



**Off-Base Drinking Water Sample Results,
Electronic Data Deliverable, Data Validation Report,
and the Sample Location Figure, SDG 1803255**

*Naval Weapons Industrial Reserve Plant Calverton
Riverhead, New York*

August 2019

"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","375-73-5","PFBS","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","307-24-4","PFHxA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","375-85-9","PFHpA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","355-46-4","PFHxS","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","335-67-1","PFOA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
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"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","1763-23-1","PFOS","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","335-76-2","PFDA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
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"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","376-06-7","PFTeDA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES",-99,"","0.250","0.001","5.00",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","13C2-PFHxA","13C2-PFHxA","77.5","%R","","-99","NA","","SURR","77.5","","-99","NA","YES","100","","0.250","0.001","-99",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","13C2-PFDA","13C2-PFDA","79.9","%R","","-99","NA","","SURR","79.9","","-99","NA","YES","100","","0.250","0.001","-99",""
"CAL-DW13-20181004","EPA Method 537","Initial","1803255-01","Vista","d5-EtFOSAA","d5-EtFOSAA","92.9","%R","","-99","NA","","SURR","92.9","","-99","NA","YES","100","","0.250","0.001","-99",""
"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","375-73-5","PFBS","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","307-24-4","PFHxA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","375-85-9","PFHpA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","355-46-4","PFHxS","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
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"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","375-95-1","PFNA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
"CAL-DW13-FRB-20181004","EPA Method 537","Initial","1803255-02","Vista","1763-23-1","PFOS","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES",-99,"","0.258","0.001","4.84",""
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9","MeFOSAA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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6","EtFOSAA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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8","PFUnA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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1","PFDoA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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8","PFTTrDA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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7","PFTeDA","4.84","ng/L","U","2.94","LOD","","TRG","","","9.69","LOQ","YES","-99","","0.258","0.001","4.84",
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PFHxA","90.9","%R","","-99","NA","","SURR","90.9","","-99","NA","YES","100","","0.258","0.001","-99",
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EtFOSAA","89.6","%R","","-99","NA","","SURR","89.6","","-99","NA","YES","100","","0.258","0.001","-99",
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5","PFBS","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
,""
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4","PFHxA","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
,""
"CAL-DW14-20181004","EPA Method 537","Initial","1803255-03","Vista","375-85-
9","PFHpA","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
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"CAL-DW14-20181004","EPA Method 537","Initial","1803255-03","Vista","355-46-
4","PFHxS","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
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"CAL-DW14-20181004","EPA Method 537","Initial","1803255-03","Vista","335-67-
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"CAL-DW14-20181004","EPA Method 537","Initial","1803255-03","Vista","2991-50-
6","EtFOSAA","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
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"CAL-DW14-20181004","EPA Method 537","Initial","1803255-03","Vista","72629-94-
8","PFTTrDA","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
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7","PFTeDA","4.75","ng/L","U","2.89","LOD","","TRG","","","9.49","LOQ","YES","-99","","0.263","0.001","4.75",
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EtFOSAA", "96.8", "%R", "", "-99", "NA", "", "SURR", "96.8", "", "-99", "NA", "YES", "100", "", "0.263", "0.001", "-99", ""
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"CAL-DW14-FRB-20181004", "EPA Method 537", "Initial", "1803255-04", "Vista", "376-06-7", "PFTeDA", "4.75", "ng/L", "U", "2.89", "LOD", "", "TRG", "", "", "9.52", "LOQ", "YES", "-99", "", "0.263", "0.001", "4.75", ""
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"B8J0073-BLK1", "EPA Method 537", "Initial", "B8J0073-BLK1", "Vista", "375-73-5", "PFBS", "5.00", "ng/L", "U", "3.04", "LOD", "", "TRG", "", "", "10.0", "LOQ", "YES", "-99", "", "0.250", "0.001", "5.00", ""
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"B8J0073-BLK1", "EPA Method 537", "Initial", "B8J0073-BLK1", "Vista", "355-46-4", "PFHxS", "5.00", "ng/L", "U", "3.04", "LOD", "", "TRG", "", "", "10.0", "LOQ", "YES", "-99", "", "0.250", "0.001", "5.00", ""
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"9","MeFOSAA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES","-99","","0.250","0.001","5.00",
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6","EtFOSAA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES","-99","","0.250","0.001","5.00",
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8","PFUnA","5.00","ng/L","U","3.04","LOD","","TRG","","","10.0","LOQ","YES","-99","","0.250","0.001","5.00",
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PFHxA","82.6","%R","","-99","NA","","SUR","82.6","","-99","NA","YES","100","","0.250","0.001","-99",
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PFDA","85.4","%R","","-99","NA","","SUR","85.4","","-99","NA","YES","100","","0.250","0.001","-99",
"B8J0073-BLK1","EPA Method 537","Initial","B8J0073-BLK1","Vista","d5-EtFOSAA","d5-
EtFOSAA","94.4","%R","","-99","NA","","SUR","94.4","","-99","NA","YES","100","","0.250","0.001","-99",
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","375-73-
5","PFBS","67.8","ng/L","","3.04","LOD","","TRG","95.7","","10.0","LOQ","YES","70.8","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","307-24-
4","PFHxA","72.3","ng/L","","3.04","LOD","","TRG","90.4","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","375-85-
9","PFHpA","77.8","ng/L","","3.04","LOD","","TRG","97.2","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","355-46-
4","PFHxS","80.8","ng/L","","3.04","LOD","","TRG","111","","10.0","LOQ","YES","72.8","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","335-67-
1","PFOA","78.9","ng/L","","3.04","LOD","","TRG","98.6","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","375-95-
1","PFNA","94.7","ng/L","","3.04","LOD","","TRG","118","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","1763-23-
1","PFOS","84.6","ng/L","","3.04","LOD","","TRG","114","","10.0","LOQ","YES","74.0","","0.250","0.001","5.00",
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","335-76-
2","PFDA","91.7","ng/L","","3.04","LOD","","TRG","115","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","2355-31-
9","MeFOSAA","94.1","ng/L","","3.04","LOD","","TRG","118","","10.0","LOQ","YES","80.0","","0.250","0.001","5.
00",
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","2991-50-
6","EtFOSAA","94.9","ng/L","","3.04","LOD","","TRG","119","","10.0","LOQ","YES","80.0","","0.250","0.001","5.0
0",
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","2058-94-
8","PFUnA","88.0","ng/L","","3.04","LOD","","TRG","110","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"
"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","307-55-
1","PFDoA","96.5","ng/L","","3.04","LOD","","TRG","121","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",
"

"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","72629-94-8","PFTrDA","99.7","ng/L","","3.04","LOD","","TRG","125","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","376-06-7","PFTeDA","88.4","ng/L","","3.04","LOD","","TRG","111","","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","13C2-PFHxA","13C2-PFHxA","89.5","%R","","-99","NA","","SUR","89.5","","-99","NA","YES","100","","0.250","0.001","-99",""

"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","13C2-PFDA","13C2-PFDA","110","%R","","-99","NA","","SUR","110","","-99","NA","YES","100","","0.250","0.001","-99",""

