557 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 62585 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 55291 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 84316 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 39254 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 23059 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30073 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 27649 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 14168 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 21131 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 21680 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13665 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12644 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3310 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5122 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5381 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27125 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 35876 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 22408 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 65865 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 100562 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 8903 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 8703 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13830 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 63104 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8957 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 77978 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 27768 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 41800 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 48398 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3310 | 5.54 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 110.8% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5122 | 5.90 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 118.1% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5381 | 6.11 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 122.3% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 27649 | 1.43 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 114.7% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 14168 | 1.35 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 108.0% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 21680 | 2.73 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 109.4% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13665 | 2.73 µg/L | 0.000 |

7.3.2
7

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 109.2% | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 169524 | 11.28 µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 112.8% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 55291 | 2.92 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 116.7% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 62585 | 3.05 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 122.2% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 55557 | 5.90 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 118.0% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 23059 | 1.42 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 113.4% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30073 | 1.45 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 115.9% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 21131 | 2.00 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 80.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 84316 | 2.89 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.5% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12644 | 2.85 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 114.1% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 39254 | 1.43 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 114.0% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27125 | 6.08 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 121.5% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 35876 | 11.28 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 112.8% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 8703 | 2.04 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 81.5% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 22408 | 5.52 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 110.4% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 65865 | 18.96 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 75.8% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 100562 | 22.14 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 88.5% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 8903 | 2.20 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 88.0% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 14796 | 3.08 µg/L | 99 |
| | | 327.1 -> 80.9 | 5777 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 15767 | 3.13 µg/L | 97 |
| | | 427.1 -> 80.9 | 5076 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 8375 | 2.80 µg/L | 100 |
| | | 527.1 -> 80.8 | 3568 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 2397 | 0.83 µg/L | 92 |
| | | 584.2 -> 526.0 | 1444 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 5601 | 0.77 µg/L | 99 |
| | | 498.1 -> 478.0 | 179 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 4482 | 0.80 µg/L | 98 |
| | | 570.1 -> 483.0 | 821 | | |
| PFBA | 2.868 | 212.8 -> 168.9 | 17967 | 3.20 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 5232 | 0.71 µg/L | 100 |
| | | 298.7 -> 98.8 | 1881 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 21767 | 0.81 µg/L | 100 |
| | | 512.9 -> 219.0 | 3444 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 14395 | 0.76 µg/L | 93 |
| | | 613.1 -> 319.0 | 2404 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 2507 | 0.79 µg/L | 95 |

7.3.2
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 1142 | 0.80 µg/L | 97 |
| | | 363.1 -> 319.0 | 19559 | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 3203 | 0.77 µg/L | 98 |
| | | 449.0 -> 79.9 | 4668 | | |
| PFHxA | 5.420 | 449.0 -> 98.9 | 2231 | 0.78 µg/L | 96 |
| | | 313.0 -> 269.0 | 16334 | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 936 | 0.74 µg/L | 95 |
| | | 398.7 -> 79.9 | 4585 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 2035 | 0.76 µg/L | 98 |
| | | 463.0 -> 419.0 | 21237 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 4365 | 0.75 µg/L | 91 |
| | | 548.8 -> 79.9 | 3828 | | |
| PFOA | 7.015 | 548.8 -> 98.9 | 2109 | 0.82 µg/L | 99 |
| | | 413.0 -> 369.0 | 29551 | | |
| PFOS | 8.178 | 413.0 -> 169.0 | 5180 | 0.77 µg/L | 93 |
| | | 498.9 -> 79.9 | 4425 | | |
| PFPeA | 4.224 | 498.9 -> 98.8 | 2150 | 1.62 µg/L | 100 |
| | | 263.0 -> 219.0 | 21639 | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 4559 | 0.74 µg/L | 97 |
| | | 349.1 -> 98.9 | 2241 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 11571 | 0.83 µg/L | 98 |
| | | 713.1 -> 168.9 | 980 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 15070 | 0.79 µg/L | 97 |
| | | 663.0 -> 168.9 | 1549 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 16084 | 0.82 µg/L | 98 |
| | | 563.1 -> 269.1 | 2611 | | |
| 11CI-PF3OUdS | 9.323 | 630.9 -> 450.9 | 21077 | 1.57 µg/L | 100 |
| | | 632.9 -> 452.9 | 6604 | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 33244 | 1.57 µg/L | 100 |
| | | 532.8 -> 353.0 | 10870 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 75826 | 1.59 µg/L | 100 |
| | | 376.9 -> 84.8 | 20232 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 5059 | 1.66 µg/L | 97 |
| | | 284.9 -> 184.9 | 625 | | |
| 3:3FTCA | 3.727 | 241.0 -> 177.0 | 2456 | 2.88 µg/L | 98 |
| | | 241.0 -> 117.0 | 334 | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 64404 | 17.04 µg/L | 93 |
| | | 341.0 -> 217.0 | 49417 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 47267 | 18.26 µg/L | 97 |
| | | 441.0 -> 336.9 | 102172 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 6191 | 1.49 µg/L | 90 |
| | | 526.0 -> 169.0 | 8382 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 16382 | 3.65 µg/L | 100 |
| | | 511.9 -> 219.0 | 5054 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 7106 | 1.58 µg/L | 93 |
| | | 616.1 -> 58.9 | 9729 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 1102 | 3.72 µg/L | 100 |
| | | 699.1 -> 98.8 | 559 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 4078 | 0.78 µg/L | 96 |
| | | 295.0 -> 84.9 | 1010 | | |
| NFDHA | 5.299 | 279.0 -> 85.1 | 14796 | 1.59 µg/L | 95 |
| | | 229.0 -> 84.9 | 11513 | | |
| PFMBA | 4.638 | 314.8 -> 134.9 | 34827 | 1.63 µg/L | 100 |
| | | 314.8 -> 82.9 | 1295 | | |
| PFMPA | 3.388 | | | 1.63 µg/L | 100 |
| | | | | | |
| PFEESA | 5.875 | | | 1.31 µg/L | 99 |
| | | | | | |

7.3.2
7

= Qualifier out of range, m = manually integrated, + = Area summed

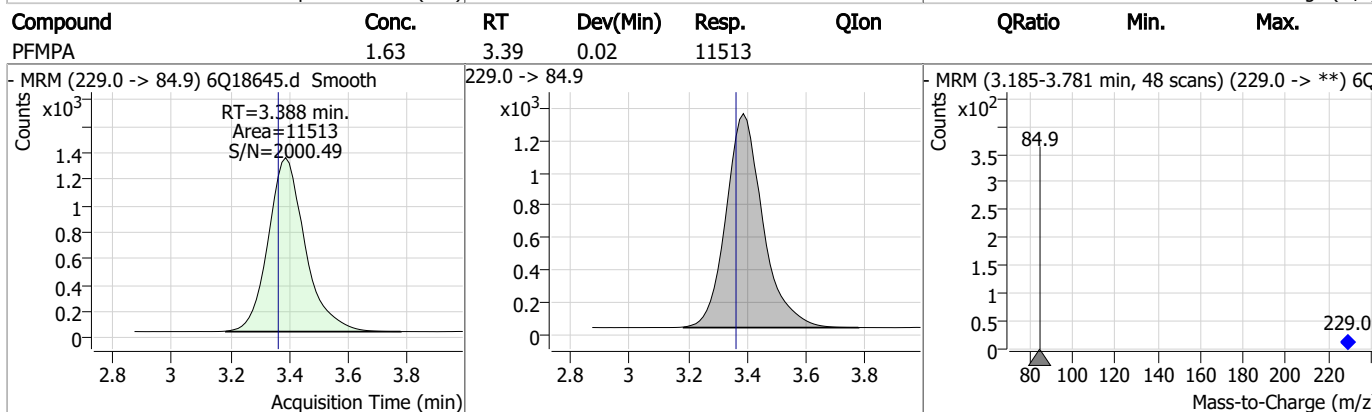
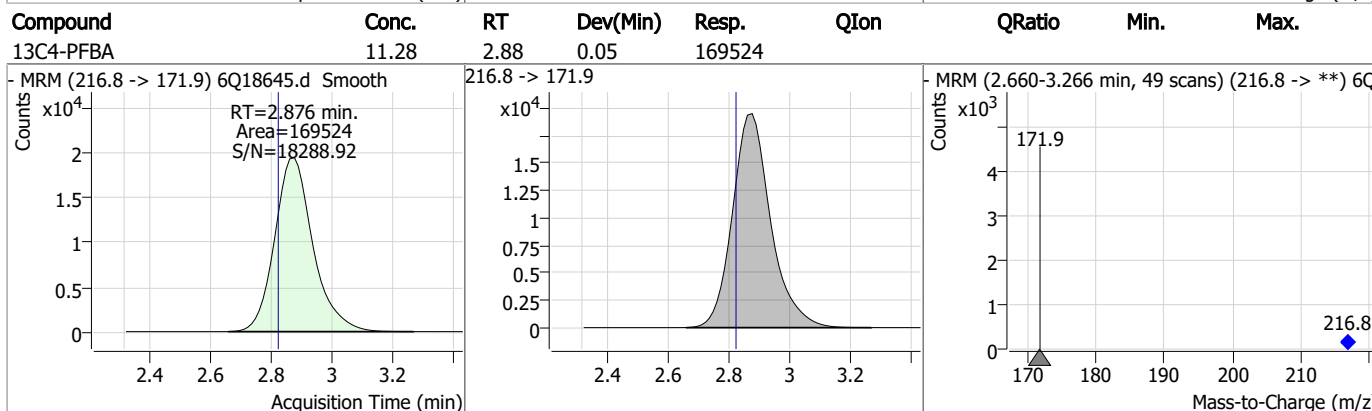
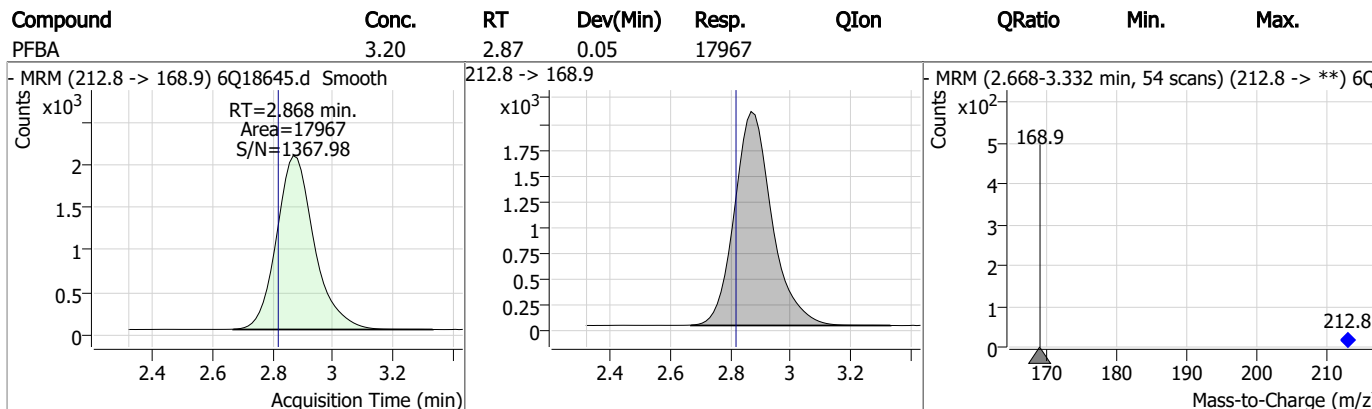
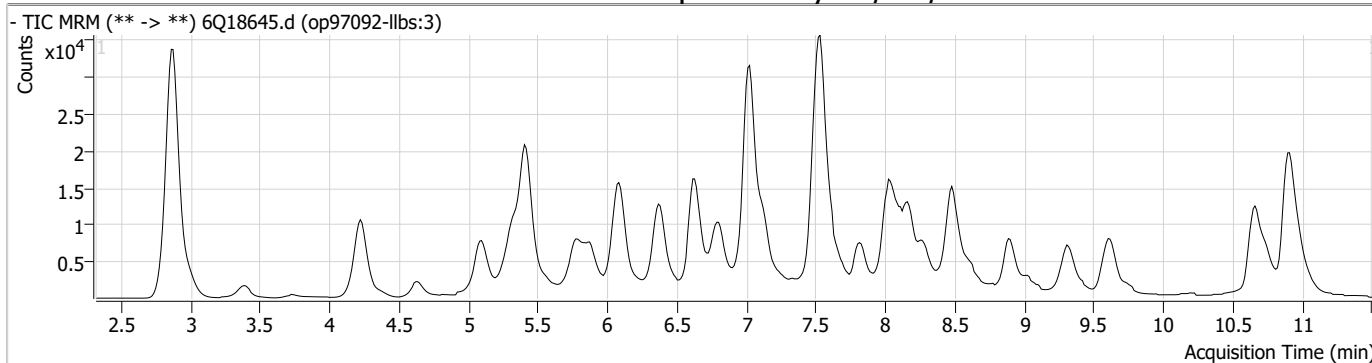
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.3.2

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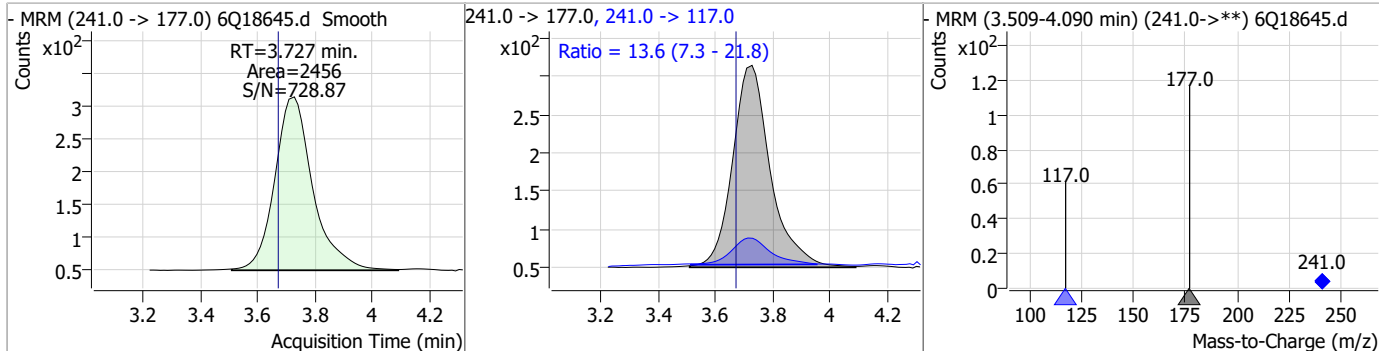
Perfluorinated Compounds by LC/MS/MS



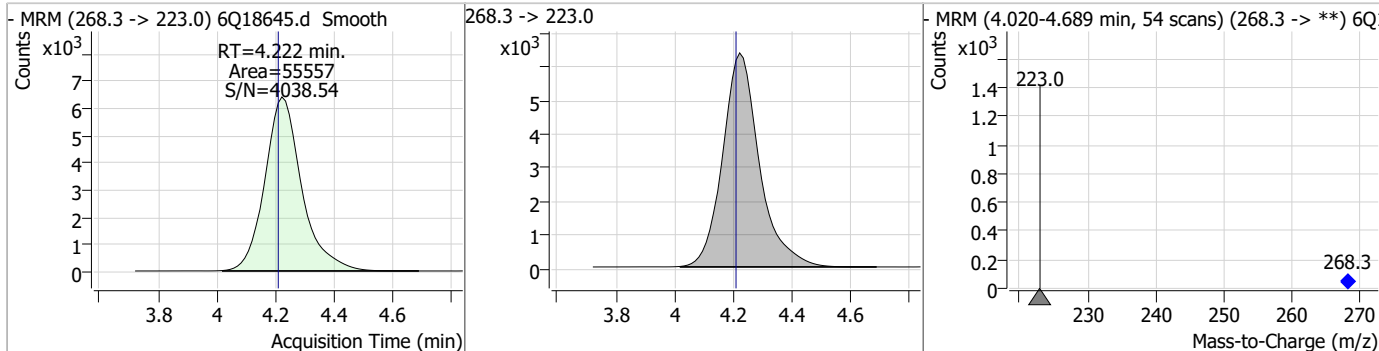
7.3.2
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Perfluorinated Compounds by LC/MS/MS

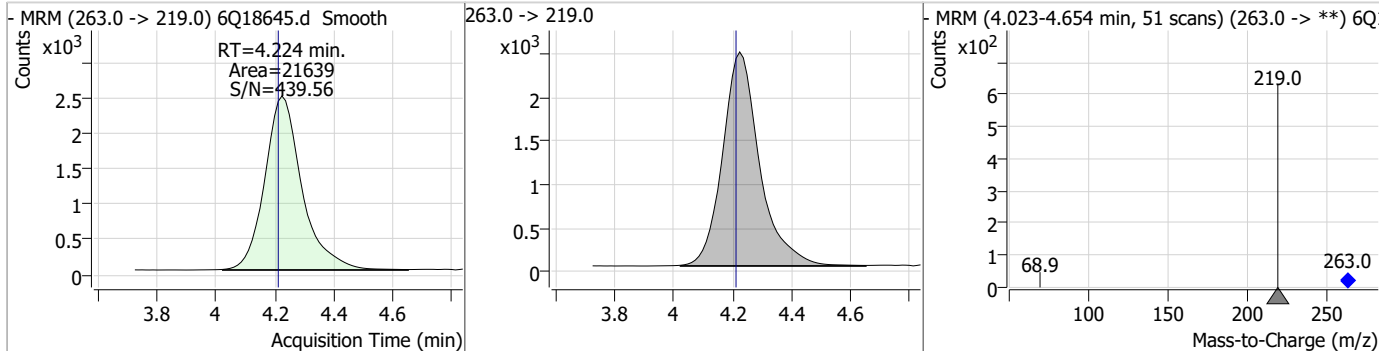
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 2.88 | 3.73 | 0.06 | 2456 | 241.0 -> 117.0 | 13.6 | 7.3 | 21.8 |



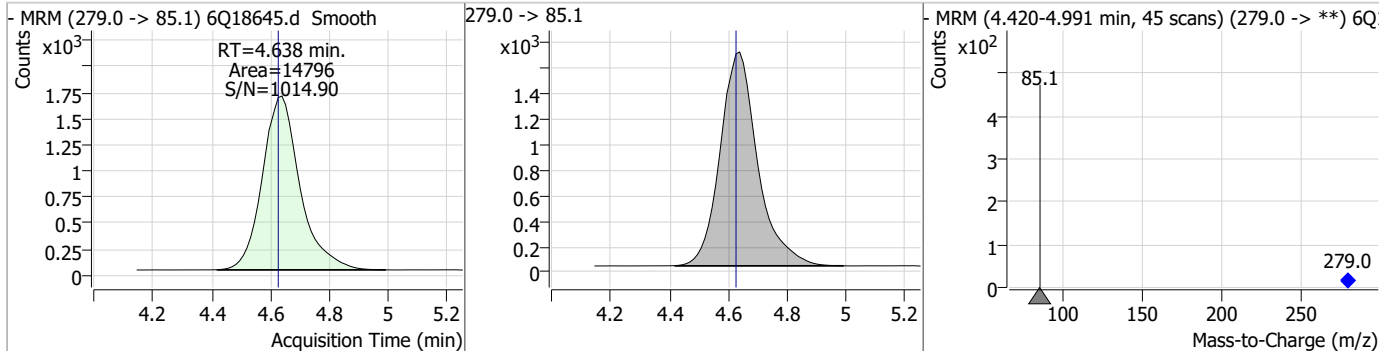
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFPeA | 5.90 | 4.22 | 0.01 | 55557 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFPeA | 1.62 | 4.22 | 0.01 | 21639 | | | | |

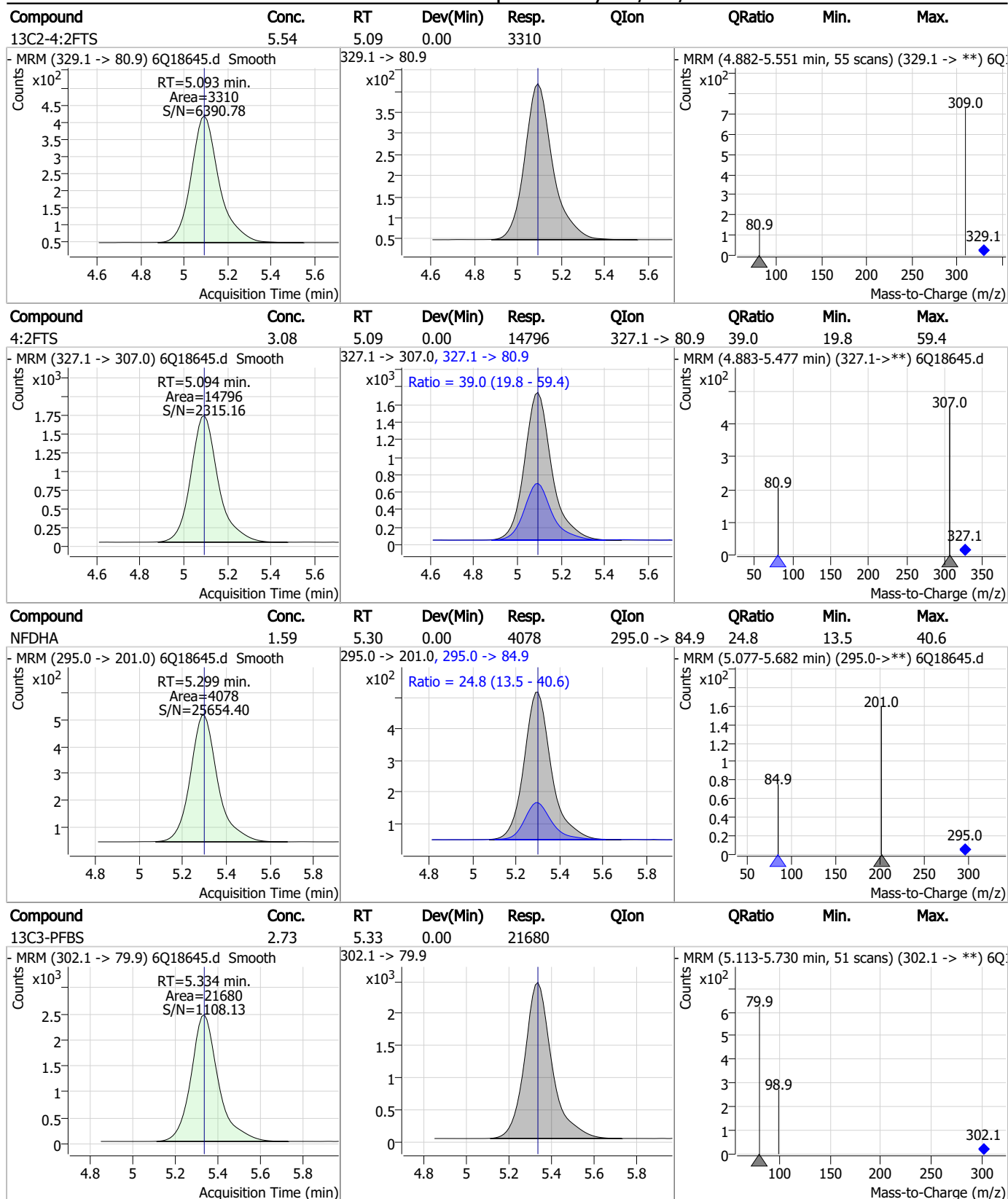


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFMBA | 1.63 | 4.64 | 0.01 | 14796 | | | | |



7.3.2
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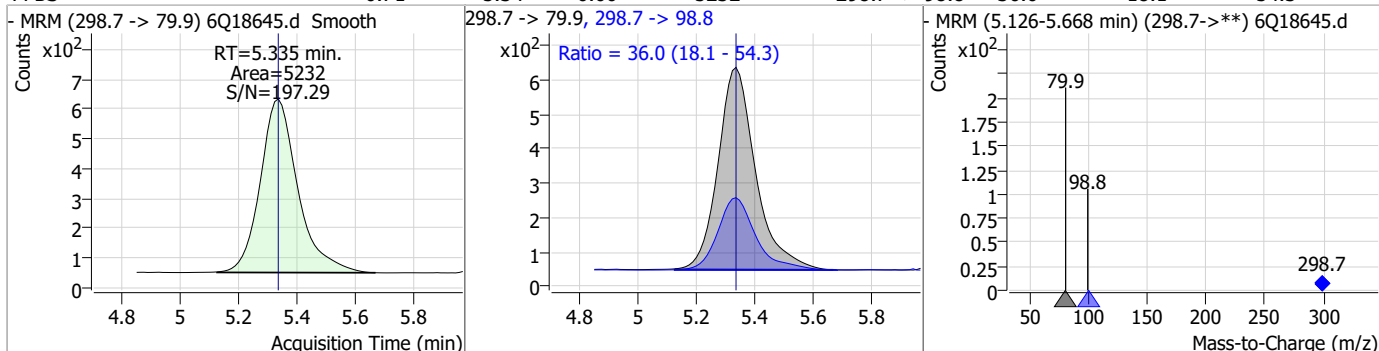
Perfluorinated Compounds by LC/MS/MS



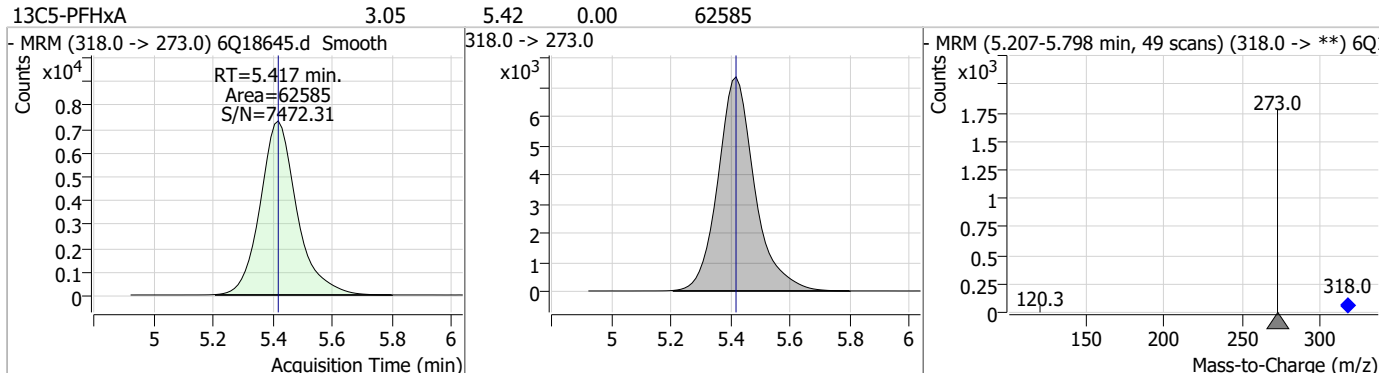
7.3.2
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Perfluorinated Compounds by LC/MS/MS

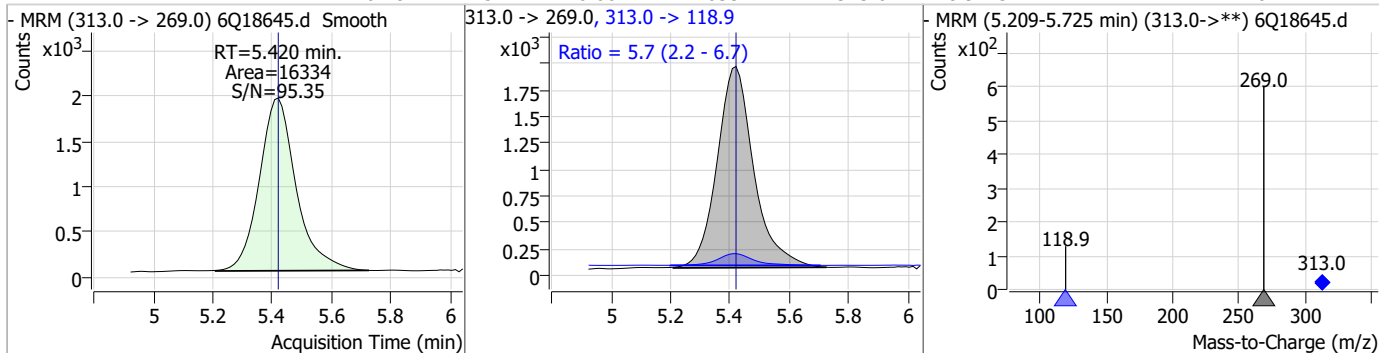
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 0.71 | 5.34 | 0.00 | 5232 | 298.7 -> 98.8 | 36.0 | 18.1 | 54.3 |



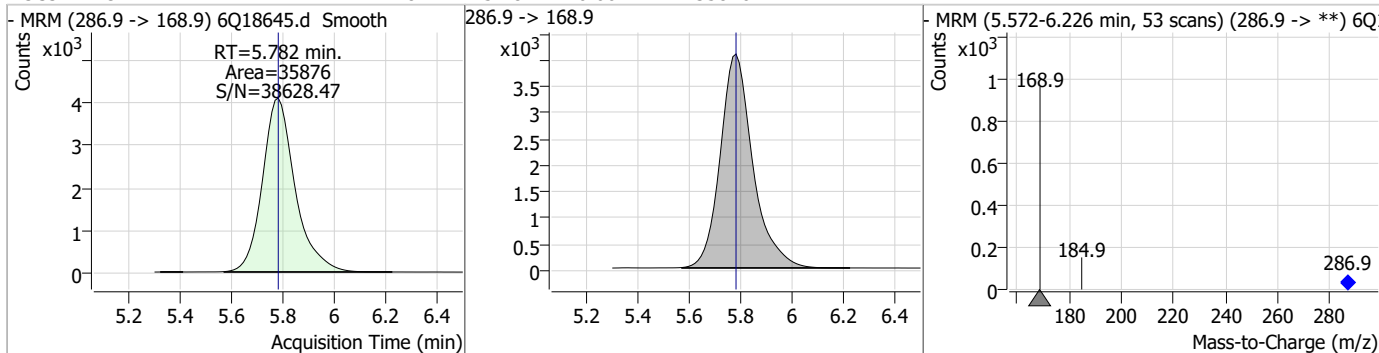
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 3.05 | 5.42 | 0.00 | 62585 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 0.78 | 5.42 | 0.00 | 16334 | 313.0 -> 118.9 | 5.7 | 2.2 | 6.7 |



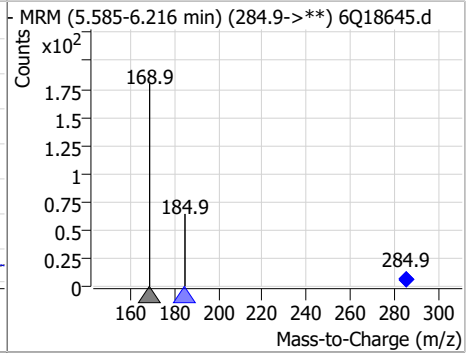
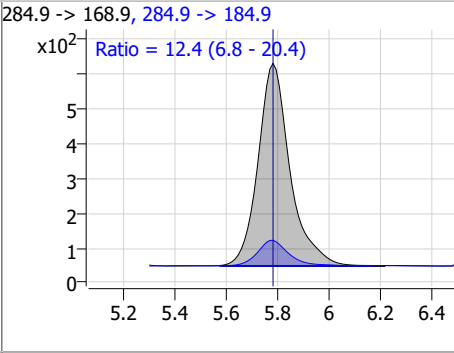
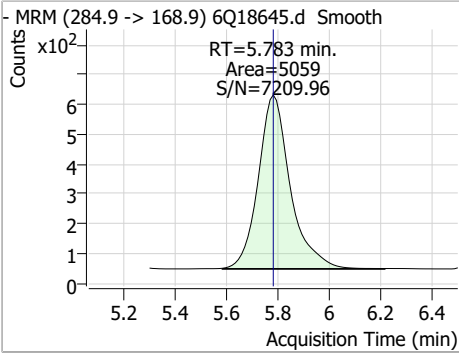
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 11.28 | 5.78 | 0.00 | 35876 | | | | |



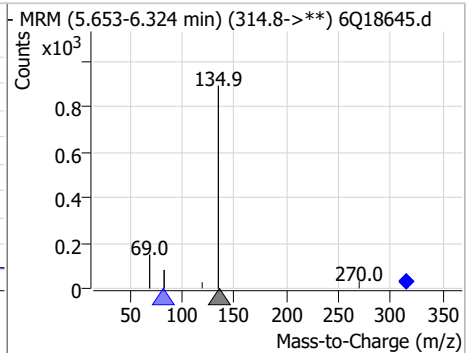
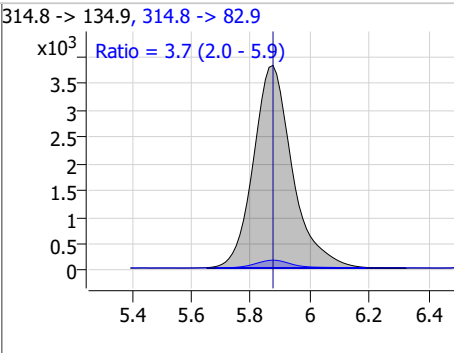
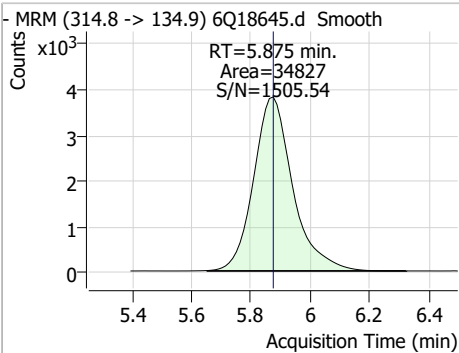
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

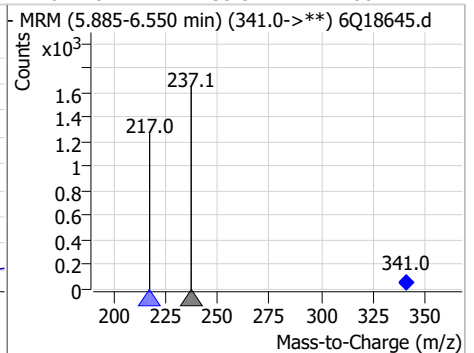
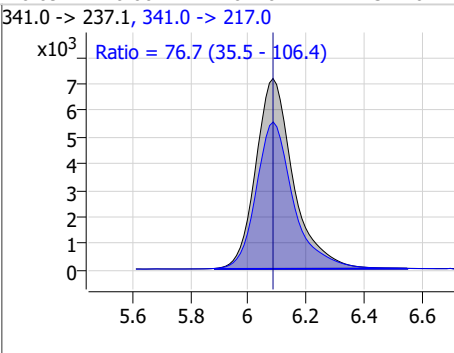
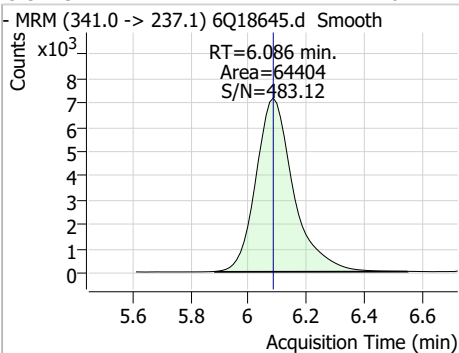
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 1.66 | 5.78 | 0.00 | 5059 | 284.9 -> 184.9 | 12.4 | 6.8 | 20.4 |



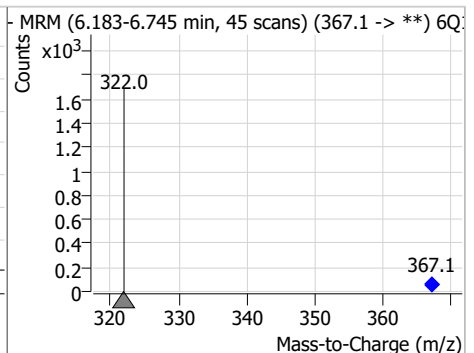
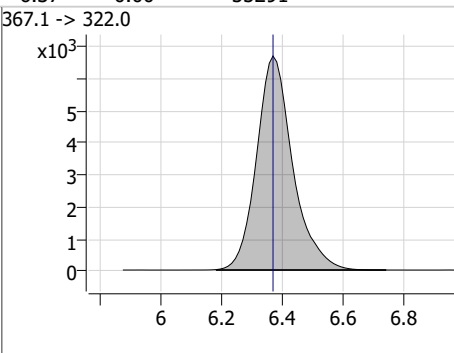
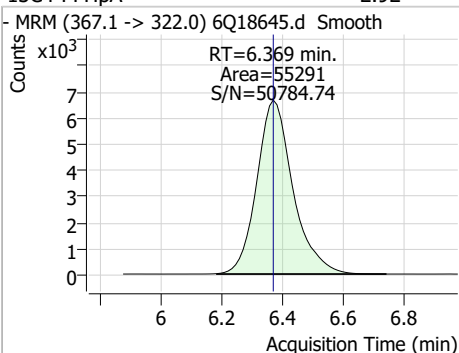
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFEESA | 1.31 | 5.88 | 0.00 | 34827 | 314.8 -> 82.9 | 3.7 | 2.0 | 5.9 |



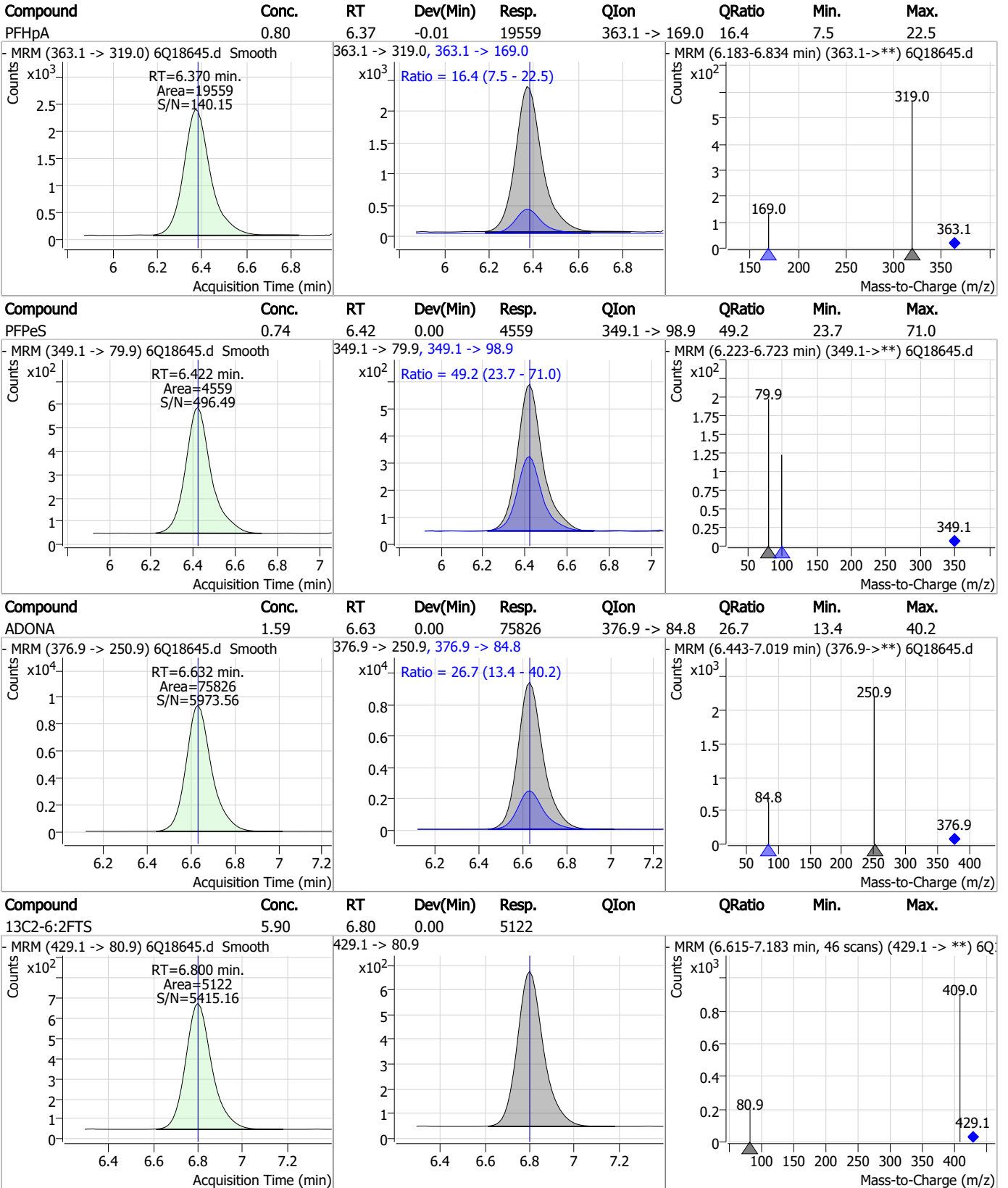
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|-------|
| 5:3FTCA | 17.04 | 6.09 | 0.00 | 64404 | 341.0 -> 217.0 | 76.7 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.92 | 6.37 | 0.00 | 55291 | 367.1 -> 322.0 | | | |



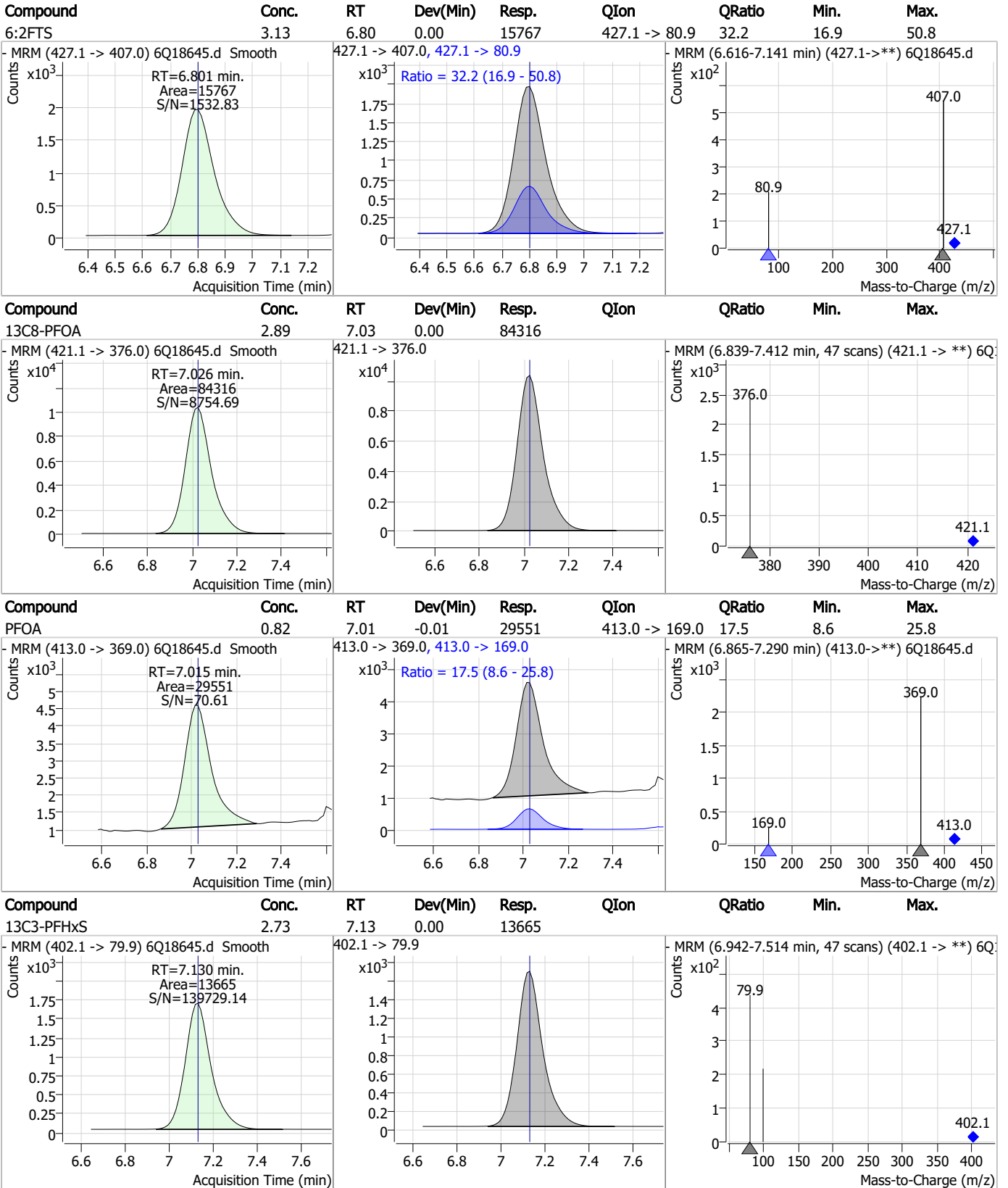
Perfluorinated Compounds by LC/MS/MS



7.3.2
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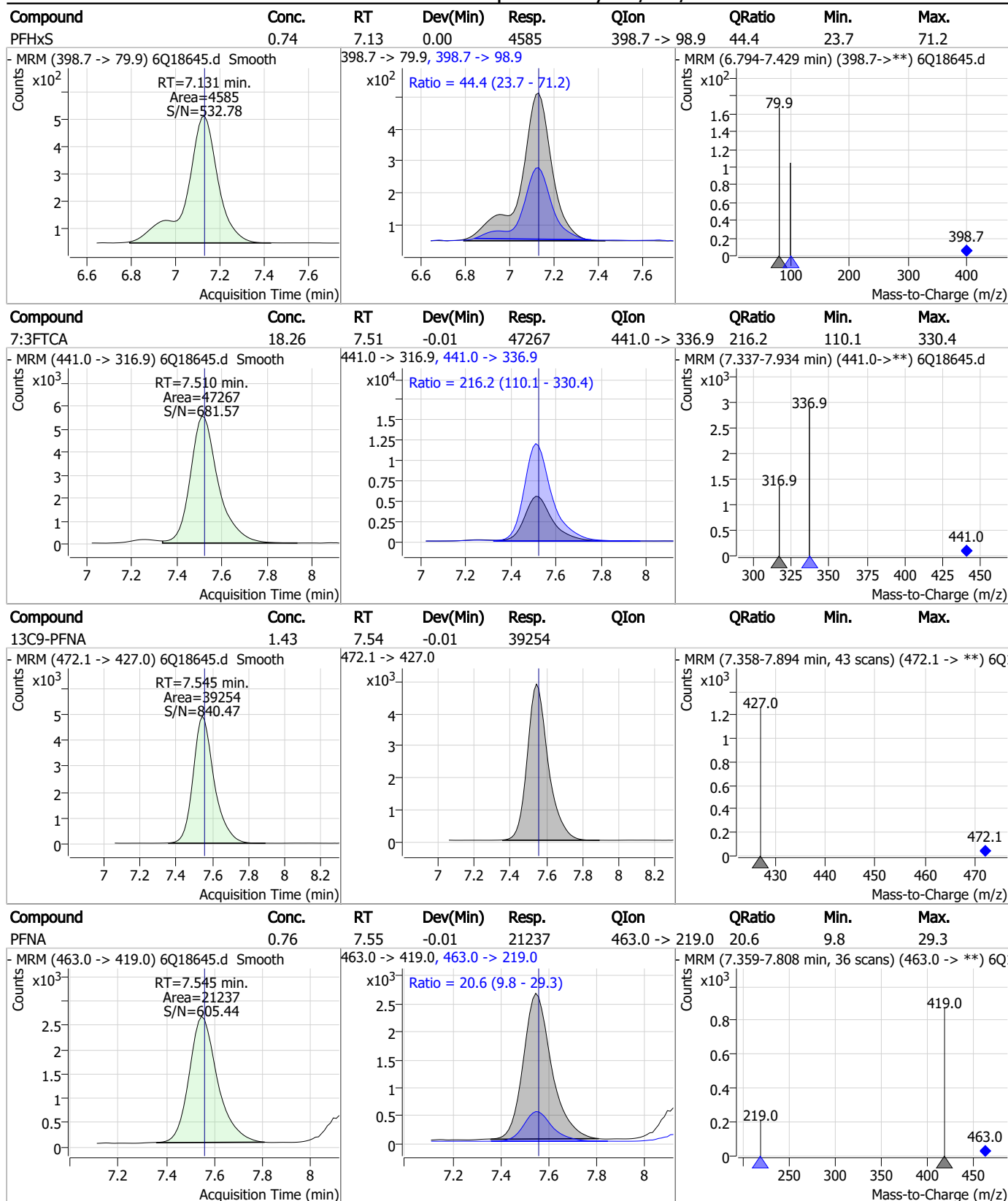
Perfluorinated Compounds by LC/MS/MS



7.3.2

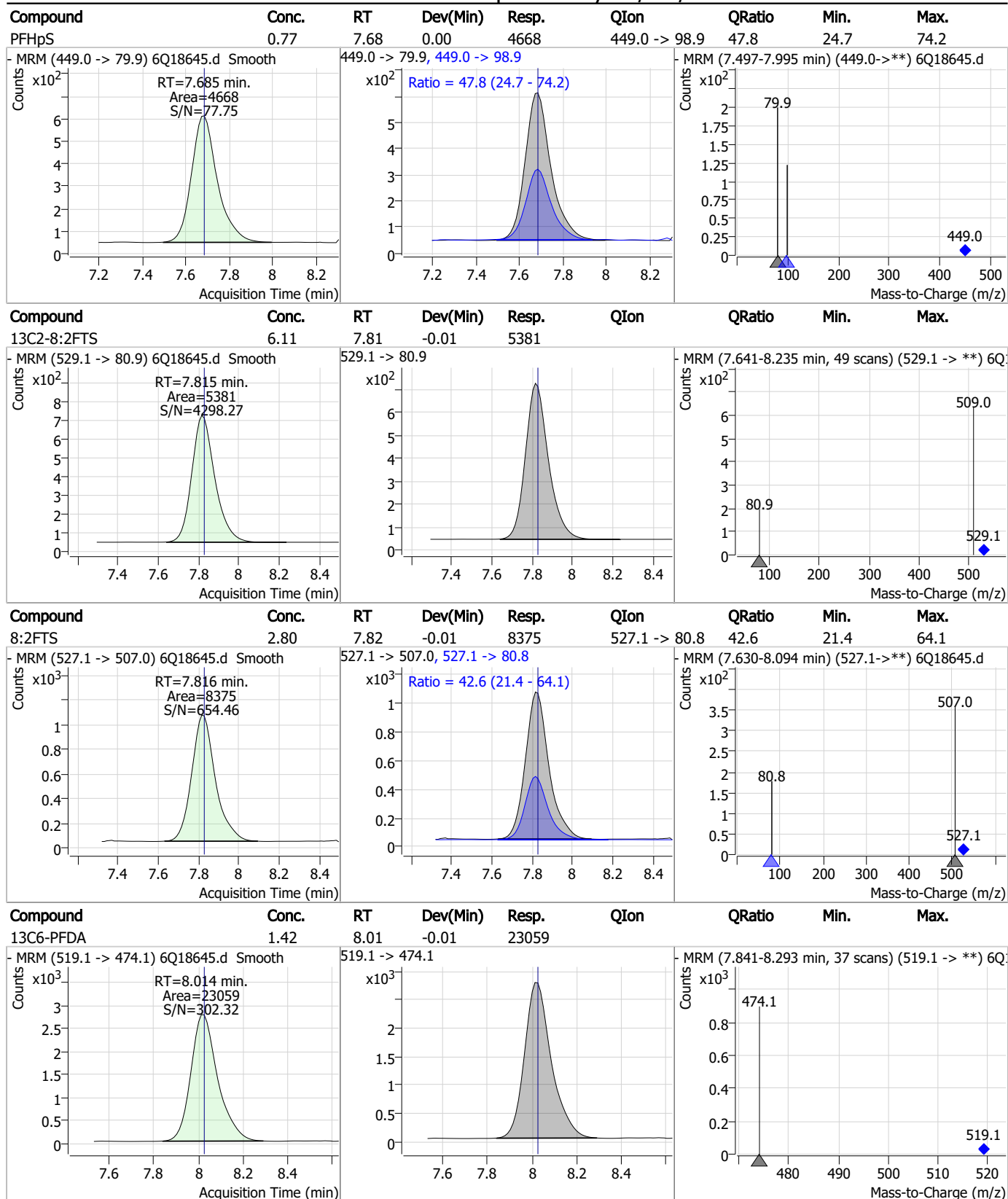
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Perfluorinated Compounds by LC/MS/MS



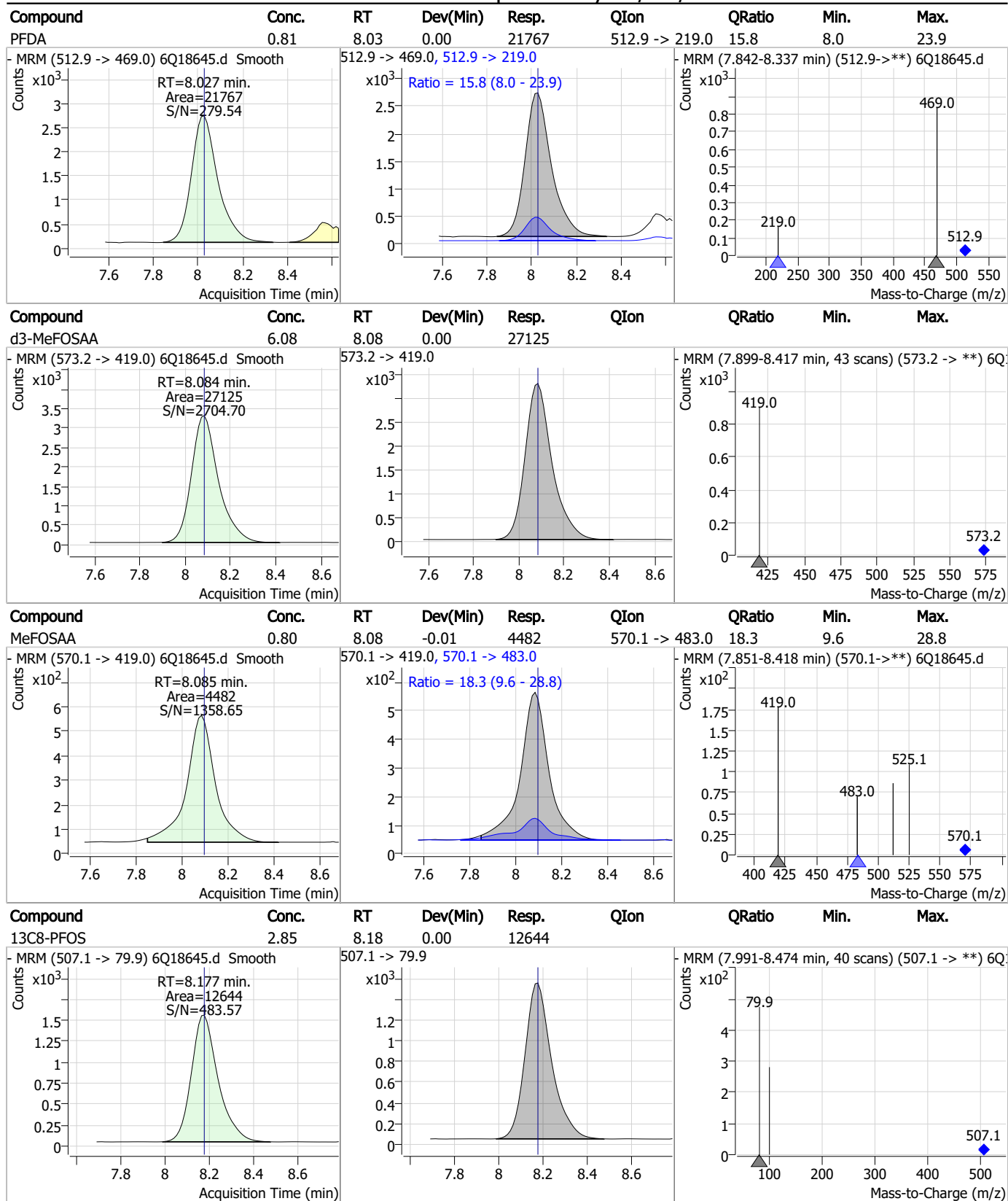
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



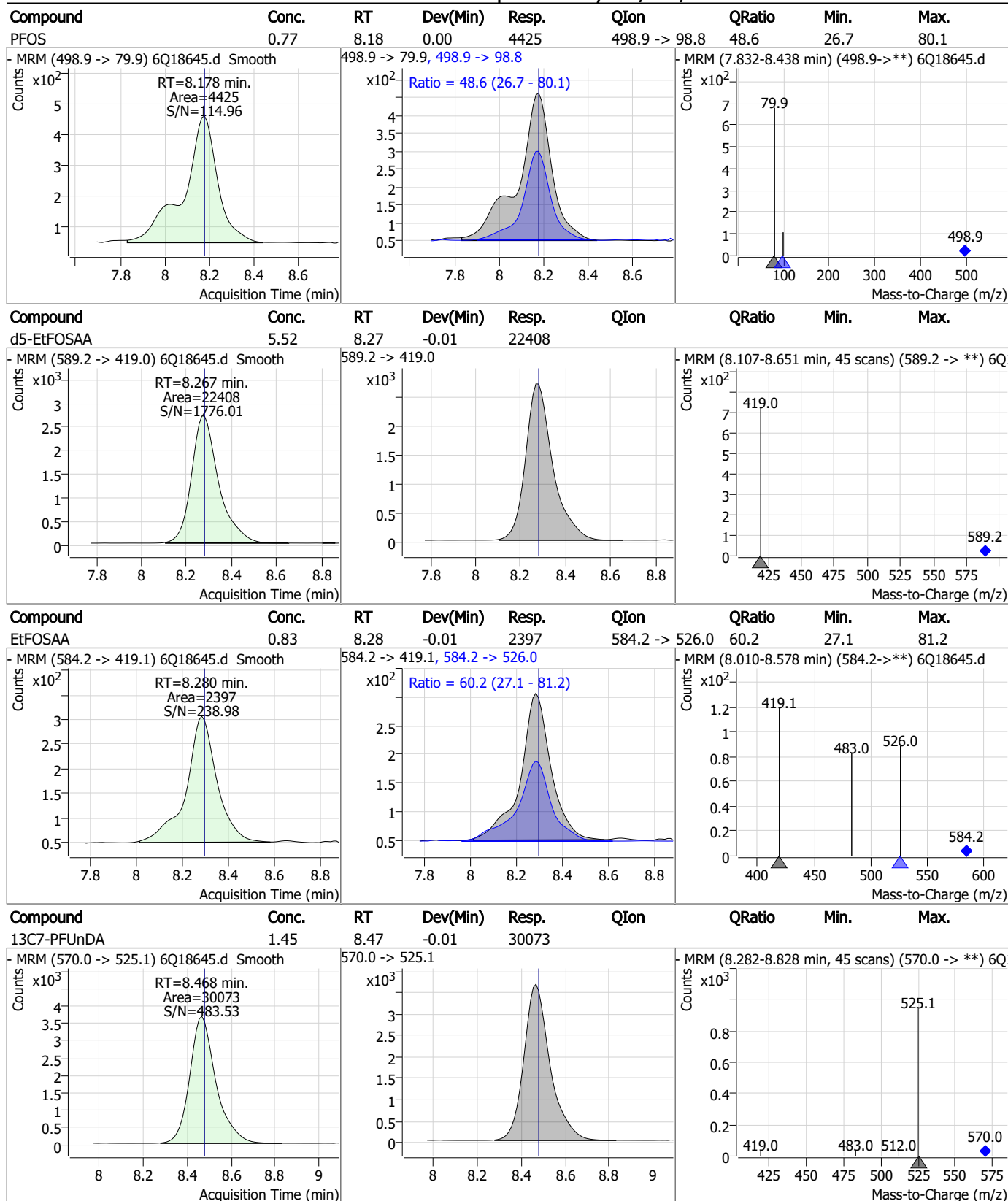
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



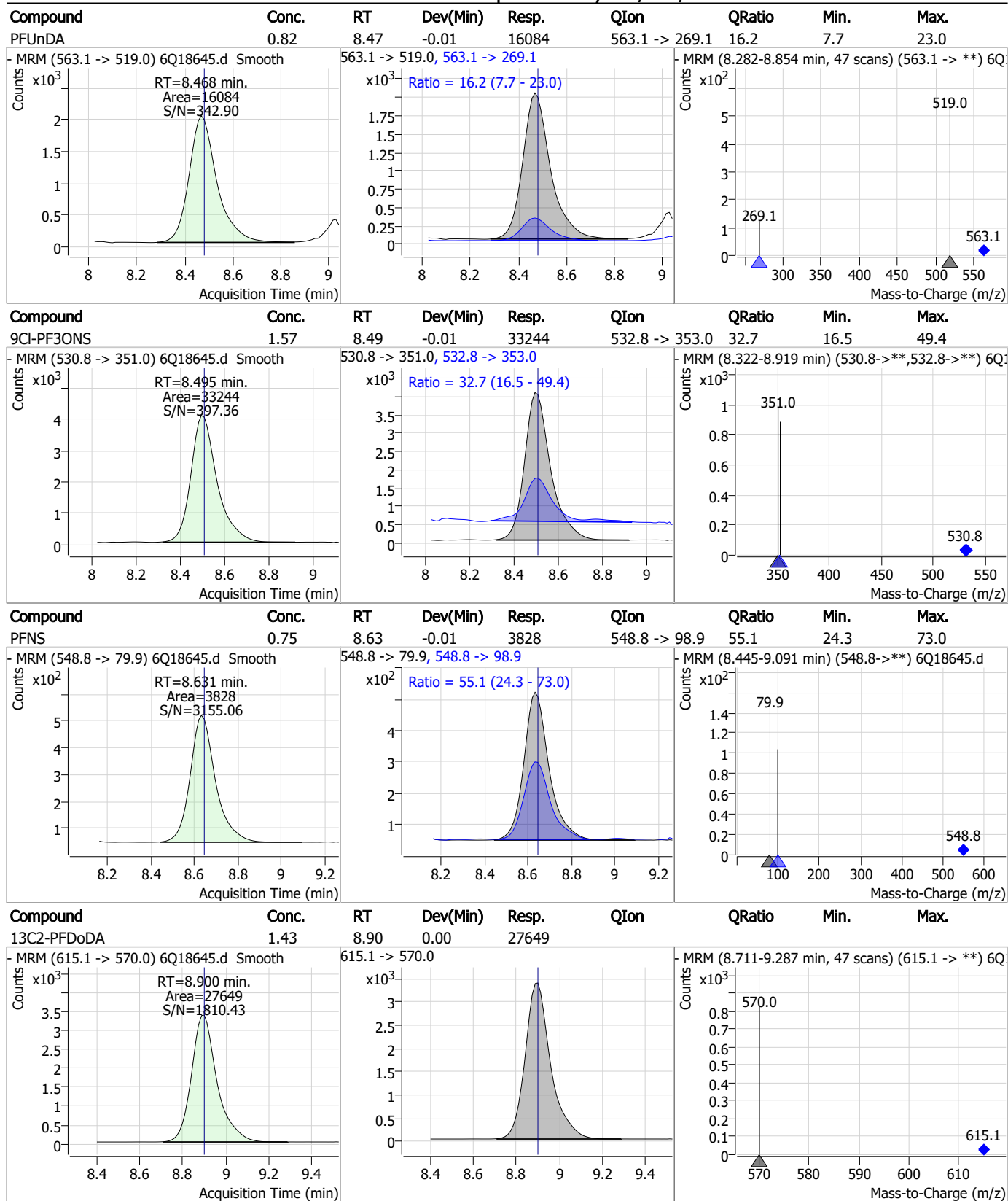
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



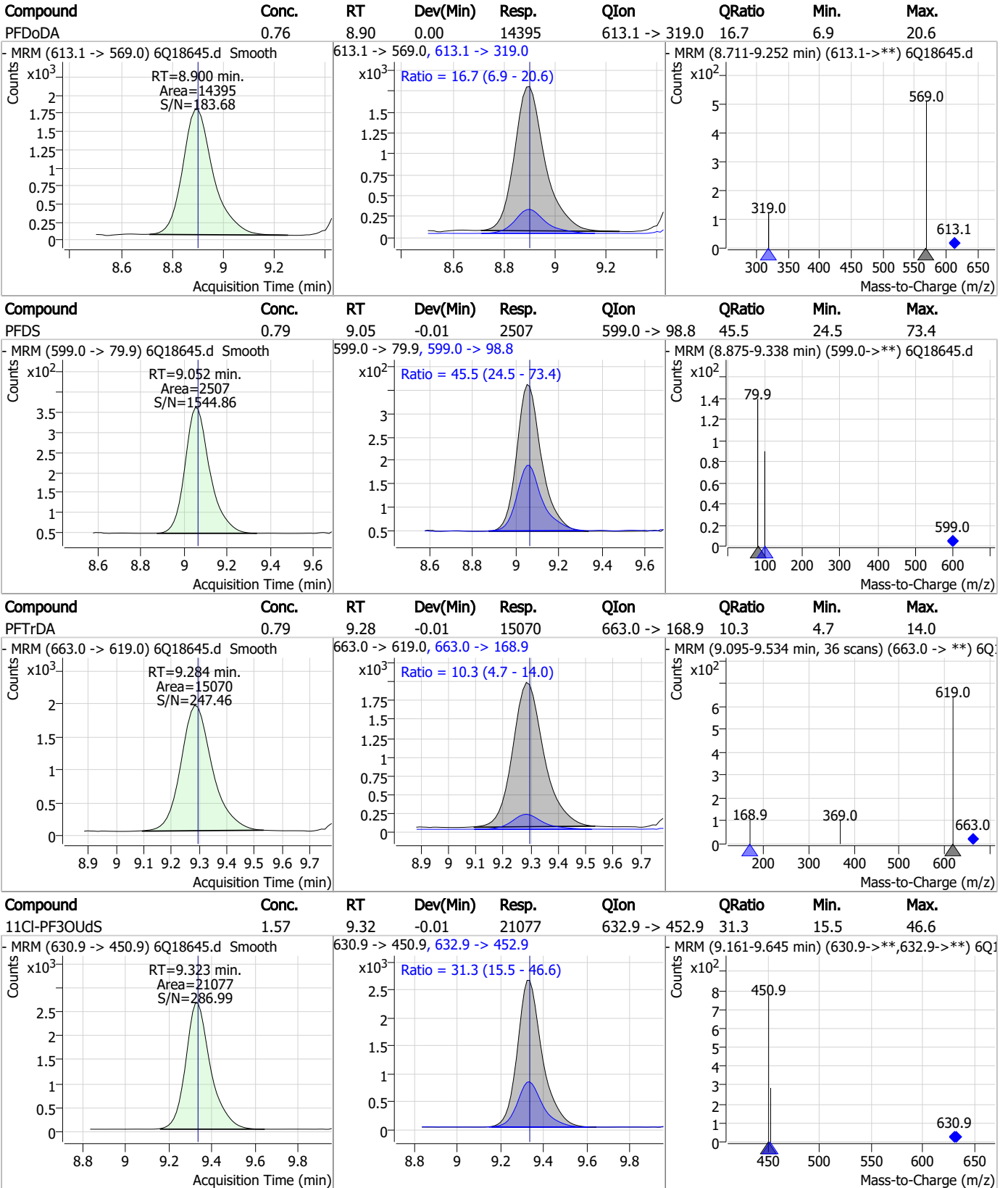
7.3.2
7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

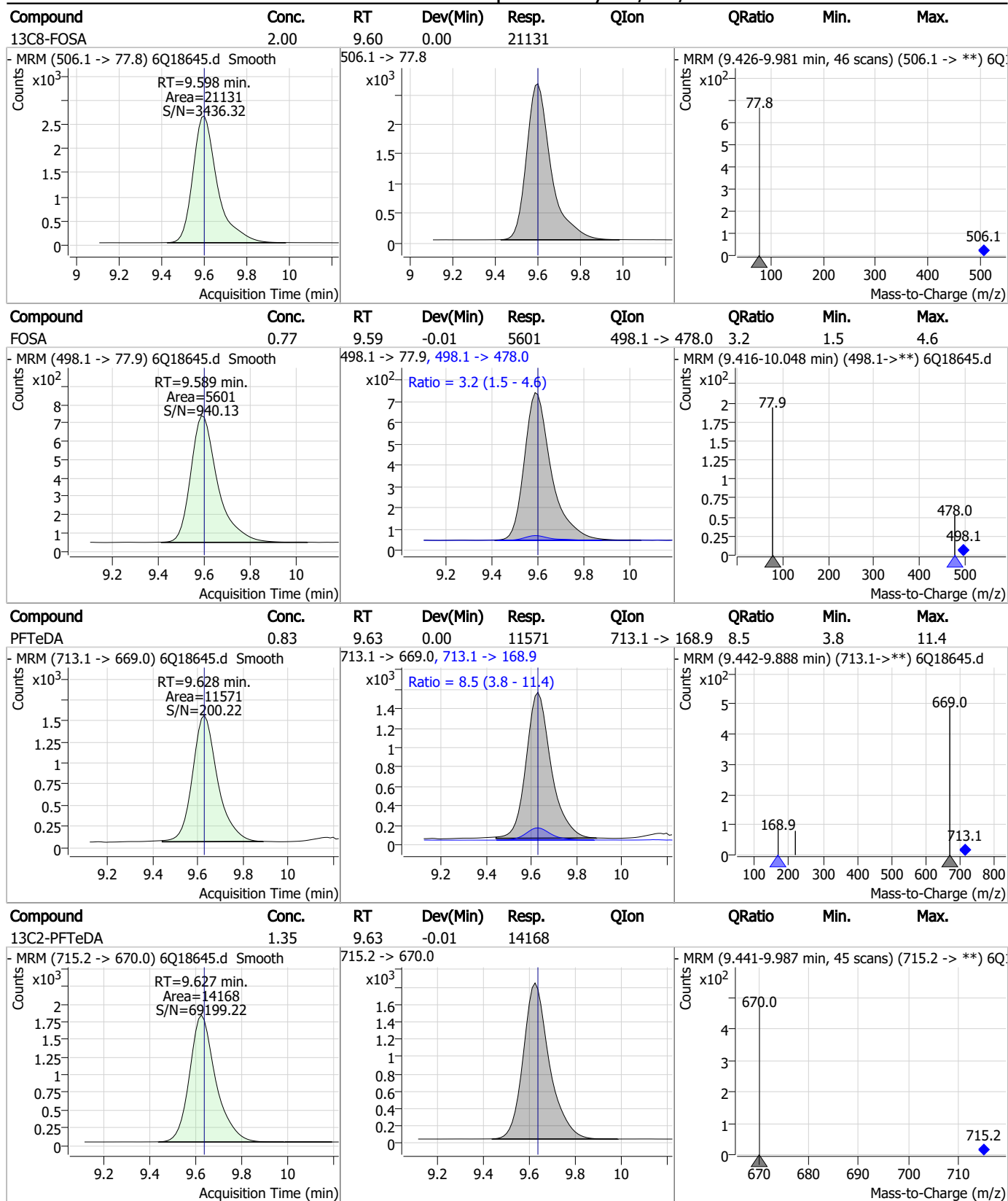
Perfluorinated Compounds by LC/MS/MS



7.3.2 7



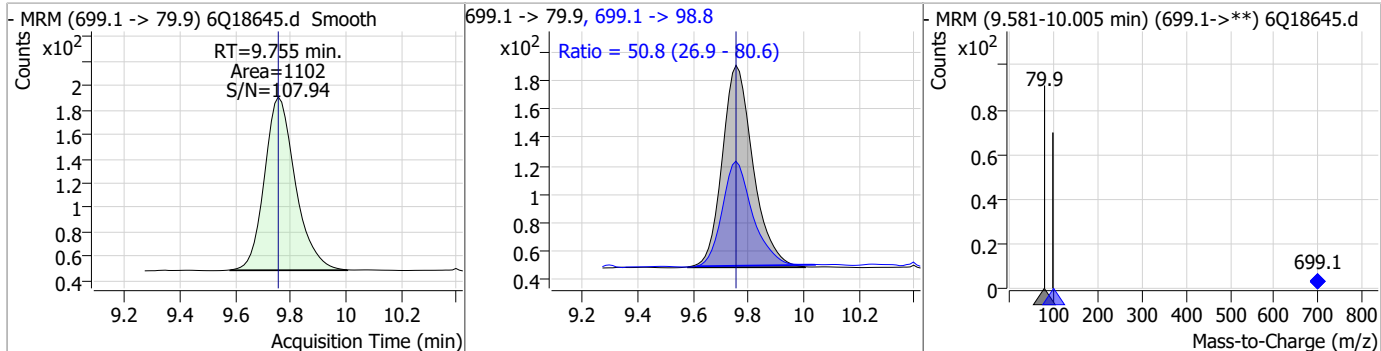
Perfluorinated Compounds by LC/MS/MS



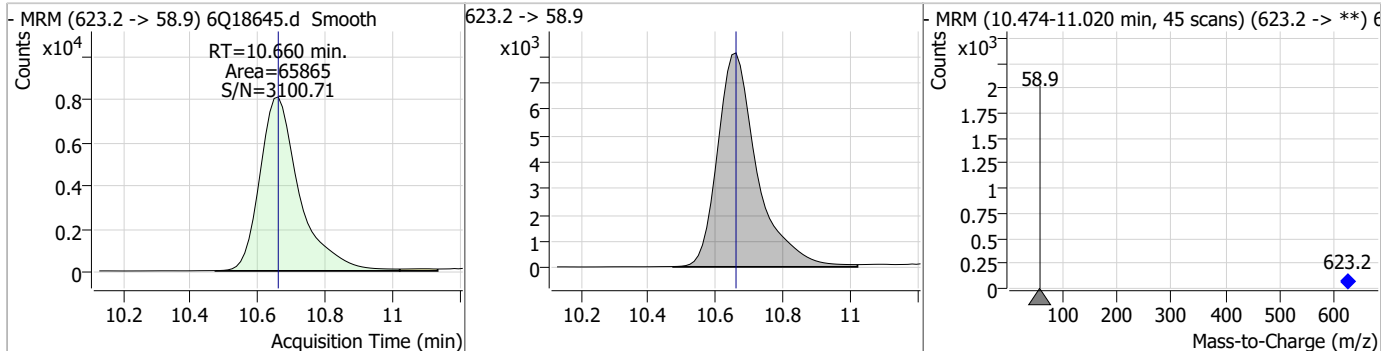
7.3.2
7

Perfluorinated Compounds by LC/MS/MS

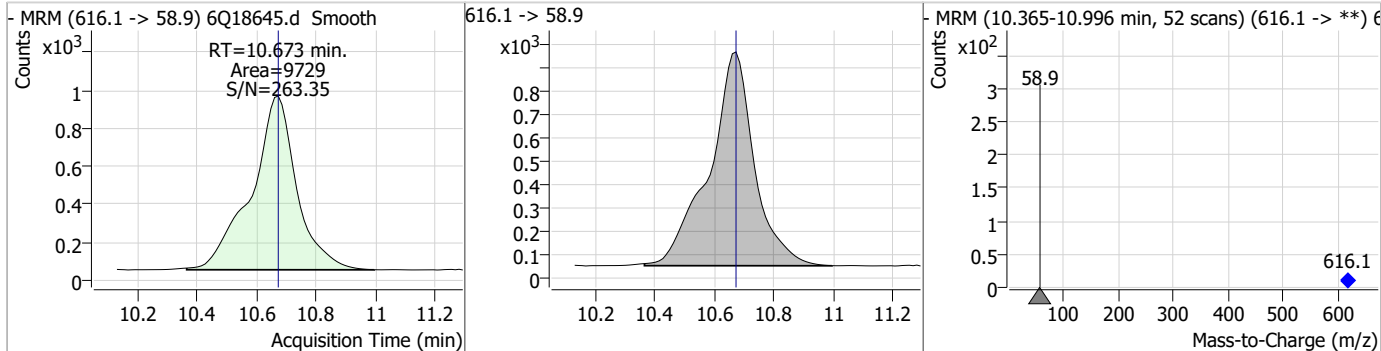
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|---------------------|-------|------|----------|-------|---------------|--------|------|------|
| PFD _o DS | 0.78 | 9.75 | 0.00 | 1102 | 699.1 -> 98.8 | 50.8 | 26.9 | 80.6 |



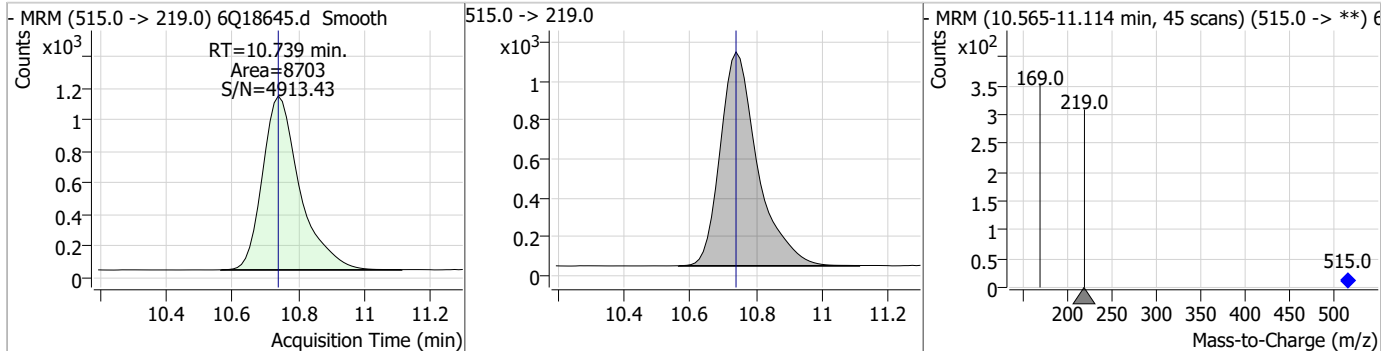
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d7-MeFOSE | 18.96 | 10.66 | 0.00 | 65865 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 3.72 | 10.67 | 0.00 | 9729 | | | | |

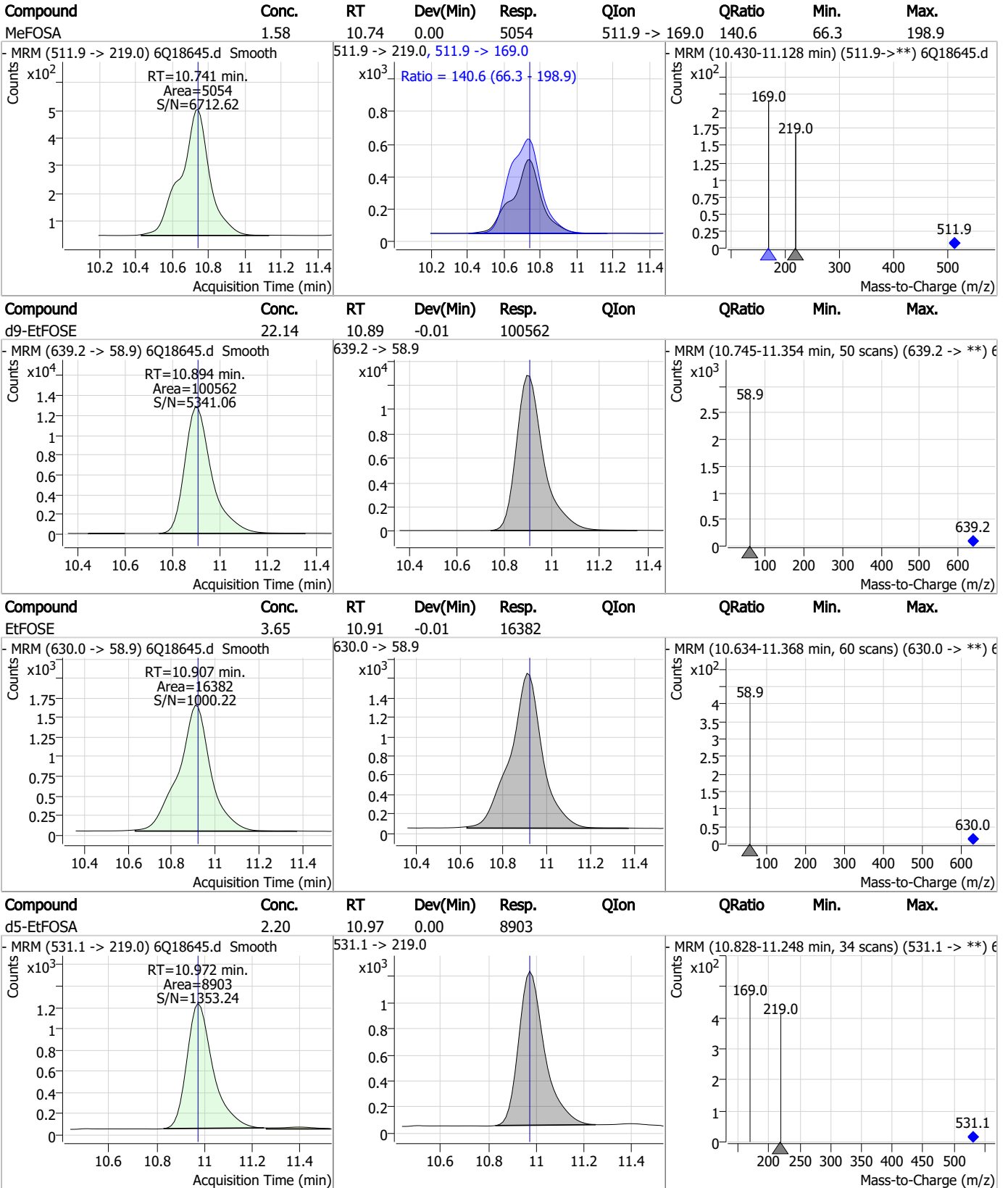


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.04 | 10.74 | 0.00 | 8703 | | | | |



7.3.2
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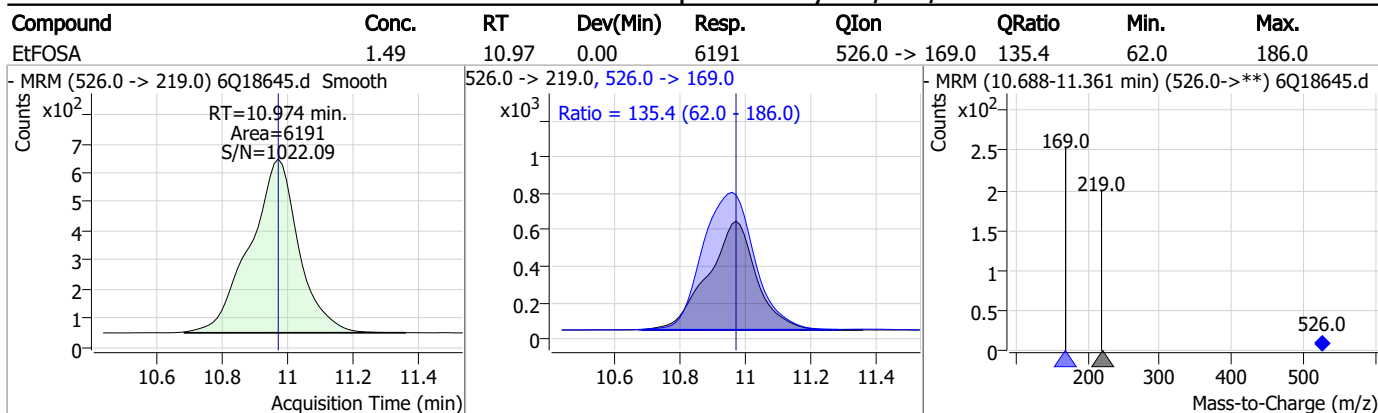
Perfluorinated Compounds by LC/MS/MS



7.3.2

7

Perfluorinated Compounds by LC/MS/MS



7.3.2
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18656.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:57:50 AM
 Sample Name : op97092-ms
 Vial : P2-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,540,,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 115216 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 55324 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 57671 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 55255 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 85276 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 37811 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23677 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30943 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25735 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13283 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 25354 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 21457 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13699 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12425 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3400 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4424 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5127 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25453 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 36591 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 21795 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 78135 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 117182 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10086 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10298 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13726 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 63647 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 9089 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 77126 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 28582 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 40762 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 48843 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3400 | 5.61 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 112.1% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4424 | 5.03 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 100.5% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5127 | 5.74 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 114.8% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 25735 | 1.30 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 103.7% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13283 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.4% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 21457 | 2.67 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 106.7% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13699 | 2.70 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 107.9% | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 115216 | 7.60 µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 76.0% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 55255 | 2.89 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 115.6% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 57671 | 2.79 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 111.6% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 55324 | 5.82 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 116.5% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23677 | 1.41 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 113.1% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 30943 | 1.45 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 115.9% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 25354 | 2.42 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.9% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 85276 | 2.95 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 118.1% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12425 | 2.83 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.0% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 37811 | 1.41 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.6% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25453 | 5.74 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 114.9% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 36591 | 11.40 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 114.0% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10298 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.1% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 21795 | 5.41 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 108.2% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 78135 | 22.66 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 90.7% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 117182 | 25.99 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 104.0% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 10086 | 2.51 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 50053 | 10.14 µg/L | 96 |
| | | 327.1 -> 80.9 | 18715 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 49238 | 11.33 µg/L | 96 |
| | | 427.1 -> 80.9 | 15523 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 30399 | 10.66 µg/L | 97 |
| | | 527.1 -> 80.8 | 12317 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 9061 | 3.23 µg/L | 95 |
| | | 584.2 -> 526.0 | 4617 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 24165 | 2.75 µg/L | 100 |
| | | 498.1 -> 478.0 | 714 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 14848 | 2.84 µg/L | 97 |
| | | 570.1 -> 483.0 | 3078 | | |
| PFBA | 2.868 | 212.8 -> 168.9 | 41846 | 10.97 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 17826 | 2.44 µg/L | 96 |
| | | 298.7 -> 98.8 | 6851 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 71496 | 2.60 µg/L | 100 |
| | | 512.9 -> 219.0 | 11387 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 50299 | 2.85 µg/L | 96 |
| | | 613.1 -> 319.0 | 7653 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 7734 | 2.49 µg/L | 98 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 3681 | 2.68 | µg/L | 95 |
| | | 363.1 -> 319.0 | 65545 | | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 11134 | 2.53 | µg/L | 98 |
| | | 449.0 -> 79.9 | 15052 | | | |
| PFHxA | 5.420 | 449.0 -> 98.9 | 7691 | 2.80 | µg/L | 98 |
| | | 313.0 -> 269.0 | 54219 | | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 2838 | 2.42 | µg/L | 99 |
| | | 398.7 -> 79.9 | 15005 | | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7271 | 2.74 | µg/L | 99 |
| | | 463.0 -> 419.0 | 73433 | | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 14806 | 2.48 | µg/L | 96 |
| | | 548.8 -> 79.9 | 12355 | | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 6369 | 2.86 | µg/L | 99 |
| | | 413.0 -> 369.0 | 103959 | | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 18295 | 2.70 | µg/L | 90 |
| | | 498.9 -> 79.9 | 15307 | | | |
| PFPeA | 4.224 | 498.9 -> 98.8 | 7076 | 5.49 | µg/L | 100 |
| | | 263.0 -> 219.0 | 72955 | | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 15321 | 2.48 | µg/L | 99 |
| | | 349.1 -> 98.9 | 7195 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 37776 | 2.89 | µg/L | 97 |
| | | 713.1 -> 168.9 | 3216 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 49740 | 2.79 | µg/L | 95 |
| | | 663.0 -> 168.9 | 5559 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 51039 | 2.54 | µg/L | 94 |
| | | 563.1 -> 269.1 | 9106 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 66924 | 4.87 | µg/L | 99 |
| | | 632.9 -> 452.9 | 20420 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 114772 | 5.31 | µg/L | 91 |
| | | 532.8 -> 353.0 | 31617 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 255048 | 5.25 | µg/L | 99 |
| | | 376.9 -> 84.8 | 67256 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 17418 | 5.62 | µg/L | 98 |
| | | 284.9 -> 184.9 | 2217 | | | |
| 3:3FTCA | 3.727 | 241.0 -> 177.0 | 8458 | 9.95 | µg/L | 97 |
| | | 241.0 -> 117.0 | 1137 | | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 225218 | 64.65 | µg/L | 97 |
| | | 341.0 -> 217.0 | 166104 | | | |
| 7:3FTCA | 7.523 | 441.0 -> 316.9 | 163815 | 68.67 | µg/L | 93 |
| | | 441.0 -> 336.9 | 379843 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 24000 | 5.11 | µg/L | 93 |
| | | 526.0 -> 169.0 | 31659 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 66499 | 12.72 | µg/L | 100 |
| | | 511.9 -> 219.0 | 20187 | | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 28151 | 5.33 | µg/L | 94 |
| | | 616.1 -> 58.9 | 41665 | | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3385 | 13.42 | µg/L | 100 |
| | | 699.1 -> 98.8 | 1797 | | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 13426 | 2.45 | µg/L | 99 |
| | | 295.0 -> 84.9 | 3492 | | | |
| NFDHA | 5.299 | 279.0 -> 85.1 | 49215 | 5.69 | µg/L | 98 |
| | | 229.0 -> 84.9 | 37023 | | | |
| PFMBA | 4.638 | 314.8 -> 134.9 | 123432 | 5.44 | µg/L | 100 |
| | | 314.8 -> 82.9 | 3990 | | | |
| PFMPA | 3.388 | | | 5.26 | µg/L | 100 |
| | | | | | | |
| PFEESA | 5.875 | | | 5.02 | µg/L | 98 |
| | | | | | | |

7.4.1
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= Qualifier out of range, m = manually integrated, + = Area summed

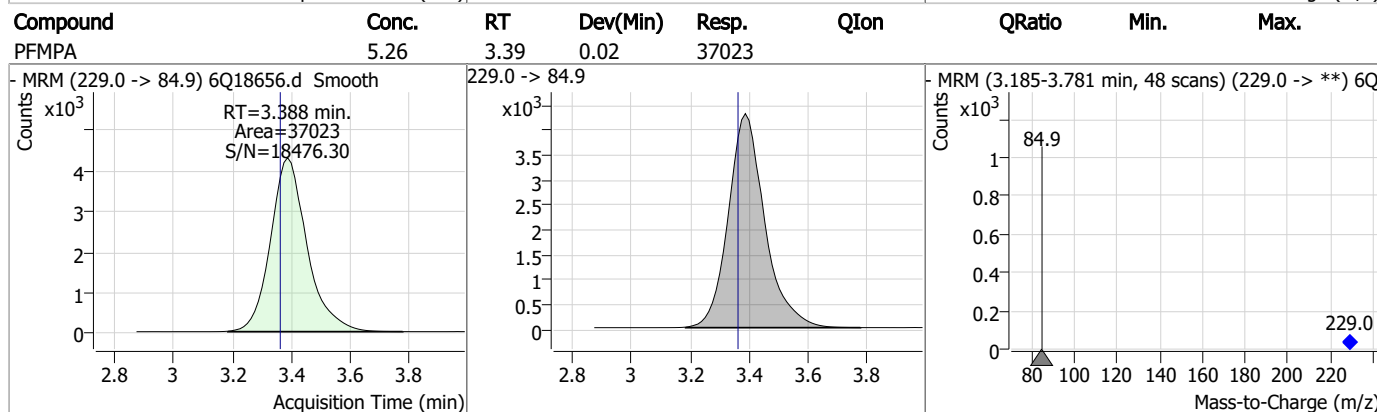
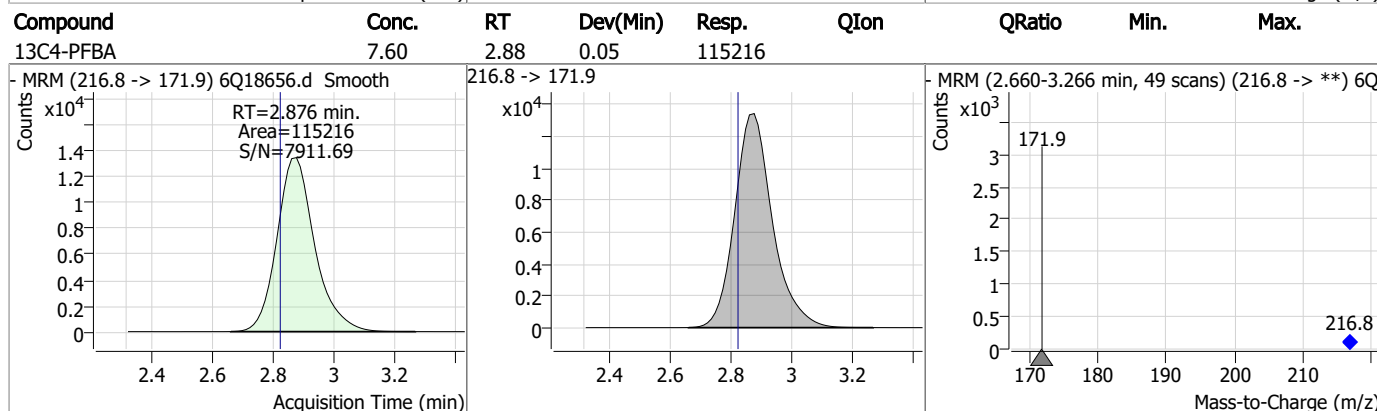
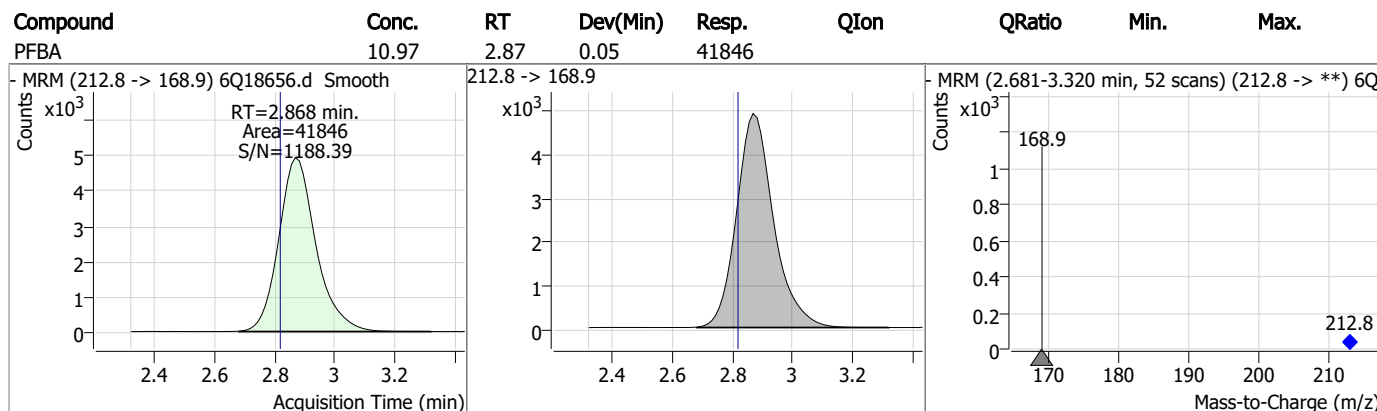
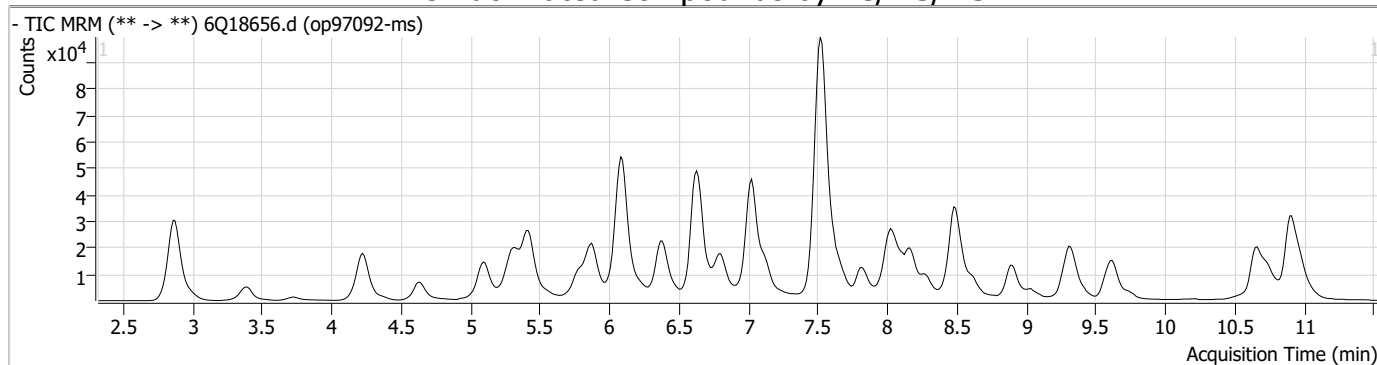
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.4.1

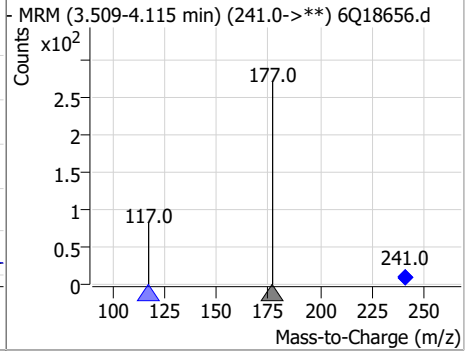
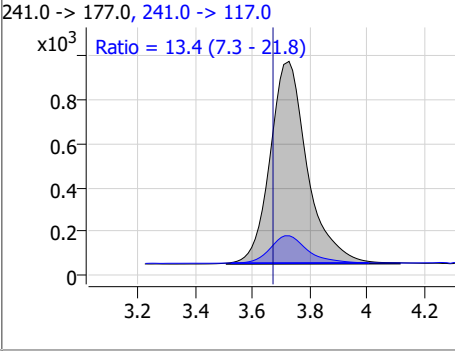
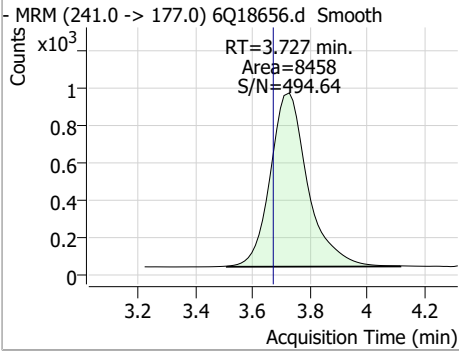
7

Perfluorinated Compounds by LC/MS/MS

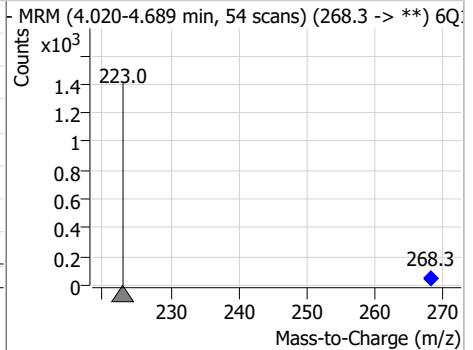
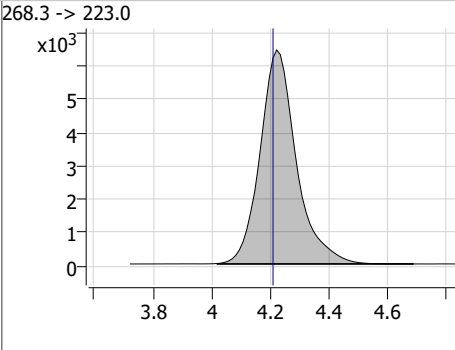
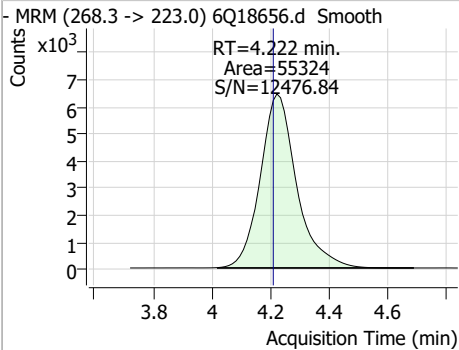


Perfluorinated Compounds by LC/MS/MS

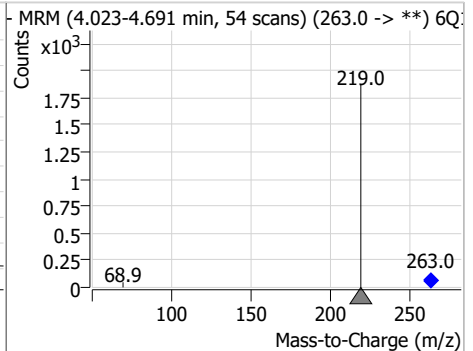
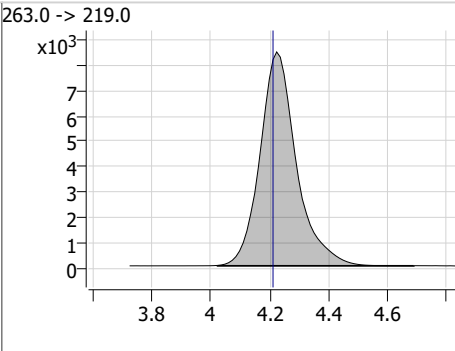
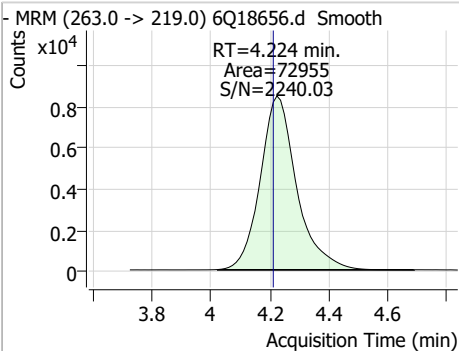
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 9.95 | 3.73 | 0.06 | 8458 | 241.0 -> 117.0 | 13.4 | 7.3 | 21.8 |



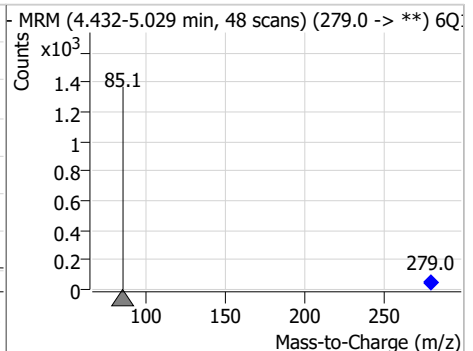
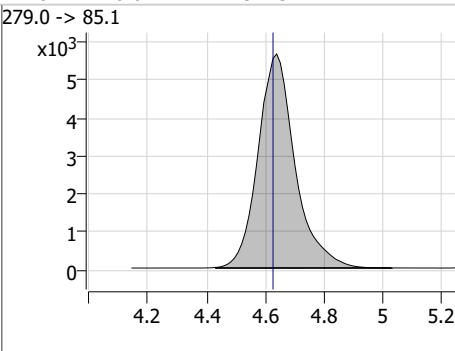
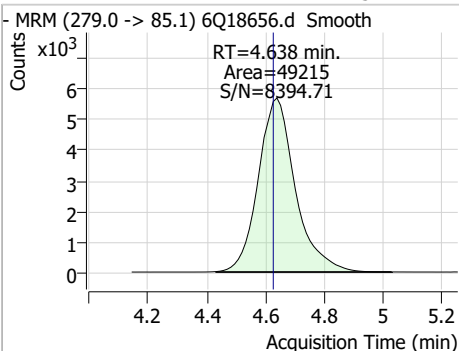
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFPeA | 5.82 | 4.22 | 0.01 | 55324 | | | | |



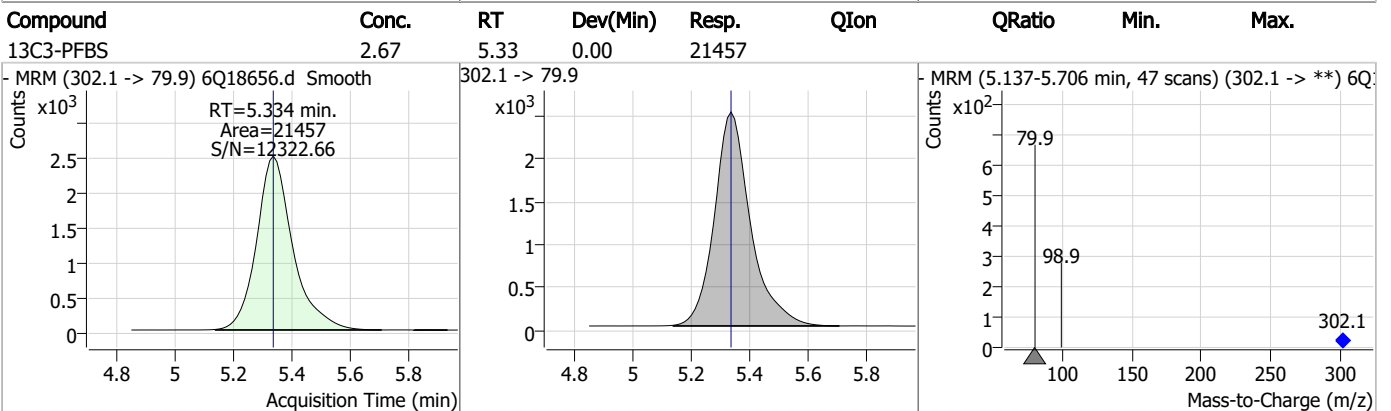
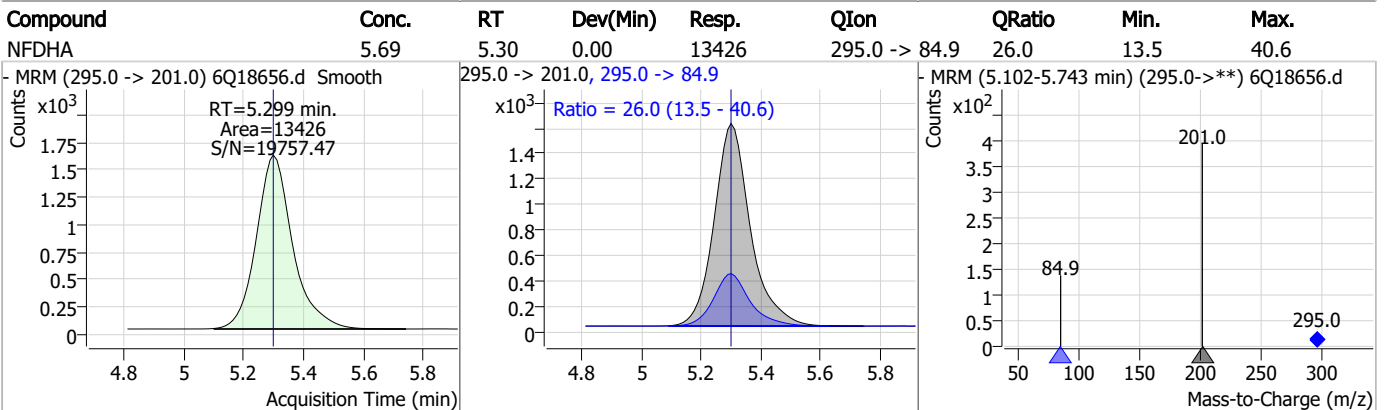
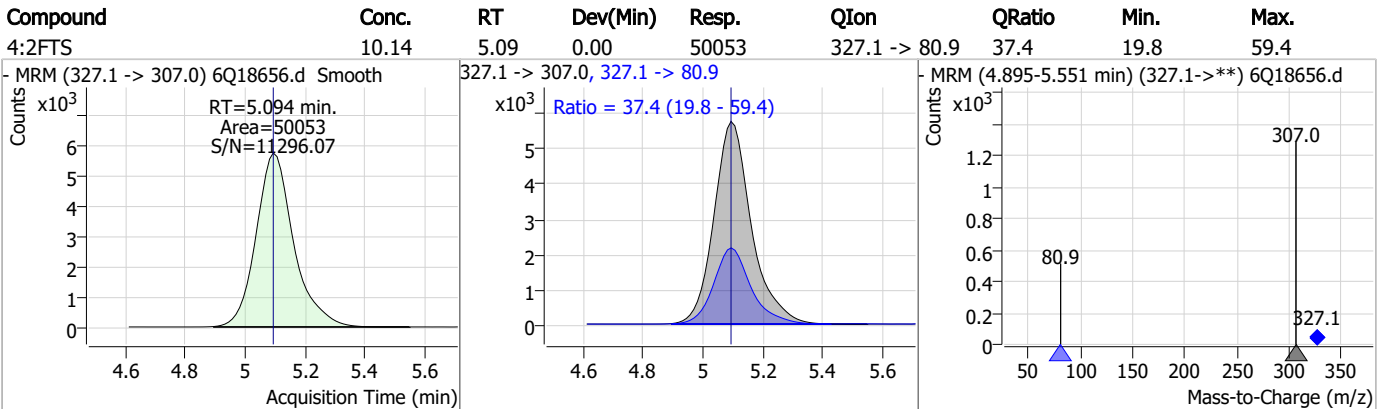
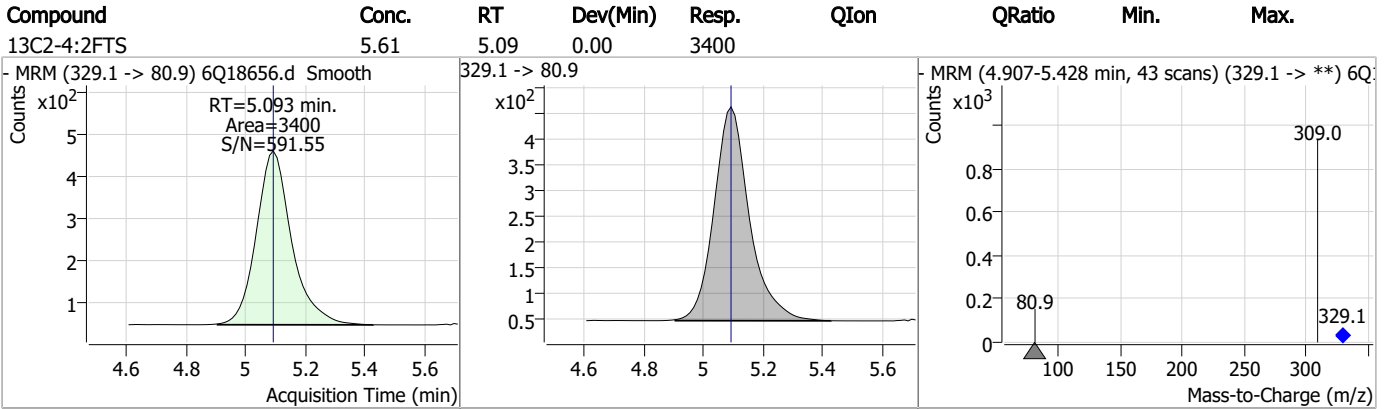
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFPeA | 5.49 | 4.22 | 0.01 | 72955 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFMBA | 5.44 | 4.64 | 0.01 | 49215 | | | | |

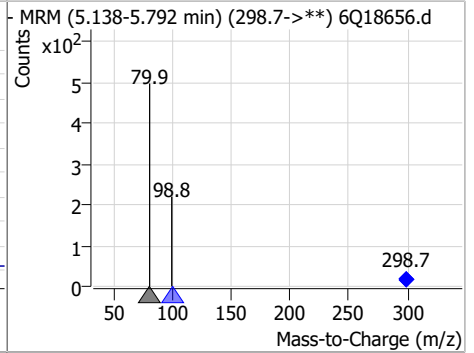
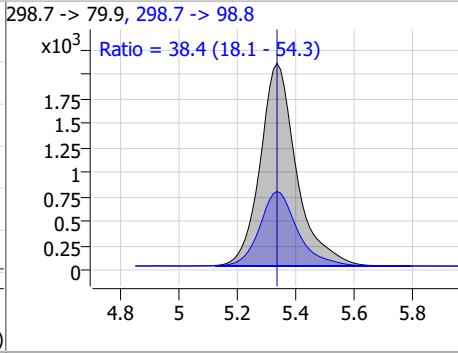
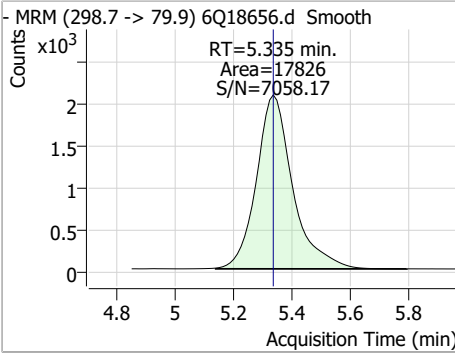


Perfluorinated Compounds by LC/MS/MS

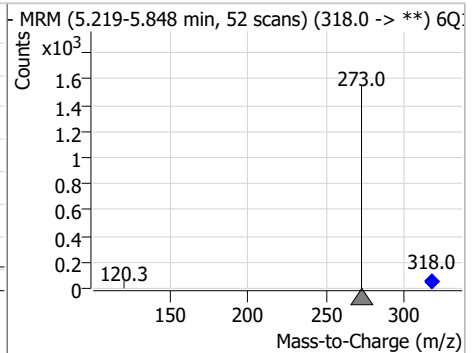
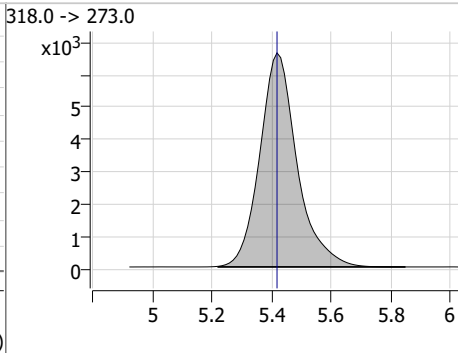
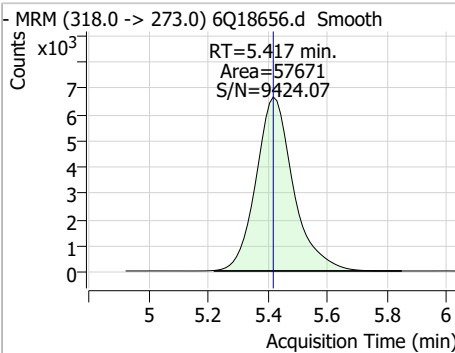


Perfluorinated Compounds by LC/MS/MS

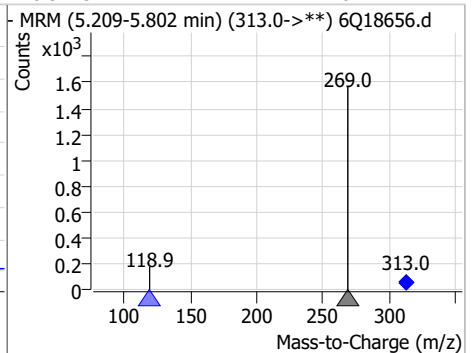
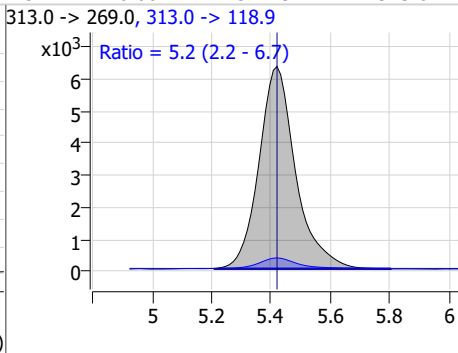
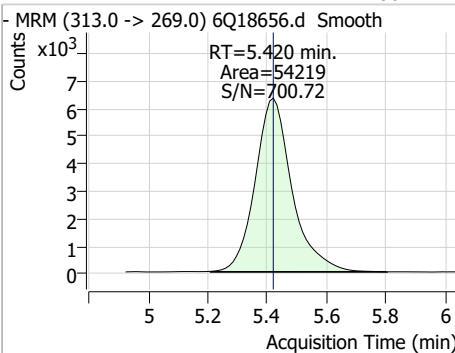
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 2.44 | 5.34 | 0.00 | 17826 | 298.7 -> 98.8 | 38.4 | 18.1 | 54.3 |



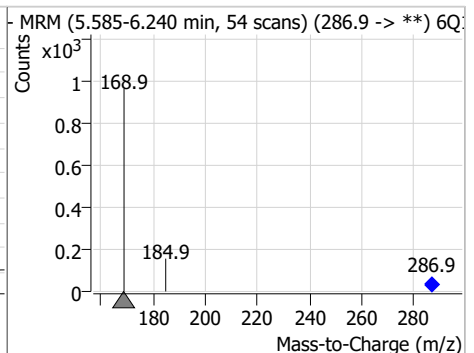
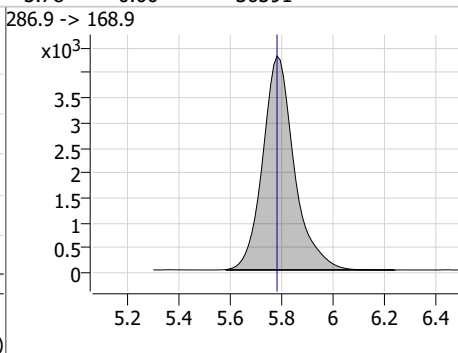
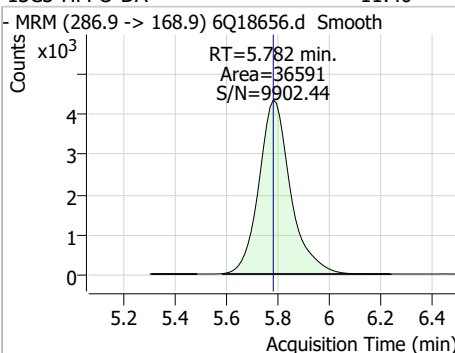
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.79 | 5.42 | 0.00 | 57671 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 2.80 | 5.42 | 0.00 | 54219 | 313.0 -> 118.9 | 5.2 | 2.2 | 6.7 |

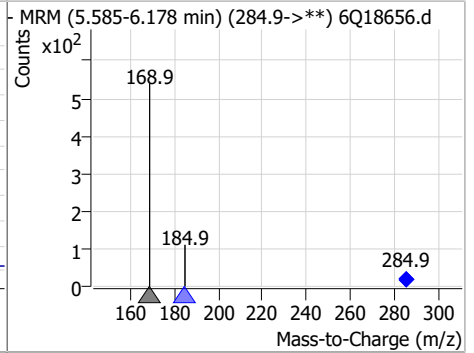
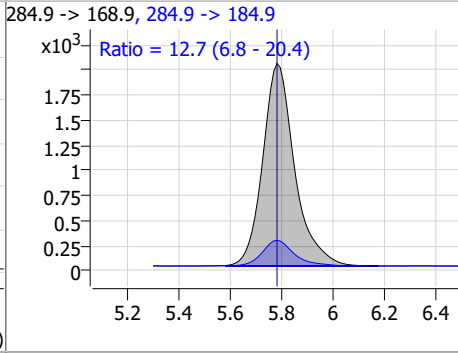
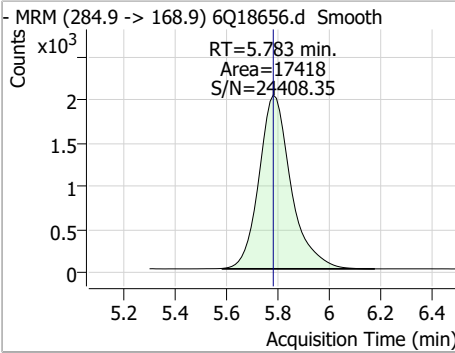


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 11.40 | 5.78 | 0.00 | 36591 | | | | |

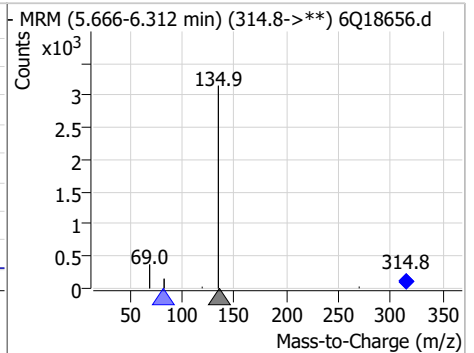
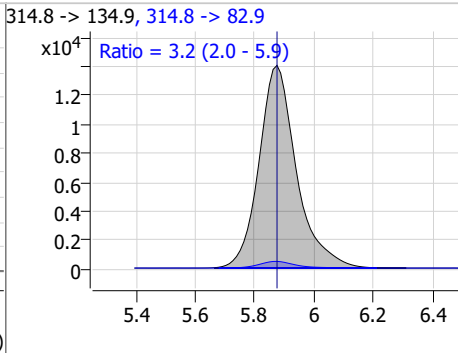
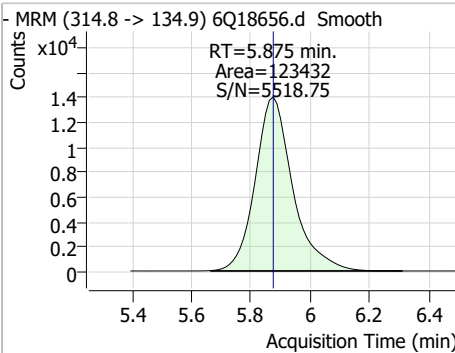


Perfluorinated Compounds by LC/MS/MS

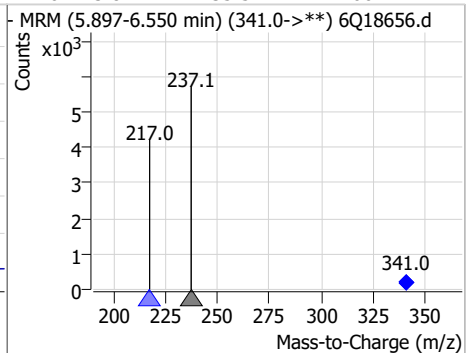
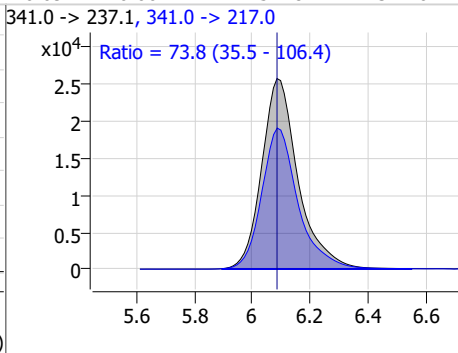
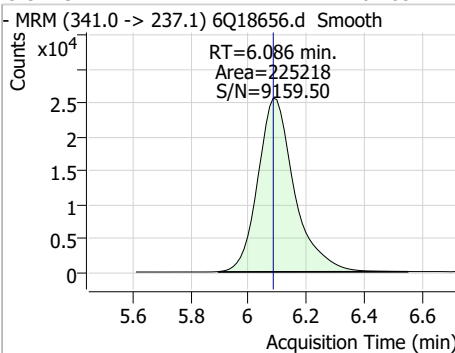
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 5.62 | 5.78 | 0.00 | 17418 | 284.9 -> 184.9 | 12.7 | 6.8 | 20.4 |



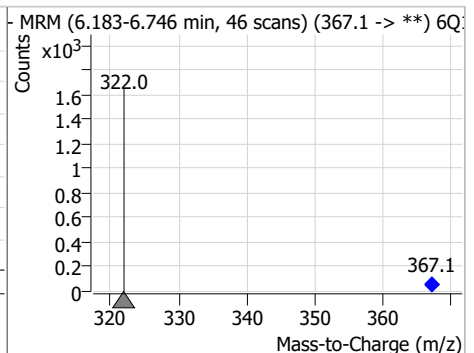
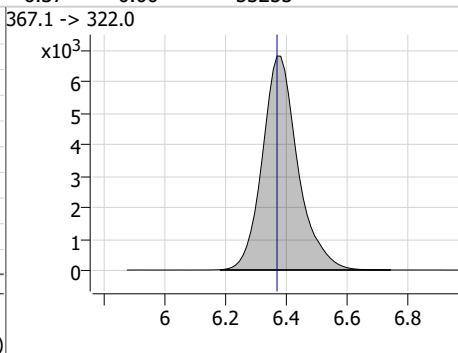
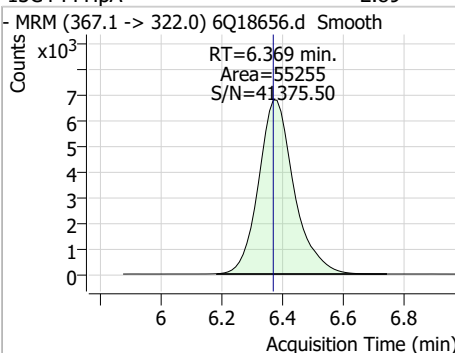
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 5.02 | 5.88 | 0.00 | 123432 | 314.8 -> 82.9 | 3.2 | 2.0 | 5.9 |



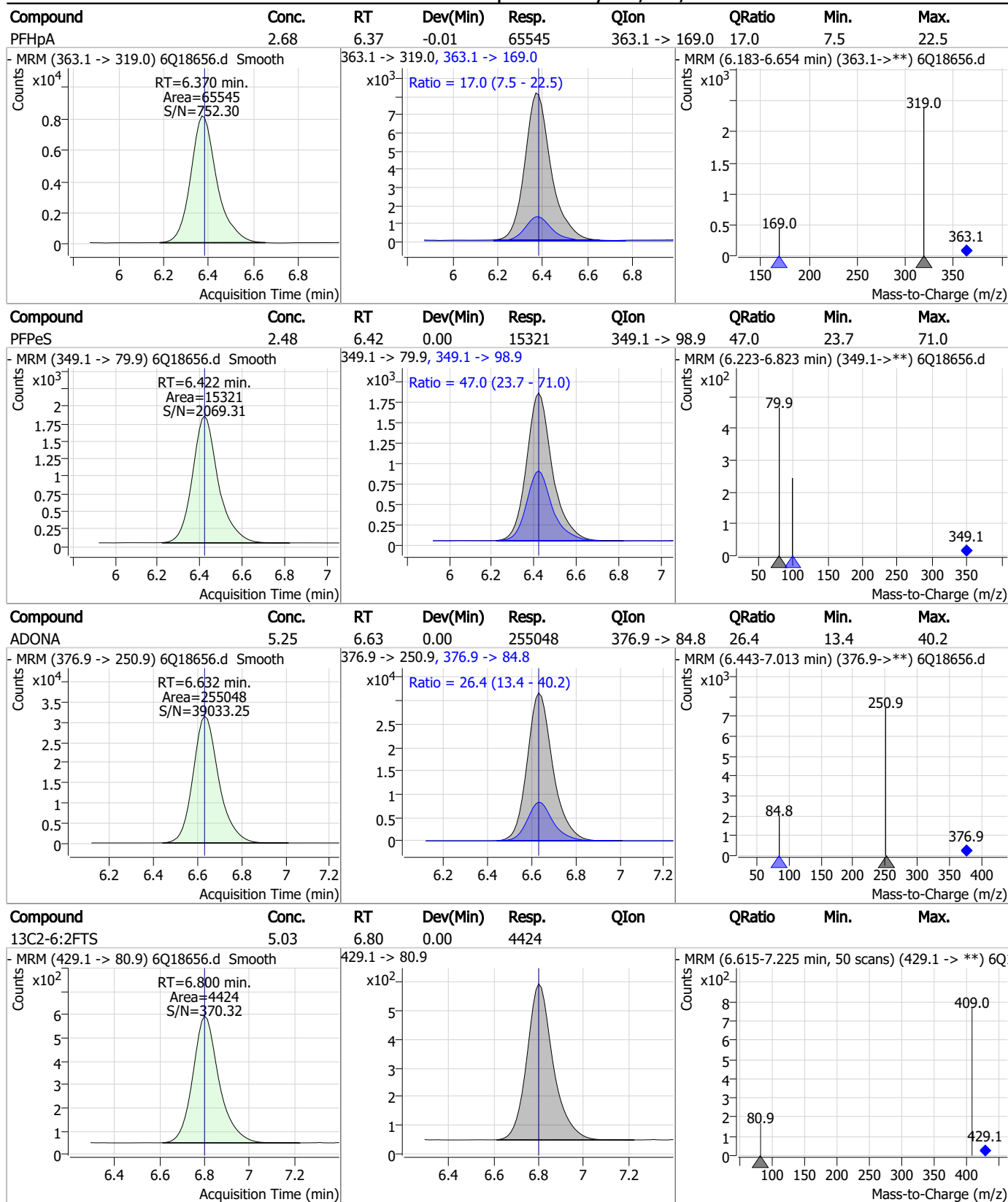
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 64.65 | 6.09 | 0.00 | 225218 | 341.0 -> 217.0 | 73.8 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.89 | 6.37 | 0.00 | 55255 | 367.1 -> 322.0 | | | |

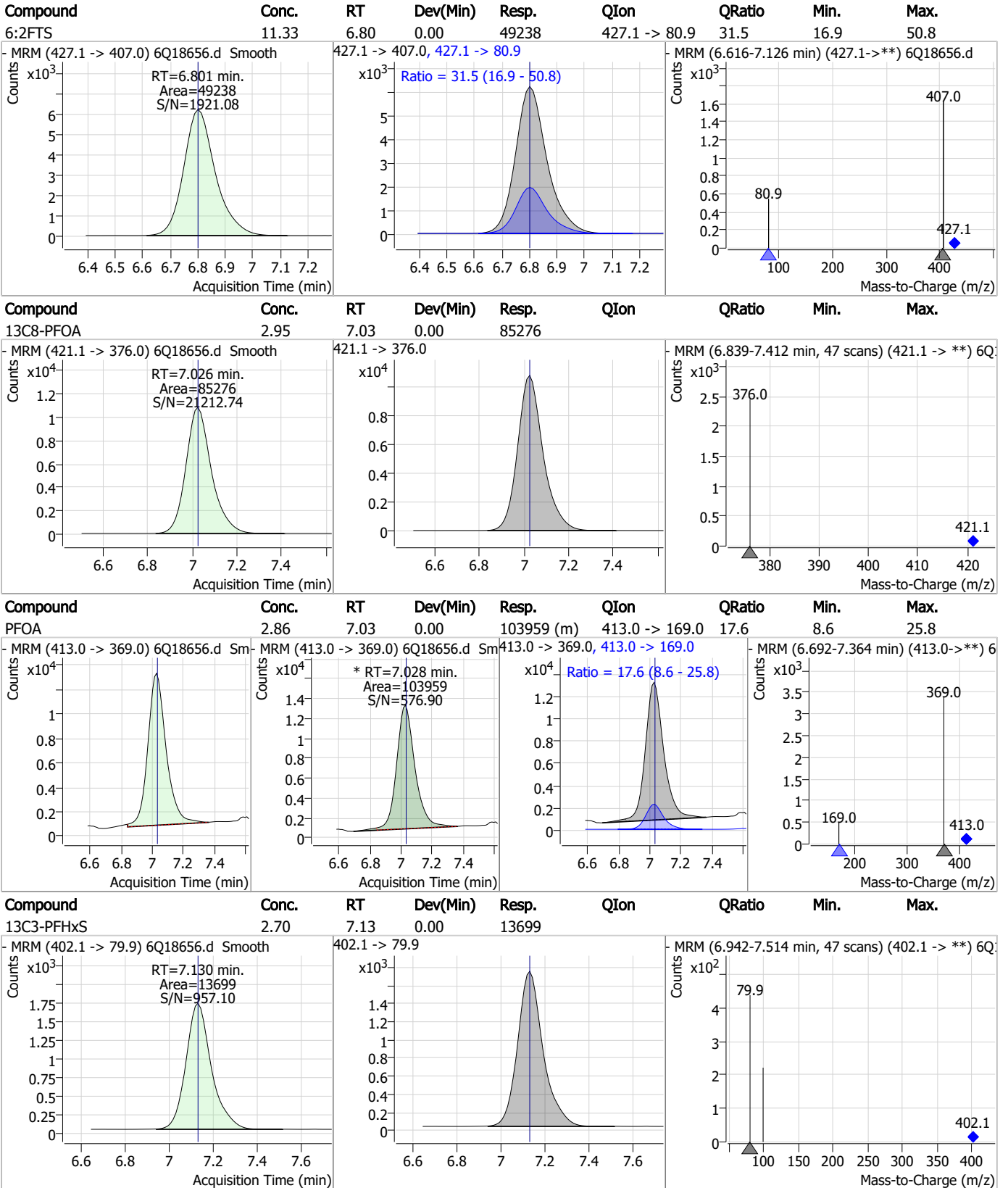


Perfluorinated Compounds by LC/MS/MS



7.4.1
7

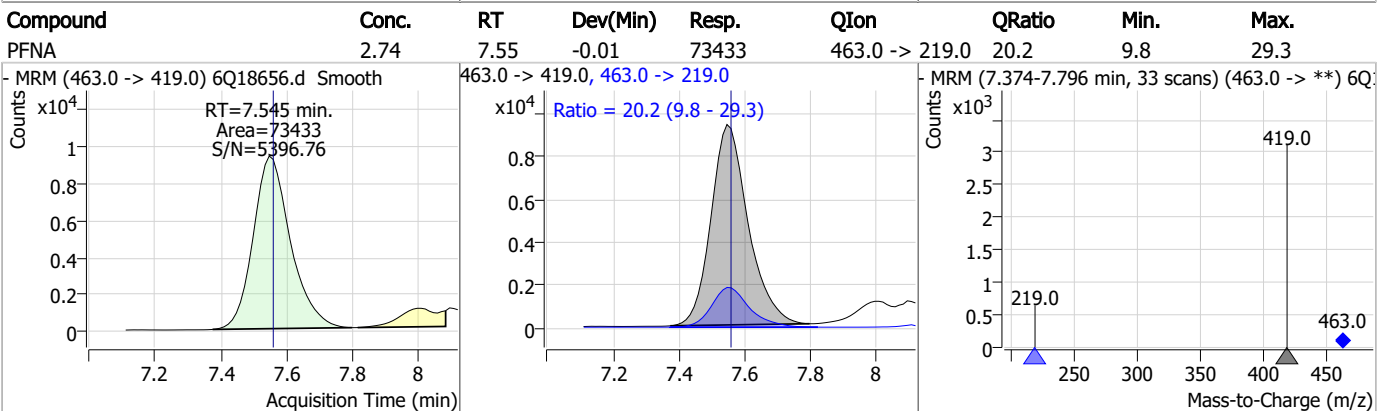
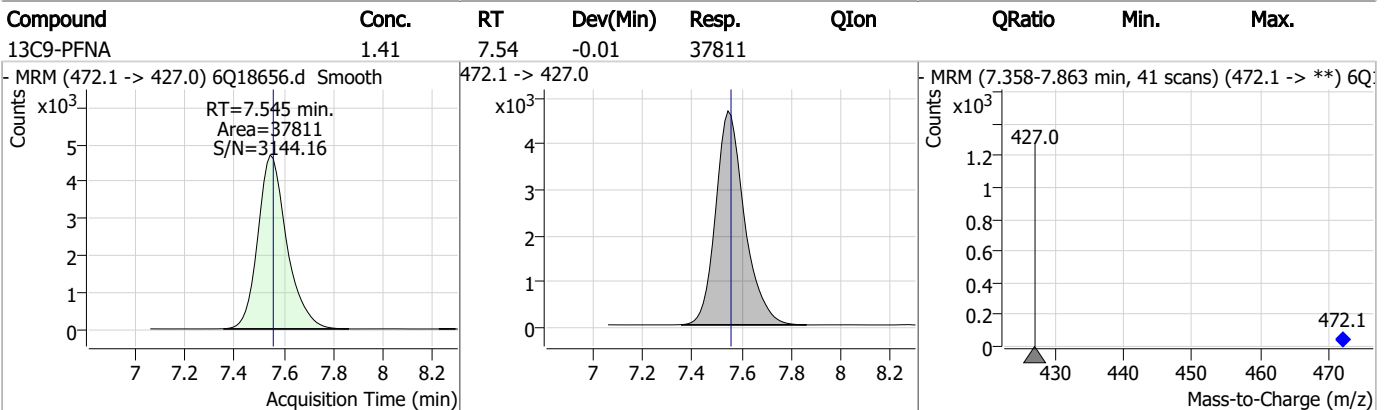
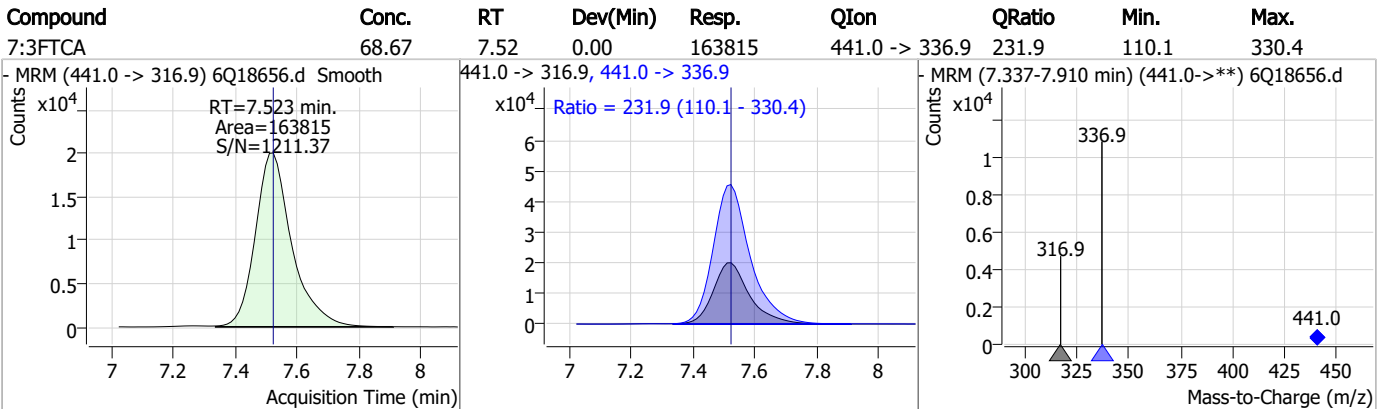
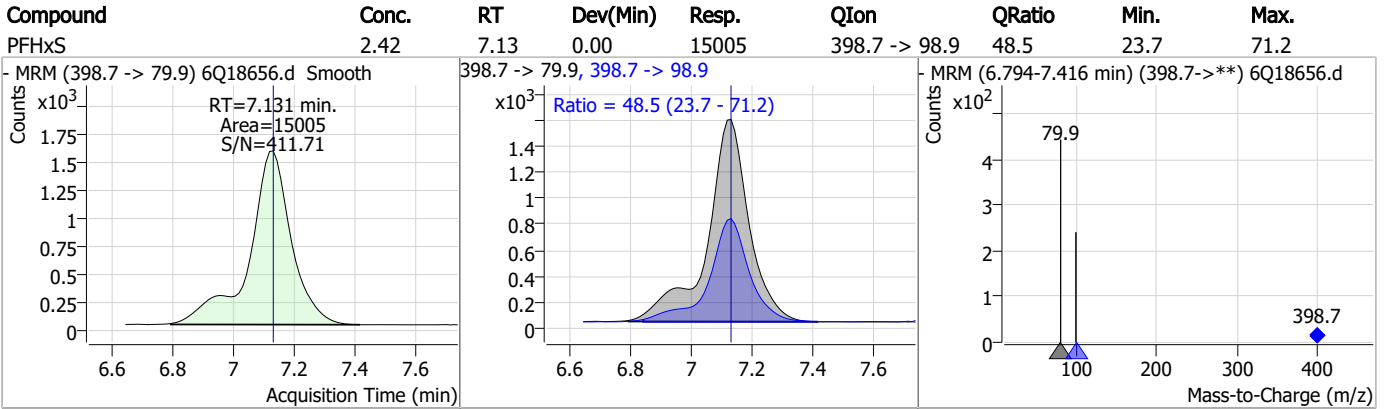
Perfluorinated Compounds by LC/MS/MS



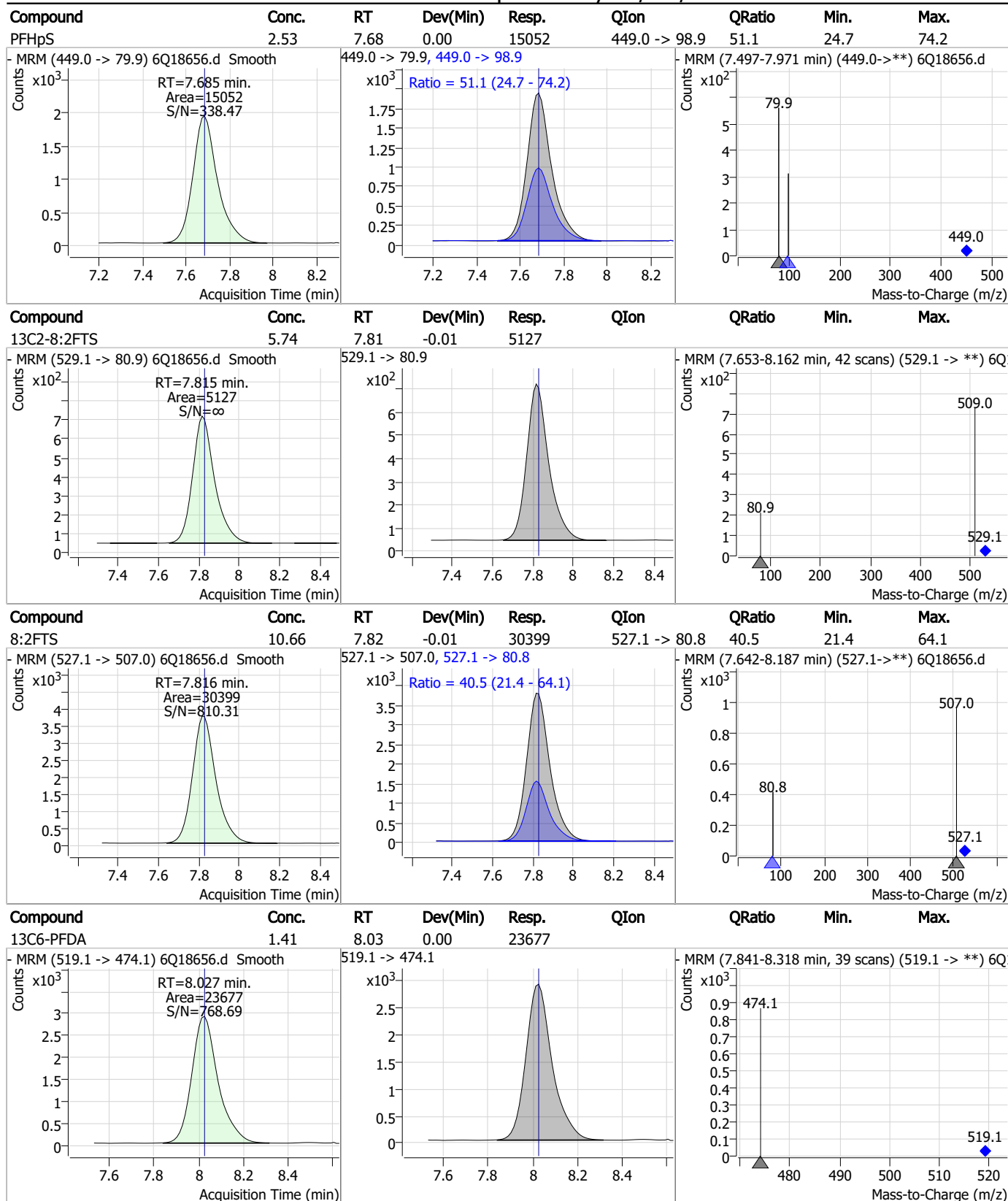
7.4.1

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Perfluorinated Compounds by LC/MS/MS

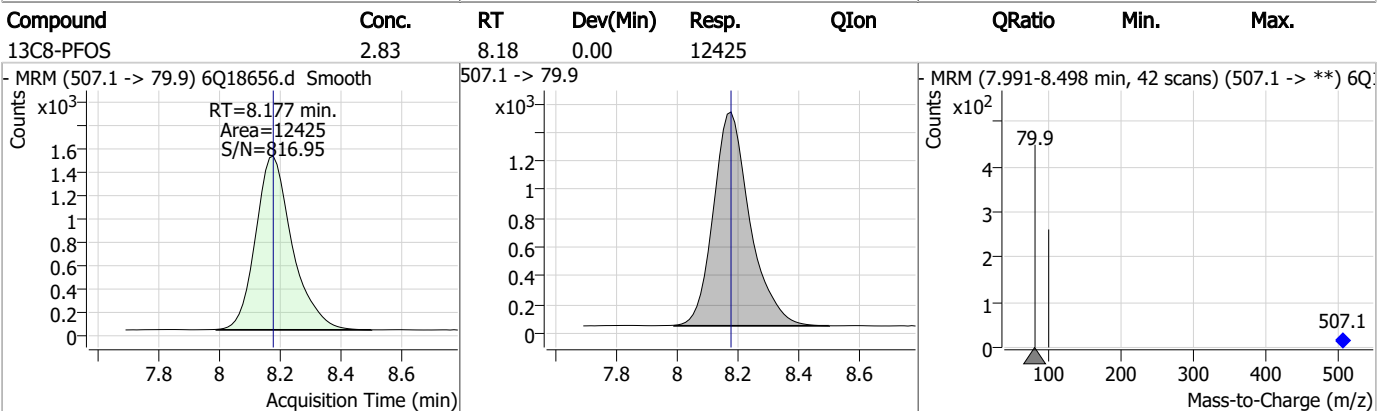
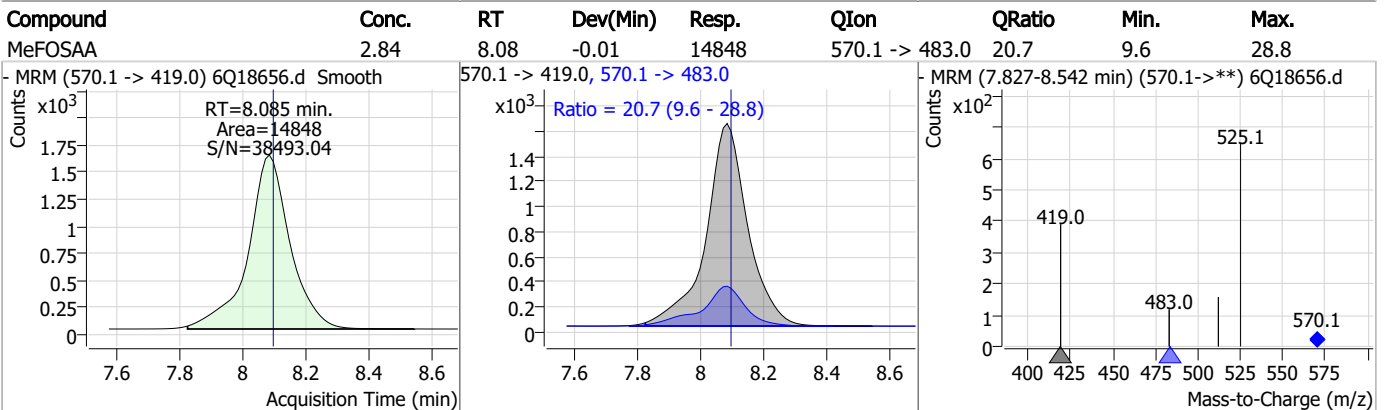
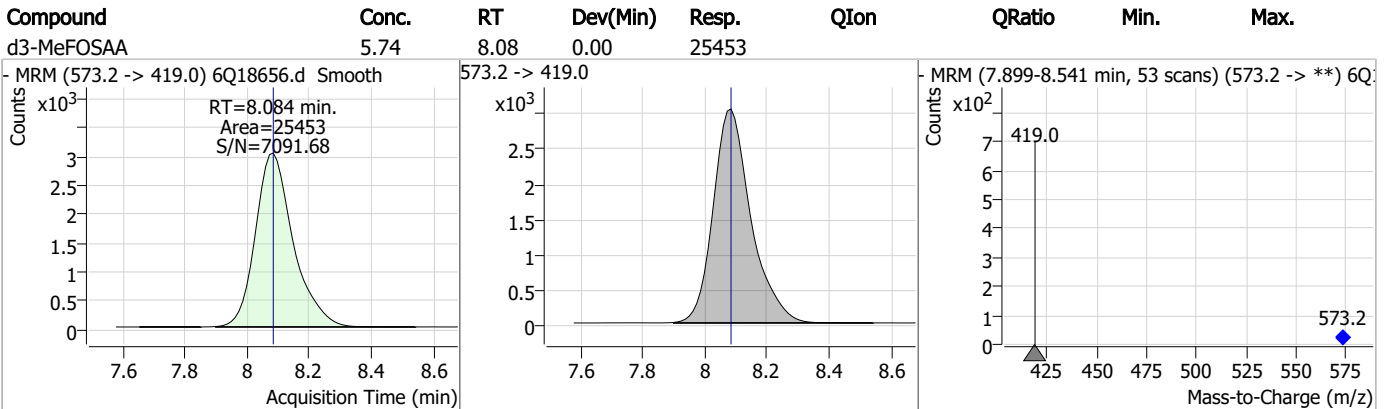
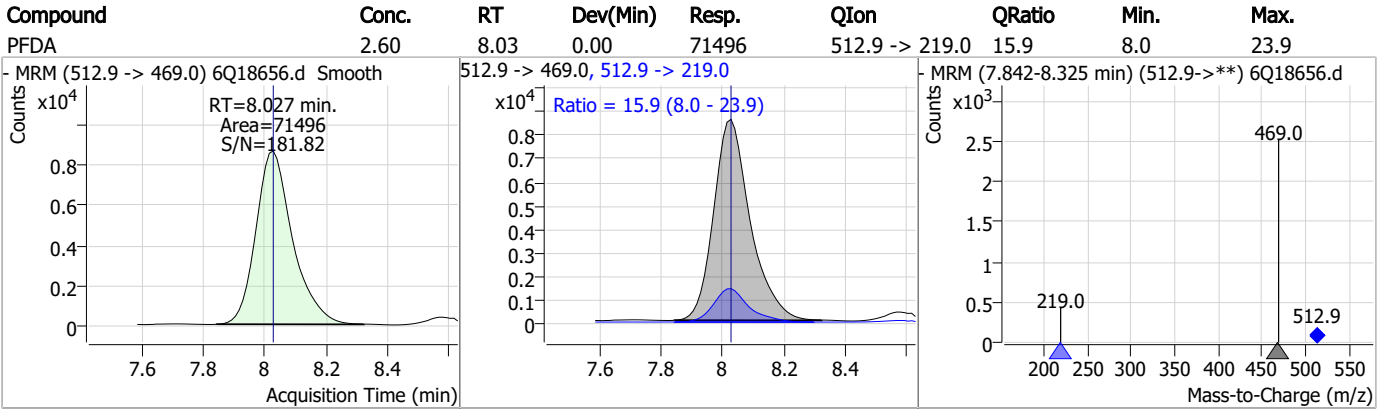


Perfluorinated Compounds by LC/MS/MS

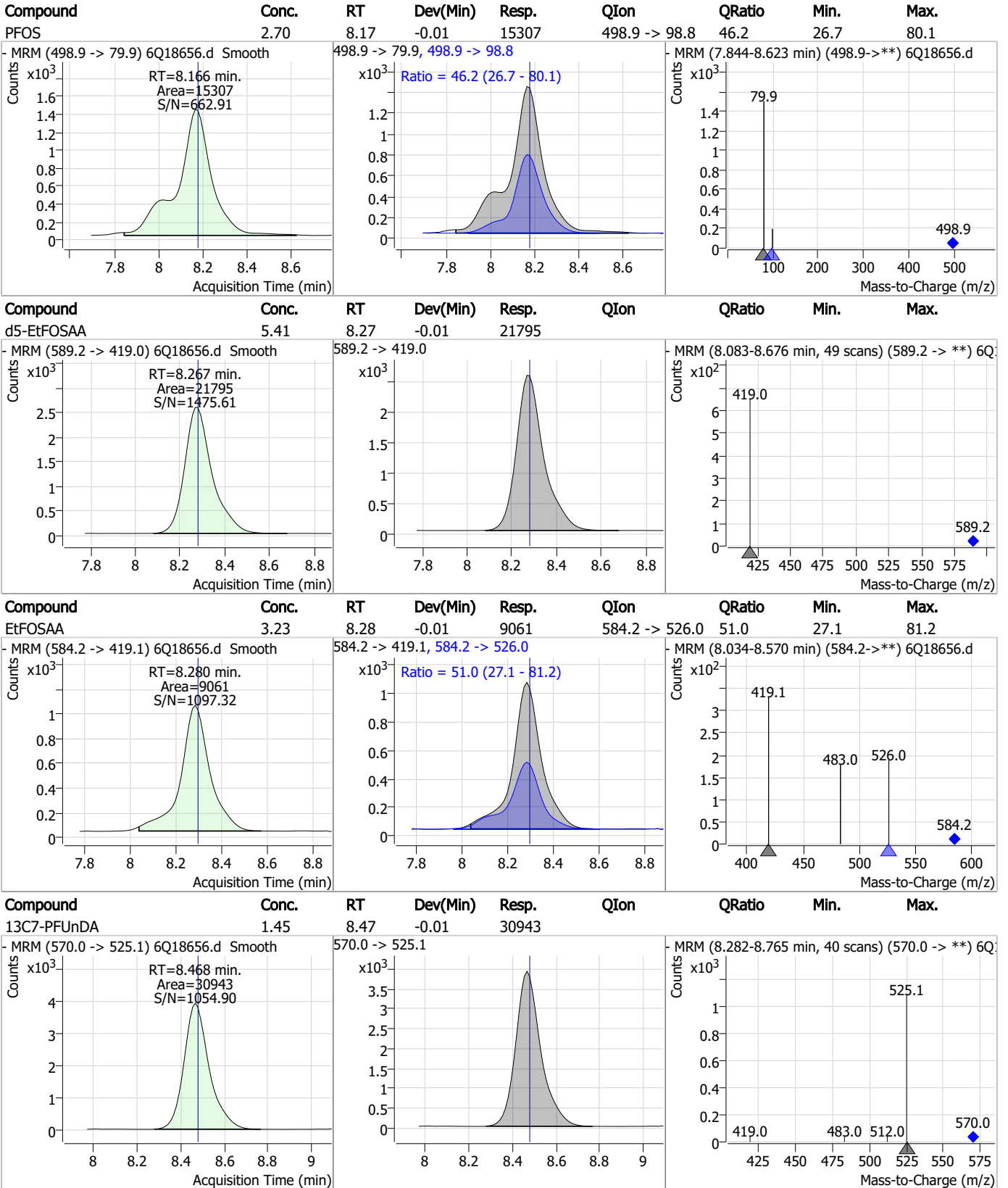


7.4.1
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Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS

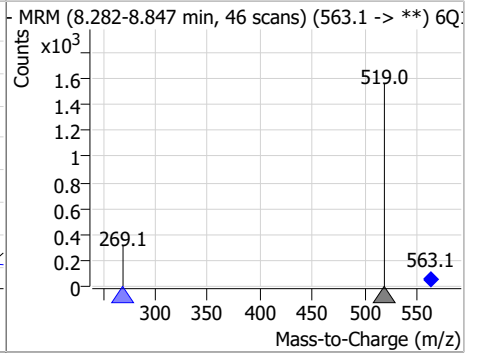
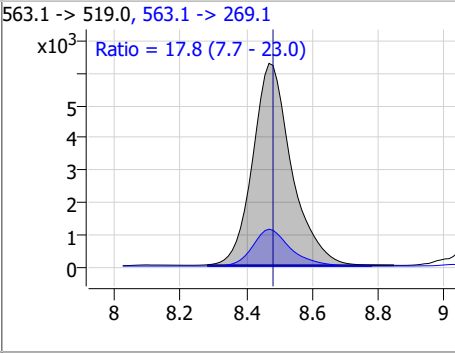
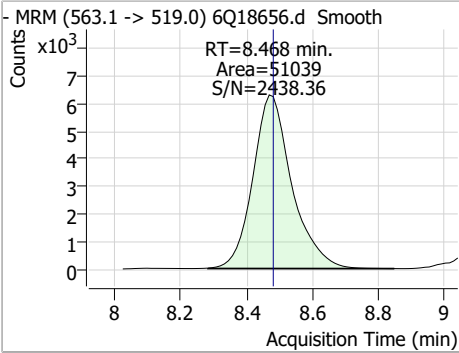


7.4.1

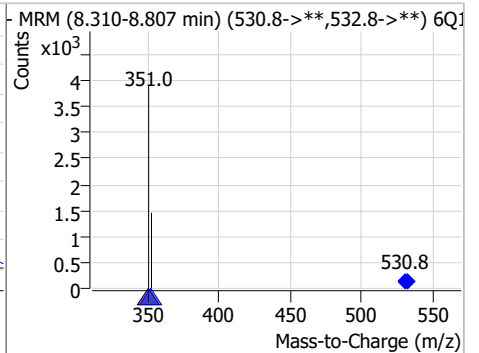
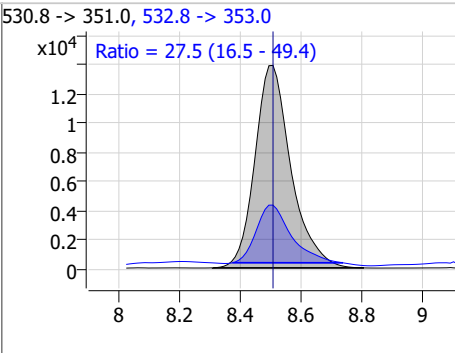
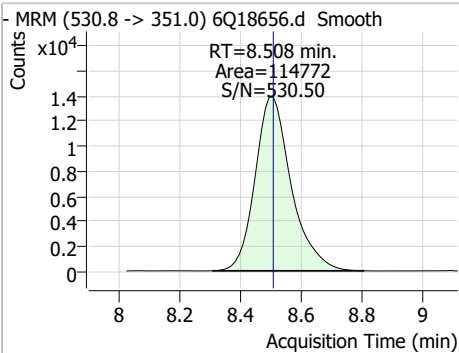
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Perfluorinated Compounds by LC/MS/MS

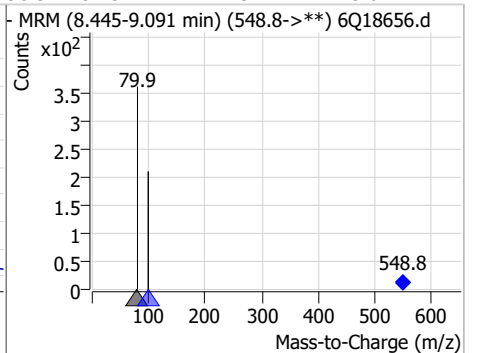
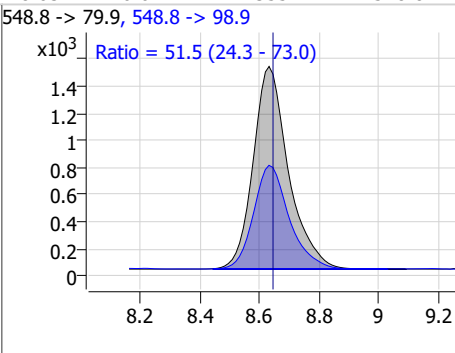
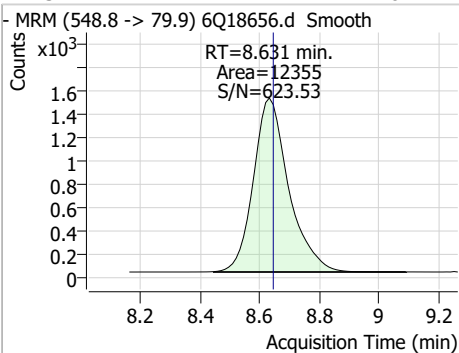
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFUnDA | 2.54 | 8.47 | -0.01 | 51039 | 563.1 -> 269.1 | 17.8 | 7.7 | 23.0 |



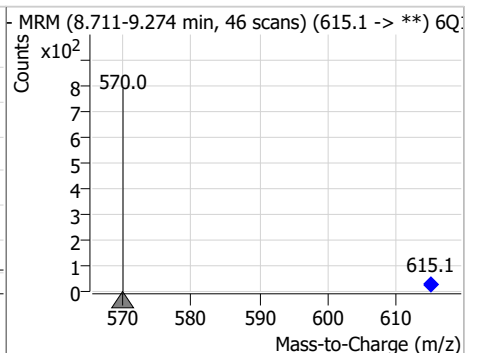
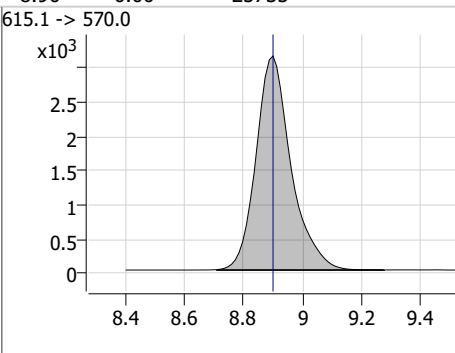
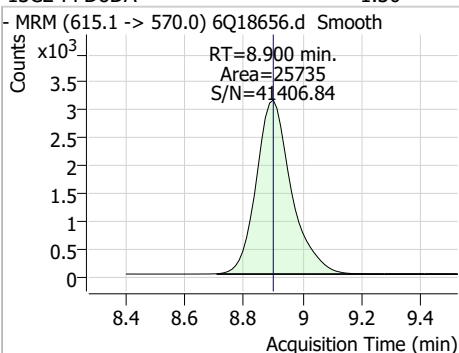
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|--------|----------------|--------|------|------|
| 9CI-PF3ONS | 5.31 | 8.51 | 0.00 | 114772 | 532.8 -> 353.0 | 27.5 | 16.5 | 49.4 |



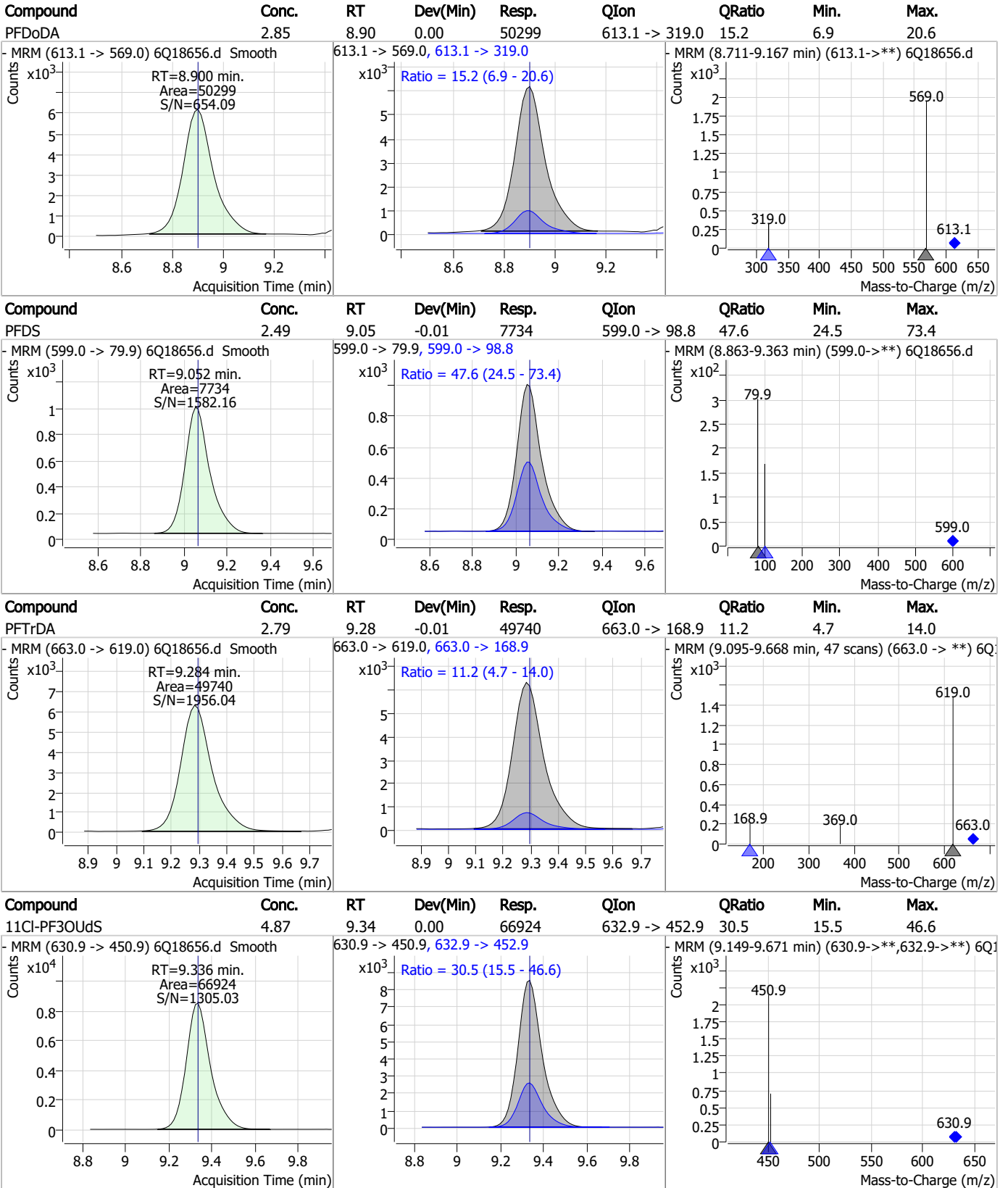
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFNS | 2.48 | 8.63 | -0.01 | 12355 | 548.8 -> 98.9 | 51.5 | 24.3 | 73.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.30 | 8.90 | 0.00 | 25735 | 615.1 -> 570.0 | | | |



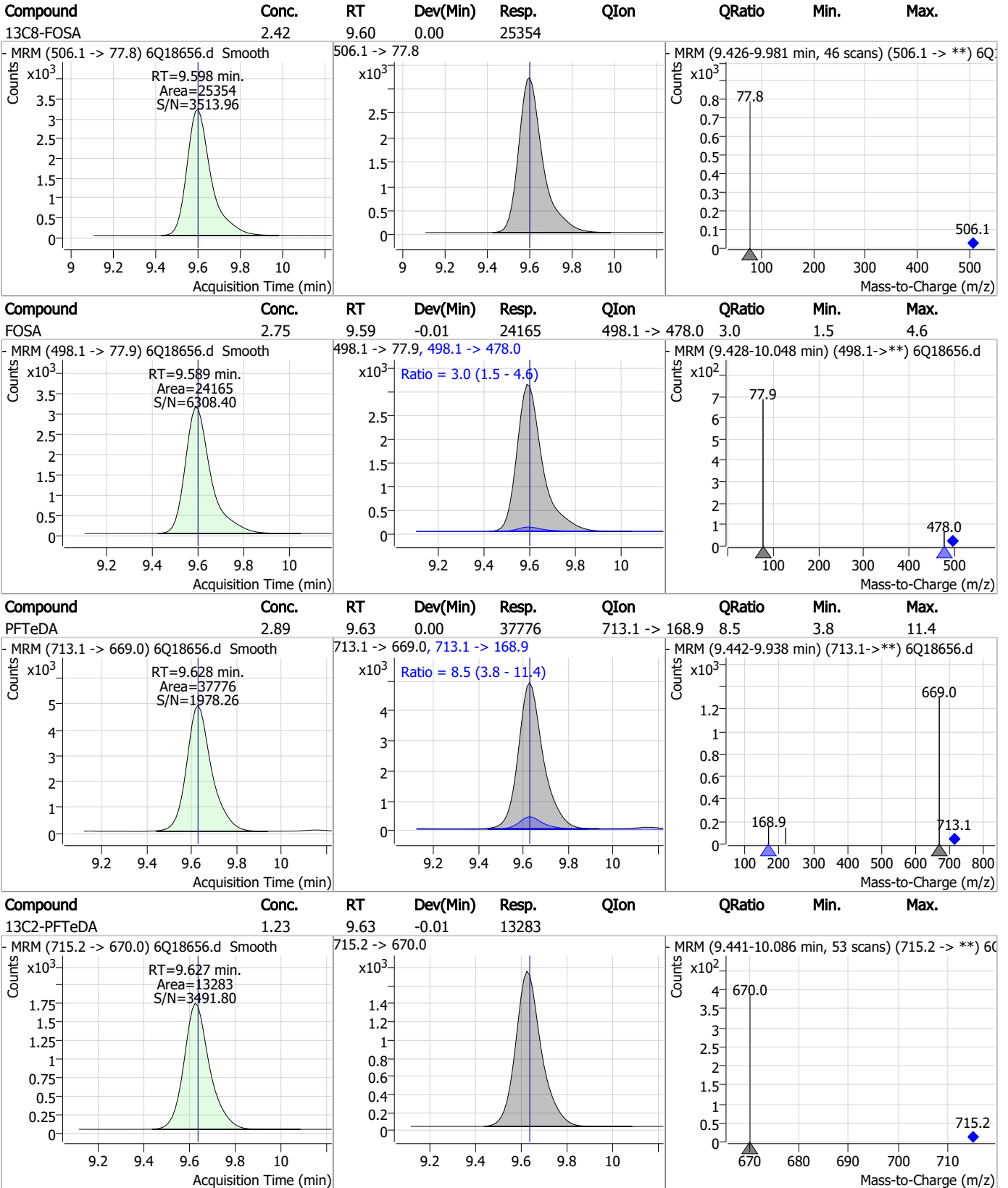
Perfluorinated Compounds by LC/MS/MS



7.4.1

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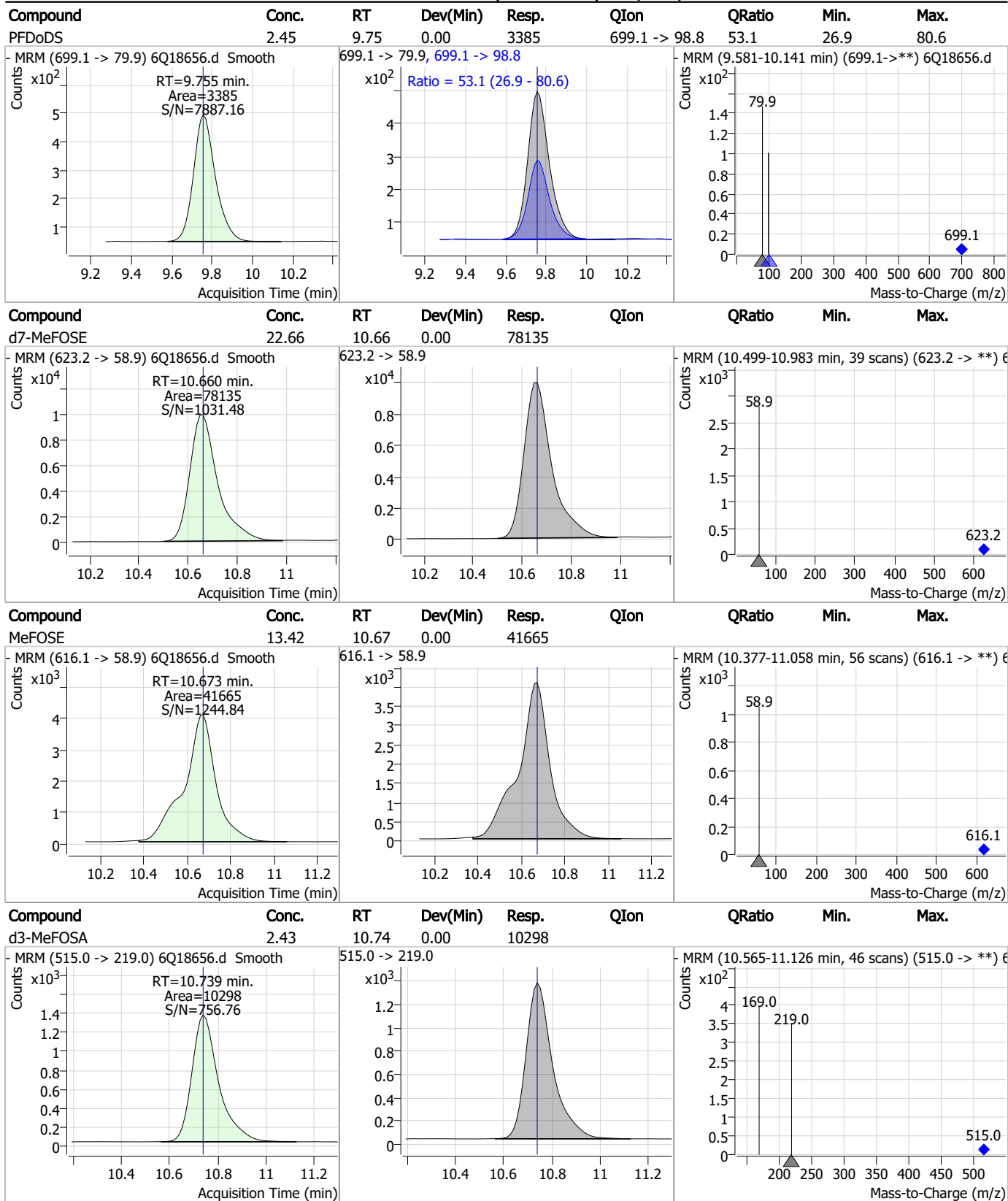
Perfluorinated Compounds by LC/MS/MS



7.4.1

7

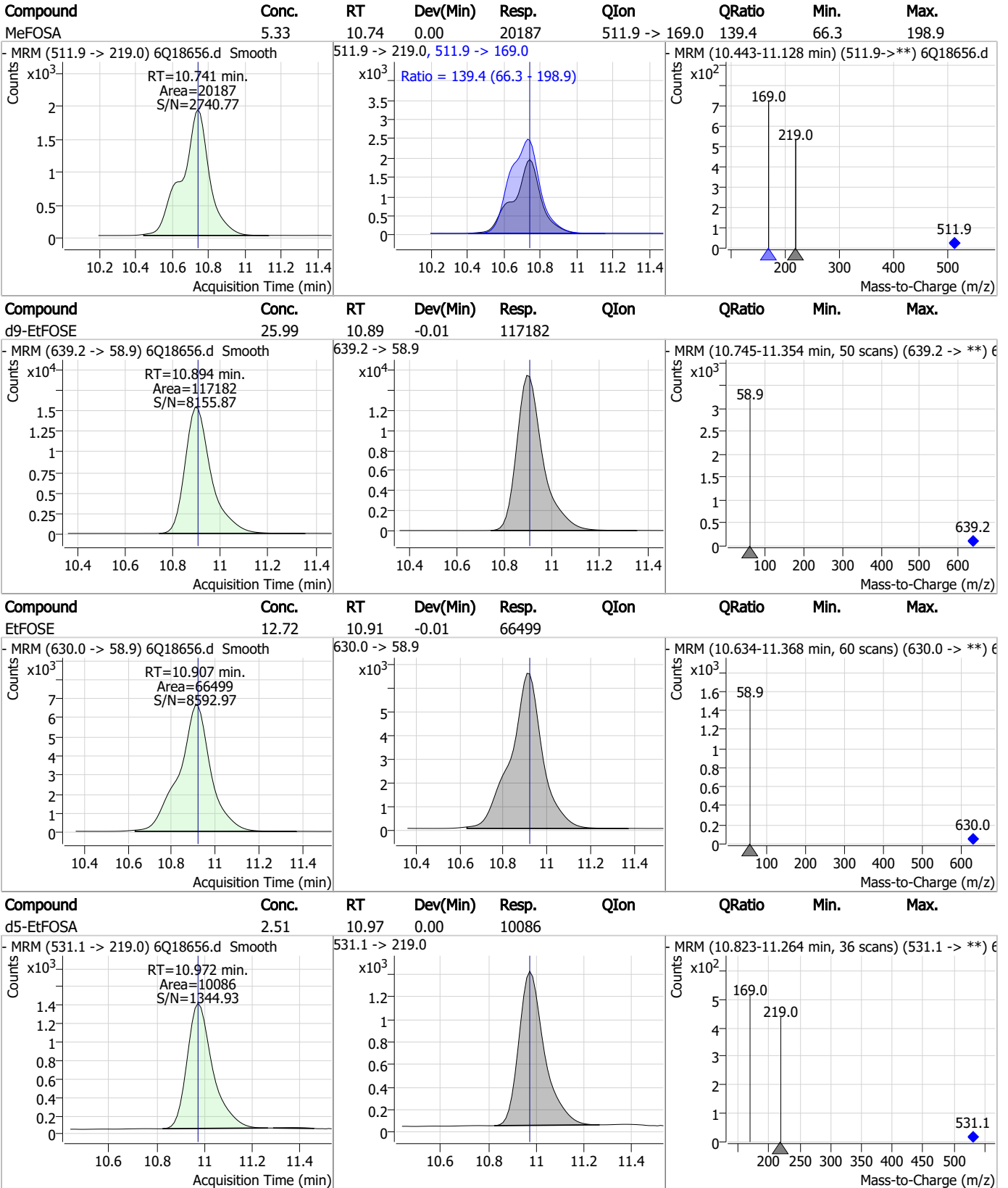
Perfluorinated Compounds by LC/MS/MS



7.4.1
7



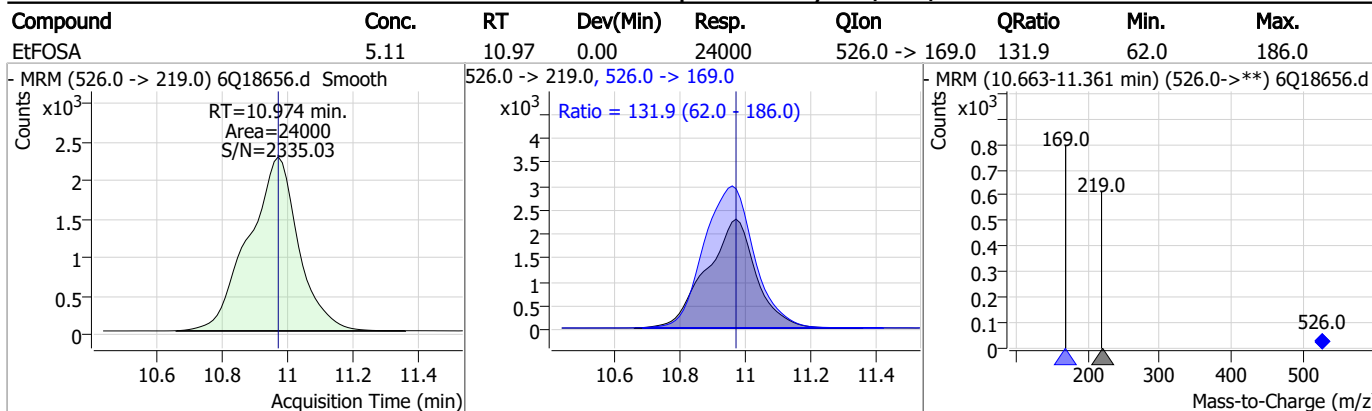
Perfluorinated Compounds by LC/MS/MS



7.4.1

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Perfluorinated Compounds by LC/MS/MS



7.4.1

7

Manual Integration Approval Summary

Sample Number: OP97092-MS Method: EPA DRAFT 1633
Lab FileID: 6Q18656.D Analyst approved: 06/01/23 14:15 Martha Valls
Injection Time: 06/01/23 09:57 Supervisor approved: 06/01/23 16:37 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------|----------|------|----------------|------------|
| Perfluorooctanoic acid | 335-67-1 | | 7.03 | Split peak |

7.4.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18658.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 10:26:51 AM
 Sample Name : op97092-dup1
 Vial : P2-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP97092,S6Q279,560,,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.876 | 216.8 -> 171.9 | 171202 | 10.00 µg/L | 0.053 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 57795 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 62753 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 57048 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 87703 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 39632 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23691 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 29202 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 24708 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13755 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 24208 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 22929 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 14049 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 13052 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3587 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5227 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5182 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27191 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38758 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 23556 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 80256 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 118112 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9647 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10077 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 13925 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 64019 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 8877 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 78407 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 28950 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 42812 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 49091 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3587 | 6.06 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 121.2% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5227 | 6.08 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 121.6% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5182 | 5.94 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 118.8% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 24708 | 1.23 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.3% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 13755 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.6% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 22929 | 2.92 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 116.7% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 14049 | 2.83 µg/L | 0.000 |

7.5.1
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------------------|----------------------|----------------|----------|-------------------|----------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.3% | |
| 13C4-PFBA | 2.876 | 216.8 -> 171.9 | 171202 | 11.23 µg/L | 0.053 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 112.3% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 57048 | 2.97 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 118.8% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 62753 | 3.02 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 120.8% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 57795 | 6.05 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 121.1% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23691 | 1.40 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 111.7% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 29202 | 1.35 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 108.0% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 24208 | 2.28 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 91.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 87703 | 2.99 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 119.4% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 13052 | 2.93 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 117.0% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 39632 | 1.40 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 112.4% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27191 | 6.05 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 121.0% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38758 | 12.01 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 120.1% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 10077 | 2.34 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.7% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 23556 | 5.76 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 115.3% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 80256 | 22.95 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 91.8% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 118112 | 25.82 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 103.3% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 9647 | 2.37 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 94.7% | |

Target Compounds

| Compound | RT | Transition | Response | Conc. Units | QValue |
|----------|-------|----------------|----------|-------------|--------|
| 4:2FTS | - | 327.1 -> 307.0 | - | N.D. | |
| | | 327.1 -> 80.9 | | | |
| 6:2FTS | - | 427.1 -> 407.0 | - | N.D. | |
| | | 427.1 -> 80.9 | | | |
| 8:2FTS | - | 527.1 -> 507.0 | - | N.D. | |
| | | 527.1 -> 80.8 | | | |
| EtFOSAA | - | 584.2 -> 419.1 | - | N.D. | |
| | | 584.2 -> 526.0 | | | |
| FOSA | - | 498.1 -> 77.9 | - | N.D. | |
| | | 498.1 -> 478.0 | | | |
| MeFOSAA | - | 570.1 -> 419.0 | - | N.D. | |
| | | 570.1 -> 483.0 | | | |
| PFBA | - | 212.8 -> 168.9 | - | N.D. | |
| PFBS | - | 298.7 -> 79.9 | - | N.D. | |
| | | 298.7 -> 98.8 | | | |
| PFDA | 8.608 | 512.9 -> 469.0 | 0 | µg/L m | 1 |
| | | 512.9 -> 219.0 | 0 | | |
| PFDODA | - | 613.1 -> 569.0 | - | N.D. | |
| | | 613.1 -> 319.0 | | | |
| PFDS | - | 599.0 -> 79.9 | - | N.D. | |



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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|----|----------------|----------|-------------|----------|
| PFHpA | - | 599.0 -> 98.8 | - | N.D. | |
| | | 363.1 -> 319.0 | | | |
| PFHpS | - | 363.1 -> 169.0 | - | N.D. | |
| | | 449.0 -> 79.9 | | | |
| PFHxA | - | 449.0 -> 98.9 | - | N.D. | |
| | | 313.0 -> 269.0 | | | |
| PFHxS | - | 313.0 -> 118.9 | - | N.D. | |
| | | 398.7 -> 79.9 | | | |
| PFNA | - | 398.7 -> 98.9 | - | N.D. | |
| | | 463.0 -> 419.0 | | | |
| PFNS | - | 463.0 -> 219.0 | - | N.D. | |
| | | 548.8 -> 79.9 | | | |
| PFOA | - | 548.8 -> 98.9 | - | N.D. | |
| | | 413.0 -> 369.0 | | | |
| PFOS | - | 413.0 -> 169.0 | - | N.D. | |
| | | 498.9 -> 79.9 | | | |
| PFPeA | - | 498.9 -> 98.8 | - | N.D. | |
| | | 263.0 -> 219.0 | | | |
| PFPeS | - | 349.1 -> 79.9 | - | N.D. | |
| | | 349.1 -> 98.9 | | | |
| PFTeDA | - | 713.1 -> 669.0 | - | N.D. | |
| | | 713.1 -> 168.9 | | | |
| PFTrDA | - | 663.0 -> 619.0 | - | N.D. | |
| | | 663.0 -> 168.9 | | | |
| PFUnDA | - | 563.1 -> 519.0 | - | N.D. | |
| | | 563.1 -> 269.1 | | | |
| 11Cl-PF3OUdS | - | 630.9 -> 450.9 | - | N.D. | |
| | | 632.9 -> 452.9 | | | |
| 9Cl-PF3ONS | - | 530.8 -> 351.0 | - | N.D. | |
| | | 532.8 -> 353.0 | | | |
| ADONA | - | 376.9 -> 250.9 | - | N.D. | |
| | | 376.9 -> 84.8 | | | |
| HFPO-DA | - | 284.9 -> 168.9 | - | N.D. | |
| | | 284.9 -> 184.9 | | | |
| 3:3FTCA | - | 241.0 -> 177.0 | - | N.D. | |
| | | 241.0 -> 117.0 | | | |
| 5:3FTCA | - | 341.0 -> 237.1 | - | N.D. | |
| | | 341.0 -> 217.0 | | | |
| 7:3FTCA | - | 441.0 -> 316.9 | - | N.D. | |
| | | 441.0 -> 336.9 | | | |
| EtFOSA | - | 526.0 -> 219.0 | - | N.D. | |
| | | 526.0 -> 169.0 | | | |
| EtFOSE | - | 630.0 -> 58.9 | - | N.D. | |
| | | 511.9 -> 219.0 | | | |
| MeFOSA | - | 511.9 -> 169.0 | - | N.D. | |
| | | 616.1 -> 58.9 | | | |
| MeFOSE | - | 699.1 -> 79.9 | - | N.D. | |
| | | 699.1 -> 98.8 | | | |
| PFDoDS | - | 295.0 -> 201.0 | - | N.D. | |
| | | 295.0 -> 84.9 | | | |
| NFDHA | - | 279.0 -> 85.1 | - | N.D. | |
| | | 229.0 -> 84.9 | | | |
| PFMBA | - | 314.8 -> 134.9 | - | N.D. | |
| | | 314.8 -> 82.9 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



7.5.1
7

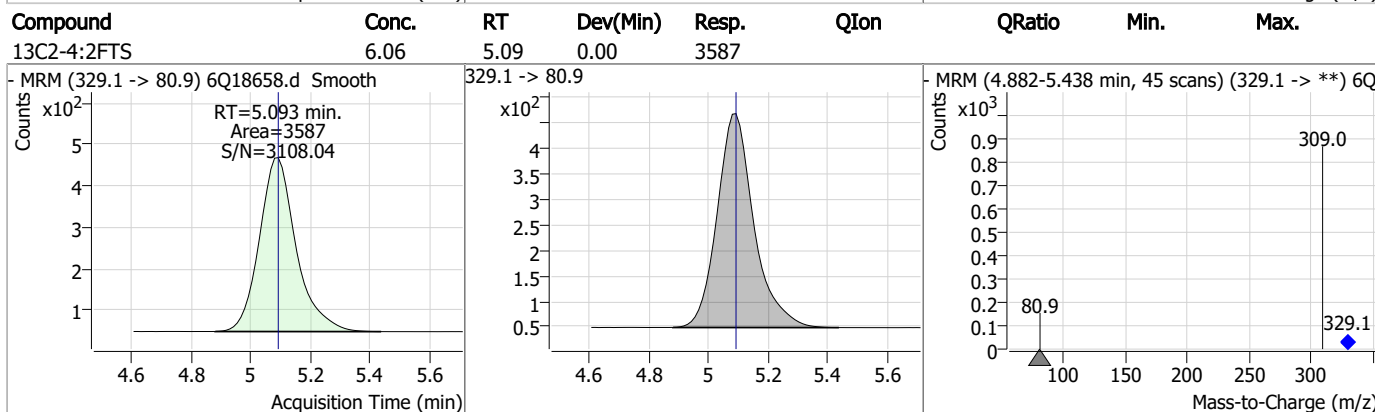
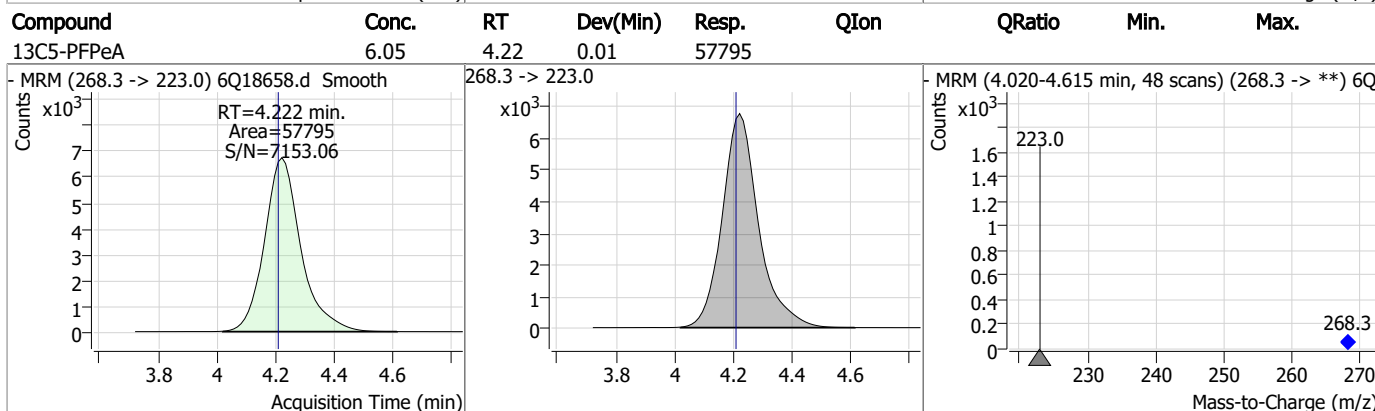
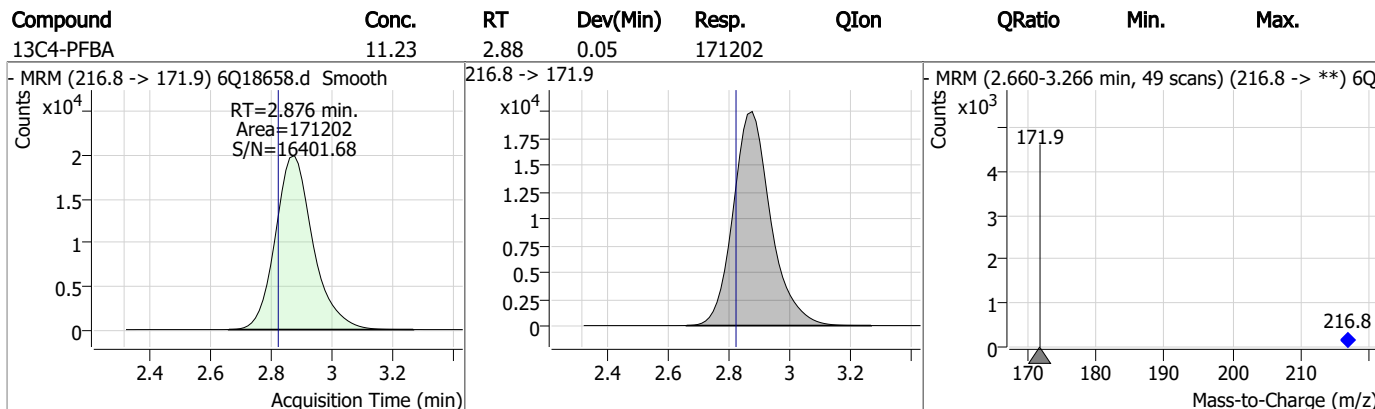
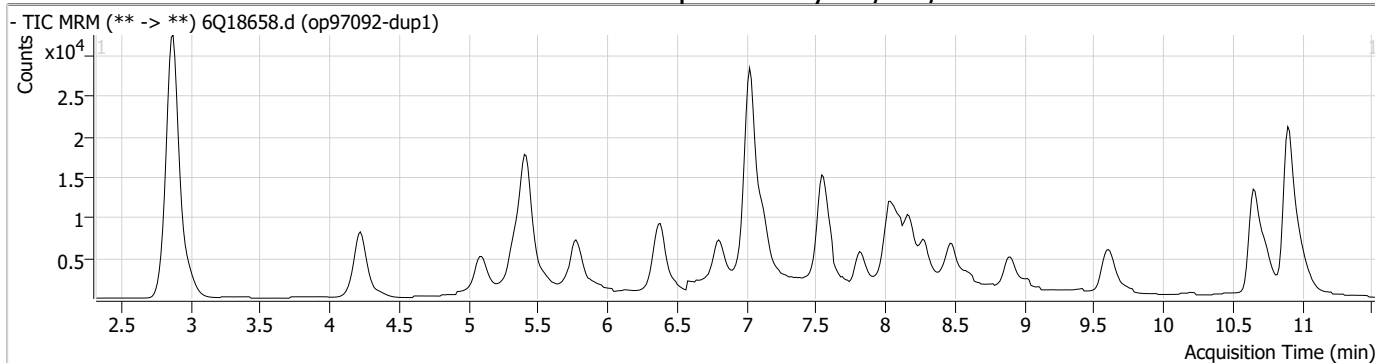
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

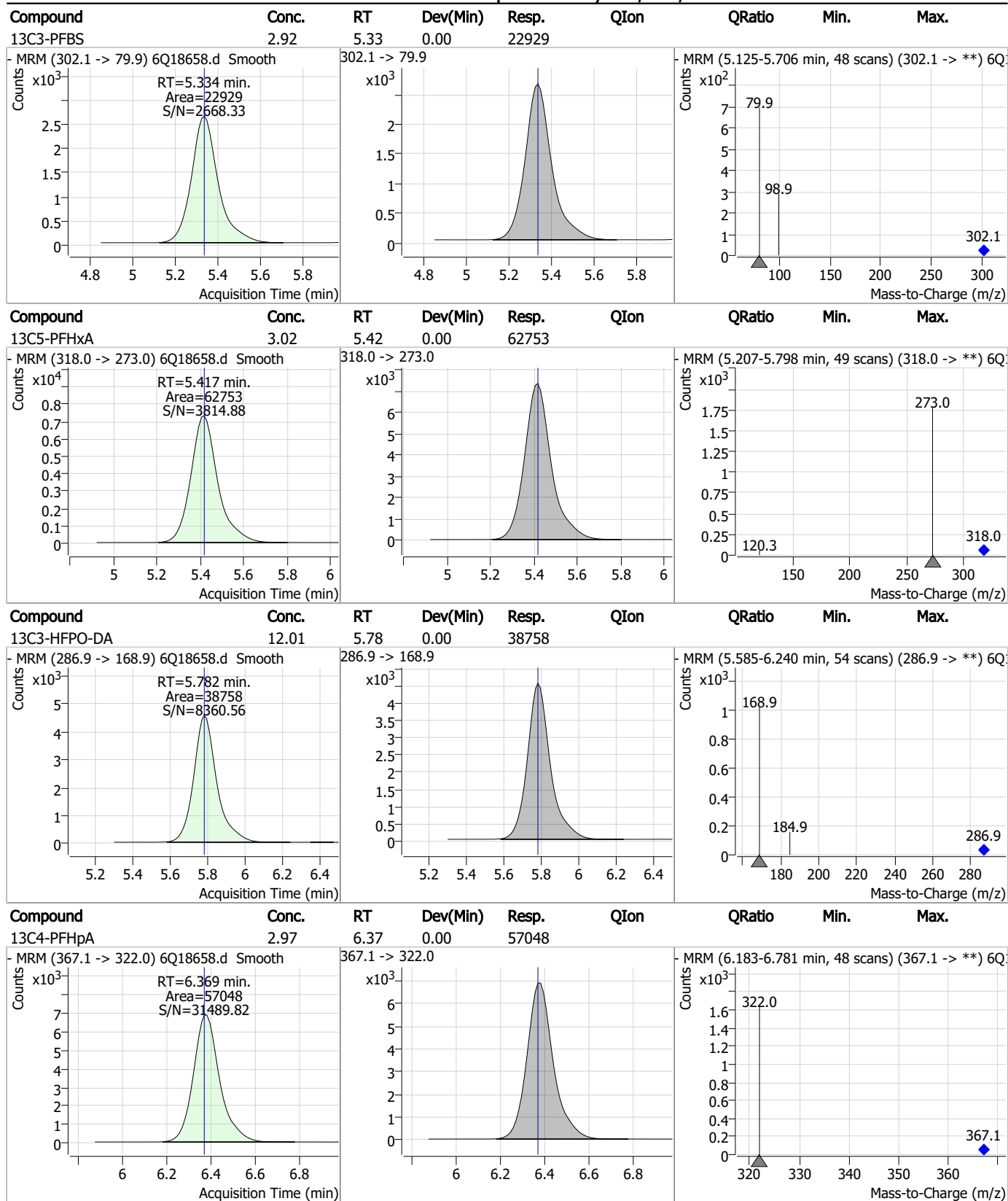
7.5.1

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Perfluorinated Compounds by LC/MS/MS

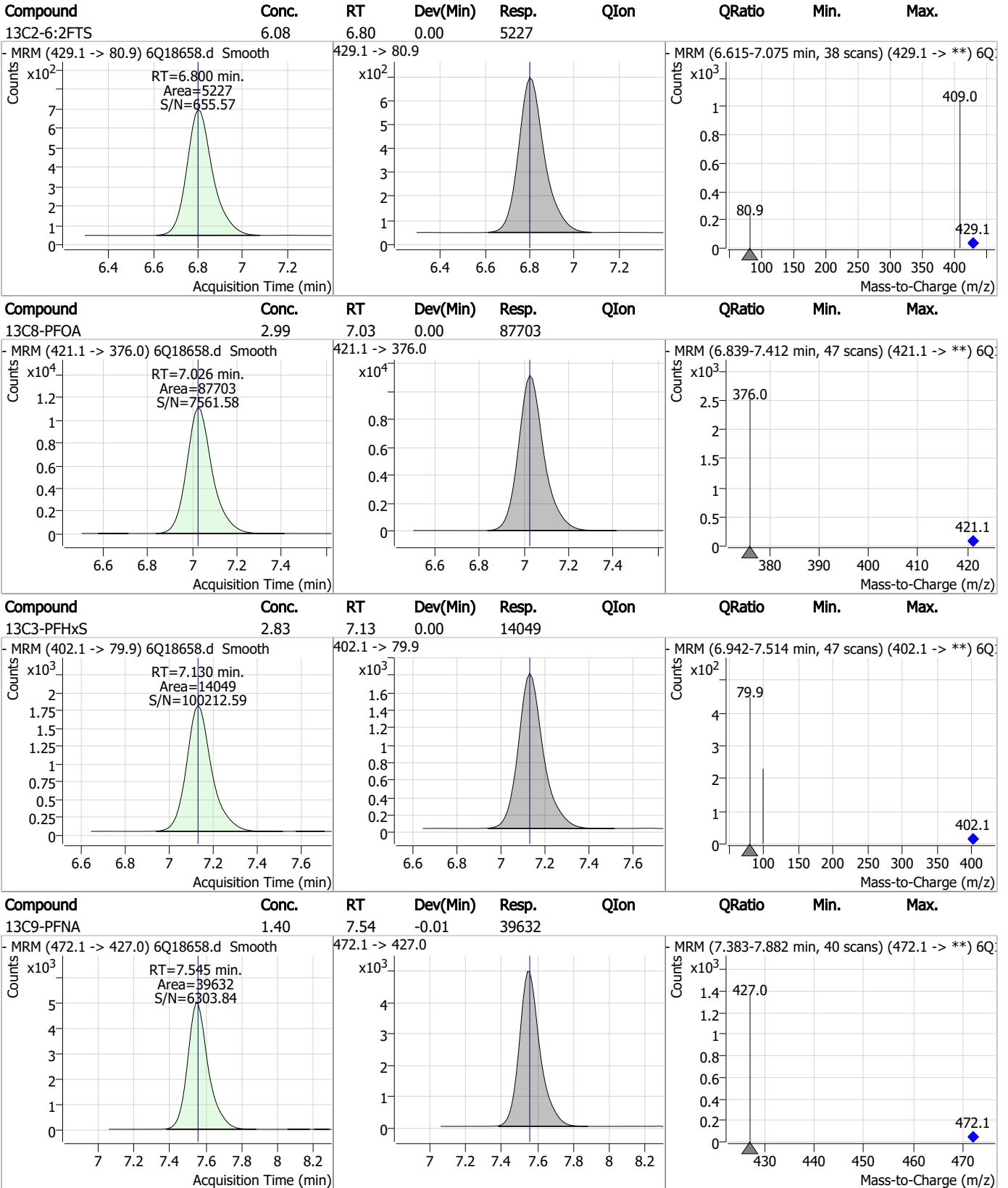


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

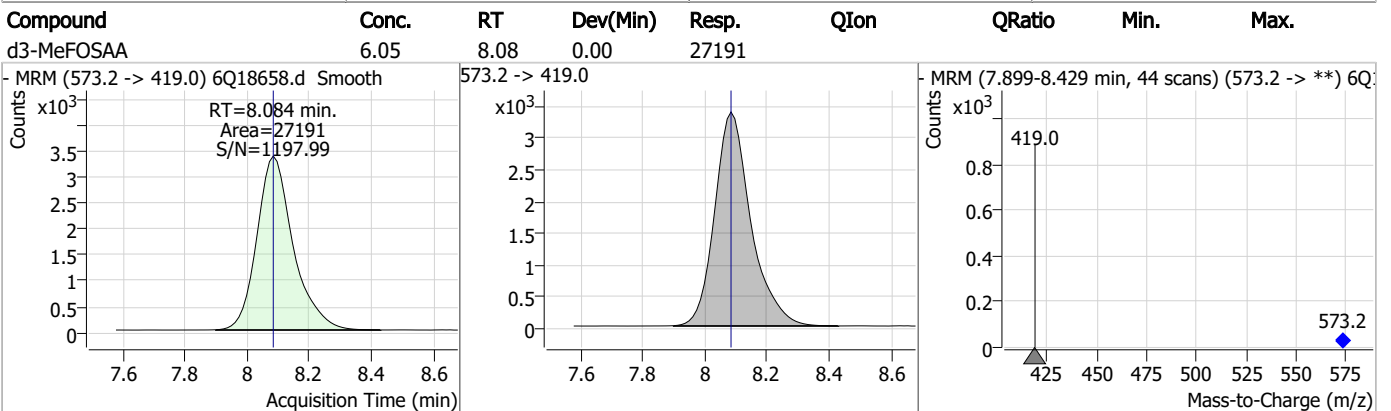
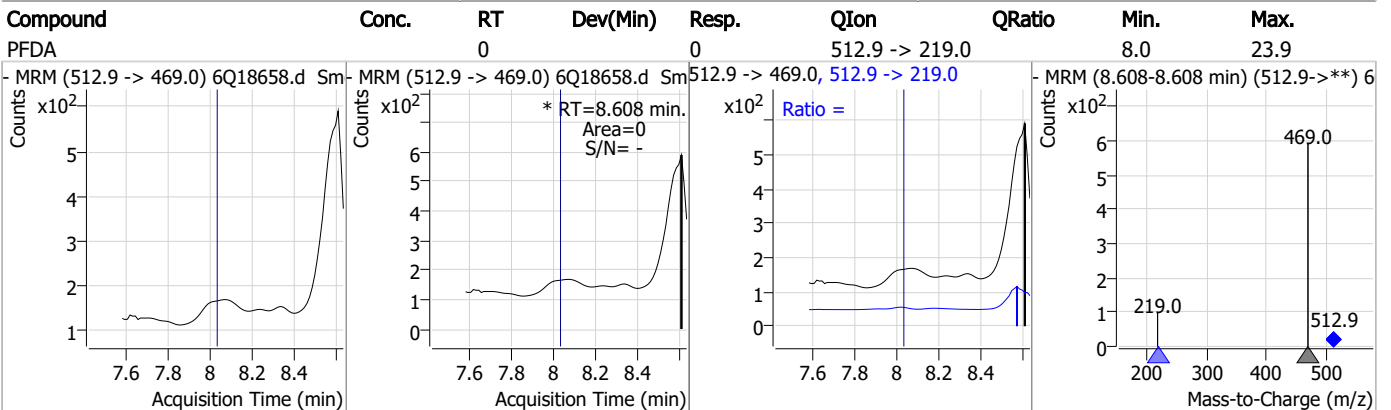
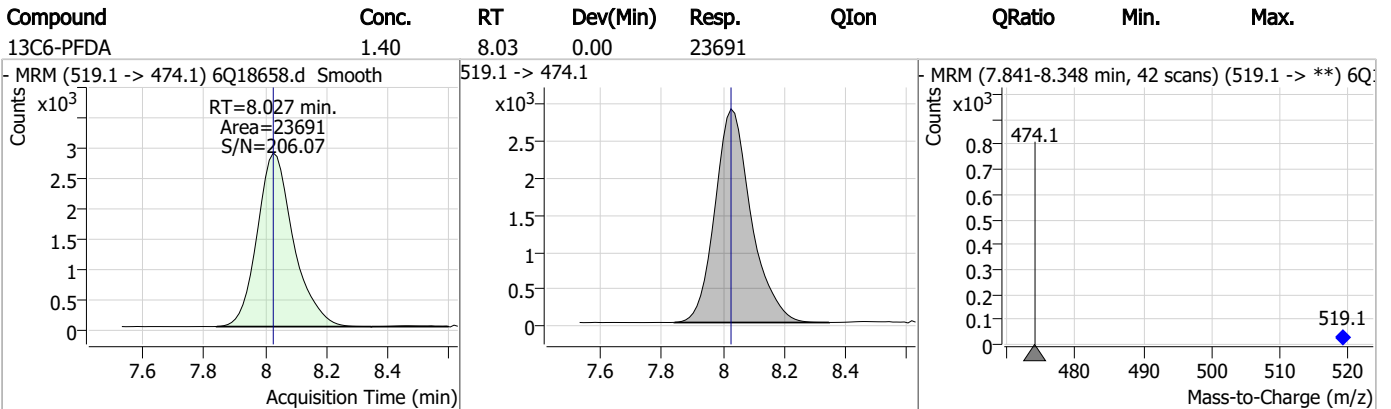
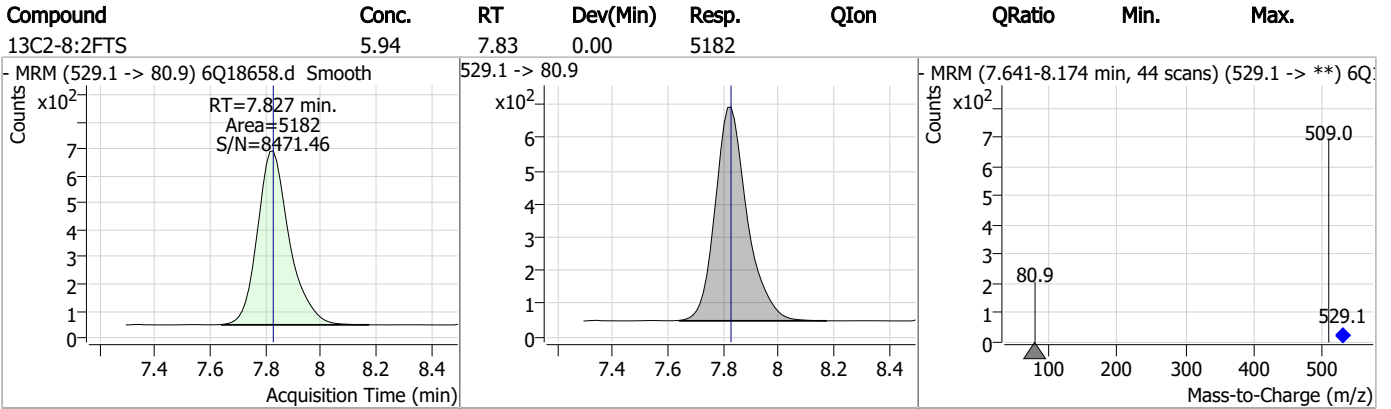


7.5.1

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Perfluorinated Compounds by LC/MS/MS

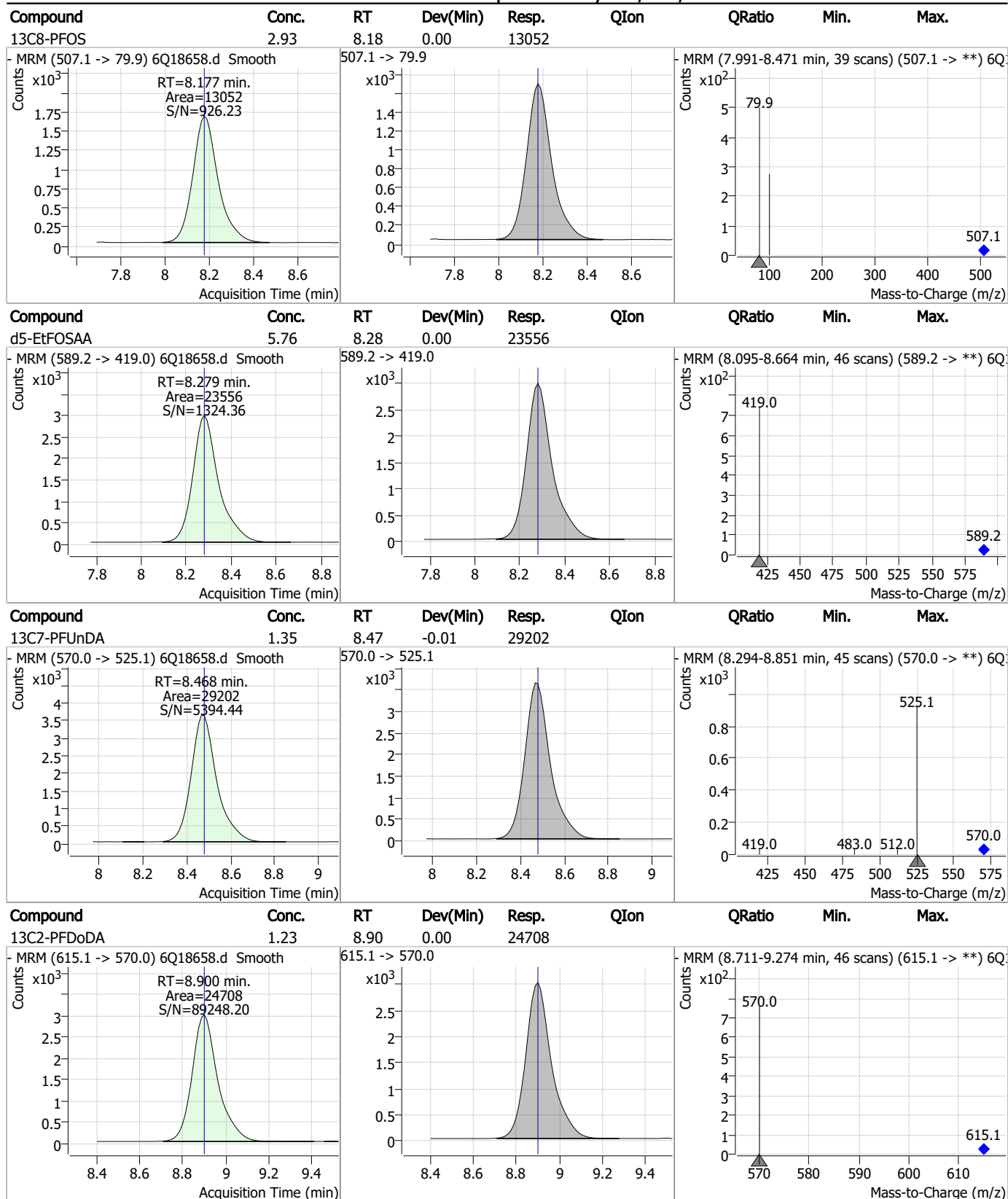


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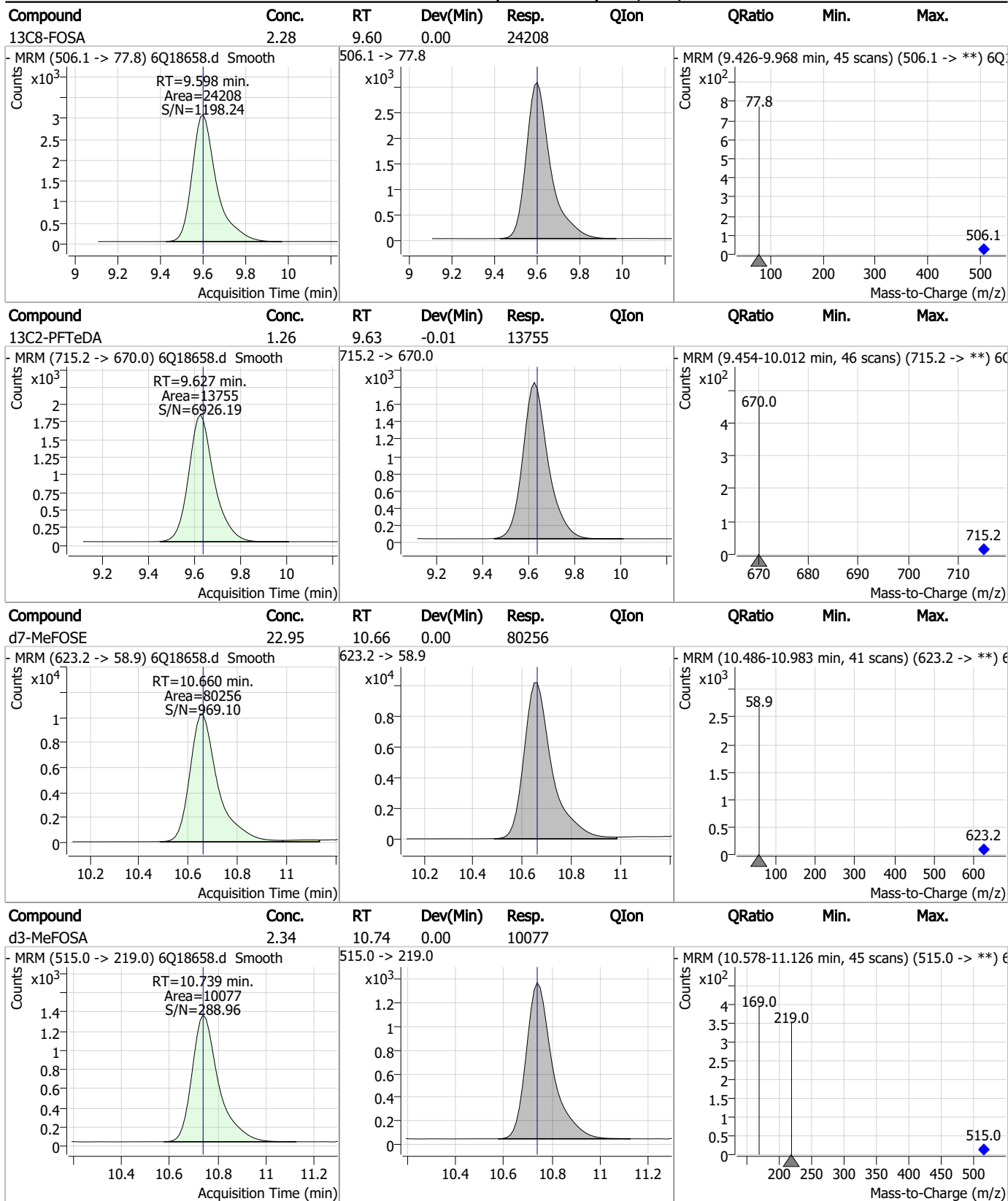


Perfluorinated Compounds by LC/MS/MS



7.5.1
7

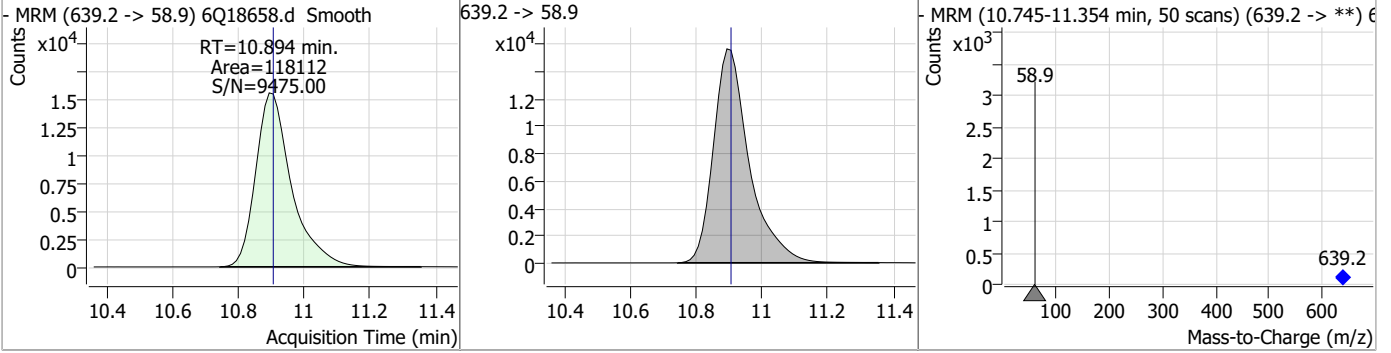
Perfluorinated Compounds by LC/MS/MS



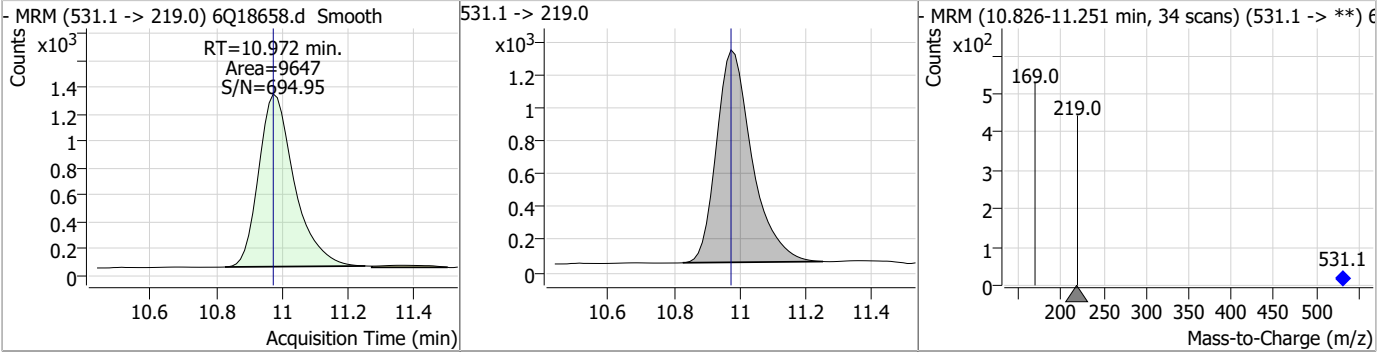
7.5.1
7

Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 25.82 | 10.89 | -0.01 | 118112 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOFA | 2.37 | 10.97 | 0.00 | 9647 | | | | |



7.5.1

7

Manual Integrations
APPROVED
 (compounds with "m" flag)
 Norman Farmer
 06/01/23 14:43

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18583.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:32:54 PM
 Sample Name : RT TDCA
 Vial : P1-B3
 DA Method File : TDCA.quantmethod.xml
 Batch Name : s6q279 TDCA.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