"B8J0073-BS1","EPA Method 537","Initial","B8J0073-BS1","Vista","d5-EtFOSAA","d5-EtFOSAA","120","%R","","-99","NA","","SUR","120","","-99","NA","YES","100","","0.250","0.001","-99",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","375-73-5","PFBS","80.9","ng/L","","3.04","LOD","","TRG","114","17.7","10.0","LOQ","YES","70.8","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","307-24-4","PFHxA","77.5","ng/L","","3.04","LOD","","TRG","96.9","6.90","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","375-85-9","PFHpA","78.4","ng/L","","3.04","LOD","","TRG","98.0","0.819","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","355-46-4","PFHxS","84.4","ng/L","","3.04","LOD","","TRG","116","4.34","10.0","LOQ","YES","72.8","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","335-67-1","PFOA","82.5","ng/L","","3.04","LOD","","TRG","103","4.47","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","375-95-1","PFNA","90.8","ng/L","","3.04","LOD","","TRG","113","4.23","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","1763-23-1","PFOS","74.3","ng/L","","3.04","LOD","","TRG","100","13.0","10.0","LOQ","YES","74.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","335-76-2","PFDA","85.1","ng/L","","3.04","LOD","","TRG","106","7.48","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","2355-31-9","MeFOSAA","98.1","ng/L","","3.04","LOD","","TRG","123","4.20","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","2991-50-6","EtFOSAA","85.9","ng/L","","3.04","LOD","","TRG","107","9.96","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","2058-94-8","PFUnA","72.7","ng/L","","3.04","LOD","","TRG","90.9","19.0","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","307-55-1","PFDoA","75.0","ng/L","","3.04","LOD","","TRG","93.7","25.0","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","72629-94-8","PFTrDA","79.9","ng/L","","3.04","LOD","","TRG","99.9","22.0","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","376-06-7","PFTeDA","81.4","ng/L","","3.04","LOD","","TRG","102","8.30","10.0","LOQ","YES","80.0","","0.250","0.001","5.00",""

"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","13C2-PFHxA","13C2-PFHxA","86.1","%R","","-99","NA","","SUR","86.1","","-99","NA","YES","100","","0.250","0.001","-99",""
"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","13C2-PFDA","13C2-PFDA","85.8","%R","","-99","NA","","SUR","85.8","","-99","NA","YES","100","","0.250","0.001","-99",""
"B8J0073-BSD1","EPA Method 537","Initial","B8J0073-BSD1","Vista","d5-EtFOSAA","d5-EtFOSAA","119","%R","","-99","NA","","SUR","119","","-99","NA","YES","100","","0.250","0.001","-99",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","CAL-DW13-20181004","10/04/2018 08:10","AQ","1803255-01","NM","","0.50","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 15:23","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","10/06/2018 09:29","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","CAL-DW13-FRB-20181004","10/04/2018 08:10","AQ","1803255-02","NM","","0.50","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 15:36","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","10/06/2018 09:29","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","CAL-DW14-20181004","10/04/2018 09:08","AQ","1803255-03","NM","","0.50","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 15:49","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","10/06/2018 09:29","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","CAL-DW14-FRB-20181004","10/04/2018 09:08","AQ","1803255-04","NM","","0.50","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 16:02","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","10/06/2018 09:29","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","B8J0073-BLK1","01/01/1900 00:00","AQ","B8J0073-BLK1","MB","","-99","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 15:10","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","01/01/1900 00:00","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","B8J0073-BS1","01/01/1900 00:00","AQ","B8J0073-BS1","LCS","","-99","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 14:45","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","01/01/1900 00:00","01/01/1900 00:00",""
"Calverton off Base DW PFAS Sam","Calverton off Base DW PFAS Sampling 112G08005 WE05","B8J0073-BSD1","01/01/1900 00:00","AQ","B8J0073-BSD1","LCSD","","-99","EPA Method 537","METHOD","Initial","10/10/2018 08:10","10/11/2018 14:57","Vista","COA","WET","NA","1","NA","NA","01/01/1900 00:00","100","B8J0073","B8J0073","NA","S8J0035","1803255","01/01/1900 00:00","01/01/1900 00:00",""

PFAS

Non-detected results were reported to the limit of detection (LOD).

Additional Comments

A matrix spike was not included in this data group. No action was taken on this issue.

Executive Summary

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Superfund Methods Data Review" (January 2017), the Environmental Protection Agency document EPA/600/R-08/092, Method 537, "Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)", (September 2009) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (2017). The text of this report has been formulated to address only those areas affecting data quality.



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Attachments:

- Appendix A - Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Data Qualifier Definitions

The following definitions provide brief explanations of the validation qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted detection limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the reporting limit).
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported detection limit is approximate and may be inaccurate or imprecise.
NJ	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample.
R	The sample result (detected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UR	The sample result (nondetected) is unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
X	The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team, but exclusion of the data is recommended.

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

PROJ_NO: 08005-WE05 SDG: 1803255 FRACTION: PFAS MEDIA: WATER	NSAMPLE	CAL-DW13-20181004			CAL-DW13-FRB-20181004			CAL-DW14-20181004			CAL-DW14-FRB-20181004		
	LAB_ID	1803255-01			1803255-02			1803255-03			1803255-04		
	SAMP_DATE	10/4/2018			10/4/2018			10/4/2018			10/4/2018		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	
N-ETHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NEFOSA)	5	U		4.84	U		4.75	U		4.75	U		
N-METHYLPERFLUOROOCCTANE SULFONAMIDOACETATE(NMFOSA)	5	U		4.84	U		4.75	U		4.75	U		
PENTADEC AFLUOROOCCTANOIC ACID (PFOA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROBUTANESULFONIC ACID (PFBS)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUORODECANOIC ACID (PFDA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUORODODECANOIC ACID (PFDOA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROHEPTANOIC ACID (PFHPA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROHEXANESULFONIC ACID (PFHXS)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROHEXANOIC ACID (PFHXA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUORONONANOIC ACID (PFNA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROOCCTANESULFONIC ACID (PFOS)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROTETRADECANOIC ACID (PFTEA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROTRIDECANOIC ACID (PFTRIA)	5	U		4.84	U		4.75	U		4.75	U		
PERFLUOROUNDECANOIC ACID (PFUNA)	5	U		4.84	U		4.75	U		4.75	U		

Appendix B

Results as Reported by the Laboratory

Sample ID: CAL-DW13-20181004											EPA Method 537	
Client Data						Laboratory Data						
Name:	Tetra Tech			Matrix:	Drinking Water		Lab Sample:	1803255-01		Column:	BEH C18	
Project:	Calverton off Base DW PFAS Sampling 112G08005 \						Date Collected:	04-Oct-18 08:10				
SDG:	WE05						Date Received:	06-Oct-18 09:29				
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
PFBS	375-73-5	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFHxA	307-24-4	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFOA	335-67-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFNA	375-95-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFDA	335-76-2	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFOA	2058-94-8	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFOA	72629-94-8	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
PFOA	376-06-7	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1	
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution		
13C2-PFHxA	SURR	77.5	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1		
13C2-PFDA	SURR	79.9	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1		
d5-EtFOSAA	SURR	92.9	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:23	1		

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: CAL-DW13-FRB-20181004											EPA Method 537				
Client Data						Laboratory Data									
Name:		Tetra Tech		Matrix:		QC Water		Lab Sample:		1803255-02		Column:		BEH C18	
Project:		Calverton off Base DW PFAS Sampling 112G08005 \						Date Collected:		04-Oct-18 08:10		Date Received:		06-Oct-18 09:29	
SDG:		WE05													
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBS	375-73-5	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFHxA	307-24-4	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFHpA	375-85-9	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFHxS	355-46-4	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFOA	335-67-1	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFNA	375-95-1	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFOS	1763-23-1	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFDA	335-76-2	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
MeFOSAA	2355-31-9	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
EtFOSAA	2991-50-6	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFUnA	2058-94-8	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFDoA	307-55-1	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFTrDA	72629-94-8	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
PFTeDA	376-06-7	ND	2.94	4.84	9.69		B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1				
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
13C2-PFHxA	SURR	90.9	70 - 130			B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1					
13C2-PFDA	SURR	96.6	70 - 130			B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1					
d5-EtFOSAA	SURR	89.6	70 - 130			B8J0073	10-Oct-18	0.258 L	11-Oct-18 15:36	1					

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: CAL-DW14-20181004							EPA Method 537				
Client Data						Laboratory Data					
Name:	Tetra Tech		Matrix:	Drinking Water		Lab Sample:	1803255-03		Column:	BEH C18	
Project:	Calverton off Base DW PFAS Sampling 112G08005 \Date Collected: 04-Oct-18 09:08					Date Received:	06-Oct-18 09:29				
SDG:	WE05										
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFHxA	307-24-4	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFHpA	375-85-9	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFHxS	355-46-4	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFOA	335-67-1	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFNA	375-95-1	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFOS	1763-23-1	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFDA	335-76-2	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
MeFOSAA	2355-31-9	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
EtFOSAA	2991-50-6	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFUnA	2058-94-8	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFDoA	307-55-1	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFTTrDA	72629-94-8	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
PFTeDA	376-06-7	ND	2.89	4.75	9.49		B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFHxA	SURR	85.7	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1	
13C2-PFDA	SURR	92.7	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1	
d5-EtFOSAA	SURR	96.8	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 15:49	1	

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: CAL-DW14-FRB-20181004											EPA Method 537				
Client Data						Laboratory Data									
Name:		Tetra Tech		Matrix:		QC Water		Lab Sample:		1803255-04		Column:		BEH C18	
Project:		Calverton off Base DW PFAS Sampling 112G08005		Date Collected:		04-Oct-18 09:08		Date Received:		06-Oct-18 09:29					
SDG:		WE05													
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBS	375-73-5	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFHxA	307-24-4	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFHpA	375-85-9	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFHxS	355-46-4	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFOA	335-67-1	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFNA	375-95-1	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFOS	1763-23-1	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFDA	335-76-2	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
MeFOSAA	2355-31-9	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
EtFOSAA	2991-50-6	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFA	2058-94-8	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFDoA	307-55-1	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFTrDA	72629-94-8	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
PFTeDA	376-06-7	ND	2.89	4.75	9.52		B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1				
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
13C2-PFHxA	SURR	82.8	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1					
13C2-PFDA	SURR	88.4	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1					
d5-EtFOSAA	SURR	103	70 - 130			B8J0073	10-Oct-18	0.263 L	11-Oct-18 16:02	1					

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Appendix C

Support Documentation



CHAIN OF CUSTODY

For Laboratory Use Only
 Work Order #: 1803255 Temp: 0.5 °C
 Storage ID: WR-7 Storage Secured: Yes No

Project ID: 1126-08005-WE05 PO#: _____ Sampler: Lauren Dorston / Beau Benfield (name) Beau Benfield
 TAT Standard: 21 days (check one): Rush (surcharge may apply) 14 days 7 days Specify: _____

Invoice to: Name Tetra Tech Company _____ Address 5700 Lake Wright Dr. Suite 102 City Norfolk State VA Ph# _____ Fax# _____

Relinquished by (printed name and signature) Lauren Dorston Date 10/05/18 Time (1400) Received by (printed name and signature) _____ Date _____ Time _____
 Relinquished by (printed name and signature) FedEx Date _____ Time _____ Received by (printed name and signature) B. Benedict Date 10/6/18 Time 0956

SHIP TO: Vista Analytical Laboratory 1104 Windfield Way El Dorado Hills, CA 95762 Ph: (916) 673-1520; Fax: (916) 673-0106				Method of Shipment: <u>FedEx</u>		Add Analysis(es) Requested		PFAS Isotope Dilution		USEPA Method 537		Comments			
ATTN: <u>Sample Custodian</u>				Tracking No.: _____		Container(s)		PFAS List 14		PFAS List 14					
Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	List of 21	List of 24 w/Isotopes	List of 24	List of 24 w/Isotopes	List of 28	Other: Please List Below	PFAS List 14	PFAS List 14	PFAS List 14
<u>CAL-DW13-20181004</u>	<u>10/04/18</u>	<u>0810</u>		<u>2</u>	<u>P</u>	<u>DW</u>							<u>2</u>		
<u>CAL-DW13-FRB-20181004</u>		<u>0810</u>		<u>1</u>	<u>GA</u>								<u>1</u>	<u>FRB</u>	
<u>CAL-DW14-20181004</u>		<u>0908</u>		<u>1</u>	<u>DW</u>								<u>1</u>		
<u>CAL-DW14-FRB-20181004</u>	<u>10/05/18</u>	<u>0908</u>		<u>1</u>	<u>GA</u>								<u>1</u>	<u>FRB</u>	

Special Instructions/Comments:
*all samples preserved w/ trizma

SEND DOCUMENTATION AND RESULTS TO:

Name: Megan Ved
 Company: Tetra Tech
 Address: Foster Plaza VII Col Anderson Dr.
 City: Pittsburgh State: PA Zip: _____
 Phone: _____ Fax: _____
 Email: megan.ved@tetrattech.com

Container Types: P= HDPE, PJ= HDPE Jar Bottle Preservation Type: T = Thiosulfate, TZ = Trizma
 Matrix Types: AQ = Aqueous, DW = Drinking Water, EF = Effluent, PP = Pulp/Paper, SD = Sediment, SL = Sludge, SO = Soil, WW = Wastewater, B = Blood/Serum, O = Other:



Sample Log in Checklist

PAGE # 1 of 1
 WO# 1803255
 SDG# WE05
 TAT 7

Section 1: Container Receipt			
Delivered By: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> On Trac <input type="checkbox"/> GSO <input type="checkbox"/> DHL <input type="checkbox"/> Hand Delivered <input type="checkbox"/> Other:			
Number of Containers	Arrival Date	Arrival time	Cooler Received LR-SLC Initiated By/Date
<u>1</u>	<u>10/6/18</u>	<u>0929</u>	<u>CRAB 10/6/18</u>