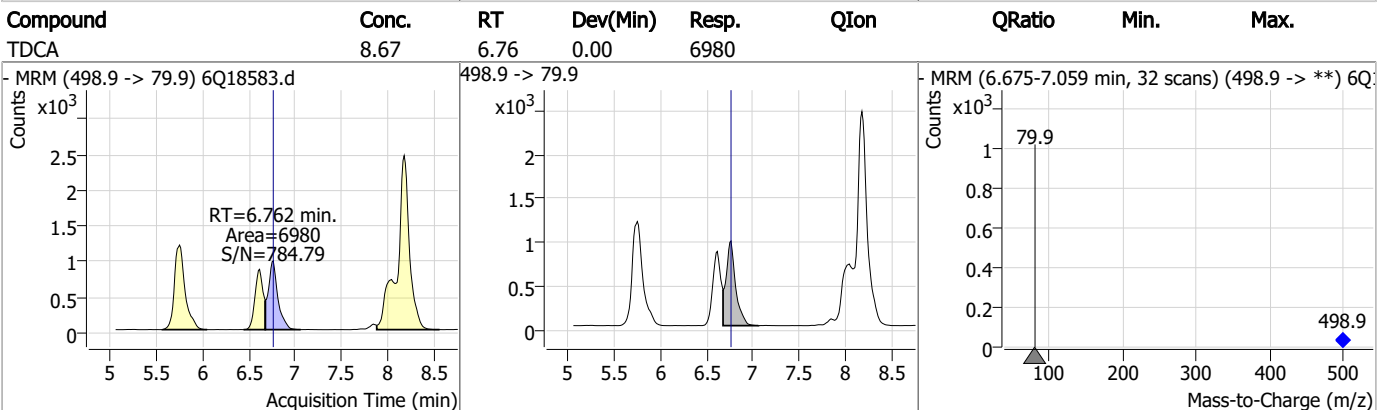
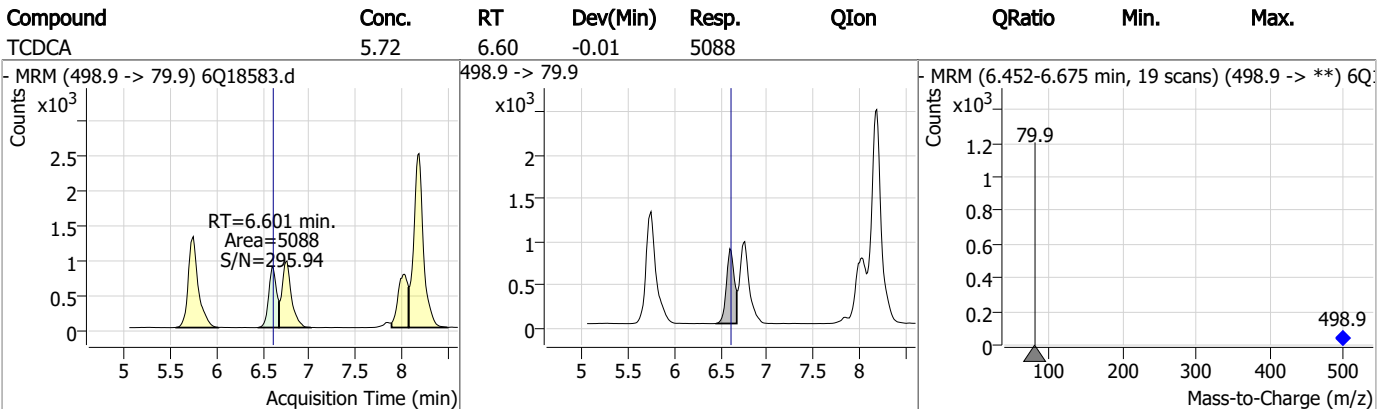
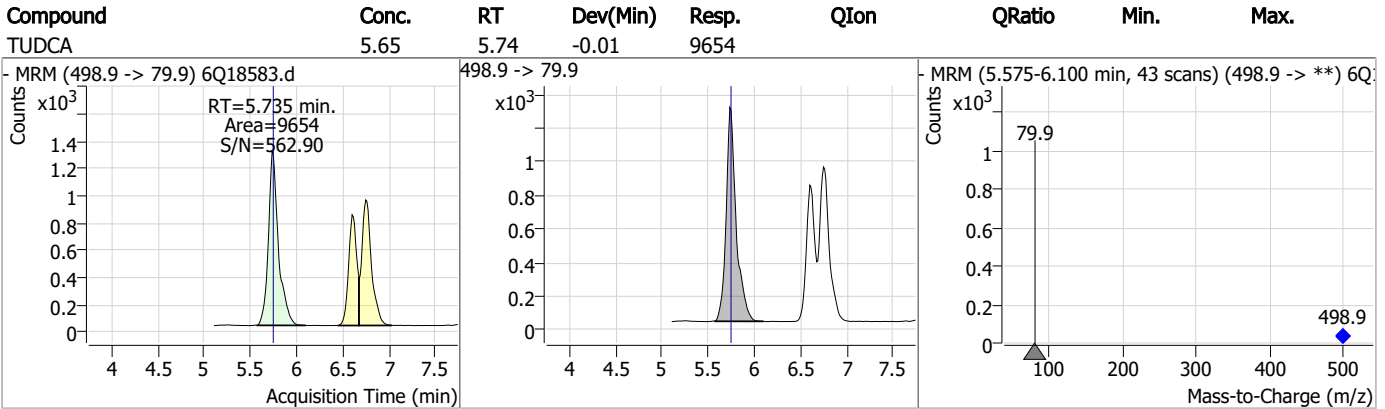
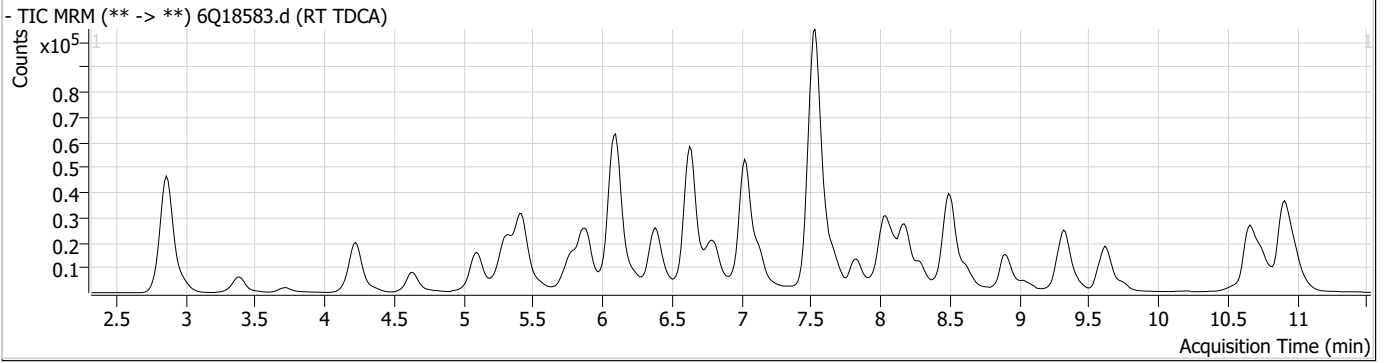
| Compound | RT | Transition | Response | Conc. Units | Dev(Min) | QValue |
|------------------------------------|----------------------|--------------------------------|------------------|-------------|----------|--------|
| Internal Standards | | | | | | |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 19278 | 2.50 µg/L | -0.025 | |
| 13C4-PFOS | 8.190 | 502.8 -> 79.9 | 25303 | 2.50 µg/L | -0.012 | |
| System Monitoring Compounds | | | | | | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 19278 | 1.93 µg/L | -0.025 | |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 77.3% | | | |
| Target Compounds | | | | | | |
| PFOS | 8.178 | 498.9 -> 79.9 498.9 -> 98.8 | 24044 10818 | 3.65 µg/L | #m | 74 |
| TCDCa | 6.601 | 498.9 -> 79.9 | 5088 | 5.72 ng/ml | | 100 |
| TDCA | 6.762 | 498.9 -> 79.9 | 6980 | 8.67 ng/ml | | 100 |
| TUDCA | 5.735 | 498.9 -> 79.9 | 9654 | 5.65 ng/ml | | 100 |

= Qualifier out of range, m = manually integrated, + = Area summed

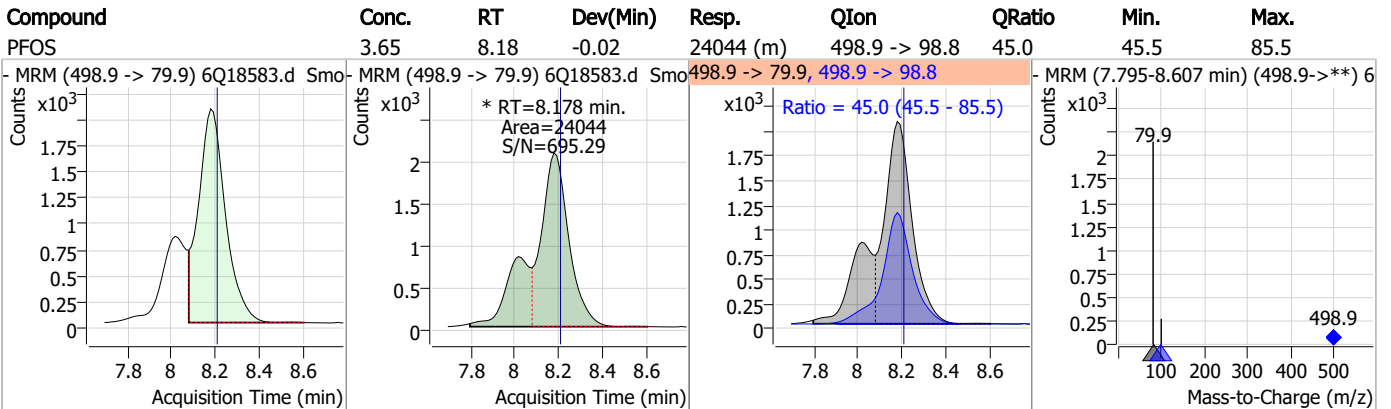
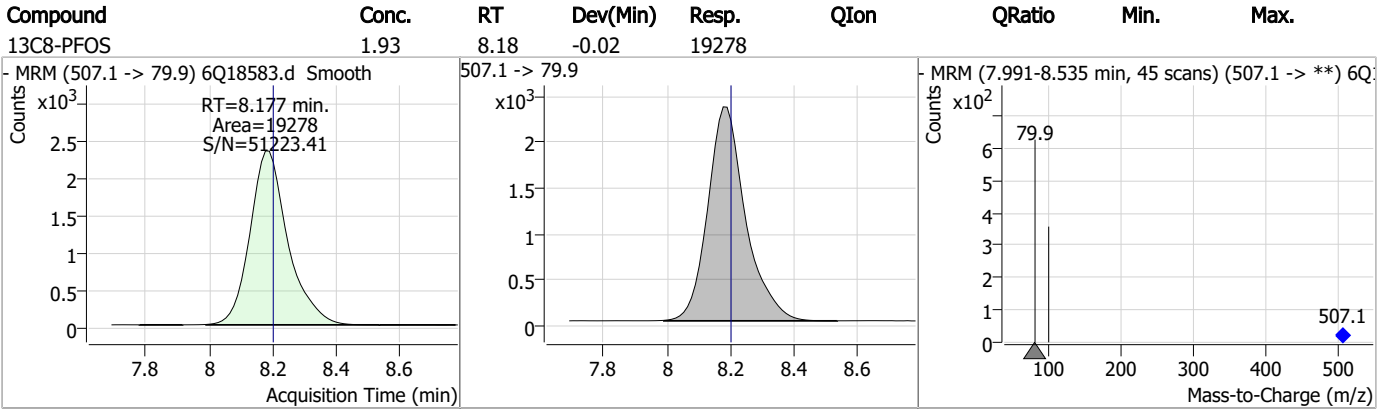
7.6.1

7

Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



7.6.1

7

Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18583.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:32 Supervisor approved: 06/01/23 14:43 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.18 | Split peak |

7.6.1.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18584.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 4:47:23 PM
 Sample Name : RT BR-LN
 Vial : P1-B4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.860 | 216.8 -> 171.9 | 184317 | 10.00 µg/L | 0.037 |
| M5-PFPeA | 4.222 | 268.3 -> 223.0 | 59764 | 5.00 µg/L | 0.012 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 64248 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.382 | 367.1 -> 322.0 | 59302 | 2.50 µg/L | 0.012 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 92001 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.557 | 472.1 -> 427.0 | 37990 | 1.25 µg/L | 0.000 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 25438 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.480 | 570.0 -> 525.1 | 29427 | 1.25 µg/L | 0.000 |
| M2-PFDoDA | 8.912 | 615.1 -> 570.0 | 29037 | 1.25 µg/L | 0.012 |
| M2-PFTeDA | 9.639 | 715.2 -> 670.0 | 16093 | 1.25 µg/L | 0.000 |
| M8-FOSA | 9.611 | 506.1 -> 77.8 | 31533 | 2.50 µg/L | 0.012 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 24390 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15405 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 13670 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3284 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5069 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 4764 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27275 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41907 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25666 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 106437 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 133388 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12888 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13977 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.190 | 502.8 -> 79.9 | 16948 | 2.50 µg/L | 0.000 |
| 13C3-PFBA | 2.864 | 216.0 -> 172.0 | 78242 | 5.00 µg/L | 0.037 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11045 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 93299 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 32534 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.557 | 468.0 -> 423.0 | 49070 | 1.25 µg/L | 0.000 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 62936 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3284 | 4.46 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 89.2% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5069 | 4.74 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 94.8% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 4764 | 4.39 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 87.8% | | |
| 13C2-PFDoDA | 8.912 | 615.1 -> 570.0 | 29037 | 1.29 µg/L | 0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 102.8% | | |
| 13C2-PFTeDA | 9.639 | 715.2 -> 670.0 | 16093 | 1.31 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 104.7% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 24390 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 99.8% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15405 | 2.50 µg/L | 0.000 |

7.6.2
7



Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.9% | |
| 13C4-PFBA | 2.860 | 216.8 -> 171.9 | 184317 | 9.89 µg/L | 0.037 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 98.9% | |
| 13C4-PFHpA | 6.382 | 367.1 -> 322.0 | 59302 | 2.41 µg/L | 0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.3% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 64248 | 2.41 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.5% | |
| 13C5-PFPeA | 4.222 | 268.3 -> 223.0 | 59764 | 4.88 µg/L | 0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 97.6% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 25438 | 1.33 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 106.7% | |
| 13C7-PFUnDA | 8.480 | 570.0 -> 525.1 | 29427 | 1.21 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.8% | |
| 13C8-FOSA | 9.611 | 506.1 -> 77.8 | 31533 | 2.44 µg/L | 0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.6% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 92001 | 2.63 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.3% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 13670 | 2.52 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.7% | |
| 13C9-PFNA | 7.557 | 472.1 -> 427.0 | 37990 | 1.17 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 94.0% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27275 | 4.99 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41907 | 10.13 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.3% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13977 | 2.67 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 106.8% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25666 | 5.16 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 103.2% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 106437 | 25.01 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 133388 | 23.96 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 95.8% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12888 | 2.60 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.0% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 258816 | 54.25 µg/L | 96 |
| | | 327.1 -> 80.9 | 95733 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 256685 | 51.53 µg/L | 100 |
| | | 427.1 -> 80.9 | 87375 | | |
| 8:2FTS | 7.828 | 527.1 -> 507.0 | 148544 | 56.06 µg/L | 95 |
| | | 527.1 -> 80.8 | 58928 | | |
| EtFOSAA | 8.293 | 584.2 -> 419.1 | 46640 | 14.12 µg/L | 97 |
| | | 584.2 -> 526.0 | 24113 | | |
| FOSA | 9.602 | 498.1 -> 77.9 | 359973 | 32.98 µg/L | 100 |
| | | 498.1 -> 478.0 | 10498 | | |
| MeFOSAA | 8.097 | 570.1 -> 419.0 | 82143 | 14.65 µg/L | 99 |
| | | 570.1 -> 483.0 | 16064 | | |
| PFBA | 2.868 | 212.8 -> 168.9 | 346074 | 56.71 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 98352 | 11.85 µg/L | 94 |
| | | 298.7 -> 98.8 | 39061 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 392824 | 13.32 µg/L | 100 |
| | | 512.9 -> 219.0 | 63646 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 270018 | 13.54 µg/L | 95 |
| | | 613.1 -> 319.0 | 42654 | | |
| PFDS | 9.064 | 599.0 -> 79.9 | 44655 | 13.07 µg/L | 100 |

7.6.2
7

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|--------|-------|----------|
| PFHpA | 6.382 | 599.0 -> 98.8 | 21835 | 14.40 | µg/L | 96 |
| | | 363.1 -> 319.0 | 377962 | | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 63431 | 13.47 | µg/L | 99 |
| | | 449.0 -> 79.9 | 88264 | | | |
| PFHxA | 5.420 | 449.0 -> 98.9 | 43121 | 13.82 | µg/L | 98 |
| | | 313.0 -> 269.0 | 298167 | | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 15638 | 12.28 | µg/L | 99 |
| | | 398.7 -> 79.9 | 85596 | | | |
| PFNA | 7.421 | 398.7 -> 98.9 | 41074 | 31.68 | µg/L | m |
| | | 463.0 -> 419.0 | 852890 | | | |
| PFNS | 8.644 | 463.0 -> 219.0 | 177688 | 13.84 | µg/L | 98 |
| | | 548.8 -> 79.9 | 75961 | | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 38180 | 31.05 | µg/L | m |
| | | 413.0 -> 369.0 | 1219762 | | | |
| PFOS | 8.178 | 413.0 -> 169.0 | 223458 | 13.47 | µg/L | m |
| | | 498.9 -> 79.9 | 84152 | | | |
| PFPeA | 4.224 | 498.9 -> 98.8 | 40831 | 28.17 | µg/L | 100 |
| | | 263.0 -> 219.0 | 404414 | | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 85668 | 12.34 | µg/L | 96 |
| | | 349.1 -> 98.9 | 38425 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 211277 | 13.35 | µg/L | 96 |
| | | 713.1 -> 168.9 | 19042 | | | |
| PFTrDA | 9.296 | 663.0 -> 619.0 | 280949 | 13.95 | µg/L | 97 |
| | | 663.0 -> 168.9 | 28727 | | | |
| PFUnDA | 8.480 | 563.1 -> 519.0 | 286066 | 14.96 | µg/L | 99 |
| | | 563.1 -> 269.1 | 45475 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 397806 | 25.30 | µg/L | 99 |
| | | 632.9 -> 452.9 | 121214 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 636777 | 25.70 | µg/L | 97 |
| | | 532.8 -> 353.0 | 197077 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 1431492 | 25.72 | µg/L | 100 |
| | | 376.9 -> 84.8 | 381084 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 96682 | 27.22 | µg/L | 98 |
| | | 284.9 -> 184.9 | 12230 | | | |
| 3:3FTCA | 3.709 | 241.0 -> 177.0 | 64579 | 70.30 | µg/L | 97 |
| | | 241.0 -> 117.0 | 8590 | | | |
| 5:3FTCA | 6.099 | 341.0 -> 237.1 | 1272409 | 327.88 | µg/L | 96 |
| | | 341.0 -> 217.0 | 944163 | | | |
| 7:3FTCA | 7.523 | 441.0 -> 316.9 | 849719 | 319.72 | µg/L | 100 |
| | | 441.0 -> 336.9 | 1871272 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 283011 | 47.11 | µg/L | 96 |
| | | 526.0 -> 169.0 | 363370 | | | |
| EtFOSE | 10.920 | 630.0 -> 58.9 | 534275 | 89.78 | µg/L | 100 |
| | | 511.9 -> 219.0 | 230564 | | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 323092 | 44.86 | µg/L | 94 |
| | | 616.1 -> 58.9 | 380421 | | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 20577 | 89.94 | µg/L | 100 |
| | | 699.1 -> 98.8 | 10652 | | | |
| PFDoDS | 9.767 | 295.0 -> 201.0 | 75790 | 13.55 | µg/L | 97 |
| | | 295.0 -> 84.9 | 19804 | | | |
| NFDHA | 5.299 | 279.0 -> 85.1 | 281574 | 28.85 | µg/L | 98 |
| | | 229.0 -> 84.9 | 222270 | | | |
| PFMBA | 4.638 | 314.8 -> 134.9 | 712861 | 26.03 | µg/L | 99 |
| | | 314.8 -> 82.9 | 25054 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.6.2
7

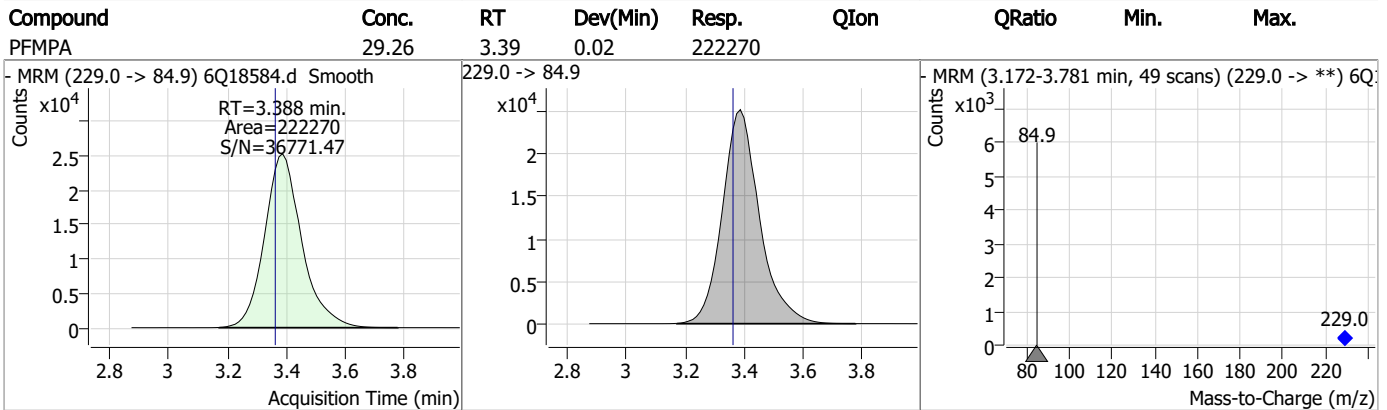
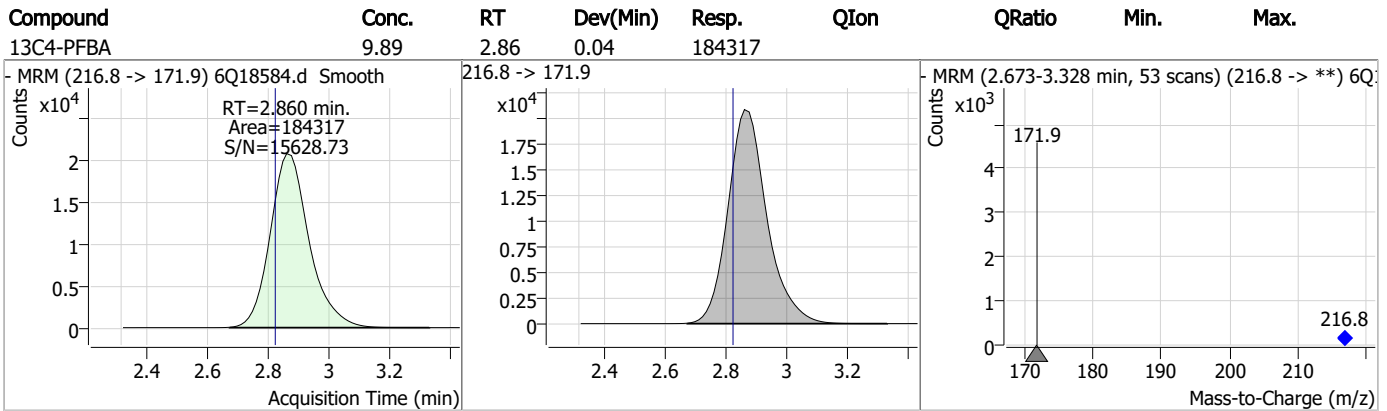
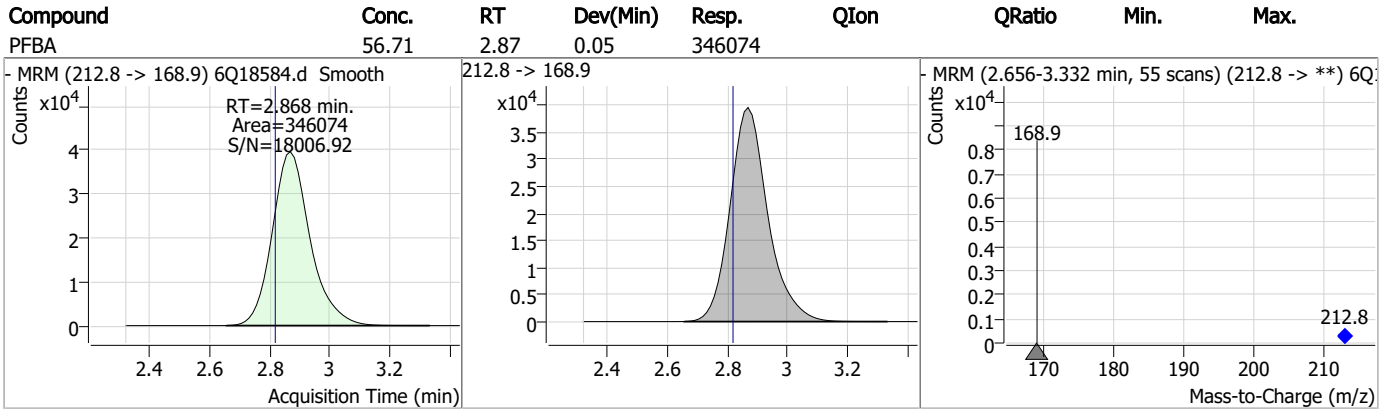
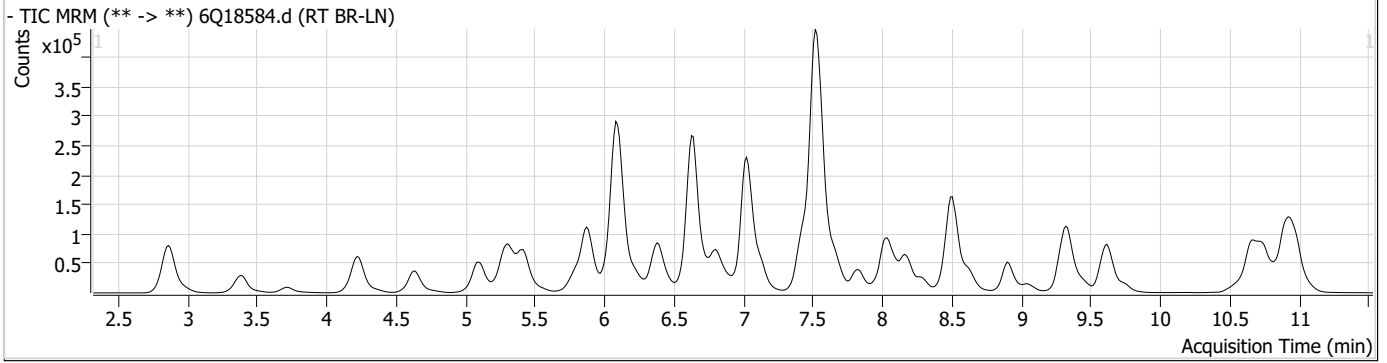
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.6.2

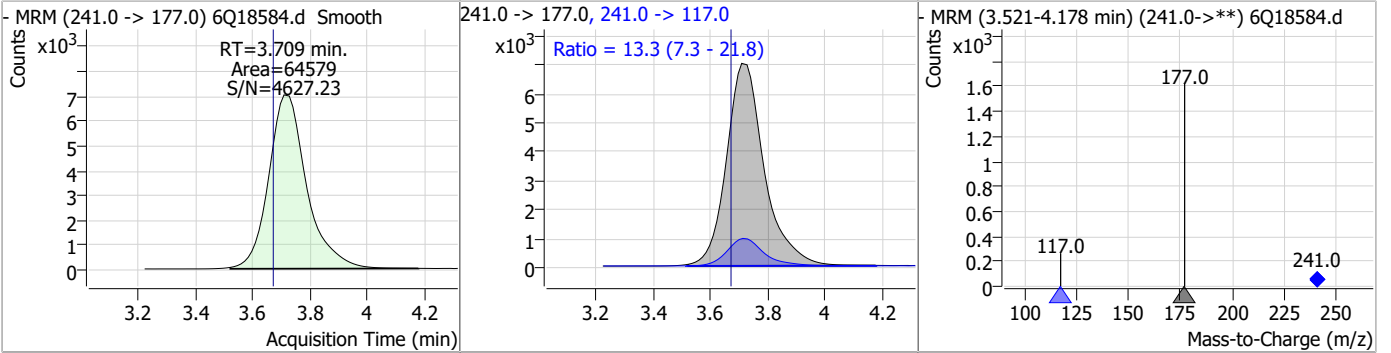
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Perfluorinated Compounds by LC/MS/MS

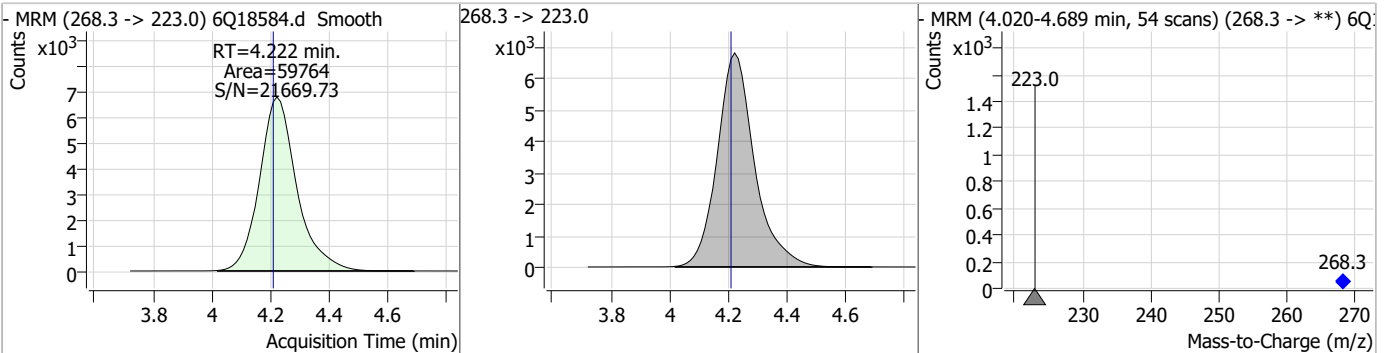


Perfluorinated Compounds by LC/MS/MS

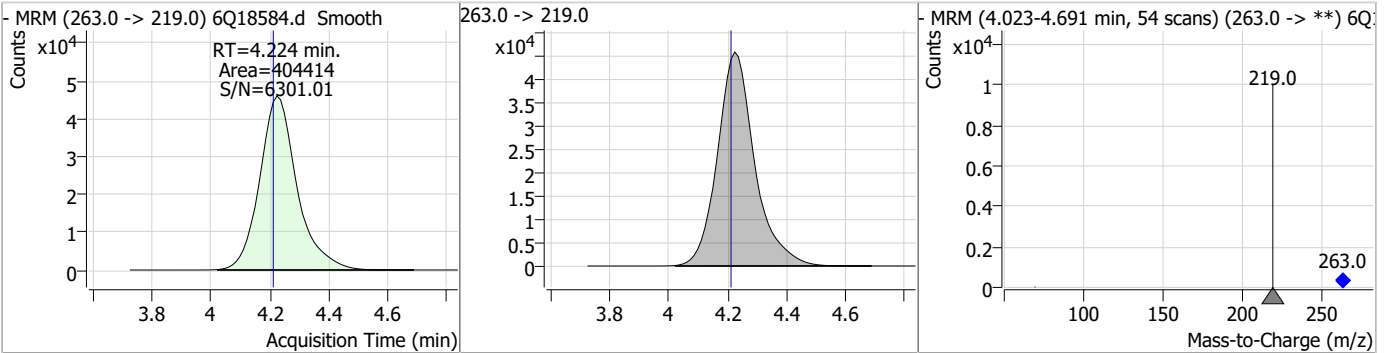
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 70.30 | 3.71 | 0.04 | 64579 | 241.0 -> 117.0 | 13.3 | 7.3 | 21.8 |



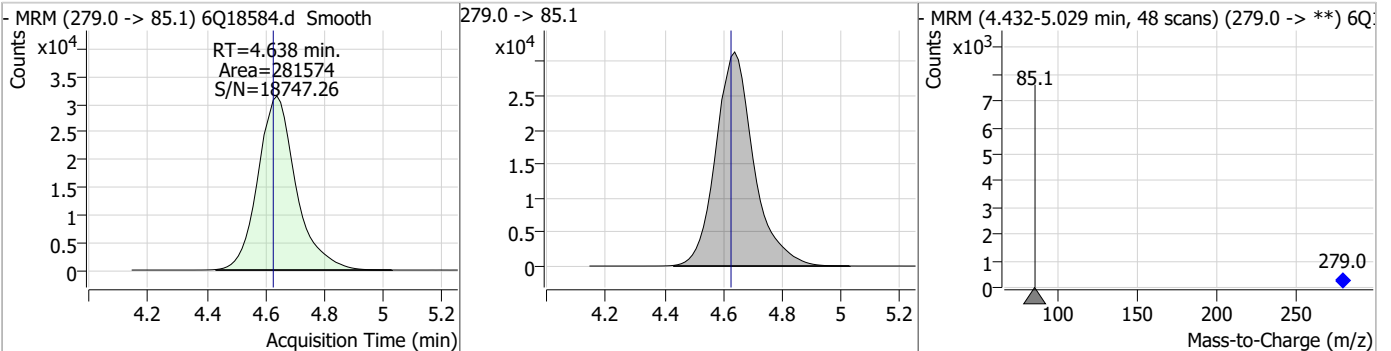
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFPeA | 4.88 | 4.22 | 0.01 | 59764 | | | | |



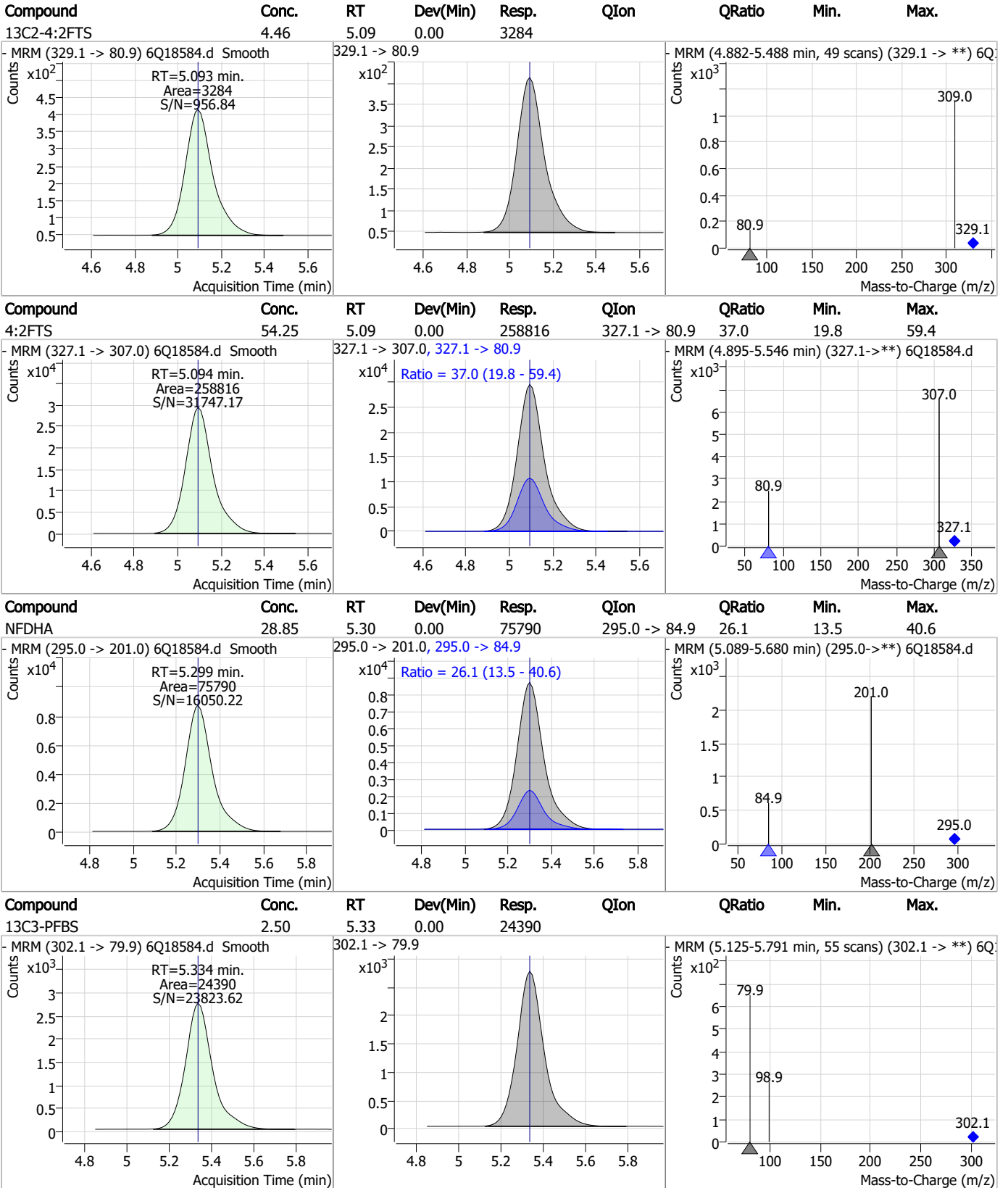
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|------|--------|------|------|
| PFPeA | 28.17 | 4.22 | 0.01 | 404414 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|------|--------|------|------|
| PFMBA | 28.82 | 4.64 | 0.01 | 281574 | | | | |



Perfluorinated Compounds by LC/MS/MS

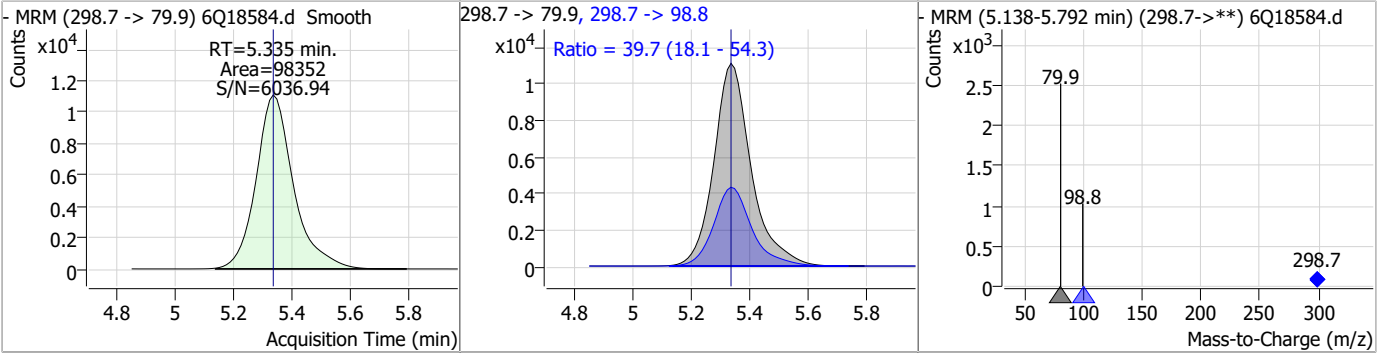


7.6.2

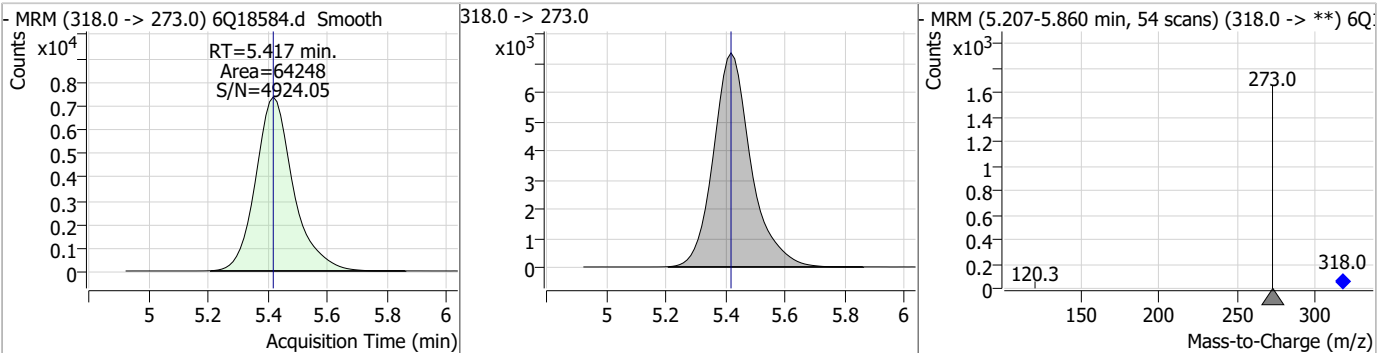
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Perfluorinated Compounds by LC/MS/MS

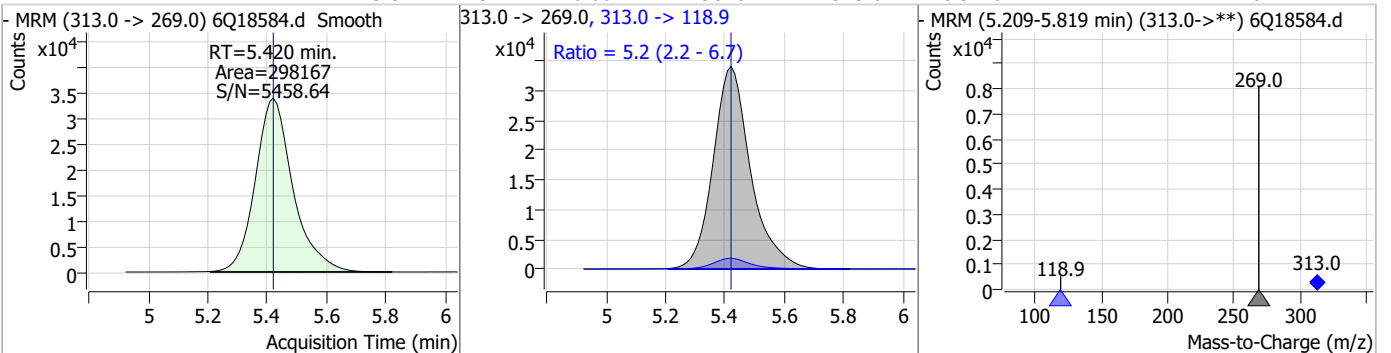
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 11.85 | 5.34 | 0.00 | 98352 | 298.7 -> 98.8 | 39.7 | 18.1 | 54.3 |



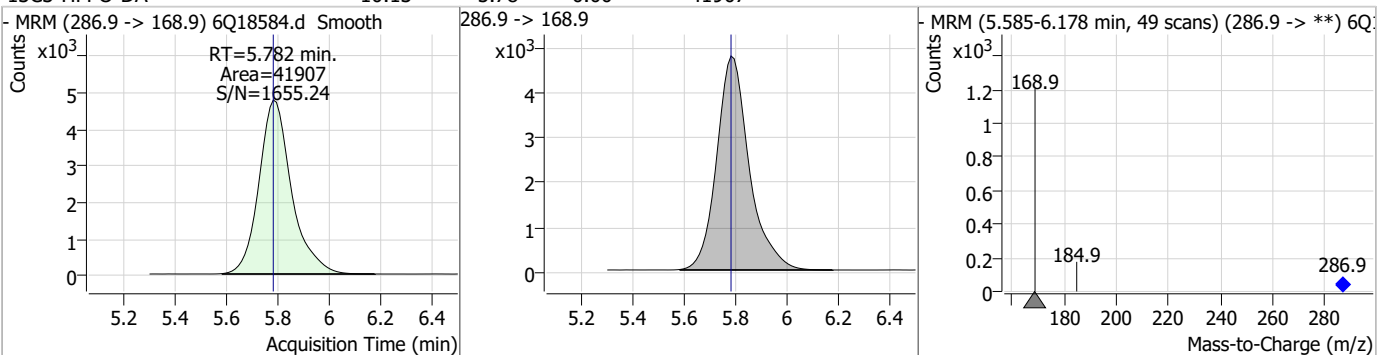
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.41 | 5.42 | 0.00 | 64248 | | | | |



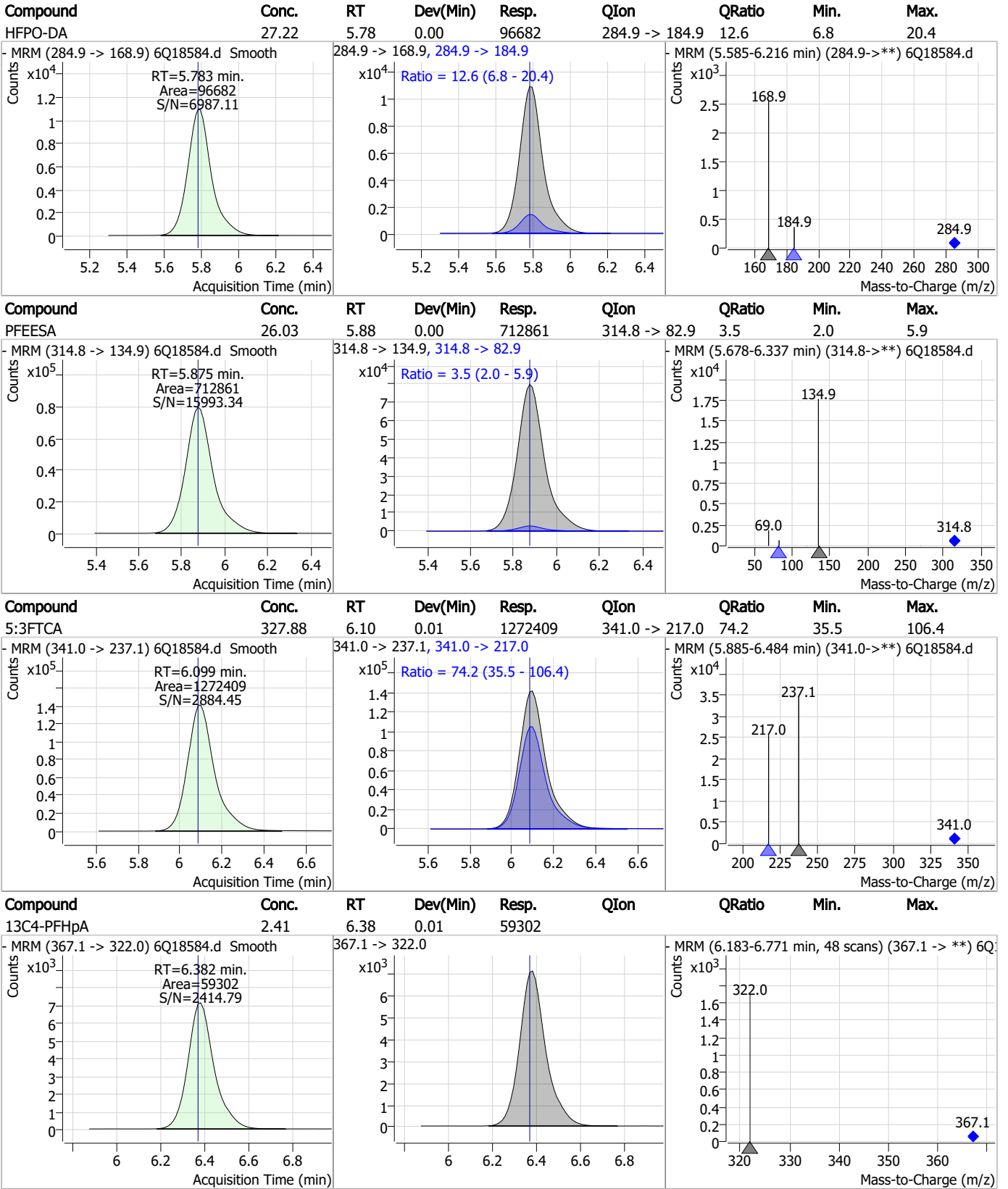
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| PFHxA | 13.82 | 5.42 | 0.00 | 298167 | 313.0 -> 118.9 | 5.2 | 2.2 | 6.7 |



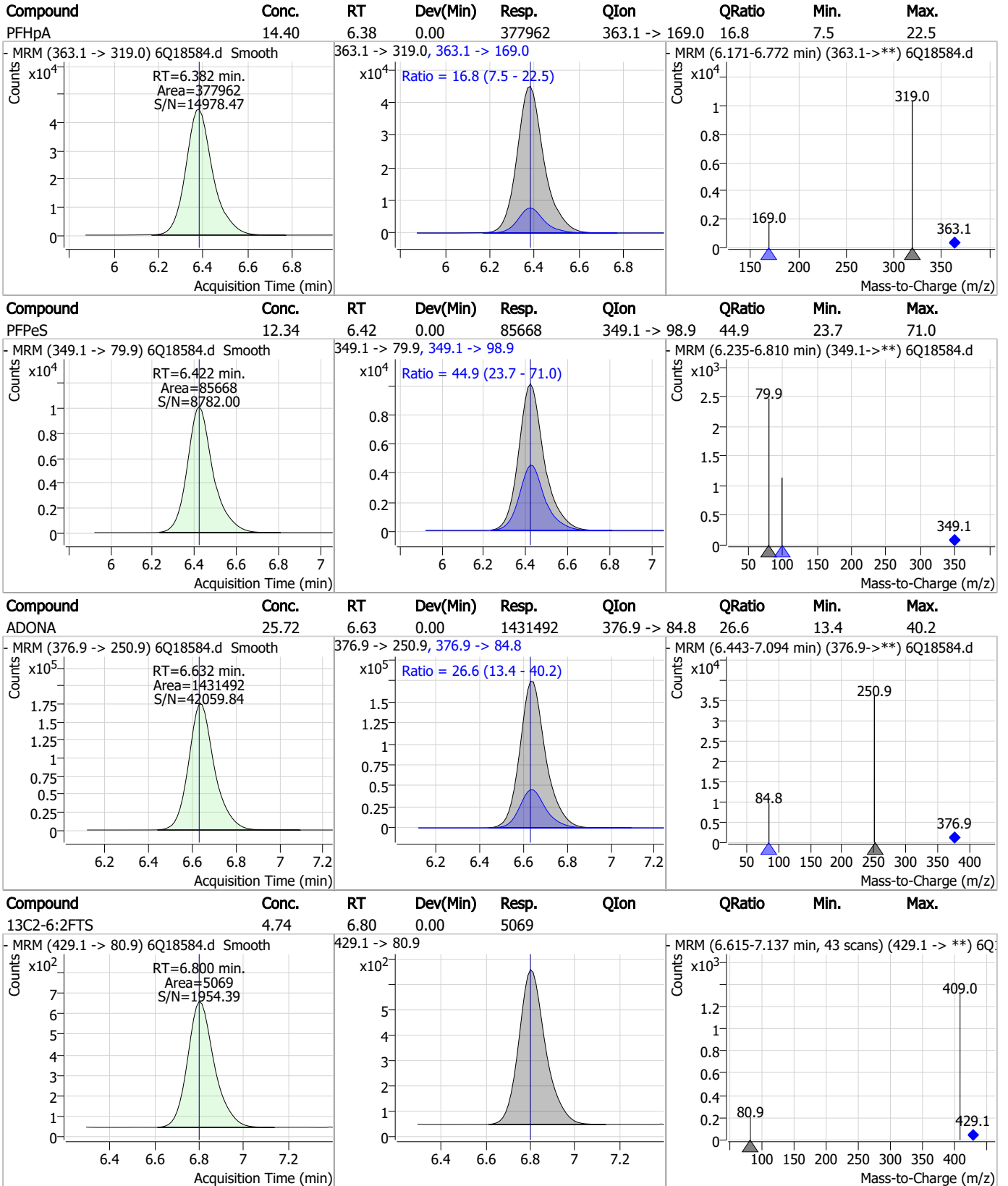
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 10.13 | 5.78 | 0.00 | 41907 | | | | |



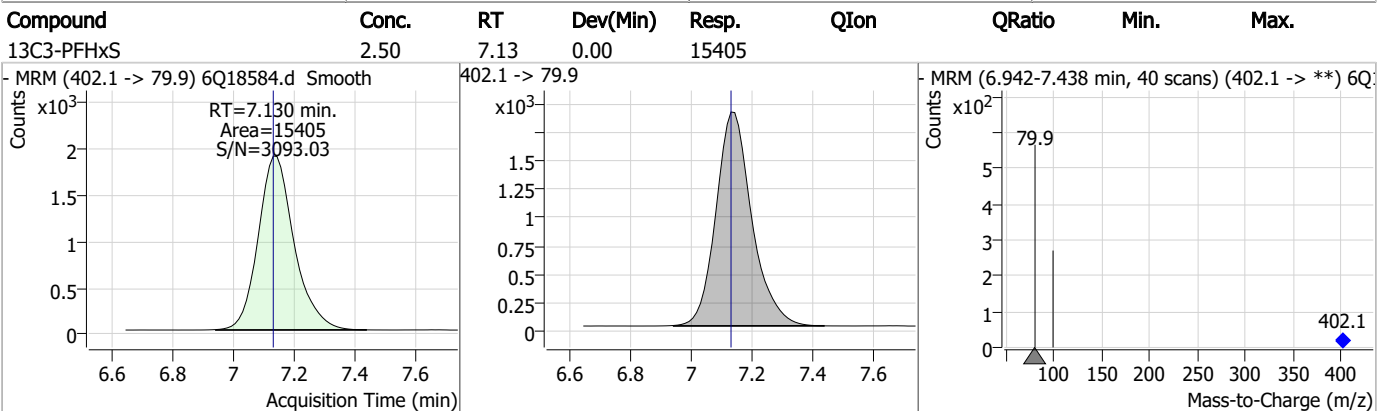
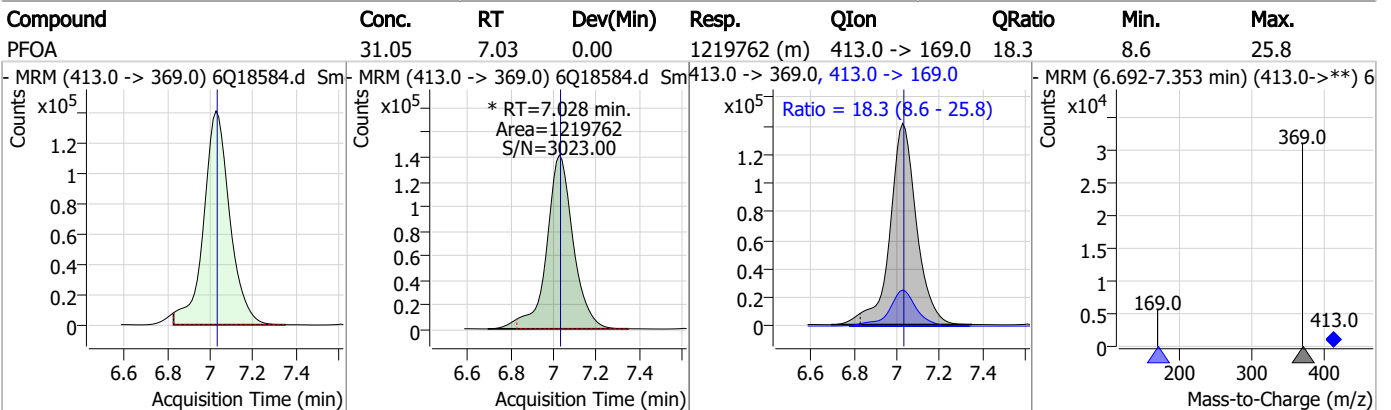
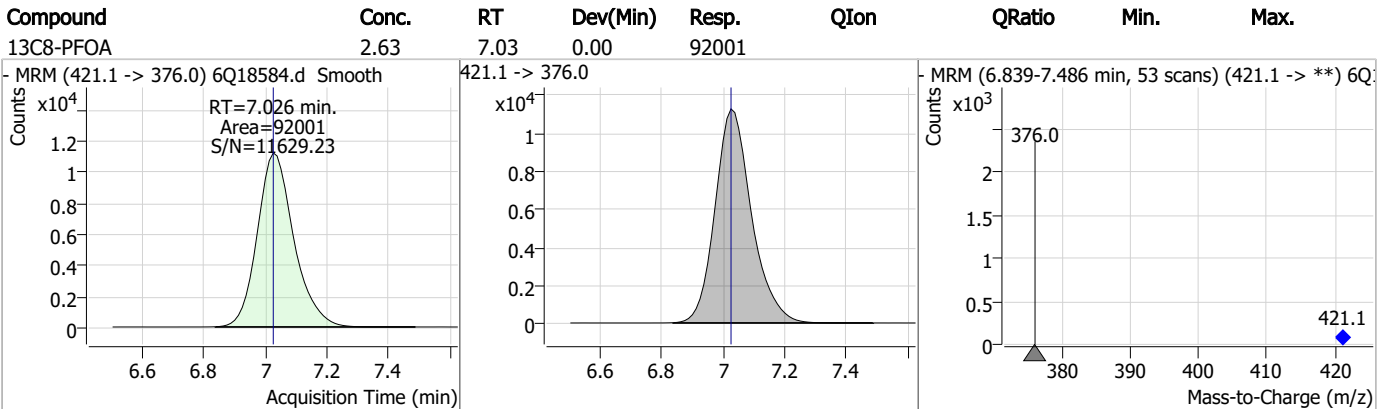
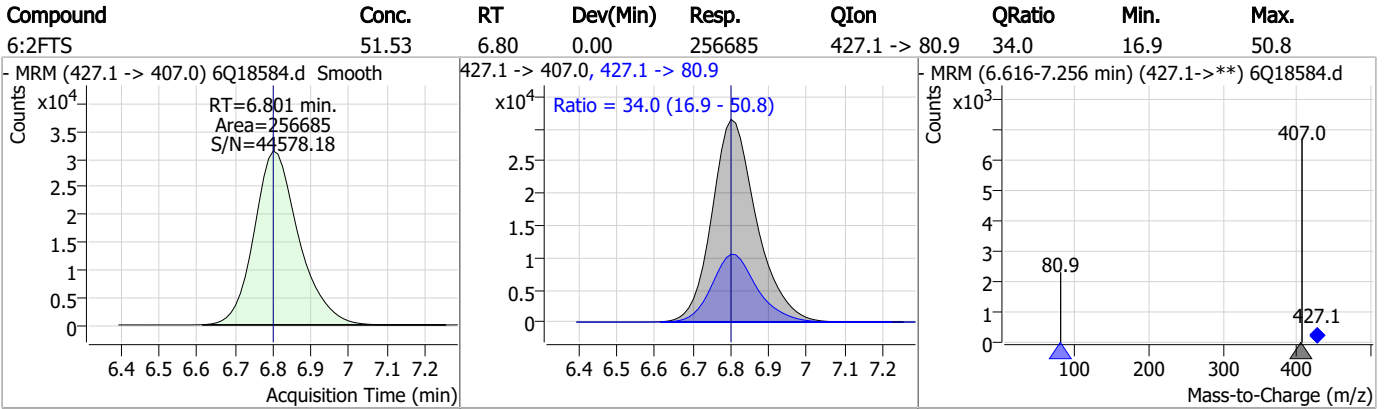
Perfluorinated Compounds by LC/MS/MS



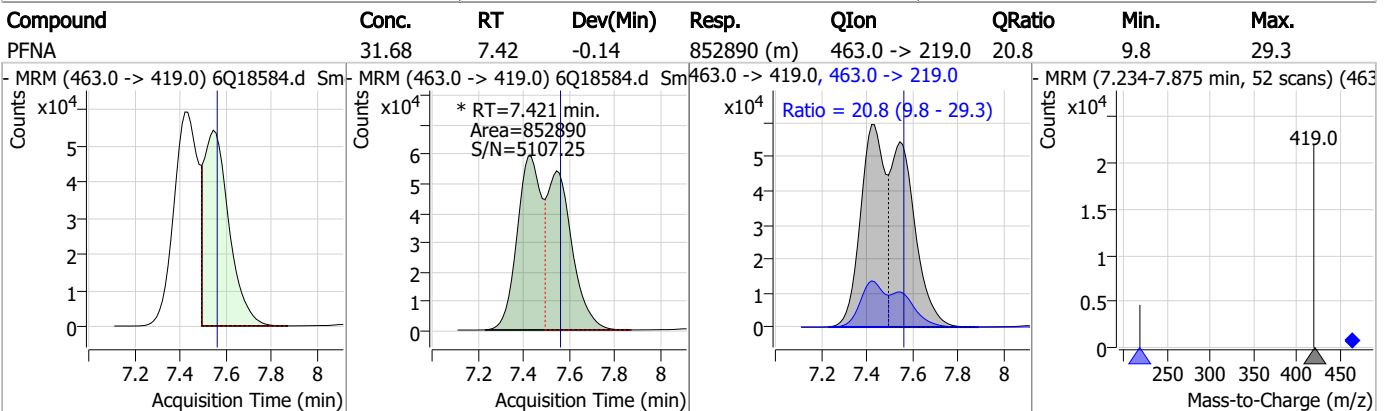
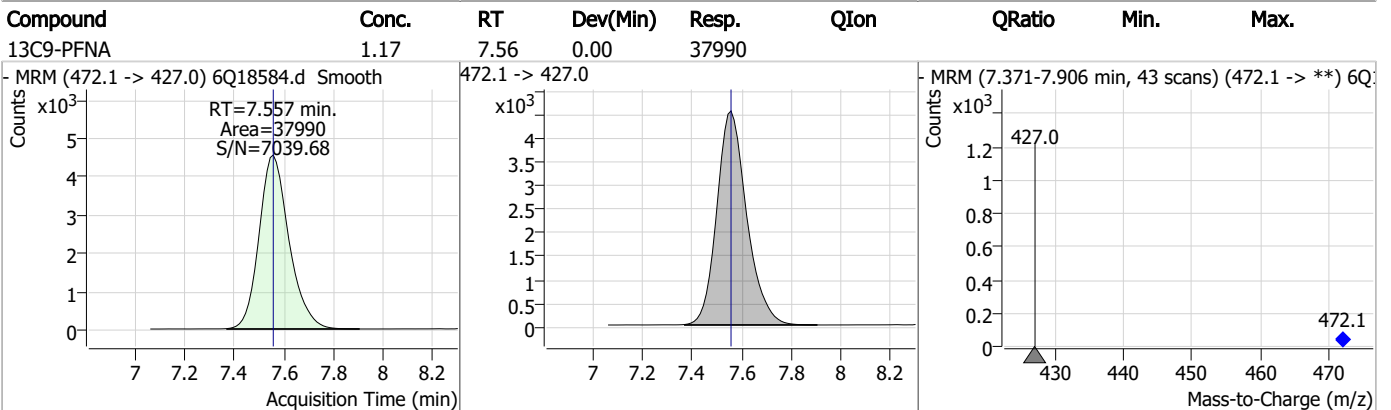
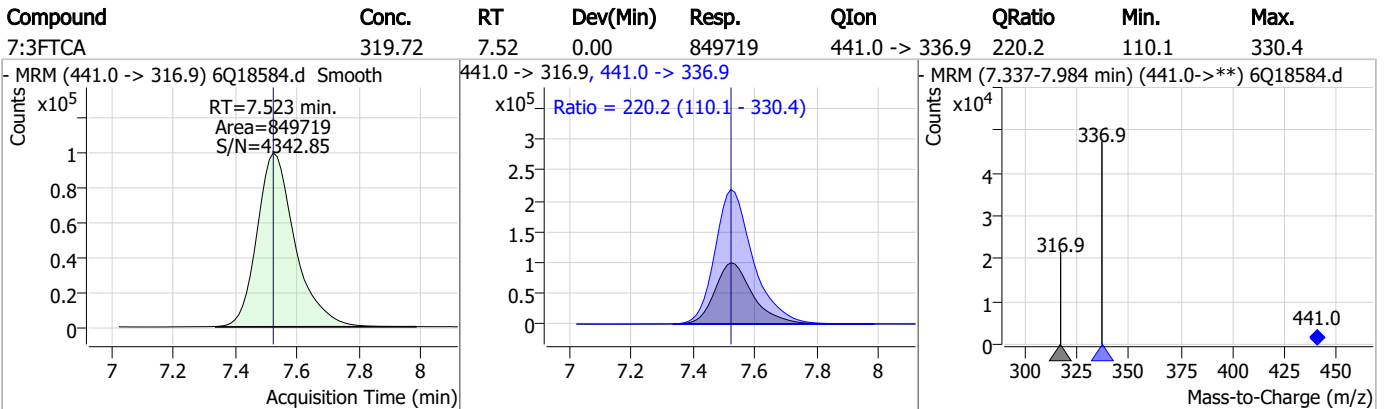
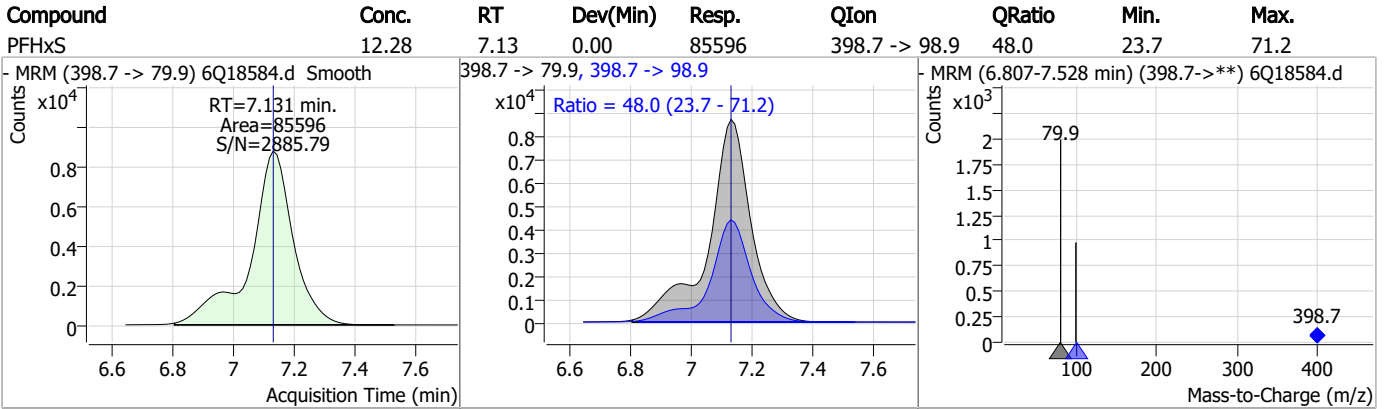
Perfluorinated Compounds by LC/MS/MS



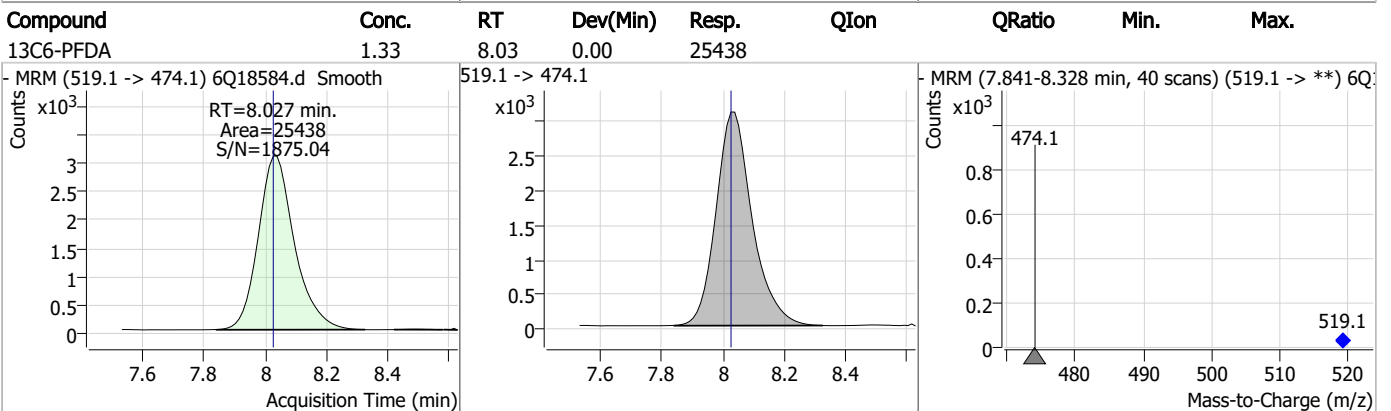
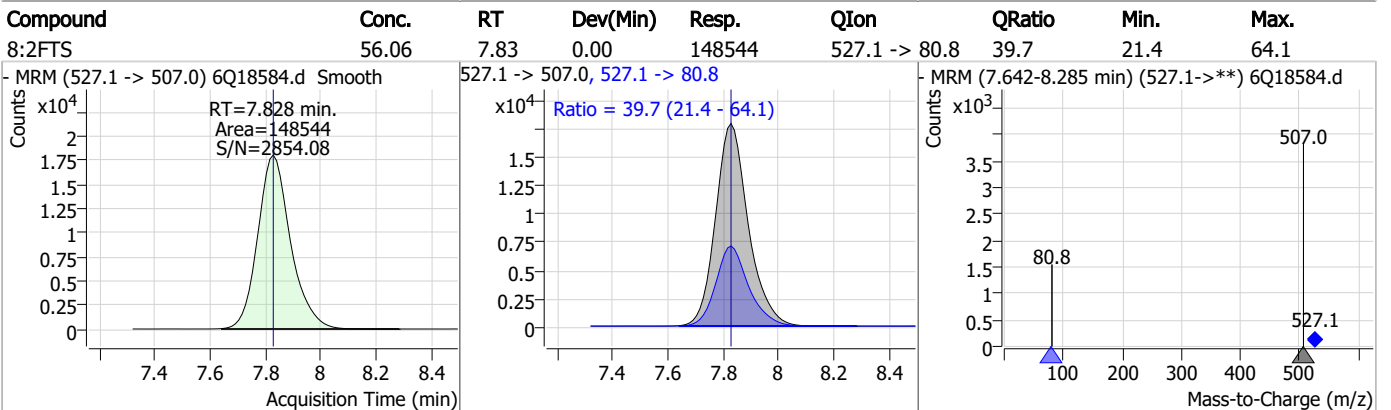
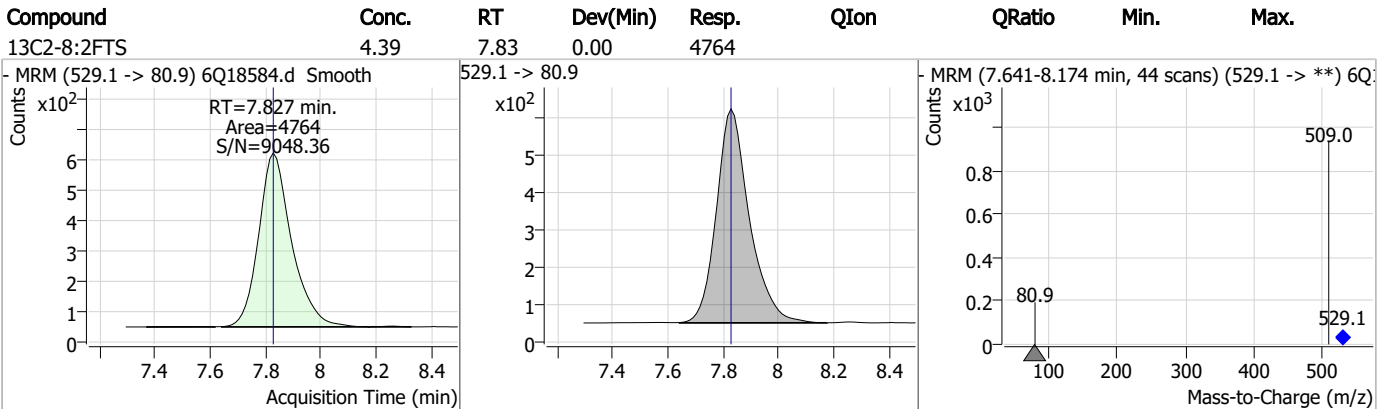
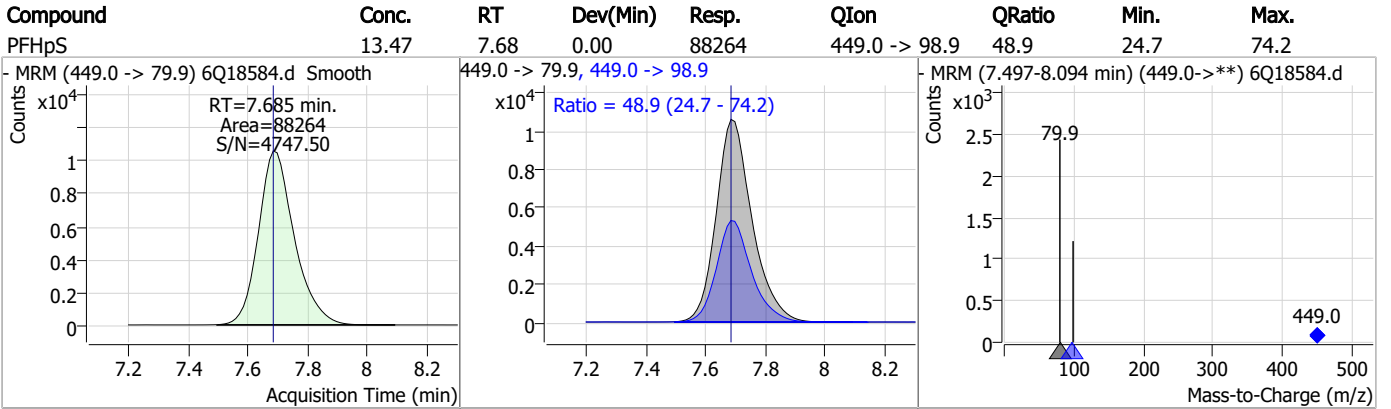
Perfluorinated Compounds by LC/MS/MS



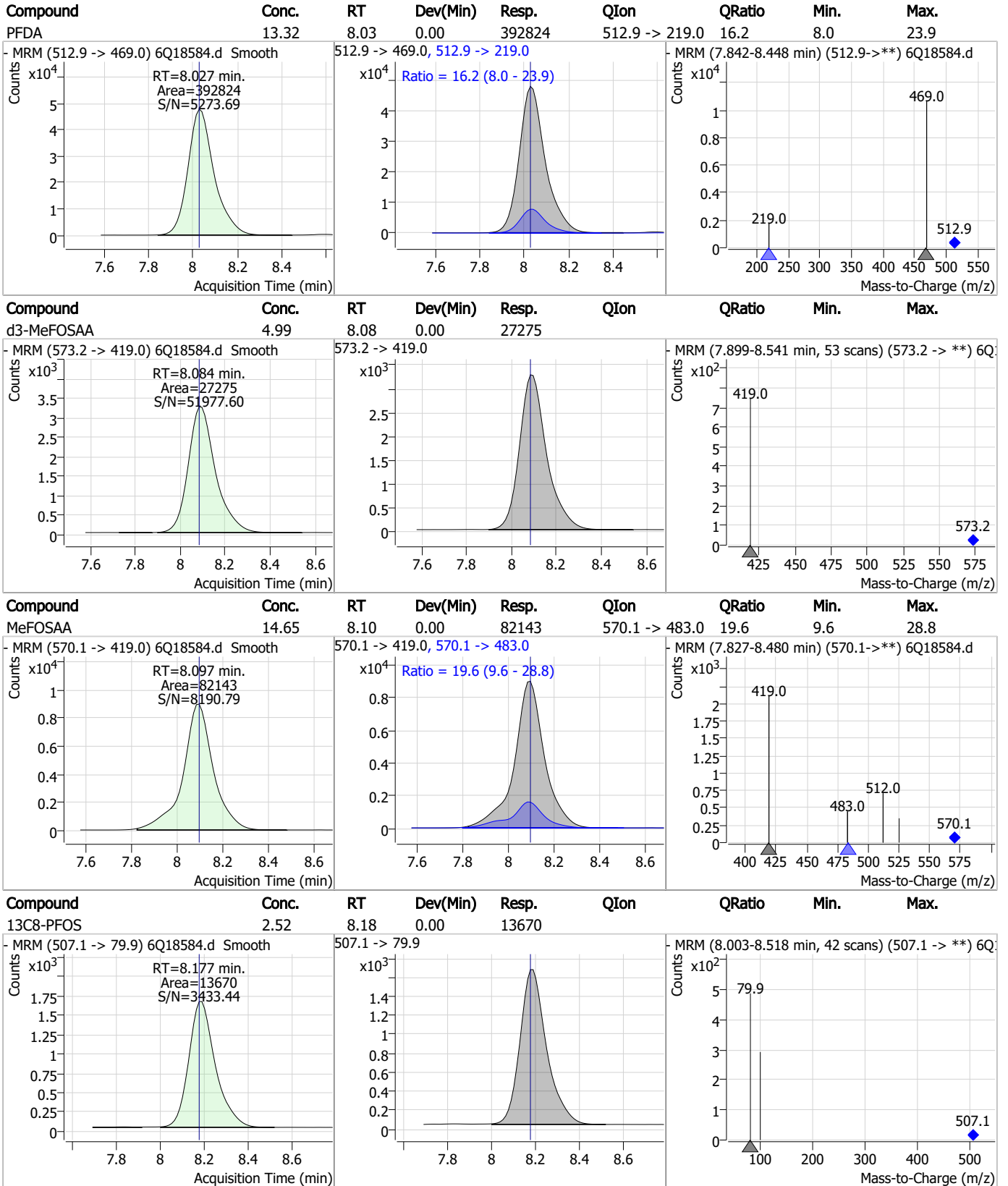
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



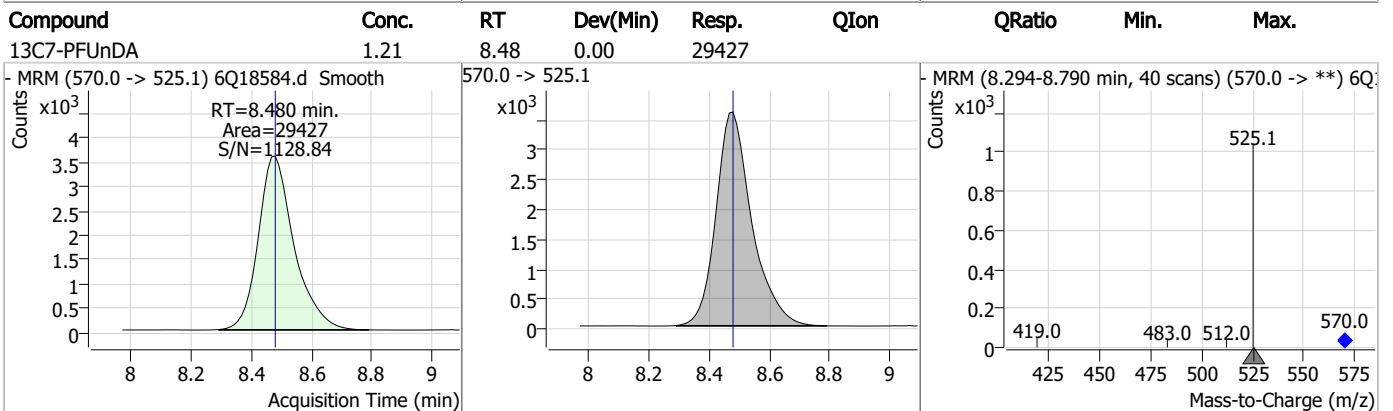
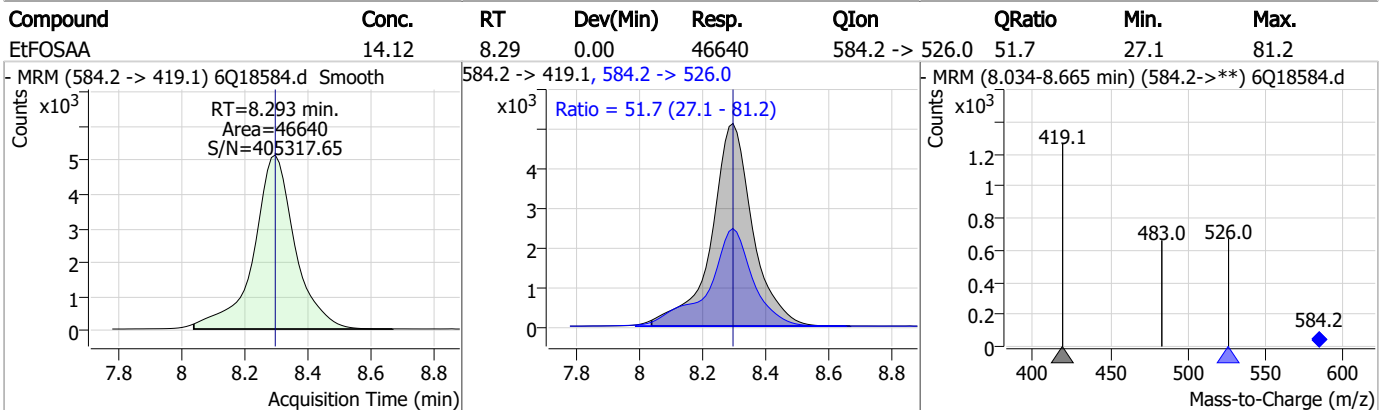
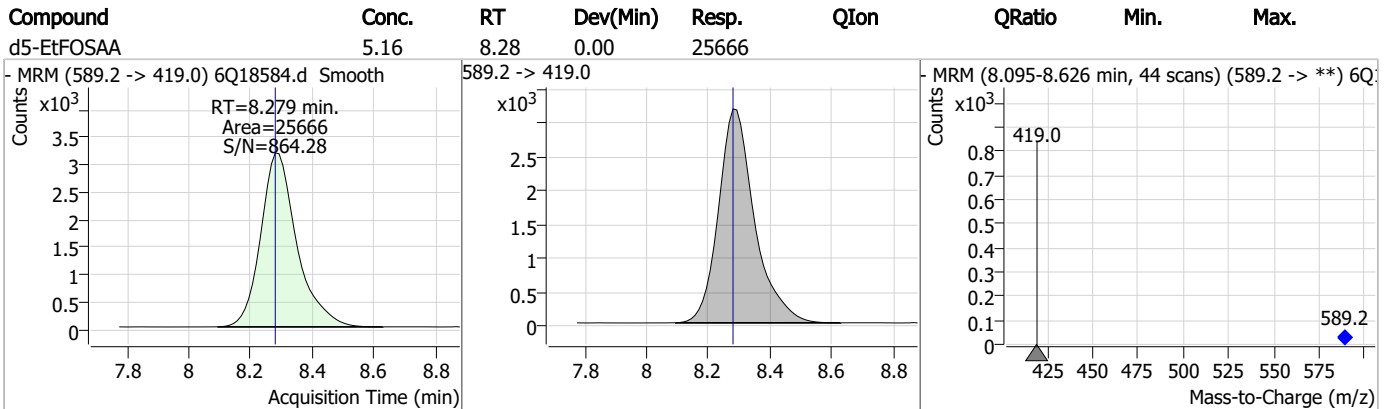
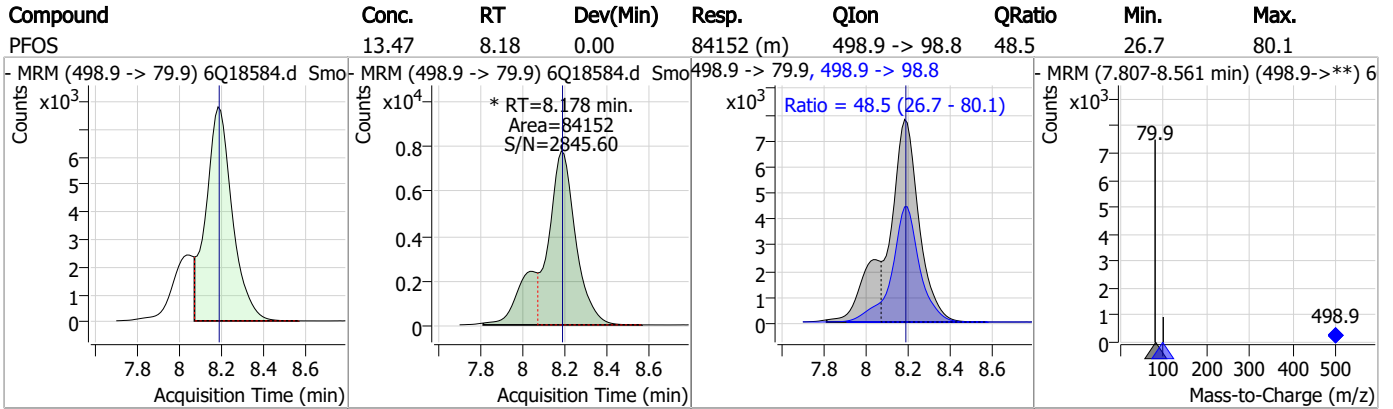
Perfluorinated Compounds by LC/MS/MS



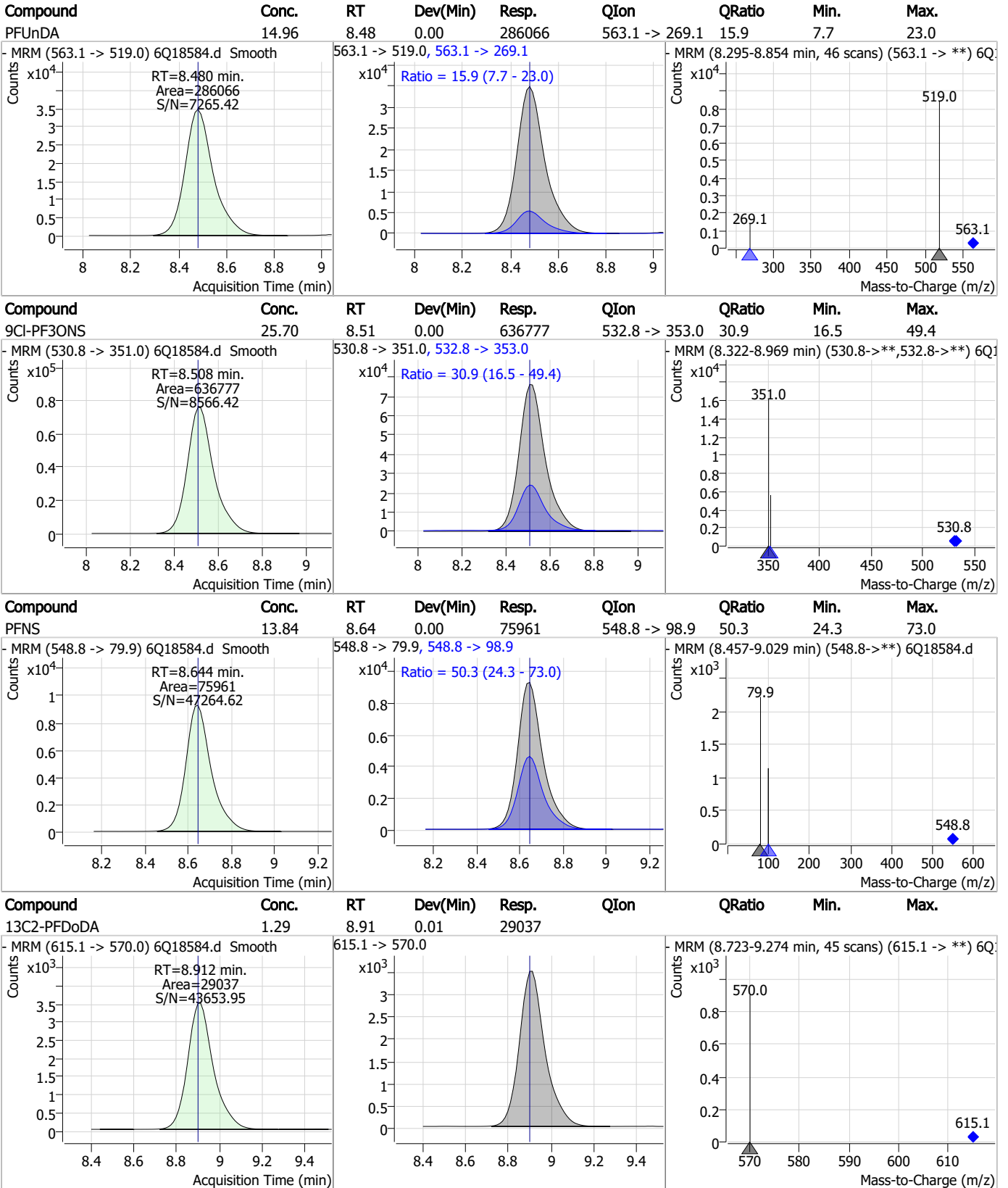
7.6.2

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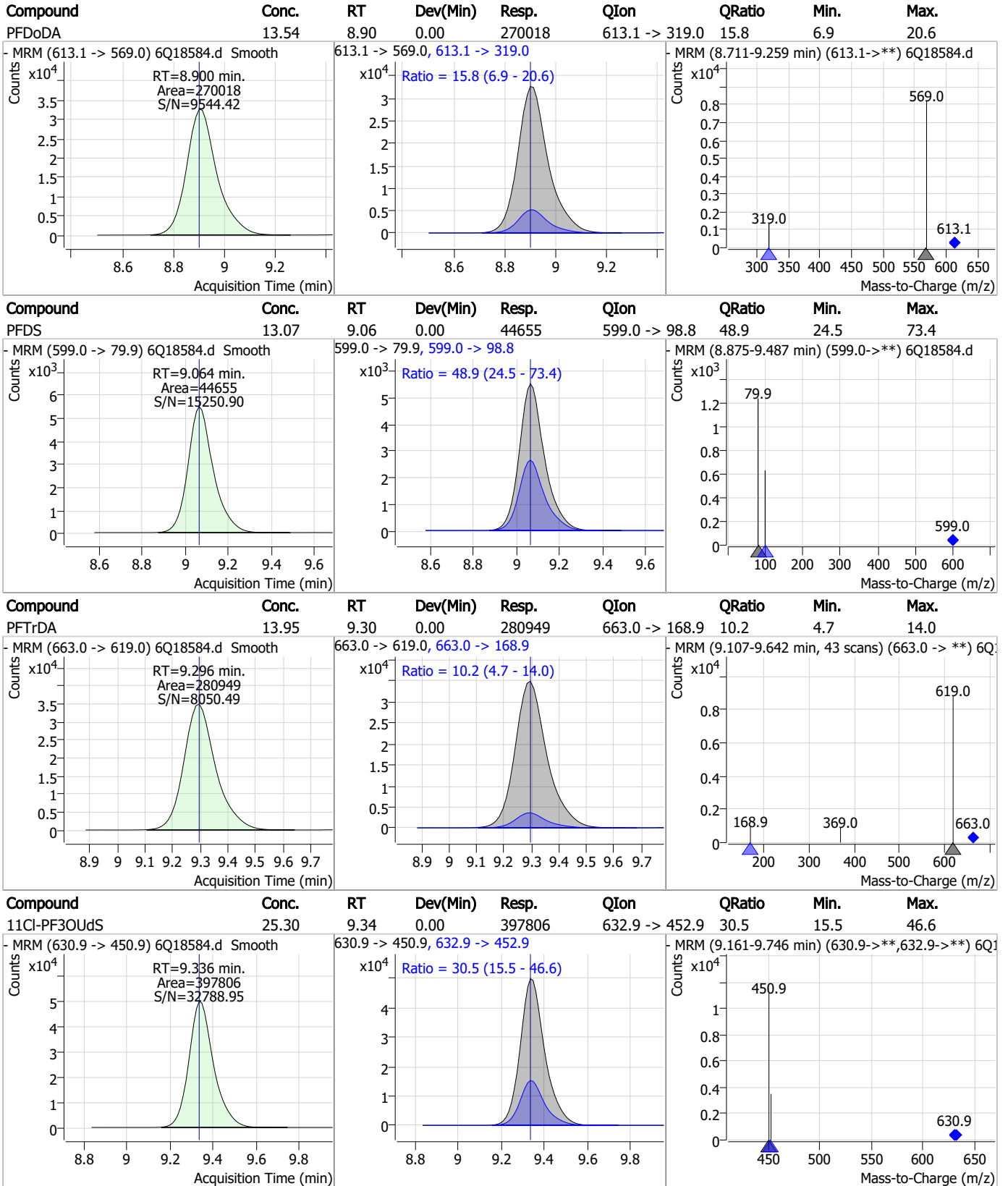
Perfluorinated Compounds by LC/MS/MS



Perfluorinated Compounds by LC/MS/MS



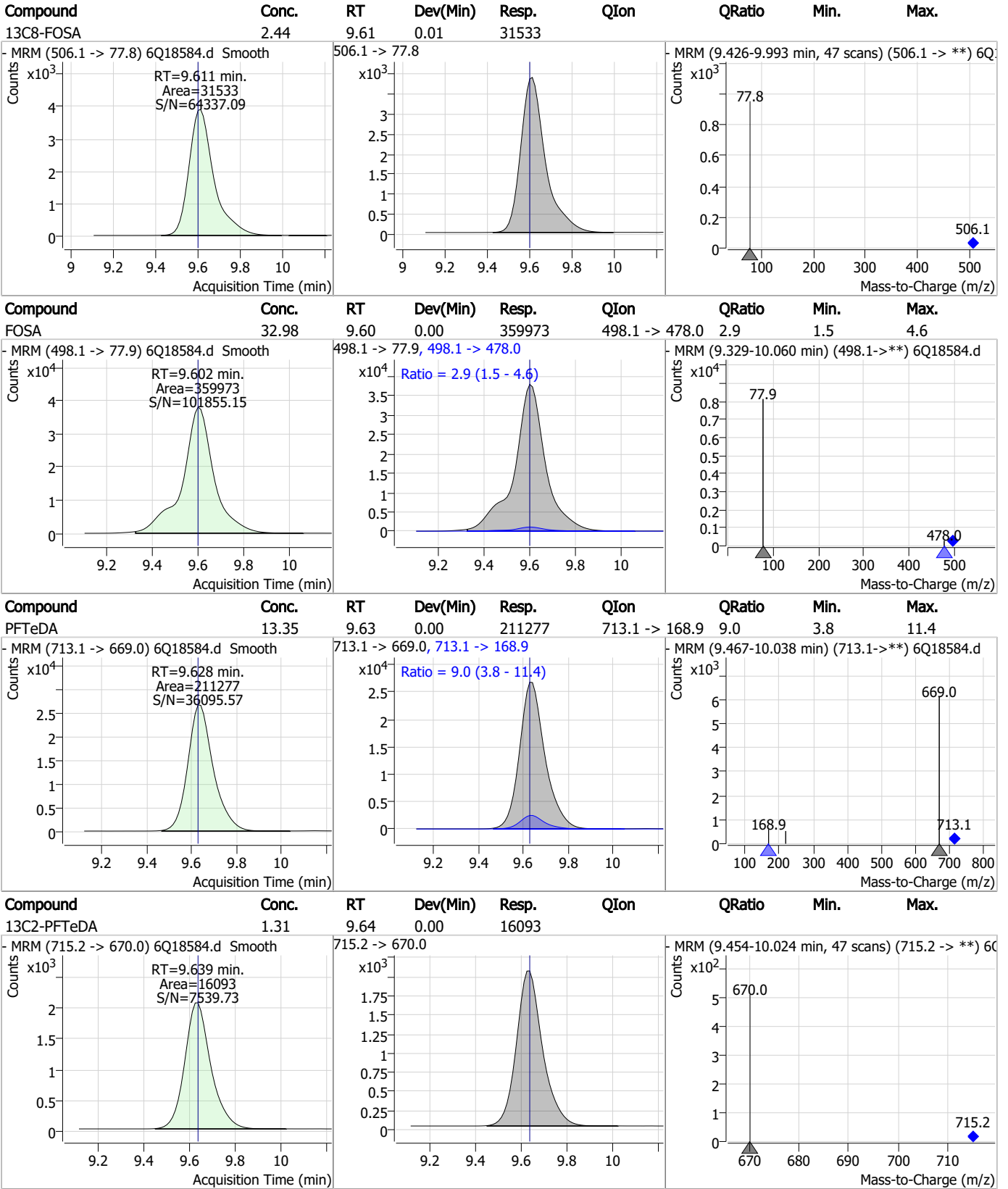
Perfluorinated Compounds by LC/MS/MS



7.6.2

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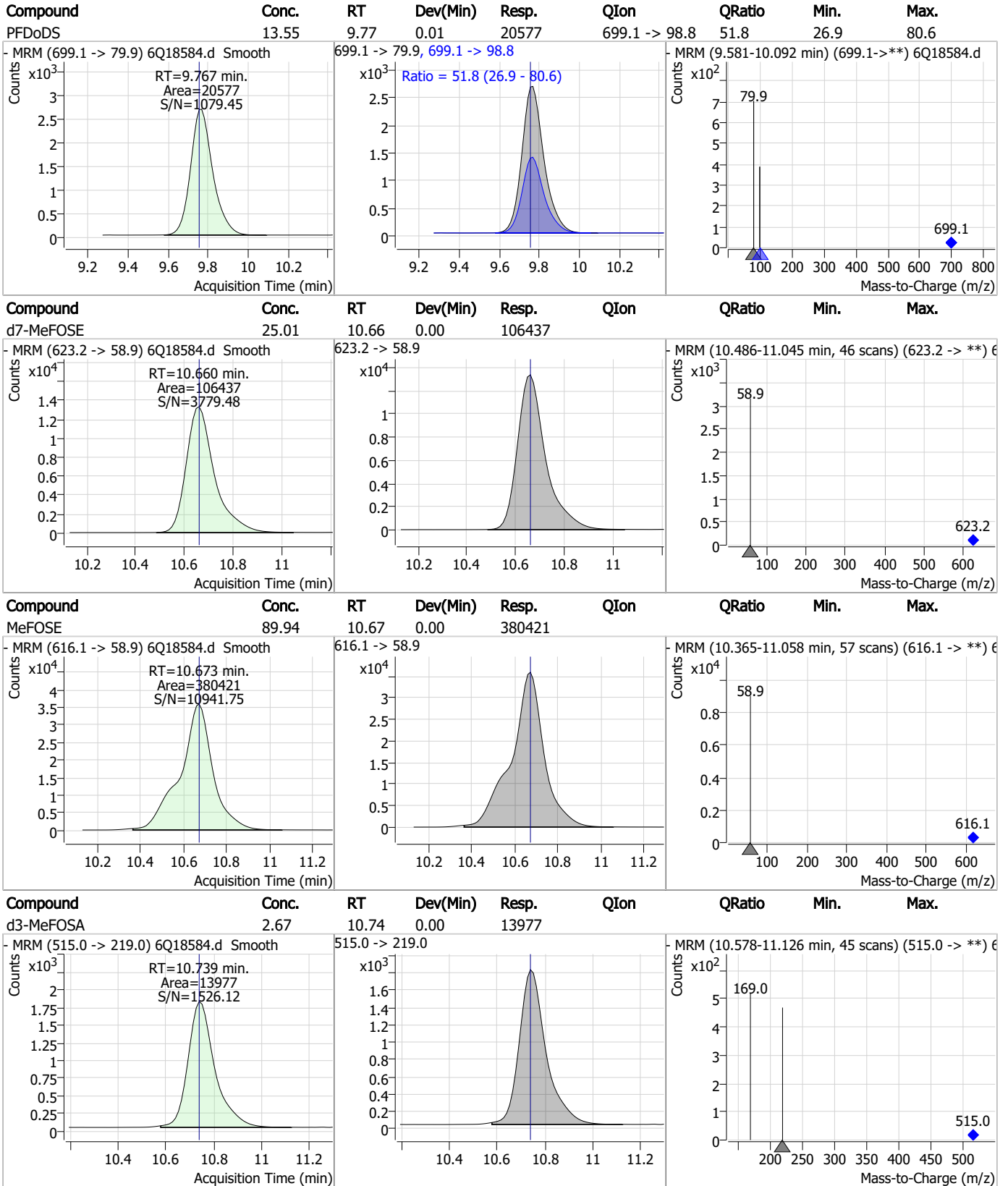
Perfluorinated Compounds by LC/MS/MS



7.6.2

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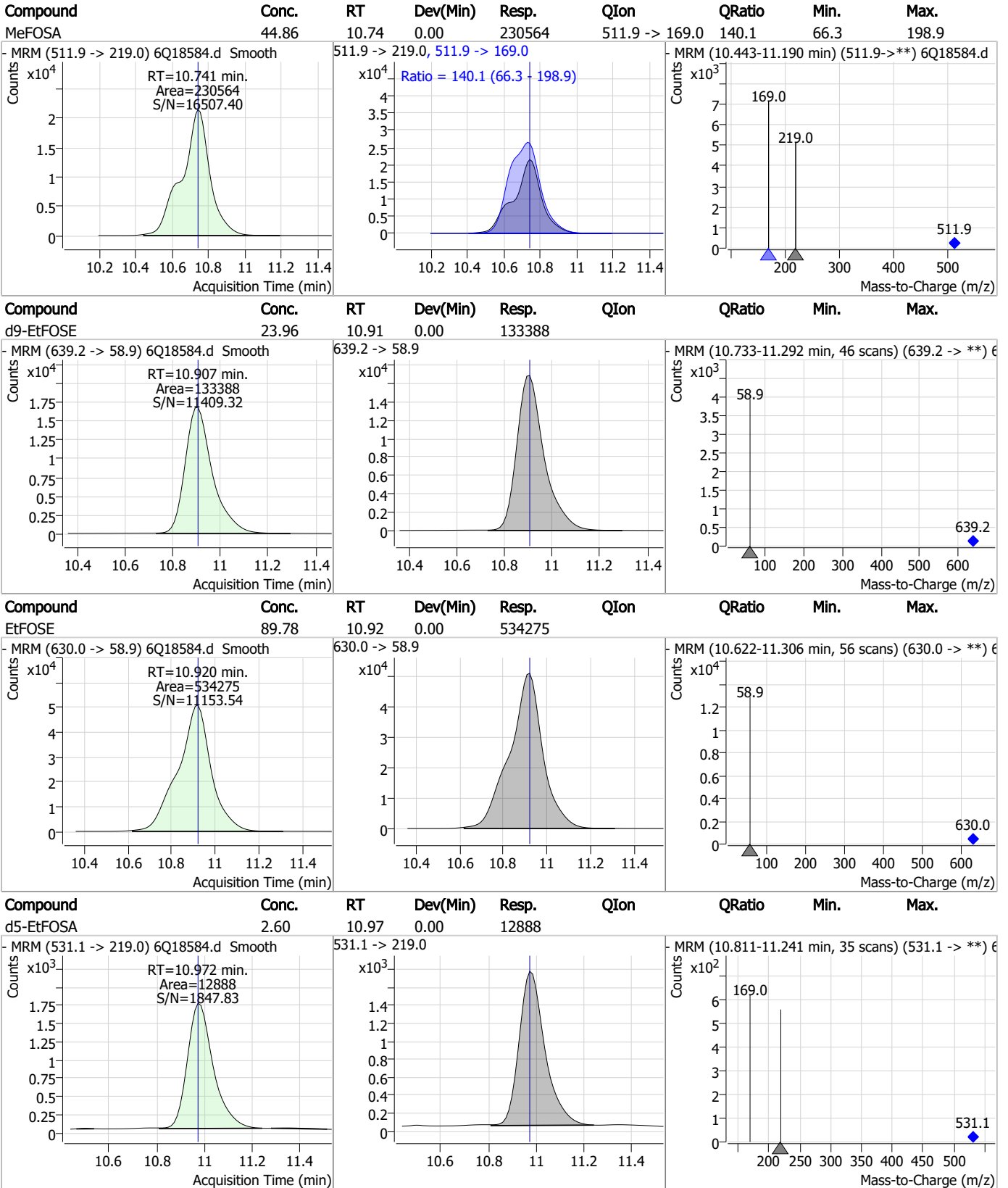
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

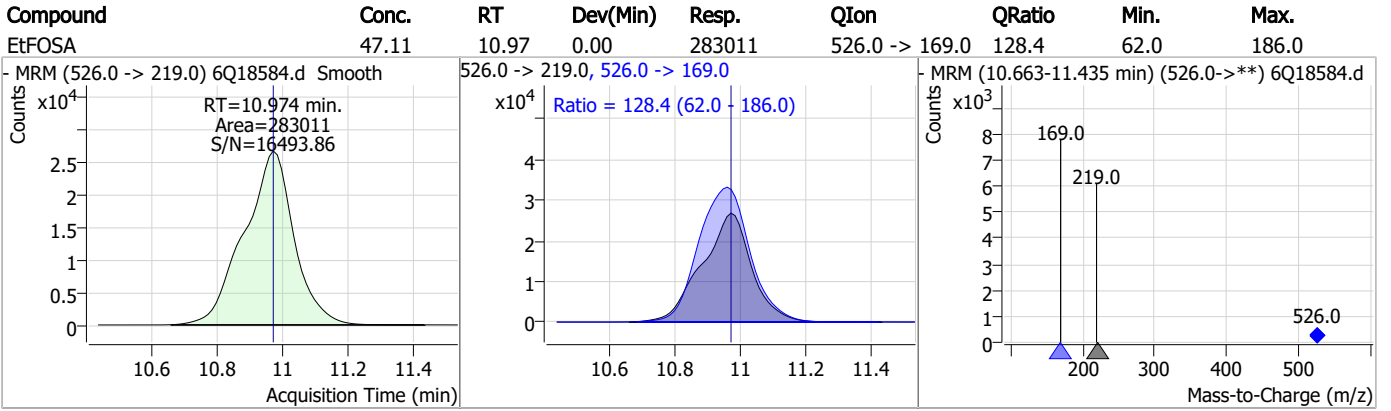
Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Perfluorinated Compounds by LC/MS/MS



7.6.2

7

Manual Integration Approval Summary

Sample Number: S6Q279-RT Method: EPA DRAFT 1633
Lab FileID: 6Q18584.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 16:47 Supervisor approved: 06/01/23 14:43 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorooctanoic acid | 335-67-1 | | 7.03 | Split peak |
| Perfluorononanoic acid | 375-95-1 | | 7.42 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.18 | Split peak |

7.6.2.1

7

QQQ Check Tune Report



Instrument Name LCMS Q6
MS Model G6495B
MS Instrument Serial SG1752D103
Software_Firmware Version 10.1.67, FW: A.00.08.112
Tune Date & Time 30 May 2023 10:49:21
File Path D:\MassHunter\Tune\QQQ\G6495B\atunes.TUNE.XML
Ion Source AJS ESI
Ionization Mode AJS ESI
Tuned Resolution All
Vacuum Pressure 1.78E+0 [R] (Torr); 2.89E-5 [H] (Torr)

Source Parameters

| Parameter | Negative |
|-------------------------|----------|
| Gas Temp (°C) | 220 |
| Gas Flow (l/min) | 14 |
| Nebulizer (psi) | 20 |
| Capillary (V) | 3000 |
| Nozzle Voltage (V) | 1500 |
| Sheath Gas Temp (°C) | 250 |
| Sheath Gas Flow (l/min) | 11 |

QQQ Check Tune Report



Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 112.99 | 112.95 | -0.04 | Pass | 0.70 | 0.65 | -0.05 | Pass | 455038 |
| 302.00 | 301.98 | -0.02 | Pass | 0.70 | 0.68 | -0.02 | Pass | 1143761 |
| 601.98 | 601.92 | -0.06 | Pass | 0.70 | 0.60 | -0.10 | Pass | 2118549 |
| 1033.99 | 1033.82 | -0.17 | Pass | 0.70 | 0.59 | -0.11 | Pass | 1683143 |
| 1633.95 | 1633.69 | -0.26 | Adjust | 0.70 | 0.64 | -0.06 | Pass | 1158862 |
| 2233.91 | 2233.43 | -0.48 | Adjust | 0.70 | 0.70 | 0.00 | Pass | 440499 |

Analyzer: MS2 Polarity: Negative Width: Unit

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 69.00 | 69.03 | 0.03 | Pass | 0.70 | 0.70 | 0.00 | Pass | 142184 |
| 112.99 | 112.96 | -0.03 | Pass | 0.70 | 0.76 | 0.06 | Pass | 581275 |
| 302.00 | 301.97 | -0.03 | Pass | 0.70 | 0.63 | -0.07 | Pass | 1512926 |
| 601.98 | 601.97 | -0.01 | Pass | 0.70 | 0.68 | -0.02 | Pass | 1340144 |
| 1033.99 | 1033.86 | -0.13 | Pass | 0.70 | 0.69 | -0.01 | Pass | 900417 |
| 1633.95 | 1633.75 | -0.20 | Pass | 0.70 | 0.74 | 0.04 | Pass | 690843 |
| 2233.91 | 2233.62 | -0.29 | Pass | 0.70 | 0.69 | -0.01 | Pass | 267882 |

Analyzer: MS1 Polarity: Negative Width: Wide

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 112.99 | 112.94 | -0.05 | Pass | 1.20 | 1.20 | 0.00 | Pass | 527677 |
| 302.00 | 301.90 | -0.10 | Pass | 1.20 | 1.35 | 0.15 | Pass | 1480594 |
| 601.98 | 601.94 | -0.04 | Pass | 1.20 | 1.48 | 0.28 | Pass | 3006683 |
| 1033.99 | 1033.77 | -0.22 | Pass | 1.20 | 1.45 | 0.25 | Pass | 2687346 |
| 1633.95 | 1633.65 | -0.30 | Pass | 1.20 | 1.44 | 0.24 | Pass | 1828520 |
| 2233.91 | 2233.52 | -0.39 | Pass | 1.20 | 1.38 | 0.18 | Pass | 851214 |

Analyzer: MS2 Polarity: Negative Width: Wide

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 69.00 | 69.01 | 0.01 | Pass | 1.20 | 1.08 | -0.12 | Pass | 175167 |
| 112.99 | 112.96 | -0.03 | Pass | 1.20 | 1.13 | -0.07 | Pass | 723223 |
| 302.00 | 301.91 | -0.09 | Pass | 1.20 | 1.12 | -0.08 | Pass | 1714873 |
| 601.98 | 601.88 | -0.10 | Pass | 1.20 | 1.30 | 0.10 | Pass | 2021470 |
| 1033.99 | 1033.82 | -0.17 | Pass | 1.20 | 1.32 | 0.12 | Pass | 1614259 |
| 1633.95 | 1633.70 | -0.25 | Pass | 1.20 | 1.21 | 0.01 | Pass | 1644467 |
| 2233.91 | 2233.55 | -0.36 | Pass | 1.20 | 1.08 | -0.12 | Pass | 660835 |

Analyzer: MS1 Polarity: Negative Width: Widest

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 112.99 | 112.92 | -0.07 | Pass | 2.50 | 2.42 | -0.08 | Pass | 572643 |
| 302.00 | 301.78 | -0.22 | Pass | 2.50 | 2.58 | 0.08 | Pass | 1936780 |
| 601.98 | 601.85 | -0.13 | Pass | 2.50 | 2.68 | 0.18 | Pass | 3673966 |
| 1033.99 | 1033.77 | -0.22 | Pass | 2.50 | 2.66 | 0.16 | Pass | 4191544 |
| 1633.95 | 1633.55 | -0.40 | Pass | 2.50 | 2.61 | 0.11 | Pass | 3493161 |
| 2233.91 | 2233.42 | -0.49 | Pass | 2.50 | 2.17 | -0.33 | Pass | 2051281 |

Analyzer: MS2 Polarity: Negative Width: Widest

| m/z Expected | m/z Measured | Delta | Result | FWHM Expected | FWHM Measured | Delta | Result | Abundance |
|--------------|--------------|-------|--------|---------------|---------------|-------|--------|-----------|
| 69.00 | 68.93 | -0.07 | Pass | 2.50 | 2.52 | 0.02 | Pass | 203780 |
| 112.99 | 112.93 | -0.06 | Pass | 2.50 | 2.53 | 0.03 | Pass | 984576 |
| 302.00 | 301.95 | -0.05 | Pass | 2.50 | 2.55 | 0.05 | Pass | 2407993 |
| 601.98 | 601.85 | -0.13 | Pass | 2.50 | 2.70 | 0.20 | Pass | 3235376 |
| 1033.99 | 1033.89 | -0.10 | Pass | 2.50 | 2.83 | 0.33 | Pass | 3164989 |
| 1633.95 | 1633.60 | -0.35 | Pass | 2.50 | 2.42 | -0.08 | Pass | 3058922 |
| 2233.91 | 2233.65 | -0.26 | Pass | 2.50 | 2.33 | -0.17 | Pass | 1539250 |

7.7.1
7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18586.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:16:21 PM
 Sample Name : ic279-1
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 175926 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 58775 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 64804 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 58558 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 92083 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 41065 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 24385 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31631 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 28658 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15918 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 32460 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 23309 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 14544 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 13033 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3770 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5269 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5181 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 28690 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40509 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25301 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 106215 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 145212 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12992 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 12922 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17710 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.827 | 216.0 -> 172.0 | 73829 | 5.00 µg/L | 0.000 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10307 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 97513 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 33316 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 50593 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 60249 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3770 | 5.48 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.7% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5269 | 5.28 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 105.6% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5181 | 5.12 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.3% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 28658 | 1.24 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 99.1% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15918 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 101.1% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 23309 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.2% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 14544 | 2.53 µg/L | 0.000 |

7.7.2
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.0% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 175926 | 10.01 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.1% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 58558 | 2.48 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.3% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 64804 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 58775 | 5.02 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 24385 | 1.25 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.9% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31631 | 1.27 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 32460 | 2.40 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 92083 | 2.52 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.8% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 13033 | 2.30 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 91.9% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 41065 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 28690 | 5.02 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.4% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40509 | 10.23 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 102.3% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 12922 | 2.36 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 94.5% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25301 | 4.87 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 106215 | 23.88 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 95.5% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 145212 | 24.96 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12992 | 2.51 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 4574 | 0.84 µg/L | 96 |
| | | 327.1 -> 80.9 | 1710 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 4592 | 0.89 µg/L | 98 |
| | | 427.1 -> 80.9 | 1605 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 2744 | 0.95 µg/L | 94 |
| | | 527.1 -> 80.8 | 1065 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 788 | 0.24 µg/L | 96 |
| | | 584.2 -> 526.0 | 451 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 2619 | 0.23 µg/L | 98 |
| | | 498.1 -> 478.0 | 94 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 1177 | 0.20 µg/L | m 93 |
| | | 570.1 -> 483.0 | 191 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 5281 | 0.91 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 1603 | 0.20 µg/L | 96 |
| | | 298.7 -> 98.8 | 614 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 6728 | 0.24 µg/L | 100 |
| | | 512.9 -> 219.0 | 1068 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 4579 | 0.23 µg/L | 95 |
| | | 613.1 -> 319.0 | 724 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 769 | 0.24 µg/L | 97 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| | | 599.0 -> 98.8 | 392 | | |
| PFHpA | 6.382 | 363.1 -> 319.0 | 6054 | 0.23 µg/L | 95 |
| | | 363.1 -> 169.0 | 1031 | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 1473 | 0.24 µg/L | 95 |
| | | 449.0 -> 98.9 | 778 | | |
| PFHxA | 5.420 | 313.0 -> 269.0 | 4961 | 0.23 µg/L | 98 |
| | | 313.0 -> 118.9 | 260 | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 1378 | 0.21 µg/L | m 94 |
| | | 398.7 -> 98.9 | 709 | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 7040 | 0.24 µg/L | 100 |
| | | 463.0 -> 219.0 | 1371 | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 1282 | 0.25 µg/L | 96 |
| | | 548.8 -> 98.9 | 661 | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 8309 | 0.21 µg/L | 95 |
| | | 413.0 -> 169.0 | 1614 | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 1321 | 0.22 µg/L | 92 |
| | | 498.9 -> 98.8 | 627 | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 6565 | 0.47 µg/L | 100 |
| PFPeS | 6.422 | 349.1 -> 79.9 | 1435 | 0.22 µg/L | 99 |
| | | 349.1 -> 98.9 | 691 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 3669 | 0.23 µg/L | 98 |
| | | 713.1 -> 168.9 | 310 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 4782 | 0.24 µg/L | 99 |
| | | 663.0 -> 168.9 | 457 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 4625 | 0.23 µg/L | 89 |
| | | 563.1 -> 269.1 | 917 | | |
| 11Cl-PF3OUdS | 9.336 | 630.9 -> 450.9 | 6290 | 0.41 µg/L | 99 |
| | | 632.9 -> 452.9 | 2001 | | |
| 9Cl-PF3ONS | 8.508 | 530.8 -> 351.0 | 9821 | 0.41 µg/L | 100 |
| | | 532.8 -> 353.0 | 3236 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 23388 | 0.43 µg/L | 100 |
| | | 376.9 -> 84.8 | 6321 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 1549 | 0.45 µg/L | 100 |
| | | 284.9 -> 184.9 | 211 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 1013 | 1.12 µg/L | 93 |
| | | 241.0 -> 117.0 | 174 | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 23311 | 5.96 µg/L | 99 |
| | | 341.0 -> 217.0 | 16635 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 15138 | 5.65 µg/L | 94 |
| | | 441.0 -> 336.9 | 34923 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 2683 | 0.44 µg/L | 91 |
| | | 526.0 -> 169.0 | 3611 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 7379 | 1.14 µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 2165 | 0.46 µg/L | 80 |
| | | 511.9 -> 169.0 | 3384 | | |
| MeFOSE | 10.661 | 616.1 -> 58.9 | 4968 | 1.18 µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 331 | 0.23 µg/L | 97 |
| | | 699.1 -> 98.8 | 170 | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 1301 | 0.49 µg/L | 90 |
| | | 295.0 -> 84.9 | 286 | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 4455 | 0.46 µg/L | 100 |
| PFMPA | 3.363 | 229.0 -> 84.9 | 3329 | 0.45 µg/L | 100 |
| PFEESA | 5.875 | 314.8 -> 134.9 | 10878 | 0.39 µg/L | 99 |
| | | 314.8 -> 82.9 | 403 | | |

= Qualifier out of range, m = manually integrated, + = Area summed

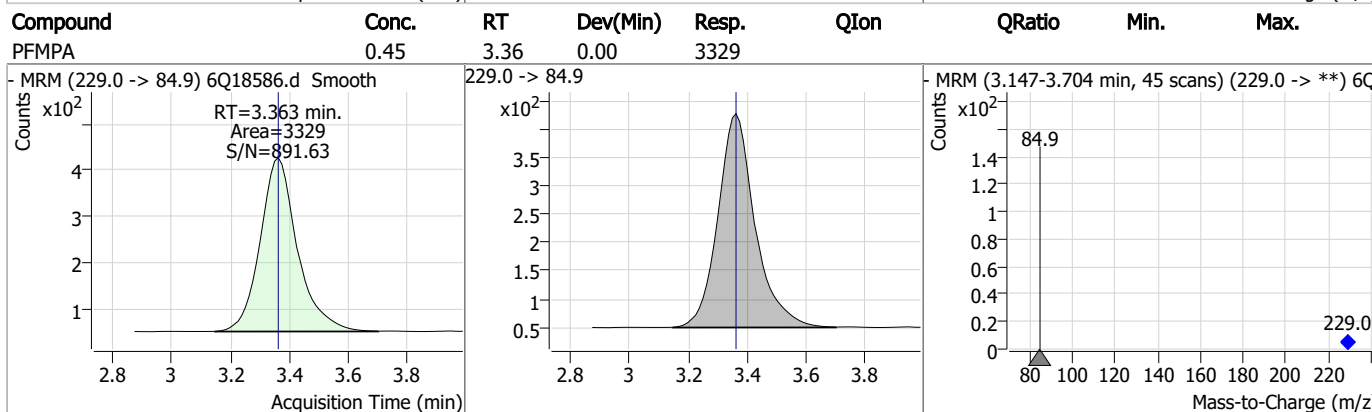
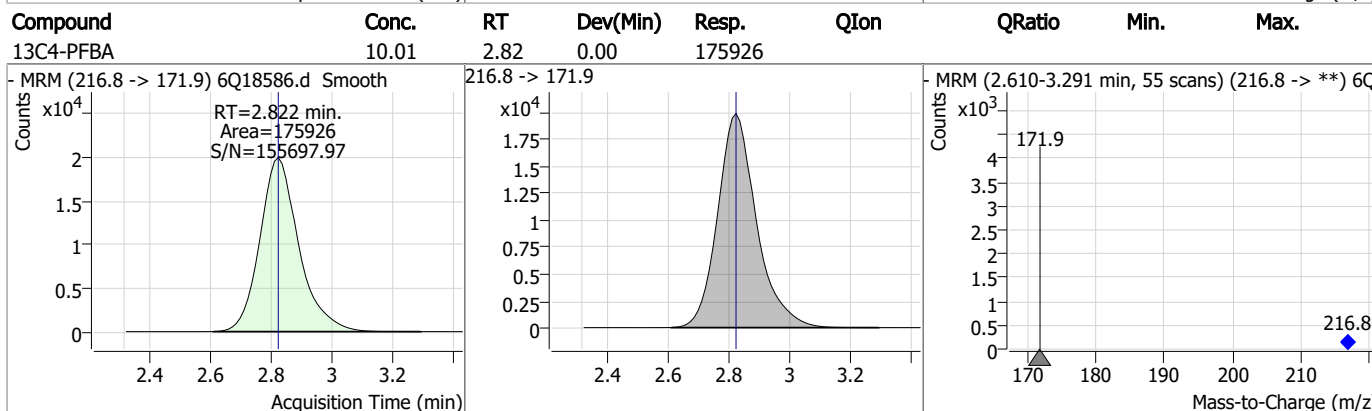
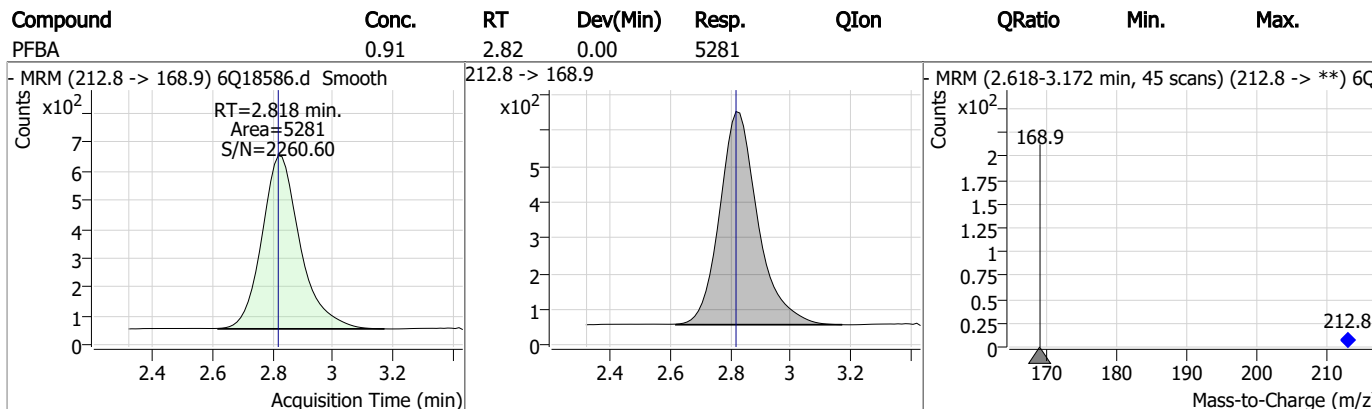
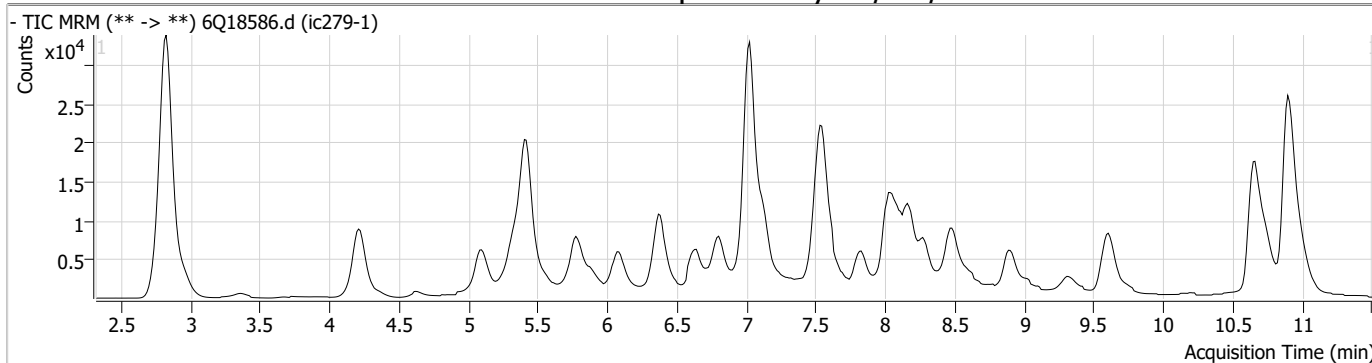
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

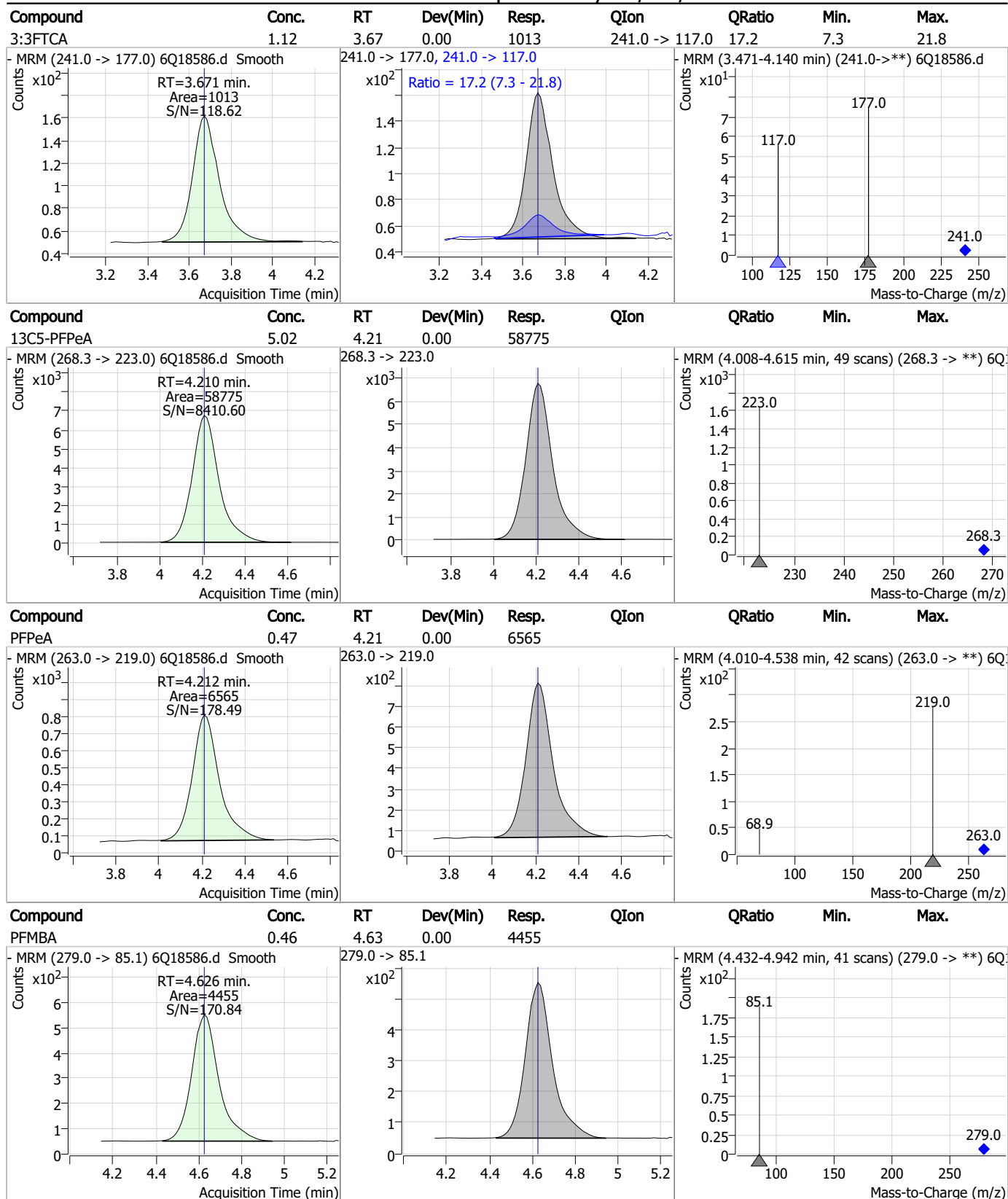
7.7.2
7



Perfluorinated Compounds by LC/MS/MS

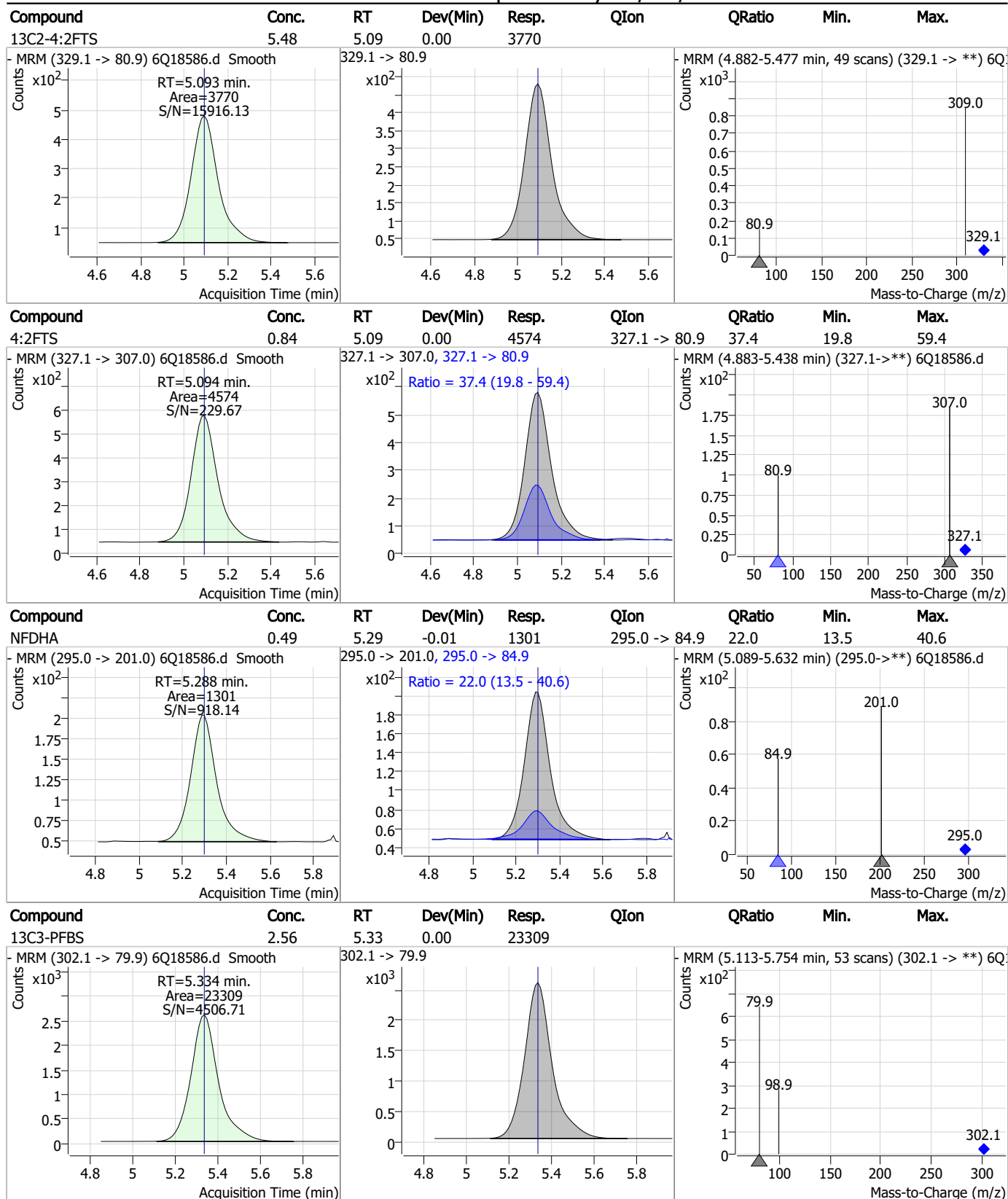


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

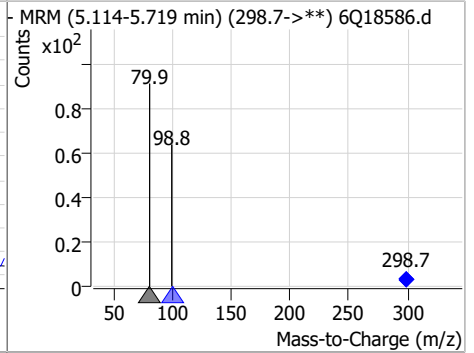
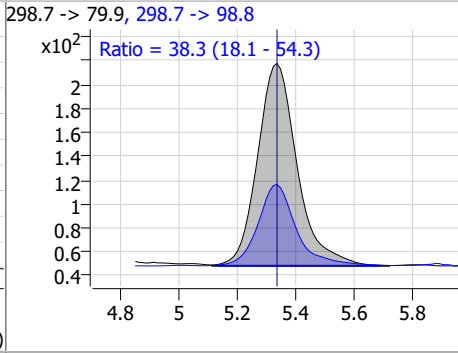
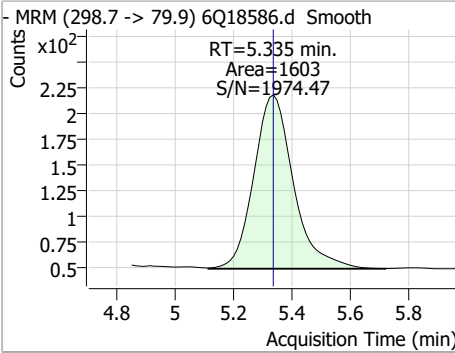
Perfluorinated Compounds by LC/MS/MS



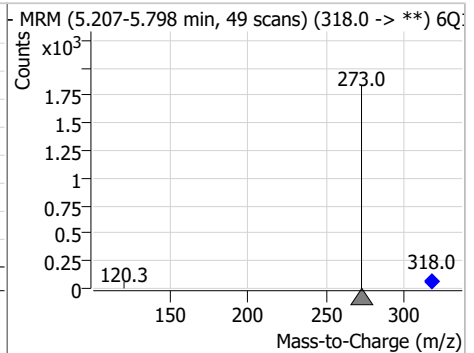
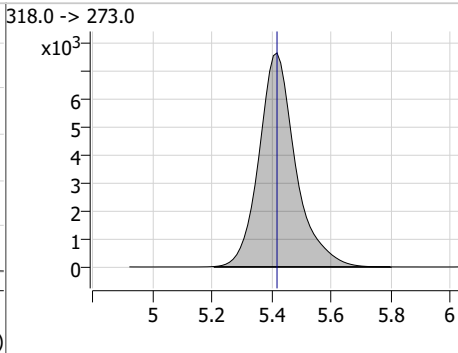
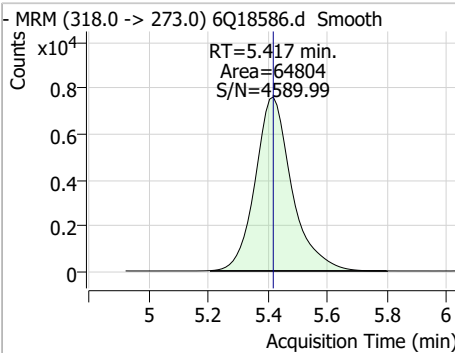
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

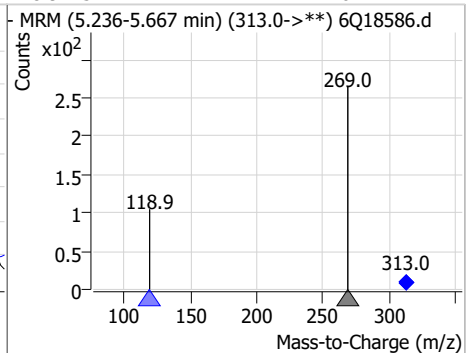
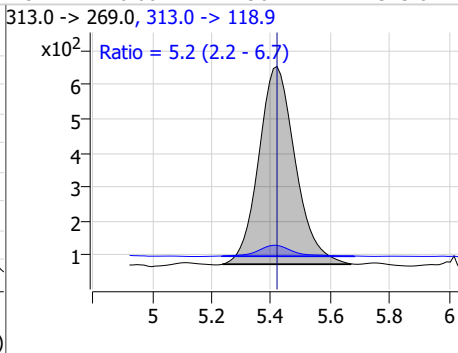
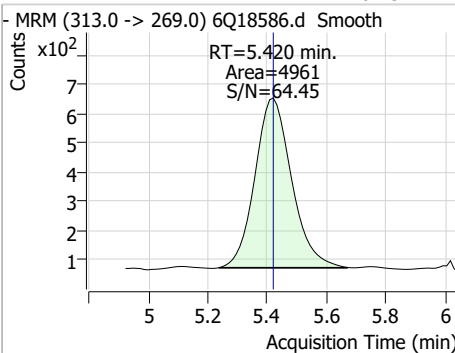
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 0.20 | 5.34 | 0.00 | 1603 | 298.7 -> 98.8 | 38.3 | 18.1 | 54.3 |



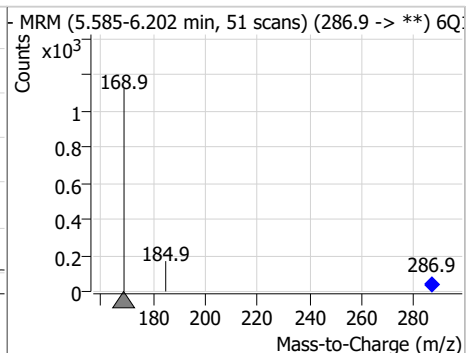
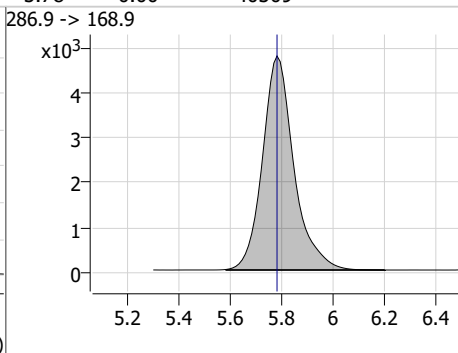
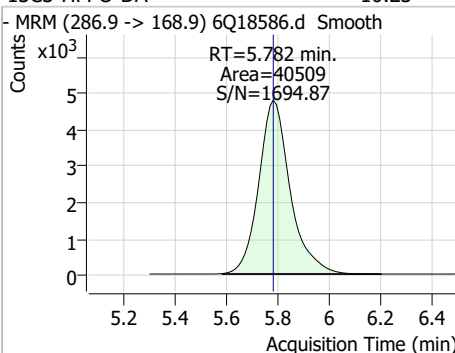
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.54 | 5.42 | 0.00 | 64804 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 0.23 | 5.42 | 0.00 | 4961 | 313.0 -> 118.9 | 5.2 | 2.2 | 6.7 |

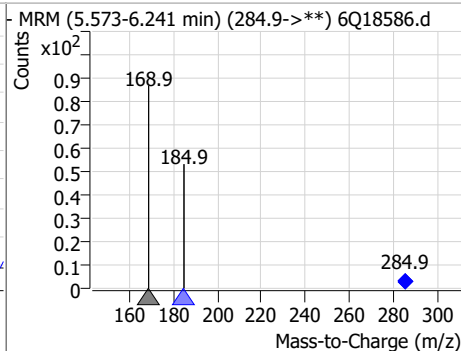
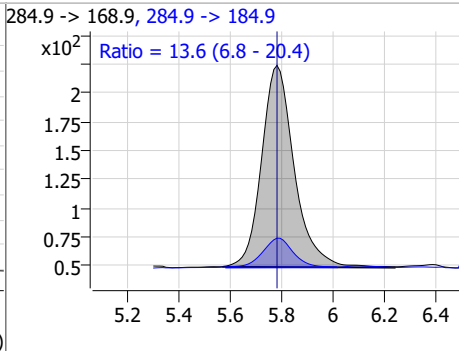
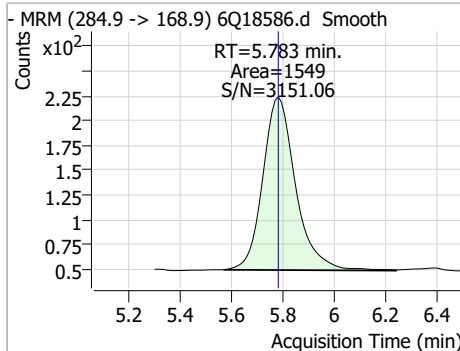


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 10.23 | 5.78 | 0.00 | 40509 | | | | |

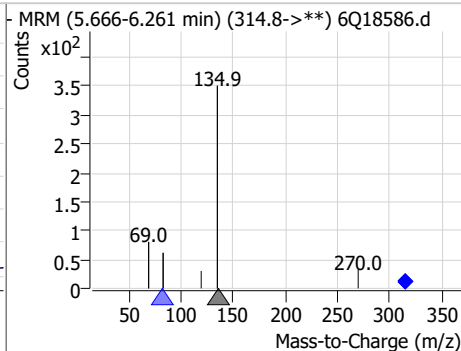
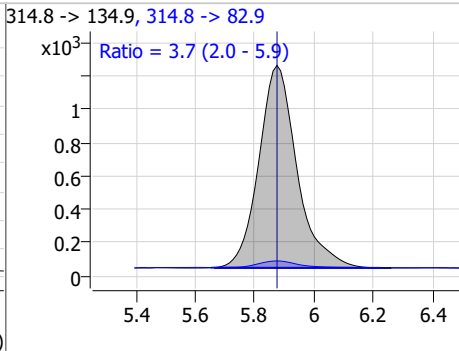
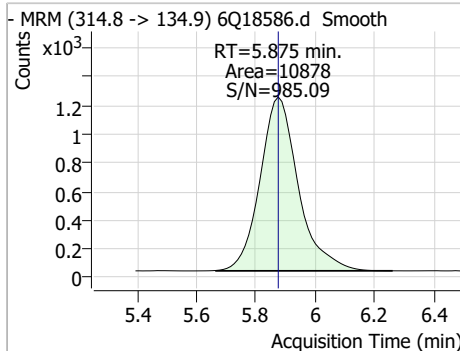


Perfluorinated Compounds by LC/MS/MS

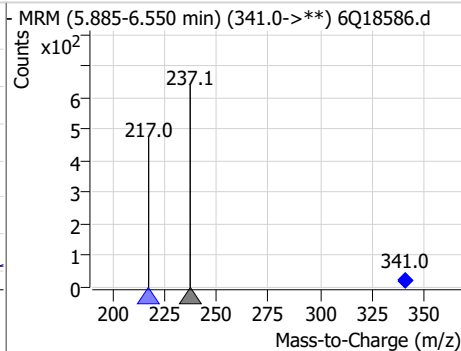
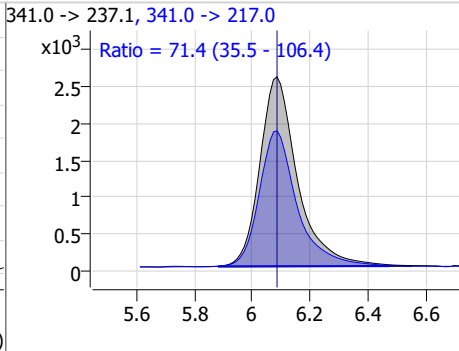
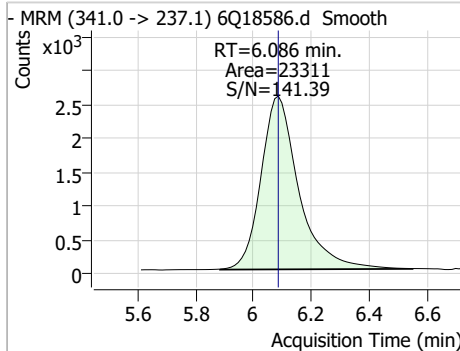
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 0.45 | 5.78 | 0.00 | 1549 | 284.9 -> 184.9 | 13.6 | 6.8 | 20.4 |



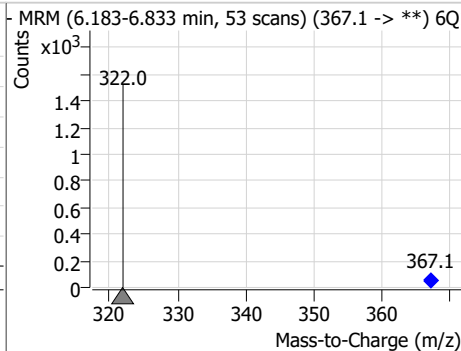
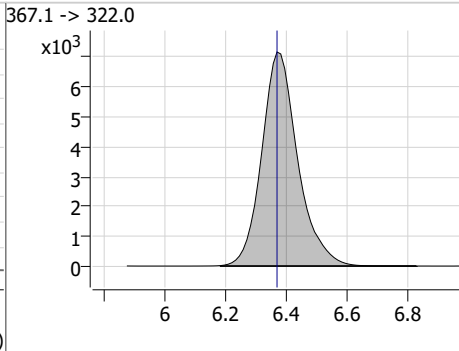
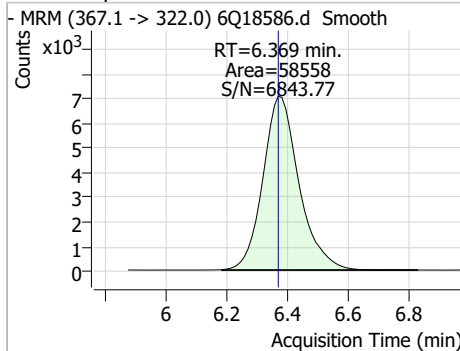
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFEESA | 0.39 | 5.88 | 0.00 | 10878 | 314.8 -> 82.9 | 3.7 | 2.0 | 5.9 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|-------|
| 5:3FTCA | 5.96 | 6.09 | 0.00 | 23311 | 341.0 -> 217.0 | 71.4 | 35.5 | 106.4 |

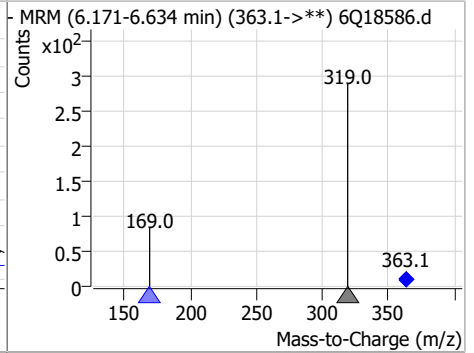
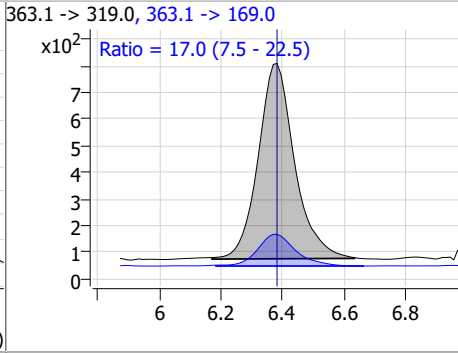
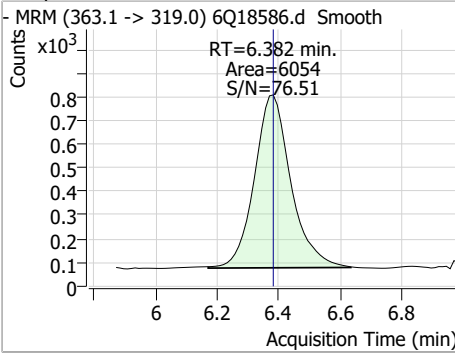


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.48 | 6.37 | 0.00 | 58558 | 367.1 -> 322.0 | | | |

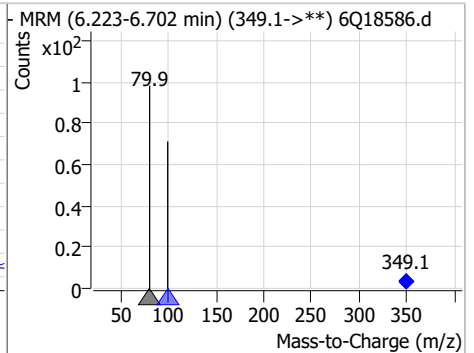
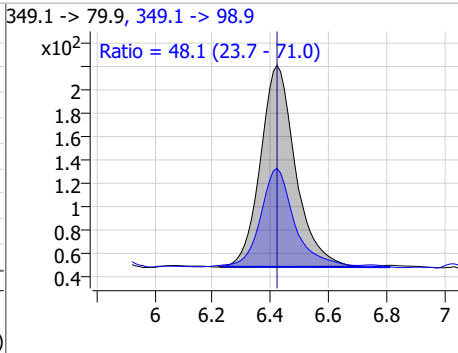
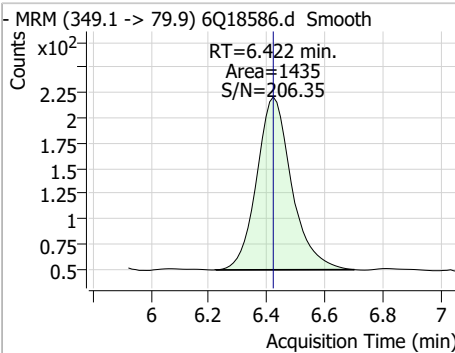


Perfluorinated Compounds by LC/MS/MS

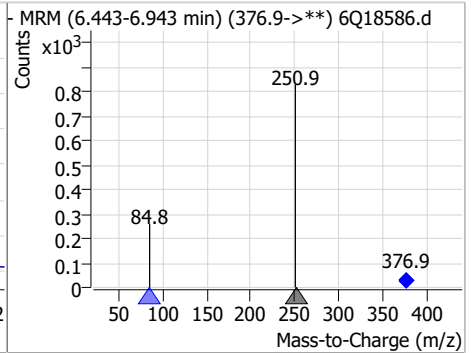
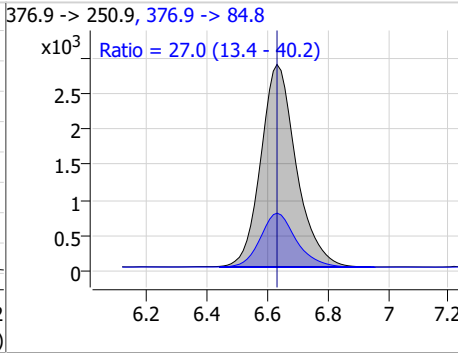
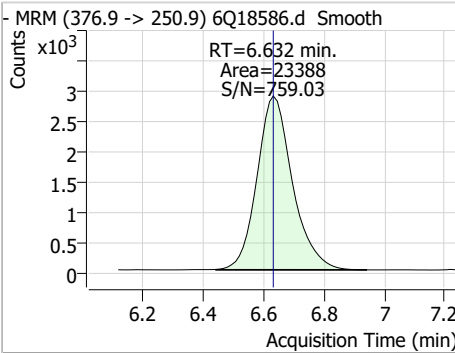
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHpA | 0.23 | 6.38 | 0.00 | 6054 | 363.1 -> 169.0 | 17.0 | 7.5 | 22.5 |



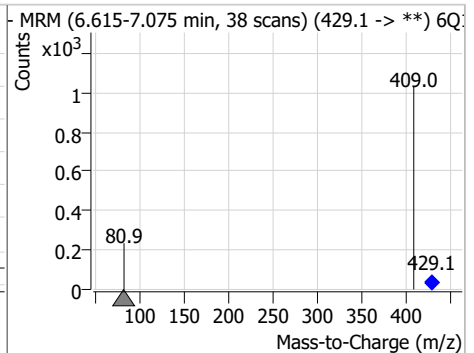
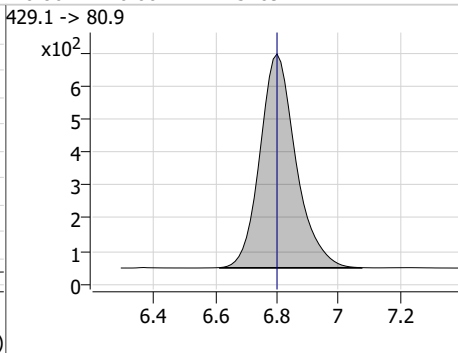
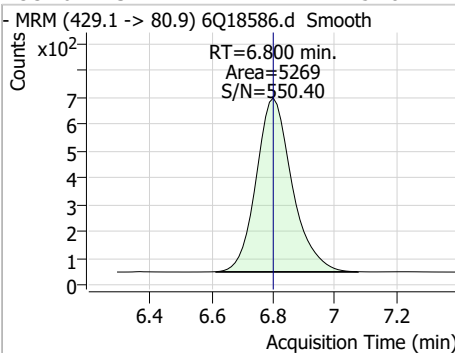
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFPeS | 0.22 | 6.42 | 0.00 | 1435 | 349.1 -> 98.9 | 48.1 | 23.7 | 71.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| ADONA | 0.43 | 6.63 | 0.00 | 23388 | 376.9 -> 84.8 | 27.0 | 13.4 | 40.2 |



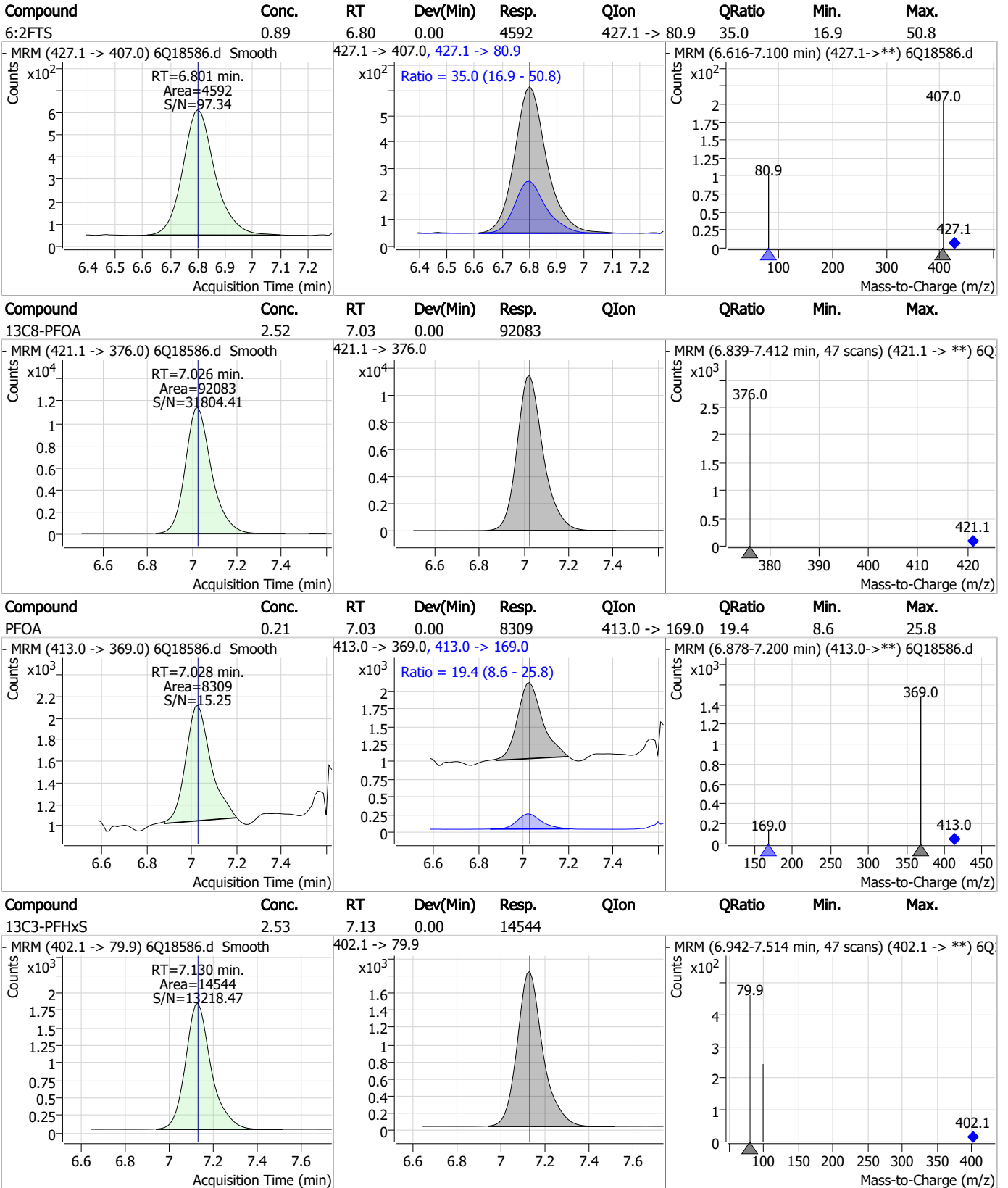
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|---------------|--------|------|------|
| 13C2-6:2FTS | 5.28 | 6.80 | 0.00 | 5269 | 429.1 -> 80.9 | | | |



7.7.2

7

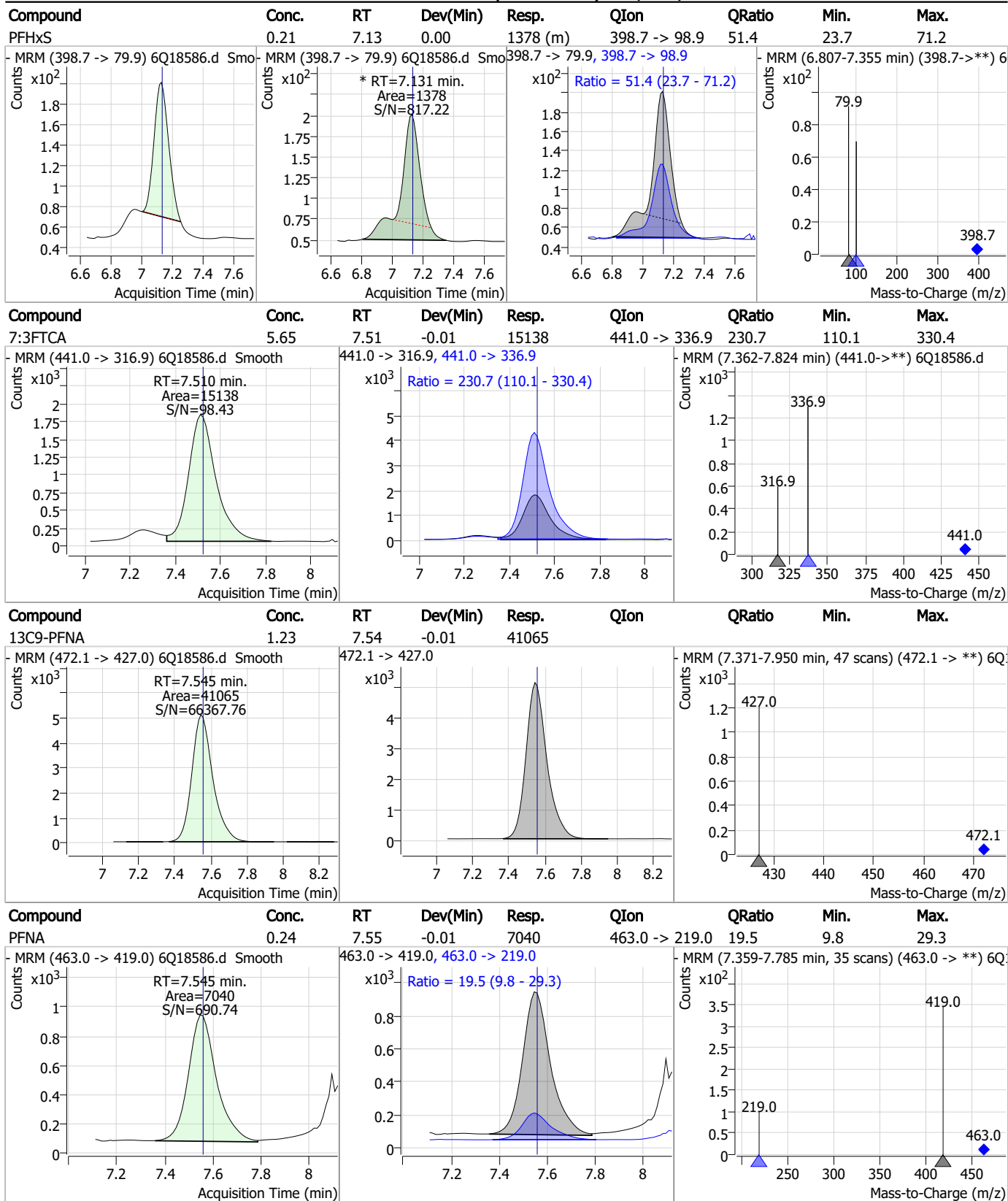
Perfluorinated Compounds by LC/MS/MS



7.7.2

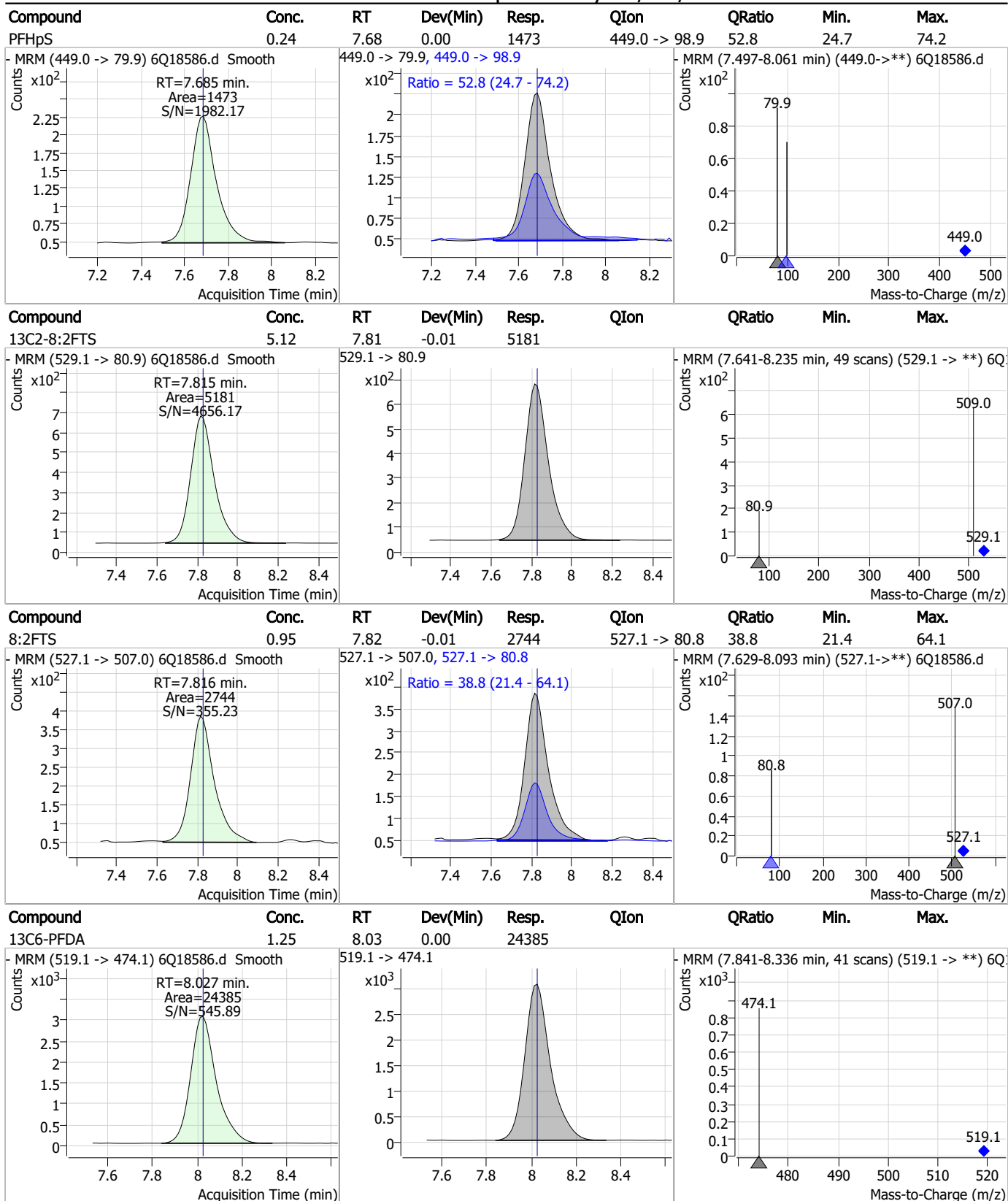
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Perfluorinated Compounds by LC/MS/MS



7.7.2
7

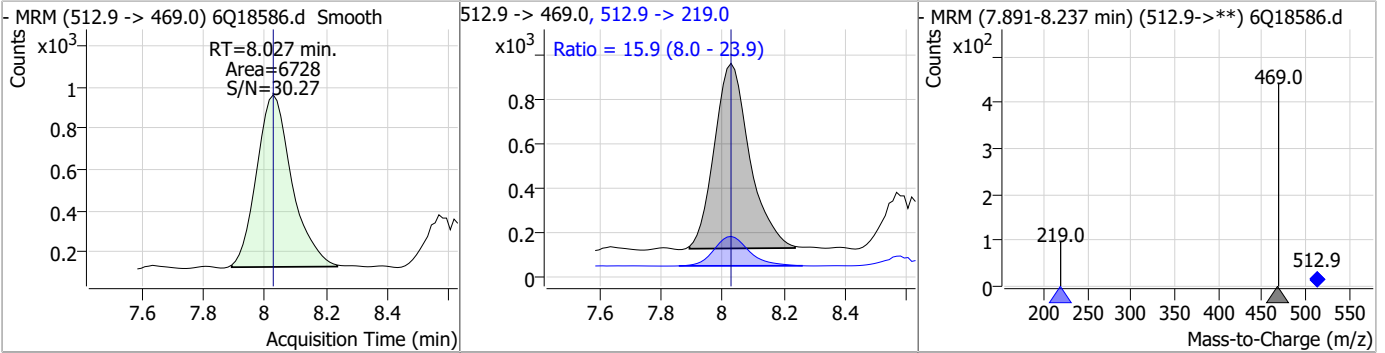
Perfluorinated Compounds by LC/MS/MS



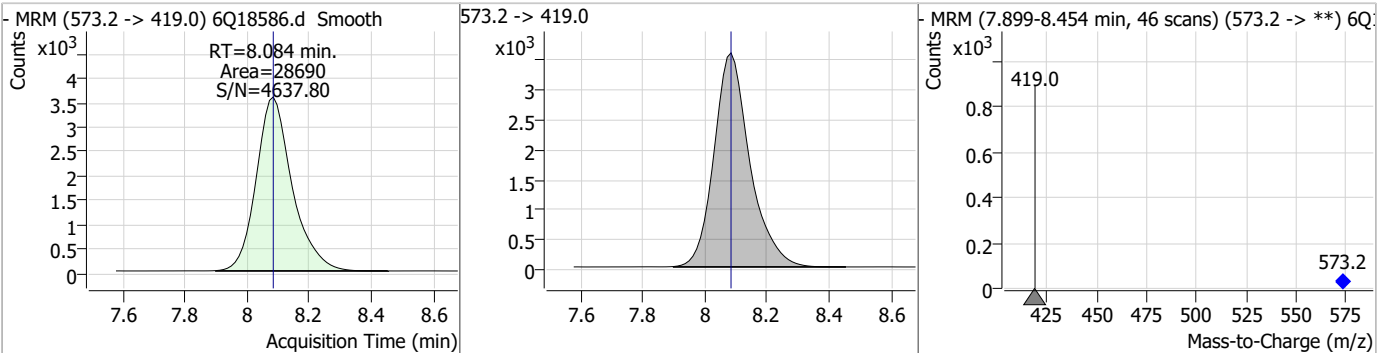
7.7.2
7

Perfluorinated Compounds by LC/MS/MS

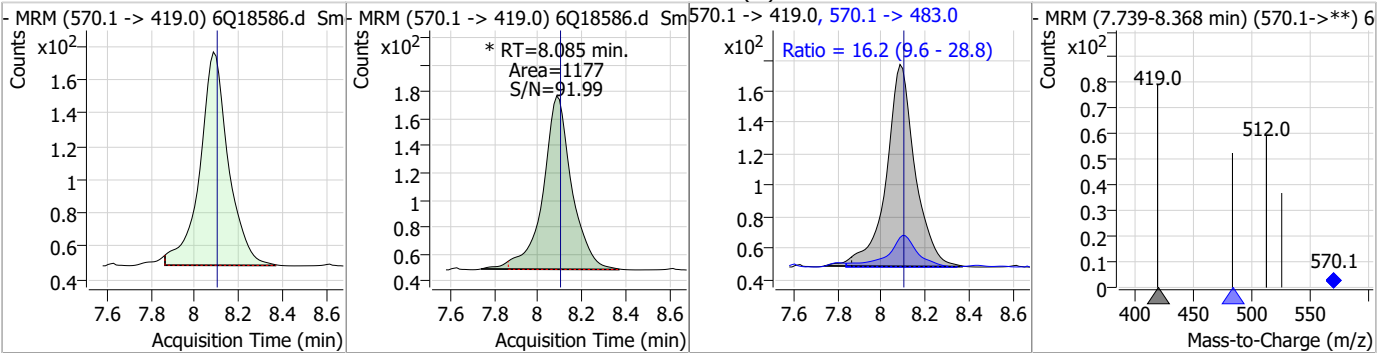
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFDA | 0.24 | 8.03 | 0.00 | 6728 | 512.9 -> 219.0 | 15.9 | 8.0 | 23.9 |



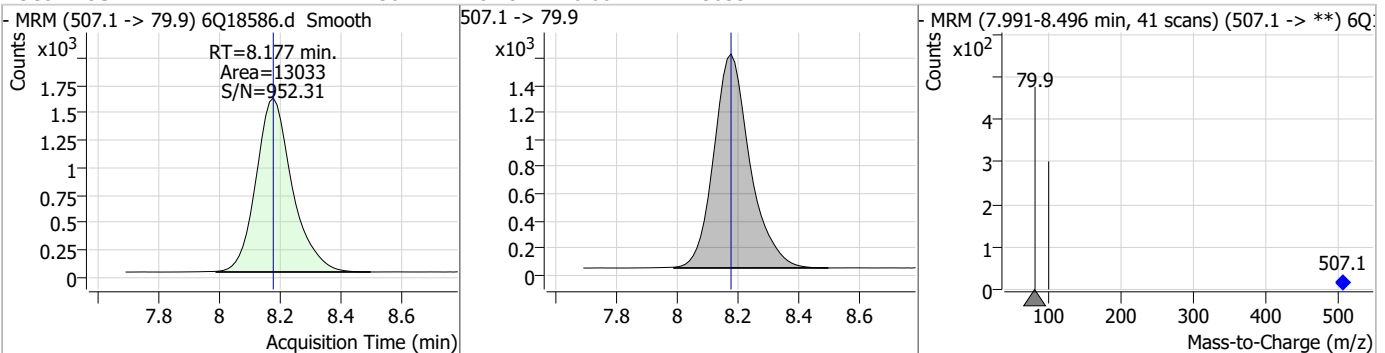
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d3-MeFOSAA | 5.02 | 8.08 | 0.00 | 28690 | | | | |



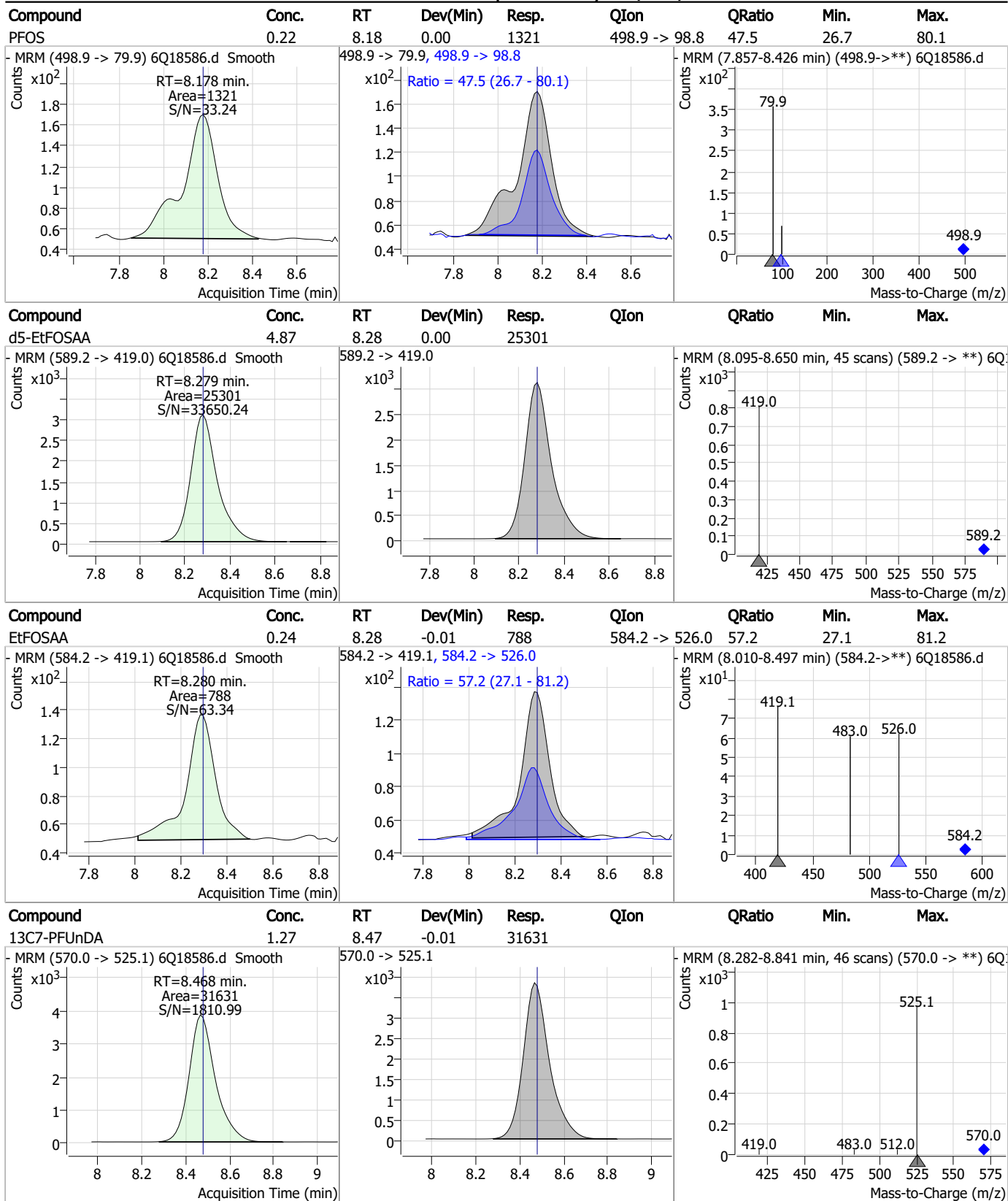
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|----------|----------------|--------|------|------|
| MeFOSAA | 0.20 | 8.08 | -0.01 | 1177 (m) | 570.1 -> 483.0 | 16.2 | 9.6 | 28.8 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C8-PFOS | 2.30 | 8.18 | 0.00 | 13033 | | | | |

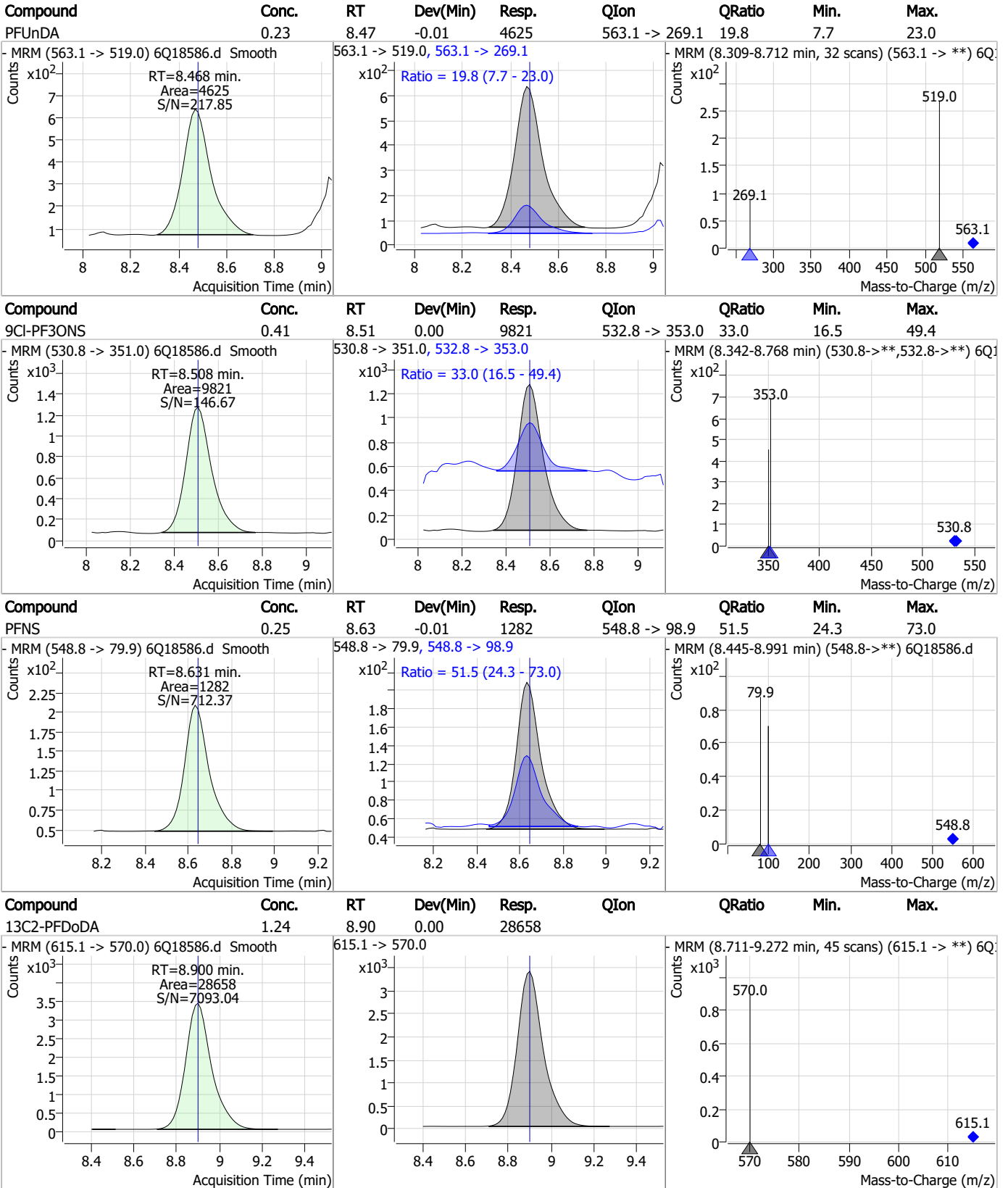


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

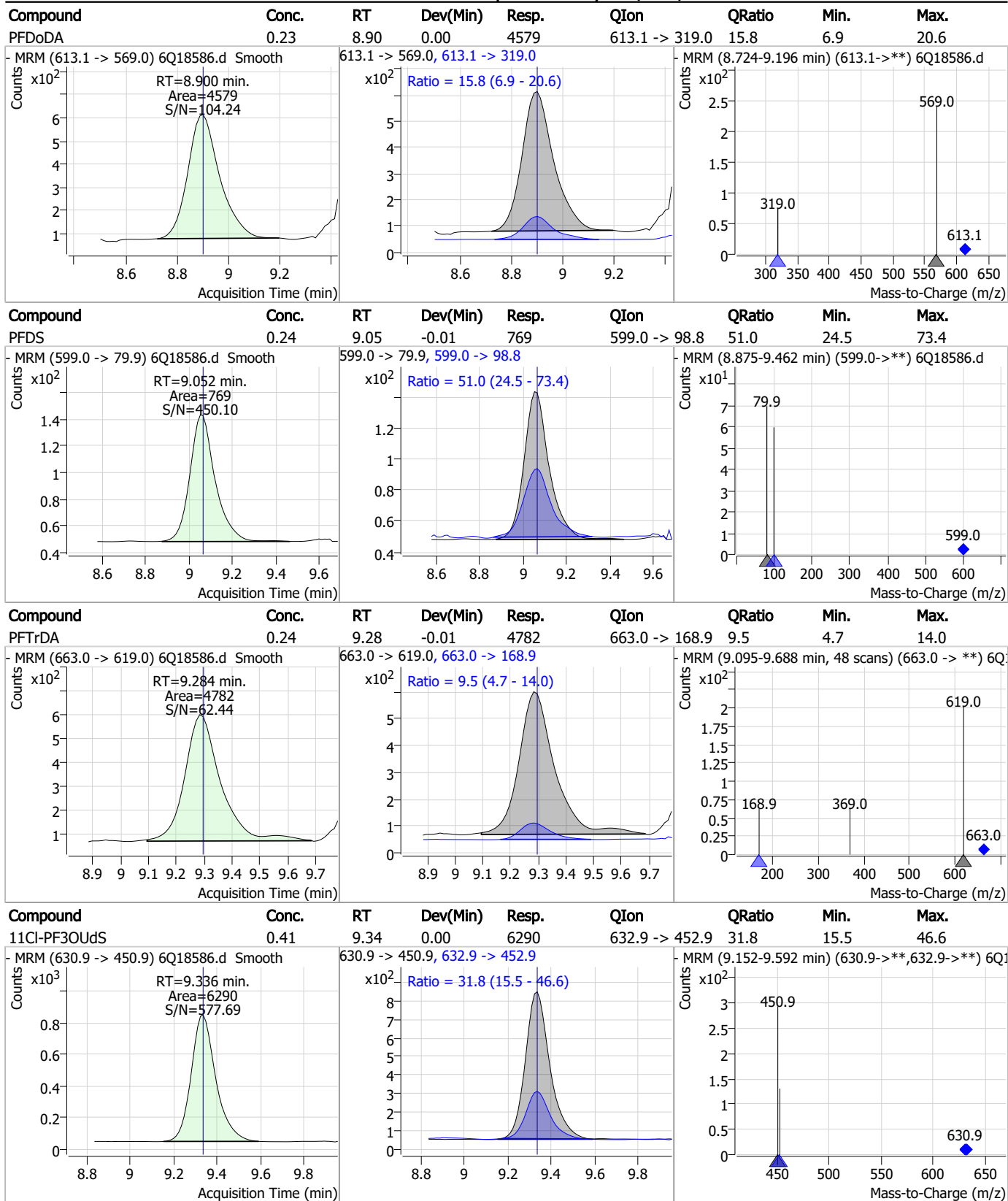
Perfluorinated Compounds by LC/MS/MS



7.7.2

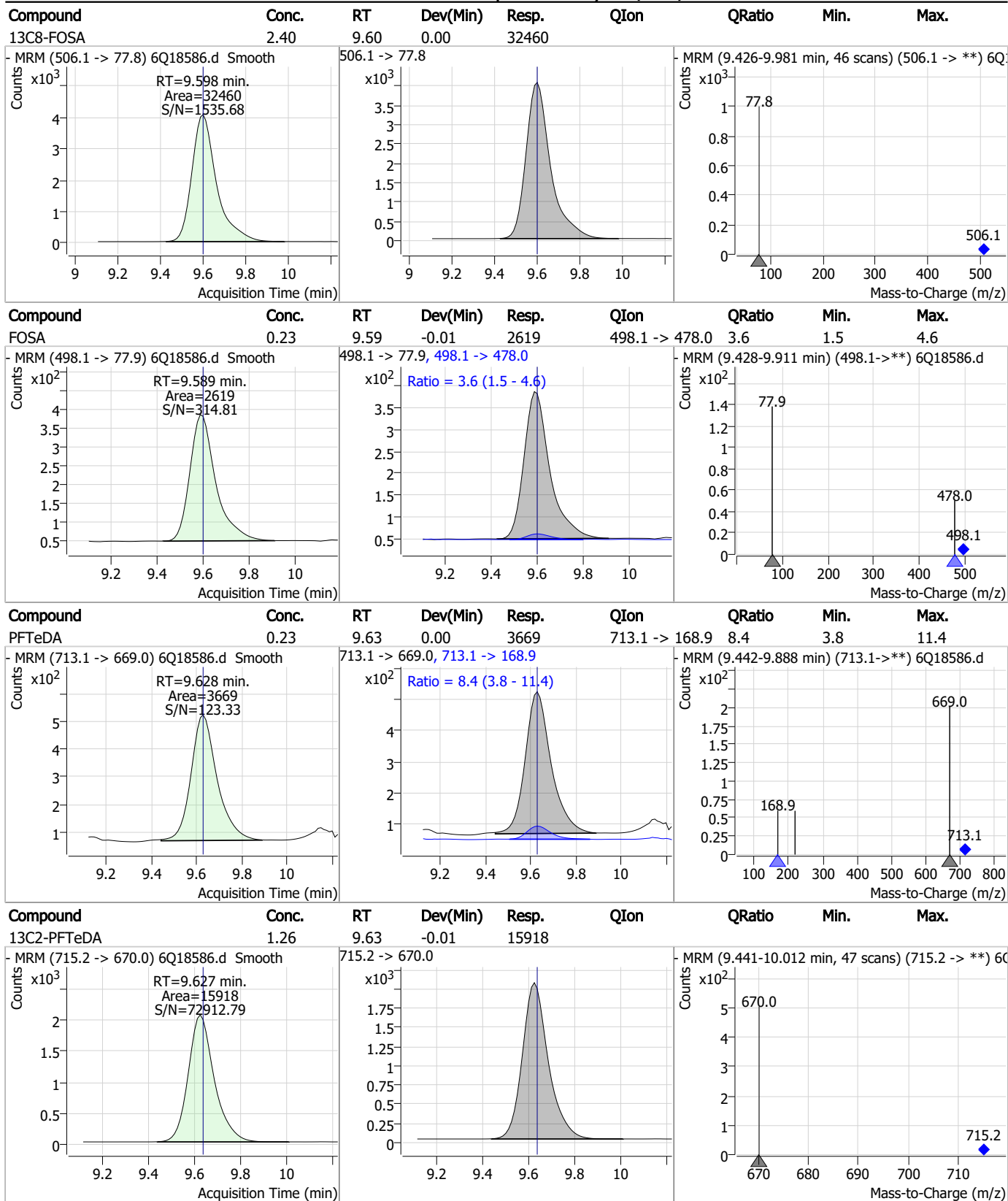
7

Perfluorinated Compounds by LC/MS/MS



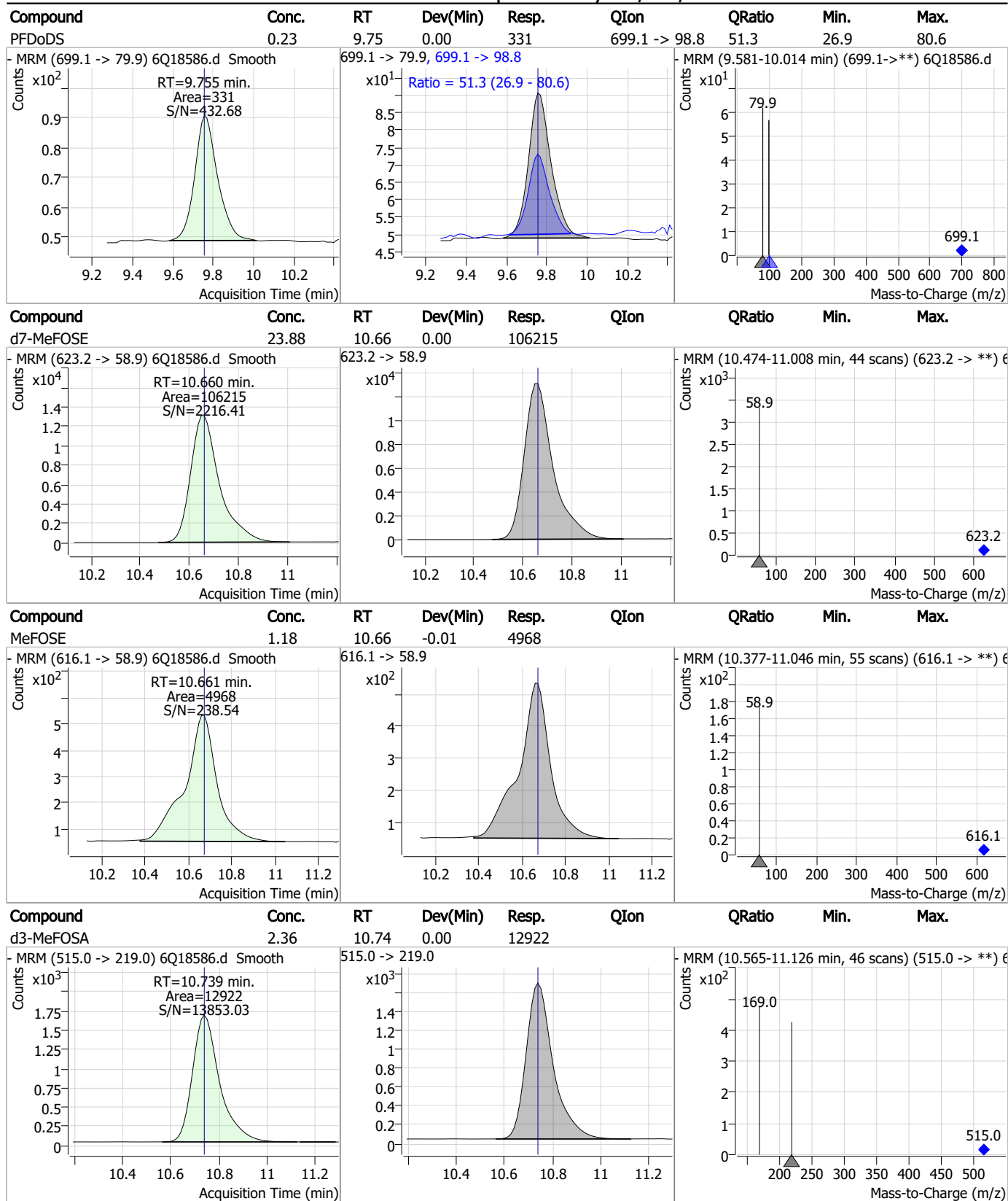
7.7.2
7

Perfluorinated Compounds by LC/MS/MS



7.7.2
7

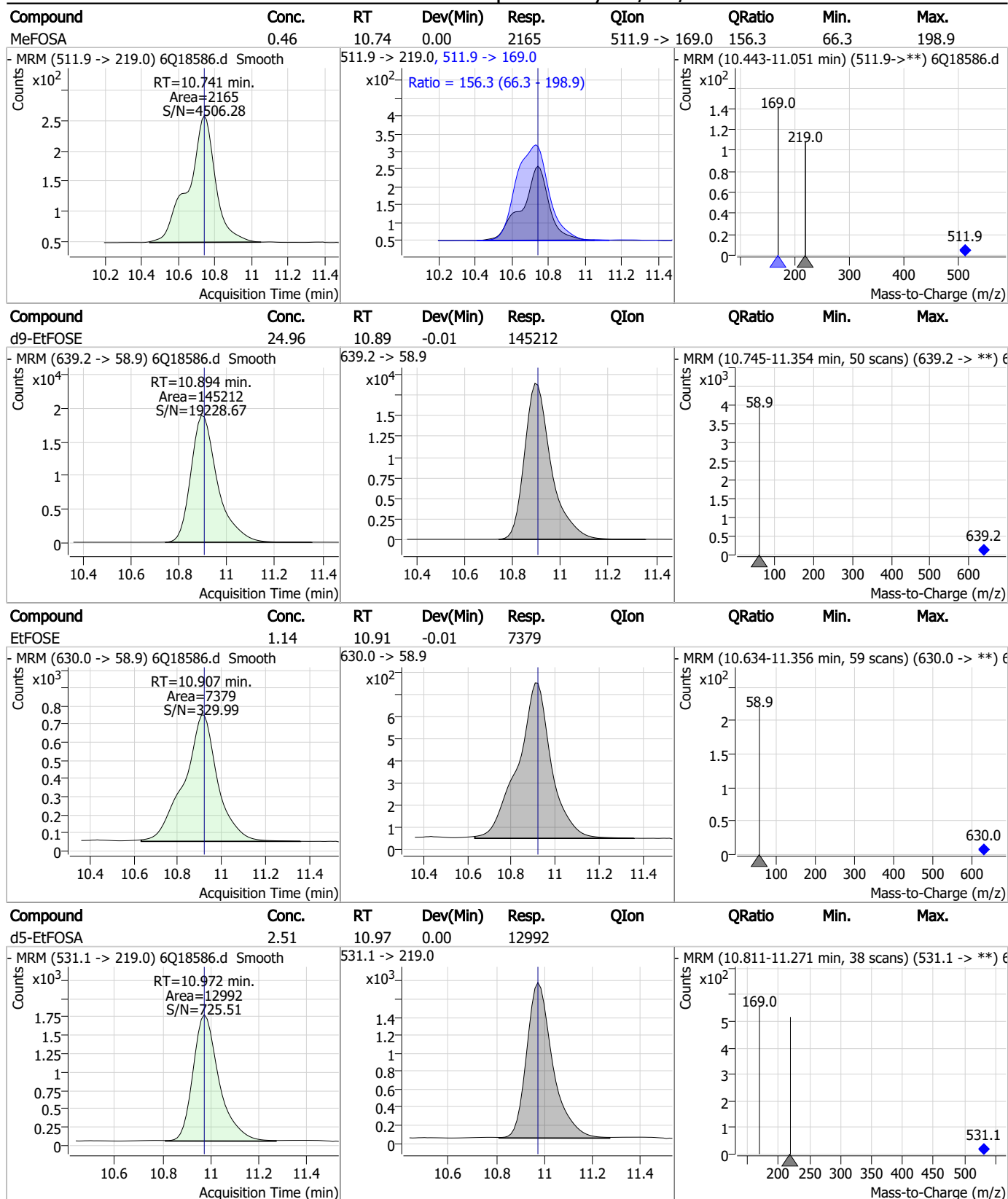
Perfluorinated Compounds by LC/MS/MS



7.7.2
7

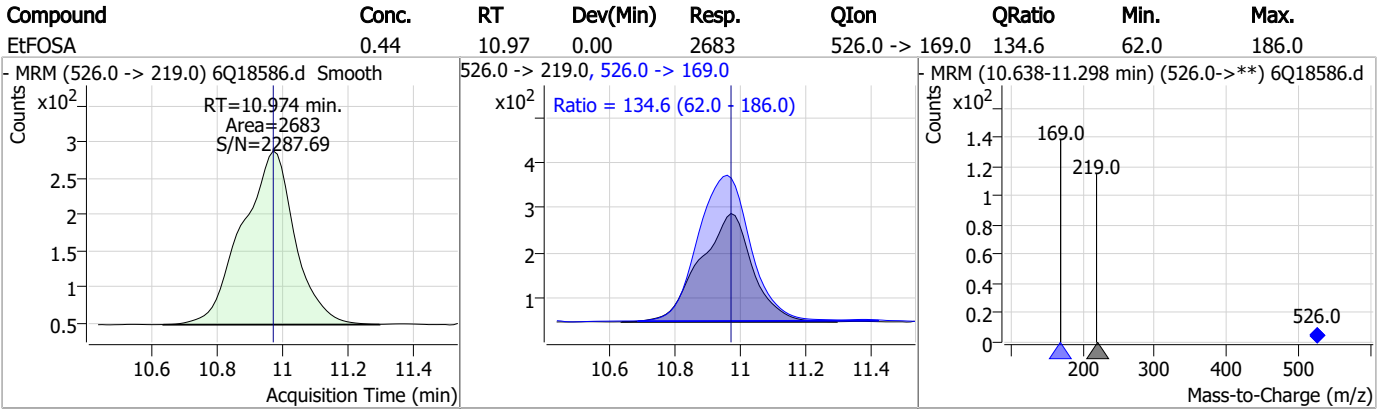


Perfluorinated Compounds by LC/MS/MS



7.7.2
7

Perfluorinated Compounds by LC/MS/MS



7.7.2

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18586.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:16 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |
| MeFOSAA | 2355-31-9 | | 8.09 | Split peak |

7.7.2.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18587.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:30:51 PM
 Sample Name : ic279-2
 Vial : P1-A3
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 187848 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 63117 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 69879 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 64325 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 96705 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 45166 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 26931 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 34115 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31844 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16834 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 35306 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 24913 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15879 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14878 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3997 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5904 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5927 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30777 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42658 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26923 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119651 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 150276 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13212 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13947 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 18570 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78663 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11055 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 104993 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 36190 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 53128 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 64575 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3997 | 5.42 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 108.4% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5904 | 5.51 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 110.3% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5927 | 5.46 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.1% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31844 | 1.27 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 101.4% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16834 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.5% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 24913 | 2.55 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.9% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15879 | 2.57 µg/L | 0.000 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.8% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 187848 | 10.03 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 64325 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.8% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 69879 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.3% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 63117 | 5.03 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 26931 | 1.27 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 34115 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.9% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 35306 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 96705 | 2.46 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.3% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14878 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 45166 | 1.29 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 103.2% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30777 | 5.13 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.7% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42658 | 10.05 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13947 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.2% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26923 | 4.94 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.8% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119651 | 25.65 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 102.6% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 150276 | 24.63 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13212 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 8300 | 1.43 µg/L | 100 |
| | | 327.1 -> 80.9 | 3305 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 8991 | 1.55 µg/L | 96 |
| | | 427.1 -> 80.9 | 2856 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 4819 | 1.46 µg/L | 100 |
| | | 527.1 -> 80.8 | 2059 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 1265 | 0.37 µg/L | m 72 |
| | | 584.2 -> 526.0 | 940 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 5069 | 0.41 µg/L | 99 |
| | | 498.1 -> 478.0 | 143 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 2704 | 0.43 µg/L | 96 |
| | | 570.1 -> 483.0 | 571 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 10022 | 1.61 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 3011 | 0.36 µg/L | 98 |
| | | 298.7 -> 98.8 | 1118 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 12768 | 0.41 µg/L | 94 |
| | | 512.9 -> 219.0 | 1732 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 8861 | 0.41 µg/L | 97 |
| | | 613.1 -> 319.0 | 1333 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 1548 | 0.42 µg/L | 93 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| | | 599.0 -> 98.8 | 679 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 11262 | 0.40 | µg/L | 94 |
| | | 363.1 -> 169.0 | 1971 | | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 2874 | 0.40 | µg/L | 90 |
| | | 449.0 -> 98.9 | 1232 | | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 9354 | 0.40 | µg/L | 99 |
| | | 313.0 -> 118.9 | 466 | | | |
| PFHxS | 7.119 | 398.7 -> 79.9 | 2706 | 0.38 | µg/L | m 95 |
| | | 398.7 -> 98.9 | 1380 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 12632 | 0.39 | µg/L | 98 |
| | | 463.0 -> 219.0 | 2580 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 2254 | 0.38 | µg/L | 85 |
| | | 548.8 -> 98.9 | 1334 | | | |
| PFOA | 7.015 | 413.0 -> 369.0 | 16855 | 0.41 | µg/L | 96 |
| | | 413.0 -> 169.0 | 3211 | | | |
| PFOS | 8.166 | 498.9 -> 79.9 | 2444 | 0.36 | µg/L | m 99 |
| | | 498.9 -> 98.8 | 1293 | | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 12188 | 0.80 | µg/L | 100 |
| PFPeS | 6.410 | 349.1 -> 79.9 | 2857 | 0.40 | µg/L | 95 |
| | | 349.1 -> 98.9 | 1264 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 6383 | 0.39 | µg/L | 93 |
| | | 713.1 -> 168.9 | 644 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 8810 | 0.40 | µg/L | 96 |
| | | 663.0 -> 168.9 | 959 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 9113 | 0.41 | µg/L | 94 |
| | | 563.1 -> 269.1 | 1628 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 11999 | 0.75 | µg/L | 99 |
| | | 632.9 -> 452.9 | 3648 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 18045 | 0.72 | µg/L | 85 |
| | | 532.8 -> 353.0 | 7481 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 42594 | 0.75 | µg/L | 99 |
| | | 376.9 -> 84.8 | 11674 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 2876 | 0.80 | µg/L | 97 |
| | | 284.9 -> 184.9 | 362 | | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 1940 | 2.00 | µg/L | 99 |
| | | 241.0 -> 117.0 | 271 | | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 43016 | 10.19 | µg/L | 97 |
| | | 341.0 -> 217.0 | 31729 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 29615 | 10.25 | µg/L | 97 |
| | | 441.0 -> 336.9 | 63812 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 5236 | 0.85 | µg/L | 94 |
| | | 526.0 -> 169.0 | 6866 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 13675 | 2.04 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 4316 | 0.84 | µg/L | 94 |
| | | 511.9 -> 169.0 | 6039 | | | |
| MeFOSE | 10.661 | 616.1 -> 58.9 | 9134 | 1.92 | µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 659 | 0.40 | µg/L | 98 |
| | | 699.1 -> 98.8 | 342 | | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 2337 | 0.82 | µg/L | 97 |
| | | 295.0 -> 84.9 | 599 | | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 8284 | 0.80 | µg/L | 100 |
| PFMPA | 3.363 | 229.0 -> 84.9 | 6426 | 0.80 | µg/L | 100 |
| PFEESA | 5.875 | 314.8 -> 134.9 | 20510 | 0.69 | µg/L | 99 |
| | | 314.8 -> 82.9 | 704 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

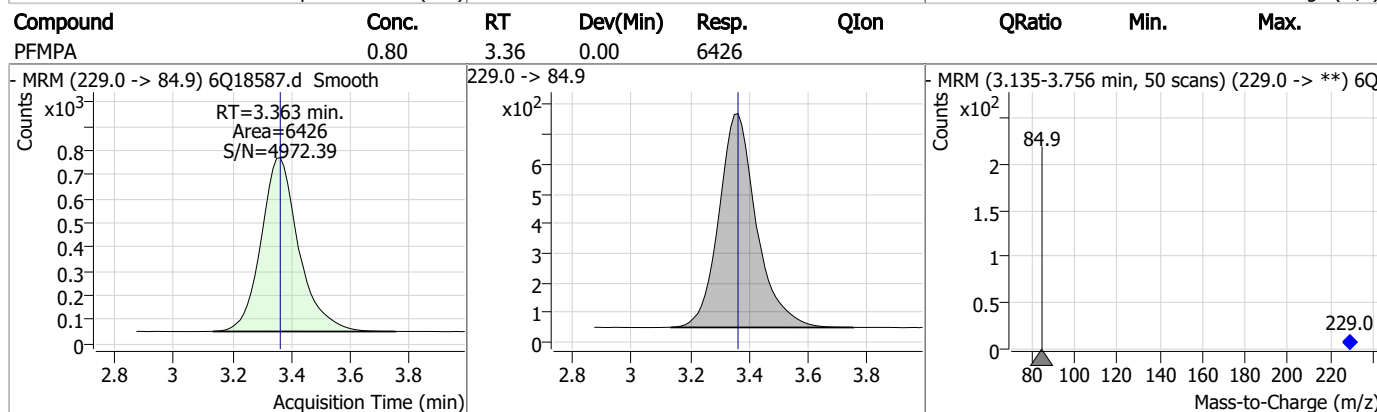
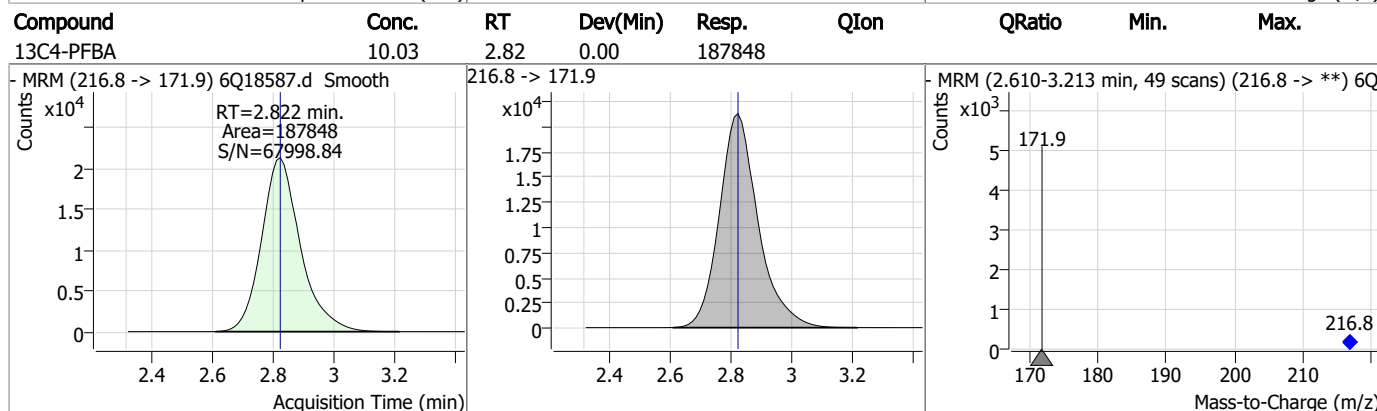
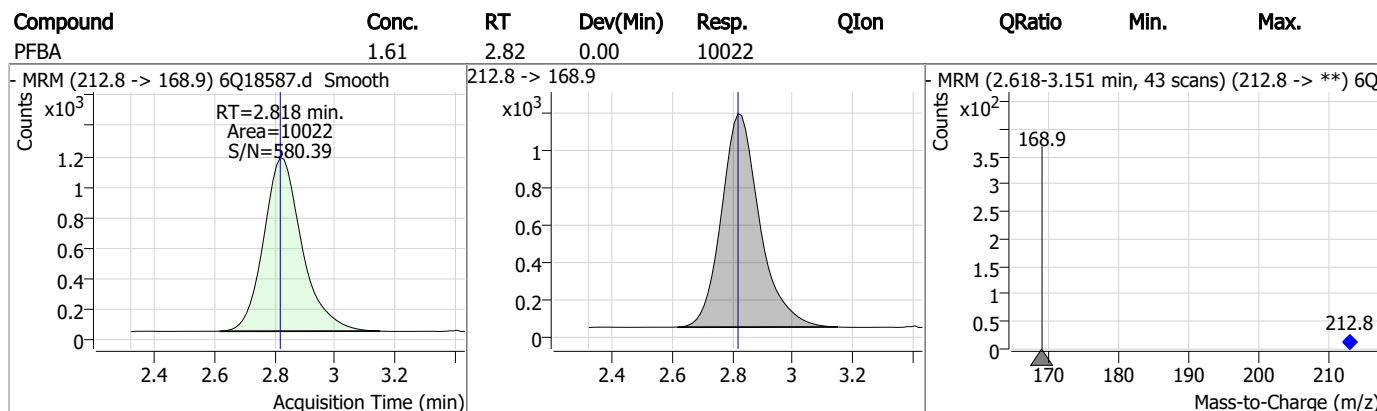
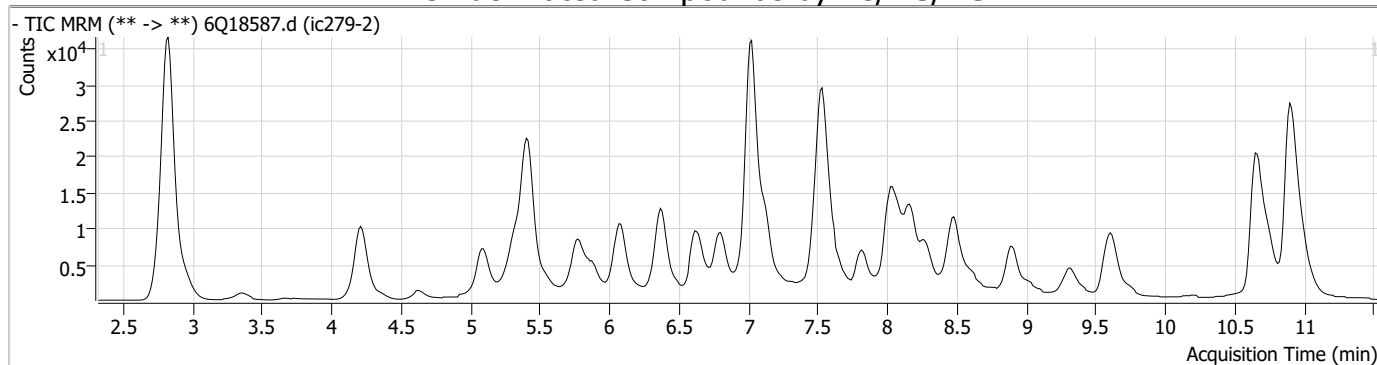
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

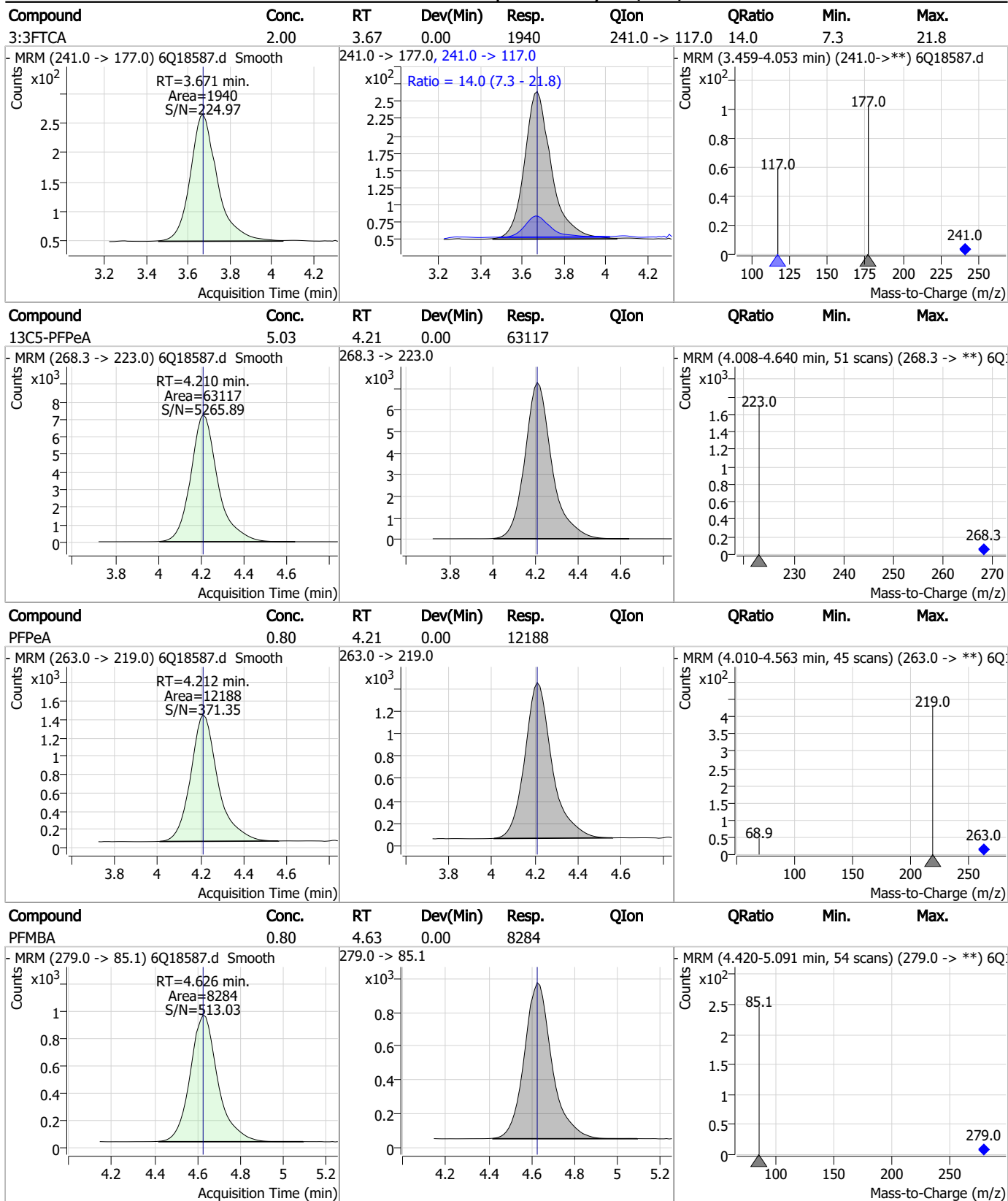
7.7.3

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Perfluorinated Compounds by LC/MS/MS



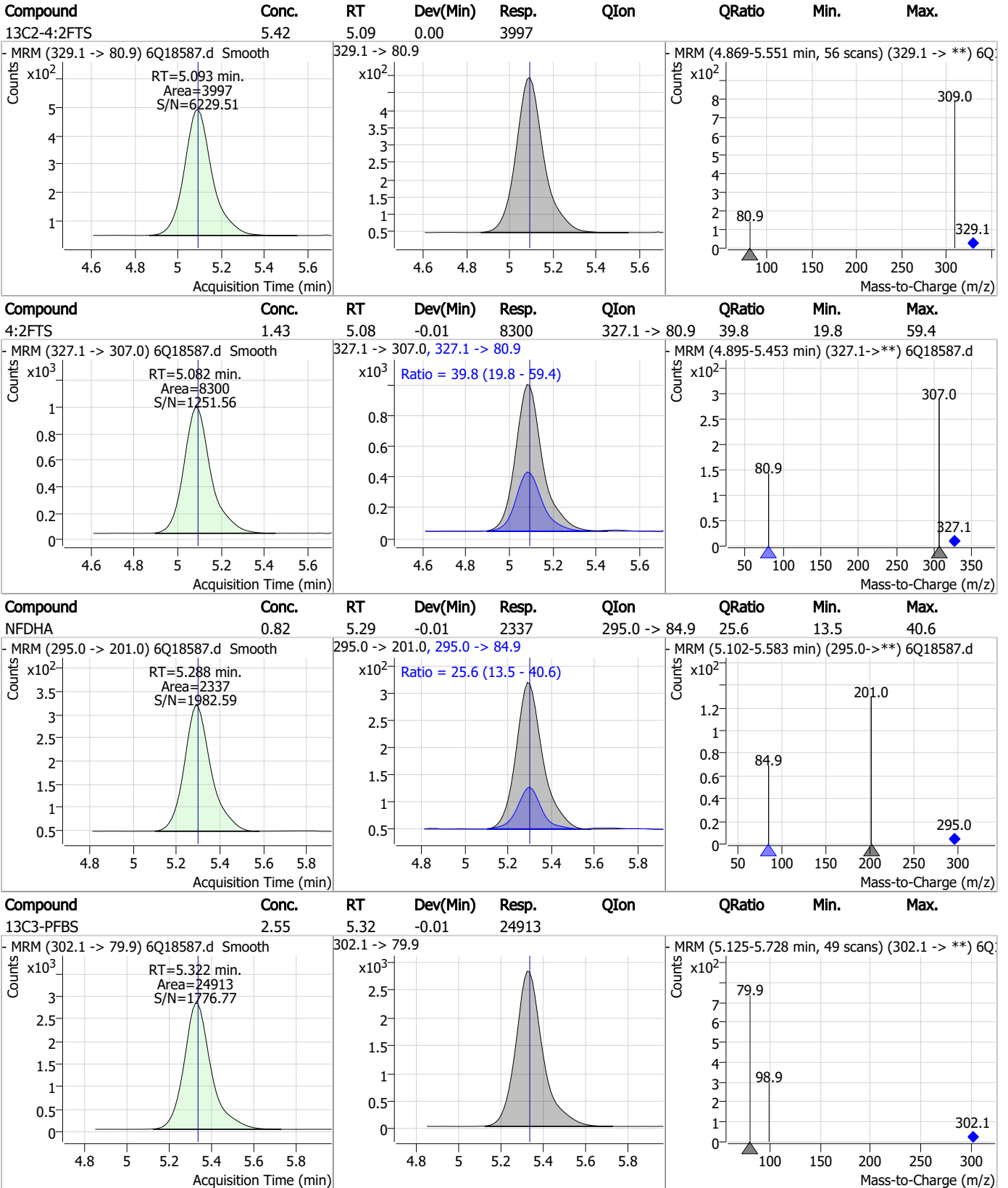
Perfluorinated Compounds by LC/MS/MS



7.7.3

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Perfluorinated Compounds by LC/MS/MS

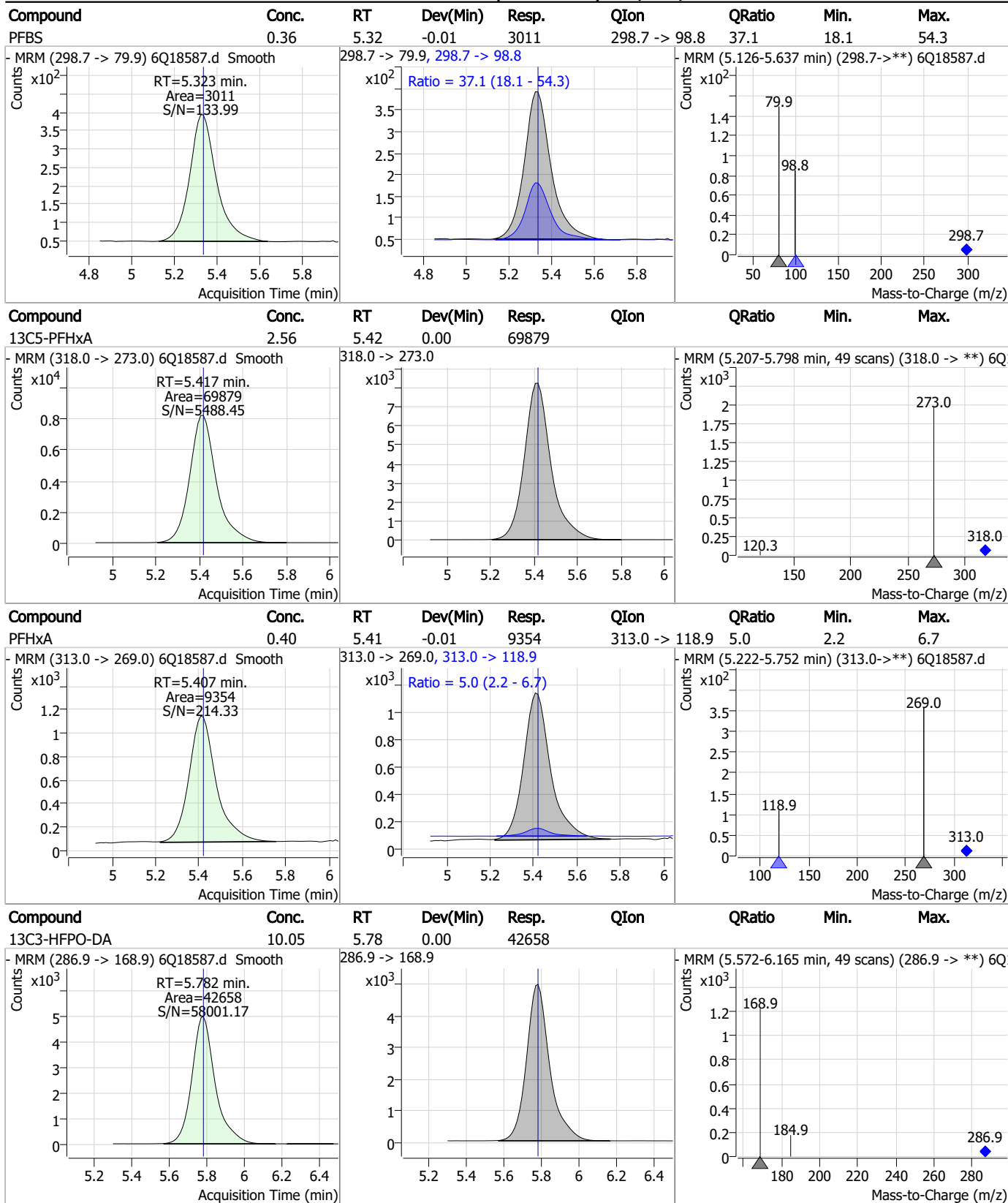


7.7.3

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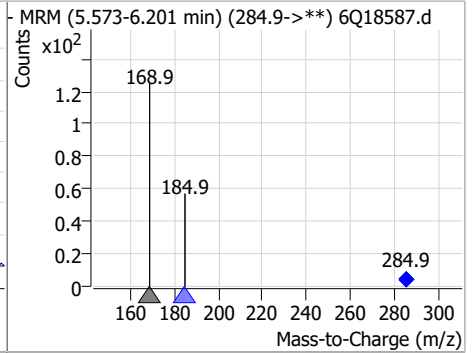
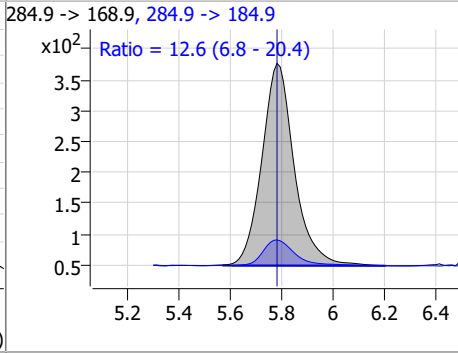
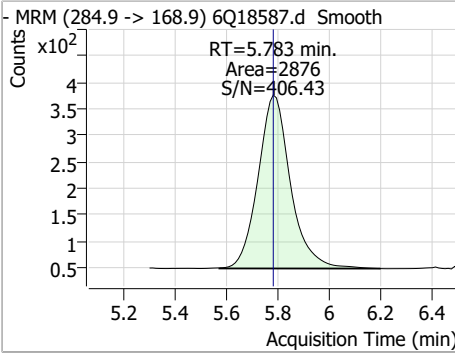
Perfluorinated Compounds by LC/MS/MS



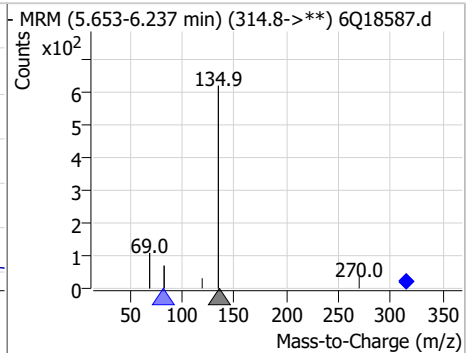
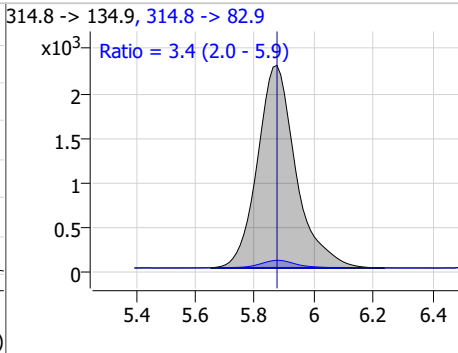
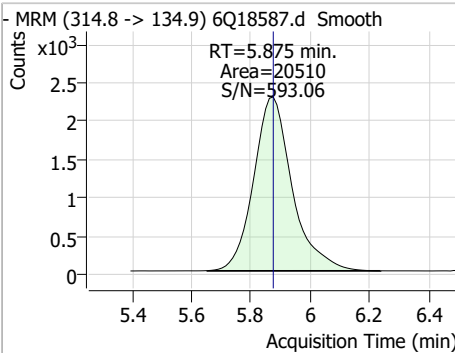
7.7.3
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Perfluorinated Compounds by LC/MS/MS