Section 2: Sample Receipt Condition and Initial Storage					
Container Condition	Chain of Custody	Preservation Type	Temperature	Storage Location	Initials/Date
<input checked="" type="checkbox"/> Shipping container intact <input checked="" type="checkbox"/> Shipping seals intact <input checked="" type="checkbox"/> Custody Seals present <input checked="" type="checkbox"/> Custody seals intact	<input checked="" type="checkbox"/> COC present <input type="checkbox"/> Multiple COC's: <u>NO</u> <input checked="" type="checkbox"/> "Relinquished By" Section complete	<input checked="" type="checkbox"/> Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Other	Thermometer ID: <u>IR-4</u> <input type="checkbox"/> Probe used Temp (uncorrected): <u>0.6</u> °C Temp (corrected): <u>1.5</u> °C	<input checked="" type="checkbox"/> WR2 <input type="checkbox"/> WF2 <input type="checkbox"/> NA	<u>CRAB</u> <u>10/6/18</u>

Section 3: Sample Log In	
Airbill/Trk #	<u>8126 0808 9795</u>
Shipping container <input type="checkbox"/> Vista <input type="checkbox"/> Client <input type="checkbox"/> Retain <input type="checkbox"/> Return <input type="checkbox"/> Dispose	By/date
Log In Time: <u>13:51</u>	<u>CRAB 10/6/18</u>
COC clearly identifies: <ul style="list-style-type: none"> • Sample name ✓ • Sample matrix ✓ • Test method ✓ • Sample collection date or time ✓ • Collector's name ✓ • Preservation type ✓ <u>NOT ON COC CRAB 10/6/18</u> 	<input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not acceptable – anomaly form required
All samples present and accounted for on COC	<u>CRAB 10/6/18</u>
Sample IDs are legible	<u>CRAB 10/6/18</u>
Samples conform to the description on the COC	<u>CRAB 10/6/18</u>
Samples are intact and suitable for testing	<u>CRAB 10/6/18</u>
Preservation documented as required: <input type="checkbox"/> NA <input type="checkbox"/> Na ₂ S ₂ O ₃ <input checked="" type="checkbox"/> Trizma <input type="checkbox"/> Other _____	<u>CRAB 10/6/18</u>
Samples stored <input checked="" type="checkbox"/> WR2 Shelf: <u>A3/E3</u> <input type="checkbox"/> WF2 Shelf: _____ <input type="checkbox"/> R1 Shelf: _____	<u>CRAB 10/6/18</u>
Comments:	<u>CRAB 10/6/18</u>

SDG Number WE05

Vista Work Order No. 1803255

Case Narrative

Sample Condition on Receipt:

Two drinking water samples and two aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

PFAS Isotope Dilution Method

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537). The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

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

Quality Control

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

Two Laboratory Fortified Blanks (LFB/LFBD) and a Laboratory Reagent Blank (LRB) were extracted and analyzed with the preparation batch. No analytes were detected in the Laboratory Reagent Blank. The LFB/LFBD recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1803255-01	CAL-DW13-20181004	04-Oct-18 08:10	06-Oct-18 09:29	Polypropylene, 250mL Polypropylene, 250mL
1803255-02	CAL-DW13-FRB-20181004	04-Oct-18 08:10	06-Oct-18 09:29	Polypropylene, 250mL Polypropylene, 250mL
1803255-03	CAL-DW14-20181004	04-Oct-18 09:08	06-Oct-18 09:29	Polypropylene, 250mL Polypropylene, 250mL
1803255-04	CAL-DW14-FRB-20181004	04-Oct-18 09:08	06-Oct-18 09:29	Polypropylene, 250mL Polypropylene, 250mL

Sample ID: LRB											EPA Method 537				
Client Data						Laboratory Data									
Name:		Tetra Tech		Matrix:		Aqueous		Lab Sample:		B8J0073-BLK1		Column:		BEH C18	
Project:		Calverton off Base DW PFAS Sampling 112G08005 V													
Analyte	CAS Number	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution				
PFBS	375-73-5	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFHxA	307-24-4	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFHpA	375-85-9	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFHxS	355-46-4	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFOA	335-67-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFNA	375-95-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFOS	1763-23-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFDA	335-76-2	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
MeFOSAA	2355-31-9	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
EtFOSAA	2991-50-6	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFUnA	2058-94-8	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFDoA	307-55-1	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFTTrDA	72629-94-8	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
PFTeDA	376-06-7	ND	3.04	5.00	10.0		B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1				
Labeled Standards	Type	% Recovery	Limits		Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution					
13C2-PFHxA	SURR	82.6	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1					
13C2-PFDA	SURR	85.4	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1					
d5-EtFOSAA	SURR	94.4	70 - 130			B8J0073	10-Oct-18	0.250 L	11-Oct-18 15:10	1					

DL - Detection Limit

LOD - Limit of Detection
LOQ - Limit of quantitation

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: LFBD											EPA Method 537					
Name: Tetra Tech					Lab Sample: B8J0073-BS1/B8J0073-BSD1					Date Extracted: 10-Oct-18						
Project: Calverton off Base DW PFAS Sampling 112G0800					QC Batch: B8J0073					Column:		BEH C18				
Matrix: Aqueous					Samp Size: 0.250/0.250 L											
Analyte	CAS Number	LFB (ng/L)	LFB Spike Amt	LFB % Rec	LFB Quals	LFBD (ng/L)	LFBD Spike Amt	LFBD % Rec	RPD	LFBD Quals	%Rec Limits	RPD Limits	LFB Analyzed	LFB Dil	LFBD Analyzed	LFBD Dil
PFBS	375-73-5	67.8	70.8	95.7		80.9	70.8	114	17.7		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFHxA	307-24-4	72.3	80.0	90.4		77.5	80.0	96.9	6.90		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFHpA	375-85-9	77.8	80.0	97.2		78.4	80.0	98.0	0.819		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFHxS	355-46-4	80.8	72.8	111		84.4	72.8	116	4.34		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFOA	335-67-1	78.9	80.0	98.6		82.5	80.0	103	4.47		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFNA	375-95-1	94.7	80.0	118		90.8	80.0	113	4.23		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFOS	1763-23-1	84.6	74.0	114		74.3	74.0	100	13.0		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFDA	335-76-2	91.7	80.0	115		85.1	80.0	106	7.48		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
MeFOSAA	2355-31-9	94.1	80.0	118		98.1	80.0	123	4.20		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
EtFOSAA	2991-50-6	94.9	80.0	119		85.9	80.0	107	9.96		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFUnA	2058-94-8	88.0	80.0	110		72.7	80.0	90.9	19.0		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFDoA	307-55-1	96.5	80.0	121		75.0	80.0	93.7	25.0		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFTTrDA	72629-94-8	99.7	80.0	125		79.9	80.0	99.9	22.0		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
PFTeDA	376-06-7	88.4	80.0	111		81.4	80.0	102	8.30		70-130		11-Oct-18 14:45	1	11-Oct-18 14:57	1
Labeled Standards	Type			LFB % Rec	LFB Quals			LFBD % Rec	LFBD Quals	Limits			LFB Analyzed	LFB Dil	LFBD Analyzed	LFBD Dil
13C2-PFHxA	SURR			89.5				86.1		70-130			11-Oct-18 14:45	1	11-Oct-18 14:57	1
13C2-PFDA	SURR			110				85.8		70-130			11-Oct-18 14:45	1	11-Oct-18 14:57	1
d5-EtFOSAA	SURR			120				119		70-130			11-Oct-18 14:45	1	11-Oct-18 14:57	1