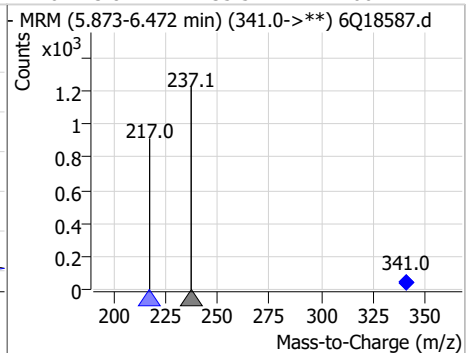
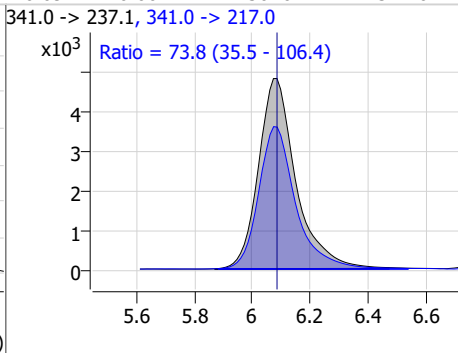
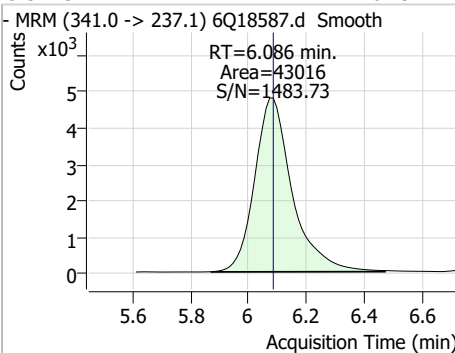
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 0.80 | 5.78 | 0.00 | 2876 | 284.9 -> 184.9 | 12.6 | 6.8 | 20.4 |



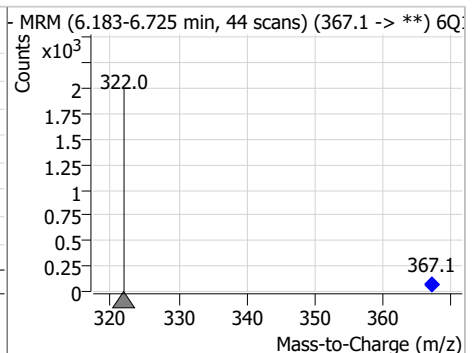
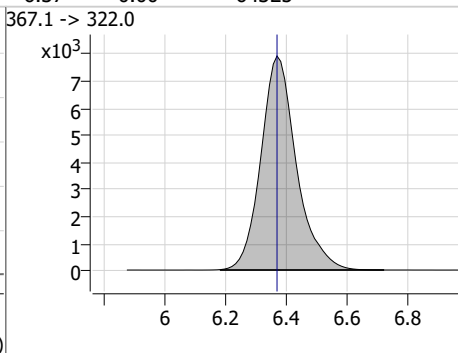
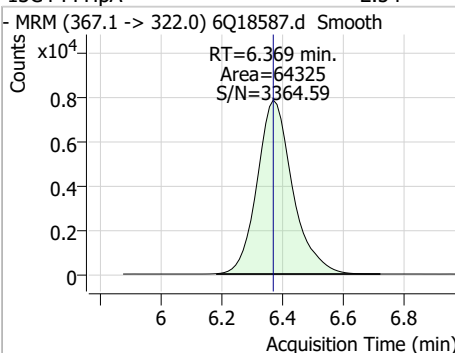
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFEESA | 0.69 | 5.88 | 0.00 | 20510 | 314.8 -> 82.9 | 3.4 | 2.0 | 5.9 |



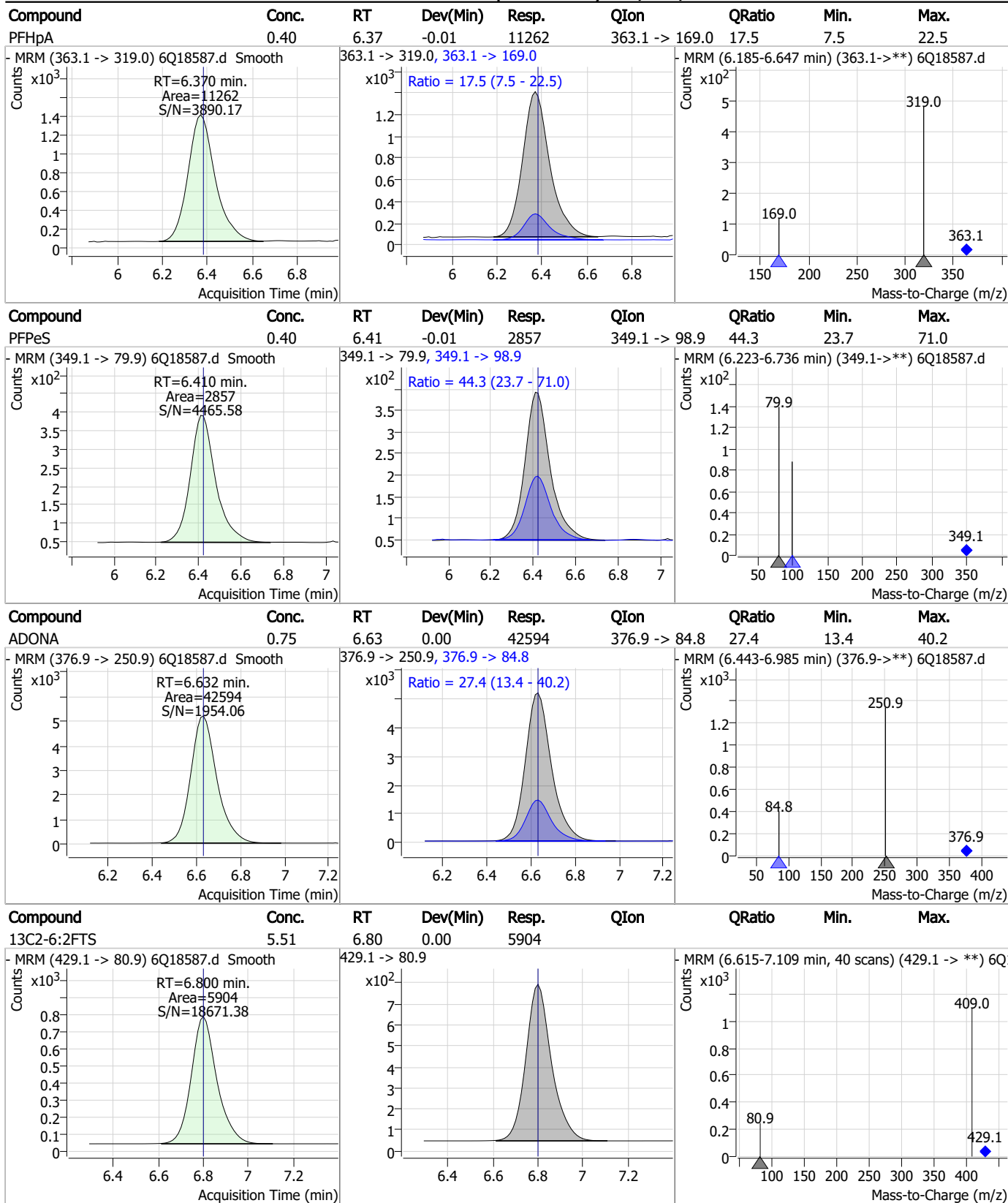
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|-------|
| 5:3FTCA | 10.19 | 6.09 | 0.00 | 43016 | 341.0 -> 217.0 | 73.8 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.54 | 6.37 | 0.00 | 64325 | 367.1 -> 322.0 | | | |

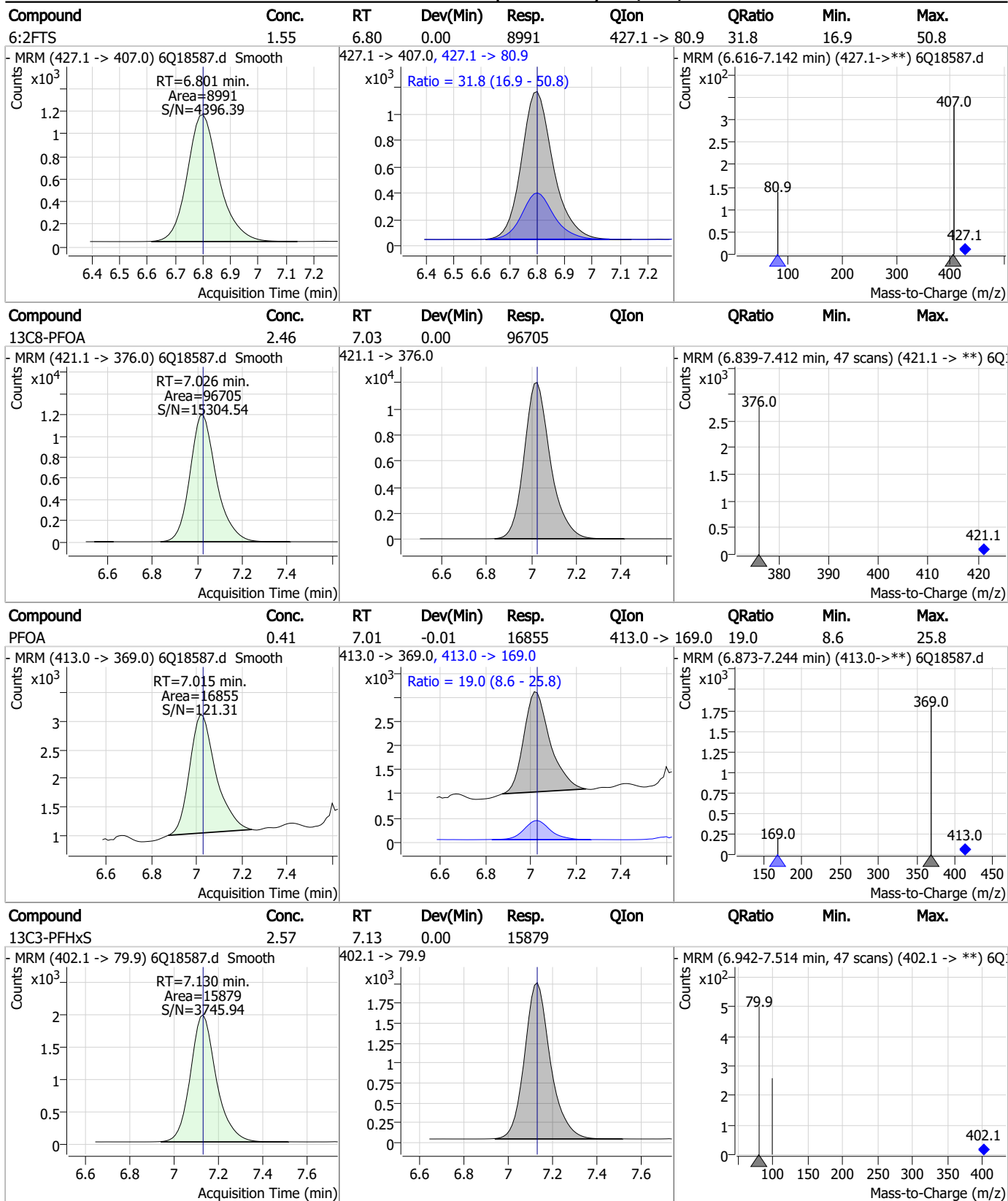


Perfluorinated Compounds by LC/MS/MS



7.7.3
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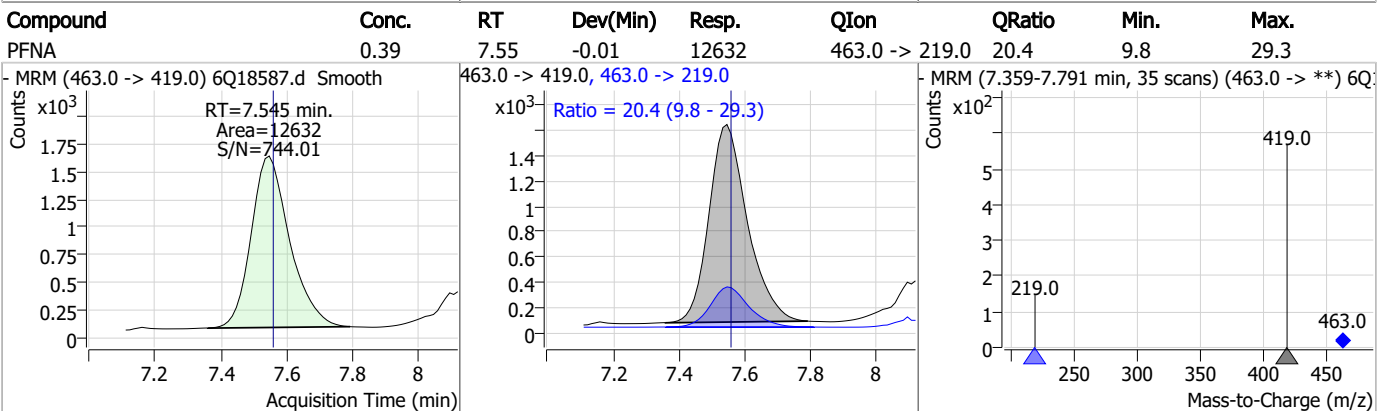
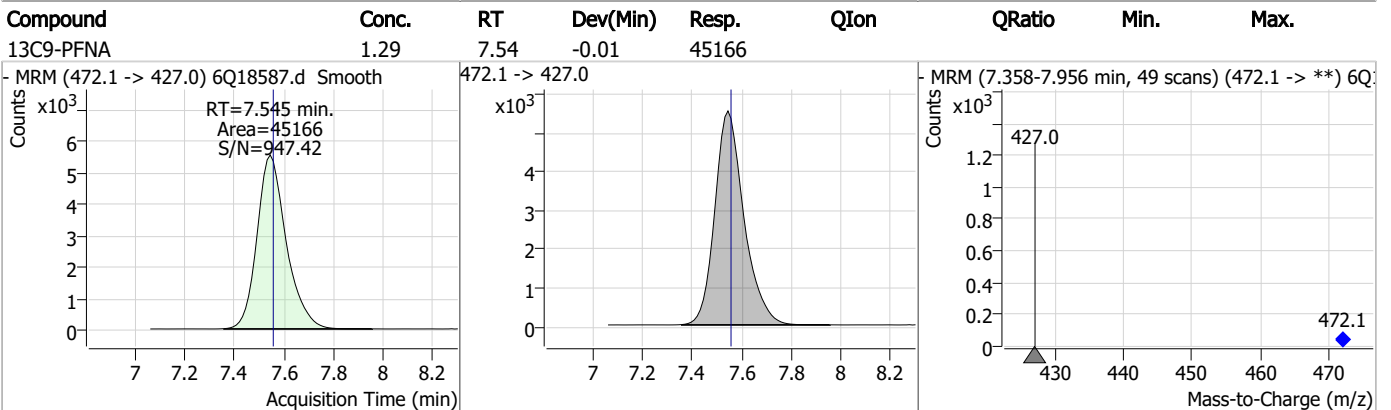
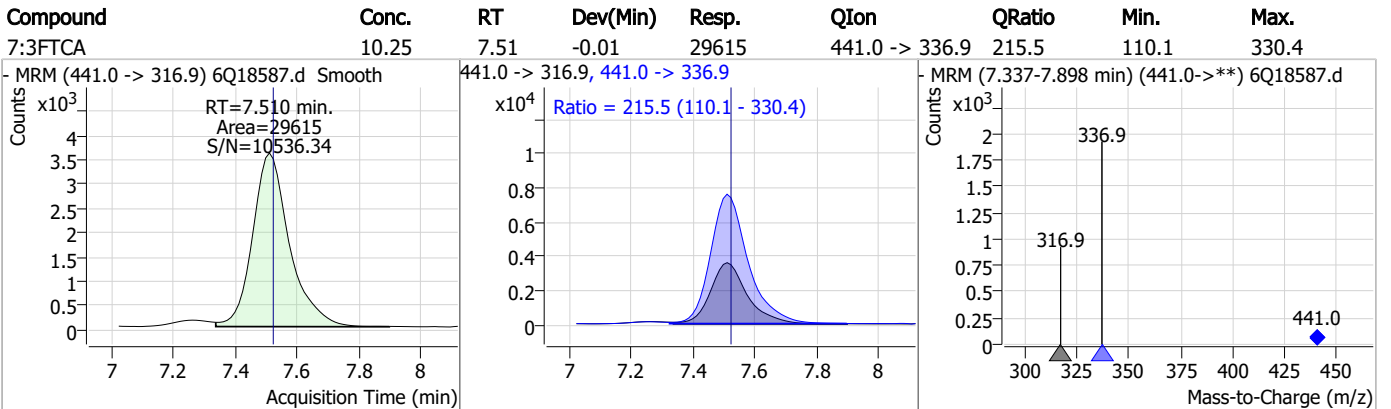
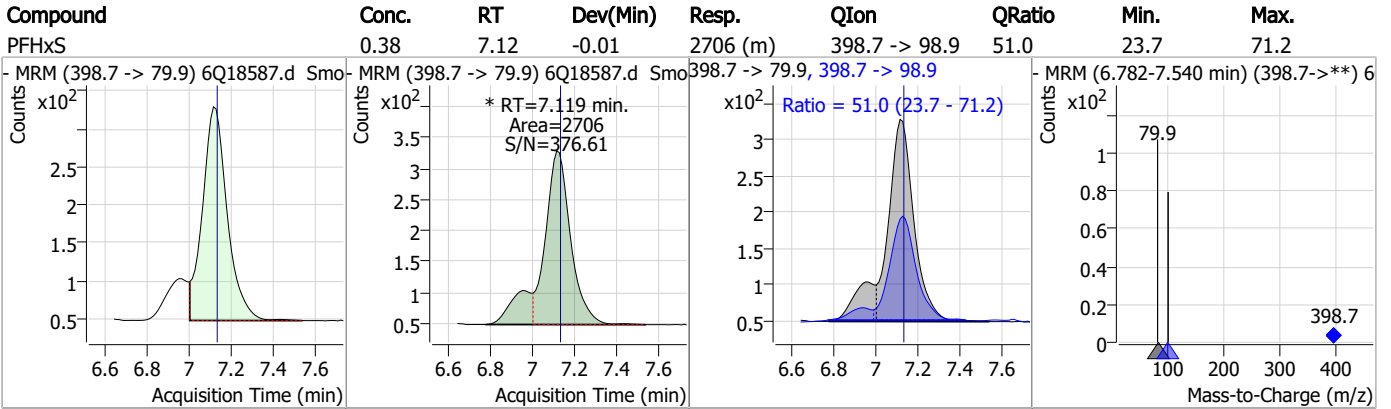
Perfluorinated Compounds by LC/MS/MS



7.7.3

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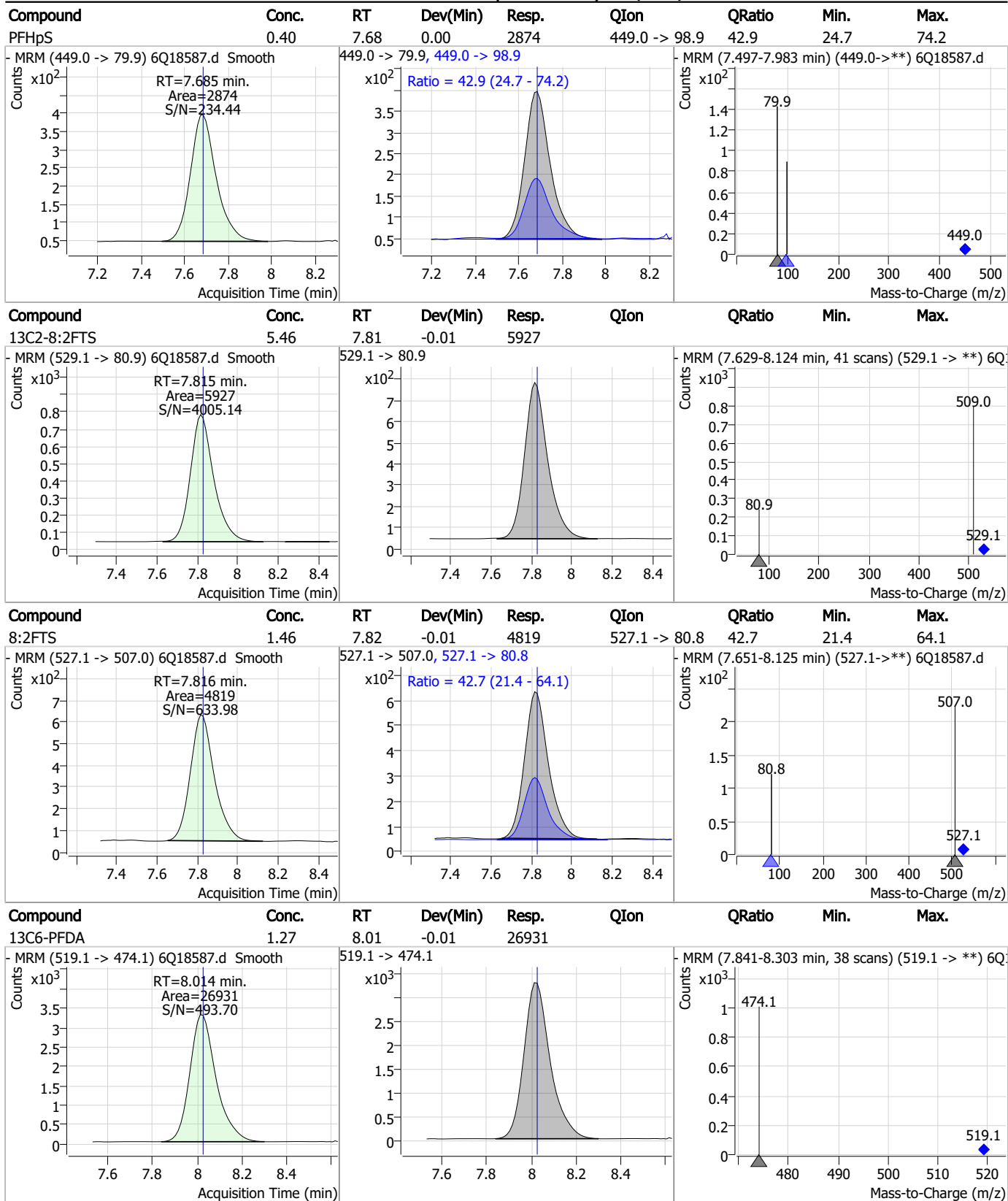
Perfluorinated Compounds by LC/MS/MS



7.7.3

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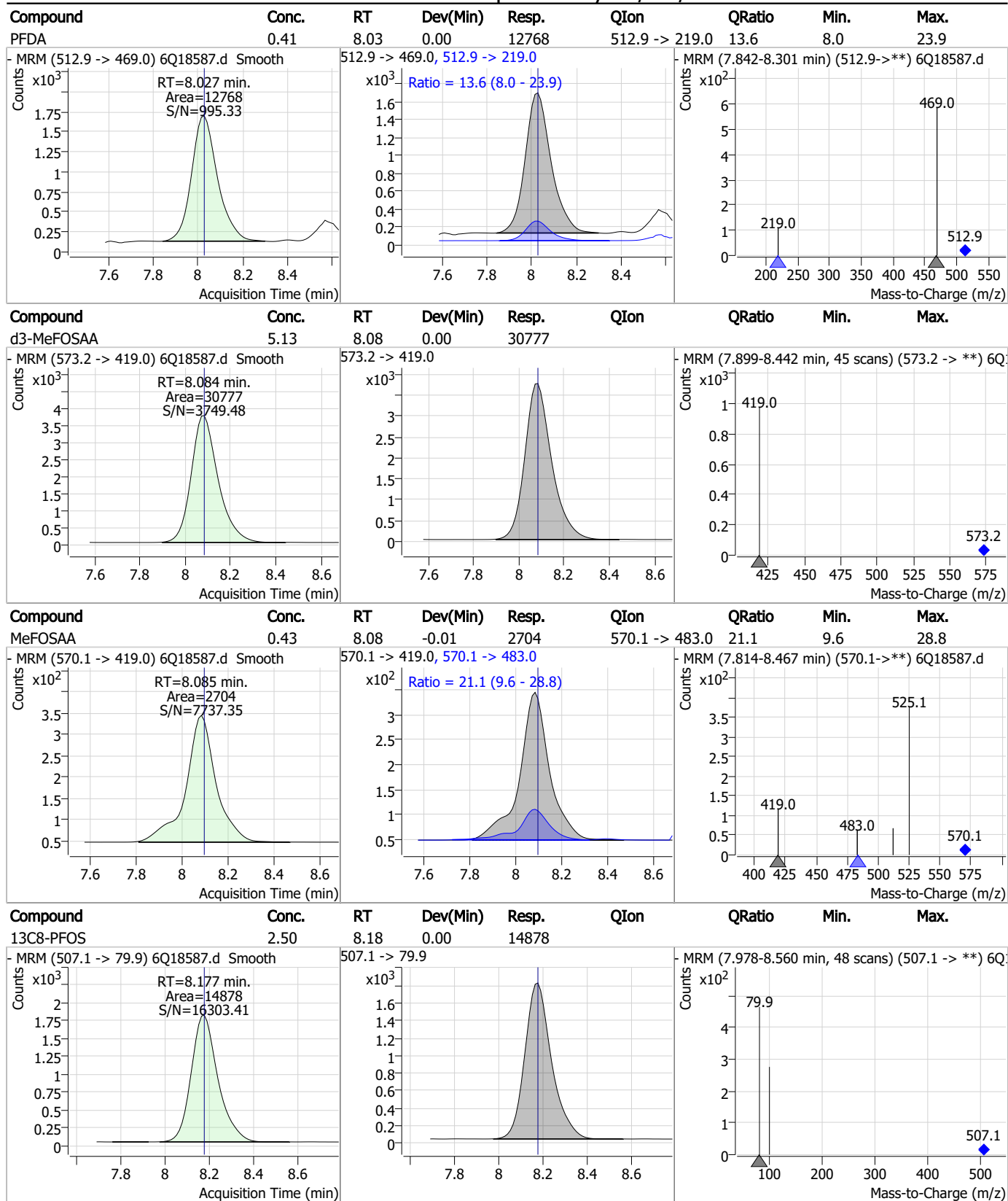
Perfluorinated Compounds by LC/MS/MS



7.7.3

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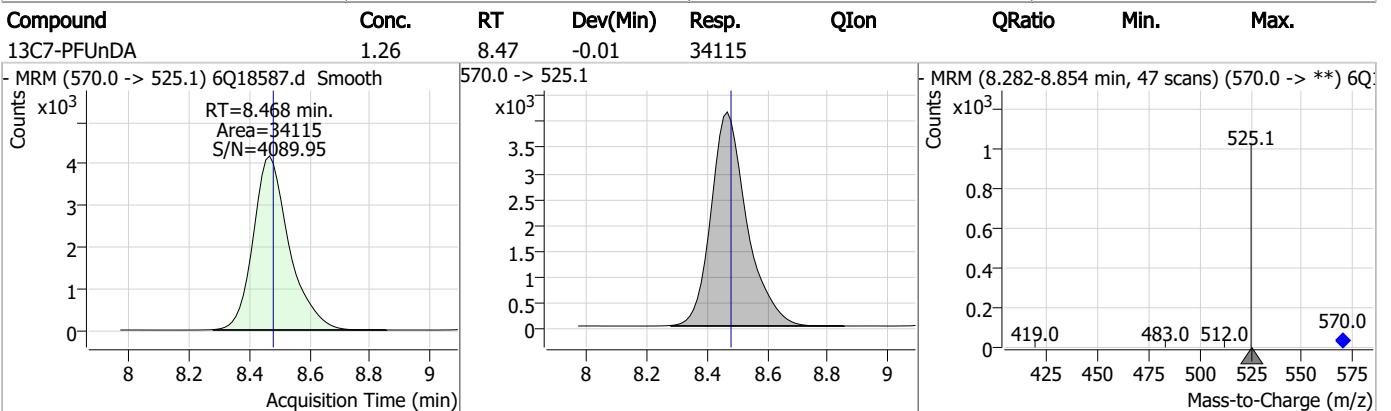
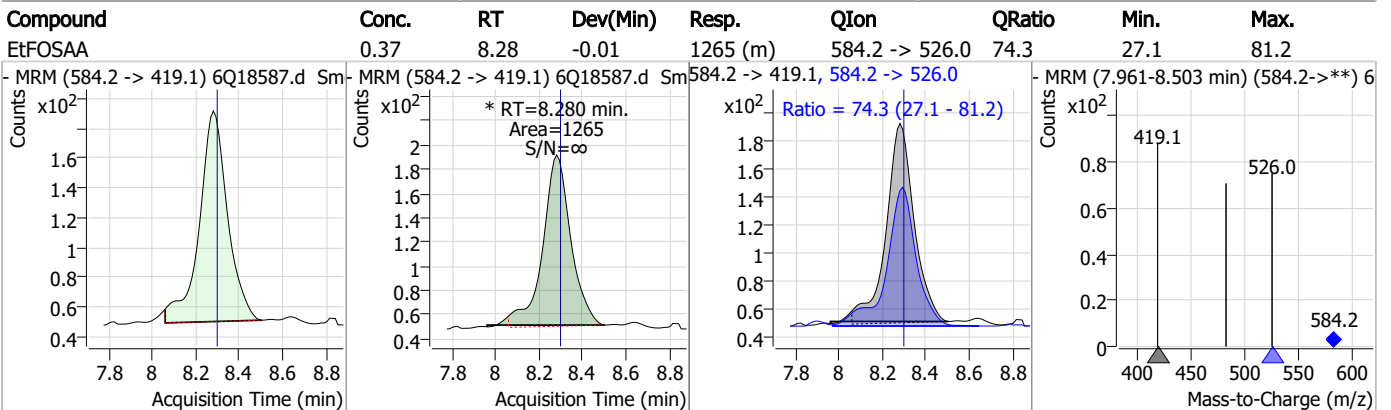
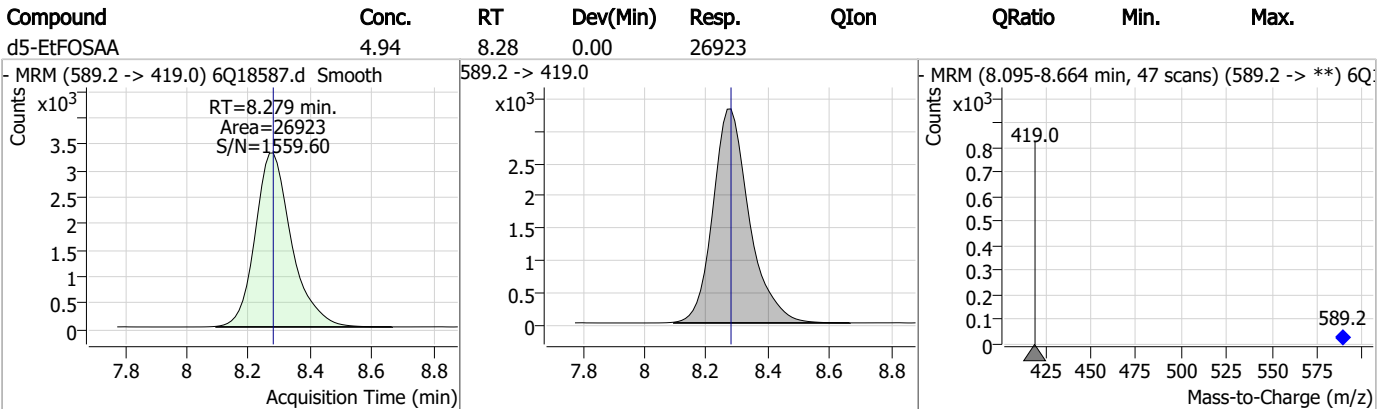
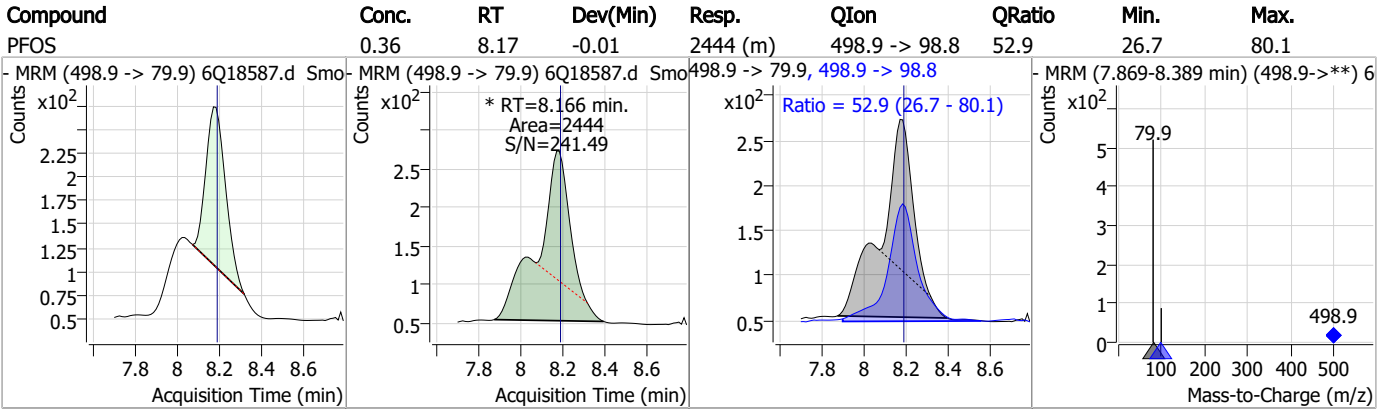
Perfluorinated Compounds by LC/MS/MS



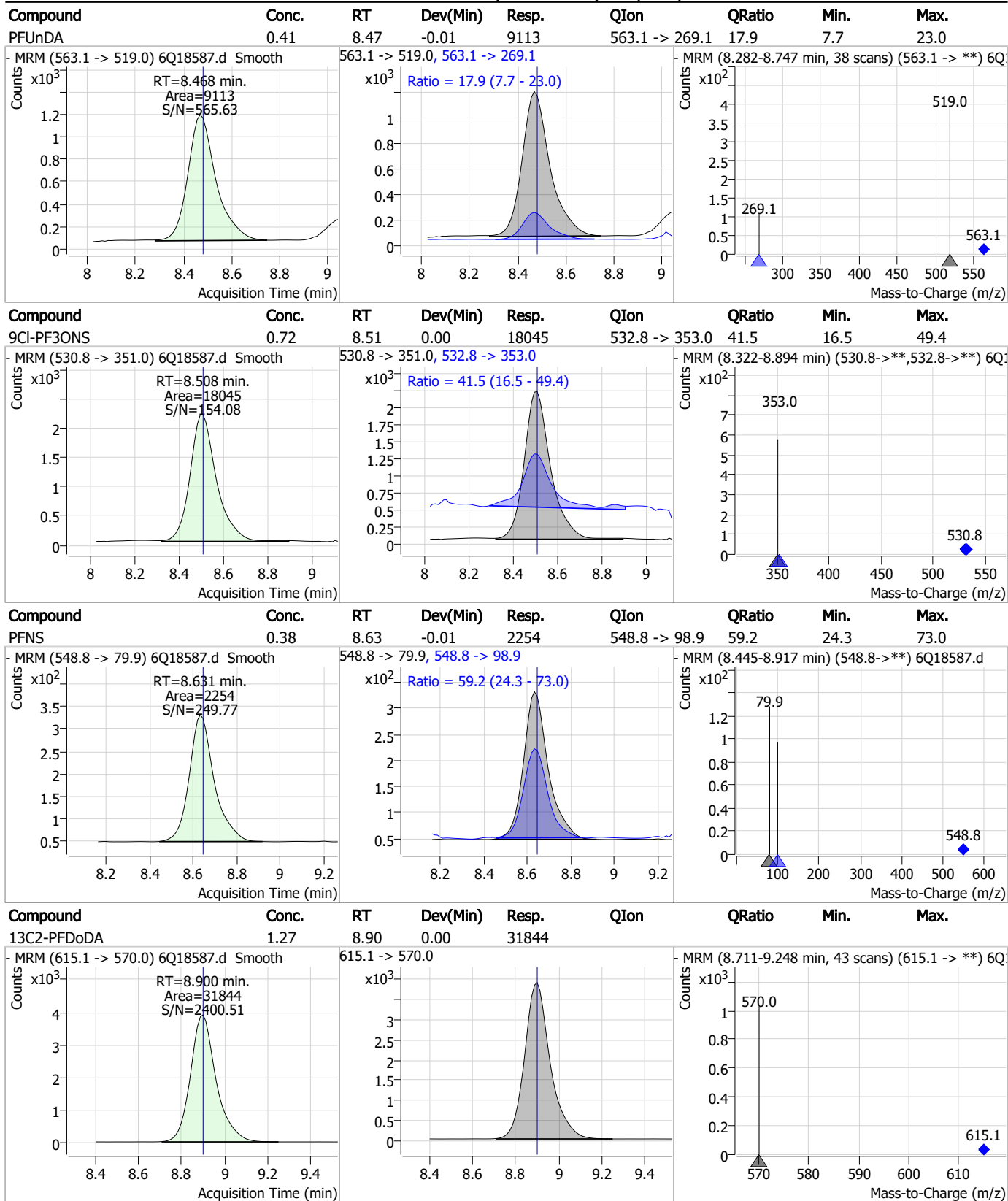
7.7.3

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Perfluorinated Compounds by LC/MS/MS

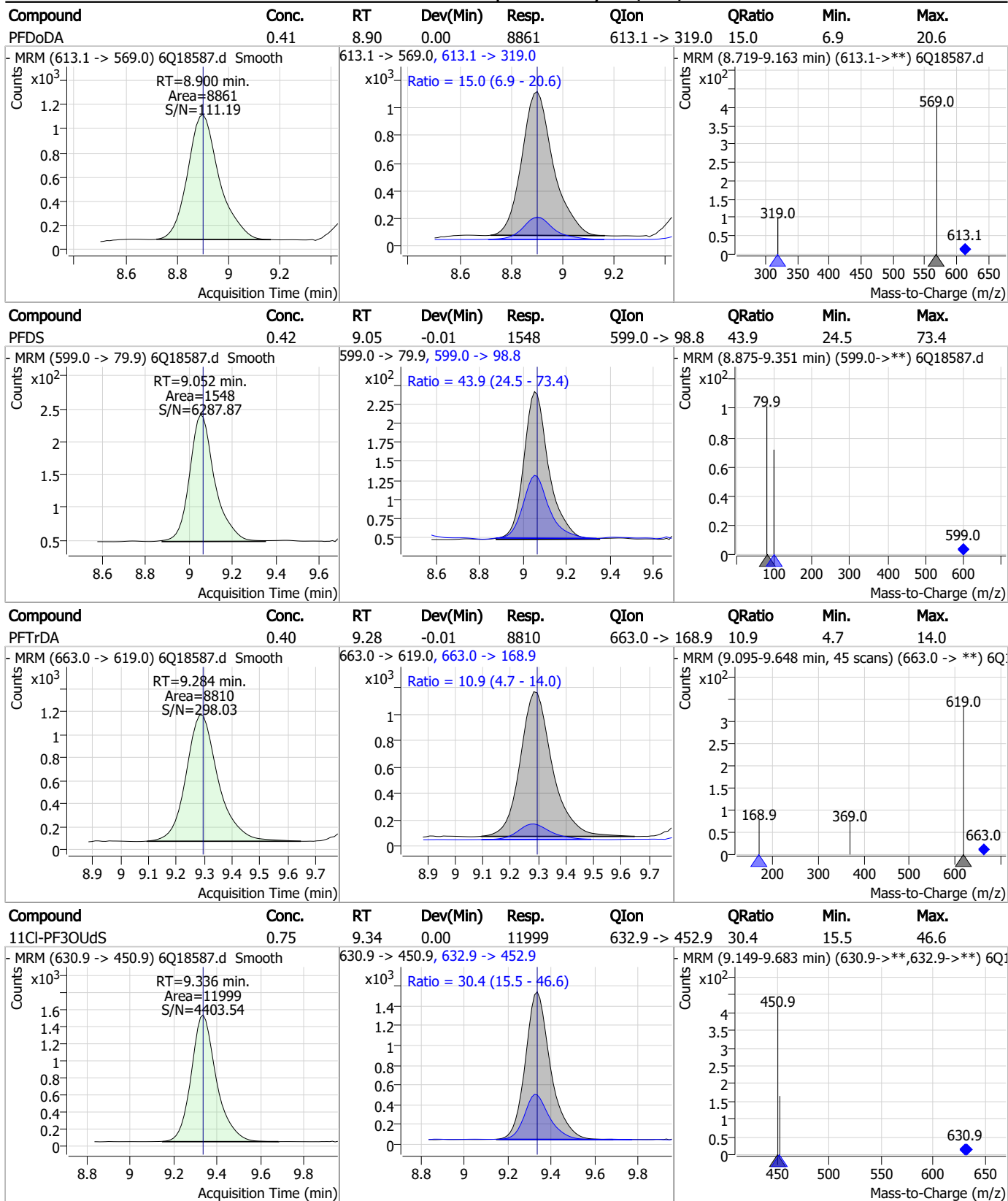


Perfluorinated Compounds by LC/MS/MS



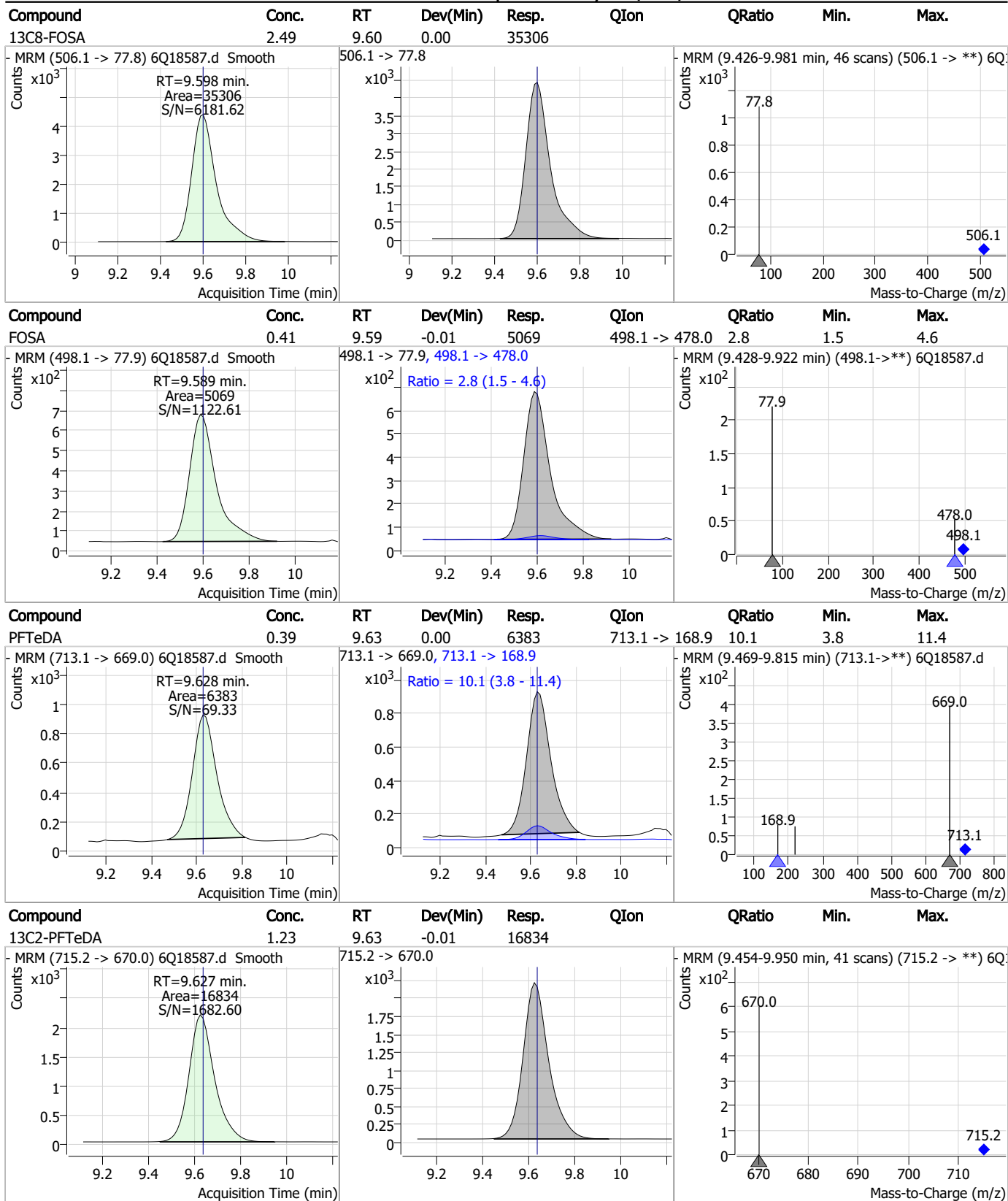
7.7.3
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Perfluorinated Compounds by LC/MS/MS



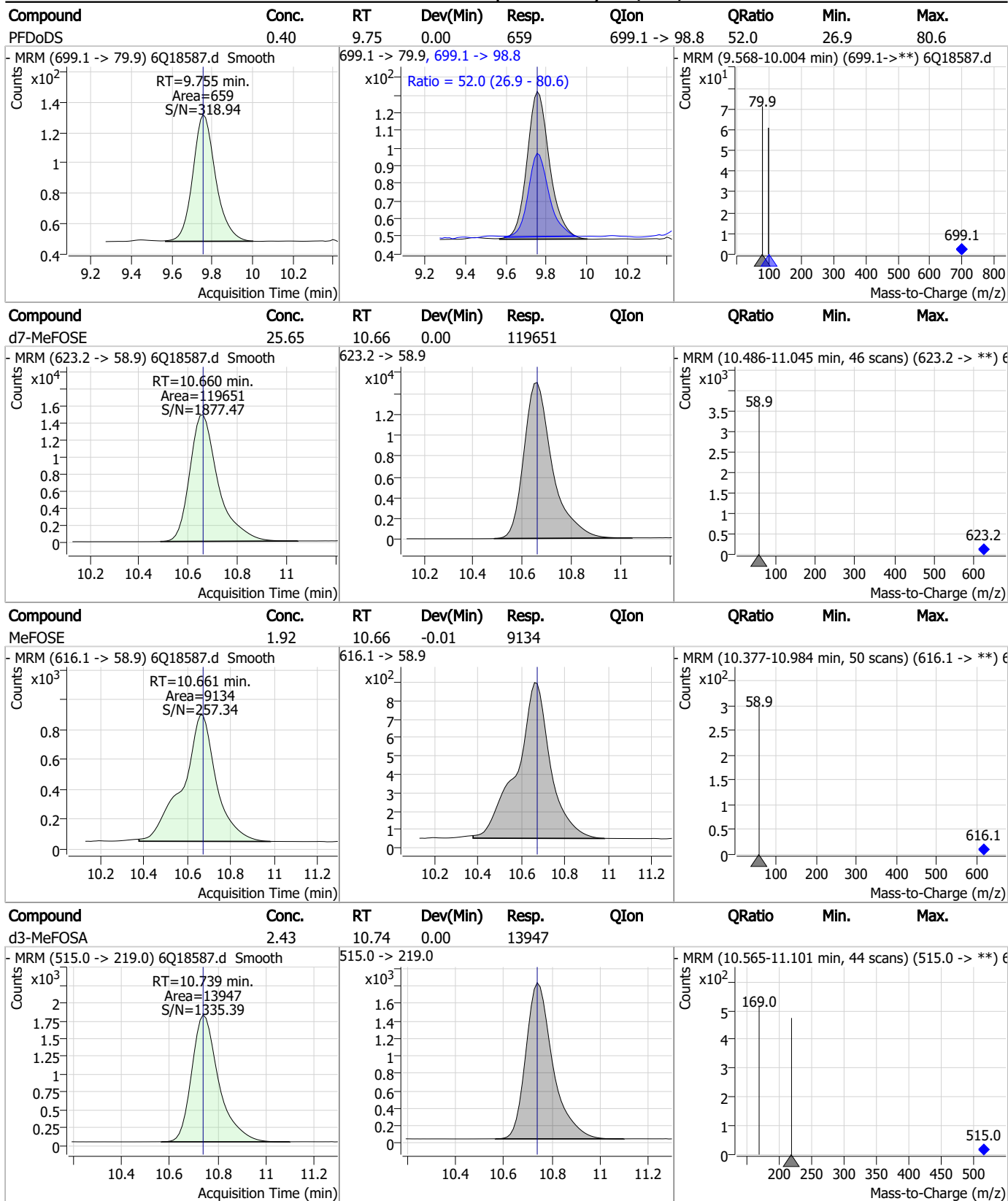
7.7.3
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Perfluorinated Compounds by LC/MS/MS



7.7.3
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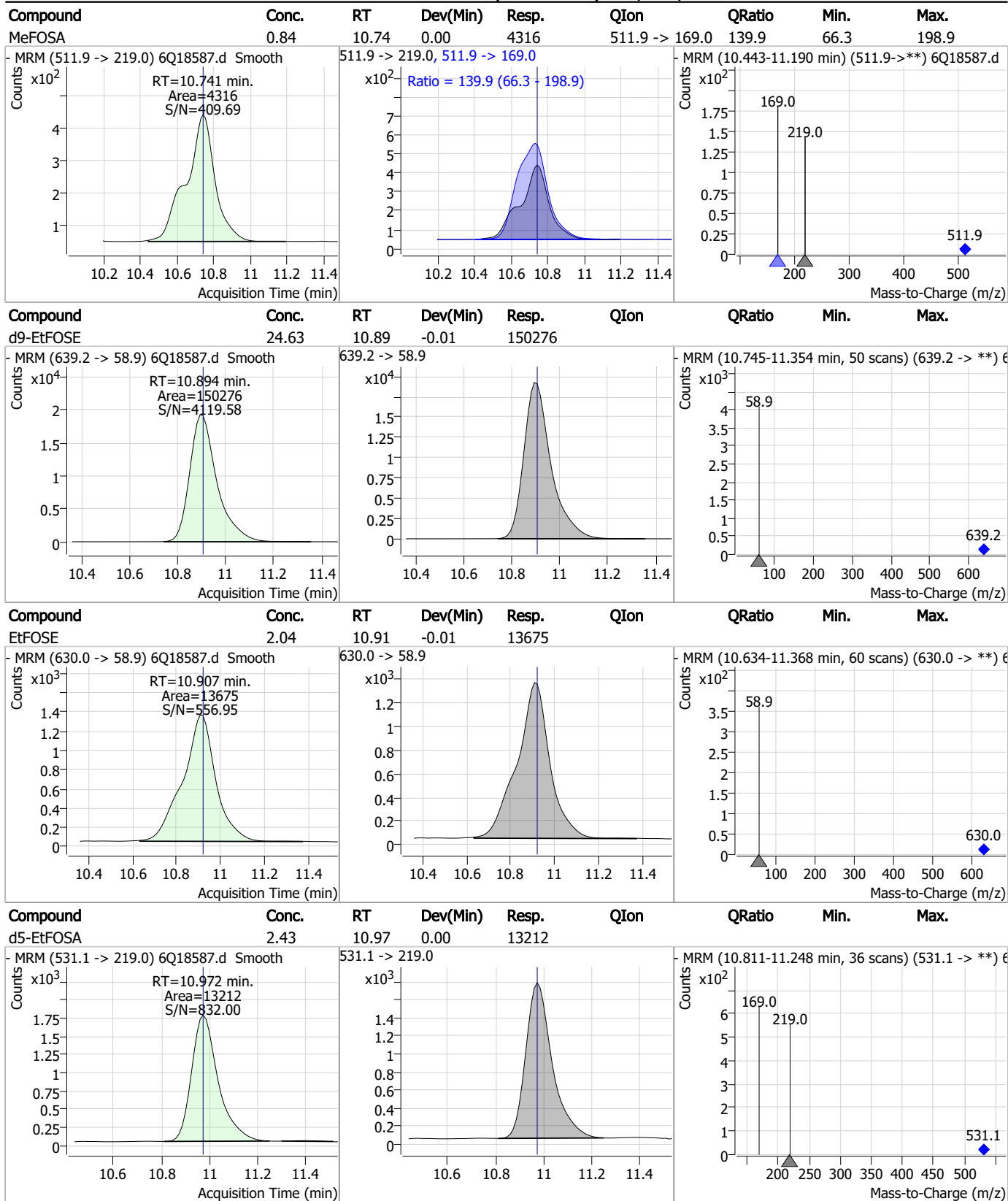
Perfluorinated Compounds by LC/MS/MS



7.7.3

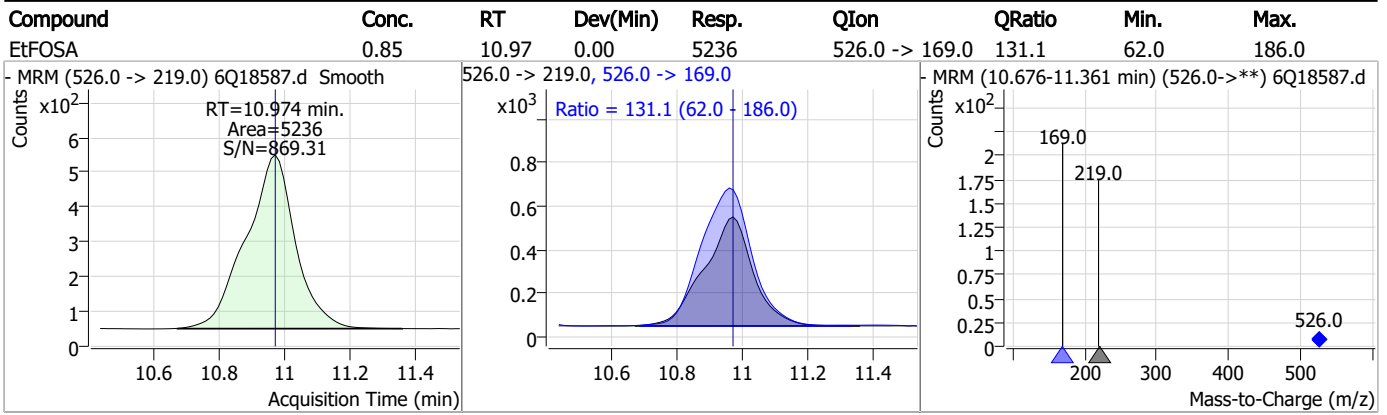
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Perfluorinated Compounds by LC/MS/MS



7.7.3
7

Perfluorinated Compounds by LC/MS/MS



7.7.3

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18587.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:30 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.12 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |
| EtFOSAA | 2991-50-6 | | 8.28 | Split peak |

7.7.3.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18588.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:45:22 PM
 Sample Name : ic279-3
 Vial : P1-A4
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 187370 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 62639 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 68931 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 62931 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 98434 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 43906 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 28212 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33495 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31515 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17235 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 35552 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 24967 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15139 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14222 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3844 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.788 | 429.1 -> 80.9 | 5719 | 5.00 µg/L | -0.012 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5271 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27962 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40832 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27544 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 117703 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 153171 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13351 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14012 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 18134 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78981 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10927 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 103303 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 38097 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 52961 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 63376 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3844 | 5.27 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 105.5% | | |
| 13C2-6:2FTS | 6.788 | 429.1 -> 80.9 | 5719 | 5.40 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 108.1% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5271 | 4.91 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 98.2% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31515 | 1.19 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 95.3% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17235 | 1.20 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 95.8% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 24967 | 2.58 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 103.3% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15139 | 2.48 µg/L | 0.000 |

7.7.4
7

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|-------------------|-------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 99.2% | | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 187370 | 9.96 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | Recovery = 99.6% | | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 62931 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.5% | | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 68931 | 2.57 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.8% | | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 62639 | 5.08 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 101.6% | | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 28212 | 1.26 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 101.1% | | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33495 | 1.18 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 94.1% | | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 35552 | 2.57 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.9% | | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 98434 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.7% | | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14222 | 2.45 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 97.9% | | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 43906 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.6% | | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27962 | 4.78 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 95.5% | | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40832 | 9.80 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | Recovery = 98.0% | | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14012 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 100.0% | | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27544 | 5.17 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 103.5% | | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 117703 | 25.84 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | Recovery = 103.4% | | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 153171 | 25.71 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | Recovery = 102.9% | | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13351 | 2.52 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 100.7% | | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 26825 | 4.80 µg/L | 94 |
| | | 327.1 -> 80.9 | 9707 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 25540 | 4.54 µg/L | 98 |
| | | 427.1 -> 80.9 | 8914 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 15451 | 5.27 µg/L | 93 |
| | | 527.1 -> 80.8 | 5868 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 4271 | 1.21 µg/L | 97 |
| | | 584.2 -> 526.0 | 2412 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 14948 | 1.21 µg/L | 100 |
| | | 498.1 -> 478.0 | 462 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 7435 | 1.29 µg/L | 99 |
| | | 570.1 -> 483.0 | 1461 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 30157 | 4.86 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 9111 | 1.07 µg/L | 97 |
| | | 298.7 -> 98.8 | 3443 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 35852 | 1.10 µg/L | 99 |
| | | 512.9 -> 219.0 | 5917 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 26862 | 1.24 µg/L | 95 |
| | | 613.1 -> 319.0 | 4178 | | |
| PFDS | 9.064 | 599.0 -> 79.9 | 4370 | 1.23 µg/L | 98 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| | | 599.0 -> 98.8 | 2090 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 34372 | 1.23 | µg/L | 96 |
| | | 363.1 -> 169.0 | 5719 | | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 8125 | 1.19 | µg/L | 100 |
| | | 449.0 -> 98.9 | 3995 | | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 27090 | 1.17 | µg/L | 96 |
| | | 313.0 -> 118.9 | 1569 | | | |
| PFHxS | 7.119 | 398.7 -> 79.9 | 8079 | 1.18 | µg/L | m 97 |
| | | 398.7 -> 98.9 | 3650 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 37524 | 1.21 | µg/L | 100 |
| | | 463.0 -> 219.0 | 7401 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 6966 | 1.22 | µg/L | 99 |
| | | 548.8 -> 98.9 | 3453 | | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 50028 | 1.19 | µg/L | 98 |
| | | 413.0 -> 169.0 | 8173 | | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 7692 | 1.18 | µg/L | m 98 |
| | | 498.9 -> 98.8 | 4010 | | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 36747 | 2.44 | µg/L | 100 |
| PFPeS | 6.410 | 349.1 -> 79.9 | 7727 | 1.13 | µg/L | 97 |
| | | 349.1 -> 98.9 | 3786 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 21136 | 1.25 | µg/L | 96 |
| | | 713.1 -> 168.9 | 1865 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 26434 | 1.21 | µg/L | 97 |
| | | 663.0 -> 168.9 | 2776 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 26286 | 1.21 | µg/L | 95 |
| | | 563.1 -> 269.1 | 4591 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 37610 | 2.45 | µg/L | 97 |
| | | 632.9 -> 452.9 | 11098 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 57452 | 2.38 | µg/L | 100 |
| | | 532.8 -> 353.0 | 18801 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 130357 | 2.40 | µg/L | 99 |
| | | 376.9 -> 84.8 | 35366 | | | |
| HFPO-DA | 5.770 | 284.9 -> 168.9 | 8787 | 2.54 | µg/L | 99 |
| | | 284.9 -> 184.9 | 1229 | | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 5932 | 6.16 | µg/L | 99 |
| | | 241.0 -> 117.0 | 843 | | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 125804 | 30.22 | µg/L | 95 |
| | | 341.0 -> 217.0 | 94435 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 81482 | 28.58 | µg/L | 84 |
| | | 441.0 -> 336.9 | 200432 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 15129 | 2.43 | µg/L | 90 |
| | | 526.0 -> 169.0 | 20436 | | | |
| EtFOSE | 10.920 | 630.0 -> 58.9 | 42639 | 6.24 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 12710 | 2.47 | µg/L | 93 |
| | | 511.9 -> 169.0 | 17862 | | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 28431 | 6.08 | µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 2029 | 1.28 | µg/L | 95 |
| | | 699.1 -> 98.8 | 1015 | | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 6915 | 2.45 | µg/L | 93 |
| | | 295.0 -> 84.9 | 1612 | | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 25336 | 2.47 | µg/L | 100 |
| PFMPA | 3.351 | 229.0 -> 84.9 | 19888 | 2.50 | µg/L | 100 |
| PFEESA | 5.862 | 314.8 -> 134.9 | 62574 | 2.13 | µg/L | 100 |
| | | 314.8 -> 82.9 | 2487 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

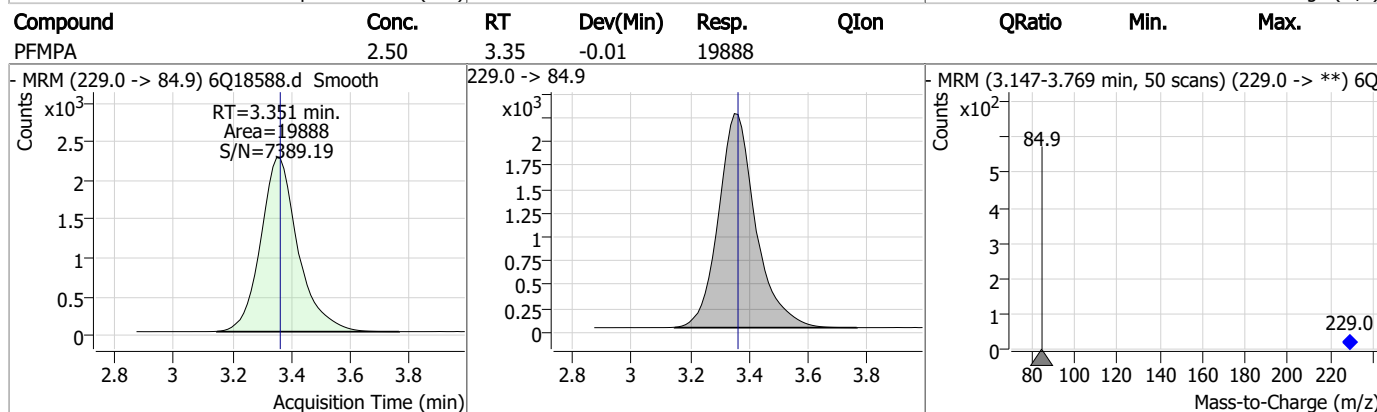
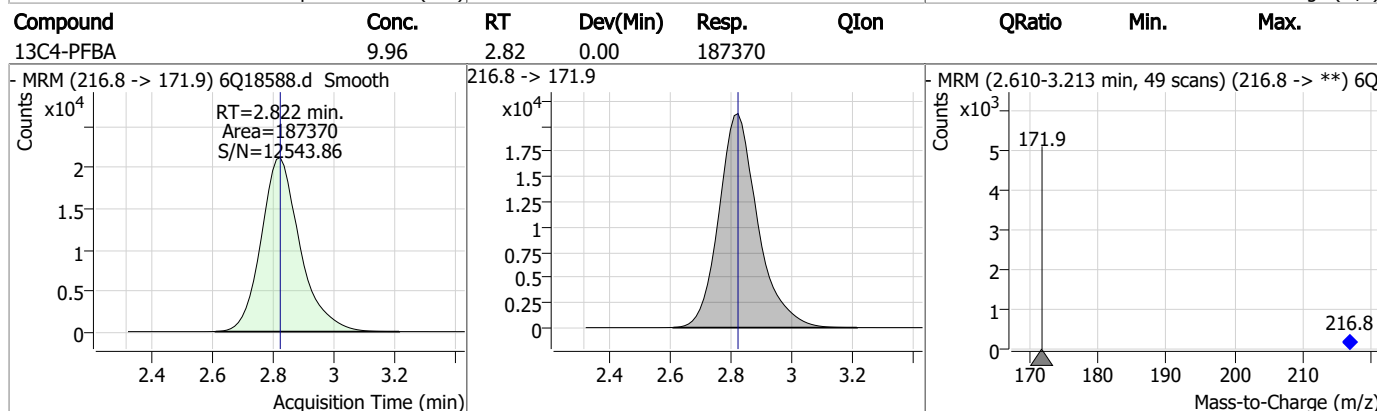
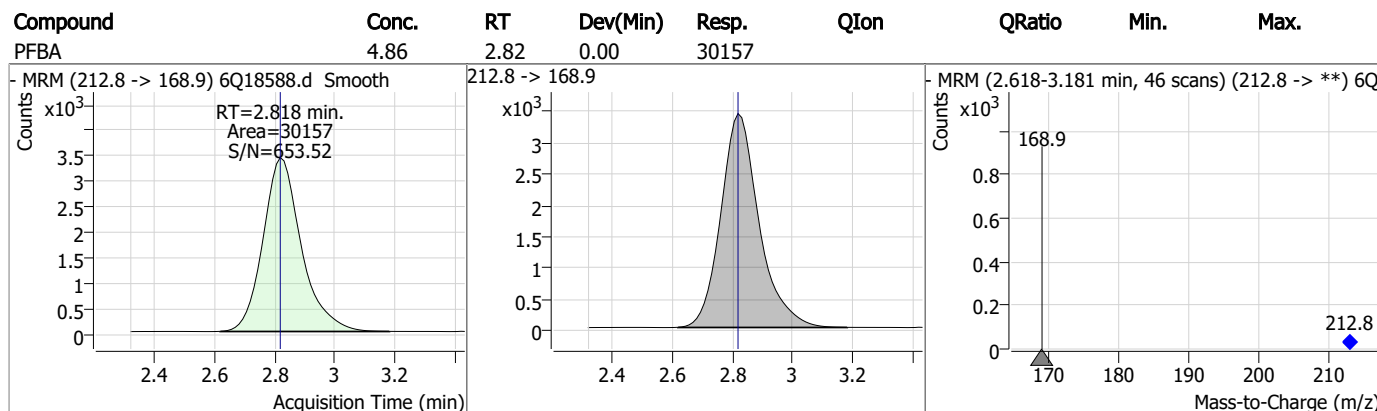
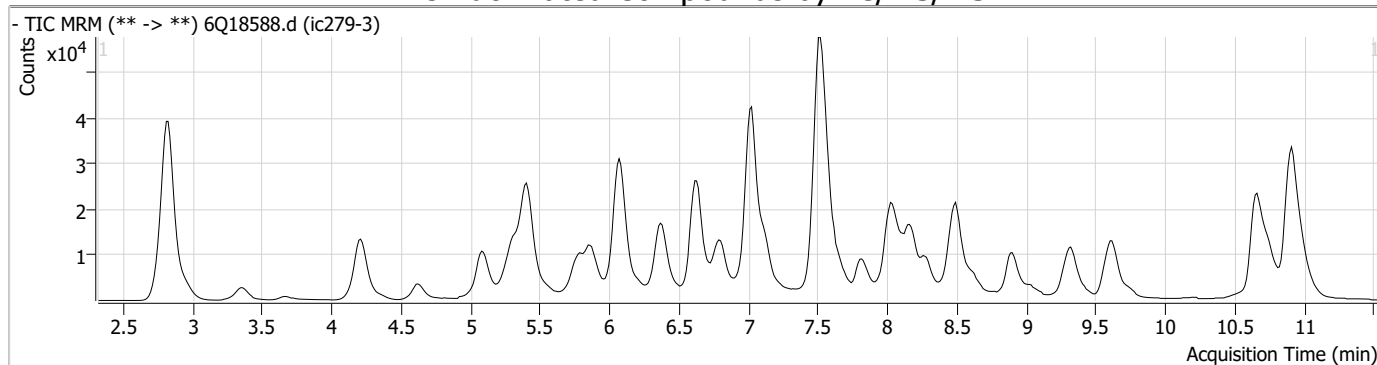
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.7.4

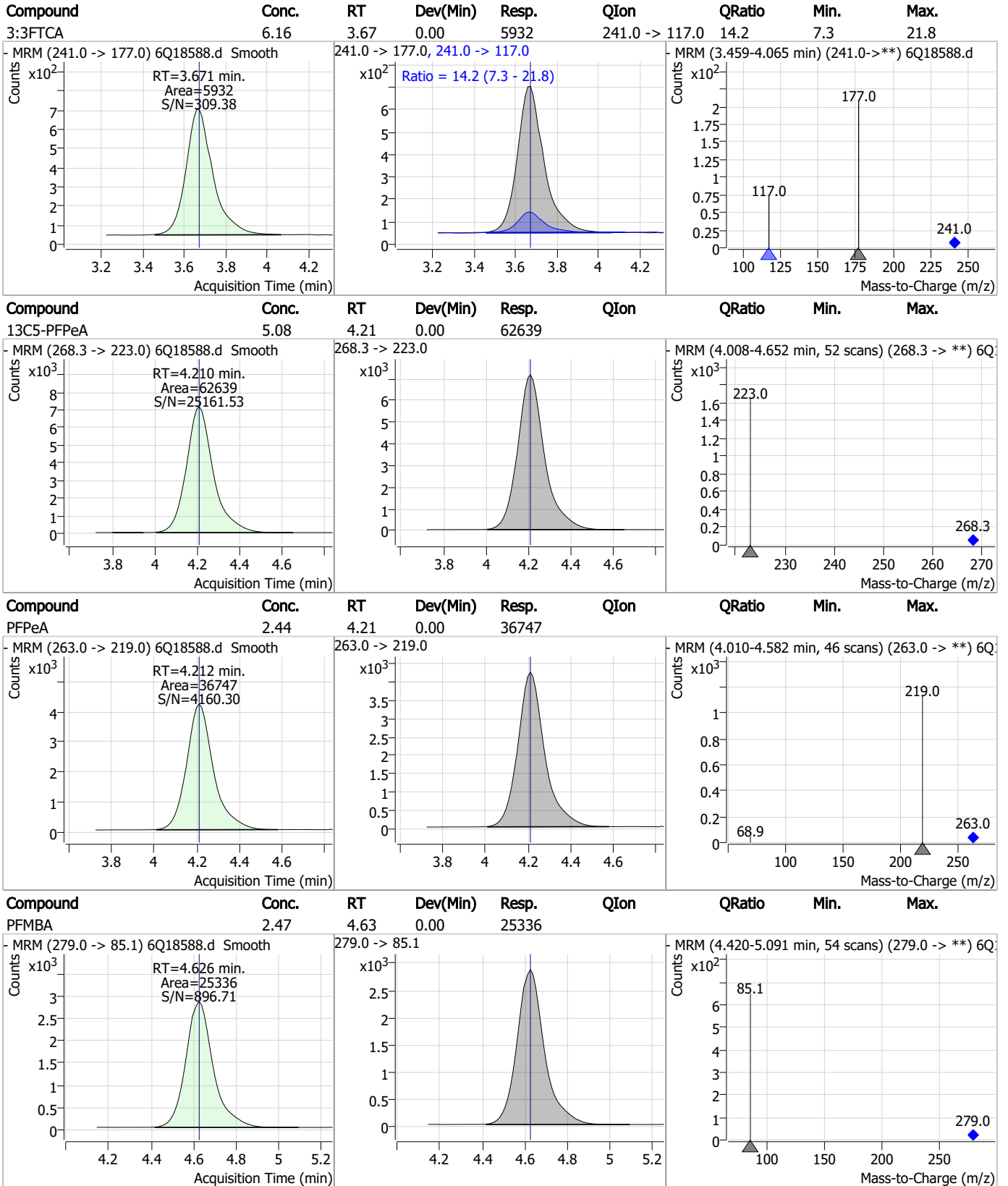
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Perfluorinated Compounds by LC/MS/MS



7.7.4
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Perfluorinated Compounds by LC/MS/MS

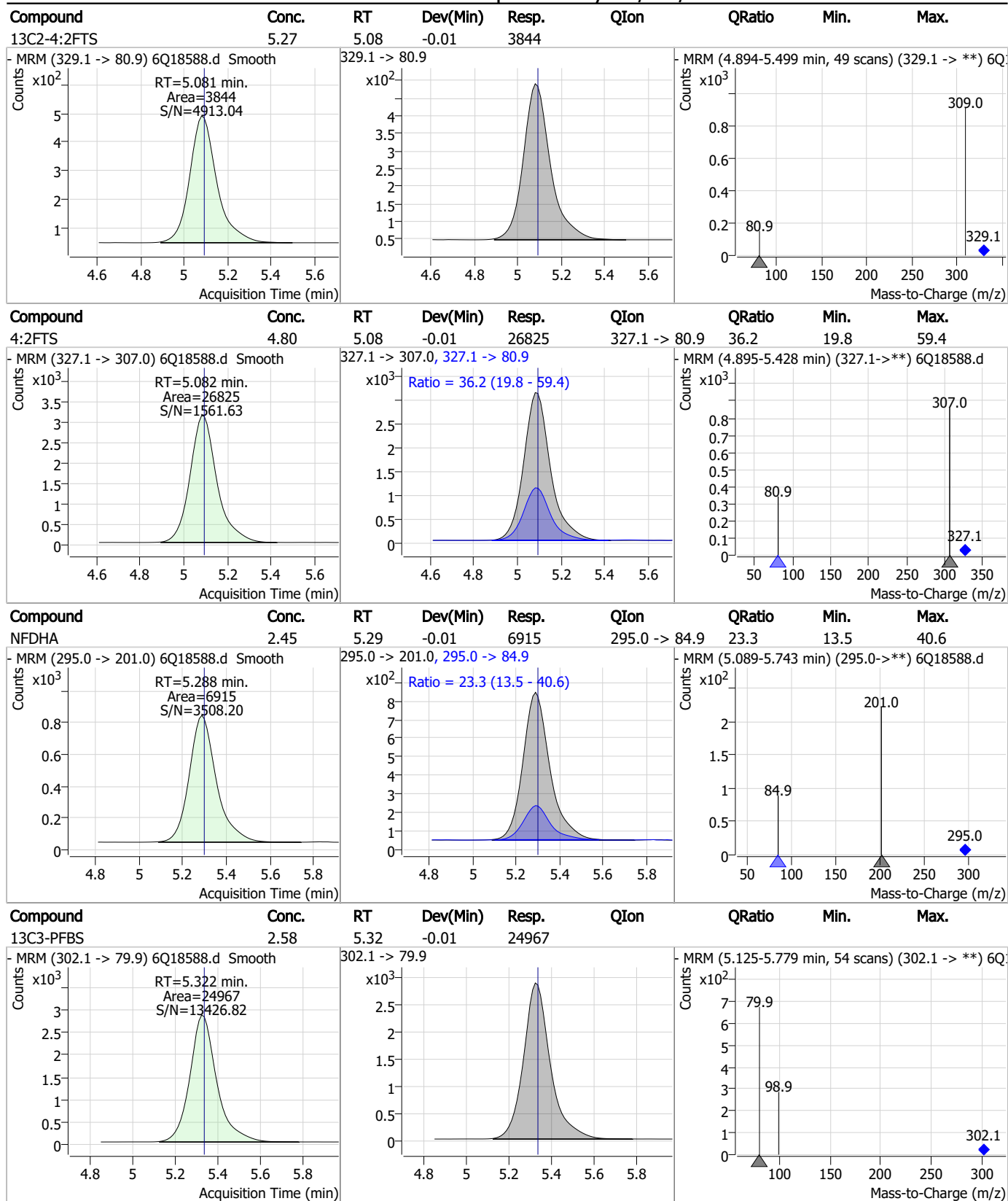


7.7.4

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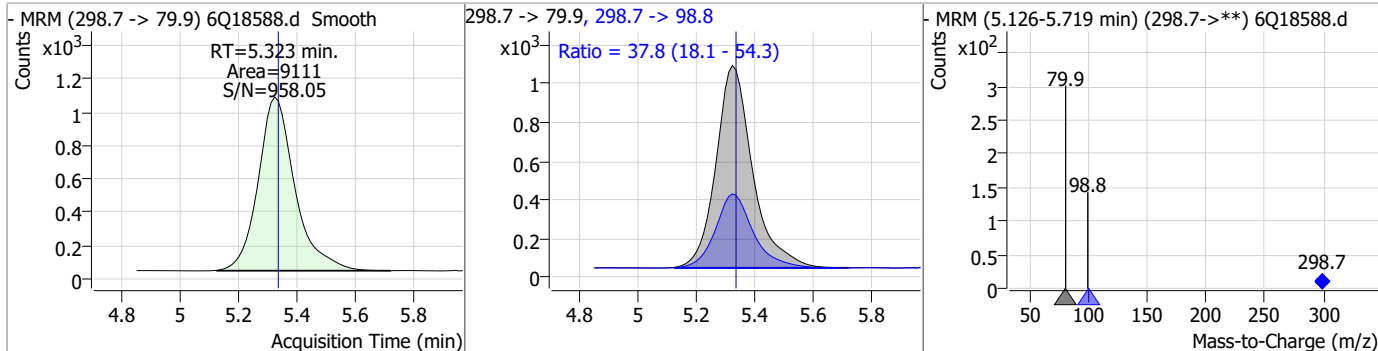
Perfluorinated Compounds by LC/MS/MS



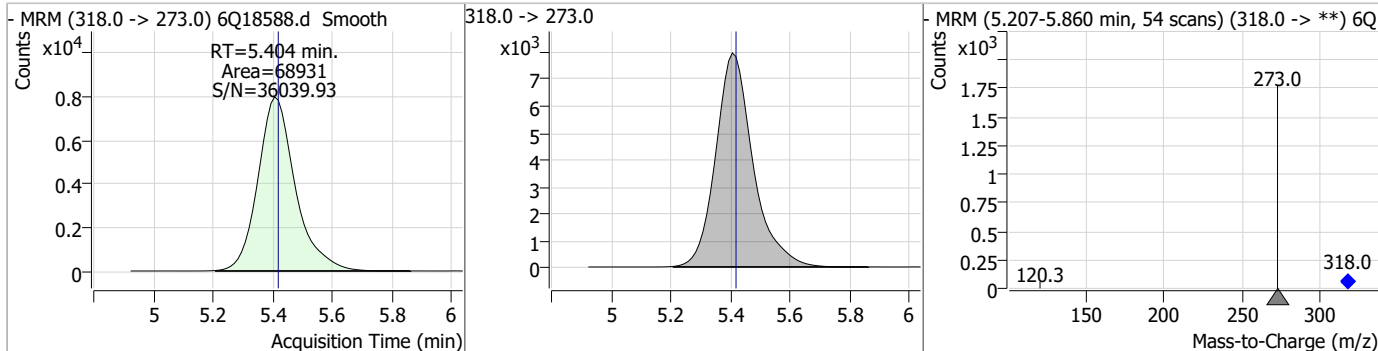
7.7.4

Perfluorinated Compounds by LC/MS/MS

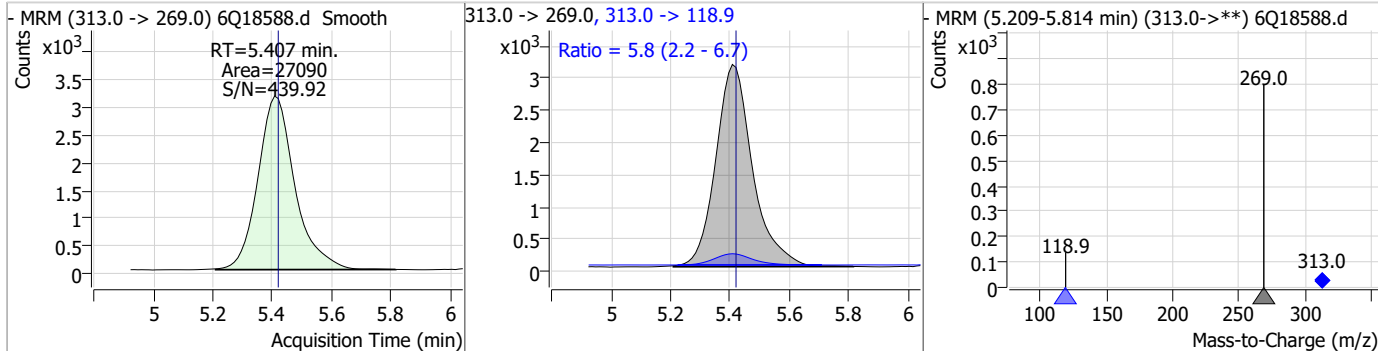
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 1.07 | 5.32 | -0.01 | 9111 | 298.7 -> 98.8 | 37.8 | 18.1 | 54.3 |



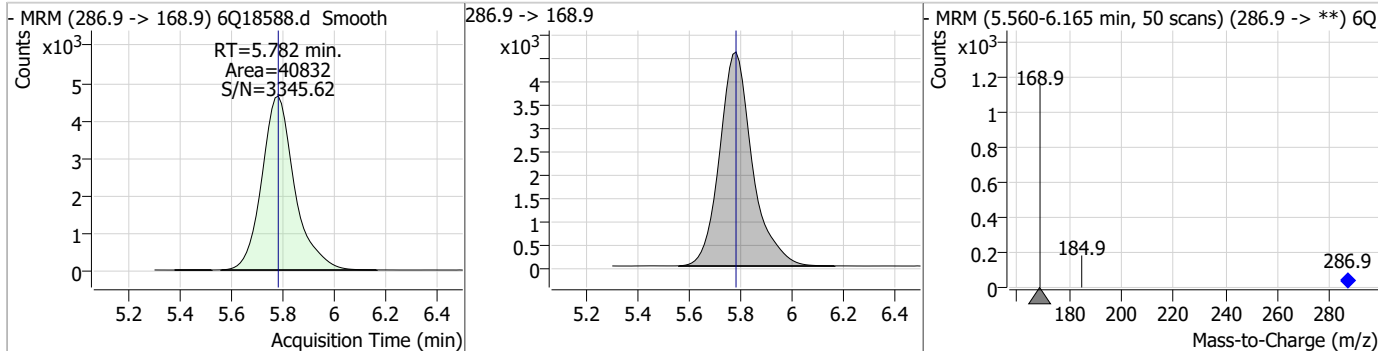
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFHxA | 2.57 | 5.40 | -0.01 | 68931 | 318.0 -> 273.0 | 5.8 | 2.2 | 6.7 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 1.17 | 5.41 | -0.01 | 27090 | 313.0 -> 118.9 | 5.8 | 2.2 | 6.7 |

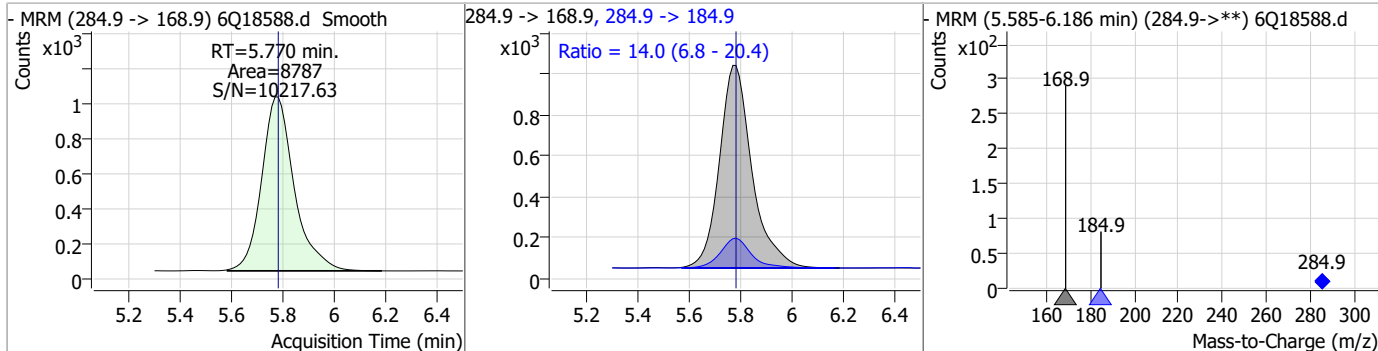


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C3-HFPO-DA | 9.80 | 5.78 | 0.00 | 40832 | 286.9 -> 168.9 | 5.8 | 2.2 | 6.7 |

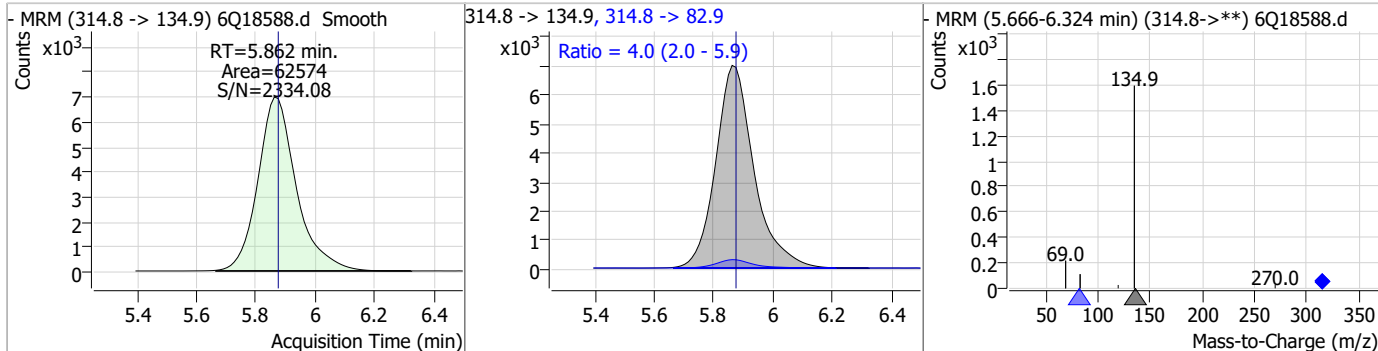


Perfluorinated Compounds by LC/MS/MS

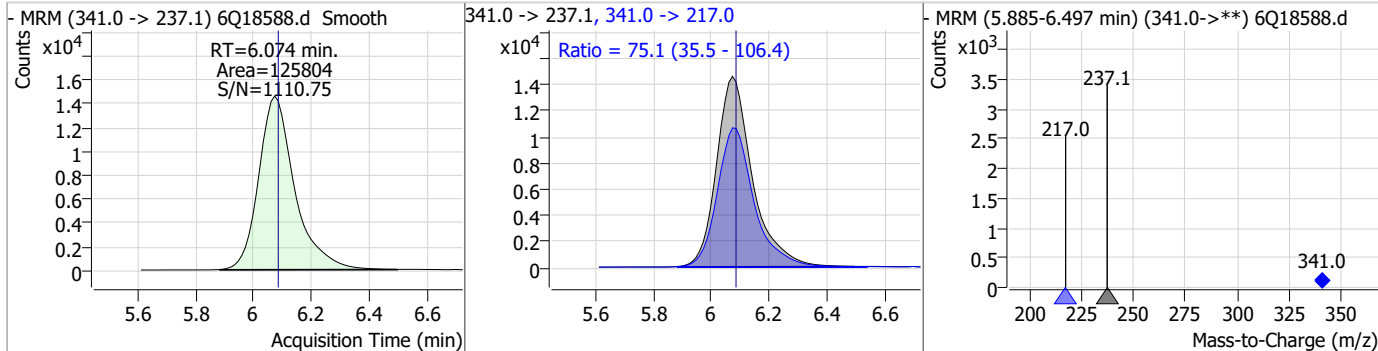
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 2.54 | 5.77 | -0.01 | 8787 | 284.9 -> 184.9 | 14.0 | 6.8 | 20.4 |



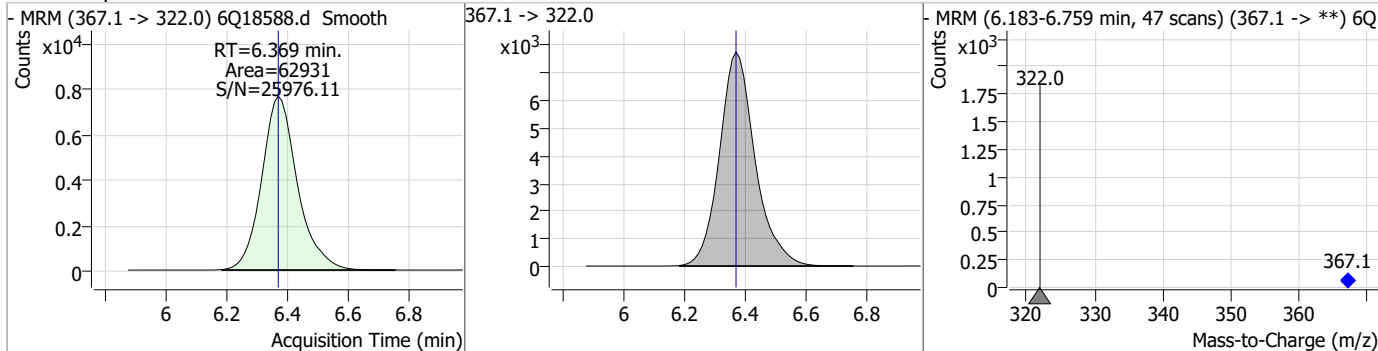
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFEESA | 2.13 | 5.86 | -0.01 | 62574 | 314.8 -> 82.9 | 4.0 | 2.0 | 5.9 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 30.22 | 6.07 | -0.01 | 125804 | 341.0 -> 217.0 | 75.1 | 35.5 | 106.4 |

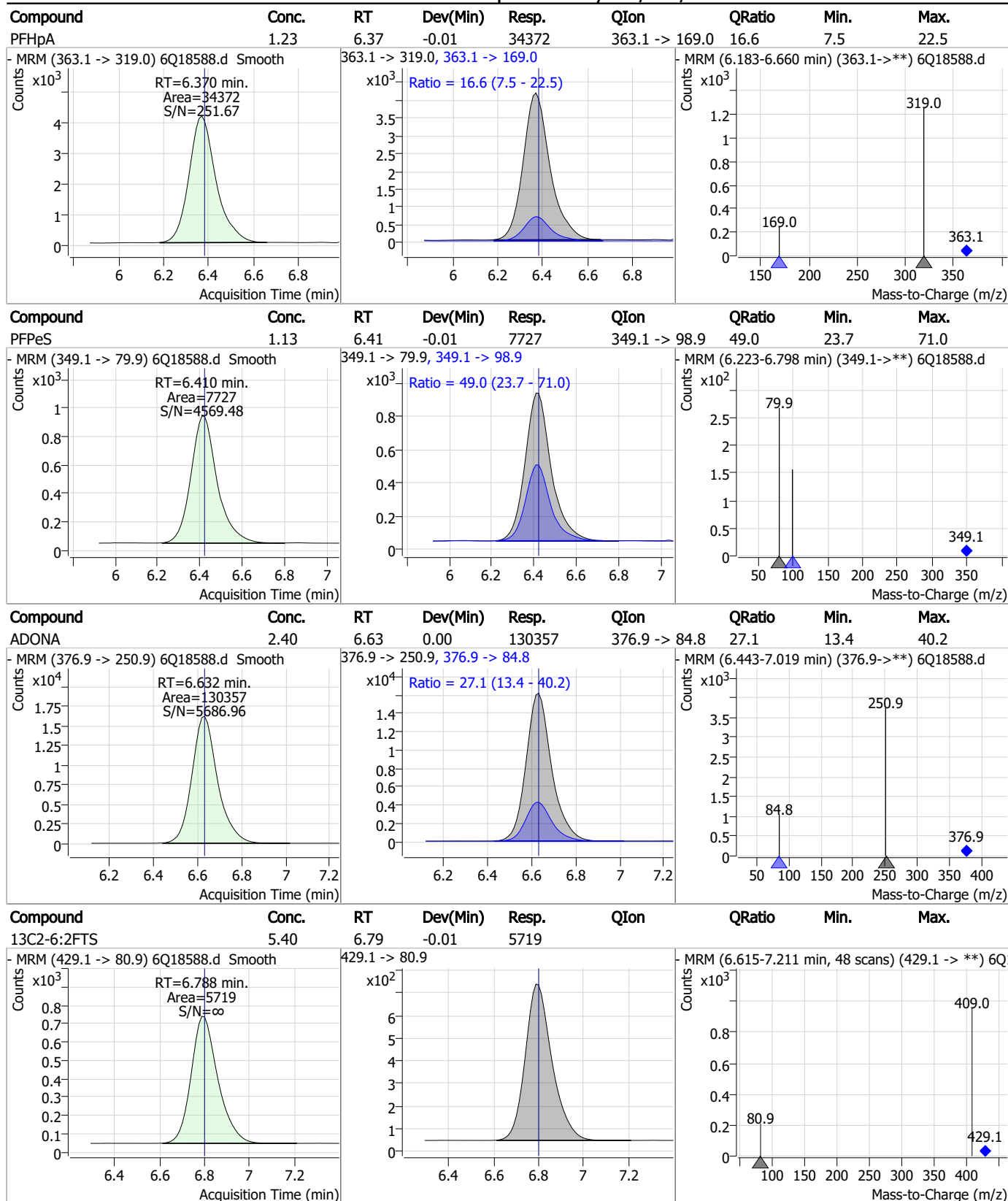


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.54 | 6.37 | 0.00 | 62931 | 367.1 -> 322.0 | | | |



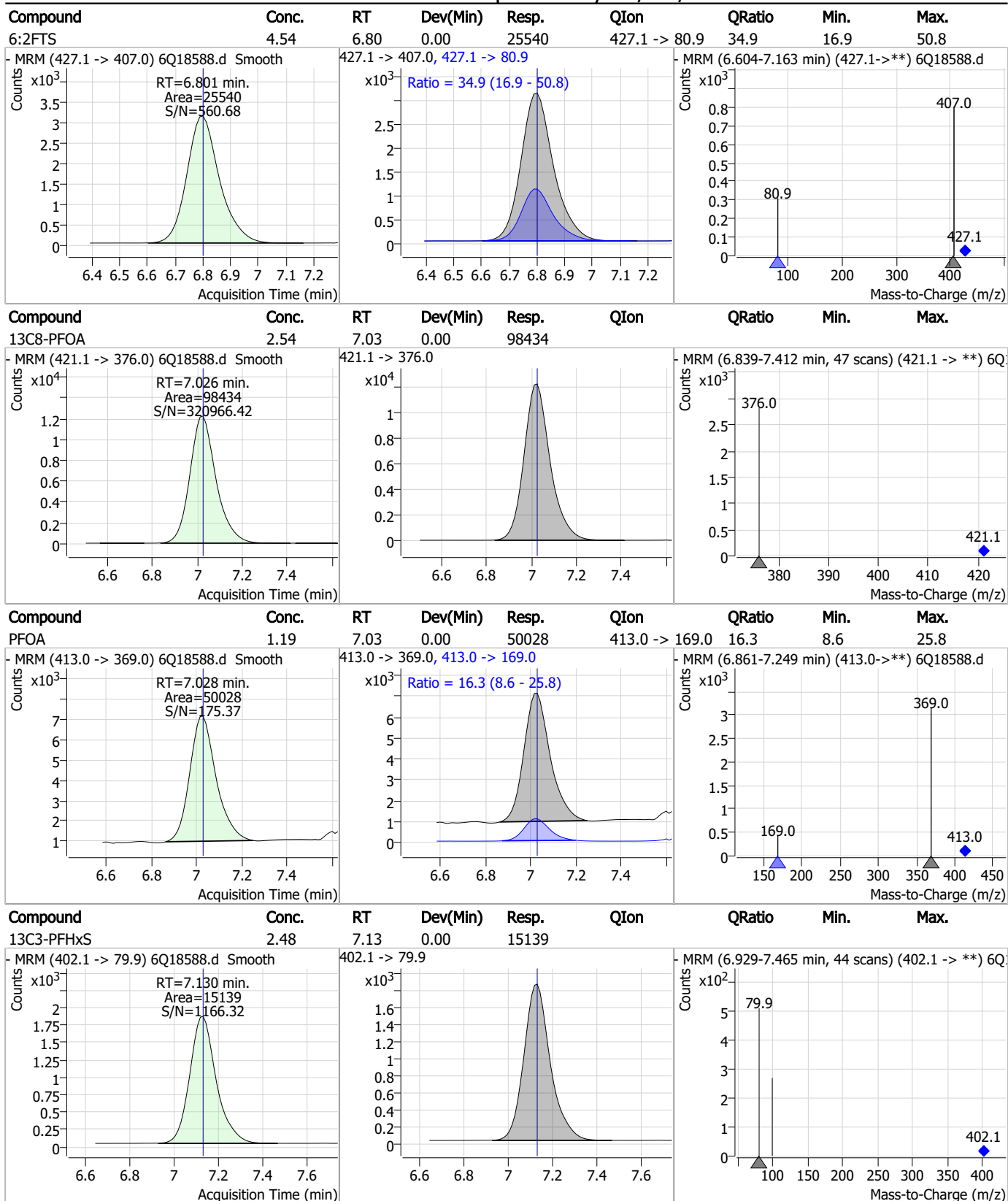
7.7.4
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

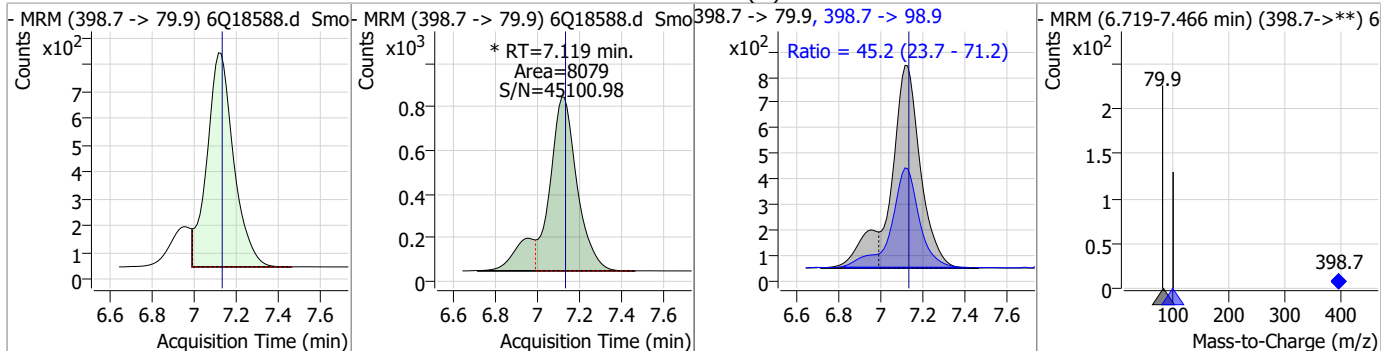


7.7.4

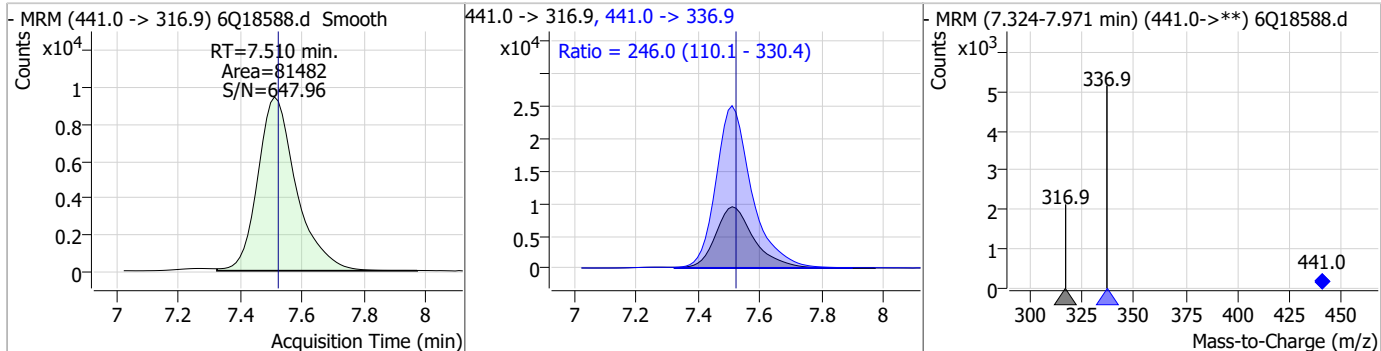
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Perfluorinated Compounds by LC/MS/MS

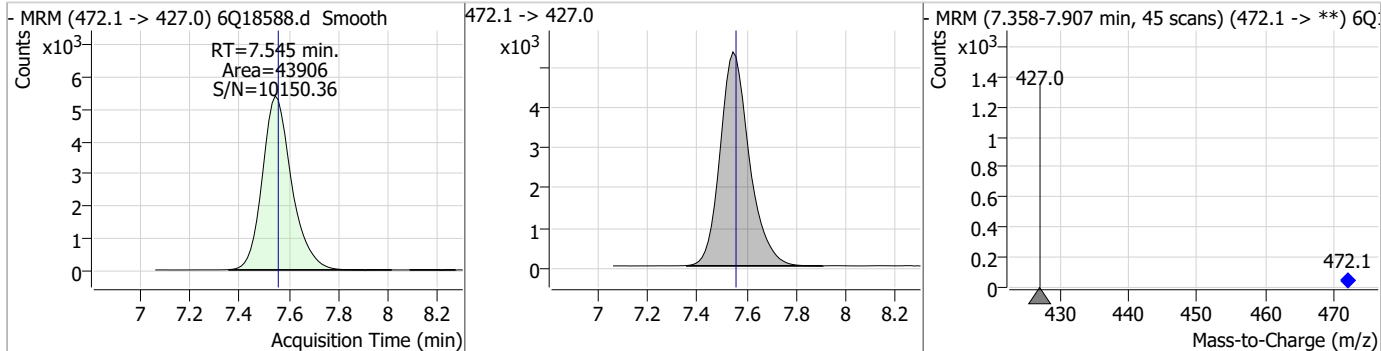
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|----------|---------------|--------|------|------|
| PFHxS | 1.18 | 7.12 | -0.01 | 8079 (m) | 398.7 -> 98.9 | 45.2 | 23.7 | 71.2 |



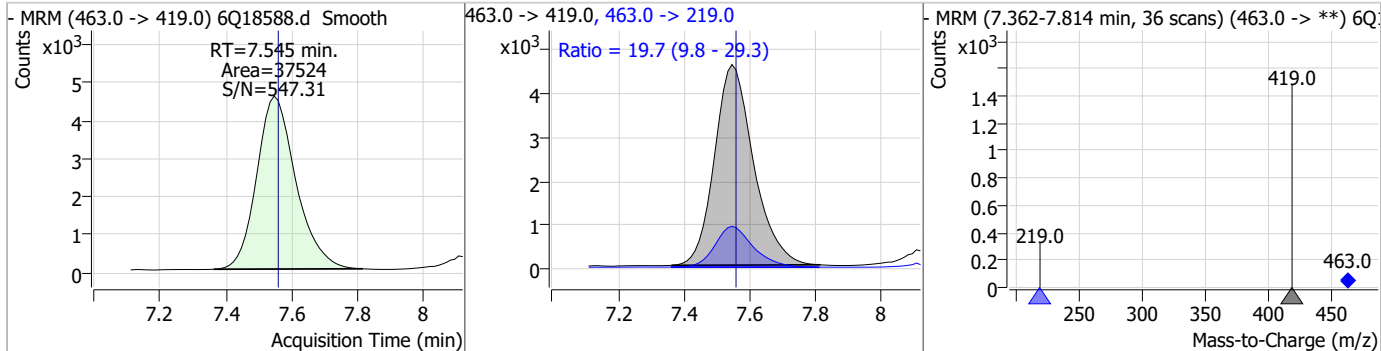
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|-------|-------|
| 7:3FTCA | 28.58 | 7.51 | -0.01 | 81482 | 441.0 -> 336.9 | 246.0 | 110.1 | 330.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C9-PFNA | 1.26 | 7.54 | -0.01 | 43906 | | | | |

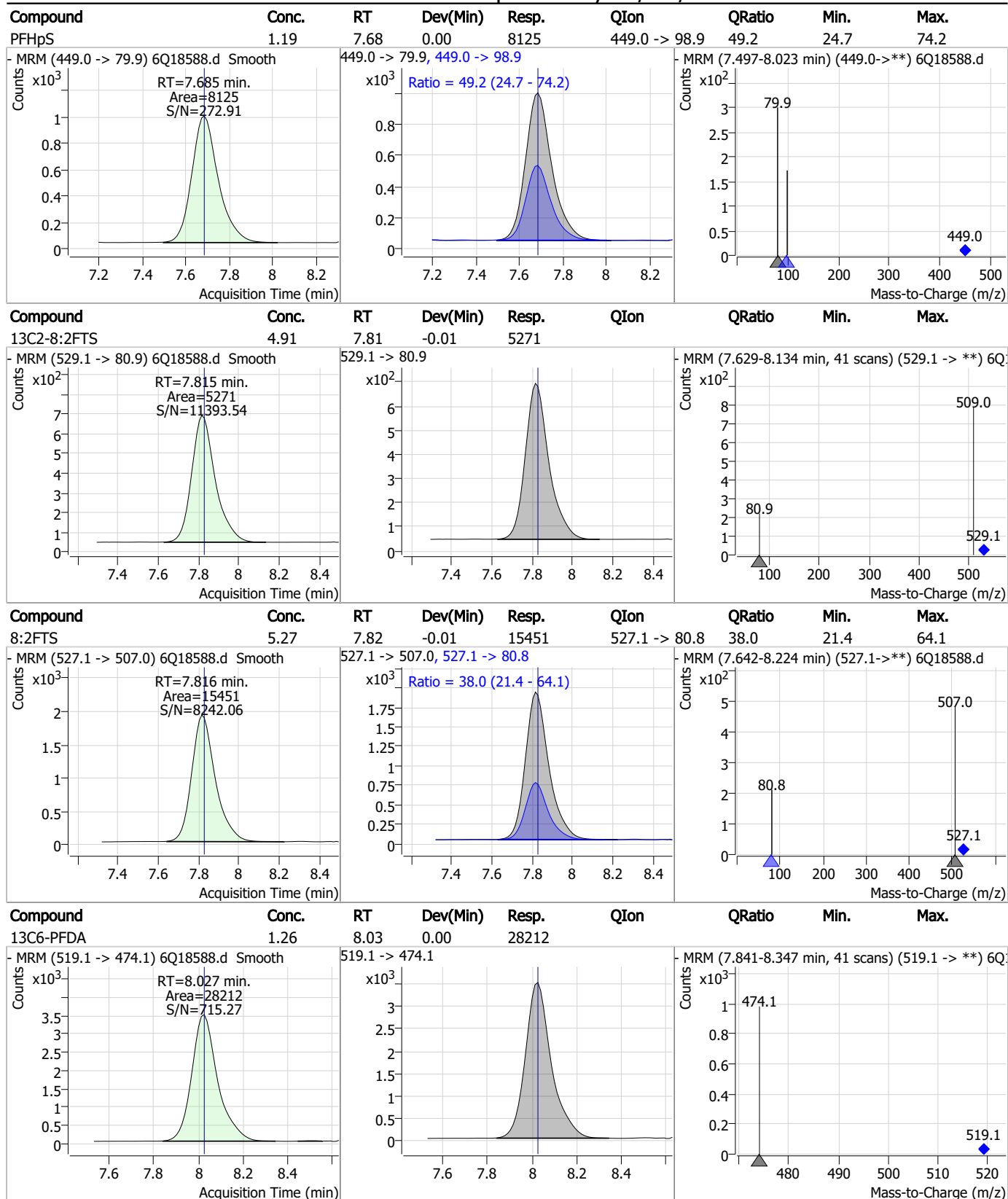


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFNA | 1.21 | 7.55 | -0.01 | 37524 | 463.0 -> 219.0 | 19.7 | 9.8 | 29.3 |



7.7.4
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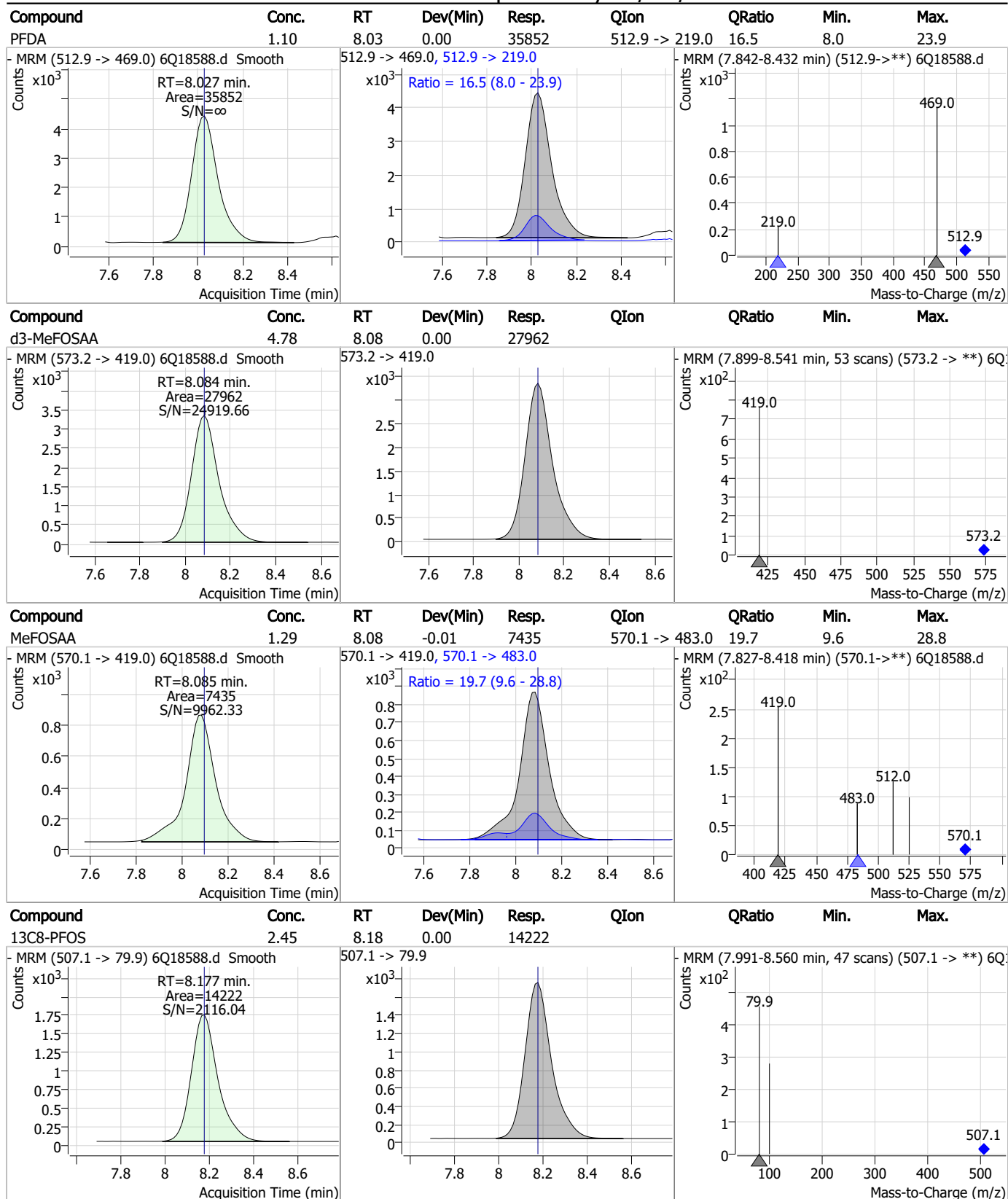
Perfluorinated Compounds by LC/MS/MS



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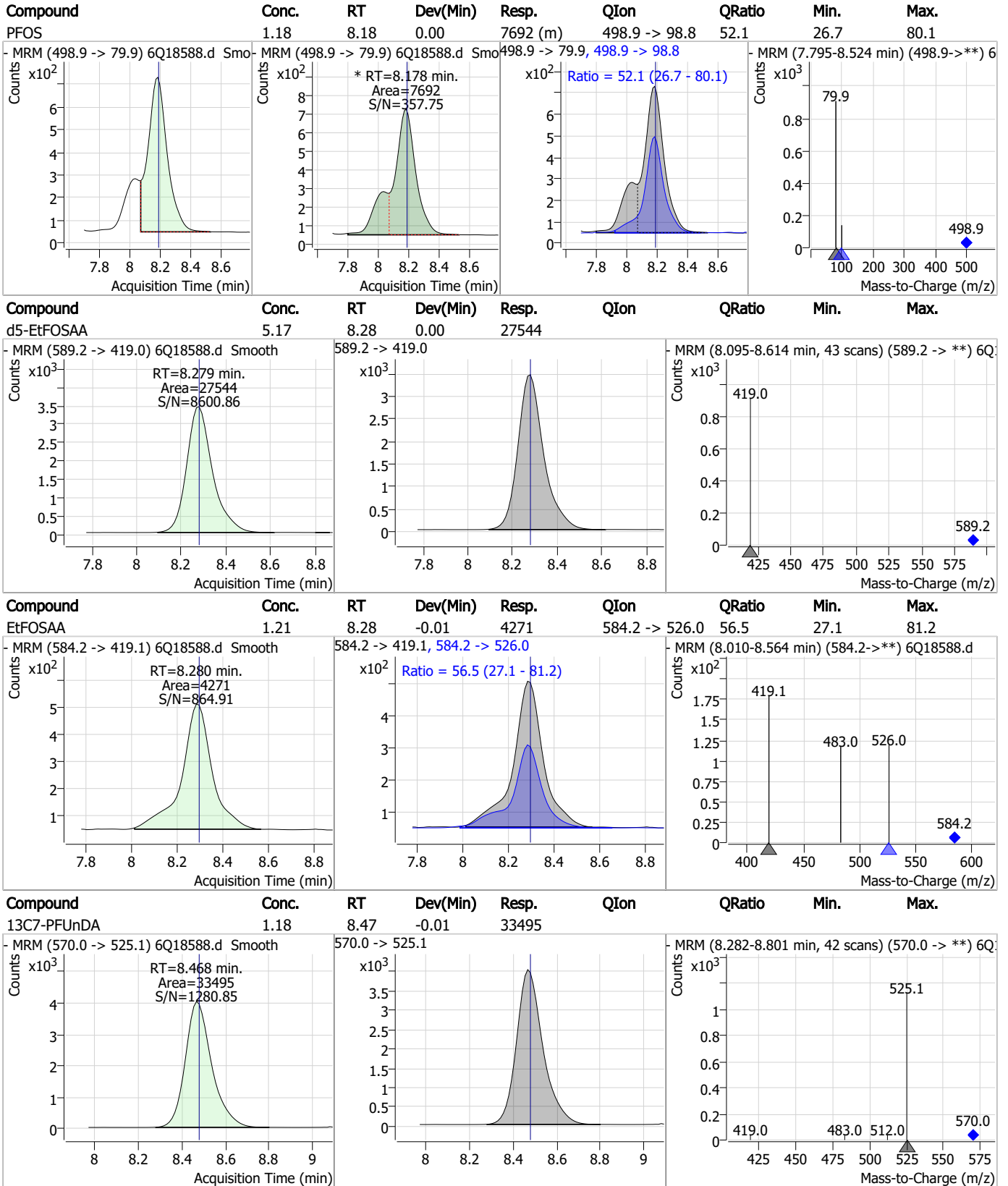
Perfluorinated Compounds by LC/MS/MS



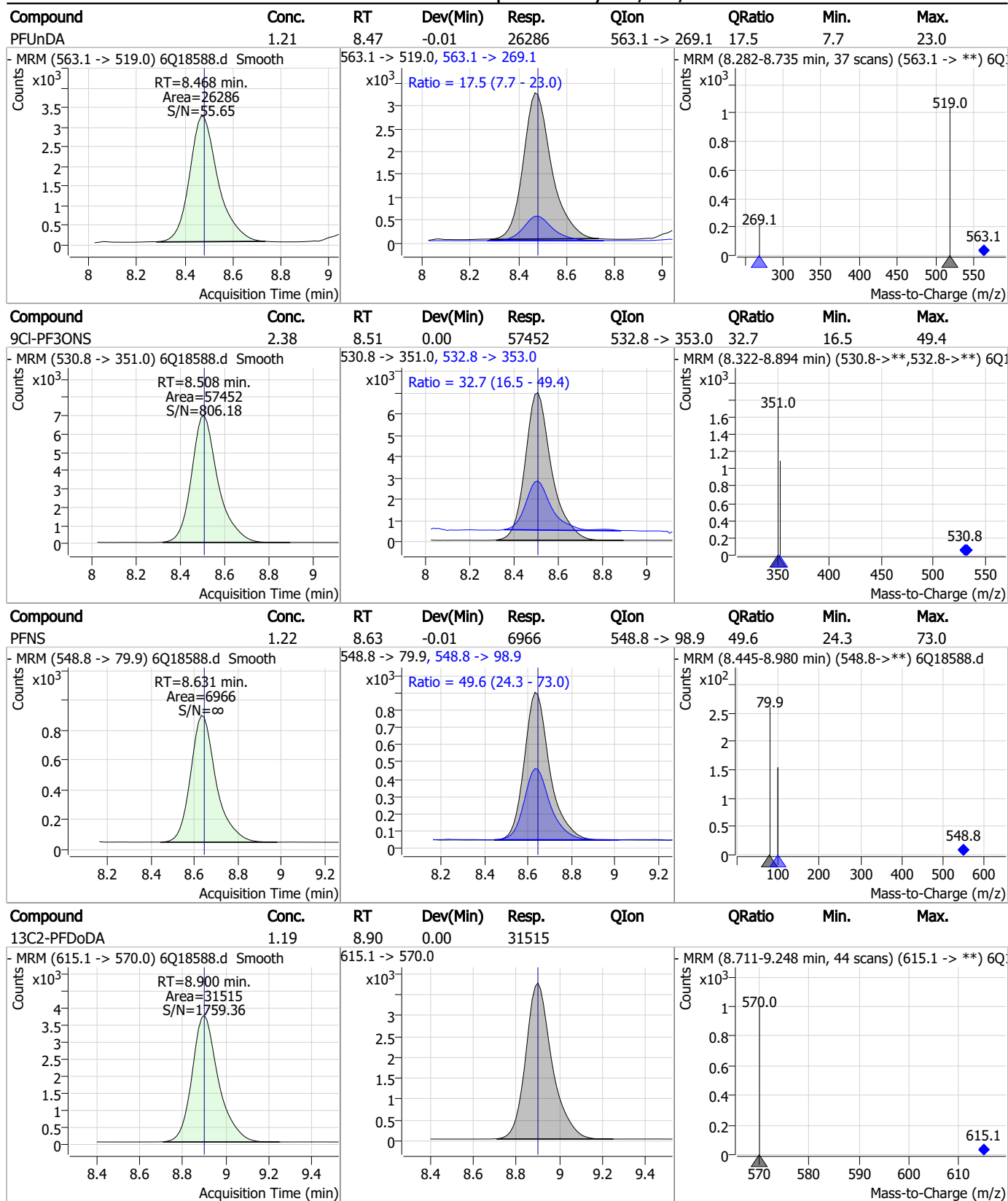
7.7.4

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Perfluorinated Compounds by LC/MS/MS



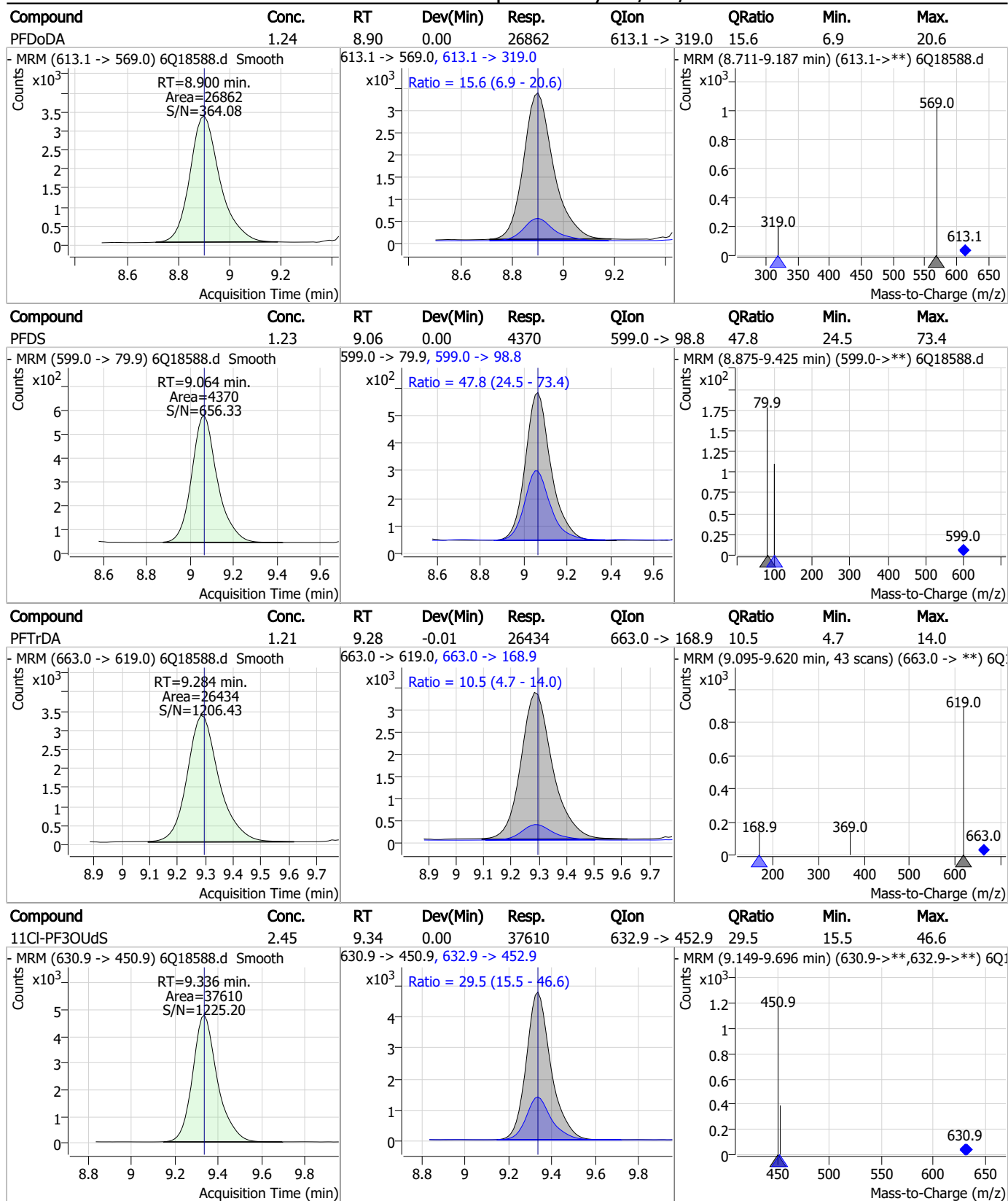
Perfluorinated Compounds by LC/MS/MS



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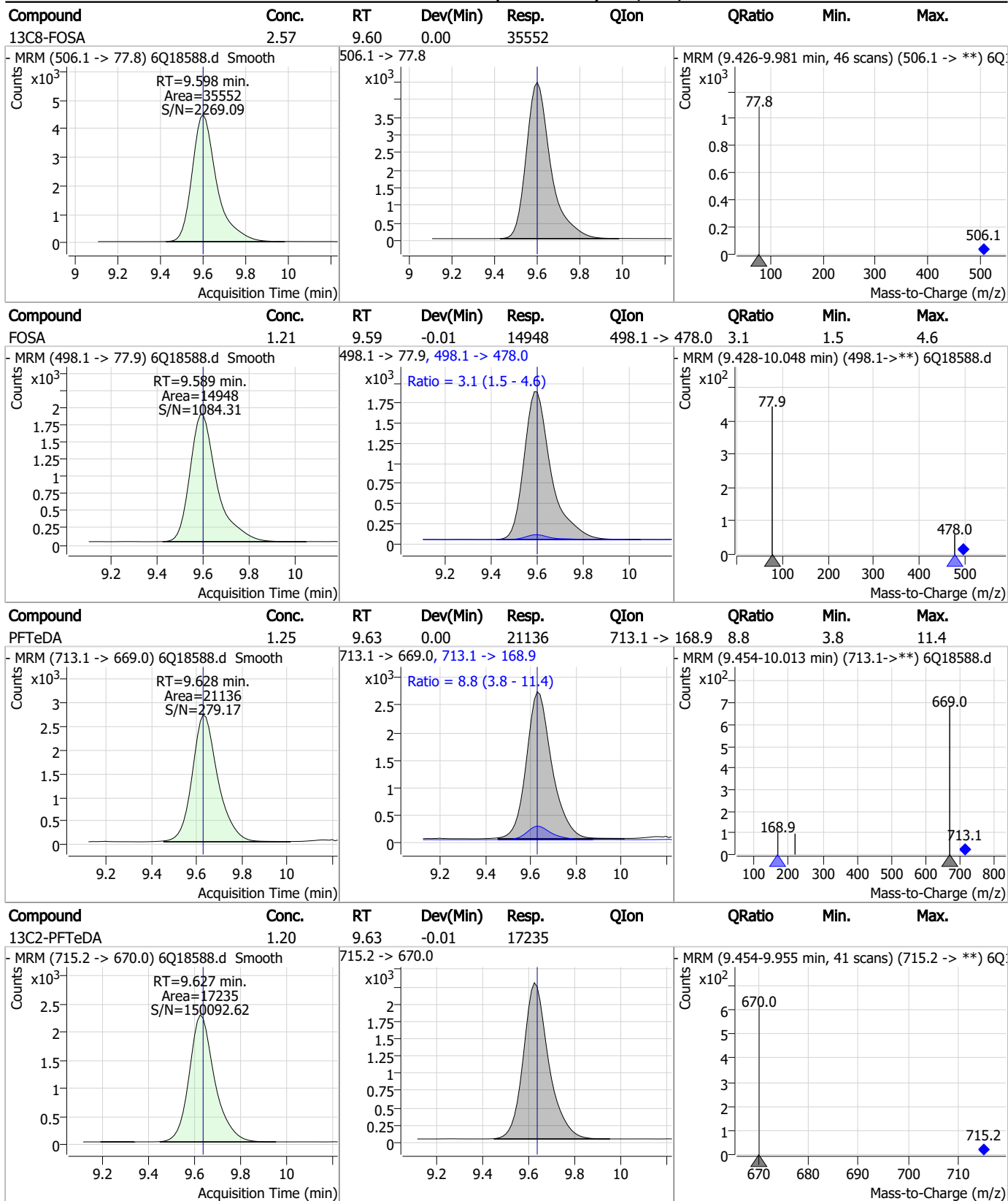
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

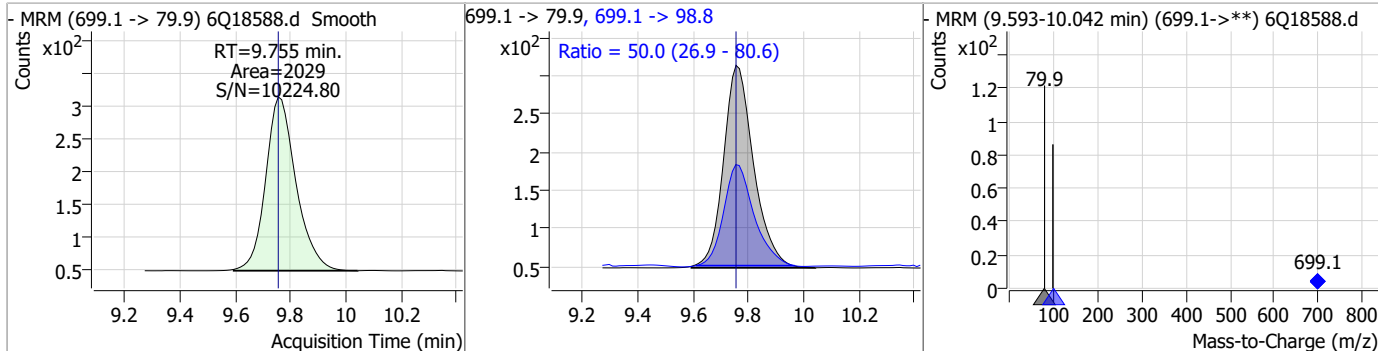


7.7.4

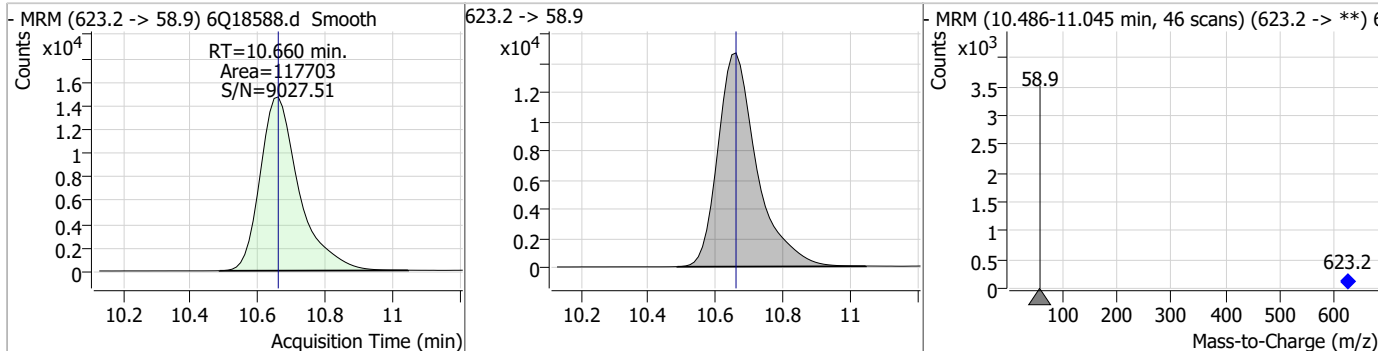
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Perfluorinated Compounds by LC/MS/MS

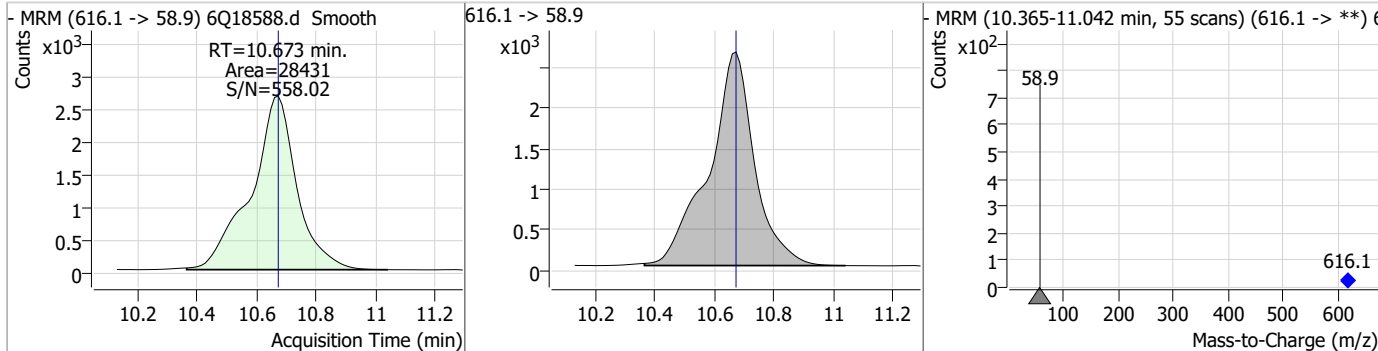
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 1.28 | 9.75 | 0.00 | 2029 | 699.1 -> 98.8 | 50.0 | 26.9 | 80.6 |



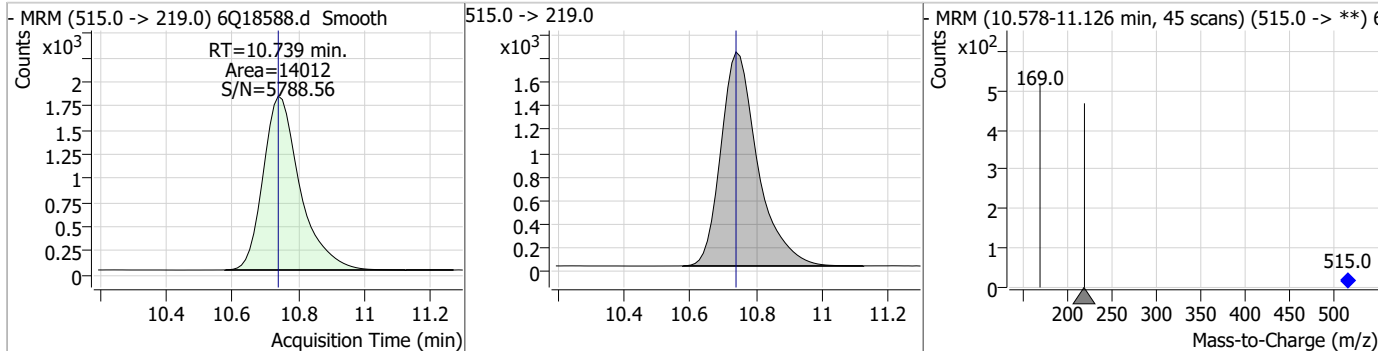
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d7-MeFOSE | 25.84 | 10.66 | 0.00 | 117703 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 6.08 | 10.67 | 0.00 | 28431 | | | | |

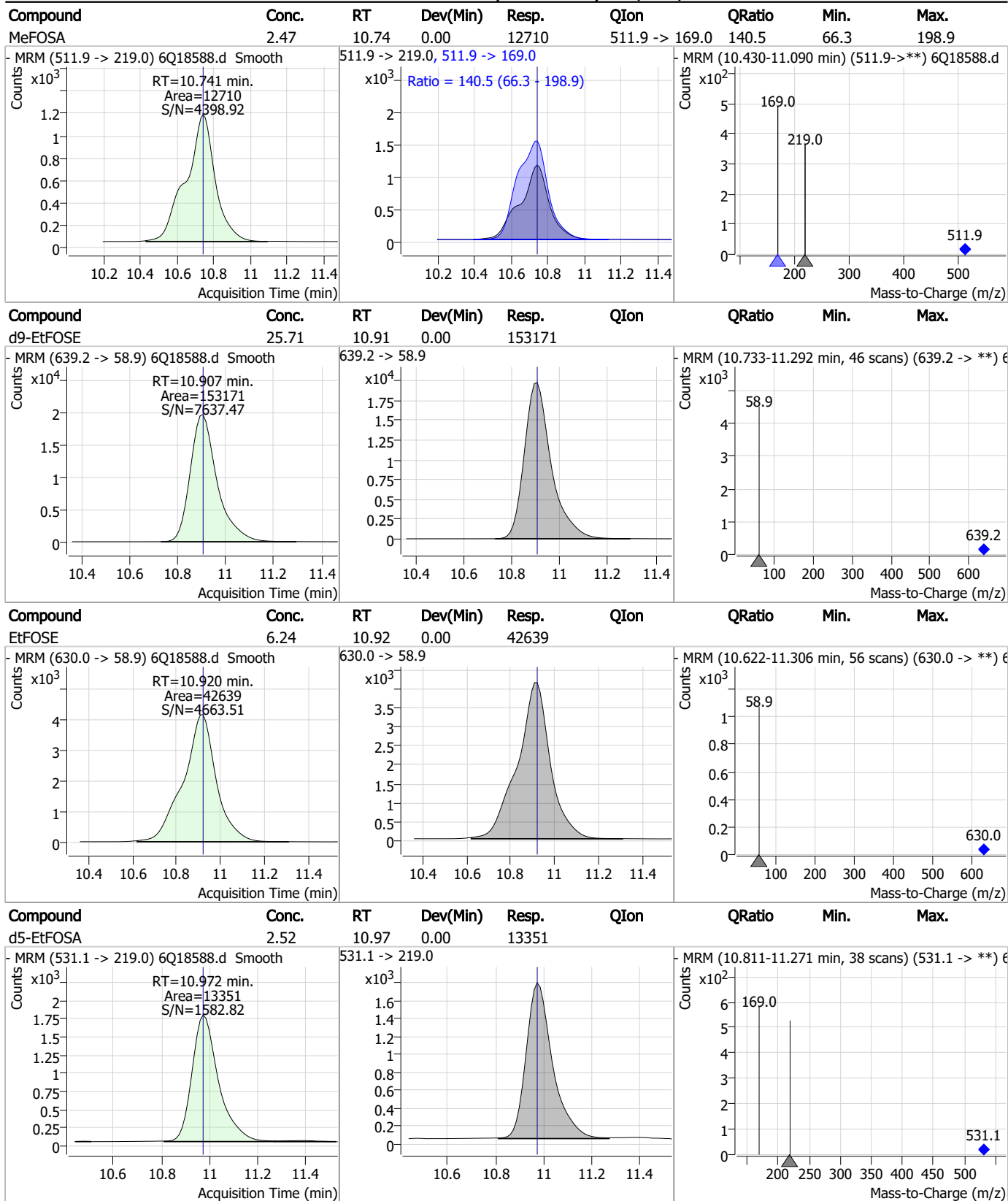


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.50 | 10.74 | 0.00 | 14012 | | | | |



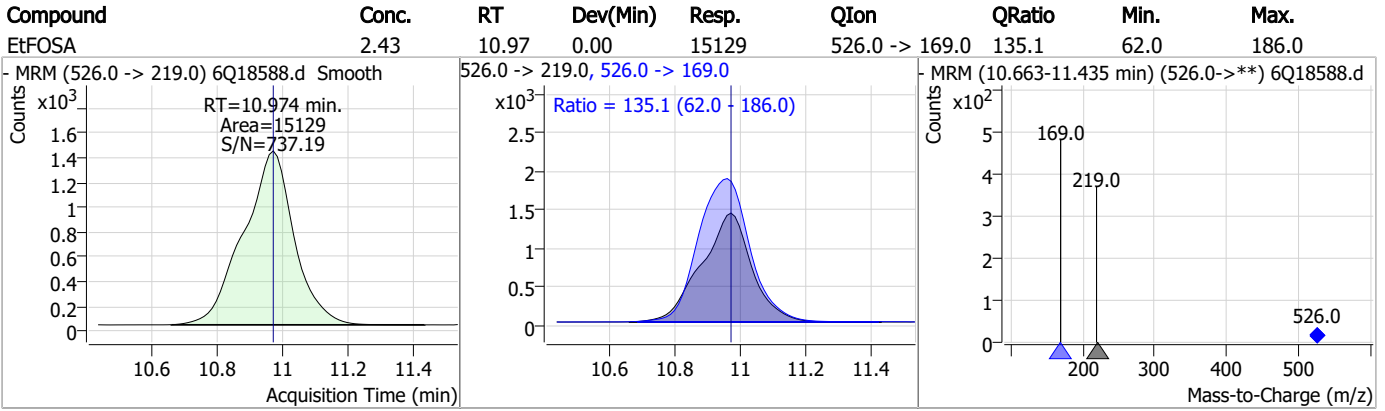
7.7.4
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



7.7.4

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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18588.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 17:45 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.12 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.18 | Split peak |

7.7.4.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18589.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 5:59:51 PM
 Sample Name : icc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 189555 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 63493 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 69513 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 64957 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 97956 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 44035 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 25820 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35422 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31033 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16887 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 34925 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 24869 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15545 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 15184 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3758 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5472 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5633 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28440 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 41571 | 10.00 µg/L | -0.012 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27173 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 117040 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 153531 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13495 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14341 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.165 | 502.8 -> 79.9 | 19853 | 2.50 µg/L | -0.025 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78902 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11237 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 103323 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 35484 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 58126 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 66686 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3758 | 5.01 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 100.3% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5472 | 5.03 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 100.5% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5633 | 5.10 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.1% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31033 | 1.26 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.7% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16887 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.8% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 24869 | 2.50 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 100.0% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15545 | 2.48 µg/L | 0.000 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.0% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 189555 | 10.09 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.9% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 64957 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.5% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 69513 | 2.46 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 63493 | 4.90 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 97.9% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 25820 | 1.24 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.3% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35422 | 1.34 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 106.8% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 34925 | 2.31 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 92.3% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 97956 | 2.53 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.2% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 15184 | 2.39 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 95.5% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 44035 | 1.15 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 92.0% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28440 | 4.44 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 88.8% | |
| 13C3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 41571 | 9.49 µg/L | -0.012 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 94.9% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14341 | 2.34 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.5% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 27173 | 4.66 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 93.3% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 117040 | 23.47 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 93.9% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 153531 | 23.54 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 94.2% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13495 | 2.32 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.0% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 51425 | 9.42 µg/L | 96 |
| | | 327.1 -> 80.9 | 19128 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 50102 | 9.32 µg/L | 98 |
| | | 427.1 -> 80.9 | 16529 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 29747 | 9.49 µg/L | 92 |
| | | 527.1 -> 80.8 | 11252 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 8210 | 2.35 µg/L | 98 |
| | | 584.2 -> 526.0 | 4591 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 29050 | 2.40 µg/L | 99 |
| | | 498.1 -> 478.0 | 792 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 14399 | 2.46 µg/L | 95 |
| | | 570.1 -> 483.0 | 3104 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 59471 | 9.48 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 18127 | 2.14 µg/L | 97 |
| | | 298.7 -> 98.8 | 6865 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 74108 | 2.48 µg/L | 99 |
| | | 512.9 -> 219.0 | 12035 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 52039 | 2.44 µg/L | 96 |
| | | 613.1 -> 319.0 | 7920 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 8728 | 2.30 µg/L | 94 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| | | 599.0 -> 98.8 | 3939 | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 66315 | 2.31 µg/L | 97 |
| | | 363.1 -> 169.0 | 10881 | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 15706 | 2.16 µg/L | 98 |
| | | 449.0 -> 98.9 | 8011 | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 56570 | 2.42 µg/L | 98 |
| | | 313.0 -> 118.9 | 2891 | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 15719 | 2.24 µg/L | 100 |
| | | 398.7 -> 98.9 | 7434 | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 69229 | 2.22 µg/L | 96 |
| | | 463.0 -> 219.0 | 14725 | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 13620 | 2.23 µg/L | 96 |
| | | 548.8 -> 98.9 | 7016 | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 101772 | 2.43 µg/L | 100 |
| | | 413.0 -> 169.0 | 17392 | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 15311 | 2.21 µg/L | 95 |
| | | 498.9 -> 98.8 | 7621 | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 72565 | 4.76 µg/L | 100 |
| PFPeS | 6.410 | 349.1 -> 79.9 | 15859 | 2.26 µg/L | 99 |
| | | 349.1 -> 98.9 | 7345 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 41426 | 2.49 µg/L | 97 |
| | | 713.1 -> 168.9 | 3558 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 54476 | 2.53 µg/L | 97 |
| | | 663.0 -> 168.9 | 5606 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 52765 | 2.29 µg/L | 95 |
| | | 563.1 -> 269.1 | 9210 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 75994 | 4.87 µg/L | 98 |
| | | 632.9 -> 452.9 | 22667 | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 118573 | 4.82 µg/L | 96 |
| | | 532.8 -> 353.0 | 36306 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 261173 | 4.73 µg/L | 99 |
| | | 376.9 -> 84.8 | 68875 | | |
| HFPO-DA | 5.770 | 284.9 -> 168.9 | 17708 | 5.03 µg/L | 94 |
| | | 284.9 -> 184.9 | 2012 | | |
| 3:3FTCA | 3.659 | 241.0 -> 177.0 | 11513 | 11.80 µg/L | 99 |
| | | 241.0 -> 117.0 | 1602 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 248699 | 59.23 µg/L | 97 |
| | | 341.0 -> 217.0 | 182017 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 175170 | 60.92 µg/L | 97 |
| | | 441.0 -> 336.9 | 376547 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 30802 | 4.90 µg/L | 93 |
| | | 526.0 -> 169.0 | 40785 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 82238 | 12.01 µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 25190 | 4.78 µg/L | 94 |
| | | 511.9 -> 169.0 | 35040 | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 56031 | 12.05 µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 3730 | 2.21 µg/L | 97 |
| | | 699.1 -> 98.8 | 2084 | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 13306 | 4.68 µg/L | 98 |
| | | 295.0 -> 84.9 | 3439 | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 49585 | 4.78 µg/L | 100 |
| PFMPA | 3.351 | 229.0 -> 84.9 | 38660 | 4.79 µg/L | 100 |
| PFEESA | 5.862 | 314.8 -> 134.9 | 127899 | 4.32 µg/L | 99 |
| | | 314.8 -> 82.9 | 4516 | | |

= Qualifier out of range, m = manually integrated, + = Area summed

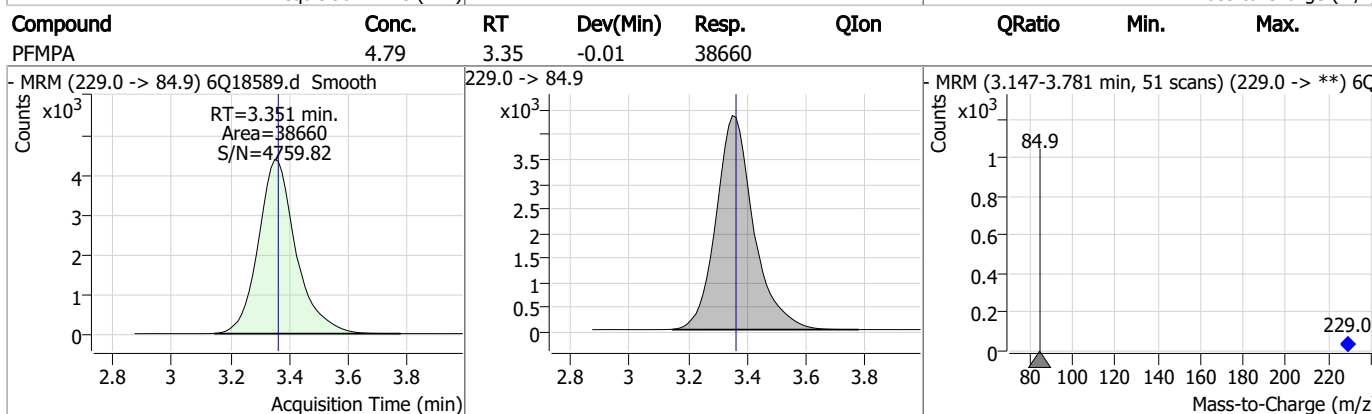
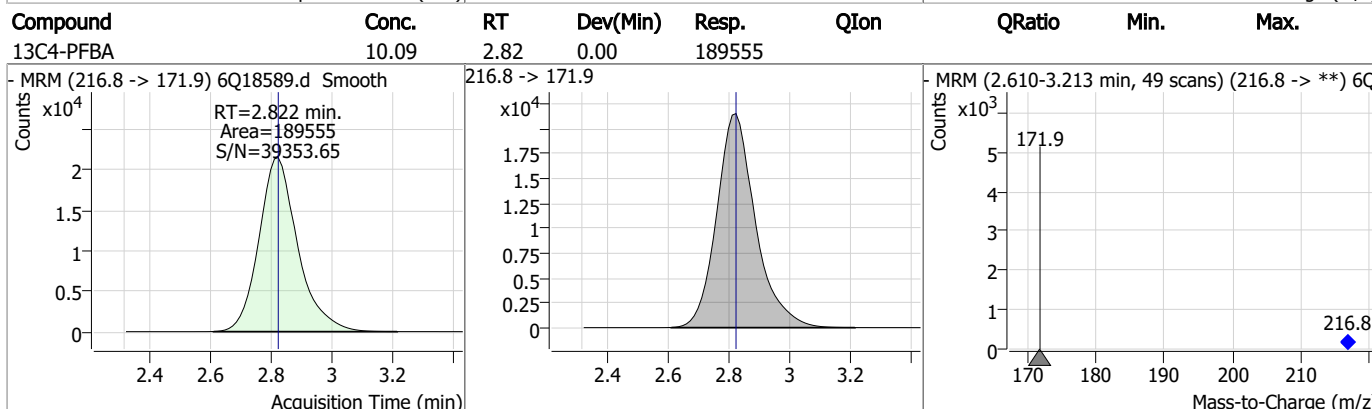
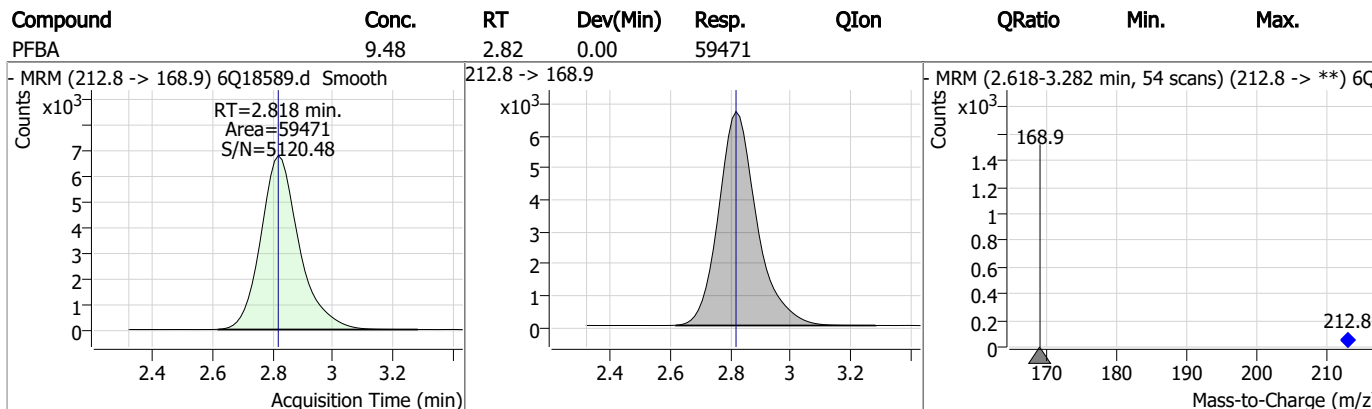
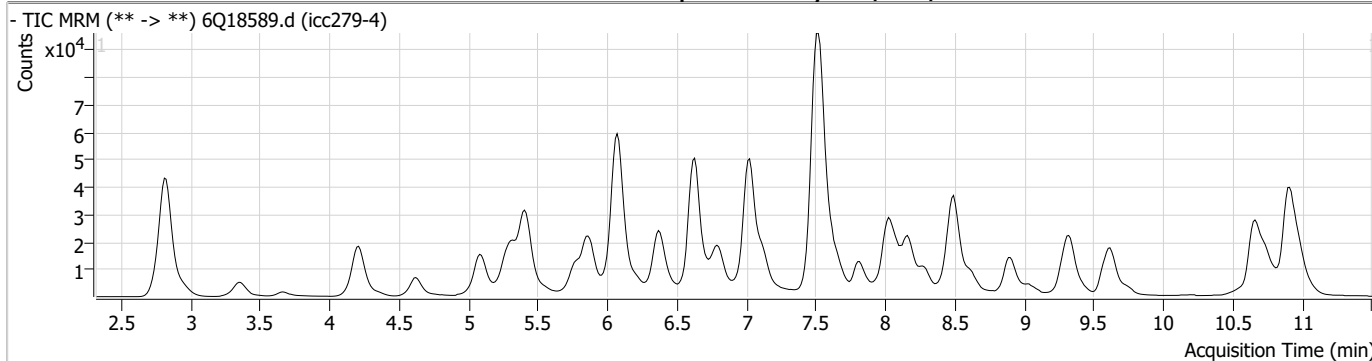
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

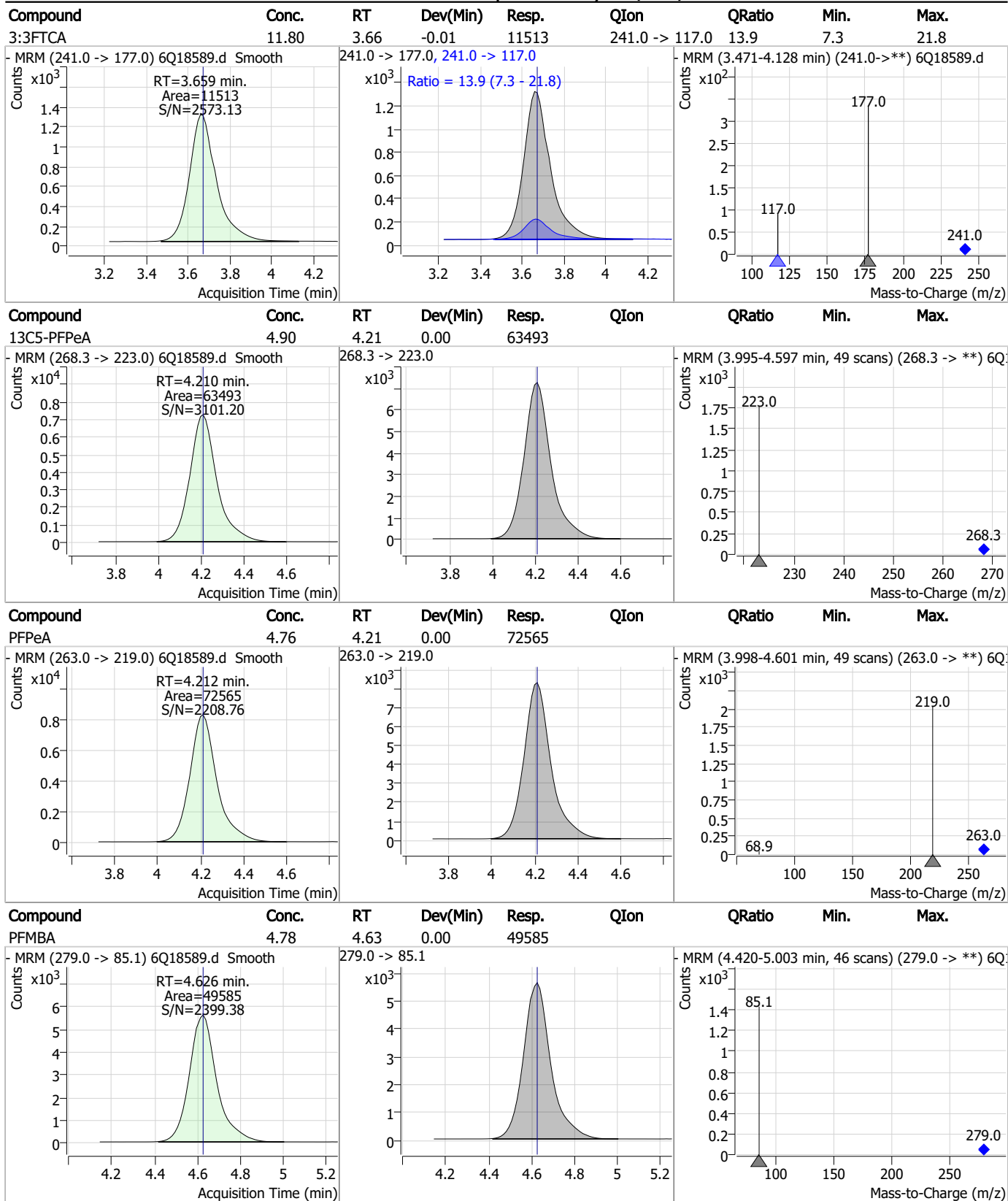
7.7.5
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Perfluorinated Compounds by LC/MS/MS



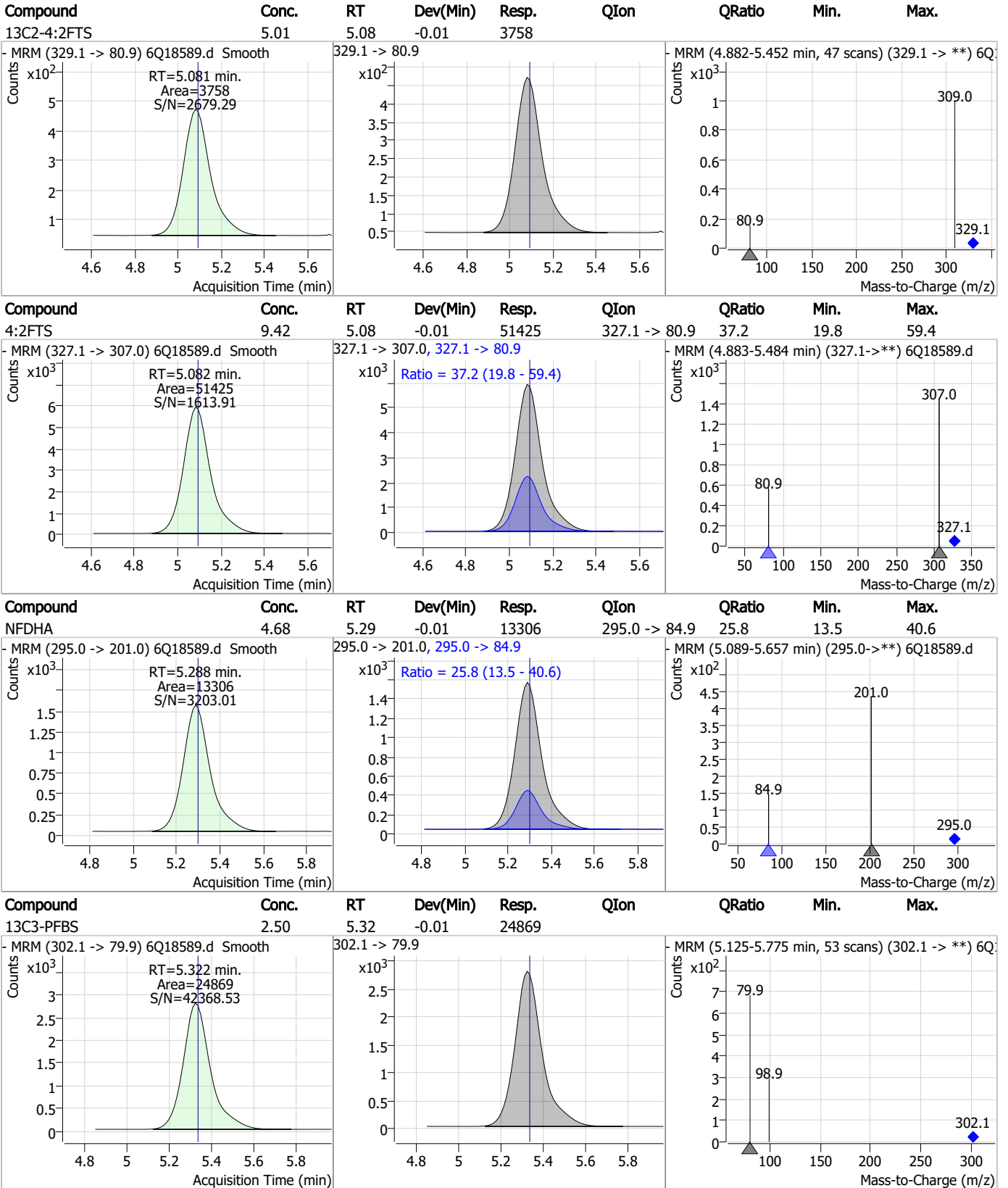
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

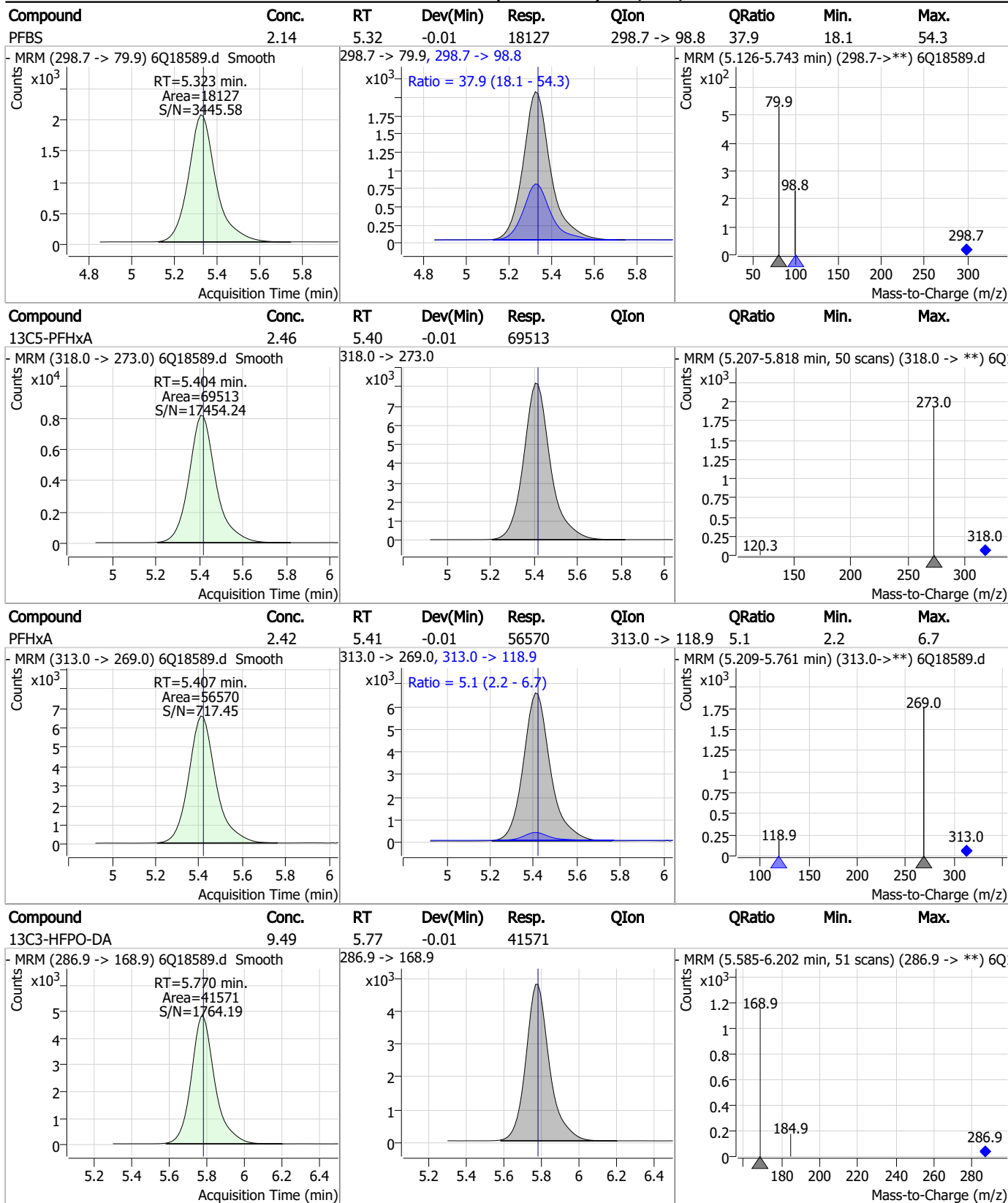


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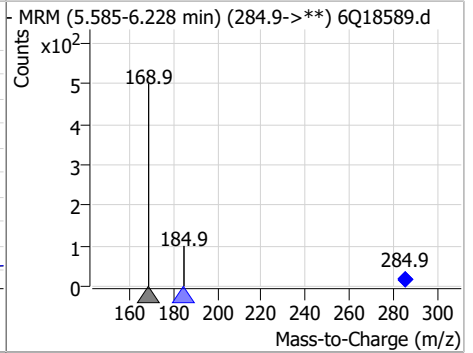
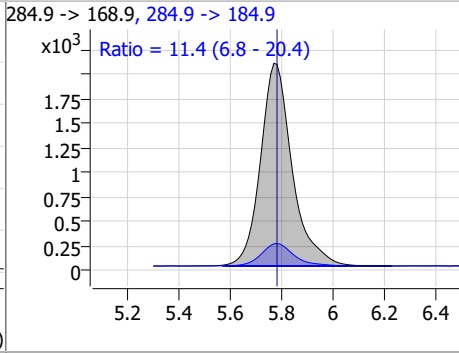
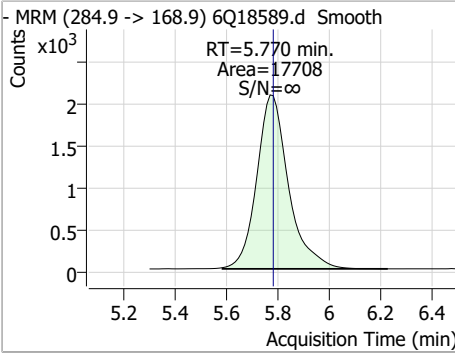
Perfluorinated Compounds by LC/MS/MS



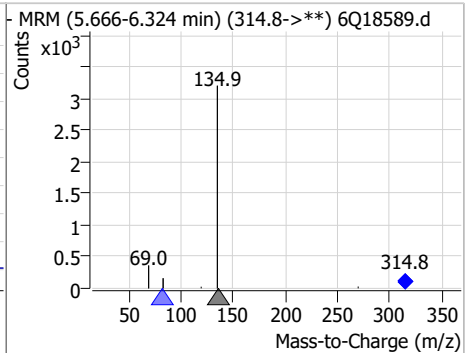
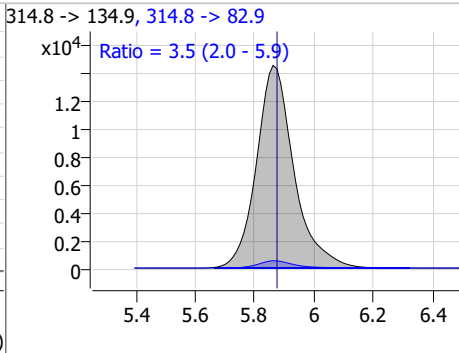
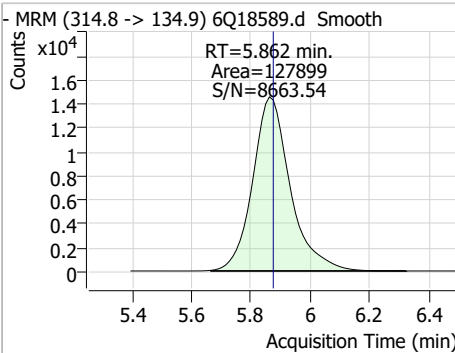
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Perfluorinated Compounds by LC/MS/MS

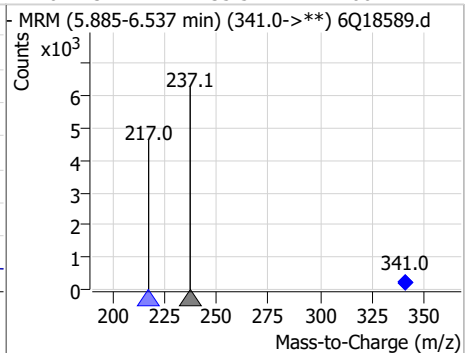
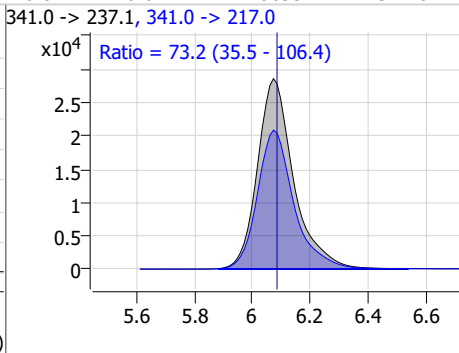
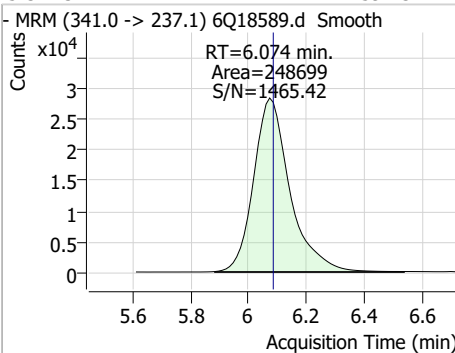
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 5.03 | 5.77 | -0.01 | 17708 | 284.9 -> 184.9 | 11.4 | 6.8 | 20.4 |



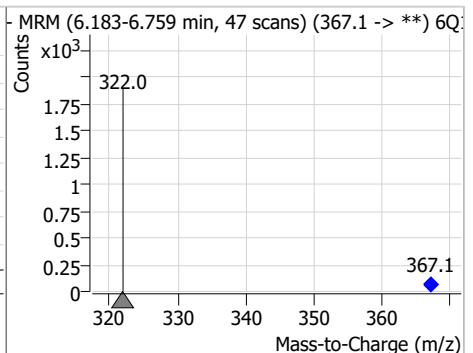
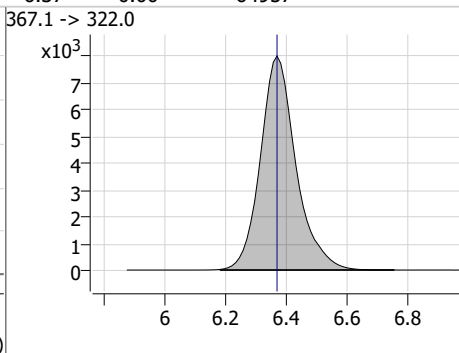
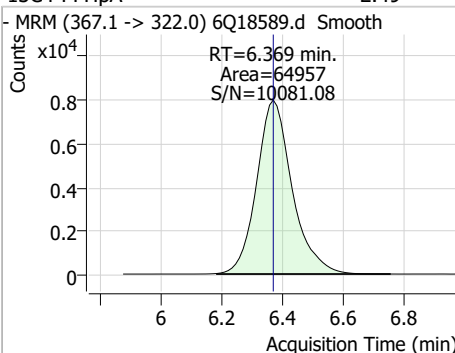
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 4.32 | 5.86 | -0.01 | 127899 | 314.8 -> 82.9 | 3.5 | 2.0 | 5.9 |



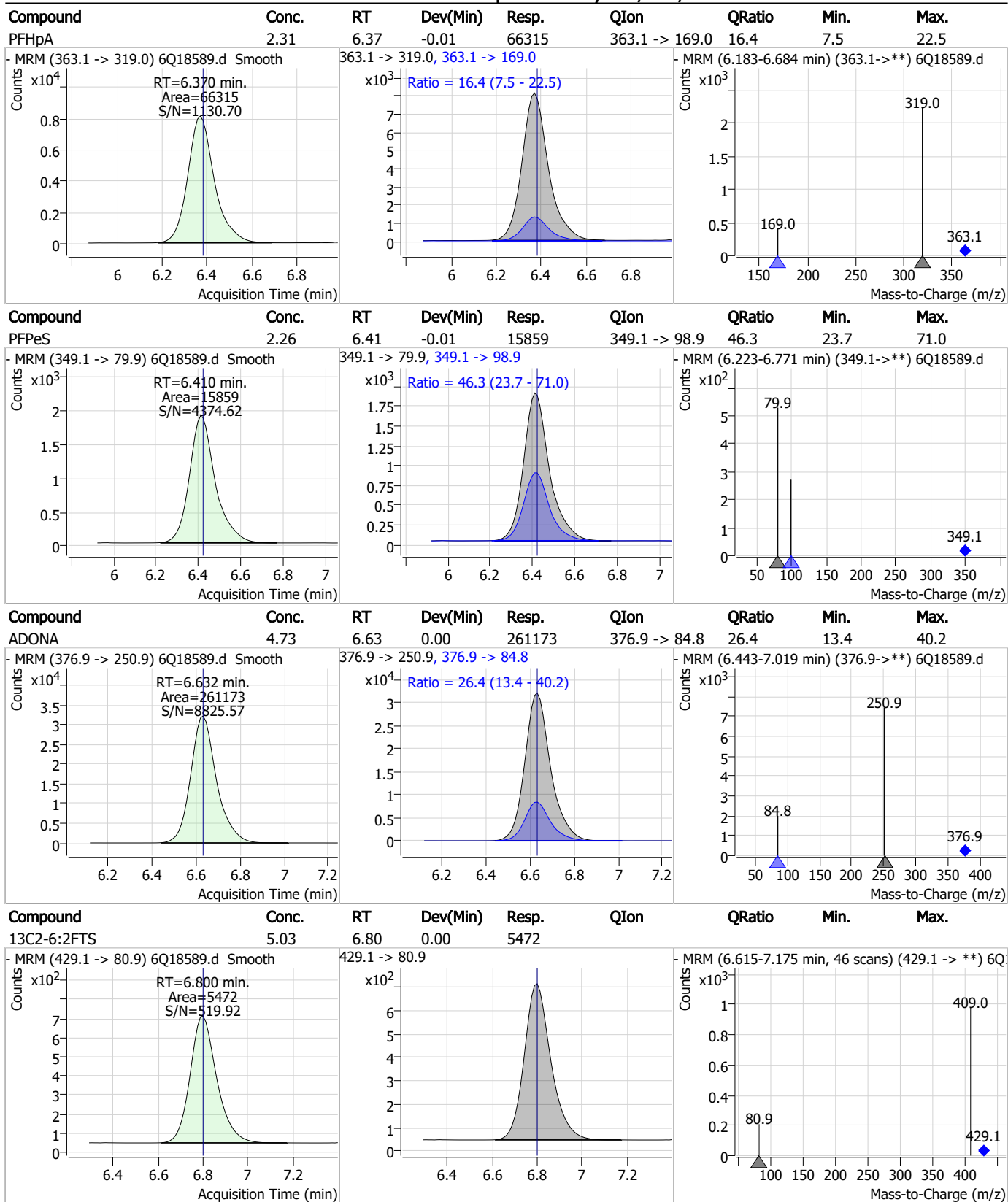
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 59.23 | 6.07 | -0.01 | 248699 | 341.0 -> 217.0 | 73.2 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.49 | 6.37 | 0.00 | 64957 | 367.1 -> 322.0 | | | |

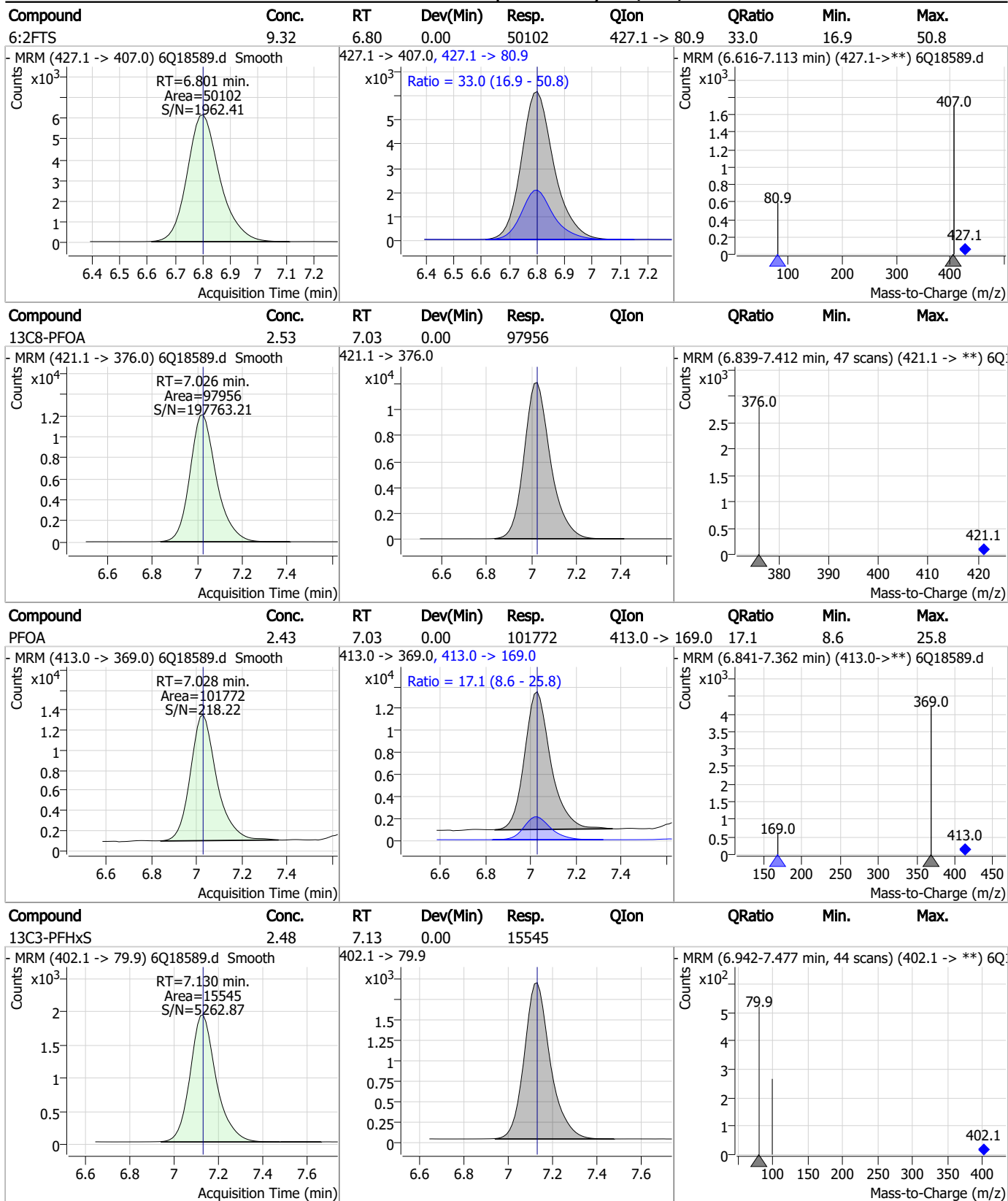


Perfluorinated Compounds by LC/MS/MS



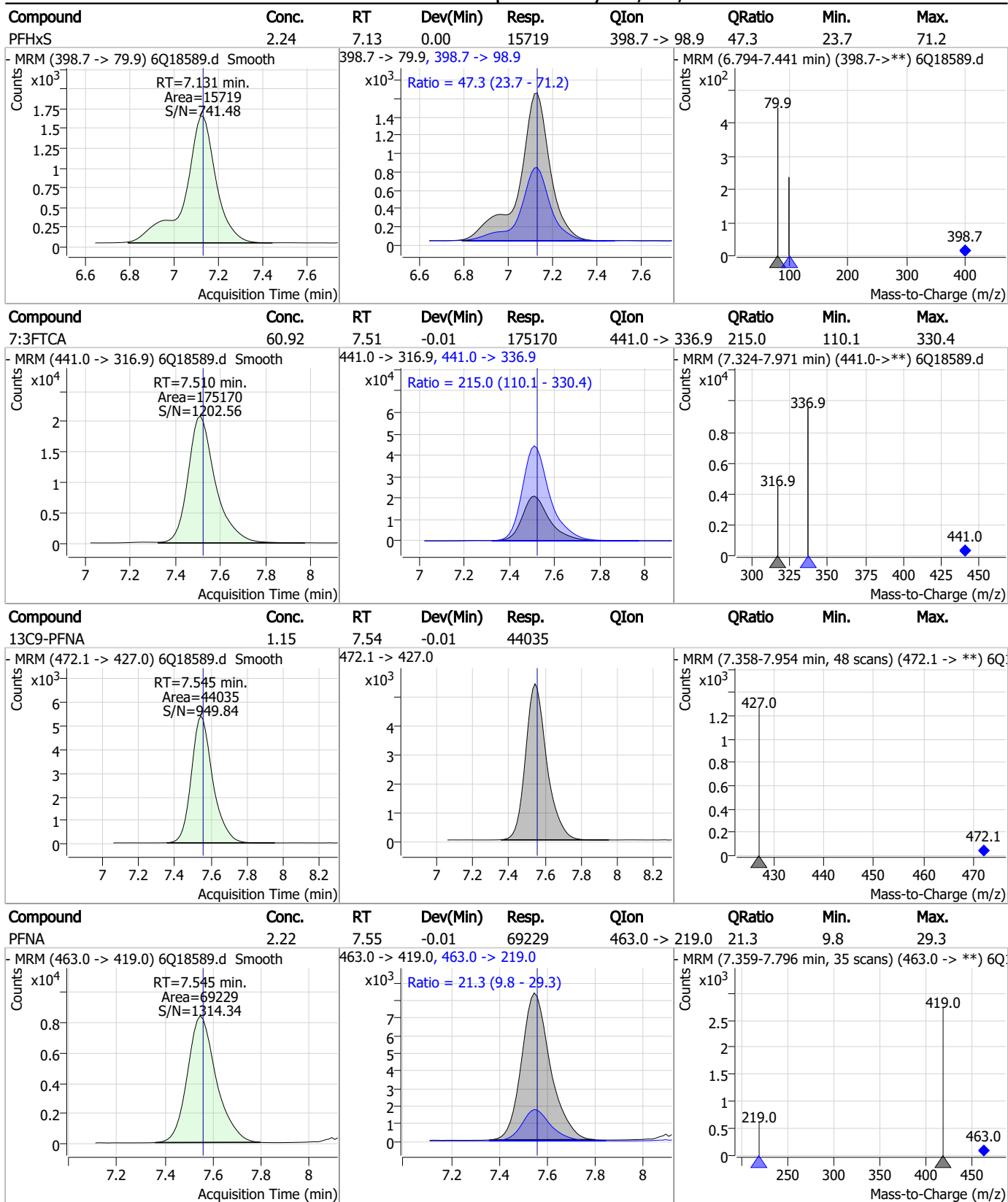
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



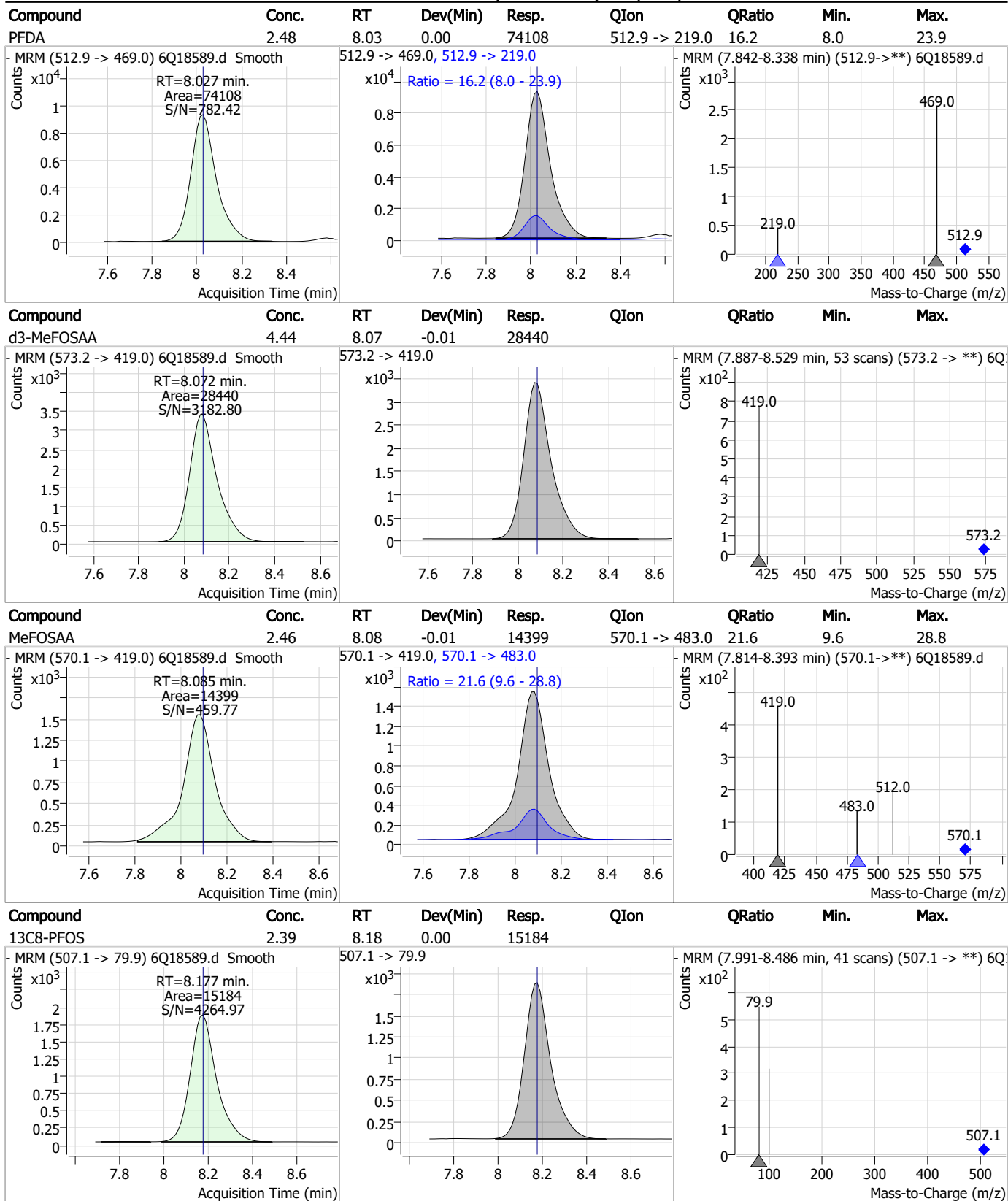
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Perfluorinated Compounds by LC/MS/MS

| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|---|-------|------|-------------------------------|-------|---------------|---|------|------|
| PFHpS | 2.16 | 7.68 | 0.00 | 15706 | 449.0 -> 98.9 | 51.0 | 24.7 | 74.2 |
| - MRM (449.0 -> 79.9) 6Q18589.d Smooth | | | 449.0 -> 79.9, 449.0 -> 98.9 | | | - MRM (7.497-8.027 min) (449.0->**) 6Q18589.d | | |
| | | | | | | | | |
| 13C2-8:2FTS | 5.10 | 7.81 | -0.01 | 5633 | | | | |
| - MRM (529.1 -> 80.9) 6Q18589.d Smooth | | | 529.1 -> 80.9 | | | - MRM (7.629-8.099 min, 39 scans) (529.1 -> **) 6Q18589.d | | |
| | | | | | | | | |
| 8:2FTS | 9.49 | 7.82 | -0.01 | 29747 | 527.1 -> 80.8 | 37.8 | 21.4 | 64.1 |
| - MRM (527.1 -> 507.0) 6Q18589.d Smooth | | | 527.1 -> 507.0, 527.1 -> 80.8 | | | - MRM (7.629-8.128 min) (527.1->**) 6Q18589.d | | |
| | | | | | | | | |
| 13C6-PFDA | 1.24 | 8.03 | 0.00 | 25820 | | | | |
| - MRM (519.1 -> 474.1) 6Q18589.d Smooth | | | 519.1 -> 474.1 | | | - MRM (7.841-8.317 min, 39 scans) (519.1 -> **) 6Q18589.d | | |
| | | | | | | | | |

7.7.5
7

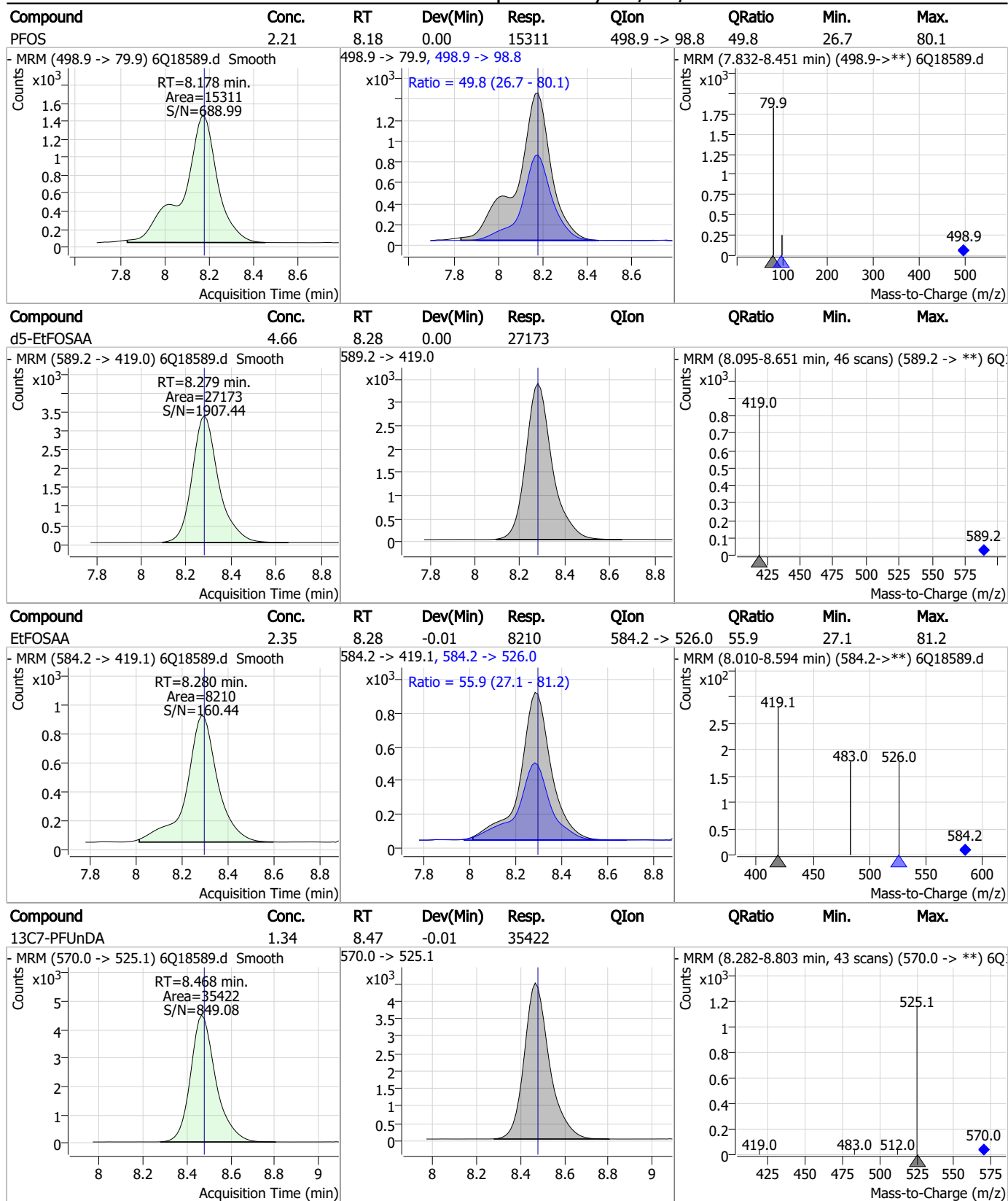
Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS

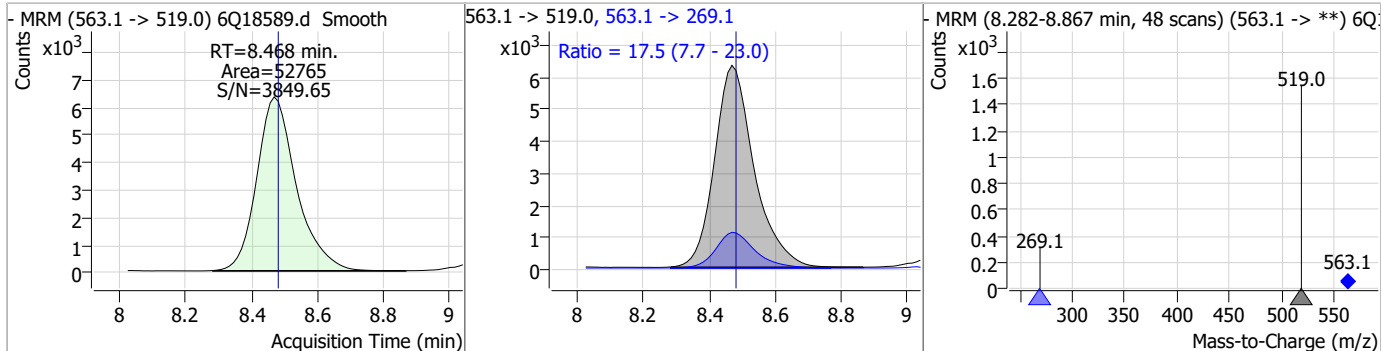


7.7.5

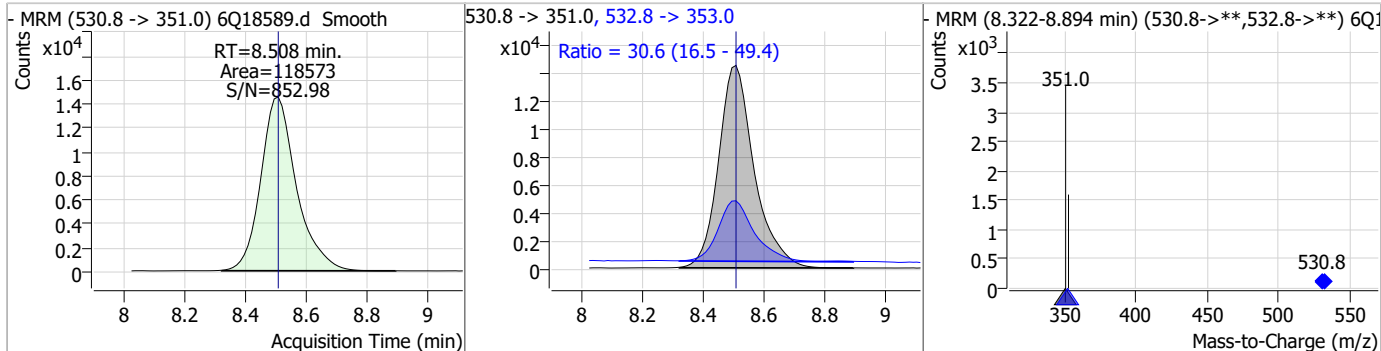
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Perfluorinated Compounds by LC/MS/MS

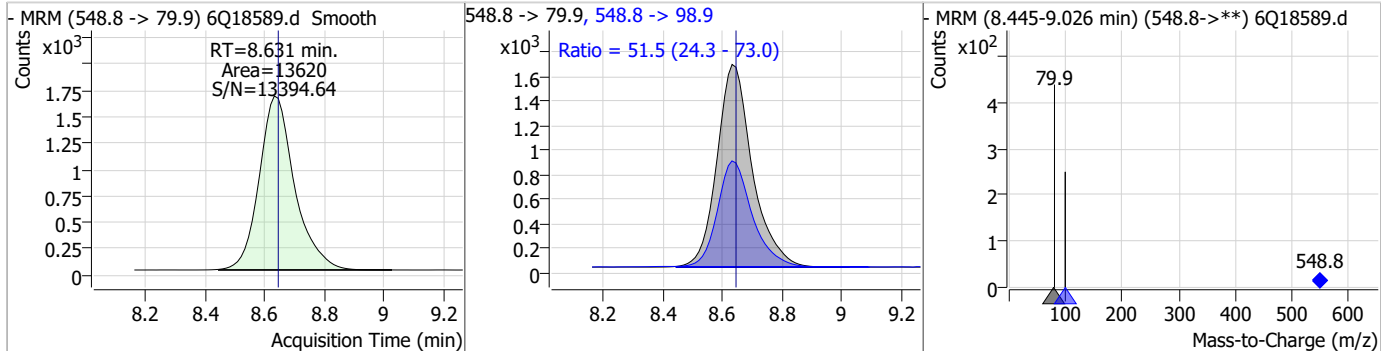
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFUnDA | 2.29 | 8.47 | -0.01 | 52765 | 563.1 -> 269.1 | 17.5 | 7.7 | 23.0 |



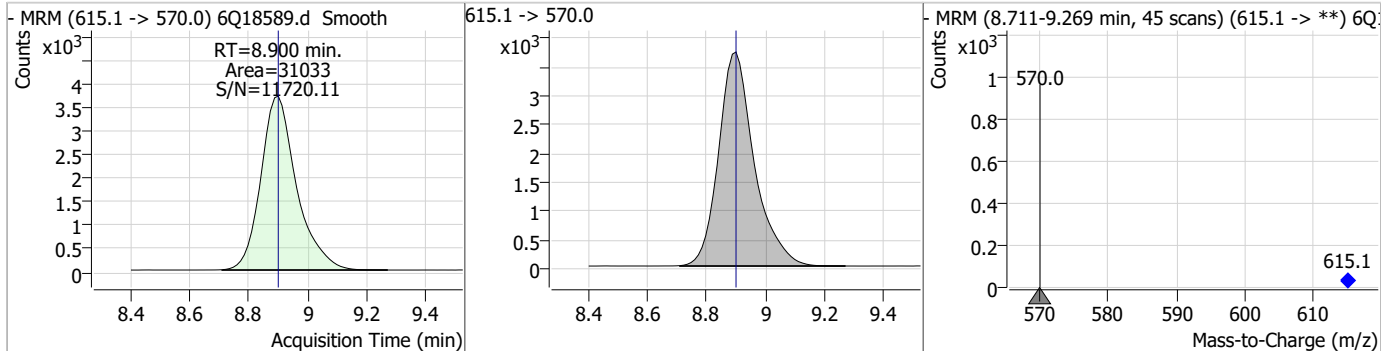
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|--------|----------------|--------|------|------|
| 9CI-PF3ONS | 4.82 | 8.51 | 0.00 | 118573 | 532.8 -> 353.0 | 30.6 | 16.5 | 49.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFNS | 2.23 | 8.63 | -0.01 | 13620 | 548.8 -> 98.9 | 51.5 | 24.3 | 73.0 |

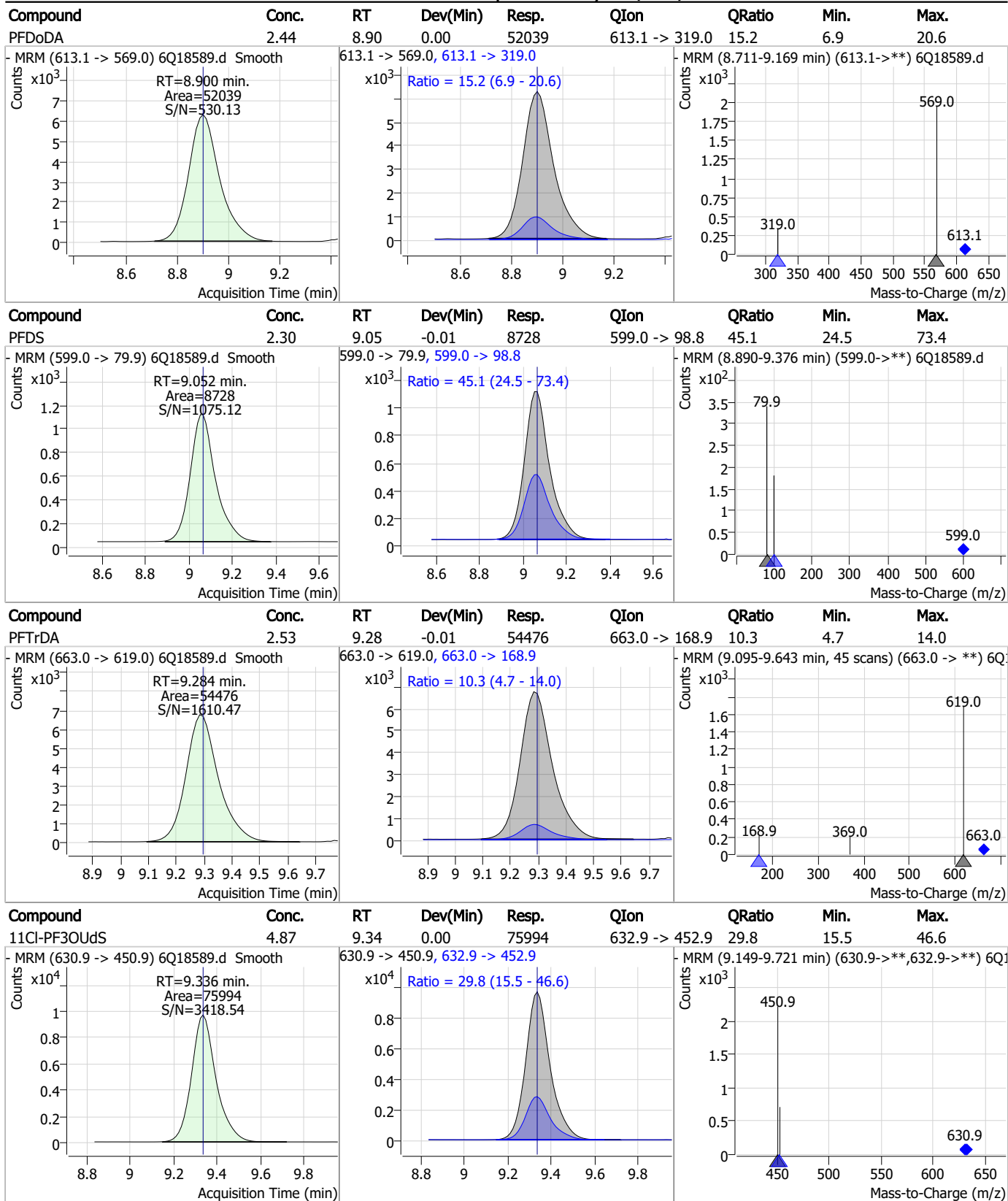


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.26 | 8.90 | 0.00 | 31033 | 615.1 -> 570.0 | | | |



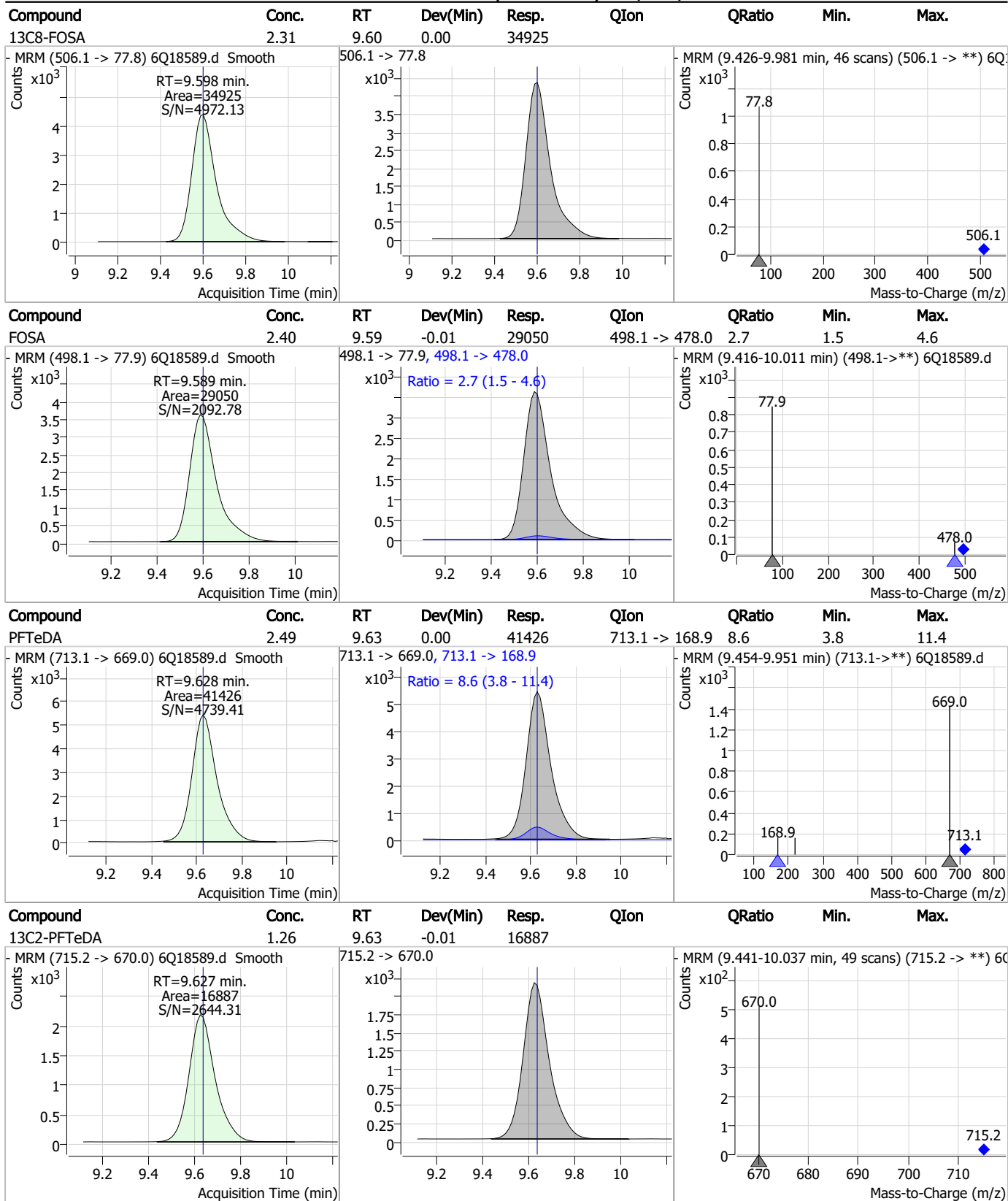
7.7.5
7

Perfluorinated Compounds by LC/MS/MS



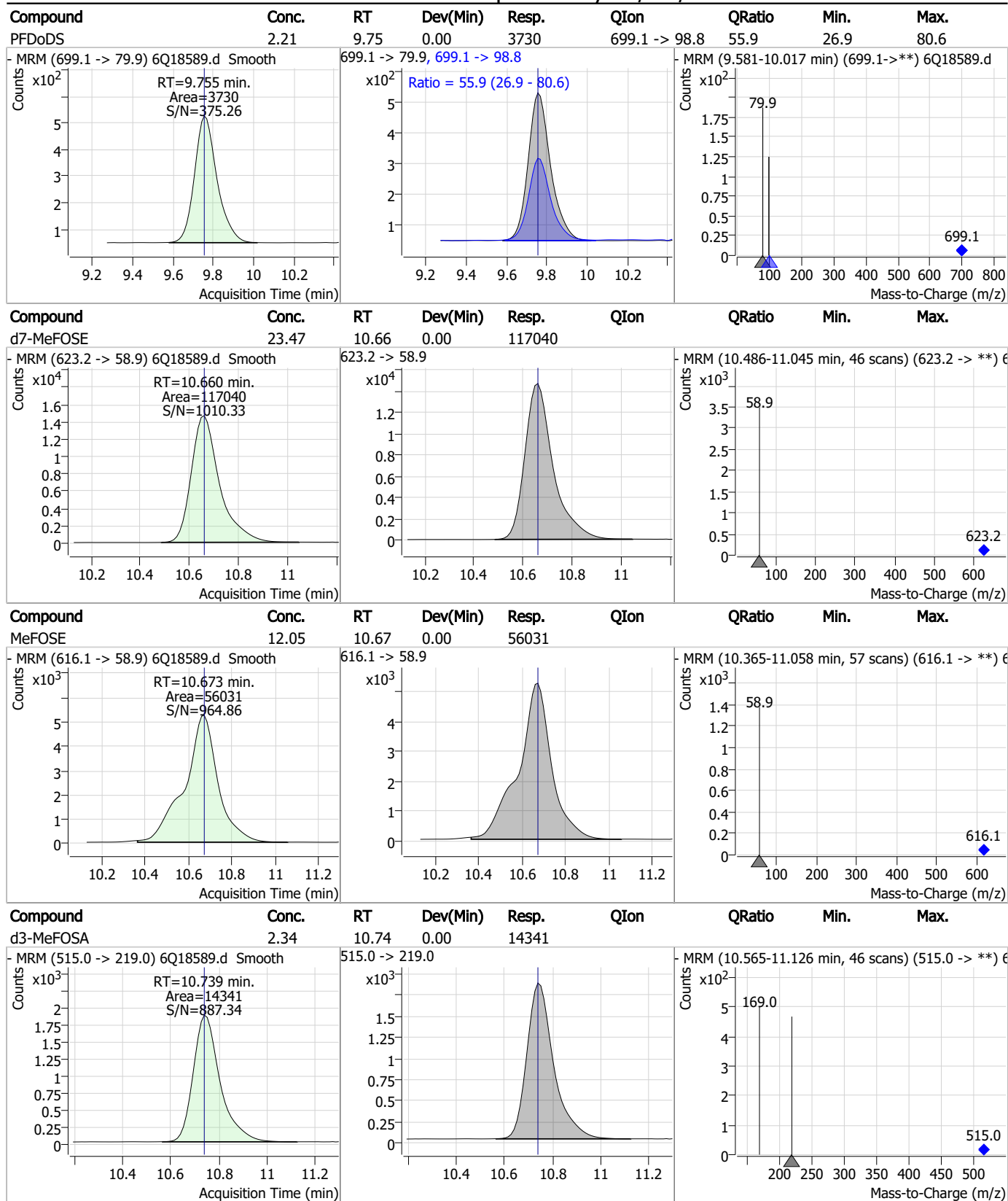
7.7.5
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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

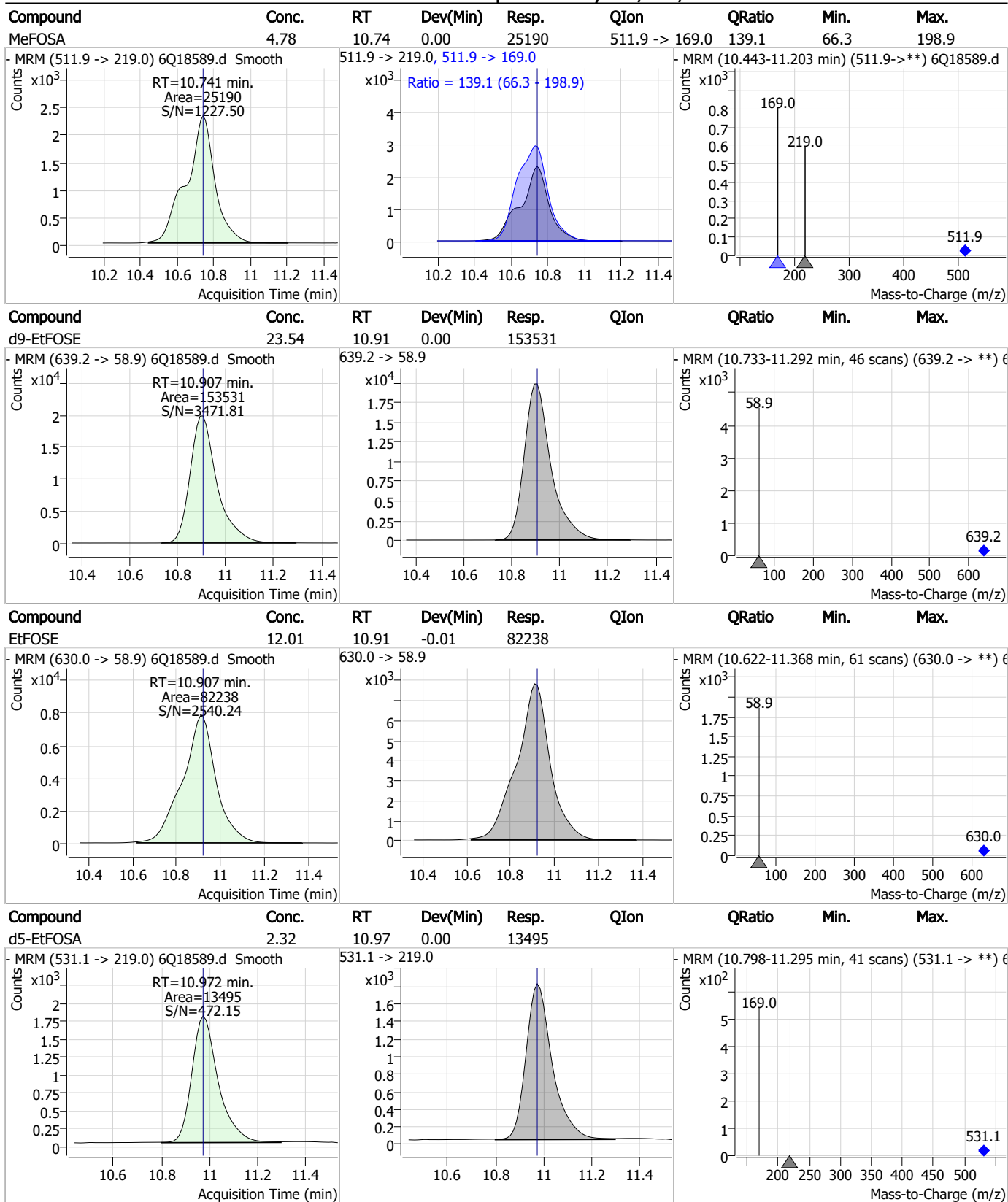
Perfluorinated Compounds by LC/MS/MS



7.7.5

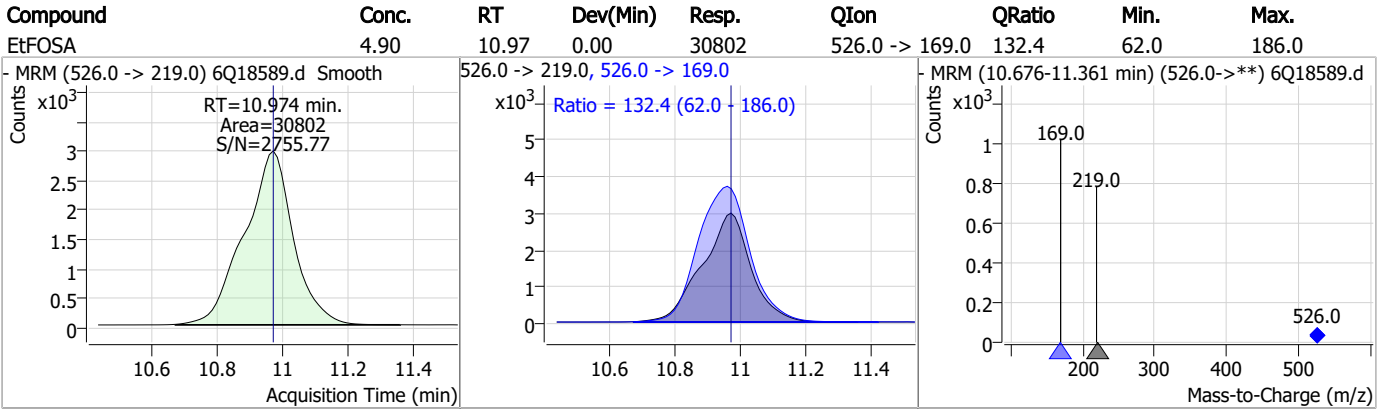
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Perfluorinated Compounds by LC/MS/MS



7.7.5
7

Perfluorinated Compounds by LC/MS/MS



7.7.5

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18590.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:14:21 PM
 Sample Name : ic279-5
 Vial : P1-A6
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 187880 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 62954 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 67445 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 62246 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.013 | 421.1 -> 376.0 | 99446 | 2.50 µg/L | -0.013 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 45750 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 26521 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.455 | 570.0 -> 525.1 | 34273 | 1.25 µg/L | -0.025 |
| M2-PFDoDA | 8.887 | 615.1 -> 570.0 | 32244 | 1.25 µg/L | -0.012 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17929 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.586 | 506.1 -> 77.8 | 35190 | 2.50 µg/L | -0.012 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 24935 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.118 | 402.1 -> 79.9 | 15616 | 2.50 µg/L | -0.012 |
| M8-PFOS | 8.165 | 507.1 -> 79.9 | 14763 | 2.50 µg/L | -0.012 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3776 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.788 | 429.1 -> 80.9 | 5453 | 5.00 µg/L | -0.012 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5898 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 32778 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42108 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26979 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.647 | 623.2 -> 58.9 | 120691 | 25.00 µg/L | -0.012 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 152625 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13841 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13866 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.165 | 502.8 -> 79.9 | 18357 | 2.50 µg/L | -0.025 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78647 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10998 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.013 | 417.1 -> 372.0 | 104265 | 2.50 µg/L | -0.013 |
| 13C2-PFDA | 8.014 | 515.1 -> 470.1 | 36093 | 1.25 µg/L | -0.013 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 52987 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 64076 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3776 | 5.15 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 103.0% | | |
| 13C2-6:2FTS | 6.788 | 429.1 -> 80.9 | 5453 | 5.12 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.4% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5898 | 5.46 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.2% | | |
| 13C2-PFDoDA | 8.887 | 615.1 -> 570.0 | 32244 | 1.29 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 102.9% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17929 | 1.31 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 105.2% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 24935 | 2.56 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.5% | | |
| 13C3-PFHxS | 7.118 | 402.1 -> 79.9 | 15616 | 2.54 µg/L | -0.012 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 187880 | 10.03 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 62246 | 2.48 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.3% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 67445 | 2.49 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.5% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 62954 | 5.05 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 101.0% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 26521 | 1.25 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| 13C7-PFUnDA | 8.455 | 570.0 -> 525.1 | 34273 | 1.27 µg/L | -0.025 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C8-FOSA | 9.586 | 506.1 -> 77.8 | 35190 | 2.51 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| 13C8-PFOA | 7.013 | 421.1 -> 376.0 | 99446 | 2.55 µg/L | -0.013 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.8% | |
| 13C8-PFOS | 8.165 | 507.1 -> 79.9 | 14763 | 2.51 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.4% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 45750 | 1.31 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 104.8% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 32778 | 5.53 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 110.6% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42108 | 10.00 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13866 | 2.44 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26979 | 5.01 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.1% | |
| d7-MeFOSE | 10.647 | 623.2 -> 58.9 | 120691 | 26.18 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 104.7% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 152625 | 25.31 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 101.2% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13841 | 2.58 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.1% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 98060 | 17.88 µg/L | 96 |
| | | 327.1 -> 80.9 | 36547 | | |
| 6:2FTS | 6.789 | 427.1 -> 407.0 | 101082 | 18.86 µg/L | 97 |
| | | 427.1 -> 80.9 | 32468 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 55700 | 16.98 µg/L | 96 |
| | | 527.1 -> 80.8 | 22317 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 17051 | 4.91 µg/L | 98 |
| | | 584.2 -> 526.0 | 9540 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 57690 | 4.74 µg/L | 100 |
| | | 498.1 -> 478.0 | 1790 | | |
| MeFOSAA | 8.073 | 570.1 -> 419.0 | 30838 | 4.58 µg/L | 99 |
| | | 570.1 -> 483.0 | 6087 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 119132 | 19.15 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 35285 | 4.16 µg/L | 97 |
| | | 298.7 -> 98.8 | 13354 | | |
| PFDA | 8.014 | 512.9 -> 469.0 | 143973 | 4.68 µg/L | 99 |
| | | 512.9 -> 219.0 | 23728 | | |
| PFDoDA | 8.888 | 613.1 -> 569.0 | 103411 | 4.67 µg/L | 96 |
| | | 613.1 -> 319.0 | 16004 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 17202 | 4.66 µg/L | 96 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| | | 599.0 -> 98.8 | 7926 | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 134100 | 4.87 µg/L | 97 |
| | | 363.1 -> 169.0 | 21692 | | |
| PFHpS | 7.673 | 449.0 -> 79.9 | 32049 | 4.53 µg/L | 98 |
| | | 449.0 -> 98.9 | 16285 | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 107925 | 4.77 µg/L | 98 |
| | | 313.0 -> 118.9 | 5659 | | |
| PFHxS | 7.119 | 398.7 -> 79.9 | 30346 | 4.30 µg/L | 100 |
| | | 398.7 -> 98.9 | 14465 | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 155123 | 4.79 µg/L | 97 |
| | | 463.0 -> 219.0 | 28167 | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 27107 | 4.57 µg/L | 96 |
| | | 548.8 -> 98.9 | 13999 | | |
| PFOA | 7.015 | 413.0 -> 369.0 | 199283 | 4.69 µg/L | 99 |
| | | 413.0 -> 169.0 | 35542 | | |
| PFOS | 8.166 | 498.9 -> 79.9 | 30197 | 4.48 µg/L | 91 |
| | | 498.9 -> 98.8 | 14141 | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 144374 | 9.55 µg/L | 100 |
| PFPeS | 6.410 | 349.1 -> 79.9 | 30757 | 4.37 µg/L | 98 |
| | | 349.1 -> 98.9 | 14232 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 81291 | 4.61 µg/L | 97 |
| | | 713.1 -> 168.9 | 7055 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 108478 | 4.85 µg/L | 97 |
| | | 663.0 -> 168.9 | 11146 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 111368 | 5.00 µg/L | 98 |
| | | 563.1 -> 269.1 | 16291 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 142513 | 9.02 µg/L | 100 |
| | | 632.9 -> 452.9 | 44315 | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 225942 | 9.08 µg/L | 99 |
| | | 532.8 -> 353.0 | 72959 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 513058 | 9.17 µg/L | 98 |
| | | 376.9 -> 84.8 | 141815 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 33213 | 9.31 µg/L | 98 |
| | | 284.9 -> 184.9 | 4234 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 22809 | 23.57 µg/L | 98 |
| | | 241.0 -> 117.0 | 3091 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 474474 | 116.47 µg/L | 93 |
| | | 341.0 -> 217.0 | 364763 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 344194 | 123.37 µg/L | 99 |
| | | 441.0 -> 336.9 | 761300 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 60538 | 9.38 µg/L | 97 |
| | | 526.0 -> 169.0 | 77131 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 164750 | 24.20 µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 50777 | 9.96 µg/L | 95 |
| | | 511.9 -> 169.0 | 70280 | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 108332 | 22.59 µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 7468 | 4.55 µg/L | 98 |
| | | 699.1 -> 98.8 | 3886 | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 26552 | 9.63 µg/L | 98 |
| | | 295.0 -> 84.9 | 6879 | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 98078 | 9.53 µg/L | 100 |
| PFMPA | 3.363 | 229.0 -> 84.9 | 76163 | 9.52 µg/L | 100 |
| PFEESA | 5.862 | 314.8 -> 134.9 | 257995 | 8.98 µg/L | 99 |
| | | 314.8 -> 82.9 | 9081 | | |

= Qualifier out of range, m = manually integrated, + = Area summed

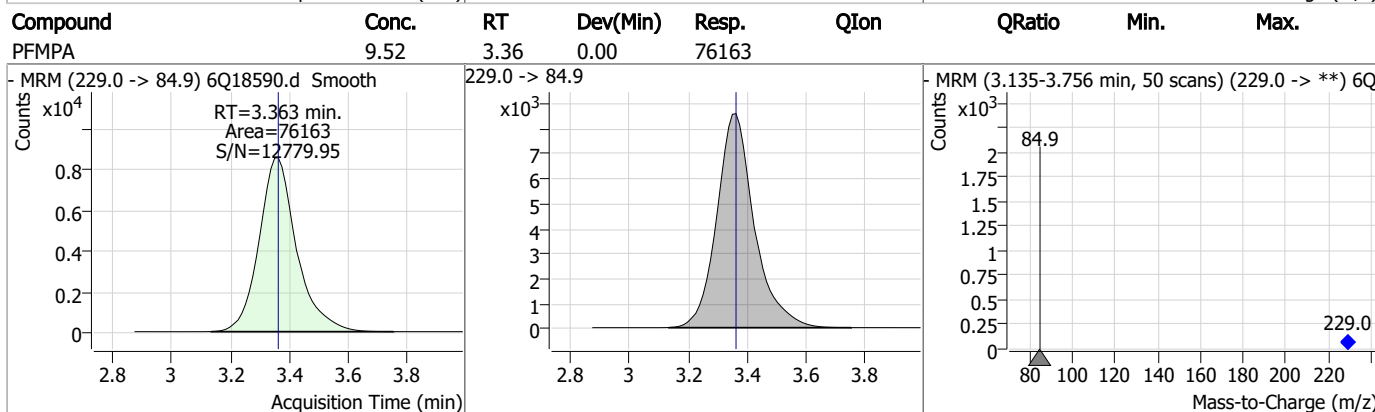
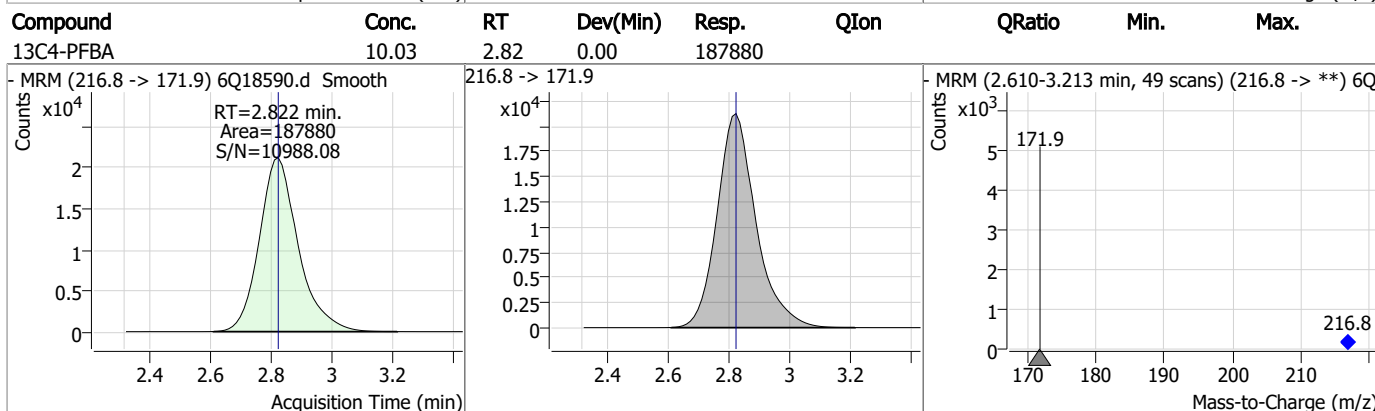
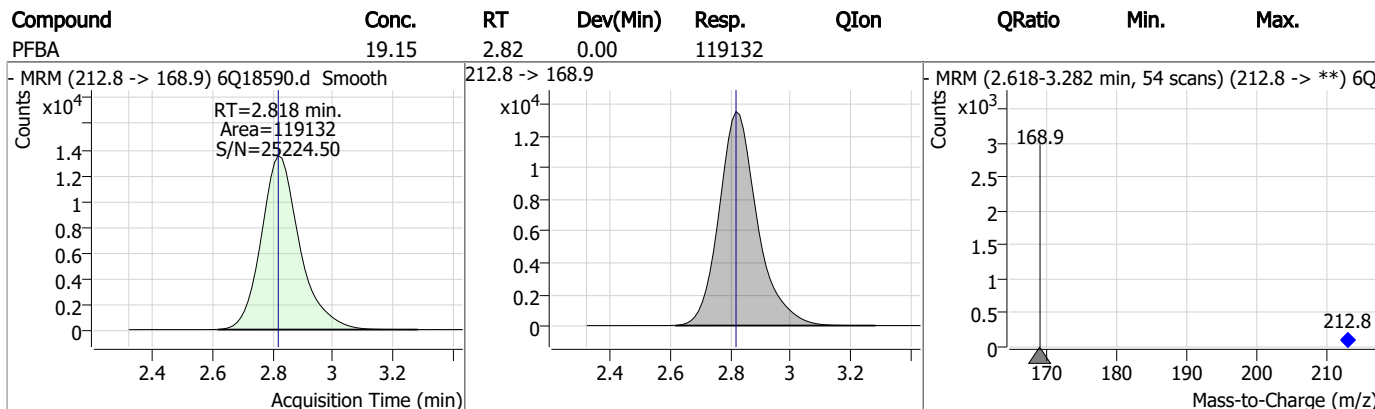
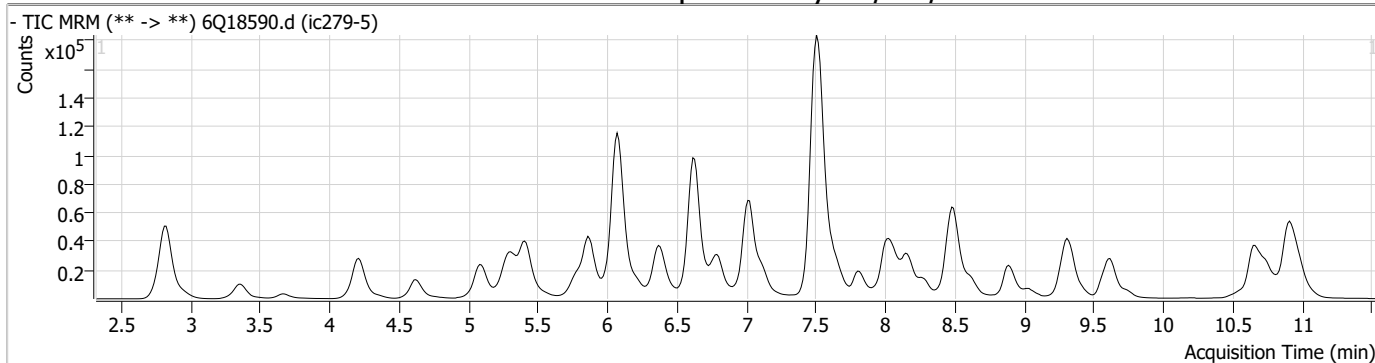
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

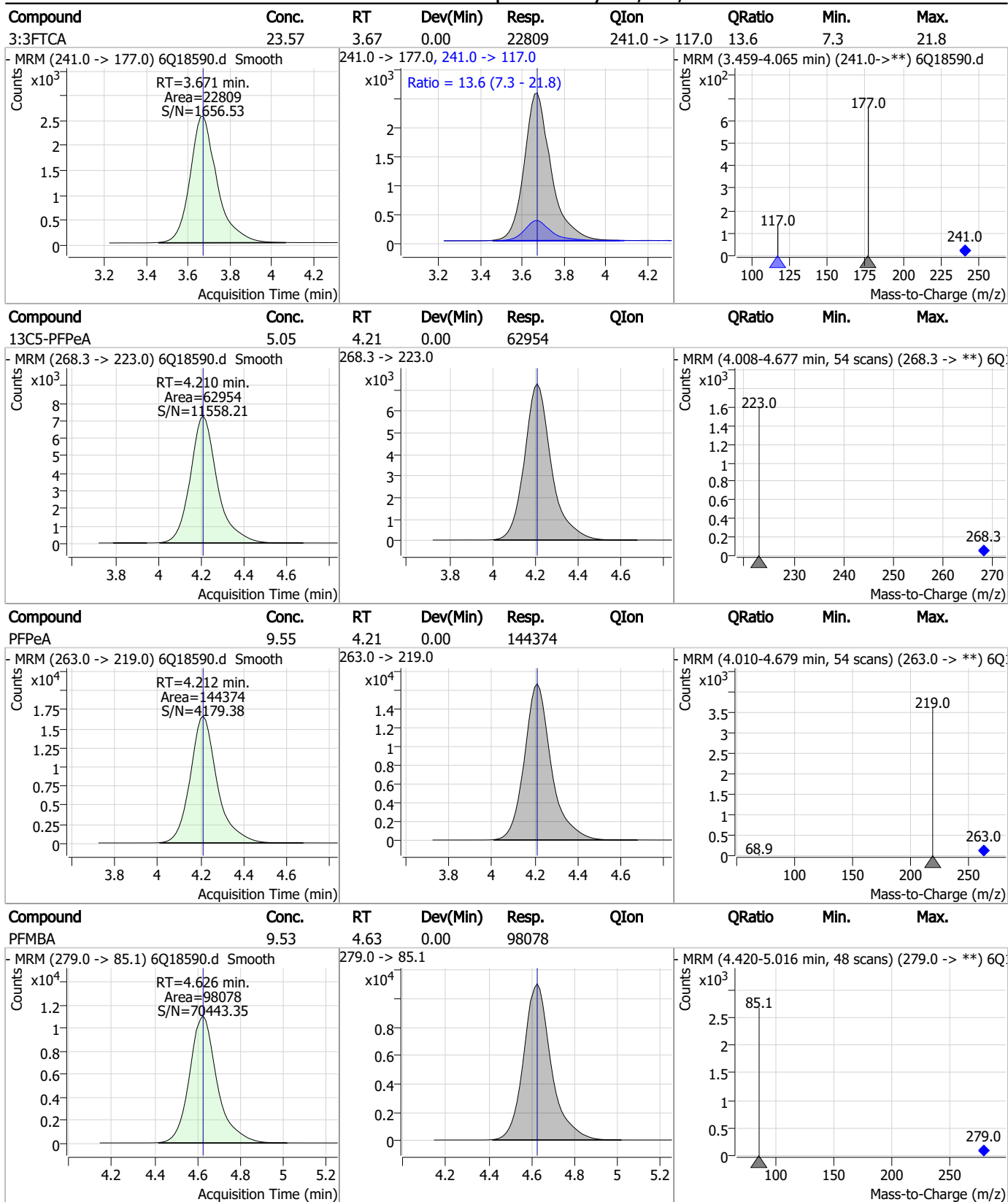
7.7.6

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Perfluorinated Compounds by LC/MS/MS

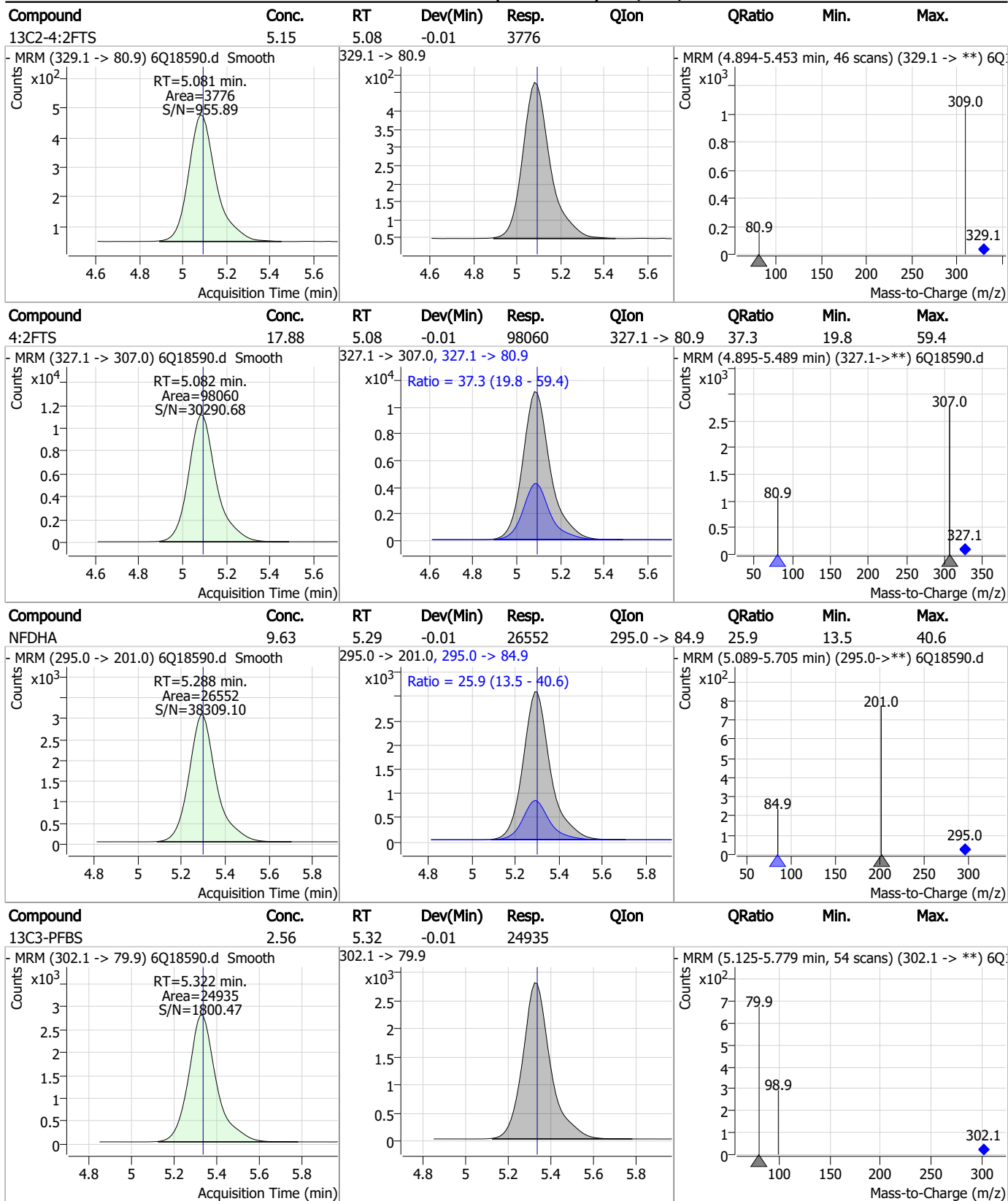


Perfluorinated Compounds by LC/MS/MS



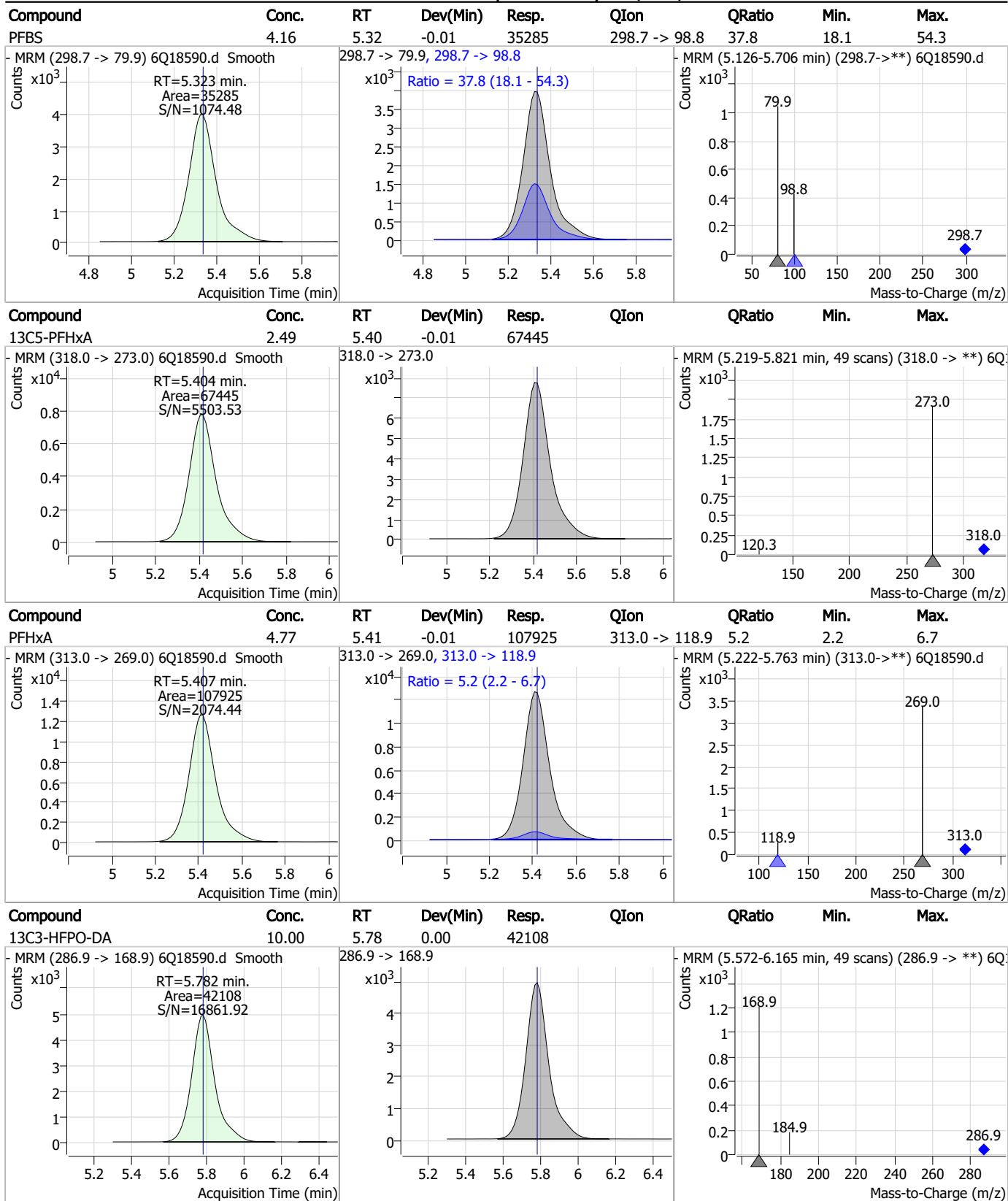
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
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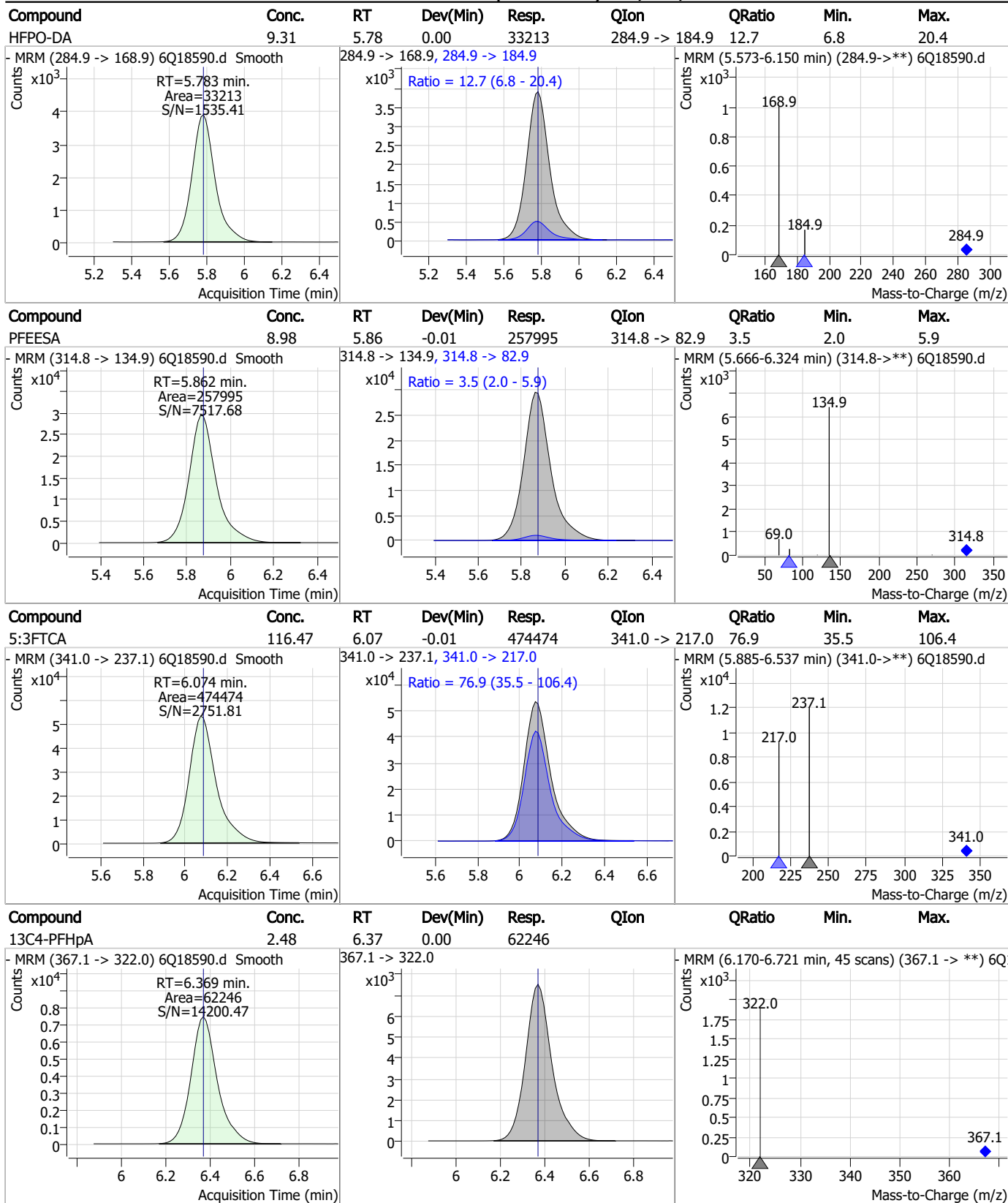
Perfluorinated Compounds by LC/MS/MS



7.7.6
7

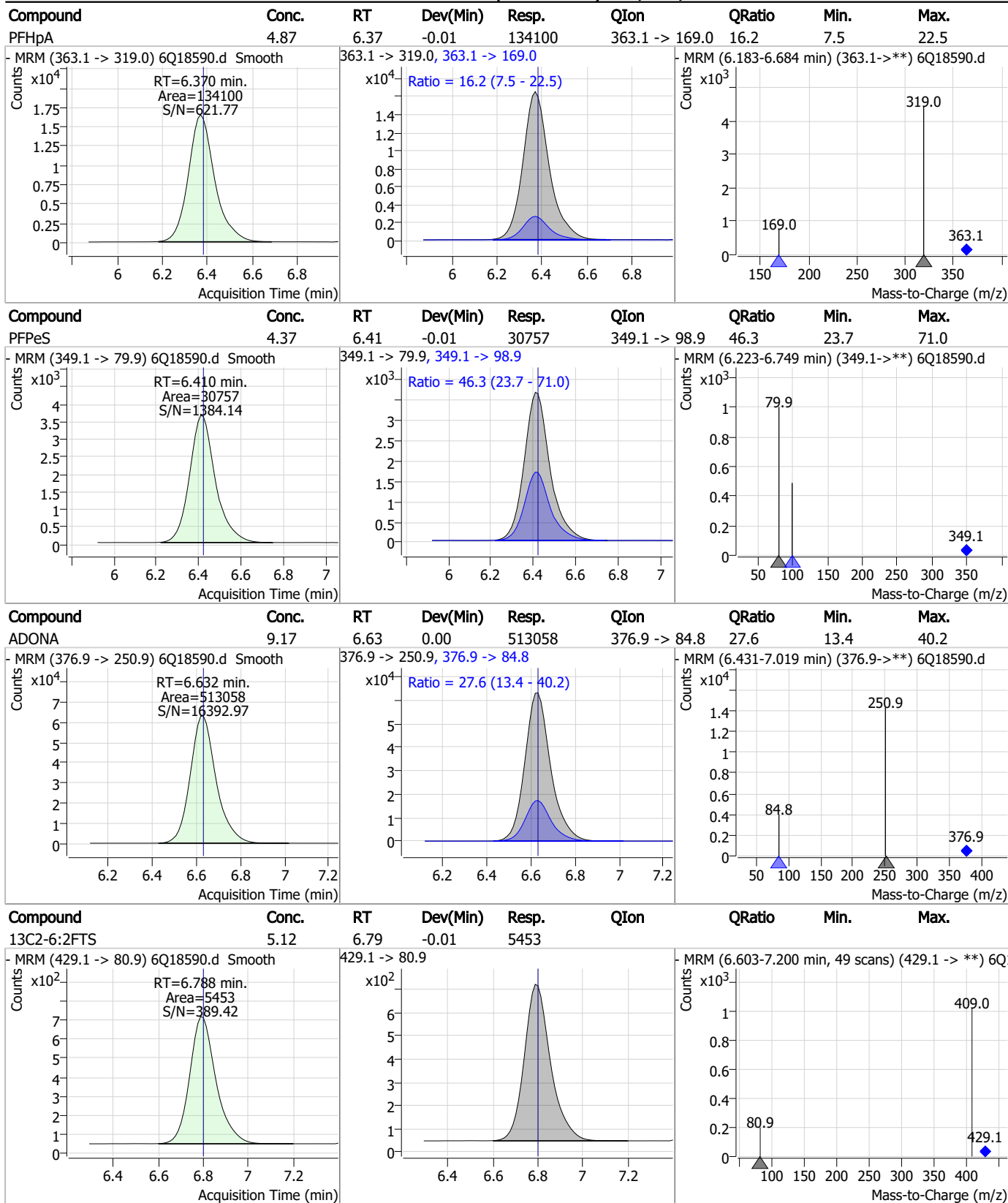


Perfluorinated Compounds by LC/MS/MS



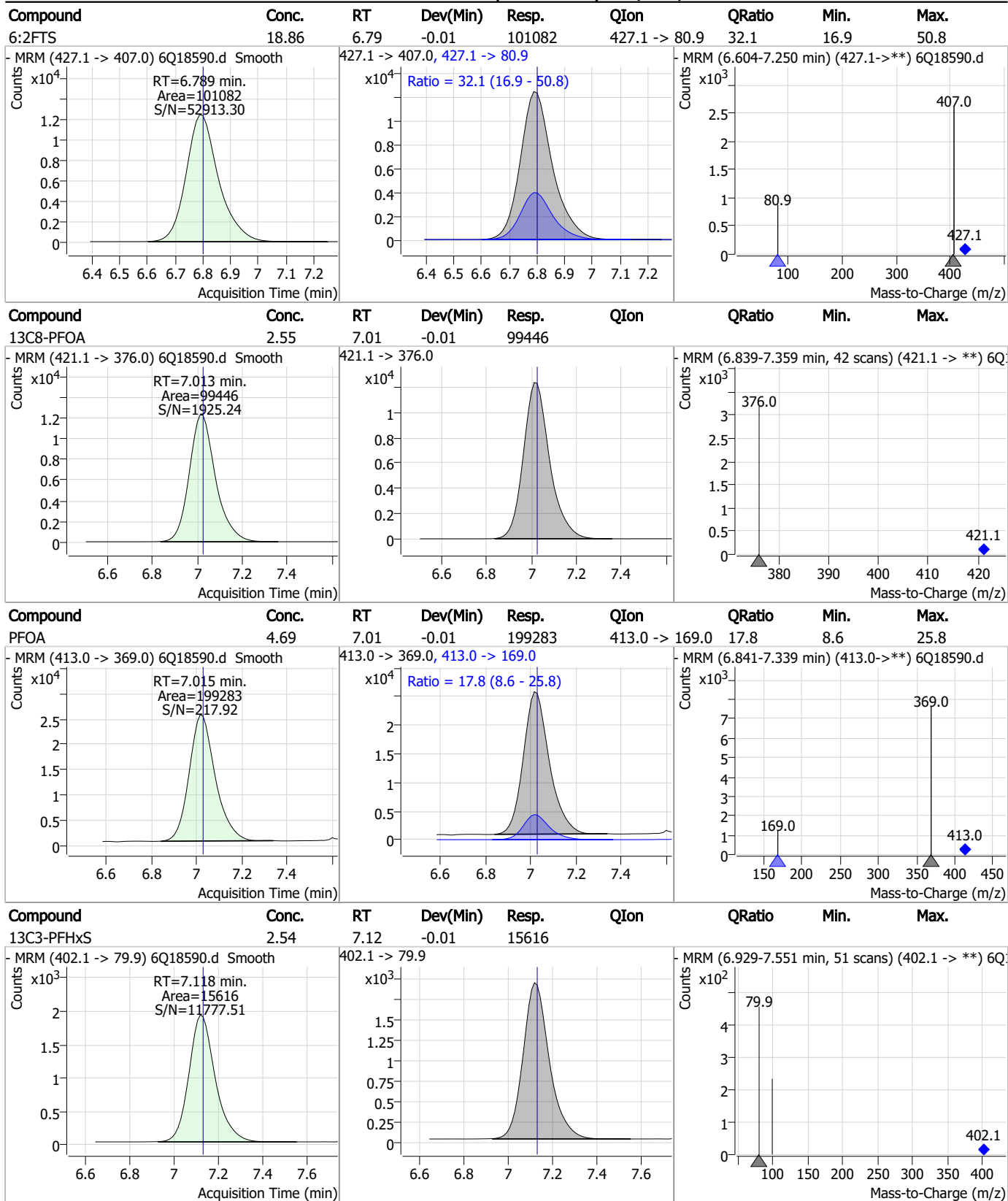
7.7.6
7

Perfluorinated Compounds by LC/MS/MS



7.7.6
7

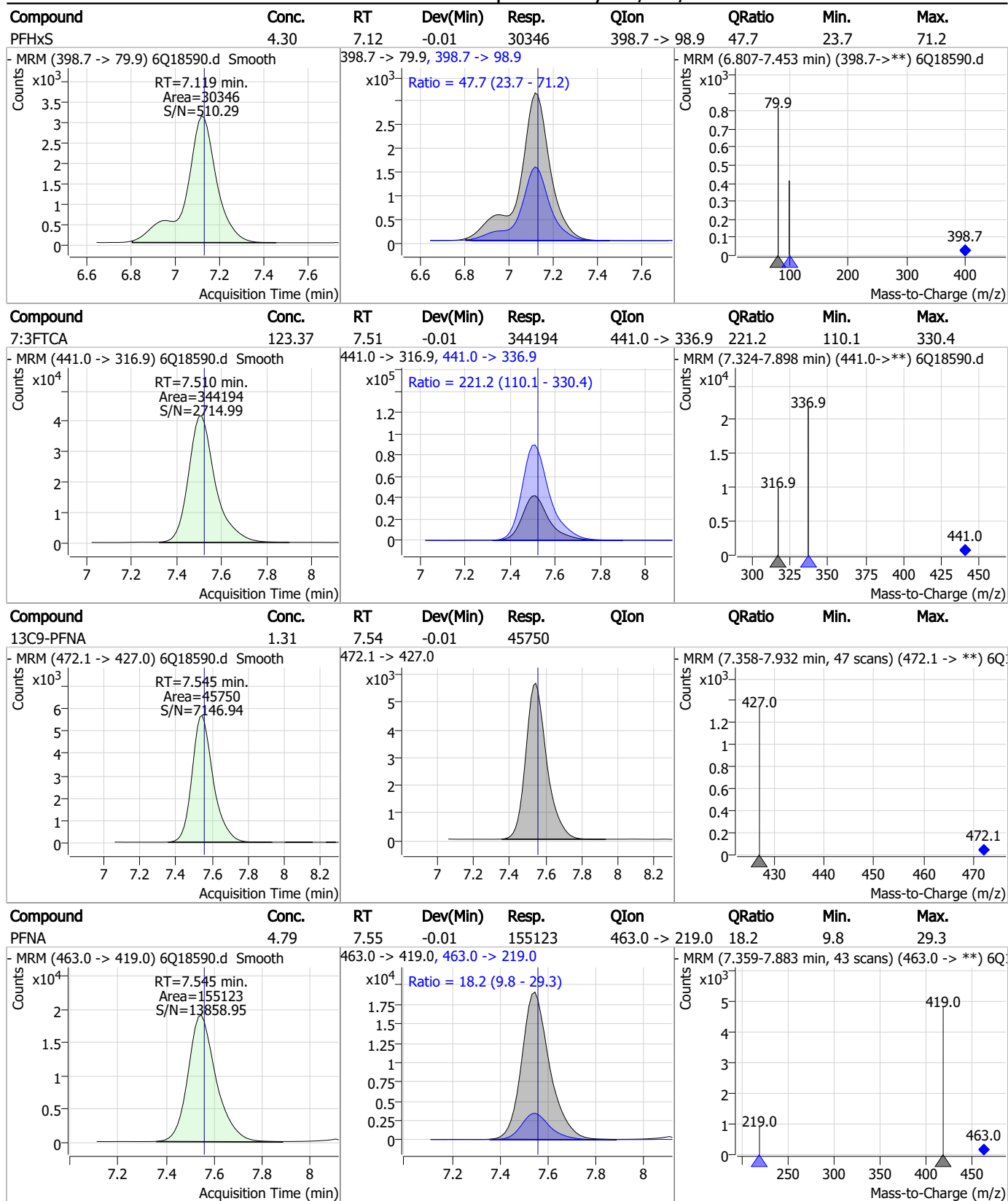
Perfluorinated Compounds by LC/MS/MS



7.7.6

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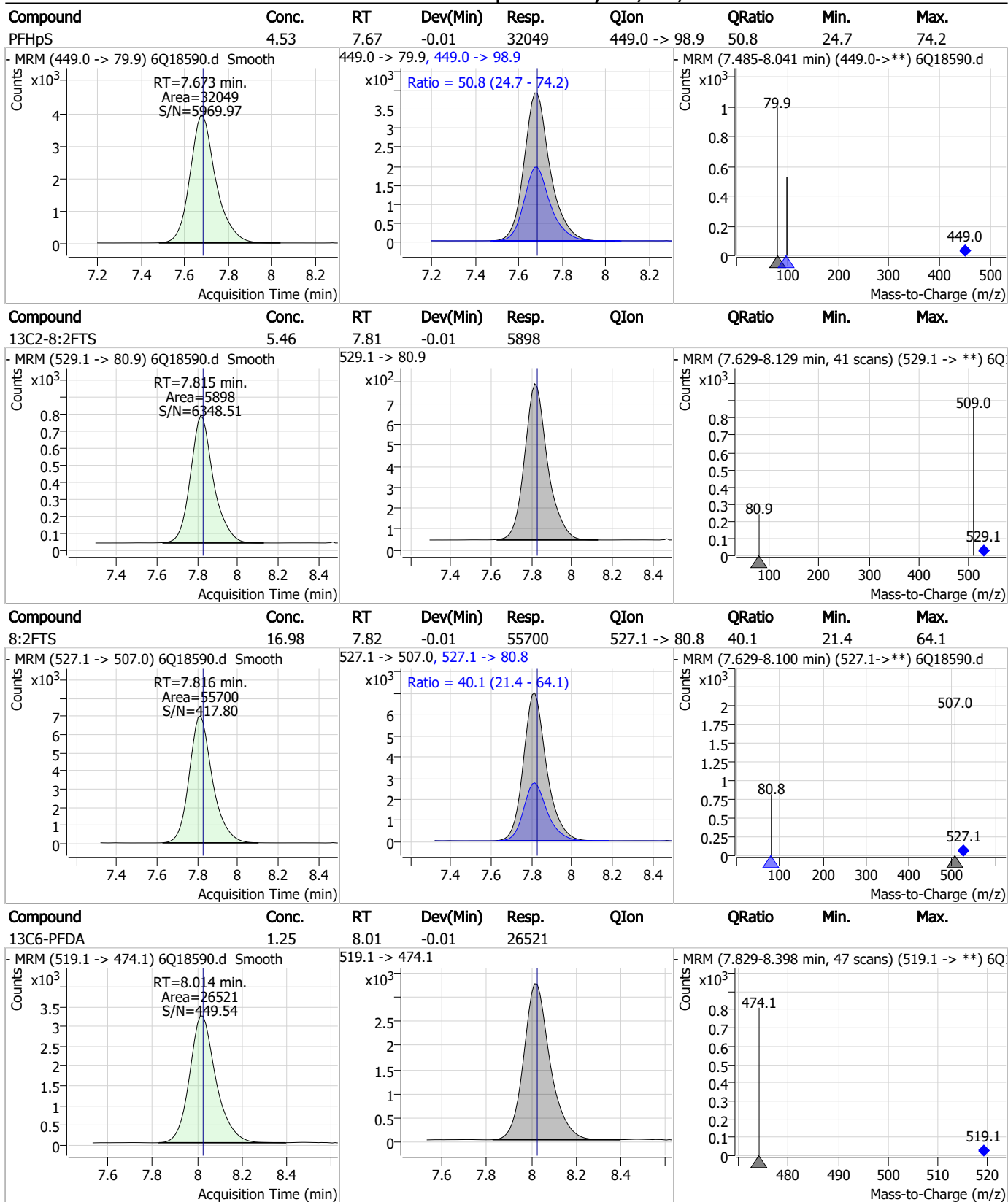
Perfluorinated Compounds by LC/MS/MS



7.7.6
7

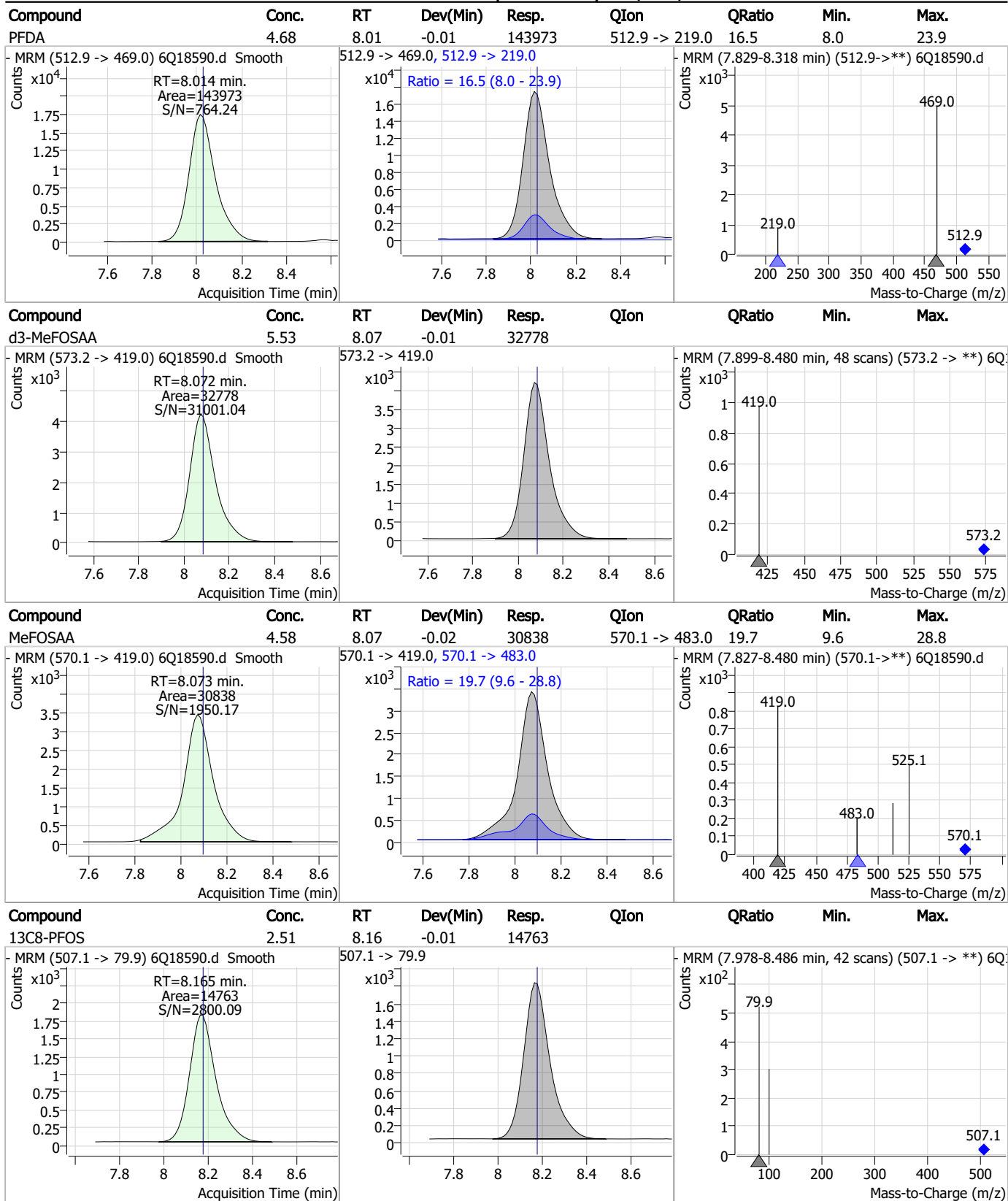


Perfluorinated Compounds by LC/MS/MS



7.7.6
7

Perfluorinated Compounds by LC/MS/MS

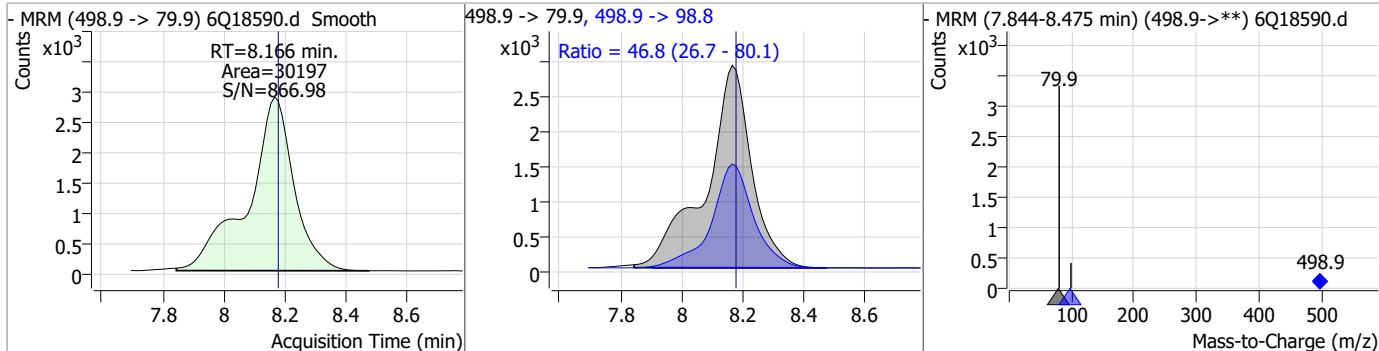


7.7.6

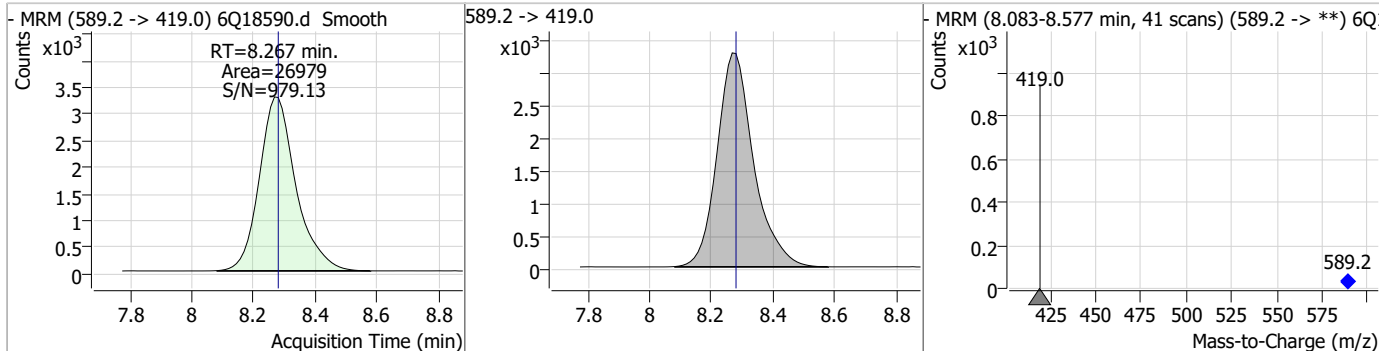
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Perfluorinated Compounds by LC/MS/MS

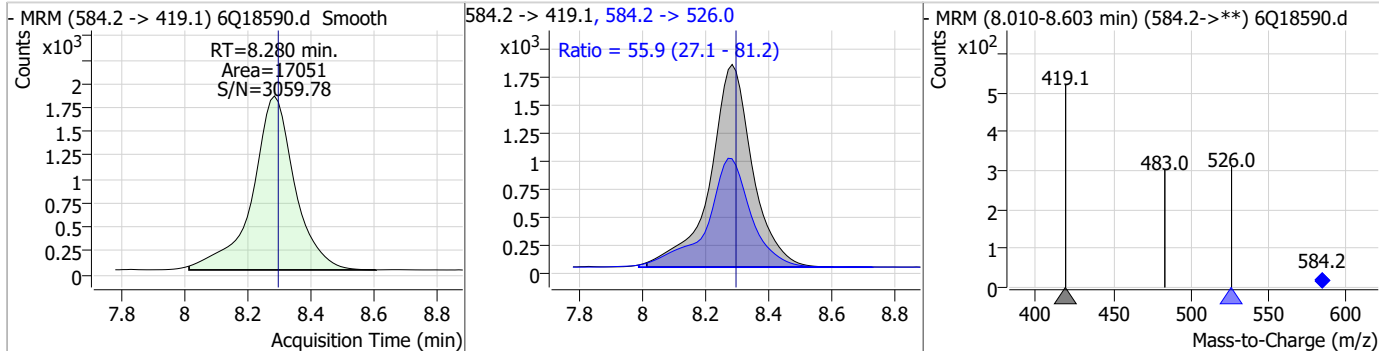
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFOS | 4.48 | 8.17 | -0.01 | 30197 | 498.9 -> 98.8 | 46.8 | 26.7 | 80.1 |



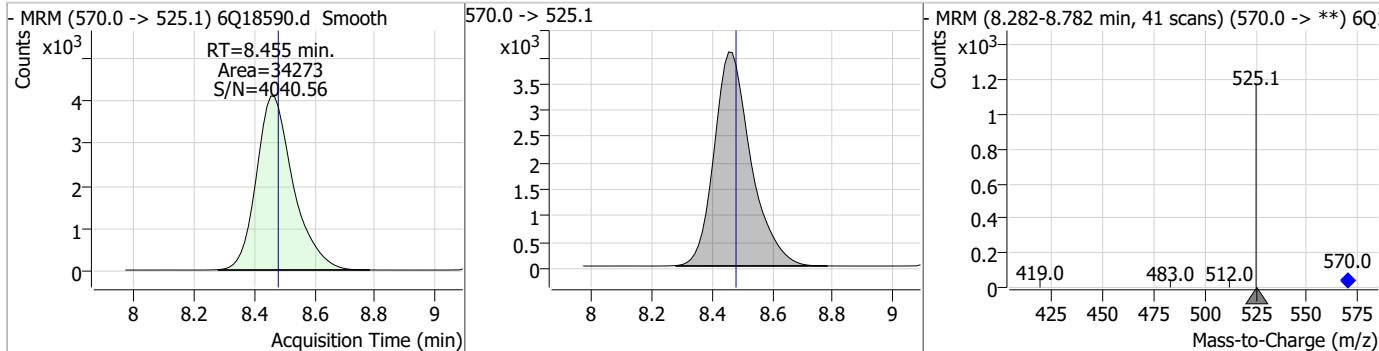
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d5-EtFOSAA | 5.01 | 8.27 | -0.01 | 26979 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| EtFOSAA | 4.91 | 8.28 | -0.01 | 17051 | 584.2 -> 526.0 | 55.9 | 27.1 | 81.2 |

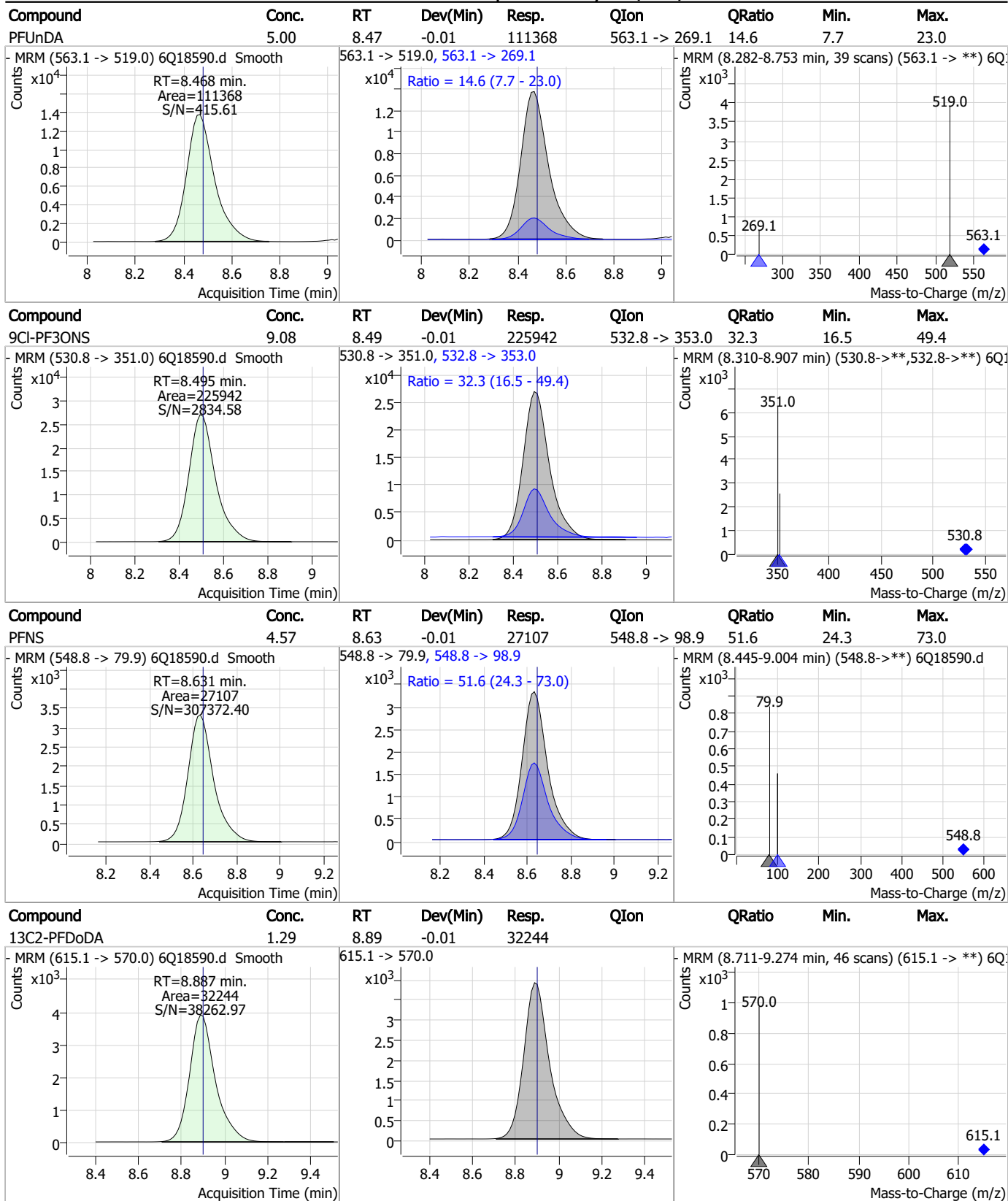


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C7-PFUnDA | 1.27 | 8.46 | -0.02 | 34273 | | | | |



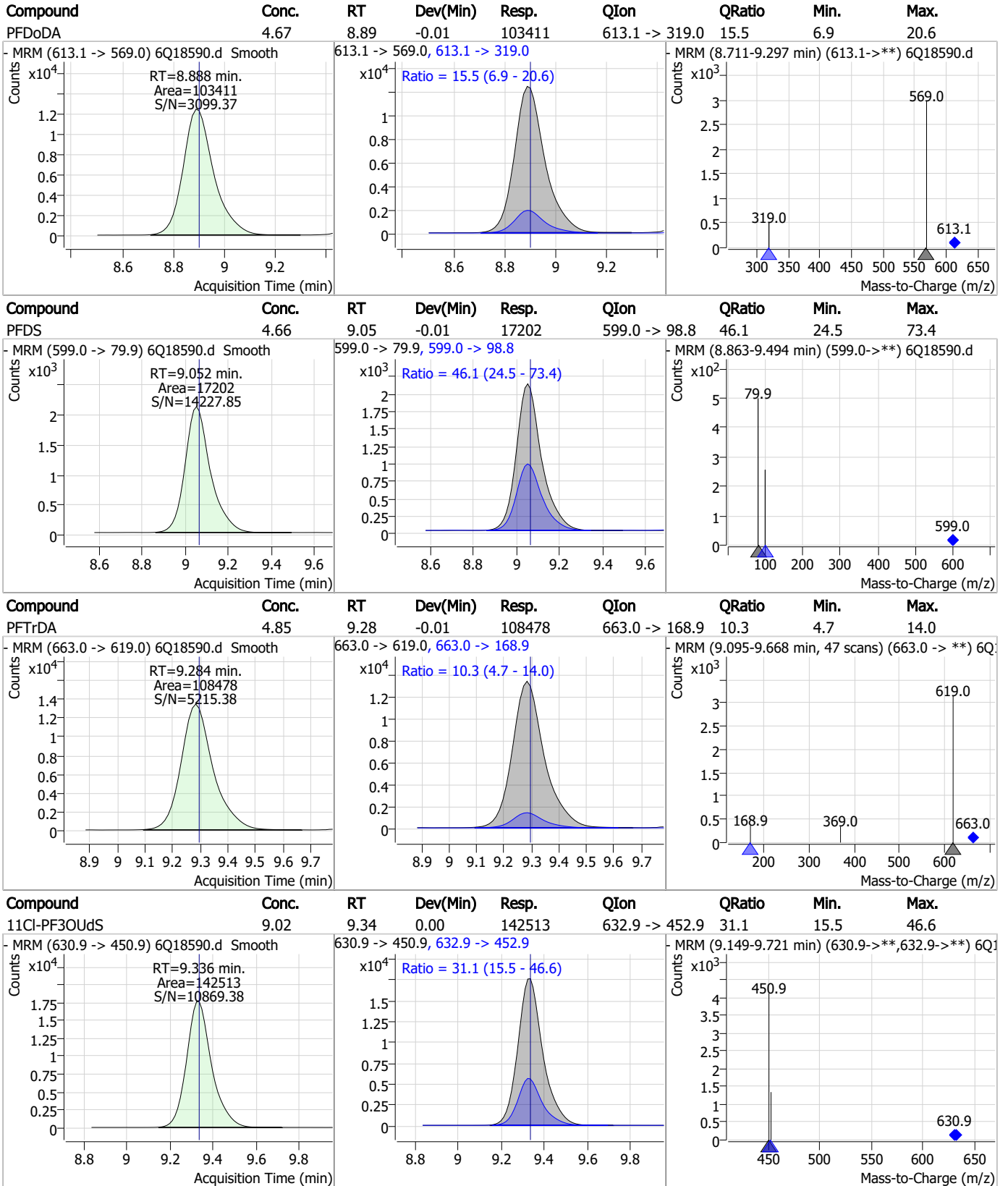
7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6
7

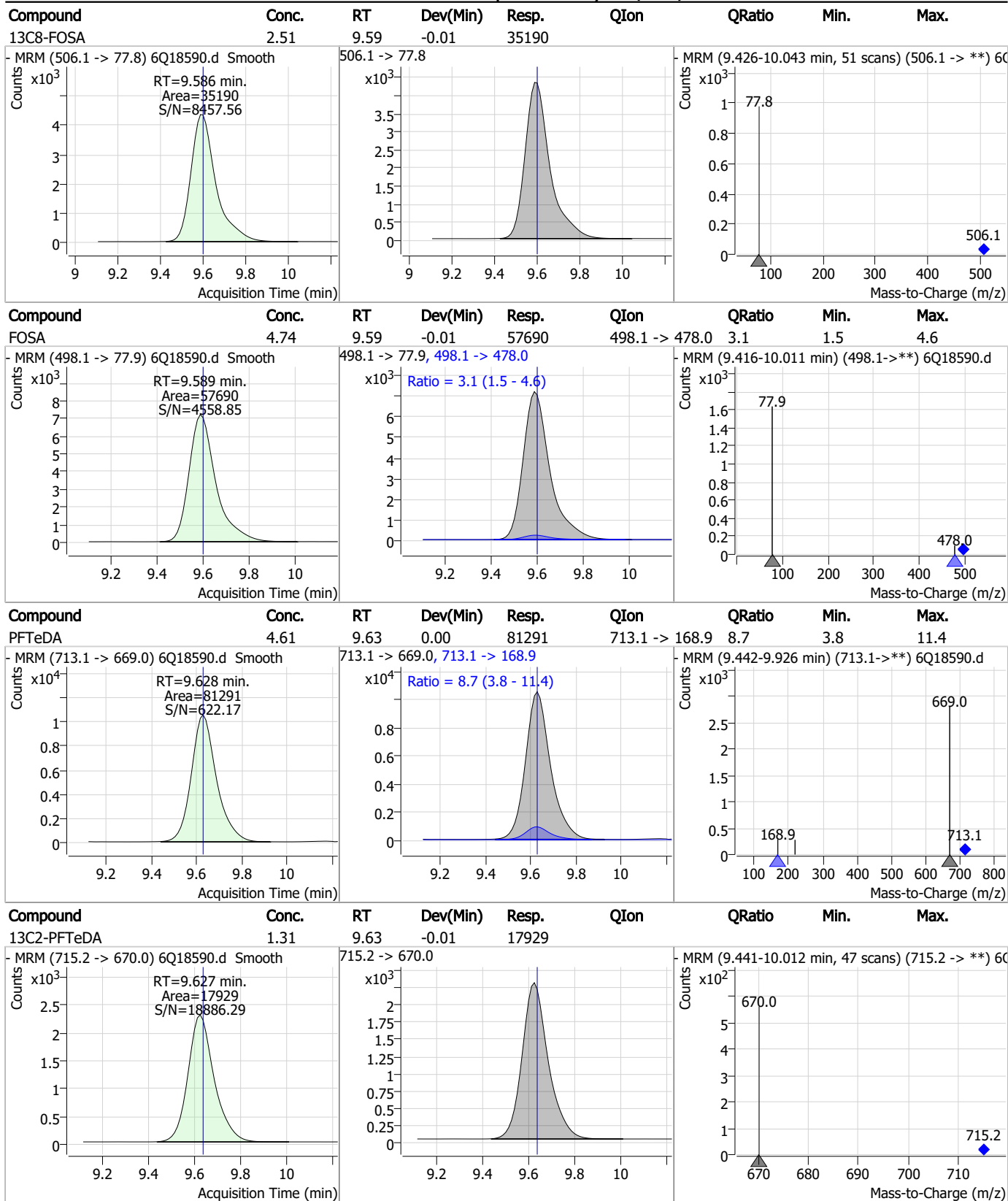
Perfluorinated Compounds by LC/MS/MS



7.7.6

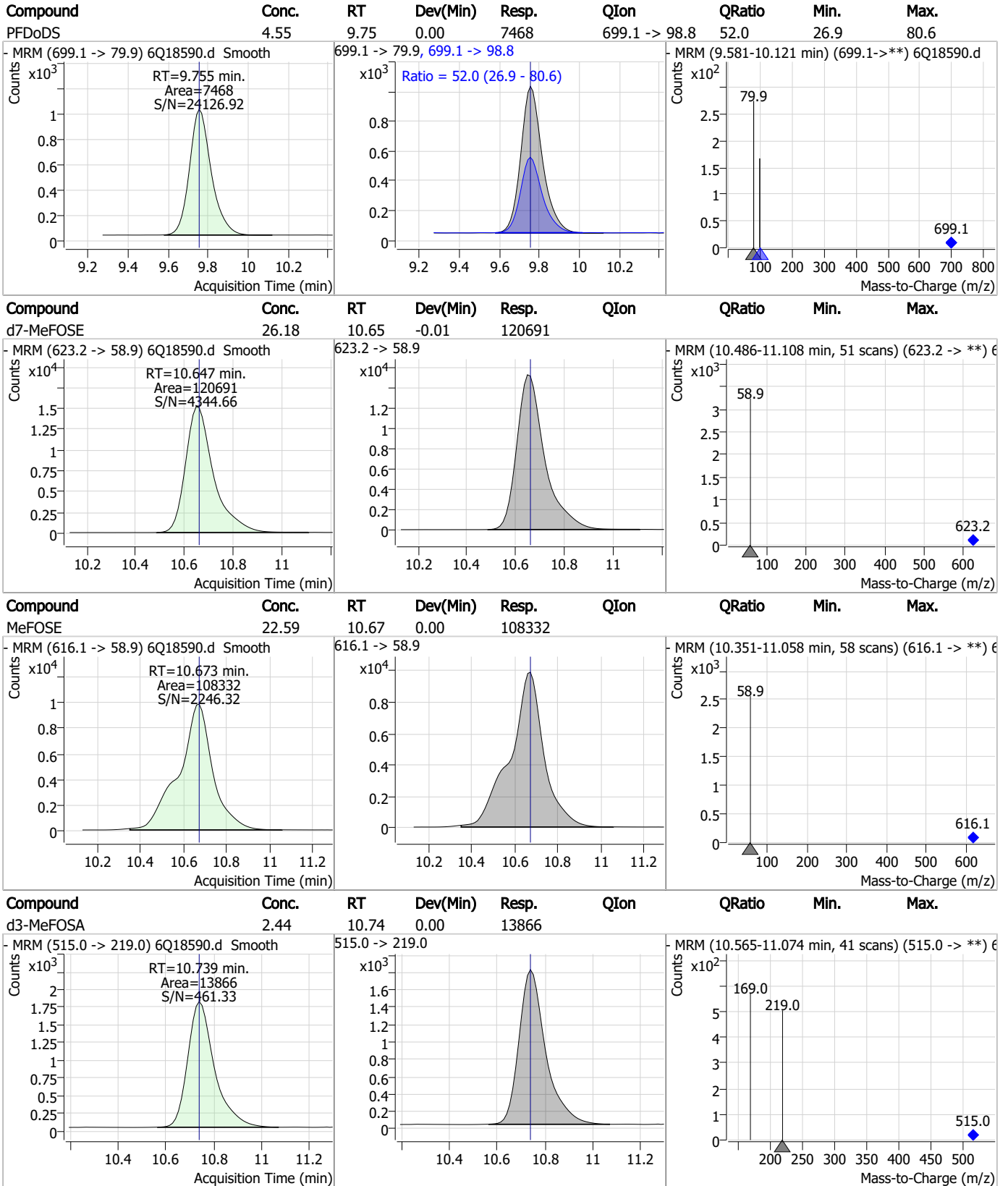
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Perfluorinated Compounds by LC/MS/MS



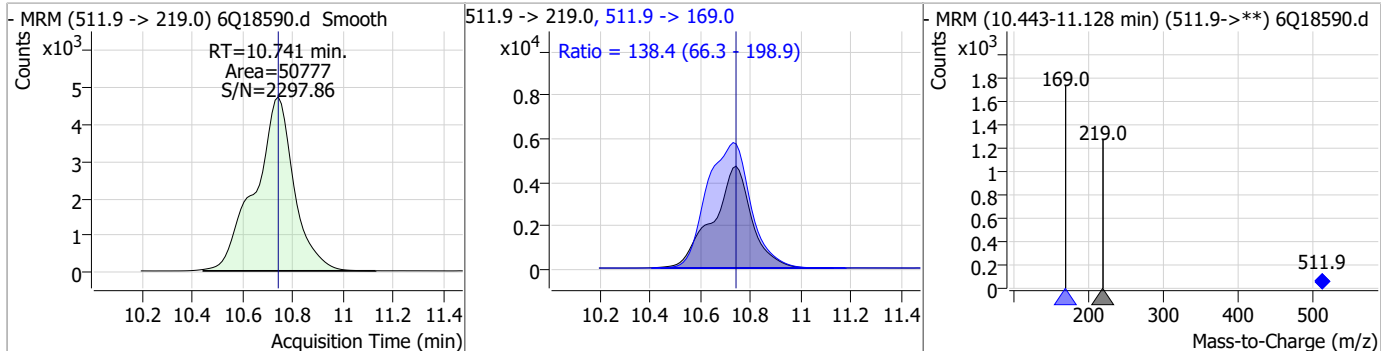
7.7.6
7

Perfluorinated Compounds by LC/MS/MS

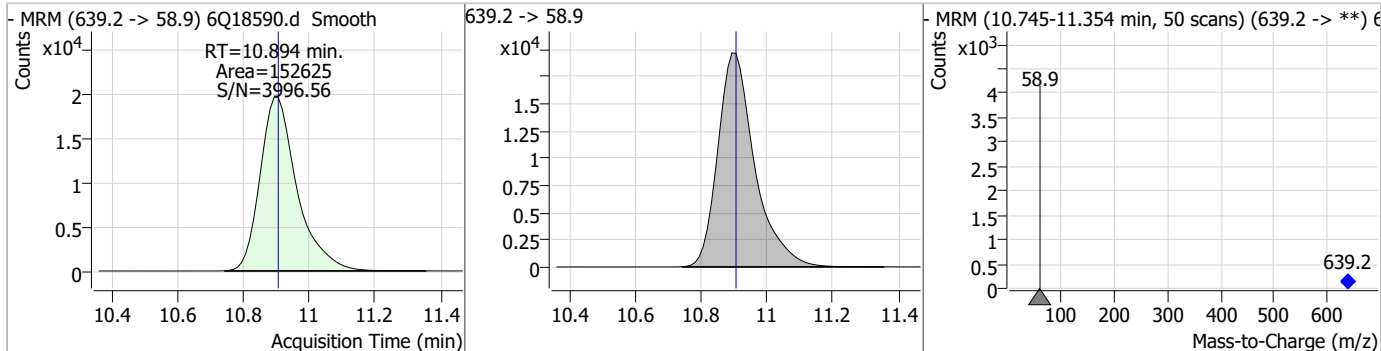


Perfluorinated Compounds by LC/MS/MS

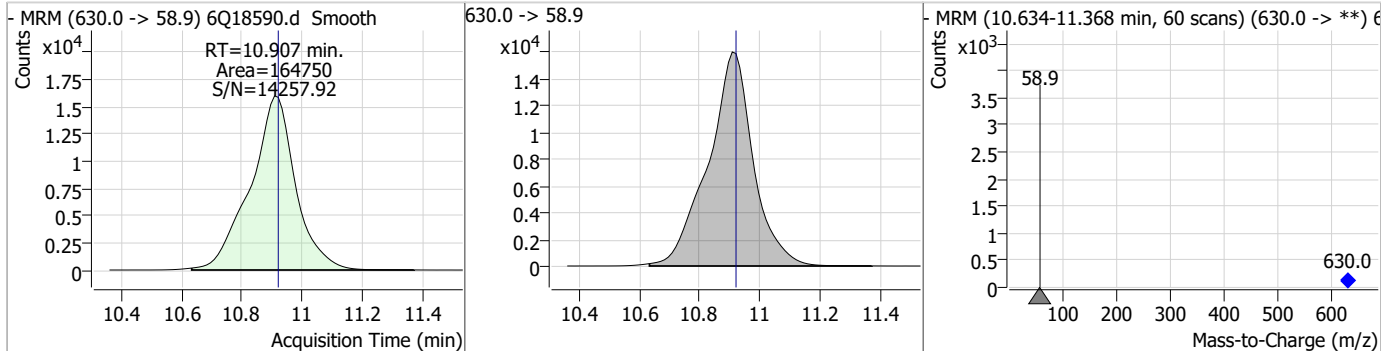
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|----------------|--------|------|-------|
| MeFOSA | 9.96 | 10.74 | 0.00 | 50777 | 511.9 -> 169.0 | 138.4 | 66.3 | 198.9 |



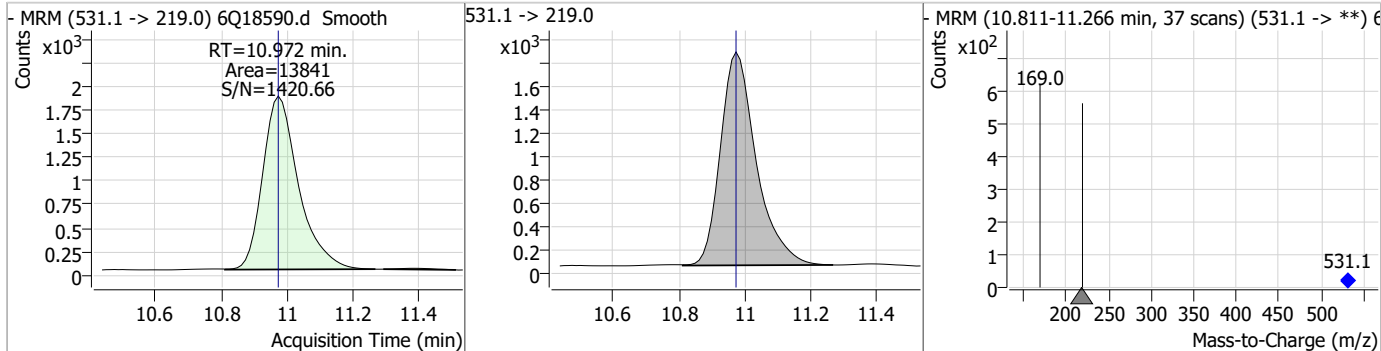
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 25.31 | 10.89 | -0.01 | 152625 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|--------|------|--------|------|------|
| EtFOSE | 24.20 | 10.91 | -0.01 | 164750 | | | | |

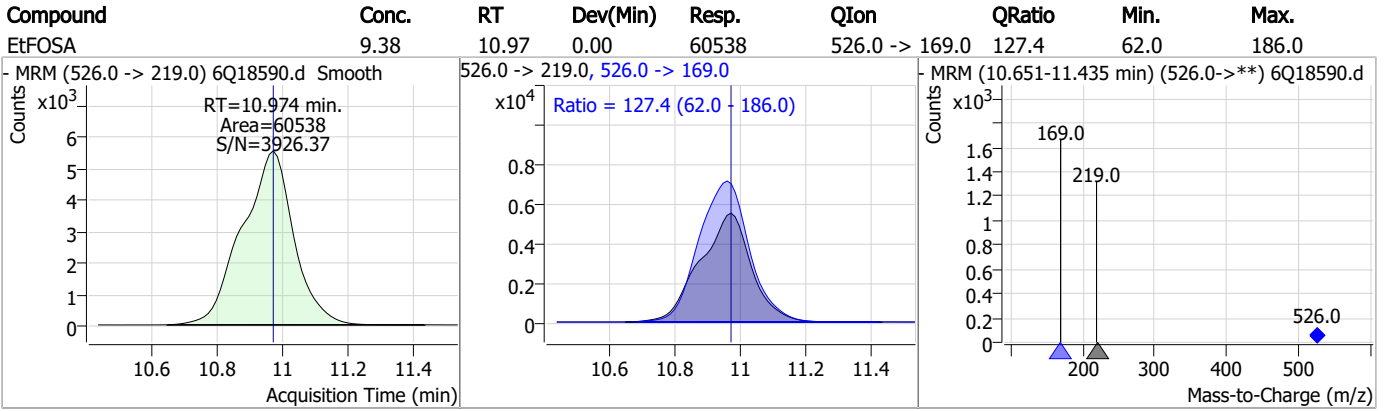


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSA | 2.58 | 10.97 | 0.00 | 13841 | | | | |



7.7.6
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Perfluorinated Compounds by LC/MS/MS



7.7.6

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18591.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:28:50 PM
 Sample Name : ic279-6
 Vial : P1-A7
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 187223 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 62656 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 68771 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 63077 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 95236 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 43575 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 26462 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33640 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.887 | 615.1 -> 570.0 | 31346 | 1.25 µg/L | -0.012 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16999 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.586 | 506.1 -> 77.8 | 35644 | 2.50 µg/L | -0.012 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 24809 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15368 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 15892 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3628 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5079 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5275 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30953 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42934 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26452 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.647 | 623.2 -> 58.9 | 115482 | 25.00 µg/L | -0.012 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 156806 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13452 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14515 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17429 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.827 | 216.0 -> 172.0 | 78677 | 5.00 µg/L | 0.000 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11436 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 104791 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 37496 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 55883 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.417 | 315.1 -> 270.0 | 64647 | 2.50 µg/L | 0.000 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 3628 | 4.76 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 95.1% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5079 | 4.59 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 91.7% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5275 | 4.70 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 93.9% | | |
| 13C2-PFDoDA | 8.887 | 615.1 -> 570.0 | 31346 | 1.20 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 96.3% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16999 | 1.20 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 96.0% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 24809 | 2.45 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 98.0% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15368 | 2.41 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.2% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 187223 | 9.99 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.9% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 63077 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 68771 | 2.51 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 62656 | 4.98 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 26462 | 1.20 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.3% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33640 | 1.20 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.0% | |
| 13C8-FOSA | 9.586 | 506.1 -> 77.8 | 35644 | 2.68 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 107.3% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 95236 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.0% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 15892 | 2.85 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 113.8% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 43575 | 1.18 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 94.7% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30953 | 5.50 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 110.0% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42934 | 10.11 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.1% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14515 | 2.70 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 107.8% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26452 | 5.17 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 103.4% | |
| d7-MeFOSE | 10.647 | 623.2 -> 58.9 | 115482 | 26.38 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 105.5% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 156806 | 27.39 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 109.6% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13452 | 2.64 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.5% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 248579 | 47.17 µg/L | 96 |
| | | 327.1 -> 80.9 | 92560 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 246153 | 49.32 µg/L | 99 |
| | | 427.1 -> 80.9 | 82513 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 140681 | 47.95 µg/L | 97 |
| | | 527.1 -> 80.8 | 57259 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 42790 | 12.57 µg/L | 96 |
| | | 584.2 -> 526.0 | 24496 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 149971 | 12.15 µg/L | 100 |
| | | 498.1 -> 478.0 | 4666 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 76629 | 12.04 µg/L | 98 |
| | | 570.1 -> 483.0 | 15562 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 308042 | 49.70 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 90329 | 10.70 µg/L | 95 |
| | | 298.7 -> 98.8 | 35360 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 379279 | 12.36 µg/L | 100 |
| | | 512.9 -> 219.0 | 60207 | | |
| PFDoDA | 8.888 | 613.1 -> 569.0 | 268807 | 12.49 µg/L | 96 |
| | | 613.1 -> 319.0 | 40976 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 42166 | 10.61 µg/L | 98 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|--------|-------|----------|
| | | 599.0 -> 98.8 | 20128 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 344728 | 12.35 | µg/L | 98 |
| | | 363.1 -> 169.0 | 55086 | | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 80819 | 10.61 | µg/L | 97 |
| | | 449.0 -> 98.9 | 38330 | | | |
| PFHxA | 5.420 | 313.0 -> 269.0 | 283376 | 12.27 | µg/L | 98 |
| | | 313.0 -> 118.9 | 14200 | | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 78663 | 11.32 | µg/L | m 99 |
| | | 398.7 -> 98.9 | 36605 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 385428 | 12.48 | µg/L | 100 |
| | | 463.0 -> 219.0 | 75050 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 67979 | 10.66 | µg/L | 93 |
| | | 548.8 -> 98.9 | 36354 | | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 523746 | 12.88 | µg/L | 99 |
| | | 413.0 -> 169.0 | 92825 | | | |
| PFOS | 8.166 | 498.9 -> 79.9 | 77612 | 10.69 | µg/L | m 93 |
| | | 498.9 -> 98.8 | 37321 | | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 373747 | 24.84 | µg/L | 100 |
| PFPeS | 6.422 | 349.1 -> 79.9 | 80140 | 11.57 | µg/L | 97 |
| | | 349.1 -> 98.9 | 36129 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 209256 | 12.51 | µg/L | 98 |
| | | 713.1 -> 168.9 | 17688 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 270193 | 12.43 | µg/L | 96 |
| | | 663.0 -> 168.9 | 29476 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 275143 | 12.59 | µg/L | 98 |
| | | 563.1 -> 269.1 | 44300 | | | |
| 11Cl-PF3OUdS | 9.323 | 630.9 -> 450.9 | 376001 | 23.34 | µg/L | 97 |
| | | 632.9 -> 452.9 | 110095 | | | |
| 9Cl-PF3ONS | 8.495 | 530.8 -> 351.0 | 569045 | 22.42 | µg/L | 99 |
| | | 532.8 -> 353.0 | 191583 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 1278083 | 22.41 | µg/L | 100 |
| | | 376.9 -> 84.8 | 340840 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 86401 | 23.74 | µg/L | 97 |
| | | 284.9 -> 184.9 | 10545 | | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 59768 | 62.06 | µg/L | 97 |
| | | 241.0 -> 117.0 | 7931 | | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 1250433 | 301.02 | µg/L | 97 |
| | | 341.0 -> 217.0 | 922064 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 875743 | 307.84 | µg/L | 98 |
| | | 441.0 -> 336.9 | 1962989 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 152729 | 24.36 | µg/L | 88 |
| | | 526.0 -> 169.0 | 210391 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 419307 | 59.94 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 129419 | 24.25 | µg/L | 90 |
| | | 511.9 -> 169.0 | 187451 | | | |
| MeFOSE | 10.661 | 616.1 -> 58.9 | 292024 | 63.63 | µg/L | 100 |
| PFDoS | 9.755 | 699.1 -> 79.9 | 19043 | 10.79 | µg/L | 99 |
| | | 699.1 -> 98.8 | 10316 | | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 68239 | 24.27 | µg/L | 98 |
| | | 295.0 -> 84.9 | 17621 | | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 254903 | 24.89 | µg/L | 100 |
| PFMPA | 3.363 | 229.0 -> 84.9 | 197427 | 24.79 | µg/L | 100 |
| PFEESA | 5.875 | 314.8 -> 134.9 | 658465 | 22.47 | µg/L | 98 |
| | | 314.8 -> 82.9 | 22317 | | | |

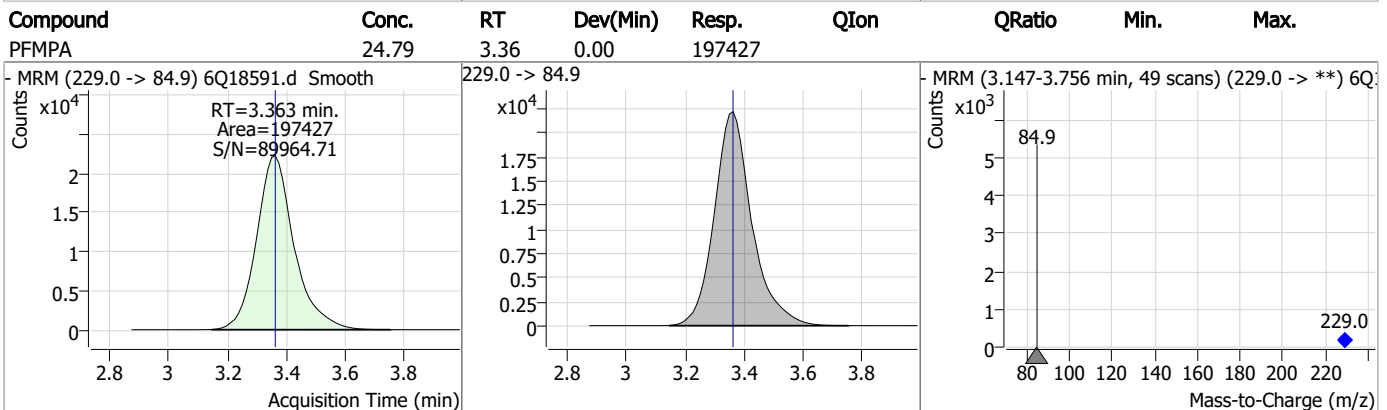
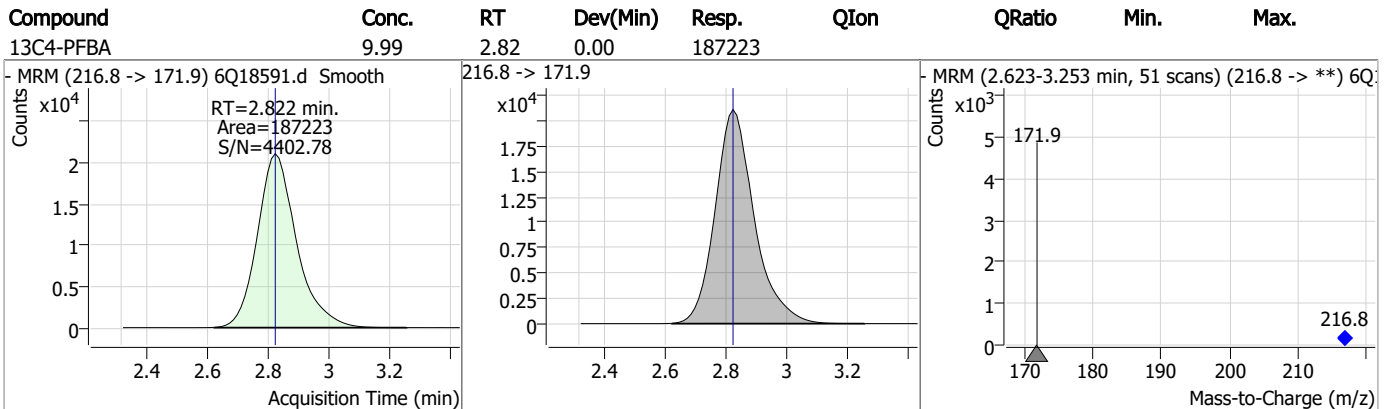
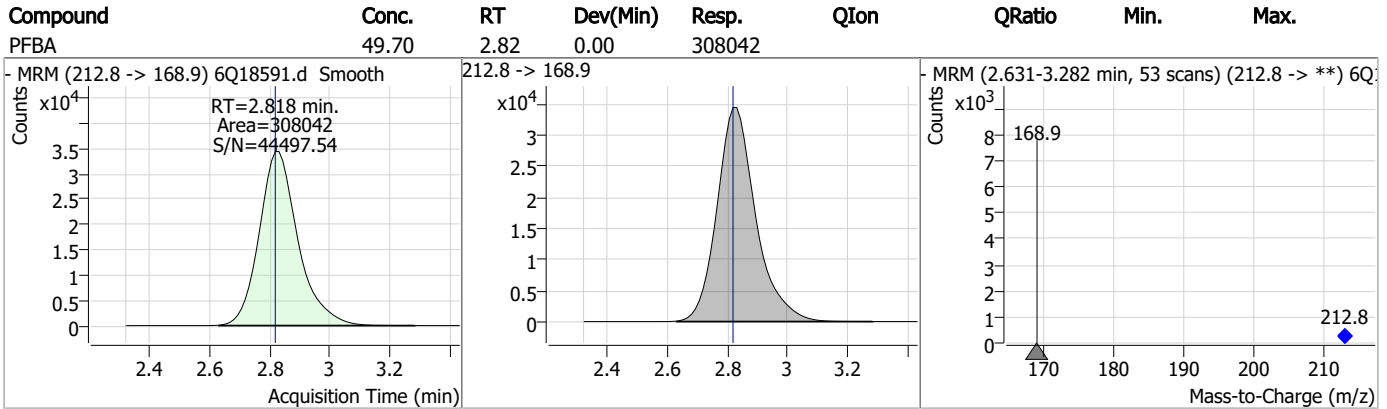
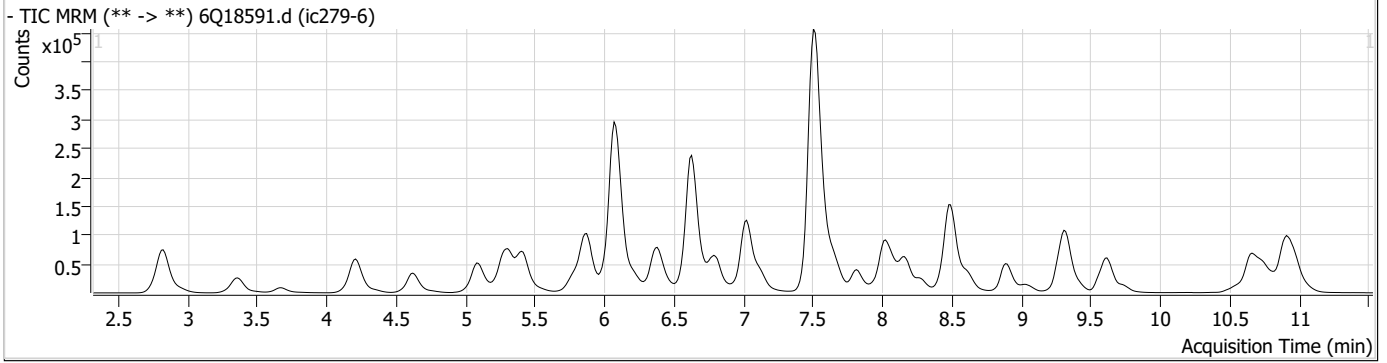
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

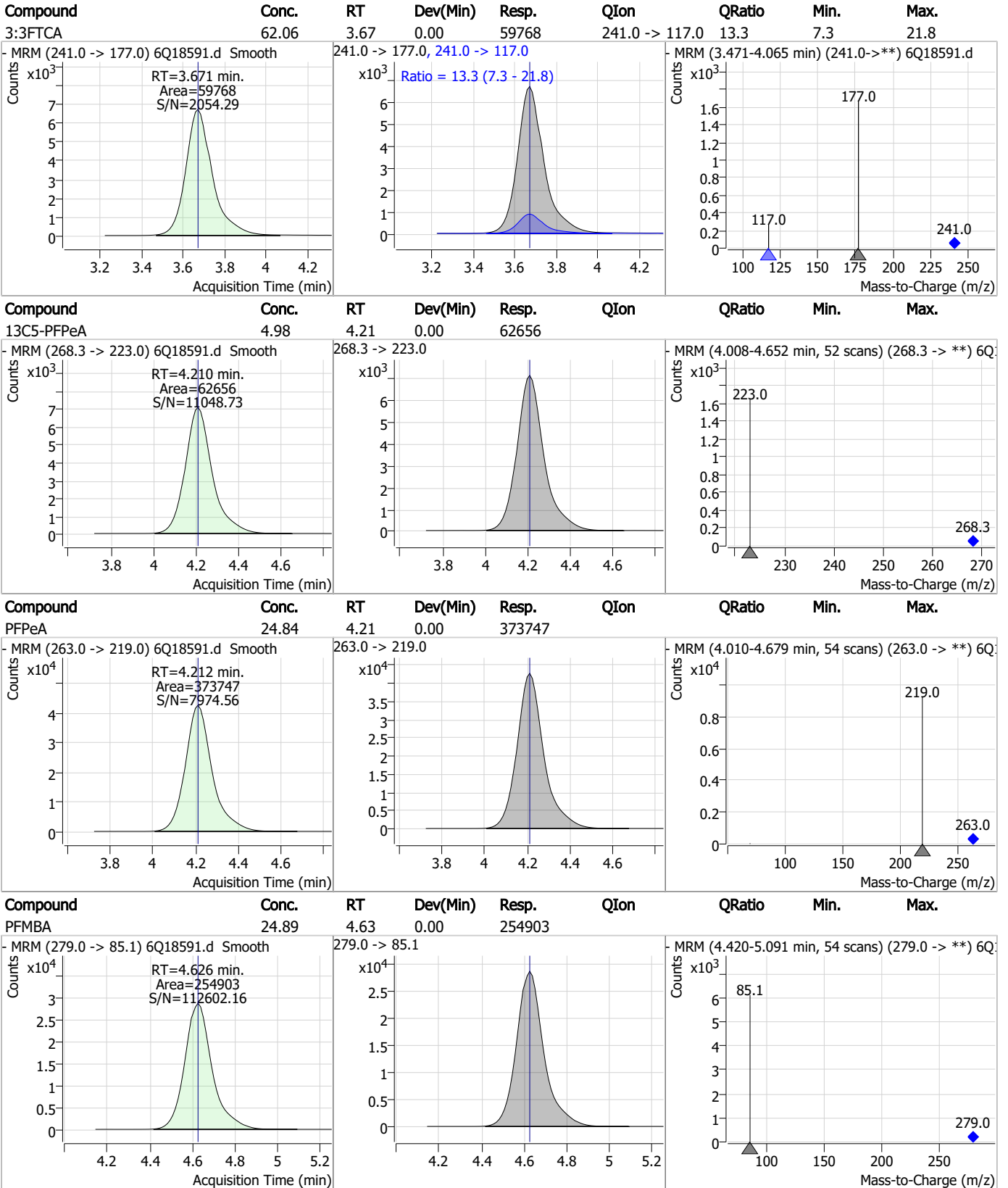
| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.7.7
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Perfluorinated Compounds by LC/MS/MS



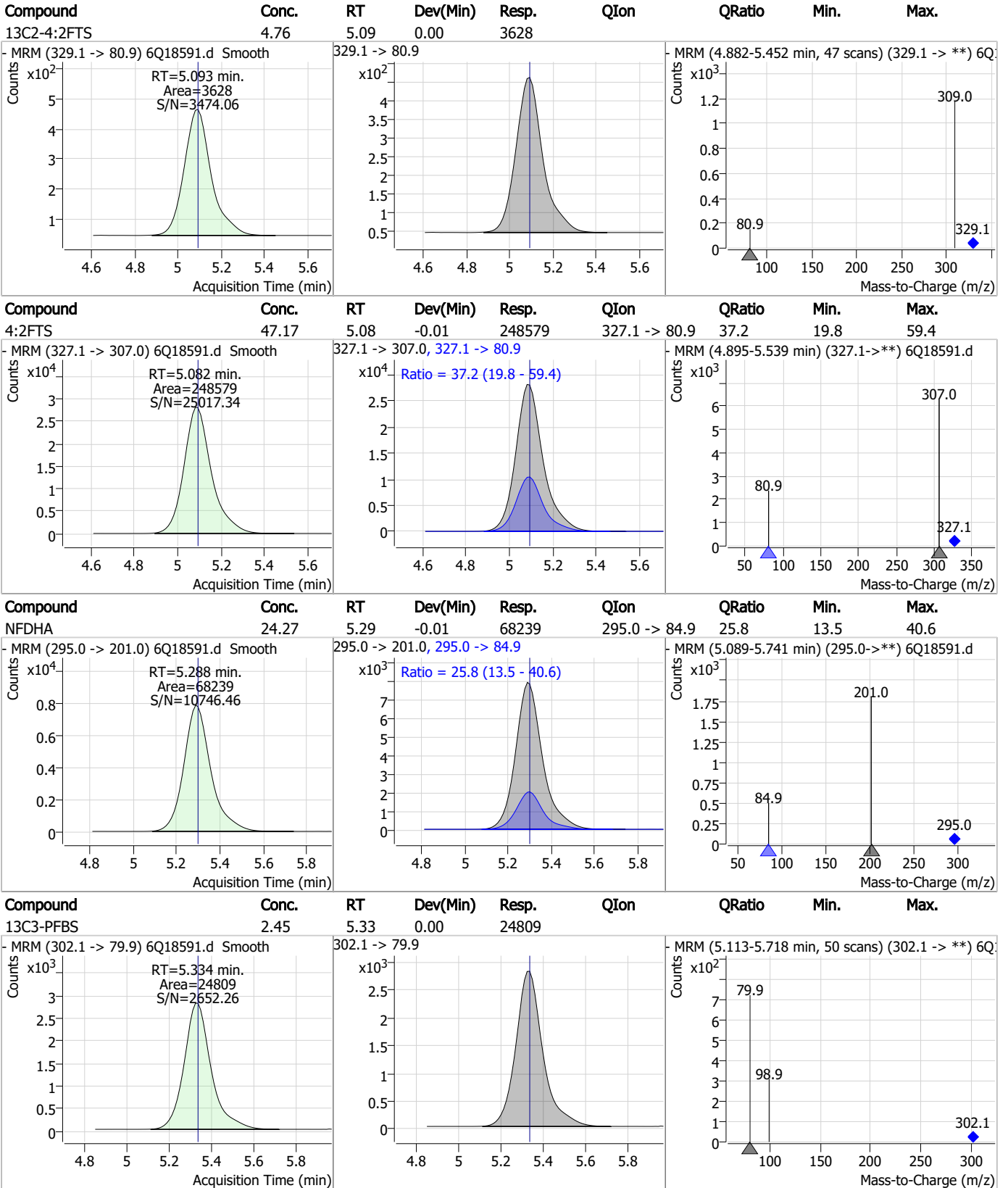
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

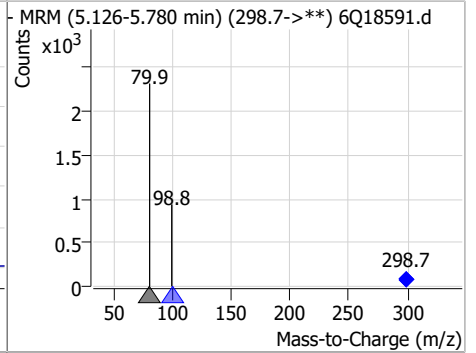
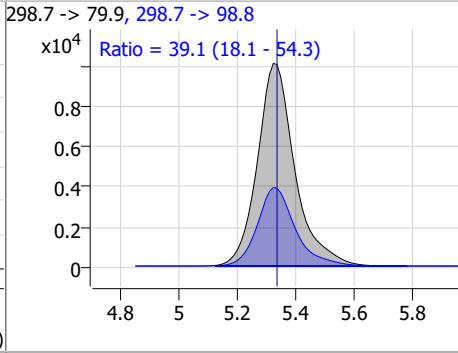
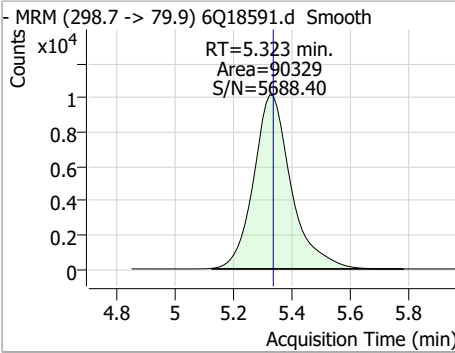


7.7.7

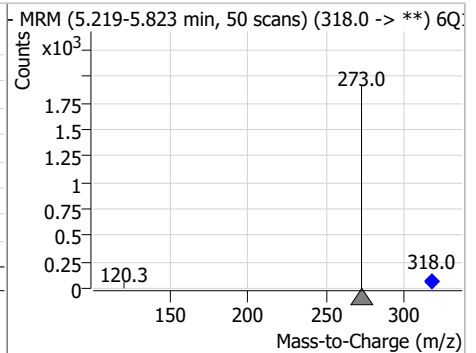
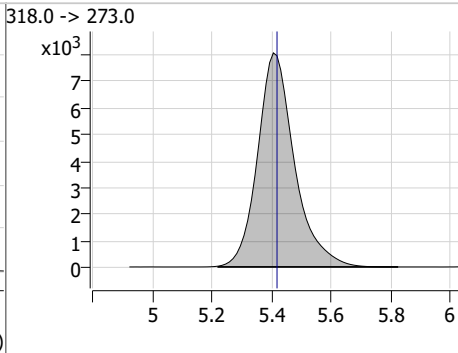
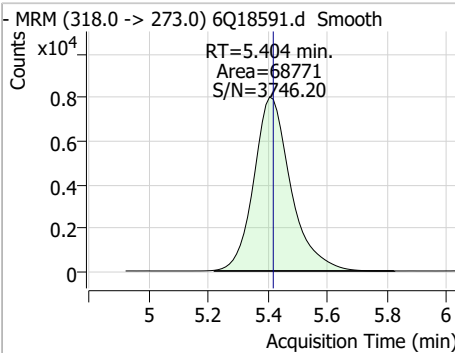
7

Perfluorinated Compounds by LC/MS/MS

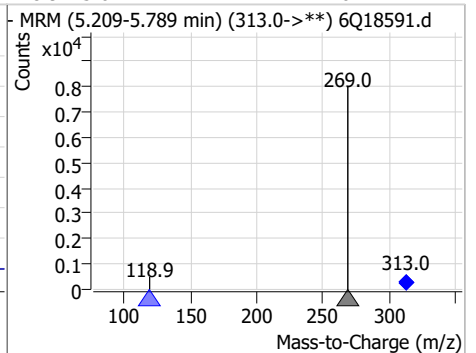
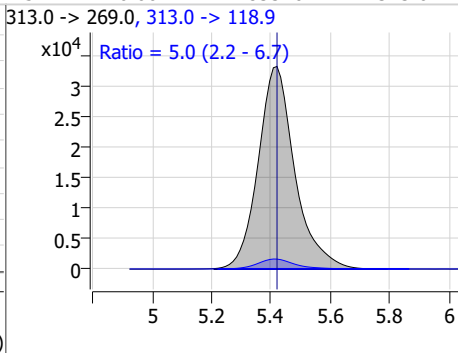
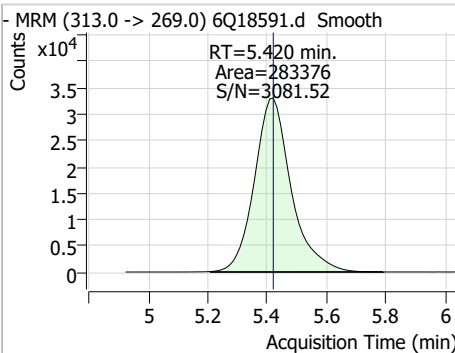
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 10.70 | 5.32 | -0.01 | 90329 | 298.7 -> 98.8 | 39.1 | 18.1 | 54.3 |



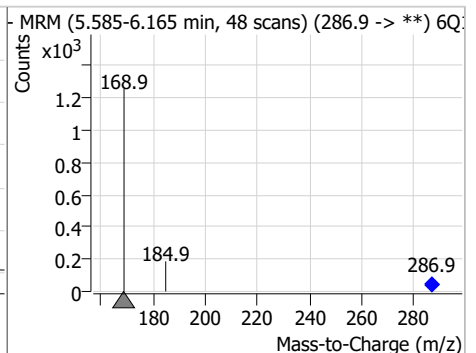
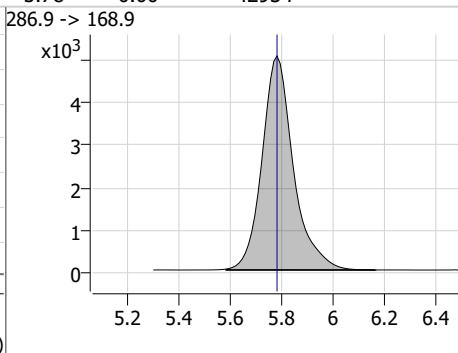
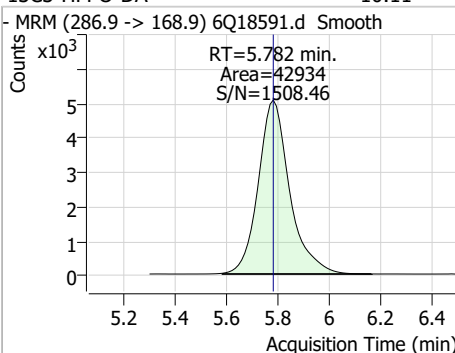
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFHxA | 2.51 | 5.40 | -0.01 | 68771 | 318.0 -> 273.0 | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| PFHxA | 12.27 | 5.42 | 0.00 | 283376 | 313.0 -> 118.9 | 5.0 | 2.2 | 6.7 |

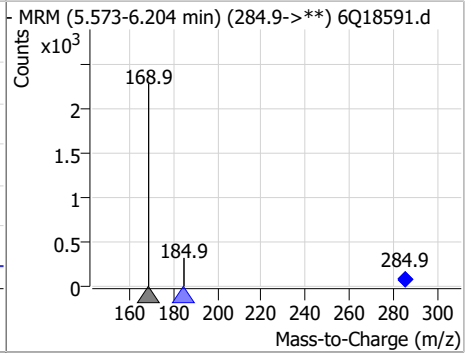
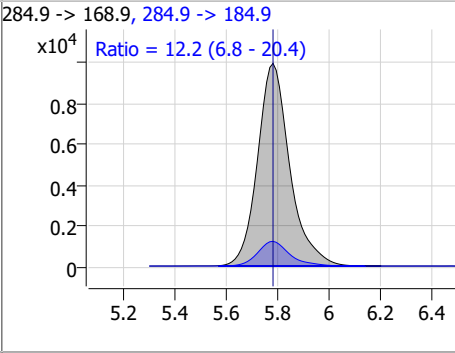
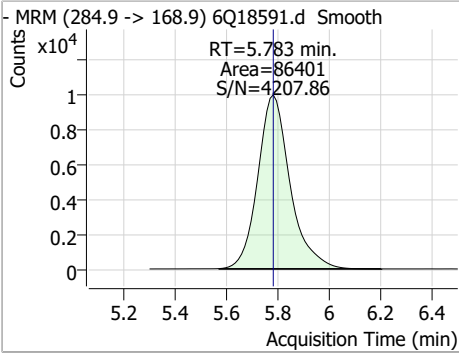


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C3-HFPO-DA | 10.11 | 5.78 | 0.00 | 42934 | 286.9 -> 168.9 | | | |

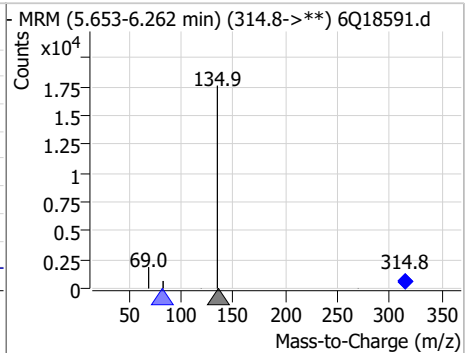
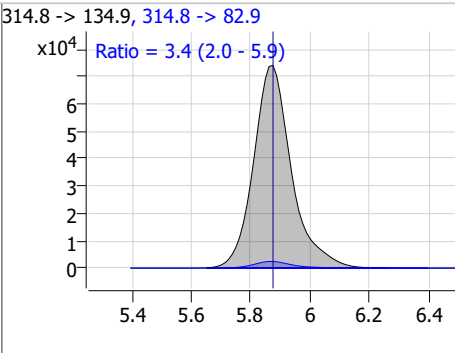
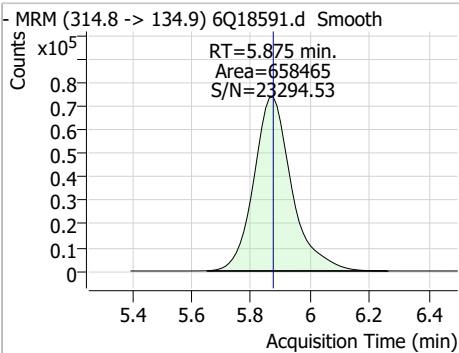


Perfluorinated Compounds by LC/MS/MS

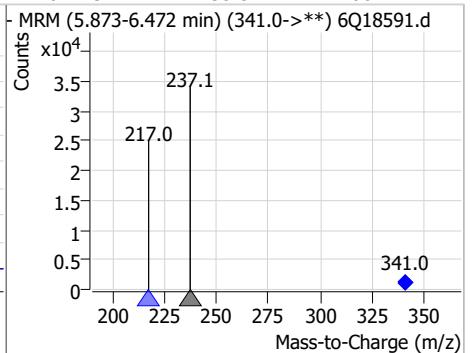
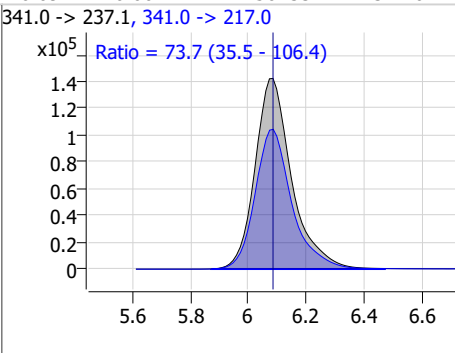
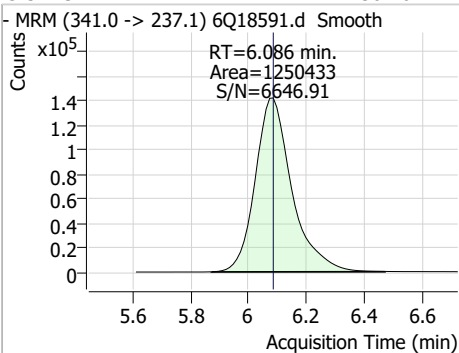
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 23.74 | 5.78 | 0.00 | 86401 | 284.9 -> 184.9 | 12.2 | 6.8 | 20.4 |



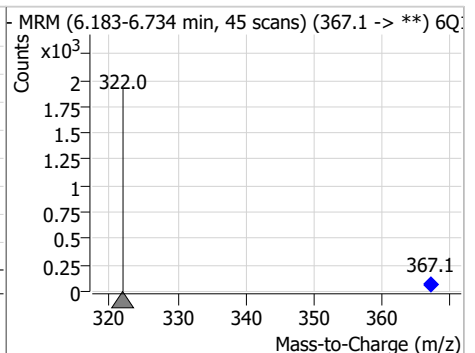
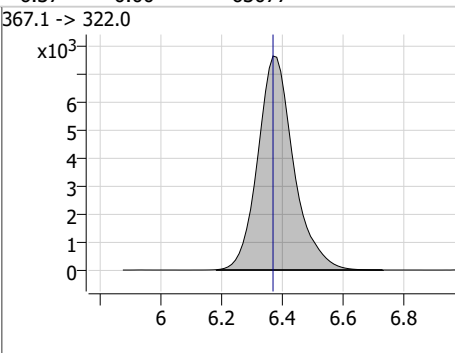
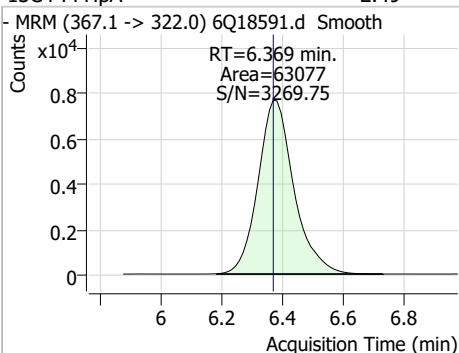
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 22.47 | 5.88 | 0.00 | 658465 | 314.8 -> 82.9 | 3.4 | 2.0 | 5.9 |



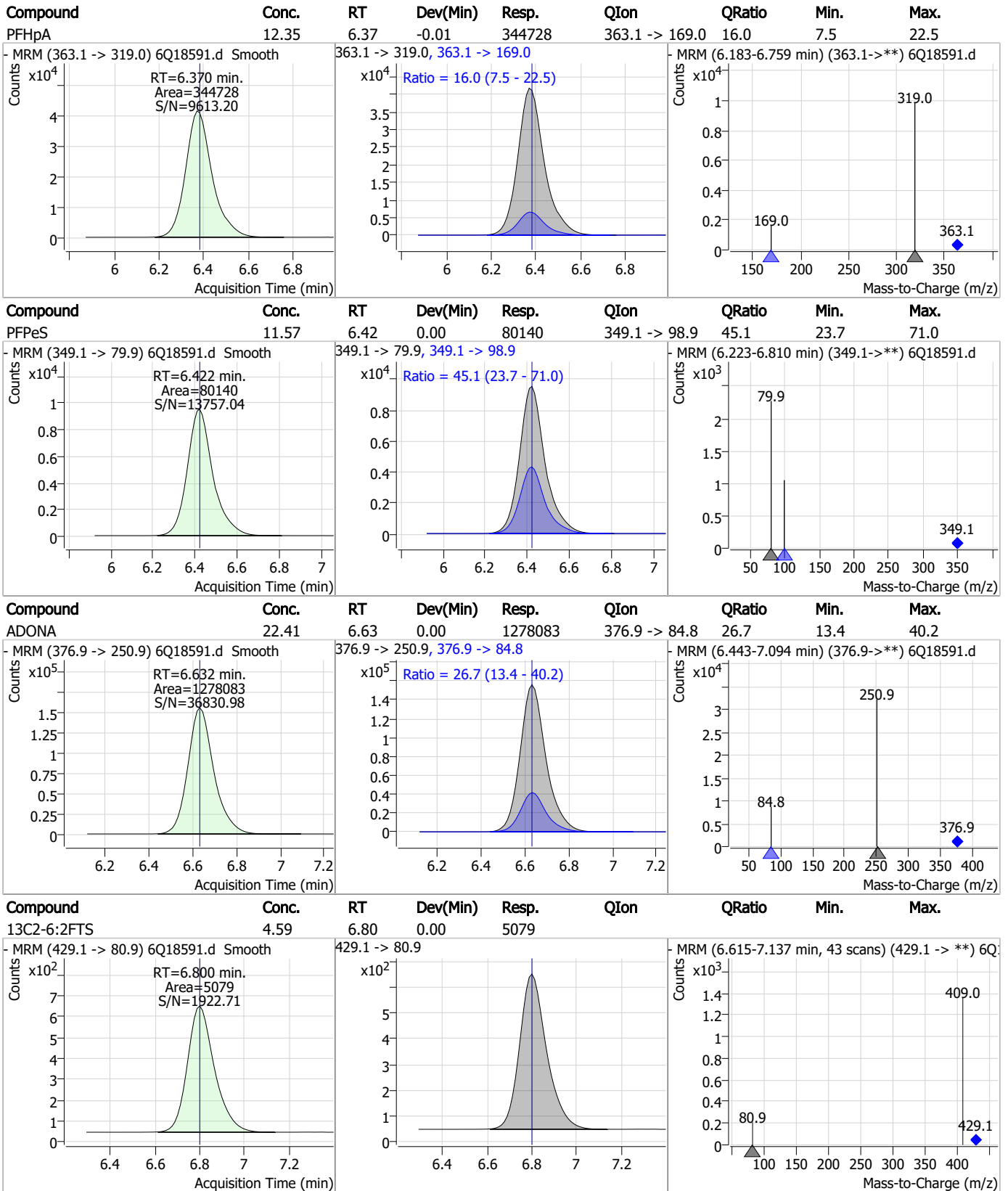
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|------|----------|---------|----------------|--------|------|-------|
| 5:3FTCA | 301.02 | 6.09 | 0.00 | 1250433 | 341.0 -> 217.0 | 73.7 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.49 | 6.37 | 0.00 | 63077 | 367.1 -> 322.0 | | | |



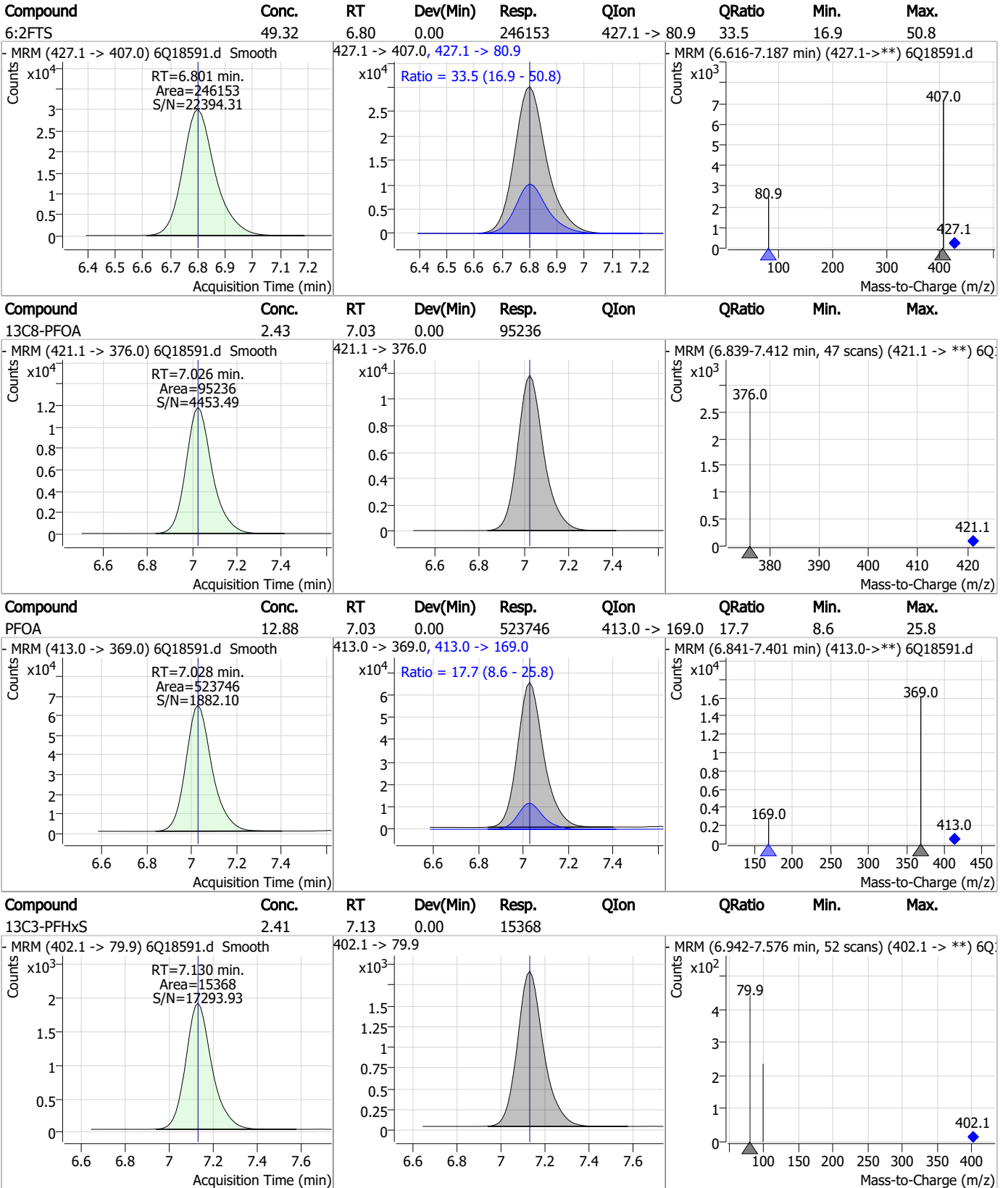
Perfluorinated Compounds by LC/MS/MS



7.7.7

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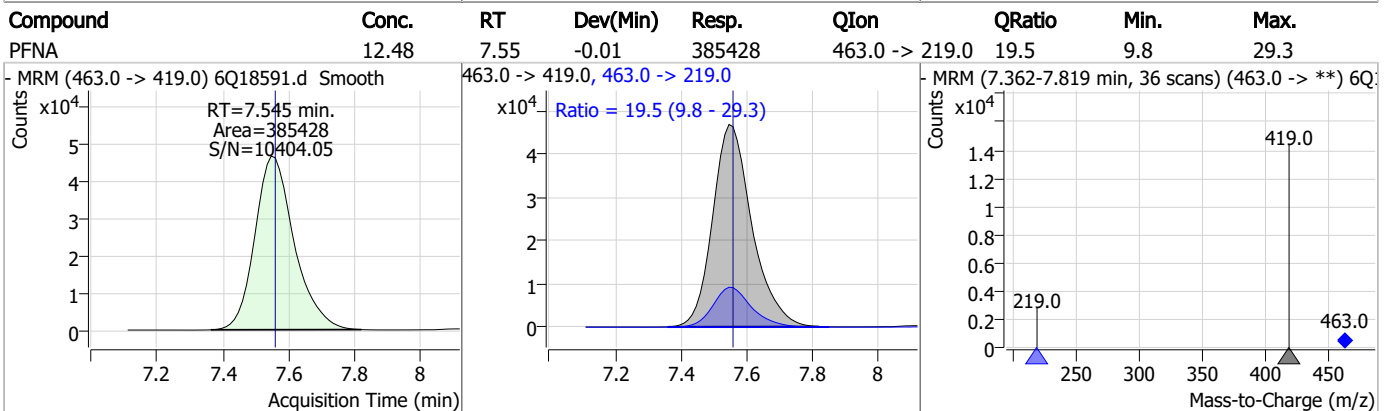
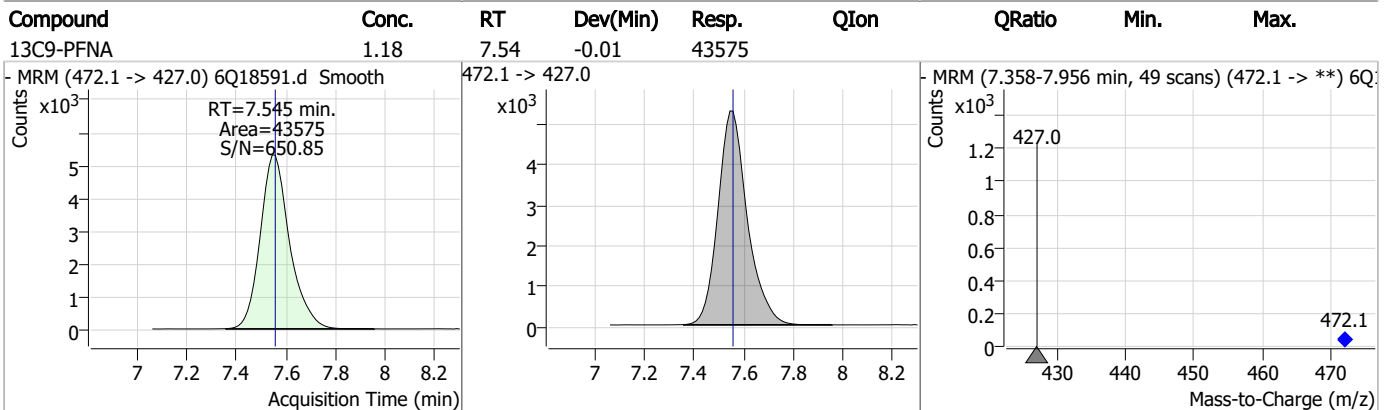
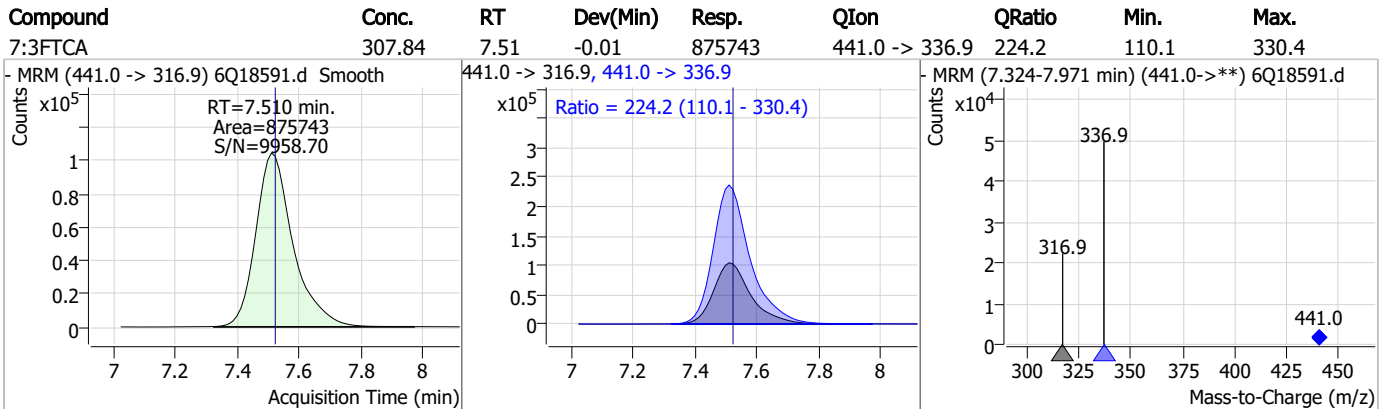
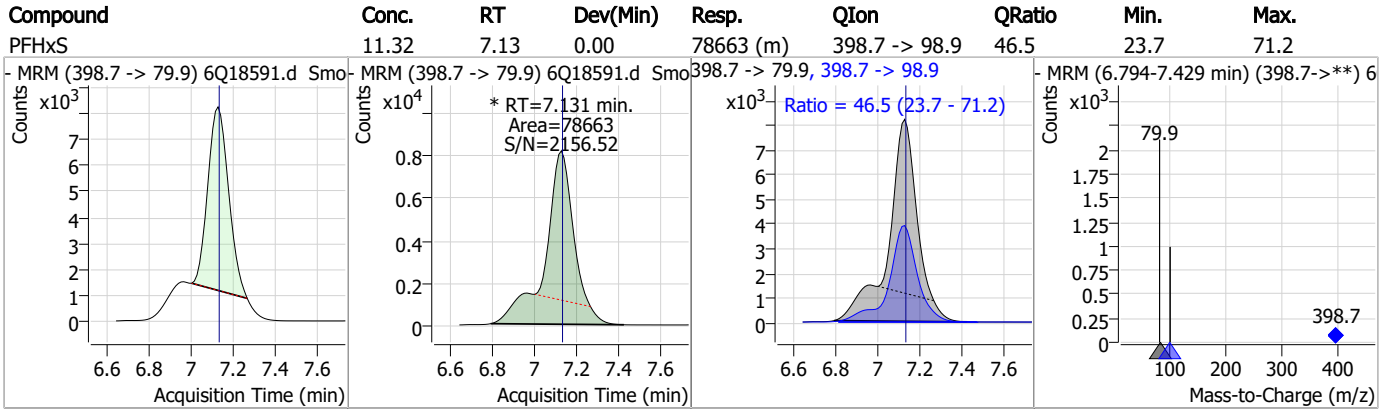
Perfluorinated Compounds by LC/MS/MS



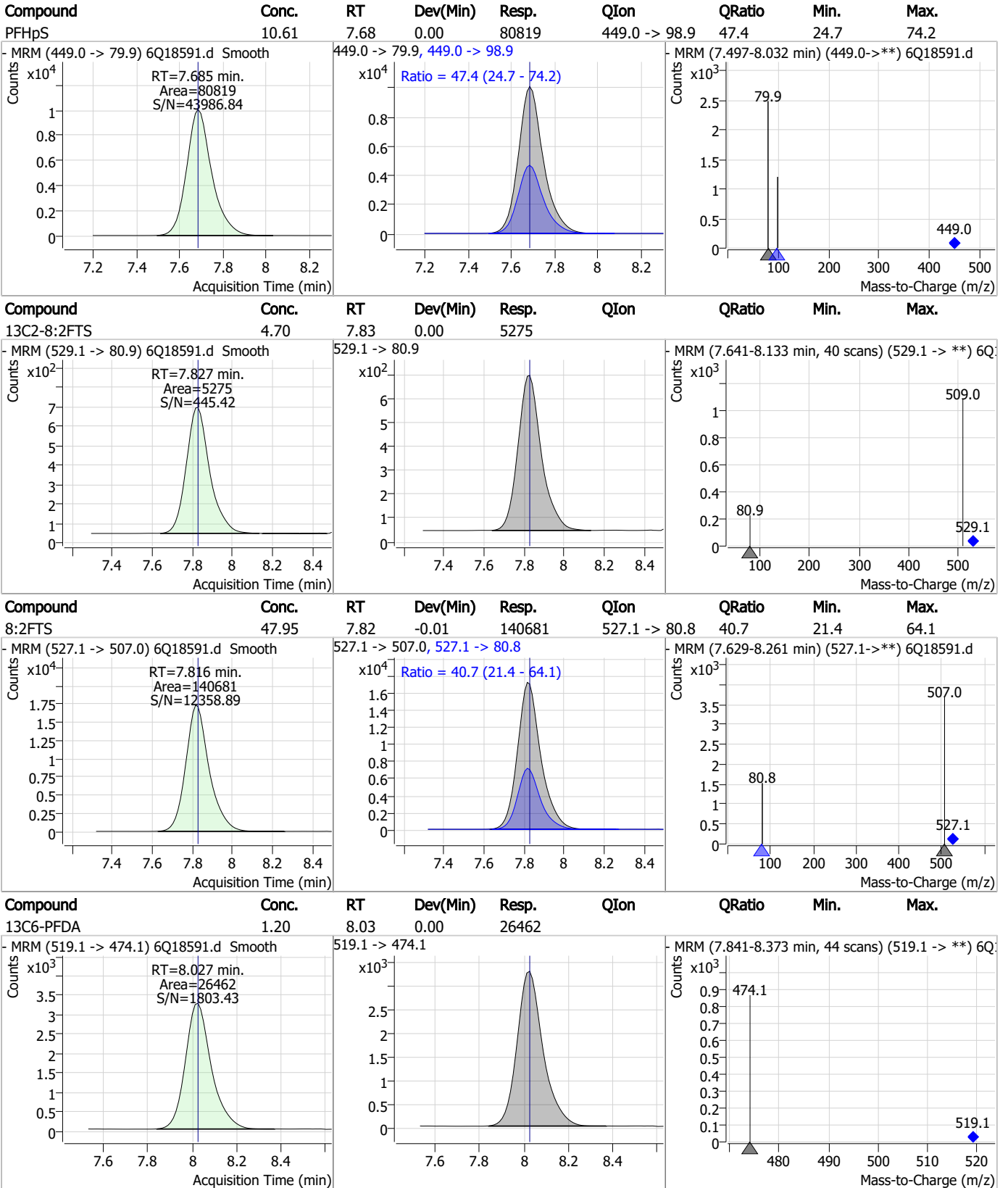
7.7.7

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Perfluorinated Compounds by LC/MS/MS



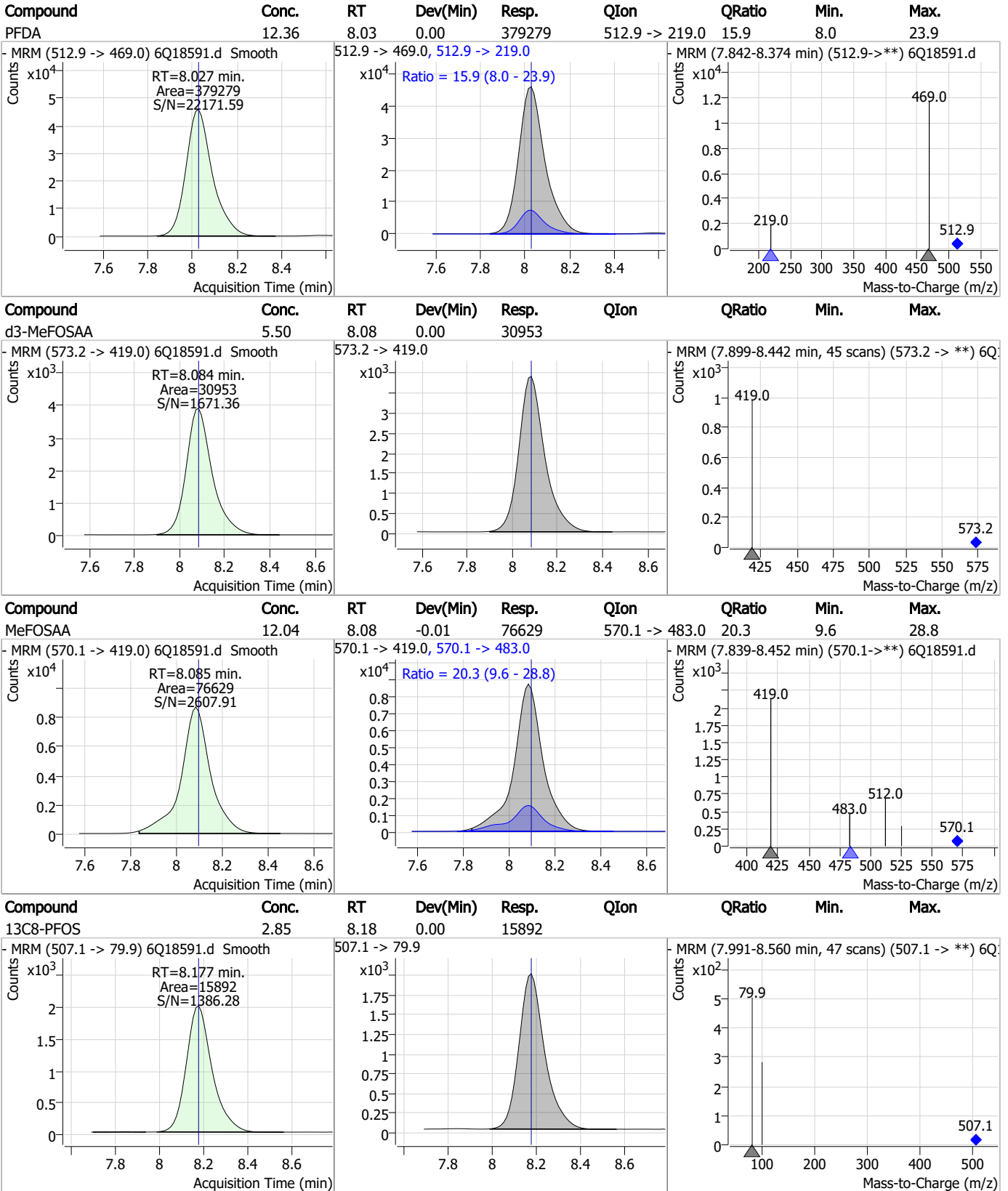
Perfluorinated Compounds by LC/MS/MS



7.7.7

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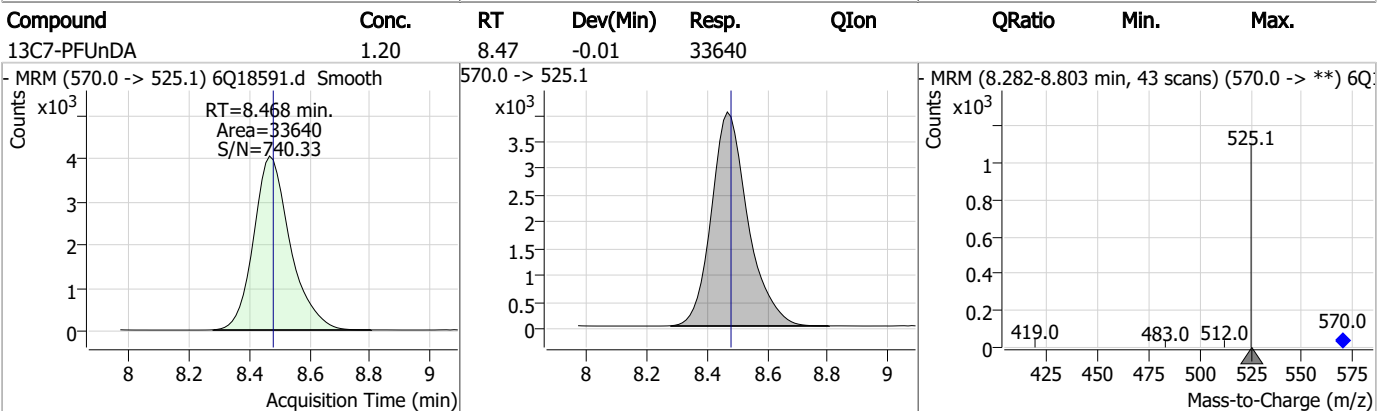
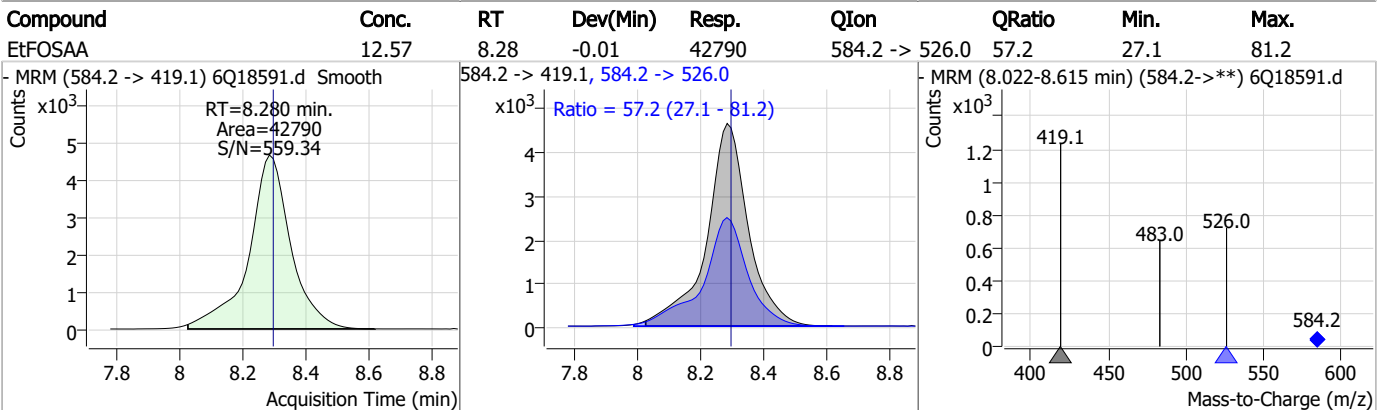
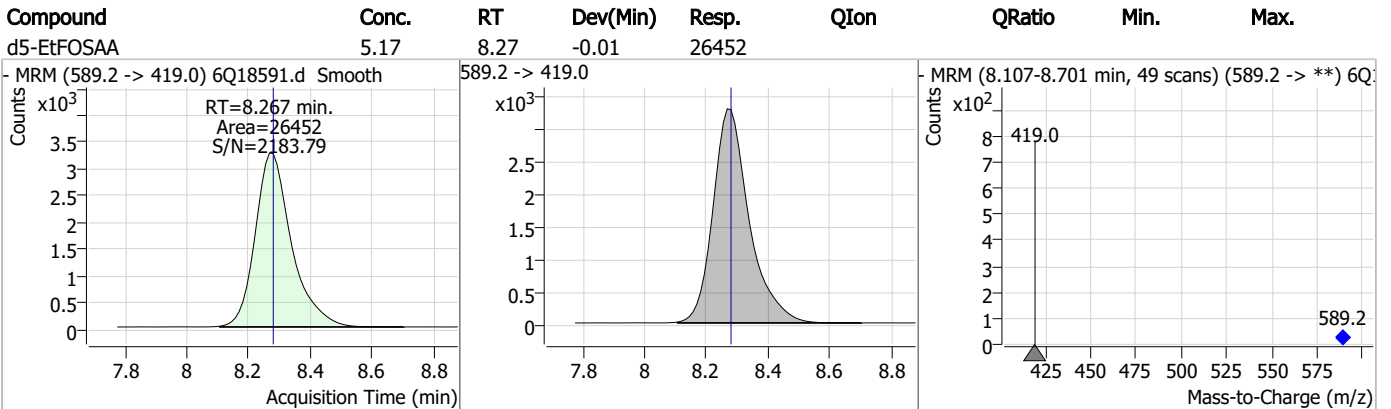
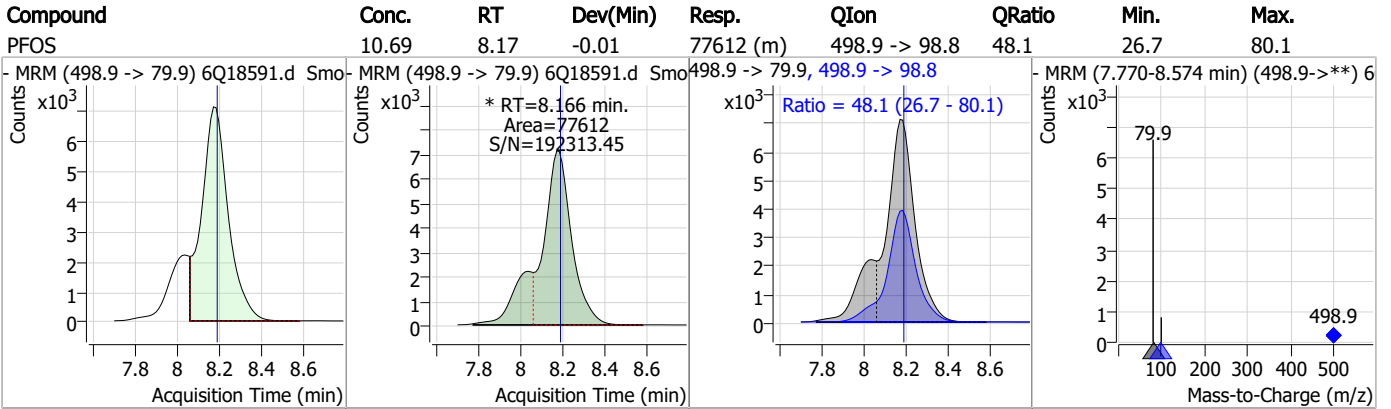
Perfluorinated Compounds by LC/MS/MS



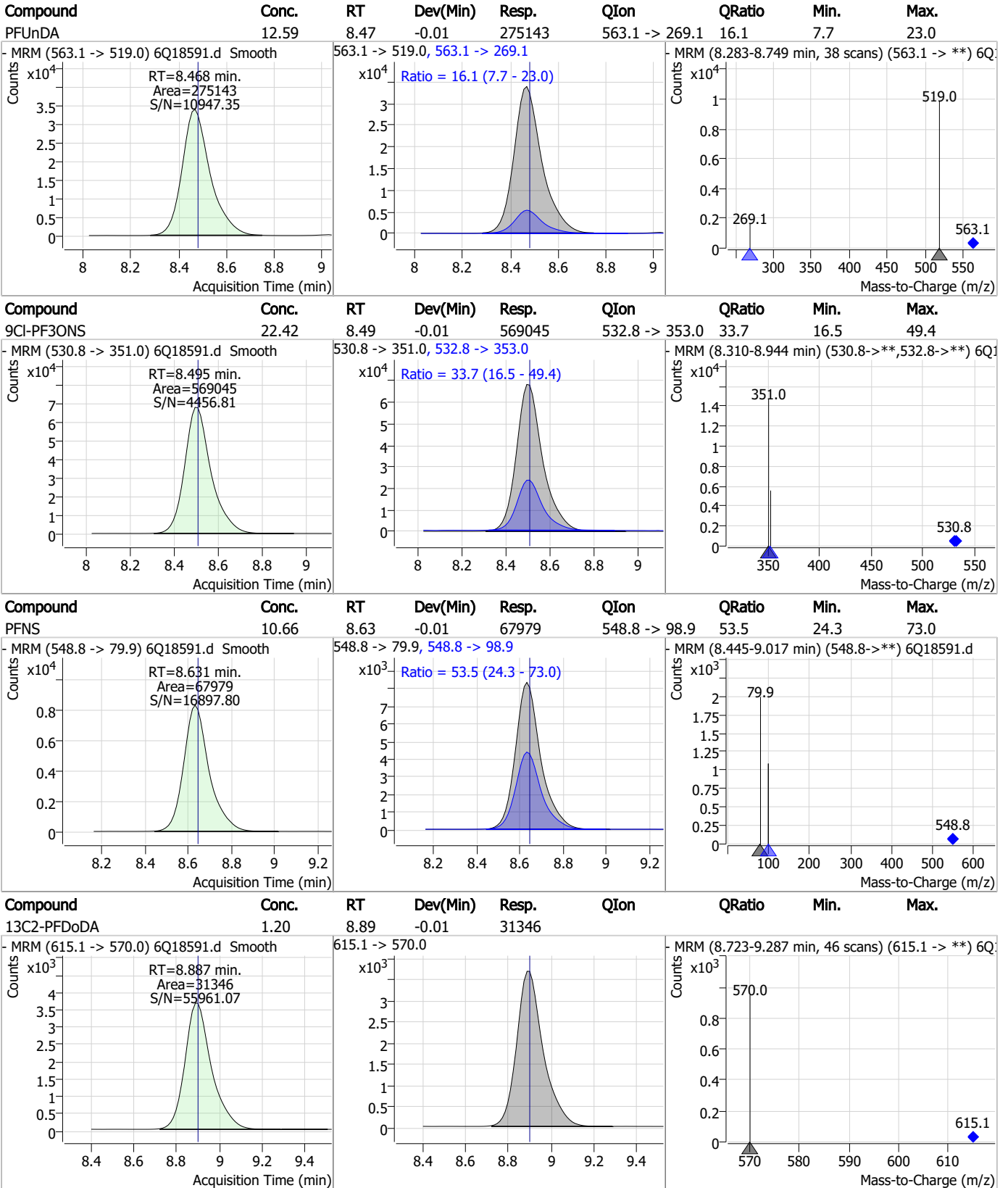
7.7.7

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Perfluorinated Compounds by LC/MS/MS



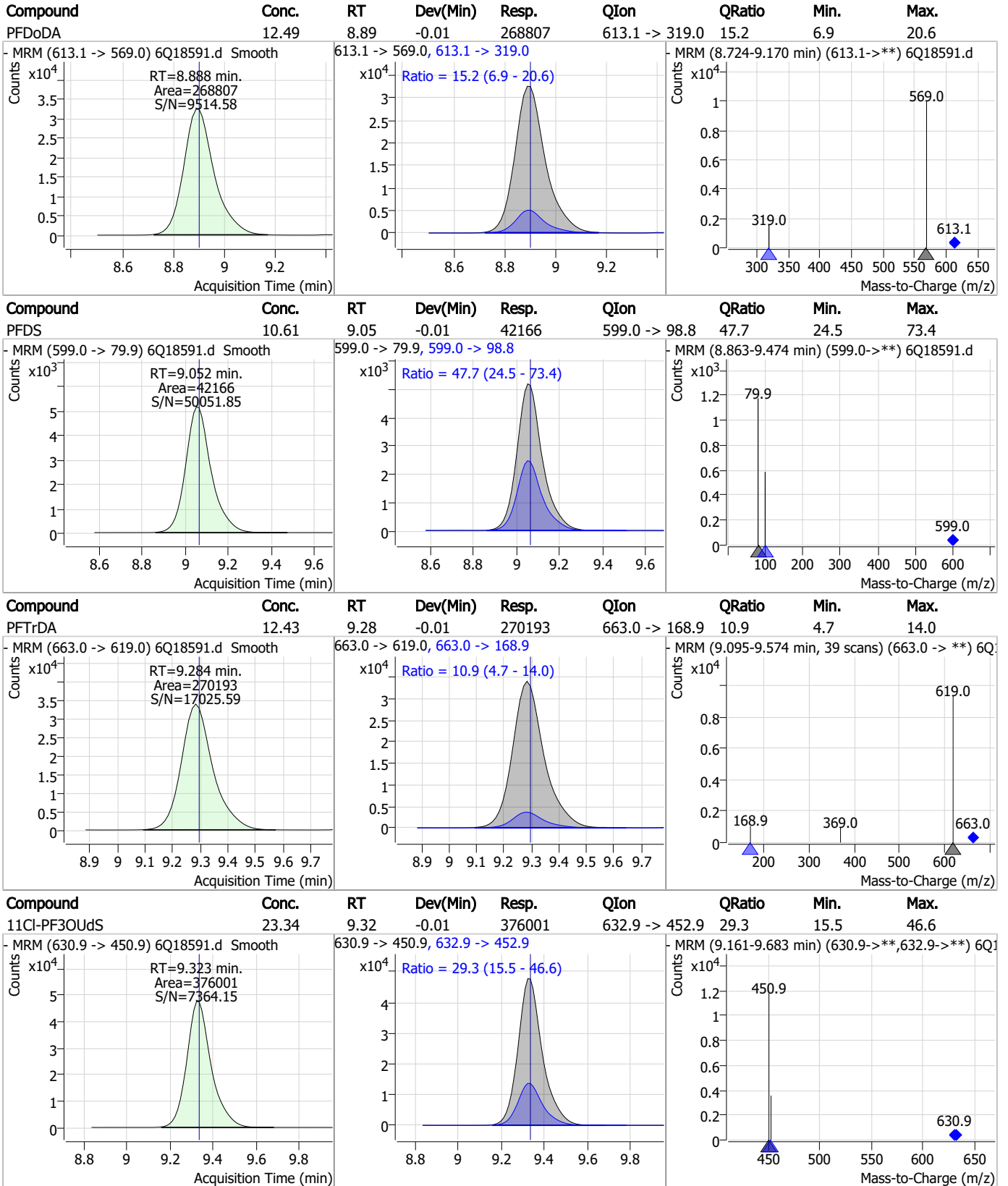
Perfluorinated Compounds by LC/MS/MS



7.7.7

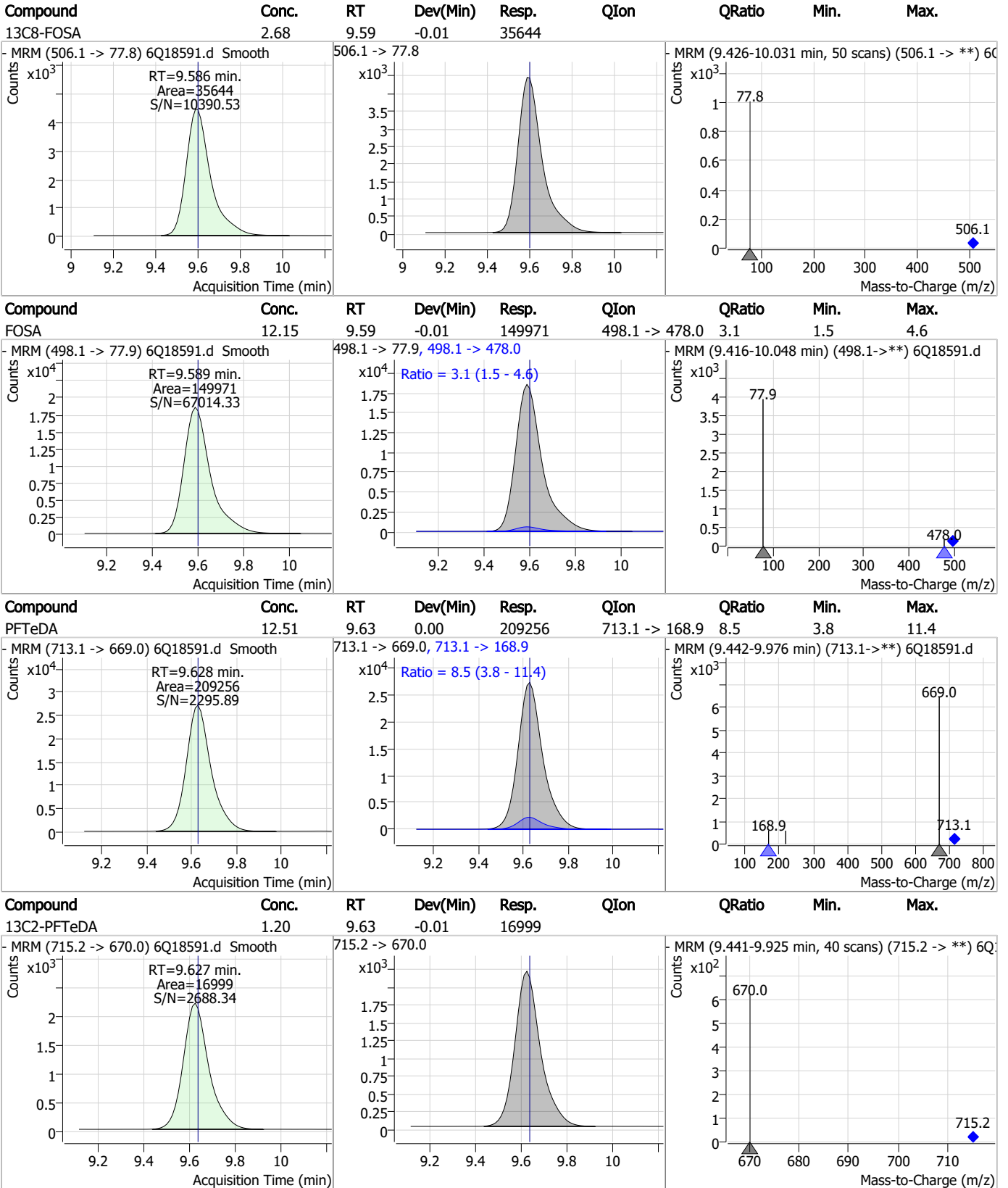
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Perfluorinated Compounds by LC/MS/MS



7.7.7
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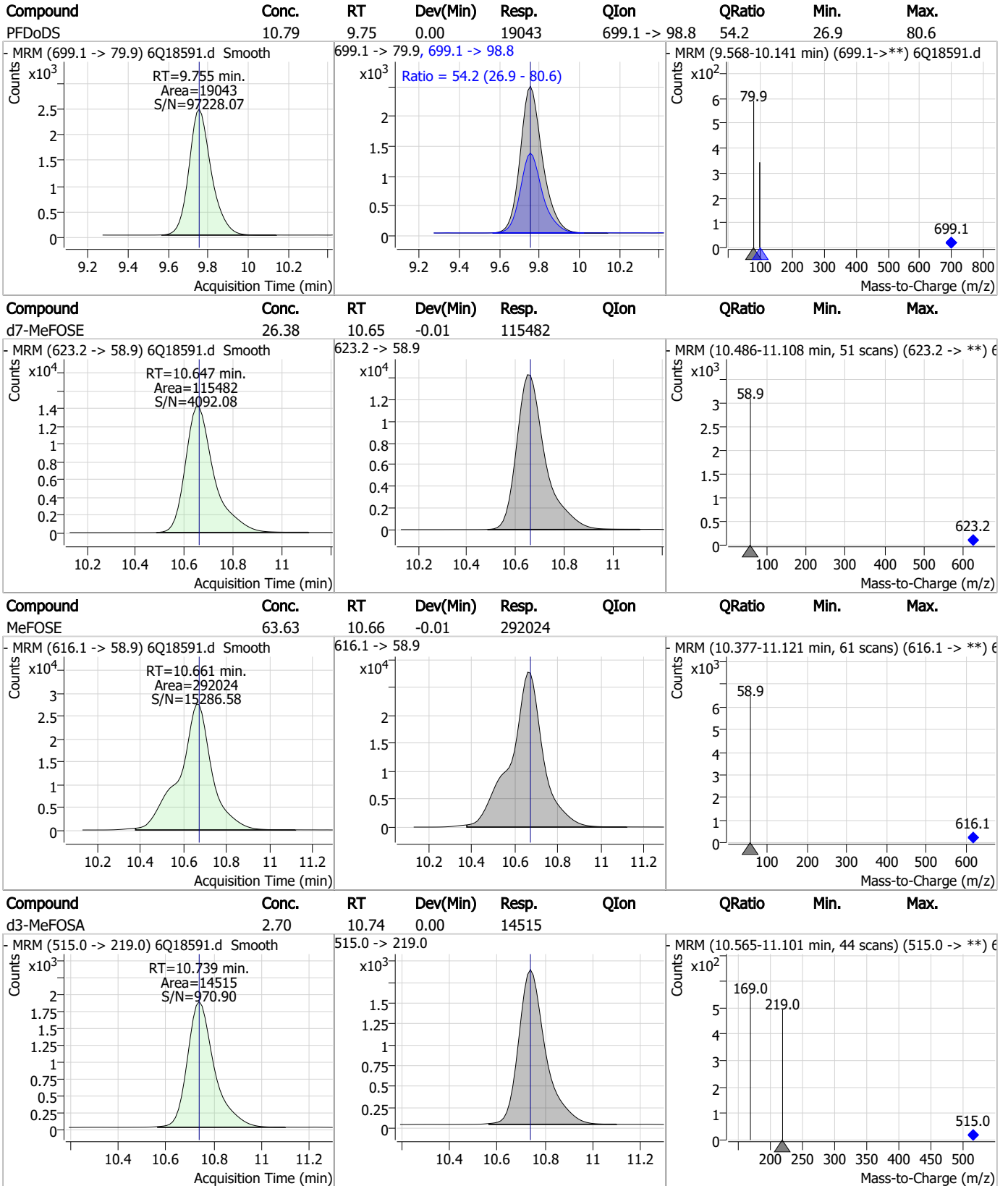
Perfluorinated Compounds by LC/MS/MS



7.7.7

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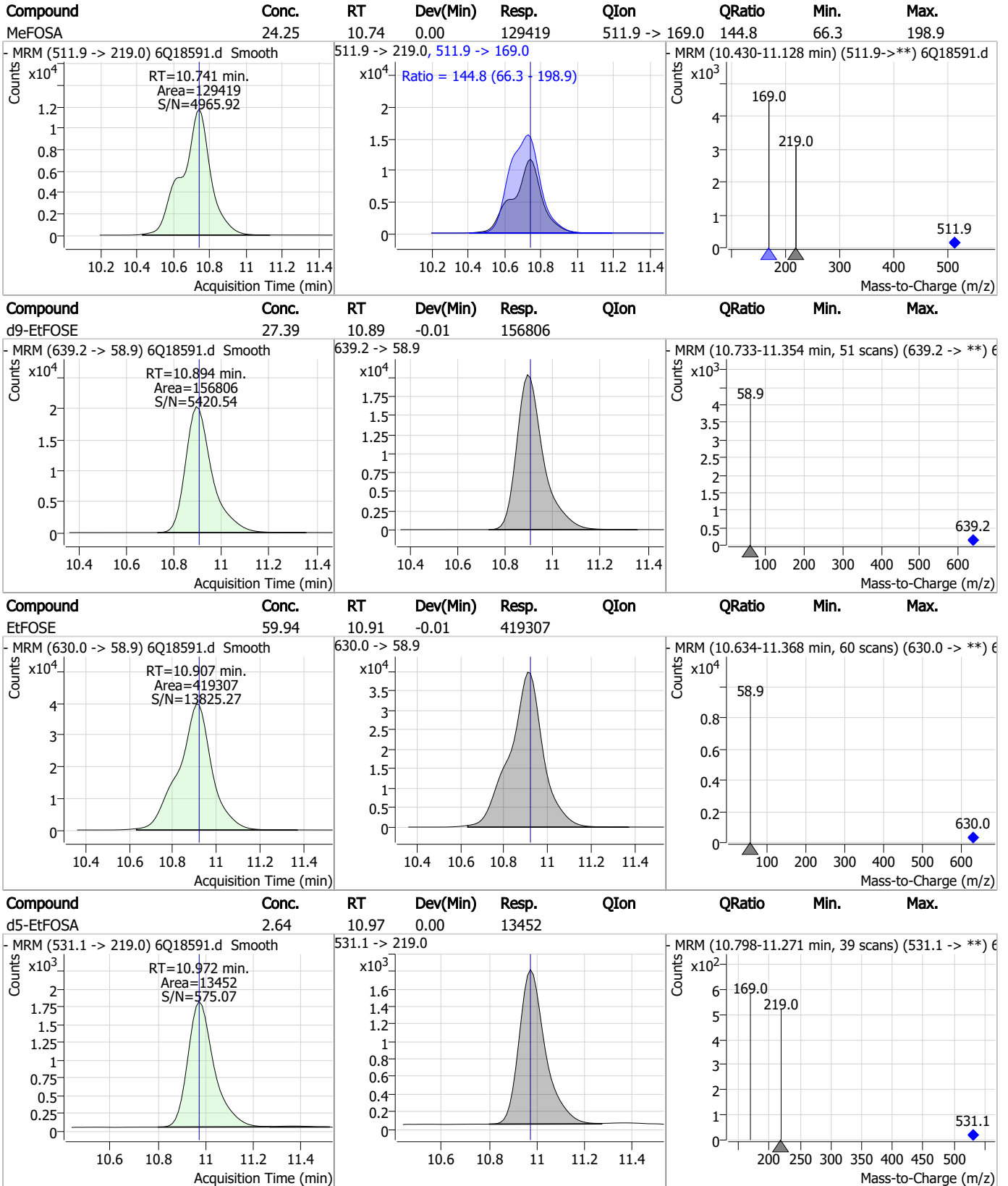
Perfluorinated Compounds by LC/MS/MS



7.7.7

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Perfluorinated Compounds by LC/MS/MS

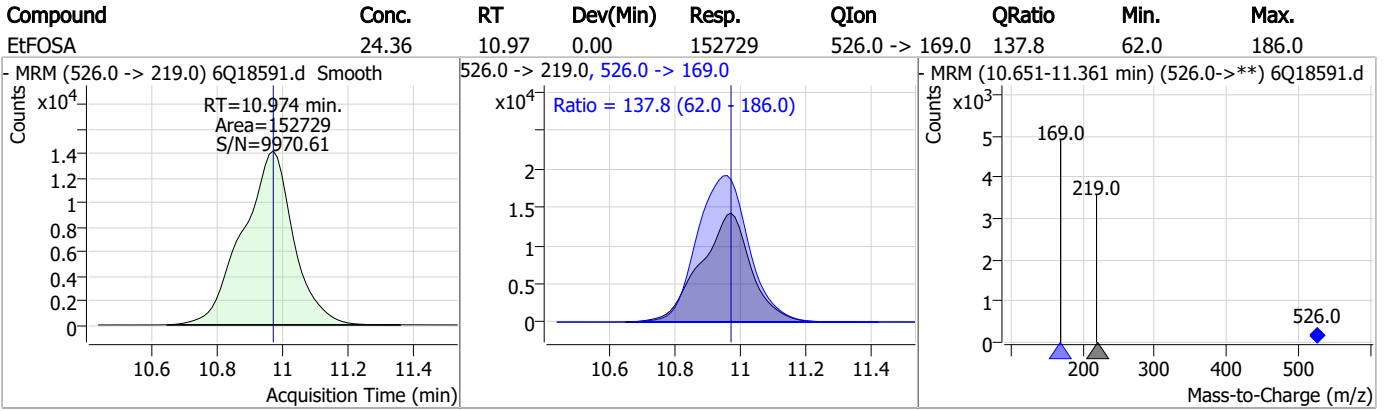


7.7.7

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Perfluorinated Compounds by LC/MS/MS



7.7.7

7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18591.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:28 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |

7.7.7.1

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Manual Integrations
APPROVED
 (compounds with "m" flag)

Norman Farmer
 06/01/23 14:56

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18592.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:43:19 PM
 Sample Name : ic279-7
 Vial : P1-A8
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 173909 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 59923 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 64695 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 61221 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 92604 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 41267 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 26149 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33011 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30068 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16581 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 34285 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 23470 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15119 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14029 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3287 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4859 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4858 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 28241 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41014 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25438 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 110296 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 143947 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13006 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13881 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17752 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 73362 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10445 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 97223 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 34474 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 49011 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 61263 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3287 | 4.72 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 94.4% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4859 | 4.80 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 96.0% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4858 | 4.73 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 94.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30068 | 1.26 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.5% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16581 | 1.27 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 101.8% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 23470 | 2.54 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.6% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15119 | 2.59 µg/L | 0.000 |

7.7.8
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.6% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 173909 | 9.95 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.5% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 61221 | 2.55 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.1% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 64695 | 2.49 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 59923 | 5.03 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 26149 | 1.29 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 103.5% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33011 | 1.28 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 102.5% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 34285 | 2.53 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.3% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 92604 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14029 | 2.47 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.7% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 41267 | 1.28 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 28241 | 4.93 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.6% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41014 | 10.19 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.9% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13881 | 2.53 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.2% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 25438 | 4.88 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 97.6% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 110296 | 24.74 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 99.0% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 143947 | 24.68 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.7% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13006 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.2% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 461734 | 96.69 µg/L | 96 |
| | | 327.1 -> 80.9 | 170644 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 454138 | 95.12 µg/L | 97 |
| | | 427.1 -> 80.9 | 145960 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 264319 | 97.83 µg/L | 92 |
| | | 527.1 -> 80.8 | 99847 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 84735 | 25.89 µg/L | 97 |
| | | 584.2 -> 526.0 | 44261 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 295311 | 24.88 µg/L | 100 |
| | | 498.1 -> 478.0 | 8483 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 150677 | 25.95 µg/L | 100 |
| | | 570.1 -> 483.0 | 29222 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 587033 | 101.96 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 179888 | 22.53 µg/L | 100 |
| | | 298.7 -> 98.8 | 65061 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 752039 | 24.80 µg/L | 99 |
| | | 512.9 -> 219.0 | 115710 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 526213 | 25.49 µg/L | 97 |
| | | 613.1 -> 319.0 | 79479 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 81025 | 23.10 µg/L | 98 |

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|--------|-------|----------|
| | | 599.0 -> 98.8 | 40858 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 661062 | 24.40 | µg/L | 98 |
| | | 363.1 -> 169.0 | 105903 | | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 160648 | 23.88 | µg/L | 100 |
| | | 449.0 -> 98.9 | 79054 | | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 544910 | 25.09 | µg/L | 98 |
| | | 313.0 -> 118.9 | 27606 | | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 151573 | 22.16 | µg/L | m 98 |
| | | 398.7 -> 98.9 | 73693 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 715129 | 24.46 | µg/L | 99 |
| | | 463.0 -> 219.0 | 144309 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 139044 | 24.69 | µg/L | 99 |
| | | 548.8 -> 98.9 | 68535 | | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 1015265 | 25.68 | µg/L | 99 |
| | | 413.0 -> 169.0 | 178898 | | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 150352 | 23.45 | µg/L | 91 |
| | | 498.9 -> 98.8 | 70289 | | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 716320 | 49.77 | µg/L | 100 |
| PFPeS | 6.422 | 349.1 -> 79.9 | 157507 | 23.11 | µg/L | 96 |
| | | 349.1 -> 98.9 | 70365 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 415094 | 25.45 | µg/L | 99 |
| | | 713.1 -> 168.9 | 33581 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 514804 | 24.69 | µg/L | 95 |
| | | 663.0 -> 168.9 | 57093 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 552916 | 25.78 | µg/L | 100 |
| | | 563.1 -> 269.1 | 85701 | | | |
| 11Cl-PF3OUdS | 9.336 | 630.9 -> 450.9 | 699278 | 45.44 | µg/L | 99 |
| | | 632.9 -> 452.9 | 220802 | | | |
| 9Cl-PF3ONS | 8.508 | 530.8 -> 351.0 | 1126698 | 46.47 | µg/L | 97 |
| | | 532.8 -> 353.0 | 352413 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 2530342 | 46.45 | µg/L | 99 |
| | | 376.9 -> 84.8 | 662153 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 176481 | 50.77 | µg/L | 95 |
| | | 284.9 -> 184.9 | 20631 | | | |
| 3:3FTCA | 3.659 | 241.0 -> 177.0 | 116182 | 126.13 | µg/L | 96 |
| | | 241.0 -> 117.0 | 15056 | | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 2422580 | 619.95 | µg/L | 100 |
| | | 341.0 -> 217.0 | 1724946 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 1687899 | 630.71 | µg/L | 96 |
| | | 441.0 -> 336.9 | 3600820 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 298243 | 49.20 | µg/L | 91 |
| | | 526.0 -> 169.0 | 399918 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 800380 | 124.63 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 252486 | 49.46 | µg/L | 94 |
| | | 511.9 -> 169.0 | 353674 | | | |
| MeFOSE | 10.661 | 616.1 -> 58.9 | 552583 | 126.07 | µg/L | 100 |
| PFDoS | 9.755 | 699.1 -> 79.9 | 38653 | 24.80 | µg/L | 98 |
| | | 699.1 -> 98.8 | 20250 | | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 126994 | 48.02 | µg/L | 98 |
| | | 295.0 -> 84.9 | 33424 | | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 485738 | 49.59 | µg/L | 100 |
| PFMPA | 3.351 | 229.0 -> 84.9 | 385009 | 50.54 | µg/L | 100 |
| PFEESA | 5.862 | 314.8 -> 134.9 | 1215259 | 44.07 | µg/L | 99 |
| | | 314.8 -> 82.9 | 42433 | | | |

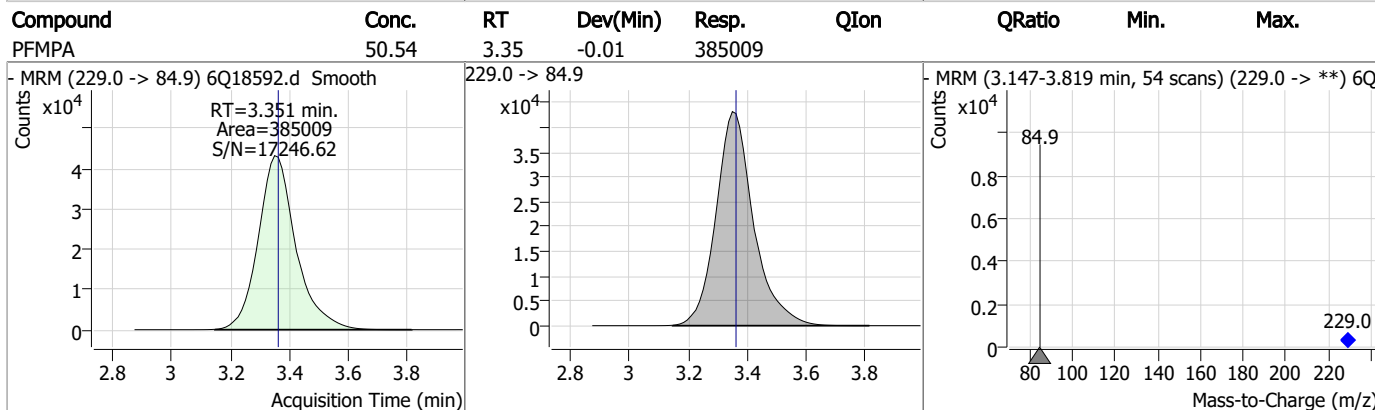
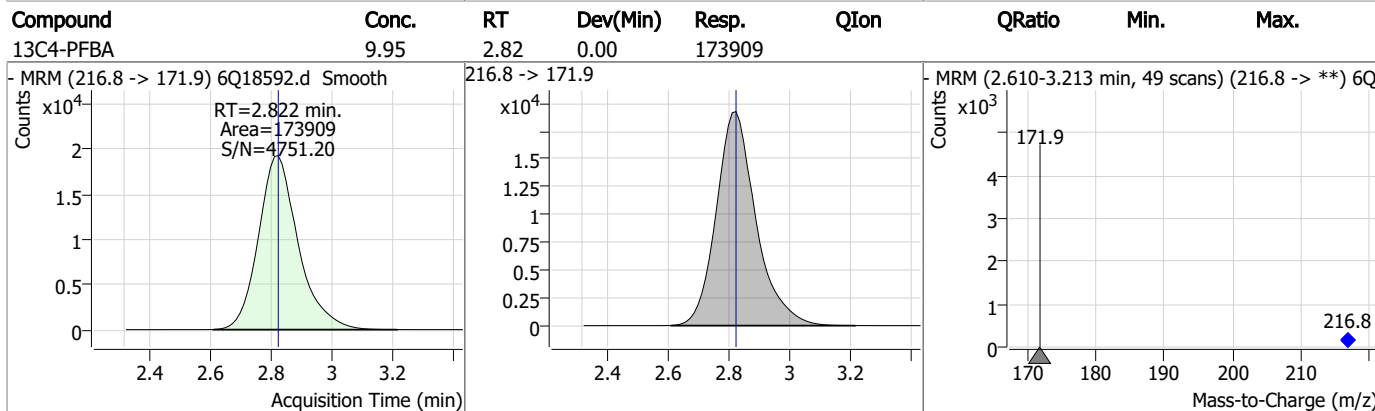
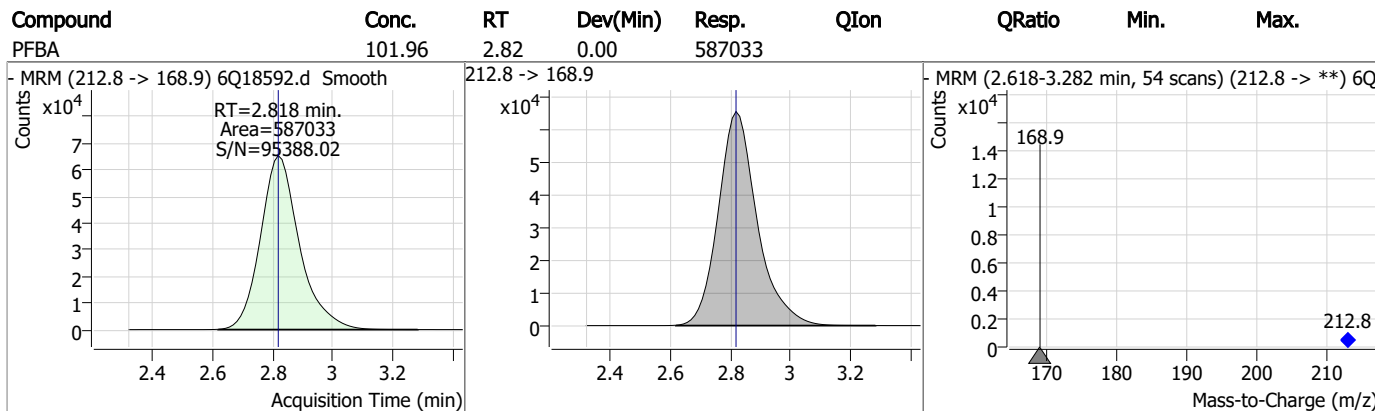
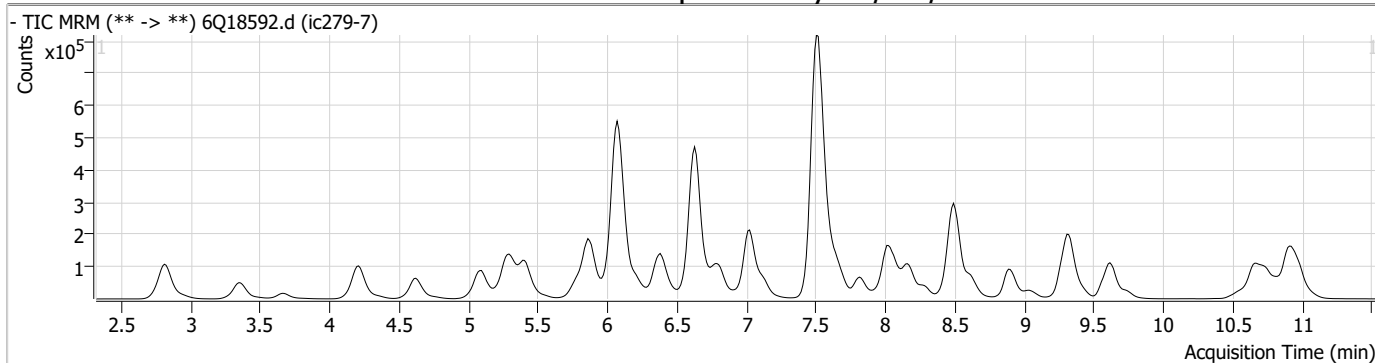
= Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

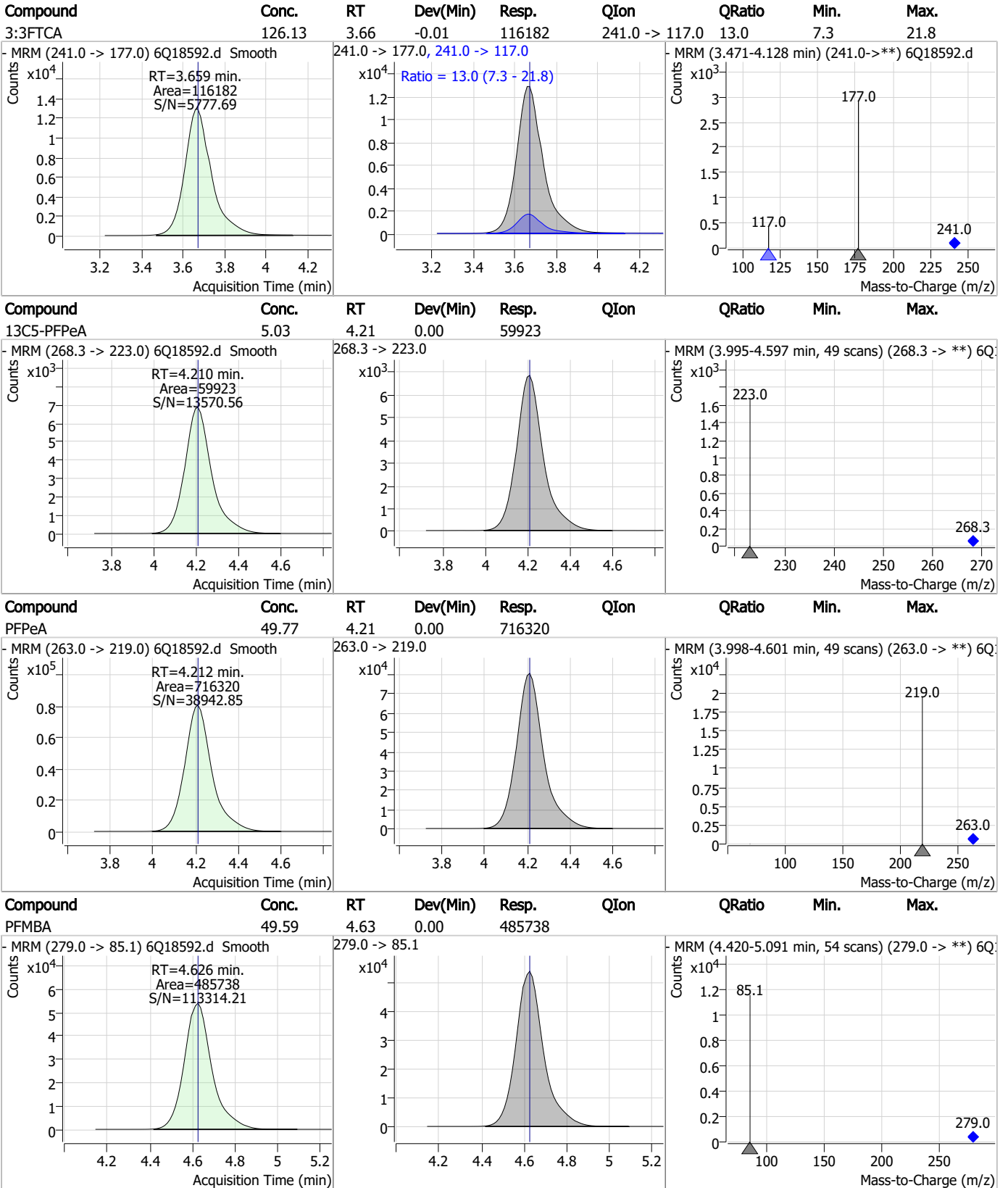
7.7.8
7

Perfluorinated Compounds by LC/MS/MS



7.7.8
7

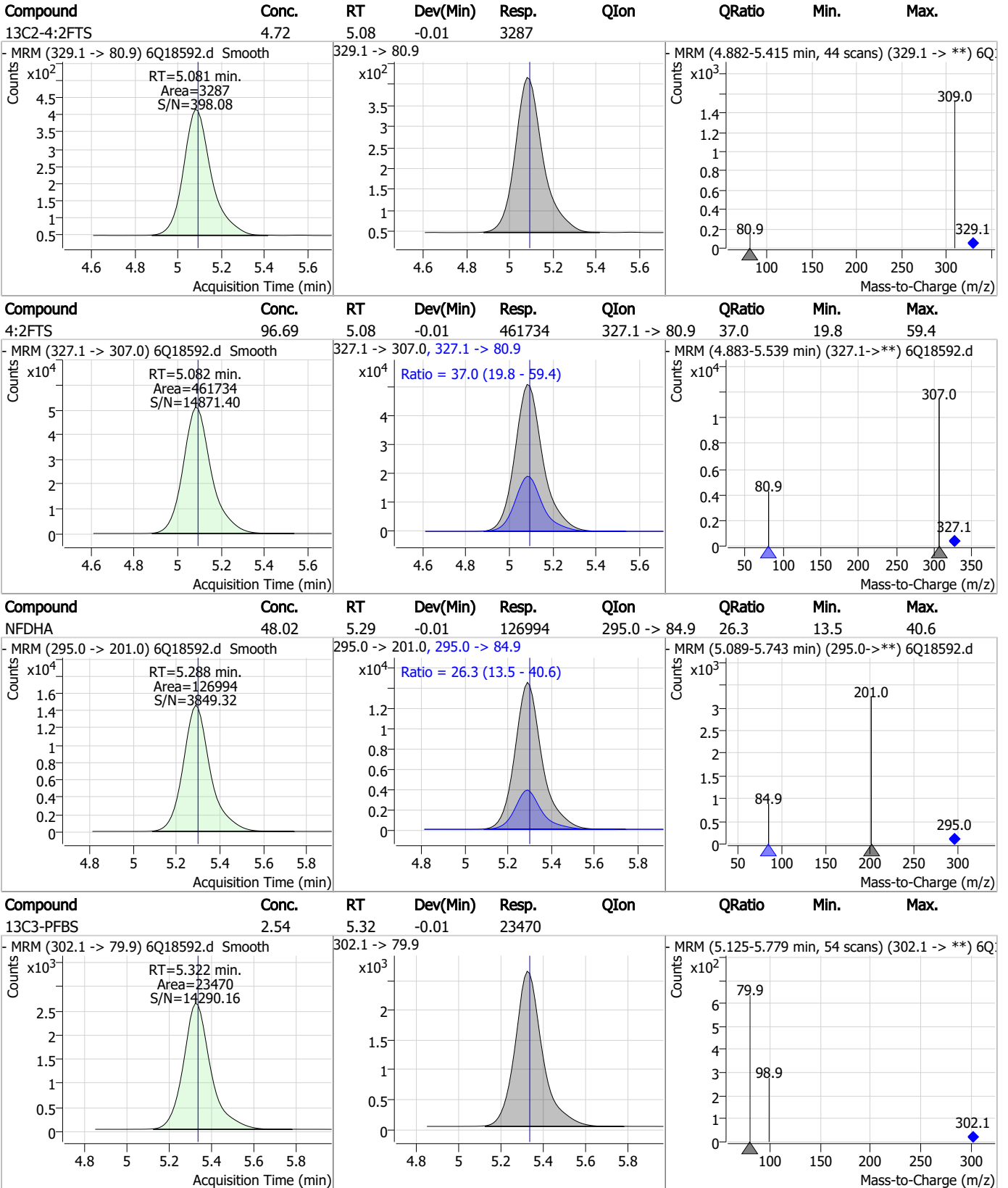
Perfluorinated Compounds by LC/MS/MS



7.7.8

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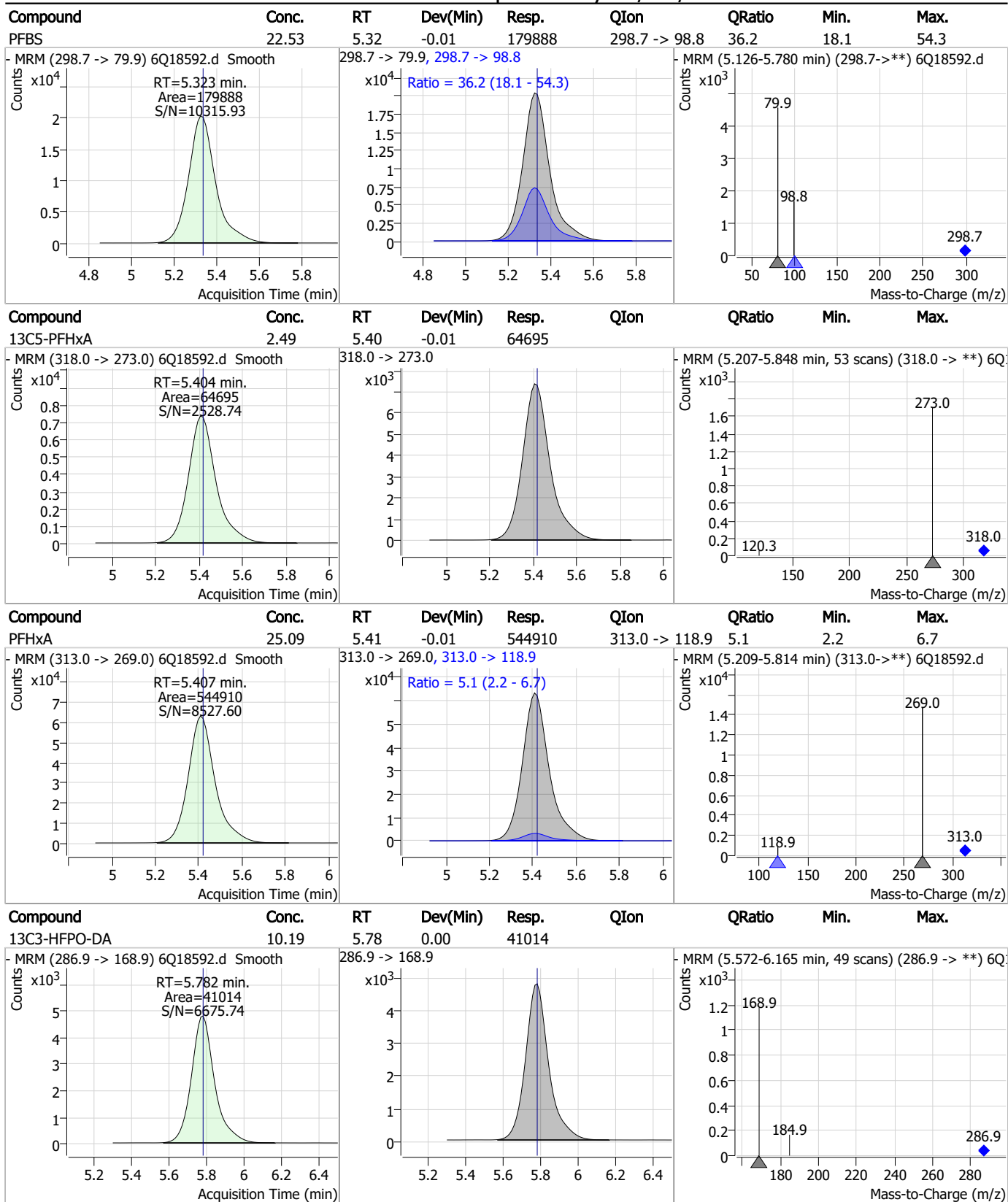
Perfluorinated Compounds by LC/MS/MS



7.7.8

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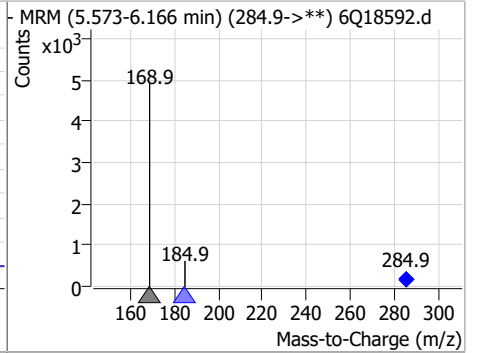
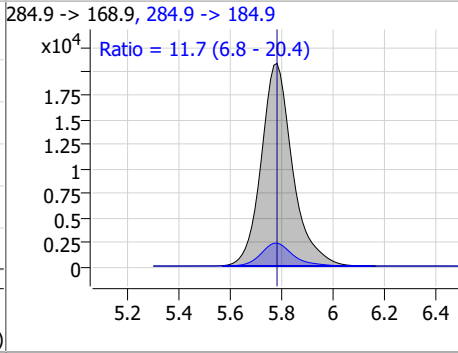
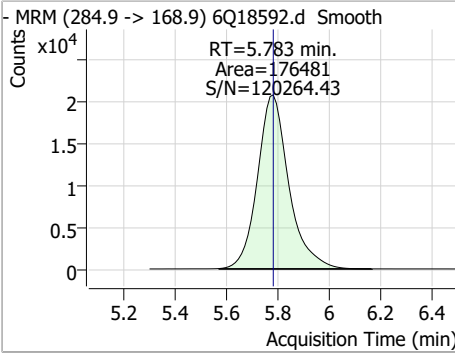
Perfluorinated Compounds by LC/MS/MS



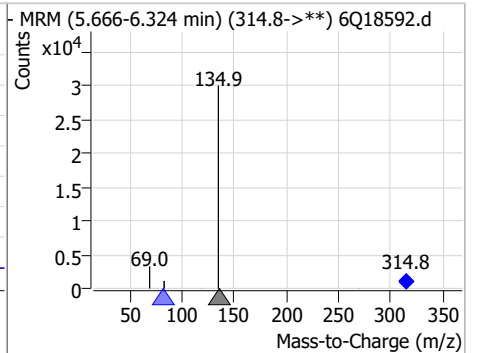
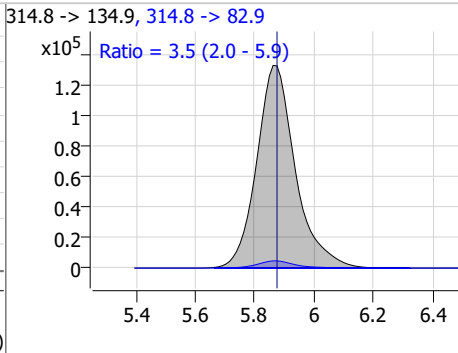
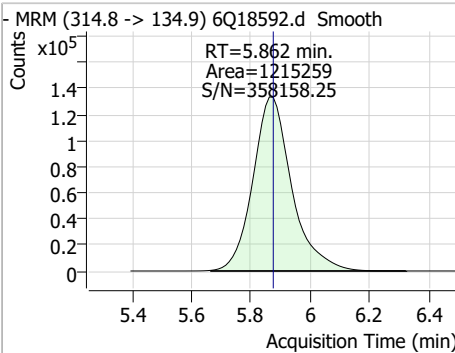
7.7.8
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Perfluorinated Compounds by LC/MS/MS

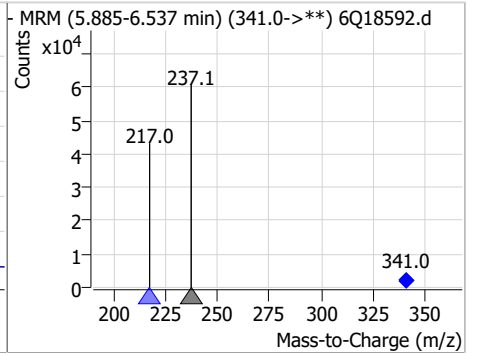
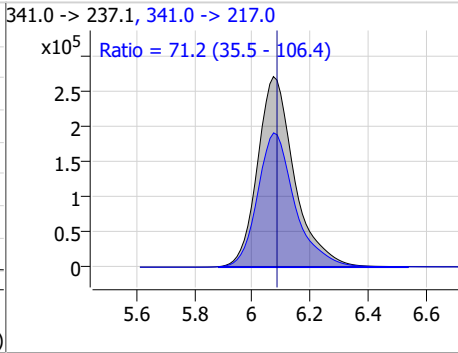
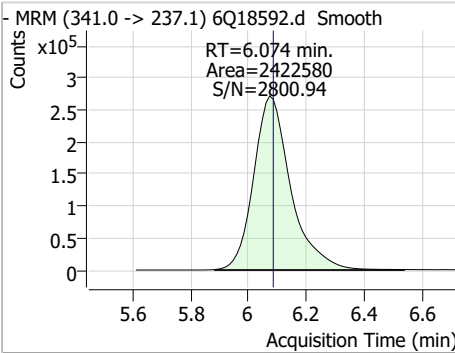
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| HFPO-DA | 50.77 | 5.78 | 0.00 | 176481 | 284.9 -> 184.9 | 11.7 | 6.8 | 20.4 |



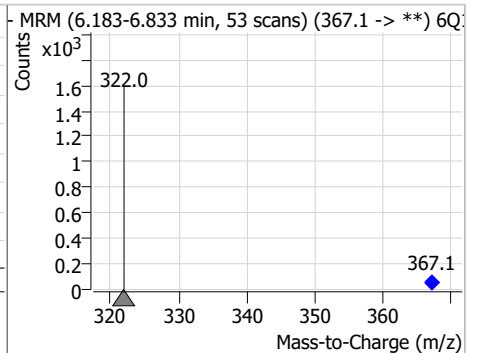
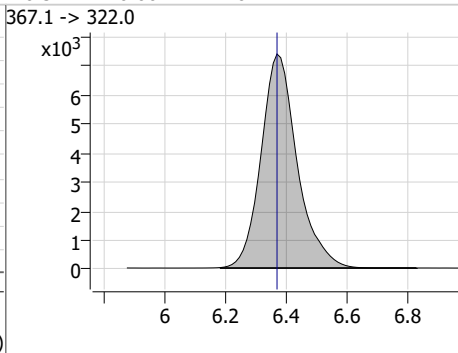
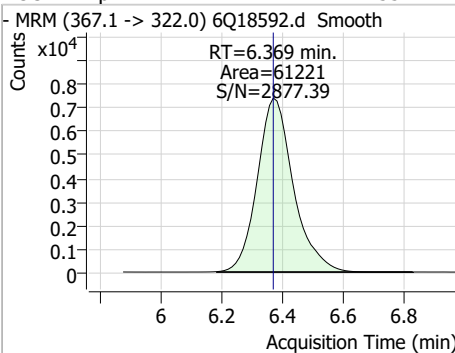
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|---------|---------------|--------|------|------|
| PFEESA | 44.07 | 5.86 | -0.01 | 1215259 | 314.8 -> 82.9 | 3.5 | 2.0 | 5.9 |



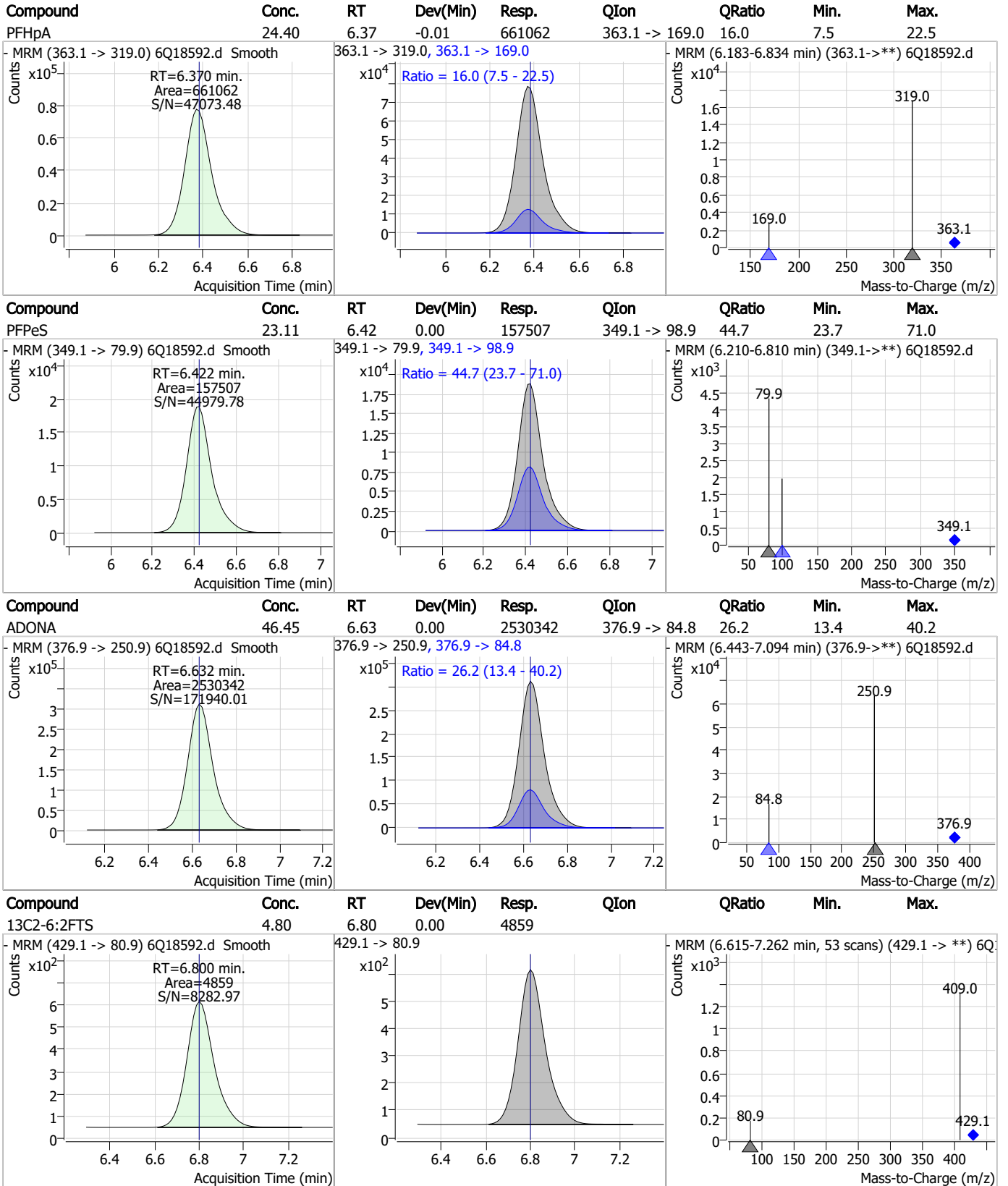
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|------|----------|---------|----------------|--------|------|-------|
| 5:3FTCA | 619.95 | 6.07 | -0.01 | 2422580 | 341.0 -> 217.0 | 71.2 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.55 | 6.37 | 0.00 | 61221 | 367.1 -> 322.0 | | | |



Perfluorinated Compounds by LC/MS/MS

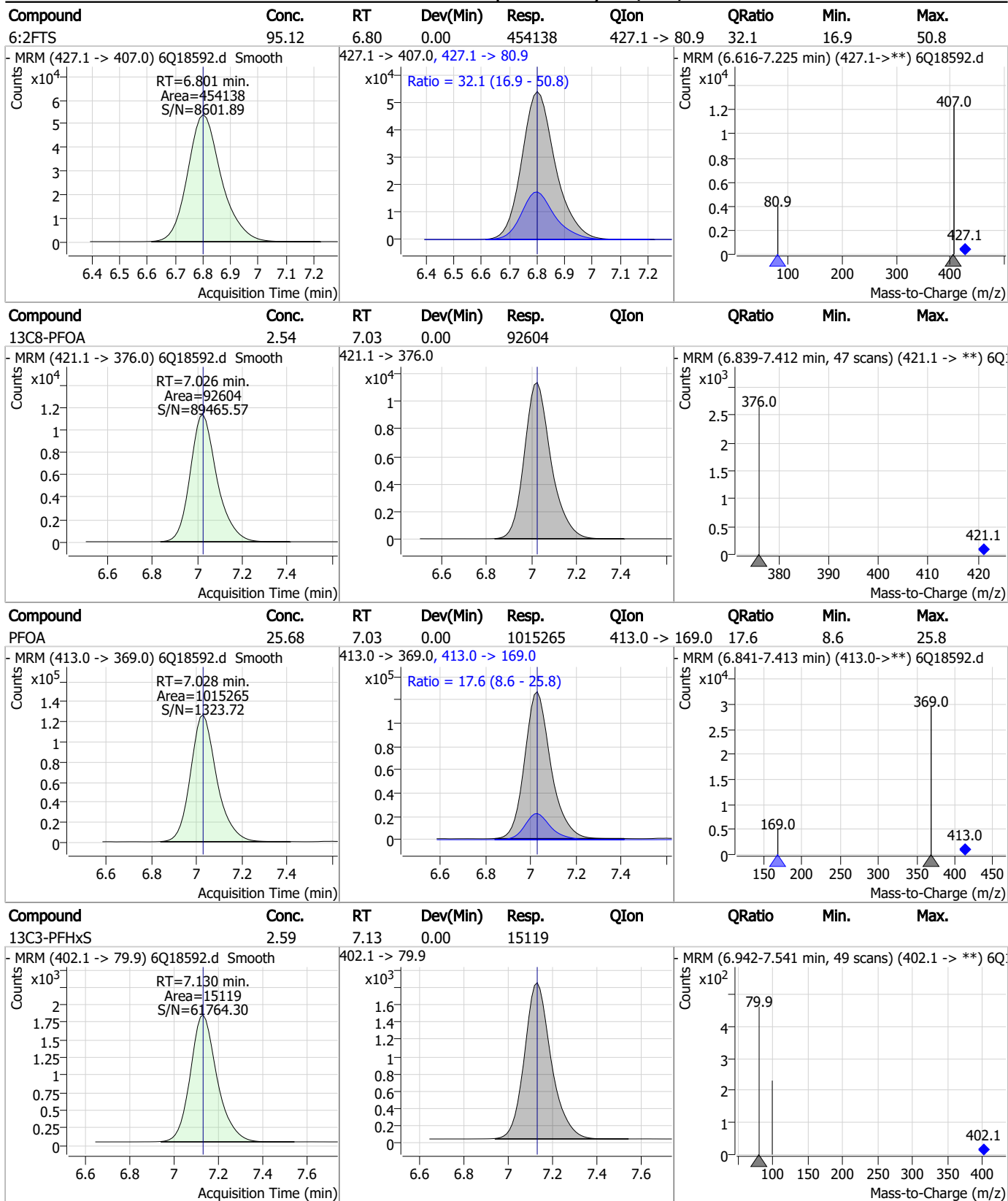


7.7.8

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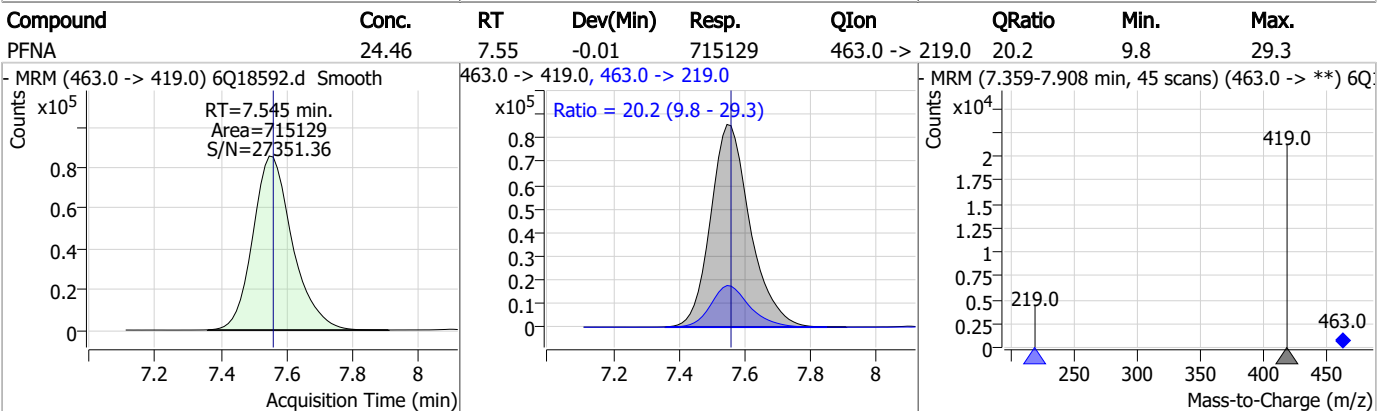
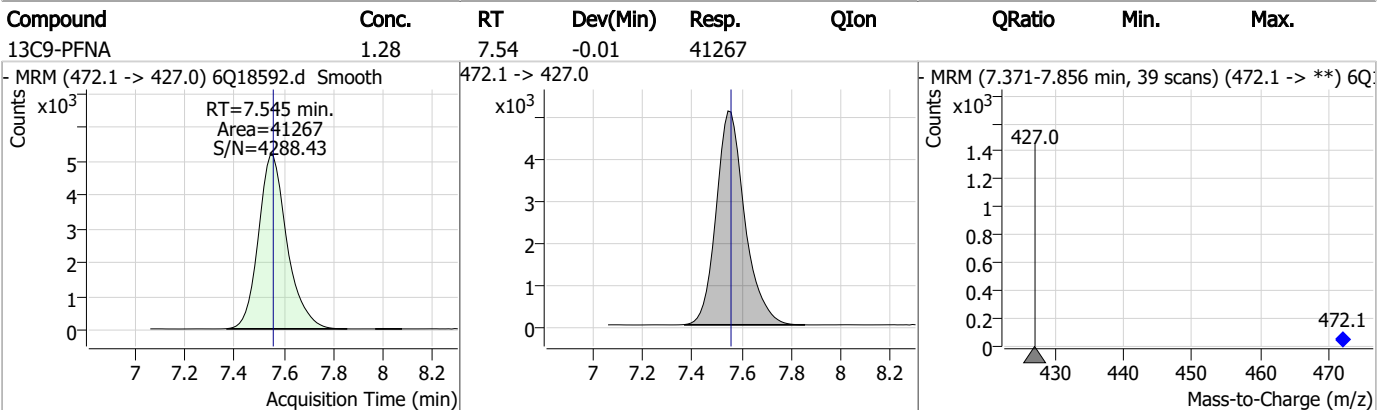
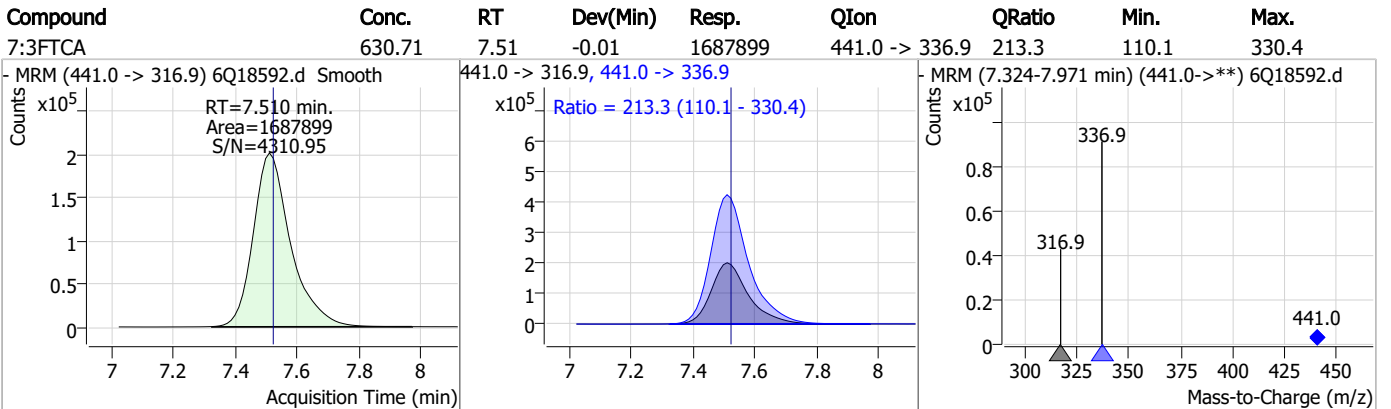
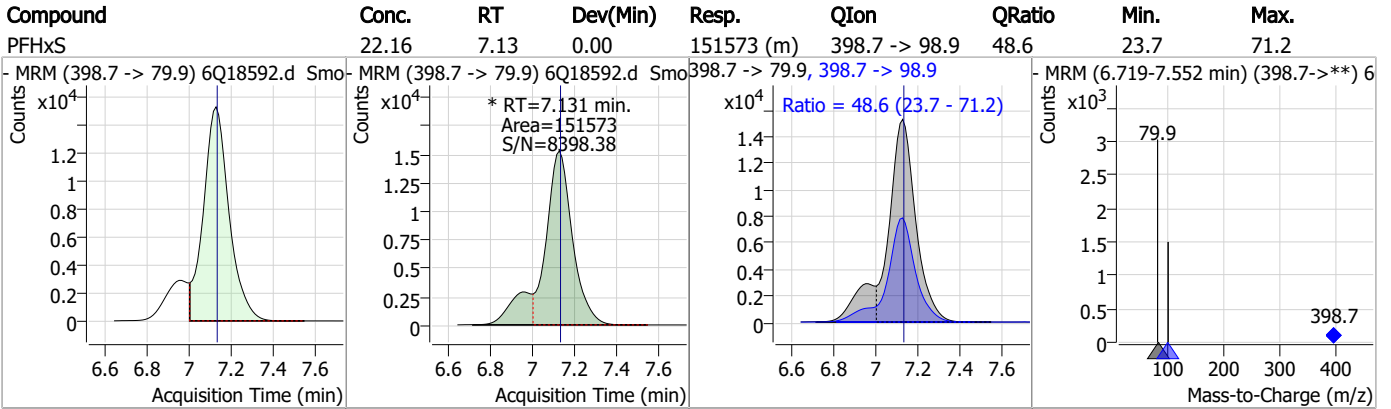


Perfluorinated Compounds by LC/MS/MS

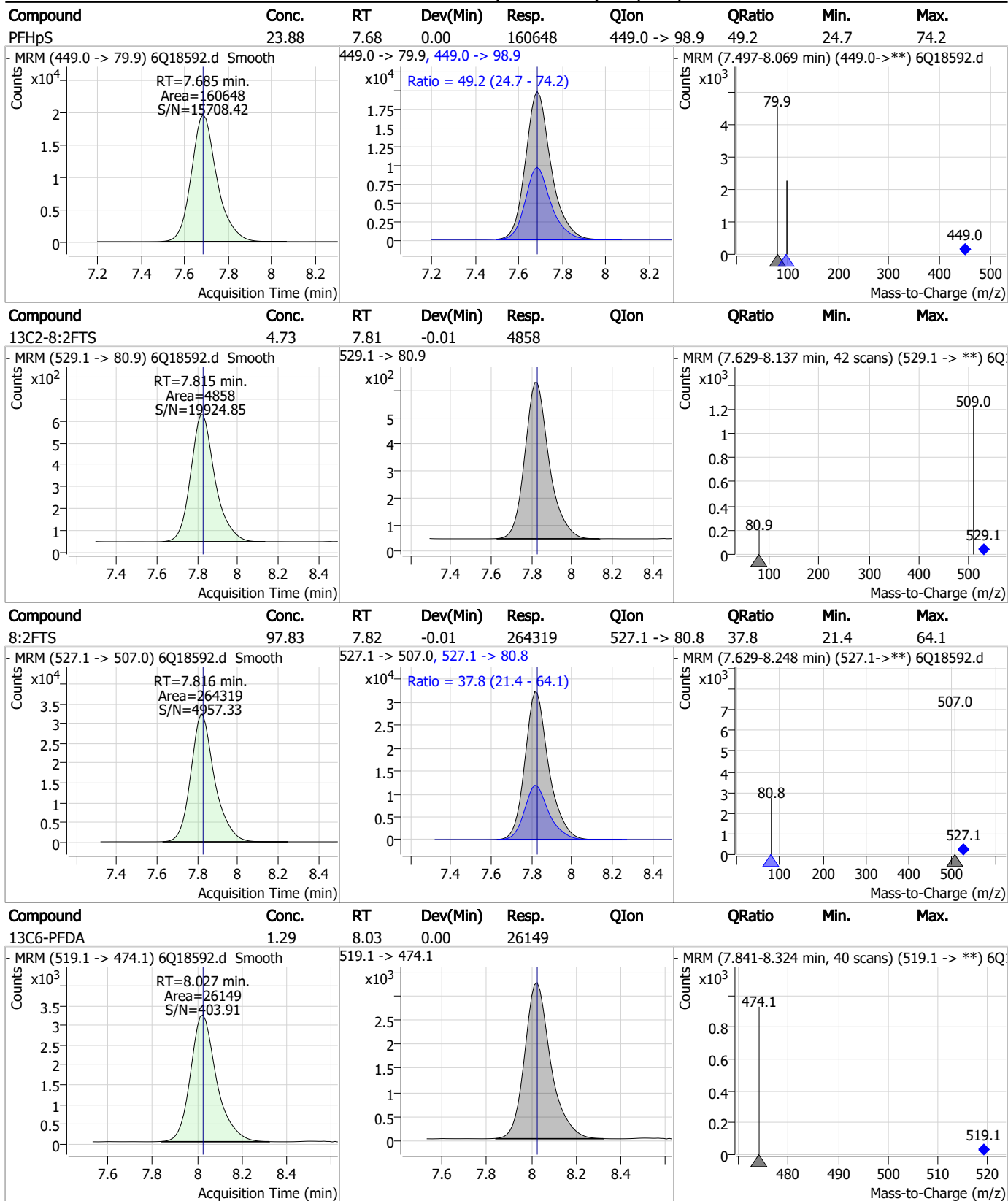


7.7.8
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Perfluorinated Compounds by LC/MS/MS

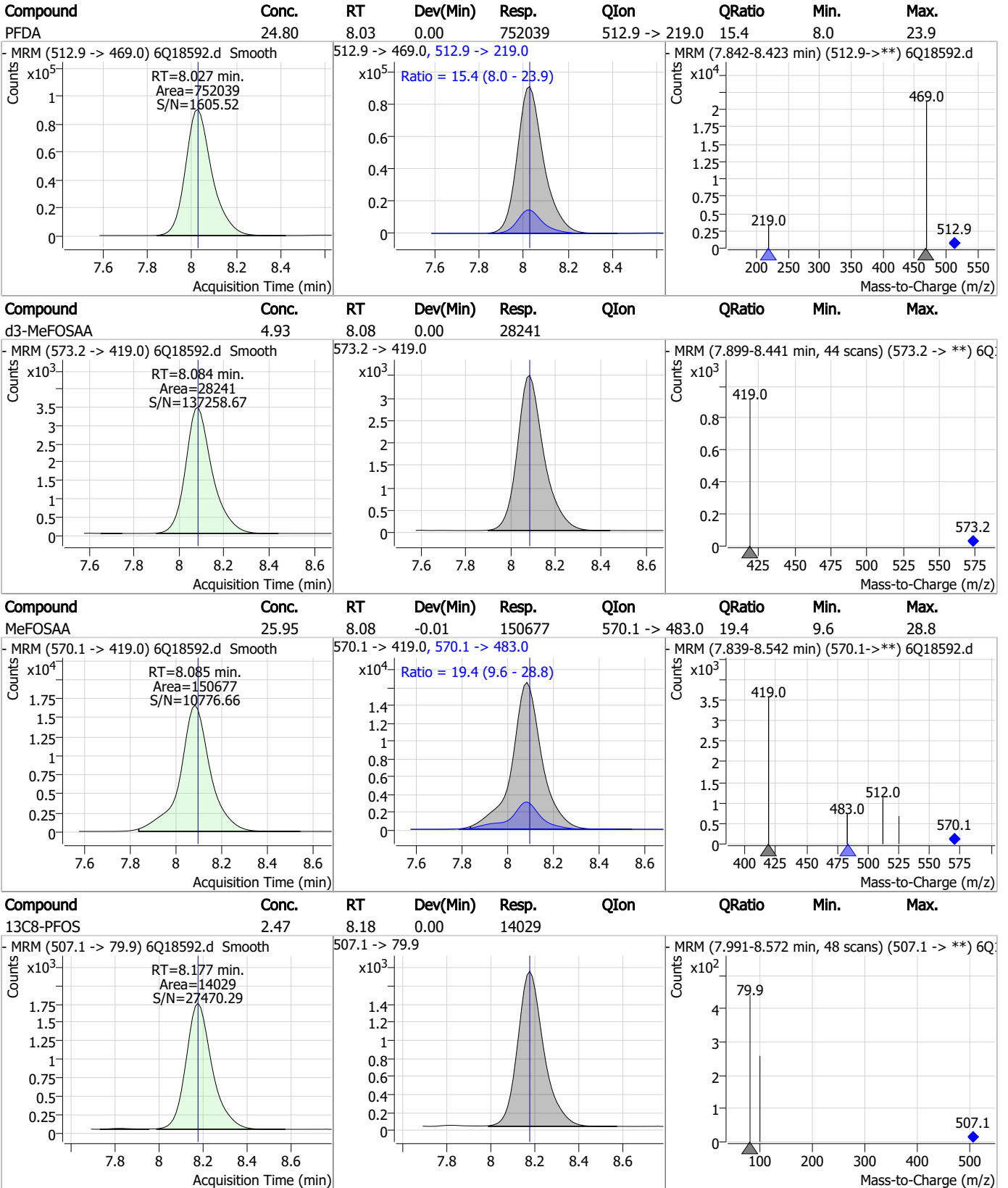


Perfluorinated Compounds by LC/MS/MS



7.7.8
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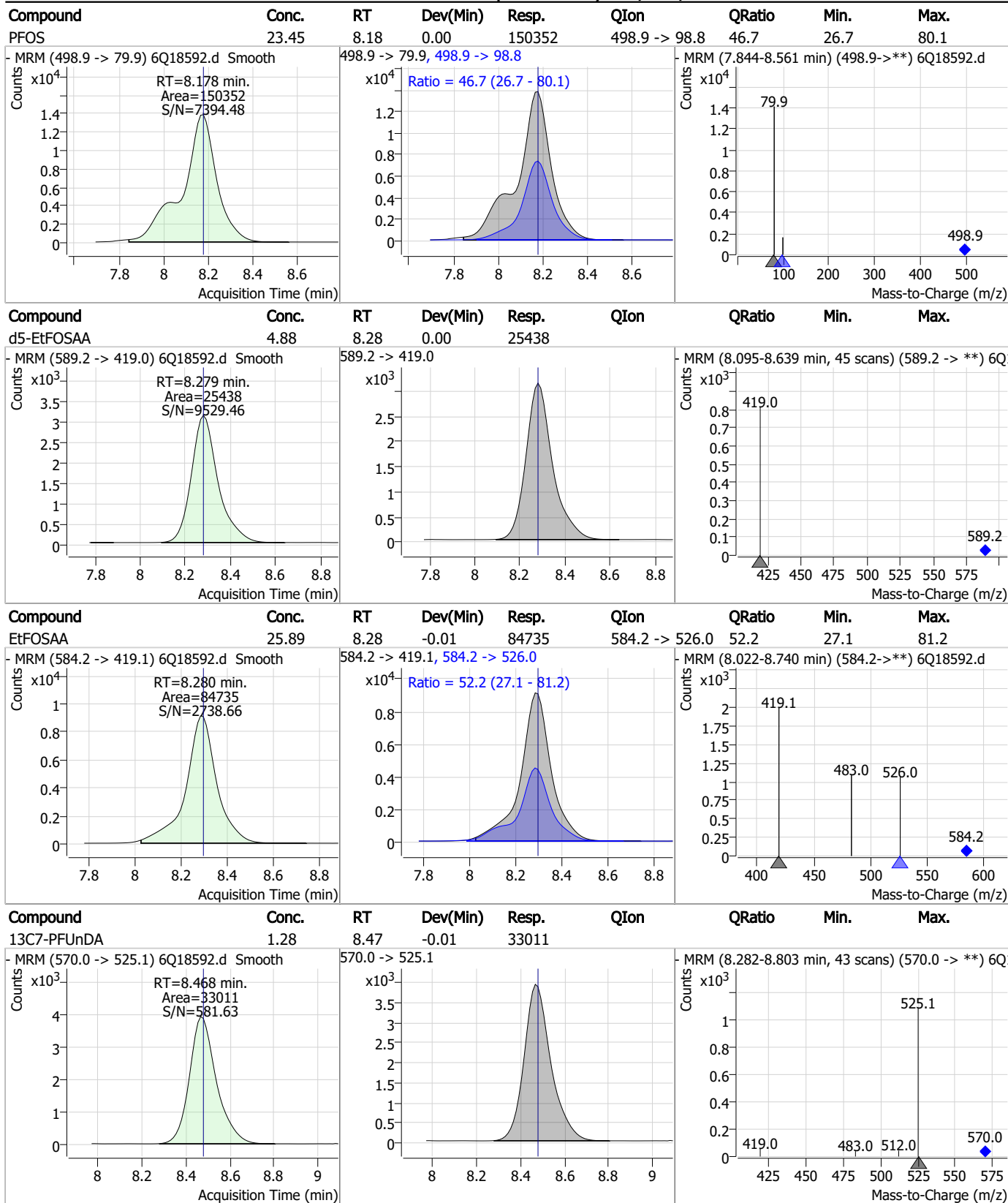
Perfluorinated Compounds by LC/MS/MS



7.7.8

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Perfluorinated Compounds by LC/MS/MS

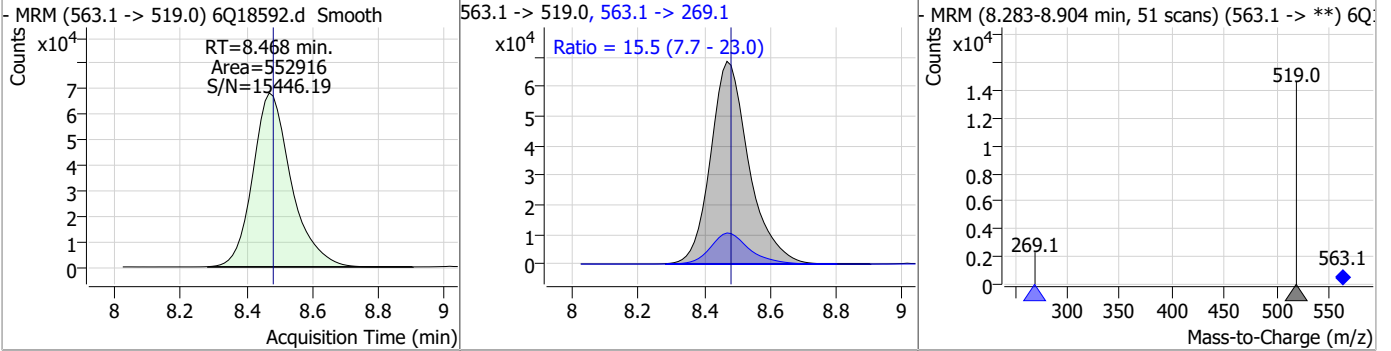


7.7.8
7

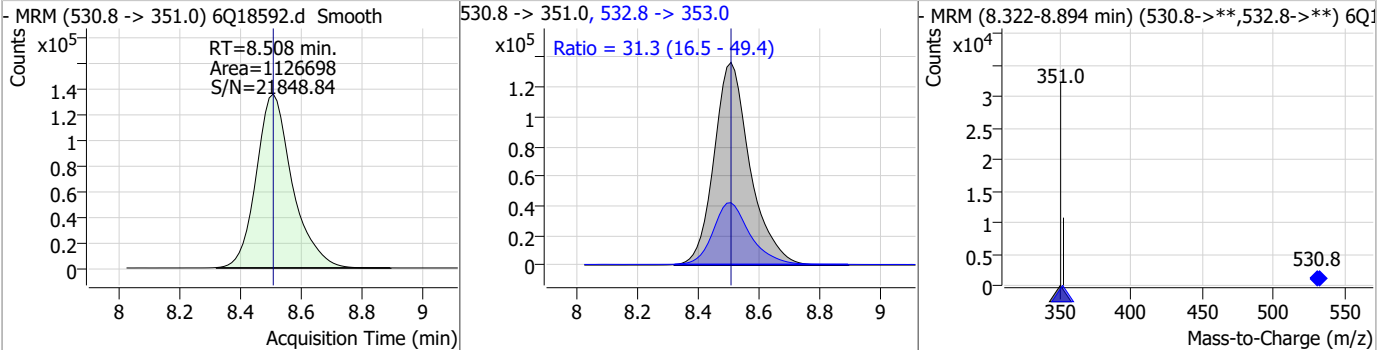


Perfluorinated Compounds by LC/MS/MS

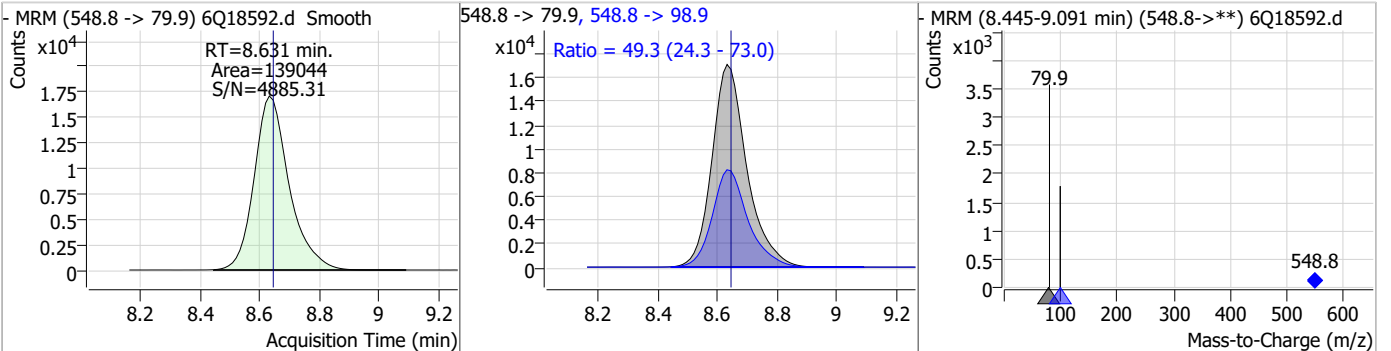
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| PFUnDA | 25.78 | 8.47 | -0.01 | 552916 | 563.1 -> 269.1 | 15.5 | 7.7 | 23.0 |



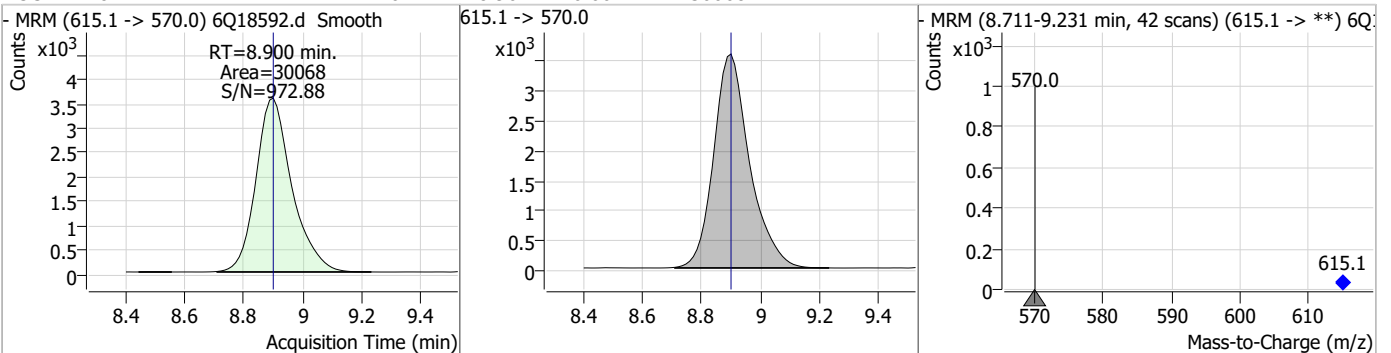
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|---------|----------------|--------|------|------|
| 9CI-PF3ONS | 46.47 | 8.51 | 0.00 | 1126698 | 532.8 -> 353.0 | 31.3 | 16.5 | 49.4 |