PREPARATION BENCH SHEET

Matrix: Aqueous

B8J0073

Method: 537 PFAS DW DoD Unmodified

Chemist:

Prep Date: 10/10/18

Prep Time: 0810

Prepared using: LCMS - SPE Extraction-LCMS

BalanceID: <u>HRMS-8 HB 10/9/18</u>							
Cen	VISTA Sample ID	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	SS/NS CHEM/WIT DATE	SPE	IS CHEM/WIT DATE
<input type="checkbox"/>	B8J0073-BLK1 (A)	NA	NA	(0.250)	FR 10/10/18		AE 10/11/18
<input type="checkbox"/>	B8J0073-BS1			(0.250)			
<input type="checkbox"/>	B8J0073-BSD1			(0.250)			
<input type="checkbox"/>	1803255-01	287.33	37.58	0.24975			
<input type="checkbox"/>	1803255-02	295.28	37.19	0.25809			
<input type="checkbox"/>	1803255-03	301.02	37.63	0.26339			
<input type="checkbox"/>	1803255-04	299.63	37.07	0.26256			

SS/IS: <u>18H1309, 20µL (V1)</u> NS: <u>18H1311, 20µL (V4)</u> IS/RS: <u>18H1310, 20µL (V1)</u>	SPE Chem: <u>Strata X 33µm 500mg/6 mL</u> Lot#: <u>S18-0048391</u> Ele SOLV: <u>MeOH</u> Lot#: <u>J8069209</u> Final Volume(s) <u>1 mL</u>	Notes: <u>(A) 1.25 g TriZma added to QCS HB 10/9/18</u>
---	--	---

Comments: Assume 1 g = 1 mL
Cen = Centrifuged

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
1803255-01	0.24975 ✓	NA	NA	1000	10-Oct-18 08:10	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803255-02	0.25809 ✓	↓	↓	1000	10-Oct-18 08:10	MAC			QC Water	537 PFAS DW DoD Unmod
1803255-03	0.26339 ✓	↓	↓	1000	10-Oct-18 08:10	MAC			Drinking Water	537 PFAS DW DoD Unmod
1803255-04	0.26256 ✓	↓	↓	1000	10-Oct-18 08:10	MAC			QC Water	537 PFAS DW DoD Unmod
B8J0073-BLK1	0.25 ✓	↓	↓	1000	10-Oct-18 08:10	MAC				QC
B8J0073-BS1	0.25 ✓	↓	↓	1000	10-Oct-18 08:10	MAC	18H1311 ✓	20 ✓		QC
B8J0073-BSD1	0.25 ✓	↓	↓	1000	10-Oct-18 08:10	MAC	18H1311 ✓	20 ✓		QC

~C 10/11/18

**INJECTION INTERNAL STANDARD (IIS) AREAS,
AND
CONTINUING CALIBRATION VERIFICATIONS (CCV)**

ICAL

Compound 18: 13C2-PFOA

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area%
1 IPA	181011G1_1	Analyte	10			5732.11	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	10	4.23	6753.96	5732.11	117.83
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	10	4.23	5563.49	5732.11	97.06
4 B8J0073-BSD1 LFBD 0.25	181011G1_4	Analyte	10	4.22	5865.70	5732.11	102.33
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	10	4.22	5998.31	5732.11	104.64
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	10	4.22	6625.86	5732.11	115.59
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	10	4.23	5966.84	5732.11	104.09
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	10	4.23	6367.34	5732.11	111.08
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	10	4.23	6836.72	5732.11	119.27
10 IPA	181011G1_10	Analyte	10			5732.11	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	10	4.23	6936.15	5732.11	121.01

Compound 19: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area%
1 IPA	181011G1_1	Analyte	28.7			13457.00	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	28.7	4.62	9991.26	13457.00	74.25
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	28.7	4.61	10594.32	13457.00	78.73
4 B8J0073-BSD1 LFBD 0.25	181011G1_4	Analyte	28.7	4.61	10382.77	13457.00	77.16
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	28.7	4.61	9675.29	13457.00	71.90
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	28.7	4.61	10785.08	13457.00	80.14
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	28.7	4.61	9912.26	13457.00	73.66
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	28.7	4.61	10543.64	13457.00	78.35
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	28.7	4.60	11076.53	13457.00	82.31
10 IPA	181011G1_10	Analyte	28.7			13457.00	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	28.7	4.61	10296.69	13457.00	76.52

Compound 20: d3-N-MeFOSAA

ID	Name	Type	Std. Conc	RT	Area	ICAL Area	Area%
1 IPA	181011G1_1	Analyte	40			14928.39	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	40	4.95	14779.83	14928.39	99.00
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	40	4.96	15439.65	14928.39	103.42
4 B8J0073-BSD1 LFB 0.25	181011G1_4	Analyte	40	4.95	12683.31	14928.39	84.96
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	40	4.94	14217.79	14928.39	95.24
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	40	4.95	12777.71	14928.39	85.59
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	40	4.95	13990.63	14928.39	93.72
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	40	4.95	12937.77	14928.39	86.67
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	40	4.95	14394.15	14928.39	96.42
10 IPA	181011G1_10	Analyte	40			14928.39	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	40	4.95	14779.83	14928.39	99.00

CCAL**Compound 18: 13C2-PFOA**

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area%
1 IPA	181011G1_1	Analyte	10			6753.96	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	10	4.23	6753.96	6753.96	100.00
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	10	4.23	5563.49	6753.96	82.37
4 B8J0073-BSD1 LFB 0.25	181011G1_4	Analyte	10	4.22	5865.70	6753.96	86.85
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	10	4.22	5998.31	6753.96	88.81
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	10	4.22	6625.86	6753.96	98.10
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	10	4.23	5966.84	6753.96	88.35
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	10	4.23	6367.34	6753.96	94.28
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	10	4.23	6836.72	6753.96	101.23
10 IPA	181011G1_10	Analyte	10			6753.96	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	10	4.23	6936.15	6753.96	102.70

Compound 19: 13C4-PFOS

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area%
1 IPA	181011G1_1	Analyte	28.7			9991.26	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	28.7	4.62	9991.26	9991.26	100.00
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	28.7	4.61	10594.32	9991.26	106.04
4 B8J0073-BSD1 LFB 0.25	181011G1_4	Analyte	28.7	4.61	10382.77	9991.26	103.92
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	28.7	4.61	9675.29	9991.26	96.84
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	28.7	4.61	10785.08	9991.26	107.95
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	28.7	4.61	9912.26	9991.26	99.21
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	28.7	4.61	10543.64	9991.26	105.53
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	28.7	4.60	11076.53	9991.26	110.86
10 IPA	181011G1_10	Analyte	28.7			9991.26	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	28.7	4.61	10296.69	9991.26	103.06