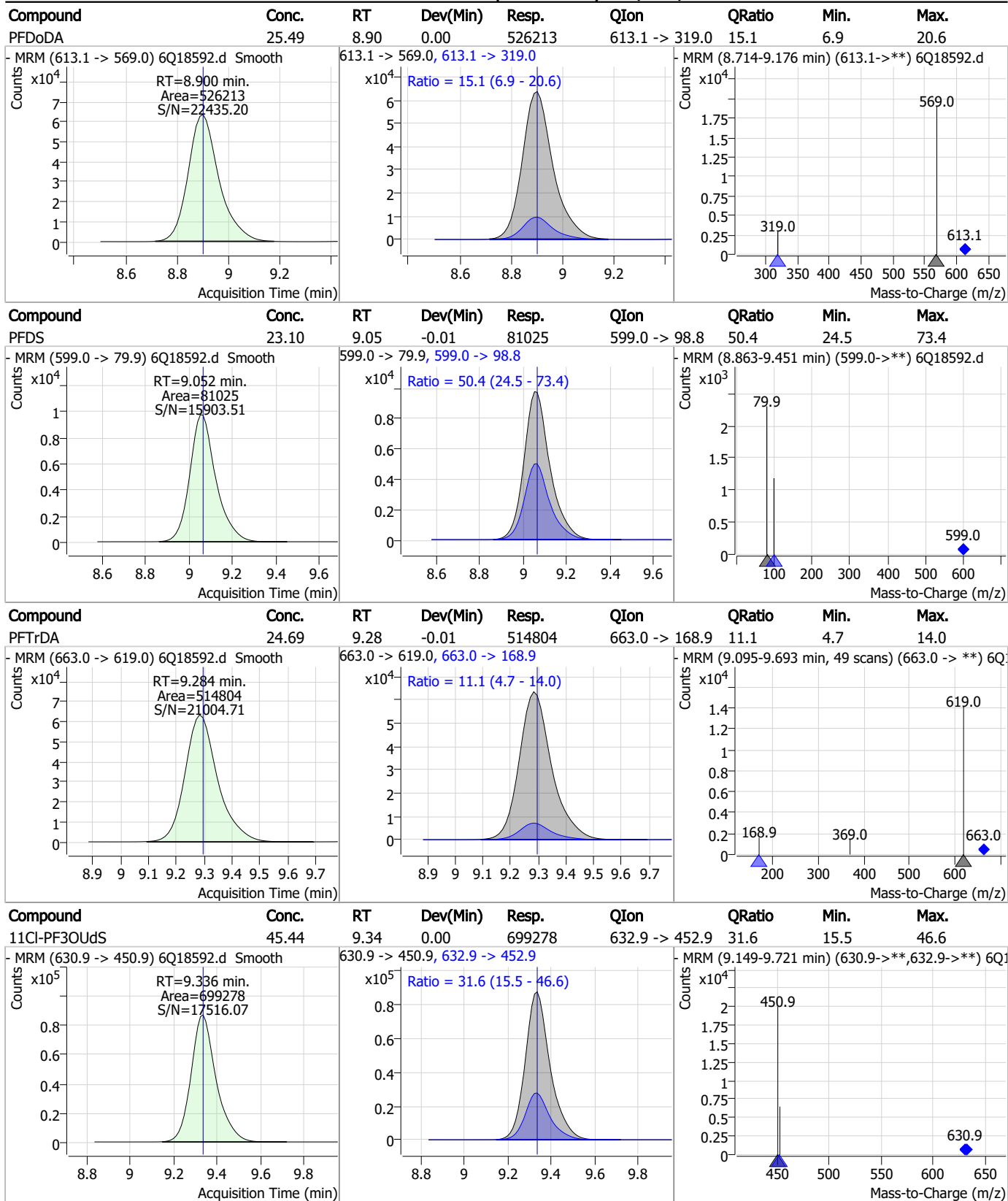
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFNS | 24.69 | 8.63 | -0.01 | 139044 | 548.8 -> 98.9 | 49.3 | 24.3 | 73.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.26 | 8.90 | 0.00 | 30068 | 615.1 -> 570.0 | | | |



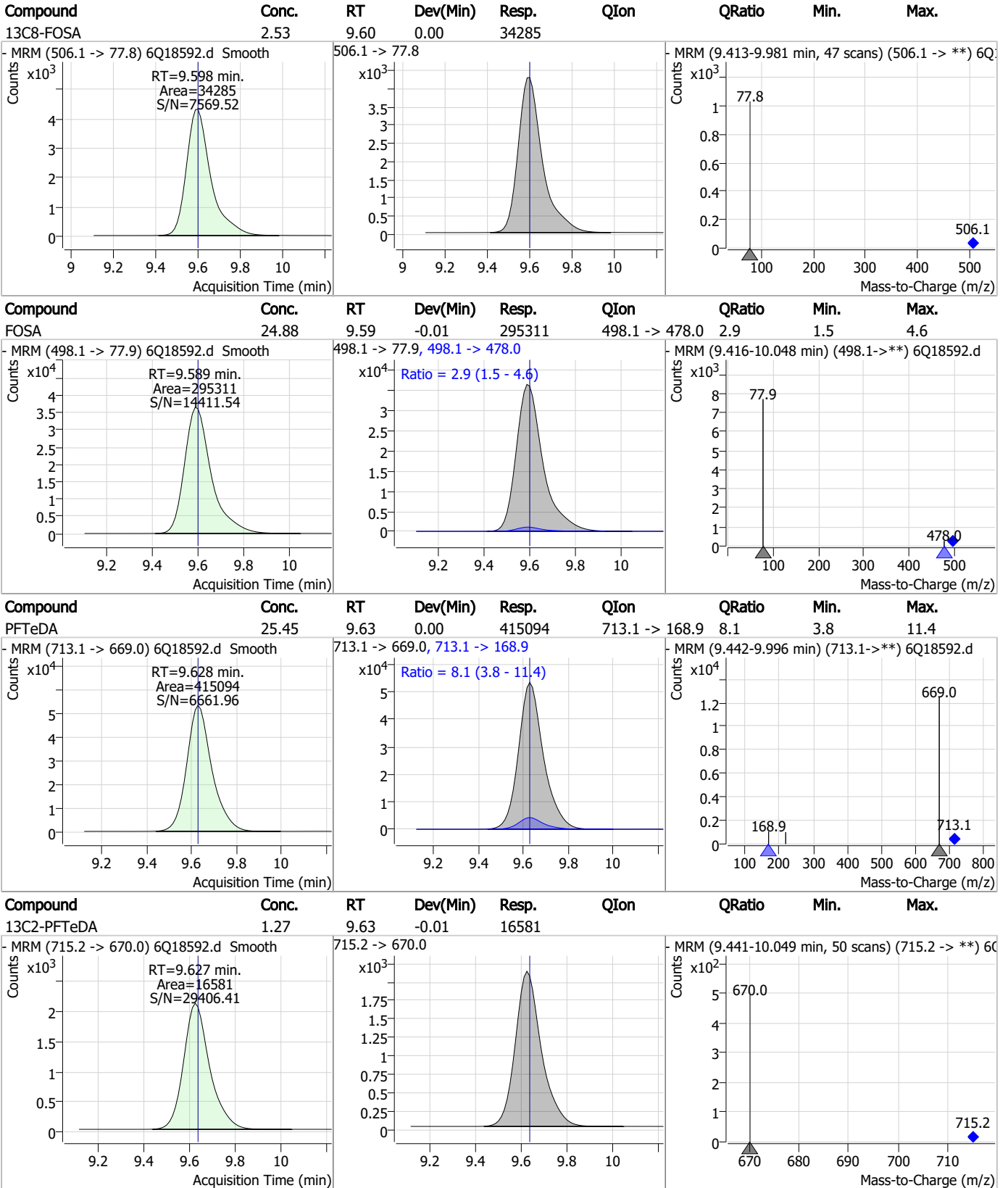
Perfluorinated Compounds by LC/MS/MS



7.7.8
7



Perfluorinated Compounds by LC/MS/MS

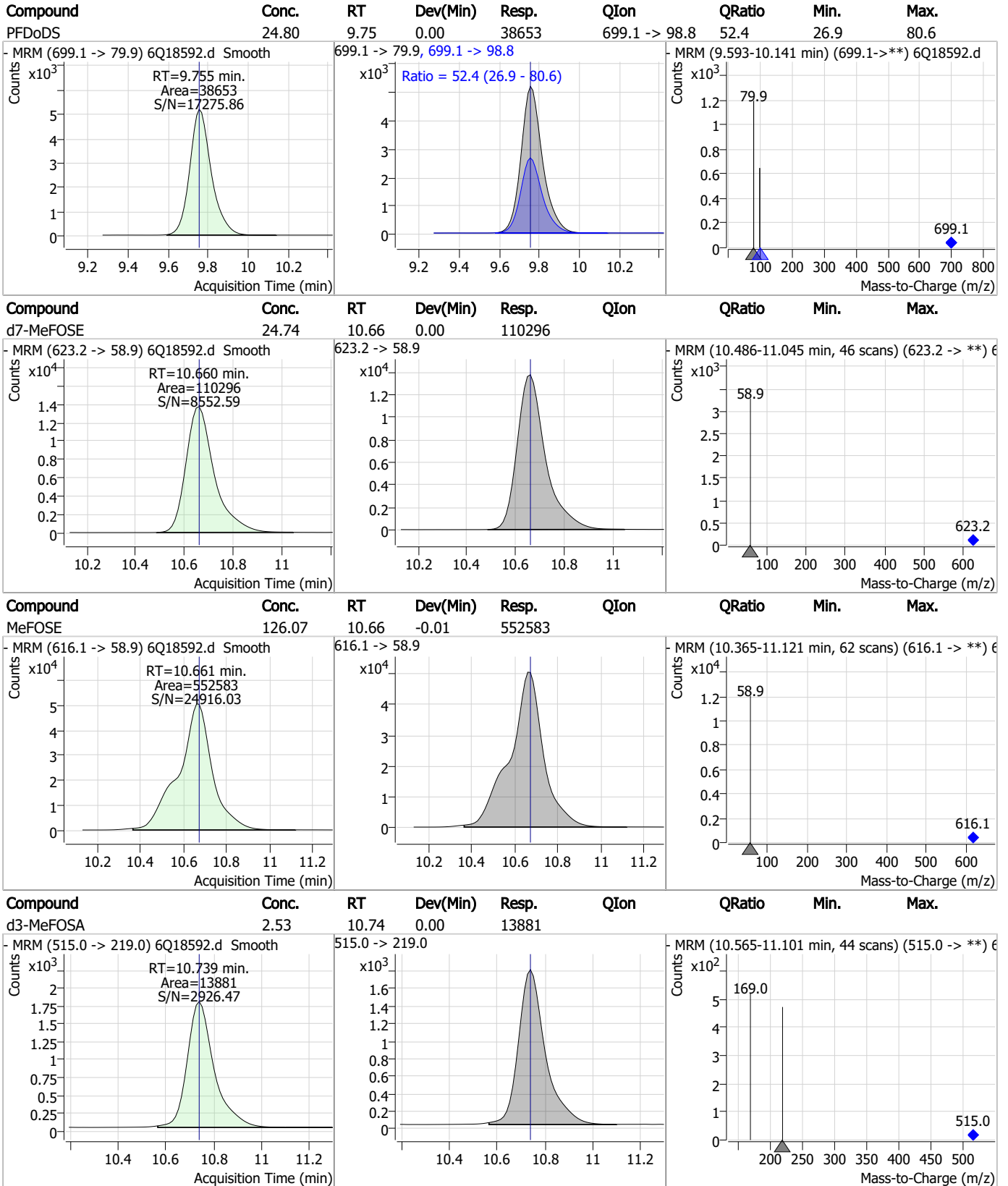


7.7.8

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Perfluorinated Compounds by LC/MS/MS

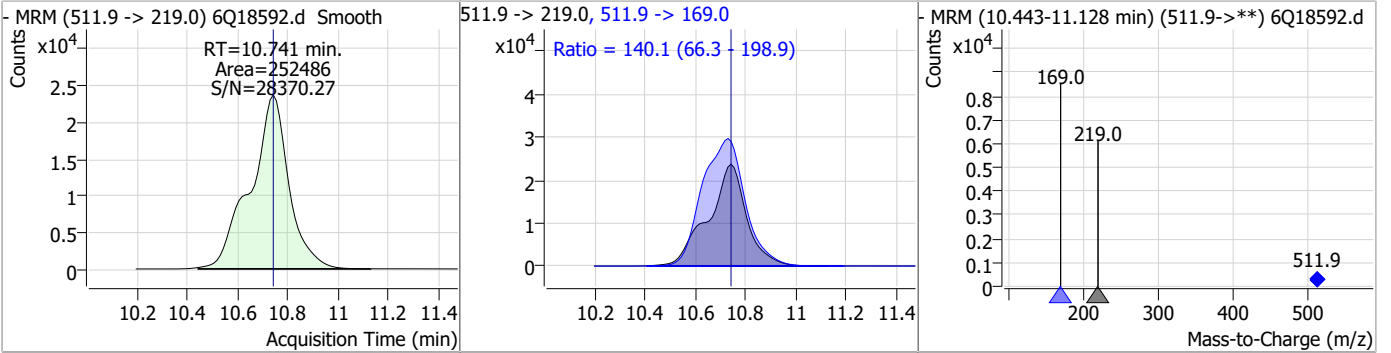


7.7.8

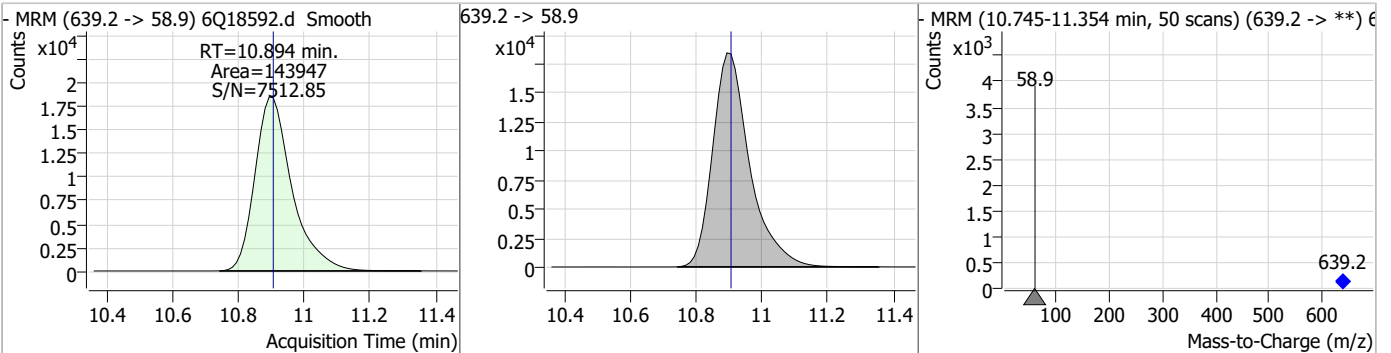
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Perfluorinated Compounds by LC/MS/MS

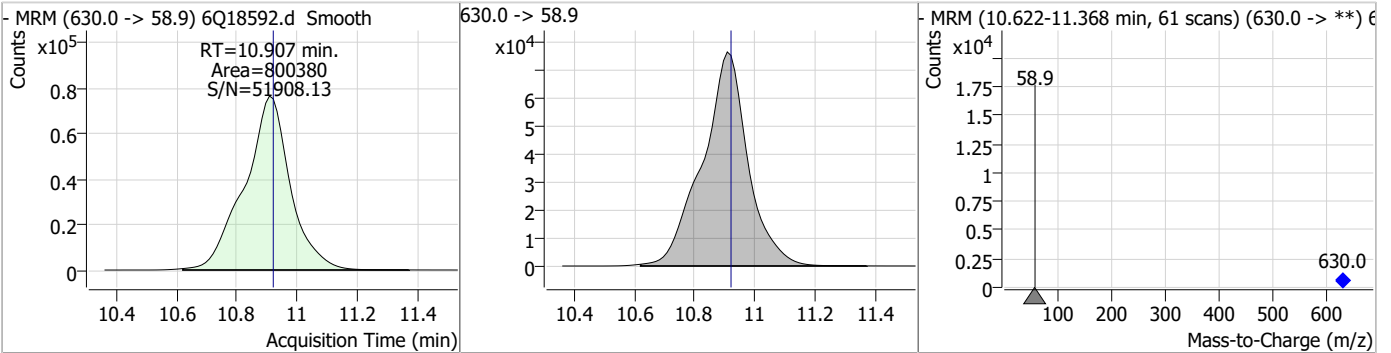
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|--------|----------------|--------|------|-------|
| MeFOSA | 49.46 | 10.74 | 0.00 | 252486 | 511.9 -> 169.0 | 140.1 | 66.3 | 198.9 |



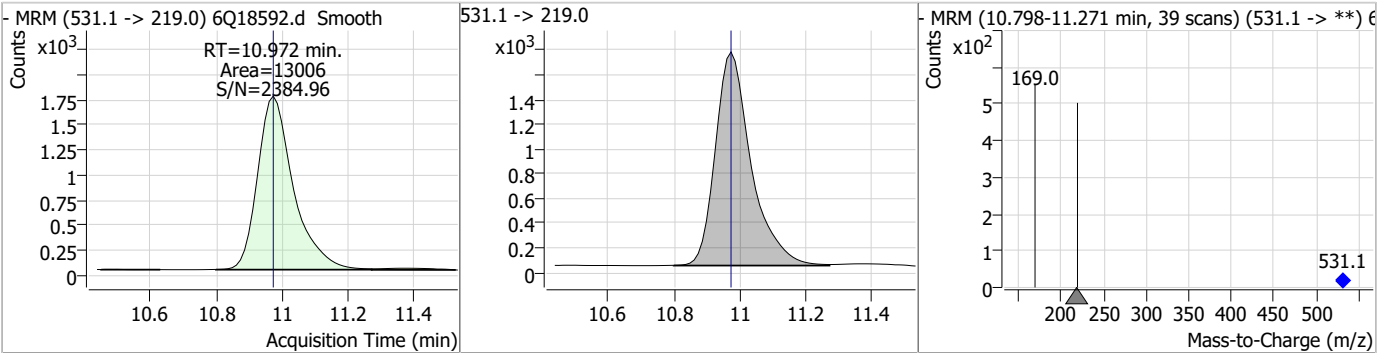
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 24.68 | 10.89 | -0.01 | 143947 | | | | |



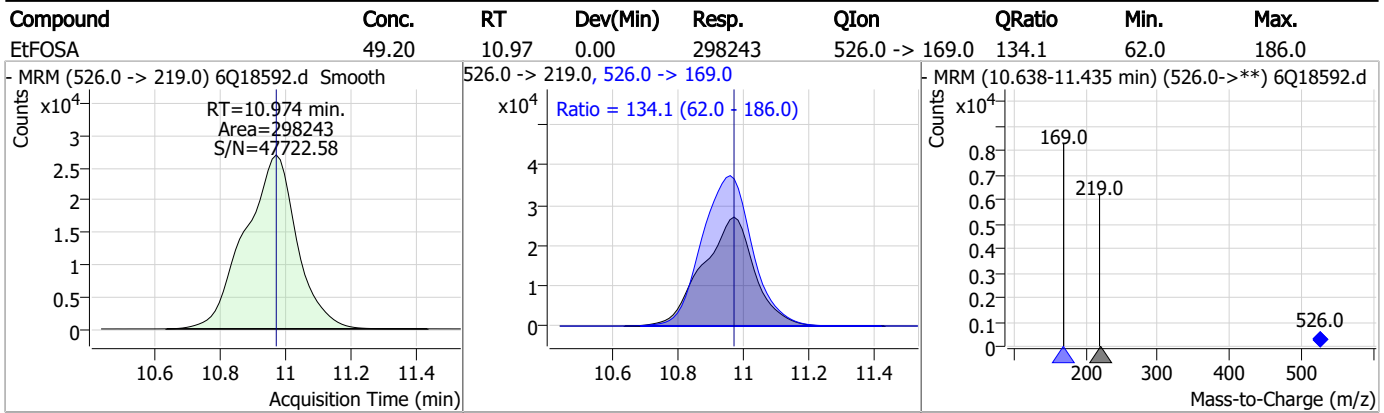
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|-------|----------|--------|------|--------|------|------|
| EtFOSE | 124.63 | 10.91 | -0.01 | 800380 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSA | 2.50 | 10.97 | 0.00 | 13006 | | | | |



Perfluorinated Compounds by LC/MS/MS



7.7.8
7

Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18592.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:43 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |

7.7.8.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18593.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 6:57:48 PM
 Sample Name : ic279-8
 Vial : P1-A9
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 164700 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 58183 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 61194 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 57581 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 88048 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 40750 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 24672 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31035 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31036 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16403 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 32407 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 22054 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 14812 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 13909 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3073 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4551 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 4892 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25736 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40478 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26530 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 102229 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 133237 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12467 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14213 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17067 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 69548 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11007 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 96660 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 34426 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 47576 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 60813 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3073 | 4.19 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 83.7% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 4551 | 4.27 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 85.4% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 4892 | 4.52 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 90.5% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31036 | 1.30 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 103.8% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16403 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.9% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 22054 | 2.26 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 90.6% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 14812 | 2.41 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.4% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 164700 | 9.94 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.4% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 57581 | 2.42 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.8% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 61194 | 2.38 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 95.1% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 58183 | 4.92 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.4% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 24672 | 1.22 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31035 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.5% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 32407 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.6% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 88048 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 13909 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.8% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 40750 | 1.30 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 104.0% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 25736 | 4.67 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 93.4% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 40478 | 10.13 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.3% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14213 | 2.70 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 107.8% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26530 | 5.30 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 105.9% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 102229 | 23.85 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 95.4% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 133237 | 23.77 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 95.1% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12467 | 2.50 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.9% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 954876 | 213.90 µg/L | 95 |
| | | 327.1 -> 80.9 | 348699 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 895923 | 200.34 µg/L | 99 |
| | | 427.1 -> 80.9 | 310885 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 534956 | 196.60 µg/L | 94 |
| | | 527.1 -> 80.8 | 208860 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 202511 | 59.33 µg/L | 96 |
| | | 584.2 -> 526.0 | 103330 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 665967 | 59.37 µg/L | 100 |
| | | 498.1 -> 478.0 | 20420 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 330253 | 62.41 µg/L | 100 |
| | | 570.1 -> 483.0 | 63777 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 1319896 | 242.06 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 418240 | 55.74 µg/L | 99 |
| | | 298.7 -> 98.8 | 153640 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 1793791 | 62.71 µg/L | 98 |
| | | 512.9 -> 219.0 | 270042 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 1199772 | 56.30 µg/L | 96 |
| | | 613.1 -> 319.0 | 183508 | | |
| PFDS | 9.064 | 599.0 -> 79.9 | 193689 | 55.70 µg/L | 98 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|--------------|----------|
| | | 599.0 -> 98.8 | 97226 | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 1584265 | 62.17 µg/L | 97 |
| | | 363.1 -> 169.0 | 256962 | | |
| PFHpS | 7.685 | 449.0 -> 79.9 | 381288 | 57.18 µg/L | 98 |
| | | 449.0 -> 98.9 | 182291 | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 1308494 | 63.69 µg/L | 99 |
| | | 313.0 -> 118.9 | 64395 | | |
| PFHxS | 7.131 | 398.7 -> 79.9 | 349987 | 52.24 µg/L | m 97 |
| | | 398.7 -> 98.9 | 174081 | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 1836171 | 63.59 µg/L | 98 |
| | | 463.0 -> 219.0 | 338668 | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 313808 | 56.21 µg/L | 90 |
| | | 548.8 -> 98.9 | 173944 | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 2352092 | 62.57 µg/L | 100 |
| | | 413.0 -> 169.0 | 408702 | | |
| PFOS | 8.178 | 498.9 -> 79.9 | 358245 | 56.35 µg/L | 93 |
| | | 498.9 -> 98.8 | 173832 | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 1677106 | 120.01 µg/L | 100 |
| PFPeS | 6.422 | 349.1 -> 79.9 | 374345 | 56.08 µg/L | 95 |
| | | 349.1 -> 98.9 | 164186 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 936983 | 58.07 µg/L | 97 |
| | | 713.1 -> 168.9 | 82003 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 1167971 | 54.26 µg/L | 96 |
| | | 663.0 -> 168.9 | 124493 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 1166697 | 57.85 µg/L | 97 |
| | | 563.1 -> 269.1 | 193233 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 1685097 | 110.95 µg/L | 99 |
| | | 632.9 -> 452.9 | 516091 | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 2667025 | 111.44 µg/L | 95 |
| | | 532.8 -> 353.0 | 808397 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 5935424 | 110.40 µg/L | 99 |
| | | 376.9 -> 84.8 | 1547138 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 412278 | 120.17 µg/L | 96 |
| | | 284.9 -> 184.9 | 48712 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 277738 | 310.54 µg/L | 96 |
| | | 241.0 -> 117.0 | 36199 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 5595577 | 1513.86 µg/L | 96 |
| | | 341.0 -> 217.0 | 4166787 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 3782443 | 1494.24 µg/L | 90 |
| | | 441.0 -> 336.9 | 8936470 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 712424 | 122.60 µg/L | 99 |
| | | 526.0 -> 169.0 | 891954 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 1779906 | 299.44 µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 596067 | 114.04 µg/L | 96 |
| | | 511.9 -> 169.0 | 818238 | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 1264982 | 311.37 µg/L | 100 |
| PFDoS | 9.755 | 699.1 -> 79.9 | 90931 | 58.86 µg/L | 98 |
| | | 699.1 -> 98.8 | 47551 | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 293121 | 117.17 µg/L | 98 |
| | | 295.0 -> 84.9 | 76201 | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 1130590 | 118.88 µg/L | 100 |
| PFMPA | 3.351 | 229.0 -> 84.9 | 900418 | 121.74 µg/L | 100 |
| PFEESA | 5.875 | 314.8 -> 134.9 | 2873554 | 110.18 µg/L | 99 |
| | | 314.8 -> 82.9 | 98610 | | |

= Qualifier out of range, m = manually integrated, + = Area summed

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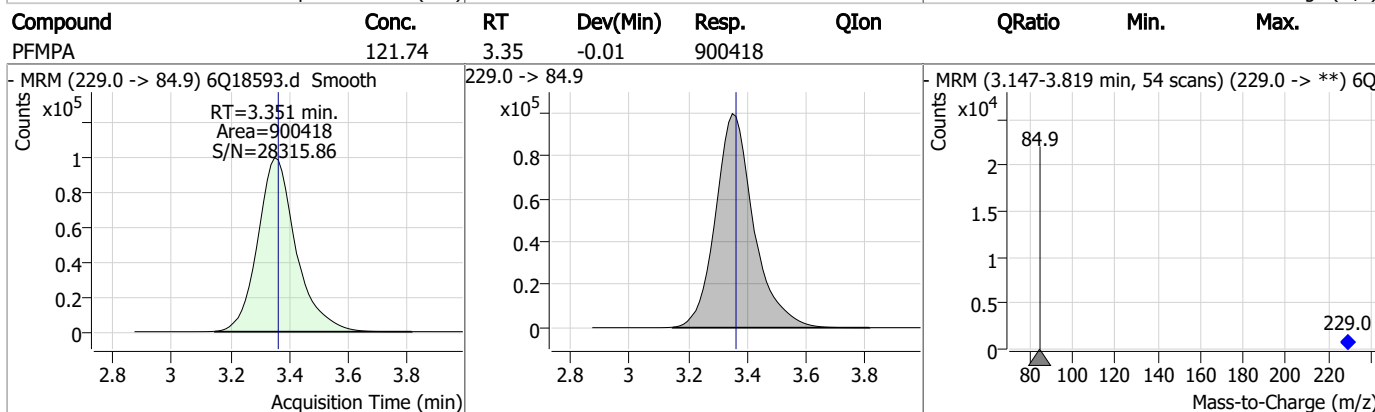
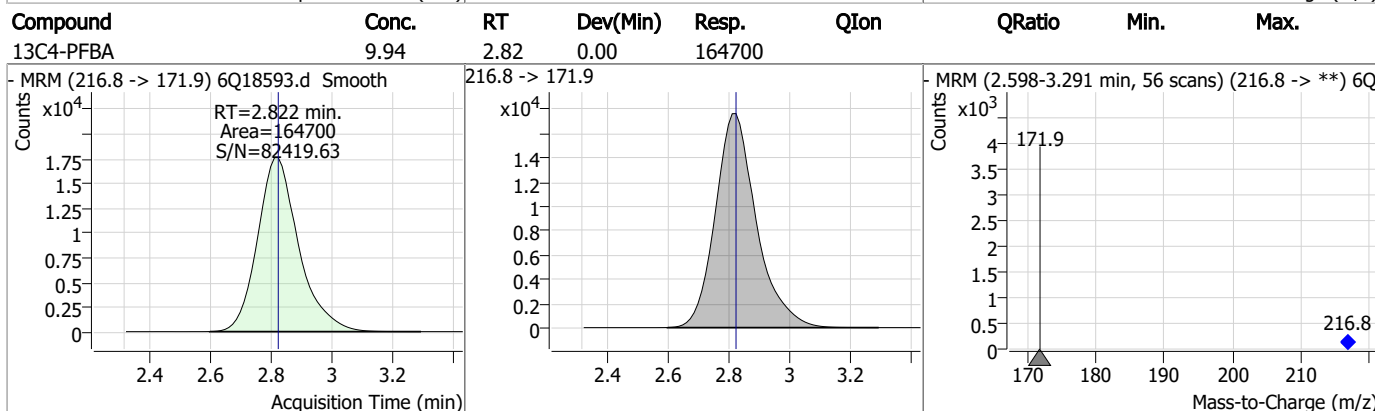
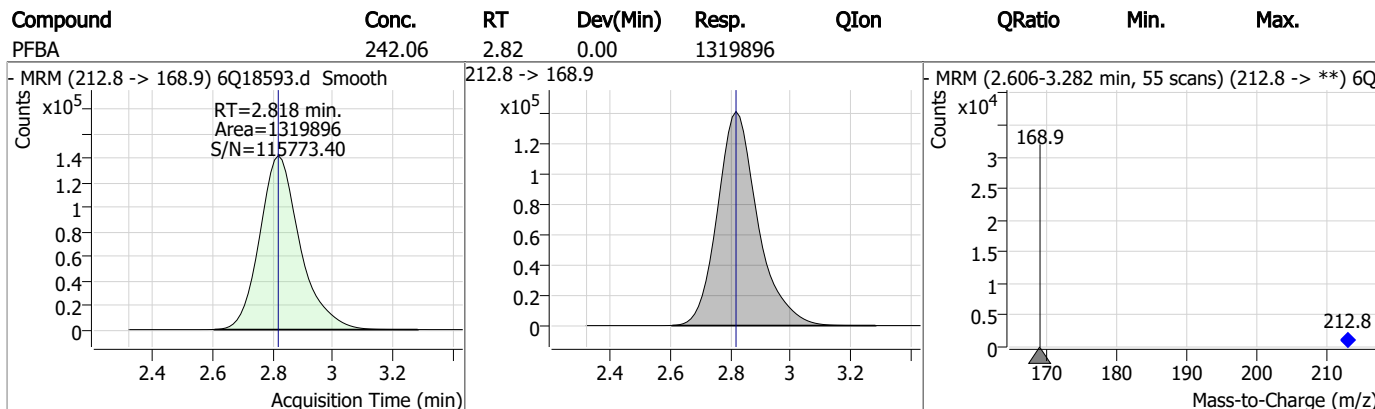
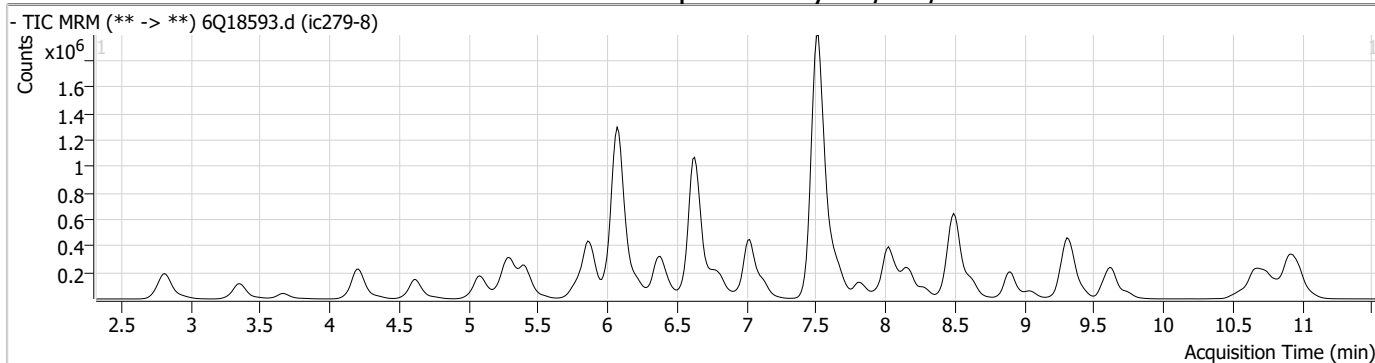
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

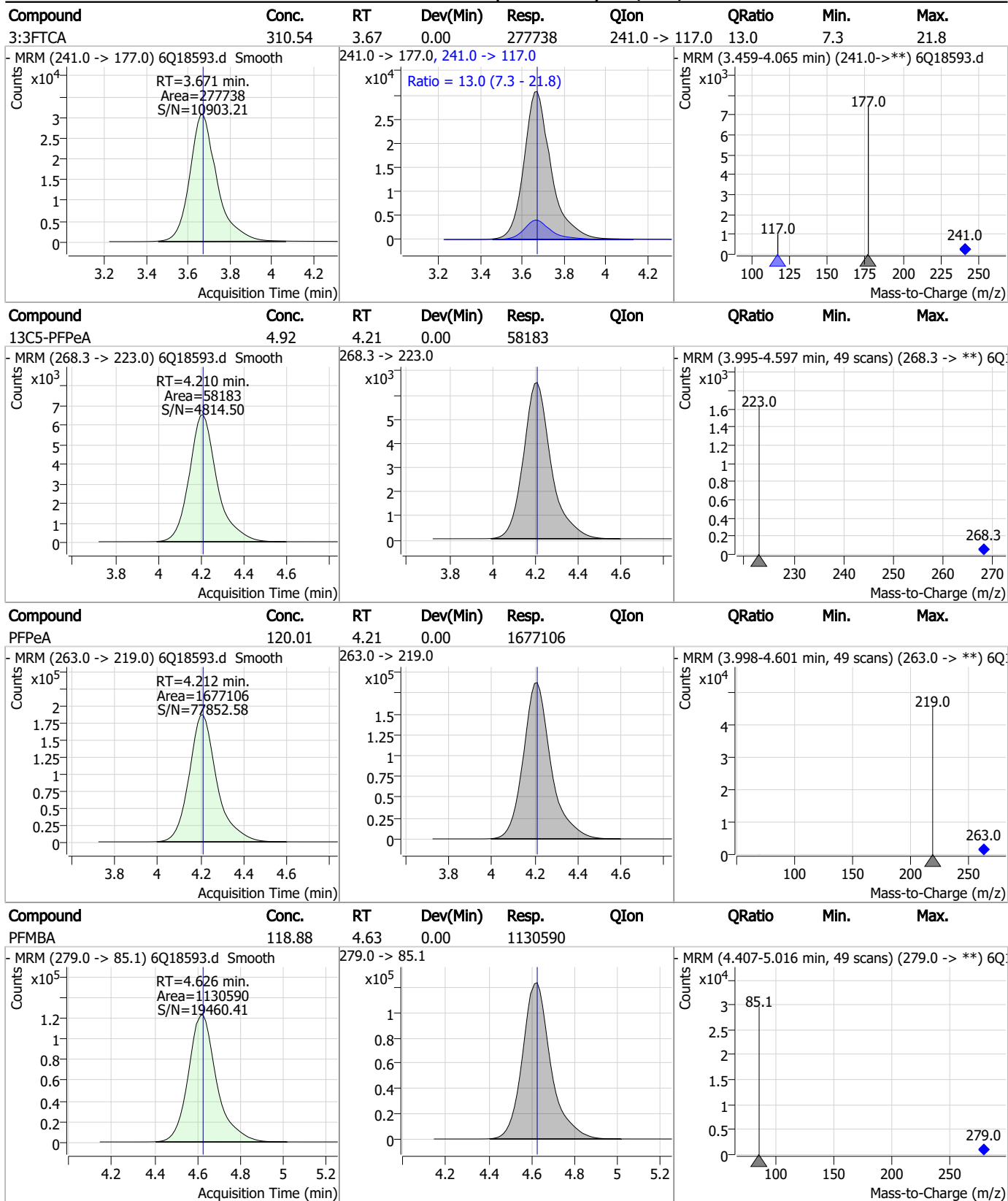
7.7.9

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Perfluorinated Compounds by LC/MS/MS

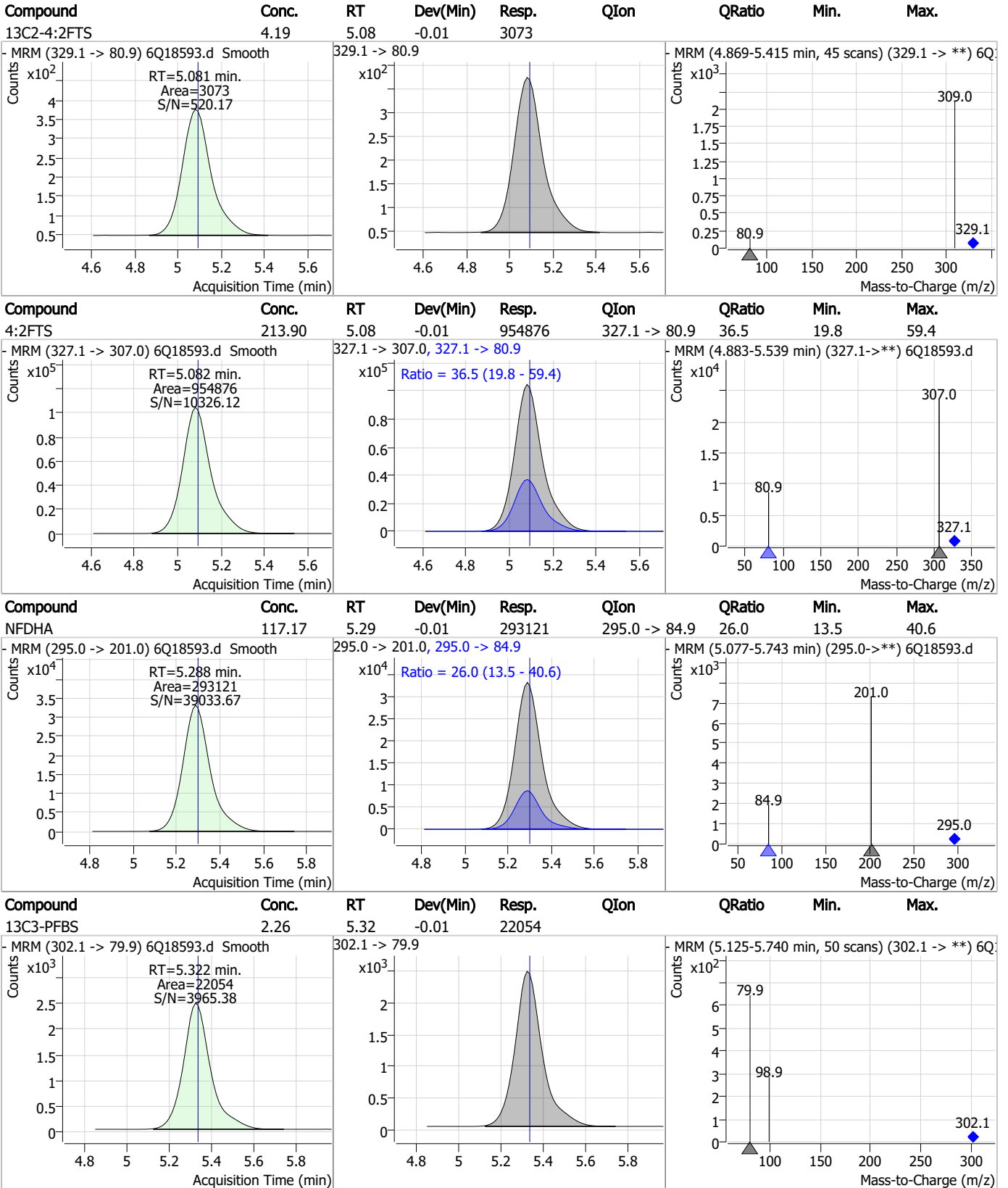


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

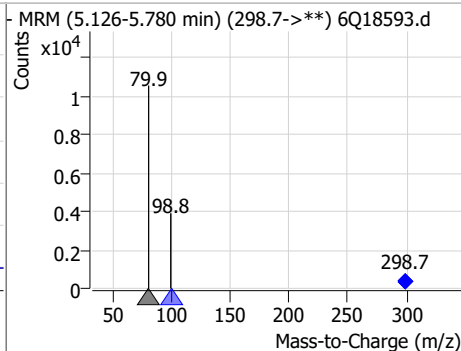
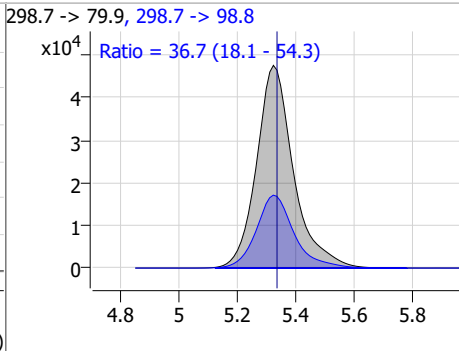
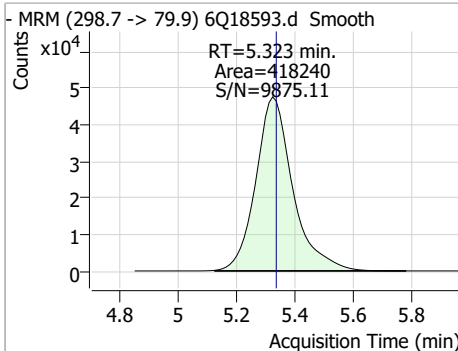


7.7.9

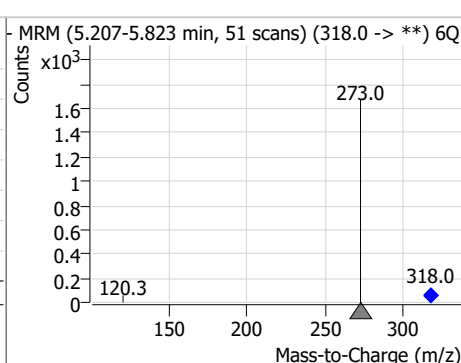
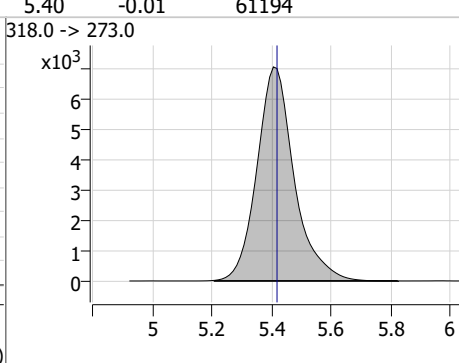
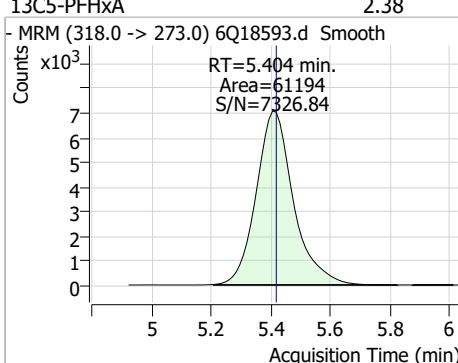
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Perfluorinated Compounds by LC/MS/MS

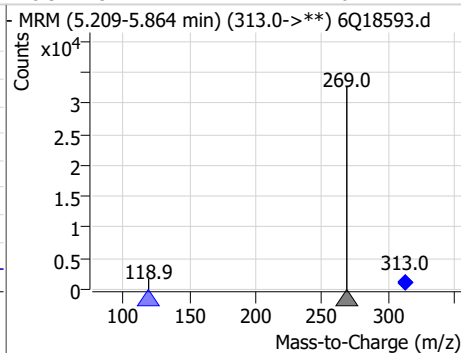
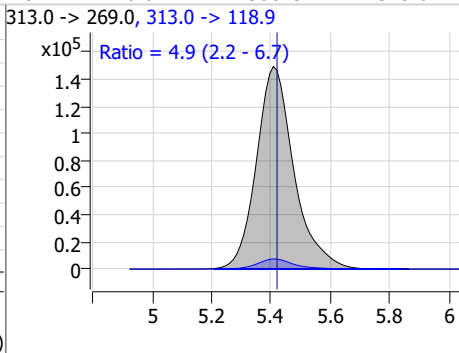
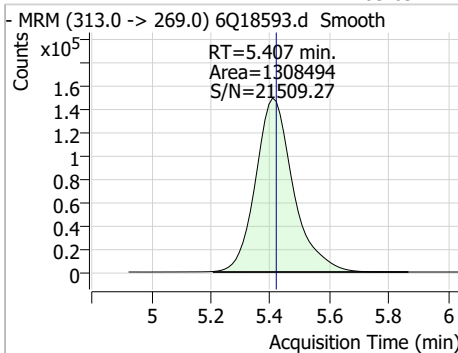
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFBS | 55.74 | 5.32 | -0.01 | 418240 | 298.7 -> 98.8 | 36.7 | 18.1 | 54.3 |



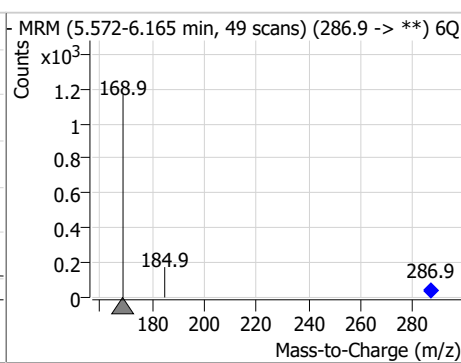
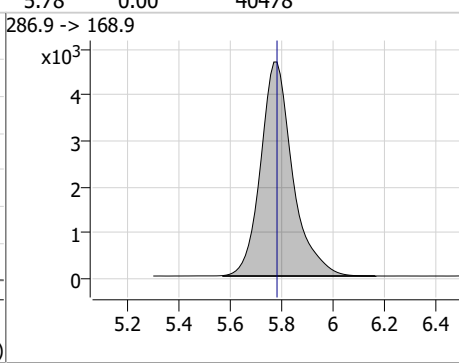
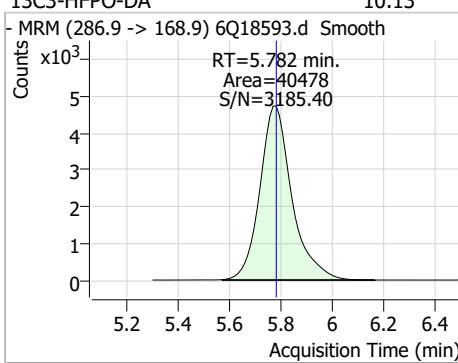
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.38 | 5.40 | -0.01 | 61194 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|---------|----------------|--------|------|------|
| PFHxA | 63.69 | 5.41 | -0.01 | 1308494 | 313.0 -> 118.9 | 4.9 | 2.2 | 6.7 |



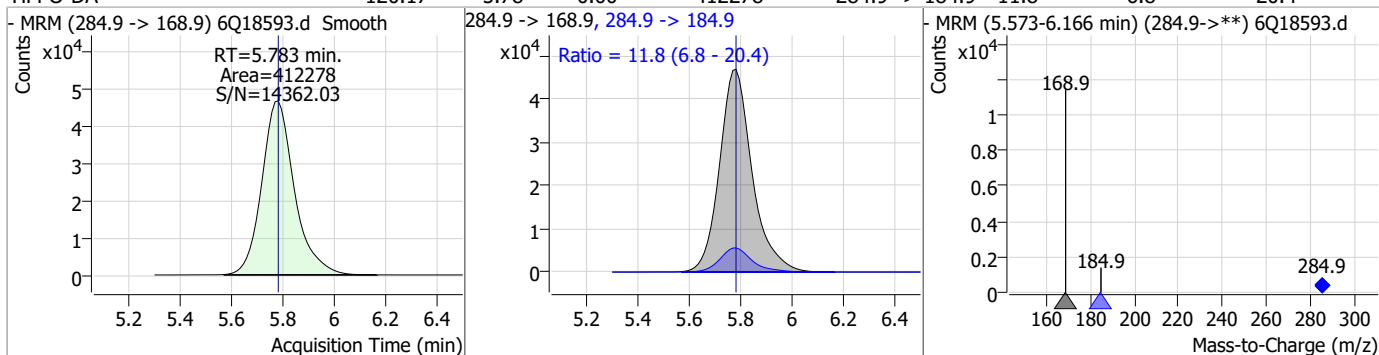
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 10.13 | 5.78 | 0.00 | 40478 | | | | |



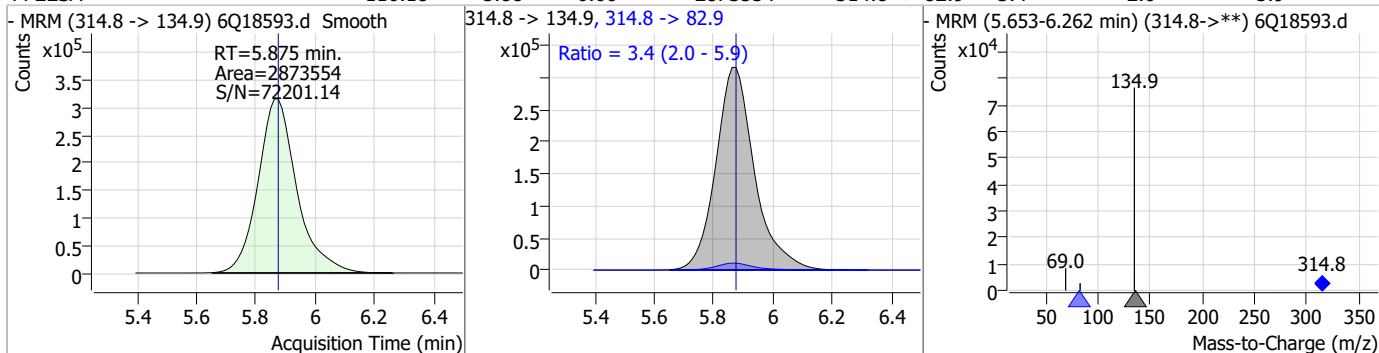
7.7.9
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Perfluorinated Compounds by LC/MS/MS

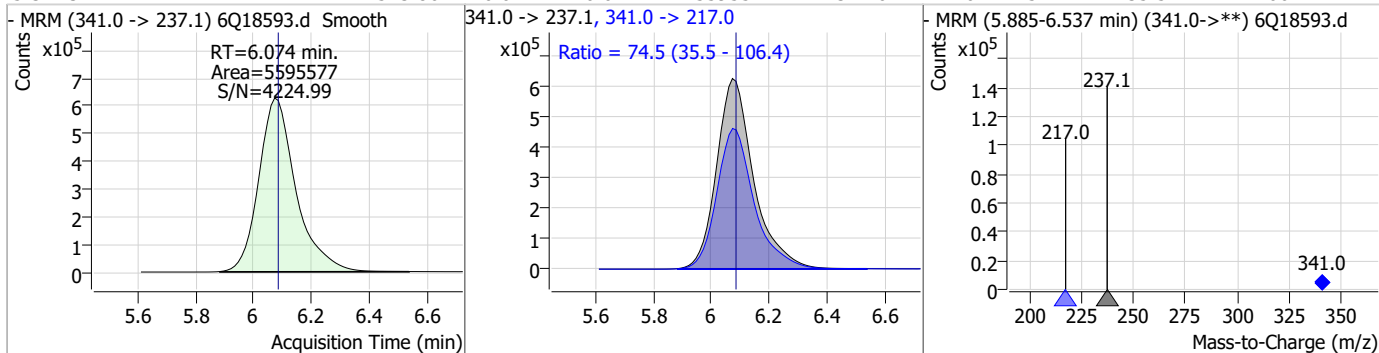
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|------|----------|--------|----------------|--------|------|------|
| HFPO-DA | 120.17 | 5.78 | 0.00 | 412278 | 284.9 -> 184.9 | 11.8 | 6.8 | 20.4 |



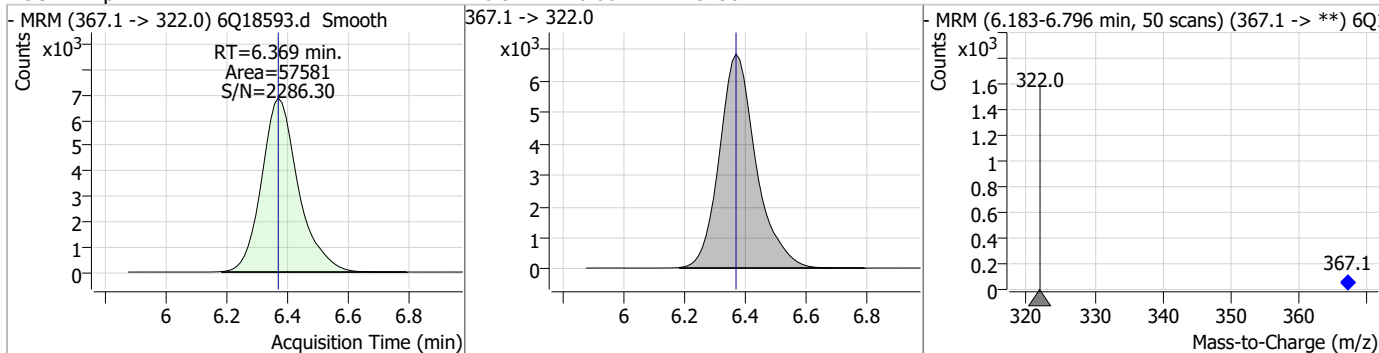
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|------|----------|---------|---------------|--------|------|------|
| PFEESA | 110.18 | 5.88 | 0.00 | 2873554 | 314.8 -> 82.9 | 3.4 | 2.0 | 5.9 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|---------|------|----------|---------|----------------|--------|------|-------|
| 5:3FTCA | 1513.86 | 6.07 | -0.01 | 5595577 | 341.0 -> 217.0 | 74.5 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.42 | 6.37 | 0.00 | 57581 | 367.1 -> 322.0 | | | |



Perfluorinated Compounds by LC/MS/MS

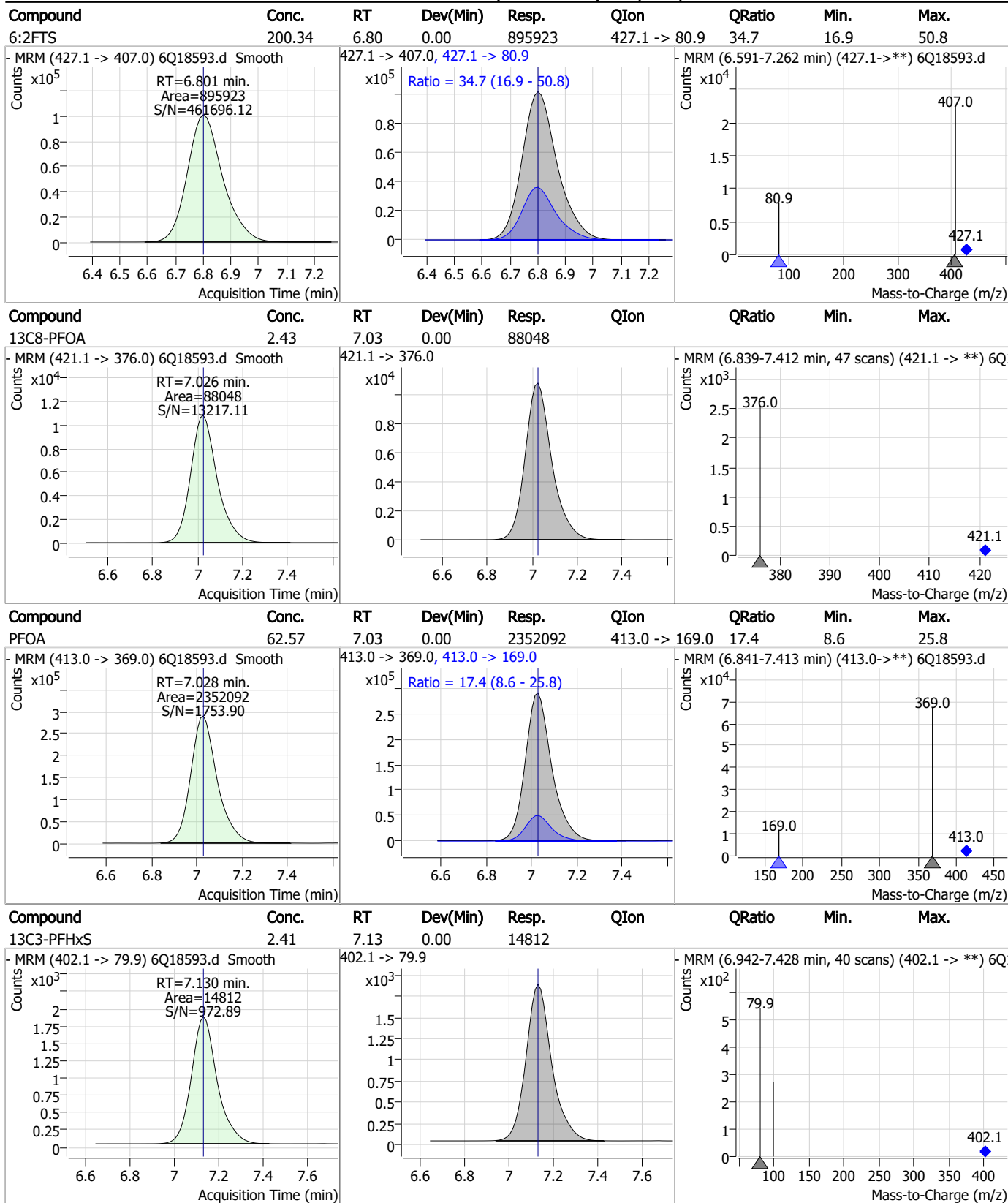
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|--------|------|----------|---------|----------------|--------|------|------|
| PFHpA | 62.17 | 6.37 | -0.01 | 1584265 | 363.1 -> 169.0 | 16.2 | 7.5 | 22.5 |
| | | | | | | | | |
| PFPeS | 56.08 | 6.42 | 0.00 | 374345 | 349.1 -> 98.9 | 43.9 | 23.7 | 71.0 |
| | | | | | | | | |
| ADONA | 110.40 | 6.63 | 0.00 | 5935424 | 376.9 -> 84.8 | 26.1 | 13.4 | 40.2 |
| | | | | | | | | |
| 13C2-6:2FTS | 4.27 | 6.80 | 0.00 | 4551 | 429.1 -> 80.9 | - | - | - |
| | | | | | | | | |

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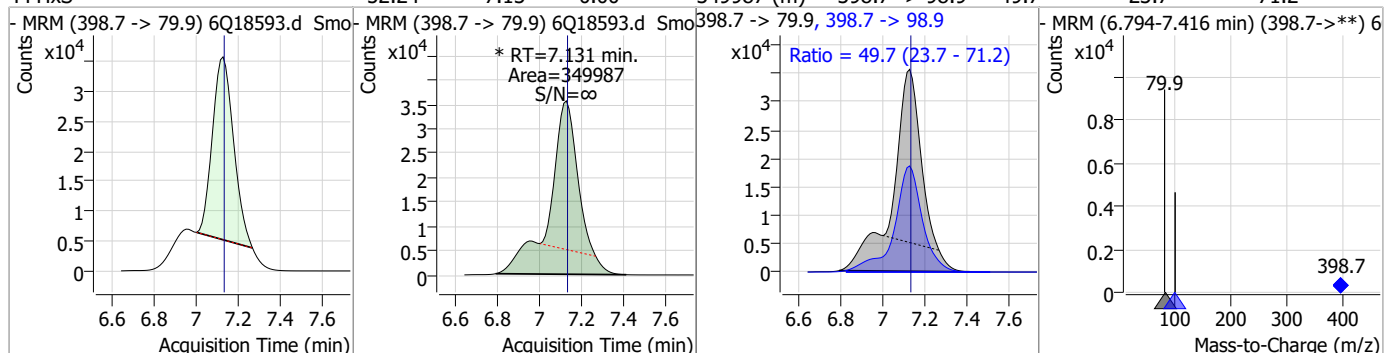
Perfluorinated Compounds by LC/MS/MS



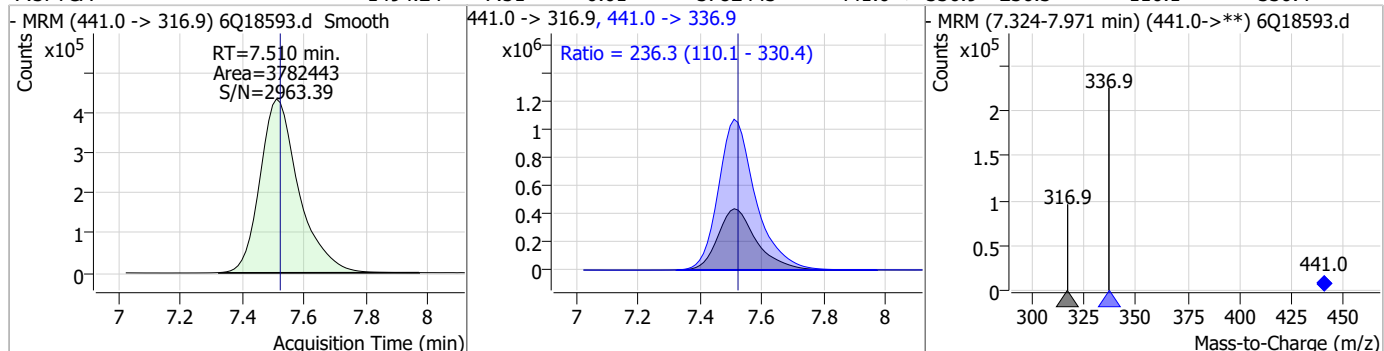
7.7.9
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Perfluorinated Compounds by LC/MS/MS

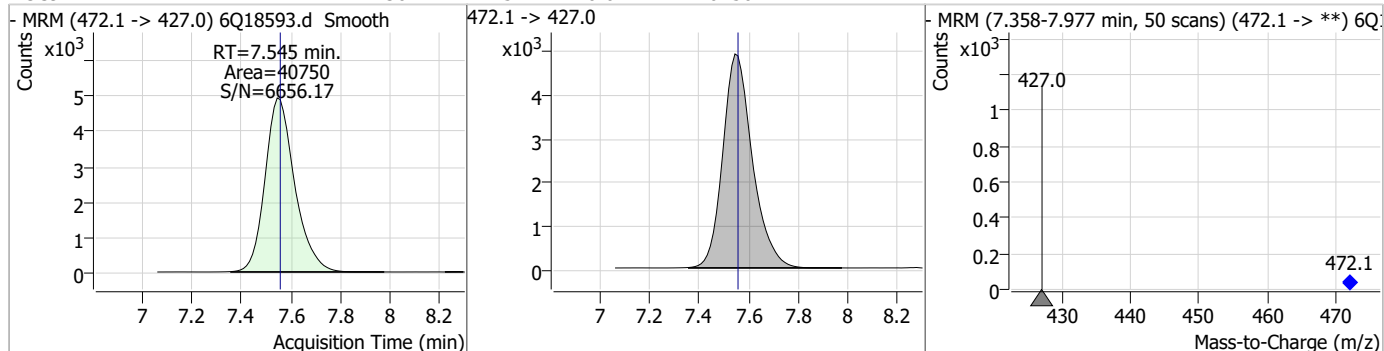
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|------------|---------------|--------|------|------|
| PFHxS | 52.24 | 7.13 | 0.00 | 349987 (m) | 398.7 -> 98.9 | 49.7 | 23.7 | 71.2 |



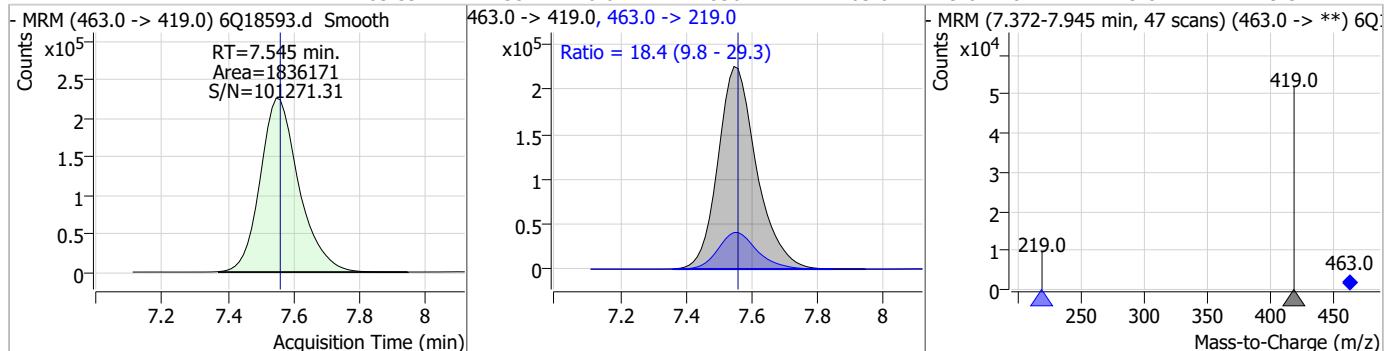
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|---------|------|----------|---------|----------------|--------|-------|-------|
| 7:3FTCA | 1494.24 | 7.51 | -0.01 | 3782443 | 441.0 -> 336.9 | 236.3 | 110.1 | 330.4 |



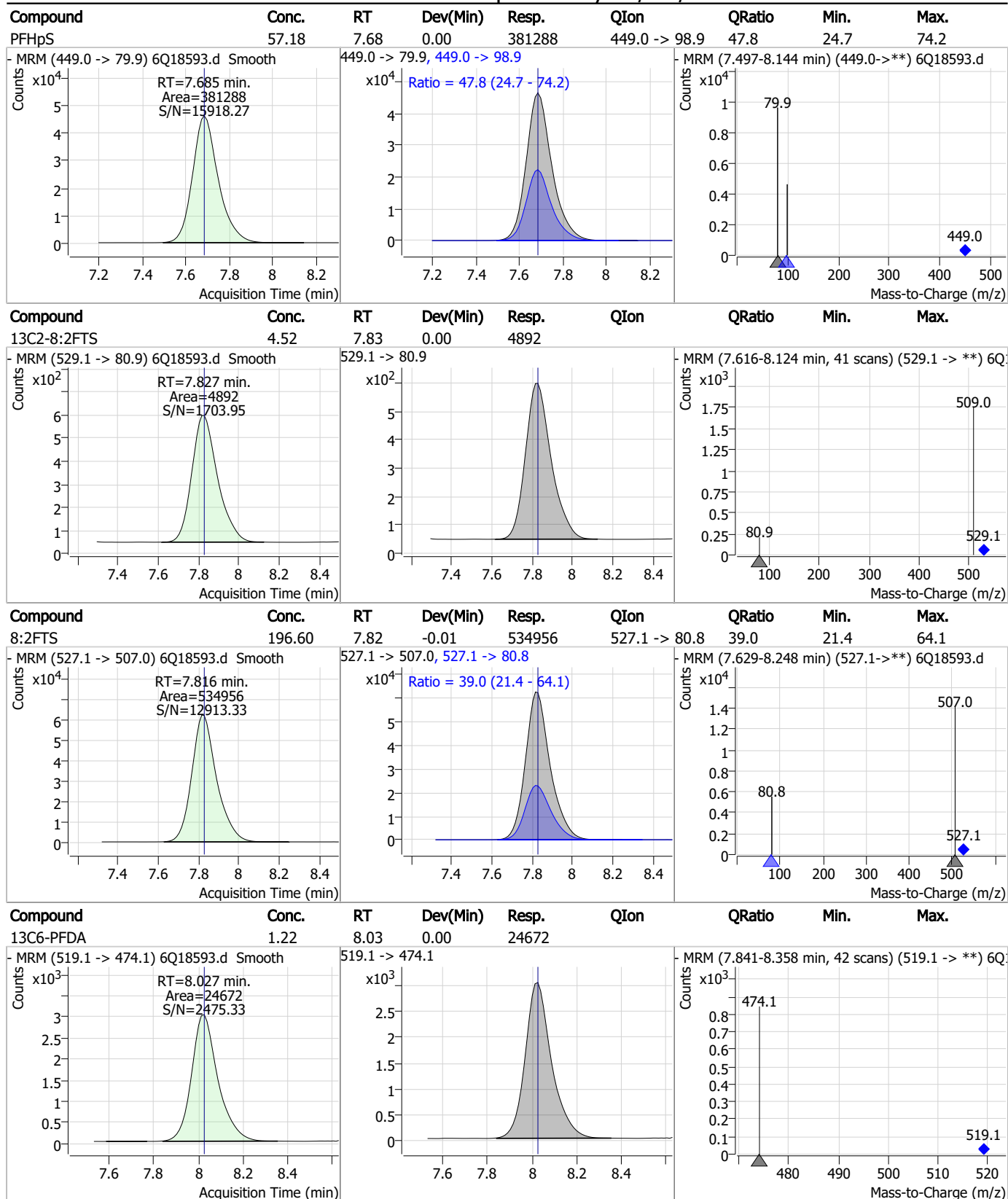
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C9-PFNA | 1.30 | 7.54 | -0.01 | 40750 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|---------|----------------|--------|------|------|
| PFNA | 63.59 | 7.55 | -0.01 | 1836171 | 463.0 -> 219.0 | 18.4 | 9.8 | 29.3 |

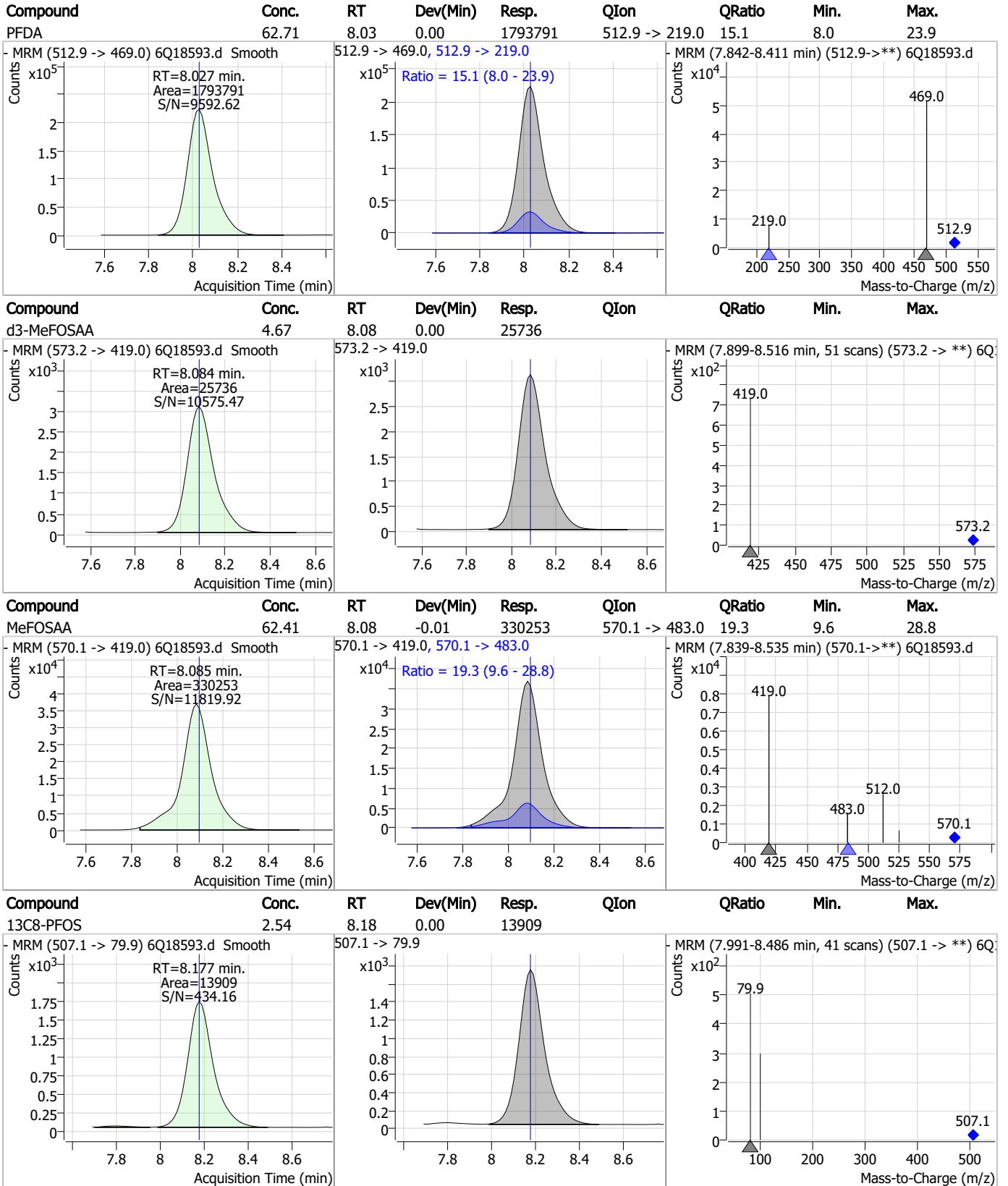


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

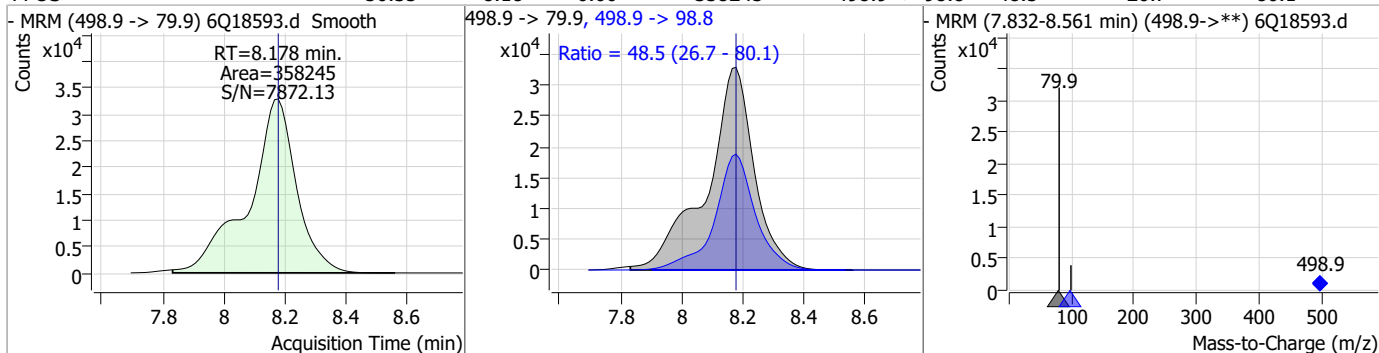


7.7.9

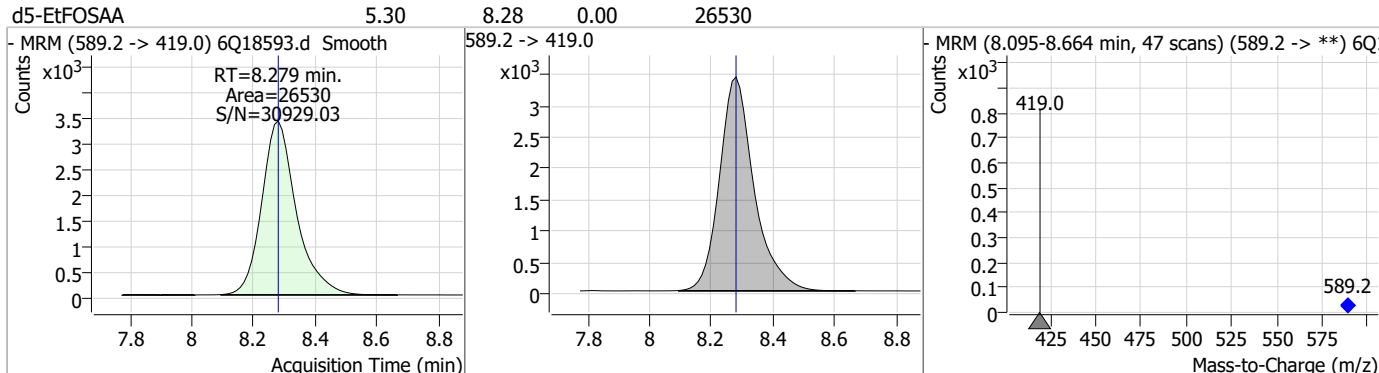
7

Perfluorinated Compounds by LC/MS/MS

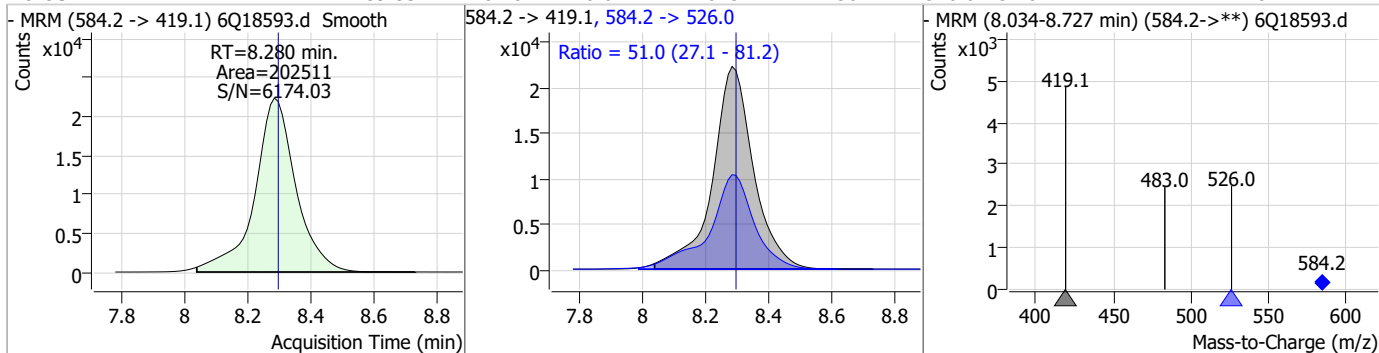
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFOS | 56.35 | 8.18 | 0.00 | 358245 | 498.9 -> 98.8 | 48.5 | 26.7 | 80.1 |



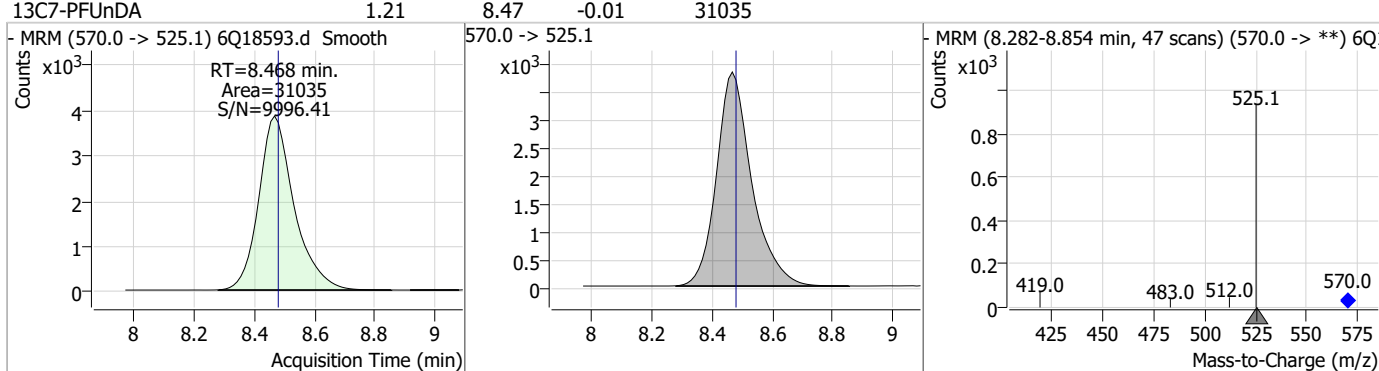
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d5-EtFOSAA | 5.30 | 8.28 | 0.00 | 26530 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| EtFOSAA | 59.33 | 8.28 | -0.01 | 202511 | 584.2 -> 526.0 | 51.0 | 27.1 | 81.2 |

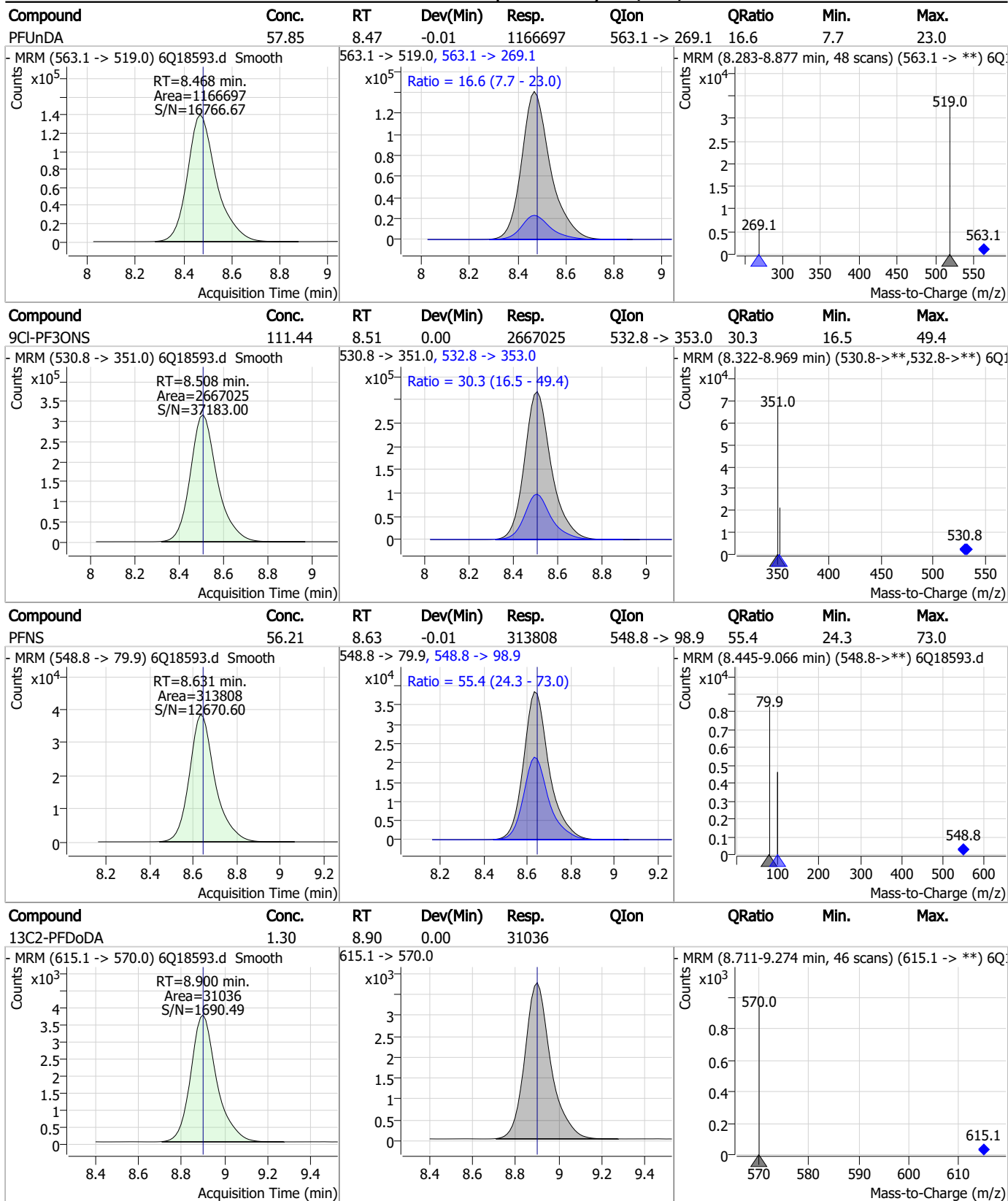


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C7-PFUnDA | 1.21 | 8.47 | -0.01 | 31035 | | | | |



7.7.9
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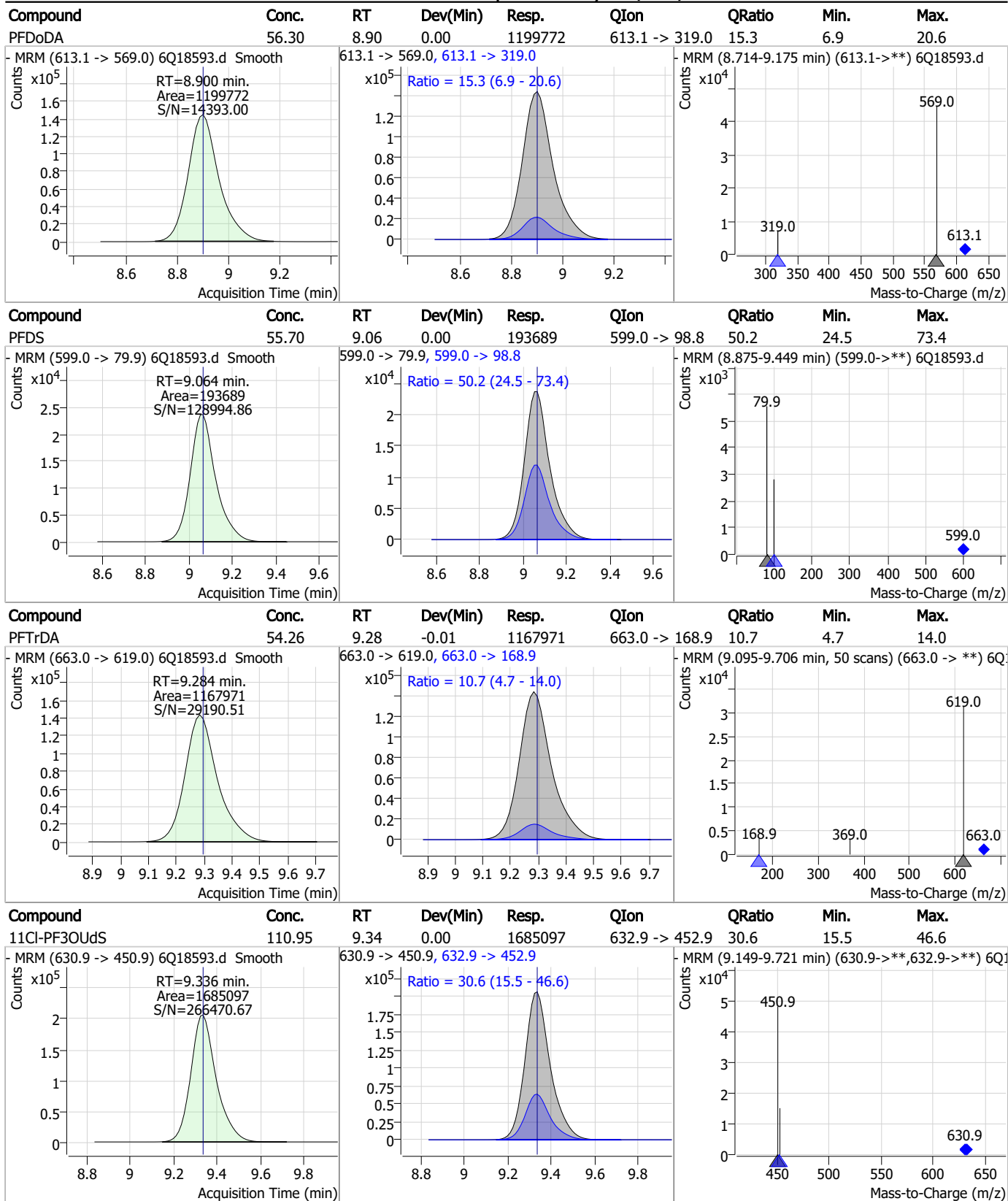
Perfluorinated Compounds by LC/MS/MS



7.7.9
7



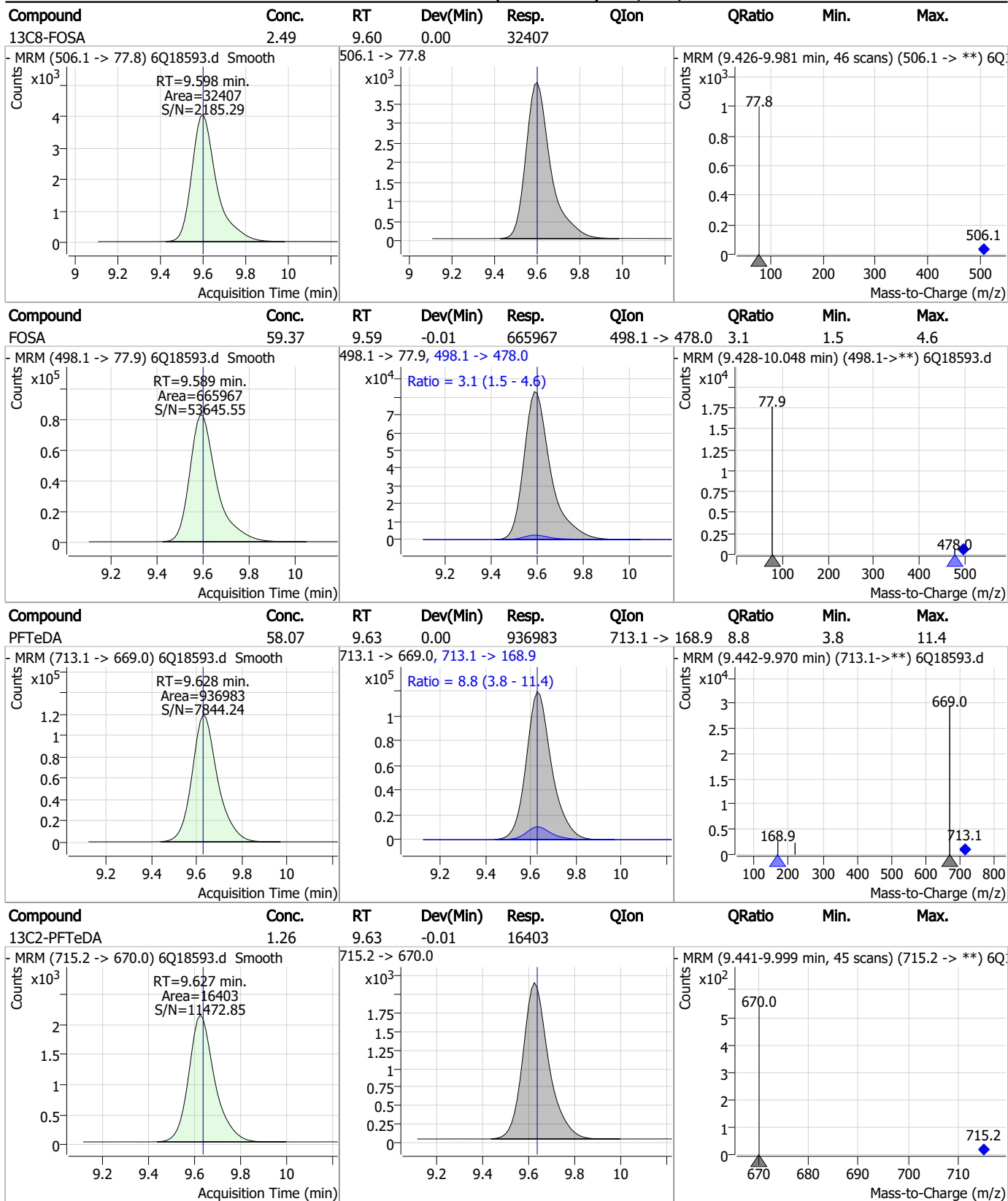
Perfluorinated Compounds by LC/MS/MS



7.7.9
7



Perfluorinated Compounds by LC/MS/MS



7.7.9
7



Perfluorinated Compounds by LC/MS/MS

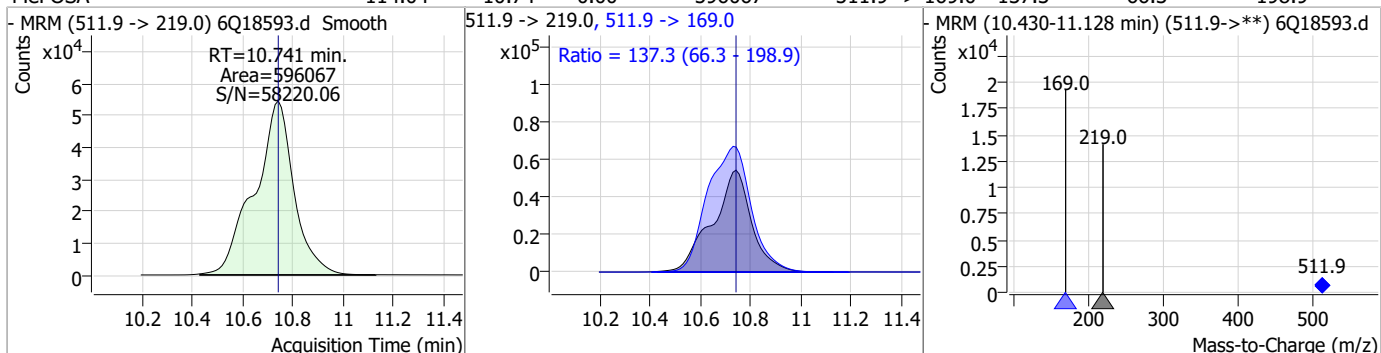
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|--------|-------|----------|---------|---------------|--------|------|------|
| PFDoS | 58.86 | 9.75 | 0.00 | 90931 | 699.1 -> 98.8 | 52.3 | 26.9 | 80.6 |
| | | | | | | | | |
| d7-MeFOSE | 23.85 | 10.66 | 0.00 | 102229 | | | | |
| | | | | | | | | |
| MeFOSE | 311.37 | 10.67 | 0.00 | 1264982 | | | | |
| | | | | | | | | |
| d3-MeFOSA | 2.70 | 10.74 | 0.00 | 14213 | | | | |
| | | | | | | | | |

7.7.9

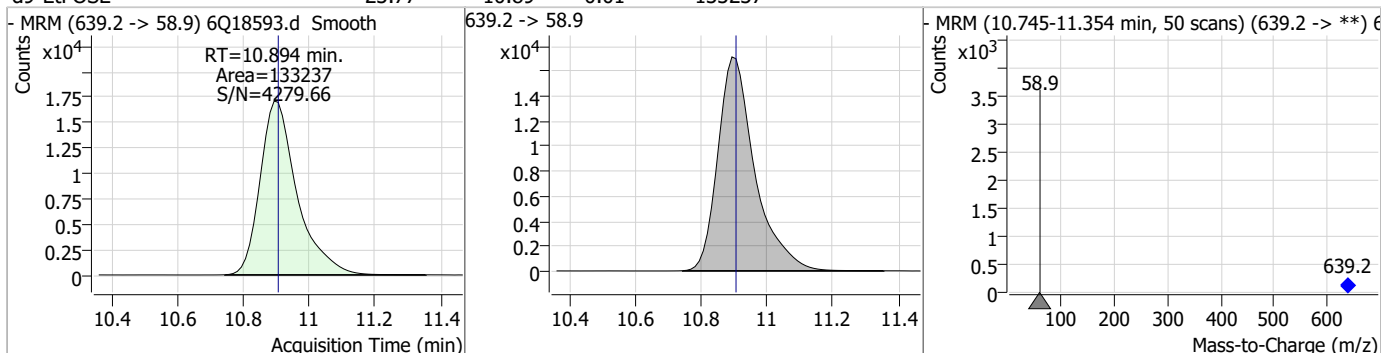
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Perfluorinated Compounds by LC/MS/MS

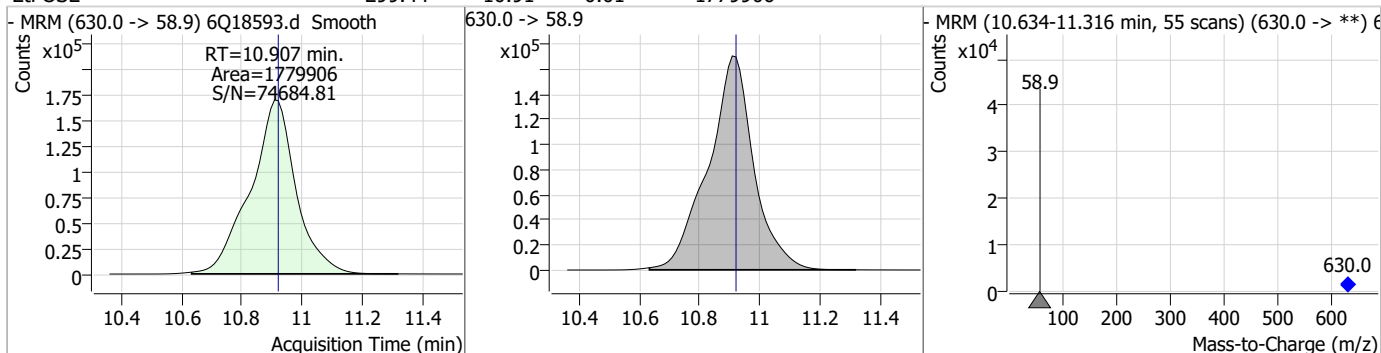
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|-------|----------|--------|----------------|--------|------|-------|
| MeFOSA | 114.04 | 10.74 | 0.00 | 596067 | 511.9 -> 169.0 | 137.3 | 66.3 | 198.9 |



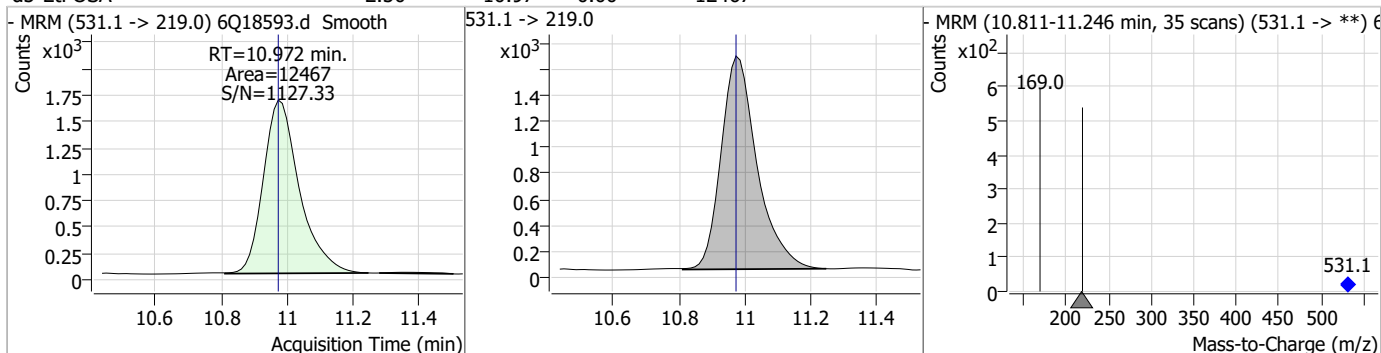
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 23.77 | 10.89 | -0.01 | 133237 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|--------|-------|----------|---------|------|--------|------|------|
| EtFOSE | 299.44 | 10.91 | -0.01 | 1779906 | | | | |

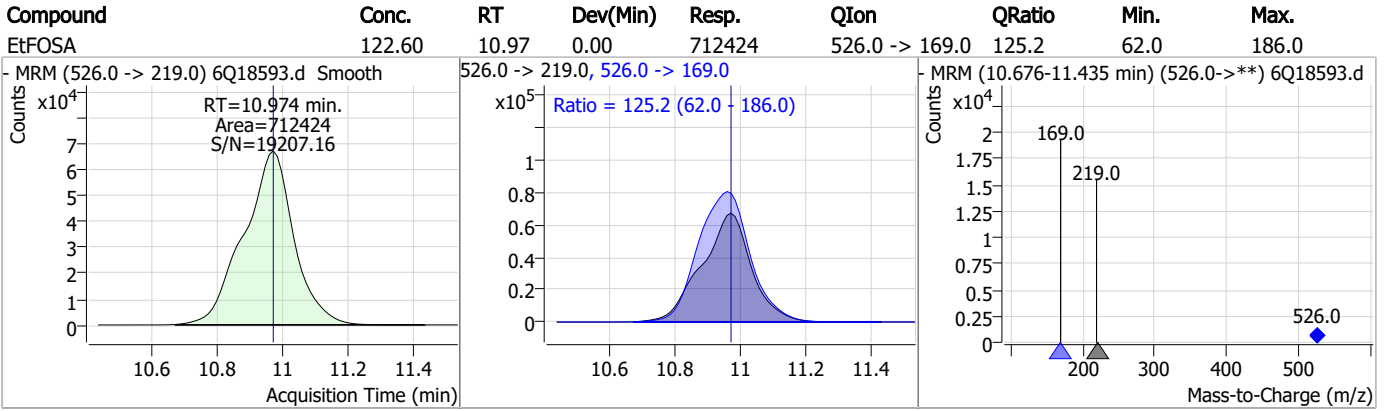


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSA | 2.50 | 10.97 | 0.00 | 12467 | | | | |



7.7.9
7

Perfluorinated Compounds by LC/MS/MS



7.7.9

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Manual Integration Approval Summary

Sample Number: S6Q279-IC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18593.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 18:57 Supervisor approved: 06/01/23 14:56 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18595.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:26:45 PM
 Sample Name : icv279-4
 Vial : P1-B1
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 170457 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 57026 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 63595 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 58610 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 89653 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 40289 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 24134 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33620 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 29418 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15555 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 33177 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 22744 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 13810 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 12998 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3600 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5027 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4884 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 27516 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38707 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26462 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 100839 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 133717 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12229 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 12293 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17202 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 71357 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10292 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 98236 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 34106 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 50284 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 58580 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3600 | 5.24 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 104.9% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5027 | 5.04 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 100.9% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 4884 | 4.83 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 96.6% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 29418 | 1.24 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 99.4% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15555 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 96.6% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 22744 | 2.50 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 99.9% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 13810 | 2.40 µg/L | 0.000 |

7.7.10
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.1% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 170457 | 10.03 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.3% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 58610 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 63595 | 2.56 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.6% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 57026 | 5.00 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.1% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 24134 | 1.21 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 96.6% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 33620 | 1.32 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 105.5% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 33177 | 2.53 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 89653 | 2.44 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.4% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 12998 | 2.36 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 94.3% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 40289 | 1.22 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 27516 | 4.96 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 99.1% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 38707 | 10.06 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 12293 | 2.31 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 92.5% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26462 | 5.24 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 104.8% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 100839 | 23.34 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 93.4% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 133717 | 23.66 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 94.7% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12229 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.2% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 48916 | 9.35 µg/L | 99 |
| | | 327.1 -> 80.9 | 19622 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 51987 | 10.52 µg/L | 99 |
| | | 427.1 -> 80.9 | 17303 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 28525 | 10.50 µg/L | 96 |
| | | 527.1 -> 80.8 | 11388 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 8691 | 2.55 µg/L | 100 |
| | | 584.2 -> 526.0 | 4733 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 29778 | 2.59 µg/L | 99 |
| | | 498.1 -> 478.0 | 815 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 15457 | 2.73 µg/L | 99 |
| | | 570.1 -> 483.0 | 2869 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 59467 | 10.54 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 17085 | 2.21 µg/L | 94 |
| | | 298.7 -> 98.8 | 6838 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 73429 | 2.62 µg/L | 98 |
| | | 512.9 -> 219.0 | 12351 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 50767 | 2.51 µg/L | 94 |
| | | 613.1 -> 319.0 | 8133 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 8551 | 2.63 µg/L | 99 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 4094 | 2.61 | µg/L | 98 |
| | | 363.1 -> 319.0 | 67586 | | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 10768 | 2.49 | µg/L | 93 |
| | | 449.0 -> 79.9 | 15515 | | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 8412 | 2.61 | µg/L | 99 |
| | | 313.0 -> 269.0 | 55703 | | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 2729 | 2.44 | µg/L | 98 |
| | | 398.7 -> 79.9 | 15232 | | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7474 | 2.68 | µg/L | 99 |
| | | 463.0 -> 419.0 | 76579 | | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 14717 | 2.49 | µg/L | 93 |
| | | 548.8 -> 79.9 | 12985 | | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 6937 | 2.46 | µg/L | 96 |
| | | 413.0 -> 369.0 | 94175 | | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 17844 | 2.53 | µg/L | 96 |
| | | 498.9 -> 79.9 | 15016 | | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 7539 | 5.24 | µg/L | 100 |
| | | 263.0 -> 219.0 | 71774 | | | |
| PFPeS | 6.410 | 349.1 -> 79.9 | 16466 | 2.65 | µg/L | 92 |
| | | 349.1 -> 98.9 | 6942 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 40144 | 2.62 | µg/L | 97 |
| | | 713.1 -> 168.9 | 3528 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 50595 | 2.48 | µg/L | 94 |
| | | 663.0 -> 168.9 | 5843 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 53459 | 2.45 | µg/L | 96 |
| | | 563.1 -> 269.1 | 8997 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 72474 | 4.99 | µg/L | 100 |
| | | 632.9 -> 452.9 | 22415 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 116131 | 5.07 | µg/L | 94 |
| | | 532.8 -> 353.0 | 34208 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 254905 | 4.96 | µg/L | 98 |
| | | 376.9 -> 84.8 | 70354 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 16543 | 5.04 | µg/L | 97 |
| | | 284.9 -> 184.9 | 2036 | | | |
| 3:3FTCA | 3.659 | 241.0 -> 177.0 | 11434 | 13.04 | µg/L | 98 |
| | | 241.0 -> 117.0 | 1565 | | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 250883 | 65.31 | µg/L | 99 |
| | | 341.0 -> 217.0 | 180428 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 167621 | 63.72 | µg/L | 97 |
| | | 441.0 -> 336.9 | 378472 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 29907 | 5.25 | µg/L | 94 |
| | | 526.0 -> 169.0 | 39103 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 81046 | 13.59 | µg/L | 100 |
| | | 511.9 -> 219.0 | 25097 | | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 34435 | 5.55 | µg/L | 96 |
| | | 616.1 -> 58.9 | 56174 | | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3790 | 14.02 | µg/L | 100 |
| | | 699.1 -> 98.8 | 1984 | | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 13465 | 2.63 | µg/L | 98 |
| | | 295.0 -> 84.9 | 3401 | | | |
| NFDHA | 5.288 | 279.0 -> 85.1 | 48666 | 5.18 | µg/L | 96 |
| | | 229.0 -> 84.9 | 38219 | | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 121513 | 5.27 | µg/L | 100 |
| | | 314.8 -> 82.9 | 4672 | | | |
| PFMPA | 3.351 | | | 4.48 | µg/L | 100 |
| | | | | | | |
| PFEESA | 5.862 | | | | | |
| | | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



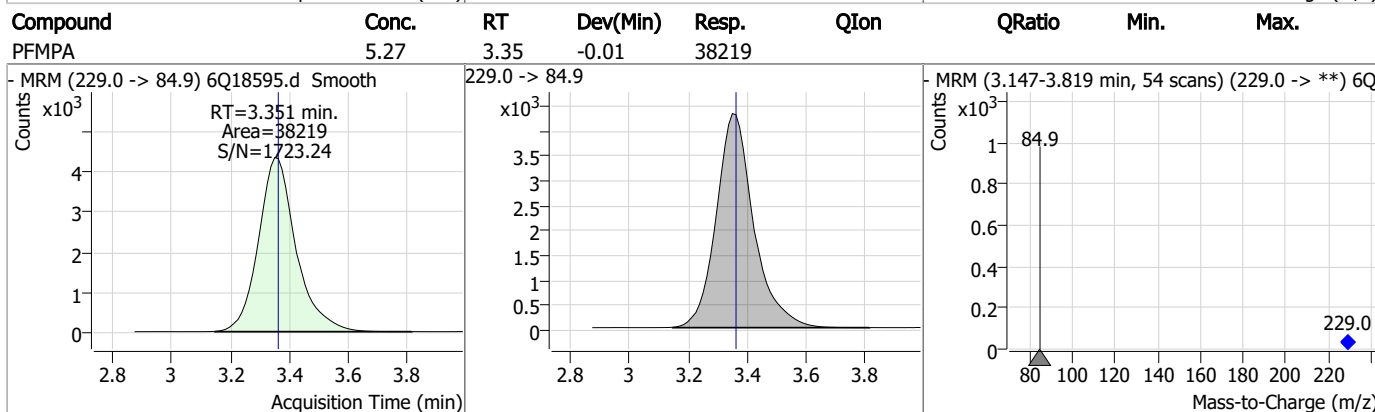
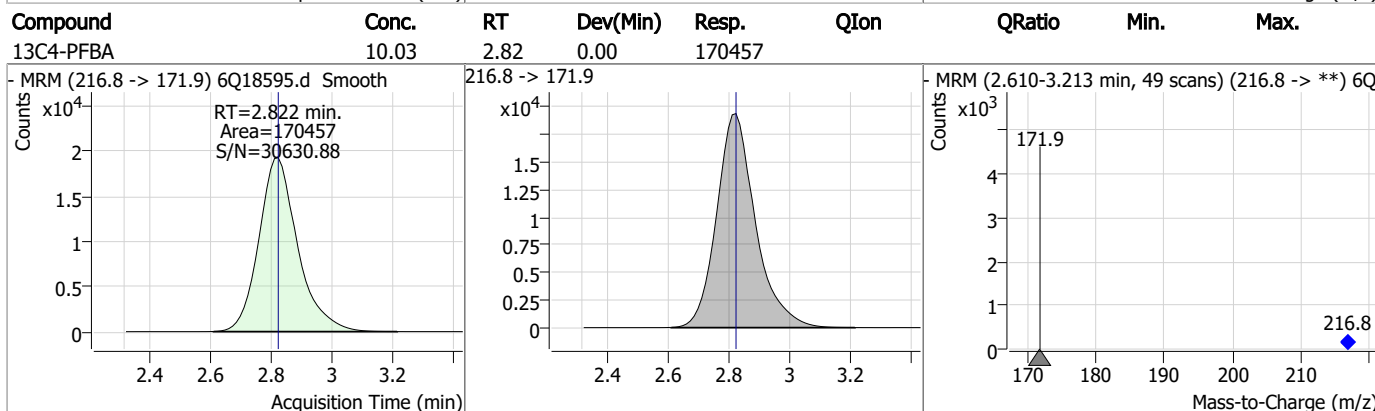
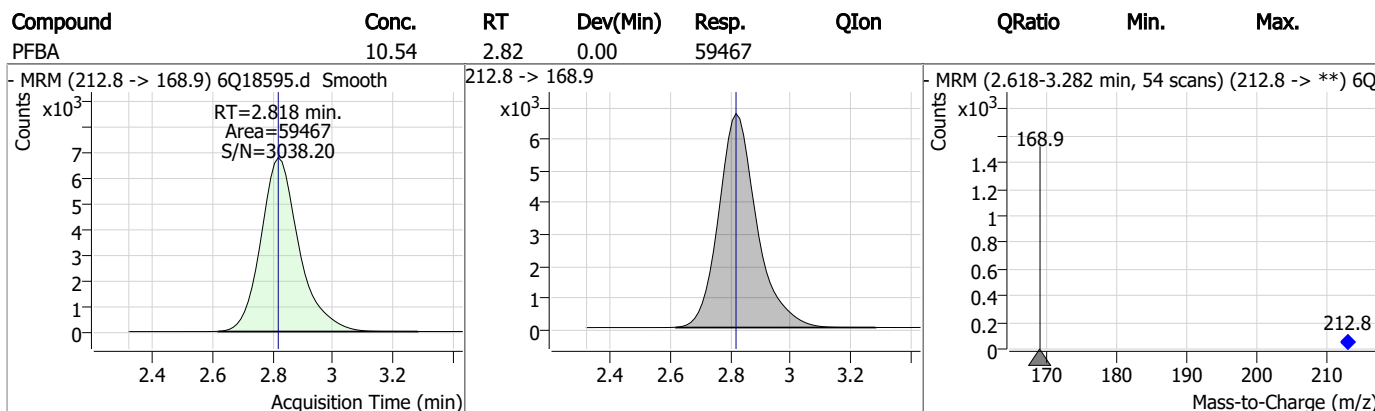
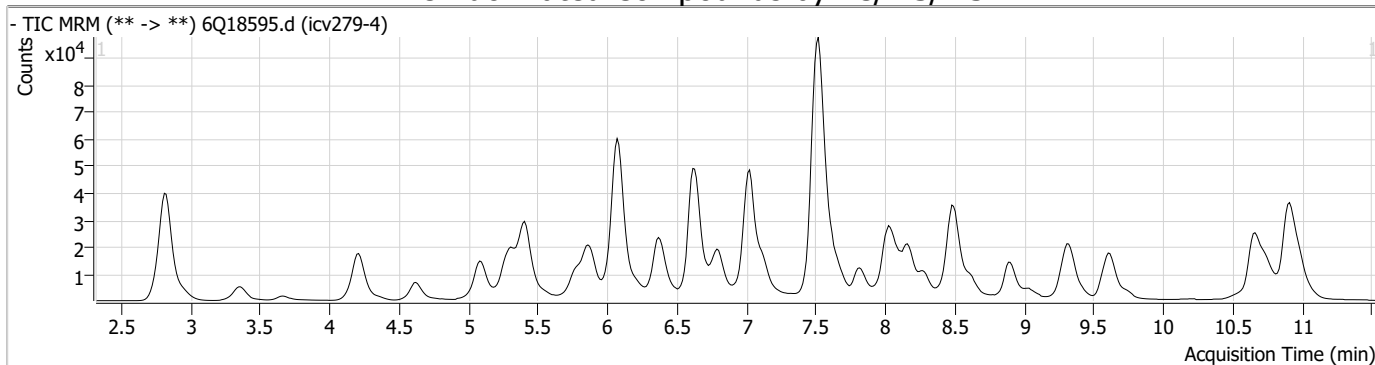
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

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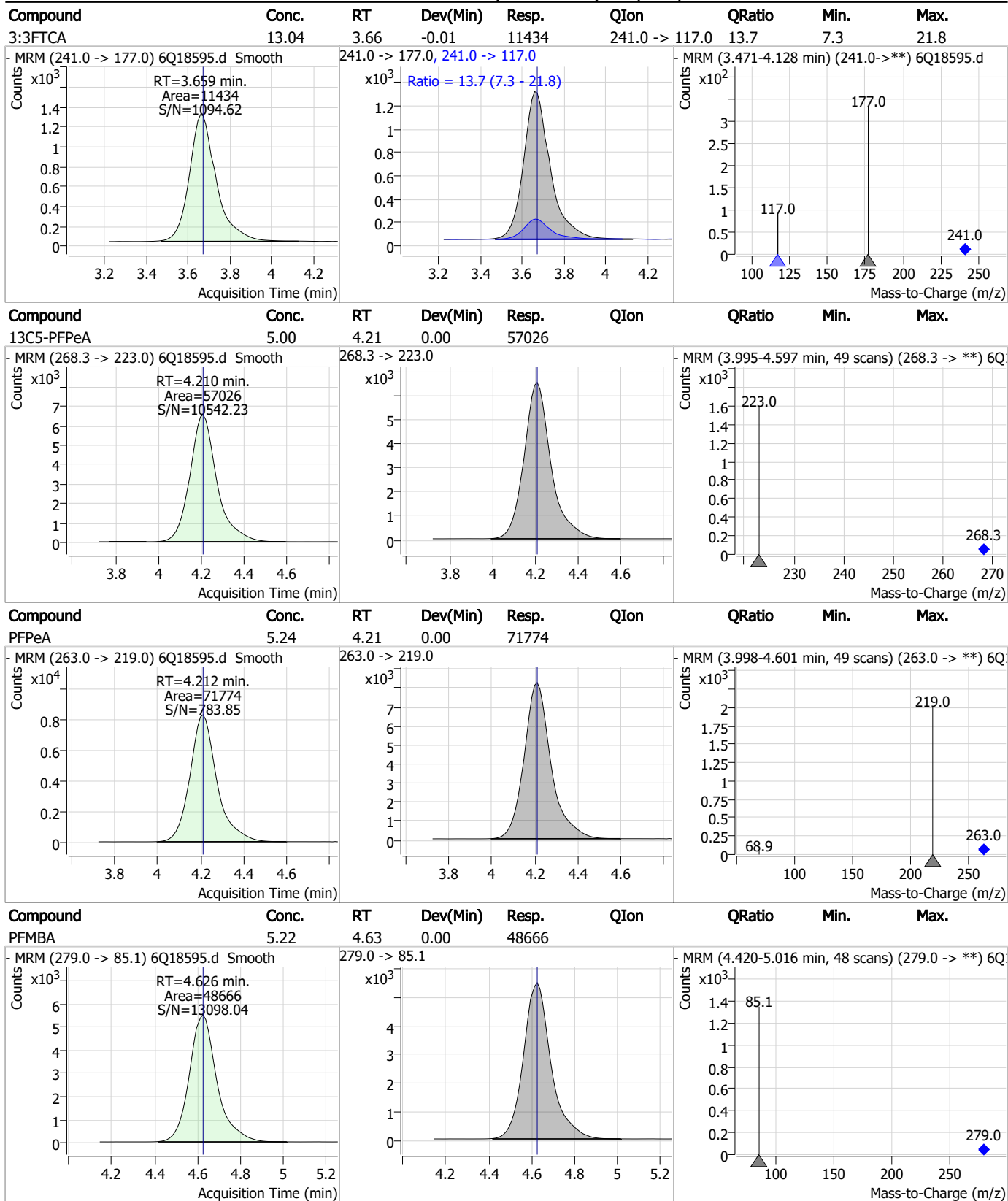
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Perfluorinated Compounds by LC/MS/MS



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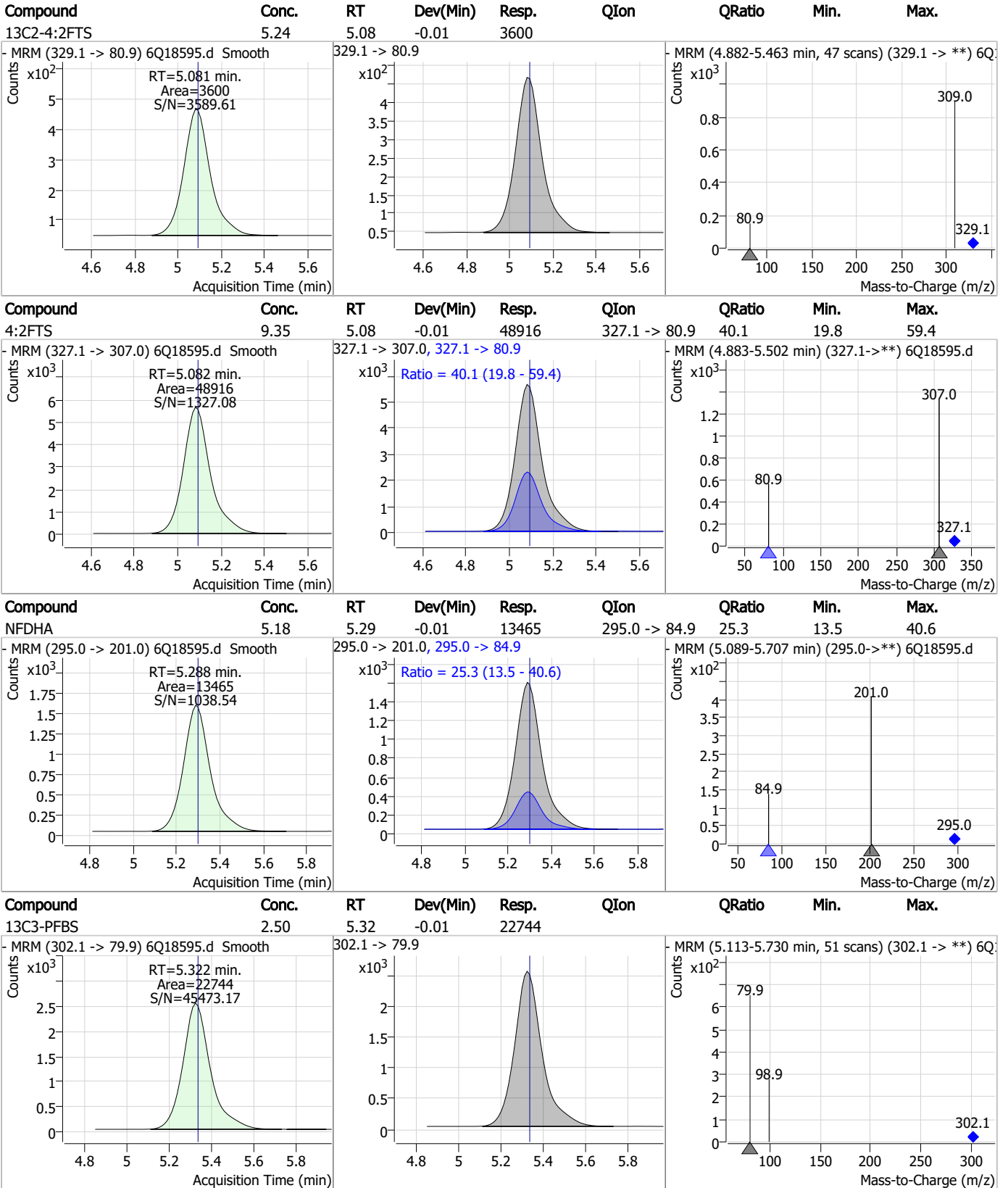
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

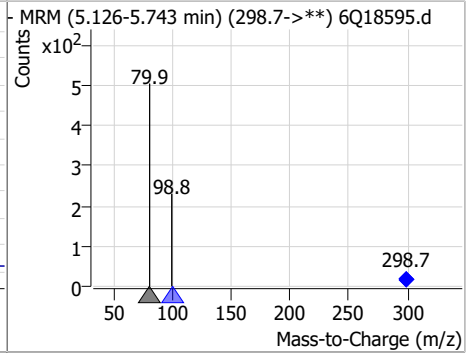
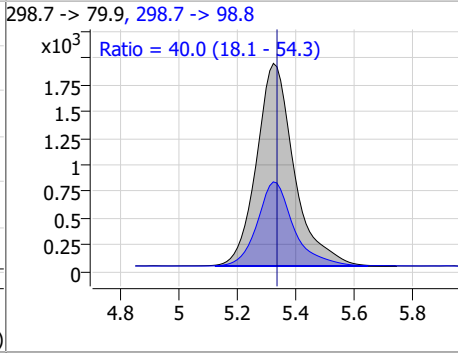
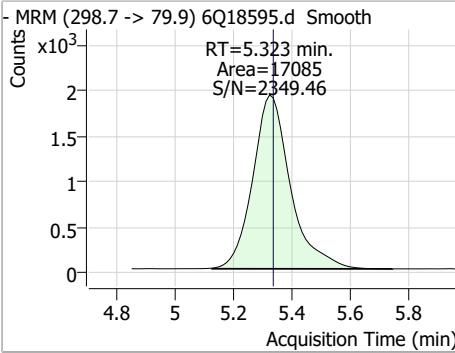


7.7.10 7

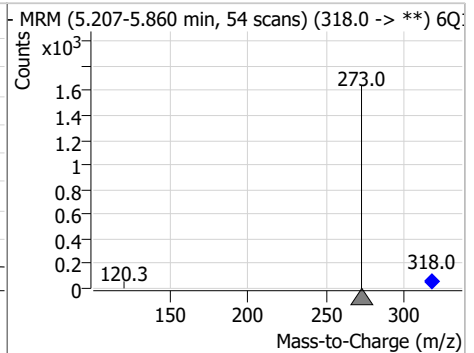
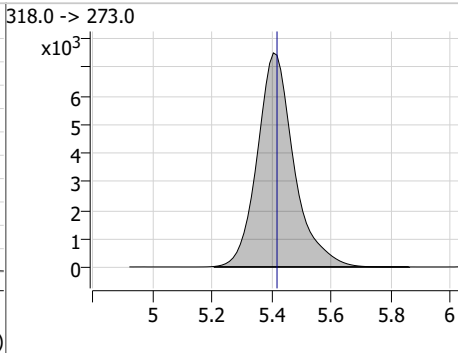
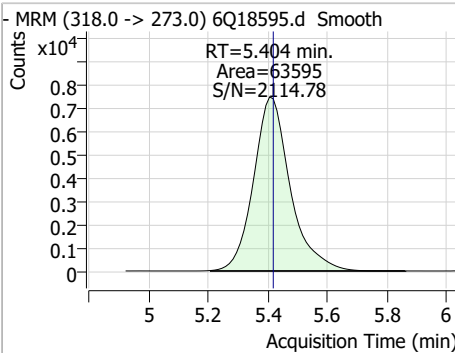


Perfluorinated Compounds by LC/MS/MS

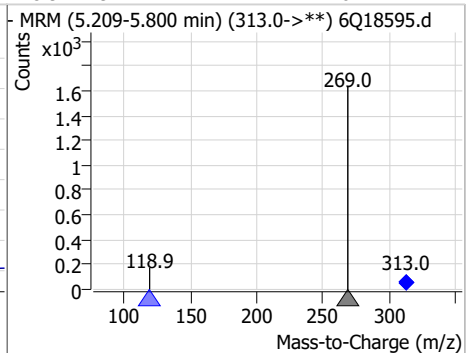
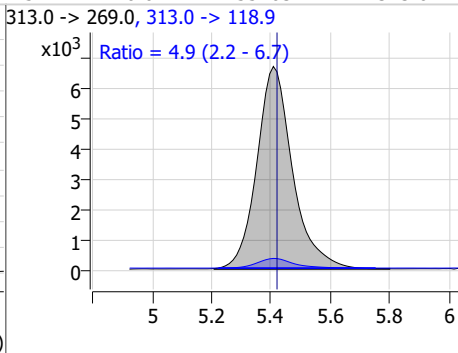
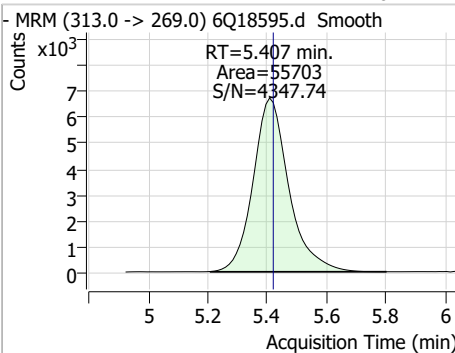
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 2.21 | 5.32 | -0.01 | 17085 | 298.7 -> 98.8 | 40.0 | 18.1 | 54.3 |



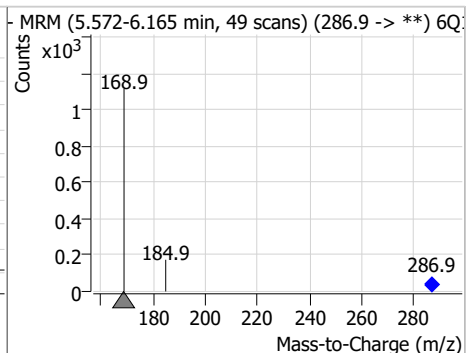
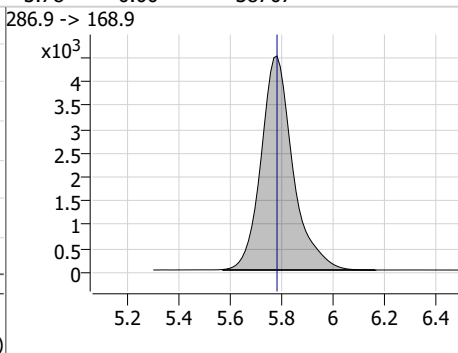
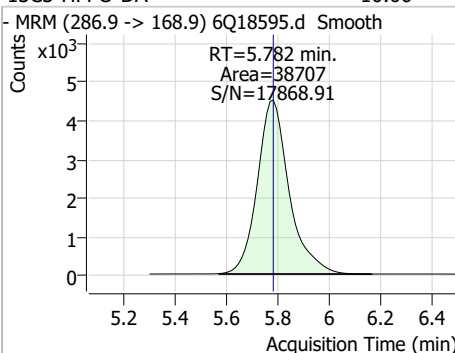
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.56 | 5.40 | -0.01 | 63595 | | | | |



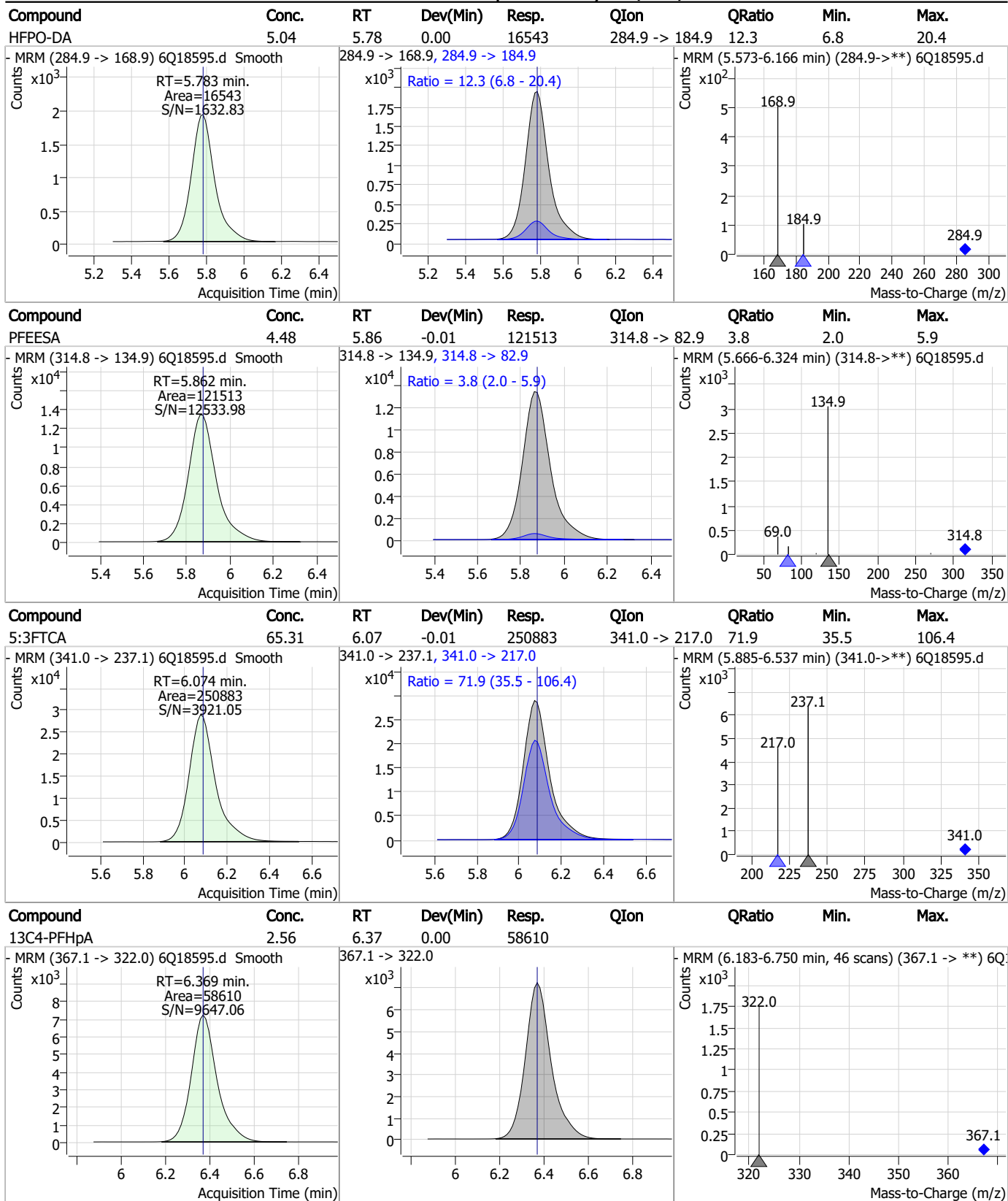
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 2.61 | 5.41 | -0.01 | 55703 | 313.0 -> 118.9 | 4.9 | 2.2 | 6.7 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 10.06 | 5.78 | 0.00 | 38707 | | | | |

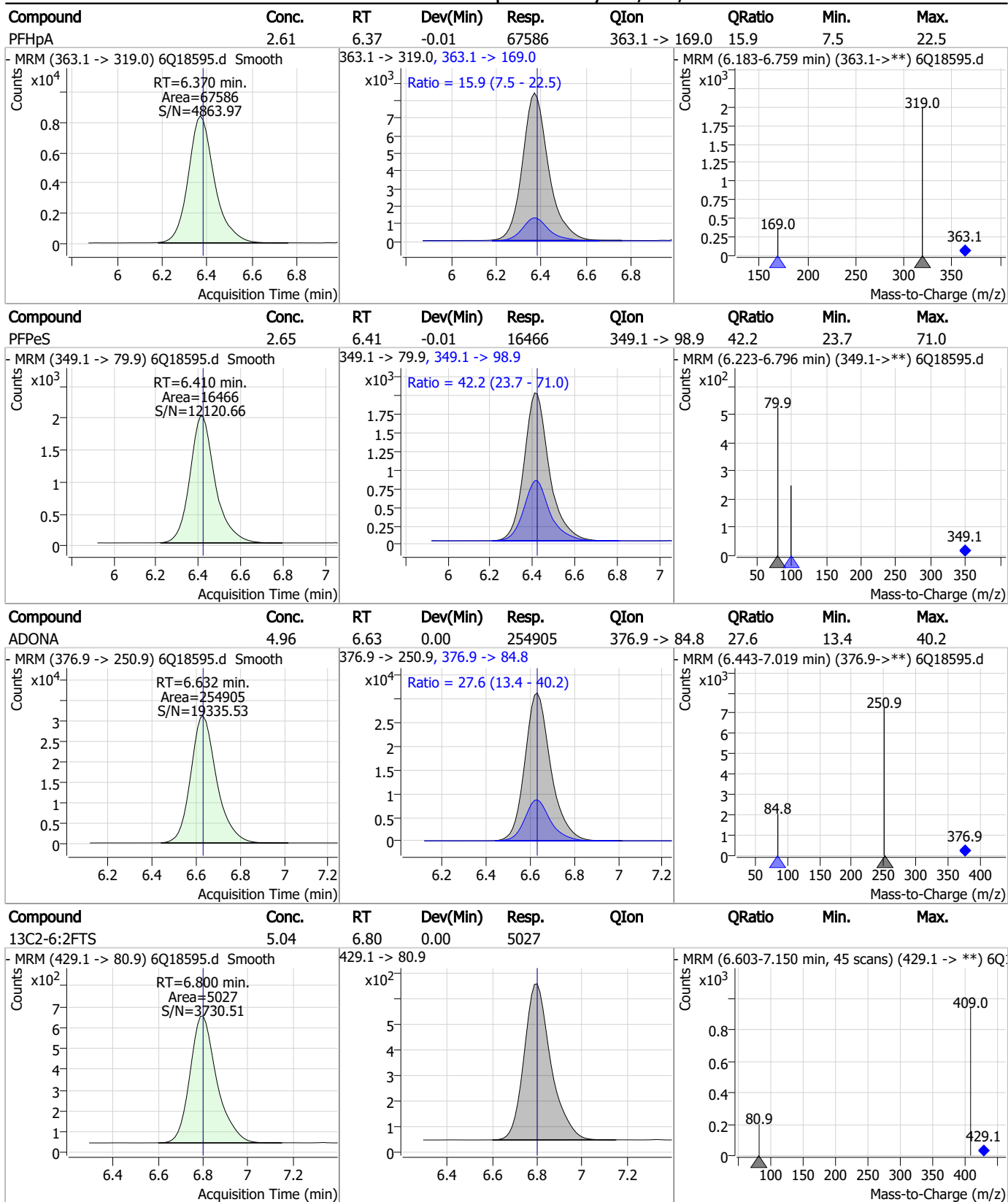


Perfluorinated Compounds by LC/MS/MS



7.7.10
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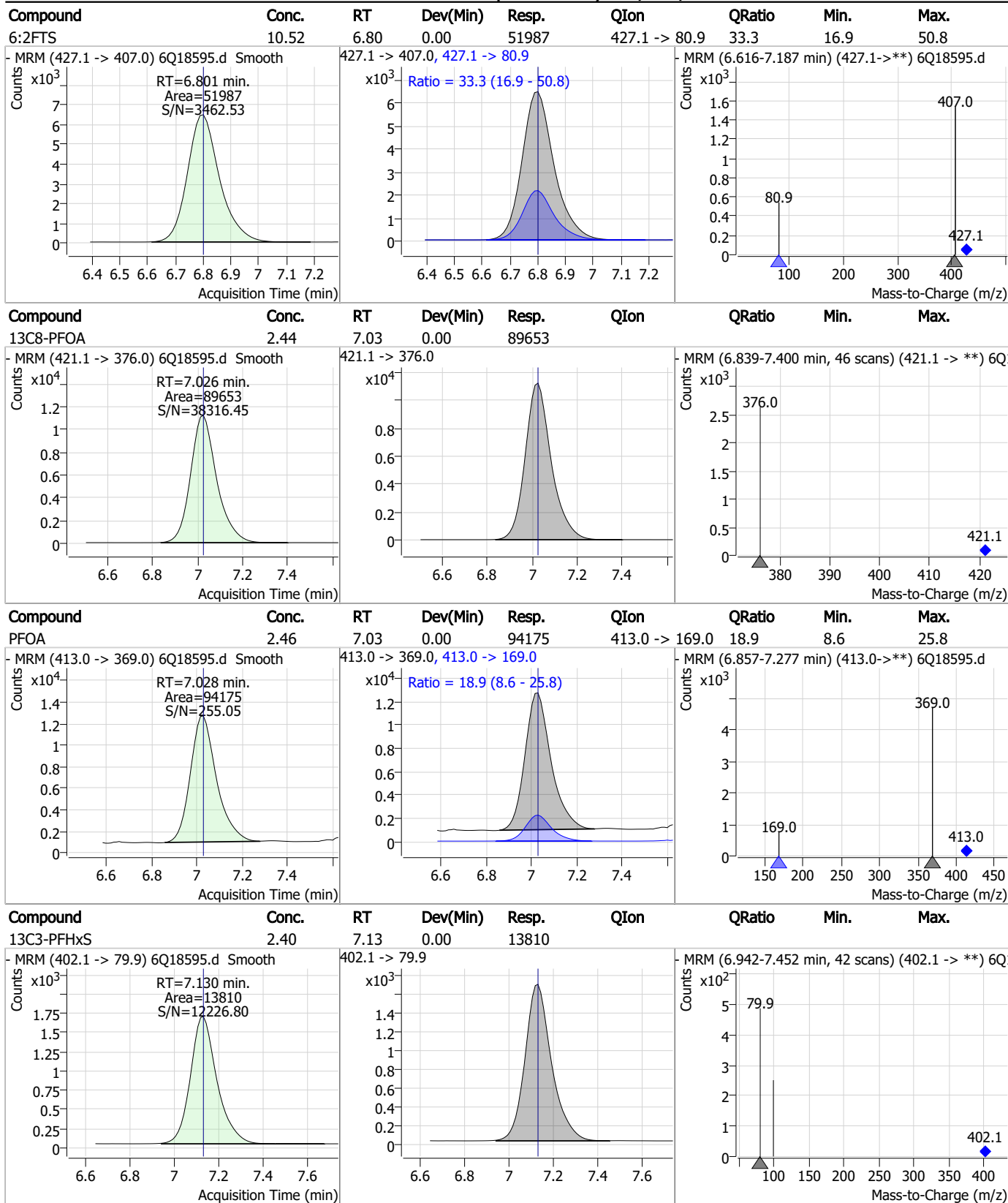
Perfluorinated Compounds by LC/MS/MS



7.7.10 7



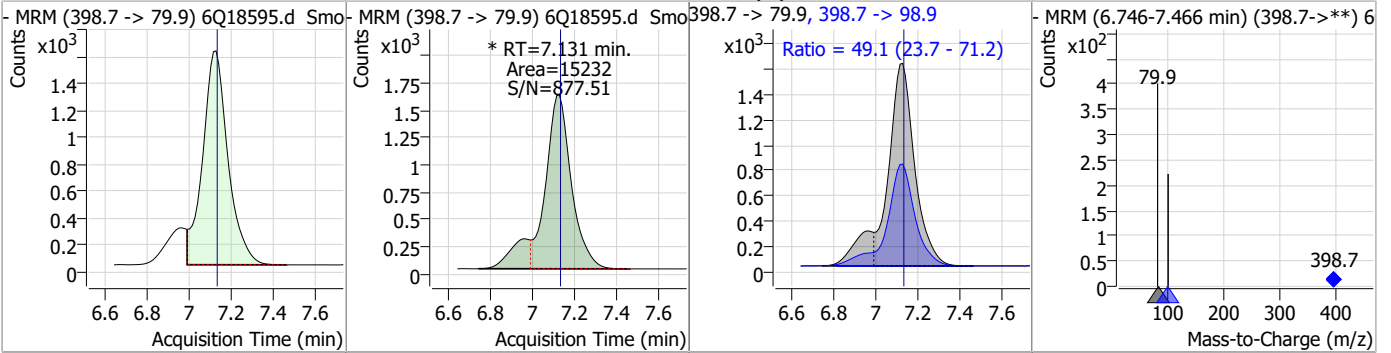
Perfluorinated Compounds by LC/MS/MS



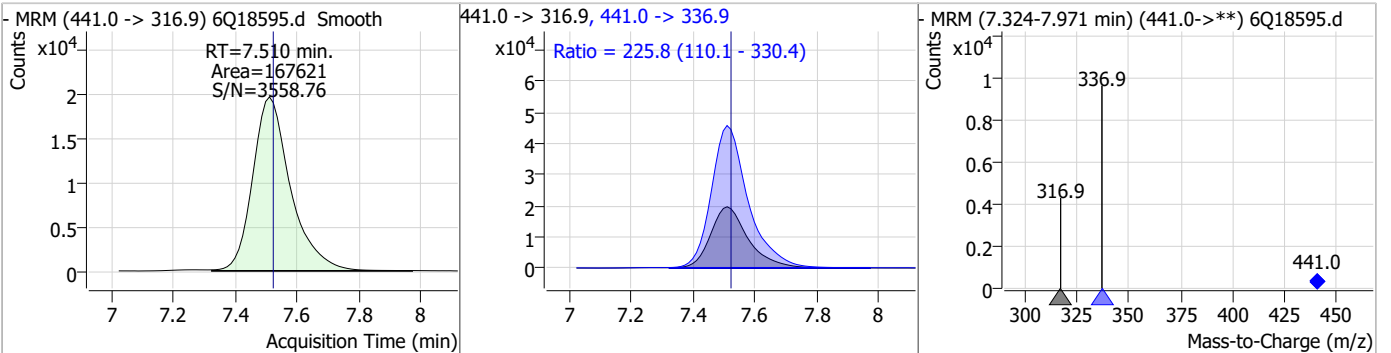
7.7.10
7

Perfluorinated Compounds by LC/MS/MS

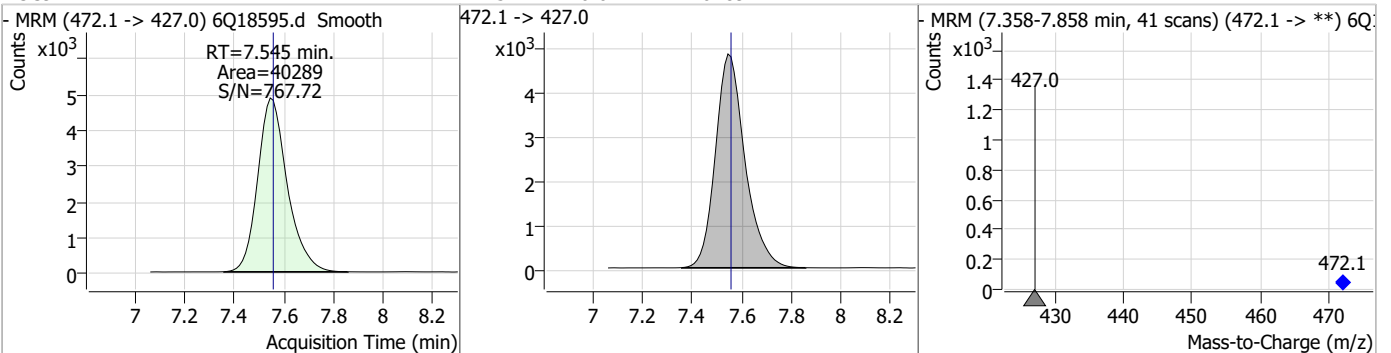
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-----------|---------------|--------|------|------|
| PFHxS | 2.44 | 7.13 | 0.00 | 15232 (m) | 398.7 -> 98.9 | 49.1 | 23.7 | 71.2 |



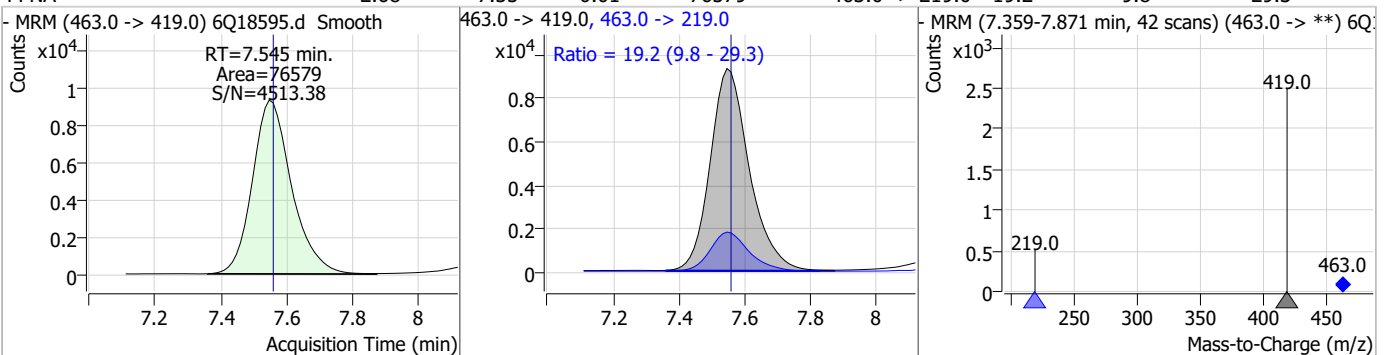
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|-------|-------|
| 7:3FTCA | 63.72 | 7.51 | -0.01 | 167621 | 441.0 -> 336.9 | 225.8 | 110.1 | 330.4 |



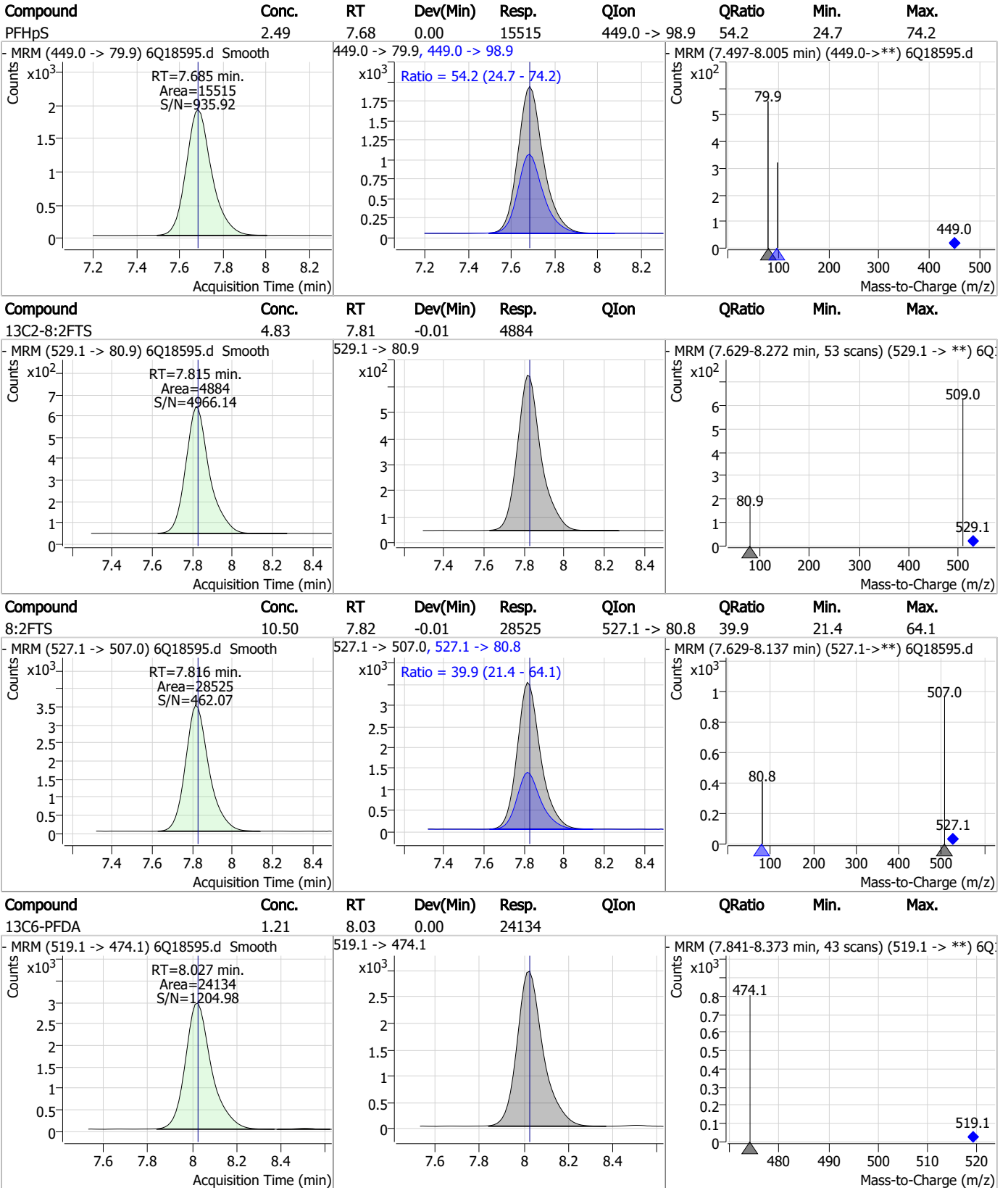
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C9-PFNA | 1.22 | 7.54 | -0.01 | 40289 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFNA | 2.68 | 7.55 | -0.01 | 76579 | 463.0 -> 219.0 | 19.2 | 9.8 | 29.3 |

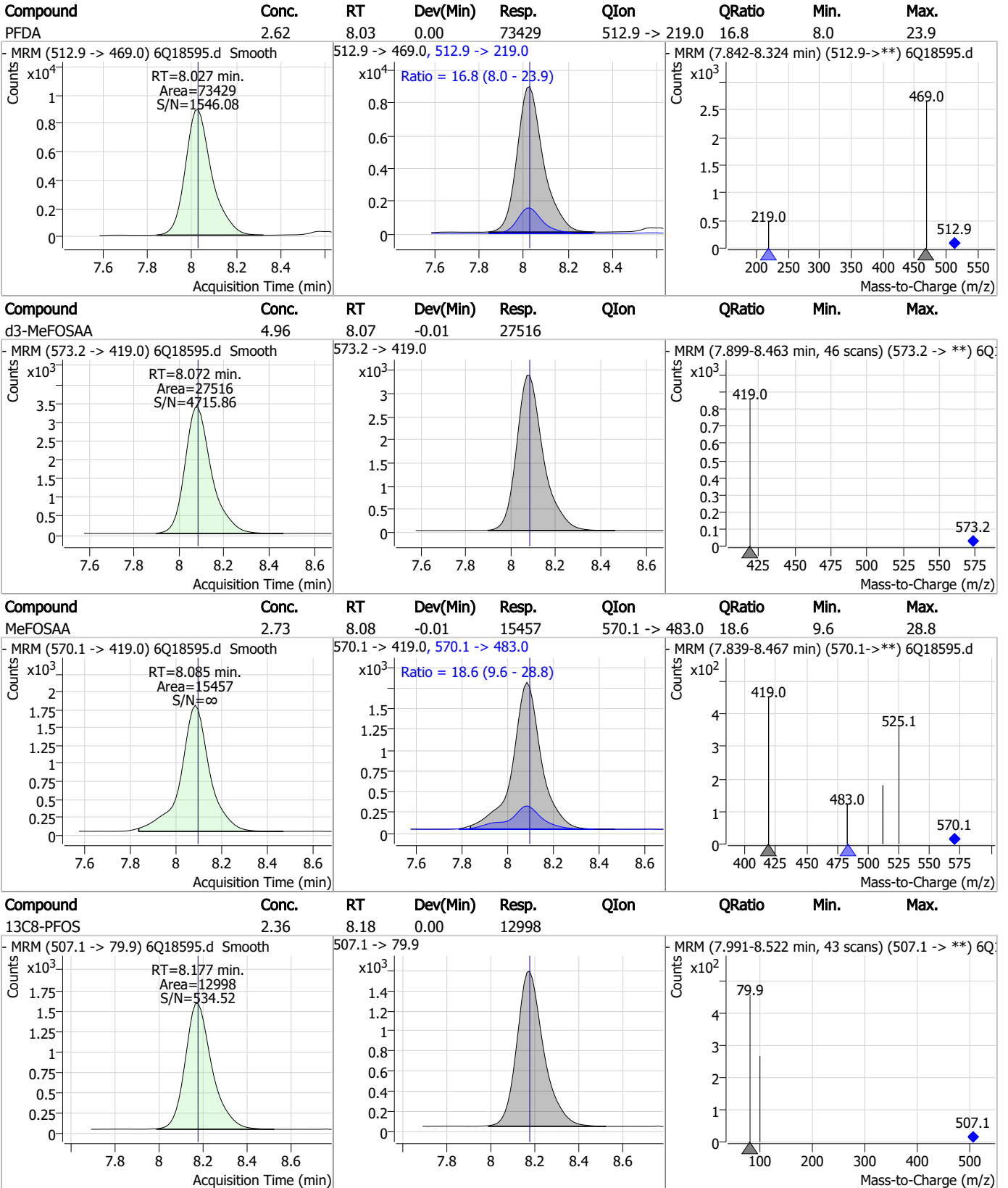


Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

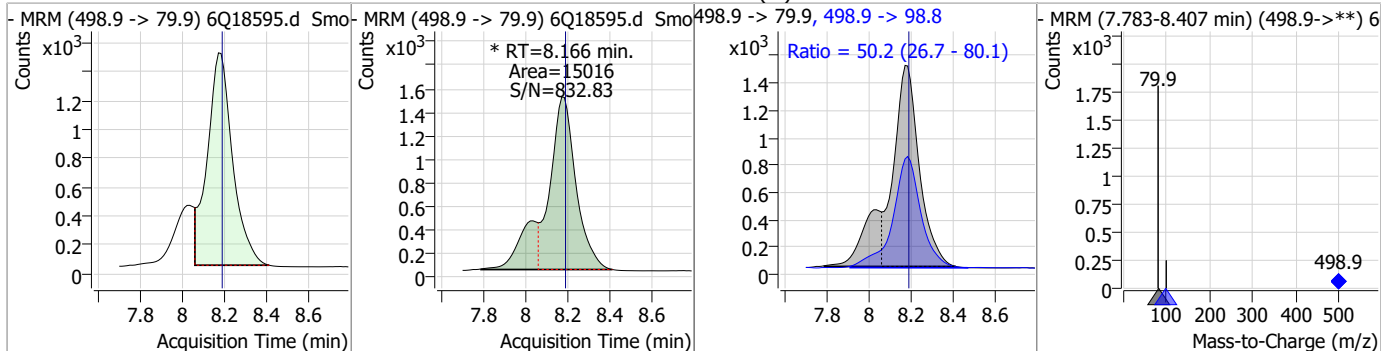


7.7.10 7

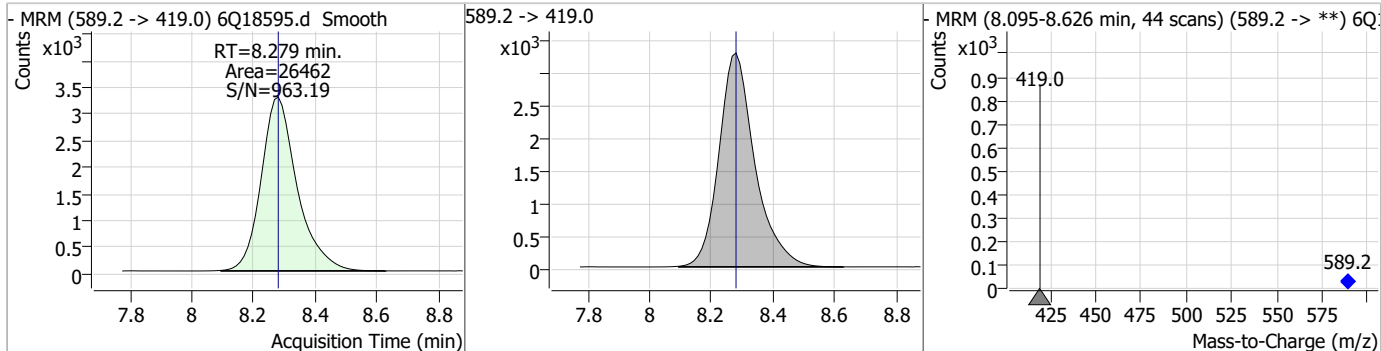


Perfluorinated Compounds by LC/MS/MS

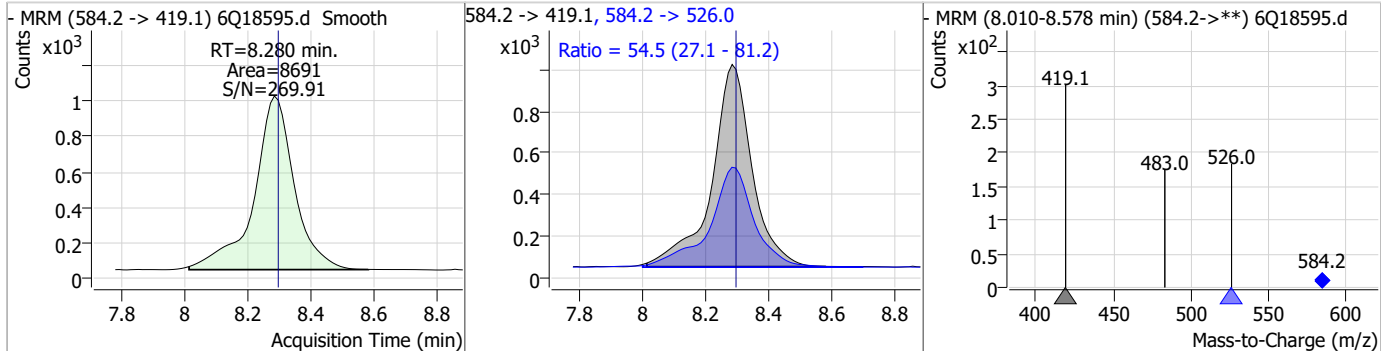
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-----------|---------------|--------|------|------|
| PFOS | 2.53 | 8.17 | -0.01 | 15016 (m) | 498.9 -> 98.8 | 50.2 | 26.7 | 80.1 |



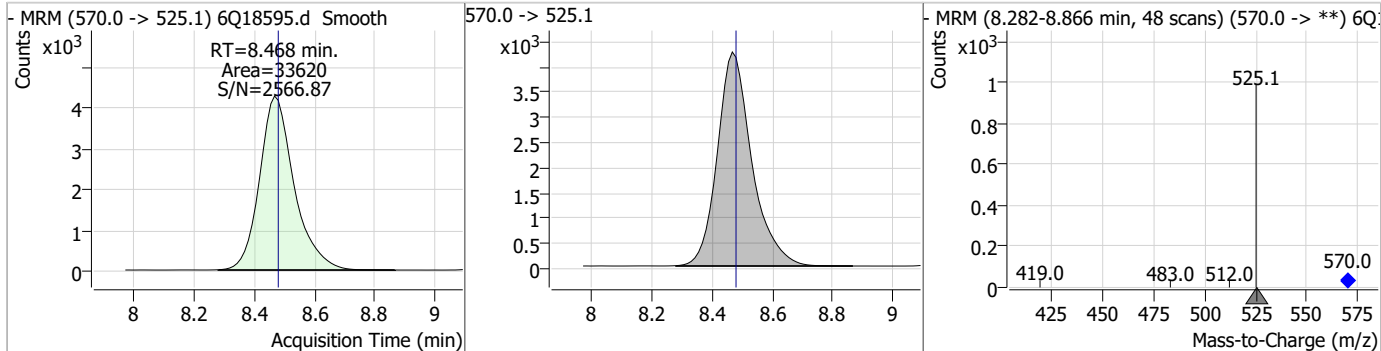
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d5-EtFOSAA | 5.24 | 8.28 | 0.00 | 26462 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| EtFOSAA | 2.55 | 8.28 | -0.01 | 8691 | 584.2 -> 526.0 | 54.5 | 27.1 | 81.2 |

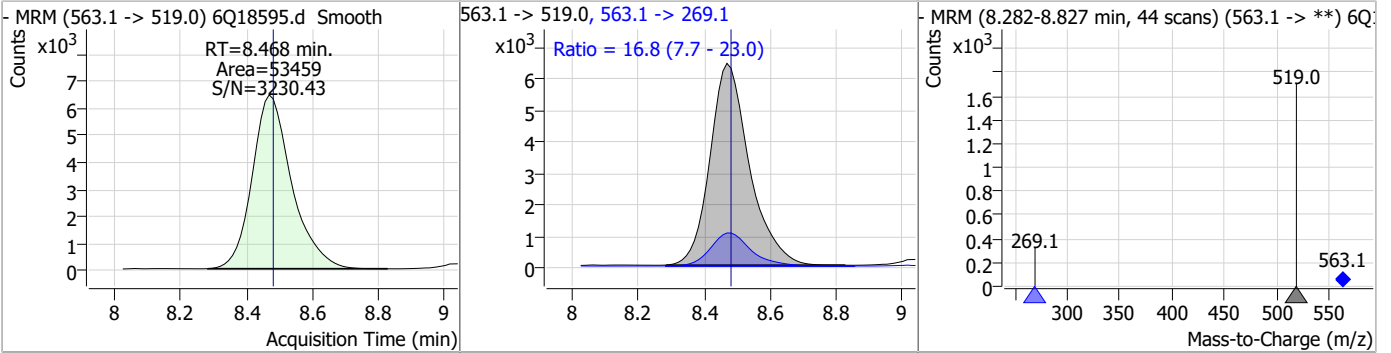


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C7-PFUnDA | 1.32 | 8.47 | -0.01 | 33620 | | | | |

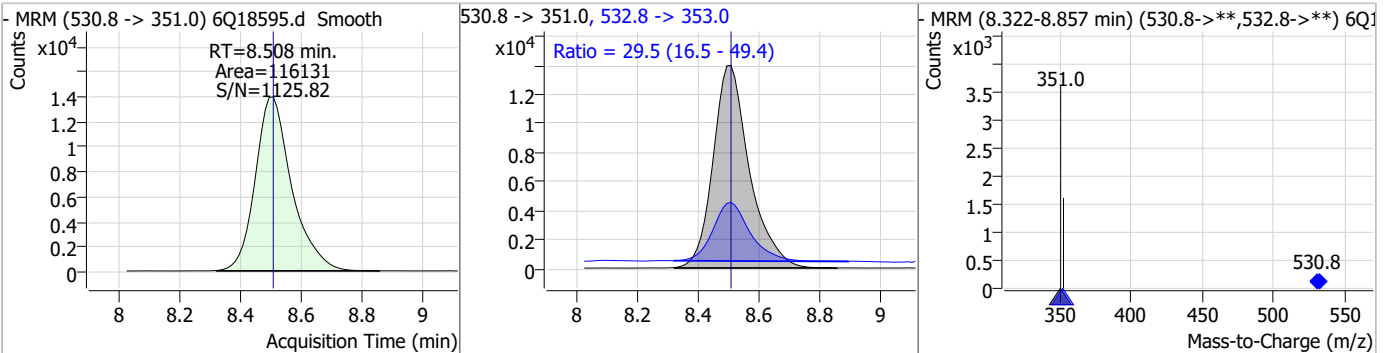


Perfluorinated Compounds by LC/MS/MS

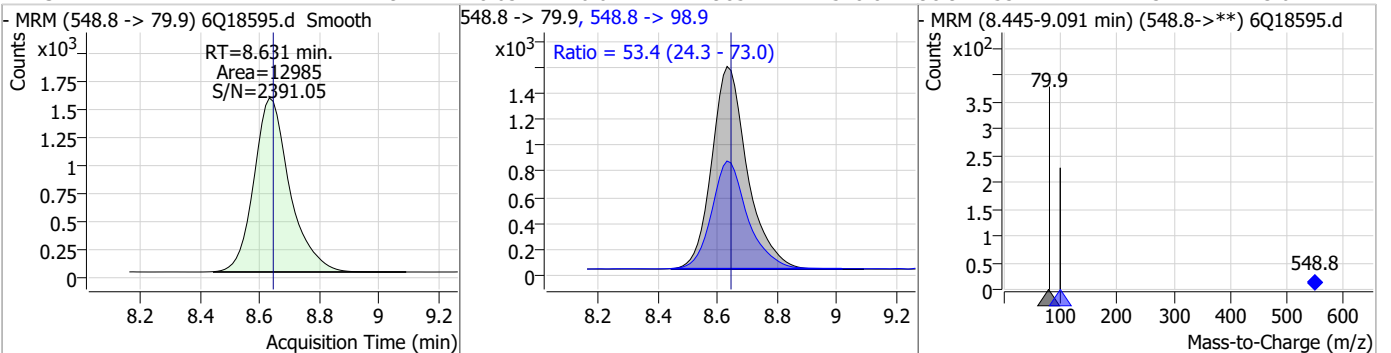
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFUnDA | 2.45 | 8.47 | -0.01 | 53459 | 563.1 -> 269.1 | 16.8 | 7.7 | 23.0 |



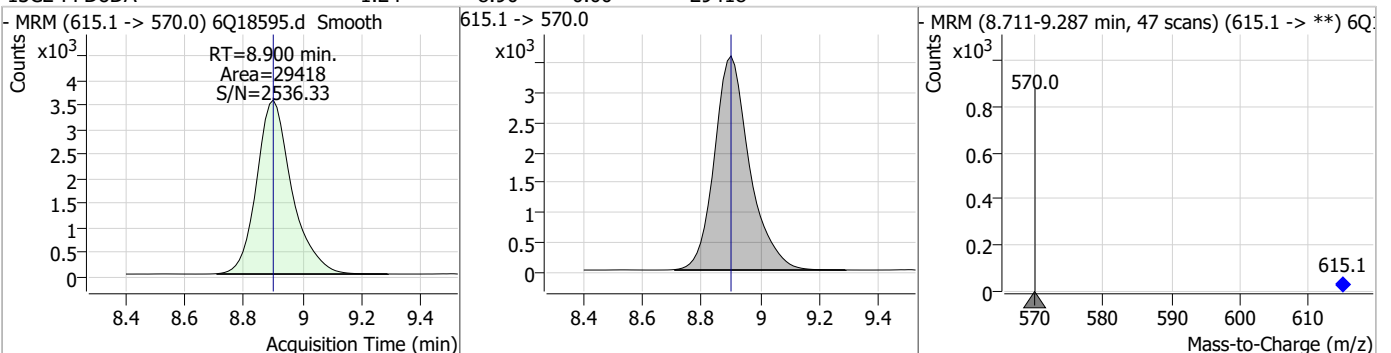
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|--------|----------------|--------|------|------|
| 9CI-PF3ONS | 5.07 | 8.51 | 0.00 | 116131 | 532.8 -> 353.0 | 29.5 | 16.5 | 49.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFNS | 2.49 | 8.63 | -0.01 | 12985 | 548.8 -> 98.9 | 53.4 | 24.3 | 73.0 |

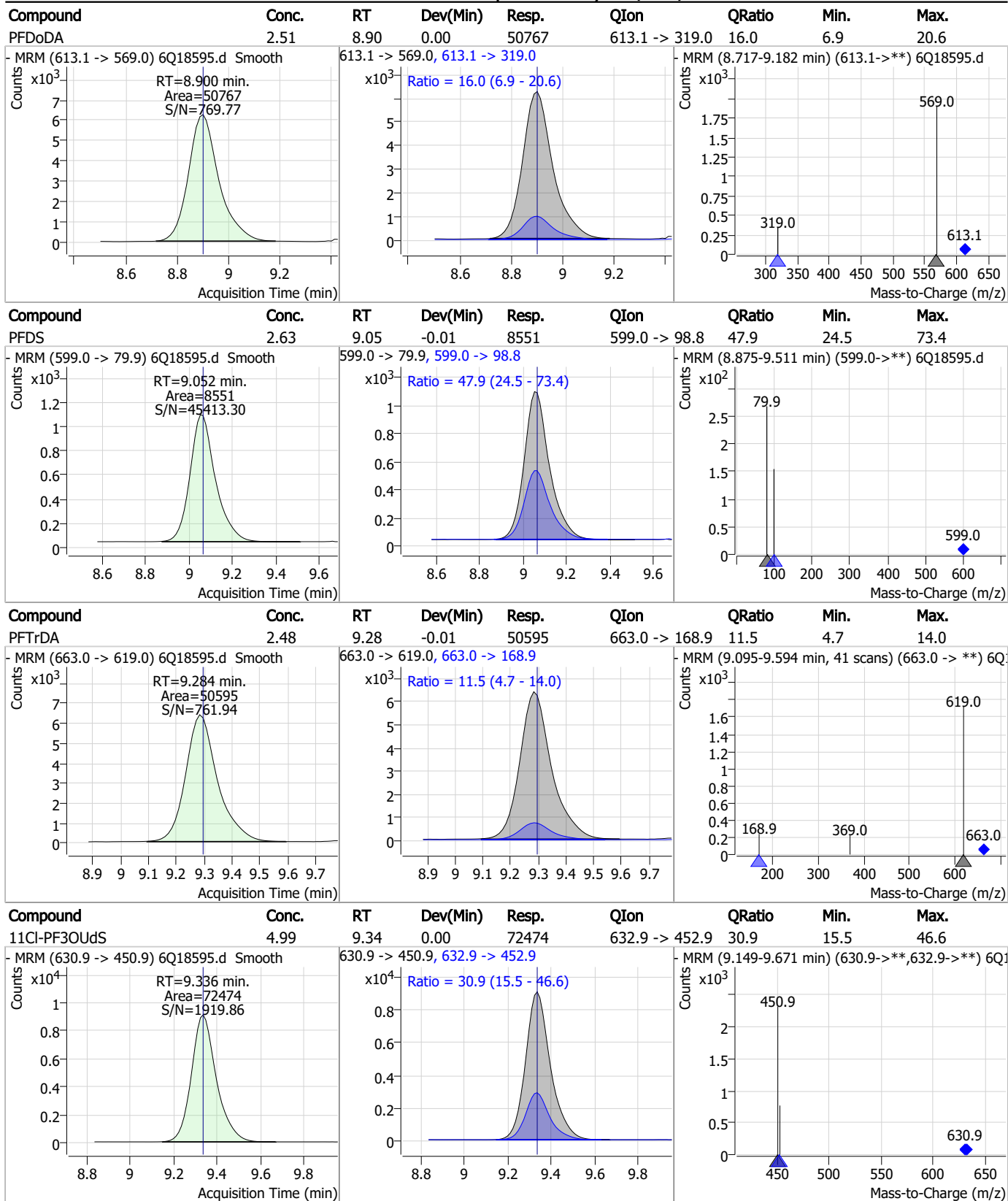


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.24 | 8.90 | 0.00 | 29418 | 615.1 -> 570.0 | | | |



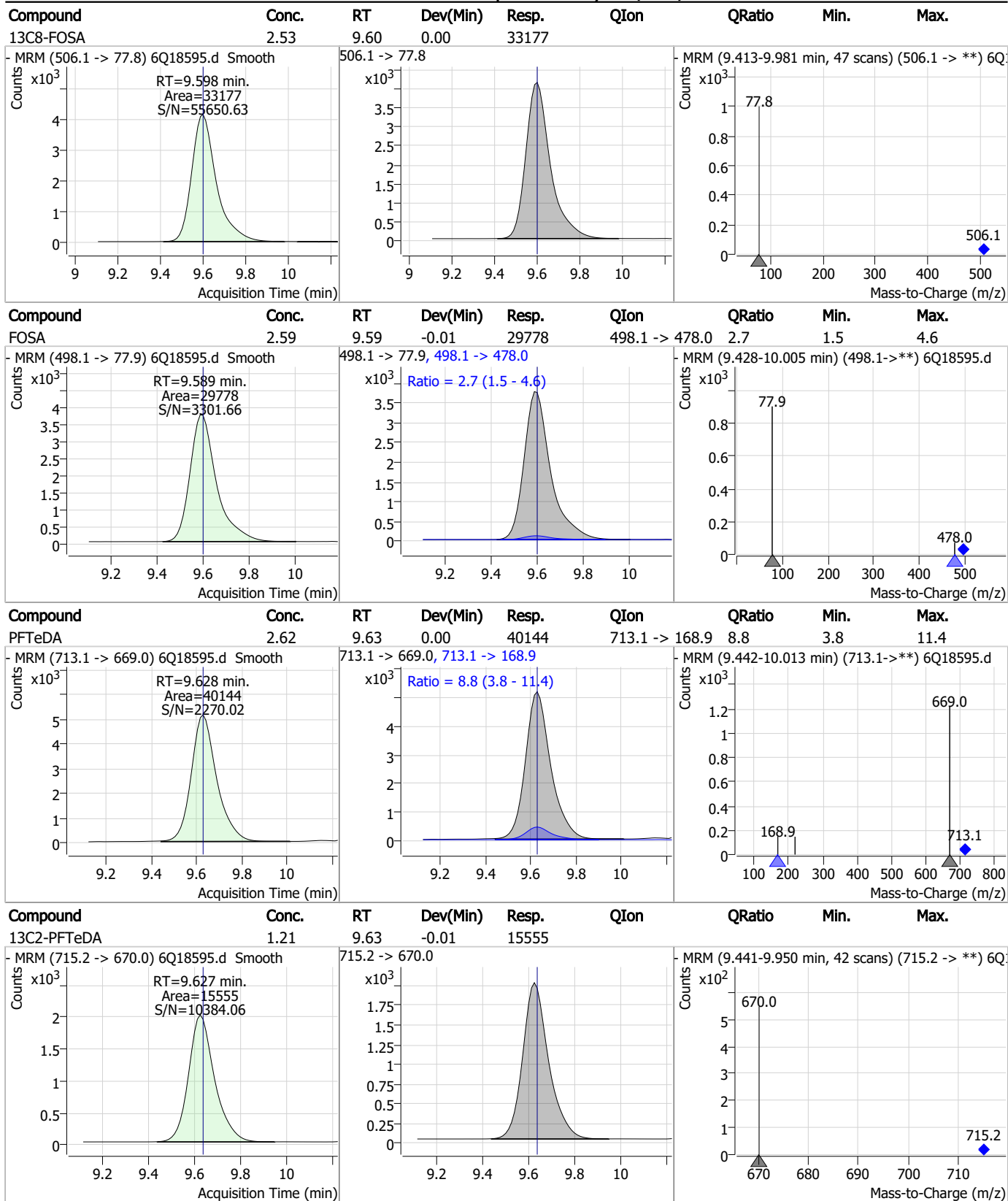
7.7.10 7

Perfluorinated Compounds by LC/MS/MS



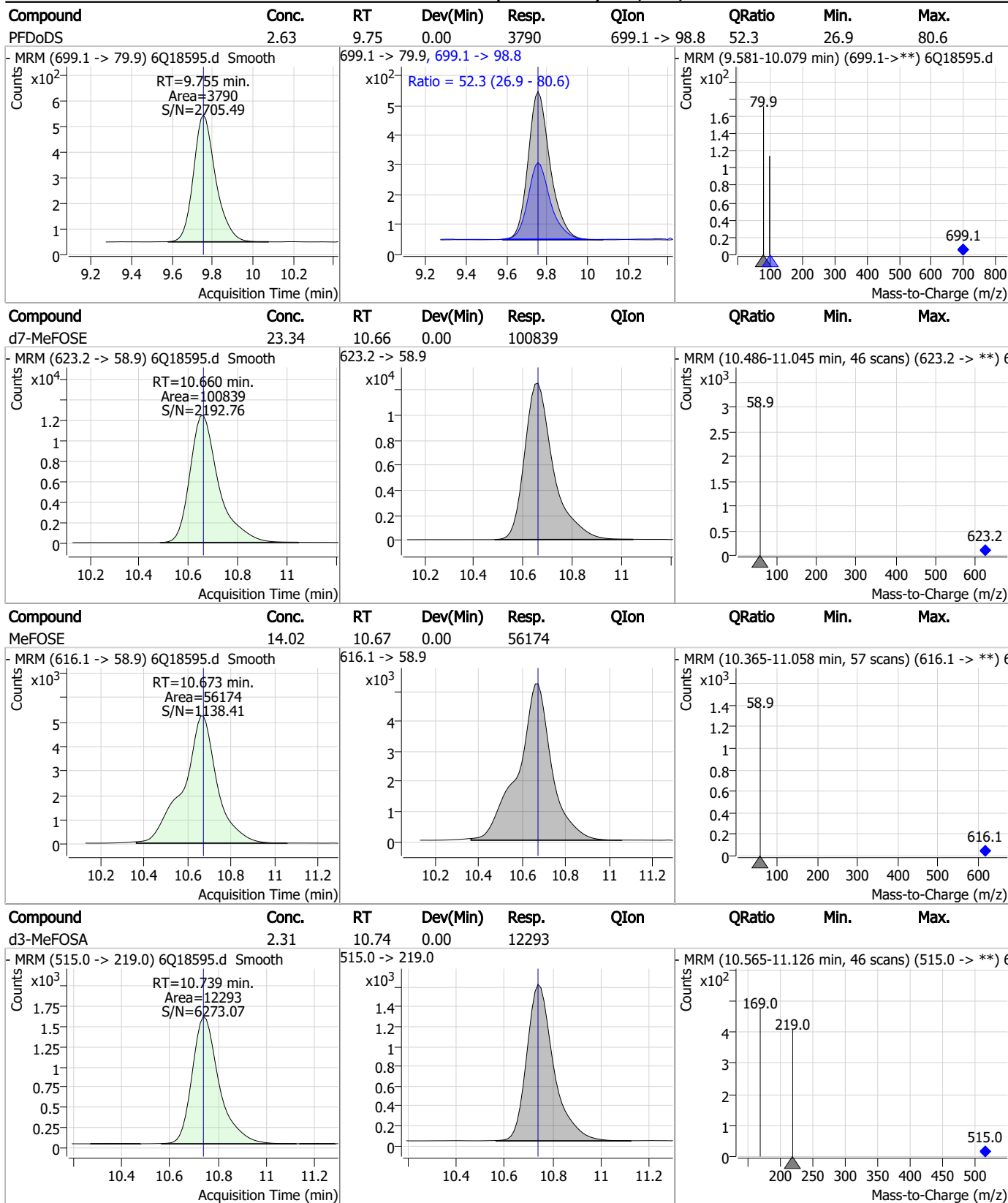
7.7.10
7

Perfluorinated Compounds by LC/MS/MS



7.7.10 7

Perfluorinated Compounds by LC/MS/MS

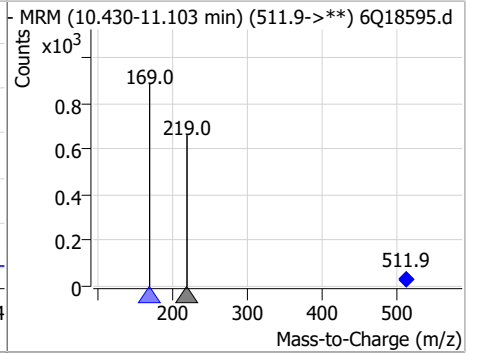
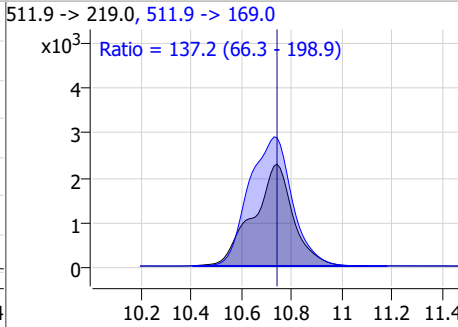
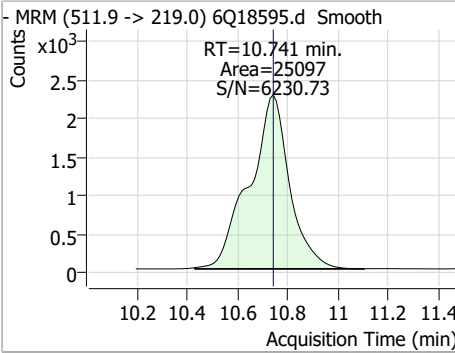


7.7.10 7

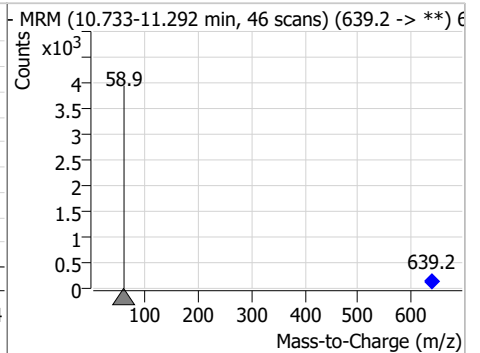
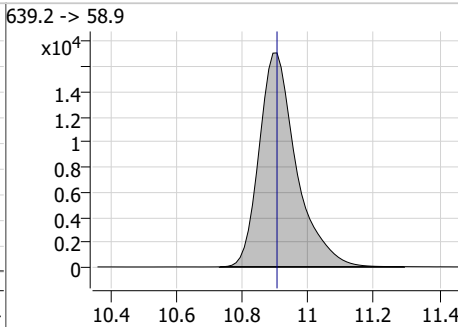
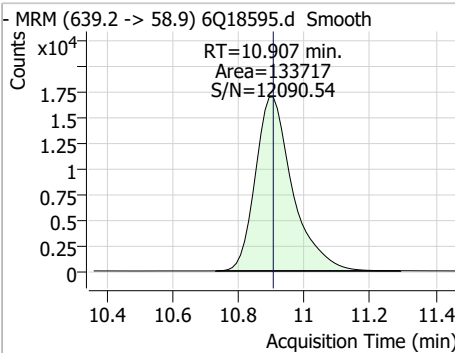


Perfluorinated Compounds by LC/MS/MS

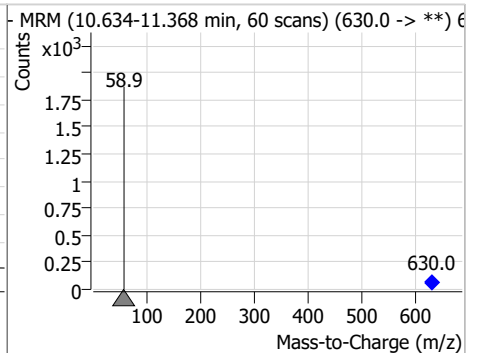
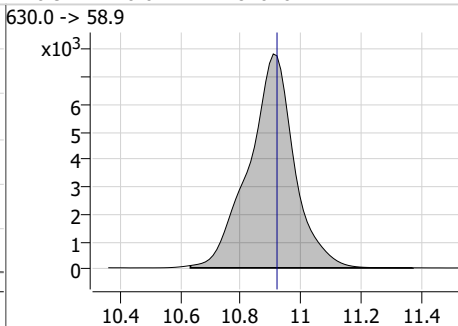
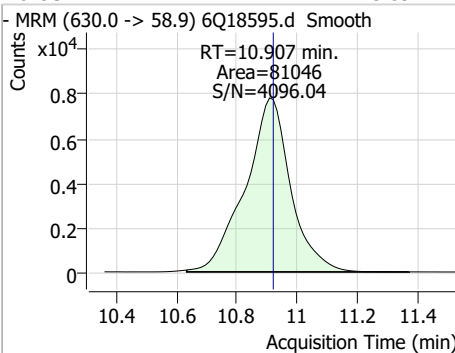
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|----------------|--------|------|-------|
| MeFOSEA | 5.55 | 10.74 | 0.00 | 25097 | 511.9 -> 169.0 | 137.2 | 66.3 | 198.9 |



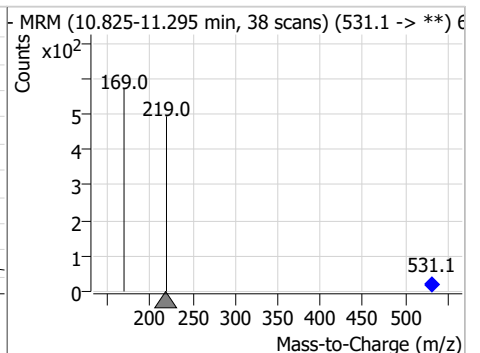
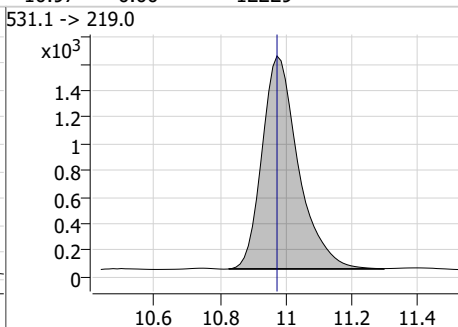
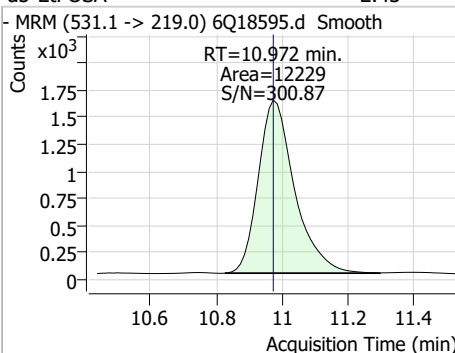
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 23.66 | 10.91 | 0.00 | 133717 | | | | |



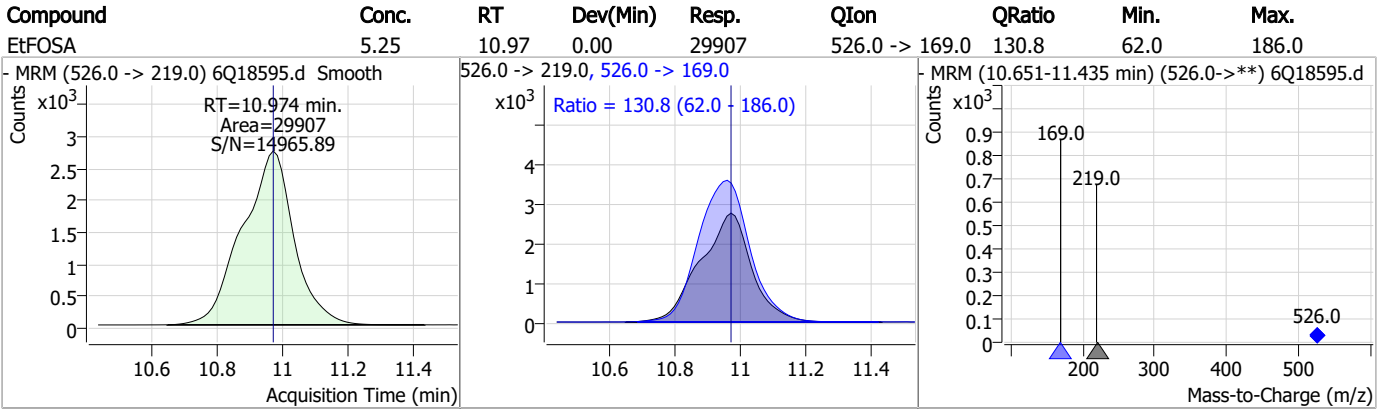
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| EtFOSE | 13.59 | 10.91 | -0.01 | 81046 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSEA | 2.43 | 10.97 | 0.00 | 12229 | | | | |



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18595.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:26 Supervisor approved: 06/01/23 15:02 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18596.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:41:13 PM
 Sample Name : icv279-20
 Vial : P1-B2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 186962 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 62853 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 68388 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 62709 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.013 | 421.1 -> 376.0 | 94819 | 2.50 µg/L | -0.013 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 43451 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 25438 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 32143 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 32578 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17789 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 34684 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 24348 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.118 | 402.1 -> 79.9 | 14940 | 2.50 µg/L | -0.012 |
| M8-PFOS | 8.165 | 507.1 -> 79.9 | 14671 | 2.50 µg/L | -0.012 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3772 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5411 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5749 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28514 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 43052 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 25180 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 115543 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 149096 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13637 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13536 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.165 | 502.8 -> 79.9 | 18696 | 2.50 µg/L | -0.025 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78415 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11177 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.013 | 417.1 -> 372.0 | 100296 | 2.50 µg/L | -0.013 |
| 13C2-PFDA | 8.014 | 515.1 -> 470.1 | 34929 | 1.25 µg/L | -0.013 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 53262 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 61388 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3772 | 5.06 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 101.2% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5411 | 5.00 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 100.0% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5749 | 5.24 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 104.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 32578 | 1.34 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 107.4% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17789 | 1.35 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 107.8% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 24348 | 2.46 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 98.5% | | |
| 13C3-PFHxS | 7.118 | 402.1 -> 79.9 | 14940 | 2.39 µg/L | -0.012 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 95.7% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 186962 | 10.01 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.1% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 62709 | 2.61 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.4% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 68388 | 2.63 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 105.3% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 62853 | 5.26 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 105.3% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 25438 | 1.24 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.4% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 32143 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 34684 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| 13C8-PFOA | 7.013 | 421.1 -> 376.0 | 94819 | 2.52 µg/L | -0.013 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 100.9% | |
| 13C8-PFOS | 8.165 | 507.1 -> 79.9 | 14671 | 2.45 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.0% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 43451 | 1.24 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.0% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28514 | 4.72 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 94.5% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 43052 | 10.67 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 106.7% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13536 | 2.34 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.7% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 25180 | 4.59 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 91.8% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 115543 | 24.61 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.4% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 149096 | 24.28 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 97.1% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13637 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 106559 | 19.45 µg/L | 99 |
| | | 327.1 -> 80.9 | 41236 | | |
| 6:2FTS | 6.789 | 427.1 -> 407.0 | 108000 | 20.31 µg/L | 98 |
| | | 427.1 -> 80.9 | 35107 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 57936 | 18.12 µg/L | 96 |
| | | 527.1 -> 80.8 | 23329 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 68565 | 21.17 µg/L | 95 |
| | | 584.2 -> 526.0 | 34564 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 212928 | 17.73 µg/L | 99 |
| | | 498.1 -> 478.0 | 6898 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 122540 | 20.90 µg/L | 98 |
| | | 570.1 -> 483.0 | 22605 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 117681 | 19.01 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 164900 | 19.91 µg/L | 100 |
| | | 298.7 -> 98.8 | 60156 | | |
| PFDA | 8.014 | 512.9 -> 469.0 | 593616 | 20.13 µg/L | 99 |
| | | 512.9 -> 219.0 | 93514 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 386783 | 17.29 µg/L | 97 |
| | | 613.1 -> 319.0 | 57188 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 68402 | 18.65 µg/L | 99 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 34080 | 19.31 µg/L | 99 |
| | | 363.1 -> 319.0 | 535964 | | |
| PFHpS | 7.673 | 363.1 -> 169.0 | 83630 | 19.13 µg/L | 97 |
| | | 449.0 -> 79.9 | 134544 | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 64128 | 18.15 µg/L | 98 |
| | | 313.0 -> 269.0 | 416654 | | |
| PFHxS | 7.119 | 313.0 -> 118.9 | 22162 | 20.60 µg/L | 99 |
| | | 398.7 -> 79.9 | 139202 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 65641 | 20.84 µg/L | 100 |
| | | 463.0 -> 419.0 | 641763 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 125644 | 19.77 µg/L | 100 |
| | | 548.8 -> 79.9 | 116407 | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 56297 | 19.19 µg/L | 100 |
| | | 413.0 -> 369.0 | 776954 | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 134705 | 16.71 µg/L | 95 |
| | | 498.9 -> 79.9 | 112048 | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 55641 | 19.67 µg/L | 100 |
| | | 263.0 -> 219.0 | 296977 | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 130985 | 19.45 µg/L | 99 |
| | | 349.1 -> 98.9 | 62624 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 332044 | 18.97 µg/L | 97 |
| | | 713.1 -> 168.9 | 28380 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 360376 | 15.95 µg/L | 94 |
| | | 663.0 -> 168.9 | 41925 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 390329 | 18.69 µg/L | 96 |
| | | 563.1 -> 269.1 | 66877 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 315465 | 19.53 µg/L | 98 |
| | | 632.9 -> 452.9 | 94491 | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 510603 | 20.06 µg/L | 97 |
| | | 532.8 -> 353.0 | 158372 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 988864 | 17.29 µg/L | 99 |
| | | 376.9 -> 84.8 | 270258 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 67617 | 18.53 µg/L | 95 |
| | | 284.9 -> 184.9 | 7725 | | |
| 3:3FTCA | 3.659 | 241.0 -> 177.0 | 18175 | 18.81 µg/L | 97 |
| | | 241.0 -> 117.0 | 2385 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 81054 | 19.62 µg/L | 95 |
| | | 341.0 -> 217.0 | 61014 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 53207 | 18.81 µg/L | 90 |
| | | 441.0 -> 336.9 | 125849 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 112015 | 17.62 µg/L | 89 |
| | | 526.0 -> 169.0 | 125550 | | |
| EtFOSE | 10.920 | 630.0 -> 58.9 | 660042 | 99.23 µg/L | 100 |
| | | 511.9 -> 219.0 | 95732 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 105640 | 19.23 µg/L | 81 |
| | | 616.1 -> 58.9 | 449429 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 28833 | 97.88 µg/L | 100 |
| | | 699.1 -> 98.8 | 15285 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 53119 | 17.69 µg/L | 99 |
| | | 295.0 -> 84.9 | 13945 | | |
| NFDHA | 5.288 | 279.0 -> 85.1 | 201256 | 19.00 µg/L | 98 |
| | | 229.0 -> 84.9 | 156145 | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 490283 | 19.54 µg/L | 100 |
| | | 314.8 -> 82.9 | 16928 | | |
| PFMPA | 3.351 | | | 16.82 µg/L | 99 |
| | | | | | |
| PFEESA | 5.862 | | | | |
| | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



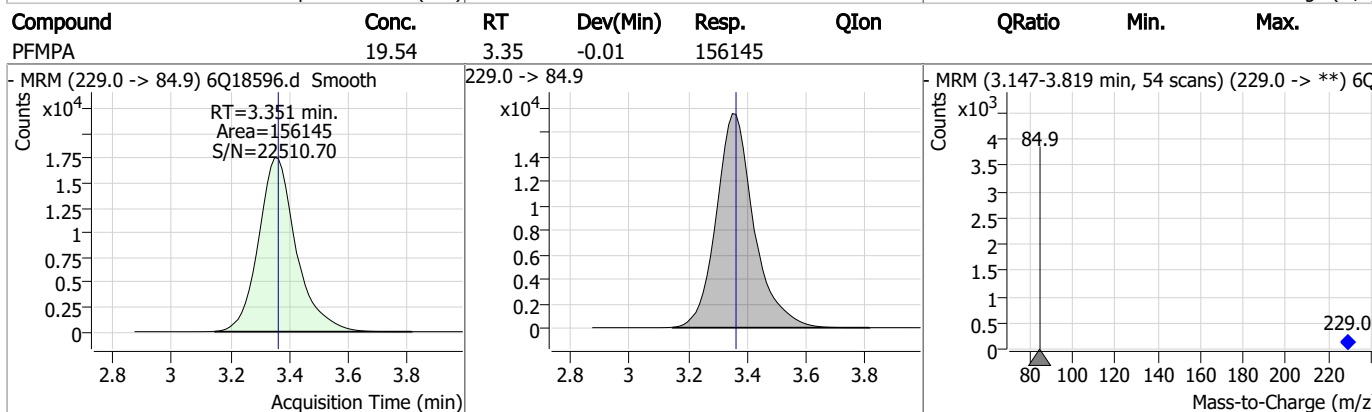
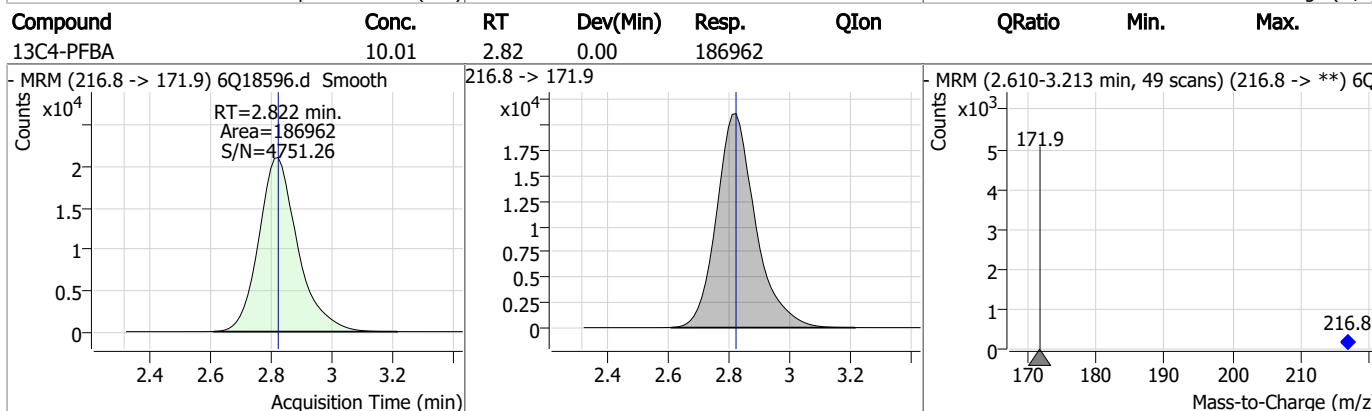
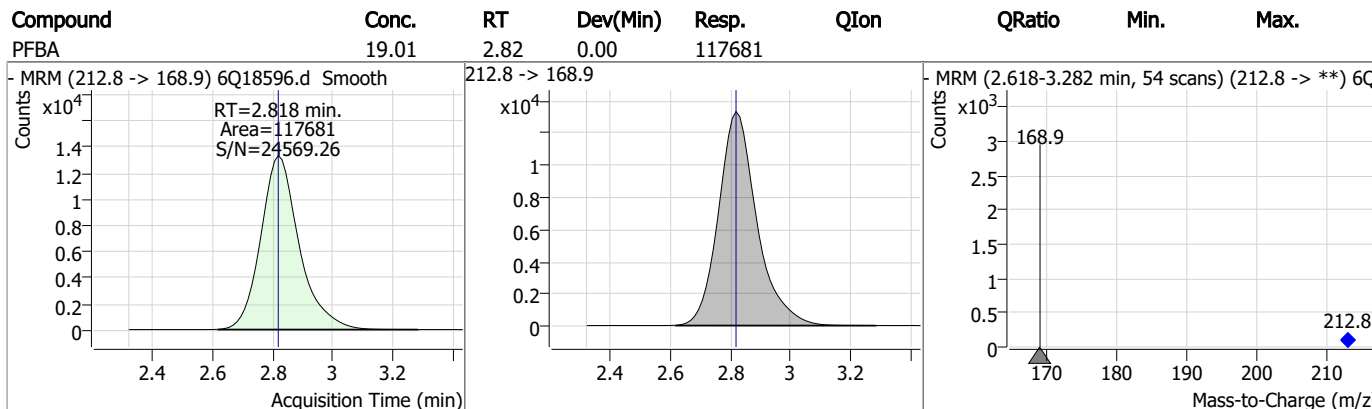
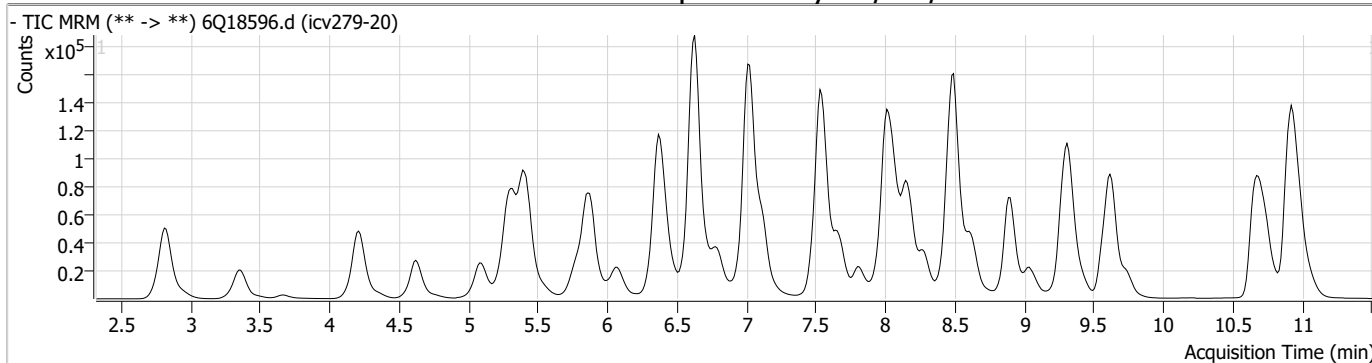
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

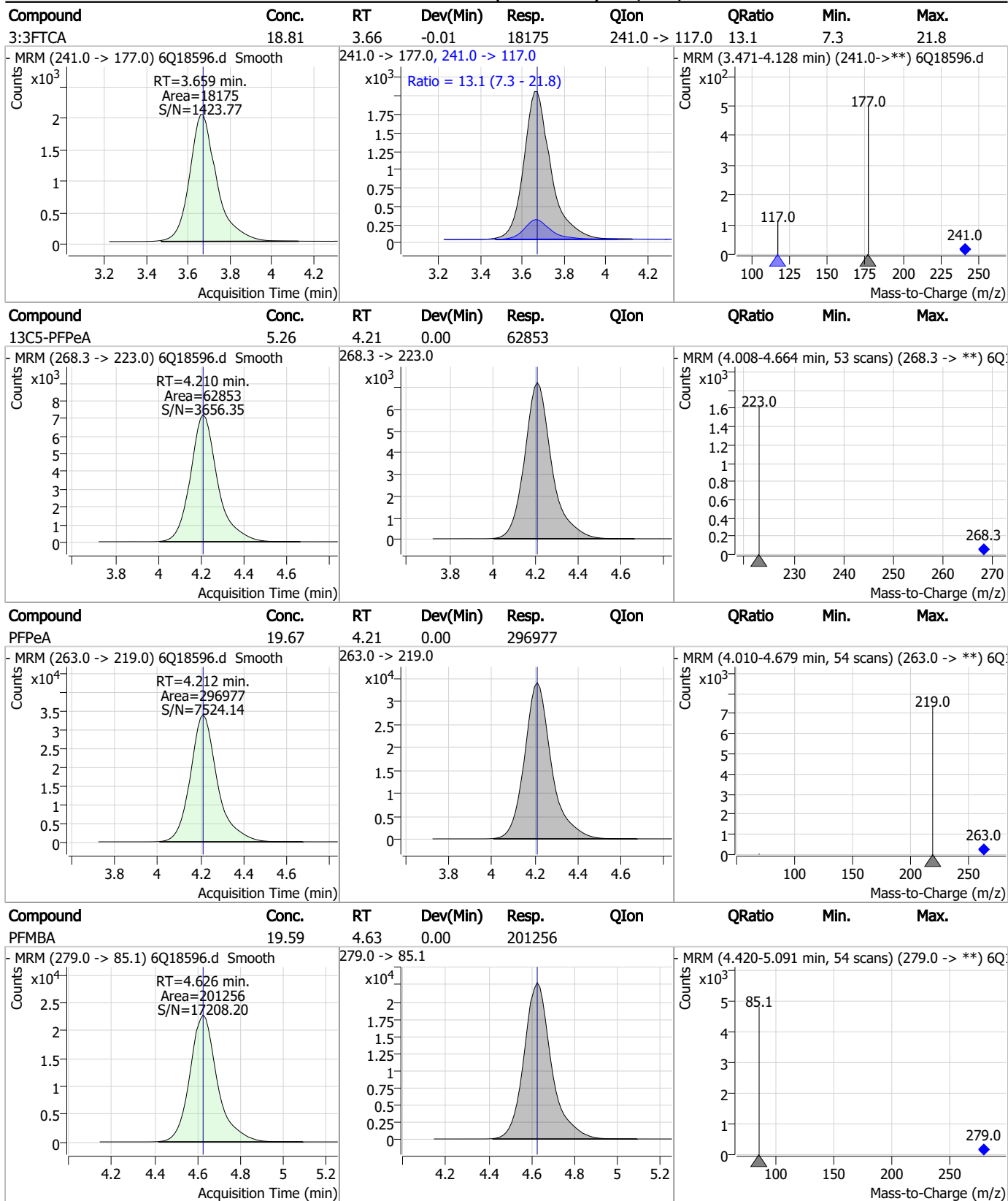
7.7.11

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Perfluorinated Compounds by LC/MS/MS

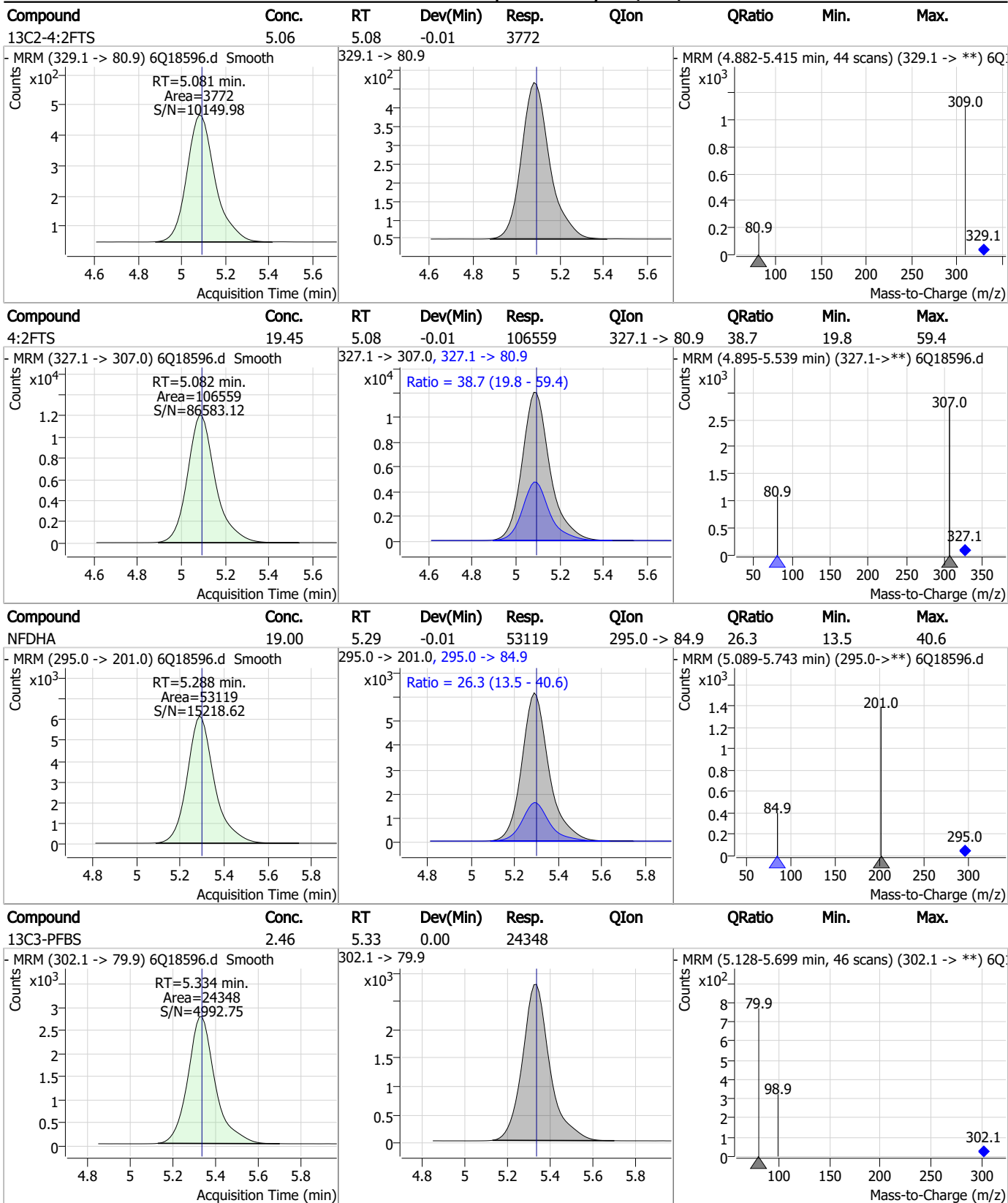


Perfluorinated Compounds by LC/MS/MS



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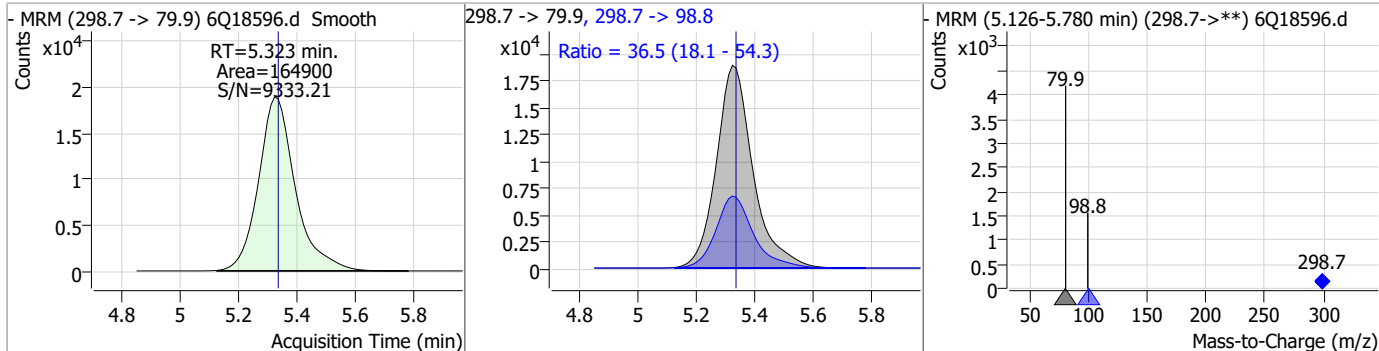
Perfluorinated Compounds by LC/MS/MS



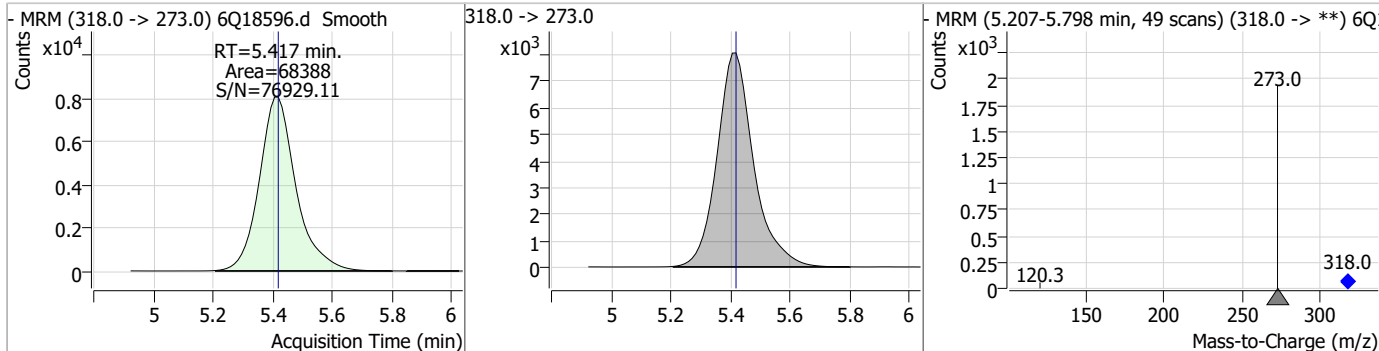
7.7.11
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Perfluorinated Compounds by LC/MS/MS

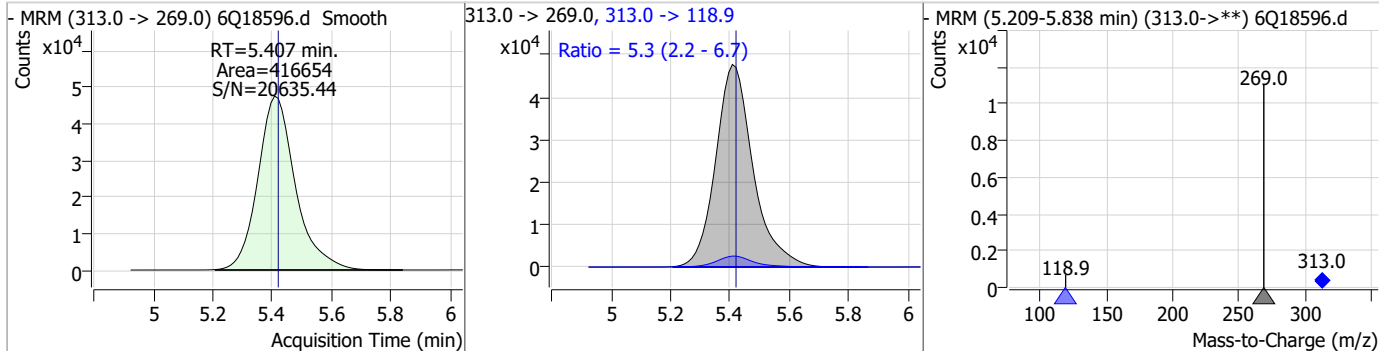
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFBS | 19.91 | 5.32 | -0.01 | 164900 | 298.7 -> 98.8 | 36.5 | 18.1 | 54.3 |



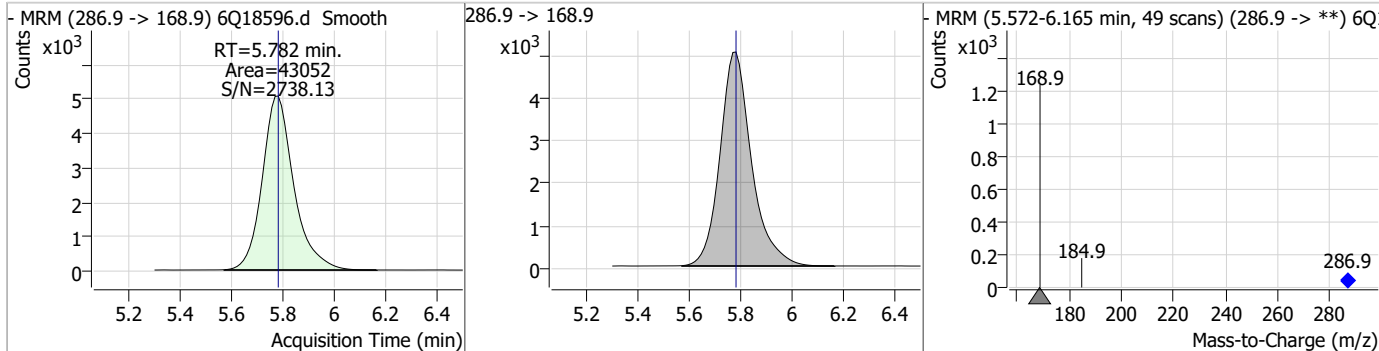
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFHxA | 2.63 | 5.42 | 0.00 | 68388 | 318.0 -> 273.0 | 5.3 | 2.2 | 6.7 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|------|
| PFHxA | 18.15 | 5.41 | -0.01 | 416654 | 313.0 -> 118.9 | 5.3 | 2.2 | 6.7 |

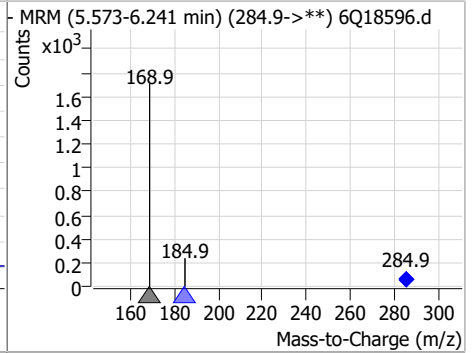
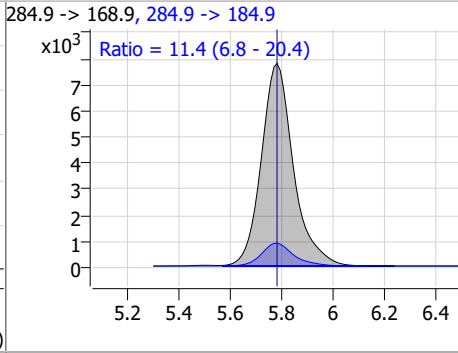
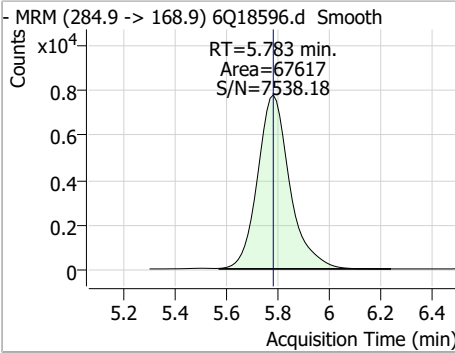


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C3-HFPO-DA | 10.67 | 5.78 | 0.00 | 43052 | 286.9 -> 168.9 | 5.3 | 2.2 | 6.7 |

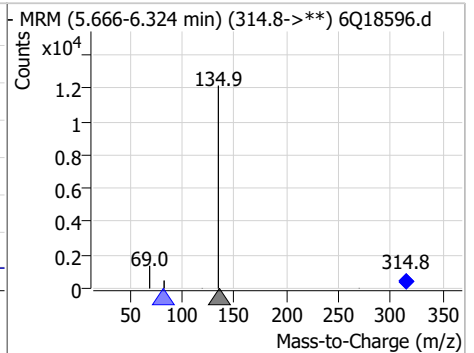
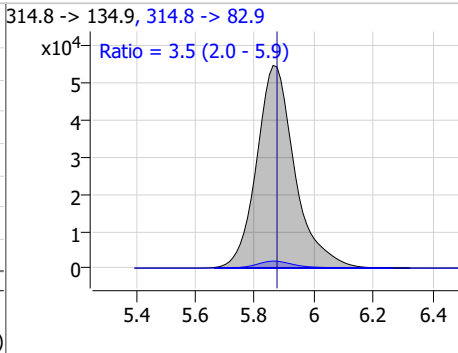
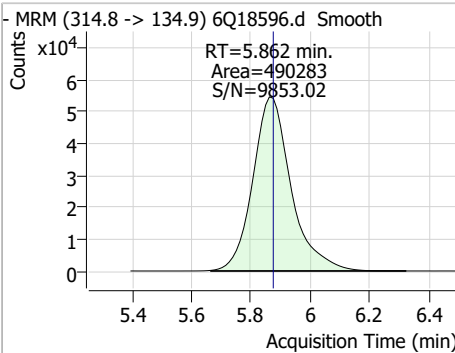


Perfluorinated Compounds by LC/MS/MS

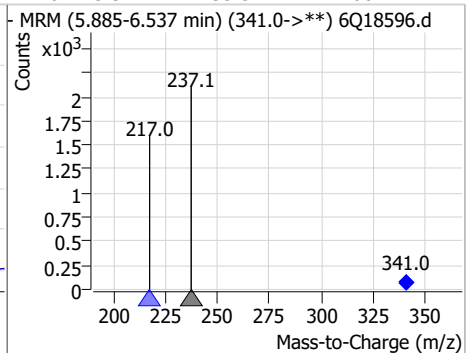
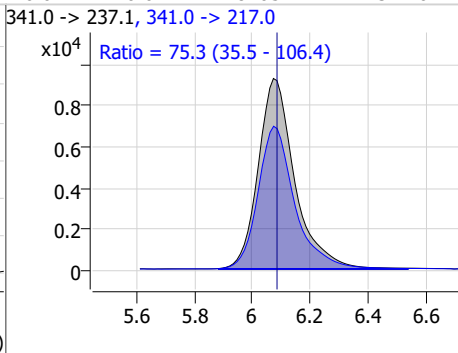
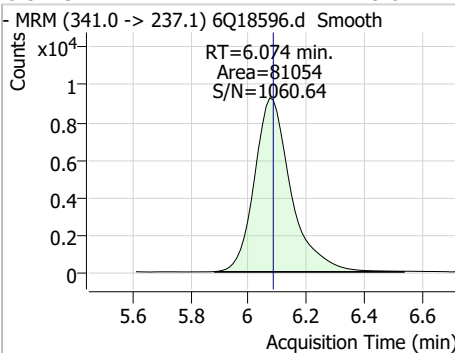
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 18.53 | 5.78 | 0.00 | 67617 | 284.9 -> 184.9 | 11.4 | 6.8 | 20.4 |



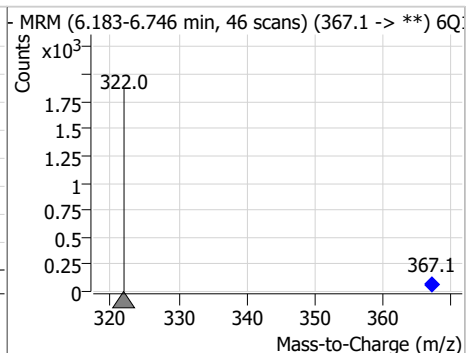
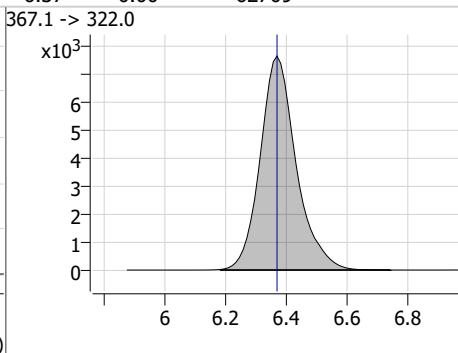
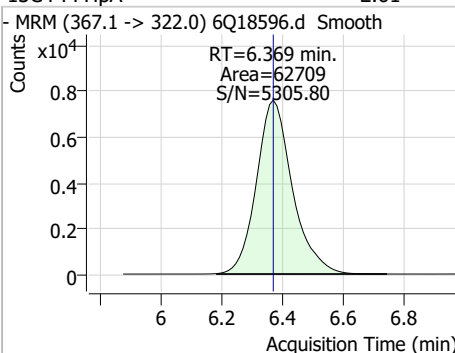
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 16.82 | 5.86 | -0.01 | 490283 | 314.8 -> 82.9 | 3.5 | 2.0 | 5.9 |



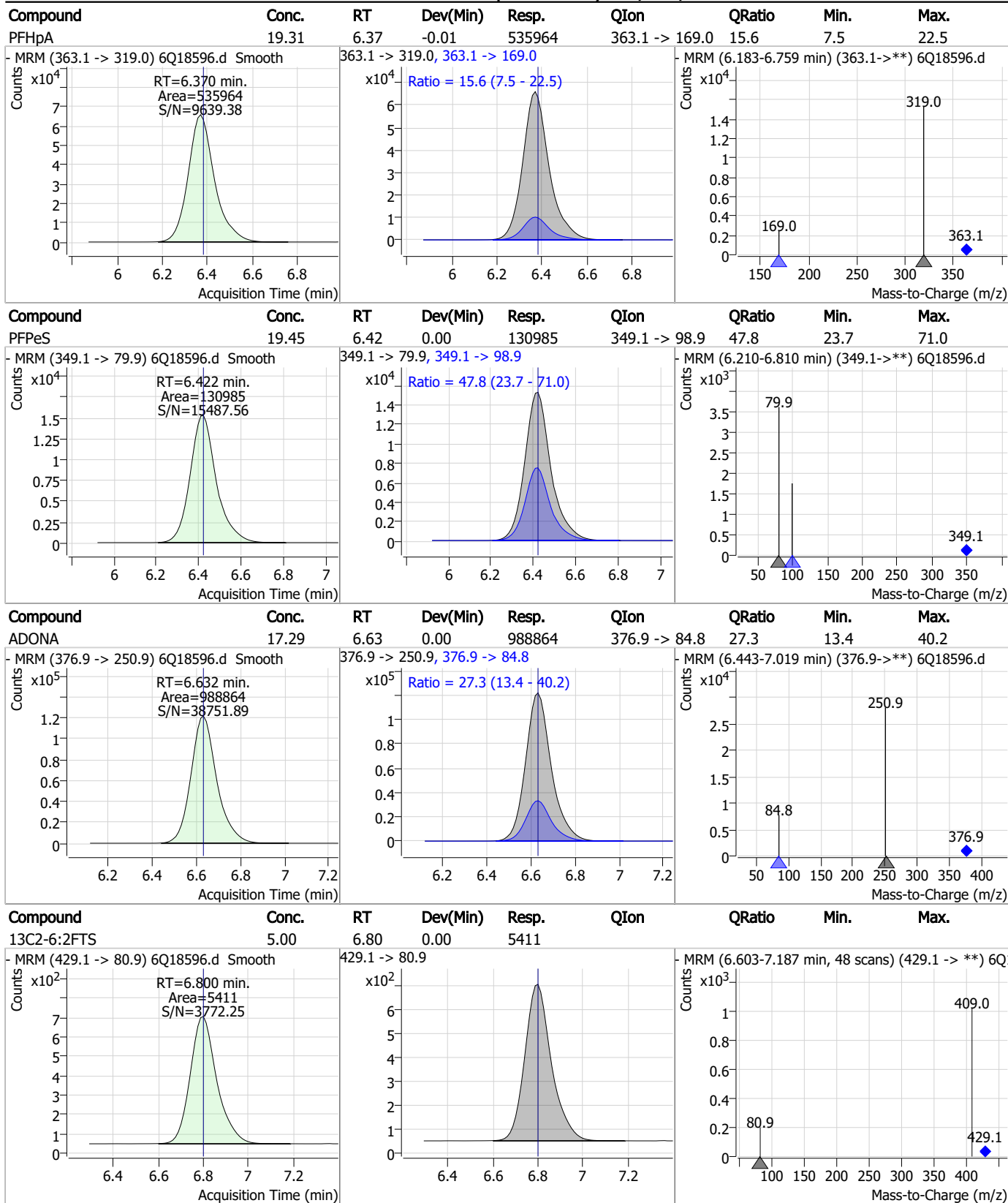
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|-------|
| 5:3FTCA | 19.62 | 6.07 | -0.01 | 81054 | 341.0 -> 217.0 | 75.3 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.61 | 6.37 | 0.00 | 62709 | 367.1 -> 322.0 | | | |

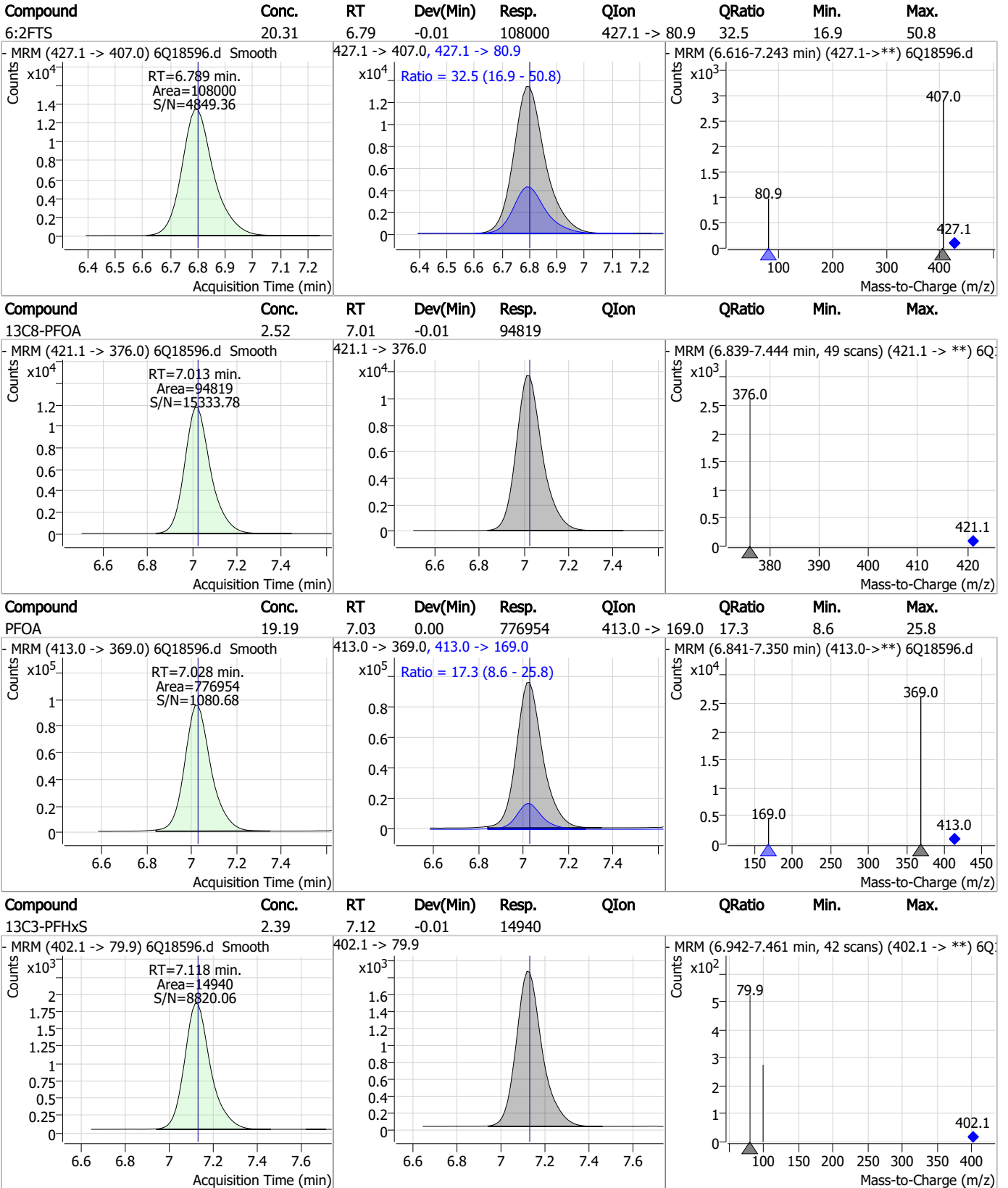


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

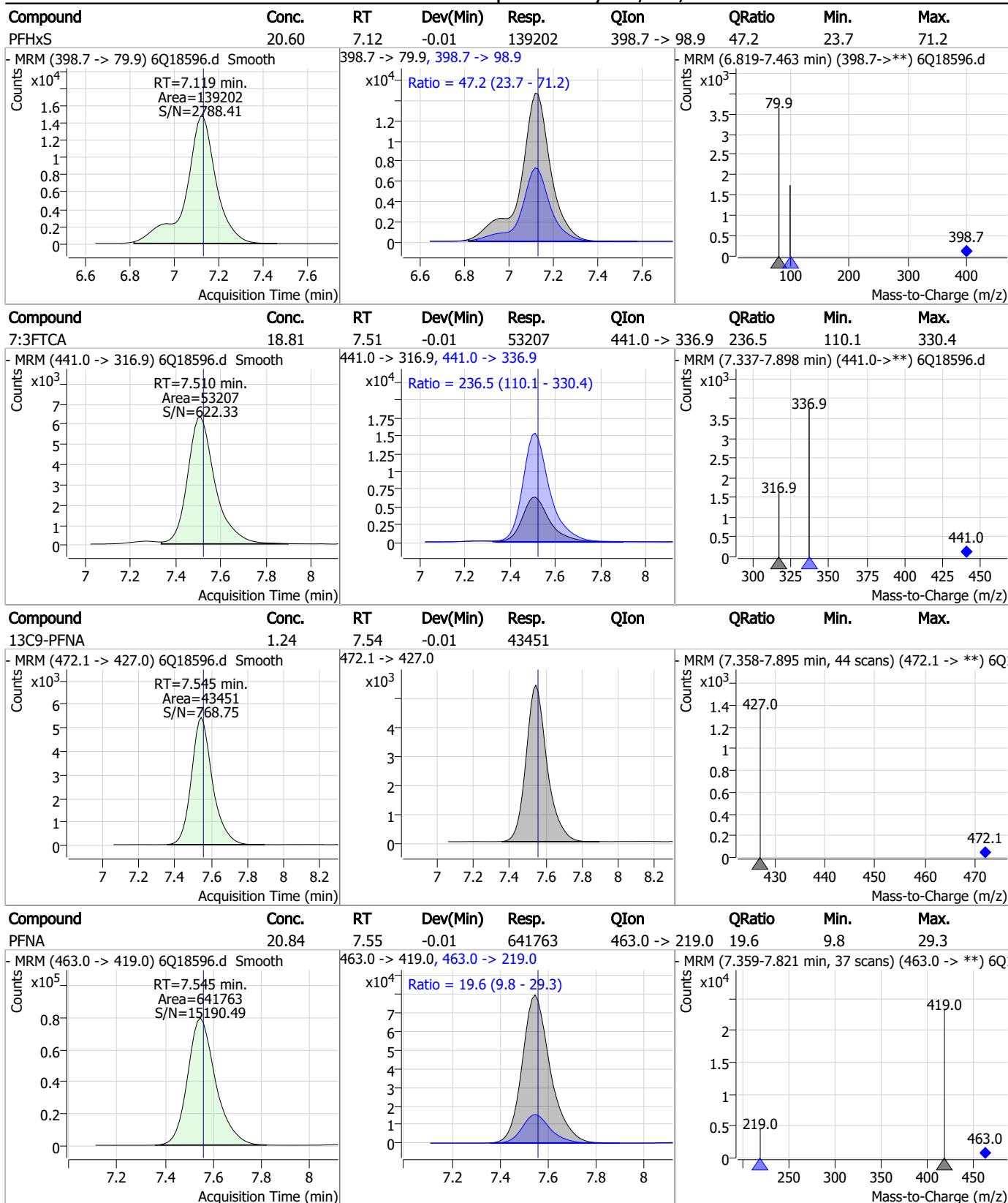


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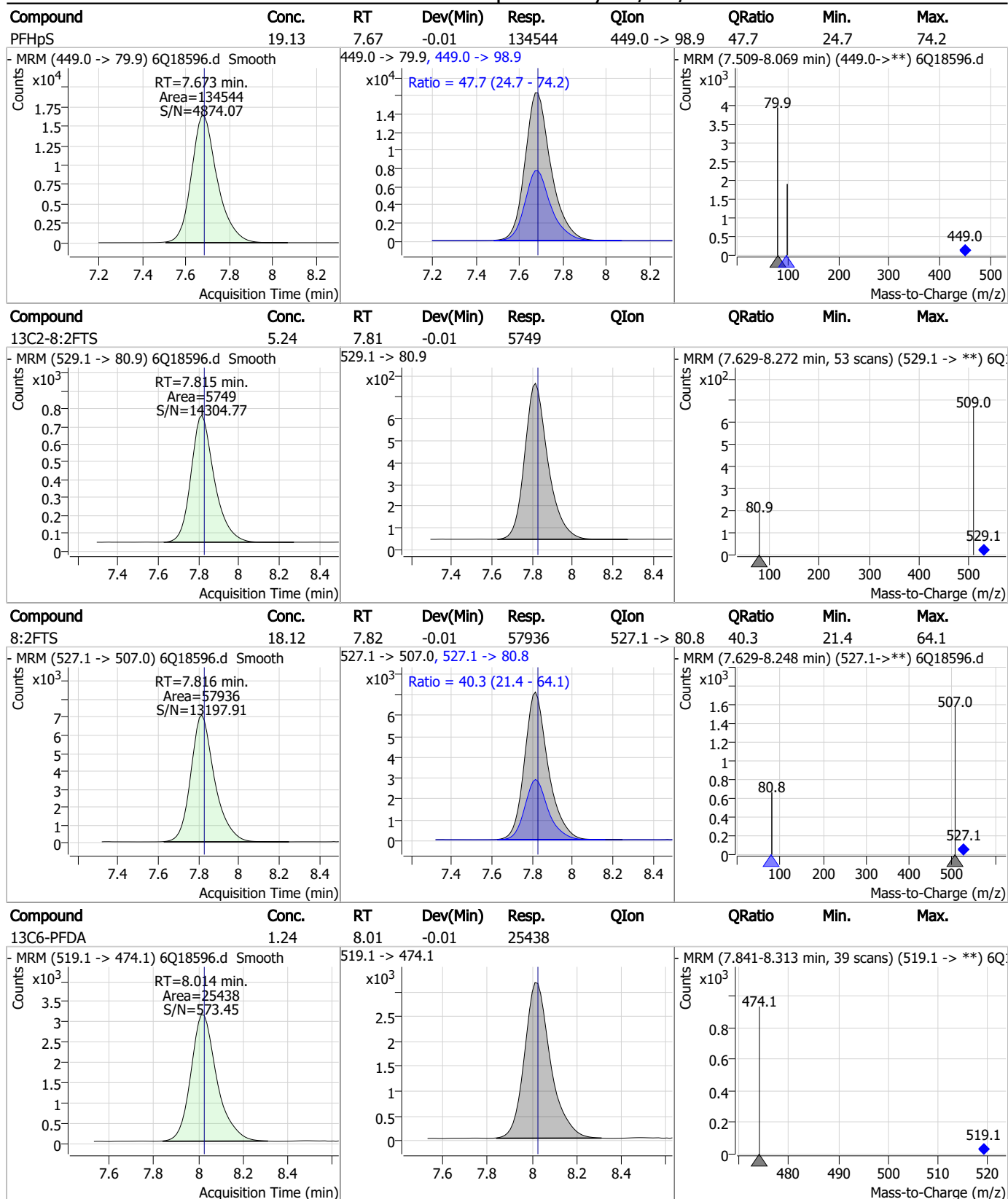
Perfluorinated Compounds by LC/MS/MS



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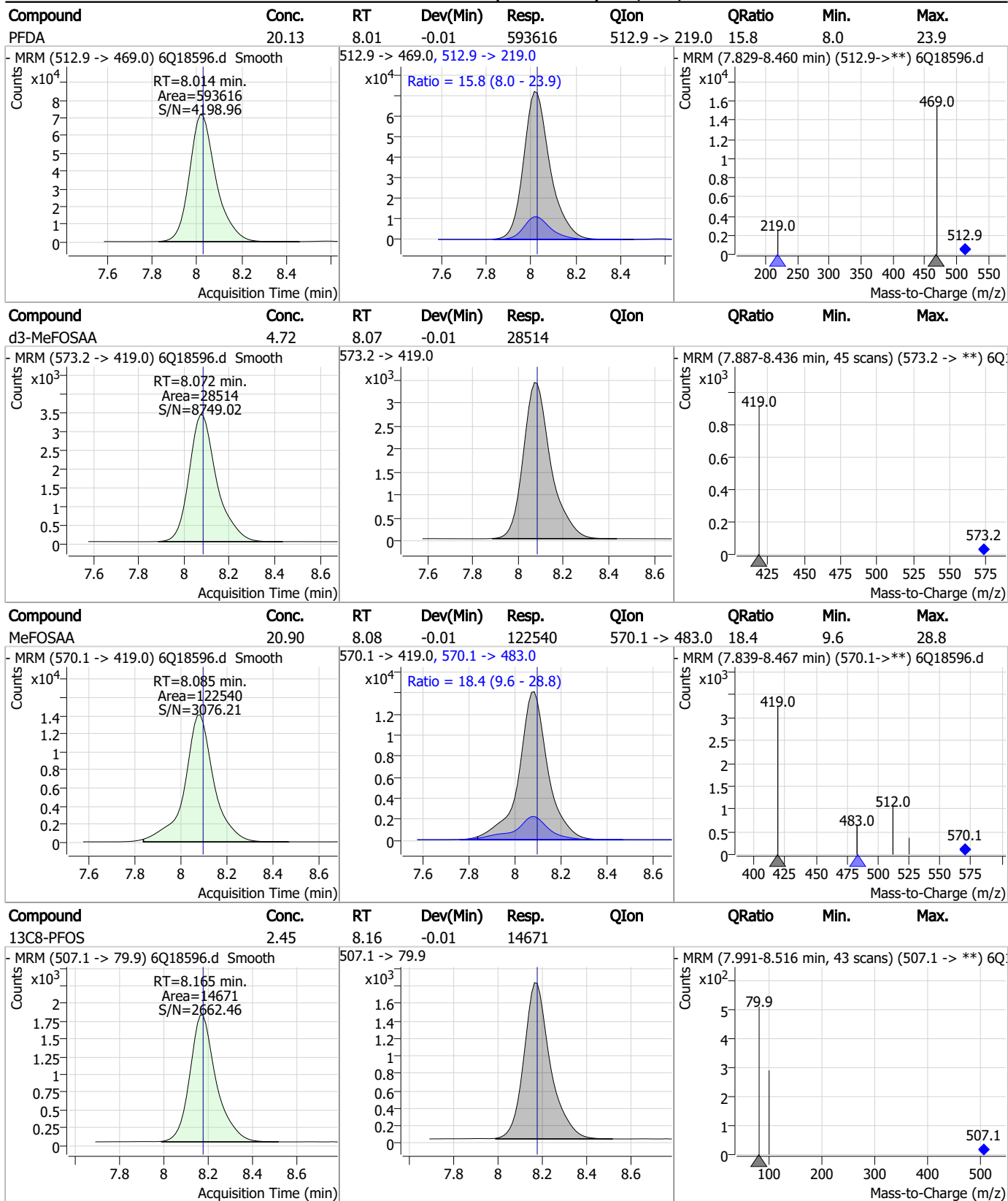


Perfluorinated Compounds by LC/MS/MS



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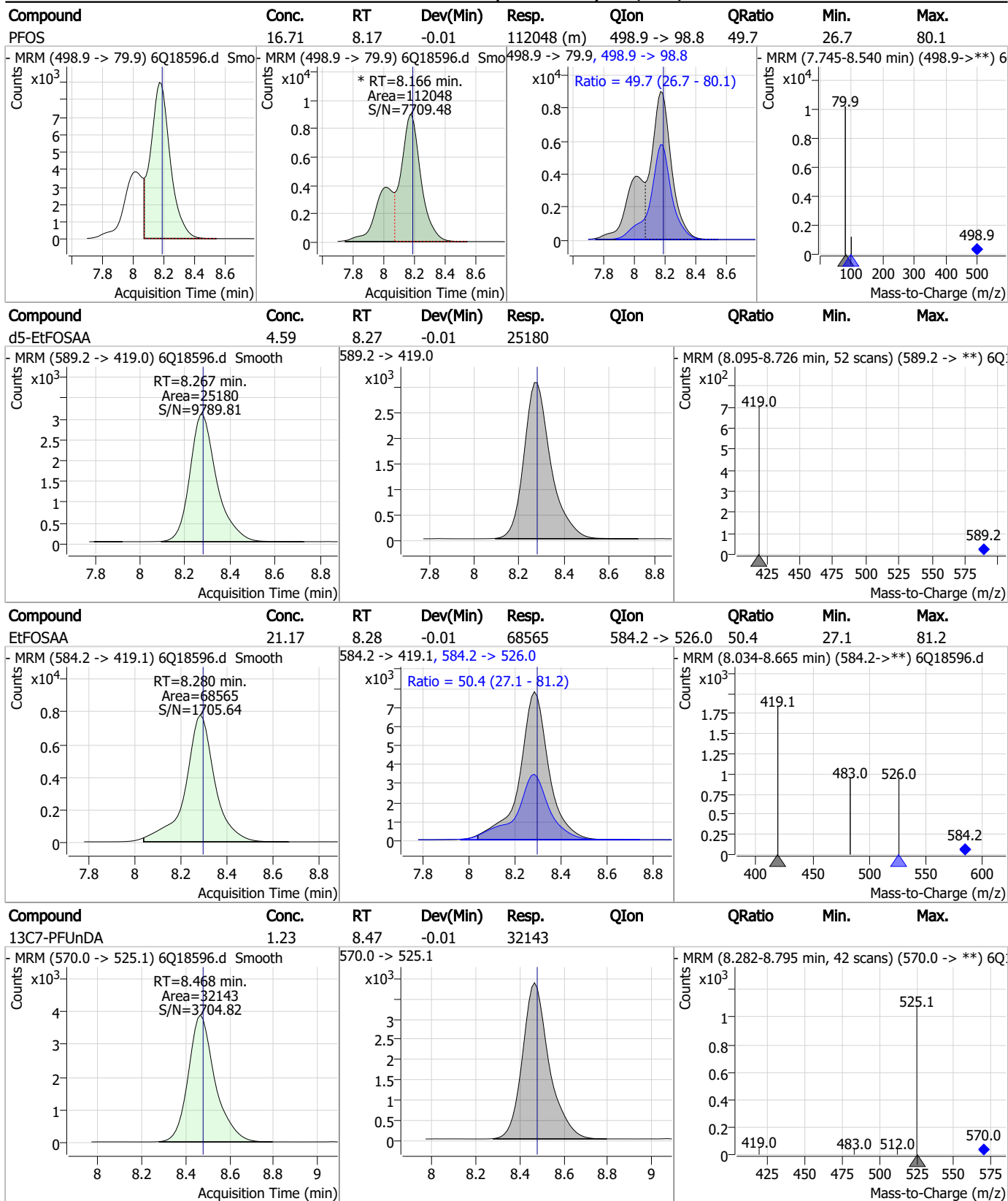
Perfluorinated Compounds by LC/MS/MS



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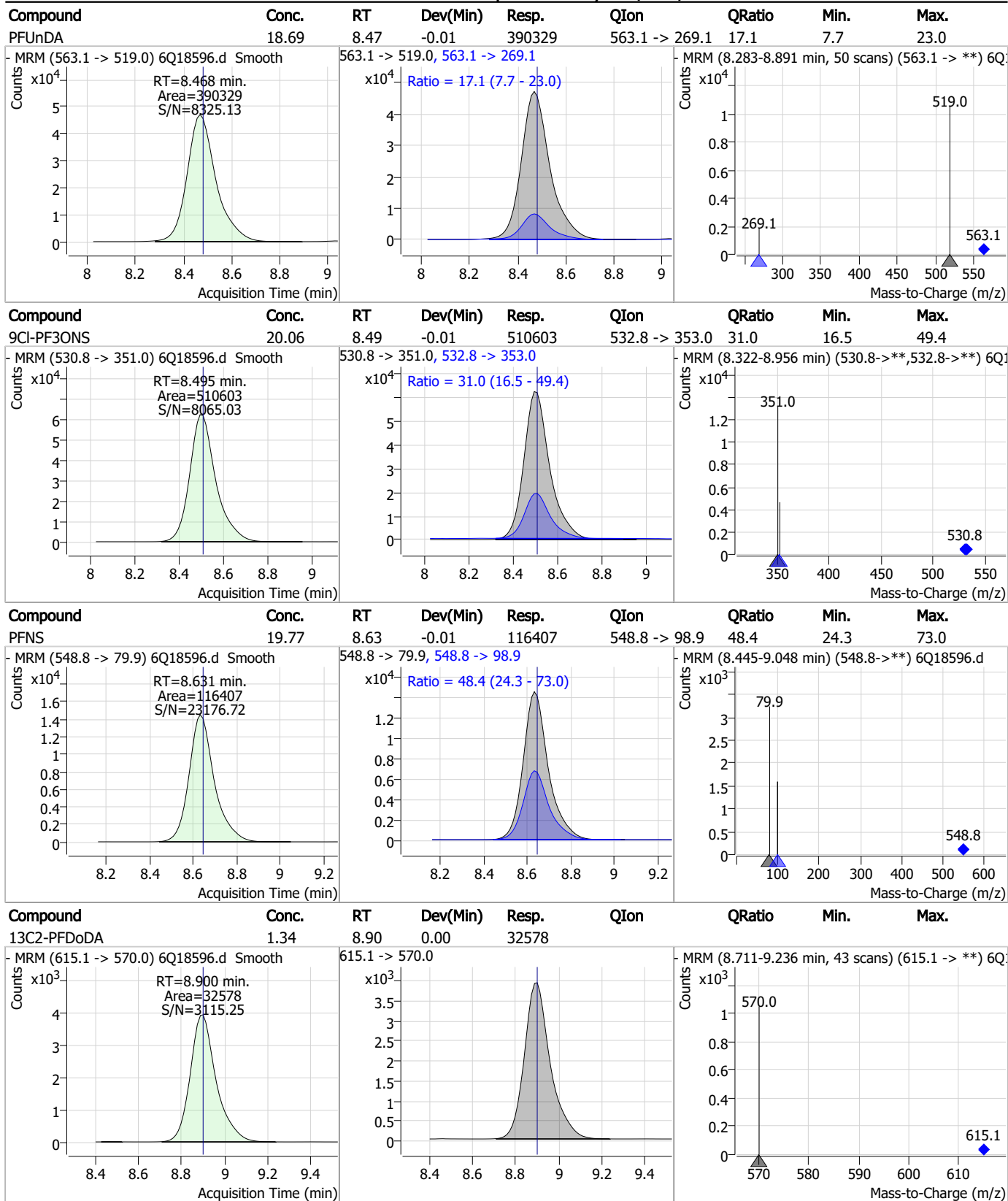
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Perfluorinated Compounds by LC/MS/MS



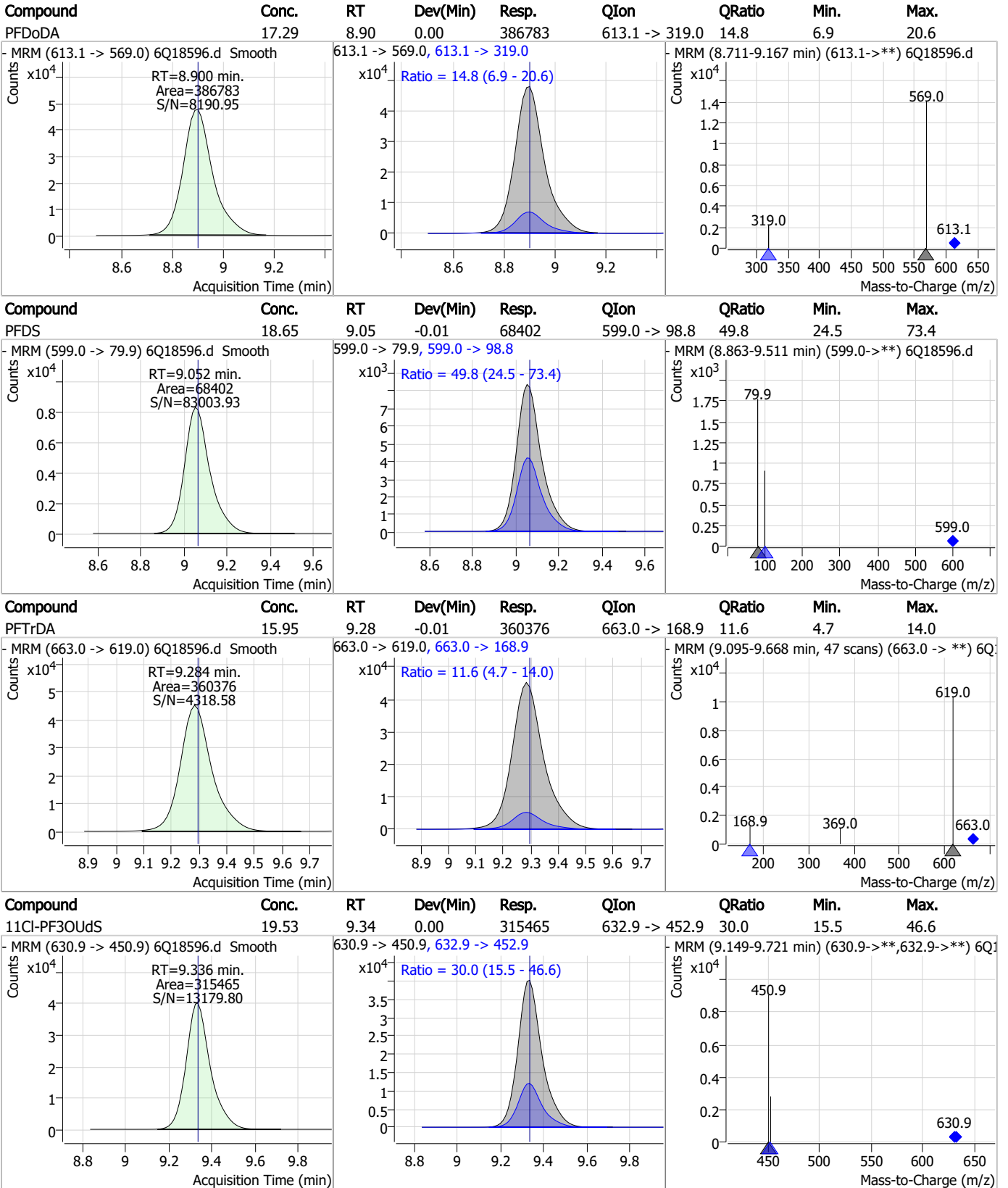
7.7.11
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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

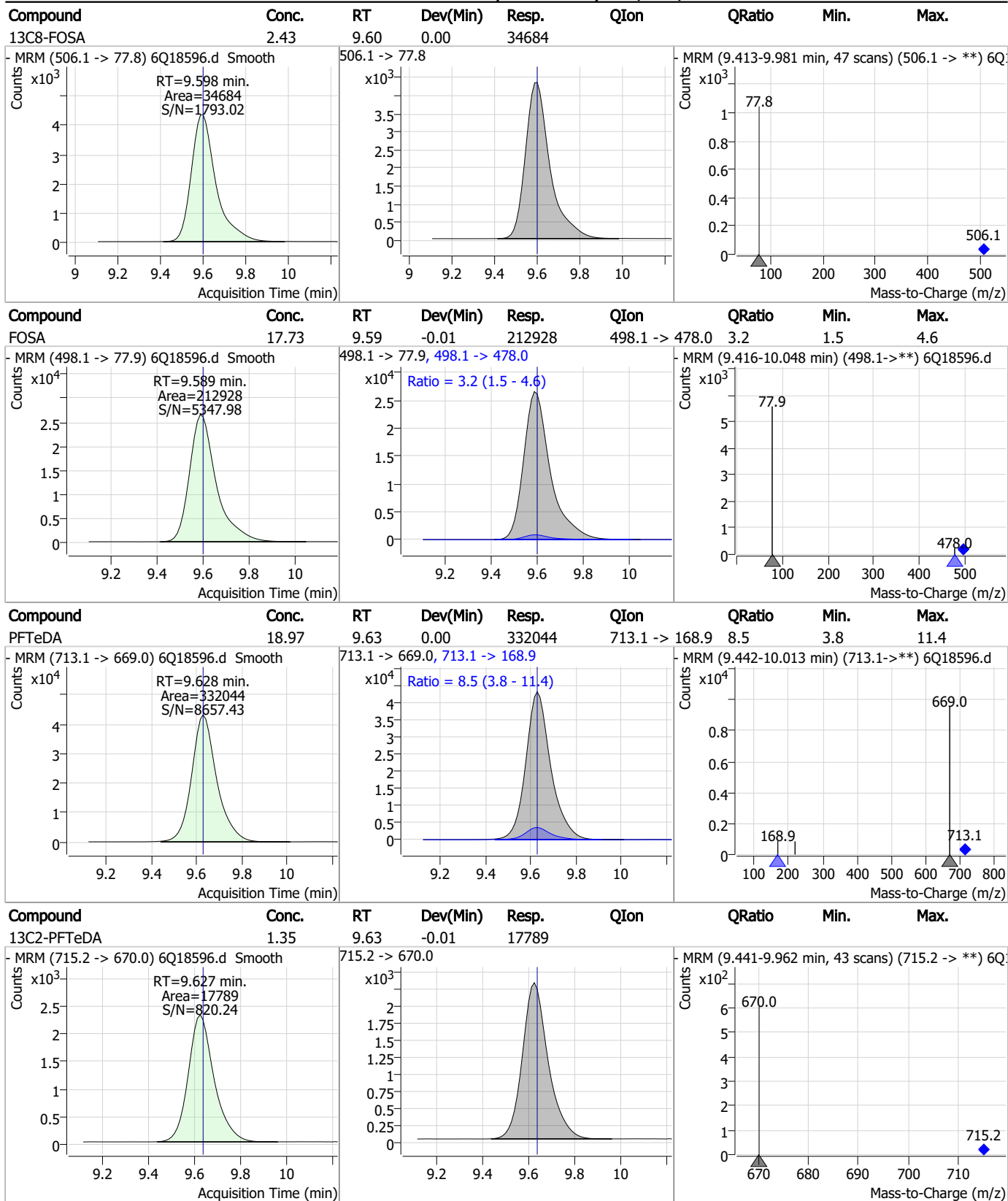


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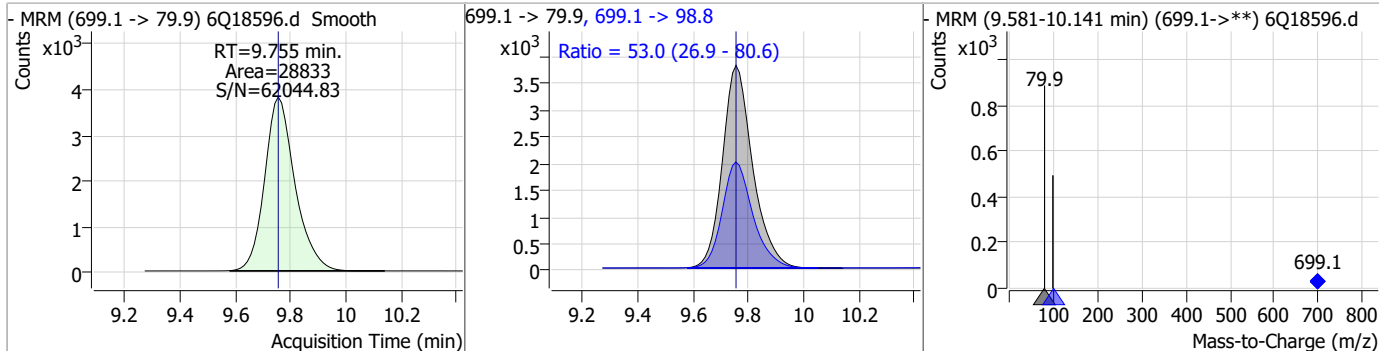
Perfluorinated Compounds by LC/MS/MS



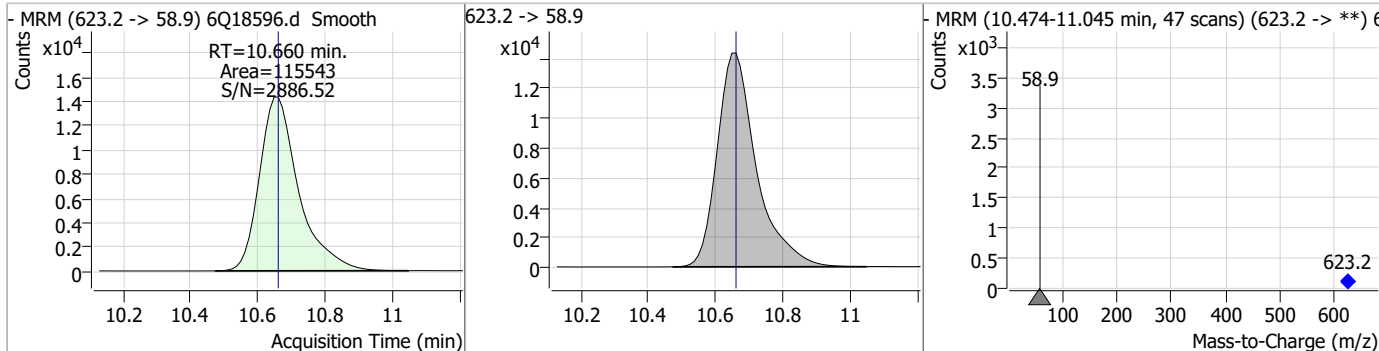
7.7.11
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Perfluorinated Compounds by LC/MS/MS

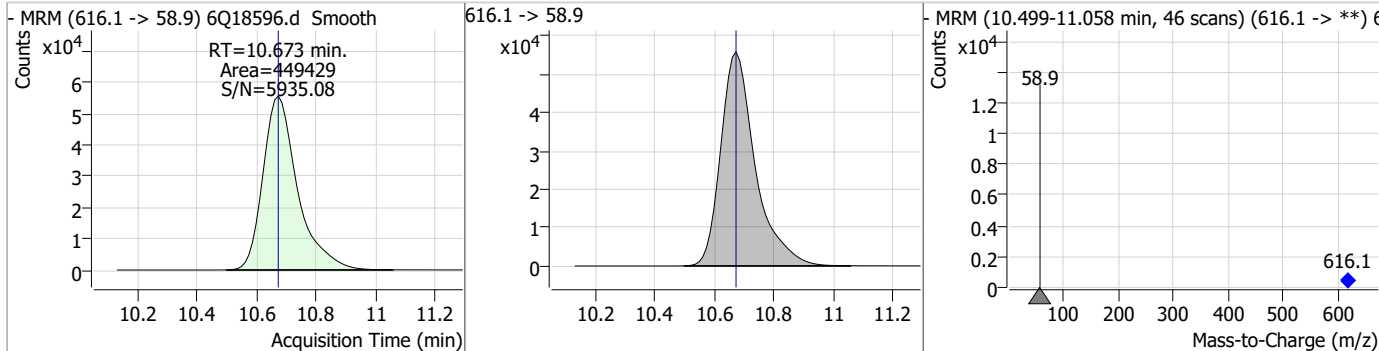
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 17.69 | 9.75 | 0.00 | 28833 | 699.1 -> 98.8 | 53.0 | 26.9 | 80.6 |



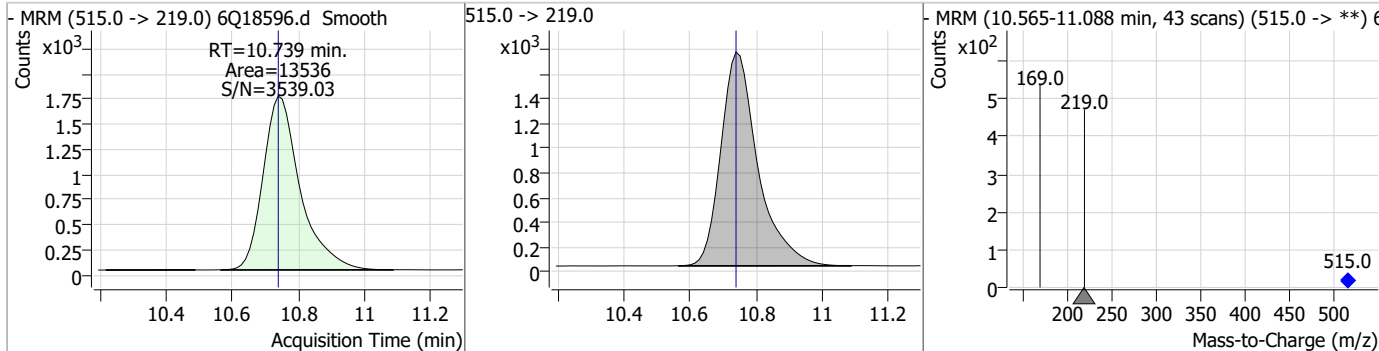
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d7-MeFOSE | 24.61 | 10.66 | 0.00 | 115543 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|--------|------|--------|------|------|
| MeFOSE | 97.88 | 10.67 | 0.00 | 449429 | | | | |

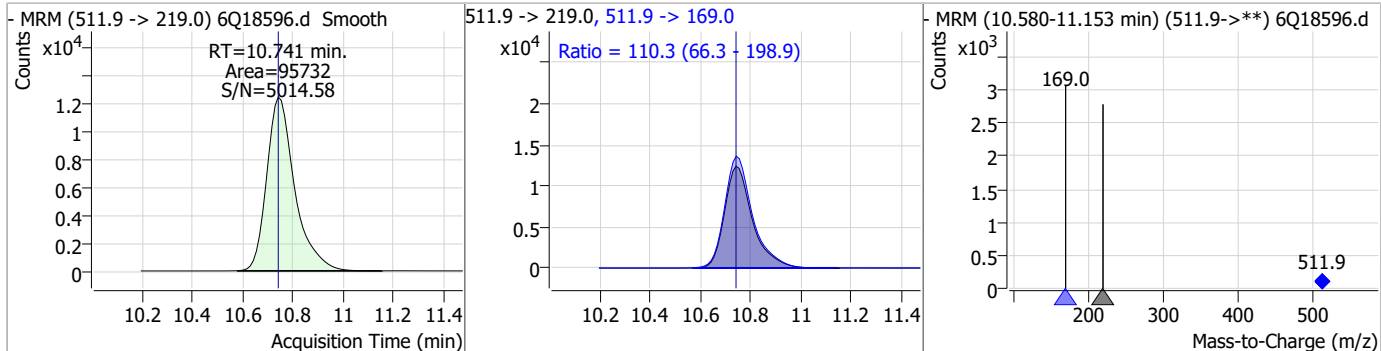


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.34 | 10.74 | 0.00 | 13536 | | | | |

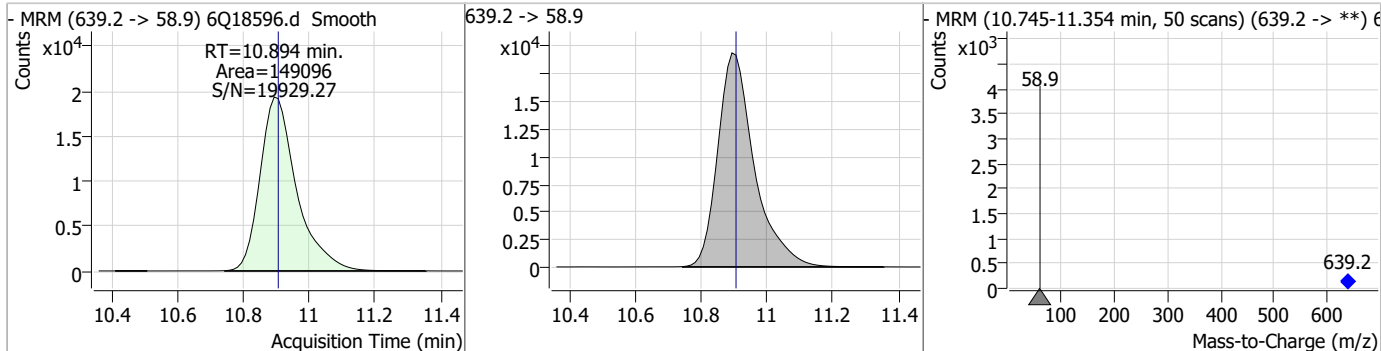


Perfluorinated Compounds by LC/MS/MS

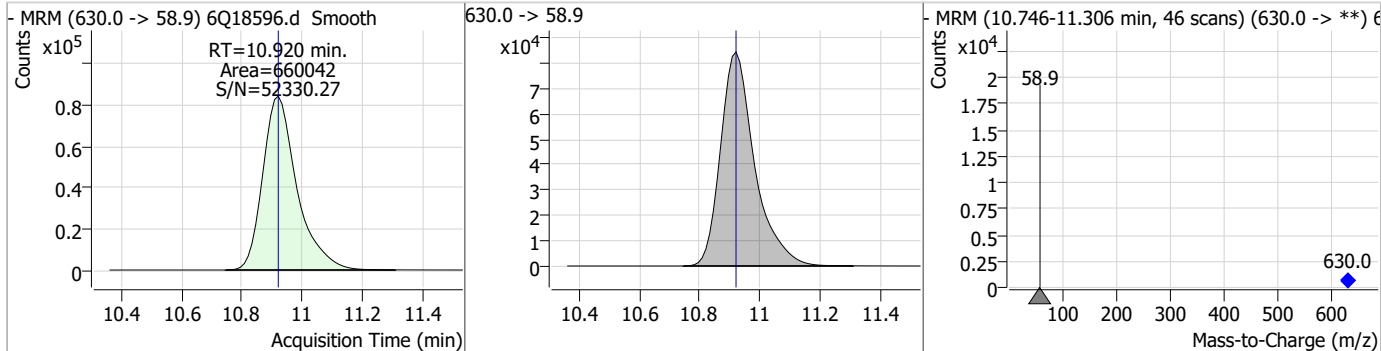
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|----------------|--------|------|-------|
| MeFOSA | 19.23 | 10.74 | 0.00 | 95732 | 511.9 -> 169.0 | 110.3 | 66.3 | 198.9 |



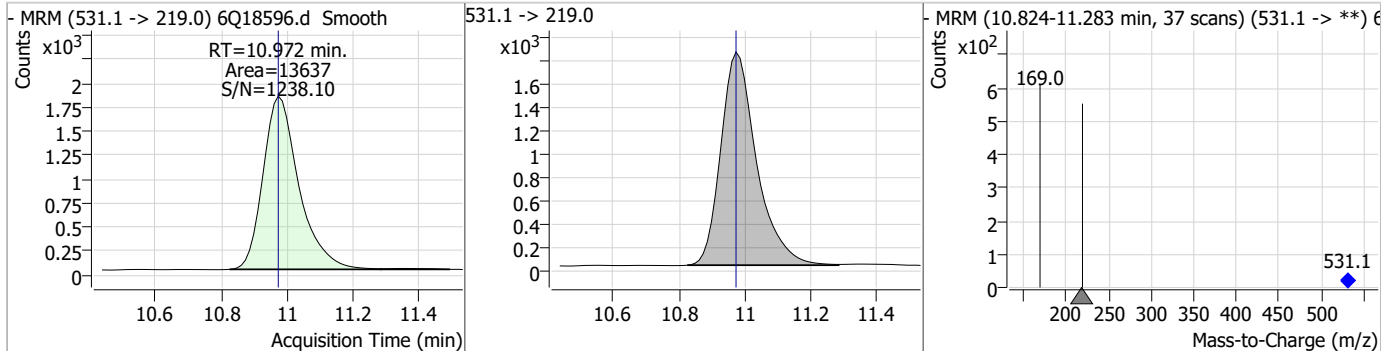
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 24.28 | 10.89 | -0.01 | 149096 | | | | |



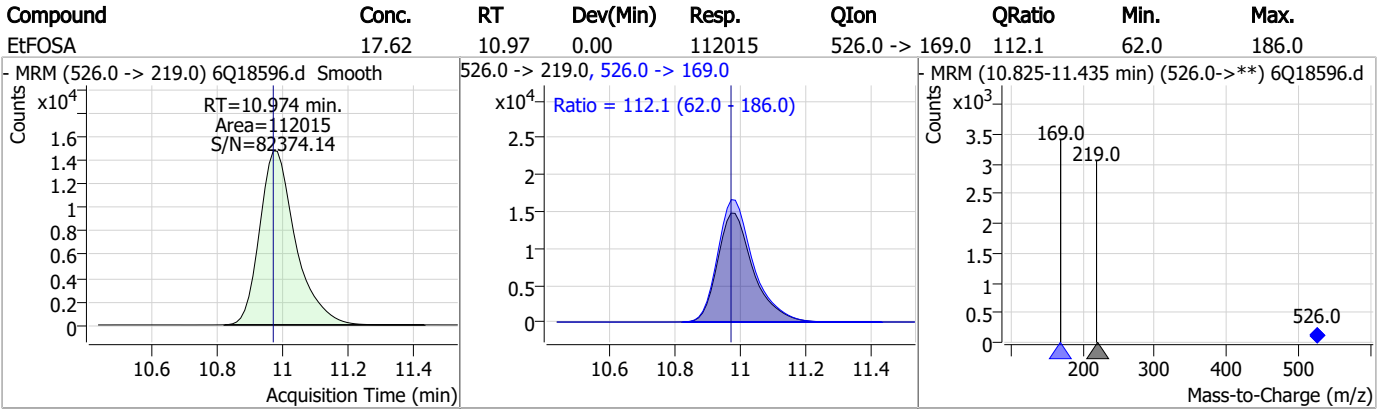
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|--------|------|--------|------|------|
| EtFOSE | 99.23 | 10.92 | 0.00 | 660042 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSA | 2.49 | 10.97 | 0.00 | 13637 | | | | |



Perfluorinated Compounds by LC/MS/MS



7.7.11

7



Manual Integration Approval Summary

Sample Number: S6Q279-ICV279 Method: EPA DRAFT 1633
Lab FileID: 6Q18596.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:41 Supervisor approved: 06/01/23 15:02 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |

7.7.11.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18597.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 7:55:42 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 186588 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 62736 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 68986 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 63323 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 96661 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 42011 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 25785 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35066 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.887 | 615.1 -> 570.0 | 30113 | 1.25 µg/L | -0.012 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17321 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 35797 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 25233 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15176 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.165 | 507.1 -> 79.9 | 14913 | 2.50 µg/L | -0.012 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4010 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5848 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5682 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30779 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41544 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26459 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.647 | 623.2 -> 58.9 | 117042 | 25.00 µg/L | -0.012 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 152765 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13878 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13737 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 19062 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 78746 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11240 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 101542 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.014 | 515.1 -> 470.1 | 37779 | 1.25 µg/L | -0.013 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 53844 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 63422 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4010 | 5.35 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 107.0% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5848 | 5.37 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 107.4% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5682 | 5.15 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.9% | | |
| 13C2-PFDoDA | 8.887 | 615.1 -> 570.0 | 30113 | 1.15 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 91.8% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17321 | 1.21 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 97.1% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 25233 | 2.54 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.5% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15176 | 2.42 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.7% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 186588 | 9.95 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.5% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 63323 | 2.55 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.0% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 68986 | 2.57 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.8% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 62736 | 5.09 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 25785 | 1.16 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 93.2% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35066 | 1.24 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.3% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 35797 | 2.46 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 96661 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C8-PFOS | 8.165 | 507.1 -> 79.9 | 14913 | 2.44 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.7% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 42011 | 1.18 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 94.7% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30779 | 5.00 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 41544 | 9.97 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13737 | 2.33 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.3% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 26459 | 4.73 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 94.6% | |
| d7-MeFOSE | 10.647 | 623.2 -> 58.9 | 117042 | 24.45 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 152765 | 24.40 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 97.6% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13878 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.6% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 50559 | 8.68 µg/L | 98 |
| | | 327.1 -> 80.9 | 19390 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 52810 | 9.19 µg/L | 97 |
| | | 427.1 -> 80.9 | 16999 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 29050 | 9.19 µg/L | 99 |
| | | 527.1 -> 80.8 | 12222 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 8693 | 2.55 µg/L | 95 |
| | | 584.2 -> 526.0 | 5034 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 28963 | 2.34 µg/L | 99 |
| | | 498.1 -> 478.0 | 959 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 14902 | 2.35 µg/L | 96 |
| | | 570.1 -> 483.0 | 3109 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 59285 | 9.60 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 18176 | 2.12 µg/L | 100 |
| | | 298.7 -> 98.8 | 6576 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 75675 | 2.53 µg/L | 99 |
| | | 512.9 -> 219.0 | 11784 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 51834 | 2.51 µg/L | 95 |
| | | 613.1 -> 319.0 | 8244 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 8054 | 2.16 µg/L | 96 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 4150 | 2.33 µg/L | 96 |
| | | 363.1 -> 319.0 | 65164 | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 10978 | 2.24 µg/L | 97 |
| | | 449.0 -> 79.9 | 16037 | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 8276 | 2.36 µg/L | 97 |
| | | 313.0 -> 269.0 | 54674 | | |
| PFHxS | 7.119 | 313.0 -> 118.9 | 2997 | 2.23 µg/L | 98 |
| | | 398.7 -> 79.9 | 15286 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7446 | 2.60 µg/L | 99 |
| | | 463.0 -> 419.0 | 77276 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 14652 | 2.18 µg/L | 89 |
| | | 548.8 -> 79.9 | 13031 | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 7286 | 2.42 µg/L | 98 |
| | | 413.0 -> 369.0 | 99796 | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 17874 | 2.15 µg/L | 98 |
| | | 498.9 -> 79.9 | 14645 | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 7637 | 4.80 µg/L | 100 |
| | | 263.0 -> 219.0 | 72367 | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 16317 | 2.39 µg/L | 92 |
| | | 349.1 -> 98.9 | 6890 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 40007 | 2.35 µg/L | 96 |
| | | 713.1 -> 168.9 | 3536 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 52821 | 2.53 µg/L | 96 |
| | | 663.0 -> 168.9 | 5615 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 52534 | 2.31 µg/L | 97 |
| | | 563.1 -> 269.1 | 8663 | | |
| 11CI-PF3OUdS | 9.323 | 630.9 -> 450.9 | 72410 | 4.65 µg/L | 98 |
| | | 632.9 -> 452.9 | 21524 | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 117295 | 4.78 µg/L | 92 |
| | | 532.8 -> 353.0 | 32994 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 255010 | 4.62 µg/L | 99 |
| | | 376.9 -> 84.8 | 66734 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 16700 | 4.74 µg/L | 96 |
| | | 284.9 -> 184.9 | 1992 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 11373 | 11.79 µg/L | 97 |
| | | 241.0 -> 117.0 | 1514 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 246759 | 59.22 µg/L | 96 |
| | | 341.0 -> 217.0 | 182862 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 173509 | 60.80 µg/L | 93 |
| | | 441.0 -> 336.9 | 362606 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 29663 | 4.59 µg/L | 92 |
| | | 526.0 -> 169.0 | 39606 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 81929 | 12.02 µg/L | 100 |
| | | 511.9 -> 219.0 | 25504 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 34359 | 5.05 µg/L | 98 |
| | | 616.1 -> 58.9 | 55465 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3876 | 11.92 µg/L | 100 |
| | | 699.1 -> 98.8 | 1967 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 13110 | 2.34 µg/L | 96 |
| | | 295.0 -> 84.9 | 3299 | | |
| NFDHA | 5.288 | 279.0 -> 85.1 | 48531 | 4.65 µg/L | 96 |
| | | 229.0 -> 84.9 | 38221 | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 124838 | 4.73 µg/L | 100 |
| | | 314.8 -> 82.9 | 4466 | | |
| PFMPA | 3.351 | | | 4.79 µg/L | 100 |
| | | | | | |
| PFEESA | 5.862 | | | 4.25 µg/L | 99 |
| | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



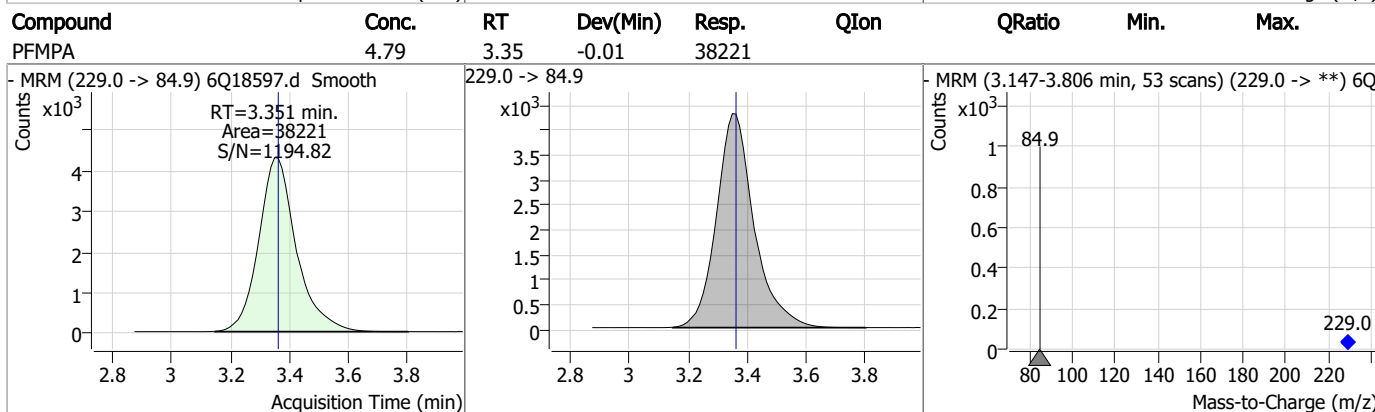
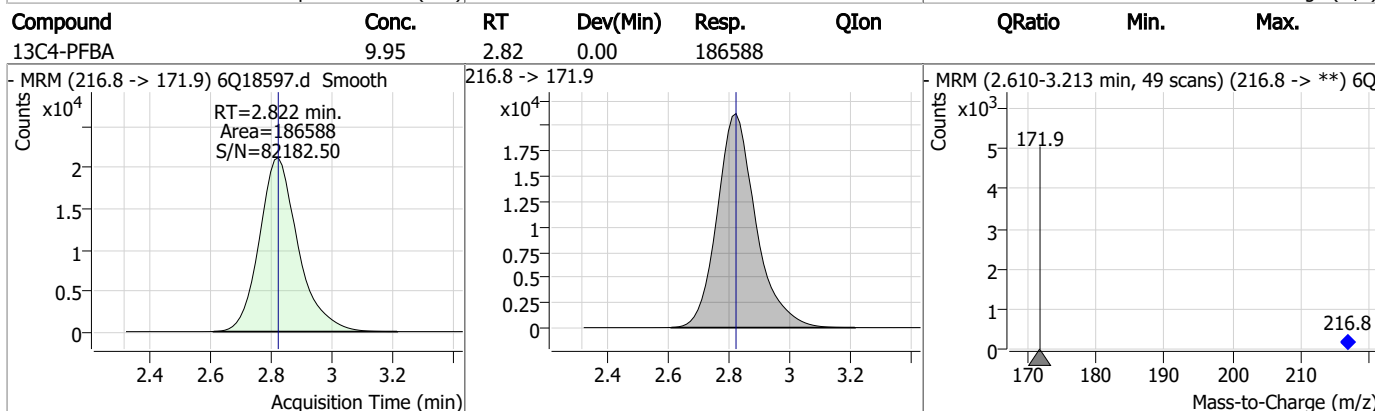
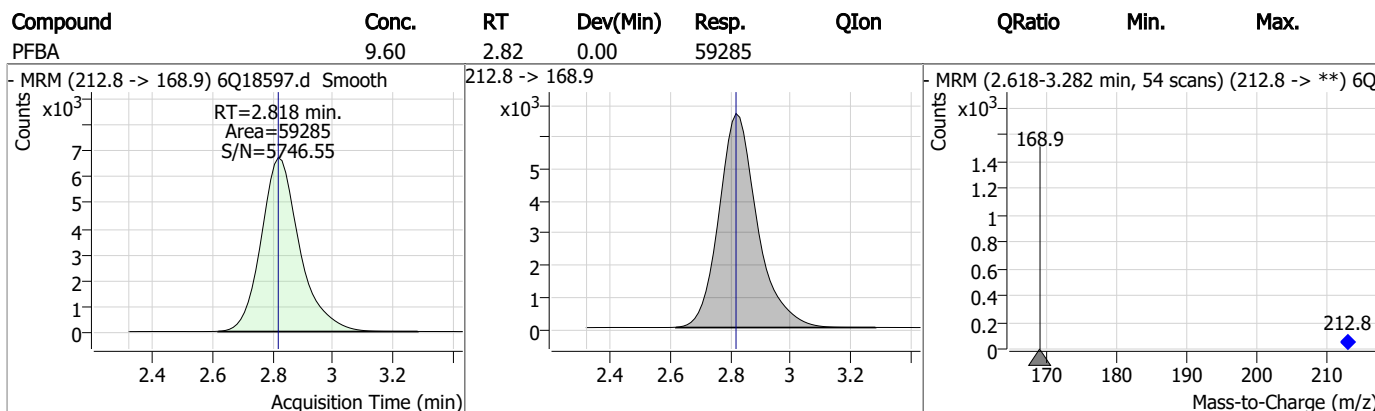
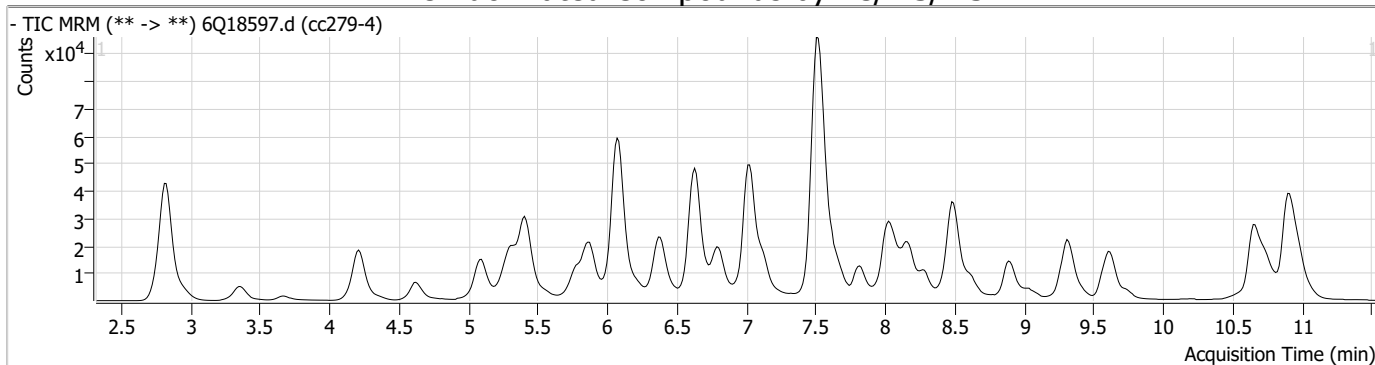
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

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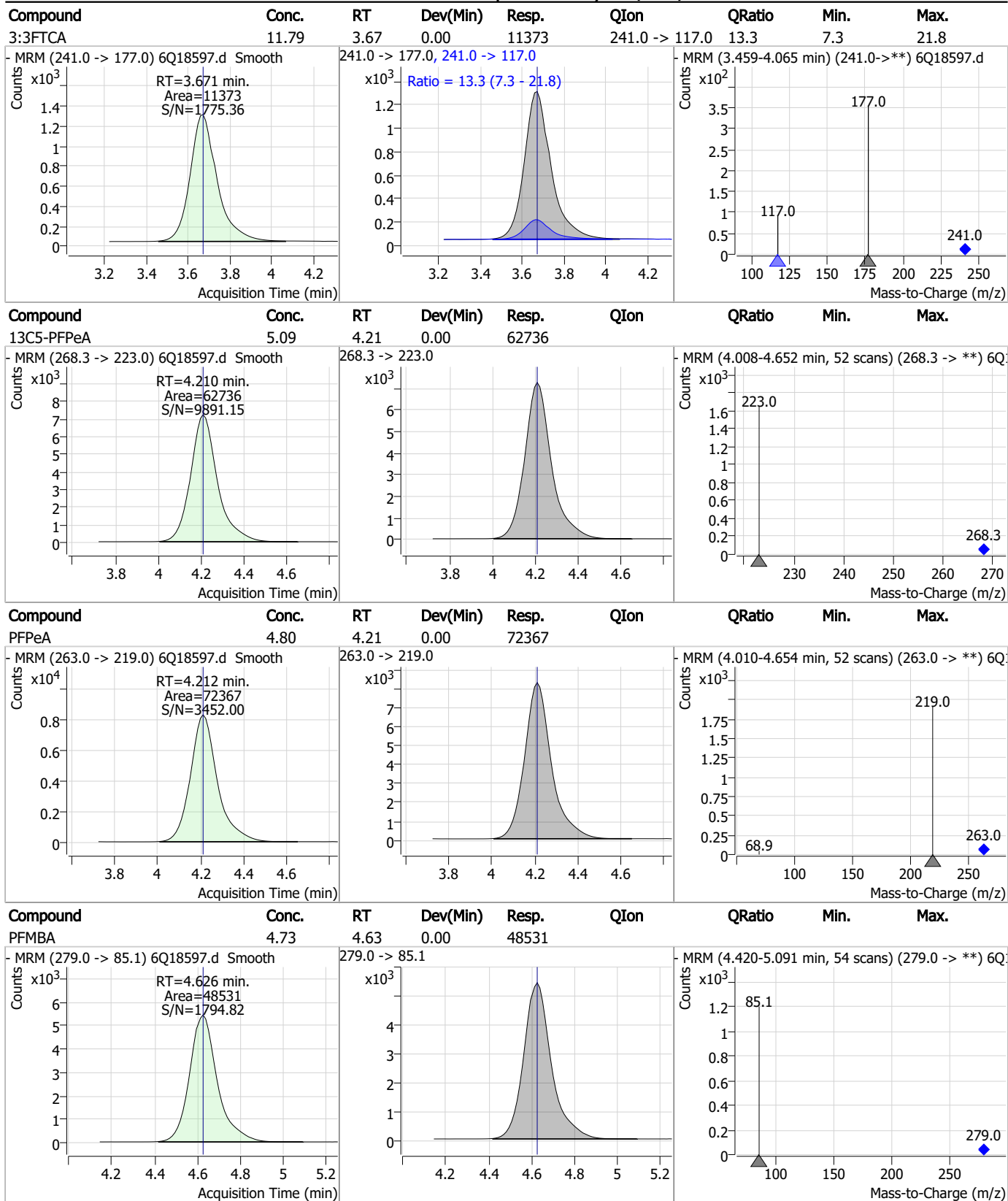
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Perfluorinated Compounds by LC/MS/MS



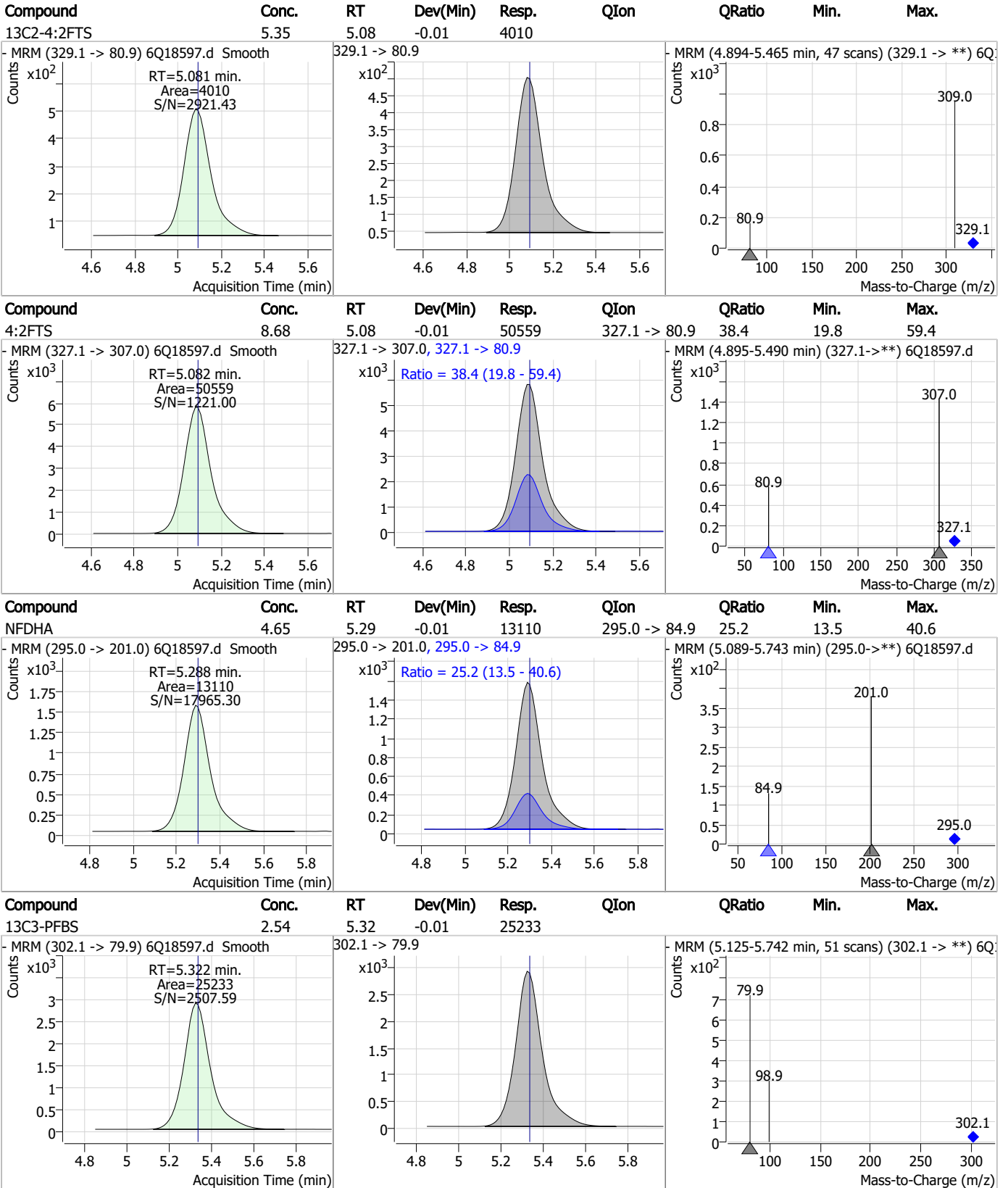
7.7.12
7

Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

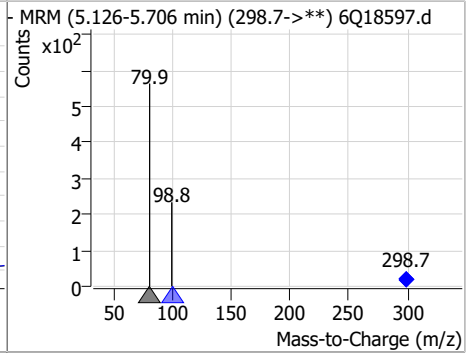
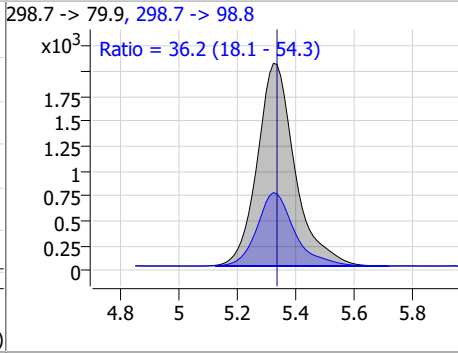
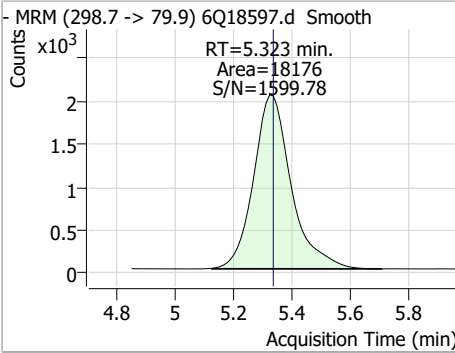


7.7.12
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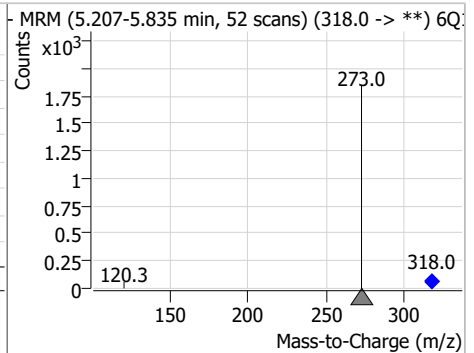
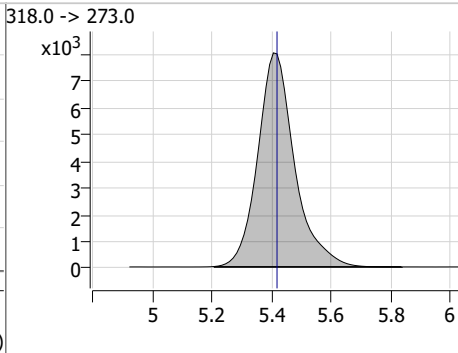
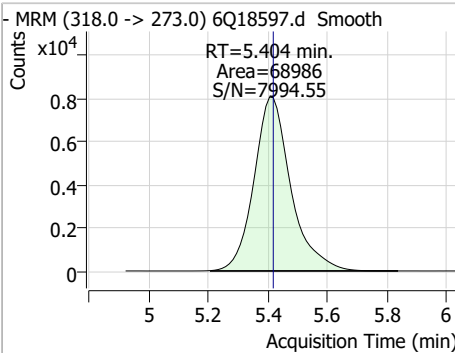


Perfluorinated Compounds by LC/MS/MS

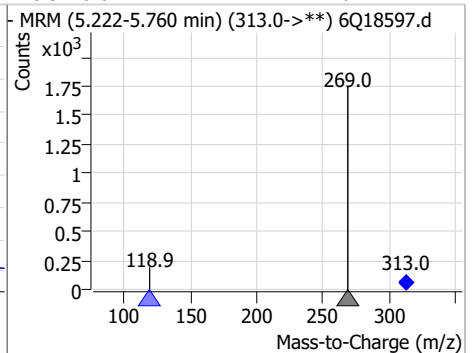
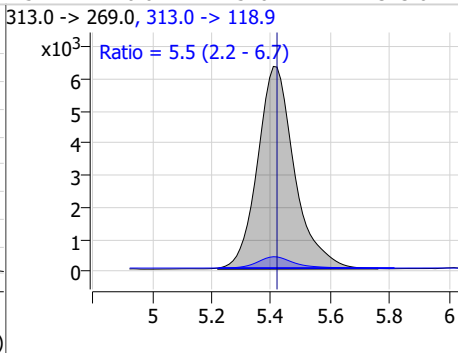
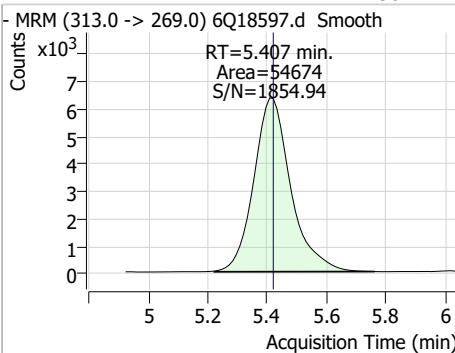
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 2.12 | 5.32 | -0.01 | 18176 | 298.7 -> 98.8 | 36.2 | 18.1 | 54.3 |



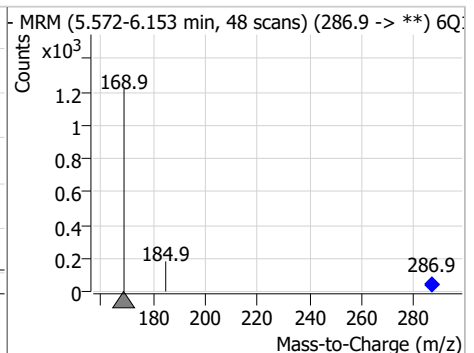
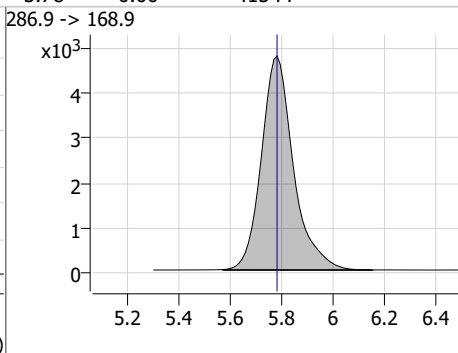
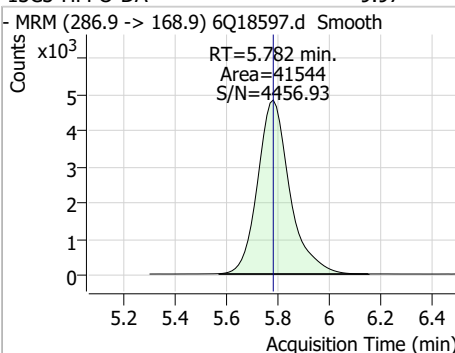
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFHxA | 2.57 | 5.40 | -0.01 | 68986 | 318.0 -> 273.0 | 5.5 | 2.2 | 6.7 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 2.36 | 5.41 | -0.01 | 54674 | 313.0 -> 118.9 | 5.5 | 2.2 | 6.7 |

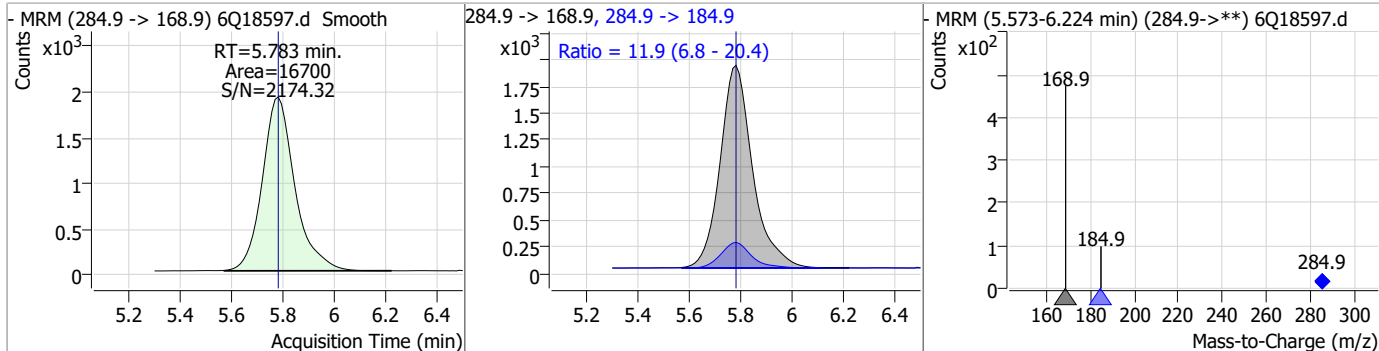


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C3-HFPO-DA | 9.97 | 5.78 | 0.00 | 41544 | 286.9 -> 168.9 | 5.5 | 2.2 | 6.7 |

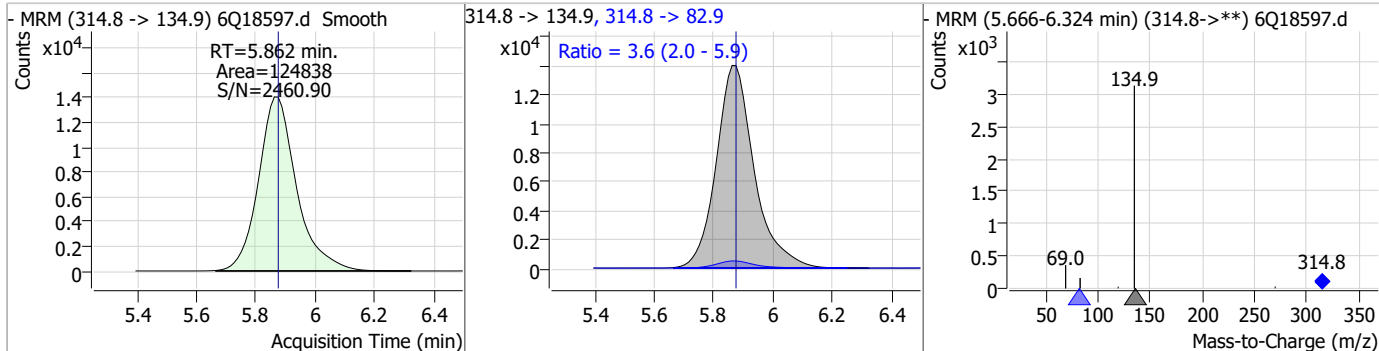


Perfluorinated Compounds by LC/MS/MS

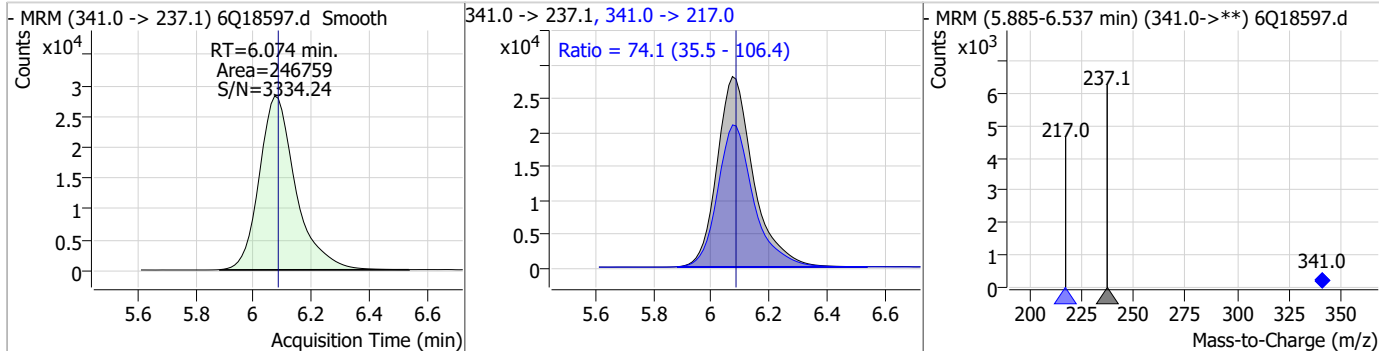
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 4.74 | 5.78 | 0.00 | 16700 | 284.9 -> 184.9 | 11.9 | 6.8 | 20.4 |



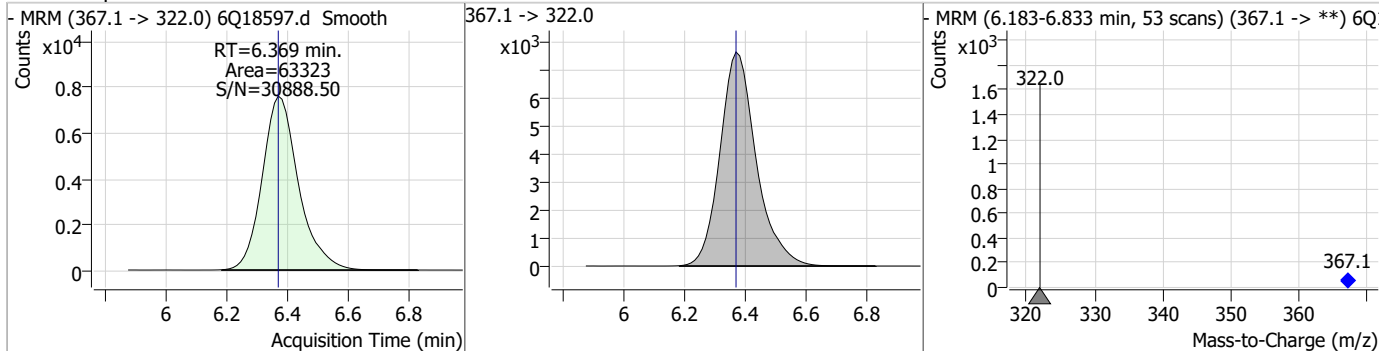
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 4.25 | 5.86 | -0.01 | 124838 | 314.8 -> 82.9 | 3.6 | 2.0 | 5.9 |



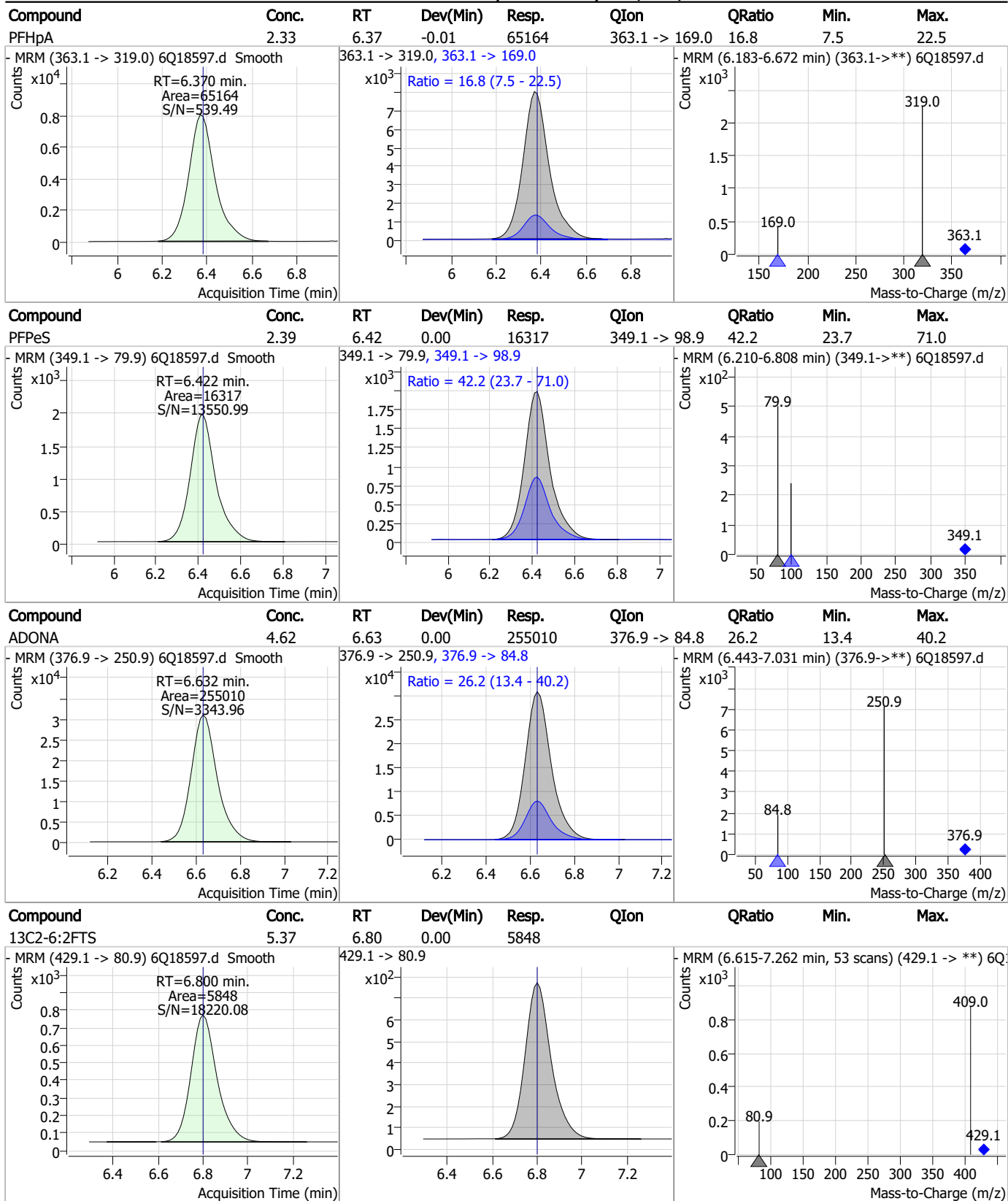
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 59.22 | 6.07 | -0.01 | 246759 | 341.0 -> 217.0 | 74.1 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.55 | 6.37 | 0.00 | 63323 | 367.1 -> 322.0 | | | |

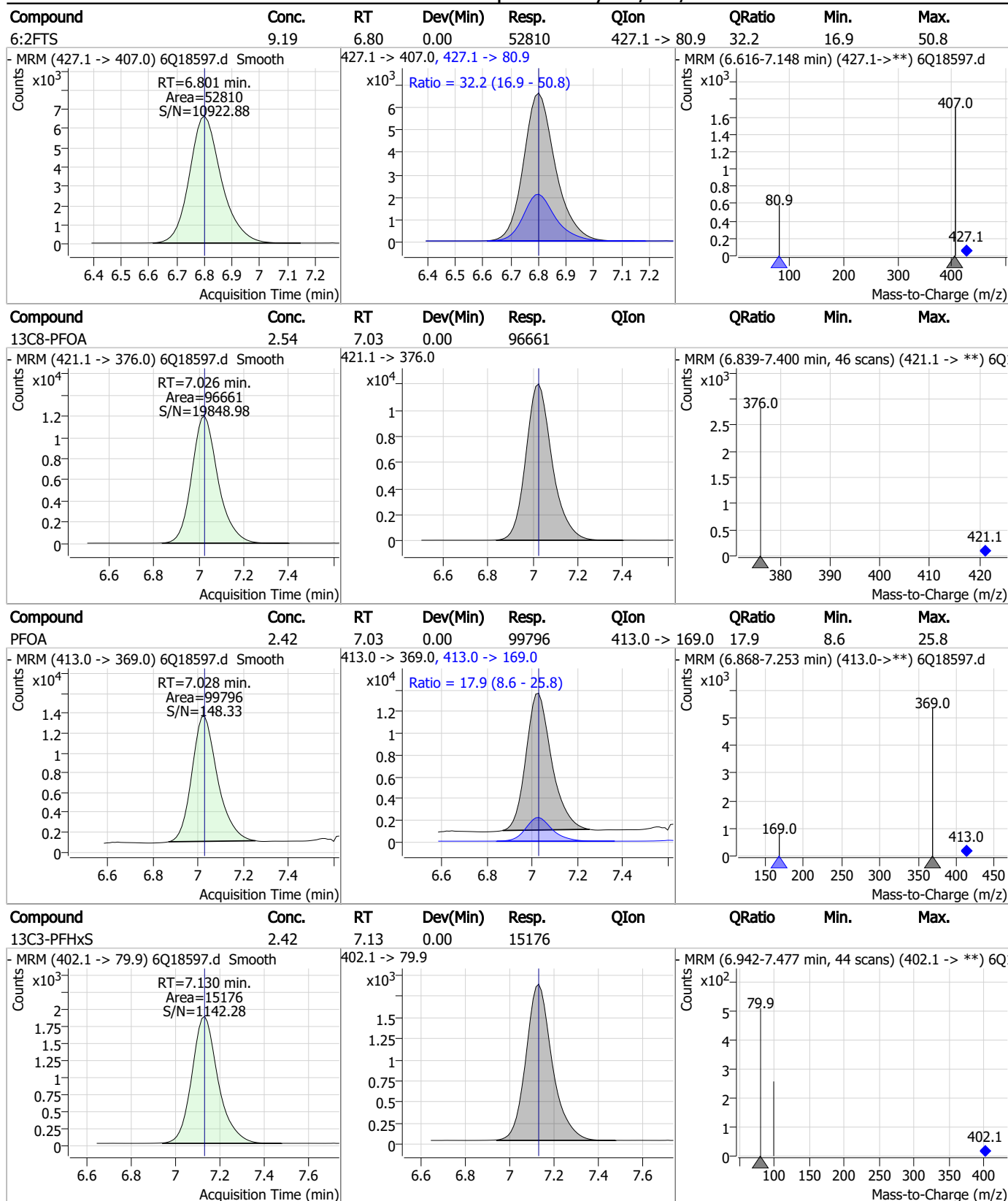


Perfluorinated Compounds by LC/MS/MS



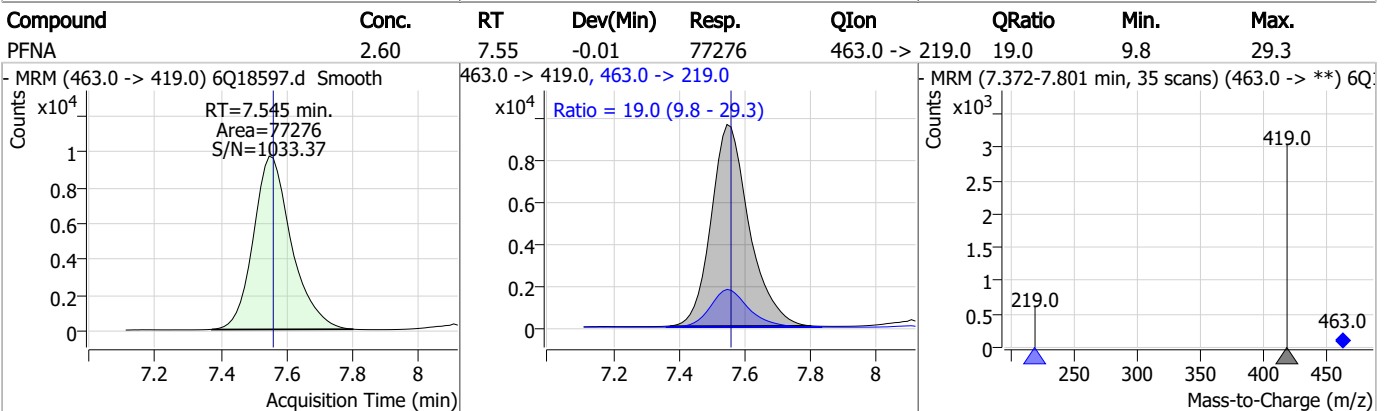
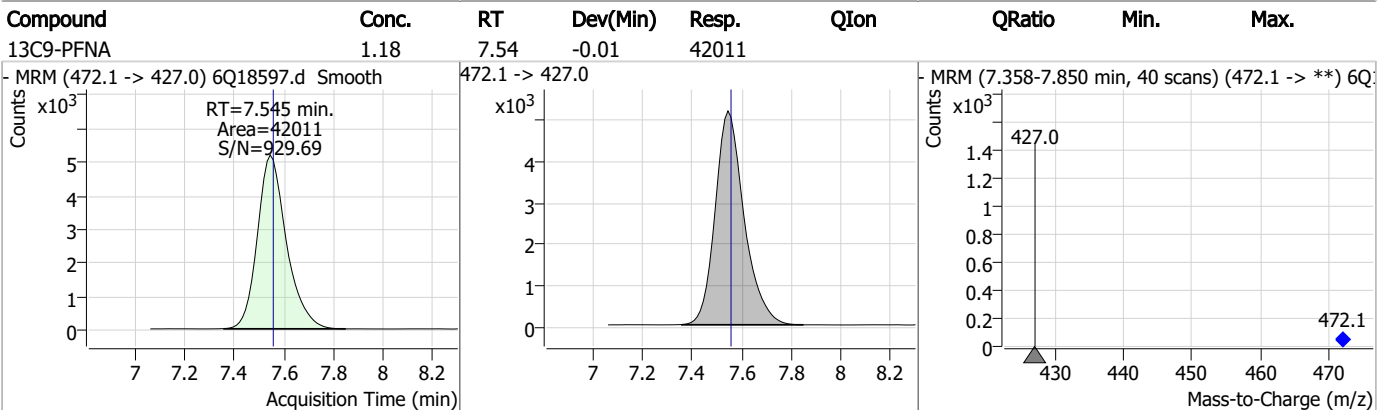
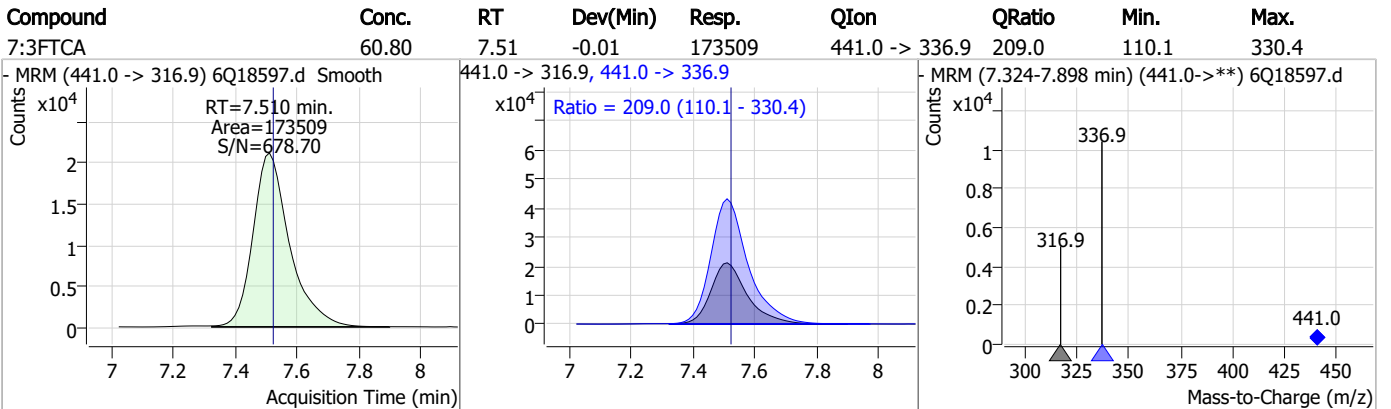
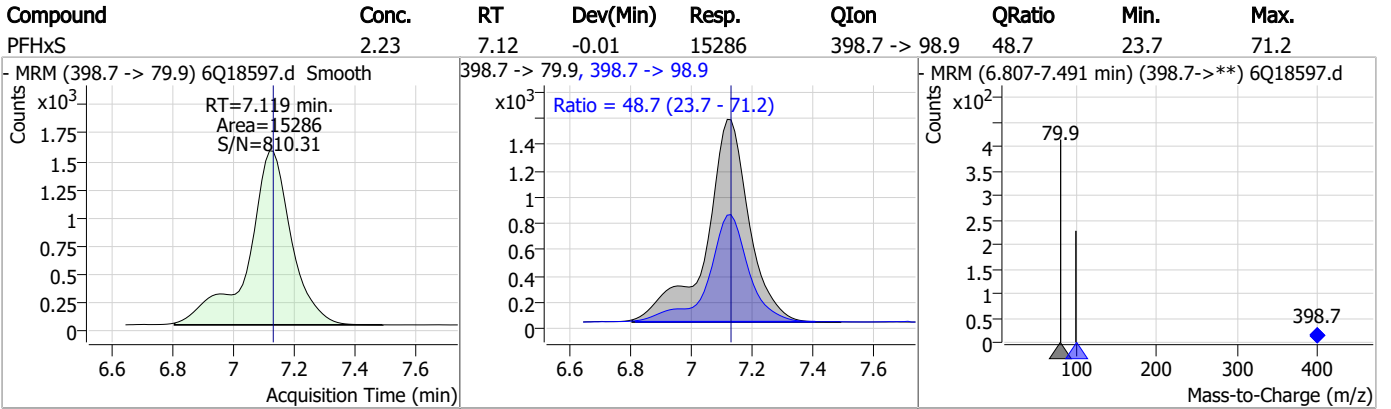
7.7.12
7

Perfluorinated Compounds by LC/MS/MS



7.7.12

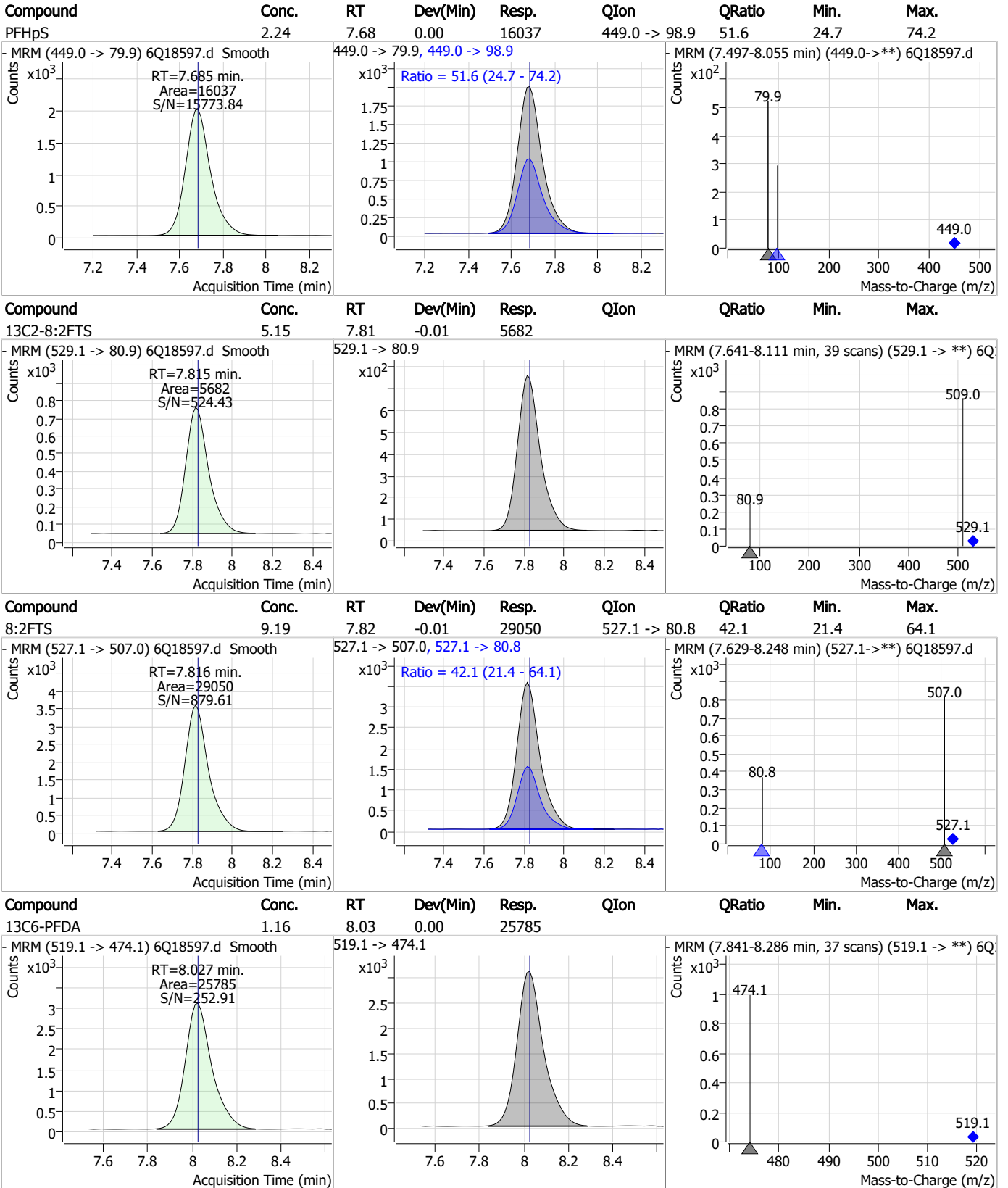
Perfluorinated Compounds by LC/MS/MS



7.7.12
7



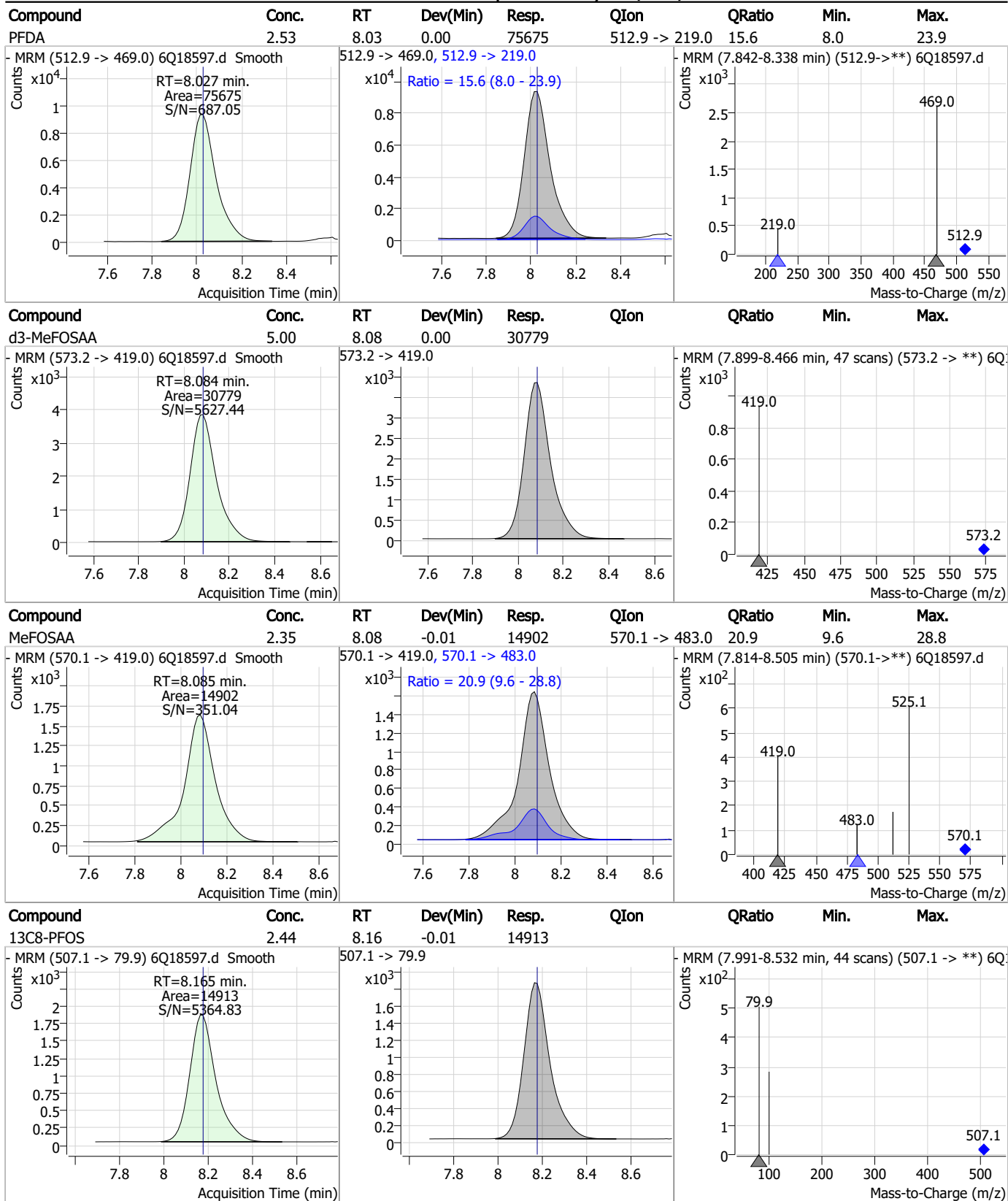
Perfluorinated Compounds by LC/MS/MS



7.7.12 7

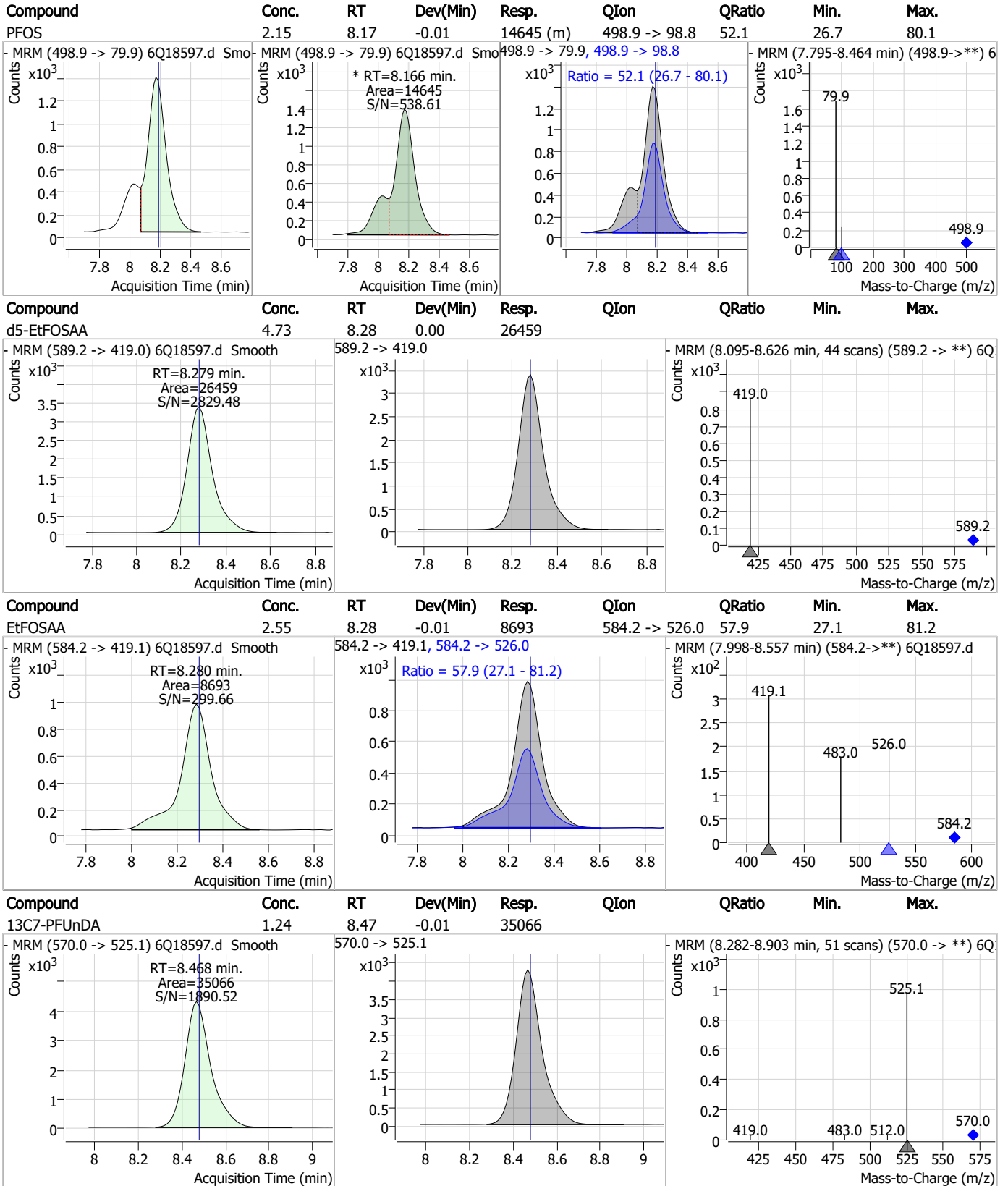


Perfluorinated Compounds by LC/MS/MS



7.7.12
7

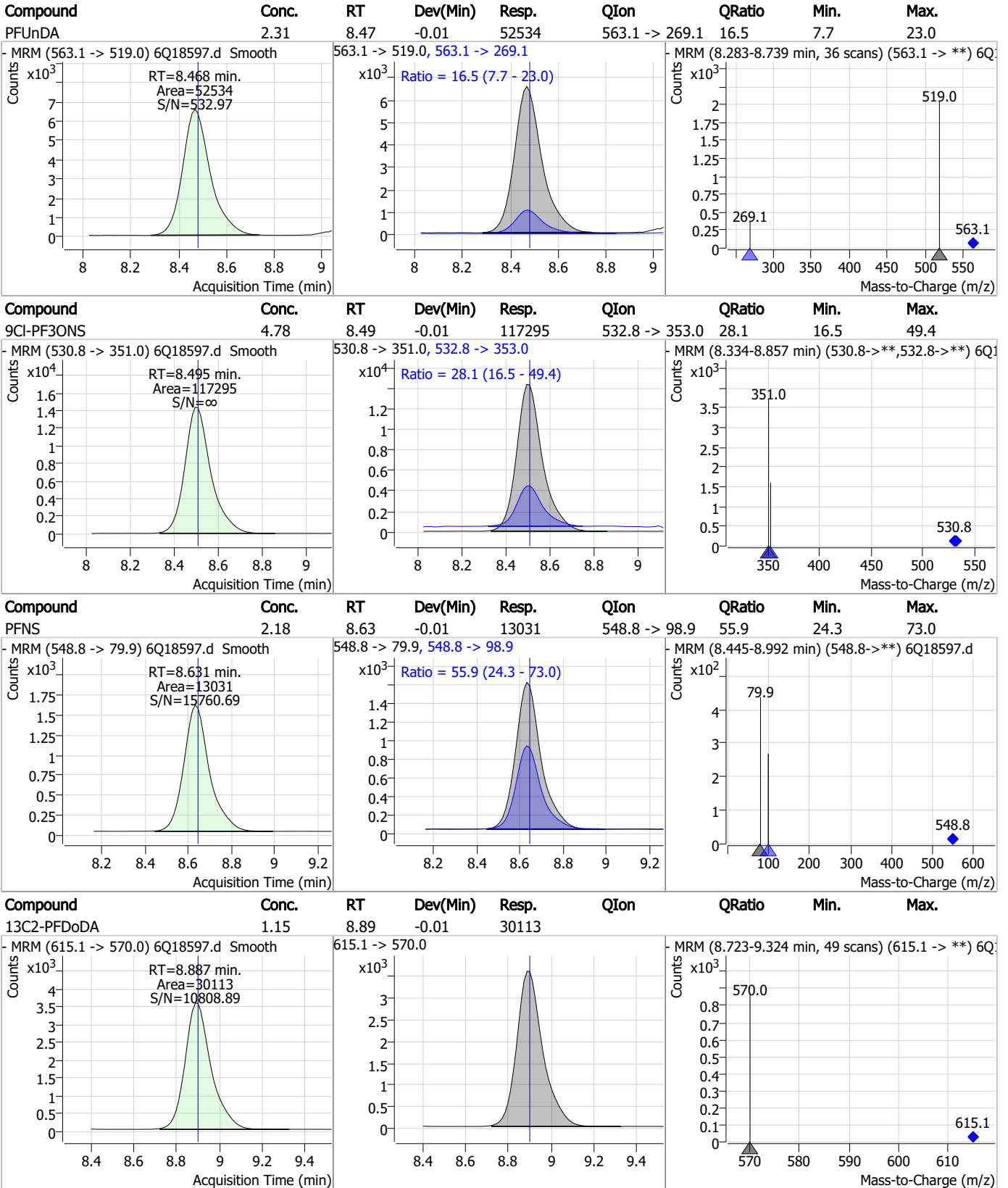
Perfluorinated Compounds by LC/MS/MS



7.7.12 7



Perfluorinated Compounds by LC/MS/MS

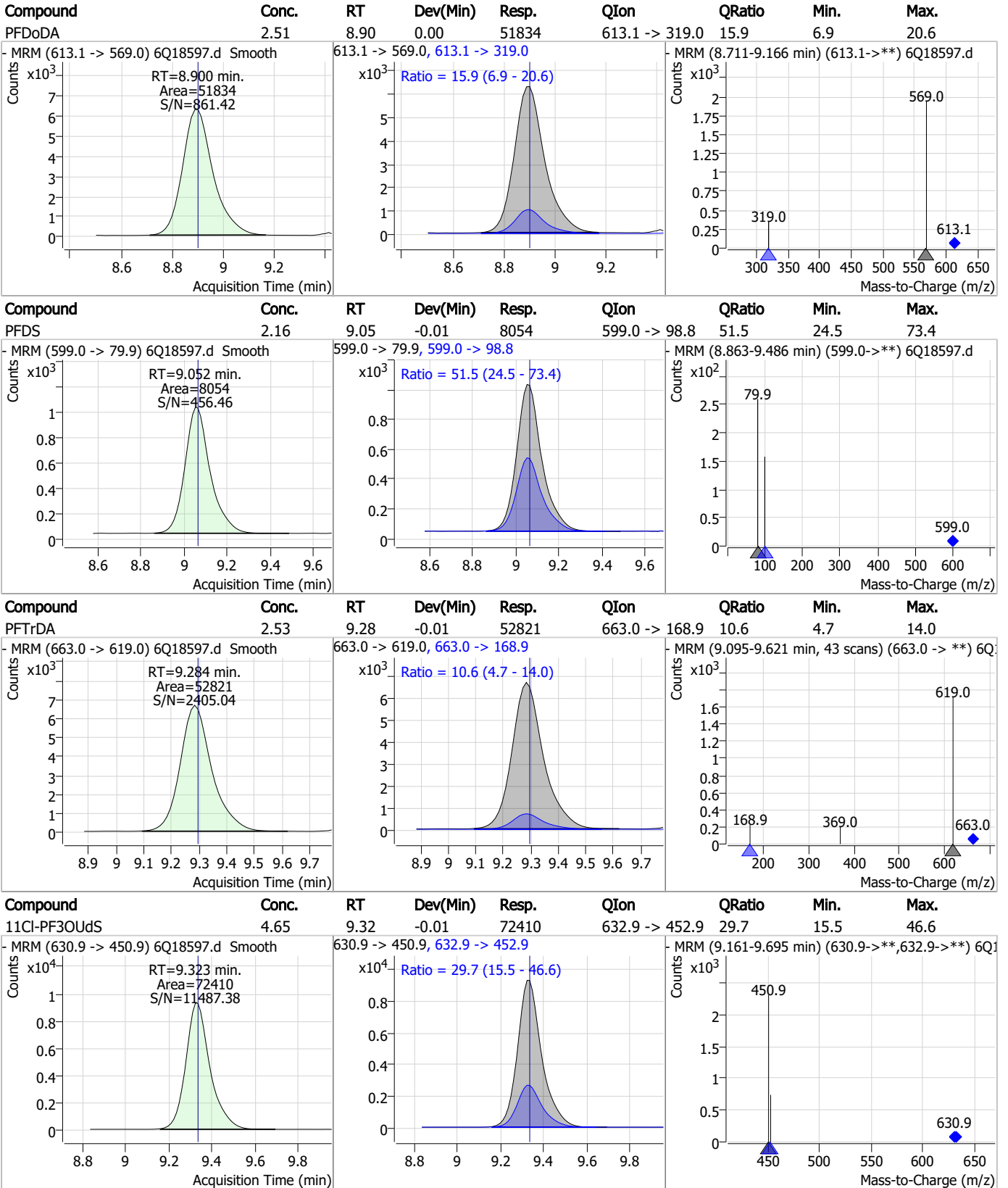


7.7.12

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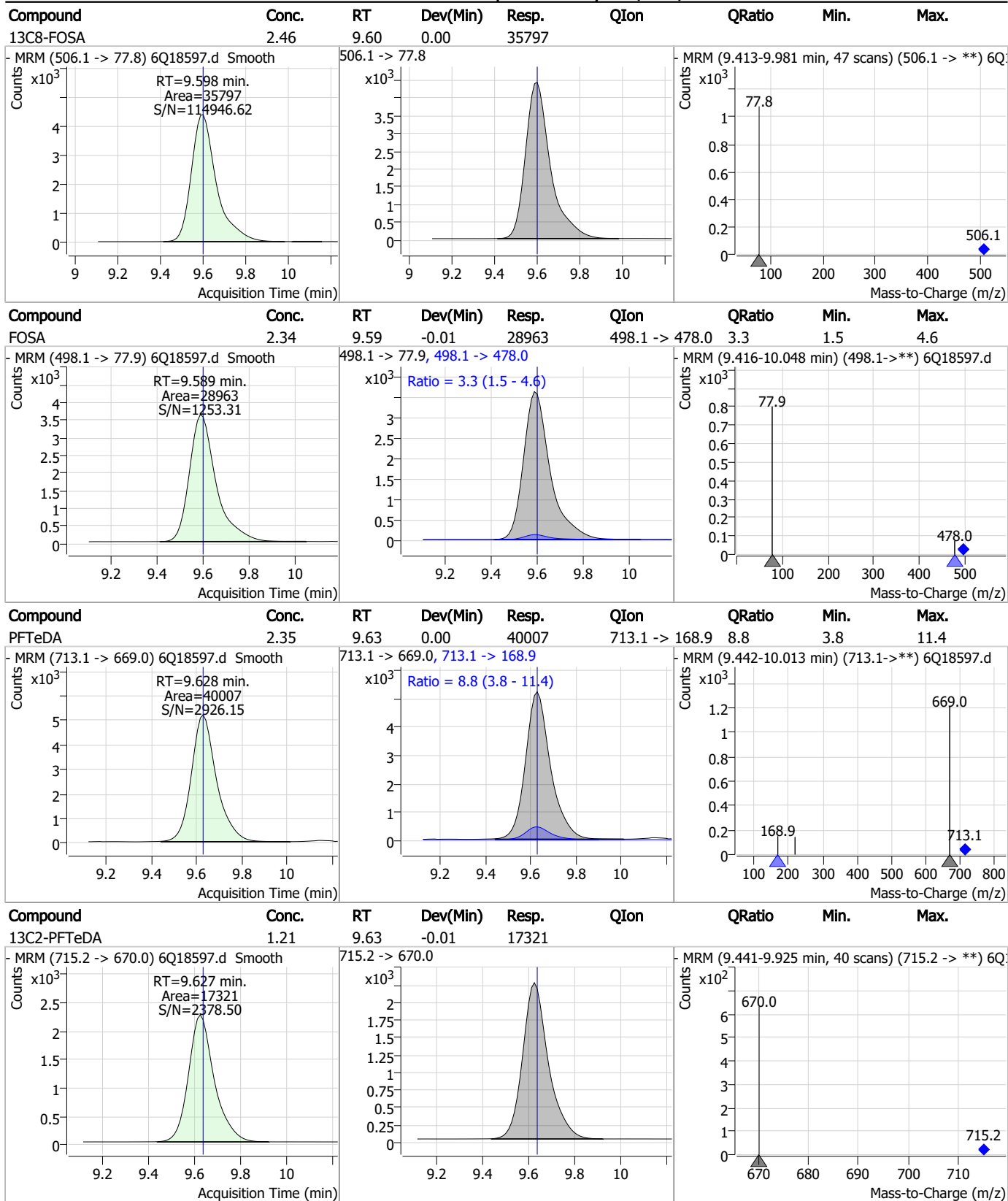
Perfluorinated Compounds by LC/MS/MS



7.7.12 7

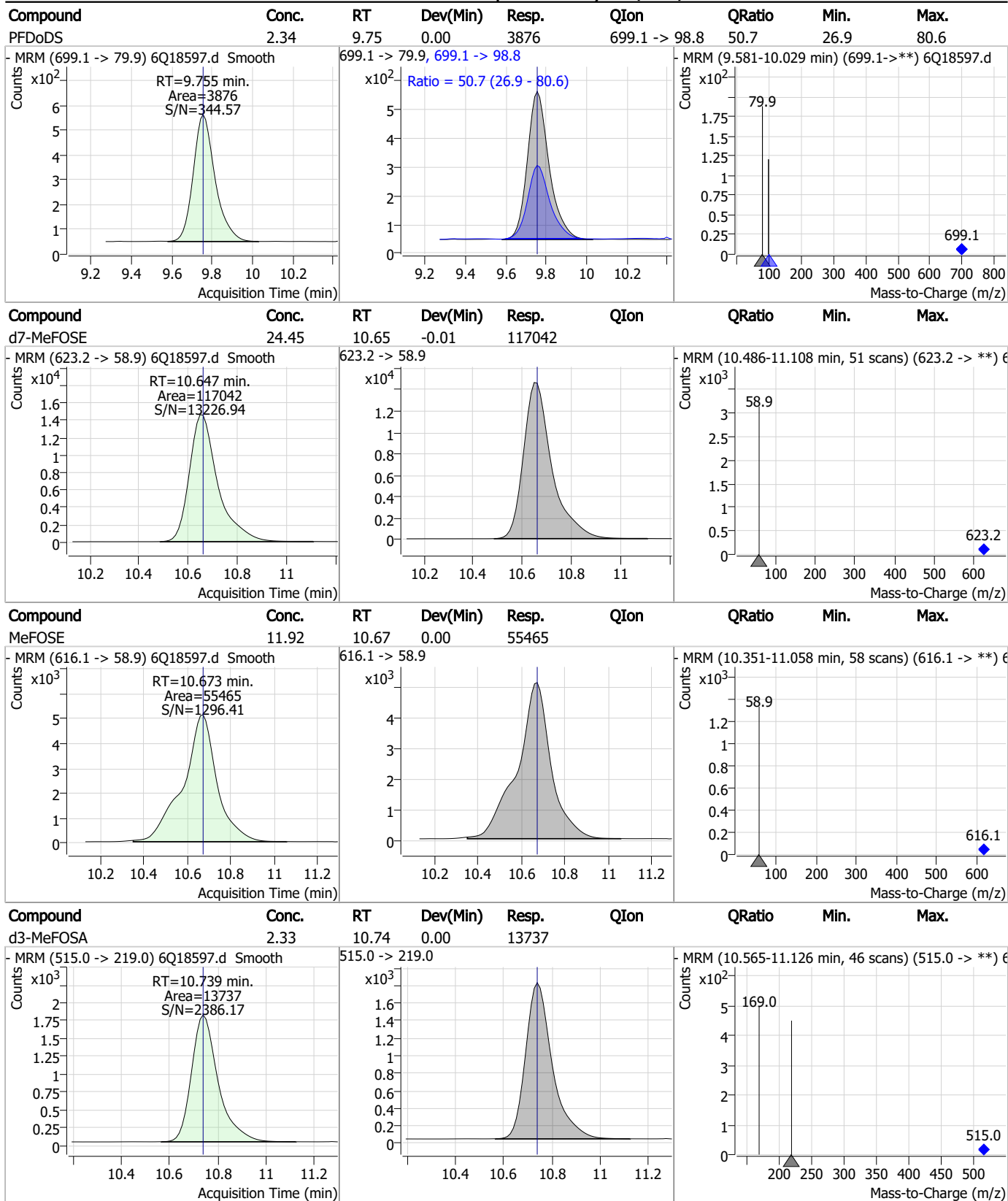


Perfluorinated Compounds by LC/MS/MS



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7

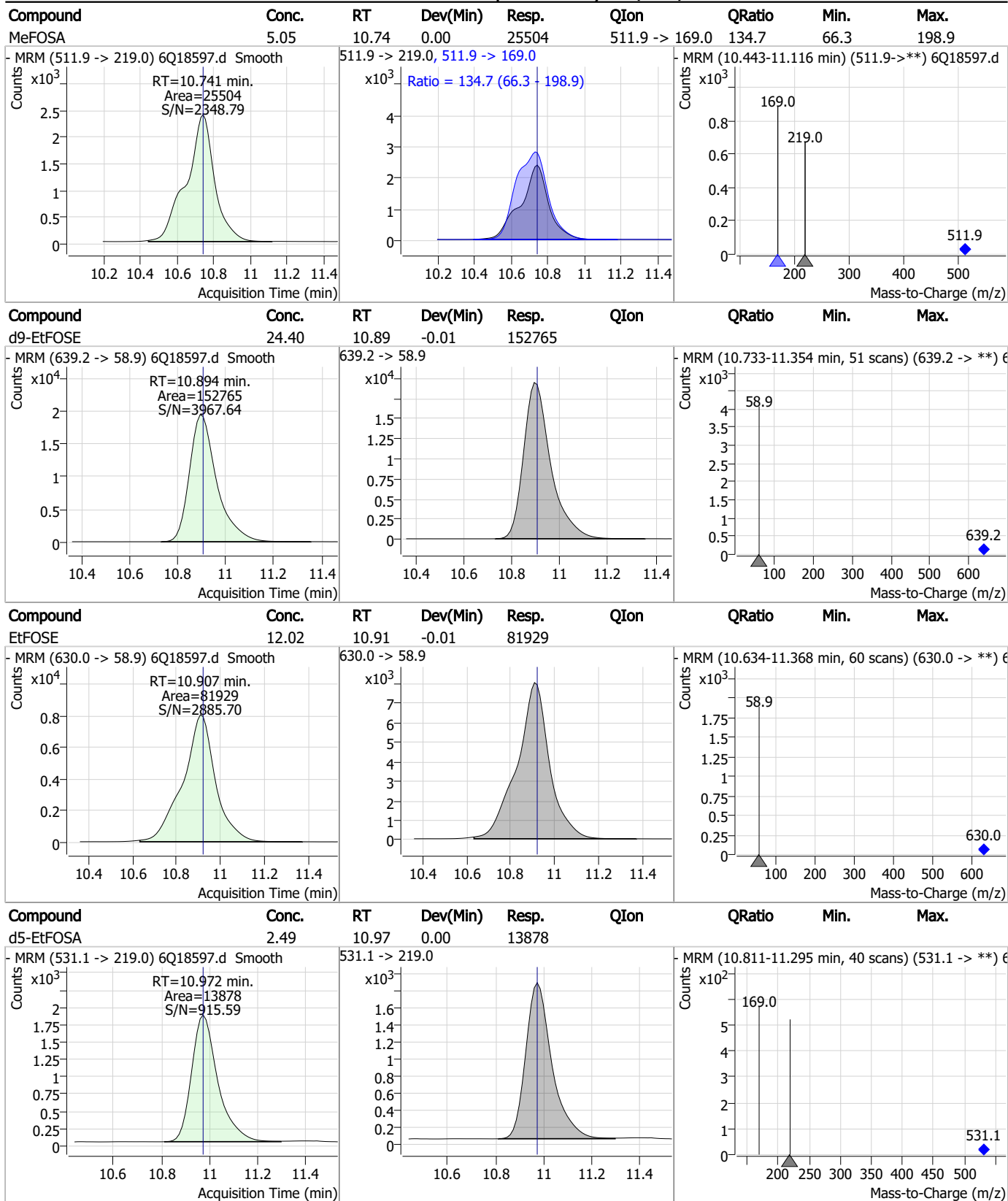
Perfluorinated Compounds by LC/MS/MS



7.7.12
7

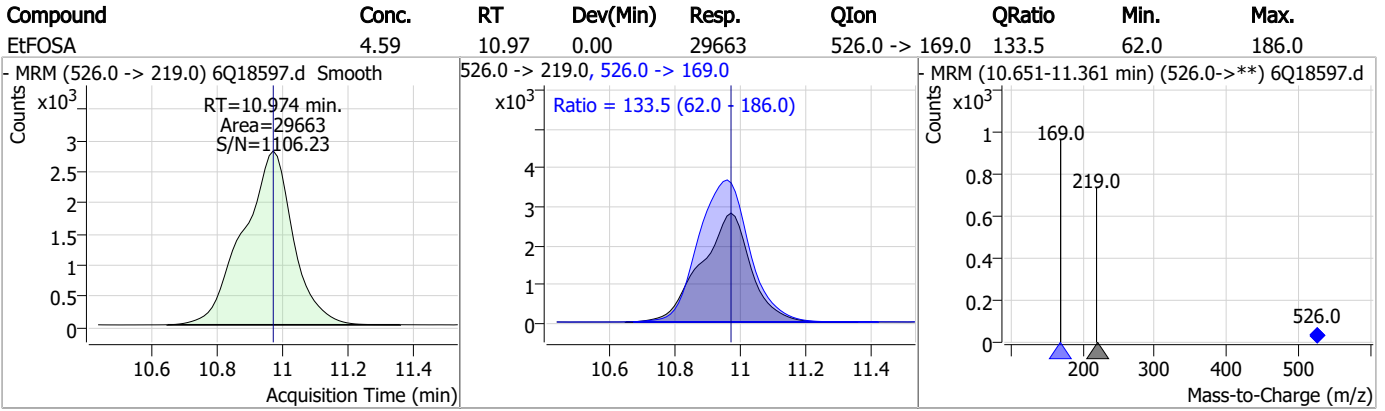


Perfluorinated Compounds by LC/MS/MS



7.7.12
7

Perfluorinated Compounds by LC/MS/MS



7.7.12
7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18597.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 19:55 Supervisor approved: 06/01/23 16:14 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |

7.7.12.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18598.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 5/31/2023 8:10:14 PM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 174414 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 58759 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 63091 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 60117 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 88165 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 42242 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 23966 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31165 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 29424 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15813 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 33723 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 23606 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.118 | 402.1 -> 79.9 | 14691 | 2.50 µg/L | -0.012 |
| M8-PFOS | 8.165 | 507.1 -> 79.9 | 13974 | 2.50 µg/L | -0.012 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3752 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5140 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5077 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27276 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 39893 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 24853 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.647 | 623.2 -> 58.9 | 108123 | 25.00 µg/L | -0.012 |
| M9-EtFOSE | 10.894 | 639.2 -> 58.9 | 143721 | 25.00 µg/L | -0.012 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12331 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13156 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 17844 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 73590 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10237 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 97722 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 34124 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 50245 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 60430 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3752 | 5.49 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.9% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5140 | 5.18 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 103.7% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5077 | 5.05 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 101.0% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 29424 | 1.24 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 99.3% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 15813 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.1% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 23606 | 2.61 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 104.2% | | |
| 13C3-PFHxS | 7.118 | 402.1 -> 79.9 | 14691 | 2.57 µg/L | -0.012 |

7.7.13
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.7% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 174414 | 9.95 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.5% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 60117 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 63091 | 2.47 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.7% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 58759 | 5.00 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 23966 | 1.20 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 95.9% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 31165 | 1.22 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 97.7% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 33723 | 2.48 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.2% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 88165 | 2.41 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.3% | |
| 13C8-PFOS | 8.165 | 507.1 -> 79.9 | 13974 | 2.44 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 42242 | 1.28 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 102.1% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27276 | 4.74 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 94.7% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 39893 | 10.05 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.5% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13156 | 2.39 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 95.5% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 24853 | 4.75 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 94.9% | |
| d7-MeFOSE | 10.647 | 623.2 -> 58.9 | 108123 | 24.13 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 96.5% | |
| d9-EtFOSE | 10.894 | 639.2 -> 58.9 | 143721 | 24.52 µg/L | -0.012 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.1% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 12331 | 2.36 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 94.5% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 4842 | 0.89 µg/L | 95 |
| | | 327.1 -> 80.9 | 1755 | | |
| 6:2FTS | 6.789 | 427.1 -> 407.0 | 4620 | 0.91 µg/L | 97 |
| | | 427.1 -> 80.9 | 1476 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 2389 | 0.85 µg/L | 99 |
| | | 527.1 -> 80.8 | 1036 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 826 | 0.26 µg/L | m 97 |
| | | 584.2 -> 526.0 | 464 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 2646 | 0.23 µg/L | 97 |
| | | 498.1 -> 478.0 | 106 | | |
| MeFOSAA | 8.073 | 570.1 -> 419.0 | 1321 | 0.24 µg/L | 85 |
| | | 570.1 -> 483.0 | 346 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 5251 | 0.91 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 1663 | 0.21 µg/L | 94 |
| | | 298.7 -> 98.8 | 665 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 6171 | 0.22 µg/L | 91 |
| | | 512.9 -> 219.0 | 756 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 4616 | 0.23 µg/L | 89 |
| | | 613.1 -> 319.0 | 842 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 793 | 0.23 µg/L | 95 |

7.7.13
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| | | 599.0 -> 98.8 | 358 | | | |
| PFHpA | 6.370 | 363.1 -> 319.0 | 5949 | 0.22 | µg/L | 92 |
| | | 363.1 -> 169.0 | 1092 | | | |
| PFHpS | 7.673 | 449.0 -> 79.9 | 1481 | 0.22 | µg/L | 91 |
| | | 449.0 -> 98.9 | 825 | | | |
| PFHxA | 5.407 | 313.0 -> 269.0 | 4821 | 0.23 | µg/L | 98 |
| | | 313.0 -> 118.9 | 249 | | | |
| PFHxS | 7.119 | 398.7 -> 79.9 | 1490 | 0.22 | µg/L | m 95 |
| | | 398.7 -> 98.9 | 755 | | | |
| PFNA | 7.545 | 463.0 -> 419.0 | 6101 | 0.20 | µg/L | 90 |
| | | 463.0 -> 219.0 | 1459 | | | |
| PFNS | 8.631 | 548.8 -> 79.9 | 1226 | 0.22 | µg/L | 95 |
| | | 548.8 -> 98.9 | 637 | | | |
| PFOA | 7.028 | 413.0 -> 369.0 | 7928 | 0.21 | µg/L | 91 |
| | | 413.0 -> 169.0 | 1687 | | | |
| PFOS | 8.166 | 498.9 -> 79.9 | 1428 | 0.22 | µg/L | m 99 |
| | | 498.9 -> 98.8 | 773 | | | |
| PFPeA | 4.212 | 263.0 -> 219.0 | 6468 | 0.46 | µg/L | 100 |
| PFPeS | 6.410 | 349.1 -> 79.9 | 1445 | 0.22 | µg/L | 99 |
| | | 349.1 -> 98.9 | 697 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 3555 | 0.23 | µg/L | 97 |
| | | 713.1 -> 168.9 | 311 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 5046 | 0.25 | µg/L | 96 |
| | | 663.0 -> 168.9 | 544 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 4952 | 0.24 | µg/L | 95 |
| | | 563.1 -> 269.1 | 860 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 6005 | 0.40 | µg/L | 93 |
| | | 632.9 -> 452.9 | 2115 | | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 10195 | 0.43 | µg/L | 99 |
| | | 532.8 -> 353.0 | 3300 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 22740 | 0.43 | µg/L | 97 |
| | | 376.9 -> 84.8 | 6394 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 1537 | 0.45 | µg/L | 97 |
| | | 284.9 -> 184.9 | 193 | | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 1032 | 1.14 | µg/L | 99 |
| | | 241.0 -> 117.0 | 154 | | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 22415 | 5.88 | µg/L | 92 |
| | | 341.0 -> 217.0 | 17292 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 15932 | 6.10 | µg/L | 95 |
| | | 441.0 -> 336.9 | 33750 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 2706 | 0.47 | µg/L | 91 |
| | | 526.0 -> 169.0 | 3635 | | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 7110 | 1.11 | µg/L | 100 |
| MeFOSA | 10.741 | 511.9 -> 219.0 | 2336 | 0.48 | µg/L | 99 |
| | | 511.9 -> 169.0 | 3130 | | | |
| MeFOSE | 10.673 | 616.1 -> 58.9 | 5117 | 1.19 | µg/L | 100 |
| PFDoDS | 9.755 | 699.1 -> 79.9 | 349 | 0.22 | µg/L | 90 |
| | | 699.1 -> 98.8 | 164 | | | |
| NFDHA | 5.288 | 295.0 -> 201.0 | 1178 | 0.46 | µg/L | 100 |
| | | 295.0 -> 84.9 | 317 | | | |
| PFMBA | 4.626 | 279.0 -> 85.1 | 4295 | 0.45 | µg/L | 100 |
| PFMPA | 3.363 | 229.0 -> 84.9 | 3360 | 0.45 | µg/L | 100 |
| PFEESA | 5.862 | 314.8 -> 134.9 | 11003 | 0.41 | µg/L | 99 |
| | | 314.8 -> 82.9 | 394 | | | |

= Qualifier out of range, m = manually integrated, + = Area summed

7.7.13
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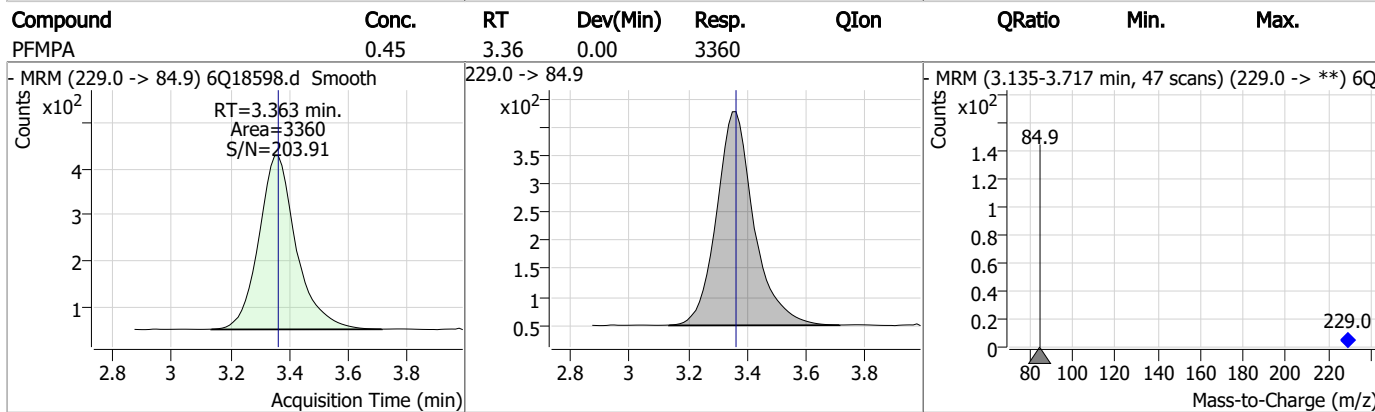
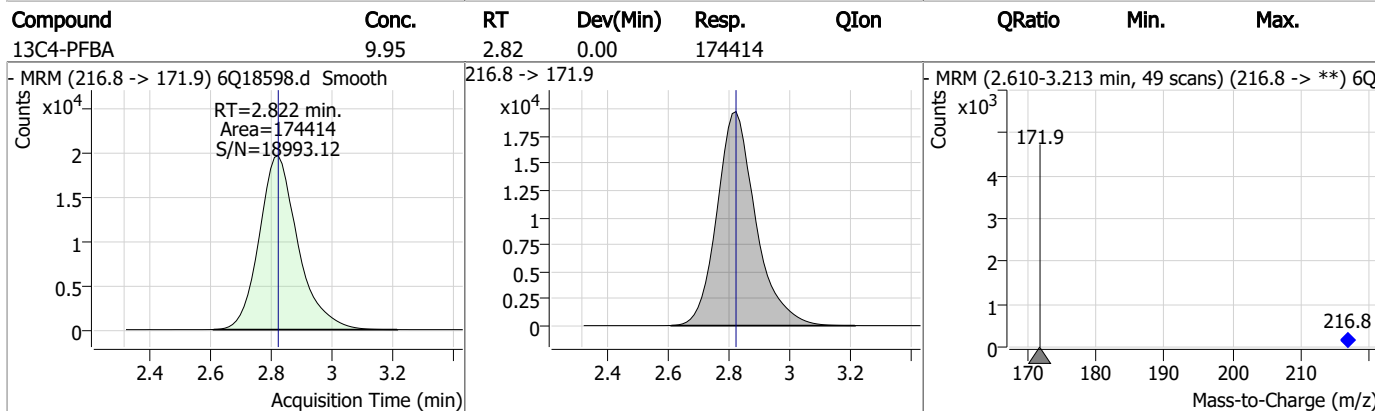
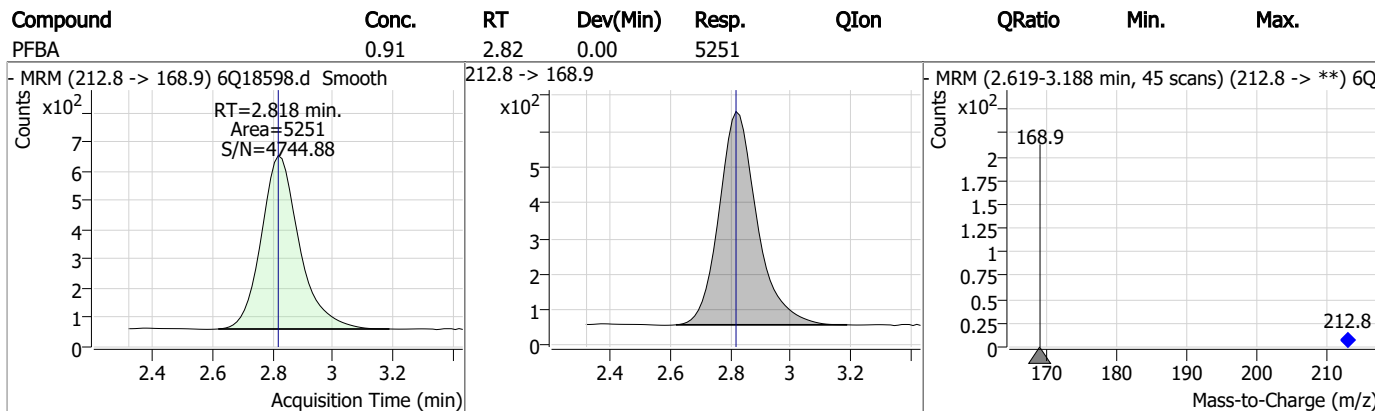
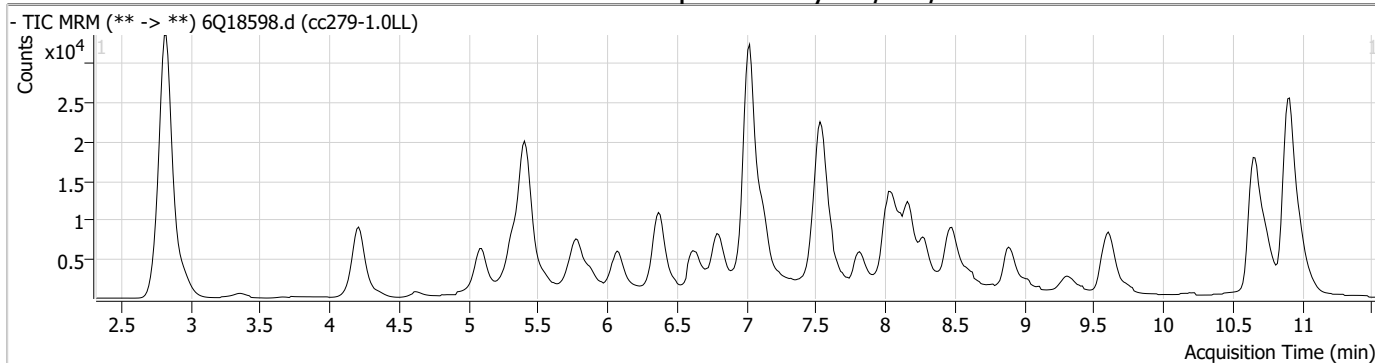
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.7.13

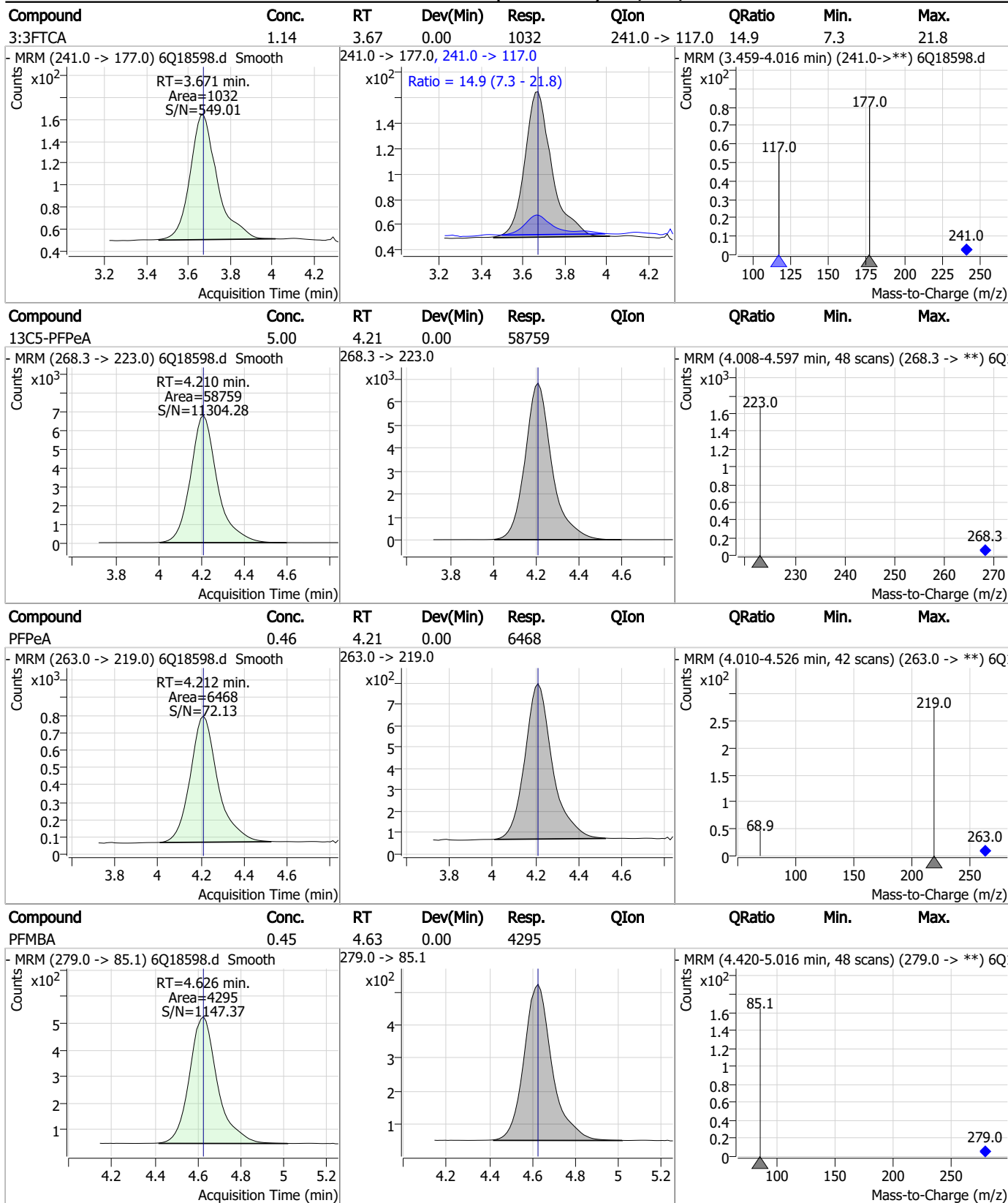
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Perfluorinated Compounds by LC/MS/MS



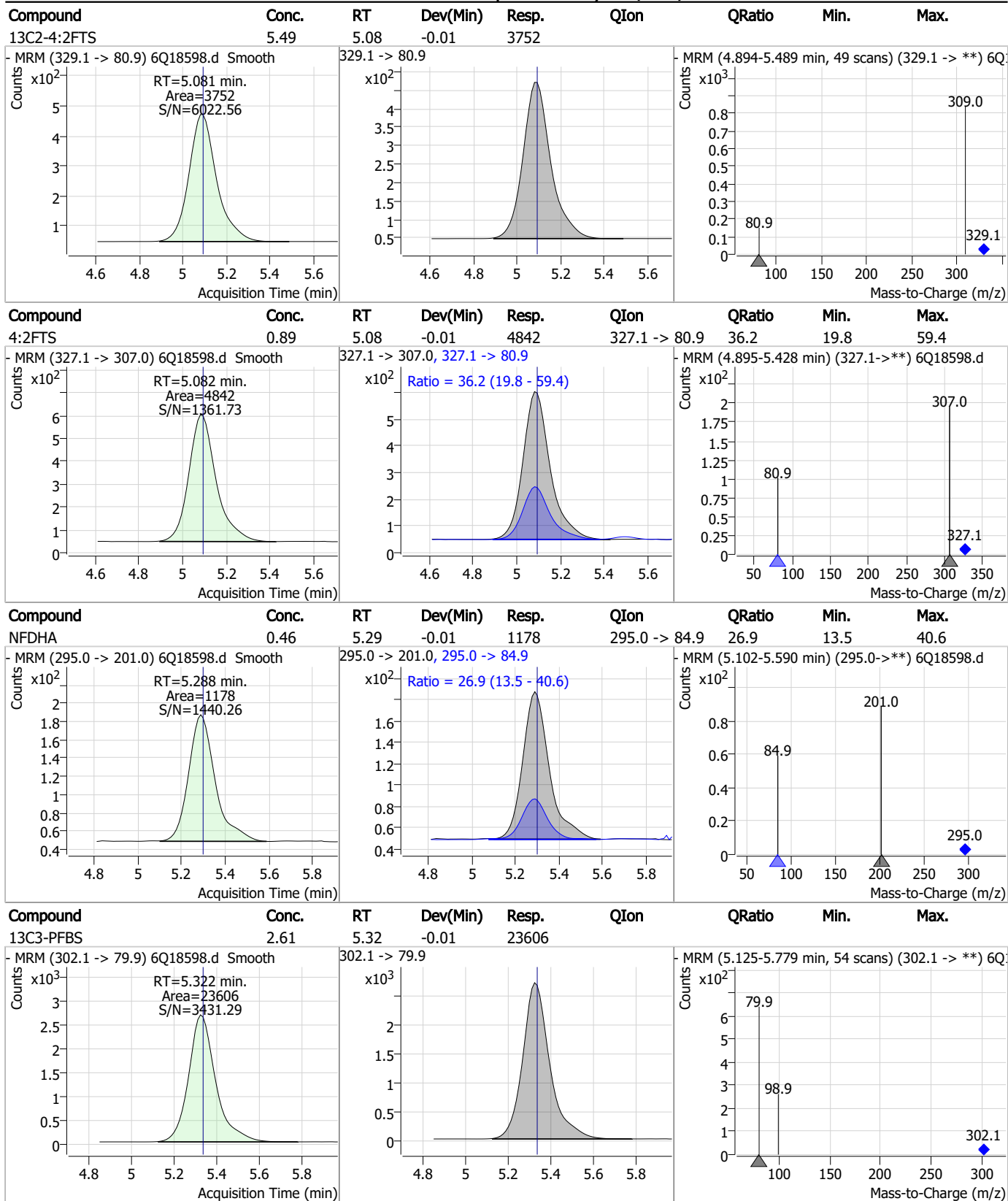
7.7.13
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Perfluorinated Compounds by LC/MS/MS



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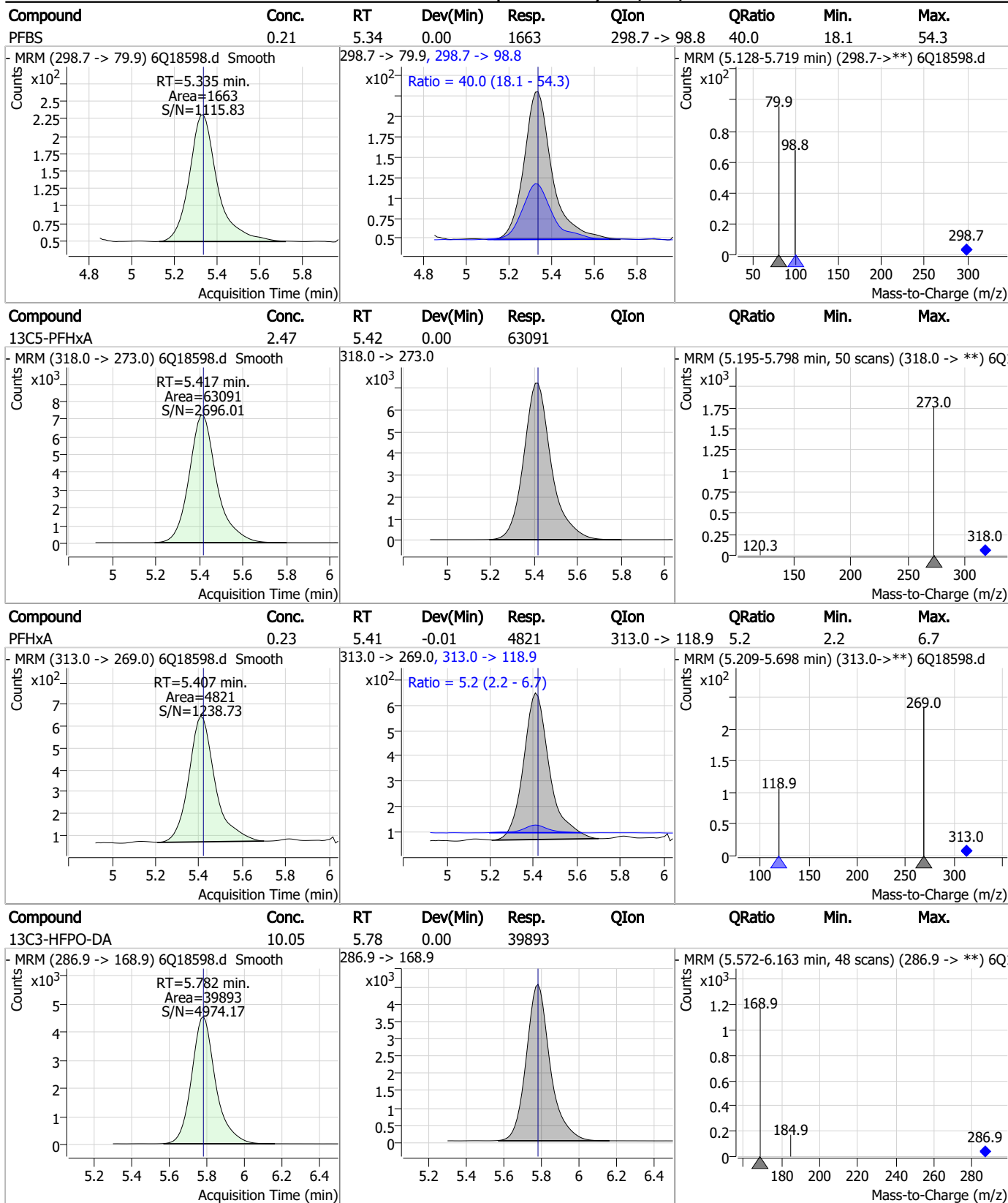
Perfluorinated Compounds by LC/MS/MS



7.7.13
7

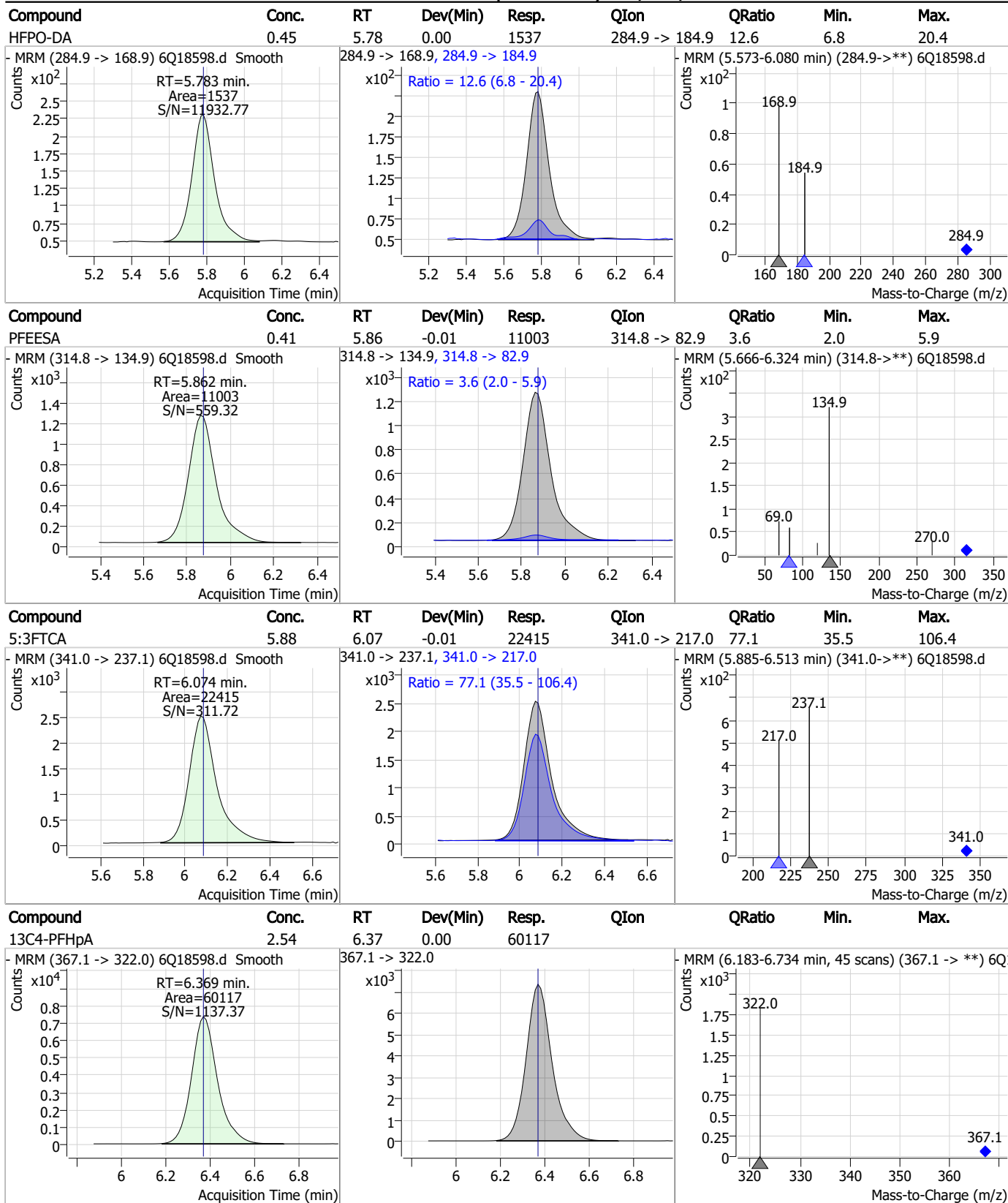


Perfluorinated Compounds by LC/MS/MS



7.7.13
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Perfluorinated Compounds by LC/MS/MS

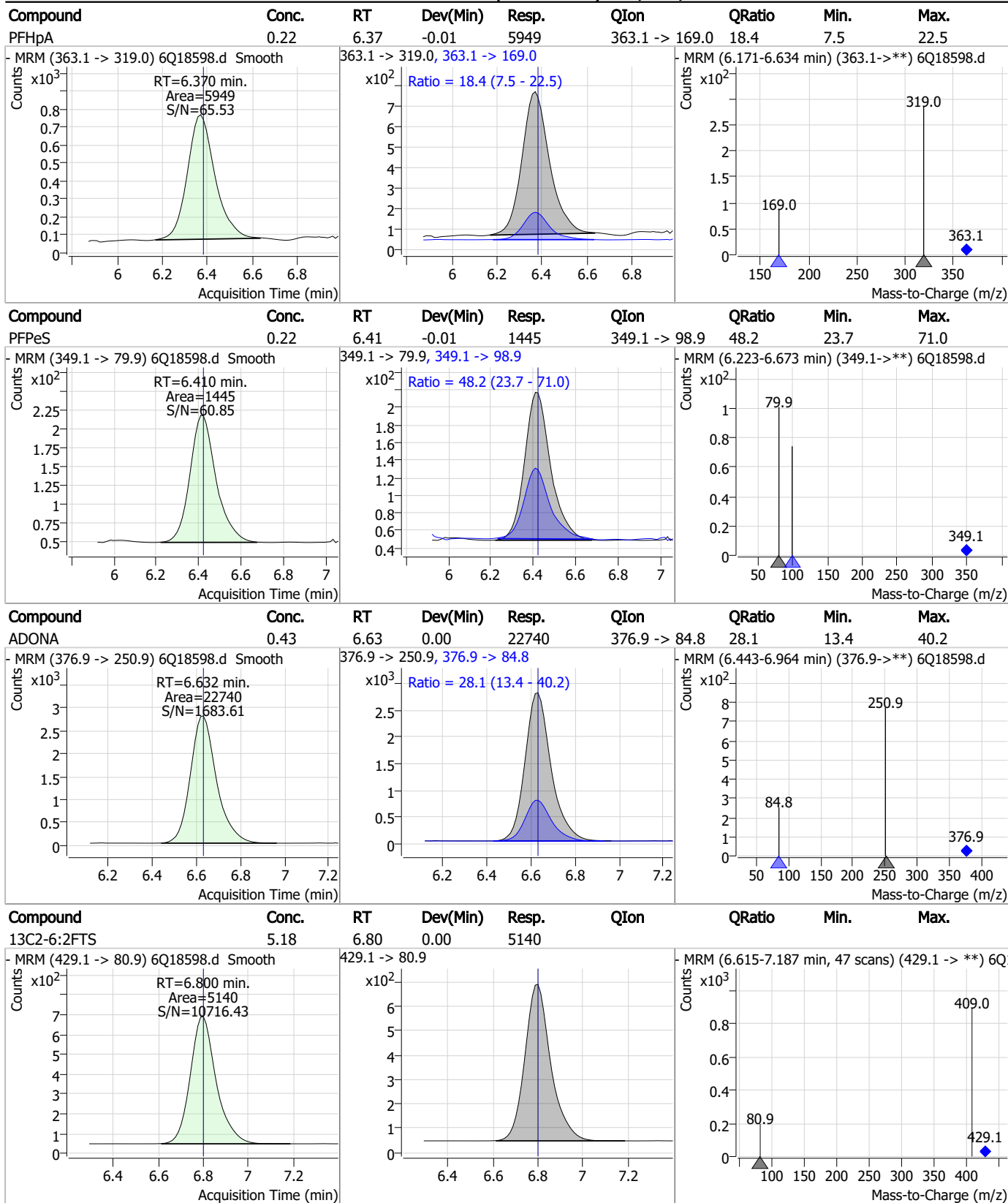


7.7.13

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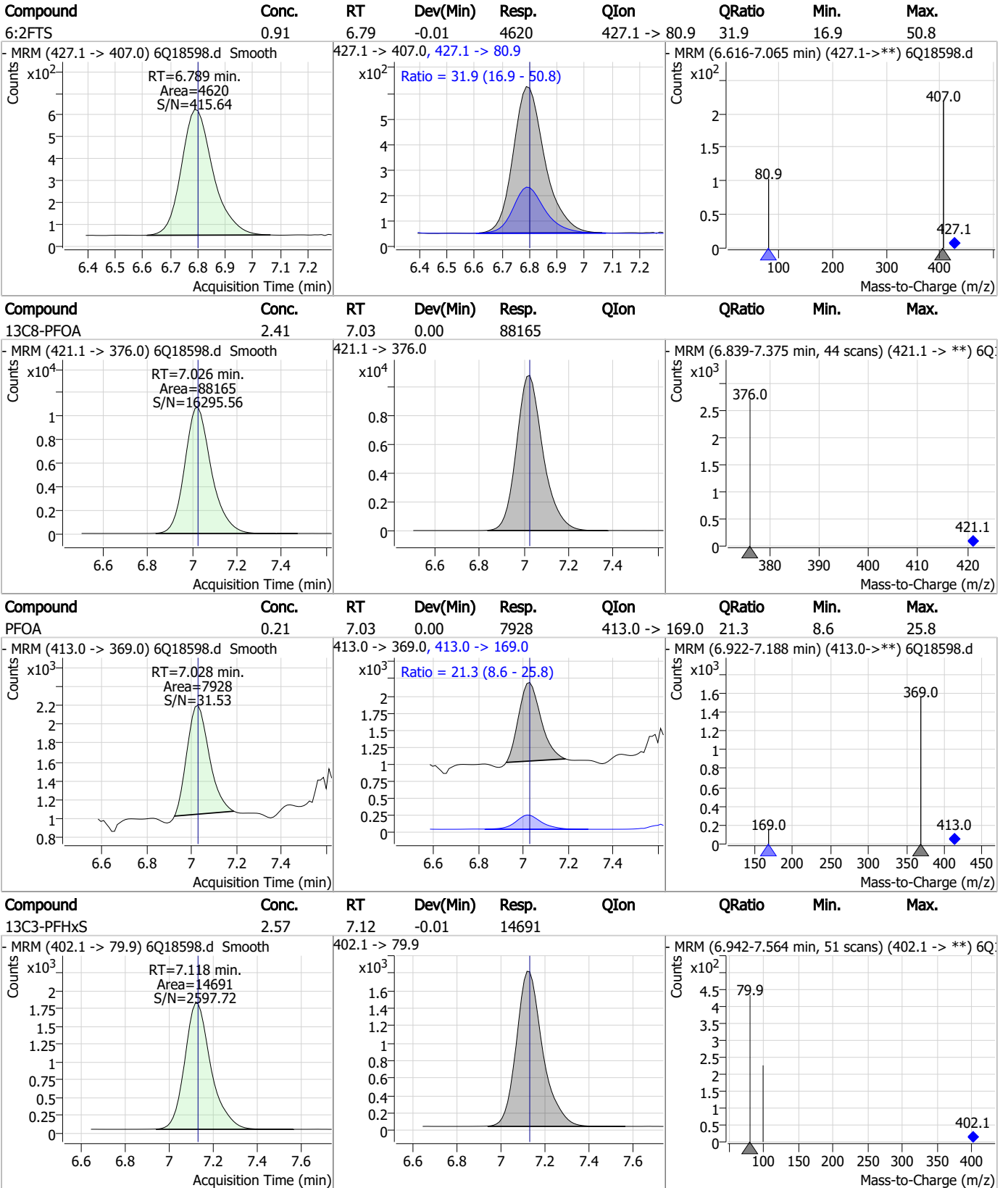


Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

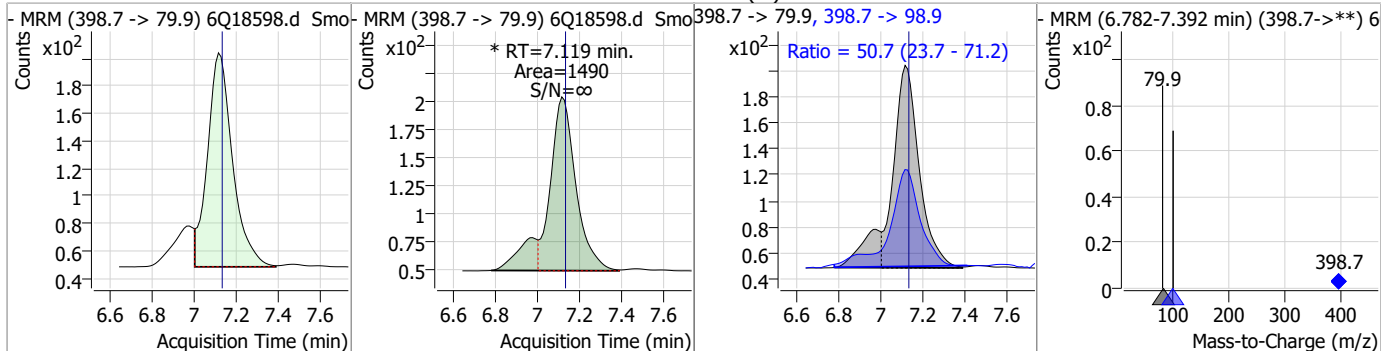


7.7.13
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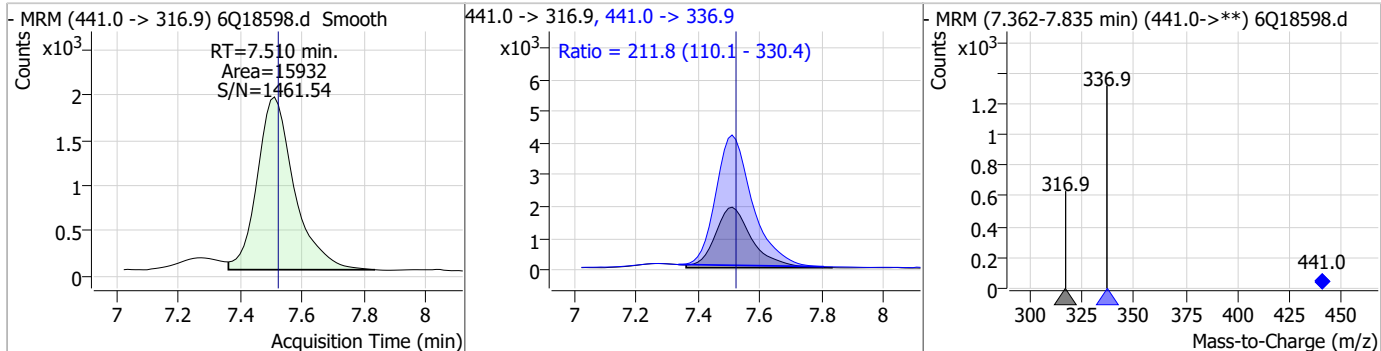


Perfluorinated Compounds by LC/MS/MS

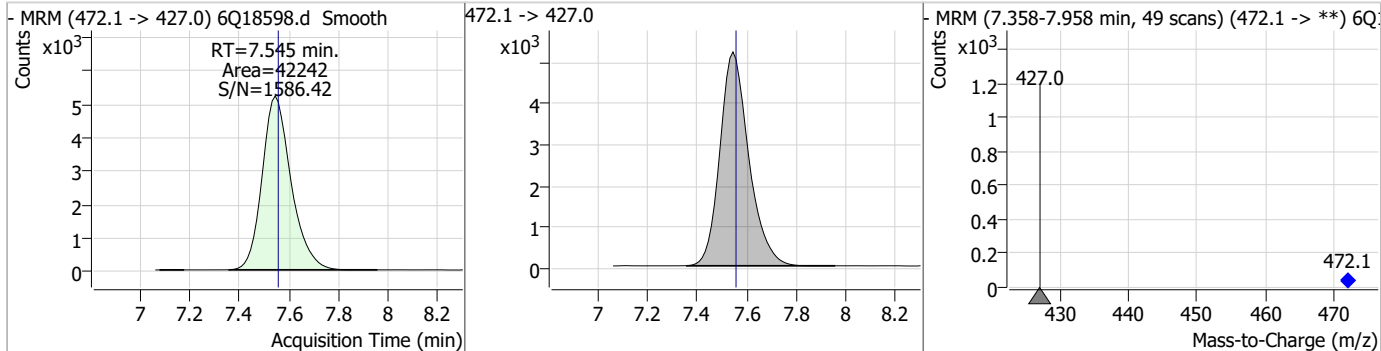
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|----------|---------------|--------|------|------|
| PFHxS | 0.22 | 7.12 | -0.01 | 1490 (m) | 398.7 -> 98.9 | 50.7 | 23.7 | 71.2 |



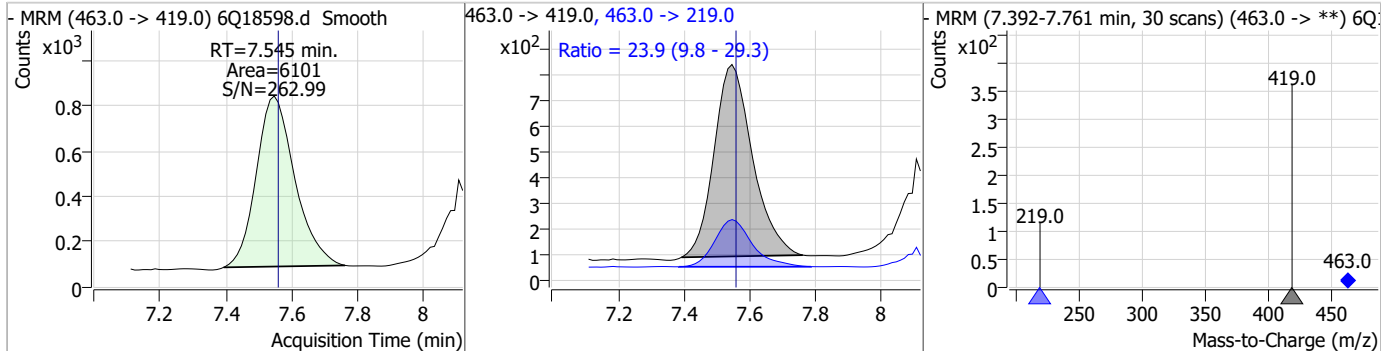
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|-------|-------|
| 7:3FTCA | 6.10 | 7.51 | -0.01 | 15932 | 441.0 -> 336.9 | 211.8 | 110.1 | 330.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C9-PFNA | 1.28 | 7.54 | -0.01 | 42242 | | | | |

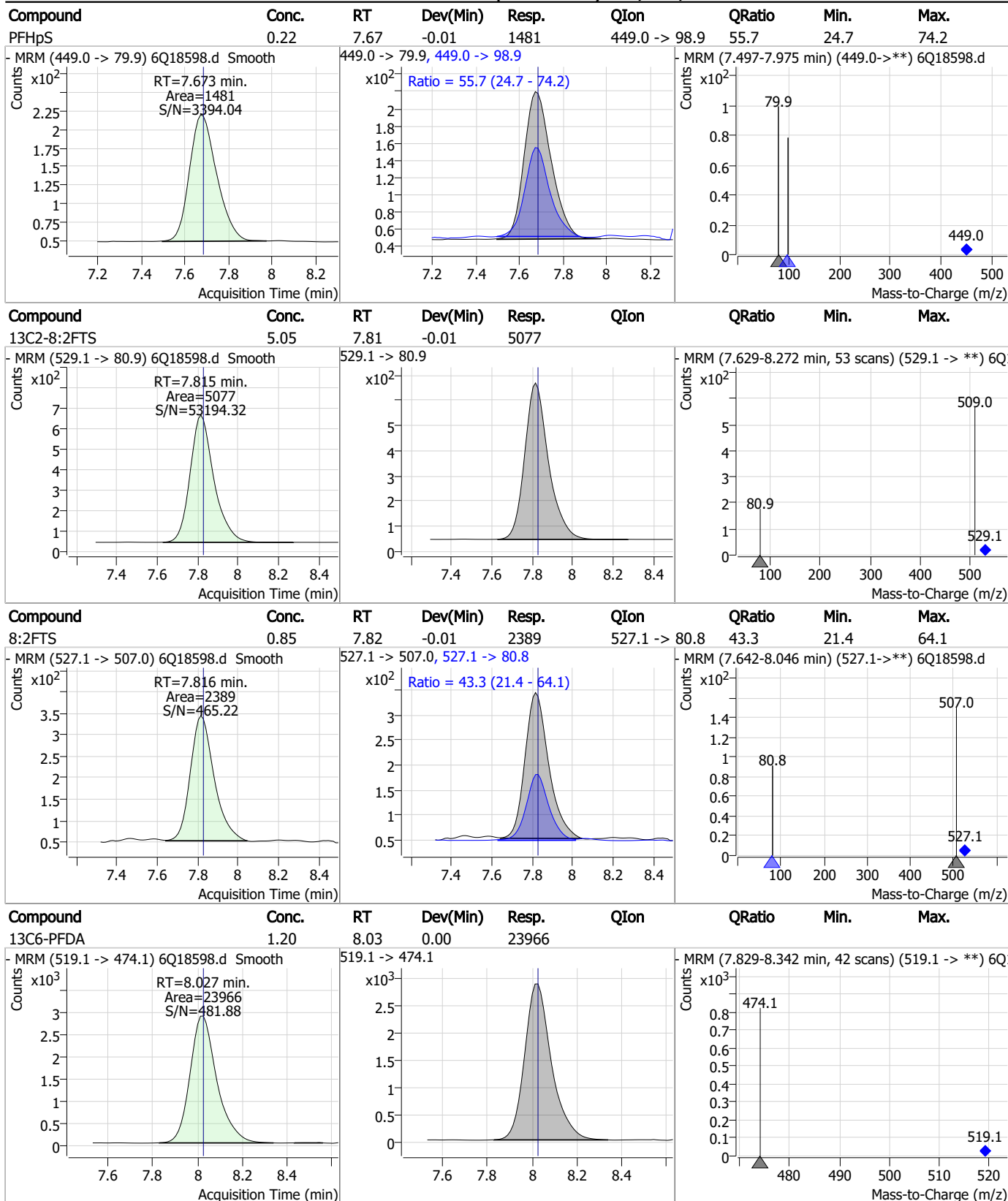


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFNA | 0.20 | 7.55 | -0.01 | 6101 | 463.0 -> 219.0 | 23.9 | 9.8 | 29.3 |



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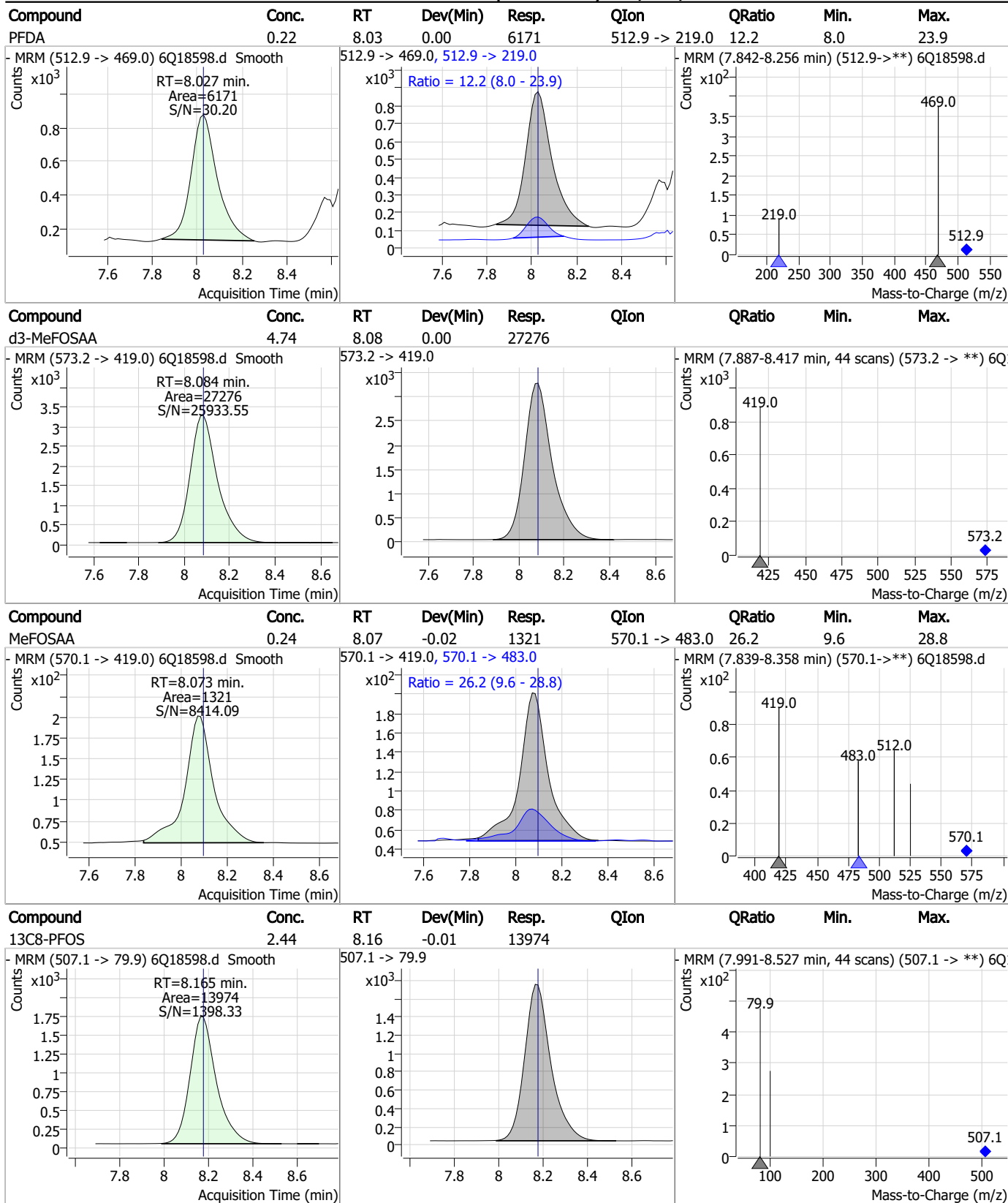
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

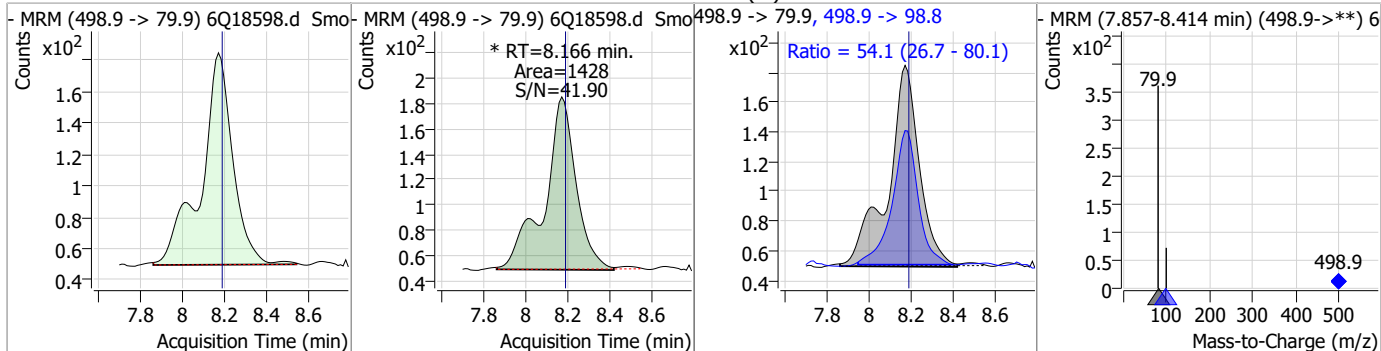


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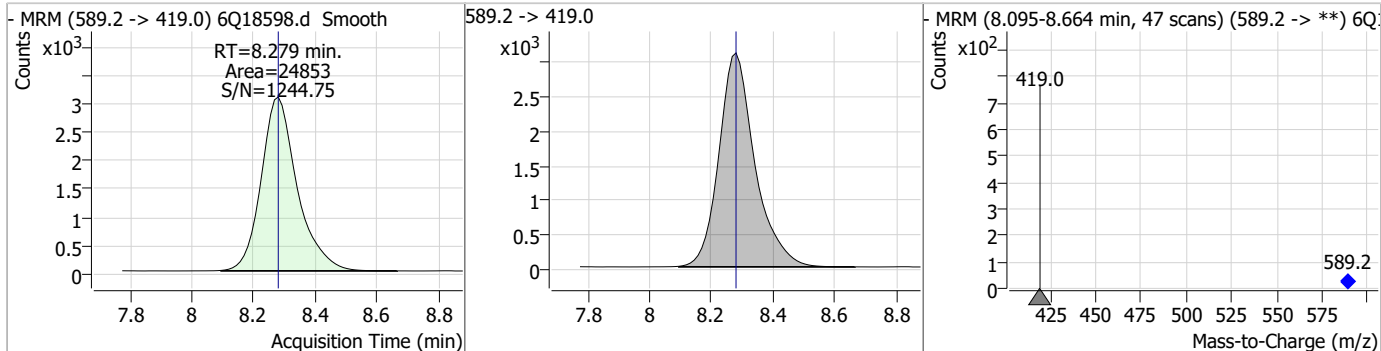
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Perfluorinated Compounds by LC/MS/MS

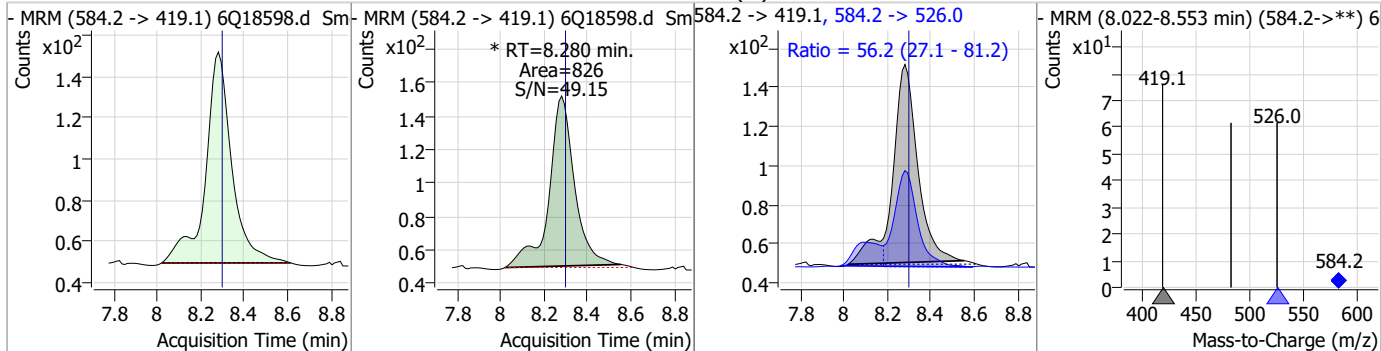
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|----------|---------------|--------|------|------|
| PFOS | 0.22 | 8.17 | -0.01 | 1428 (m) | 498.9 -> 98.8 | 54.1 | 26.7 | 80.1 |



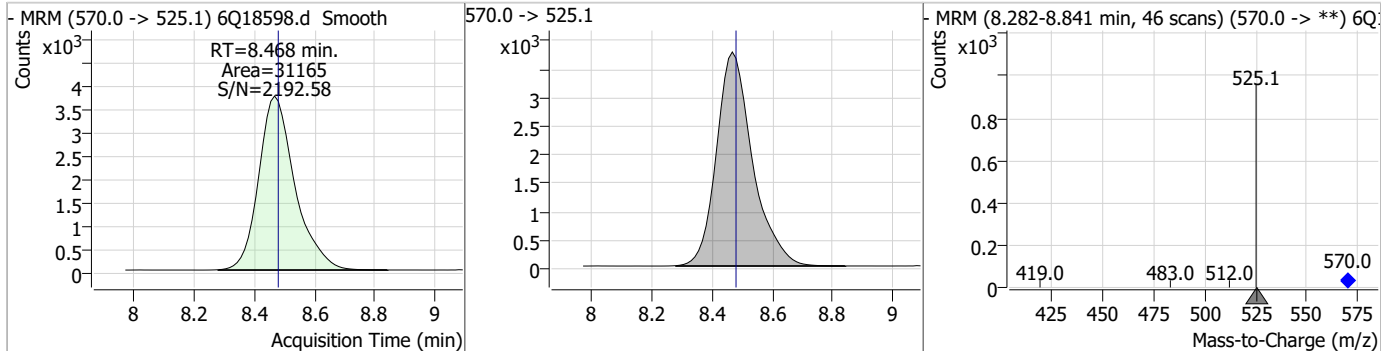
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d5-EtFOSAA | 4.75 | 8.28 | 0.00 | 24853 | | | | |



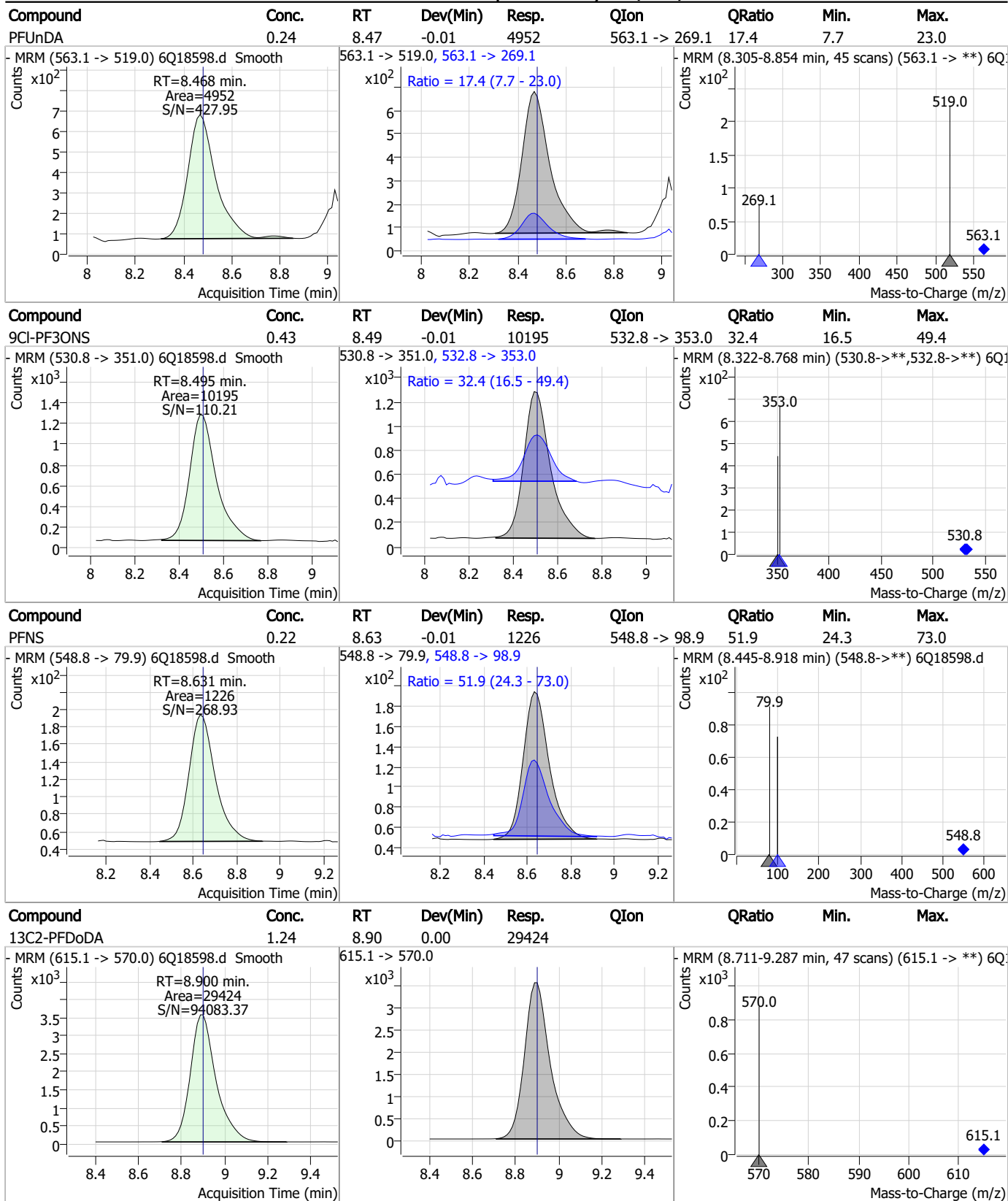
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|---------|----------------|--------|------|------|
| EtFOSAA | 0.26 | 8.28 | -0.01 | 826 (m) | 584.2 -> 526.0 | 56.2 | 27.1 | 81.2 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C7-PFUnDA | 1.22 | 8.47 | -0.01 | 31165 | | | | |



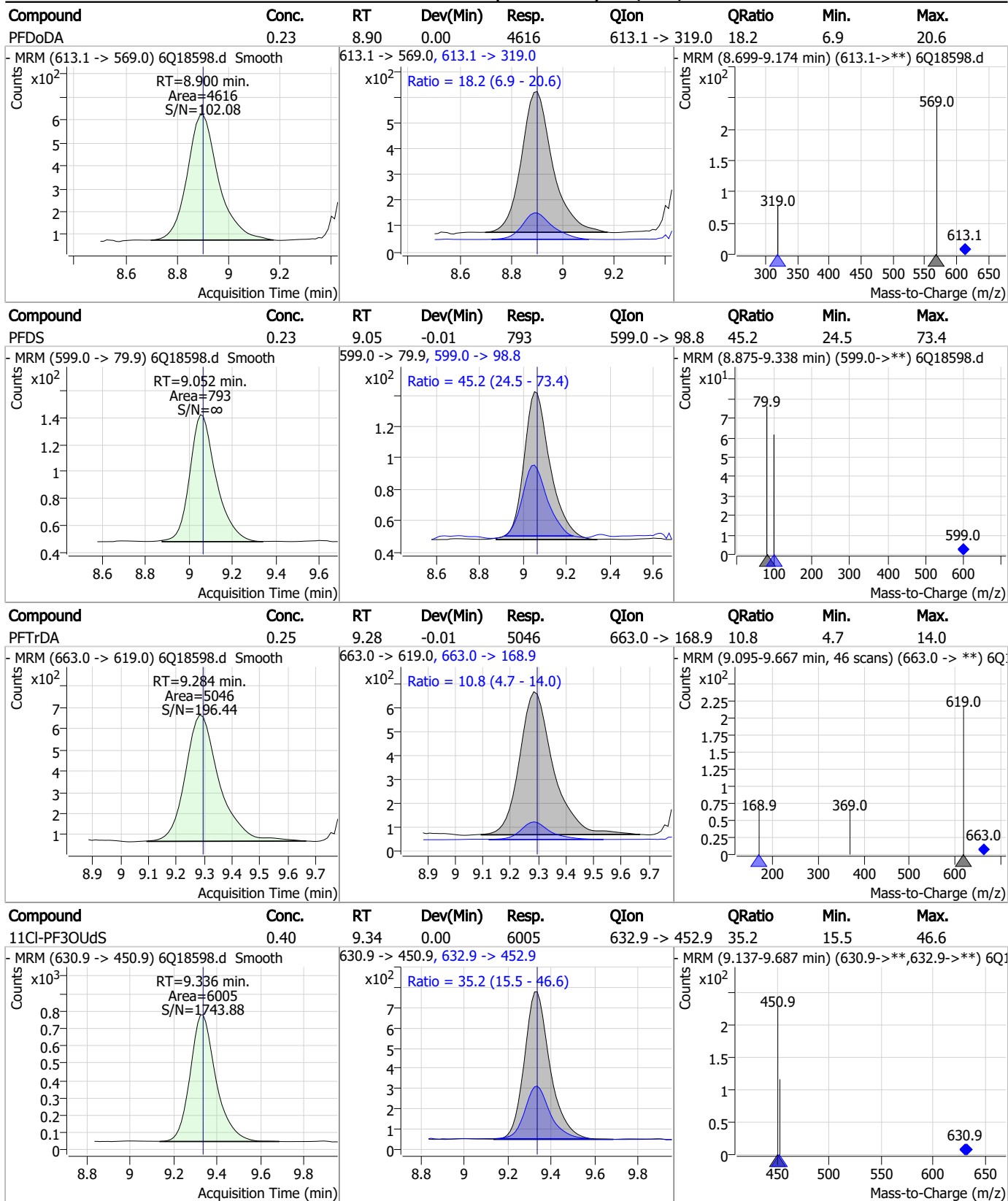
Perfluorinated Compounds by LC/MS/MS



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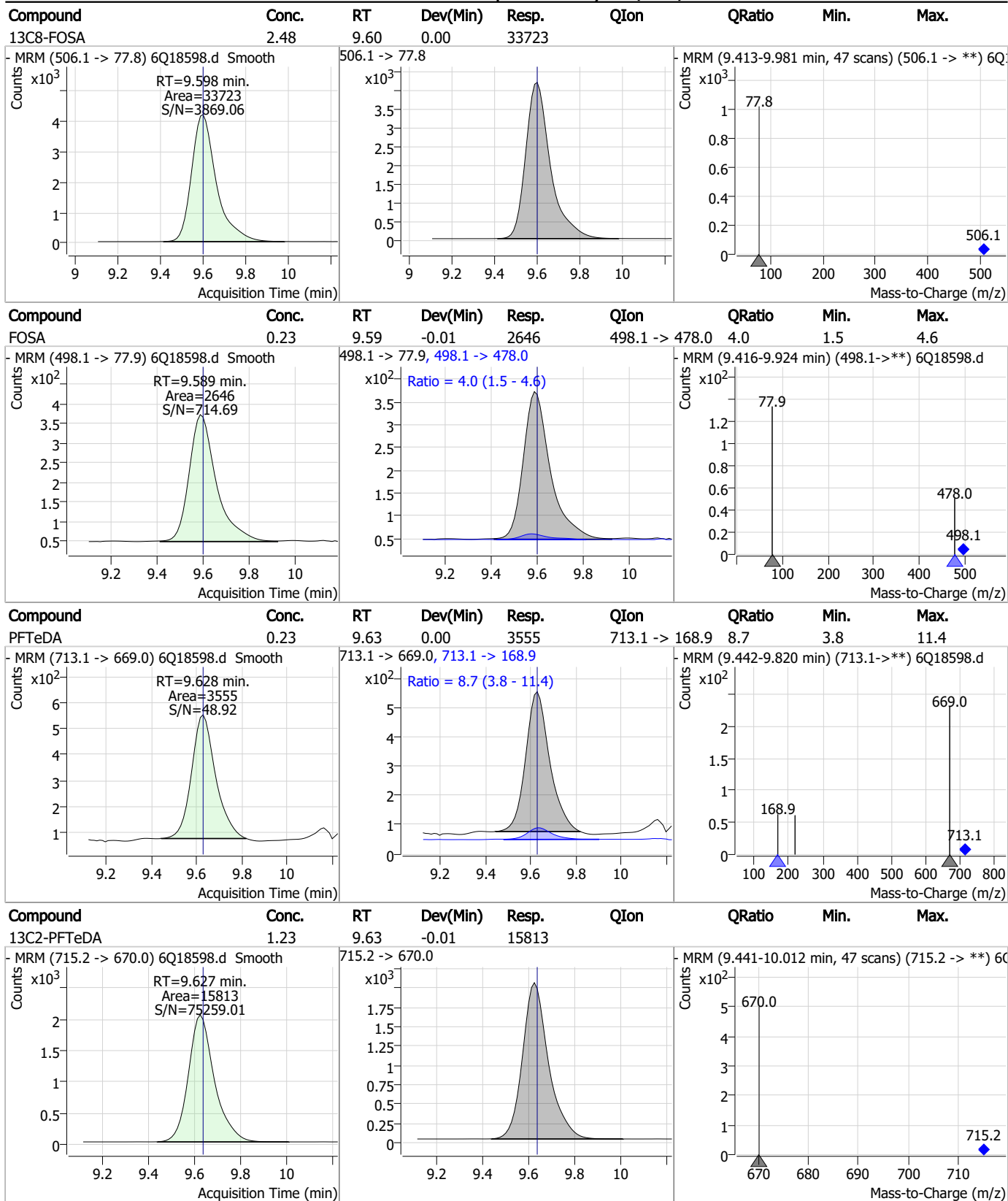
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Perfluorinated Compounds by LC/MS/MS



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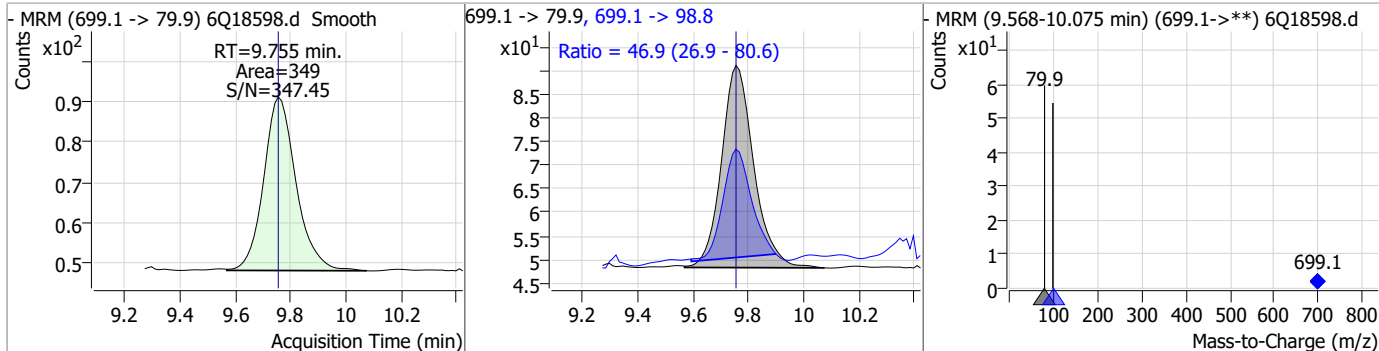
Perfluorinated Compounds by LC/MS/MS



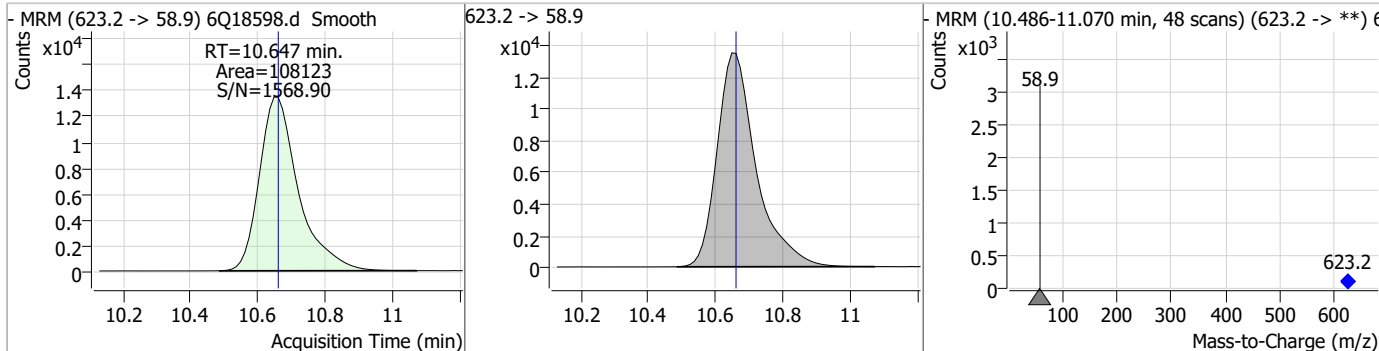
7.7.13
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Perfluorinated Compounds by LC/MS/MS

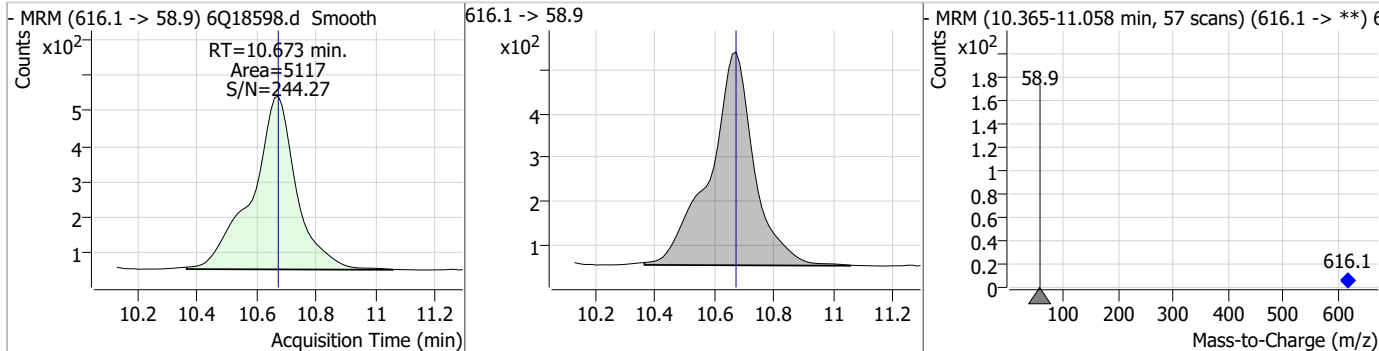
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 0.22 | 9.75 | 0.00 | 349 | 699.1 -> 98.8 | 46.9 | 26.9 | 80.6 |



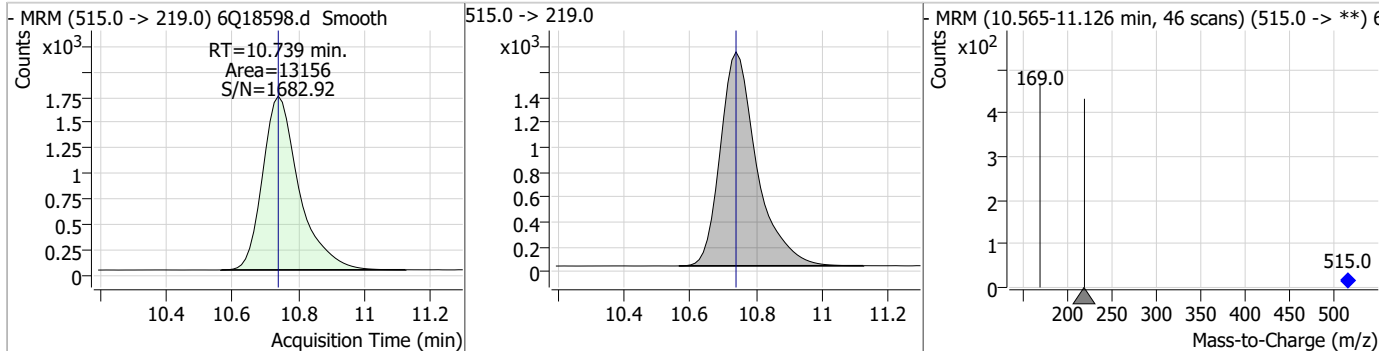
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d7-MeFOSE | 24.13 | 10.65 | -0.01 | 108123 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 1.19 | 10.67 | 0.00 | 5117 | | | | |

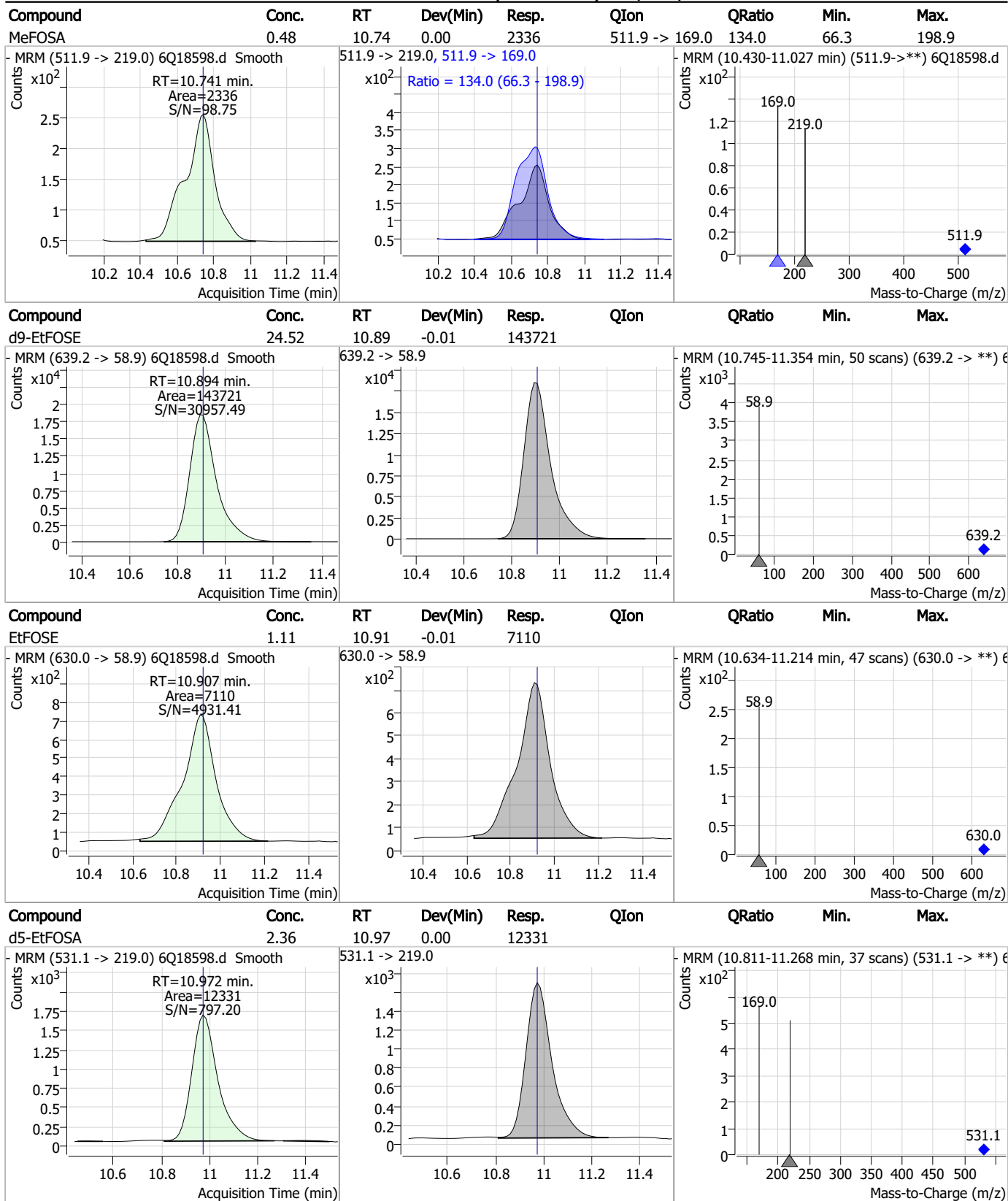


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.39 | 10.74 | 0.00 | 13156 | | | | |



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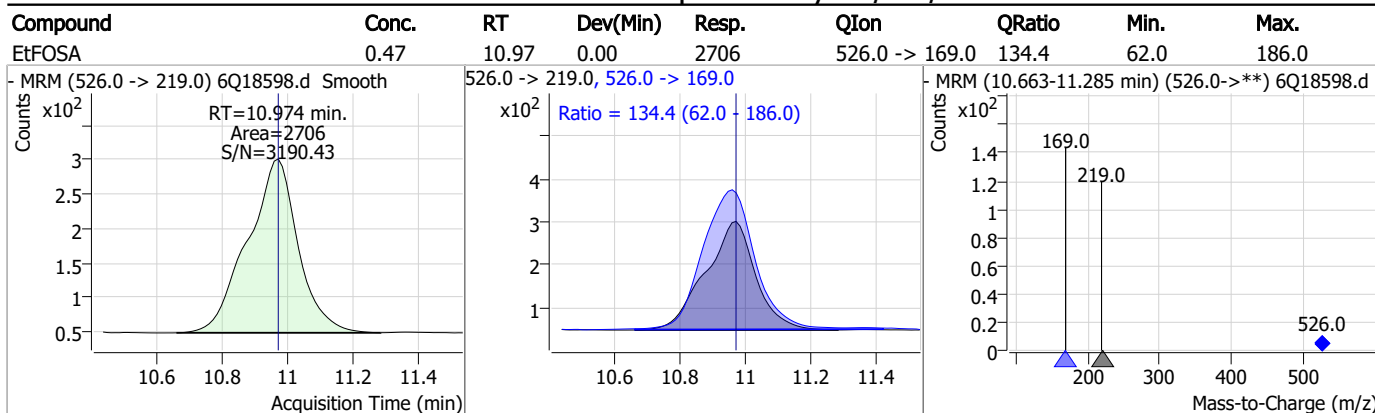
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18598.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 05/31/23 20:10 Supervisor approved: 06/01/23 16:14 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.12 | Split peak |
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.17 | Split peak |
| EtFOSAA | 2991-50-6 | | 8.28 | Split peak |

7.7.13.1

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18641.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:20:34 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 193604 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 64803 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 68747 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 66809 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 101290 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 45104 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.014 | 519.1 -> 474.1 | 27803 | 1.25 µg/L | -0.013 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35188 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 33730 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17603 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 37509 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.334 | 302.1 -> 79.9 | 25040 | 2.50 µg/L | 0.000 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 16140 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 14602 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.093 | 329.1 -> 80.9 | 4259 | 5.00 µg/L | 0.000 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5957 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5951 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27948 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42232 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26485 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 120342 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 160430 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 14225 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14192 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.165 | 502.8 -> 79.9 | 18957 | 2.50 µg/L | -0.025 |
| 13C3-PFBA | 2.827 | 216.0 -> 172.0 | 80817 | 5.00 µg/L | 0.000 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11033 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 105546 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 37745 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 53000 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 66120 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.093 | 329.1 -> 80.9 | 4259 | 5.79 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 115.7% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5957 | 5.57 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 111.5% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5951 | 5.49 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.8% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 33730 | 1.29 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 102.9% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17603 | 1.23 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.7% | | |
| 13C3-PFBS | 5.334 | 302.1 -> 79.9 | 25040 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 102.6% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 16140 | 2.62 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.7% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 193604 | 10.06 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 66809 | 2.58 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.3% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 68747 | 2.46 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.2% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 64803 | 5.04 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.8% | |
| 13C6-PFDA | 8.014 | 519.1 -> 474.1 | 27803 | 1.26 µg/L | -0.013 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35188 | 1.25 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.8% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 37509 | 2.60 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.8% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 101290 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.5% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 14602 | 2.40 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.2% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 45104 | 1.29 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 103.3% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 27948 | 4.57 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 91.3% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42232 | 9.72 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 97.2% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14192 | 2.42 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.9% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26485 | 4.76 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 95.2% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 120342 | 25.28 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 101.1% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 160430 | 25.76 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 103.1% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 14225 | 2.57 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.6% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.094 | 327.1 -> 307.0 | 54503 | 8.81 µg/L | 97 |
| | | 327.1 -> 80.9 | 20659 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 51806 | 8.85 µg/L | 98 |
| | | 427.1 -> 80.9 | 18070 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 31719 | 9.58 µg/L | 93 |
| | | 527.1 -> 80.8 | 12077 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 8617 | 2.53 µg/L | 96 |
| | | 584.2 -> 526.0 | 4916 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 29472 | 2.27 µg/L | 100 |
| | | 498.1 -> 478.0 | 891 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 15964 | 2.78 µg/L | 99 |
| | | 570.1 -> 483.0 | 3103 | | |
| PFBA | 2.831 | 212.8 -> 168.9 | 61373 | 9.58 µg/L | 100 |
| PFBS | 5.335 | 298.7 -> 79.9 | 17775 | 2.09 µg/L | 95 |
| | | 298.7 -> 98.8 | 7007 | | |
| PFDA | 8.014 | 512.9 -> 469.0 | 78918 | 2.45 µg/L | 97 |
| | | 512.9 -> 219.0 | 11599 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 53397 | 2.31 µg/L | 95 |
| | | 613.1 -> 319.0 | 8459 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 8593 | 2.35 µg/L | 98 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 4100 | 2.27 µg/L | 95 |
| | | 363.1 -> 319.0 | 66986 | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 11317 | 2.37 µg/L | 99 |
| | | 449.0 -> 79.9 | 16558 | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 8237 | 2.38 µg/L | 99 |
| | | 313.0 -> 269.0 | 54845 | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 2712 | 2.12 µg/L | 100 |
| | | 398.7 -> 79.9 | 15504 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7317 | 2.38 µg/L | 99 |
| | | 463.0 -> 419.0 | 76221 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 15116 | 2.24 µg/L | 88 |
| | | 548.8 -> 79.9 | 13104 | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 7467 | 2.33 µg/L | 97 |
| | | 413.0 -> 369.0 | 100757 | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 18648 | 2.28 µg/L | 98 |
| | | 498.9 -> 79.9 | 15205 | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 7924 | 4.76 µg/L | 100 |
| | | 263.0 -> 219.0 | 74090 | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 16179 | 2.22 µg/L | 97 |
| | | 349.1 -> 98.9 | 7376 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 42110 | 2.43 µg/L | 98 |
| | | 713.1 -> 168.9 | 3477 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 55755 | 2.38 µg/L | 97 |
| | | 663.0 -> 168.9 | 5803 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 55858 | 2.44 µg/L | 97 |
| | | 563.1 -> 269.1 | 9262 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 71466 | 4.51 µg/L | 99 |
| | | 632.9 -> 452.9 | 22500 | | |
| 9CI-PF3ONS | 8.495 | 530.8 -> 351.0 | 112295 | 4.50 µg/L | 99 |
| | | 532.8 -> 353.0 | 36155 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 264040 | 4.71 µg/L | 99 |
| | | 376.9 -> 84.8 | 69214 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 16988 | 4.75 µg/L | 99 |
| | | 284.9 -> 184.9 | 2251 | | |
| 3:3FTCA | 3.684 | 241.0 -> 177.0 | 11721 | 11.77 µg/L | 97 |
| | | 241.0 -> 117.0 | 1573 | | |
| 5:3FTCA | 6.086 | 341.0 -> 237.1 | 248817 | 59.92 µg/L | 94 |
| | | 341.0 -> 217.0 | 187838 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 176829 | 62.18 µg/L | 98 |
| | | 441.0 -> 336.9 | 383951 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 30756 | 4.64 µg/L | 95 |
| | | 526.0 -> 169.0 | 39840 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 83477 | 11.66 µg/L | 100 |
| | | 511.9 -> 219.0 | 25647 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 36031 | 4.91 µg/L | 93 |
| | | 616.1 -> 58.9 | 57270 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3799 | 11.97 µg/L | 100 |
| | | 699.1 -> 98.8 | 2005 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 13457 | 2.34 µg/L | 99 |
| | | 295.0 -> 84.9 | 3637 | | |
| NFDHA | 5.299 | 279.0 -> 85.1 | 50850 | 4.79 µg/L | 100 |
| | | 229.0 -> 84.9 | 39382 | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 128876 | 4.80 µg/L | 100 |
| | | 314.8 -> 82.9 | 4488 | | |
| PFMPA | 3.363 | | | 4.78 µg/L | 100 |
| | | | | | |
| PFEESA | 5.875 | | | 4.40 µg/L | 99 |
| | | | | | |