Compound 20: d3-N-MeFOSAA

ID	Name	Type	Std. Conc	RT	Area	CCAL Area	Area%
1 IPA	181011G1_1	Analyte	40			14779.83	0.00
2 ST181011G1-1 PFC CS-2 537 18J0403	181011G1_2	Analyte	40	4.95	14779.83	14779.83	100.00
3 B8J0073-BS1 LFB 0.25	181011G1_3	Analyte	40	4.96	15439.65	14779.83	104.46
4 B8J0073-BSD1 LFB 0.25	181011G1_4	Analyte	40	4.95	12683.31	14779.83	85.81
5 B8J0073-BLK1 LRB 0.25	181011G1_5	Analyte	40	4.94	14217.79	14779.83	96.20
6 1803255-01 CAL-DW13-20181004 0.24975	181011G1_6	Analyte	40	4.95	12777.71	14779.83	86.45
7 1803255-02 CAL-DW13-FRB-20181004 0.25809	181011G1_7	Analyte	40	4.95	13990.63	14779.83	94.66
8 1803255-03 CAL-DW14-20181004 0.26339	181011G1_8	Analyte	40	4.95	12937.77	14779.83	87.54
9 1803255-04 CAL-DW14-FRB-20181004 0.26256	181011G1_9	Analyte	40	4.95	14394.15	14779.83	97.39
10 IPA	181011G1_10	Analyte	40			14779.83	0.00
11 ST181011G1-2 PFC CS0 537 18J0405	181011G1_11	Analyte	40	4.95	14779.83	14779.83	100.00

Dataset: X:\G1.PRO\Results\2018\181011G1\181011G1-2.qld

CCV

Last Altered: Friday, October 12, 2018 11:35:09 Pacific Daylight Time

Printed: Friday, October 12, 2018 11:38:51 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1011.mdb 12 Oct 2018 11:32:54

Calibration: X:\G1.pro\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

MT
10/15/18

Name: 181011G1_2, Date: 11-Oct-2018, Time: 12:48:42, ID: ST181011G1-1 PFC CS-2 537 18J0403, Description: PFC CS-2 537 18J0403

#	Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	298.8 > 80.2	2.85e2	9.99e3	1.00		2.93	2.93	0.818	1.10	123.7
2	2 PFHxA	312.8 > 269.0	6.19e2	6.75e3	1.00		3.28	3.29	0.917	0.888	88.8
3	3 PFHpA	362.8 > 319.0	6.34e2	6.75e3	1.00		3.80	3.80	0.939	0.872	87.2
4	4 PFHxS	398.7 > 80.2	2.44e2	9.99e3	1.00		3.93	3.92	0.701	0.978	107.3
5	5 PFOA	412.7 > 368.9	6.27e2	6.75e3	1.00		4.23	4.23	0.928	0.899	89.9
6	6 PFNA	462.8 > 419.0	5.37e2	6.75e3	1.00		4.55	4.56	0.795	0.821	82.1
7	7 PFOS	498.7 > 80.2	9.62e1	9.99e3	1.00		4.61	4.62	0.276	0.735	79.2
8	8 PFDA	512.8 > 468.9	9.37e2	6.75e3	1.00		4.82	4.83	1.39	1.07	107.5
9	9 N-MeFOSAA	569.8 > 419.0	2.01e2	1.48e4	1.00		4.95	4.97	0.544	0.775	77.5
10	10 N-EtFOSAA	583.8 > 419.0	1.83e2	1.48e4	1.00		5.11	5.10	0.494	0.763	76.3
11	11 PFUnA	562.7 > 518.9	7.06e2	6.75e3	1.00		5.11	5.12	1.05	0.735	73.5
12	12 PFDoA	612.8 > 569.0	7.49e2	6.75e3	1.00		5.37	5.38	1.11	0.916	91.6
13	13 PFTTrDA	662.8 > 619.0	7.22e2	6.75e3	1.00		5.58	5.59	1.07	0.866	86.6
14	14 PFTeDA	712.8 > 669.0	8.63e2	6.75e3	1.00		5.75	5.75	1.28	0.979	97.9
15	15 13C2-PFHxA	314.9 > 270.0	6.19e3	6.75e3	1.00	1.102	3.29	3.29	9.16	8.32	83.2
16	16 13C2-PFDA	514.8 > 470.0	7.20e3	6.75e3	1.00	1.199	4.87	4.83	10.7	8.90	89.0
17	17 d5-N-EtFOSAA	588.8 > 419.0	1.14e4	1.48e4	1.00	0.820	5.08	5.10	31.0	37.8	94.4
18	18 13C2-PFOA	414.8 > 370.0	6.75e3	6.75e3	1.00	1.000	4.23	4.23	10.0	10.0	100.0
19	19 13C4-PFOS	502.8 > 80.2	9.99e3	9.99e3	1.00	1.000	4.61	4.62	28.7	28.7	100.0
20	20 d3-N-MeFOSAA	572.7 > 419.0	1.48e4	1.48e4	1.00	1.000	4.95	4.95	40.0	40.0	100.0

WBF 10/12/18

Dataset: Untitled

Last Altered: Friday, October 12, 2018 11:39:18 Pacific Daylight Time
Printed: Friday, October 12, 2018 11:39:43 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1011.mdb 12 Oct 2018 11:32:54
Calibration: X:\G1.pro\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

Compound name: PFBS

	# Name	ID	Acq.Date	Acq.Time
1	1 181011G1_1	IPA	11-Oct-18	12:36:39
2	2 181011G1_2	ST181011G1-1 PFC CS-2 537 18J0403	11-Oct-18	12:48:42
3	3 181011G1_3	B8J0073-BS1 LFB 0.25 ✓	11-Oct-18	14:45:41
4	4 181011G1_4	B8J0073-BSD1 LFB 0.25	11-Oct-18	14:57:42
5	5 181011G1_5	B8J0073-BLK1 LRB 0.25	11-Oct-18	15:10:41
6	6 181011G1_6	1803255-01 CAL-DW13-20181004 0.24...	11-Oct-18	15:23:39
7	7 181011G1_7	1803255-02 CAL-DW13-FRB-2018100...	11-Oct-18	15:36:36
8	8 181011G1_8	1803255-03 CAL-DW14-20181004 0.26...	11-Oct-18	15:49:34
9	9 181011G1_9	1803255-04 CAL-DW14-FRB-2018100...	11-Oct-18	16:02:32
10	10 181011G1_10	IPA	11-Oct-18	16:15:29
11	11 181011G1_11	ST181011G1-2 PFC CS0 537 18J0405 ✓	11-Oct-18	16:28:27

Dataset: X:\G1.PRO\Results\2018\181011G1\181011G1-11.qld

CCV

Last Altered: Friday, October 12, 2018 11:37:08 Pacific Daylight Time
Printed: Friday, October 12, 2018 11:37:38 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1011.mdb 12 Oct 2018 11:32:54 ✓
Calibration: X:\G1.pro\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25 ✓

MTT
10/15/18

Name: 181011G1_11, Date: 11-Oct-2018, Time: 16:28:27, ID: ST181011G1-2 PFC CS0 537 18J0405, Description: PFC CS0 537 18J0405 ✓

	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	298.8 > 80.2	1.30e3	1.03e4	1.00		2.92	2.92	3.62	4.86	109.4
2	2 PFHxA	312.8 > 269.0	2.97e3	6.94e3	1.00		3.28	3.28	4.28	4.14	82.9
3	3 PFHpA	362.8 > 319.0	3.07e3	6.94e3	1.00		3.80	3.80	4.43	4.12	82.3
4	4 PFHxS	398.7 > 80.2	1.35e3	1.03e4	1.00		3.92	3.92	3.77	5.25	115.2
5	5 PFOA	412.7 > 368.9	3.08e3	6.94e3	1.00		4.23	4.23	4.44	4.30	86.0
6	6 PFNA	462.8 > 419.0	3.22e3	6.94e3	1.00		4.55	4.55	4.64	4.79	95.8
7	7 PFOS	498.7 > 80.2	5.54e2	1.03e4	1.00		4.60	4.60	1.54	4.11	88.5
8	8 PFDA	512.8 > 468.9	3.75e3	6.94e3	1.00		4.82	4.82	5.40	4.19	83.7
9	9 N-MeFOSAA	569.8 > 419.0	1.35e3	1.48e4	1.00		4.95	4.95	3.64	5.20	103.9
10	10 N-EiFOSAA	583.8 > 419.0	1.22e3	1.48e4	1.00		5.10	5.10	3.31	5.12	102.3
11	11 PFUnA	562.7 > 518.9	3.93e3	6.94e3	1.00		5.11	5.11	5.67	3.98	79.7
12	12 PFDoA	612.8 > 569.0	3.69e3	6.94e3	1.00		5.37	5.37	5.32	4.39	87.8
13	13 PFTTrDA	662.8 > 619.0	3.87e3	6.94e3	1.00		5.58	5.58	5.59	4.53	90.6
14	14 PFTeDA	712.8 > 669.0	4.34e3	6.94e3	1.00		5.75	5.75	6.25	4.79	95.7
15	15 13C2-PFHxA	314.9 > 270.0	6.12e3	6.94e3	1.00	1.102	3.30	3.28	8.83	8.01	80.1
16	16 13C2-PFDA	514.8 > 470.0	7.25e3	6.94e3	1.00	1.199	4.87	4.82	10.4	8.72	87.2
17	17 d5-N-EiFOSAA	588.8 > 419.0	1.36e4	1.48e4	1.00	0.820	5.08	5.10	36.7	44.8	112.1
18	18 13C2-PFOA	414.8 > 370.0	6.94e3	6.94e3	1.00	1.000	4.23	4.23	10.0	10.0	100.0
19	19 13C4-PFOS	502.8 > 80.2	1.03e4	1.03e4	1.00	1.000	4.61	4.61	28.7	28.7	100.0
20	20 d3-N-MeFOSAA	572.7 > 419.0	1.48e4	1.48e4	1.00	1.000	4.95	4.95	40.0	40.0	100.0

VBF 10/12/18

Dataset: Untitled

Last Altered: Friday, October 12, 2018 11:39:18 Pacific Daylight Time
Printed: Friday, October 12, 2018 11:39:43 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1011.mdb 12 Oct 2018 11:32:54
Calibration: X:\G1.pro\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

Compound name: PFBS

#	Name	ID	Acq.Date	Acq.Time
1	1 181011G1_1	IPA	11-Oct-18	12:36:39
2	2 181011G1_2	ST181011G1-1 PFC CS-2 537 18J0403	11-Oct-18	12:48:42
3	3 181011G1_3	B8J0073-BS1 LFB 0.25	11-Oct-18	14:45:41
4	4 181011G1_4	B8J0073-BSD1 LFB 0.25	11-Oct-18	14:57:42
5	5 181011G1_5	B8J0073-BLK1 LRB 0.25	11-Oct-18	15:10:41
6	6 181011G1_6	1803255-01 CAL-DW13-20181004 0.24...	11-Oct-18	15:23:39
7	7 181011G1_7	1803255-02 CAL-DW13-FRB-2018100... 11-Oct-18	11-Oct-18	15:36:36
8	8 181011G1_8	1803255-03 CAL-DW14-20181004 0.26...	11-Oct-18	15:49:34
9	9 181011G1_9	1803255-04 CAL-DW14-FRB-2018100... 11-Oct-18	11-Oct-18	16:02:32
10	10 181011G1_10	IPA	11-Oct-18	16:15:29
11	11 181011G1_11	ST181011G1-2 PFC CS0 537 18J0405	11-Oct-18	16:28:27

INITIAL CALIBRATION (ICAL)
INCLUDING ASSOCIATED
INITIAL CALIBRATION VERIFICATION (ICV) AND INSTRUMENT BLANK (IB)

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low pt
 PFOS = 0.464
 EtFOSAA = 1.0

high pt
 PFHxA = 75 MeFOSAA = 25
 PFHpA EtFOSAA ↓
 PFOA
 PFNA
 PFDA
 PFUnA
 PFDaA
 PFTDA
 PFTeDA
 ✓✓ 10/9/18

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1005.mdb 06 Oct 2018 09:05:09
 Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

Compound name: PFBS
 Coefficient of Determination: R² = 0.999081
 Calibration curve: 0.744632 * x
 Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.222	2.93	62.733	14224.786	0.127	0.2	-23.4	NO	0.999	NO	bb
2	2 181005G3_3	Standard	0.444	2.93	146.427	13024.970	0.323	0.4	-2.4	NO	0.999	NO	bb
3	3 181005G3_4	Standard	0.888	2.93	303.388	14070.765	0.619	0.8	-6.4	NO	0.999	NO	bb
4	4 181005G3_5	Standard	1.780	2.93	657.534	14081.617	1.340	1.8	1.1	NO	0.999	NO	bb
5	5 181005G3_6	Standard	4.440	2.93	1534.146	14864.415	2.962	4.0	-10.4	NO	0.999	NO	bb
6	6 181005G3_7	Standard	8.840	2.93	2817.001	13089.380	6.177	8.3	-6.2	NO	0.999	NO	bd
7	7 181005G3_8	Standard	22.100	2.93	7487.047	13387.591	16.051	21.6	-2.5	NO	0.999	NO	bb
8	8 181005G3_9	Standard	44.200	2.93	15305.433	12750.208	34.452	46.3	4.7	NO	0.999	NO	bd
9	9 181005G3_10	Standard	66.400	2.92	21674.318	12622.959	49.279	66.2	-0.3	NO	0.999	NO	bb
10	10 181005G3_11	Standard	88.500	2.93	28531.990	12453.261	65.755	88.3	-0.2	NO	0.999	NO	bb