7.7.14
7

= Qualifier out of range, m = manually integrated, + = Area summed



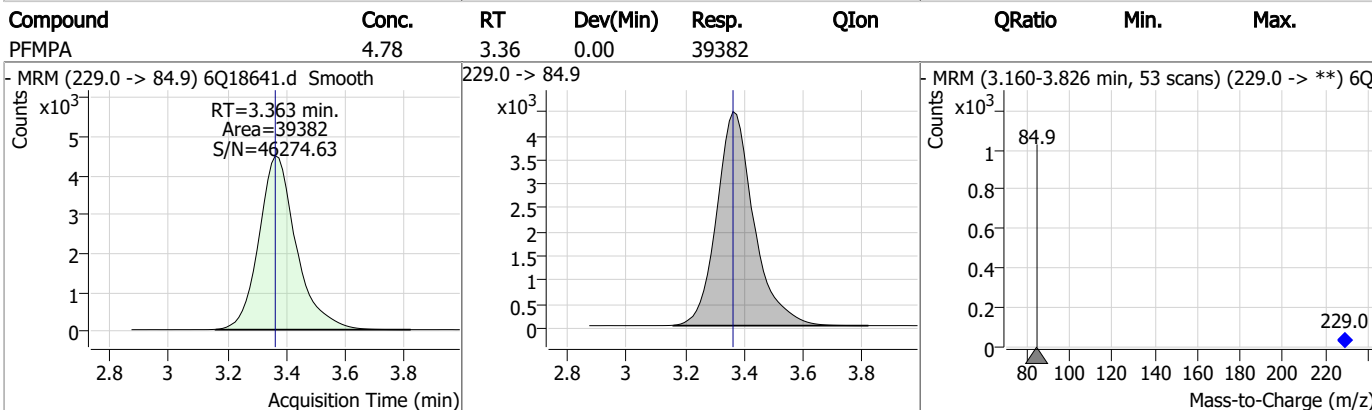
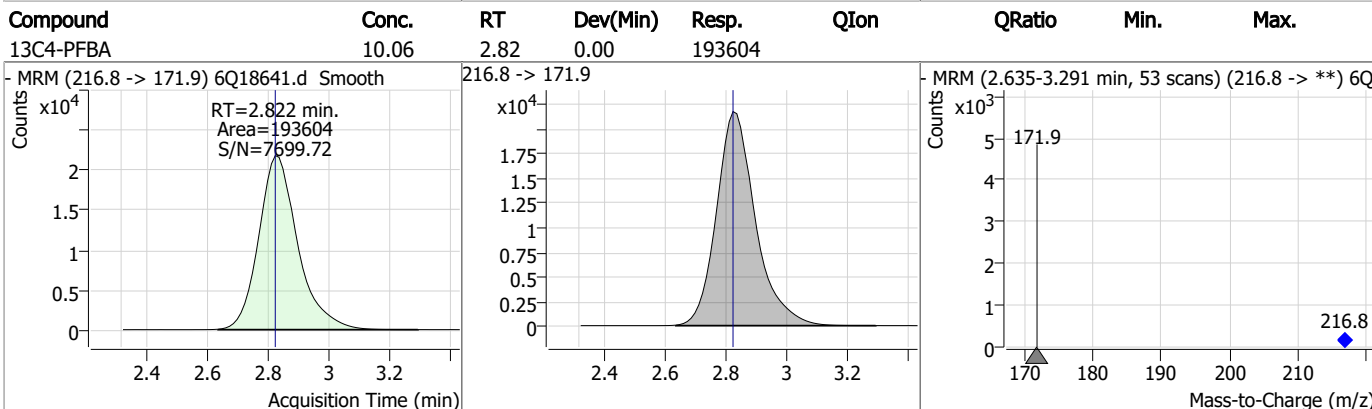
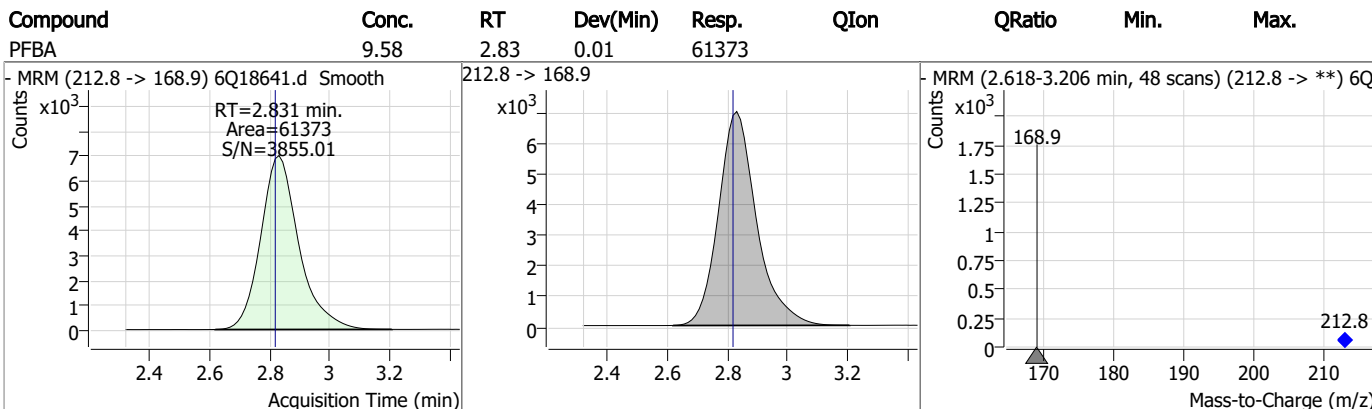
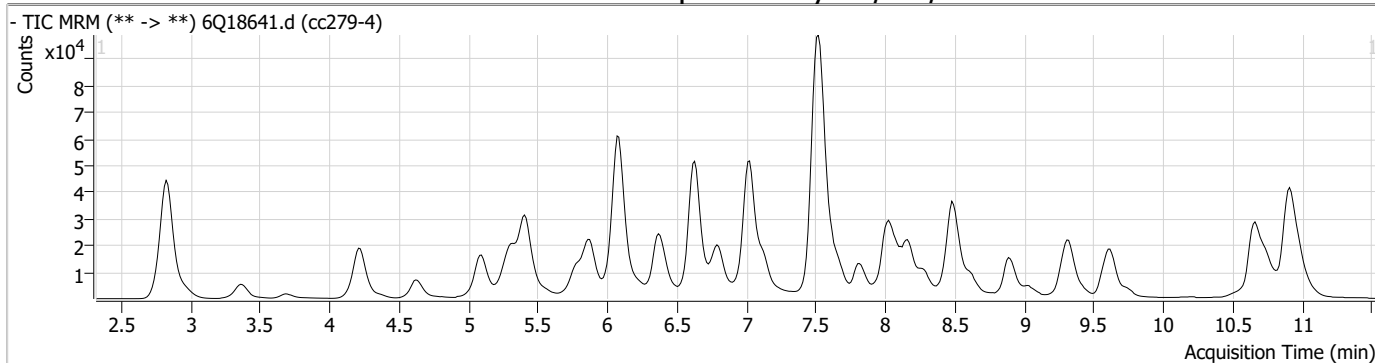
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.7.14

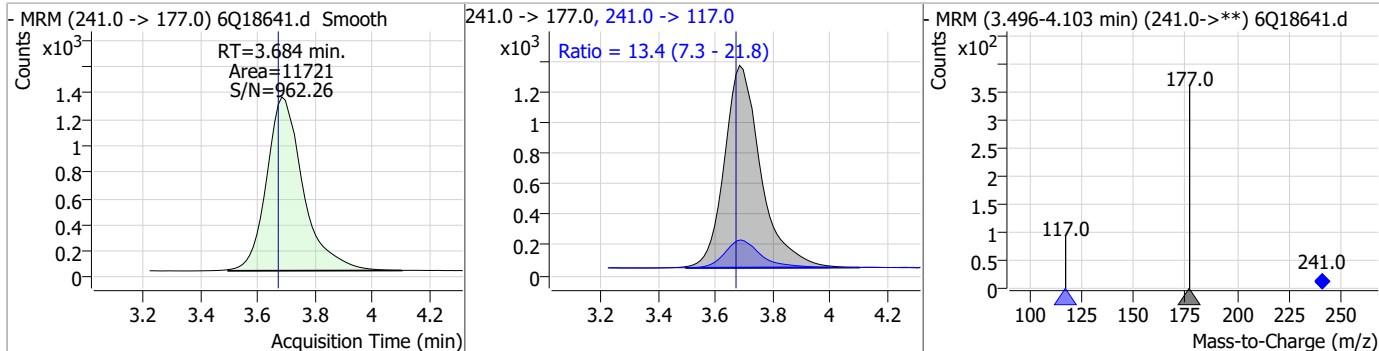
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Perfluorinated Compounds by LC/MS/MS

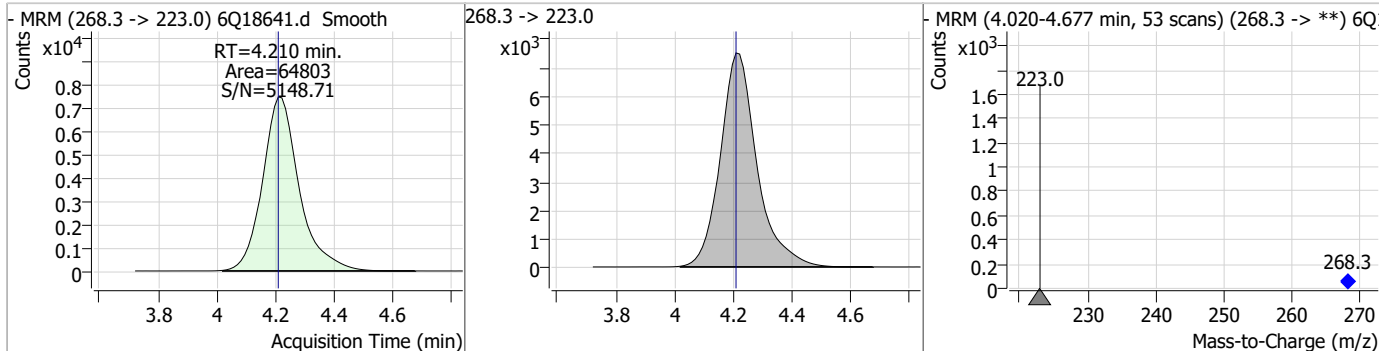


Perfluorinated Compounds by LC/MS/MS

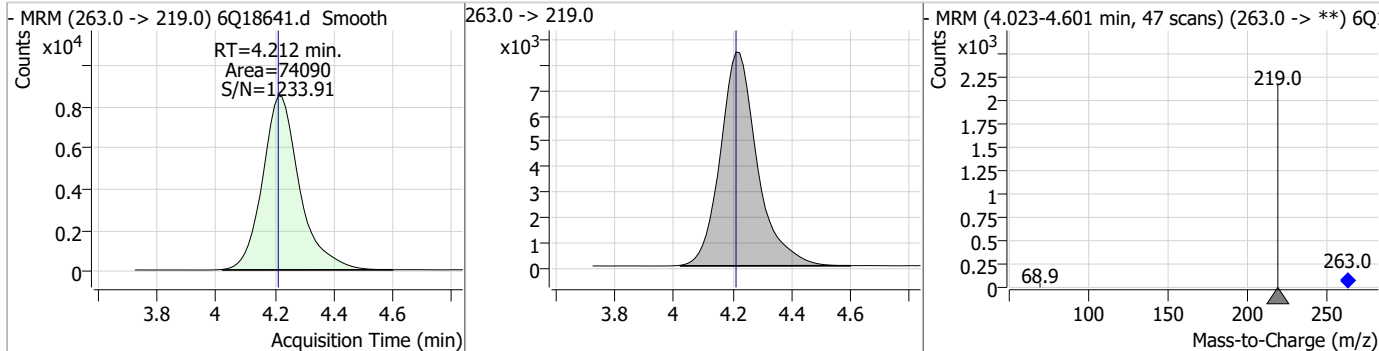
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 11.77 | 3.68 | 0.01 | 11721 | 241.0 -> 117.0 | 13.4 | 7.3 | 21.8 |



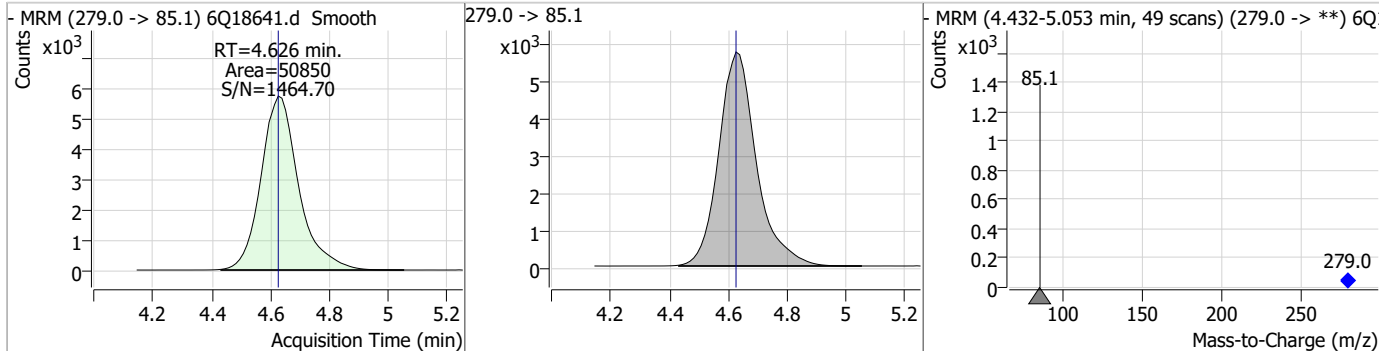
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFPeA | 5.04 | 4.21 | 0.00 | 64803 | | | | |



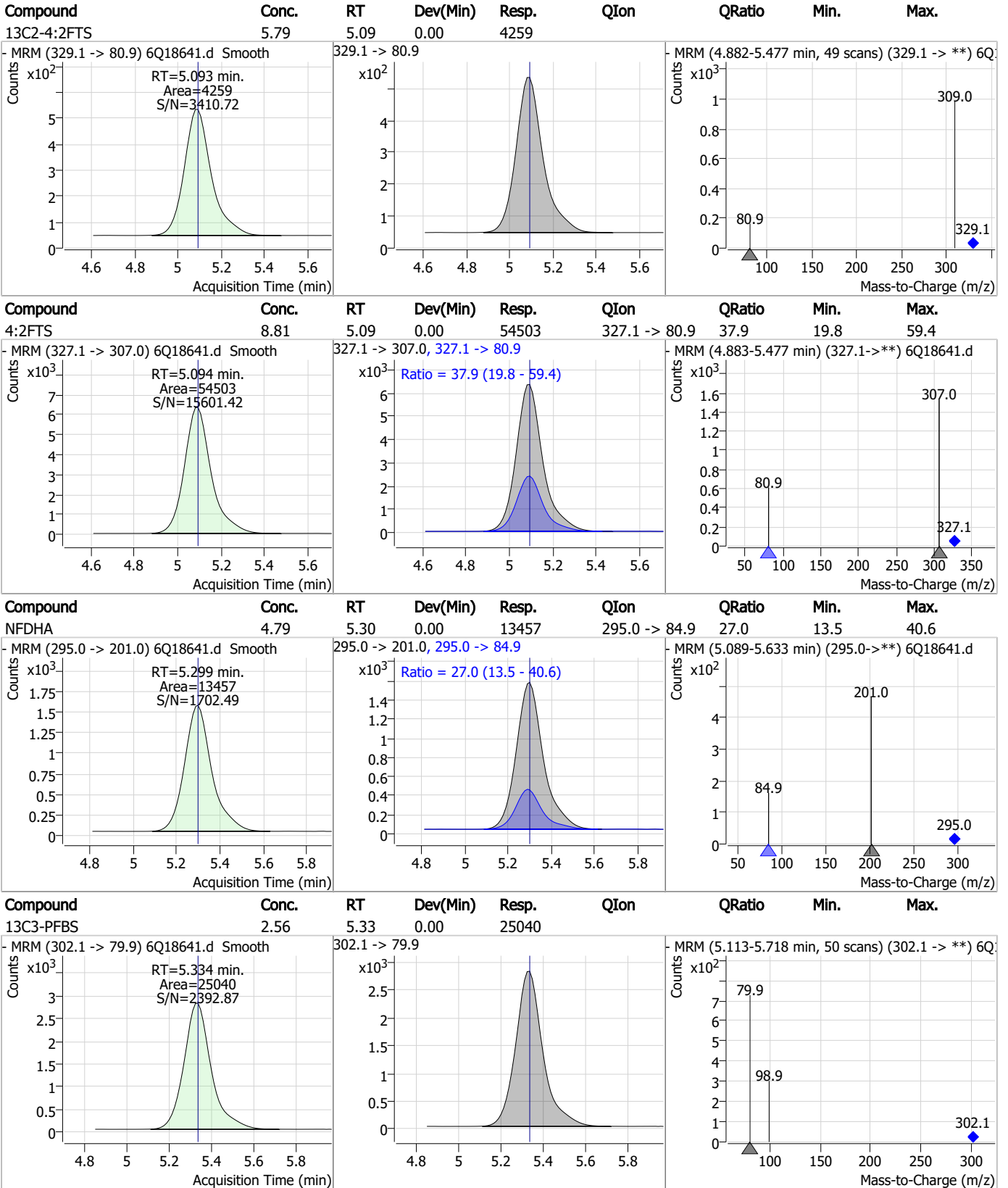
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFPeA | 4.76 | 4.21 | 0.00 | 74090 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFMBA | 4.80 | 4.63 | 0.00 | 50850 | | | | |



Perfluorinated Compounds by LC/MS/MS

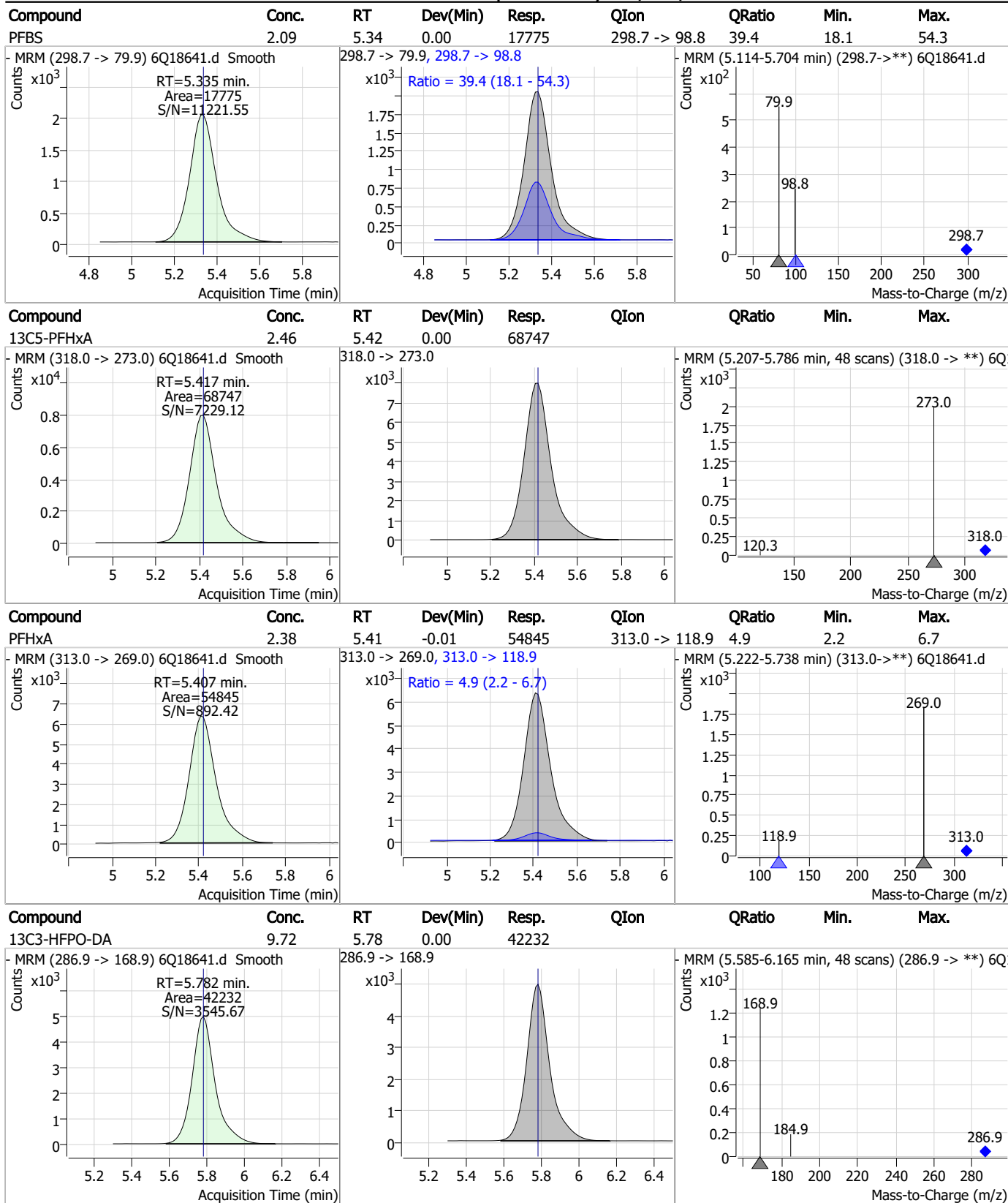


7.7.14

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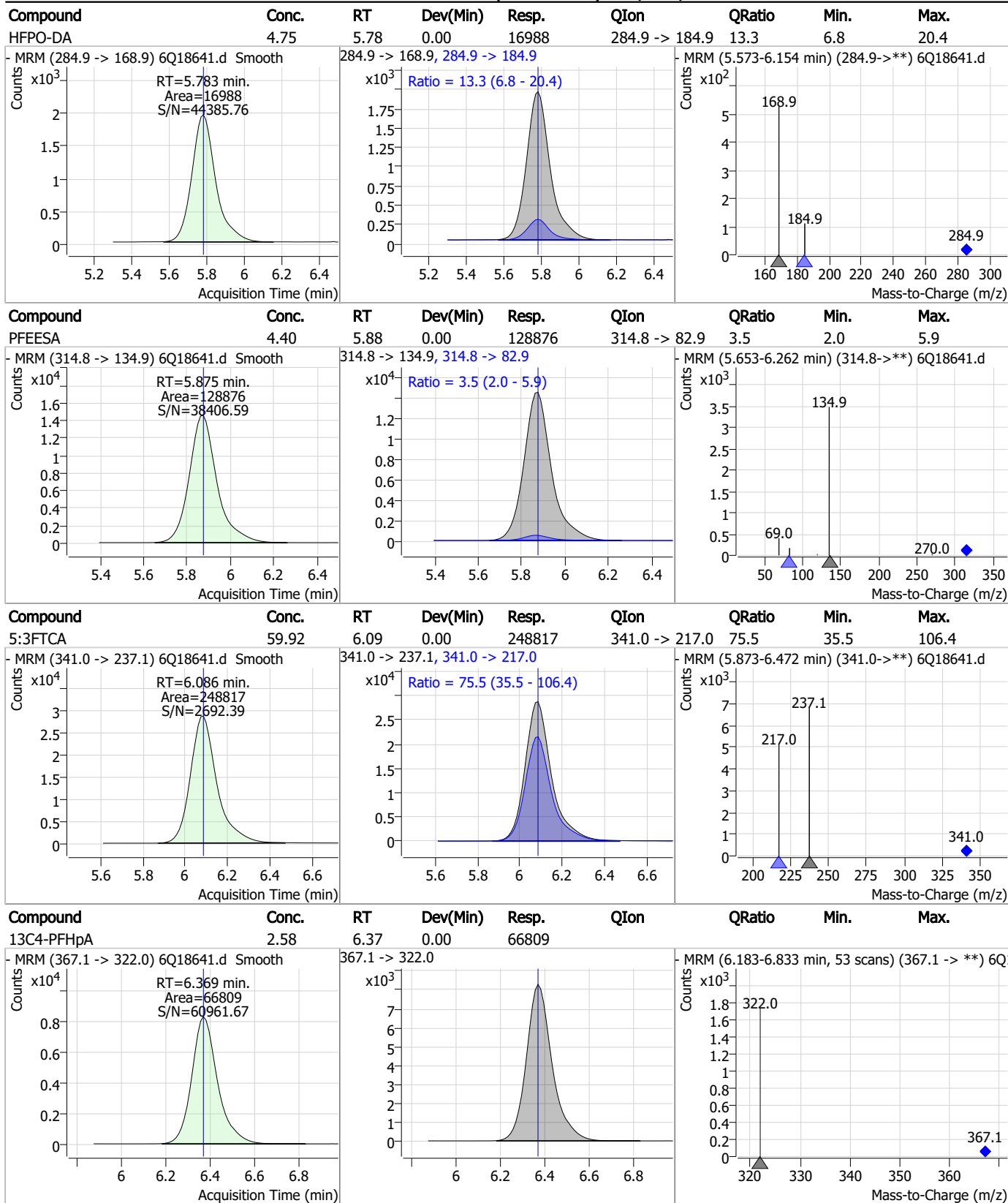


Perfluorinated Compounds by LC/MS/MS



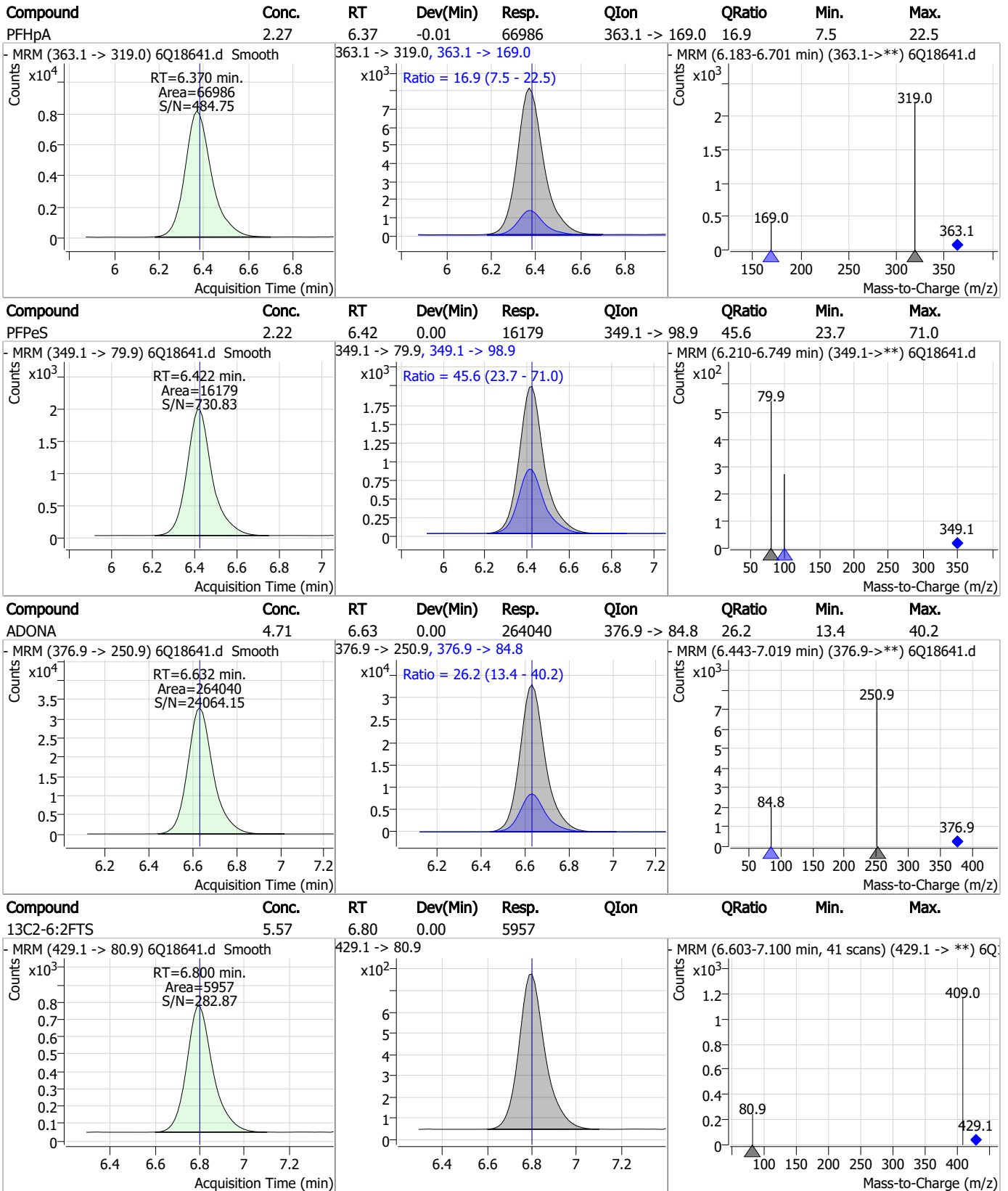
7.7.14

Perfluorinated Compounds by LC/MS/MS



7.7.14
7

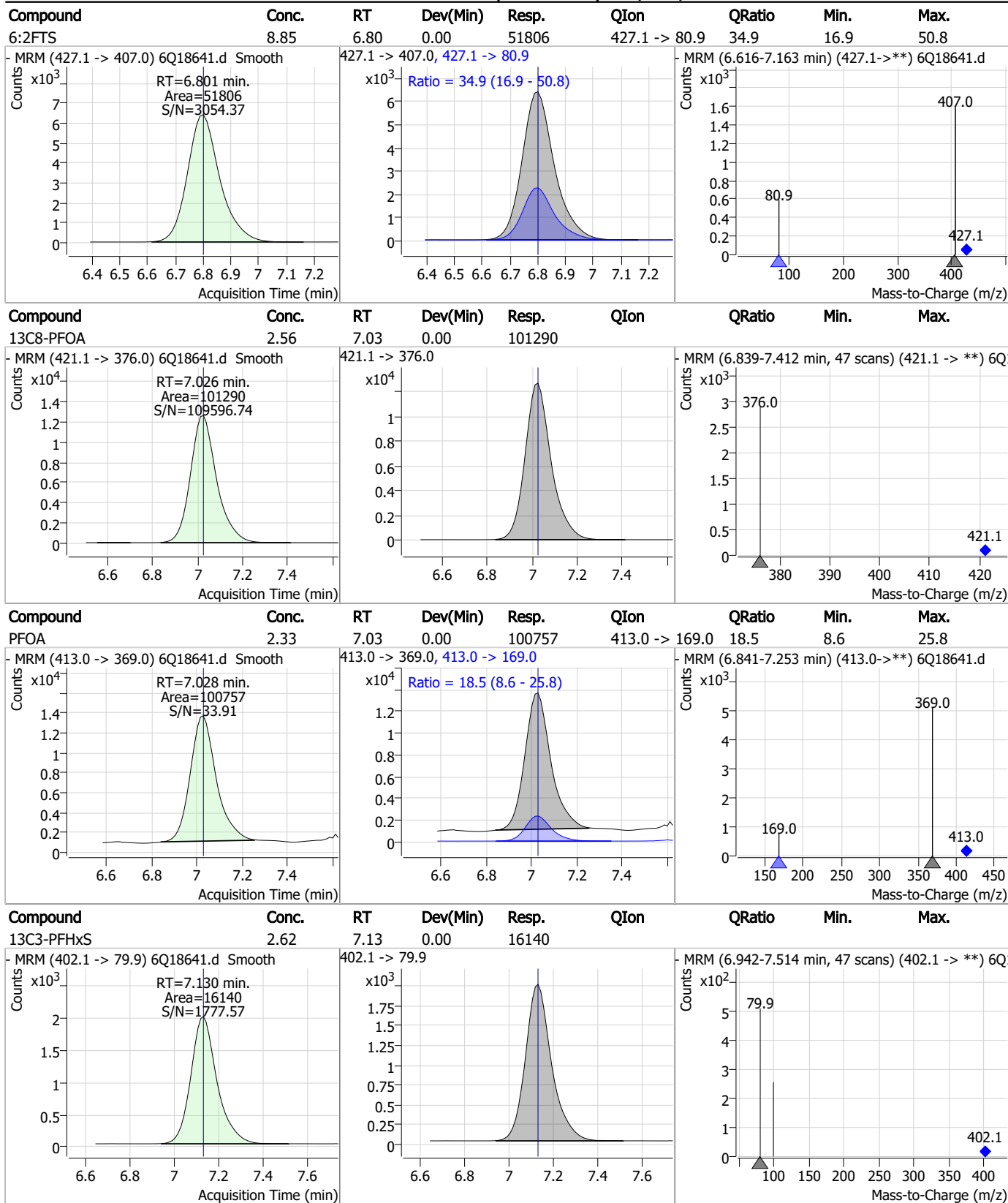
Perfluorinated Compounds by LC/MS/MS



7.7.14

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Perfluorinated Compounds by LC/MS/MS

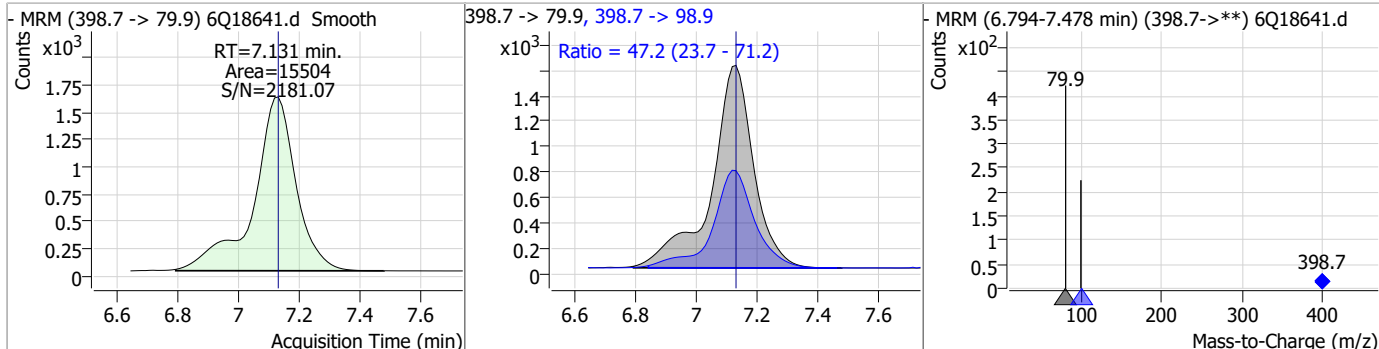


7.7.14

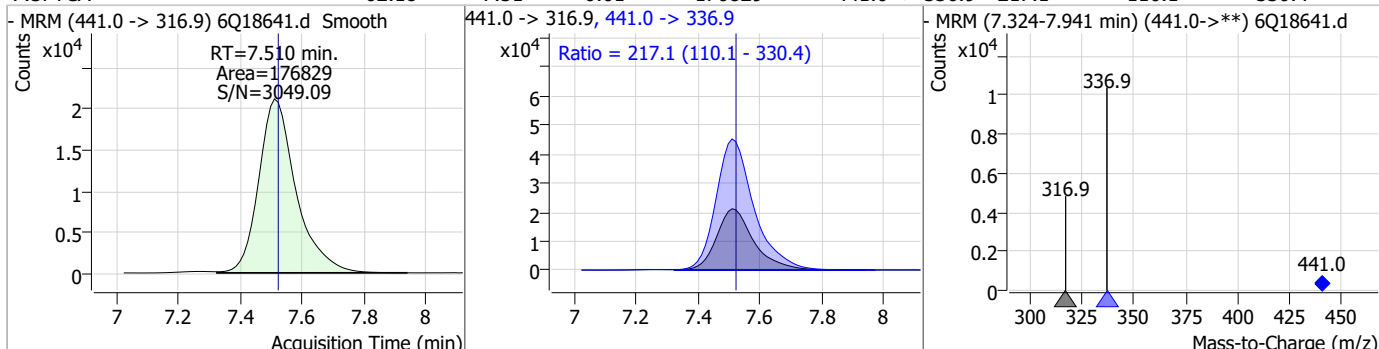
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Perfluorinated Compounds by LC/MS/MS

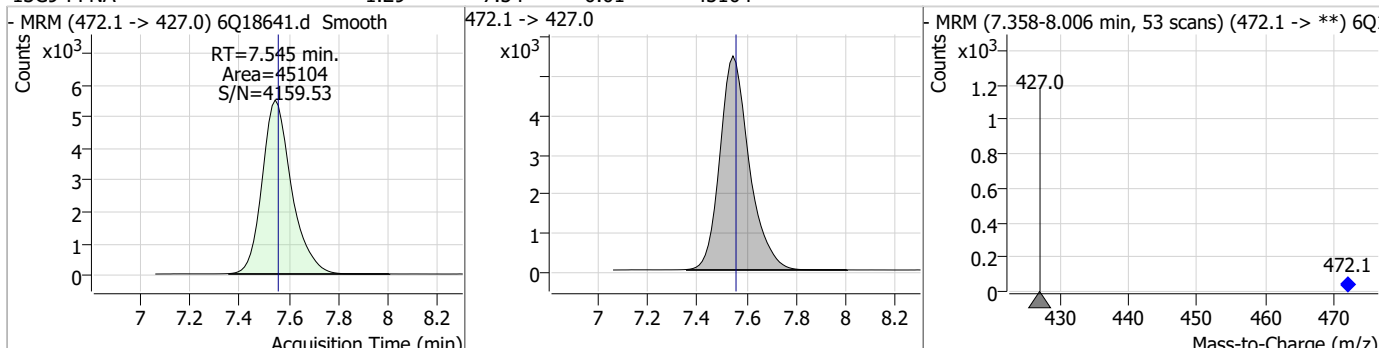
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFHxS | 2.12 | 7.13 | 0.00 | 15504 | 398.7 -> 98.9 | 47.2 | 23.7 | 71.2 |



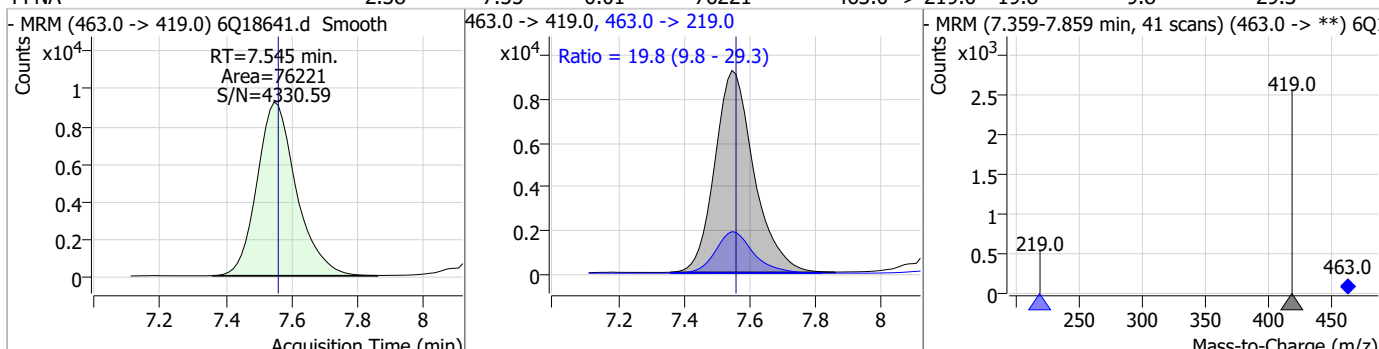
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|-------|-------|
| 7:3FTCA | 62.18 | 7.51 | -0.01 | 176829 | 441.0 -> 336.9 | 217.1 | 110.1 | 330.4 |



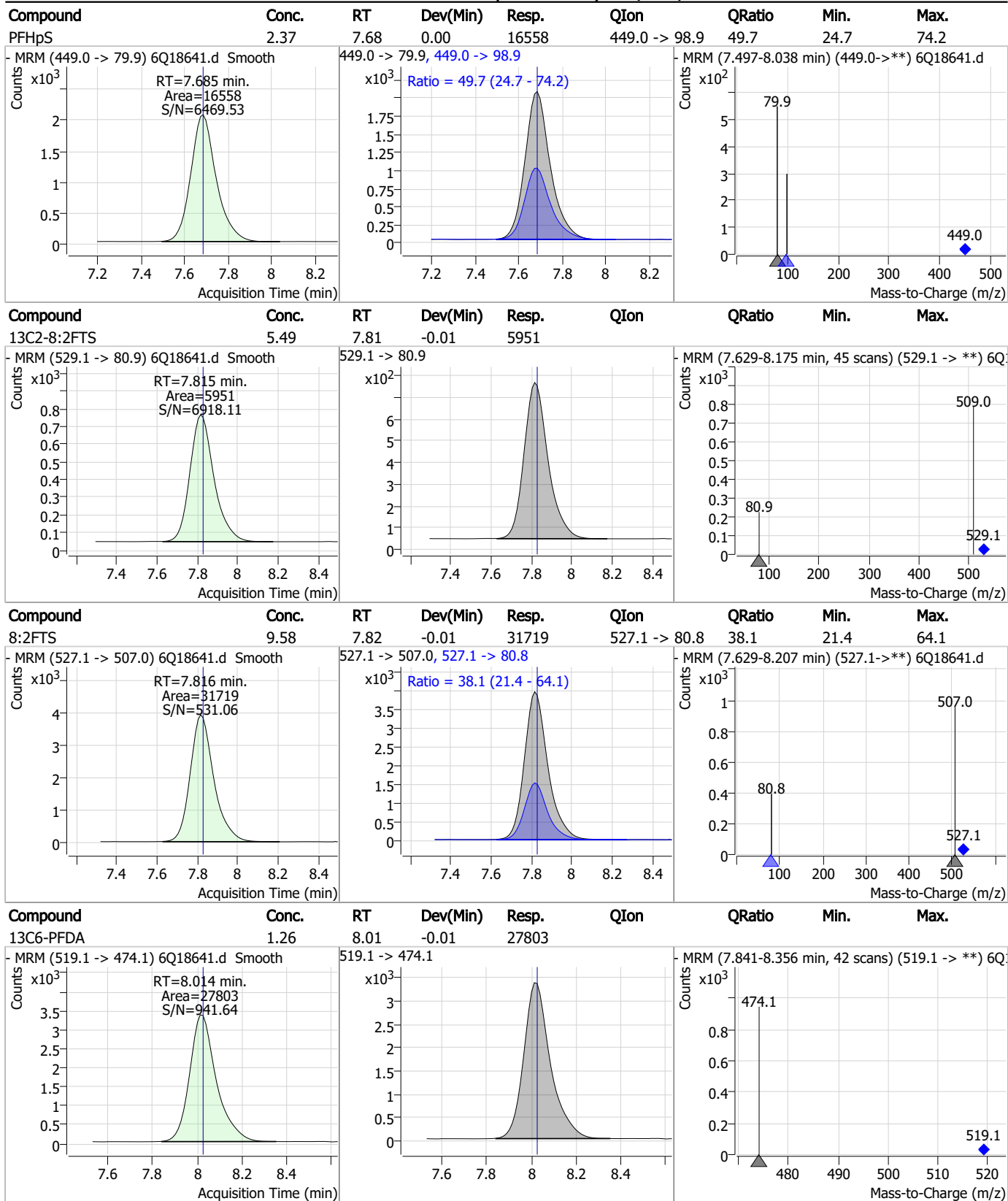
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C9-PFNA | 1.29 | 7.54 | -0.01 | 45104 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFNA | 2.38 | 7.55 | -0.01 | 76221 | 463.0 -> 219.0 | 19.8 | 9.8 | 29.3 |



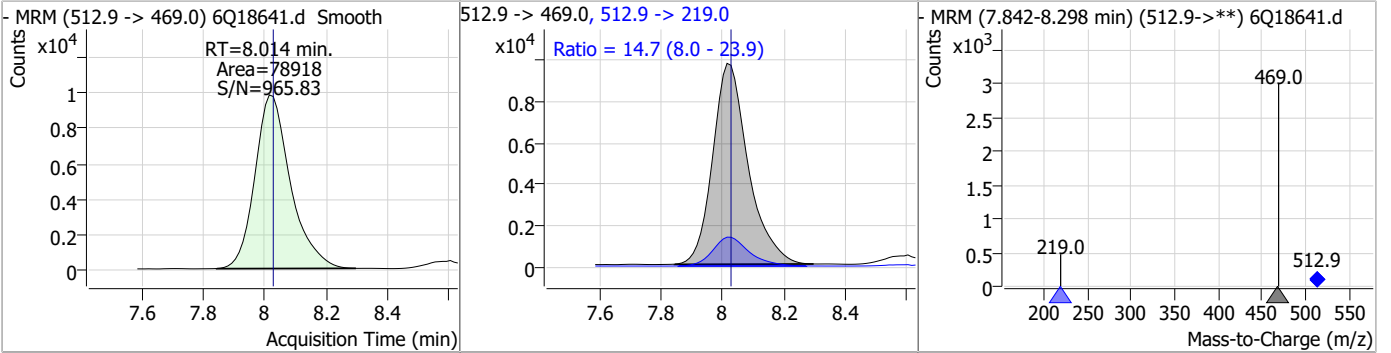
Perfluorinated Compounds by LC/MS/MS



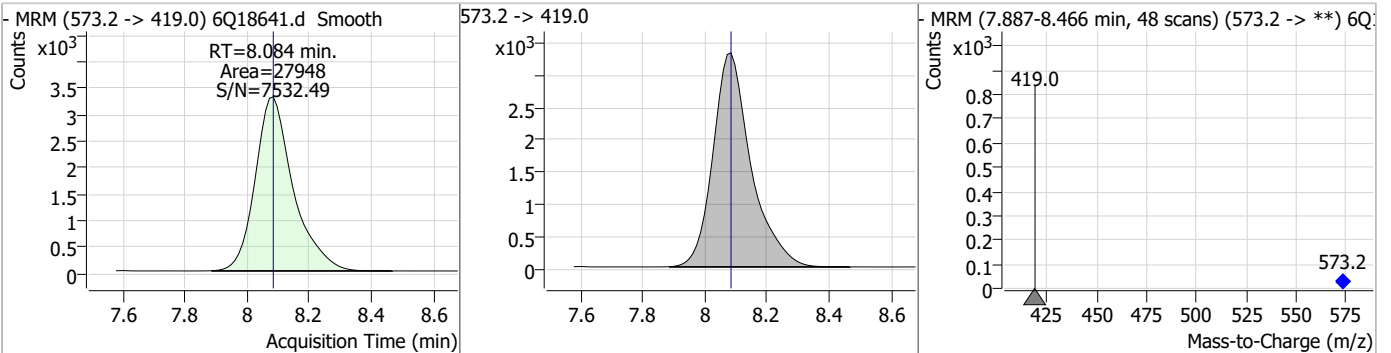
7.7.14

Perfluorinated Compounds by LC/MS/MS

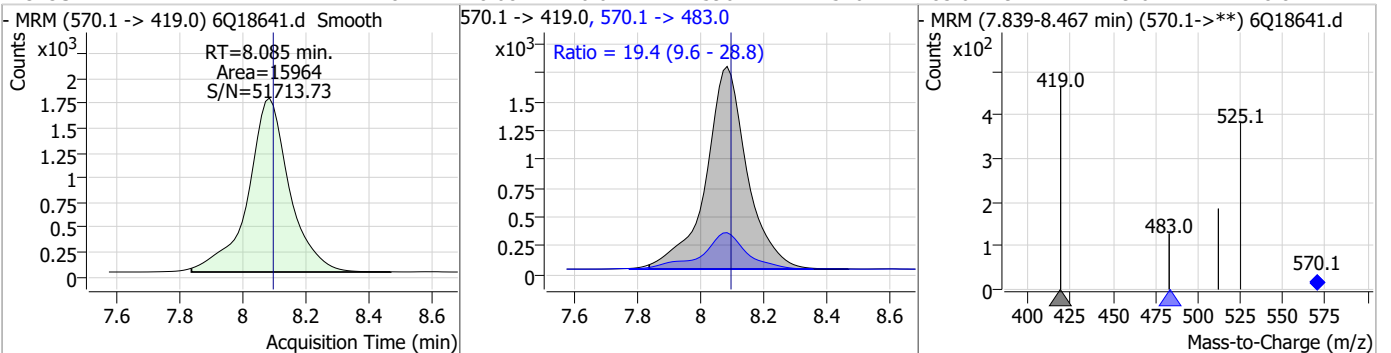
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFDA | 2.45 | 8.01 | -0.01 | 78918 | 512.9 -> 219.0 | 14.7 | 8.0 | 23.9 |



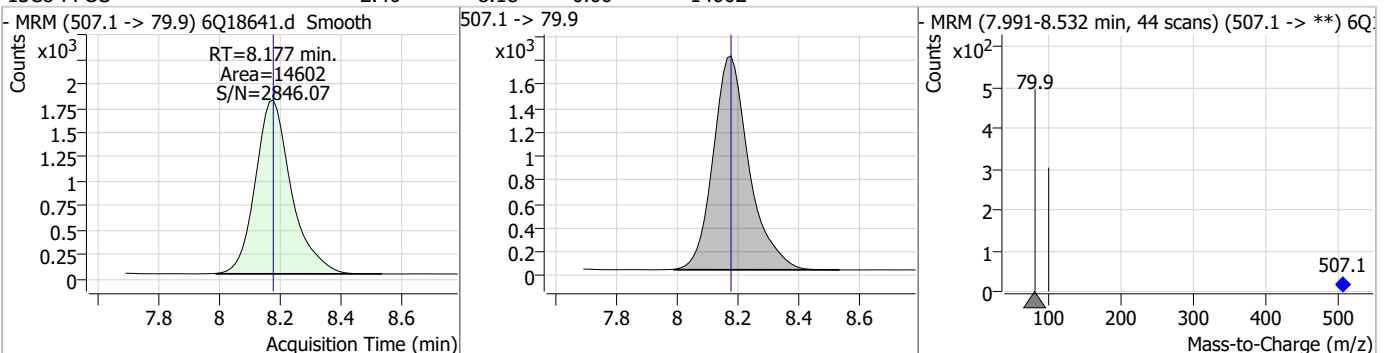
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d3-MeFOSAA | 4.57 | 8.08 | 0.00 | 27948 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| MeFOSAA | 2.78 | 8.08 | -0.01 | 15964 | 570.1 -> 483.0 | 19.4 | 9.6 | 28.8 |

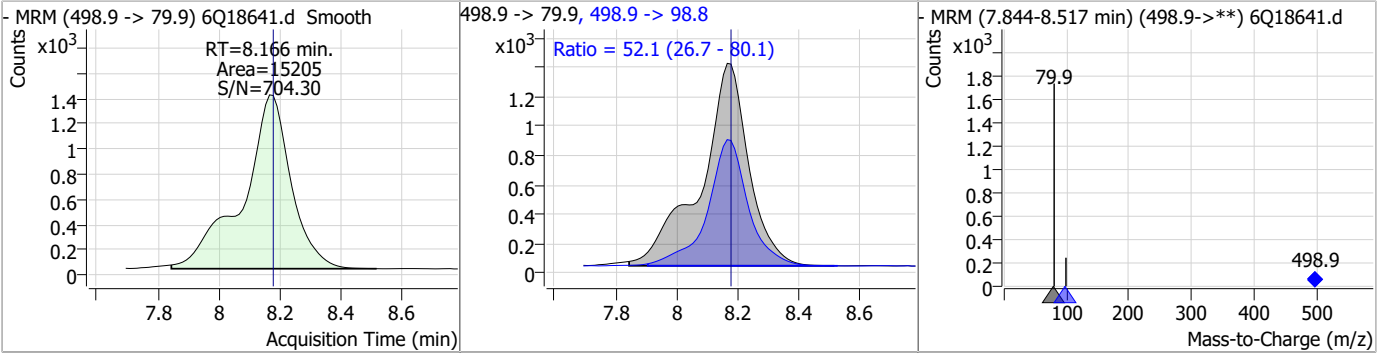


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C8-PFOS | 2.40 | 8.18 | 0.00 | 14602 | | | | |

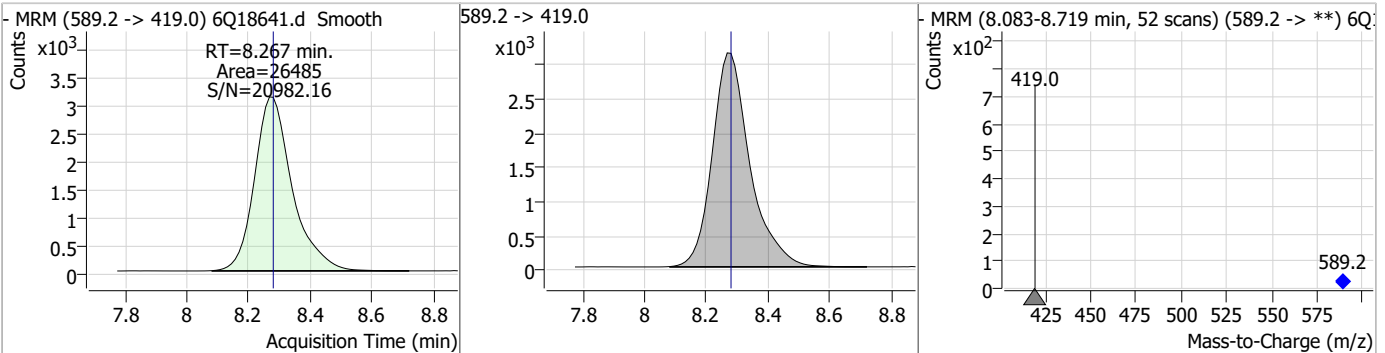


Perfluorinated Compounds by LC/MS/MS

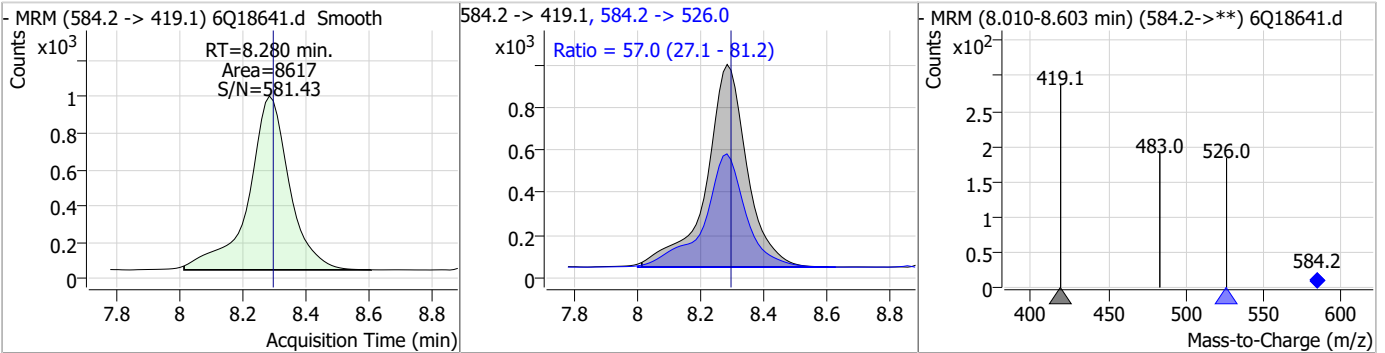
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFOS | 2.28 | 8.17 | -0.01 | 15205 | 498.9 -> 98.8 | 52.1 | 26.7 | 80.1 |



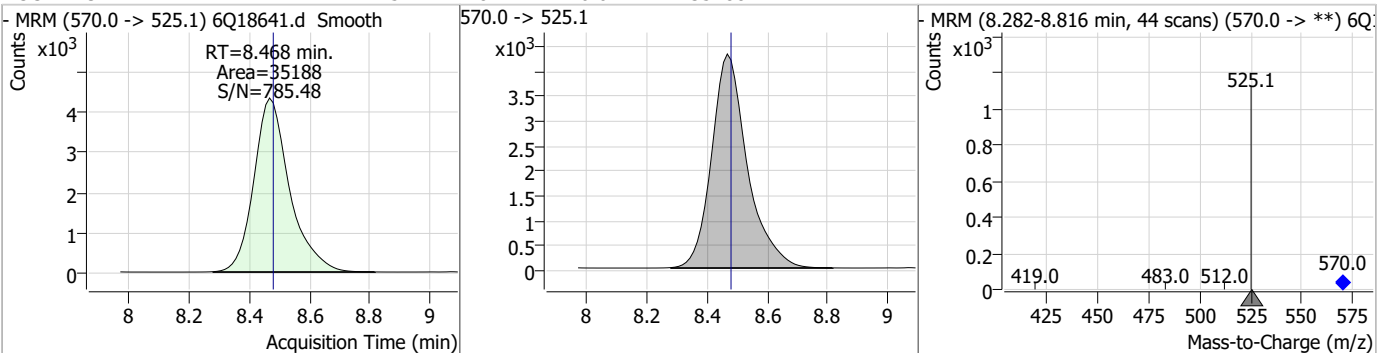
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d5-EtFOSAA | 4.76 | 8.27 | -0.01 | 26485 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| EtFOSAA | 2.53 | 8.28 | -0.01 | 8617 | 584.2 -> 526.0 | 57.0 | 27.1 | 81.2 |



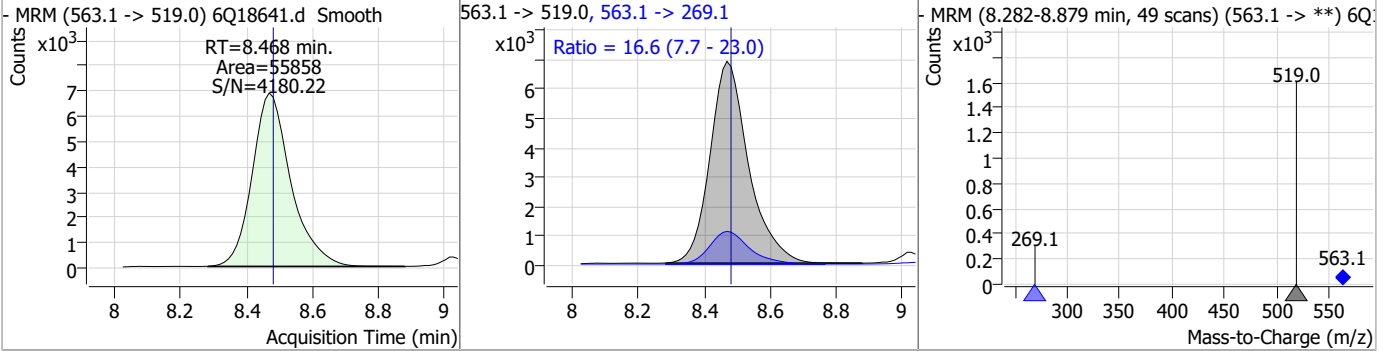
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|------|--------|------|------|
| 13C7-PFUnDA | 1.25 | 8.47 | -0.01 | 35188 | | | | |



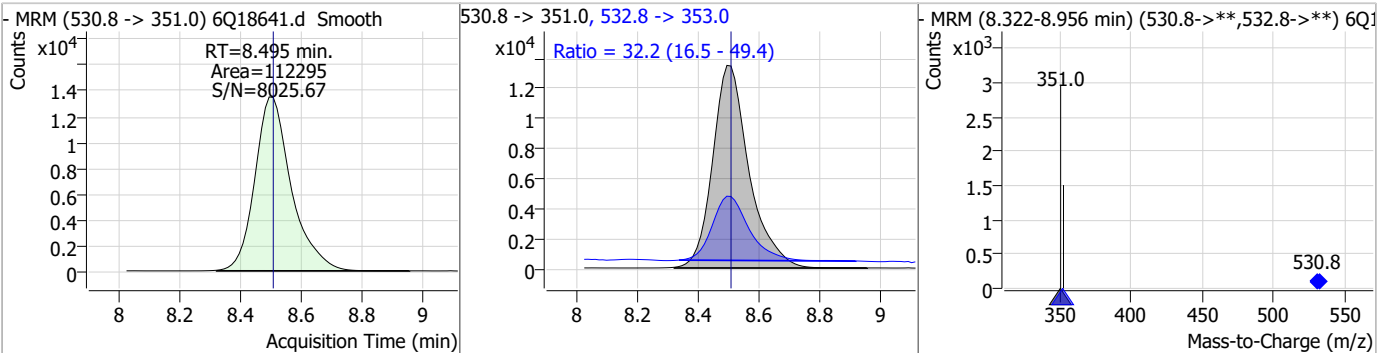
7.7.14
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Perfluorinated Compounds by LC/MS/MS

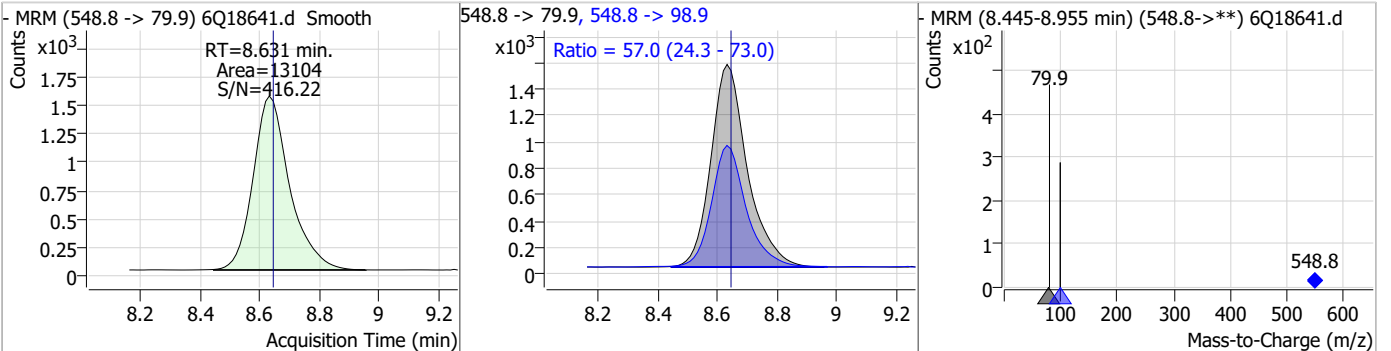
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFUnDA | 2.44 | 8.47 | -0.01 | 55858 | 563.1 -> 269.1 | 16.6 | 7.7 | 23.0 |



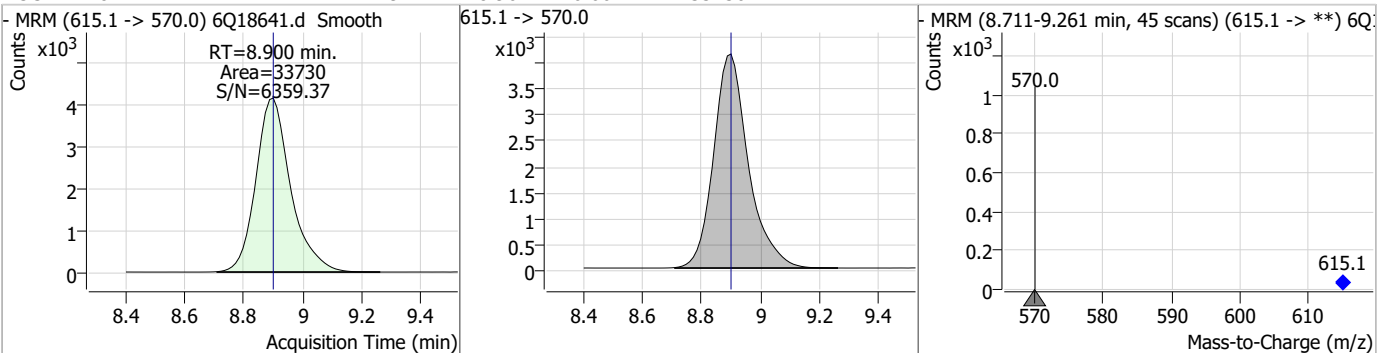
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|--------|----------------|--------|------|------|
| 9CI-PF3ONS | 4.50 | 8.49 | -0.01 | 112295 | 532.8 -> 353.0 | 32.2 | 16.5 | 49.4 |



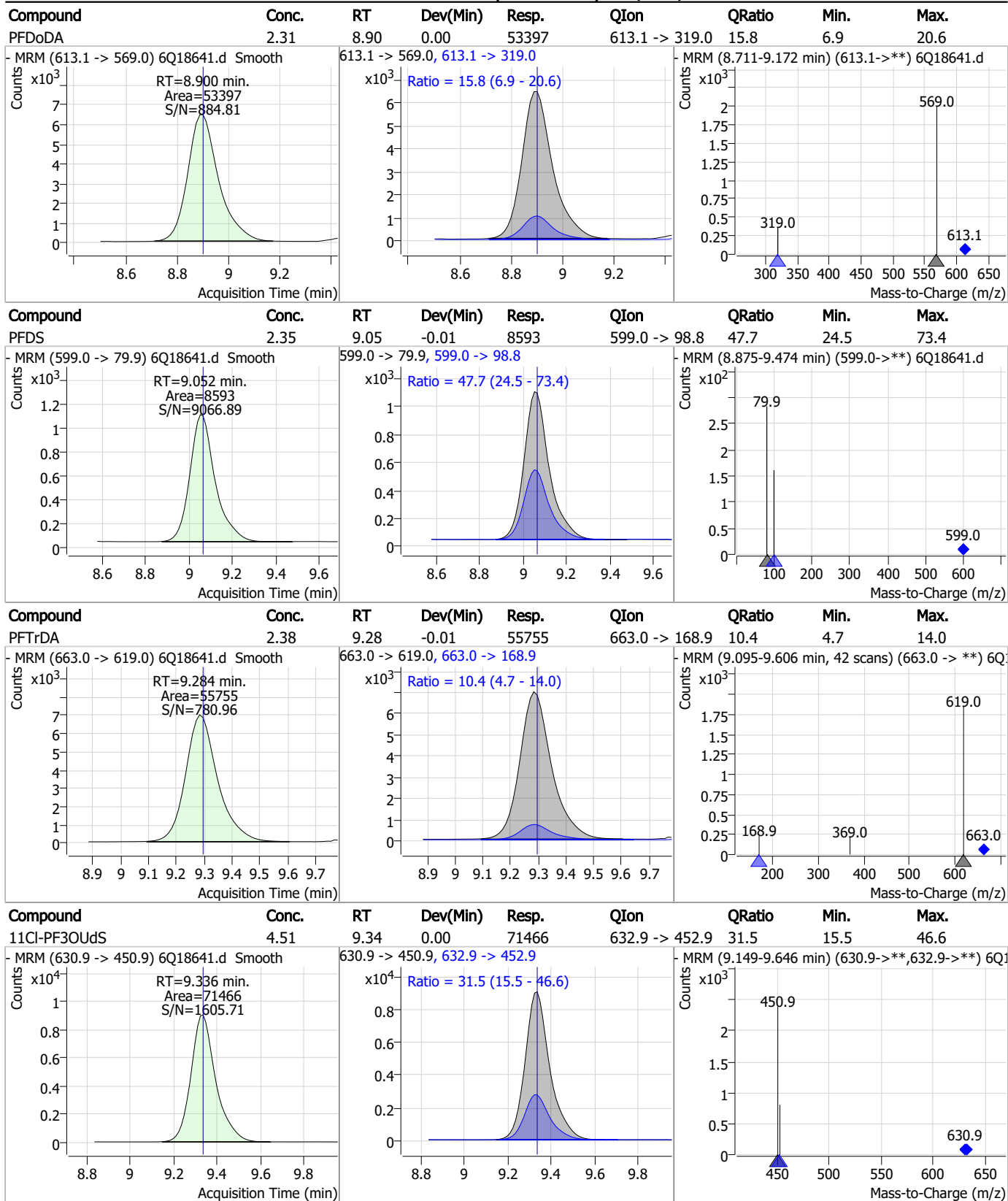
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFNS | 2.24 | 8.63 | -0.01 | 13104 | 548.8 -> 98.9 | 57.0 | 24.3 | 73.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C2-PFDoDA | 1.29 | 8.90 | 0.00 | 33730 | 615.1 -> 570.0 | | | |



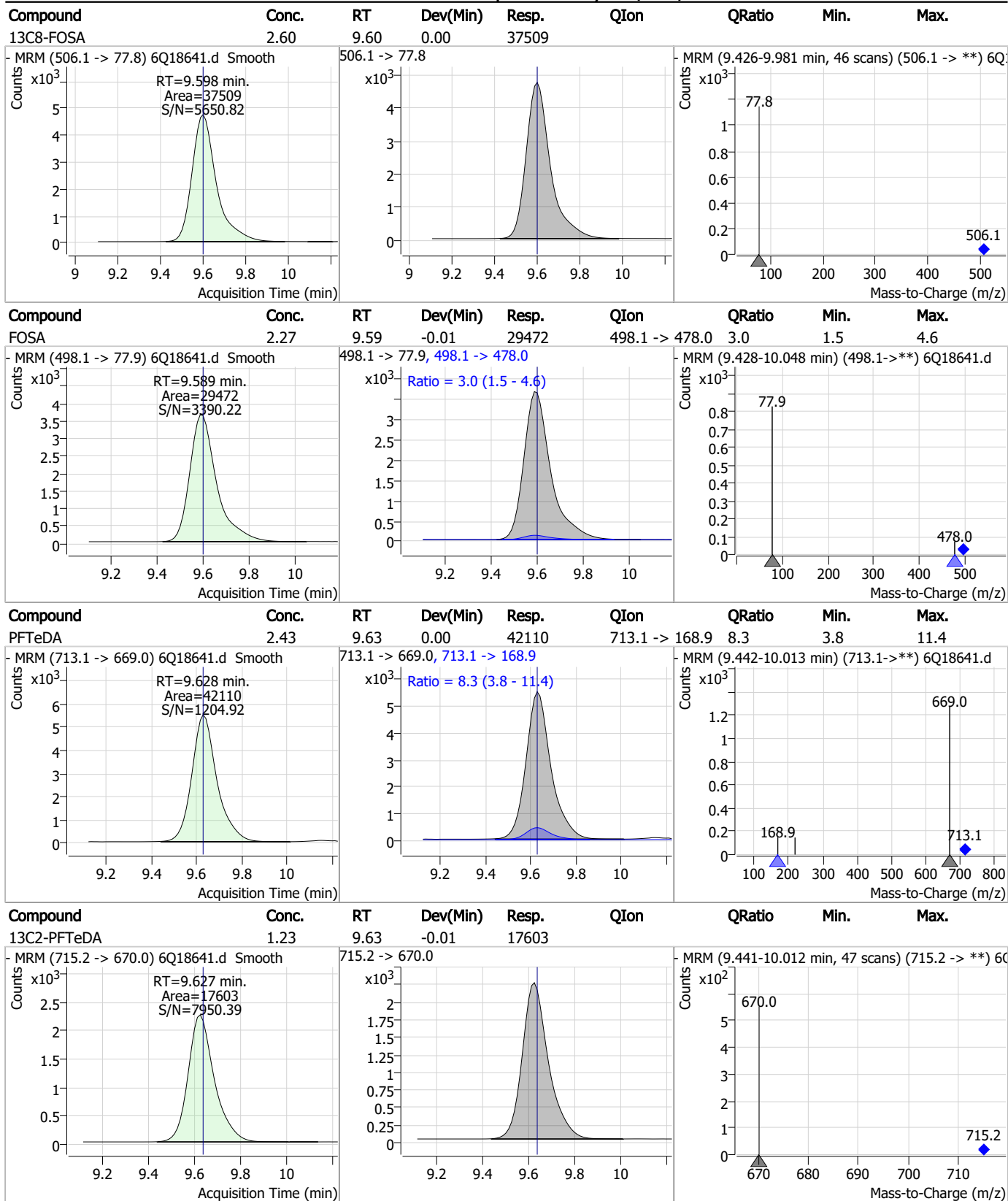
Perfluorinated Compounds by LC/MS/MS



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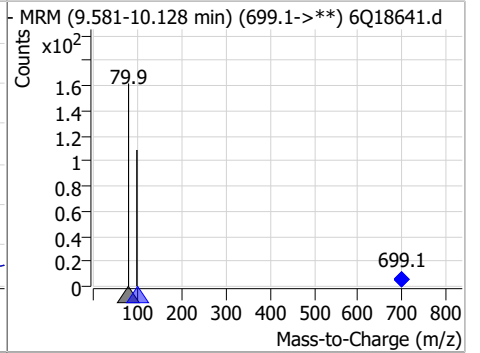
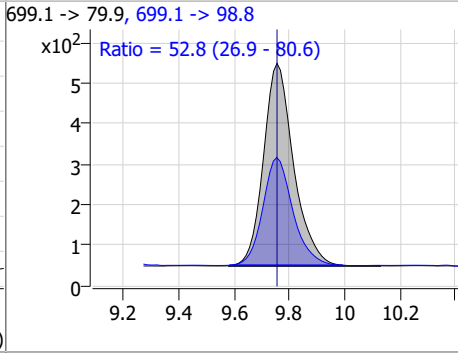
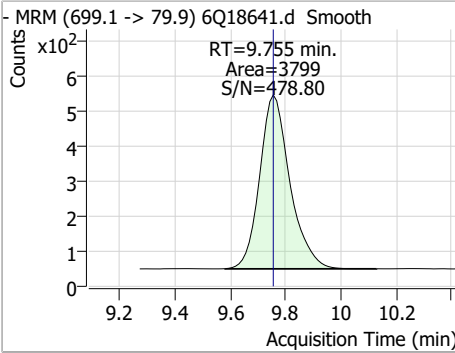
Perfluorinated Compounds by LC/MS/MS



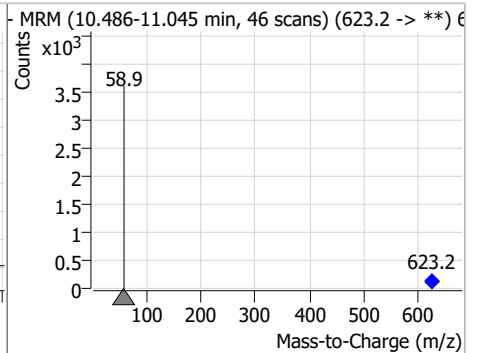
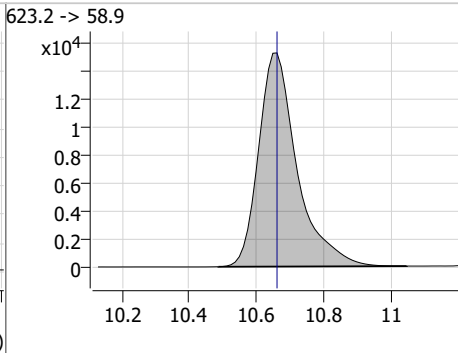
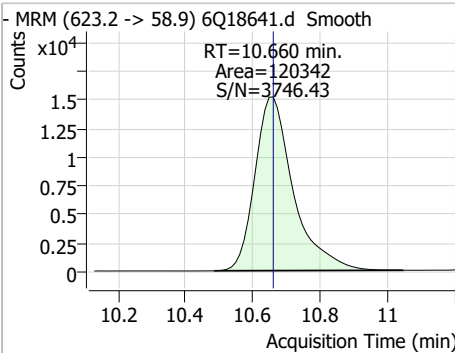
7.7.14
7

Perfluorinated Compounds by LC/MS/MS

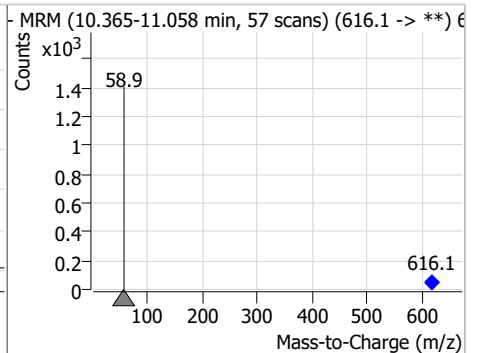
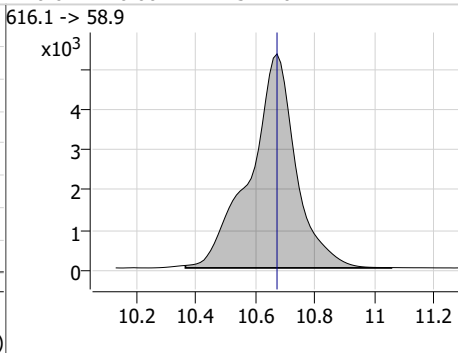
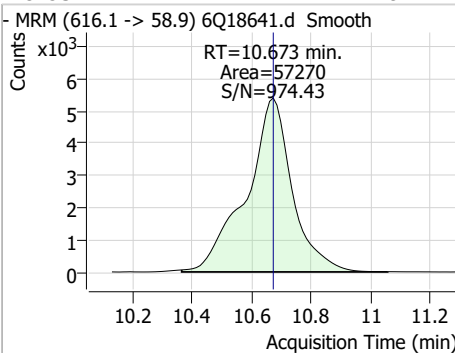
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 2.34 | 9.75 | 0.00 | 3799 | 699.1 -> 98.8 | 52.8 | 26.9 | 80.6 |



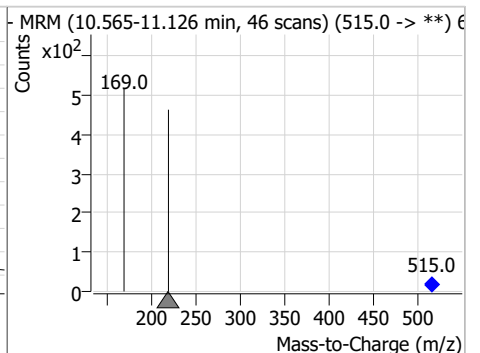
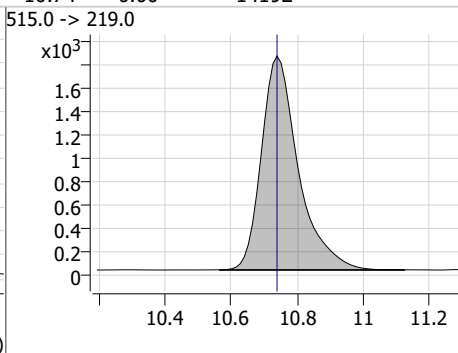
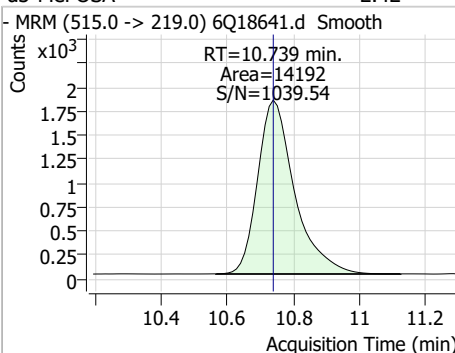
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d7-MeFOSE | 25.28 | 10.66 | 0.00 | 120342 | | | | |



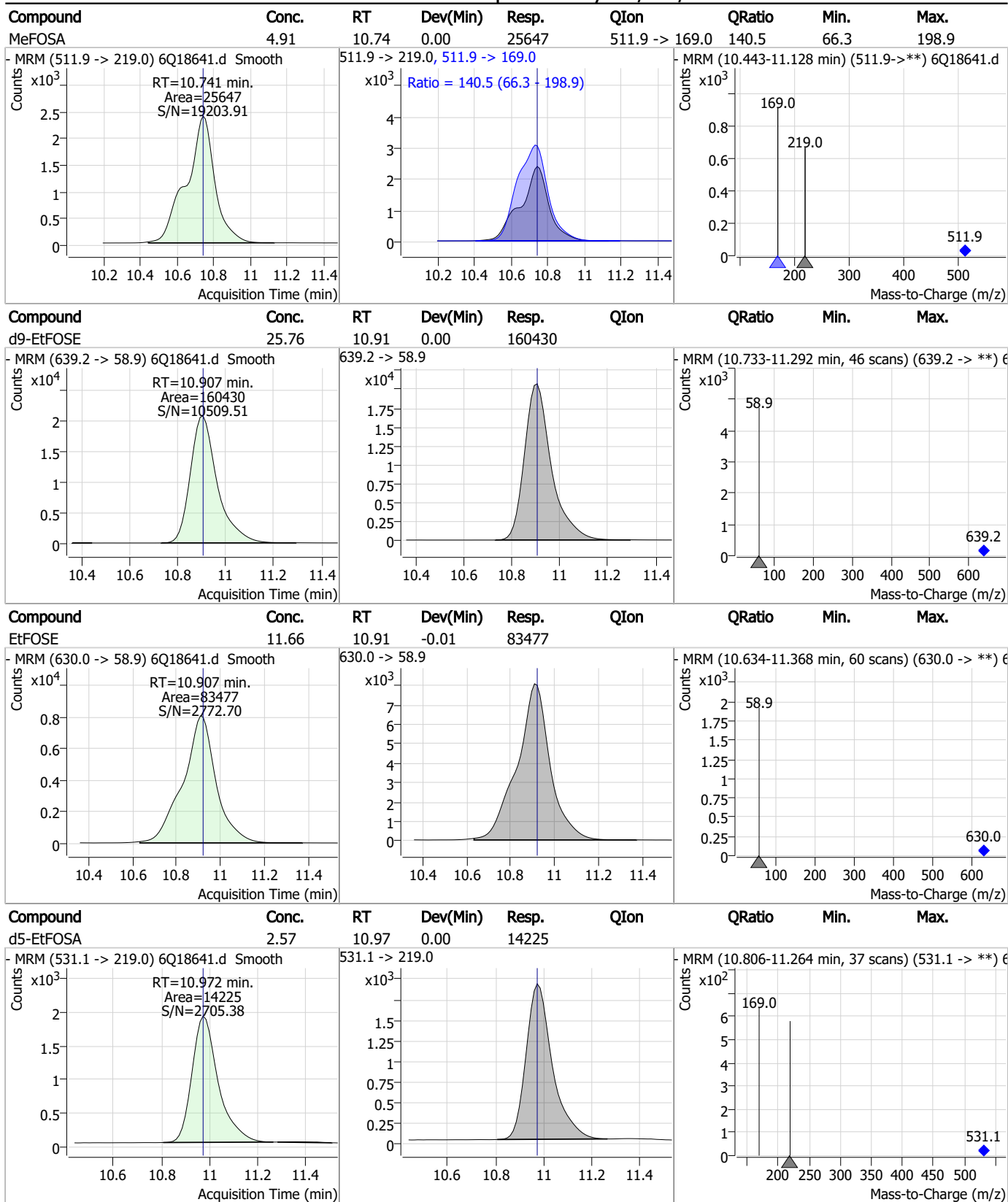
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 11.97 | 10.67 | 0.00 | 57270 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.42 | 10.74 | 0.00 | 14192 | | | | |



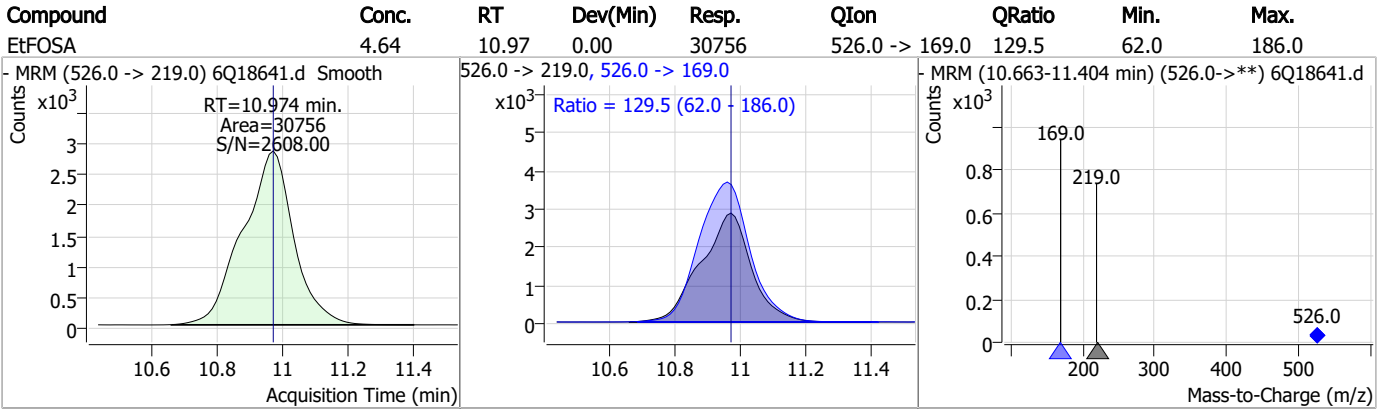
Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS



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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18642.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 6:35:02 AM
 Sample Name : cc279-1.0LL
 Vial : P1-A2
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 178884 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 60241 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.417 | 318.0 -> 273.0 | 66763 | 2.50 µg/L | 0.000 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 62959 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 94654 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 45460 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 26274 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35319 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30328 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16835 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.586 | 506.1 -> 77.8 | 34201 | 2.50 µg/L | -0.012 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 23735 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 14601 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.165 | 507.1 -> 79.9 | 14144 | 2.50 µg/L | -0.012 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3930 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5748 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5317 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28427 | 5.00 µg/L | -0.012 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 39732 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26464 | 5.00 µg/L | -0.012 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 108651 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 139639 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13198 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13117 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 18303 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 75157 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 10565 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 96494 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 35400 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 52433 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 60721 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 3930 | 5.58 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 111.5% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5748 | 5.62 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 112.3% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5317 | 5.12 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.4% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 30328 | 1.23 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 98.7% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 16835 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.7% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 23735 | 2.54 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 101.5% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 14601 | 2.47 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.0% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 178884 | 9.99 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.9% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 62959 | 2.65 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 106.0% | |
| 13C5-PFHxA | 5.417 | 318.0 -> 273.0 | 66763 | 2.60 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.9% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 60241 | 5.10 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.0% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 26274 | 1.27 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 101.3% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 35319 | 1.33 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 106.8% | |
| 13C8-FOSA | 9.586 | 506.1 -> 77.8 | 34201 | 2.45 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.1% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 94654 | 2.62 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.7% | |
| 13C8-PFOS | 8.165 | 507.1 -> 79.9 | 14144 | 2.41 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.5% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 45460 | 1.32 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 105.2% | |
| d3-MeFOSAA | 8.072 | 573.2 -> 419.0 | 28427 | 4.81 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 96.2% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 39732 | 9.96 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.6% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13117 | 2.32 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 92.8% | |
| d5-EtFOSAA | 8.267 | 589.2 -> 419.0 | 26464 | 4.93 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 108651 | 23.64 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 94.5% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 139639 | 23.22 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 92.9% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13198 | 2.47 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.6% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 5101 | 0.89 µg/L | 93 |
| | | 327.1 -> 80.9 | 1796 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 4889 | 0.87 µg/L | 99 |
| | | 427.1 -> 80.9 | 1635 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 2814 | 0.95 µg/L | 97 |
| | | 527.1 -> 80.8 | 1150 | | |
| EtFOSAA | 8.268 | 584.2 -> 419.1 | 811 | 0.24 µg/L | 80 |
| | | 584.2 -> 526.0 | 555 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 2610 | 0.22 µg/L | 97 |
| | | 498.1 -> 478.0 | 105 | | |
| MeFOSAA | 8.073 | 570.1 -> 419.0 | 1415 | 0.24 µg/L | 91 |
| | | 570.1 -> 483.0 | 331 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 5444 | 0.92 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 1743 | 0.22 µg/L | 92 |
| | | 298.7 -> 98.8 | 709 | | |
| PFDA | 8.014 | 512.9 -> 469.0 | 6432 | 0.21 µg/L | 89 |
| | | 512.9 -> 219.0 | 727 | | |
| PFDODA | 8.888 | 613.1 -> 569.0 | 4611 | 0.22 µg/L | 99 |
| | | 613.1 -> 319.0 | 645 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 728 | 0.21 µg/L | 89 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 411 | 0.22 µg/L | 98 |
| | | 363.1 -> 319.0 | 6091 | | |
| PFHpS | 7.673 | 363.1 -> 169.0 | 974 | 0.23 µg/L | 93 |
| | | 449.0 -> 79.9 | 1544 | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 693 | 0.21 µg/L | 98 |
| | | 313.0 -> 269.0 | 4812 | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 254 | 0.21 µg/L | m 88 |
| | | 398.7 -> 79.9 | 1408 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 783 | 0.20 µg/L | 95 |
| | | 463.0 -> 419.0 | 6565 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 1421 | 0.21 µg/L | 88 |
| | | 548.8 -> 79.9 | 1176 | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 673 | 0.22 µg/L | 94 |
| | | 413.0 -> 369.0 | 8829 | | |
| PFOS | 8.166 | 413.0 -> 169.0 | 1762 | 0.22 µg/L | 96 |
| | | 498.9 -> 79.9 | 1421 | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 723 | 0.48 µg/L | 100 |
| | | 263.0 -> 219.0 | 6877 | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 1485 | 0.23 µg/L | 96 |
| | | 349.1 -> 98.9 | 658 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 3903 | 0.24 µg/L | 99 |
| | | 713.1 -> 168.9 | 316 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 4785 | 0.23 µg/L | 95 |
| | | 663.0 -> 168.9 | 525 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 4750 | 0.21 µg/L | 92 |
| | | 563.1 -> 269.1 | 893 | | |
| 11Cl-PF3OUdS | 9.323 | 630.9 -> 450.9 | 6584 | 0.44 µg/L | 100 |
| | | 632.9 -> 452.9 | 2052 | | |
| 9Cl-PF3ONS | 8.508 | 530.8 -> 351.0 | 10283 | 0.44 µg/L | 95 |
| | | 532.8 -> 353.0 | 3121 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 25107 | 0.48 µg/L | 99 |
| | | 376.9 -> 84.8 | 6578 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 1449 | 0.43 µg/L | 99 |
| | | 284.9 -> 184.9 | 205 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 1050 | 1.13 µg/L | 94 |
| | | 241.0 -> 117.0 | 124 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 23791 | 5.90 µg/L | 93 |
| | | 341.0 -> 217.0 | 18232 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 16444 | 5.95 µg/L | 93 |
| | | 441.0 -> 336.9 | 34297 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 2842 | 0.46 µg/L | 99 |
| | | 526.0 -> 169.0 | 3494 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 7378 | 1.18 µg/L | 100 |
| | | 511.9 -> 219.0 | 2305 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 3250 | 0.48 µg/L | 93 |
| | | 616.1 -> 58.9 | 4913 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 351 | 1.14 µg/L | 100 |
| | | 699.1 -> 98.8 | 192 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 1232 | 0.22 µg/L | 99 |
| | | 295.0 -> 84.9 | 287 | | |
| NFDHA | 5.299 | 279.0 -> 85.1 | 4407 | 0.45 µg/L | 100 |
| | | 229.0 -> 84.9 | 3450 | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 11161 | 0.45 µg/L | 100 |
| | | 314.8 -> 82.9 | 380 | | |
| PFMPA | 3.351 | | | 0.39 µg/L | 98 |
| | | | | | |
| PFEESA | 5.875 | | | | |
| | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



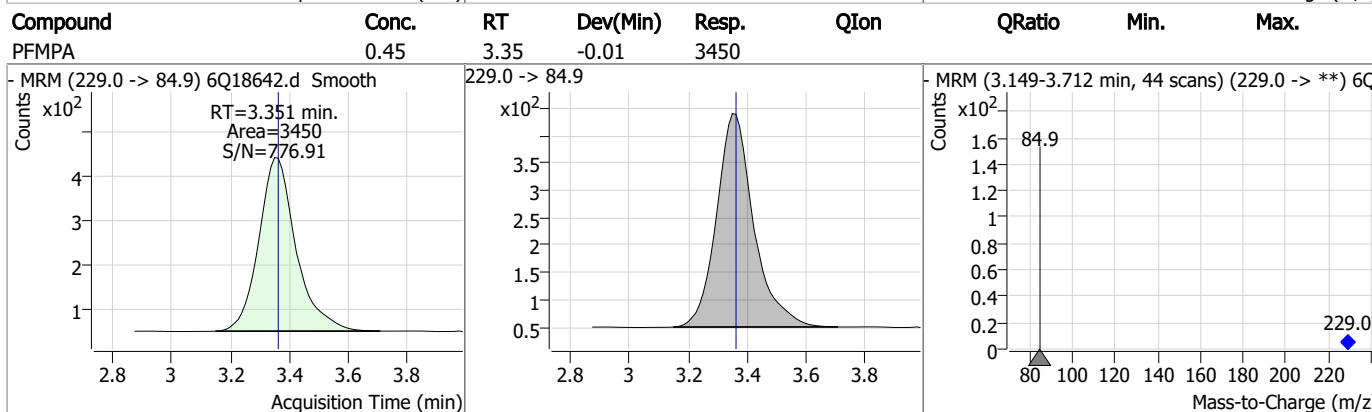
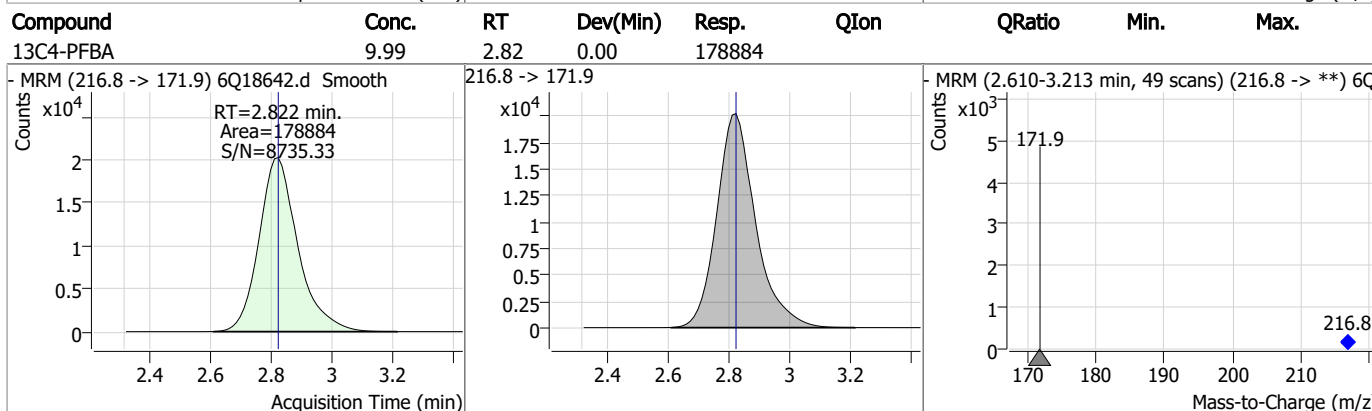
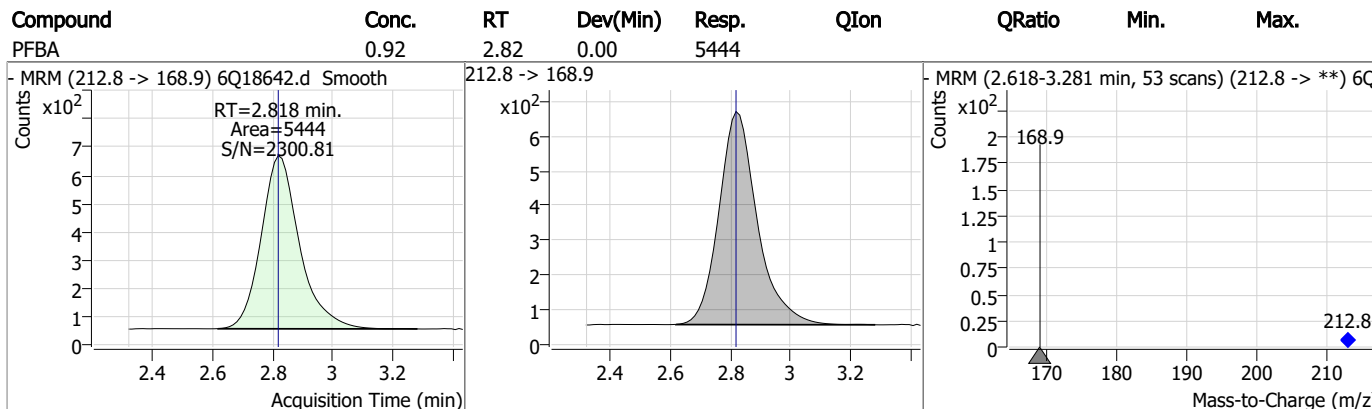
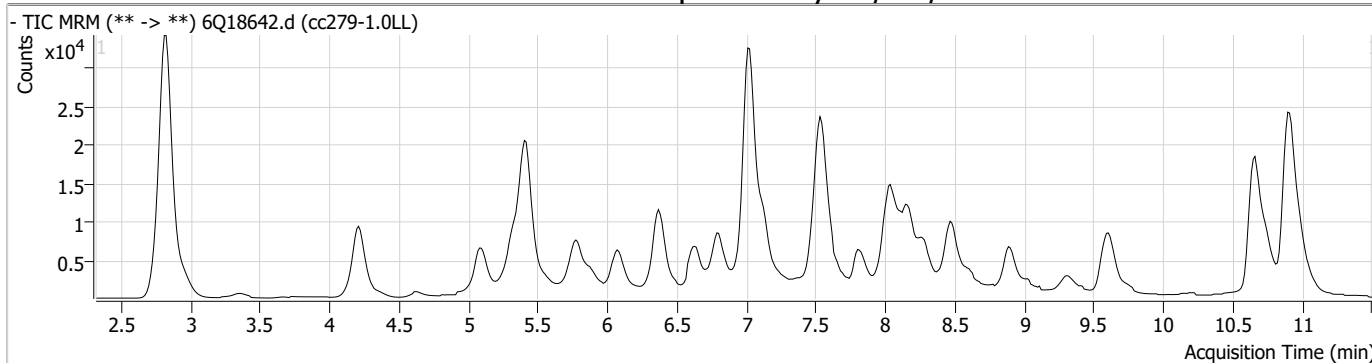
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

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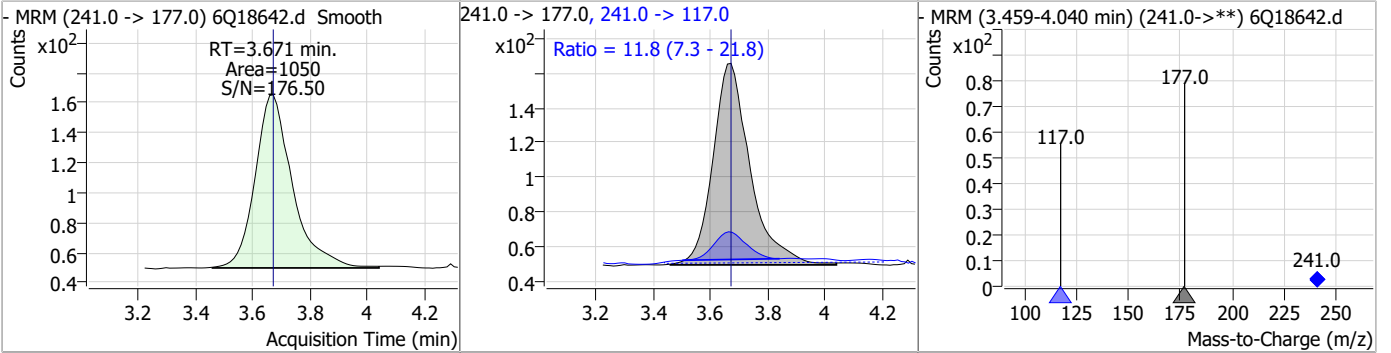
Perfluorinated Compounds by LC/MS/MS



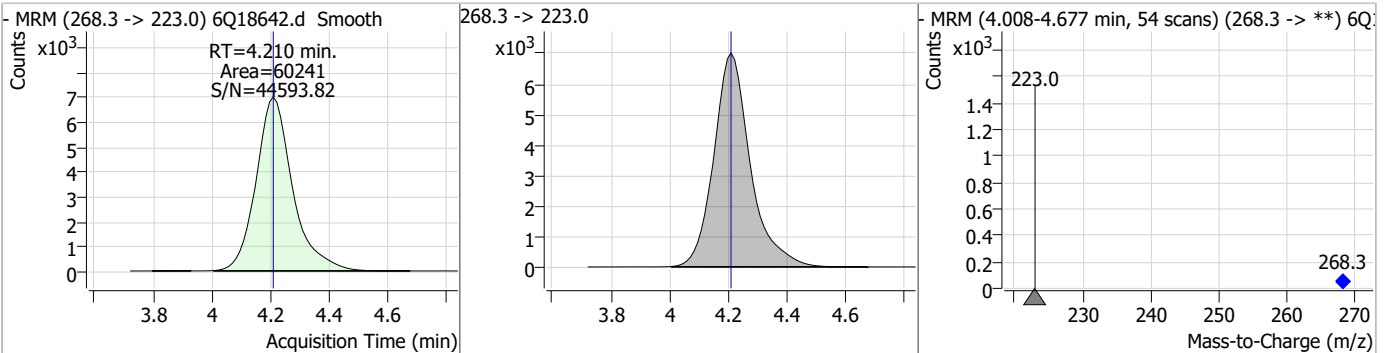
7.7.15
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Perfluorinated Compounds by LC/MS/MS

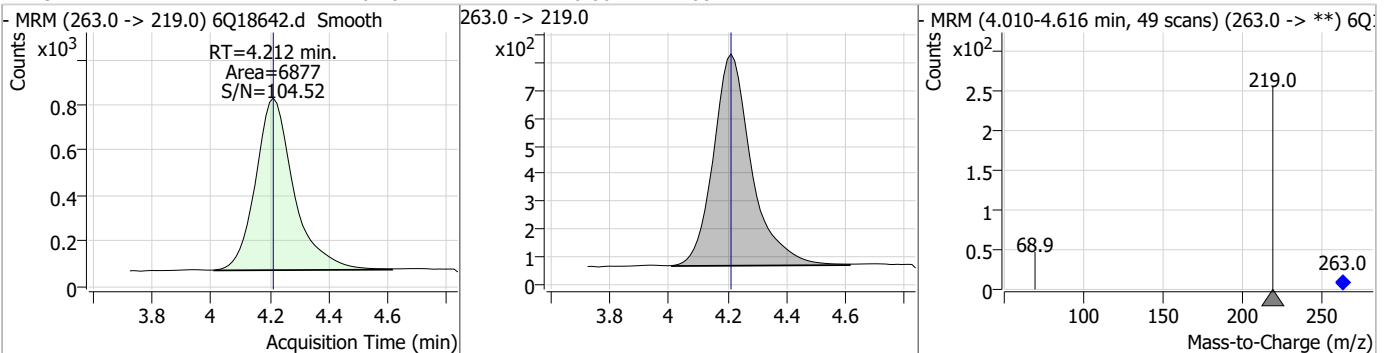
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| 3:3FTCA | 1.13 | 3.67 | 0.00 | 1050 | 241.0 -> 117.0 | 11.8 | 7.3 | 21.8 |



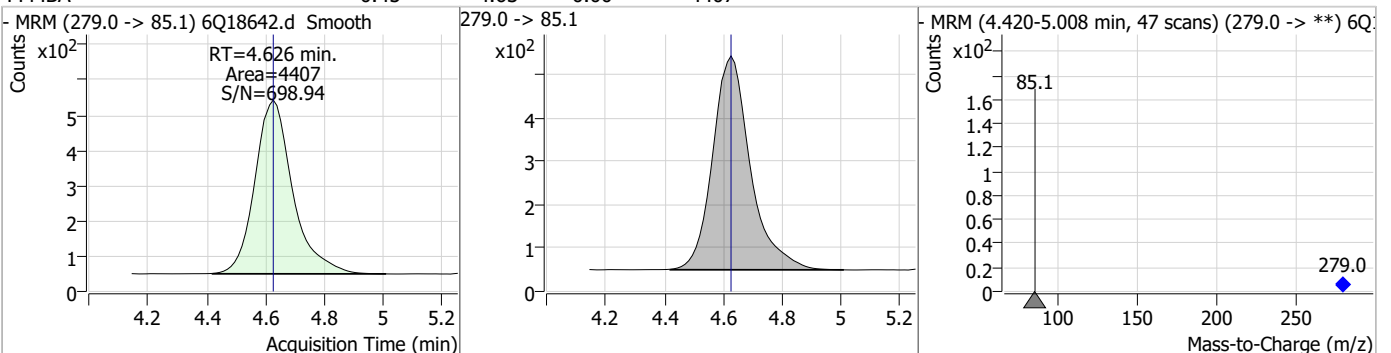
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFPeA | 5.10 | 4.21 | 0.00 | 60241 | | | | |



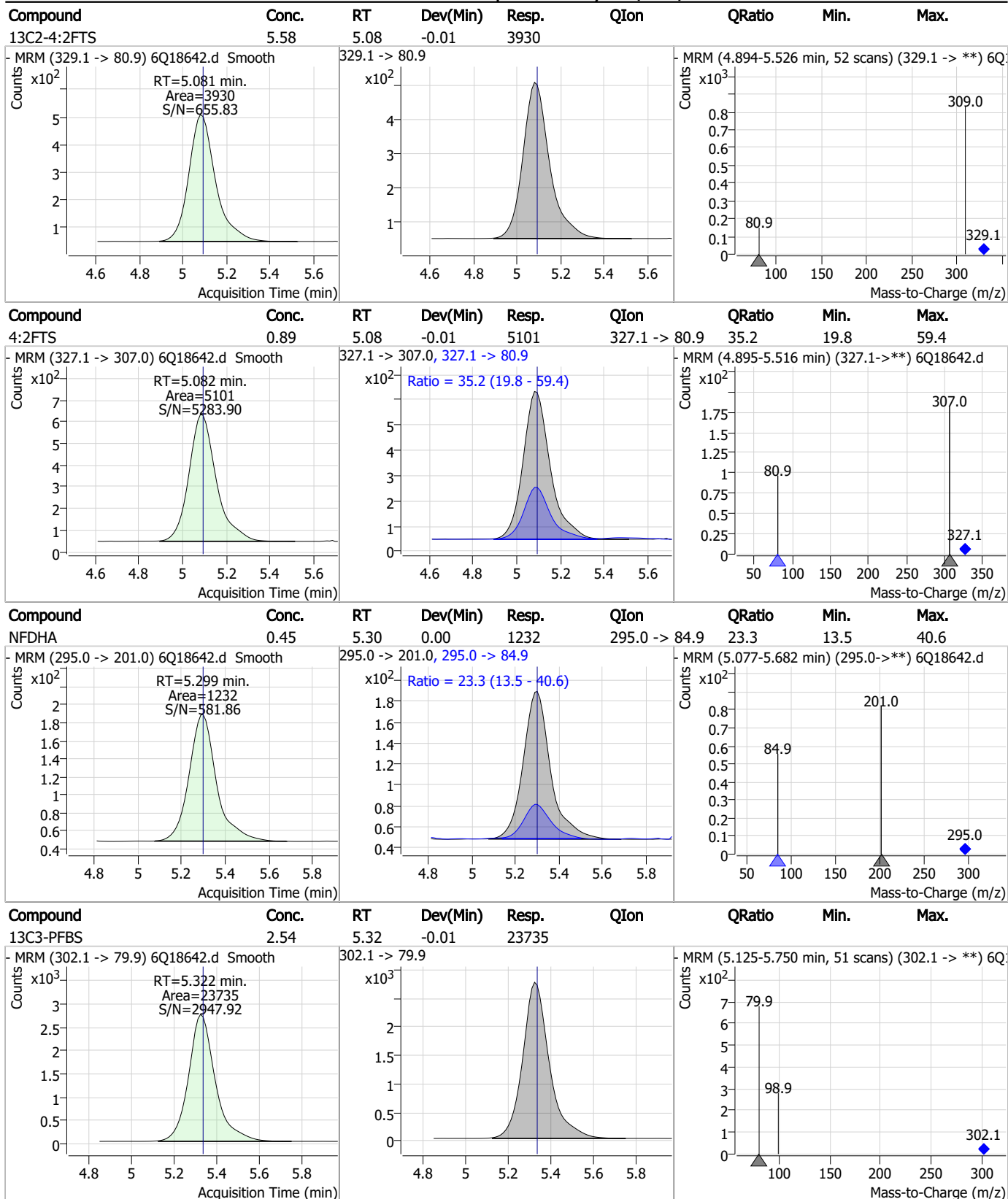
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFPeA | 0.48 | 4.21 | 0.00 | 6877 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|------|--------|------|------|
| PFMBA | 0.45 | 4.63 | 0.00 | 4407 | | | | |



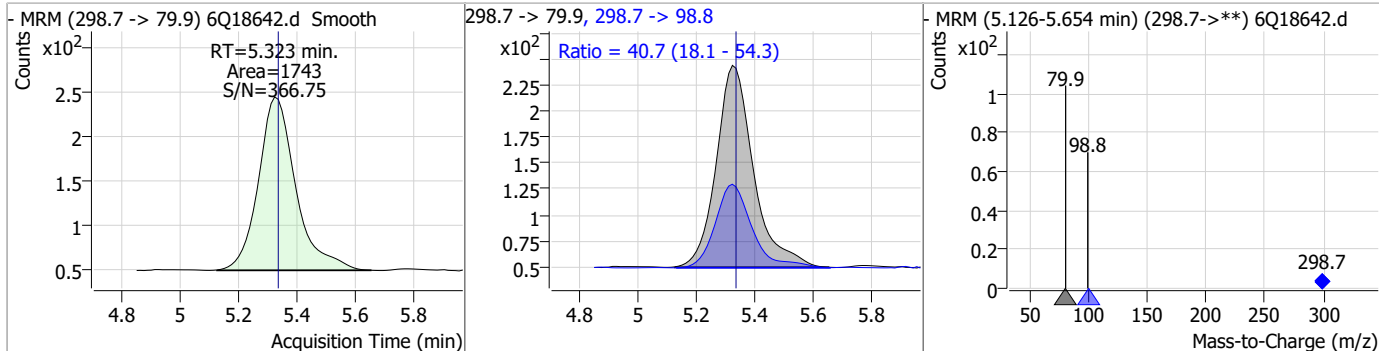
Perfluorinated Compounds by LC/MS/MS



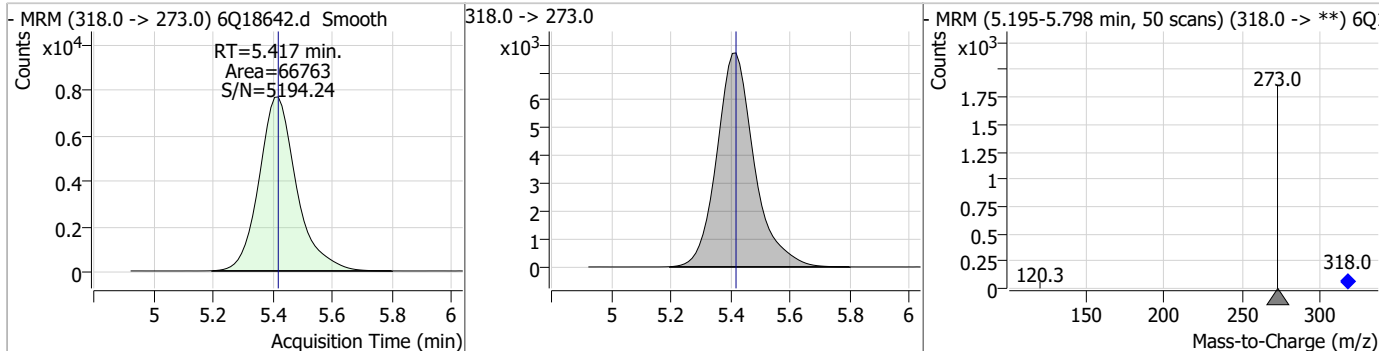
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Perfluorinated Compounds by LC/MS/MS

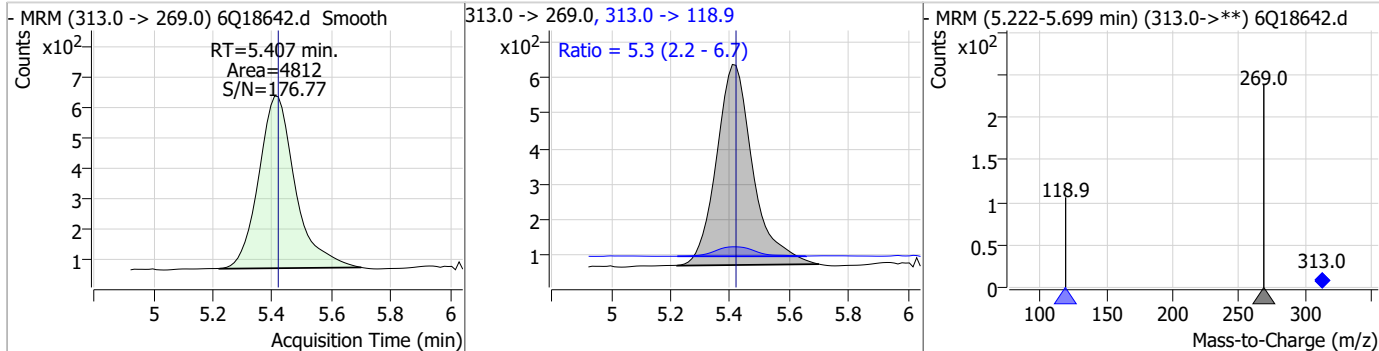
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 0.22 | 5.32 | -0.01 | 1743 | 298.7 -> 98.8 | 40.7 | 18.1 | 54.3 |



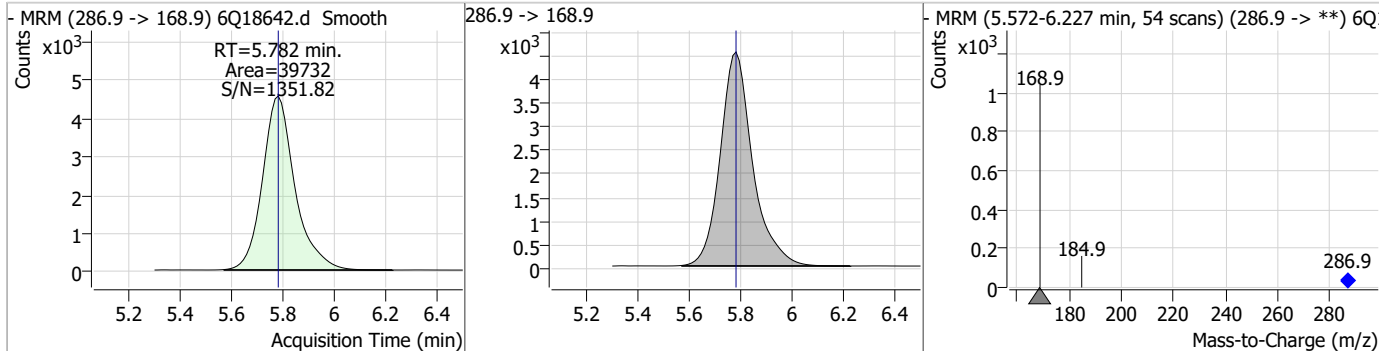
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| 13C5-PFHxA | 2.60 | 5.42 | 0.00 | 66763 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 0.21 | 5.41 | -0.01 | 4812 | 313.0 -> 118.9 | 5.3 | 2.2 | 6.7 |

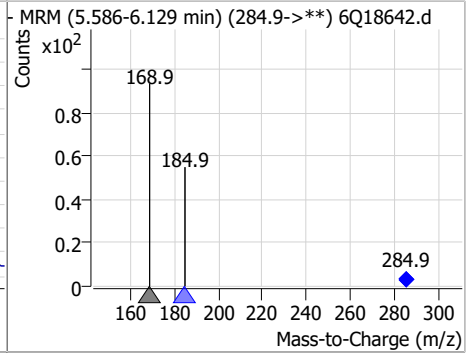
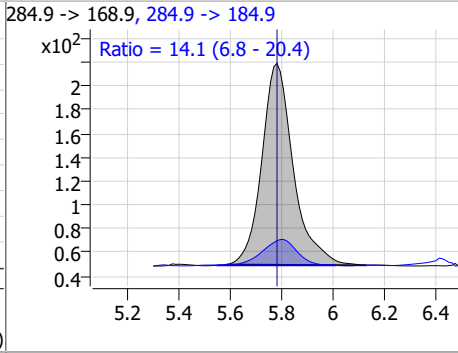
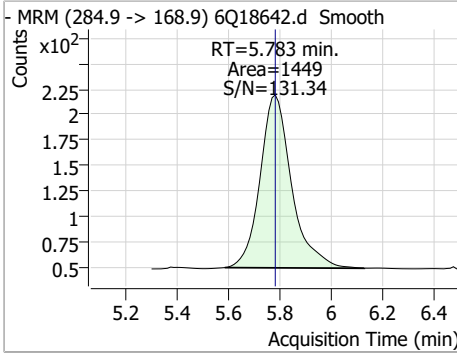


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|------|--------|------|------|
| 13C3-HFPO-DA | 9.96 | 5.78 | 0.00 | 39732 | | | | |

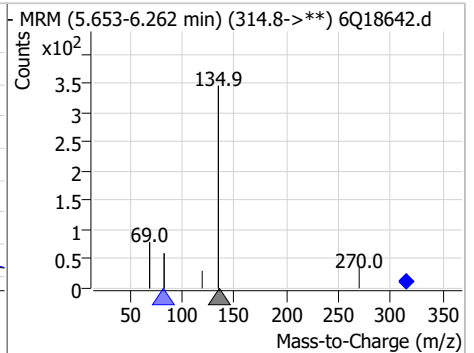
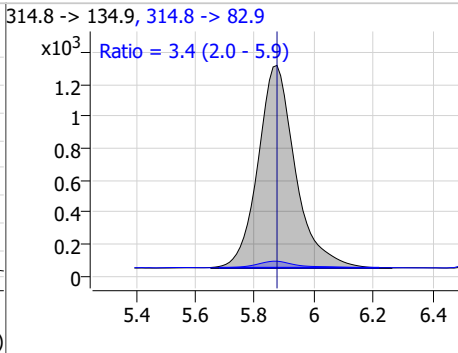
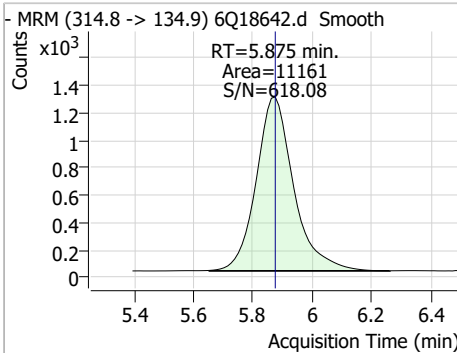


Perfluorinated Compounds by LC/MS/MS

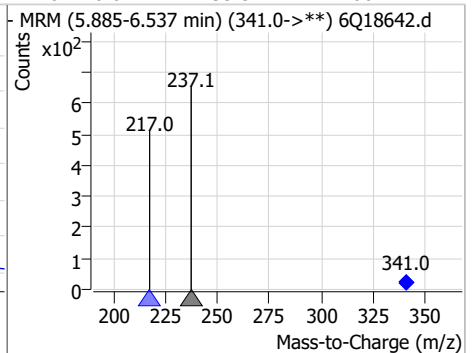
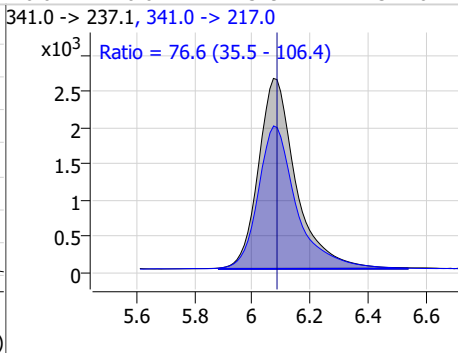
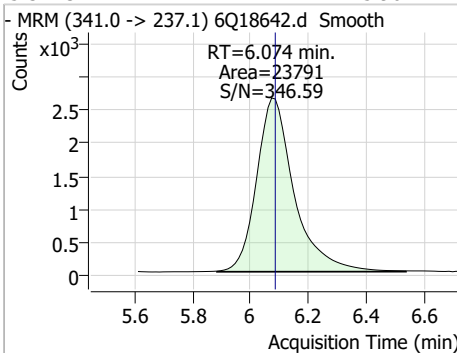
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 0.43 | 5.78 | 0.00 | 1449 | 284.9 -> 184.9 | 14.1 | 6.8 | 20.4 |



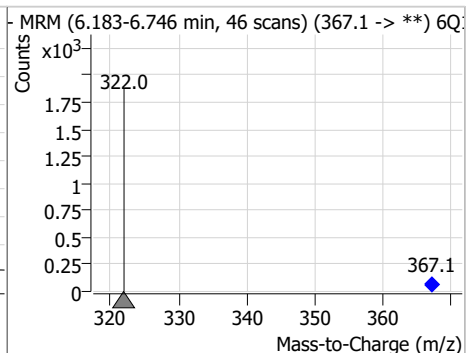
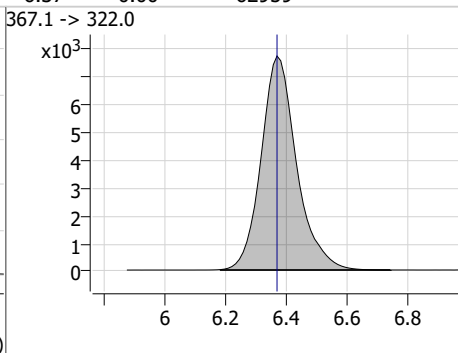
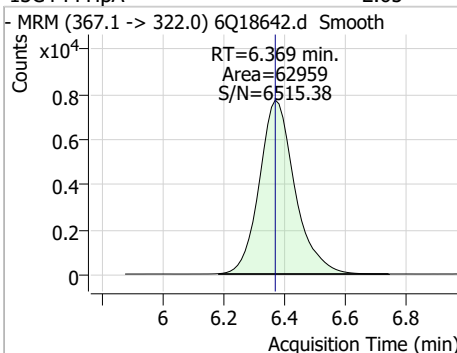
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFEESA | 0.39 | 5.88 | 0.00 | 11161 | 314.8 -> 82.9 | 3.4 | 2.0 | 5.9 |



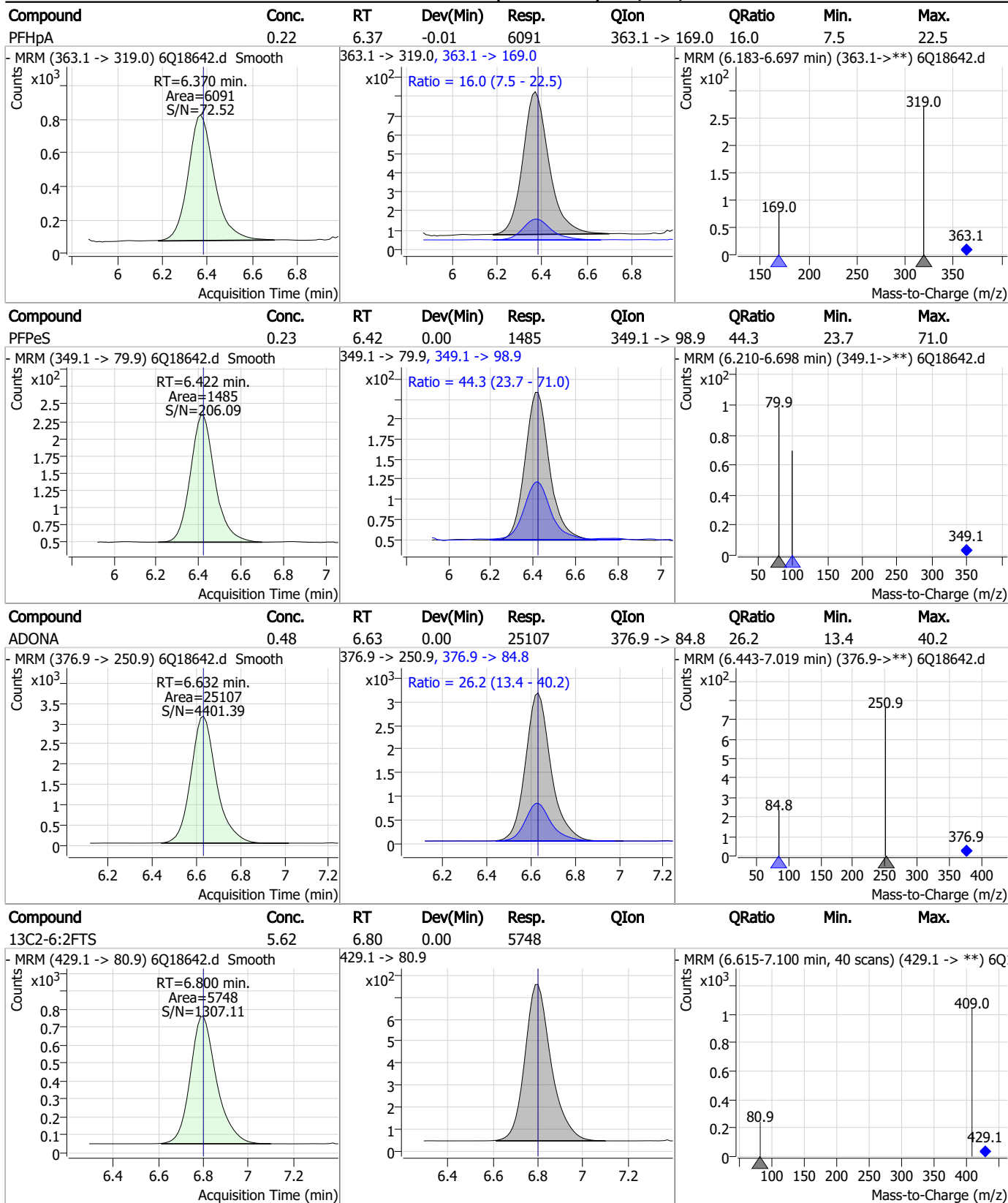
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|-------|
| 5:3FTCA | 5.90 | 6.07 | -0.01 | 23791 | 341.0 -> 217.0 | 76.6 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.65 | 6.37 | 0.00 | 62959 | 367.1 -> 322.0 | | | |

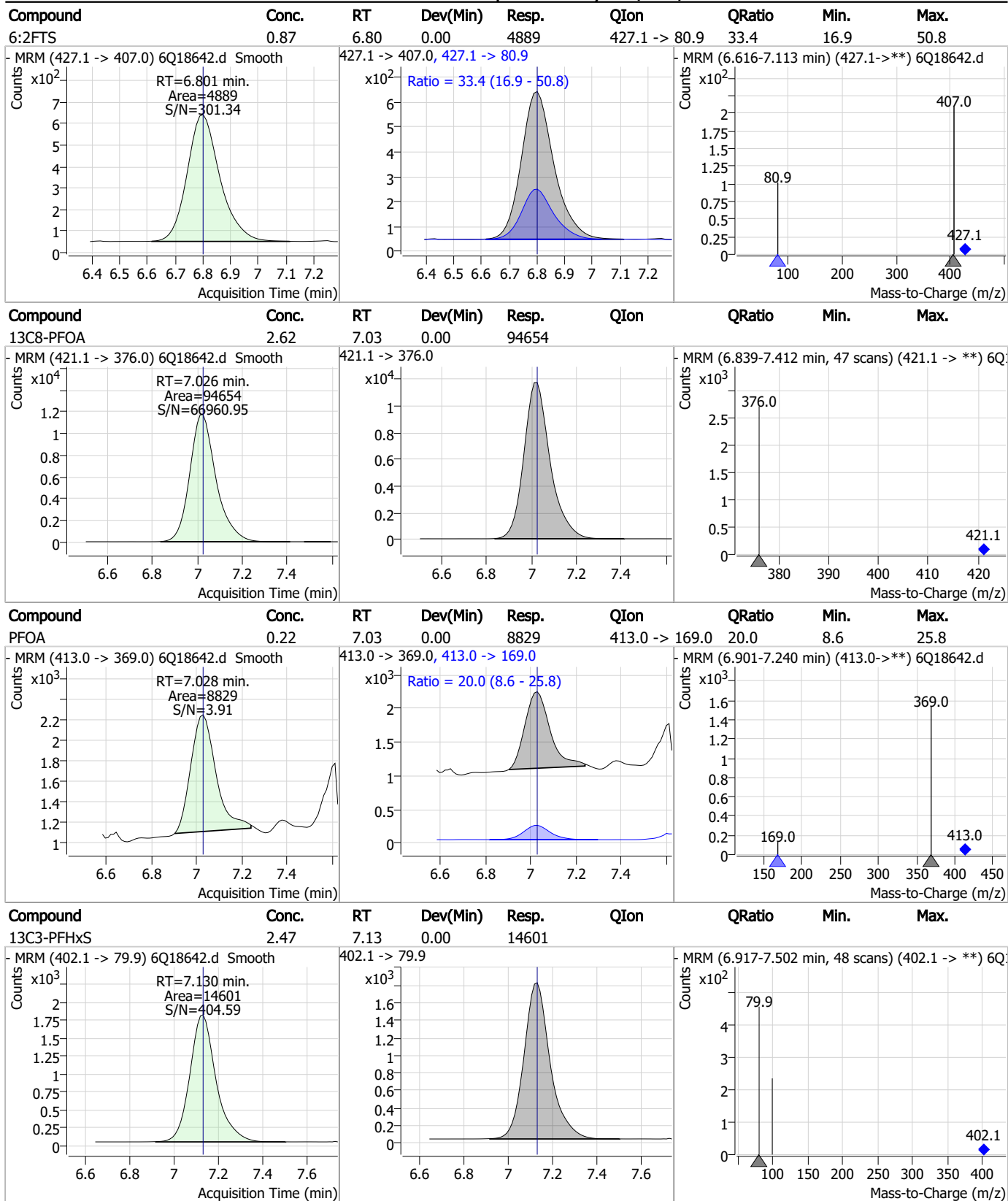


Perfluorinated Compounds by LC/MS/MS



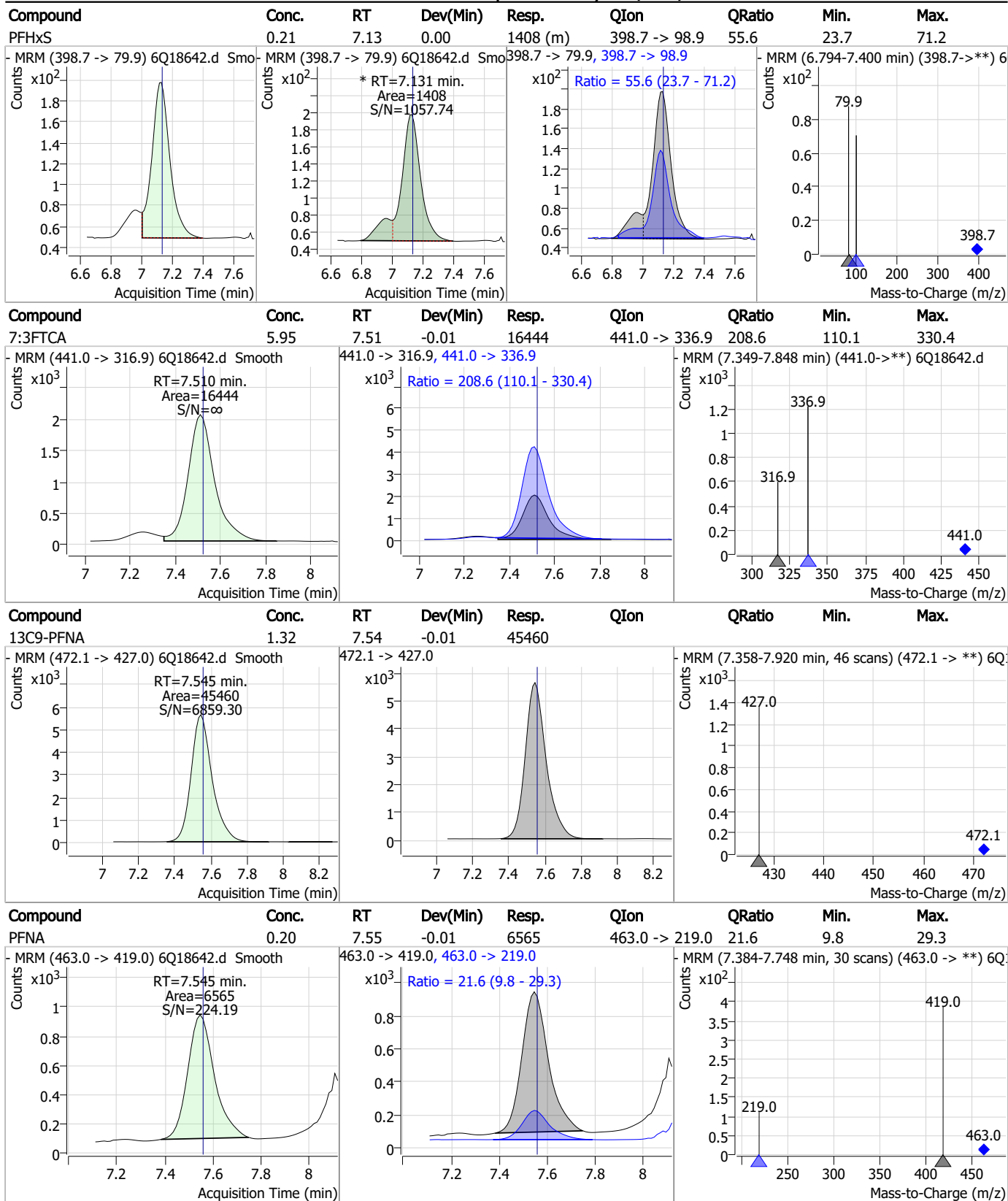
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Perfluorinated Compounds by LC/MS/MS



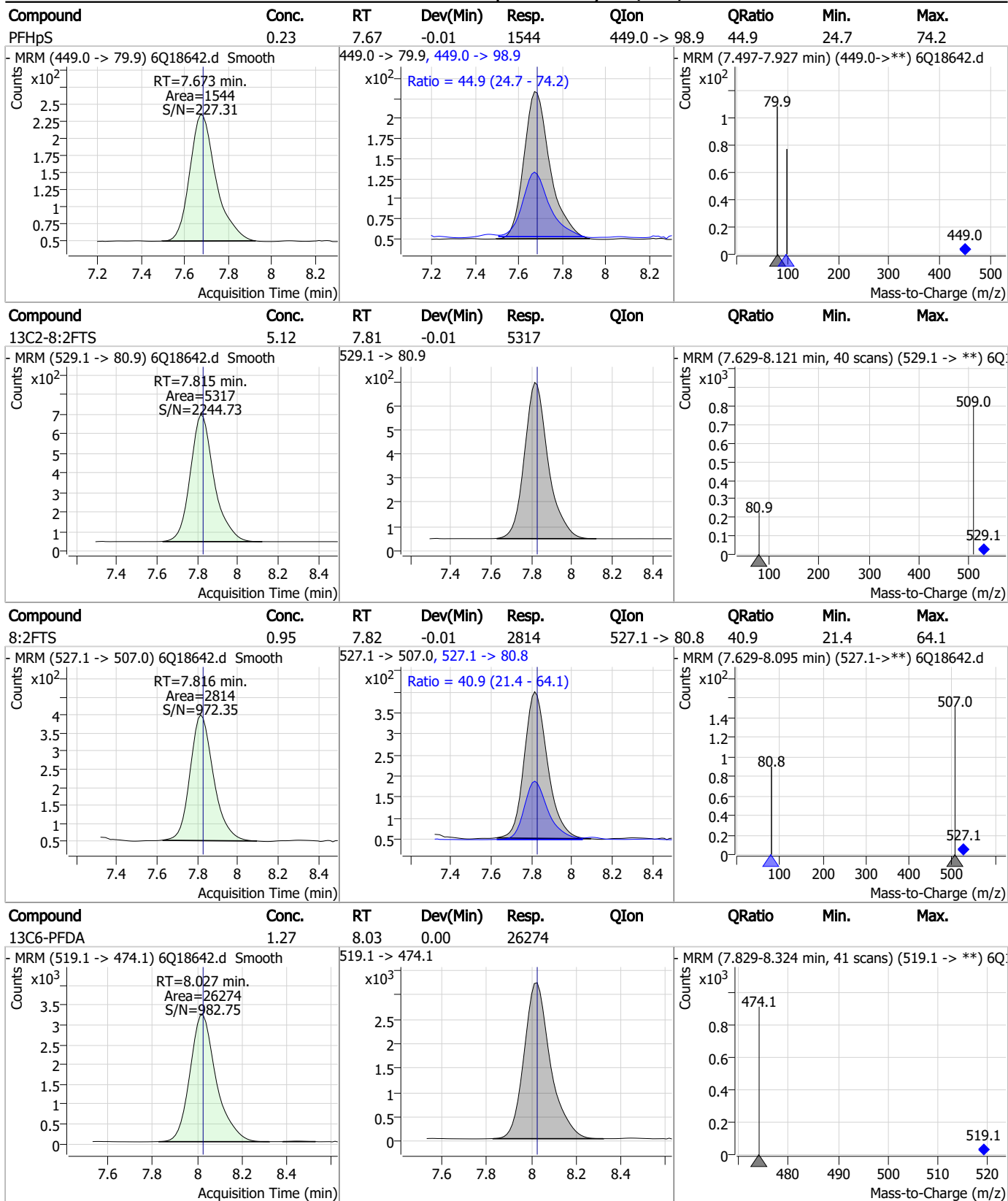
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Perfluorinated Compounds by LC/MS/MS



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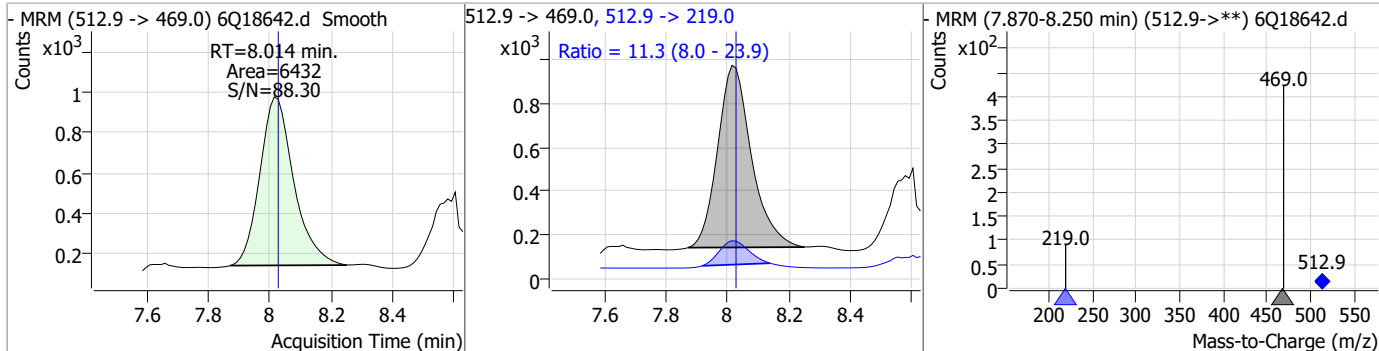
Perfluorinated Compounds by LC/MS/MS



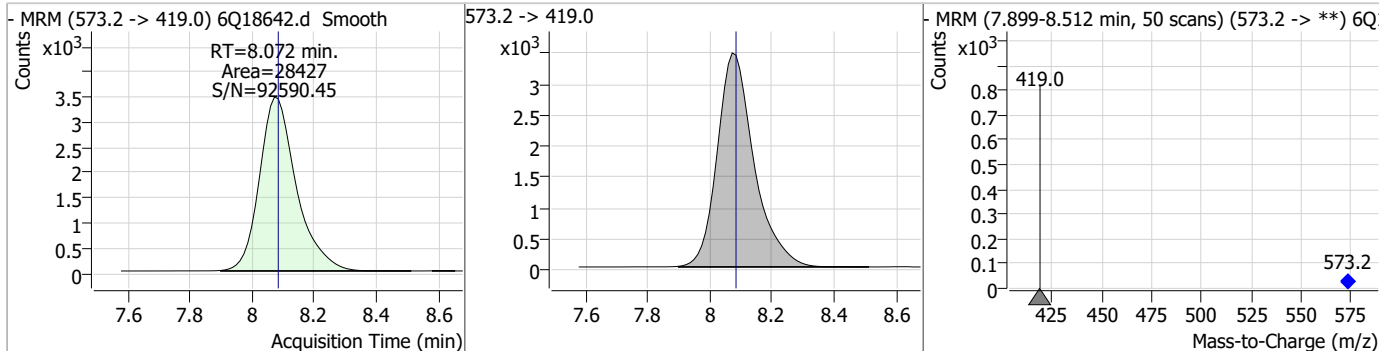
7.7.15
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Perfluorinated Compounds by LC/MS/MS

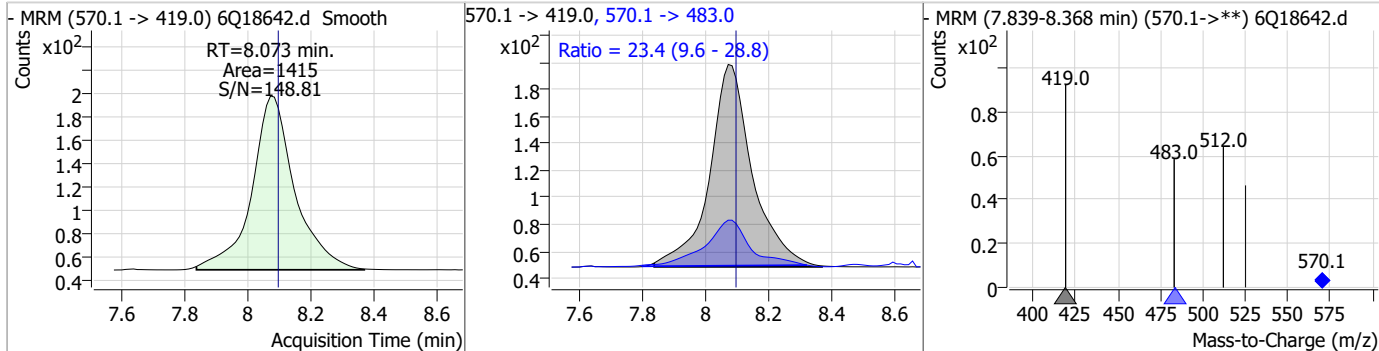
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFDA | 0.21 | 8.01 | -0.01 | 6432 | 512.9 -> 219.0 | 11.3 | 8.0 | 23.9 |



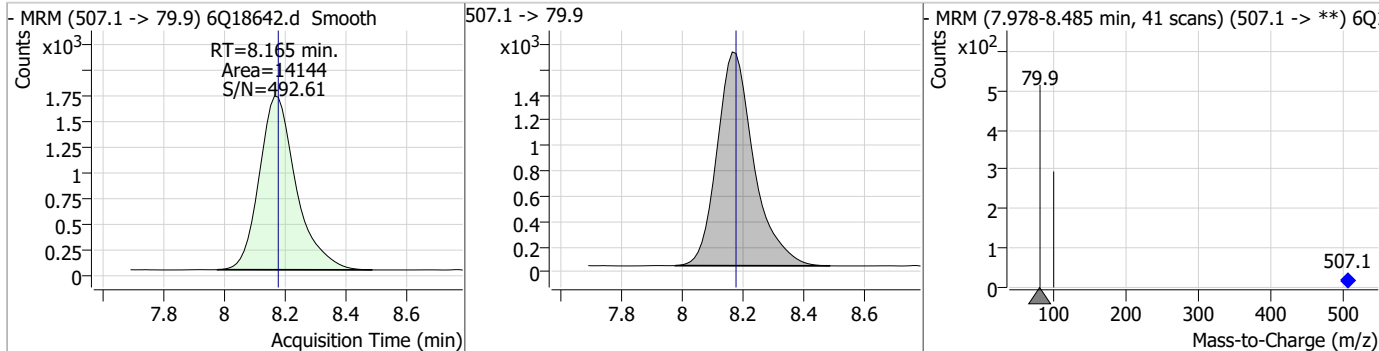
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|------|--------|------|------|
| d3-MeFOSAA | 4.81 | 8.07 | -0.01 | 28427 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| MeFOSAA | 0.24 | 8.07 | -0.02 | 1415 | 570.1 -> 483.0 | 23.4 | 9.6 | 28.8 |

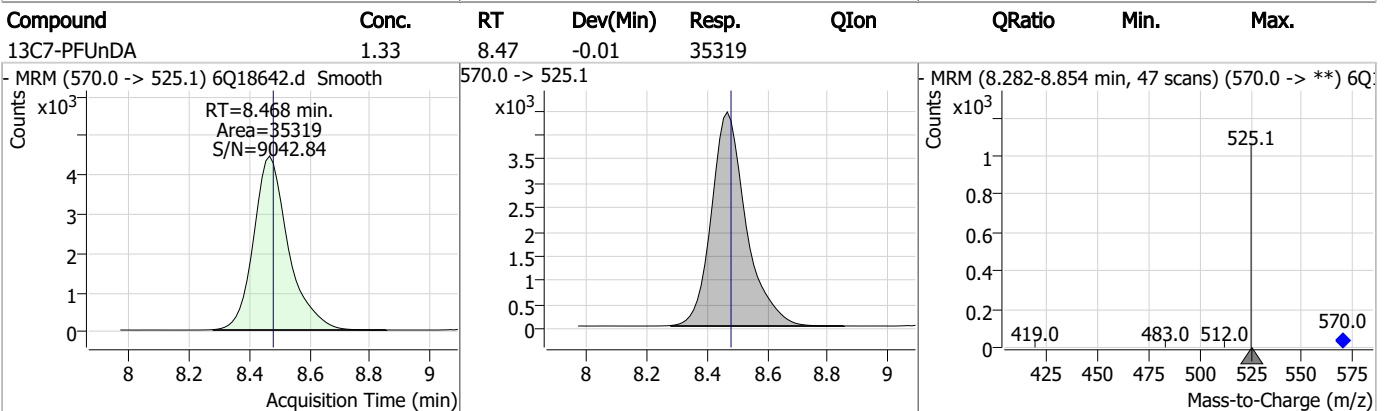
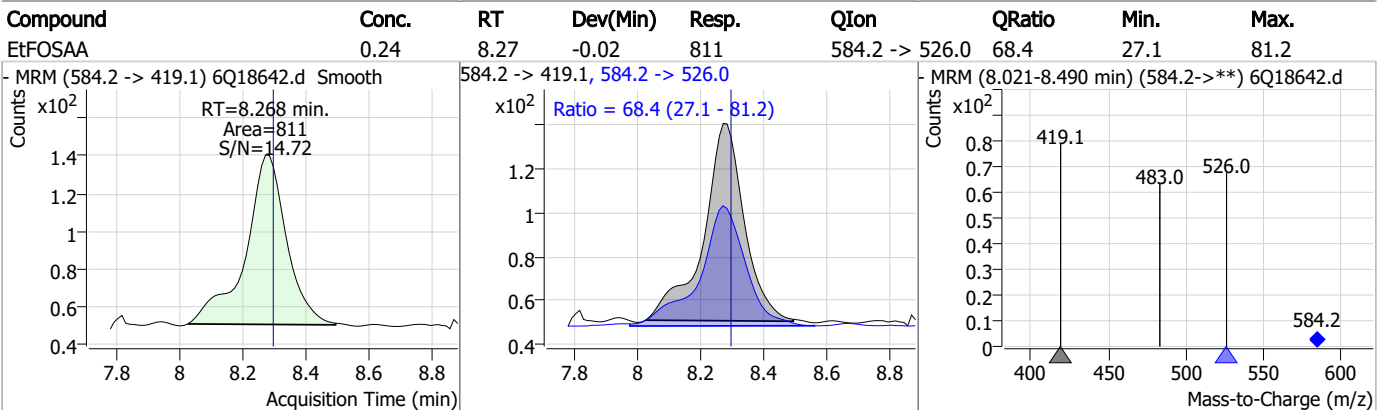
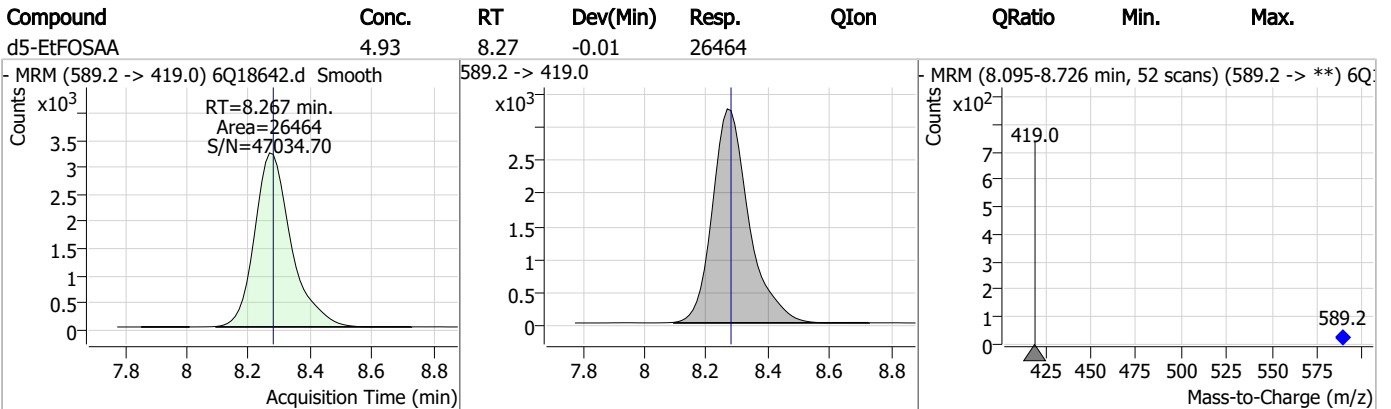
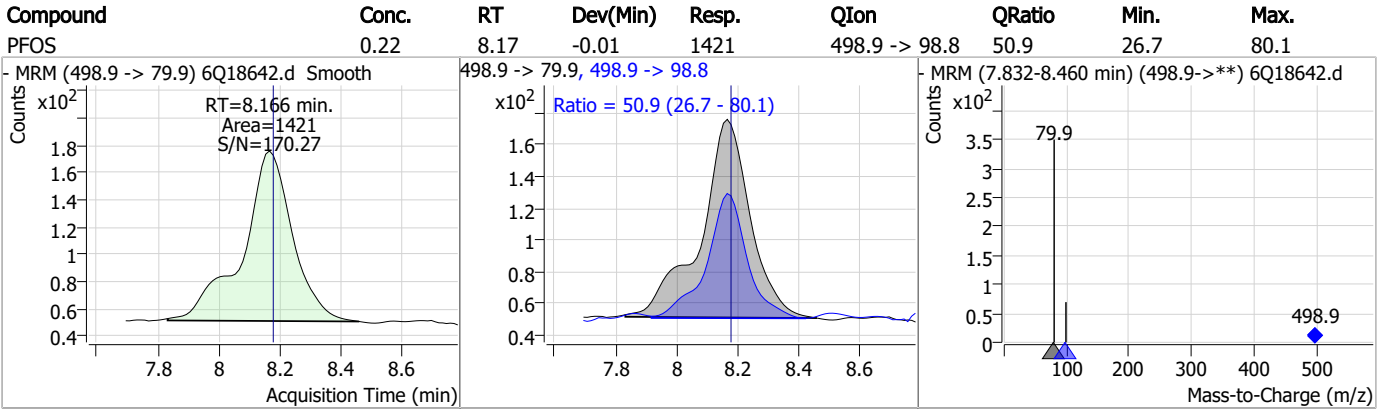


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|------|----------|-------|------|--------|------|------|
| 13C8-PFOS | 2.41 | 8.16 | -0.01 | 14144 | | | | |

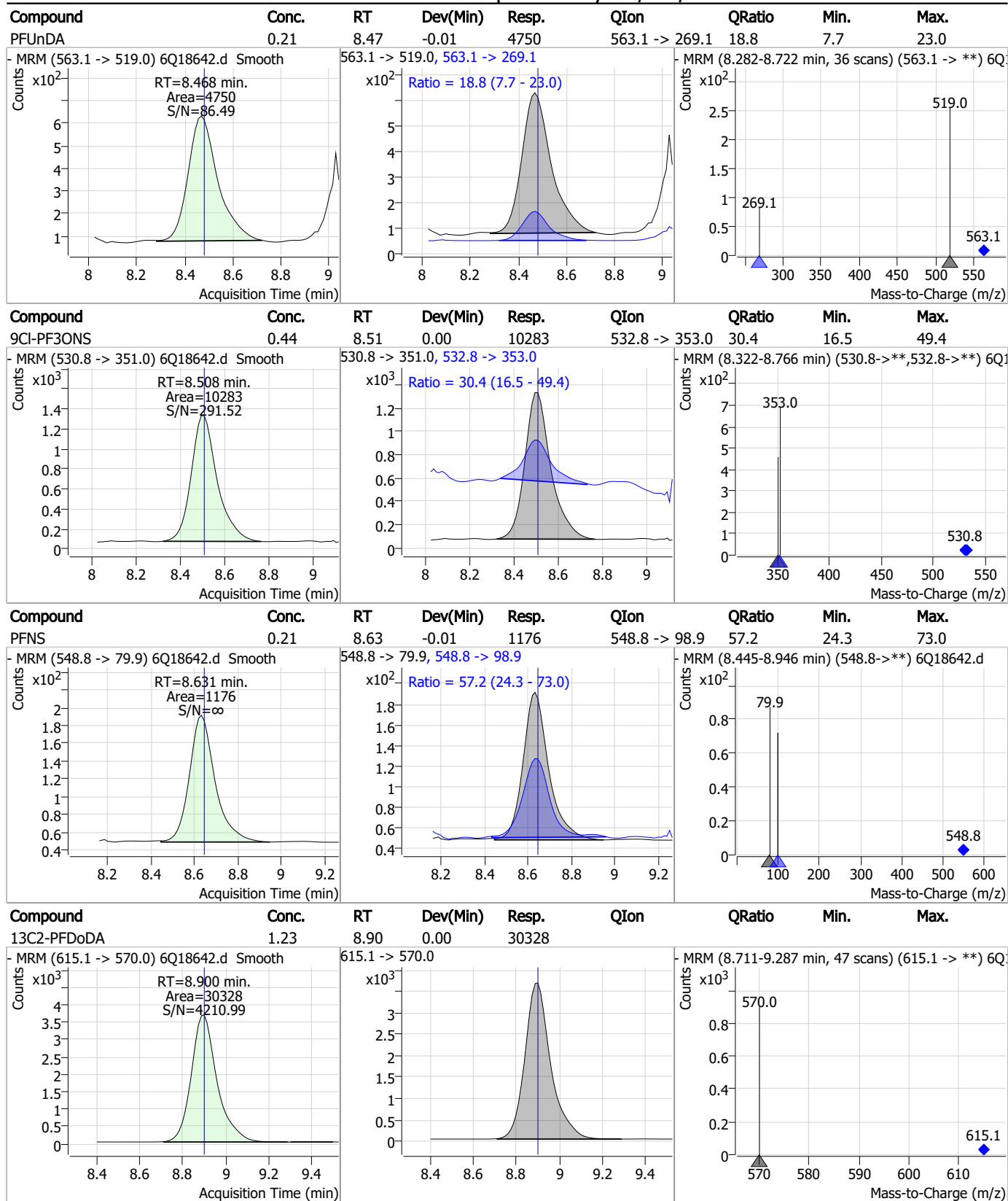


7.7.15
7

Perfluorinated Compounds by LC/MS/MS



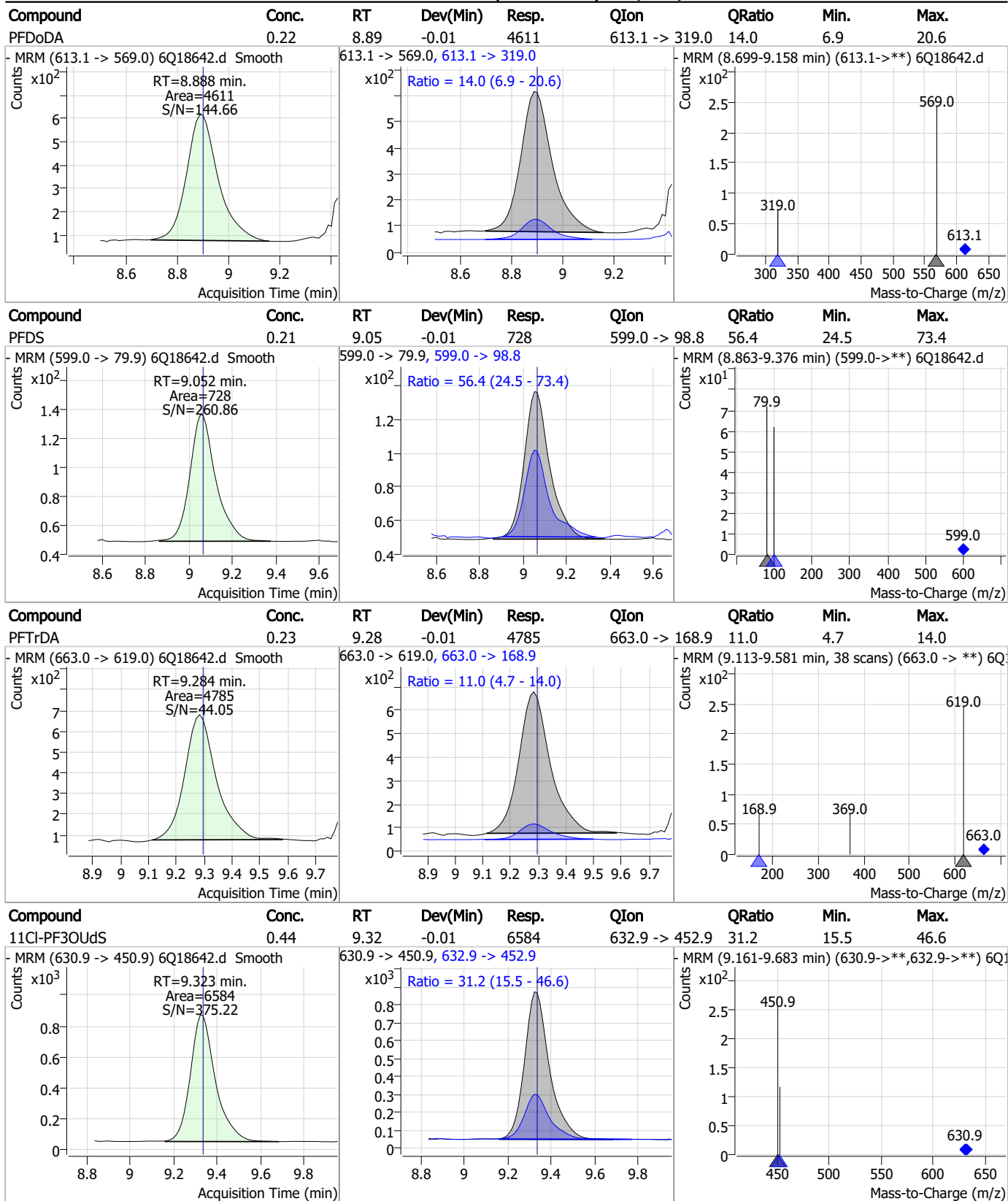
Perfluorinated Compounds by LC/MS/MS



7.7.15

7

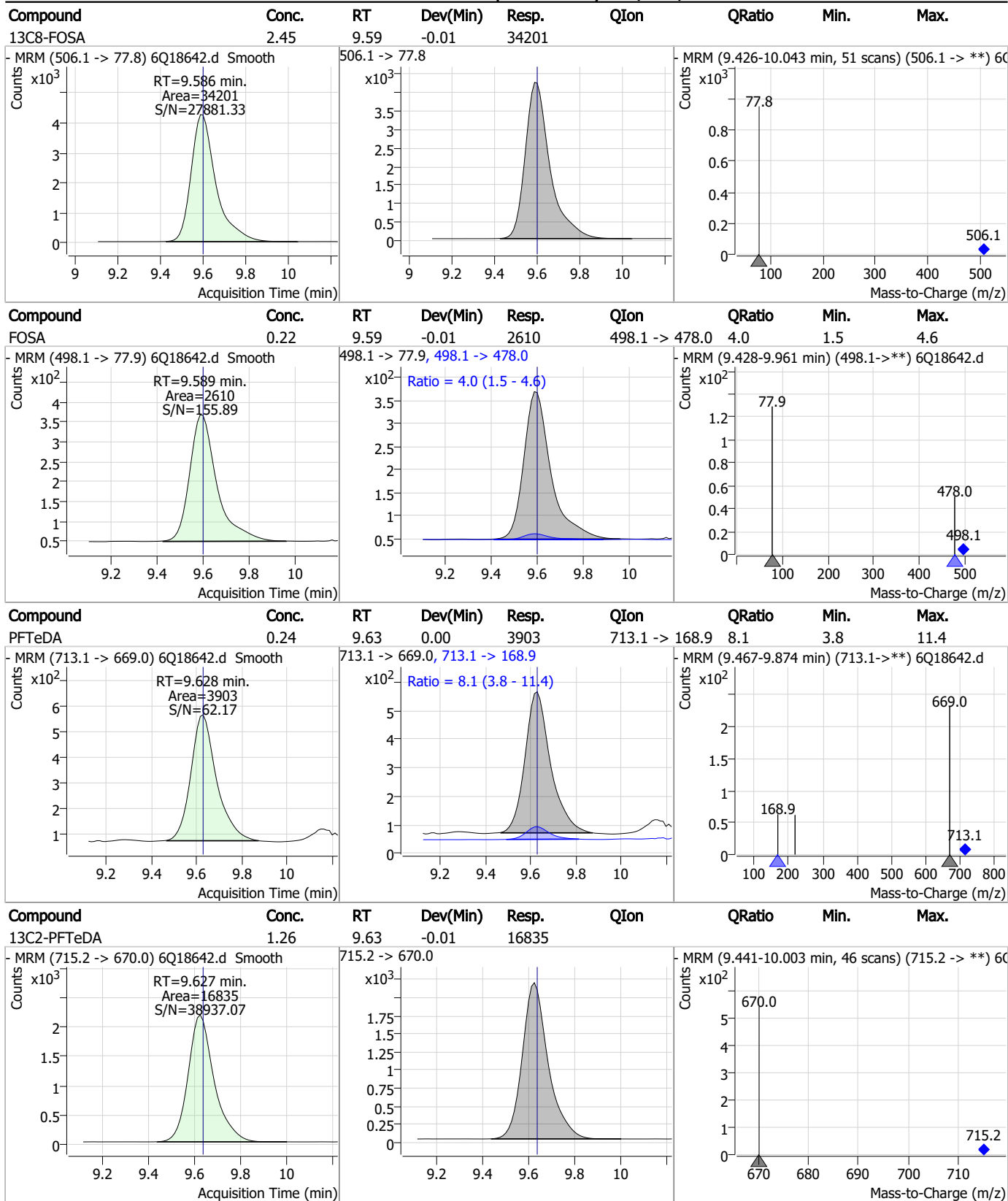
Perfluorinated Compounds by LC/MS/MS



7.7.15
7



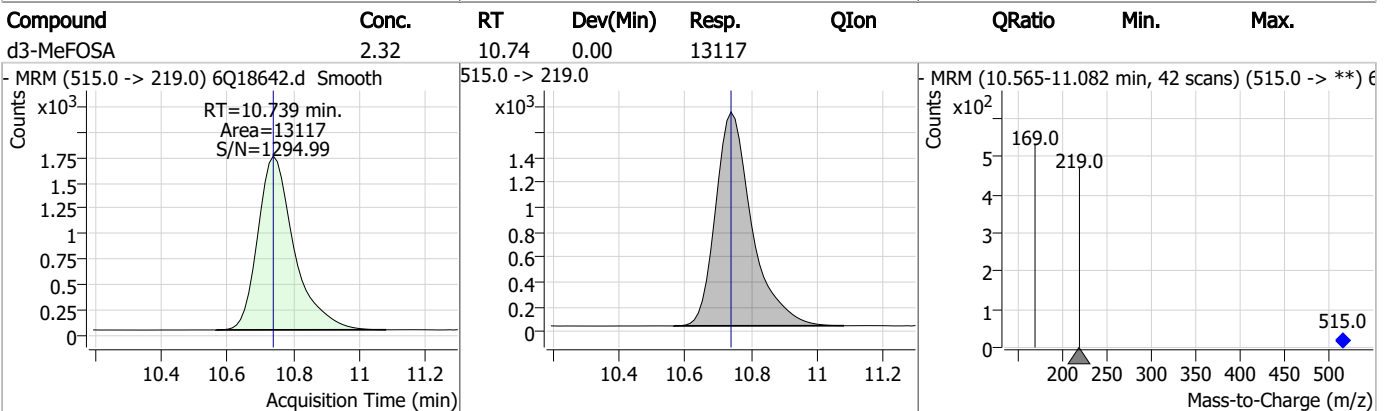
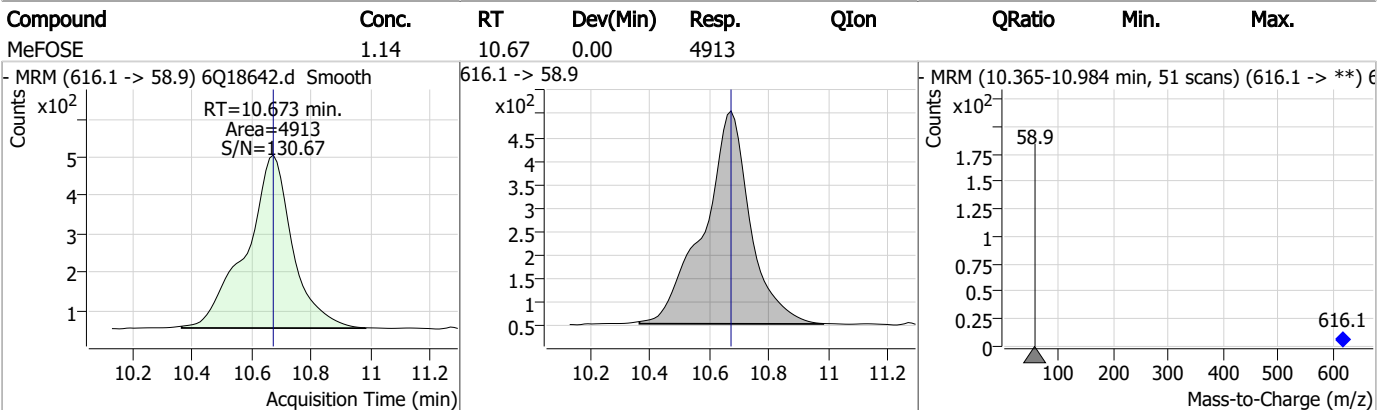
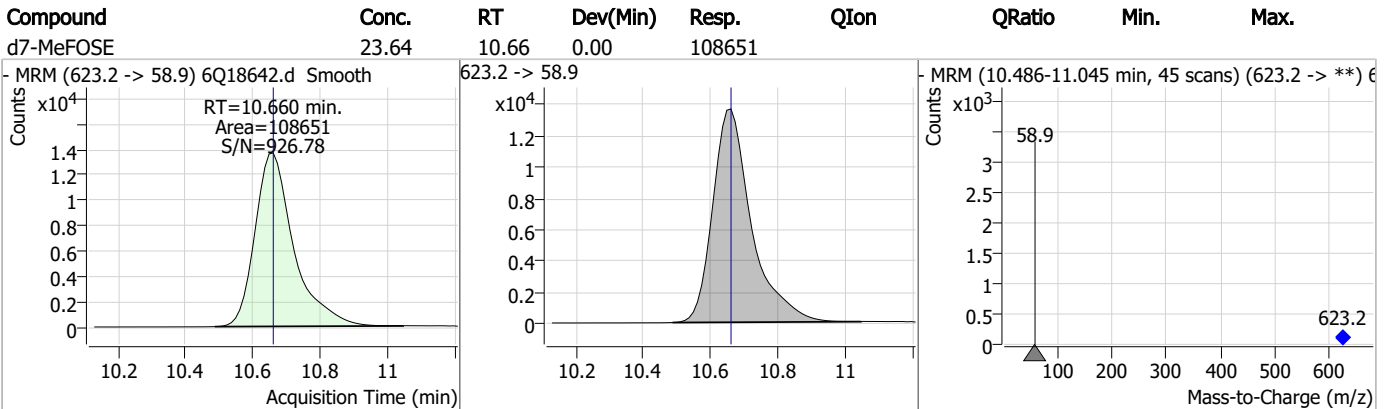
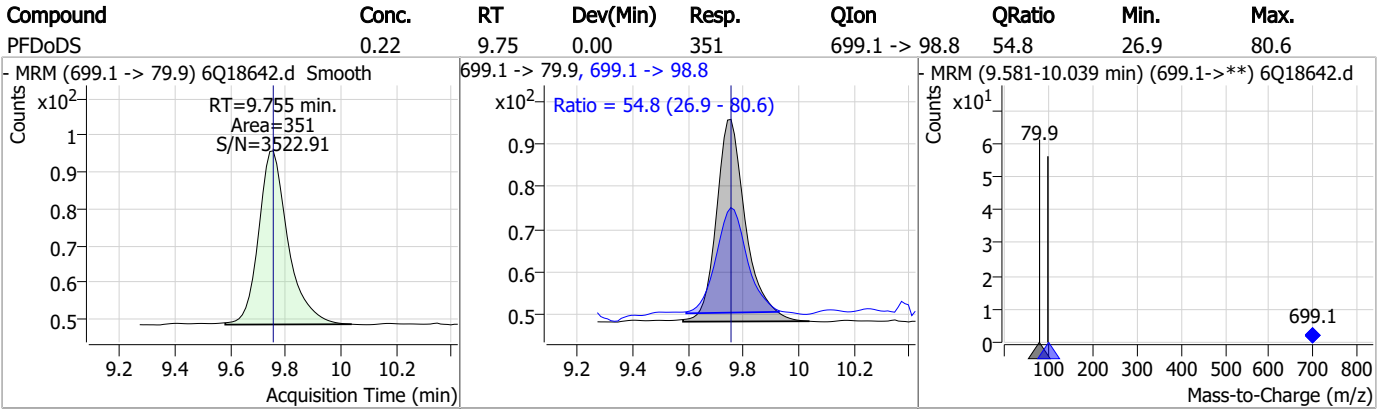
Perfluorinated Compounds by LC/MS/MS



7.7.15 7



Perfluorinated Compounds by LC/MS/MS

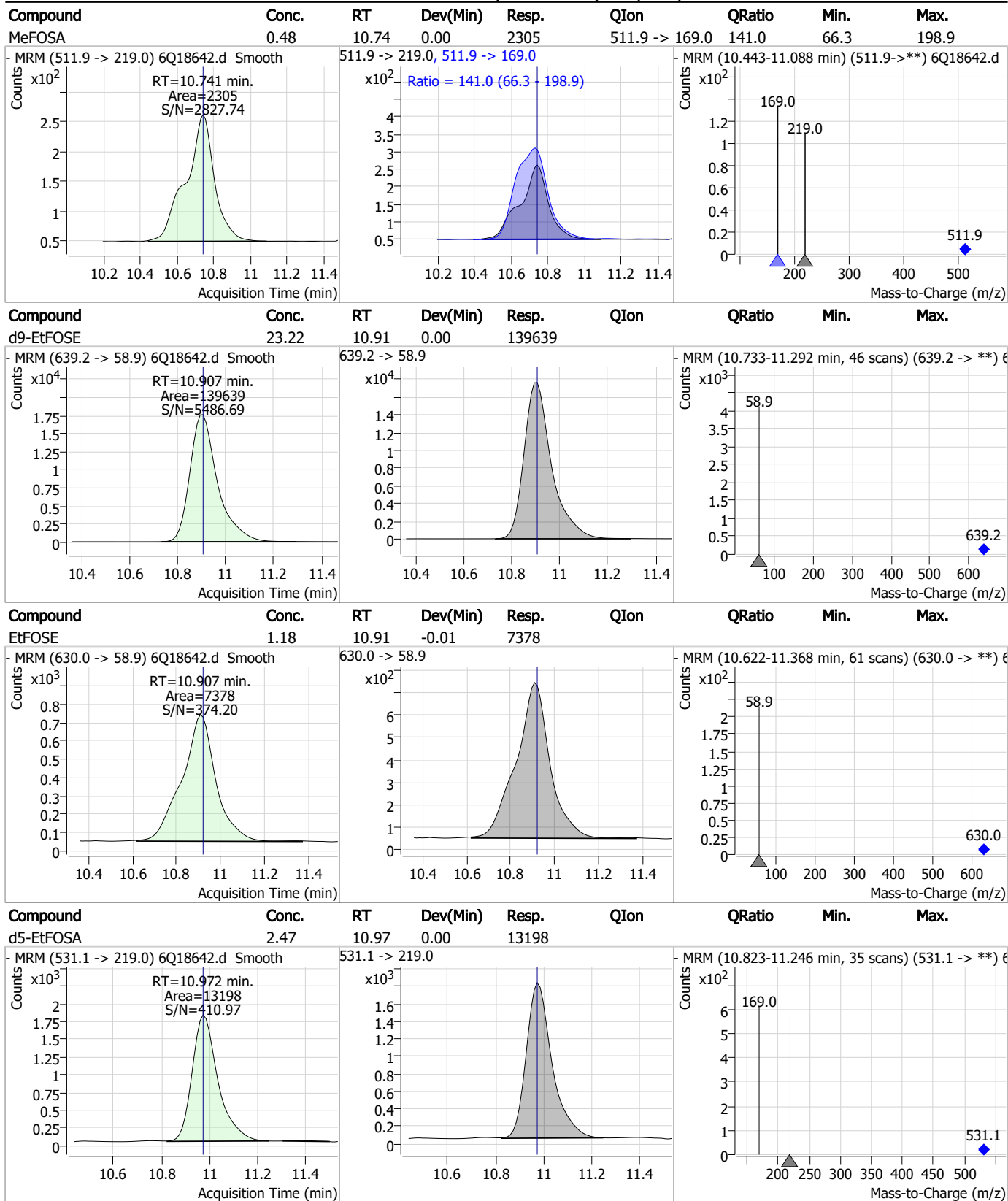


7.7.15

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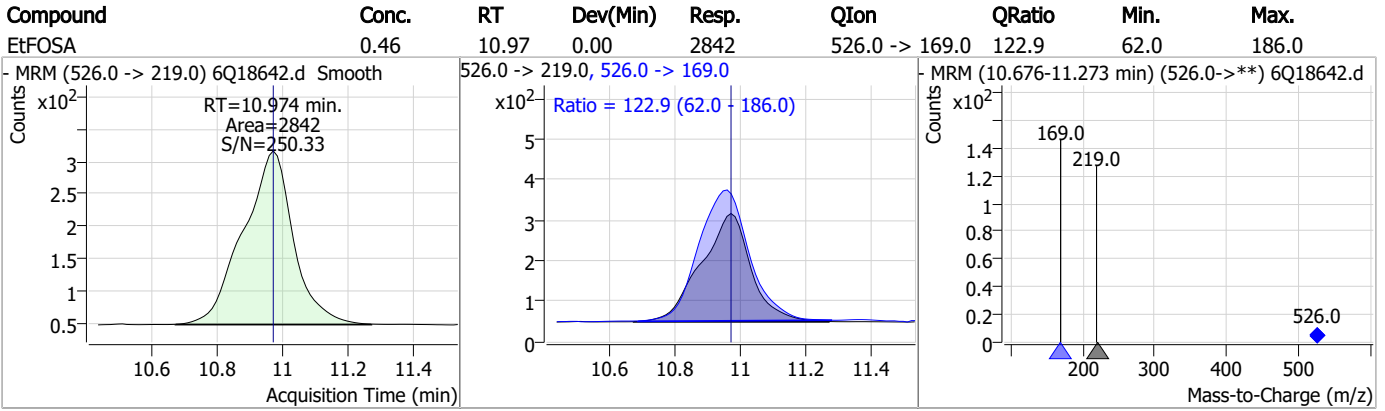
Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Perfluorinated Compounds by LC/MS/MS



7.7.15

7

Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18642.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 06/01/23 06:35 Supervisor approved: 06/01/23 16:14 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |

7.7.15.1

7

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18653.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 9:14:24 AM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 193677 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 64771 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 71890 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 65846 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.013 | 421.1 -> 376.0 | 100075 | 2.50 µg/L | -0.013 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 47752 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 28228 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36005 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31688 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 18290 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 35263 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 25612 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 16203 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 15145 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4156 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5945 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5987 | 5.00 µg/L | -0.012 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 29455 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 43982 | 10.00 µg/L | -0.012 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 29745 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119470 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 155660 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 14051 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13853 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.178 | 502.8 -> 79.9 | 18611 | 2.50 µg/L | -0.012 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 80824 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11225 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 109869 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 38549 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 55056 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 65823 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4156 | 5.55 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 111.0% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5945 | 5.47 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 109.4% | | |
| 13C2-8:2FTS | 7.815 | 529.1 -> 80.9 | 5987 | 5.43 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 108.6% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 31688 | 1.18 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 94.7% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 18290 | 1.26 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 100.4% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 25612 | 2.58 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 103.1% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 16203 | 2.58 µg/L | 0.000 |

7.7.16
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.3% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 193677 | 10.06 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 100.6% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 65846 | 2.56 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 71890 | 2.58 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.2% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 64771 | 5.06 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 101.2% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 28228 | 1.25 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36005 | 1.25 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 100.0% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 35263 | 2.49 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.4% | |
| 13C8-PFOA | 7.013 | 421.1 -> 376.0 | 100075 | 2.43 µg/L | -0.013 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.3% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 15145 | 2.54 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.6% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 47752 | 1.32 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 105.3% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 29455 | 4.90 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.1% | |
| 13C3-HFPO-DA | 5.770 | 286.9 -> 168.9 | 43982 | 10.17 µg/L | -0.012 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 101.7% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 13853 | 2.41 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.4% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 29745 | 5.45 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 108.9% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119470 | 25.56 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 155660 | 25.46 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 101.8% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 14051 | 2.58 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 103.2% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 52888 | 8.76 µg/L | 97 |
| | | 327.1 -> 80.9 | 19944 | | |
| 6:2FTS | 6.789 | 427.1 -> 407.0 | 52291 | 8.95 µg/L | 98 |
| | | 427.1 -> 80.9 | 18190 | | |
| 8:2FTS | 7.828 | 527.1 -> 507.0 | 28364 | 8.52 µg/L | 97 |
| | | 527.1 -> 80.8 | 12639 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 8847 | 2.31 µg/L | 96 |
| | | 584.2 -> 526.0 | 4555 | | |
| FOSA | 9.602 | 498.1 -> 77.9 | 28572 | 2.34 µg/L | 100 |
| | | 498.1 -> 478.0 | 857 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 15544 | 2.57 µg/L | 97 |
| | | 570.1 -> 483.0 | 3193 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 61992 | 9.67 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 17843 | 2.05 µg/L | 95 |
| | | 298.7 -> 98.8 | 6955 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 77749 | 2.38 µg/L | 97 |
| | | 512.9 -> 219.0 | 11511 | | |
| PFDODA | 8.900 | 613.1 -> 569.0 | 53126 | 2.44 µg/L | 97 |
| | | 613.1 -> 319.0 | 8002 | | |
| PFDS | 9.064 | 599.0 -> 79.9 | 8250 | 2.18 µg/L | 98 |

7.7.16
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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|--------------|--------|----------------|----------|-------------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 3918 | 2.28 µg/L | 98 |
| | | 363.1 -> 319.0 | 66511 | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 10572 | 2.17 µg/L | 96 |
| | | 449.0 -> 79.9 | 15758 | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 8182 | 2.30 µg/L | 98 |
| | | 313.0 -> 269.0 | 55453 | | |
| PFHxS | 7.119 | 313.0 -> 118.9 | 2888 | 2.06 µg/L | 97 |
| | | 398.7 -> 79.9 | 15094 | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7461 | 2.26 µg/L | 100 |
| | | 463.0 -> 419.0 | 76439 | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 14800 | 2.27 µg/L | 95 |
| | | 548.8 -> 79.9 | 13785 | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 7227 | 2.29 µg/L | 95 |
| | | 413.0 -> 369.0 | 98049 | | |
| PFOS | 8.178 | 413.0 -> 169.0 | 18842 | 2.12 µg/L | 98 |
| | | 498.9 -> 79.9 | 14691 | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 7592 | 4.74 µg/L | 100 |
| | | 263.0 -> 219.0 | 73795 | | |
| PFPeS | 6.410 | 349.1 -> 79.9 | 15896 | 2.18 µg/L | 100 |
| | | 349.1 -> 98.9 | 7486 | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 42601 | 2.37 µg/L | 97 |
| | | 713.1 -> 168.9 | 3722 | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 54158 | 2.46 µg/L | 96 |
| | | 663.0 -> 168.9 | 5839 | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 52160 | 2.23 µg/L | 93 |
| | | 563.1 -> 269.1 | 9463 | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 74007 | 4.48 µg/L | 98 |
| | | 632.9 -> 452.9 | 22255 | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 112125 | 4.31 µg/L | 97 |
| | | 532.8 -> 353.0 | 35260 | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 255400 | 4.37 µg/L | 98 |
| | | 376.9 -> 84.8 | 71741 | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 16945 | 4.55 µg/L | 100 |
| | | 284.9 -> 184.9 | 2323 | | |
| 3:3FTCA | 3.671 | 241.0 -> 177.0 | 11732 | 11.78 µg/L | 98 |
| | | 241.0 -> 117.0 | 1614 | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 248226 | 57.16 µg/L | 94 |
| | | 341.0 -> 217.0 | 187400 | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 184484 | 62.04 µg/L | 90 |
| | | 441.0 -> 336.9 | 376319 | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 30636 | 4.68 µg/L | 89 |
| | | 526.0 -> 169.0 | 41694 | | |
| EtFOSE | 10.907 | 630.0 -> 58.9 | 82052 | 11.82 µg/L | 100 |
| | | 511.9 -> 219.0 | 25620 | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 35863 | 5.03 µg/L | 94 |
| | | 616.1 -> 58.9 | 55875 | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3820 | 11.77 µg/L | 100 |
| | | 699.1 -> 98.8 | 2122 | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 14053 | 2.27 µg/L | 97 |
| | | 295.0 -> 84.9 | 3474 | | |
| NFDHA | 5.288 | 279.0 -> 85.1 | 49684 | 4.78 µg/L | 95 |
| | | 229.0 -> 84.9 | 39671 | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 127102 | 4.69 µg/L | 100 |
| | | 314.8 -> 82.9 | 4520 | | |
| PFMPA | 3.351 | | | 4.82 µg/L | 100 |
| | | | | | |
| PFEESA | 5.862 | | | 4.15 µg/L | 99 |
| | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



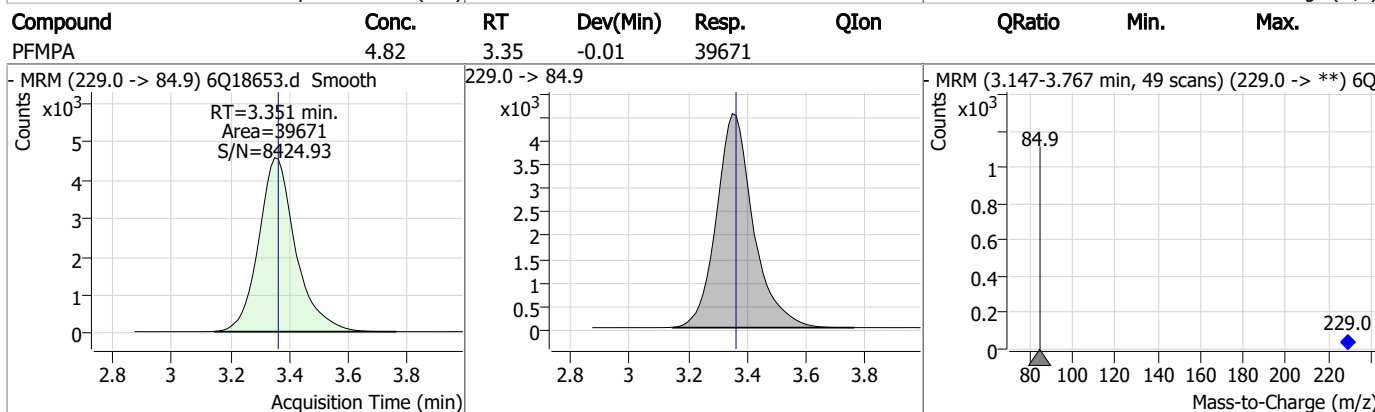
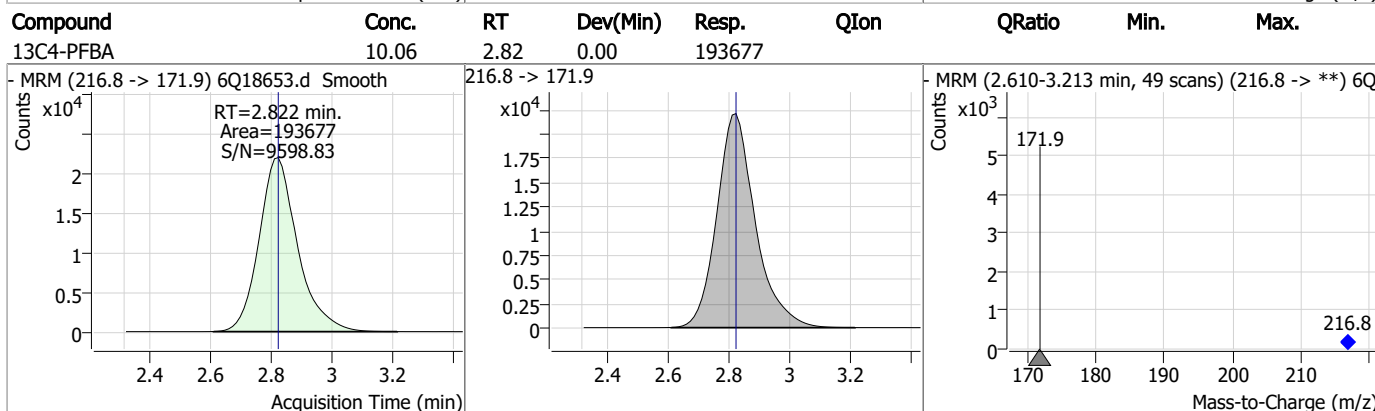
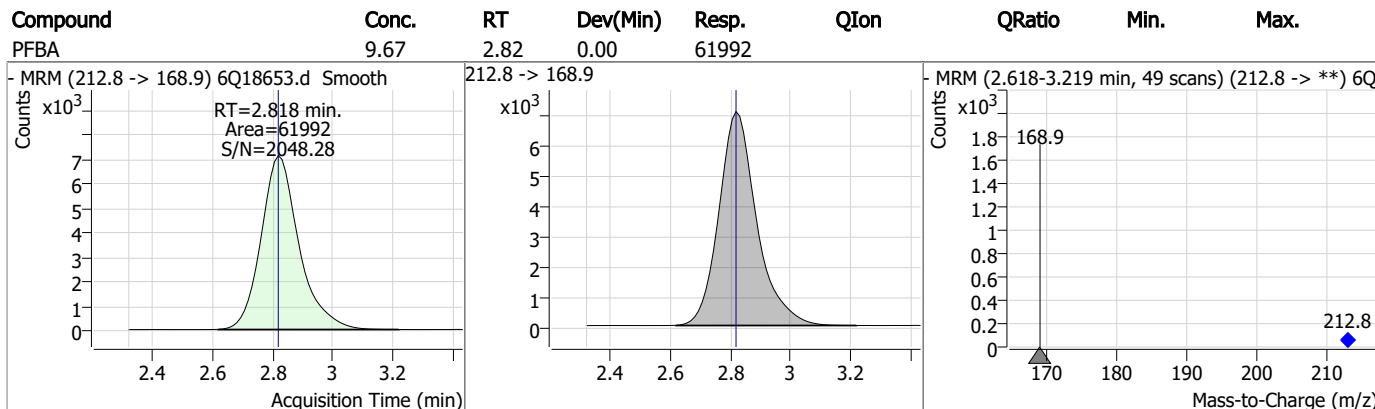
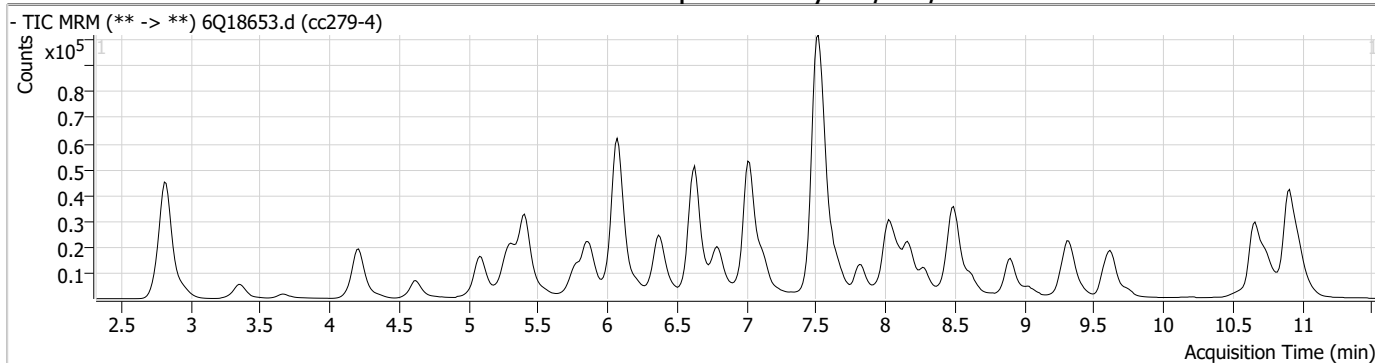
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

7.7.16

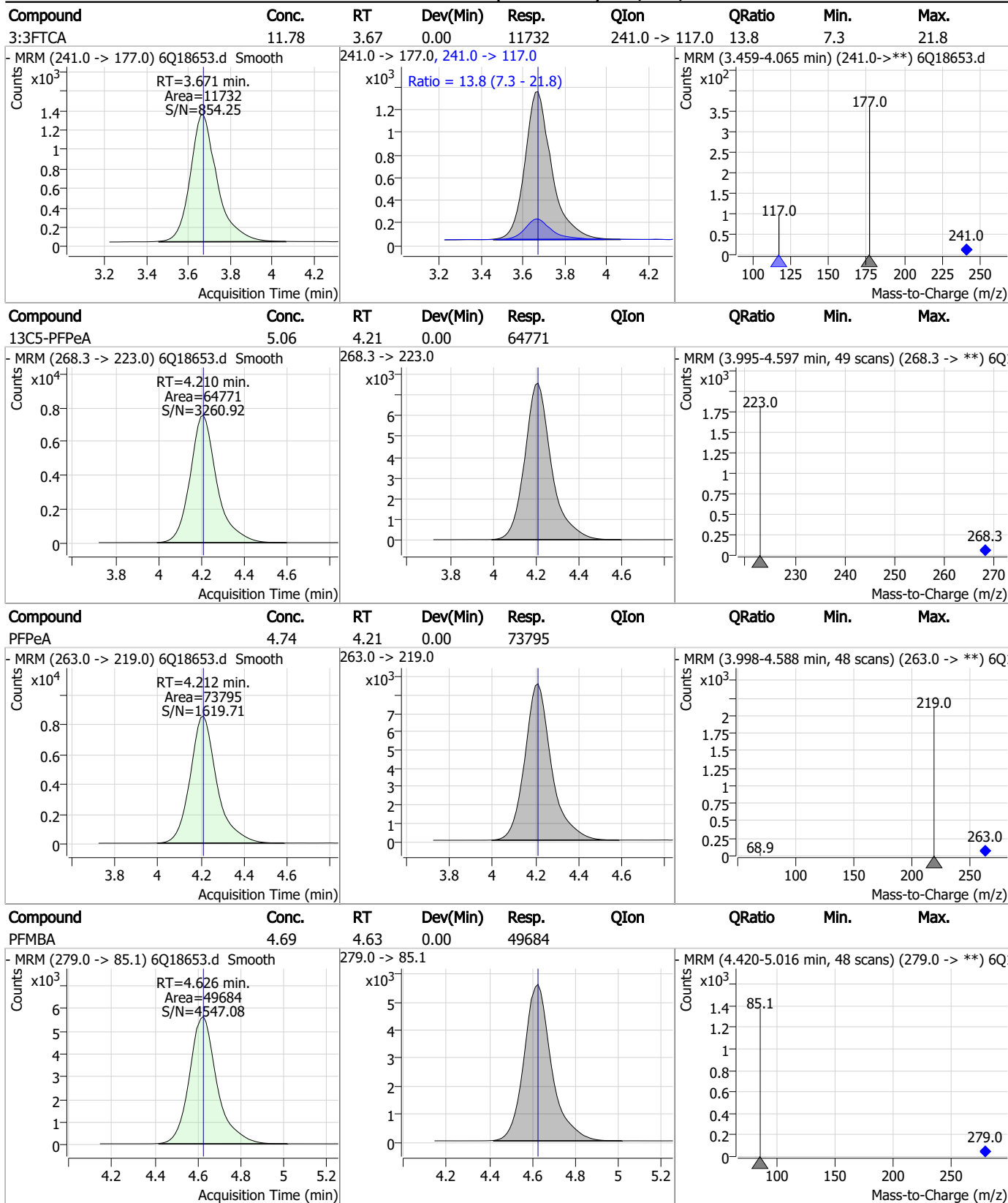
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Perfluorinated Compounds by LC/MS/MS



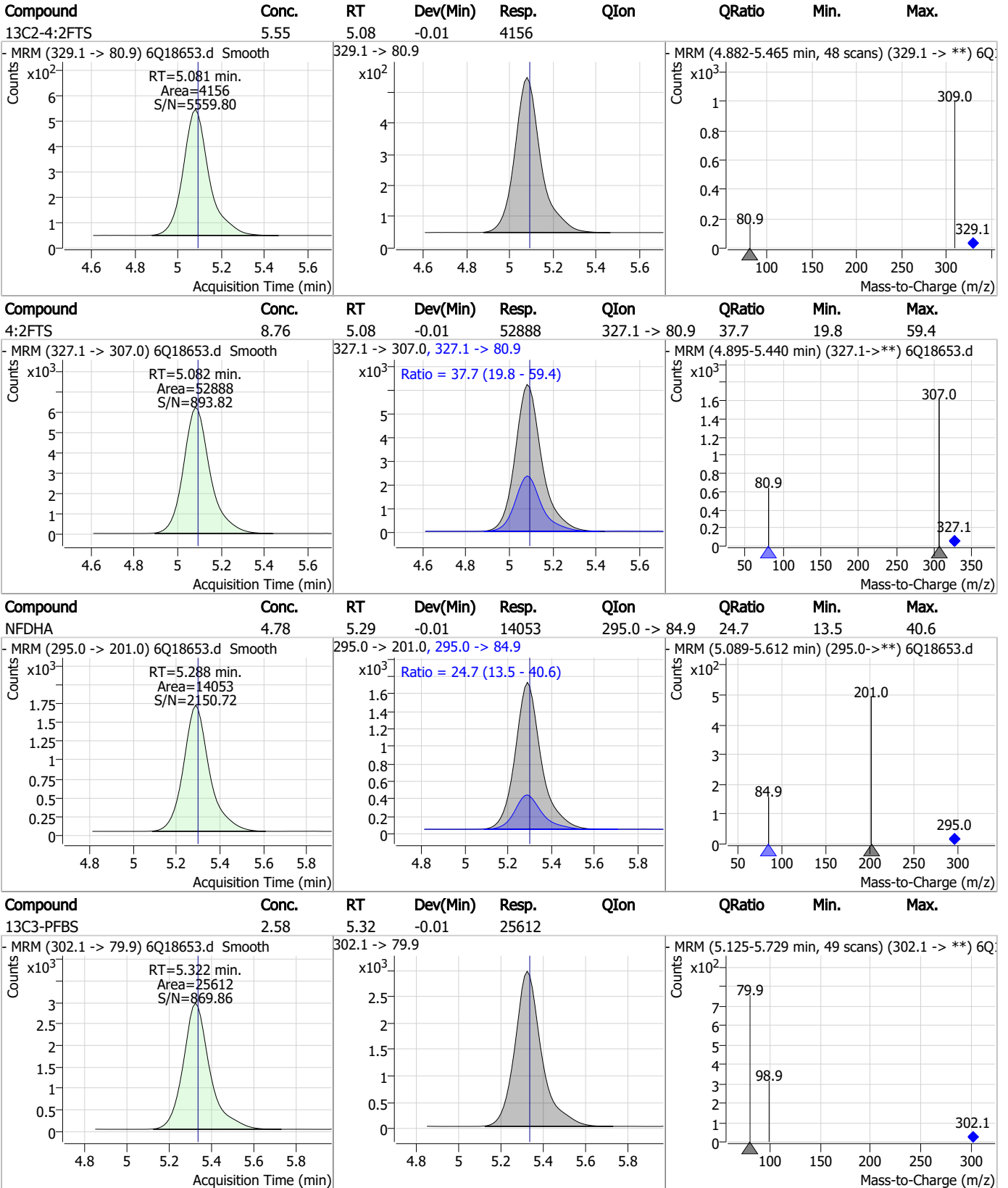
7.7.16
7

Perfluorinated Compounds by LC/MS/MS



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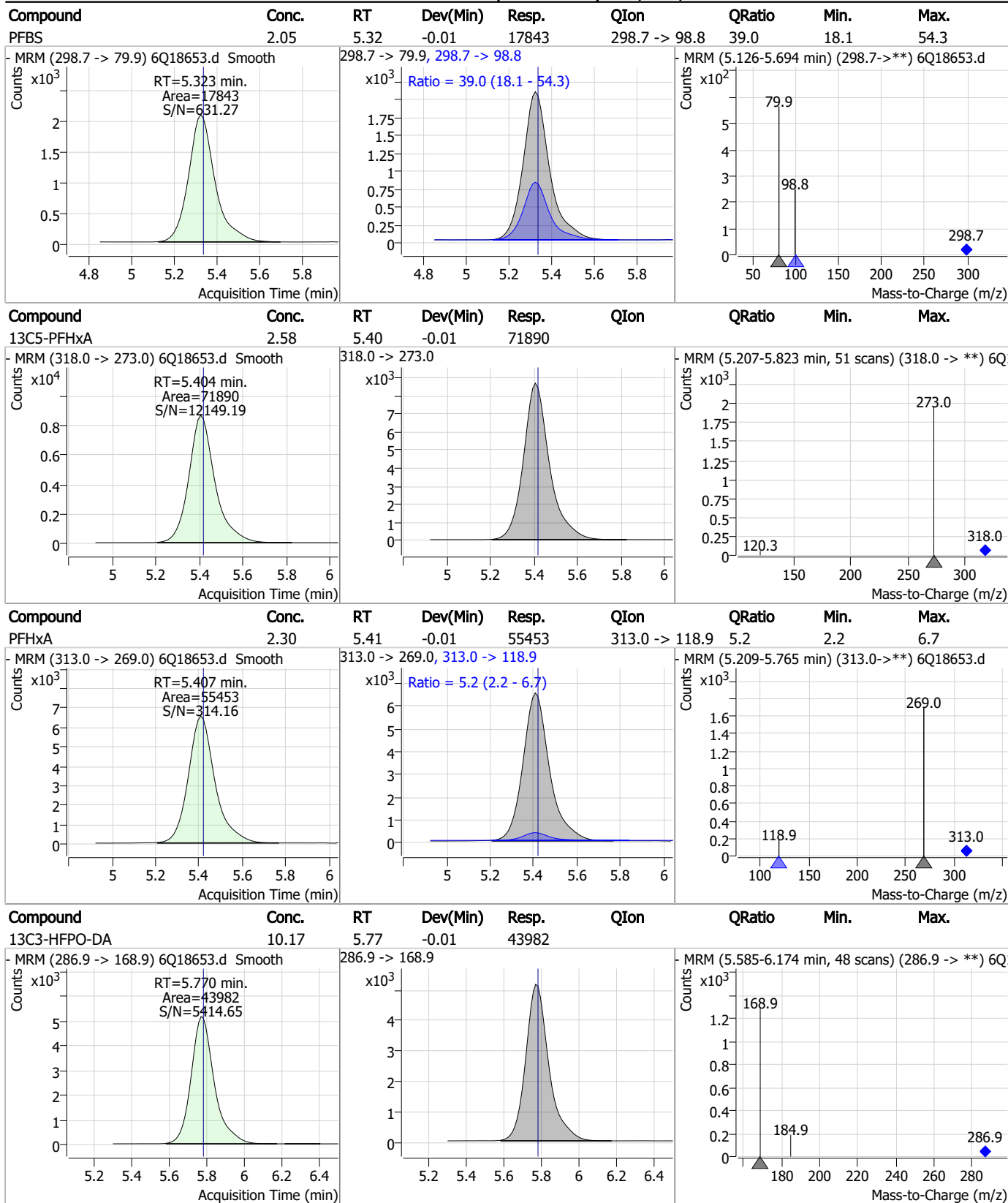
Perfluorinated Compounds by LC/MS/MS



7.7.16 7



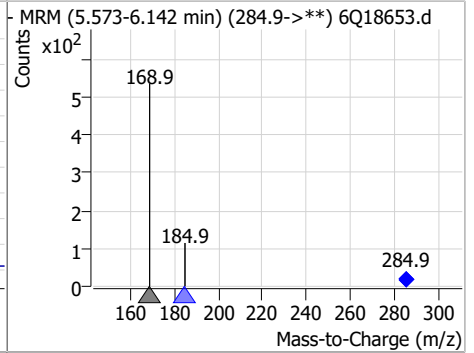
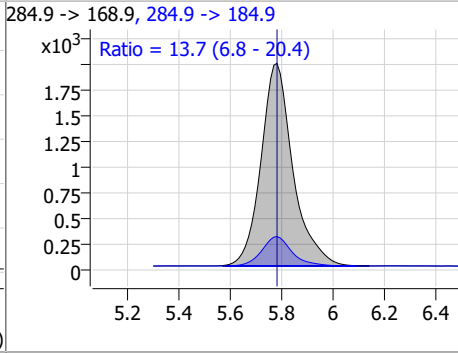
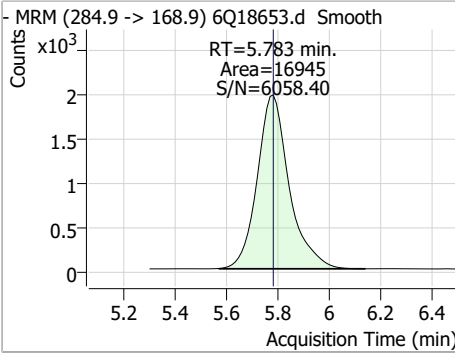
Perfluorinated Compounds by LC/MS/MS



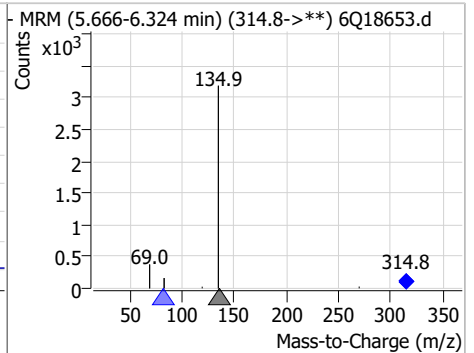
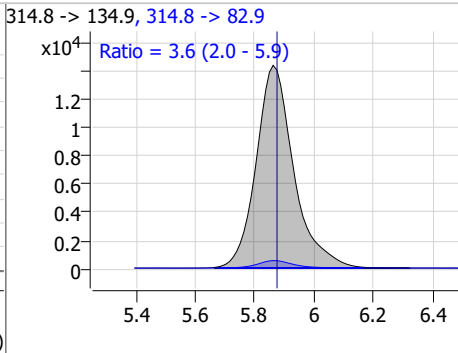
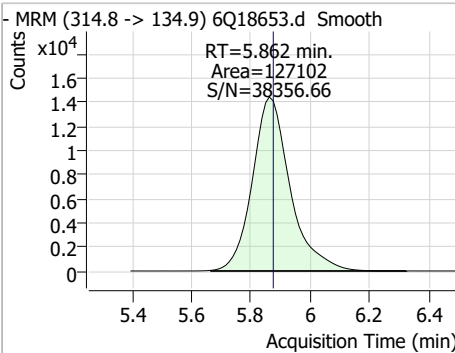
7.7.16

Perfluorinated Compounds by LC/MS/MS

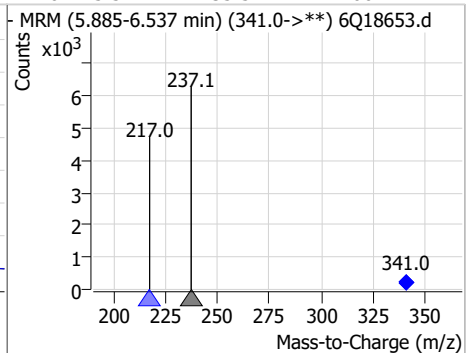
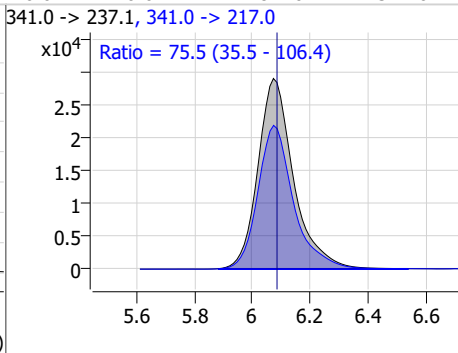
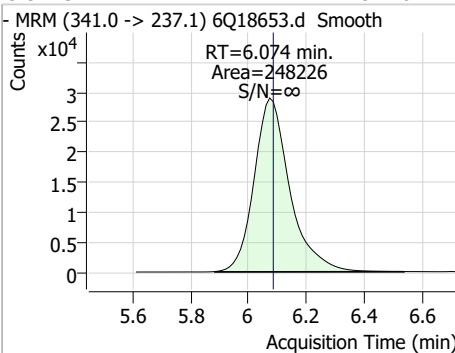
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 4.55 | 5.78 | 0.00 | 16945 | 284.9 -> 184.9 | 13.7 | 6.8 | 20.4 |



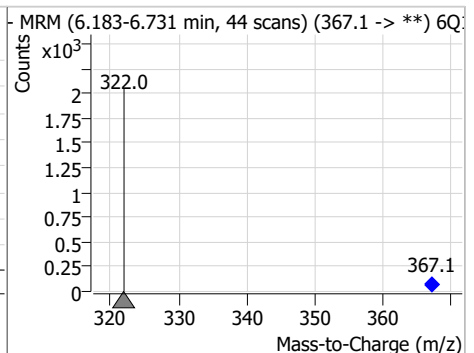
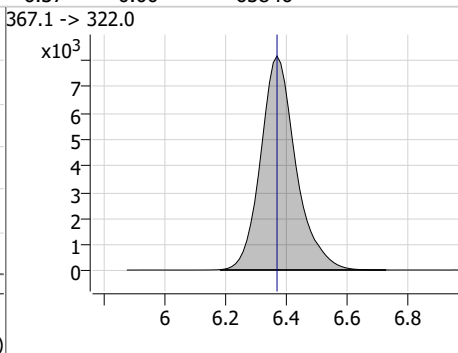
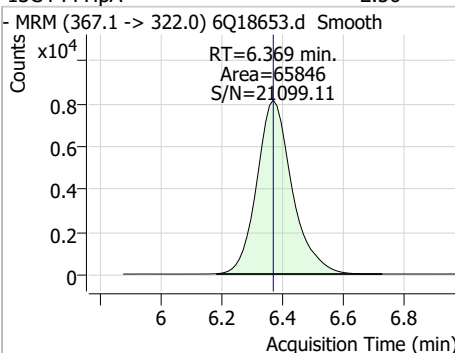
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 4.15 | 5.86 | -0.01 | 127102 | 314.8 -> 82.9 | 3.6 | 2.0 | 5.9 |



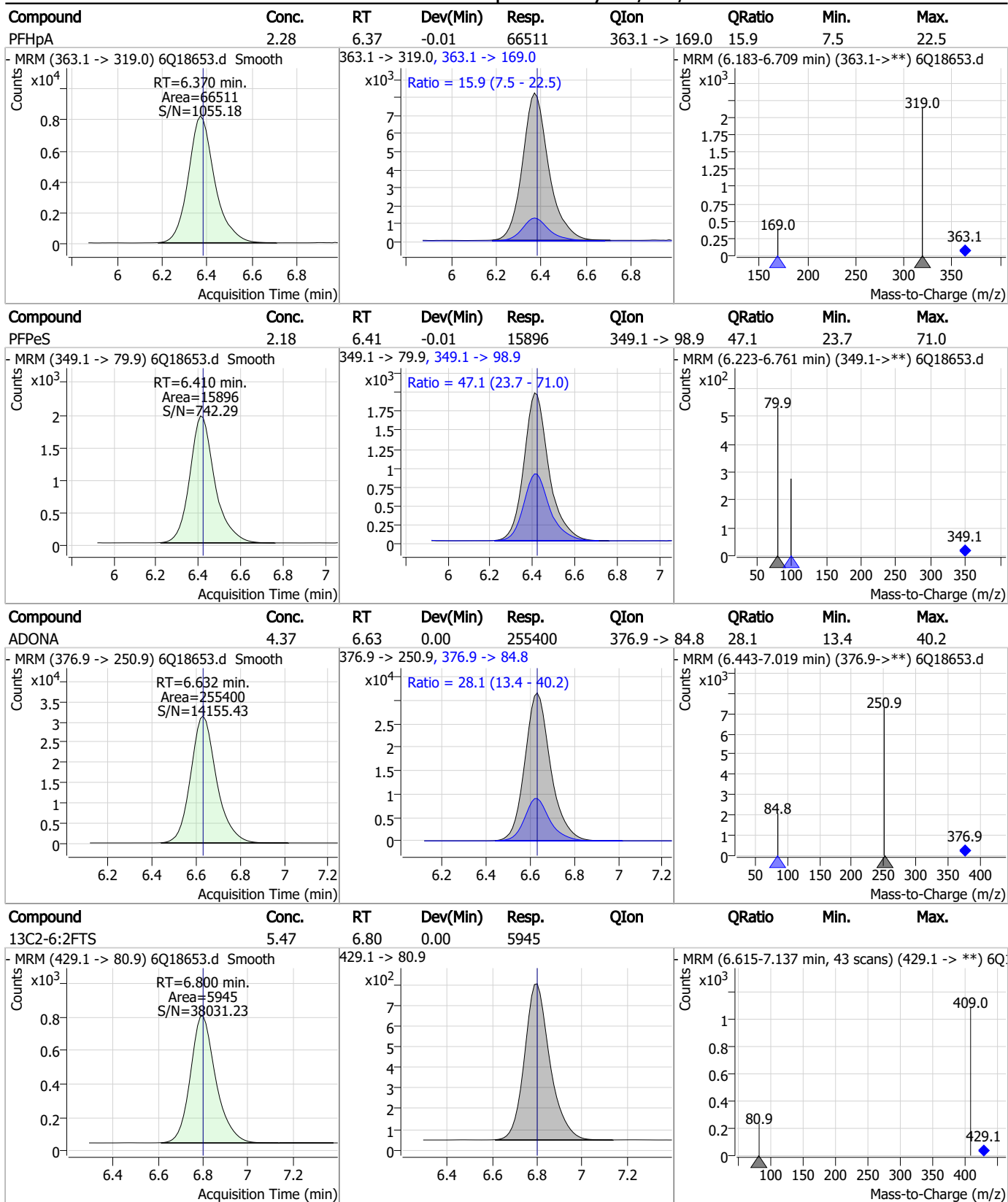
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 57.16 | 6.07 | -0.01 | 248226 | 341.0 -> 217.0 | 75.5 | 35.5 | 106.4 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpa | 2.56 | 6.37 | 0.00 | 65846 | 367.1 -> 322.0 | | | |



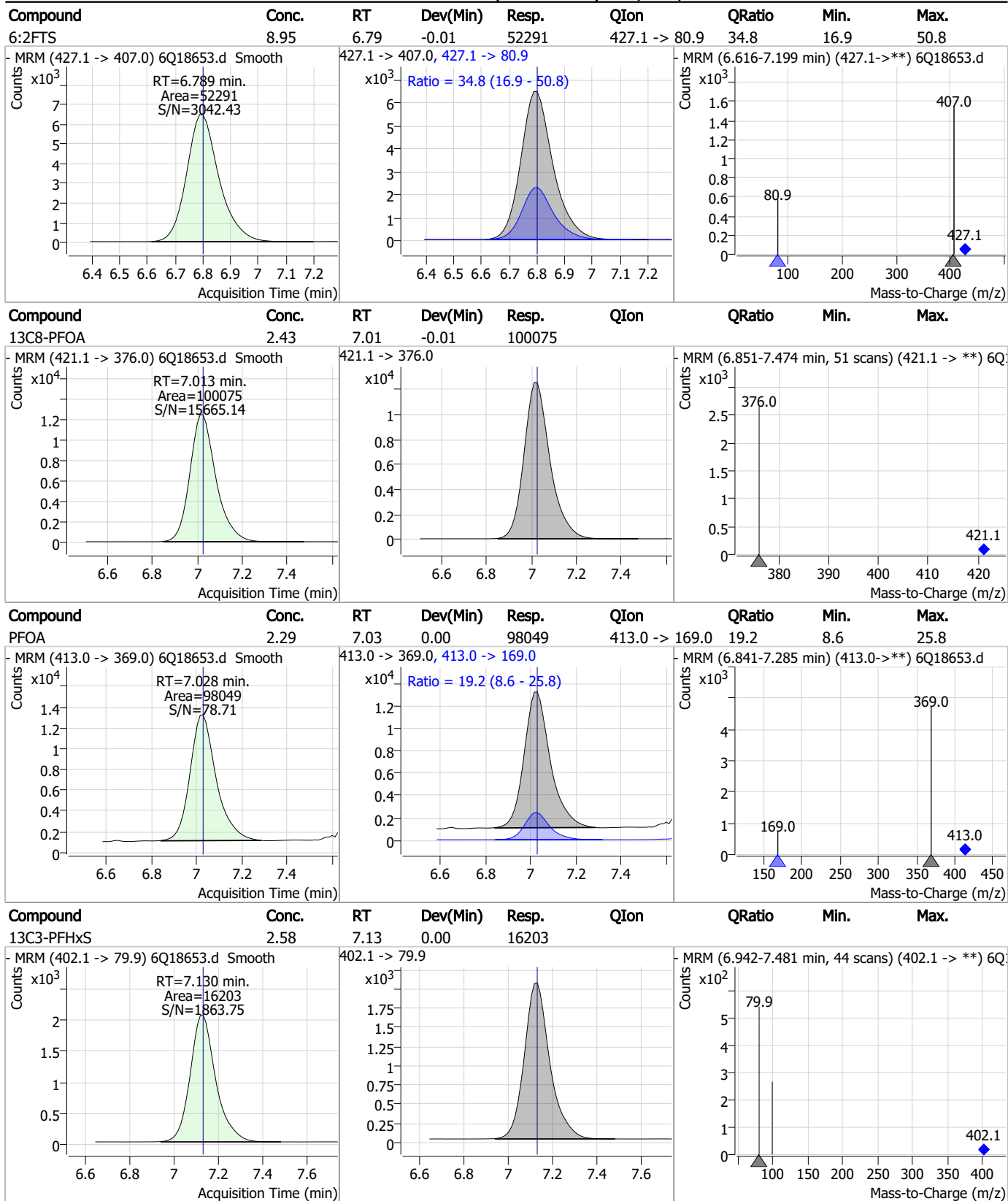
Perfluorinated Compounds by LC/MS/MS



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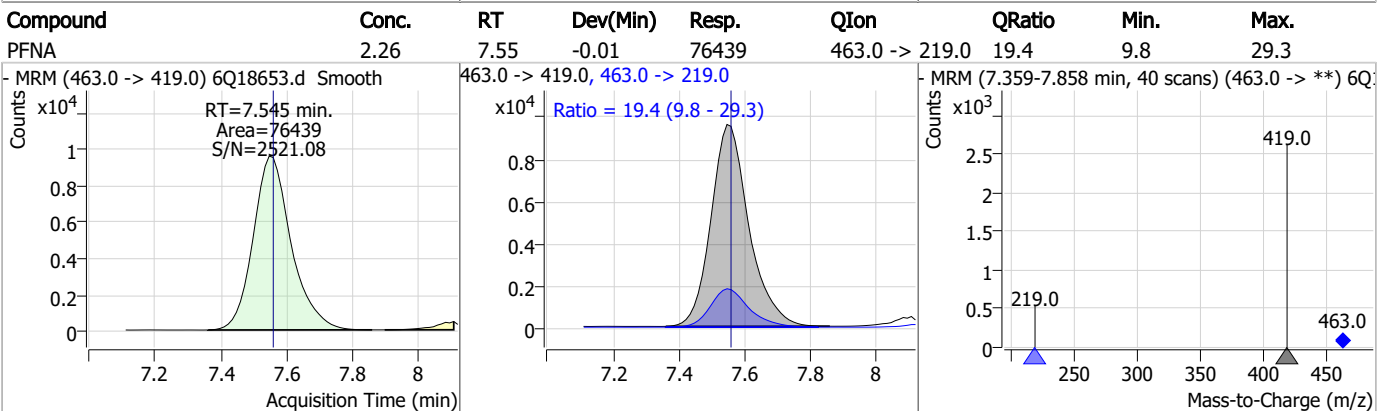
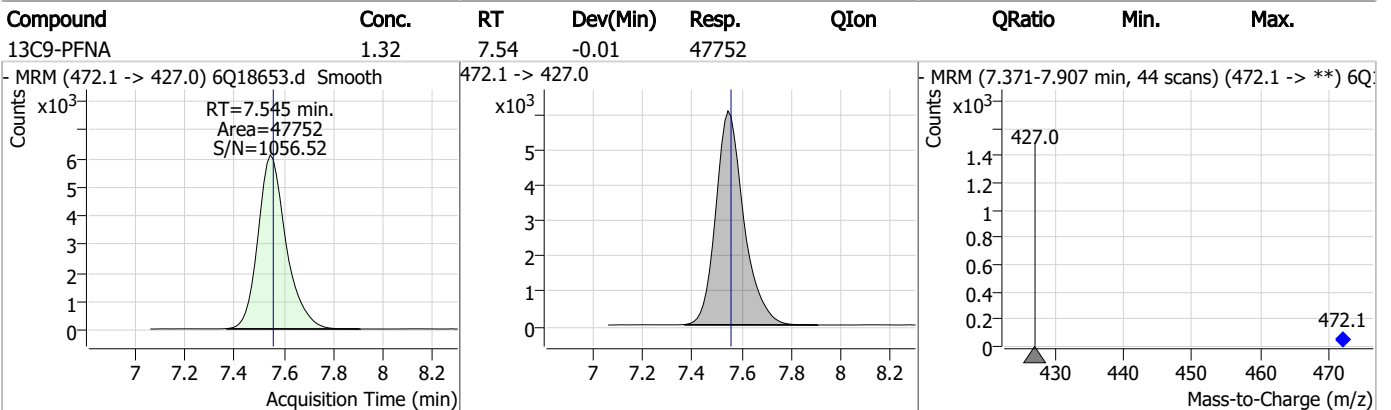
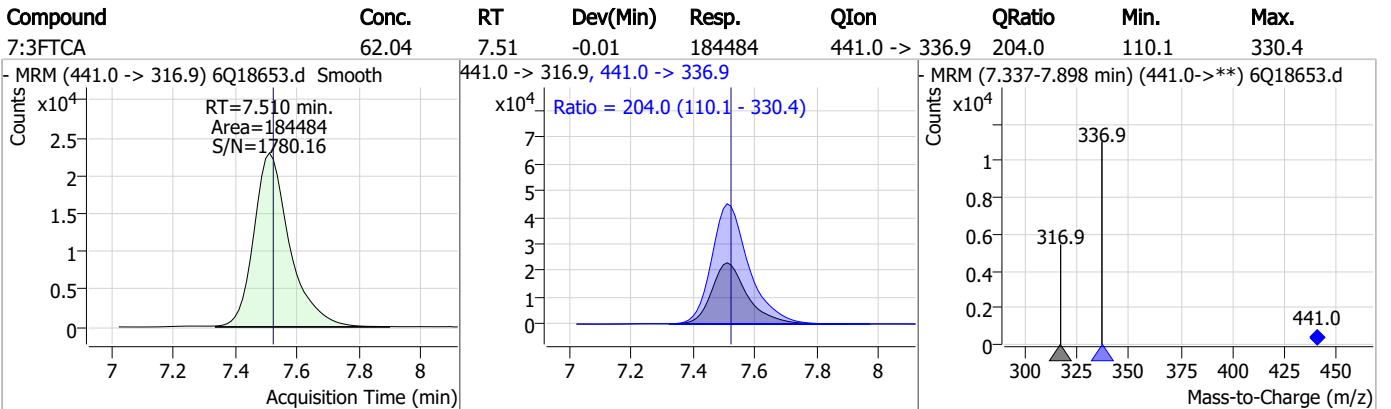
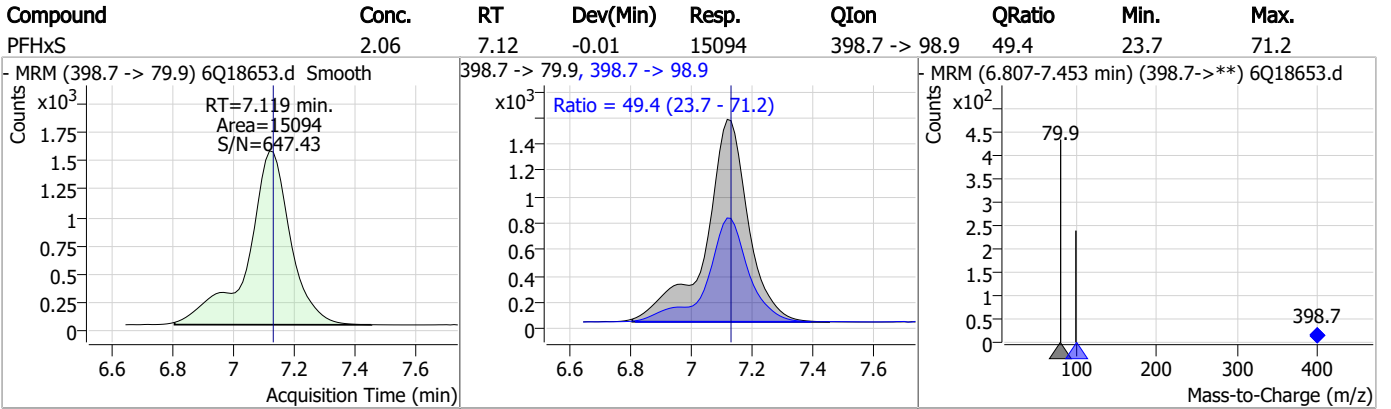


Perfluorinated Compounds by LC/MS/MS



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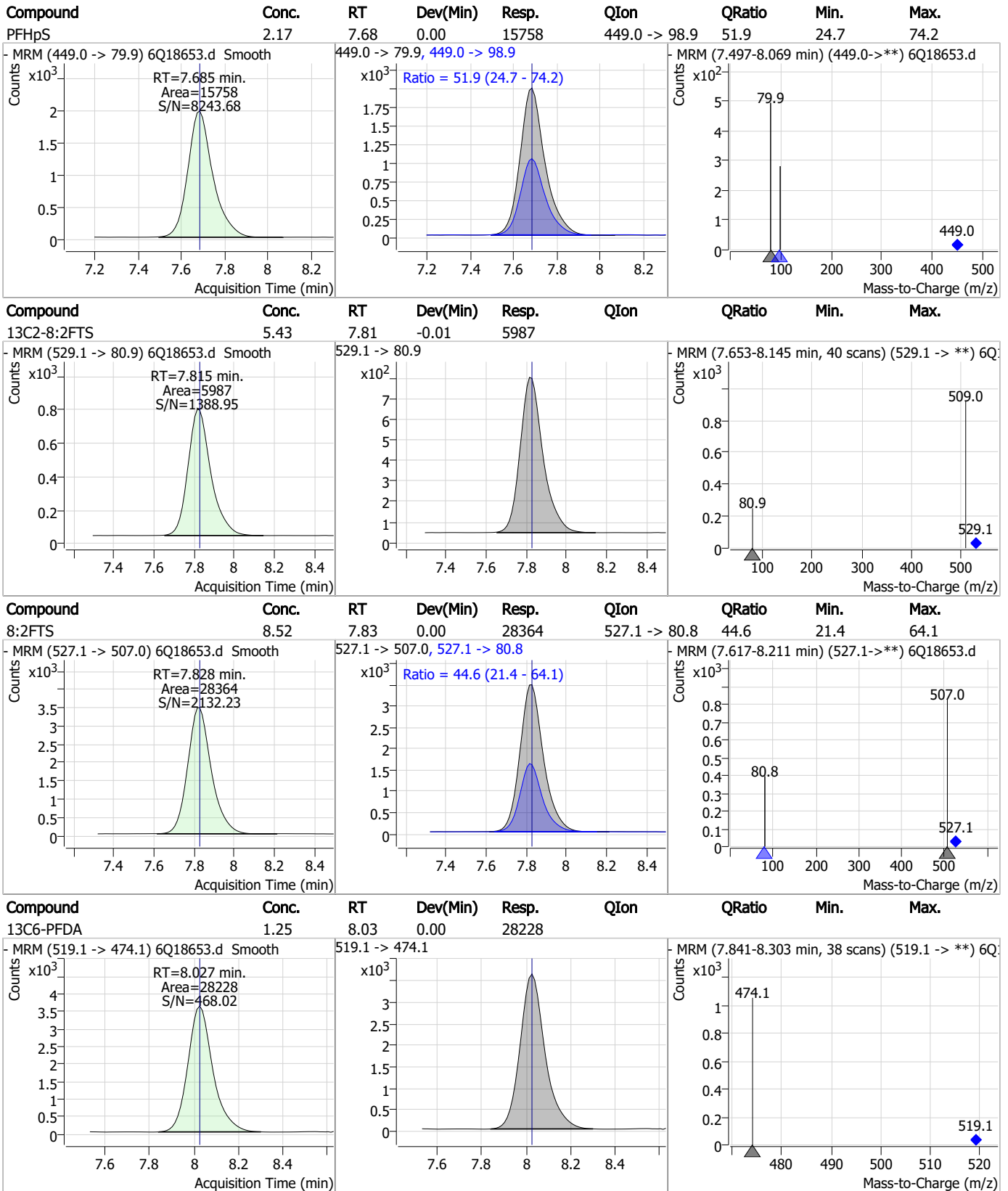
Perfluorinated Compounds by LC/MS/MS



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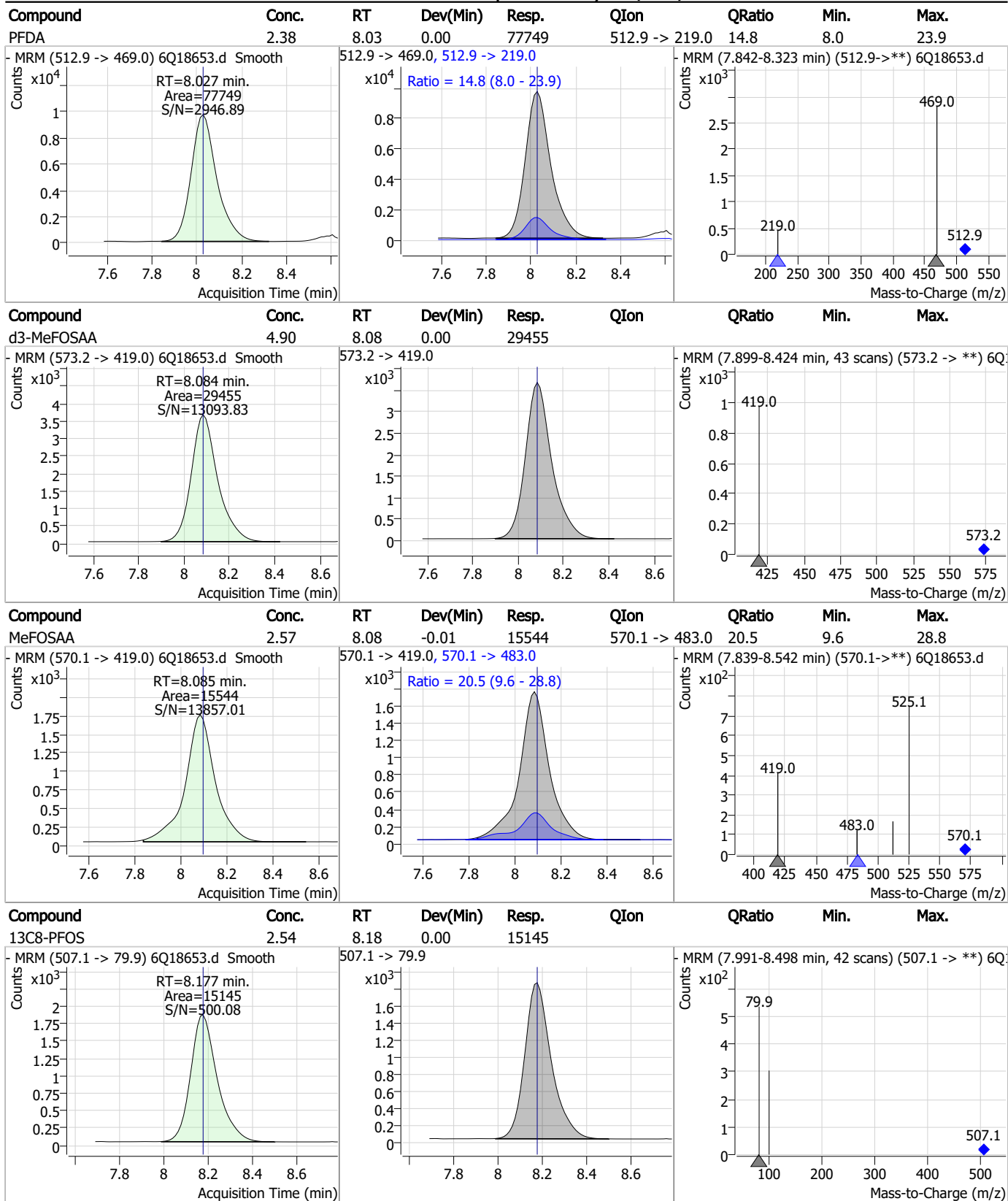


Perfluorinated Compounds by LC/MS/MS



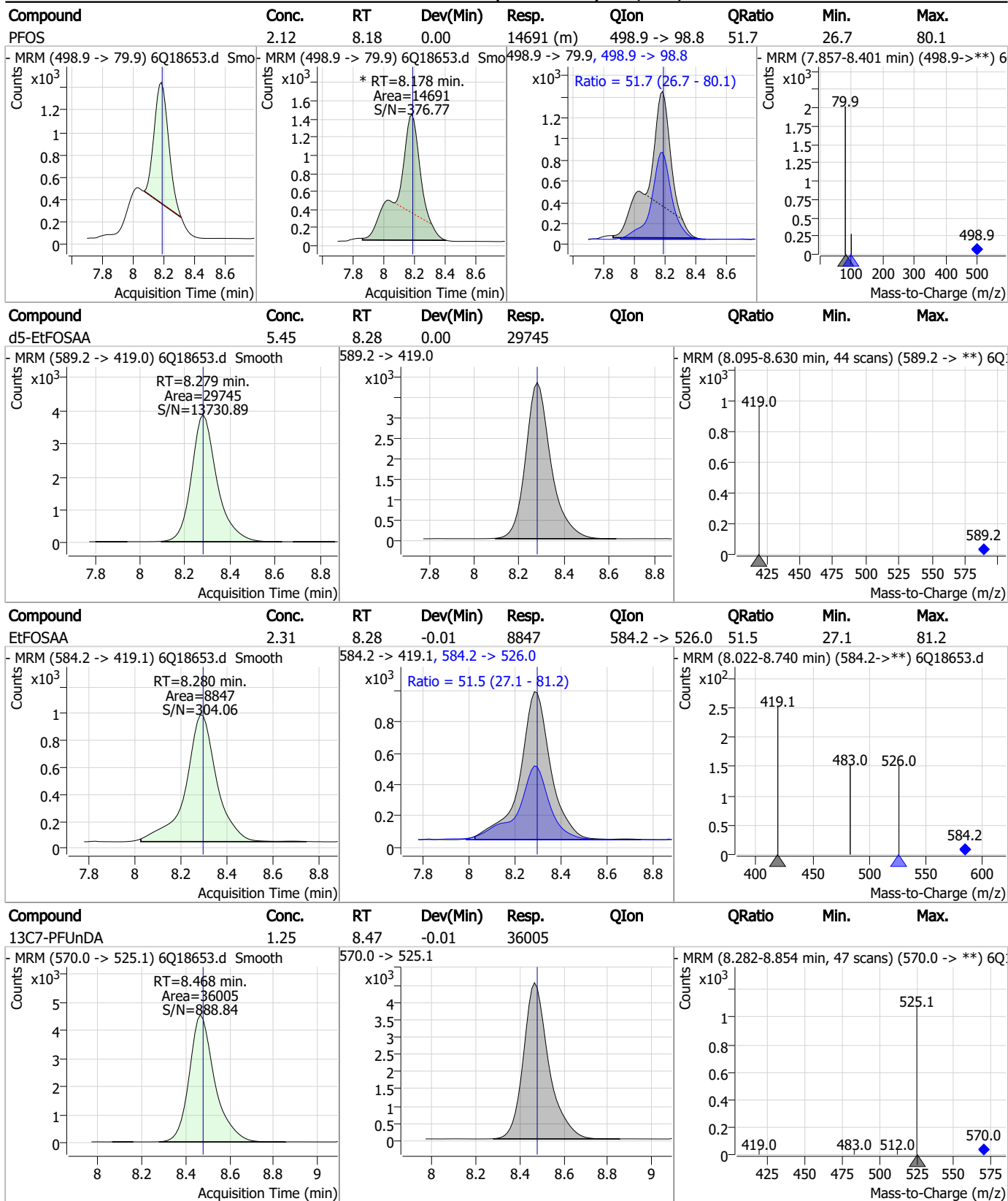
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Perfluorinated Compounds by LC/MS/MS



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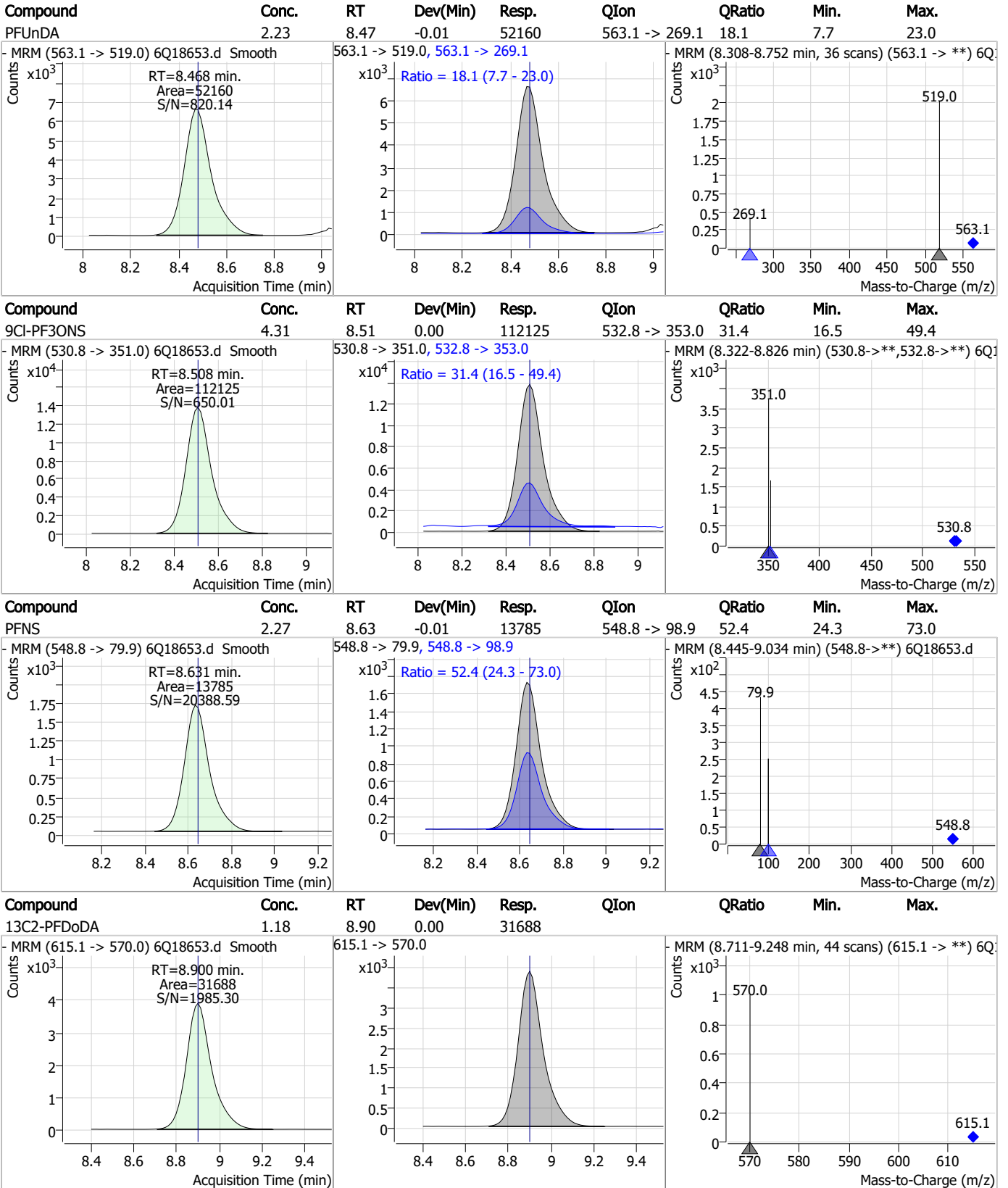
Perfluorinated Compounds by LC/MS/MS



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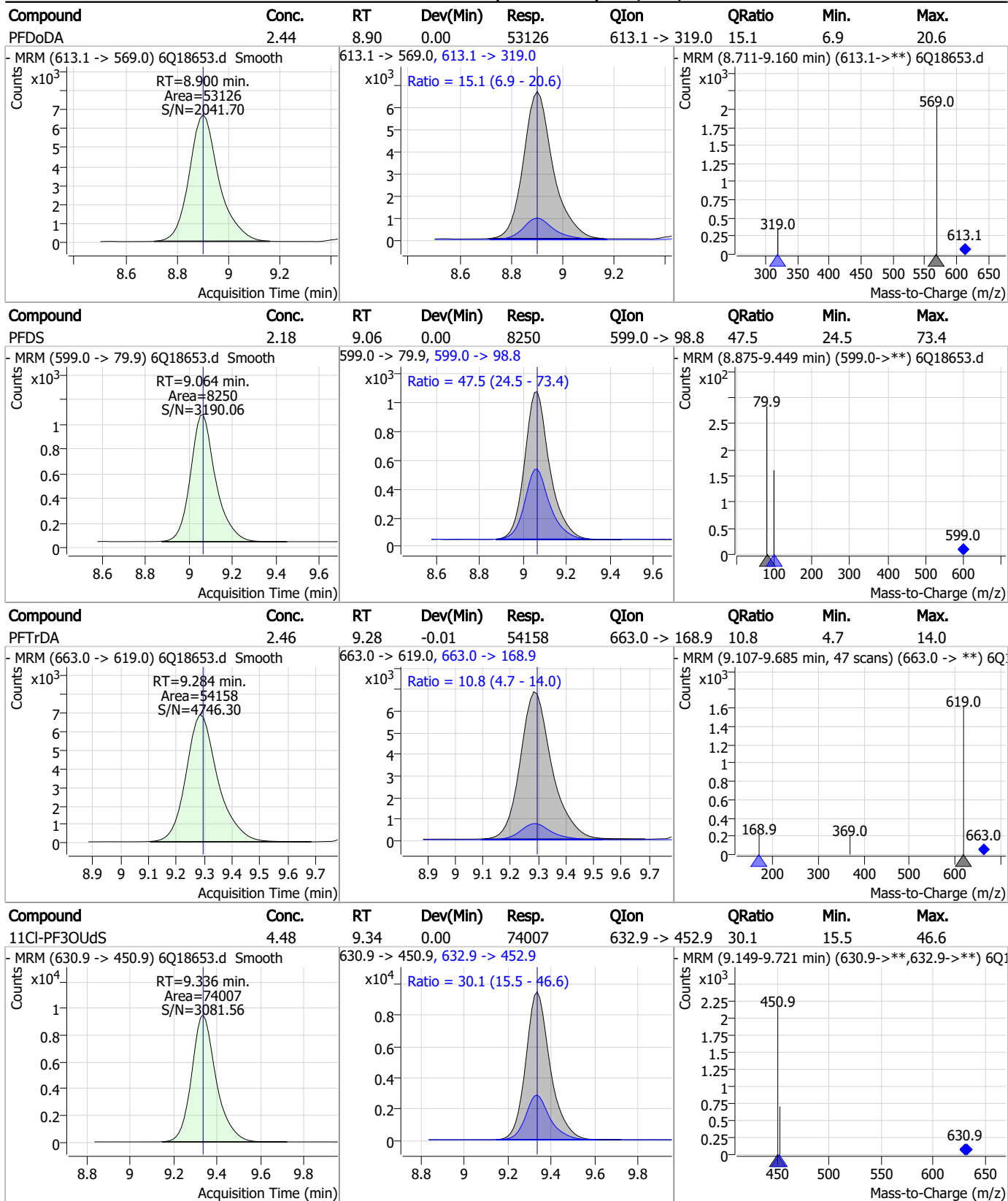
Perfluorinated Compounds by LC/MS/MS



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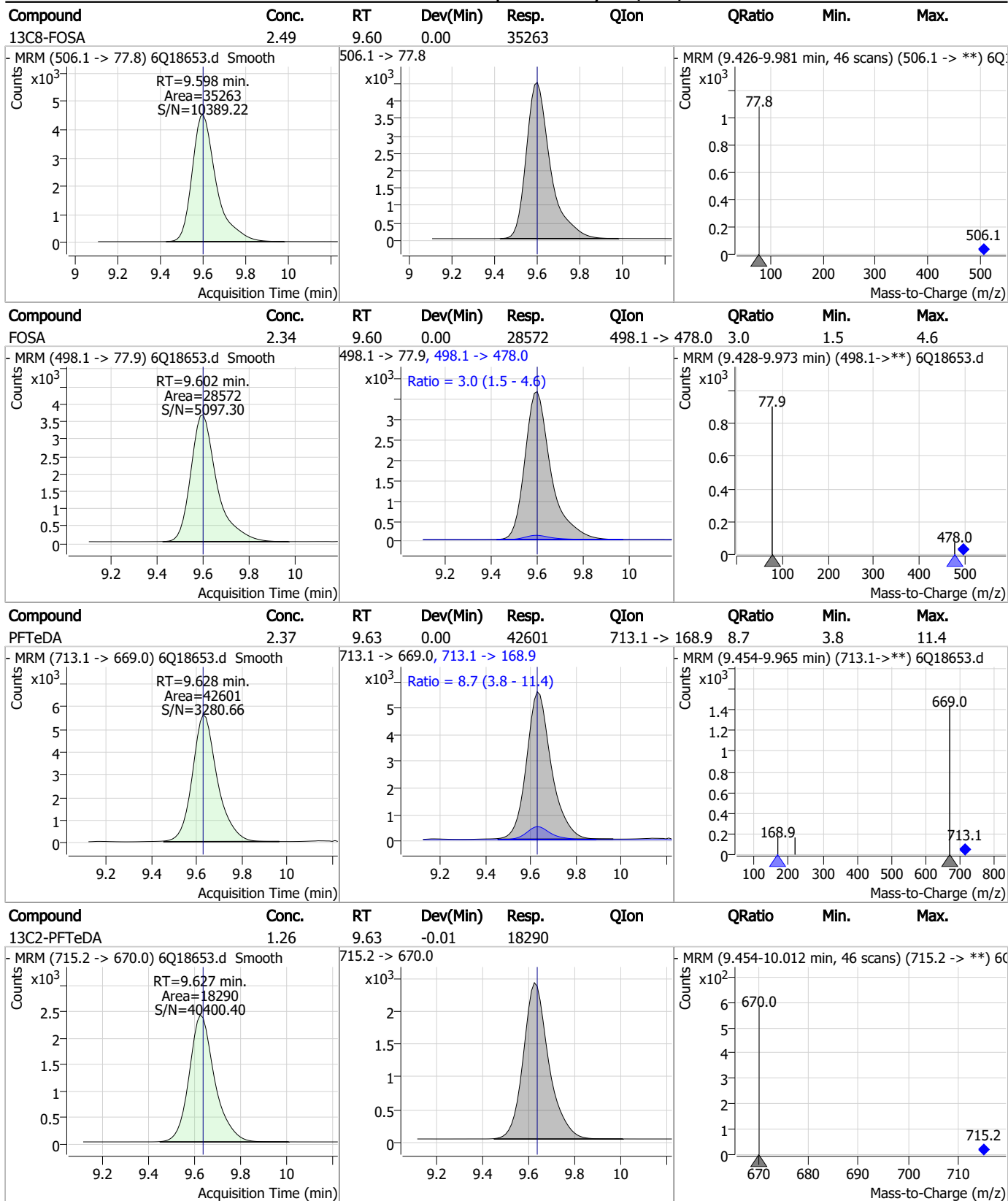


Perfluorinated Compounds by LC/MS/MS



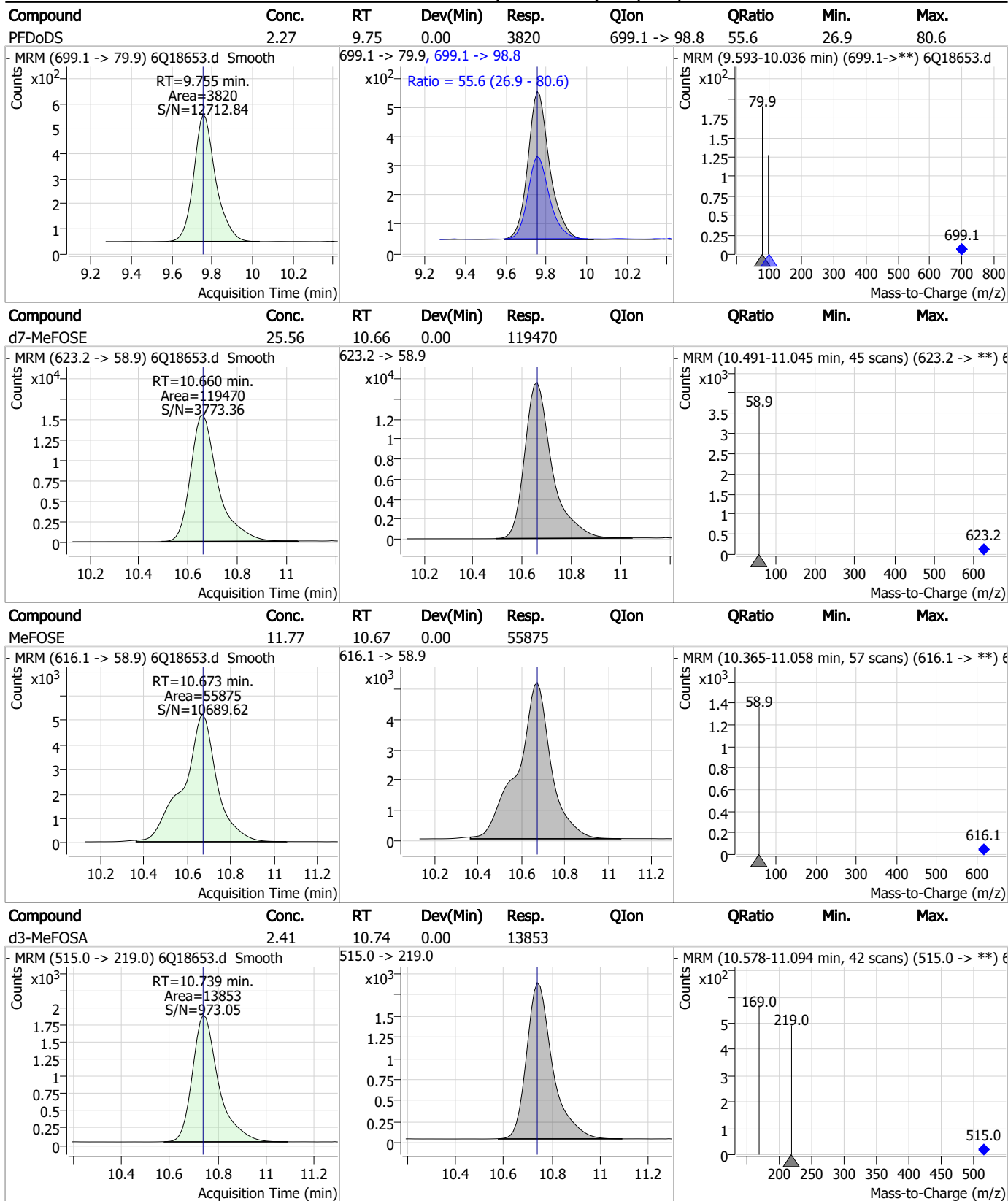
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Perfluorinated Compounds by LC/MS/MS



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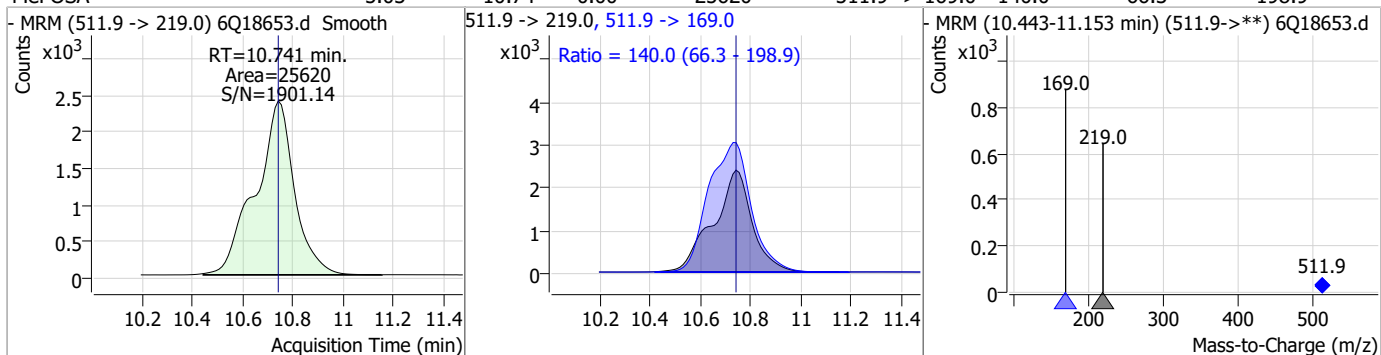
Perfluorinated Compounds by LC/MS/MS



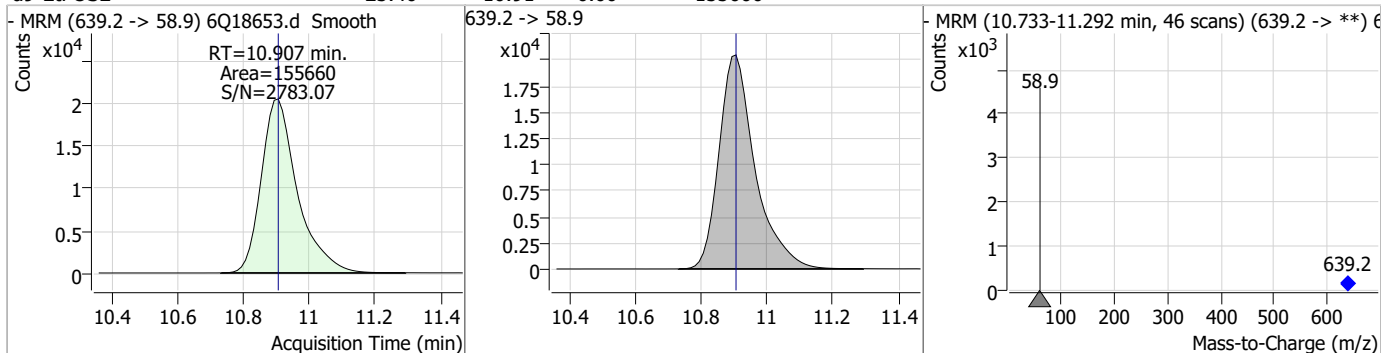
7.7.16
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Perfluorinated Compounds by LC/MS/MS

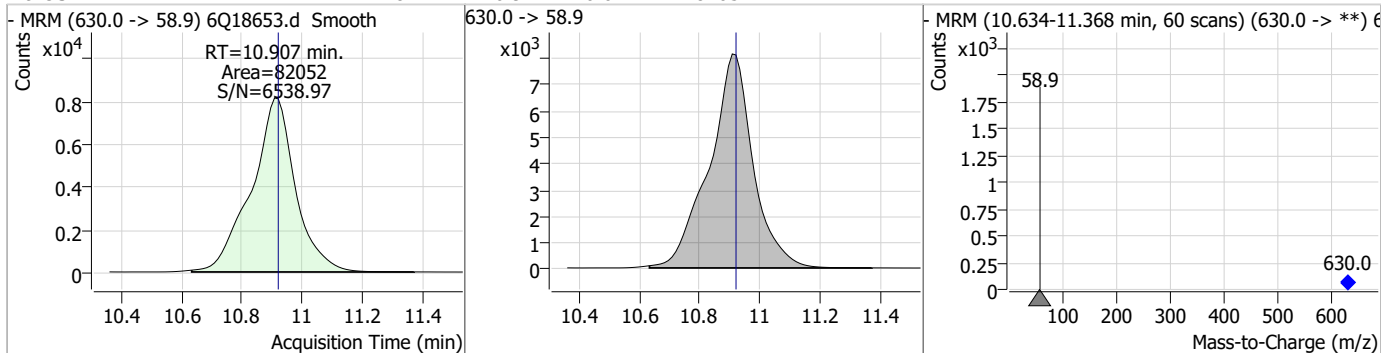
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|----------------|--------|------|-------|
| MeFOSA | 5.03 | 10.74 | 0.00 | 25620 | 511.9 -> 169.0 | 140.0 | 66.3 | 198.9 |



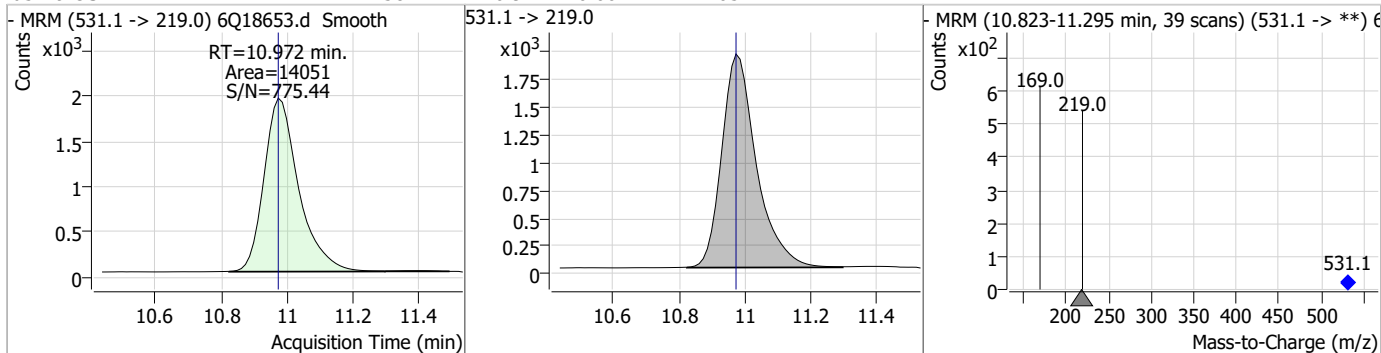
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d9-EtFOSE | 25.46 | 10.91 | 0.00 | 155660 | | | | |



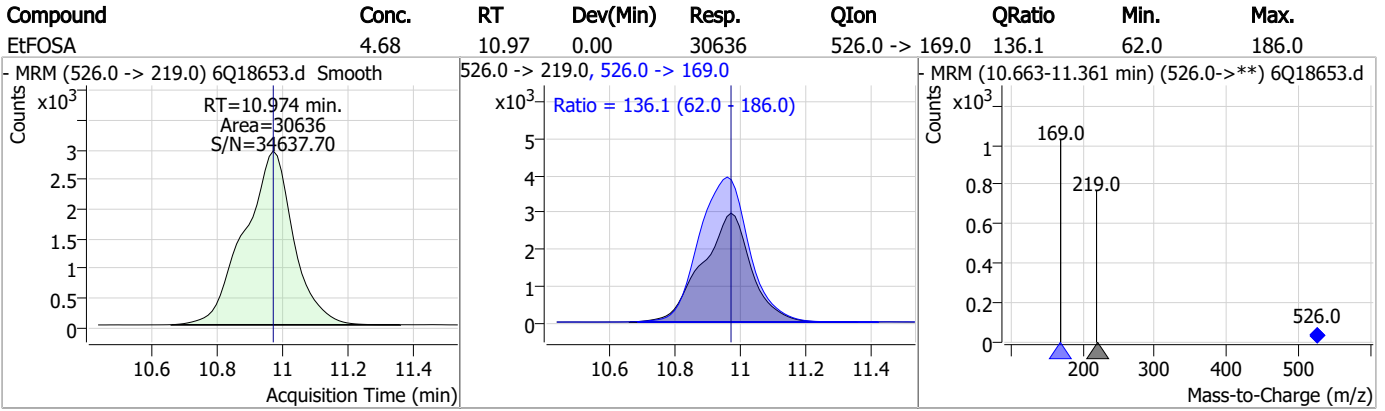
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| EtFOSE | 11.82 | 10.91 | -0.01 | 82052 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d5-EtFOSA | 2.58 | 10.97 | 0.00 | 14051 | | | | |



Perfluorinated Compounds by LC/MS/MS



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Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18653.D Analyst approved: 06/01/23 11:12 Martha Valls
Injection Time: 06/01/23 09:14 Supervisor approved: 06/01/23 16:20 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|-----------|------|----------------|------------|
| Perfluorooctanesulfonic acid | 1763-23-1 | | 8.18 | Split peak |

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Perfluorinated Compounds by LC/MS/MS

Data File : 6Q18665.d
 Operator : marthav
 Acq. Method : 1633full.m
 Acq. Date-Time : 6/1/2023 12:08:14 PM
 Sample Name : cc279-4
 Vial : P1-A5
 DA Method File : 1633_053123_S6Q279.quantmethod.xml
 Batch Name : S6Q279.batch.bin
 Sample Information : OP96663,S6Q279,500,,,5.0,1,water

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|------------------------------------|----------------------|----------------|-------------------|-------------|----------|
| Internal Standards | | | | | |
| M4-PFBA | 2.822 | 216.8 -> 171.9 | 193754 | 10.00 µg/L | 0.000 |
| M5-PFPeA | 4.210 | 268.3 -> 223.0 | 65257 | 5.00 µg/L | 0.000 |
| M5-PFHxA | 5.404 | 318.0 -> 273.0 | 70633 | 2.50 µg/L | -0.012 |
| M4-PFHpA | 6.369 | 367.1 -> 322.0 | 68650 | 2.50 µg/L | 0.000 |
| M8-PFOA | 7.026 | 421.1 -> 376.0 | 102565 | 2.50 µg/L | 0.000 |
| M9-PFNA | 7.545 | 472.1 -> 427.0 | 45459 | 1.25 µg/L | -0.012 |
| M6-PFDA | 8.027 | 519.1 -> 474.1 | 28360 | 1.25 µg/L | 0.000 |
| M7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36791 | 1.25 µg/L | -0.012 |
| M2-PFDoDA | 8.900 | 615.1 -> 570.0 | 32301 | 1.25 µg/L | 0.000 |
| M2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17937 | 1.25 µg/L | -0.012 |
| M8-FOSA | 9.598 | 506.1 -> 77.8 | 35849 | 2.50 µg/L | 0.000 |
| M3-PFBS | 5.322 | 302.1 -> 79.9 | 25832 | 2.50 µg/L | -0.012 |
| M3-PFHxS | 7.130 | 402.1 -> 79.9 | 15680 | 2.50 µg/L | 0.000 |
| M8-PFOS | 8.177 | 507.1 -> 79.9 | 15205 | 2.50 µg/L | 0.000 |
| M2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4031 | 5.00 µg/L | -0.012 |
| M2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5740 | 5.00 µg/L | 0.000 |
| M2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5863 | 5.00 µg/L | 0.000 |
| M3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30794 | 5.00 µg/L | 0.000 |
| M3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42905 | 10.00 µg/L | 0.000 |
| M5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 29039 | 5.00 µg/L | 0.000 |
| M7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119963 | 25.00 µg/L | 0.000 |
| M9-EtFOSE | 10.907 | 639.2 -> 58.9 | 155644 | 25.00 µg/L | 0.000 |
| M5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13845 | 2.50 µg/L | 0.000 |
| M3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14048 | 2.50 µg/L | 0.000 |
| 13C4-PFOS | 8.165 | 502.8 -> 79.9 | 19366 | 2.50 µg/L | -0.025 |
| 13C3-PFBA | 2.814 | 216.0 -> 172.0 | 81627 | 5.00 µg/L | -0.013 |
| 18O2-PFHxS | 7.129 | 403.0 -> 83.9 | 11627 | 2.50 µg/L | 0.000 |
| 13C4-PFOA | 7.026 | 417.1 -> 372.0 | 107504 | 2.50 µg/L | 0.000 |
| 13C2-PFDA | 8.027 | 515.1 -> 470.1 | 35969 | 1.25 µg/L | 0.000 |
| 13C5-PFNA | 7.545 | 468.0 -> 423.0 | 55667 | 1.25 µg/L | -0.012 |
| 13C2-PFHxA | 5.405 | 315.1 -> 270.0 | 66952 | 2.50 µg/L | -0.012 |
| System Monitoring Compounds | | | | | |
| 13C2-4:2FTS | 5.081 | 329.1 -> 80.9 | 4031 | 5.20 µg/L | -0.012 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 103.9% | | |
| 13C2-6:2FTS | 6.800 | 429.1 -> 80.9 | 5740 | 5.10 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 101.9% | | |
| 13C2-8:2FTS | 7.827 | 529.1 -> 80.9 | 5863 | 5.13 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | Recovery = 102.7% | | |
| 13C2-PFDoDA | 8.900 | 615.1 -> 570.0 | 32301 | 1.29 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 103.4% | | |
| 13C2-PFTeDA | 9.627 | 715.2 -> 670.0 | 17937 | 1.32 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | Recovery = 105.6% | | |
| 13C3-PFBS | 5.322 | 302.1 -> 79.9 | 25832 | 2.51 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | Recovery = 100.4% | | |
| 13C3-PFHxS | 7.130 | 402.1 -> 79.9 | 15680 | 2.41 µg/L | 0.000 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|-------------------------|----------------------|----------------|----------|-------------------|---------------|
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 96.6% | |
| 13C4-PFBA | 2.822 | 216.8 -> 171.9 | 193754 | 9.97 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C4-PFHpA | 6.369 | 367.1 -> 322.0 | 68650 | 2.62 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 104.8% | |
| 13C5-PFHxA | 5.404 | 318.0 -> 273.0 | 70633 | 2.49 µg/L | -0.012 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 99.7% | |
| 13C5-PFPeA | 4.210 | 268.3 -> 223.0 | 65257 | 5.01 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 100.2% | |
| 13C6-PFDA | 8.027 | 519.1 -> 474.1 | 28360 | 1.35 µg/L | 0.000 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 107.6% | |
| 13C7-PFUnDA | 8.468 | 570.0 -> 525.1 | 36791 | 1.37 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 109.5% | |
| 13C8-FOSA | 9.598 | 506.1 -> 77.8 | 35849 | 2.43 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.1% | |
| 13C8-PFOA | 7.026 | 421.1 -> 376.0 | 102565 | 2.55 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 101.9% | |
| 13C8-PFOS | 8.177 | 507.1 -> 79.9 | 15205 | 2.45 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 98.0% | |
| 13C9-PFNA | 7.545 | 472.1 -> 427.0 | 45459 | 1.24 µg/L | -0.012 |
| Spiked Amount: 1.25 | Range: 50.0 - 150.0% | | | Recovery = 99.1% | |
| d3-MeFOSAA | 8.084 | 573.2 -> 419.0 | 30794 | 4.93 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 98.5% | |
| 13C3-HFPO-DA | 5.782 | 286.9 -> 168.9 | 42905 | 9.75 µg/L | 0.000 |
| Spiked Amount: 10.00 | Range: 50.0 - 150.0% | | | Recovery = 97.5% | |
| d3-MeFOSA | 10.739 | 515.0 -> 219.0 | 14048 | 2.35 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 93.9% | |
| d5-EtFOSAA | 8.279 | 589.2 -> 419.0 | 29039 | 5.11 µg/L | 0.000 |
| Spiked Amount: 5.00 | Range: 50.0 - 150.0% | | | Recovery = 102.2% | |
| d7-MeFOSE | 10.660 | 623.2 -> 58.9 | 119963 | 24.66 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 98.7% | |
| d9-EtFOSE | 10.907 | 639.2 -> 58.9 | 155644 | 24.47 µg/L | 0.000 |
| Spiked Amount: 25.00 | Range: 50.0 - 150.0% | | | Recovery = 97.9% | |
| d5-EtFOSA | 10.972 | 531.1 -> 219.0 | 13845 | 2.44 µg/L | 0.000 |
| Spiked Amount: 2.50 | Range: 50.0 - 150.0% | | | Recovery = 97.8% | |
| Target Compounds | | | | | QValue |
| 4:2FTS | 5.082 | 327.1 -> 307.0 | 53892 | 9.20 µg/L | 95 |
| | | 327.1 -> 80.9 | 19735 | | |
| 6:2FTS | 6.801 | 427.1 -> 407.0 | 54663 | 9.69 µg/L | 98 |
| | | 427.1 -> 80.9 | 17911 | | |
| 8:2FTS | 7.816 | 527.1 -> 507.0 | 31069 | 9.53 µg/L | 95 |
| | | 527.1 -> 80.8 | 12310 | | |
| EtFOSAA | 8.280 | 584.2 -> 419.1 | 9057 | 2.42 µg/L | 100 |
| | | 584.2 -> 526.0 | 4916 | | |
| FOSA | 9.589 | 498.1 -> 77.9 | 29248 | 2.36 µg/L | 100 |
| | | 498.1 -> 478.0 | 913 | | |
| MeFOSAA | 8.085 | 570.1 -> 419.0 | 16433 | 2.60 µg/L | 99 |
| | | 570.1 -> 483.0 | 3250 | | |
| PFBA | 2.818 | 212.8 -> 168.9 | 62120 | 9.68 µg/L | 100 |
| PFBS | 5.323 | 298.7 -> 79.9 | 18168 | 2.07 µg/L | 99 |
| | | 298.7 -> 98.8 | 6642 | | |
| PFDA | 8.027 | 512.9 -> 469.0 | 77758 | 2.36 µg/L | 100 |
| | | 512.9 -> 219.0 | 12525 | | |
| PFDoDA | 8.900 | 613.1 -> 569.0 | 52324 | 2.36 µg/L | 93 |
| | | 613.1 -> 319.0 | 8735 | | |
| PFDS | 9.052 | 599.0 -> 79.9 | 8444 | 2.22 µg/L | 97 |

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Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. | Units | Dev(Min) |
|--------------|--------|----------------|----------|-------|-------|----------|
| PFHpA | 6.370 | 599.0 -> 98.8 | 3976 | 2.24 | µg/L | 96 |
| | | 363.1 -> 319.0 | 68134 | | | |
| PFHpS | 7.685 | 363.1 -> 169.0 | 11283 | 2.25 | µg/L | 100 |
| | | 449.0 -> 79.9 | 16430 | | | |
| PFHxA | 5.407 | 449.0 -> 98.9 | 8122 | 2.43 | µg/L | 98 |
| | | 313.0 -> 269.0 | 57534 | | | |
| PFHxS | 7.131 | 313.0 -> 118.9 | 2955 | 2.27 | µg/L | 98 |
| | | 398.7 -> 79.9 | 16128 | | | |
| PFNA | 7.545 | 398.7 -> 98.9 | 7457 | 2.39 | µg/L | 99 |
| | | 463.0 -> 419.0 | 76994 | | | |
| PFNS | 8.631 | 463.0 -> 219.0 | 15215 | 2.20 | µg/L | 91 |
| | | 548.8 -> 79.9 | 13402 | | | |
| PFOA | 7.028 | 548.8 -> 98.9 | 7356 | 2.26 | µg/L | 96 |
| | | 413.0 -> 369.0 | 98949 | | | |
| PFOS | 8.178 | 413.0 -> 169.0 | 18814 | 2.13 | µg/L | 99 |
| | | 498.9 -> 79.9 | 14794 | | | |
| PFPeA | 4.212 | 498.9 -> 98.8 | 7785 | 4.77 | µg/L | 100 |
| | | 263.0 -> 219.0 | 74806 | | | |
| PFPeS | 6.422 | 349.1 -> 79.9 | 15886 | 2.25 | µg/L | 97 |
| | | 349.1 -> 98.9 | 7179 | | | |
| PFTeDA | 9.628 | 713.1 -> 669.0 | 42958 | 2.43 | µg/L | 97 |
| | | 713.1 -> 168.9 | 3787 | | | |
| PFTrDA | 9.284 | 663.0 -> 619.0 | 55347 | 2.47 | µg/L | 95 |
| | | 663.0 -> 168.9 | 6225 | | | |
| PFUnDA | 8.468 | 563.1 -> 519.0 | 53281 | 2.23 | µg/L | 96 |
| | | 563.1 -> 269.1 | 9036 | | | |
| 11CI-PF3OUdS | 9.336 | 630.9 -> 450.9 | 73314 | 4.55 | µg/L | 99 |
| | | 632.9 -> 452.9 | 23249 | | | |
| 9CI-PF3ONS | 8.508 | 530.8 -> 351.0 | 117769 | 4.64 | µg/L | 98 |
| | | 532.8 -> 353.0 | 37344 | | | |
| ADONA | 6.632 | 376.9 -> 250.9 | 255792 | 4.49 | µg/L | 99 |
| | | 376.9 -> 84.8 | 69603 | | | |
| HFPO-DA | 5.783 | 284.9 -> 168.9 | 17891 | 4.92 | µg/L | 96 |
| | | 284.9 -> 184.9 | 2152 | | | |
| 3:3FTCA | 3.659 | 241.0 -> 177.0 | 11841 | 11.80 | µg/L | 98 |
| | | 241.0 -> 117.0 | 1627 | | | |
| 5:3FTCA | 6.074 | 341.0 -> 237.1 | 253177 | 59.34 | µg/L | 97 |
| | | 341.0 -> 217.0 | 185193 | | | |
| 7:3FTCA | 7.510 | 441.0 -> 316.9 | 175731 | 60.14 | µg/L | 99 |
| | | 441.0 -> 336.9 | 383358 | | | |
| EtFOSA | 10.974 | 526.0 -> 219.0 | 31206 | 4.84 | µg/L | 94 |
| | | 526.0 -> 169.0 | 40648 | | | |
| EtFOSE | 10.920 | 630.0 -> 58.9 | 83220 | 11.98 | µg/L | 100 |
| | | 511.9 -> 219.0 | 25067 | | | |
| MeFOSA | 10.741 | 511.9 -> 169.0 | 36193 | 4.85 | µg/L | 90 |
| | | 616.1 -> 58.9 | 56325 | | | |
| MeFOSE | 10.673 | 699.1 -> 79.9 | 3826 | 11.81 | µg/L | 100 |
| | | 699.1 -> 98.8 | 2184 | | | |
| PFDoDS | 9.755 | 295.0 -> 201.0 | 13642 | 2.27 | µg/L | 95 |
| | | 295.0 -> 84.9 | 3892 | | | |
| NFDHA | 5.288 | 279.0 -> 85.1 | 50383 | 4.72 | µg/L | 100 |
| | | 229.0 -> 84.9 | 39611 | | | |
| PFMBA | 4.626 | 314.8 -> 134.9 | 128096 | 4.77 | µg/L | 100 |
| | | 314.8 -> 82.9 | 4005 | | | |
| PFMPA | 3.351 | | | 4.26 | µg/L | 98 |
| | | | | | | |
| PFEESA | 5.862 | | | | | |
| | | | | | | |

= Qualifier out of range, m = manually integrated, + = Area summed



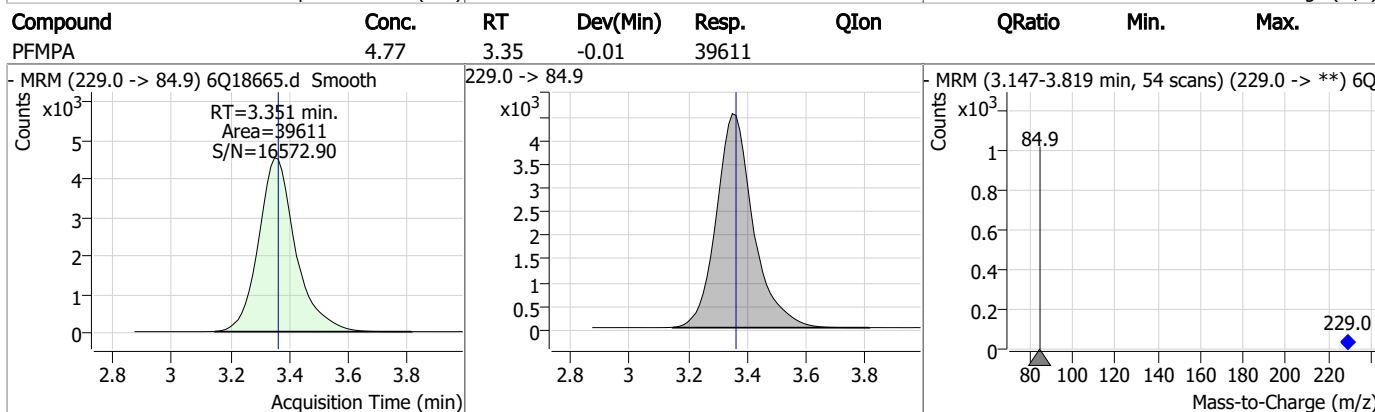
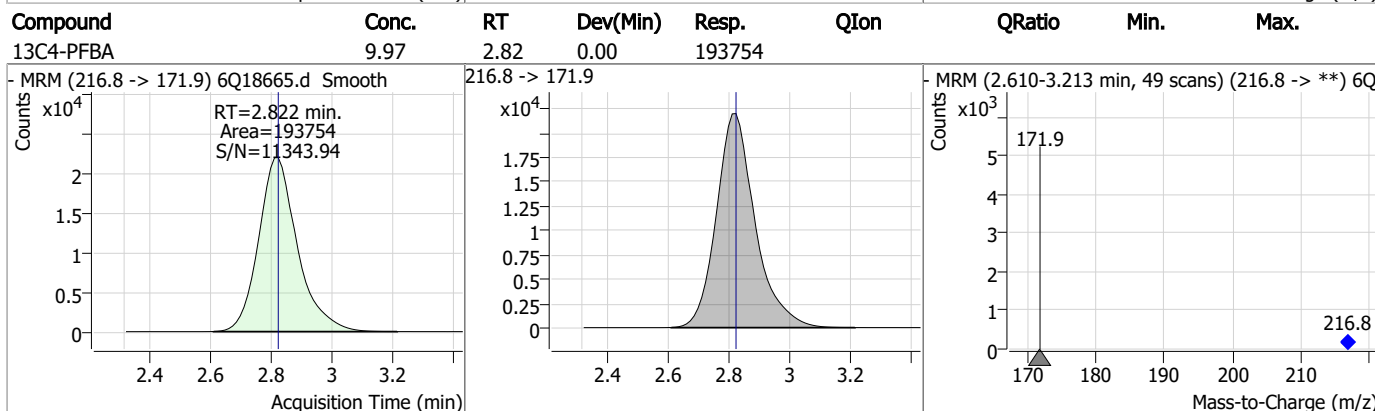
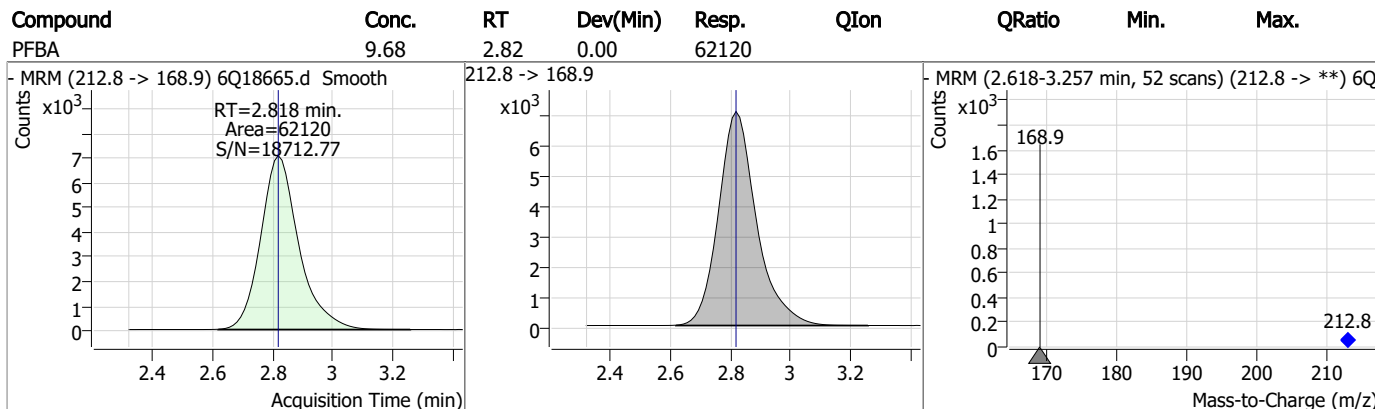
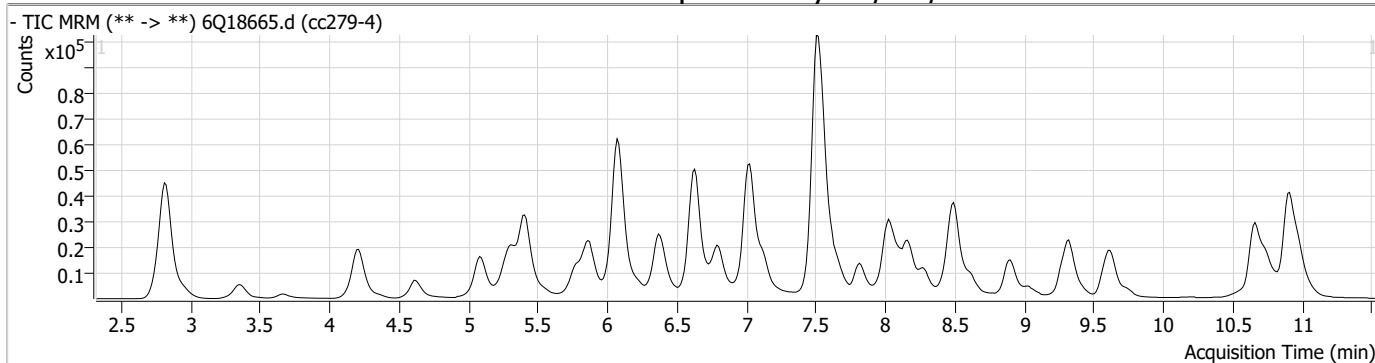
Perfluorinated Compounds by LC/MS/MS

| Compound | RT | Transition | Response | Conc. Units | Dev(Min) |
|----------|----|------------|----------|-------------|----------|
|----------|----|------------|----------|-------------|----------|

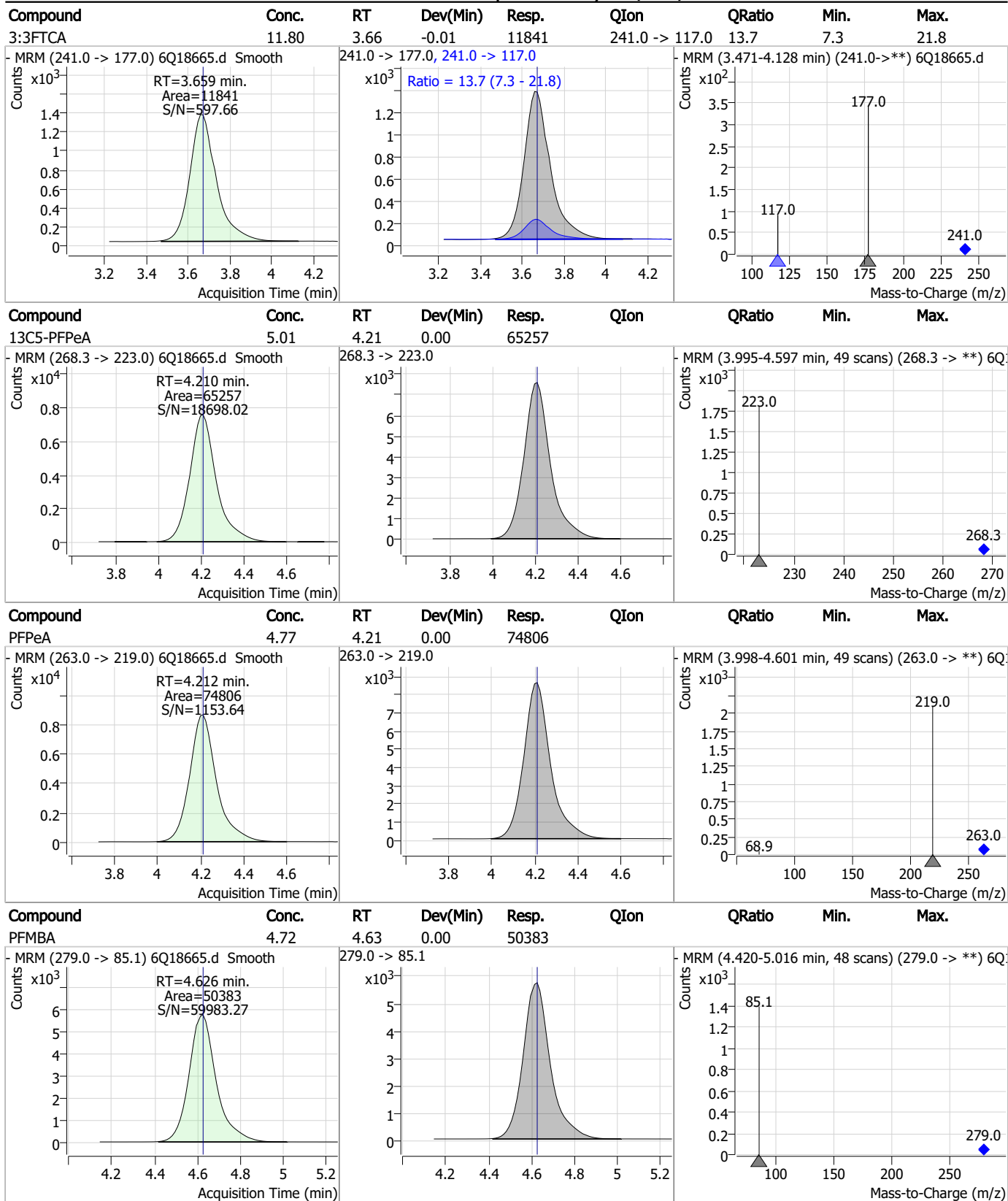
7.7.17

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Perfluorinated Compounds by LC/MS/MS

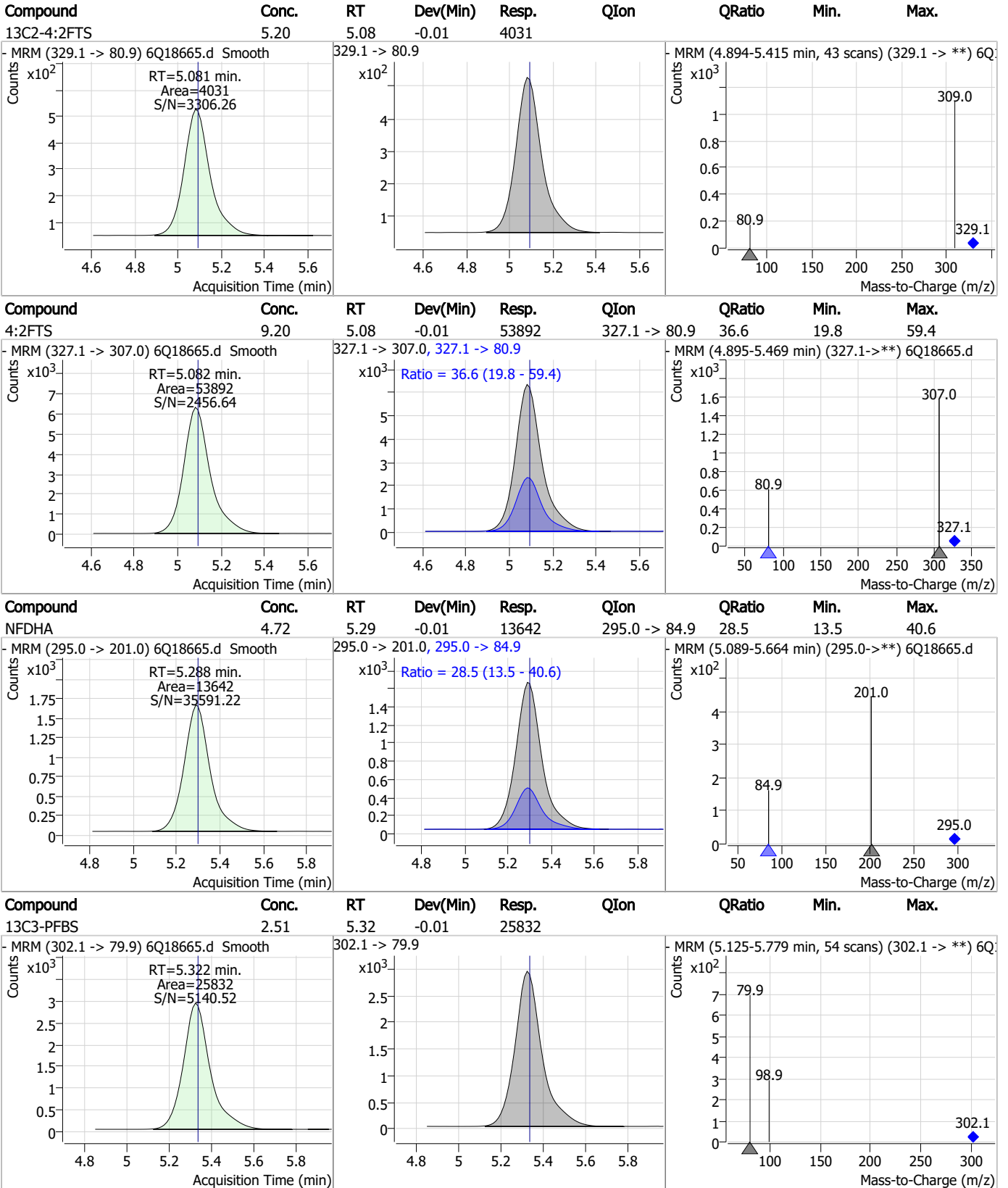


Perfluorinated Compounds by LC/MS/MS



7.7.17

Perfluorinated Compounds by LC/MS/MS



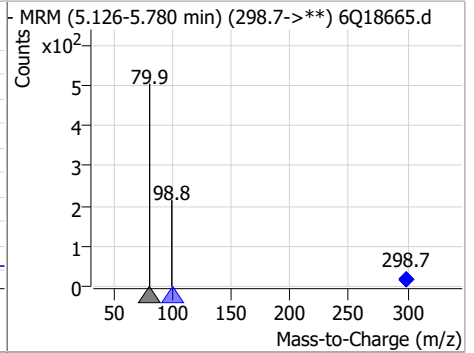
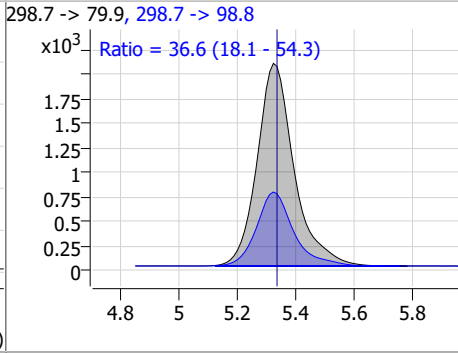
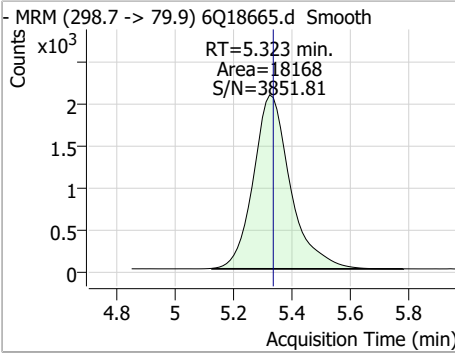
7.7.17

7

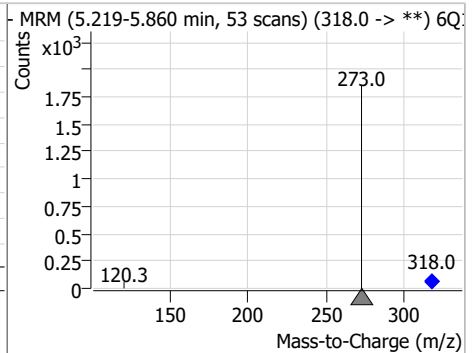
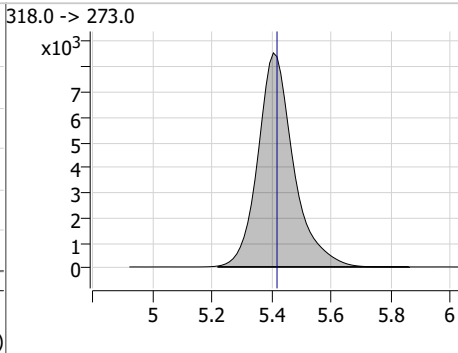
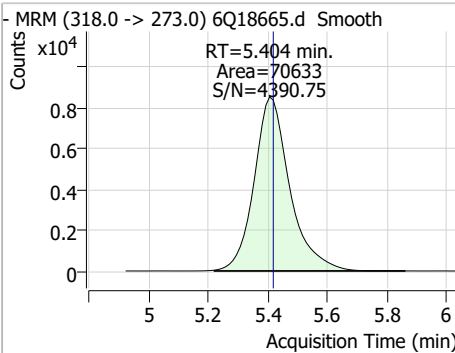


Perfluorinated Compounds by LC/MS/MS

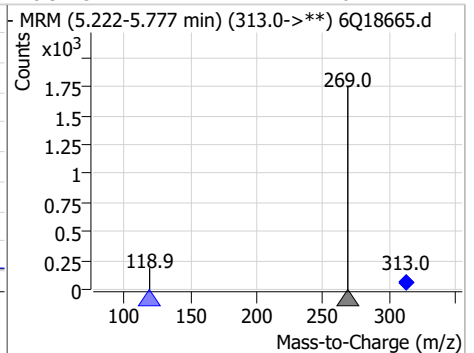
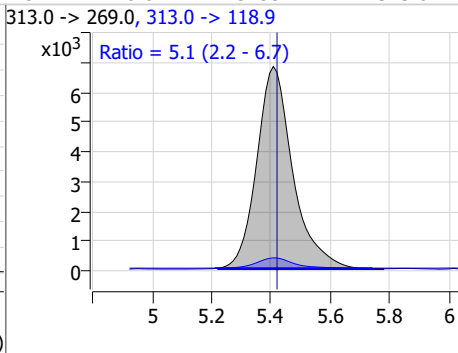
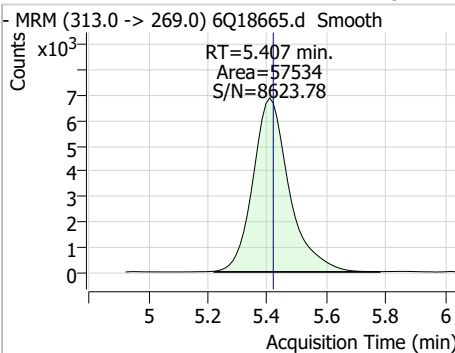
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFBS | 2.07 | 5.32 | -0.01 | 18168 | 298.7 -> 98.8 | 36.6 | 18.1 | 54.3 |



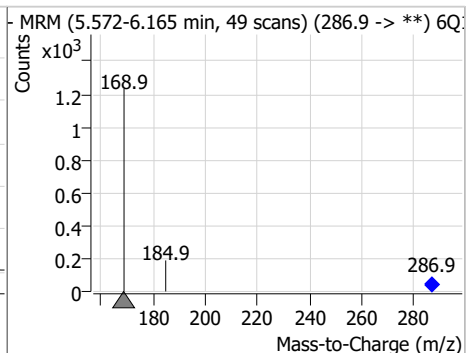
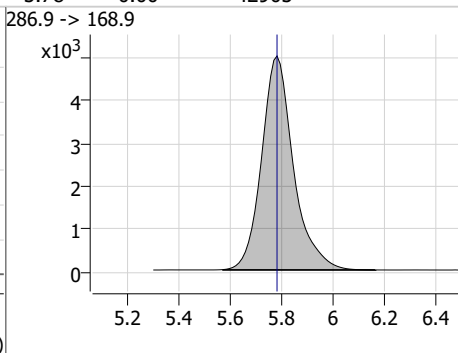
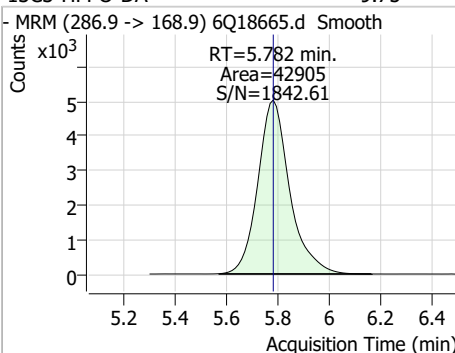
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C5-PFHxA | 2.49 | 5.40 | -0.01 | 70633 | 318.0 -> 273.0 | 5.1 | 2.2 | 6.7 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHxA | 2.43 | 5.41 | -0.01 | 57534 | 313.0 -> 118.9 | 5.1 | 2.2 | 6.7 |



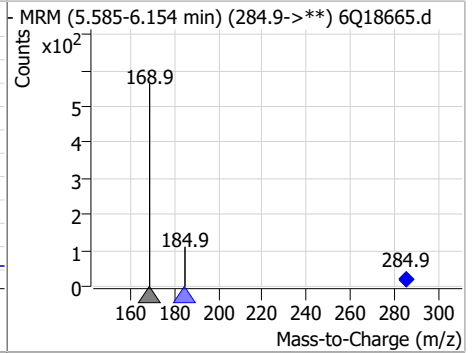
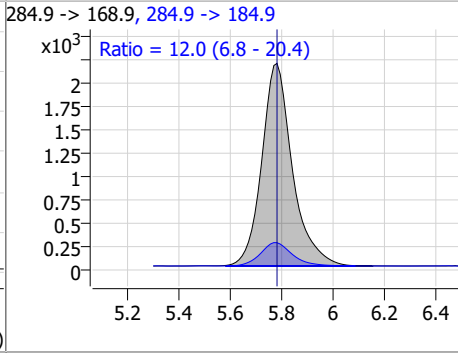
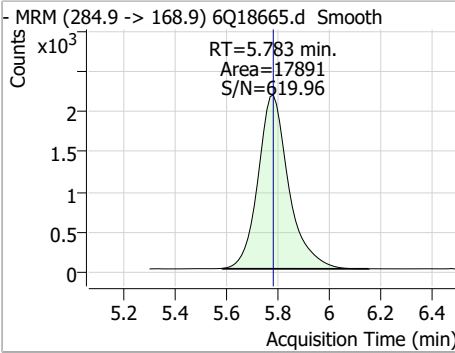
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|--------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C3-HFPO-DA | 9.75 | 5.78 | 0.00 | 42905 | 286.9 -> 168.9 | 5.1 | 2.2 | 6.7 |



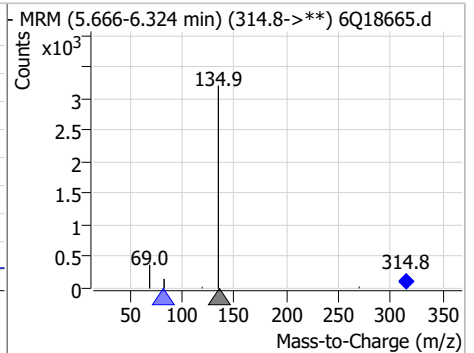
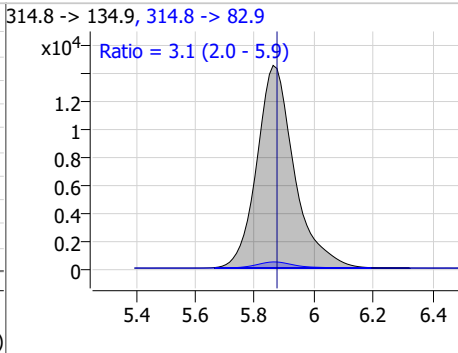
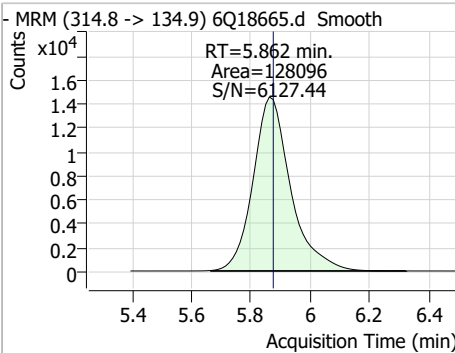
7.7.17

Perfluorinated Compounds by LC/MS/MS

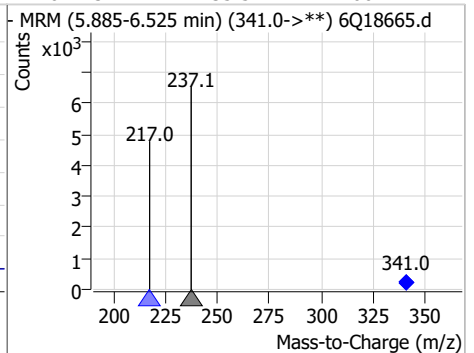
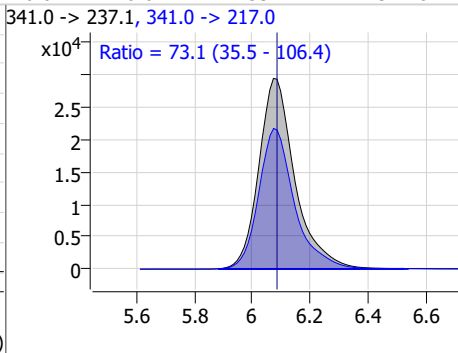
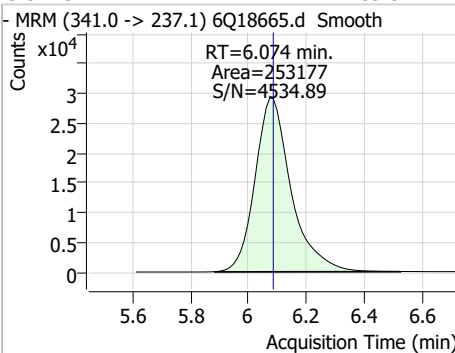
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| HFPO-DA | 4.92 | 5.78 | 0.00 | 17891 | 284.9 -> 184.9 | 12.0 | 6.8 | 20.4 |



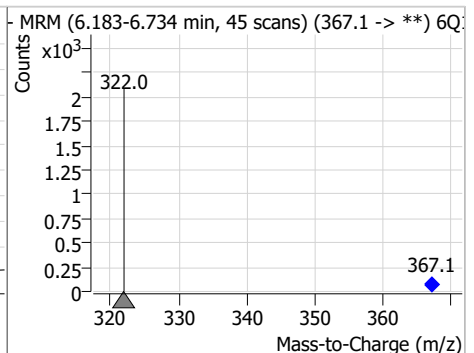
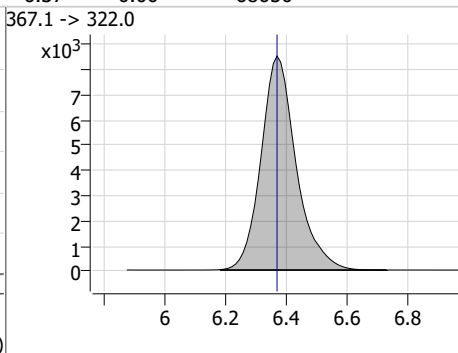
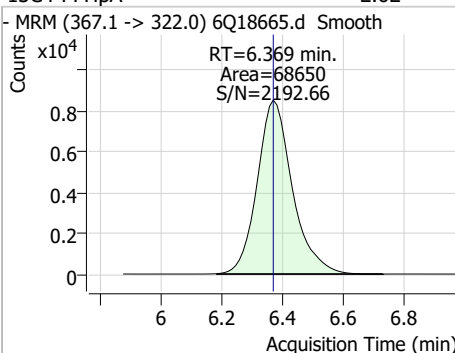
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| PFEESA | 4.26 | 5.86 | -0.01 | 128096 | 314.8 -> 82.9 | 3.1 | 2.0 | 5.9 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|----------------|--------|------|-------|
| 5:3FTCA | 59.34 | 6.07 | -0.01 | 253177 | 341.0 -> 217.0 | 73.1 | 35.5 | 106.4 |



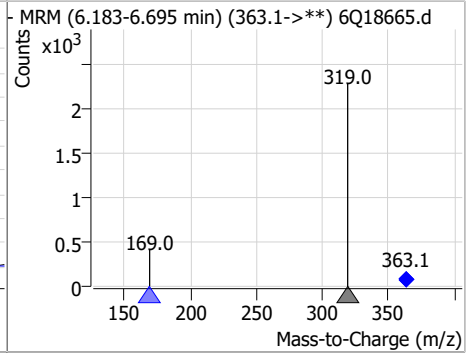
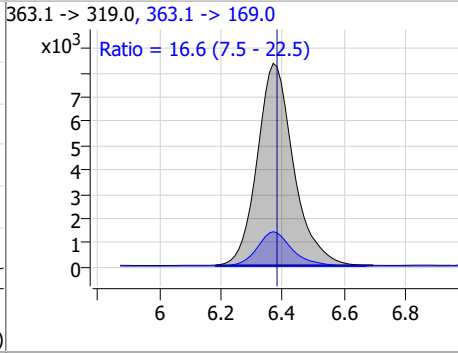
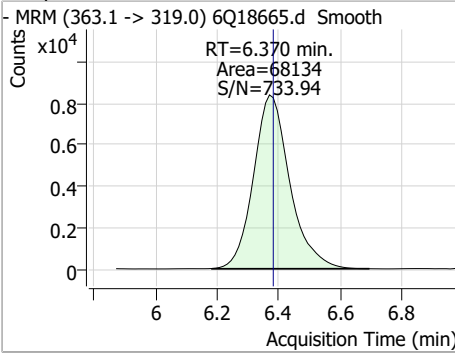
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|------------|-------|------|----------|-------|----------------|--------|------|------|
| 13C4-PFHpA | 2.62 | 6.37 | 0.00 | 68650 | 367.1 -> 322.0 | | | |



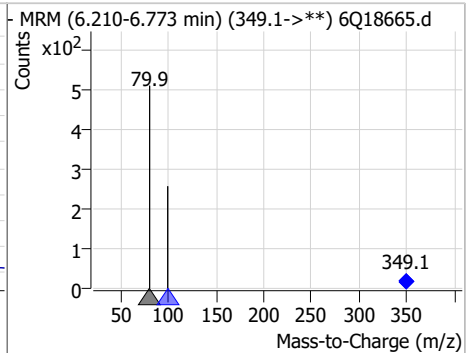
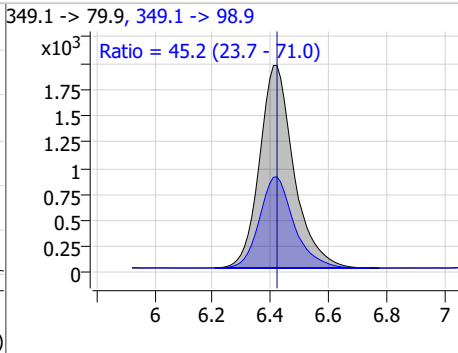
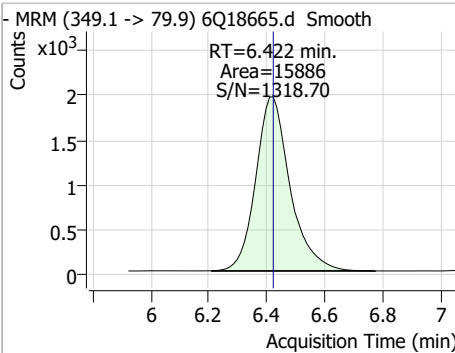
7.7.17

Perfluorinated Compounds by LC/MS/MS

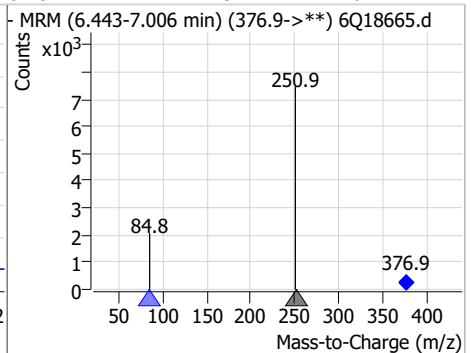
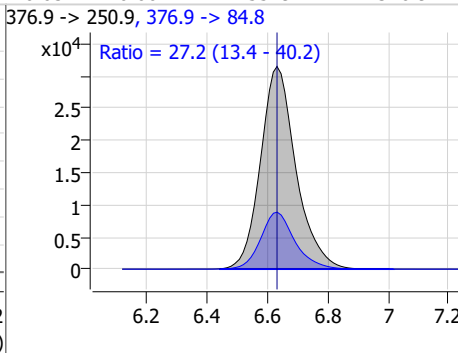
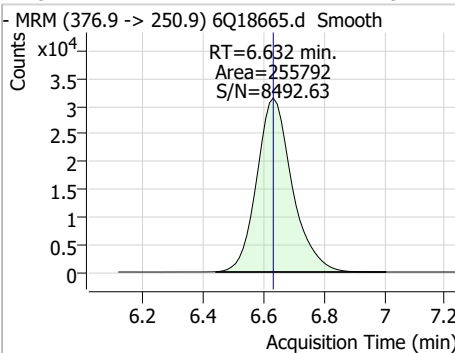
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|----------------|--------|------|------|
| PFHpA | 2.24 | 6.37 | -0.01 | 68134 | 363.1 -> 169.0 | 16.6 | 7.5 | 22.5 |



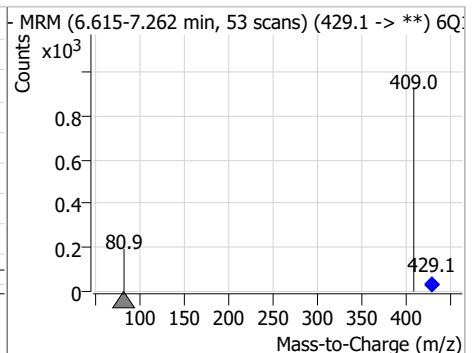
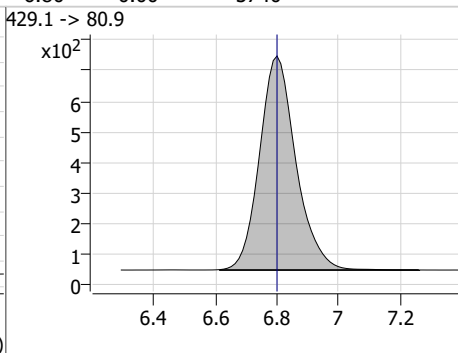
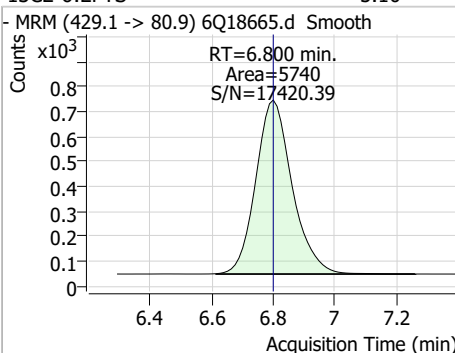
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFPeS | 2.25 | 6.42 | 0.00 | 15886 | 349.1 -> 98.9 | 45.2 | 23.7 | 71.0 |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|--------|---------------|--------|------|------|
| ADONA | 4.49 | 6.63 | 0.00 | 255792 | 376.9 -> 84.8 | 27.2 | 13.4 | 40.2 |

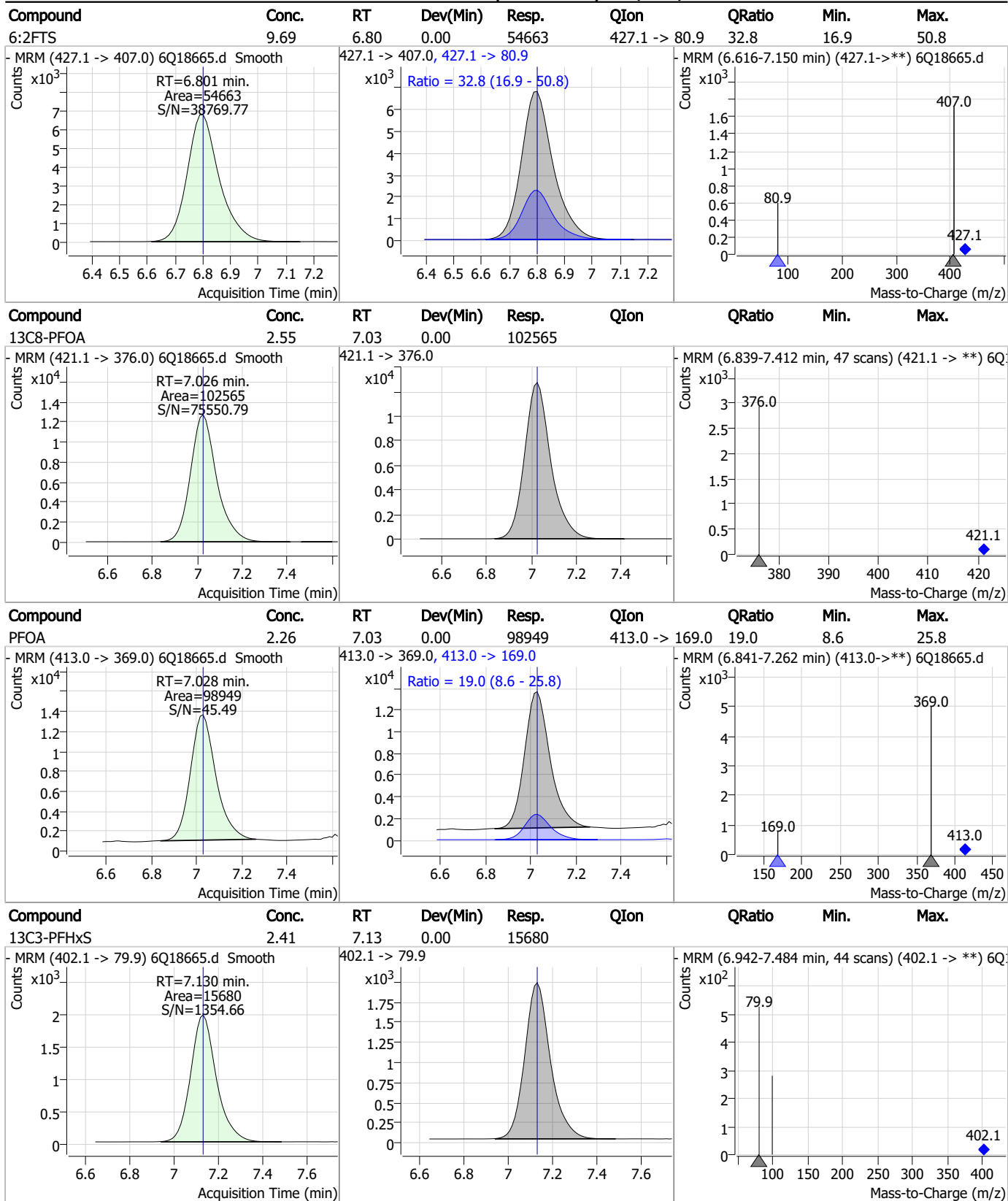


| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-------------|-------|------|----------|-------|---------------|--------|------|------|
| 13C2-6:2FTS | 5.10 | 6.80 | 0.00 | 5740 | 429.1 -> 80.9 | | | |



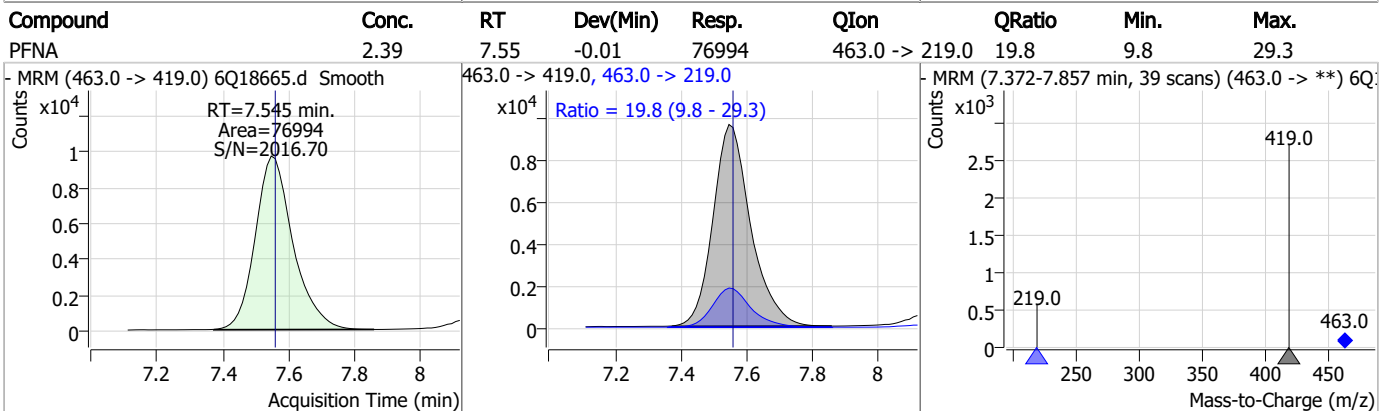
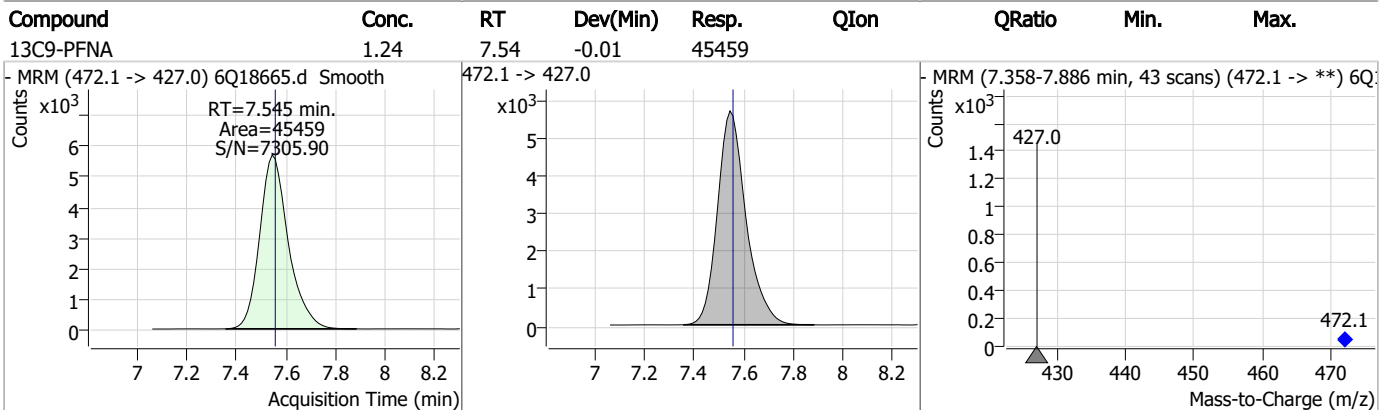
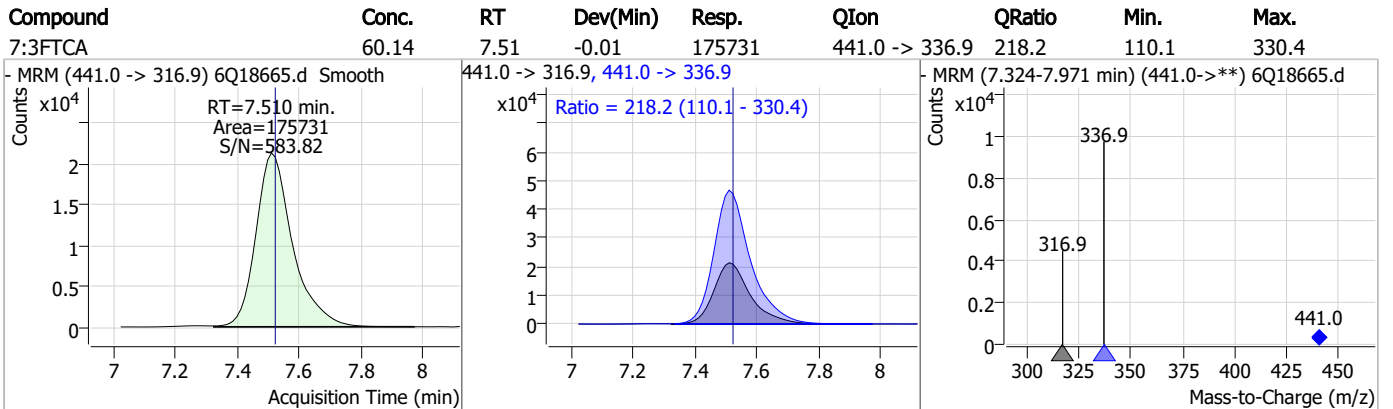
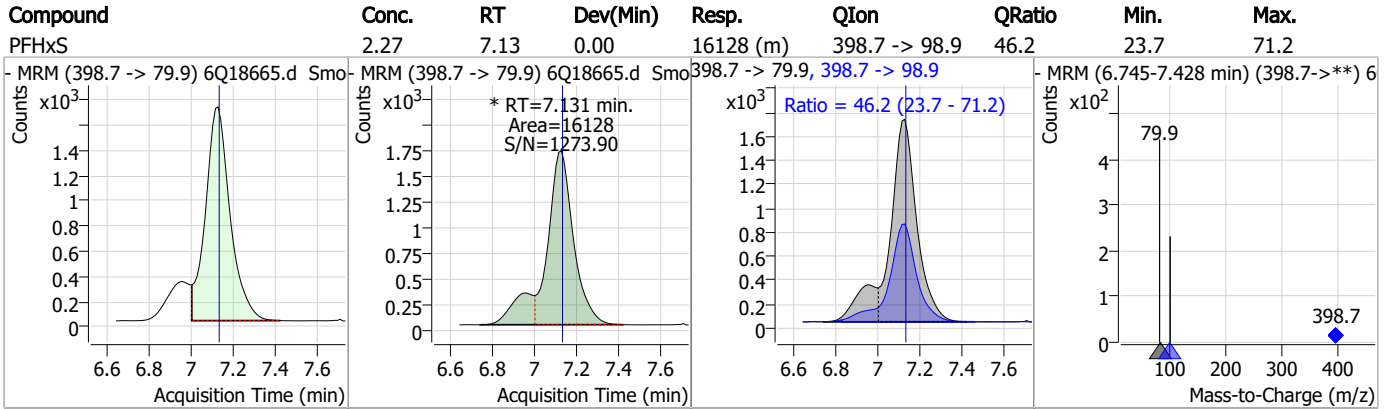
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

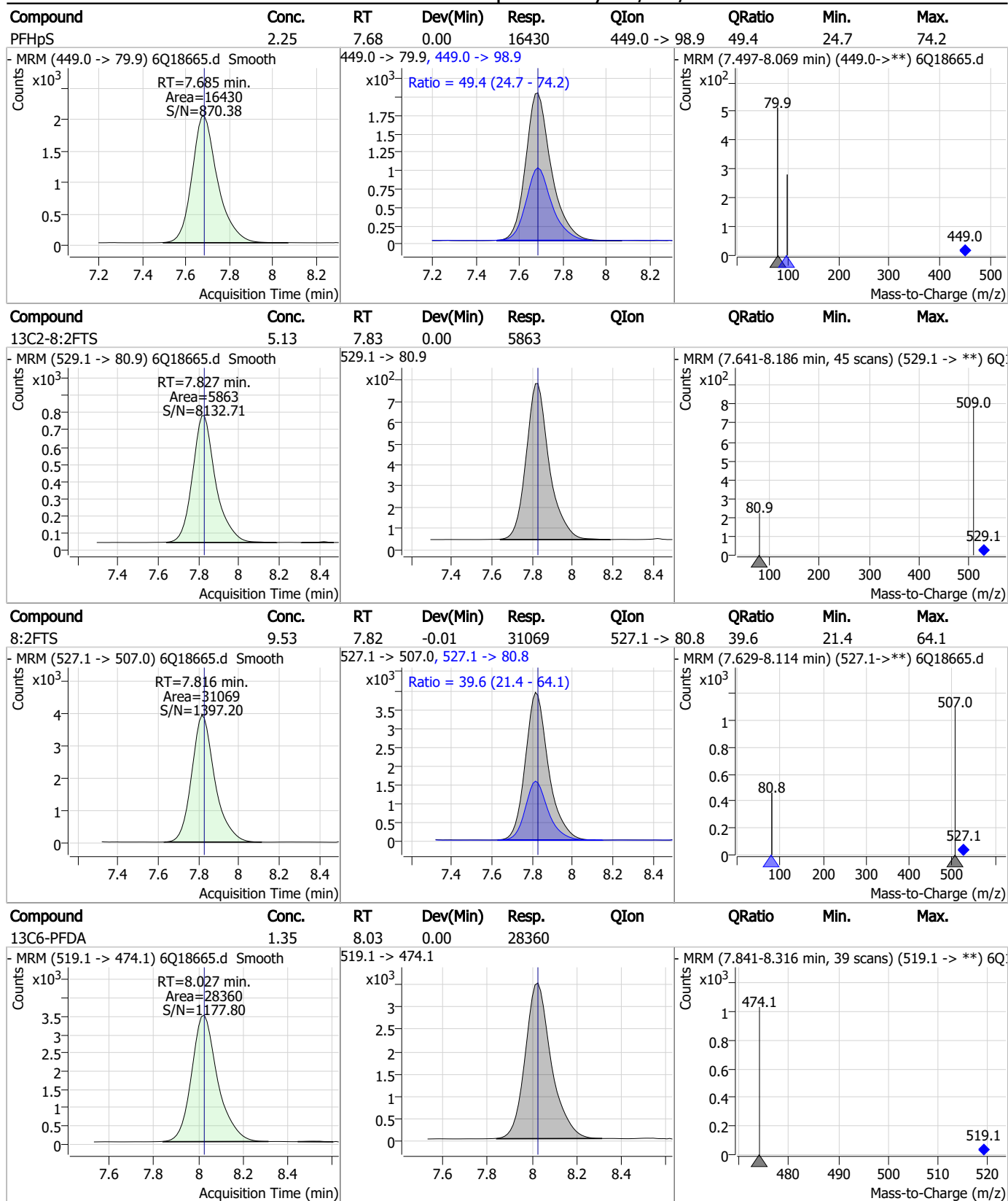
Perfluorinated Compounds by LC/MS/MS



7.7.17

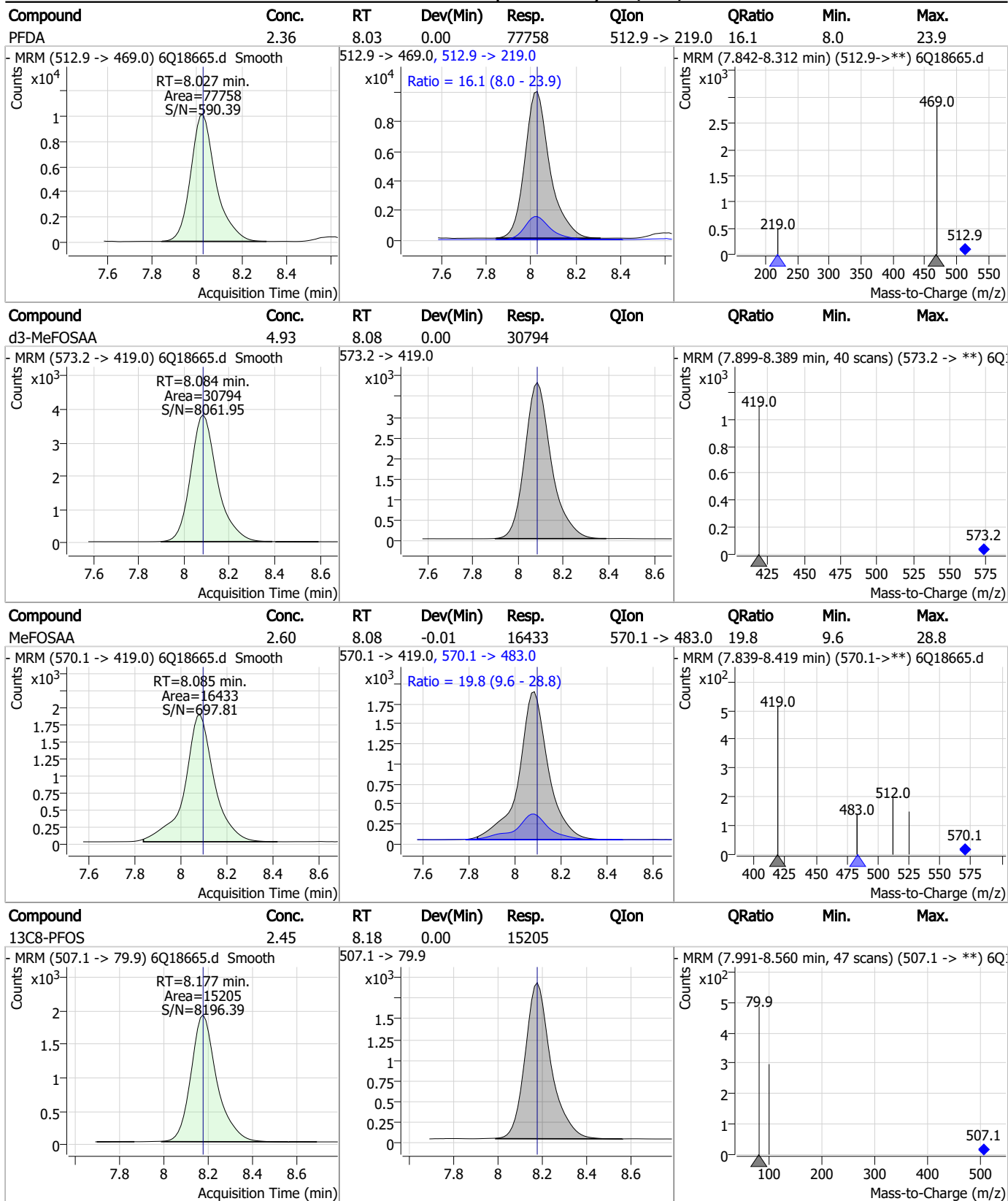


Perfluorinated Compounds by LC/MS/MS



7.7.17

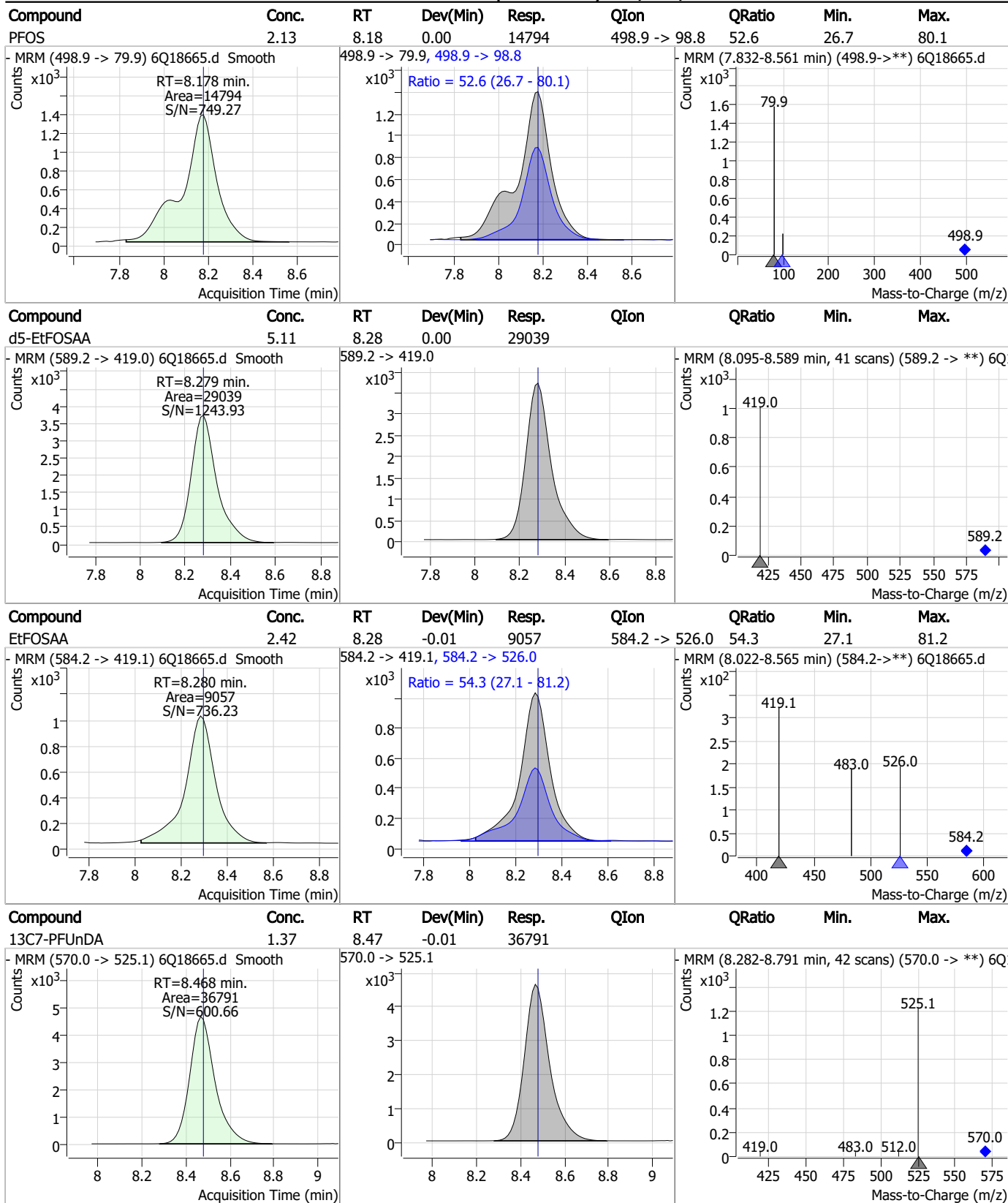
Perfluorinated Compounds by LC/MS/MS



7.7.17

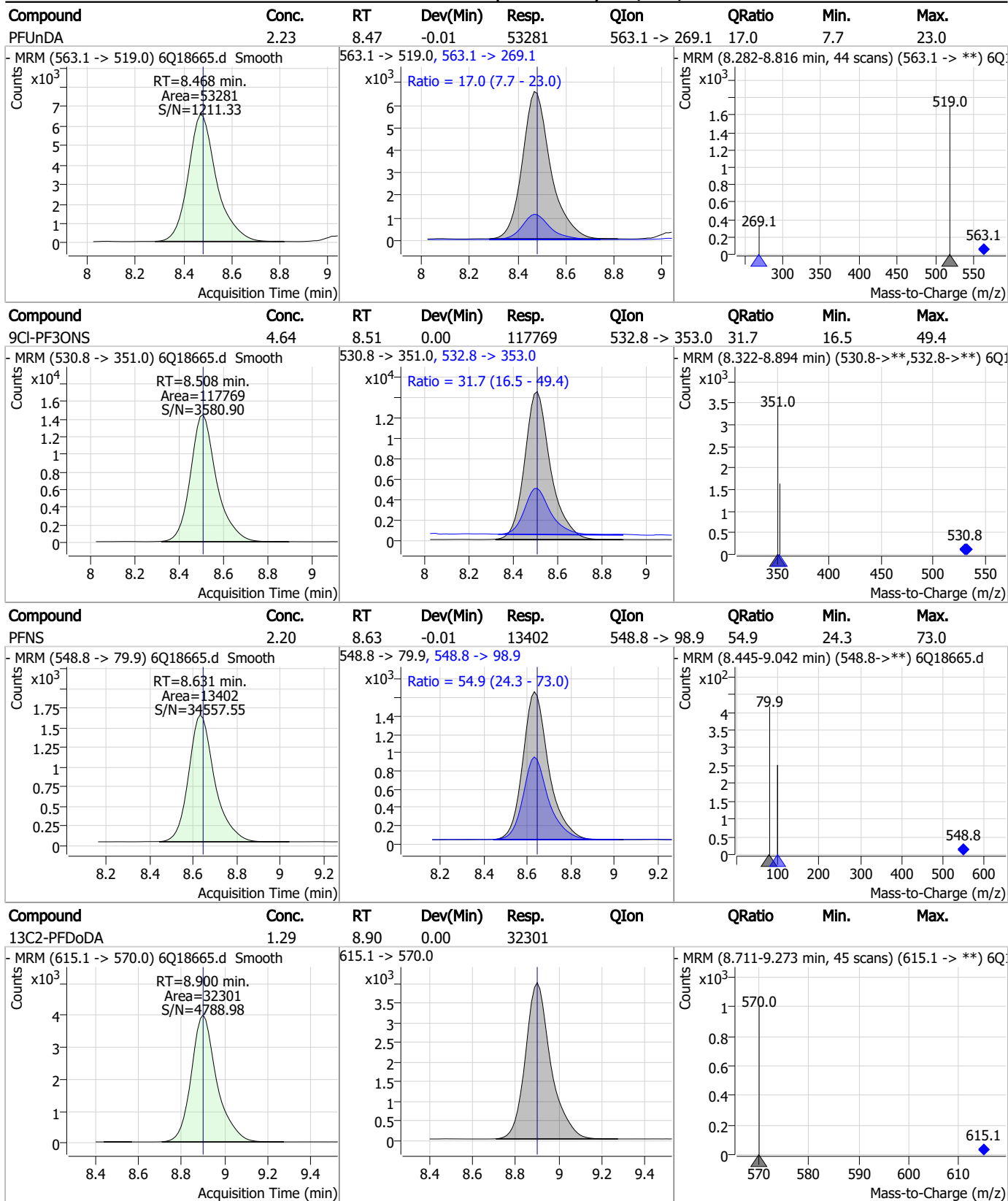


Perfluorinated Compounds by LC/MS/MS



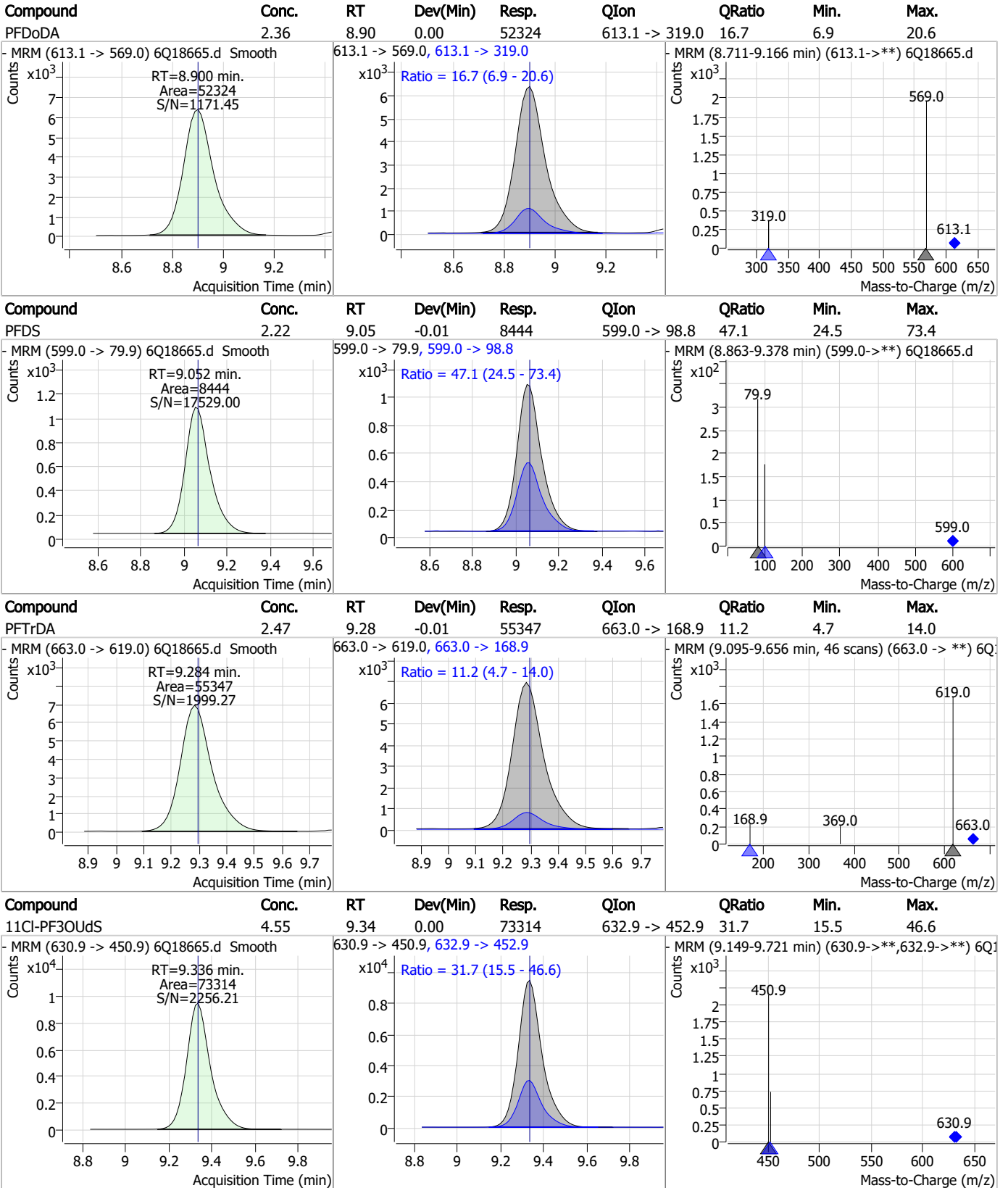
7.7.17

Perfluorinated Compounds by LC/MS/MS



7.7.17

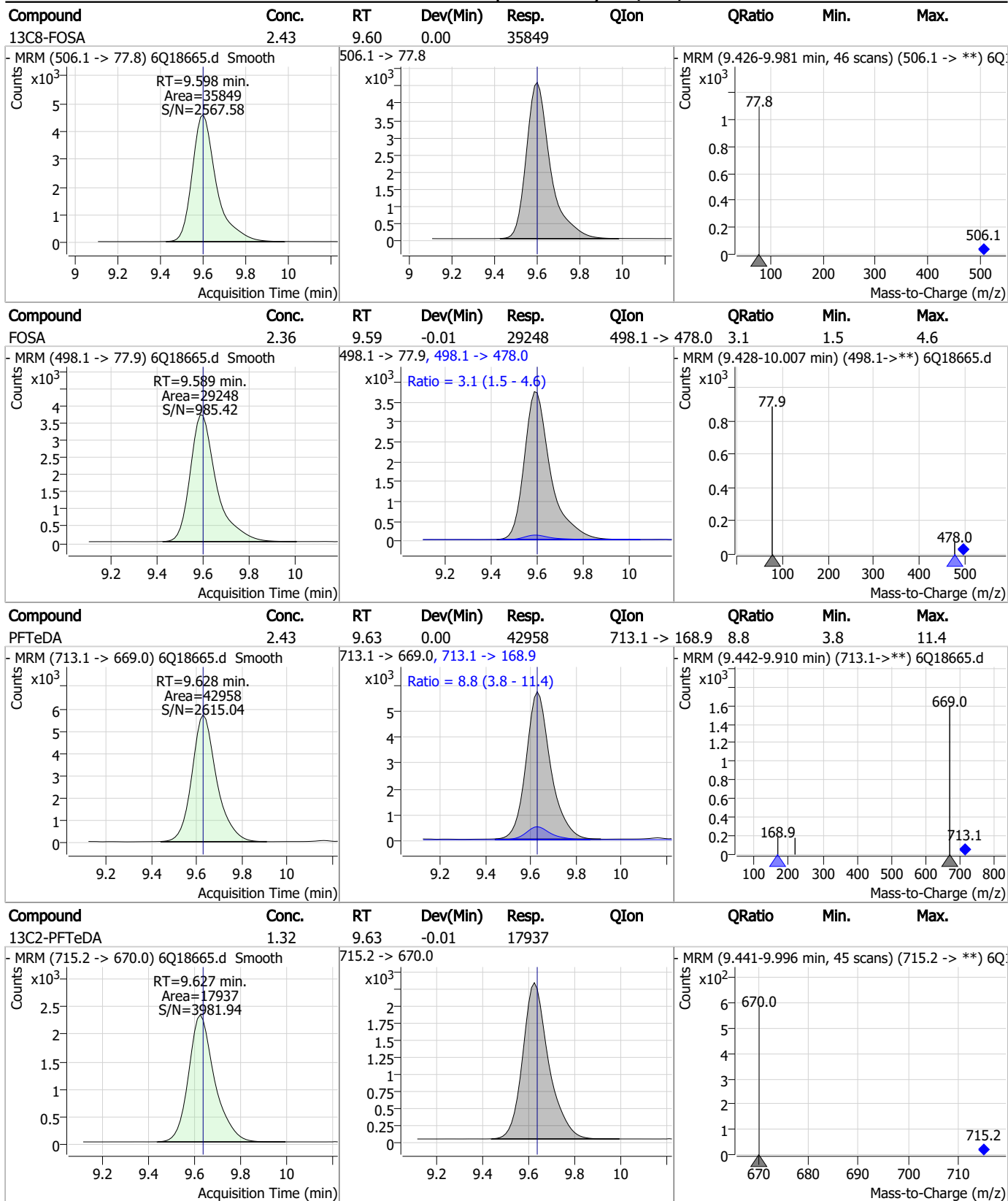
Perfluorinated Compounds by LC/MS/MS



7.7.17



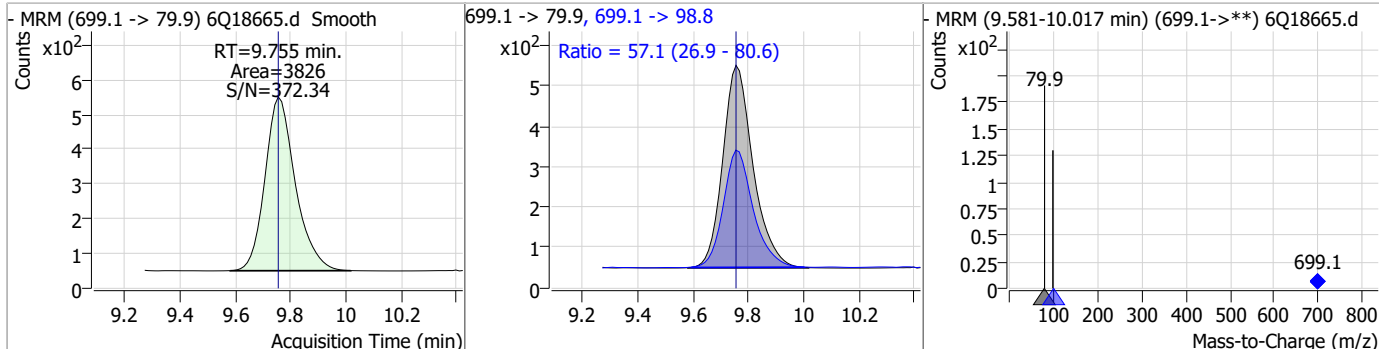
Perfluorinated Compounds by LC/MS/MS



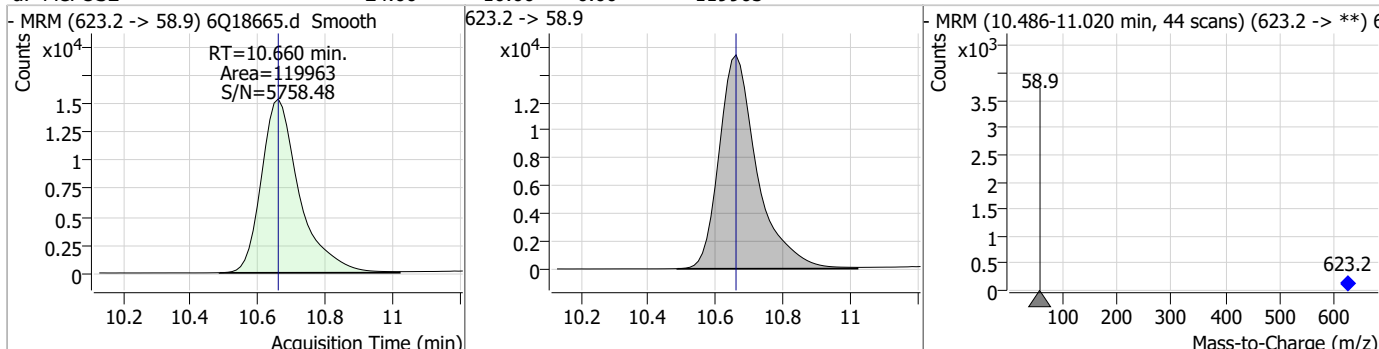
7.7.17

Perfluorinated Compounds by LC/MS/MS

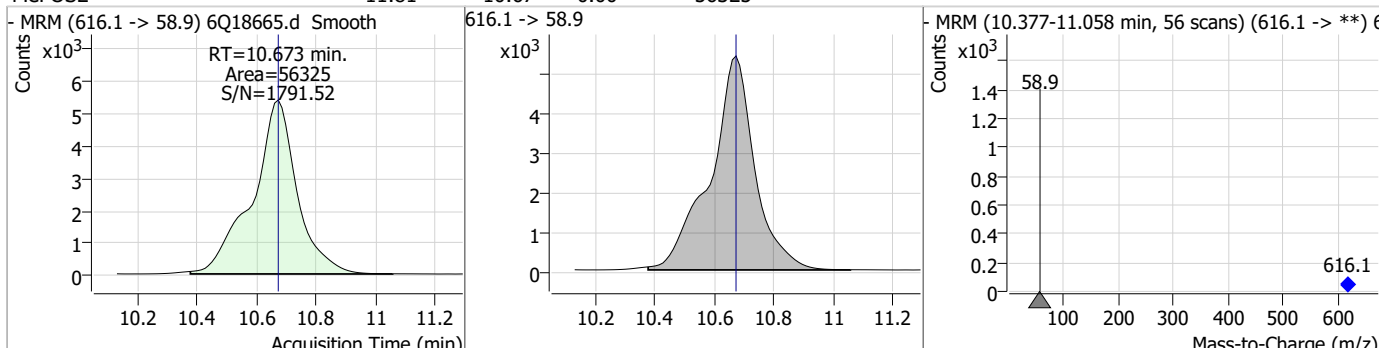
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|------|----------|-------|---------------|--------|------|------|
| PFDoS | 2.27 | 9.75 | 0.00 | 3826 | 699.1 -> 98.8 | 57.1 | 26.9 | 80.6 |



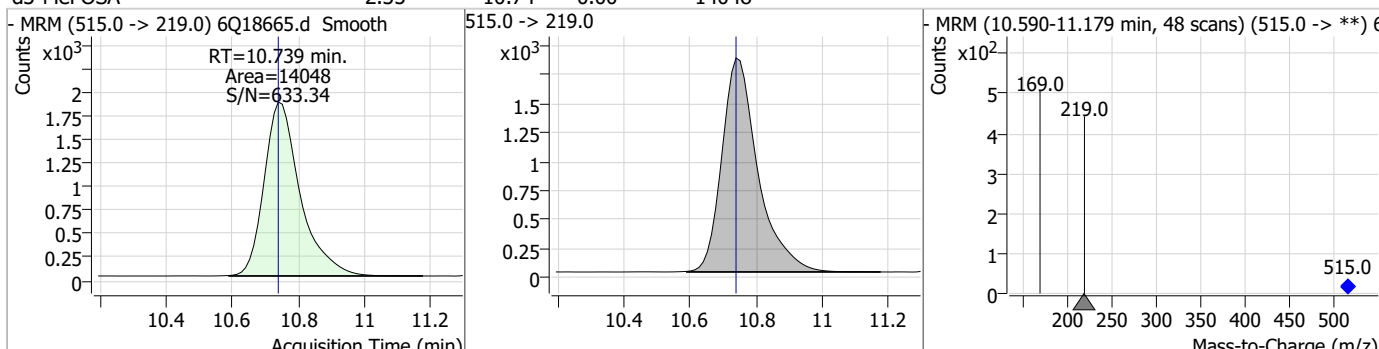
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|--------|------|--------|------|------|
| d7-MeFOSE | 24.66 | 10.66 | 0.00 | 119963 | | | | |



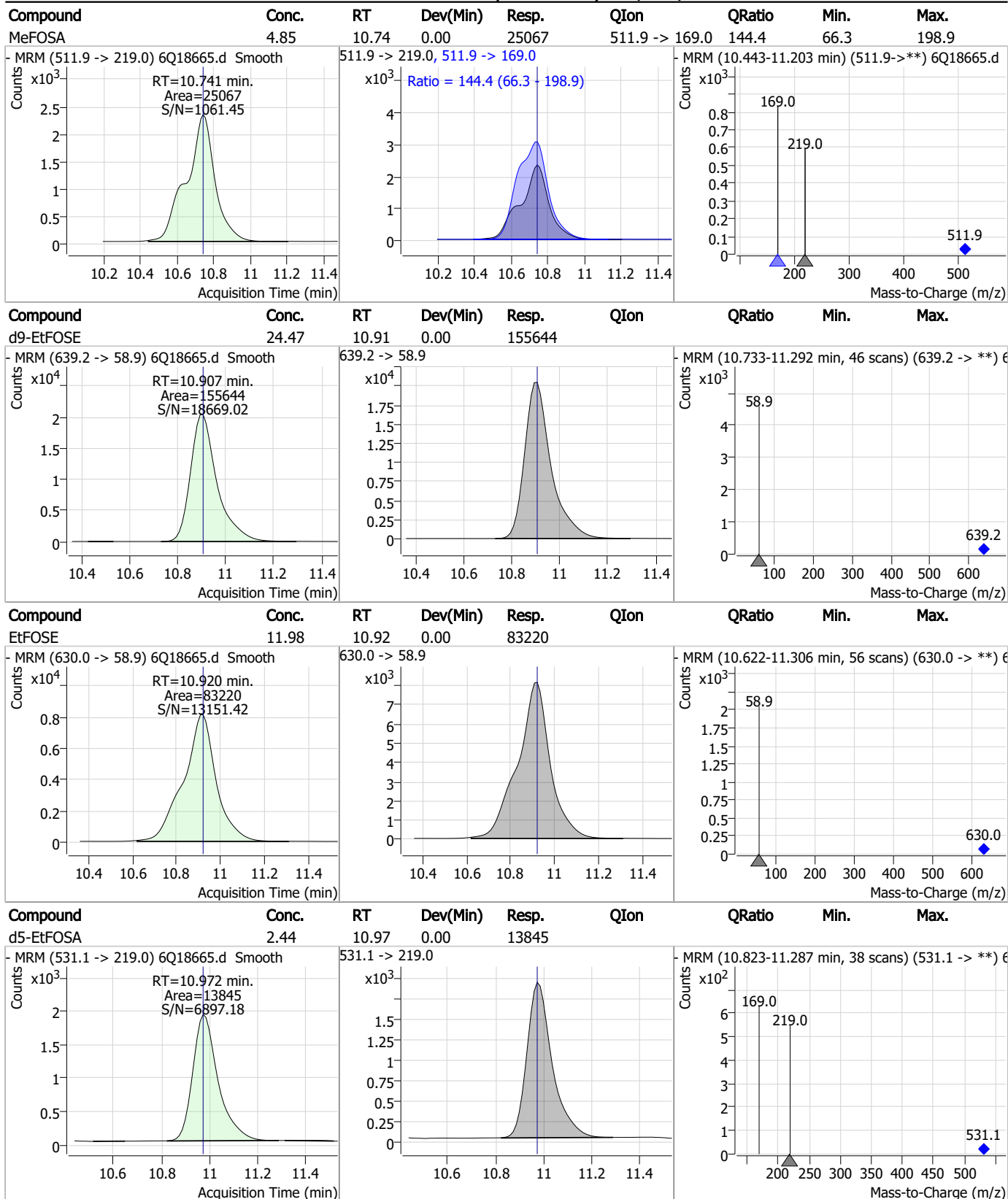
| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|----------|-------|-------|----------|-------|------|--------|------|------|
| MeFOSE | 11.81 | 10.67 | 0.00 | 56325 | | | | |



| Compound | Conc. | RT | Dev(Min) | Resp. | QIon | QRatio | Min. | Max. |
|-----------|-------|-------|----------|-------|------|--------|------|------|
| d3-MeFOSA | 2.35 | 10.74 | 0.00 | 14048 | | | | |



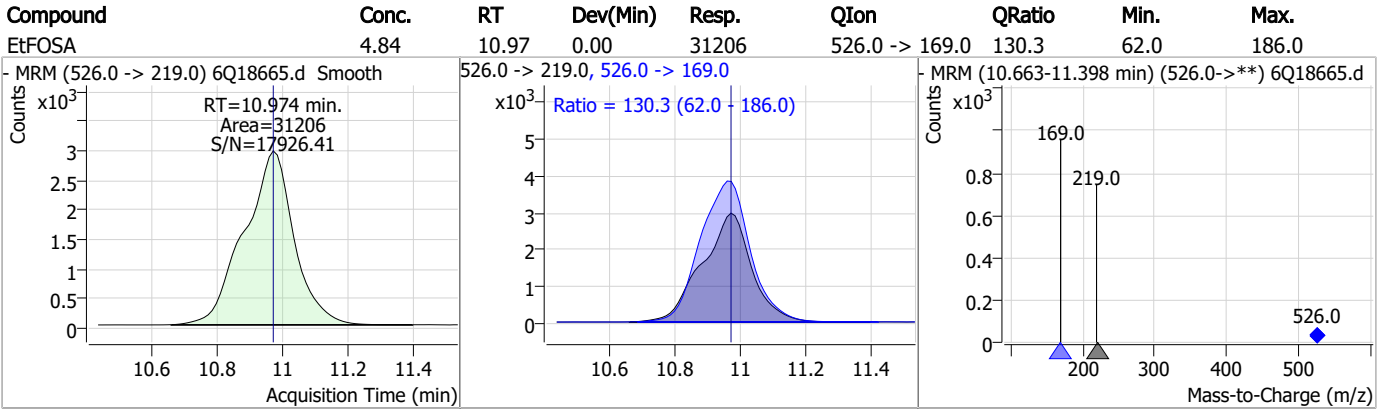
Perfluorinated Compounds by LC/MS/MS



7.7.17



Perfluorinated Compounds by LC/MS/MS



7.7.17
7



Manual Integration Approval Summary

Sample Number: S6Q279-CC279 Method: EPA DRAFT 1633
Lab FileID: 6Q18665.D Analyst approved: 06/01/23 14:15 Martha Valls
Injection Time: 06/01/23 12:08 Supervisor approved: 06/01/23 16:14 Norman Farmer

| Parameter | CAS | Sig# | R.T. (min.) | Reason |
|------------------------------|----------|------|----------------|------------|
| Perfluorohexanesulfonic acid | 355-46-4 | | 7.13 | Split peak |

7.7.17.1

7

SGS ORLANDO

| | |
|--------------|----------------|
| DATE: | 05/31/23 |
| COLUMN TYPE: | Poroshell EC18 |
| AMOUNT INJ: | 4 uI |
| INSTRUMENT: | LCMS6-6Q |

LCMS6-6Q ANALYSIS LOG

| | |
|-------------|--------------------|
| METHODS: | 1633 |
| PROC. METH: | 1633_053123_S6Q279 |
| CAL DATE: | 05/31/23 |
| ANALYST: | M. Valls |
| RUN BATCH: | S6Q279 |

| | |
|--------------------|--|
| ELUENT A LOT #: | ACN 220228 |
| ELUENT B LOT #: | HPLC WATER LOT: 224870 W5% ACN 220225 2mM AMAC: 11387 |
| IC/CC STD LOT #: | LCMS 2127D |
| ICV STD LOT #: | LCMS 2127C/2125A |
| ISTD/ID STD LOT #: | 11765/11764 |

| | Data File | Sample | Sample Name | Method | Sample Type | Level | Misc. Info | Comments |
|----|-----------|--------|-------------|------------|-------------|---------|----------------------------------|---------------------------------|
| 1 | 6Q18557.d | P1-B9 | CCB | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 2 | 6Q18558.d | P1-B9 | CCB | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 3 | 6Q18559.d | P1-B3 | RT TDCA | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 4 | 6Q18560.d | P1-B4 | RT BR-LN | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 5 | 6Q18561.d | P1-A9 | High Std | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 6 | 6Q18562.d | P1-A1 | iblk | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 7 | 6Q18563.d | P1-A5 | cc278-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | surr high |
| 8 | 6Q18564.d | P1-A2 | cc278-1.0LL | 1633full.m | QC | 1.6/500 | OP96663.S6Q279.500,,,5.0,1,water | surr failing high, re-calibrate |
| 9 | 6Q18565.d | P6-B5 | op97070-bs | 1633full.m | Sample | | OP97070.S6Q279.500,,,5.0,1,water | rr samples |
| 10 | 6Q18566.d | P1-B9 | CCB | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 11 | 6Q18567.d | P1-B3 | RT TDCA | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 12 | 6Q18568.d | P1-B4 | RT BR-LN | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 13 | 6Q18569.d | P1-A1 | ic279-0 | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 14 | 6Q18570.d | P1-A2 | ic279-1 | 1633full.m | Calibration | 1.6/500 | OP96663.S6Q279.500,,,5.0,1,water | Eitfossa fail high, RR curve |
| 15 | 6Q18571.d | P1-A3 | ic279-2 | 1633full.m | Calibration | 3.2/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 16 | 6Q18572.d | P1-A4 | ic279-3 | 1633full.m | Calibration | 10/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 17 | 6Q18573.d | P1-A5 | icc279-4 | 1633full.m | Calibration | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 18 | 6Q18574.d | P1-A6 | ic279-5 | 1633full.m | Calibration | 40/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 19 | 6Q18575.d | P1-A7 | ic279-6 | 1633full.m | Calibration | 100/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 20 | 6Q18576.d | P1-A8 | ic279-7 | 1633full.m | Calibration | 200/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 21 | 6Q18577.d | P1-A9 | ic279-8 | 1633full.m | Calibration | 1x | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 22 | 6Q18578.d | P1-A1 | iblk | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | rr icv |
| 23 | 6Q18579.d | P1-B1 | icv279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 24 | 6Q18580.d | P1-B2 | icv279-20 | 1633full.m | QC | 100/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 25 | 6Q18581.d | P1-B9 | CCB | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 26 | 6Q18582.d | P1-B9 | CCB | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 27 | 6Q18583.d | P1-B3 | RT TDCA | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 28 | 6Q18584.d | P1-B4 | RT BR-LN | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 29 | 6Q18585.d | P1-A1 | ic279-0 | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 30 | 6Q18586.d | P1-A2 | ic279-1 | 1633full.m | Calibration | 1.6/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 31 | 6Q18587.d | P1-A3 | ic279-2 | 1633full.m | Calibration | 3.2/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 32 | 6Q18588.d | P1-A4 | ic279-3 | 1633full.m | Calibration | 10/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 33 | 6Q18589.d | P1-A5 | icc279-4 | 1633full.m | Calibration | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 34 | 6Q18590.d | P1-A6 | ic279-5 | 1633full.m | Calibration | 40/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 35 | 6Q18591.d | P1-A7 | ic279-6 | 1633full.m | Calibration | 100/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |



LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

| | | | | | | | | |
|----|-----------|-------|----------------|------------|-------------|---------|----------------------------------|------------------------|
| 36 | 6Q18592.d | P1-A8 | ic279-7 | 1633full.m | Calibration | 200/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 37 | 6Q18593.d | P1-A9 | ic279-8 | 1633full.m | Calibration | 1x | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 38 | 6Q18594.d | P1-A1 | iblk | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 39 | 6Q18595.d | P1-B1 | icv279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 40 | 6Q18596.d | P1-B2 | icv279-20 | 1633full.m | QC | 100/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 41 | 6Q18597.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 42 | 6Q18598.d | P1-A2 | cc279-1.0LL | 1633full.m | QC | 1.6/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 43 | 6Q18599.d | P6-B5 | op97070-bs | 1633full.m | Sample | | OP97070.S6Q279.500,,,5.0,1,water | ✓ |
| 44 | 6Q18600.d | P6-B6 | op97070-llbs:3 | 1633full.m | Sample | | OP97070.S6Q279.500,,,5.0,1,water | ✓ |
| 45 | 6Q18601.d | P6-B7 | op97070-mb | 1633full.m | Sample | | OP97070.S6Q279.500,,,5.0,1,water | ✓ |
| 46 | 6Q18602.d | P6-B9 | FC6278-1 | 1633full.m | Sample | | OP97070.S6Q279.540,,,5.0,1,water | ✓ |
| 47 | 6Q18603.d | P6-C1 | op97070-ms | 1633full.m | Sample | | OP97070.S6Q279.530,,,5.0,1,water | ✓ |
| 48 | 6Q18604.d | P6-C2 | FC6278-2 | 1633full.m | Sample | | OP97070.S6Q279.570,,,5.0,1,water | ✓ |
| 49 | 6Q18605.d | P6-C3 | FC6278-3 | 1633full.m | Sample | | OP97070.S6Q279.540,,,5.0,1,water | ✓ |
| 50 | 6Q18606.d | P6-C4 | op97070-dup | 1633full.m | Sample | | OP97070.S6Q279.520,,,5.0,1,water | ✓ |
| 51 | 6Q18607.d | P6-C5 | FC6278-4 | 1633full.m | Sample | | OP97070.S6Q279.570,,,5.0,1,water | ✓ |
| 52 | 6Q18608.d | P6-C7 | FC5956-1 | 1633full.m | Sample | | OP97070.S6Q279.5,,,5.0,1,water | rf10x |
| 53 | 6Q18609.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 54 | 6Q18610.d | P1-A1 | iccb | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 55 | 6Q18611.d | P6-C6 | FC6278-5 | 1633full.m | Sample | | OP97070.S6Q279.540,,,5.0,1,water | ✓ |
| 56 | 6Q18612.d | P6-C8 | op97024-bs | 1633full.m | Sample | | OP97024.S6Q279.500,,,5.0,1,soil | ✓ |
| 57 | 6Q18613.d | P6-C9 | op97024-llbs:2 | 1633full.m | Sample | | OP97024.S6Q279.500,,,5.0,1,soil | ✓ |
| 58 | 6Q18614.d | P6-D1 | op97024-mb | 1633full.m | Sample | | OP97024.S6Q279.500,,,5.0,1,soil | ✓ |
| 59 | 6Q18615.d | P6-D2 | FC6086-1 | 1633full.m | Sample | | OP97024.S6Q279.4.97,,,5.0,1,soil | ✓ |
| 60 | 6Q18616.d | P6-D3 | op97024-ms | 1633full.m | Sample | | OP97024.S6Q279.5.01,,,5.0,1,soil | ✓ |
| 61 | 6Q18617.d | P6-D4 | op97024-mnsd | 1633full.m | Sample | | OP97024.S6Q279.4.98,,,5.0,1,soil | ✓ |
| 62 | 6Q18618.d | P6-D5 | FC6086-2 | 1633full.m | Sample | | OP97024.S6Q279.4.96,,,5.0,1,soil | ✓ |
| 63 | 6Q18619.d | P6-D6 | FC6086-3 | 1633full.m | Sample | | OP97024.S6Q279.5.01,,,5.0,1,soil | ✓ |
| 64 | 6Q18620.d | P6-D7 | FC6086-4 | 1633full.m | Sample | | OP97024.S6Q279.5.00,,,5.0,1,soil | ✓ |
| 65 | 6Q18621.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 66 | 6Q18622.d | P1-A1 | iccb | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ✓ |
| 67 | 6Q18623.d | P6-D8 | FC6086-5 | 1633full.m | Sample | | OP97024.S6Q279.5.05,,,5.0,1,soil | ✓ |
| 68 | 6Q18624.d | P6-D9 | FC6086-6 | 1633full.m | Sample | | OP97024.S6Q279.4.98,,,5.0,1,soil | ✓ |
| 69 | 6Q18625.d | P6-E1 | FC6086-7 | 1633full.m | Sample | | OP97024.S6Q279.4.96,,,5.0,1,soil | ✓ |
| 70 | 6Q18626.d | P6-E2 | FC6086-8 | 1633full.m | Sample | | OP97024.S6Q279.4.98,,,5.0,1,soil | ✓ |
| 71 | 6Q18627.d | P6-E3 | FC6086-9 | 1633full.m | Sample | | OP97024.S6Q279.4.99,,,5.0,1,soil | ✓ |
| 72 | 6Q18628.d | P6-E4 | FC6086-10 | 1633full.m | Sample | | OP97024.S6Q279.5.03,,,5.0,1,soil | ✓ |
| 73 | 6Q18629.d | P6-E5 | FC6086-11 | 1633full.m | Sample | | OP97024.S6Q279.4.96,,,5.0,1,soil | Redo due to double NIS |
| 74 | 6Q18630.d | P6-E6 | FC6086-12 | 1633full.m | Sample | | OP97024.S6Q279.5.02,,,5.0,1,soil | ↓ |
| 75 | 6Q18631.d | P6-E7 | FC6086-13 | 1633full.m | Sample | | OP97024.S6Q279.5.03,,,5.0,1,soil | ↓ |
| 76 | 6Q18632.d | P6-E8 | FC6086-14 | 1633full.m | Sample | | OP97024.S6Q279.5.03,,,5.0,1,soil | ↓ |
| 77 | 6Q18633.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | OP96663.S6Q279.500,,,5.0,1,water | ↓ |
| 78 | 6Q18634.d | P1-A1 | iccb | 1633full.m | Sample | | OP96663.S6Q279.500,,,5.0,1,water | ↓ |



LCMS6-6Q ANALYSIS LOG

SGS ORLANDO

| | | | | | | | |
|-----|-----------|-------|-------------------|------------|--------|-----------------------------------|---------------------|
| 79 | 6Q18635.d | P6-E9 | FC6086-15 | 1633full.m | Sample | OP97024,S6Q279,5.00,,,5.0,1,soil | ↓ |
| 80 | 6Q18636.d | P6-F1 | FC6086-16 | 1633full.m | Sample | OP97024,S6Q279,4.99,,,5.0,1,soil | ↓ |
| 81 | 6Q18637.d | P6-F2 | FC6086-17 | 1633full.m | Sample | OP97024,S6Q279,5.04,,,5.0,1,soil | ↓ |
| 82 | 6Q18638.d | P6-F3 | FC6086-18 | 1633full.m | Sample | OP97024,S6Q279,4.98,,,5.0,1,soil | ↓ |
| 83 | 6Q18639.d | P6-F4 | FC6086-19 | 1633full.m | Sample | OP97024,S6Q279,5.01,,,5.0,1,soil | ↓ |
| 84 | 6Q18640.d | P6-F5 | FC5956-1 | 1633full.m | Sample | OP97070,S6Q279,5,,,5.0,5,water | rr, missing vial. |
| 85 | 6Q18641.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | ✓ |
| 86 | 6Q18642.d | P1-A2 | cc279-1.0LL | 1633full.m | QC | 1.6/500 | ✓ |
| 87 | 6Q18643.d | P1-A1 | iccb | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |
| 88 | 6Q18644.d | P2-A1 | op97092-bs | 1633full.m | Sample | OP97092,S6Q279,500,,,5.0,1,water | ✓ |
| 89 | 6Q18645.d | P2-A2 | op97092-llbs:3 | 1633full.m | Sample | OP97092,S6Q279,500,,,5.0,1,water | ✓ |
| 90 | 6Q18646.d | P2-A3 | op97092-mb | 1633full.m | Sample | OP97092,S6Q279,500,,,5.0,1,water | ✓ |
| 91 | 6Q18647.d | P2-A4 | FC5851-5 | 1633full.m | Sample | OP97092,S6Q279,550,,,5.0,1,water | ✓ |
| 92 | 6Q18648.d | P2-A5 | FC5885-4 | 1633full.m | Sample | OP97092,S6Q279,60,,,5.0,1,water | rr10x |
| 93 | 6Q18649.d | P2-A6 | FC5963-1 | 1633full.m | Sample | OP97092,S6Q279,526,,,5.0,1,water | rr1x for co |
| 94 | 6Q18650.d | P2-A7 | FC5963-8 | 1633full.m | Sample | OP97092,S6Q279,550,,,5.0,1,water | ✓ |
| 95 | 6Q18651.d | P2-A8 | op97092-dup2 | 1633full.m | Sample | OP97092,S6Q279,68,,,5.0,1,water | ✓ |
| 96 | 6Q18652.d | P2-A9 | FC6238-3 | 1633full.m | Sample | OP97092,S6Q279,60,,,5.0,1,water | ✓ |
| 97 | 6Q18653.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | ✓ |
| 98 | 6Q18654.d | P1-A1 | iccb | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |
| 99 | 6Q18655.d | P2-B1 | FC6325-1 | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |
| 100 | 6Q18656.d | P2-B2 | op97092-ms | 1633full.m | Sample | OP97092,S6Q279,550,,,5.0,1,water | ✓ |
| 101 | 6Q18657.d | P2-B3 | FC6325-2 | 1633full.m | Sample | OP97092,S6Q279,540,,,5.0,1,water | ✓ |
| 102 | 6Q18658.d | P2-B4 | op97092-dup1 | 1633full.m | Sample | OP97092,S6Q279,560,,,5.0,1,water | ✓ |
| 103 | 6Q18659.d | P2-B5 | FC6325-3 | 1633full.m | Sample | OP97092,S6Q279,550,,,5.0,1,water | ✓ |
| 104 | 6Q18660.d | P2-B6 | FC6006-5 | 1633full.m | Sample | OP97093,S6Q279,565,,,5.0,5,water | ✓ |
| 105 | 6Q18661.d | P2-B7 | FC6063-1 | 1633full.m | Sample | OP97093,S6Q279,500,,,5.0,10,water | Redo, surr fail low |
| 106 | 6Q18662.d | P2-B8 | FC6125-1 | 1633full.m | Sample | OP97093,S6Q279,545,,,5.0,1,water | ✓ |
| 107 | 6Q18663.d | P6-B8 | FC5956-1 | 1633full.m | Sample | OP97070,S6Q279,1,,,5.0,1,water | ✓ |
| 108 | 6Q18664.d | P2-B9 | FC5956-1 | 1633full.m | Sample | OP97070,S6Q279,5,,,5.0,5,water | dilution not use. |
| 109 | 6Q18665.d | P1-A5 | cc279-4 | 1633full.m | QC | 20/500 | ✓ |
| 110 | 6Q18666.d | P1-A1 | iccb | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |
| 111 | 6Q18667.d | P2-C1 | FC5885-4 | 1633full.m | Sample | OP97092,S6Q279,500,,,5.0,1,water | ✓ |
| 112 | 6Q18668.d | P2-C2 | FC5963-1 | 1633full.m | Sample | OP97092,S6Q279,60,,,5.0,10,water | ✓ |
| 113 | 6Q18669.d | P2-C3 | FC6114-1 | 1633full.m | Sample | OP97092,S6Q279,526,,,5.0,1,water | ✓ |
| 114 | 6Q18670.d | P1-A5 | ecc279-4 | 1633full.m | QC | 25/400 | ✓ |
| 115 | 6Q18671.d | P1-A1 | iccb | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |
| 116 | 6Q18672.d | P1-F1 | List 40 surr test | 1633full.m | Sample | OP96663,S6Q279,500,,,5.0,1,water | ✓ |

Organic Standards Preparation Log

| SGS - Orlando Std. # | Name Description | Parent Std. # | Parent Name | Parent Vendor | Vendor Exp. Date | Lab* Exp. Date | Parent Conc. | Vol. Used | Final Vol. | Final Conc. | Diluent Lot | Prep. Date | Exp. Date | Initials |
|----------------------|------------------------------|---------------|-------------------|-----------------|------------------|----------------|--------------|-----------|------------|-----------------------|------------------------|------------|-----------|----------|
| LCN75 2125A-E | FULL 2.5f 40 spike (Cal std) | 11750 | PROA 28 Comp | Alabate | 3/3/28 | 5/10/24 | 1.0ppm | 400ul | 4.0ml | 100ppb | 955formol 581420 | 5/22/23 | 8/23/23 | MS |
| LCN75 2125A-E | ↓ | LCN75 2067 | 40 2.5f Pdd on #1 | 595-Std. | — | 8/23/23 | 1.0ppm | 400ul | ↓ | ↓ | (2.400ml) | ↓ | ↓ | ↓ |
| LCN75 2125A-E | ↓ | LCN75 2117 | 40 2.5f Pdd on #2 | — | — | 11/8/23 | 1.0ppm | 400ul | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| LCN75 2125A-E | ↓ | LCN75 2101 | FOSE Std. | Wellington Labs | — | 7/19/23 | 5.0ppm | 400ul | ↓ | 500ppb | PS1400H 05123231133123 | ↓ | ↓ | ↓ |
| LCN75 2125A-E | ↓ | 11804 A-5 | MPK - GUES | Wellington Labs | 01/1/28 | 05/23/24 | 1.0ppm | 1.2ml | 2.5ml | 0.5ppm | PS1400H 05123231133123 | 5/24/23 | 10/28/23 | MS |
| LCN75 2125A-E | ↓ | 11635A | H3HPD-DA | Wellington Labs | 11/6/28 | 04/14/24 | 50ppm | 40ul | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| LCN75 2125A-E | ↓ | 11431 | D-N-NEBASAN | Wellington Labs | 05/6/27 | 03/15/24 | 50ppm | 40ul | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| LCN75 2125A-E | ↓ | 11399B 11807 | PERC HxH | Wellington Labs | 4/17/28 | 5/24/24 | 1.4ppm | 25ul | 4ml | 6.25 125 250ppb | 1633 MIV 5/24/23 | 10/28/23 | MS | |
| LCN75 2125A-E | ↓ | LCN75 2097AB | BE LN ET-ME | 595 Labs | NA | 10/28/23 | 2ppm | ↓ | ↓ | 125 512.5ppb (2.68ml) | ↓ | ↓ | ↓ | |
| LCN75 2125A-E | ↓ | 11801B | PERC MxT | Wellington Labs | 3/24/26 | 5/22/24 | 2ppm | ↓ | ↓ | 125ppb | ↓ | ↓ | ↓ | |
| LCN75 2125A-E | ↓ | 11802B 11809 | PERC MxG | Wellington Labs | 12/1/27 | 5/22/24 | 2ppm | ↓ | ↓ | 125ppb | ↓ | ↓ | ↓ | |
| LCN75 2125A-E | ↓ | 11803B 11810 | PERC MxT | Wellington Labs | 3/28/28 | 5/22/24 | 4.30 ppm | 3/20ul | ↓ | 312 1160ppb | ↓ | ↓ | ↓ | |
| LCN75 2125A-E | ↓ | 11819 | MPK - GUES | Wellington Labs | 01/1/28 | 06/10/24 | 1.0ppm | 1.2ml | 2.5ml | 0.5ppm | PS1400H 05123231133123 | ↓ | ↓ | NS |
| LCN75 2125A-E | ↓ | 11635A | H3HPD-DA | Wellington Labs | 11/6/28 | 04/14/24 | 50ppm | 24ul | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| LCN75 2125A-E | ↓ | 11584 | D-N-NEBASAN | Wellington Labs | 11/1/27 | 06/10/24 | 50ppm | 24ul | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| LCN75 2125A-E | ↓ | 11584 | D-N-NEBASAN | Wellington Labs | 11/1/27 | 06/10/24 | 50ppm | 24ul | ↓ | ↓ | ↓ | ↓ | ↓ | NS |

* based on date opened as specified in each SGS - Orlando SOP.



Organic Standards Preparation Log

| SGS - Orlando Std # | Name Description | Parent Std # | Parent Name | Parent Vendor | Vendor Exp. Date | Lab* Exp. Date | Parent Conc. | Vol. Used | Final Vol. | Final Conc. | Diluent Lot | Prep. Date | Exp. Date | Initials |
|---------------------|----------------------|--------------|-------------|-----------------|------------------|----------------|--------------|-----------|------------|--------------|------------------|------------|-----------|----------|
| LCMS 2095A-5 | (10ppb) PFC TD SURF | 11669 | HPAC-2UES | Wellington Labs | 01/08/23 | 03/08/24 | 1.0ppm | 2.4mL | ~50mL | 0.5ppm | 95/100th SI. #20 | 03/08/23 | 09/08/23 | NS |
| ↓ | ↓ | 11585 | HPAC-2A | ↓ | 11/08/23 | 01/08/24 | 50ppm | 48uL | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| ↓ | ↓ | 11431 | d-N-HPAC-2A | ↓ | 05/08/27 | 03/13/24 | 50ppm | 48uL | ↓ | ↓ | ↓ | ↓ | ↓ | NS |
| LCMS 2096A-B | 1633 OPPE End std. | 11672 | PFC-MXH | Wellington | 8/8/27 | 3/23/24 | 1-4 ppm | 250uL | 4mL | 0.25 ppm | 1633 MIX | 3/09/23 | 9/09/23 | MS |
| ↓ | ↓ | 11686 | PFC-MXI | ↓ | 2/23/28 | 3/30/24 | 1-10 ppm | 250uL | ↓ | 0.25 ppm | ↓ | ↓ | ↓ | ↓ |
| ↓ | ↓ | 11074A | PFC-MXF | ↓ | 1/11/25 | 3/23/24 | 2ppm | 500uL | ↓ | 250ppb | ↓ | ↓ | ↓ | ↓ |
| ↓ | ↓ | 11074B | PFC-MXF | ↓ | 12/1/27 | 3/10/24 | 2ppm | 250uL | ↓ | 125ppb | ↓ | ↓ | ↓ | ↓ |
| ↓ | ↓ | 11675 | PFC-MXS | ↓ | 9/14/26 | 3/03/24 | 4-20 ppm | 312uL | ↓ | 312/1100 ppb | ↓ | ↓ | ↓ | ↓ |
| LCMS 2097A | BR-LN metel for 1633 | 11497 | br-N metesa | Wellington | 08/23/27 | 10/28/23 | 50ppm | 200uL | 5mL | 2ppm | 1633 MIX | 4/16/23 | 10/28/23 | MS |
| ↓ | ↓ | 11498 | br-N Effosa | ↓ | 10/07/27 | 10/28/23 | 50ppm | 200uL | ↓ | 2ppm | ↓ | ↓ | ↓ | ↓ |
| ↓ | ↓ | 11495 | br-N metese | ↓ | 10/07/27 | 10/28/23 | 50ppm | 500uL | ↓ | 5ppm | ↓ | ↓ | ↓ | ↓ |
| ↓ | ↓ | 11494 | br-N Effose | ↓ | 10/17/27 | 10/28/23 | 50ppm | 500uL | ↓ | 5ppm | ↓ | ↓ | ↓ | ↓ |

* tested
 10/21
 3/20
 on
 5/20

40 mL

* based on date opened as specified in each SGS - Orlando SOP.



Organic Standards Preparation Log

| SGS - Orlando Std. # | Name Description | Parent Std. # | Parent Name | Parent Vendor | Vendor Exp. Date | Lab* Exp. Date | Parent Conc. | Vol. Used | Final Vol. | Final Conc. | Diluent Lot | Prep. Date | Exp. Date | Initials |
|----------------------|---------------------------|---------------|-------------------|---------------|------------------|----------------|--------------|-----------|------------|-------------|--------------------|------------|--------------------|----------|
| LCM29 2067 | 40 L1st std. ADD-ON #1 | 10726A | 10:2 FTS | Wellington | 3/3/26 | 3/21/23 | 50ppm | 80uL | 4.0mL | 1ppm | 95% meth 5% H2O | 2/8/23 | 3/21/23 8/23/23 | MV |
| | | 10840 | PFD05 | | 7/9/26 | 10/18/23 | | | | | | | 8/23/23 | |
| | | 10829 | N- MeTosA | | 8/3/26 | 8/23/23 | | | | | | | | |
| | | 10837 | N- EFTosA | | 8/3/26 | 8/23/23 | | | | | | | | |
| | | 10842 | PFHxDA | | 9/3/26 | 10/18/23 | | | | | | | | |
| | | 10841 | PFD0A | | 5/7/26 | 10/18/23 | | | | | | | | |
| | | 1116B | 3:3FTCA PERPA | | 2/3/27 | 2/8/24 | | | | | | | | |
| | | 10685A | 5:3FTCA PERPA | | 11/1/25 | 8/23/23 | | | | | | | | |
| | | 1116A | 7:3FTCA FHPA | | 11/2/25 | 2/8/24 | | | | | | | | |
| | | 11332 | PFECHS | | 3/2/27 | 10/18/23 | | | | | | | | |
| | | 10762B | PFEESA | | 5/3/25 | 10/18/23 | | | | | | | | |
| | | 10763B | PMBBA PES0HKA | | 3/3/25 | 10/18/23 | | | | | | | | |
| | | 10764 | PMMPA PE406A | | 3/3/25 | 2/8/24 | | | | | | | | |
| | | 10765B | NEHDA 3.6-08PA | | 3/3/25 | 10/18/23 | | | | | | | | |
| | | | | | NG 02/10/23 | | | | | | | | | |

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

| SGS - Orlando Std. # | Name Description | Parent Std. # | Parent Name | Parent Vendor | Vendor Exp. Date | Lab* Exp. Date | Parent Conc. | Vol. Used | Final Vol. | Final Conc. | Diluent Lot | Prep. Date | Exp. Date | Initials |
|----------------------|------------------------------------|---------------|---------------------|---------------|------------------|----------------|--------------|-----------|------------|-------------|---|------------|-----------|----------|
| LCMS 2115 | 1.57 40 Scan Add-on 1516 spike mix | 11523 | d7-N-Metose | Wellington | 1/23/27 | 5/9/24 | 50 ppm | 200 uL | 2 ml | 5 ppm (1/5) | 95% MeOH 5% H ₂ O | 5/19/23 | 8/23/23 | NV |
| | | 11460 | d9-N-Etfose | | 1/23/27 | 12/6/23 | | 200 uL | | 5 ppm | | | | |
| | | 11115 | M2-PTHXDA | | 1/23/28 | 8/23/23 | | 40 uL | | 1 ppm | | | | |
| | | 10836 | D-N-Etfose | | 12/30/25 | 8/23/23 | | 40 uL | | 1 ppm | | | | |
| LCMS 2116 | Full List (40) Spike (cal mix) | 11053 | PROA 200 28 Comp. | Absolute | 11/9/27 | 4/18/24 | 1.0 ppm | 400 uL | 4.0 ml | 100 ppb | 95% MeOH 5% H ₂ O (2.400 ml) | 5/19/23 | 8/23/23 | NV |
| | | LCMS 2067 | 40 List Add on #1 | Absolute | | 8/23/23 | 1.0 ppm | 400 uL | | | | | | |
| | | LCMS 2117 | 40 List Add on #2 | | | 5/18/23 | 1.0 ppm | 400 uL | | | | | | |
| | | LCMS 2054 | Fose Std. | | | 7/24/23 | 5.0 ppm | 4800 uL | | 500 ppb | | | | |
| LCMS 2117 | 40 List Add on #2 | 11250 | FB5A-1 | Wellington | 11/10/26 | 11/8/23 | 50 ppm | 80 uL | 4.0 ml | 1 ppm | 95% MeOH 5% H ₂ O | 5/19/23 | 11/8/23 | MU |
| | | 11249 | FHXGA-1 | | 2/29/26 | 11/3/23 | 50 ppm | 80 uL | | | | | | |
| | | 11140B | L-PR5 | | 7/12/26 | 5/9/24 | 50 ppm | 80 uL | | | | | | |
| | | LCMS 2118A | PIC ID Sum (10 ppb) | Wellington | 1/18/28 | 5/10/24 | 1.0 ppm | 2.4 ml | 5.0 ml | 0.5 ppm | 95% MeOH 5% H ₂ O | 5/10/23 | 11/10/23 | MU |
| | | 11775A | NPRAC 24 ES | | 11/8/25 | 4/24/24 | 50 ppm | 48 uL | | | | | | |
| | | 1635A | M3-H0 DA | | 5/16/27 | 3/13/24 | 50 ppm | 48 uL | | | | | | |
| | | 11431 | d-11 Mehsam | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

* based on date opened as specified in each SGS - Orlando SOP.

NS 05/12/23

Organic Standards Preparation Log

| SGS - Orlando Std. # | Name Description | Parent Std. # | Parent Name | Parent Vendor | Vendor Exp. Date | Lab* Exp. Date | Parent Conc. | Vol. Used | Final Vol. | Final Conc. | Diluent Lot | Prep. Date | Exp. Date | Initials |
|----------------------|-----------------------------------|---------------|---------------|-----------------|------------------|----------------|--------------|-----------|------------|-------------|-------------------|------------|-----------|----------|
| LCMS 2098A | 1033 OPike Cal std. | 11072A | PFAC MYH | Wellington | 8/8/23 | 3/23/24 | 1-4 ppm | 250uL | 4mL | 0.25 250ppb | 1033 mix | 9/10/23 | 10/10/23 | MS |
| LCMS 2097 | | 11072B | Bi-1n Et, Me | Sgs 1stbd | 9/9 | 10/28/23 | 3ppm | 250uL | | 0.25ppb | | | | |
| LCMS 11074B | | 11075 | PFAC MYG | Wellington | 11/1/25 | 3/30/24 | 2ppm | 250uL | | 125ppb | | | | |
| LCMS 11072B | | 11072B | PFAC MYT | Wellington | 9/14/26 | 3/23/24 | 4-20 ppm | 312uL | | 312/100 ppb | | | | |
| LCMS 11070 | (Interim) 537.1 Du std. | 11070 | MSPF-PEA | Wellington Labs | 07/06/25 | 04/04/24 | 50ppm | 80uL | 4mL | 1.0ppm | 0.111111111111111 | | | |
| LCMS 10436A | | 10436A | Mu: a ETS | | 11/05/25 | 04/04/24 | | 80uL | | 1.0ppm | | | | NS |
| LCMS 10592B | | 10592B | d3-N-METCSAA | | 10/29/25 | 05/15/23 | | 160uL | | 2.0ppm | | | | NS |
| LCMS 10494A | | 10494A | MRFOS | | 11/02/25 | 05/29/24 | | 80uL | | 1.0ppm | | | | NS |
| LCMS 11069 | | 11069 | WARFA | | 12/01/26 | 03/29/24 | | 80uL | | 1.0ppm | | | | NS |
| LCMS 11026 | Full List (40) List 40 spike (S6) | 11026 | PF0A 28 Comp. | Absolute | 11/9/23 | 4/11/24 | 1.0ppm | 400uL | 4.0mL | 100ppb | 95% MeOH 5% H2O | 4/11/23 | 7/24/23 | MS |
| LCMS 2067 | | 2067 | 40 List #2 | Sgs std. | 8/23/23 | | 1.0ppm | 400uL | | | (2.14031) | | | |
| LCMS 2070 | | 2070 | 40 List #2 | | 5/12/23 | | 1.0ppm | 400uL | | | | | | |
| LCMS 2054 | | 2054 | FOSG std. | | 7/24/23 | | 5.0ppm | 400uL | | 500ppb | | | | |
| LCMS 2101 | Fose std. | 11336 | N-et Fose | Wellington | 5/13/27 | 9/19/23 | 50ppm | 200uL | 2.0mL | 5ppm | 95% MeOH 5% H2O | 4/11/23 | 9/19/23 | MS |
| LCMS 11338 | | 11338 | N-me Fose | | 5/13/27 | 9/19/23 | 50ppm | 200uL | | | | | | |

* based on date opened as specified in each SGS - Orlando SOP.

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol Isomeric Mix

PRODUCT CODE: br-NMeFOSE
LOT NUMBER: brNMeFOSE0922
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/02/2022
LAST TESTED: (mm/dd/yyyy) 09/07/2022 (HRGC/LRMS)
 10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 3: LC/MS Data (SIR)
 Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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Form#:13, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

brNMeFOSE0922 (1 of 7)
 rev1

7.9.1

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11495



**WELLINGTON
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**CERTIFICATE OF ANALYSIS
DOCUMENTATION**

br-NEtFOSE

**2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix**

PRODUCT CODE: br-NEtFOSE
LOT NUMBER: brNEtFOSE1022
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 09/12/2022
LAST TESTED: (mm/dd/yyyy) 09/12/2022 (HRGC/LRMS)
10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy) 10/07/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide Isomeric Mix

PRODUCT CODE: br-NMeFOSA
LOT NUMBER: brNMeFOSA0822
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
DATE PREPARED: (mm/dd/yyyy) 08/18/2022
LAST TESTED: (mm/dd/yyyy) 08/23/2022
EXPIRY DATE: (mm/dd/yyyy) 08/23/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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brNMeFOSA0822 (1 of 6)
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WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide Isomeric Mix

| | |
|---|-------------------------------------|
| <u>PRODUCT CODE:</u> | br-NEtFOSA |
| <u>LOT NUMBER:</u> | brNEtFOSA0922 |
| <u>CONCENTRATION:</u> | 50.0 ± 2.5 µg/mL |
| <u>SOLVENT(S):</u> | Methanol |
| <u>DATE PREPARED:</u> (mm/dd/yyyy) | 08/23/2022 |
| <u>LAST TESTED:</u> (mm/dd/yyyy) | 10/07/2022 |
| <u>EXPIRY DATE:</u> (mm/dd/yyyy) | 10/07/2027 |
| <u>RECOMMENDED STORAGE:</u> | Store ampoule in a cool, dark place |

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ¹⁹F-NMR
 Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
 Figure 2: LC/MS Data (SIR)
 Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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Revision#:9, Revised 2020-12-23

brNEtFOSA0922 (1 of 6)
rev1

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11799 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS Solution/Mixture

| | |
|---|---------------------------------------|
| <u>PRODUCT CODE:</u> | PFAC-MXH |
| <u>LOT NUMBER:</u> | PFACMXH0423 |
| <u>SOLVENT(S):</u> | Methanol/Isopropanol (2%)/Water (<1%) |
| <u>DATE PREPARED:</u> (mm/dd/yyyy) | 04/06/2023 |
| <u>LAST TESTED:</u> (mm/dd/yyyy) | 04/19/2023 |
| <u>EXPIRY DATE:</u> (mm/dd/yyyy) | 04/19/2028 |
| <u>RECOMMENDED STORAGE:</u> | Refrigerate ampoule |

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₅, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Table B: Isomeric Components and Percent Composition of N-MeFOSAA
- Table C: Isomeric Components and Percent Composition of N-EtFOSAA
- Table D: Isomeric Components and Percent Composition of PFHxSK
- Table E: Isomeric Components and Percent Composition of PFOSK
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

7.9.1

7

Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
|--|-------------------------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| Perfluoro-n-butanoic acid | PFBA | 4000 | | 1 |
| Perfluoro-n-pentanoic acid | PFPeA | 2000 | | 2 |
| Perfluoro-n-hexanoic acid | PFHxA | 1000 | | 5 |
| Perfluoro-n-heptanoic acid | PFHpA | 1000 | | 7 |
| Perfluoro-n-octanoic acid | PFOA | 1000 | | 11 |
| Perfluoro-n-nonanoic acid | PFNA | 1000 | | 14 |
| Perfluoro-n-decanoic acid | PFDA | 1000 | | 18 |
| Perfluoro-n-undecanoic acid | PFUdA | 1000 | | 23 |
| Perfluoro-n-dodecanoic acid | PFDoA | 1000 | | 26 |
| Perfluoro-n-tridecanoic acid | PFTrDA | 1000 | | 27 |
| Perfluoro-n-tetradecanoic acid | PFTeDA | 1000 | | 29 |
| Perfluoro-1-octanesulfonamide | FOSA | 1000 | | 24 |
| N-Methylperfluorooctanesulfonamidoacetic acid ^a | N-MeFOSAA: linear isomer | 760 | | 20 |
| | N-MeFOSAA: ∑ branched isomers | 240 | | 17 |
| N-Ethylperfluorooctanesulfonamidoacetic acid ^b | N-EtFOSAA: linear isomer | 775 | | 22 |
| | N-EtFOSAA: ∑ branched isomers | 225 | | 21 |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| | | as the salt | as the acid | |
| Potassium perfluoro-1-butanesulfonate | L-PFBS | 1000 | 887 | 3 |
| Sodium perfluoro-1-pentanesulfonate | L-PFPeS | 1000 | 941 | 6 |
| Potassium perfluorohexanesulfonate ^c | PFHxSK: linear isomer | 811 | 741 | 9 |
| | PFHxSK: ∑ branched isomers | 189 | 173 | 8 |
| Sodium perfluoro-1-heptanesulfonate | L-PFHpS | 1000 | 953 | 12 |
| Potassium perfluorooctanesulfonate ^d | PFOSK: linear isomer | 788 | 732 | 15 |
| | PFOSK: ∑ branched isomers | 211 | 196 | 13 |
| Sodium perfluoro-1-nonanesulfonate | L-PFNS | 1000 | 962 | 19 |
| Sodium perfluoro-1-decanesulfonate | L-PFDS | 1000 | 965 | 25 |
| Sodium perfluoro-1-dodecanesulfonate | L-PFDoS | 1000 | 970 | 28 |
| Sodium 1H,1H,2H,2H-perfluorohexanesulfonate | 4:2FTS | 4000 | 3750 | 4 |
| Sodium 1H,1H,2H,2H-perfluorooctanesulfonate | 6:2FTS | 4000 | 3800 | 10 |
| Sodium 1H,1H,2H,2H-perfluorodecanesulfonate | 8:2FTS | 4000 | 3840 | 16 |

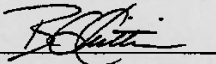
^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 05/11/2023
(mm/dd/yyyy)

11801A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

PRODUCT CODE:

PFAC-MXF

LOT NUMBER:

PFACMXF0323

SOLVENT(S):

Methanol / Water (<1%)

DATE PREPARED: (mm/dd/yyyy)

03/23/2023

LAST TESTED: (mm/dd/yyyy)

03/24/2023

EXPIRY DATE: (mm/dd/yyyy)

03/24/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

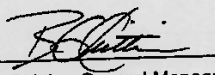
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Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
|--|--------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid | HFPO-DA | 2000 | | A |
| Sodium dodecafluoro-3H-4,8-dioxanonanoate | NaDONA | 2000 | 1890 | B |
| Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate | 9Cl-PF3ONS | 2000 | 1870 | C |
| Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate | 11Cl-PF3OUdS | 2000 | 1890 | D |

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11802 A-B
rec'd: 05/15/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

| | |
|------------------------------------|-------------------------------------|
| PRODUCT CODE: | PFAC-MXG |
| LOT NUMBER: | PFACMXG1122 |
| SOLVENT(S): | Methanol/Water (<1%) |
| DATE PREPARED: (mm/dd/yyyy) | 11/30/2022 |
| LAST TESTED: (mm/dd/yyyy) | 12/01/2022 |
| EXPIRY DATE: (mm/dd/yyyy) | 12/01/2027 |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place |

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#: 13, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

PFACMXG1122 (1 of 5)
rev0

7.9.1

7

Table A: PFAC-MXG; Components and Concentrations (ng/mL; \pm 5% in methanol/water (<1%))

| Compound | Acronym | Concentration (ng/mL) | | Peak Assignment in Figure 1 |
|--|------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| Perfluoro-4-oxapentanoic acid | PF4OPeA | 2000 | | A |
| Perfluoro-5-oxahexanoic acid | PF5OHxA | 2000 | | B |
| Perfluoro-3,6-dioxahexanoic acid | 3,6-OPFHxA | 2000 | | D |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| | | as the salt | as the acid | |
| Potassium perfluoro(2-ethoxyethane)sulfonate | PFEESA | 2000 | 1780 | C |

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11803 A-B
rec'd: 05/15/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

PRODUCT CODE:
LOT NUMBER:
SOLVENT(S):
DATE PREPARED: (mm/dd/yyyy)
LAST TESTED: (mm/dd/yyyy)
EXPIRY DATE: (mm/dd/yyyy)
RECOMMENDED STORAGE:

PFAC-MXJ
PFACMXJ0323
Methanol
03/27/2023
03/28/2023
03/28/2028
Refrigerate ampoule

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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7.9.1

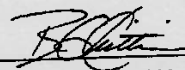
7

Concentrations (µg/mL; ± 5% in methanol)

Table A:

PFAC-MXJ; Components and

| Compound | Acronym | Concentration (µg/mL) |
|----------------------------------|---------|-----------------------|
| 3-Perfluoropropyl propanoic acid | FPrPA | 4.00 |
| 3-Perfluoropentyl propanoic acid | FPePA | 20.0 |
| 3-Perfluoroheptyl propanoic acid | FHpPA | 20.0 |

Certified By: 
B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

11807
rec'd 10/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE: PFAC-MXH
LOT NUMBER: PFACMXH0423
SOLVENT(S): Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 04/06/2023
LAST TESTED: (mm/dd/yyyy) 04/19/2023
EXPIRY DATE: (mm/dd/yyyy) 04/19/2028
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C₄-C₁₄), eight native perfluoroalkanesulfonates (C₄, C₆, C₇, C₉, C₁₀ and C₁₂ linear; C₆ and C₈ linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

PFACMXH0423 (1 of 11)
rev1

**Table A: PFAC-MXH; Components and Concentrations
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))**

| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
|--|-------------------------------|---------------------------|----------------|-----------------------------------|
| | | as the salt | as the acid | |
| Perfluoro-n-butanoic acid | PFBA | 4000 | | 1 |
| Perfluoro-n-pentanoic acid | PFPeA | 2000 | | 2 |
| Perfluoro-n-hexanoic acid | PFHxA | 1000 | | 5 |
| Perfluoro-n-heptanoic acid | PFHpA | 1000 | | 7 |
| Perfluoro-n-octanoic acid | PFOA | 1000 | | 11 |
| Perfluoro-n-nonanoic acid | PFNA | 1000 | | 14 |
| Perfluoro-n-decanoic acid | PFDA | 1000 | | 18 |
| Perfluoro-n-undecanoic acid | PFUDA | 1000 | | 23 |
| Perfluoro-n-dodecanoic acid | PFDoA | 1000 | | 26 |
| Perfluoro-n-tridecanoic acid | PFTrDA | 1000 | | 27 |
| Perfluoro-n-tetradecanoic acid | PFTeDA | 1000 | | 29 |
| Perfluoro-1-octanesulfonamide | FOSA | 1000 | | 24 |
| N-Methylperfluorooctanesulfonamidoacetic acid ^a | N-MeFOSAA: linear isomer | 760 | | 20 |
| | N-MeFOSAA: ∑ branched isomers | 240 | | 17 |
| N-Ethylperfluorooctanesulfonamidoacetic acid ^b | N-EtFOSAA: linear isomer | 775 | | 22 |
| | N-EtFOSAA: ∑ branched isomers | 225 | | 21 |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| | | as the salt | as the acid | |
| Potassium perfluoro-1-butanedisulfonate | L-PFBS | 1000 | 887 | 3 |
| Sodium perfluoro-1-pentadisulfonate | L-PFPeS | 1000 | 941 | 6 |
| Potassium perfluorohexadisulfonate ^c | PFHxSK: linear isomer | 811 | 741 | 9 |
| | PFHxSK: ∑ branched isomers | 189 | 173 | 8 |
| Sodium perfluoro-1-heptadisulfonate | L-PFHpS | 1000 | 953 | 12 |
| Potassium perfluorooctadisulfonate ^d | PFOSK: linear isomer | 788 | 732 | 15 |
| | PFOSK: ∑ branched isomers | 211 | 196 | 13 |
| Sodium perfluoro-1-nonadisulfonate | L-PFNS | 1000 | 962 | 19 |
| Sodium perfluoro-1-decadisulfonate | L-PFDS | 1000 | 965 | 25 |
| Sodium perfluoro-1-dodecadisulfonate | L-PFDoS | 1000 | 970 | 28 |
| Sodium 1H,1H,2H,2H-perfluorohexadisulfonate | 4:2FTS | 4000 | 3750 | 4 |
| Sodium 1H,1H,2H,2H-perfluorooctadisulfonate | 6:2FTS | 4000 | 3800 | 10 |
| Sodium 1H,1H,2H,2H-perfluorodecadisulfonate | 8:2FTS | 4000 | 3840 | 16 |

^a See Table B for percent composition of linear and branched N-MeFOSAA isomers.

^b See Table C for percent composition of linear and branched N-EtFOSAA isomers.

^c See Table D for percent composition of linear and branched PFHxSK isomers.

^d See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____

B.G. Chittim, General Manager

Date: 05/11/2023

(mm/dd/yyyy)

11808
rec'd. 05/16/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXF

Native Replacement PFAS
Solution/Mixture

| | |
|---|------------------------|
| <u>PRODUCT CODE:</u> | PFAC-MXF |
| <u>LOT NUMBER:</u> | PFACMXF0323 |
| <u>SOLVENT(S):</u> | Methanol / Water (<1%) |
| <u>DATE PREPARED:</u> (mm/dd/yyyy) | 03/23/2023 |
| <u>LAST TESTED:</u> (mm/dd/yyyy) | 03/24/2023 |
| <u>EXPIRY DATE:</u> (mm/dd/yyyy) | 03/24/2026 |
| <u>RECOMMENDED STORAGE:</u> | Refrigerate ampoule |

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Revision#:9, Revised 2020-12-23

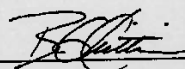
PFACMXF0323 (1 of 5)
rev0

7.9.1
7

Table A: PFAC-MXF; Components and Concentrations (ng/mL; \pm 5% in Methanol/Water (<1%))

| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
|--|--------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid | HFPO-DA | 2000 | | A |
| Sodium dodecafluoro-3H-4,8-dioxanonoate | NaDONA | 2000 | 1890 | B |
| Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate | 9Cl-PF3ONS | 2000 | 1870 | C |
| Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate | 11Cl-PF3OUdS | 2000 | 1890 | D |

* Concentrations have been rounded to three significant figures.

Certified By: 
 B.G. Chittim, General Manager

Date: 03/29/2023
(mm/dd/yyyy)

11809
rec'd: 05/16/23



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic
Acids and Sulfonate Solution/Mixture

| | |
|------------------------------------|-------------------------------------|
| PRODUCT CODE: | PFAC-MXG |
| LOT NUMBER: | PFACMXG1122 |
| SOLVENT(S): | Methanol/Water (<1%) |
| DATE PREPARED: (mm/dd/yyyy) | 11/30/2022 |
| LAST TESTED: (mm/dd/yyyy) | 12/01/2022 |
| EXPIRY DATE: (mm/dd/yyyy) | 12/01/2027 |
| RECOMMENDED STORAGE: | Store ampoule in a cool, dark place |

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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PFACMXG1122 (1 of 5)
rev0

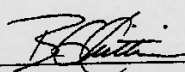
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Table A: PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

| Compound | Acronym | Concentration (ng/mL) | | Peak Assignment in Figure 1 |
|--|------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| Perfluoro-4-oxapentanoic acid | PF4OPeA | 2000 | | A |
| Perfluoro-5-oxahexanoic acid | PF5OHxA | 2000 | | B |
| Perfluoro-3,6-dioxaheptanoic acid | 3,6-OPFHpA | 2000 | | D |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| Potassium perfluoro(2-ethoxyethane)sulfonate | PFEESA | 2000 | 1780 | |

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 12/09/2022
(mm/dd/yyyy)

11810
rec'd: 05/16/23



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic
Acid Solution/Mixture

| | |
|---|---------------------|
| <u>PRODUCT CODE:</u> | PFAC-MXJ |
| <u>LOT NUMBER:</u> | PFACMXJ0323 |
| <u>SOLVENT(S):</u> | Methanol |
| <u>DATE PREPARED:</u> (mm/dd/yyyy) | 03/27/2023 |
| <u>LAST TESTED:</u> (mm/dd/yyyy) | 03/28/2023 |
| <u>EXPIRY DATE:</u> (mm/dd/yyyy) | 03/28/2028 |
| <u>RECOMMENDED STORAGE:</u> | Refrigerate ampoule |

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

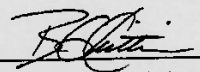
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7.9.1
7

Table A: PFAC-MXJ; Components and Concentrations ($\mu\text{g}/\text{mL}$; $\pm 5\%$ in methanol)

| Compound | Acronym | Concentration ($\mu\text{g}/\text{mL}$) |
|----------------------------------|---------|---|
| 3-Perfluoropropyl propanoic acid | FPrPA | 4.00 |
| 3-Perfluoropentyl propanoic acid | FPePA | 20.0 |
| 3-Perfluoroheptyl propanoic acid | FHpPA | 20.0 |

Certified By: 
 B.G. Chittim, General Manager

Date: 04/12/2023
(mm/dd/yyyy)

Form#: 13, Issued 2004-11-10
 Revision#: 9, Revised 2020-12-23

PFACMXJ0323 (3 of 5)
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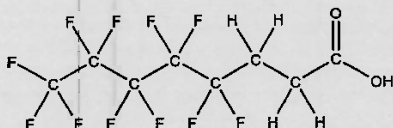
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA1120

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA: $C_8H_5F_{11}O_2$
CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 11/11/2020
EXPIRY DATE: (mm/dd/yyyy) 11/11/2025
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 342.11
SOLVENT(S): Methanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^{19}F NMR.

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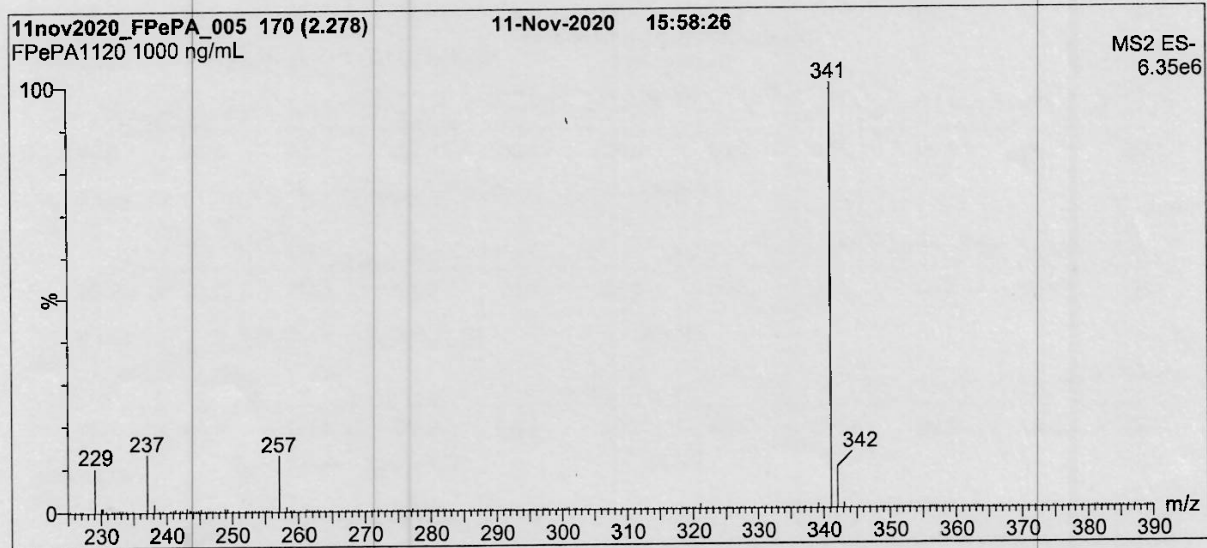
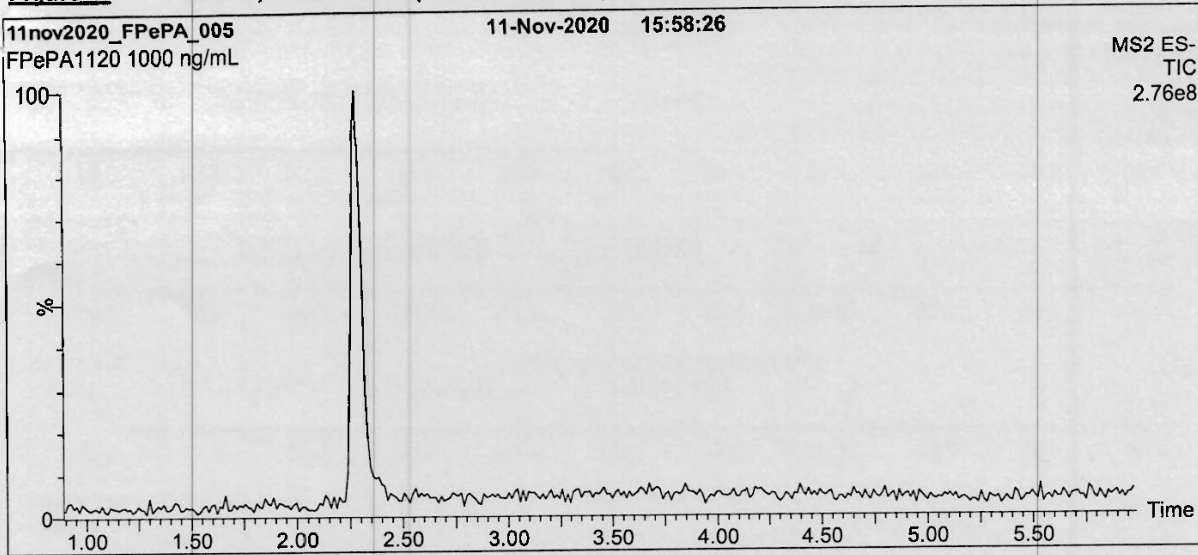
Certified By:

B.G. Chittim, General Manager

Date: 11/27/2020
(mm/dd/yyyy)

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Figure 1: FPePA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{1a}
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 18.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10726 A



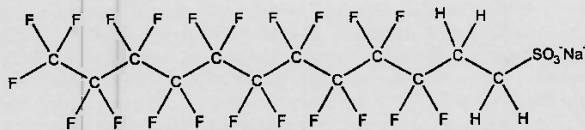
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0221

COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA: C₁₂H₄F₂₁SO₃Na **MOLECULAR WEIGHT:** 650.18

CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt) **SOLVENT(S):** Methanol
48.3 ± 2.4 µg/mL (10:2FTS acid)
48.2 ± 2.4 µg/mL (10:2FTS anion)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/03/2021

EXPIRY DATE: (mm/dd/yyyy) 03/03/2026

RECOMMENDED STORAGE: Refrigerate ampoule

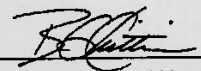
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:  **Date:** 03/05/2021
(mm/dd/yyyy)
B.G. Chittim, General Manager

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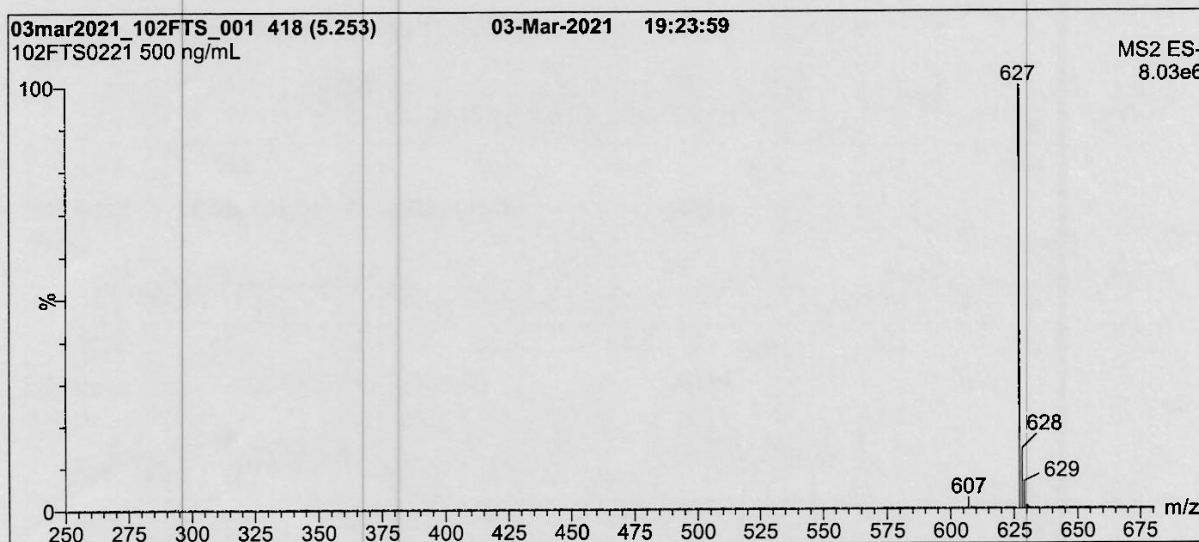
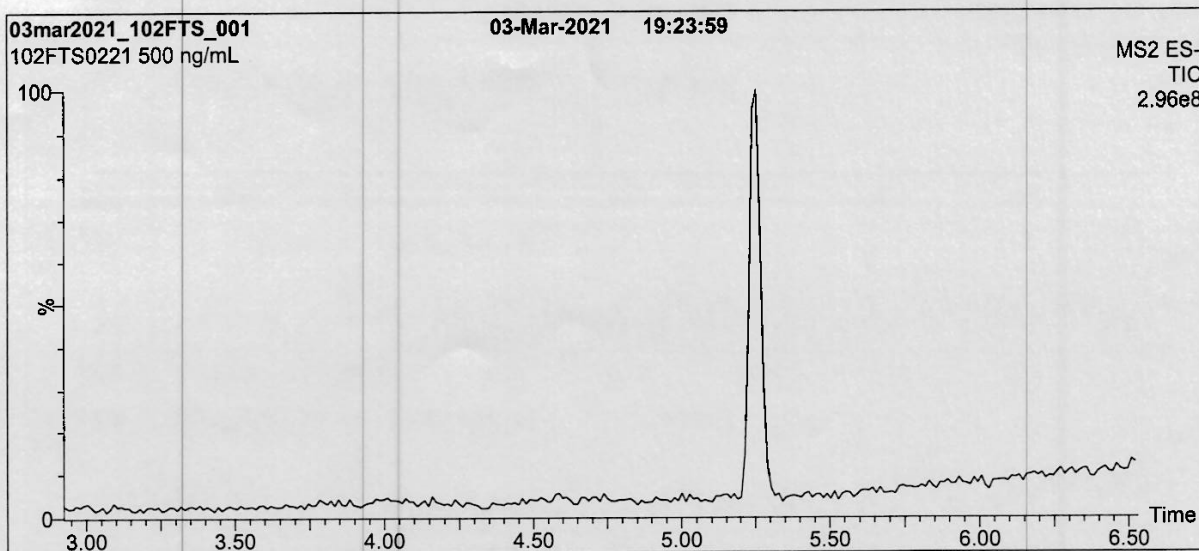
Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

102FTS0221 (1 of 4)
rev0

7.9.1

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Figure 1: 10:2FTS; LC/MS Data (Full Scan and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 40% H₂O / 60% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (250 - 850 amu)
Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 25.00
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

10762 A-B



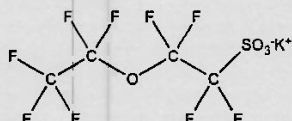
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CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
8/20/21
WPH

PRODUCT CODE: PFEESA **LOT NUMBER:** PFEESA0520
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

STRUCTURE: **CAS #:** 117205-07-9



MOLECULAR FORMULA: C₄F₆SO₄K **MOLECULAR WEIGHT:** 354.19
CONCENTRATION: 50.0 ± 2.5 µg/ml (K salt) **SOLVENT(S):** Methanol
44.6 ± 2.2 µg/ml (PFEESA acid)
44.5 ± 2.2 µg/ml (PFEESA anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/13/2020
EXPIRY DATE: (mm/dd/yyyy) 05/13/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

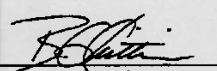
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-octanoic acid (PFOA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager **Date:** 05/29/2020
(mm/dd/yyyy)

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Form#: 27, Issued 2004-11-10
Revision#: 7, Revised 2020-01-09

PFEESA0520 (1 of 4)
rev0

7.9.1

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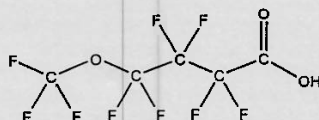
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PF5OHxA *re'd
with
8/20/21* **LOT NUMBER:** PF5OHxA0320

COMPOUND: Perfluoro-5-oxahexanoic acid

SYNONYM: Perfluoro-4-methoxybutanoic acid (PFMBA)

STRUCTURE: **CAS #:** 863090-89-5



MOLECULAR FORMULA: C₅HF₉O₃ **MOLECULAR WEIGHT:** 280.05

CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
Water (<1%)

CHEMICAL PURITY: >98%

LAST TESTED: (mm/dd/yyyy) 03/31/2020

EXPIRY DATE: (mm/dd/yyyy) 03/31/2025

RECOMMENDED STORAGE: Store ampoule in a cool, dark place

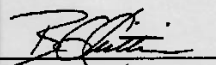
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:  **Date:** 12/21/2020
(mm/dd/yyyy)

B.G. Chittim, General Manager

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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

PF5OHxA0320 (1 of 4)
rev1

7.9.1
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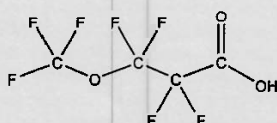


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CERTIFICATE OF ANALYSIS DOCUMENTATION

rec'd
w/ln
8/20/21

PRODUCT CODE: PF4OPeA **LOT NUMBER:** PF4OPeA0320
COMPOUND: Perfluoro-4-oxapentanoic acid
SYNONYM: Perfluoro-3-methoxypropanoic acid (PFMPA) **CAS #:** 377-73-1
STRUCTURE:



MOLECULAR FORMULA: C₄HF₇O₃ **MOLECULAR WEIGHT:** 230.04
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/31/2020
EXPIRY DATE: (mm/dd/yyyy) 03/31/2025
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

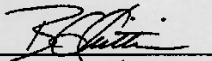
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
 B.G. Chittim, General Manager

Date: 12/21/2020
 (mm/dd/yyyy)

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10765 A-13



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

3,6-OPFHpA

rec'd
wfu
8/20/21

LOT NUMBER:

36OPFHpA0320

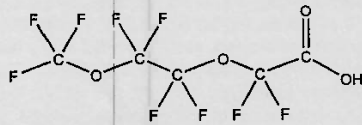
COMPOUND:

Perfluoro-3,6-dioxaheptanoic acid

STRUCTURE:

CAS #:

151772-58-6



MOLECULAR FORMULA:

C₅HF₉O₄

MOLECULAR WEIGHT:

296.04

CONCENTRATION:

50.0 ± 2.5 µg/ml

SOLVENT(S):

Methanol
Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/31/2020

EXPIRY DATE: (mm/dd/yyyy)

03/31/2025

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim, General Manager

Date: 05/27/2020
(mm/dd/yyyy)

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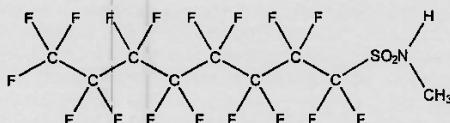
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA0721M

STRUCTURE:

CAS #: 31506-32-8



*rec'd
w/ru
10/5/21*

MOLECULAR FORMULA: C₉H₄F₁₇NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 08/03/2021
EXPIRY DATE: (mm/dd/yyyy) 08/03/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 513.17
SOLVENT(S): Methanol

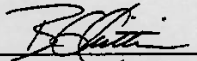
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager

Date: 08/04/2021
(mm/dd/yyyy)

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Revision#: 9, Revised 2020-12-23

NMeFOSA0721M (1 of 4)
rev0

7.9.1
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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-EtFOSA-M

10837

LOT NUMBER:

NEtFOSA0821M

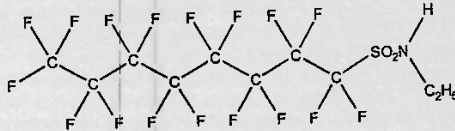
COMPOUND:

N-ethylperfluoro-1-octanesulfonamide

STRUCTURE:

CAS #:

4151-50-2



MOLECULAR FORMULA:

$C_{10}H_{17}F_{17}NO_2S$

MOLECULAR WEIGHT:

527.20

CONCENTRATION:

$50.0 \pm 2.5 \mu\text{g/mL}$

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

08/12/2021

EXPIRY DATE: (mm/dd/yyyy)

08/12/2026

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

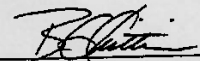
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By:


B.G. Chittim, General Manager

Date: 08/16/2021

(mm/dd/yyyy)

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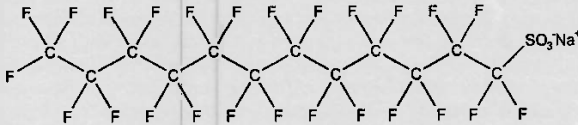
10840

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0721

STRUCTURE:

CAS #: 1260224-54-1



MOLECULAR FORMULA: C₁₂F₂₅SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
48.5 ± 2.4 µg/mL (PFDoS acid)
48.4 ± 2.4 µg/mL (PFDoS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/09/2021
EXPIRY DATE: (mm/dd/yyyy) 07/09/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 722.14
SOLVENT(S): Methanol

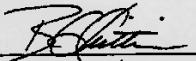
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-dodecanoic acid (PFDoA).

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Certified By: 
B.G. Chittim, General Manager

Date: 07/16/2021
(mm/dd/yyyy)

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10847 NS 01/18/23

PRODUCT CODE:

PFODA

LOT NUMBER:

PFODA0821

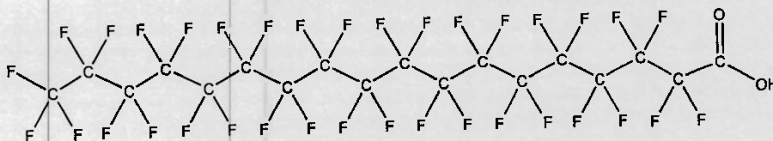
COMPOUND:

Perfluoro-n-octadecanoic acid

STRUCTURE:

CAS #:

16517-11-6



MOLECULAR FORMULA:

C₁₈H₃₅O₂

MOLECULAR WEIGHT:

914.14

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

Water (<1%)

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

09/03/2021

EXPIRY DATE: (mm/dd/yyyy)

09/03/2026

RECOMMENDED STORAGE:

Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 09/28/2021

(mm/dd/yyyy)

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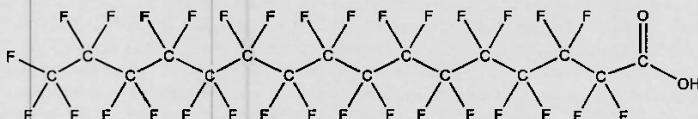
CERTIFICATE OF ANALYSIS
DOCUMENTATION

10842 NG 01/18/23

PRODUCT CODE: PFHxDA **LOT NUMBER:** PFHxDA0421

COMPOUND: Perfluoro-n-hexadecanoic acid

STRUCTURE: **CAS #:** 67905-19-5



MOLECULAR FORMULA: C₁₆HF₃₁O₂ **MOLECULAR WEIGHT:** 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL **SOLVENT(S):** Methanol
 Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 05/07/2021
EXPIRY DATE: (mm/dd/yyyy) 05/07/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

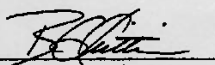
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:  **Date:** 05/25/2021
 B.G. Chittim, General Manager (mm/dd/yyyy)

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Form#:27, Issued 2004-11-10
 Revision#:9, Revised 2020-12-23

PFHxDA0421 (1 of 4)
 rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FHpPA

LOT NUMBER:

FHpPA1020

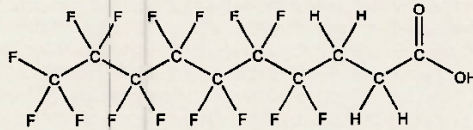
COMPOUND:

3-Perfluoroheptyl propanoic acid

STRUCTURE:

CAS #:

812-70-4



MOLECULAR FORMULA:

C₁₀H₅F₁₅O₂

MOLECULAR WEIGHT:

442.12

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/12/2020

EXPIRY DATE: (mm/dd/yyyy)

11/12/2025

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date:

11/27/2020

(mm/dd/yyyy)

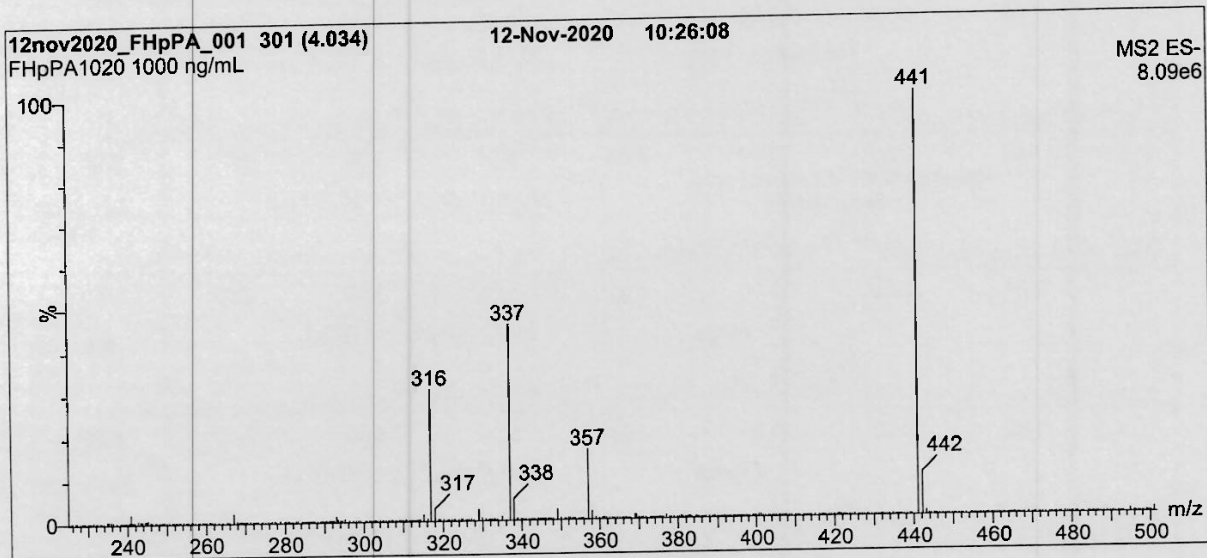
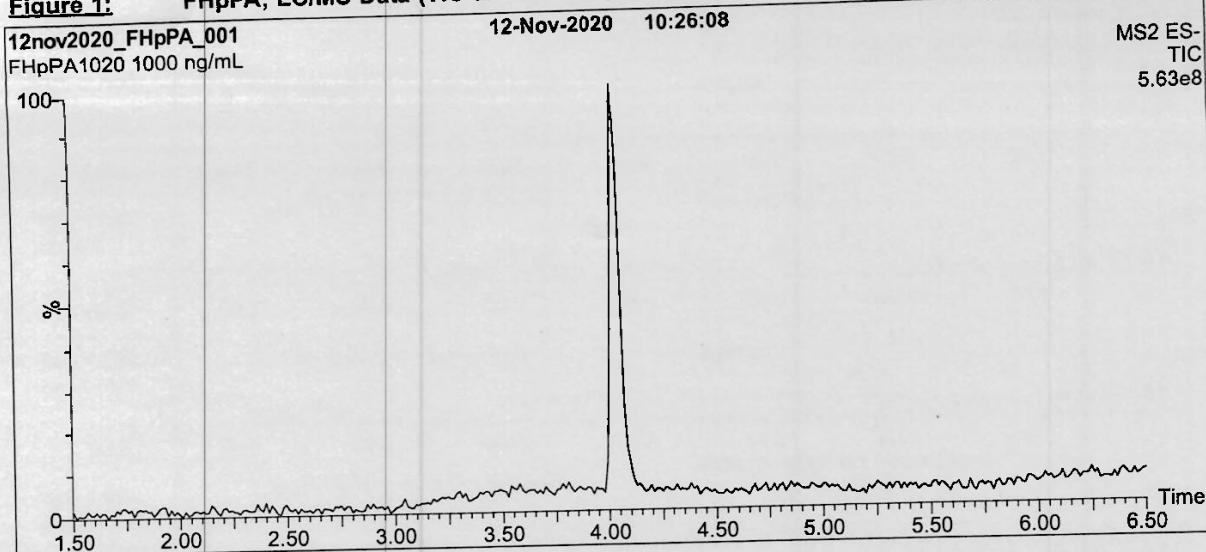
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Form#: 27, Issued 2004-11-10
Revision#: 8, Revised 2020-09-10

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rev0

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Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)



Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP₁₈
1.7 μ m, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H₂O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH₄OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 μ L/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature ($^{\circ}$ C) = 500
Desolvation Gas Flow (L/hr) = 1000

FPr PA(3:3 FTA) 1116 B



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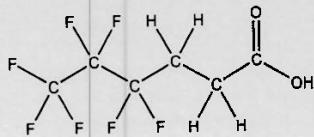
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

STRUCTURE:

CAS #: 356-02-5



MOLECULAR FORMULA: C₆H₅F₇O₂
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/03/2022
EXPIRY DATE: (mm/dd/yyyy) 02/03/2027
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 242.09
SOLVENT(S): Methanol

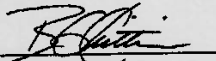
DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid (C₈H₃F₉O₂) as an impurity determined by ¹⁹F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 02/04/2022
(mm/dd/yyyy)

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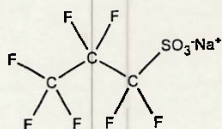
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFPPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPPrS0721

STRUCTURE:

CAS #: Not available



MOLECULAR FORMULA: C₃F₇SO₃Na
CONCENTRATION: 50.0 ± 2.5 µg/mL (Na salt)
46.0 ± 2.3 µg/mL (PFPPrS acid)
45.8 ± 2.3 µg/mL (PFPPrS anion)
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/12/2021
EXPIRY DATE: (mm/dd/yyyy) 07/12/2026
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

MOLECULAR WEIGHT: 272.07
SOLVENT(S): Methanol

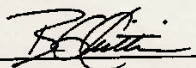
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: 
B.G. Chittim, General Manager
Date: 08/04/2021
(mm/dd/yyyy)

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LPFPPrS0721 (1 of 4)
rev0

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Revision#:9, Revised 2020-12-23

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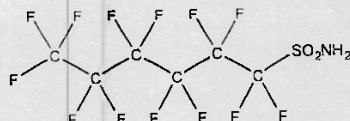
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA12211

STRUCTURE:

CAS #: 41997-13-1



MOLECULAR FORMULA: C₆H₂F₁₃NO₂S
CONCENTRATION: 50.0 ± 2.5 µg/mL
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 12/29/2021
EXPIRY DATE: (mm/dd/yyyy) 12/29/2026
RECOMMENDED STORAGE: Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

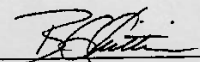
DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: 
B.G. Chittim, General Manager
Date: 01/10/2022
(mm/dd/yyyy)

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Revision# 9, Revised 2020-12-23

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rev0

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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

FBSA-I

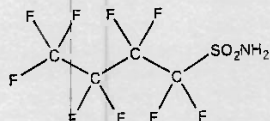
LOT NUMBER: FBSA11211

COMPOUND:

Perfluoro-1-butananesulfonamide

STRUCTURE:

CAS #: 30334-69-1



MOLECULAR FORMULA:

C₄H₂F₁₀NO₂S

MOLECULAR WEIGHT: 299.11

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S): Isopropanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

11/10/2021

EXPIRY DATE: (mm/dd/yyyy)

11/10/2026

RECOMMENDED STORAGE:

Refrigerate ampoule

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 11/10/2021

(mm/dd/yyyy)

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FBSA11211 (1 of 4)
rev0

Form#: 27, Issued 2004-11-10
Revision#: 9, Revised 2020-12-23

7.9.1
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11332



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CERTIFICATE OF ANALYSIS DOCUMENTATION

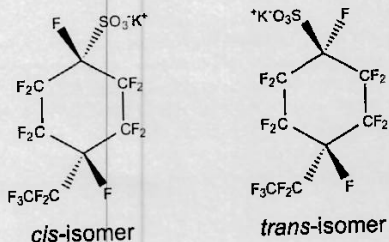
PRODUCT CODE:
COMPOUND:

PFECHS
Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

LOT NUMBER: PFECHS0222

CAS #: 335-24-0

STRUCTURE:



MOLECULAR FORMULA:
CONCENTRATION:

$C_8F_{15}SO_3K$
50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)

MOLECULAR WEIGHT: 500.22
SOLVENT(S): Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

03/28/2022

EXPIRY DATE: (mm/dd/yyyy)

03/28/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis/trans* isomers of PFECHS at a ratio of 1:1.27 (*cis:trans*).

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Certified By:

B.G. Chittim, General Manager

Date: 03/30/2022
(mm/dd/yyyy)

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11336



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DOCUMENTATION**

PRODUCT CODE:

N-EtFOSE-M

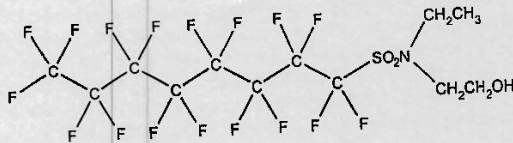
LOT NUMBER: NEtFOSE0622M

COMPOUND:

2-(N-ethylperfluoro-1-octanesulfonamido)ethanol

CAS #: 1691-99-2

STRUCTURE:



MOLECULAR FORMULA:

C₁₂H₁₀F₁₇NO₃S

MOLECULAR WEIGHT: 571.25

CONCENTRATION:

50.0 ± 2.5 µg/mL

SOLVENT(S):

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)
05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

- Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
- Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
- Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By:

B.G. Chittim, General Manager

Date: 07/13/2022
(mm/dd/yyyy)

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NEtFOSE0622M (1 of 5)
rev0

Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

11338



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CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:

N-MeFOSE-M

LOT NUMBER:

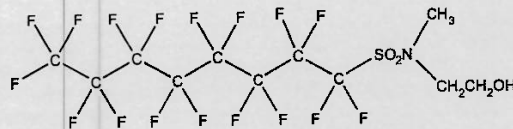
NMeFOSE0522M

COMPOUND:

2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE:**CAS #:**

24448-09-7

**MOLECULAR FORMULA:** $C_{11}H_8F_{17}NO_3S$ **MOLECULAR WEIGHT:**

557.22

CONCENTRATION: $50.0 \pm 2.5 \mu\text{g/mL}$ **SOLVENT(S):**

Methanol

CHEMICAL PURITY:

>98%

LAST TESTED: (mm/dd/yyyy)

05/13/2022 (HRGC/LRMS)

05/13/2022 (LC/MS)

EXPIRY DATE: (mm/dd/yyyy)

05/13/2027

RECOMMENDED STORAGE:

Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)

Figure 2: LC/MS Data (Full Scan and Mass Spectrum)

Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By:

B.G. Chittim, General Manager

Date: 06/14/2022

(mm/dd/yyyy)

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11764 A-5
rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection
Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-IS
LOT NUMBER: MPFACHIFIS1122
SOLVENT(S): Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 11/28/2022
LAST TESTED: (mm/dd/yyyy) 11/29/2022
EXPIRY DATE: (mm/dd/yyyy) 11/29/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄, C₆, C₈-C₁₀) and two mass-labelled (¹⁸O and ¹³C) perfluoroalkanesulfonates (C₆ and C₈). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and mass-labelled perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ¹³C or >94% per ¹⁸O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

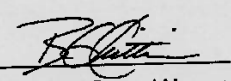
MPFACHIFIS1122 (1 of 5)
rev0

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Table A: MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))

| Compound | Acronym | Concentration (ng/mL) | | Peak Assignment in Figure 1 |
|--|---------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| Perfluoro-n-(2,3,4- ¹³ C ₃)butanoic acid | M3PFBA | 1000 | | 1 |
| Perfluoro-n-(1,2- ¹³ C ₂)hexanoic acid | MPFHxA | 500 | | 2 |
| Perfluoro-n-(1,2,3,4- ¹³ C ₄)octanoic acid | MPFOA | 500 | | 4 |
| Perfluoro-n-(1,2,3,4,5- ¹³ C ₅)nonanoic acid | MPFNA | 250 | | 5 |
| Perfluoro-n-(1,2- ¹³ C ₂)decanoic acid | MPFDA | 250 | | 7 |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| | | as the salt | as the acid | |
| Sodium perfluoro-1-hexane(¹⁸ O ₂)sulfonate | MPFHxS | 500 | 474 | 3 |
| Sodium perfluoro-1-(1,2,3,4- ¹³ C ₄)octanesulfonate | MPFOS | 500 | 479 | 6 |

* Concentrations have been rounded to three significant figures.

Certified By: 
R.G. Chittim, General Manager

Date: 12/05/2022
(mm/dd/yyyy)

11765 A-J
Rec'd: 04/20/23



WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

MPFAC-HIF-ES Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE: MPFAC-HIF-ES
LOT NUMBER: MPFACHIFES1022
SOLVENT(S): Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy) 10/28/2022
LAST TESTED: (mm/dd/yyyy) 11/23/2022
EXPIRY DATE: (mm/dd/yyyy) 11/23/2025
RECOMMENDED STORAGE: Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (¹³C) perfluoroalkylcarboxylic acids (C₄-C₁₂, C₁₄), three mass-labelled (¹³C) perfluoroalkanesulfonates (C₄, C₆, and C₈), three mass-labelled (one ¹³C and two ²H) perfluoro-1-octanesulfonamides, three mass-labelled (¹³C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (²H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (²H) perfluorooctanesulfonamidoethanols, and mass-labelled (¹³C) hexafluoropropylene oxide dimer acid (GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ¹³C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ²H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

- Table A: Components and Concentrations of the Solution/Mixture
- Figure 1: LC/MS Data (SIR)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

MPFACHIFES1022 (1 of 7)
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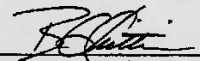
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Table A: MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))

| Compound | Acronym | Concentration (ng/mL) | | Peak Assignment in Figure 1 |
|--|--------------|------------------------|-------------|-----------------------------|
| | | as the salt | as the acid | |
| Perfluoro-n-(¹³ C ₂)butanoic acid | MPFBA | 2000 | | 1 |
| Perfluoro-n-(¹³ C ₃)pentanoic acid | M5PFPeA | 1000 | | 2 |
| Perfluoro-n-(1,2,3,4,6- ¹³ C ₅)hexanoic acid | M5PFHxA | 500 | | 5 |
| Perfluoro-n-(1,2,3,4- ¹³ C ₄)heptanoic acid | M4PFHpA | 500 | | 7 |
| Perfluoro-n-(¹³ C ₆)octanoic acid | M8PFOA | 500 | | 10 |
| Perfluoro-n-(¹³ C ₇)nonanoic acid | M9PFNA | 250 | | 11 |
| Perfluoro-n-(1,2,3,4,5,6- ¹³ C ₆)decanoic acid | M6PFDA | 250 | | 14 |
| Perfluoro-n-(1,2,3,4,5,6,7- ¹³ C ₇)undecanoic acid | M7PFUdA | 250 | | 18 |
| Perfluoro-n-(1,2- ¹³ C ₂)dodecanoic acid | MPFDcA | 250 | | 19 |
| Perfluoro-n-(1,2- ¹³ C ₂)tetradecanoic acid | M2PFTeDA | 250 | | 22 |
| Perfluoro-1-(¹³ C ₈)octanesulfonamide | M8FOSA | 500 | | 17 |
| N-methyl-d ₃ -perfluoro-1-octanesulfonamide | d-N-MeFOSA | 500 | | 21 |
| N-ethyl-d ₅ -perfluoro-1-octanesulfonamide | d-N-EtFOSA | 500 | | 24 |
| N-methyl-d ₃ -perfluoro-1-octanesulfonamidoacetic acid | d3-N-MeFOSAA | 1000 | | 15 |
| N-ethyl-d ₅ -perfluoro-1-octanesulfonamidoacetic acid | d5-N-EtFOSAA | 1000 | | 16 |
| 2-(N-methyl-d ₃ -perfluoro-1-octanesulfonamido)ethan-d ₂ -ol | d7-N-MeFOSE | 5000 | | 20 |
| 2-(N-ethyl-d ₅ -perfluoro-1-octanesulfonamido)ethan-d ₄ -ol | d9-N-EtFOSE | 5000 | | 23 |
| 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)(¹³ C ₃)propanoic acid | M3HFPO-DA | 2000 | | 6 |
| Compound | Acronym | Concentration* (ng/mL) | | Peak Assignment in Figure 1 |
| | | as the salt | as the acid | |
| Sodium perfluoro-1-(2,3,4- ¹³ C ₃)butanesulfonate | M3PFBS | 500 | 466 | 3 |
| Sodium perfluoro-1-(1,2,3- ¹³ C ₃)hexanesulfonate | M3PFHxS | 500 | 474 | 8 |
| Sodium perfluoro-1-(¹³ C ₈)octanesulfonate | M8PFOS | 500 | 479 | 12 |
| Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)hexanesulfonate | M2-4:2FTS | 1000 | 938 | 4 |
| Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)octanesulfonate | M2-6:2FTS | 1000 | 951 | 9 |
| Sodium 1H,1H,2H,2H-perfluoro-(1,2- ¹³ C ₂)decanesulfonate | M2-8:2FTS | 1000 | 960 | 13 |

* Concentrations have been rounded to three significant figures.

Certified By: 
B.G. Chittim, General Manager

Date: 11/24/2022
(mm/dd/yyyy)

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/26/23 10:30
Started (mm/dd/yy 24 00)

Method: EPA 1633 Draft (QSM)

Date/Time: 5/30/23 14:49
Finished (mm/dd/yy 24 00)

Balance ID: _____

Batch# OP97092 Ext. By: GH

Conc. By: _____ Viald By: _____

| Sample ID | Bottle Number | Amount Extracted (ml) | Initial pH | Adjusted pH | Surrogate Amount (ul) | Spike Amount (ul) | Final Volume (ml) | Manifold ID | Comments |
|------------------------------|---------------|-----------------------|------------|-------------|-----------------------|-------------------|-------------------|-------------|----------|
| OP 97092 MB | / | 500 | 7 | N/A | 25 | | 5 | A4 | |
| OP 97092 BS | / | 500 | 7 | | | | | | |
| OP 97092 LLBS | / | 500 | 7 | | | 200 | | | |
| FC 5851-5AL | 2 | 550 | 6 | | | 60 | | | |
| FC 5885-4AL | 1 | 60 | 6 | | | | | | |
| FC 5943-1AL | 3 | 526 | 6 | | | | | | |
| 8 AL | 3 | 550 | 6 | | | | | | |
| FC 6238-3AL | 1 | 60 | 7 | | | | | | |
| FC 6325-1 | 2 | 550 | 6 | | | | | | |
| | 2 | 570 | 6 | | | | | | |
| | 3 | 550 | 6 | N/A | 25 | | 5 | A4 | |
| FC 5943-8 th DUP2 | 1 | 68 | 6 | N/A | 25 | | 5 | A4 | |
| OP FC6325-1 MS | 3 | 540 | 6 | N/A | 25 | 200 | 5 | A4 | |
| OP MSD | | | | | | | | | |
| OP FC6325-2 DUP1 | 3 | 560 | 6 | N/A | 25 | | 5 | A4 | |

Comments:

EIS (SURR) ID: 11806 H-J Conc: 250-5000 ng/l^{mk} Exp. Date: 05/18/23 Inj. By: GH Ver. By: DBL
 SPIKE 1 ID: LMS 2124B Conc: VARIED Exp. Date: 10/28/23 Inj. By: GH Ver. By: DBL
 SPIKE 2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____
 NIS (ISTD) ID: 11820D-E Conc: 250-1000 ng/l^{mk} Exp. Date: 5/24/24 Inj. By: MV Ver. By: NG

TurboVap Temp (Therm ID): _____ N-Evap Temp (Therm ID): _____
 Observed Temp °C: _____ Corr. Temp °C: _____ Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 224279 1% NH4OH MeOH PF416 SPE Lot # 0736233-03
 Water Lot# OP97000 0.3M Formic Acid PF413 Syringe filter Lot #
 Acetic Acid# 194003 3% NH4OH Sol _____ pH paper Lot# 215322
 0.1M Formic PF415 5% Formic Acid _____ Carbon Lot# 99687

Relinquished By: [Signature]
 Accepted By: [Signature]

Date: 05/26/23
 Date: 5/30/23

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