Compound name: PFHxA
 Coefficient of Determination: R² = 0.998629
 Calibration curve: 1.03224 * x
 Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)
 Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	3.29	186.167	5750.953	0.324	0.3	25.4	NO	0.999	NO	bb
2	2 181005G3_3	Standard	0.500	3.29	342.566	6289.390	0.545	0.5	5.5	NO	0.999	NO	bb
3	3 181005G3_4	Standard	1.000	3.28	631.665	5792.523	1.090	1.1	5.6	NO	0.999	NO	bb
4	4 181005G3_5	Standard	2.000	3.28	1220.053	5555.693	2.196	2.1	6.4	NO	0.999	NO	bb
5	5 181005G3_6	Standard	5.000	3.28	3019.632	5865.877	5.148	5.0	-0.3	NO	0.999	NO	bd
6	6 181005G3_7	Standard	10.000	3.28	5624.349	5593.660	10.055	9.7	-2.6	NO	0.999	NO	bd
7	7 181005G3_8	Standard	25.000	3.28	13917.297	5723.753	24.315	23.6	-5.8	NO	0.999	NO	bd
8	8 181005G3_9	Standard	50.000	3.28	28629.891	5320.454	53.811	52.1	4.3	NO	0.999	NO	bb
9	9 181005G3_10	Standard	75.000	3.28	43697.902	5696.708	76.707	74.3	-0.9	NO	0.999	NO	bd
10	10 181005G3_11	Standard	100.000	3.28	54433.914	5059.471	107.588	104.2	4.2	NO	0.999	NO	bbX

✓✓ 10/9/18

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Compound name: PFHpA

Coefficient of Determination: R² = 0.998832

Calibration curve: 1.07676 * x

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	3.81	130.943	5750.953	0.228	0.2	-15.4	NO	0.999	NO	bb
2	2 181005G3_3	Standard	0.500	3.81	322.857	6289.390	0.513	0.5	-4.7	NO	0.999	NO	bb
3	3 181005G3_4	Standard	1.000	3.80	580.985	5792.523	1.003	0.9	-6.9	NO	0.999	NO	bb
4	4 181005G3_5	Standard	2.000	3.80	1306.926	5555.693	2.352	2.2	9.2	NO	0.999	NO	bb
5	5 181005G3_6	Standard	5.000	3.81	3218.410	5865.877	5.487	5.1	1.9	NO	0.999	NO	bb
6	6 181005G3_7	Standard	10.000	3.81	6242.474	5593.660	11.160	10.4	3.6	NO	0.999	NO	bb
7	7 181005G3_8	Standard	25.000	3.80	14793.167	5723.753	25.845	24.0	-4.0	NO	0.999	NO	bd
8	8 181005G3_9	Standard	50.000	3.81	29748.197	5320.454	55.913	51.9	3.9	NO	0.999	NO	bb
9	9 181005G3_10	Standard	75.000	3.80	45118.750	5696.708	79.201	73.6	-1.9	NO	0.999	NO	bb
10	10 181005G3_11	Standard	100.000	3.81	57904.727	5059.471	114.448	106.3	6.3	NO	0.999	NO	bbX

Compound name: PFHxS

Coefficient of Determination: R² = 0.999312

Calibration curve: 0.716646 * x

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.228	3.93	62.383	14224.786	0.126	0.2	-23.0	NO	0.999	NO	MM
2	2 181005G3_3	Standard	0.456	3.93	140.388	13024.970	0.309	0.4	-5.3	NO	0.999	NO	MM
3	3 181005G3_4	Standard	0.912	3.93	281.891	14070.765	0.575	0.8	-12.0	NO	0.999	NO	MM
4	4 181005G3_5	Standard	1.820	3.94	618.664	14081.617	1.261	1.8	-3.3	NO	0.999	NO	MM
5	5 181005G3_6	Standard	4.560	3.94	1624.240	14864.415	3.136	4.4	-4.0	NO	0.999	NO	MM
6	6 181005G3_7	Standard	9.120	3.93	3064.151	13089.380	6.719	9.4	2.8	NO	0.999	NO	MM
7	7 181005G3_8	Standard	22.800	3.93	7268.626	13387.591	15.582	21.7	-4.6	NO	0.999	NO	MM
8	8 181005G3_9	Standard	45.500	3.93	14813.804	12750.208	33.345	46.5	2.3	NO	0.999	NO	MM
9	9 181005G3_10	Standard	68.200	3.93	21944.377	12622.959	49.894	69.6	2.1	NO	0.999	NO	MM
10	10 181005G3_11	Standard	91.000	3.93	27918.807	12453.261	64.342	89.8	-1.3	NO	0.999	NO	MM

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Compound name: PFOA

Coefficient of Determination: R² = 0.997085

Calibration curve: 1.03308 * x

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	4.26	100.437	5750.953	0.175	0.2	-32.4	NO	0.997	NO	MM
2	2 181005G3_3	Standard	0.500	4.24	298.241	6289.390	0.474	0.5	-8.2	NO	0.997	NO	MM
3	3 181005G3_4	Standard	1.000	4.25	472.692	5792.523	0.816	0.8	-21.0	NO	0.997	NO	MM
4	4 181005G3_5	Standard	2.000	4.25	1130.231	5555.693	2.034	2.0	-1.5	NO	0.997	NO	MM
5	5 181005G3_6	Standard	5.000	4.25	3177.579	5865.877	5.417	5.2	4.9	NO	0.997	NO	bb
6	6 181005G3_7	Standard	10.000	4.25	5597.691	5593.660	10.007	9.7	-3.1	NO	0.997	NO	bd
7	7 181005G3_8	Standard	25.000	4.25	13515.015	5723.753	23.612	22.9	-8.6	NO	0.997	NO	bd
8	8 181005G3_9	Standard	50.000	4.25	29153.088	5320.454	54.794	53.0	6.1	NO	0.997	NO	bb
9	9 181005G3_10	Standard	75.000	4.24	43866.152	5696.708	77.003	74.5	-0.6	NO	0.997	NO	bd
10	10 181005G3_11	Standard	100.000	4.25	56620.234	5059.471	111.909	108.3	8.3	NO	0.997	NO	bdX

Compound name: PFNA

Coefficient of Determination: R² = 0.997889

Calibration curve: 0.969177 * x

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	4.55	101.443	5750.953	0.176	0.2	-27.2	NO	0.998	NO	MM
2	2 181005G3_3	Standard	0.500	4.56	285.927	6289.390	0.455	0.5	-6.2	NO	0.998	NO	MM
3	3 181005G3_4	Standard	1.000	4.56	442.730	5792.523	0.764	0.8	-21.1	NO	0.998	NO	MM
4	4 181005G3_5	Standard	2.000	4.56	1159.673	5555.693	2.087	2.2	7.7	NO	0.998	NO	bb
5	5 181005G3_6	Standard	5.000	4.56	2729.900	5865.877	4.654	4.8	-4.0	NO	0.998	NO	MM
6	6 181005G3_7	Standard	10.000	4.56	5465.954	5593.660	9.772	10.1	0.8	NO	0.998	NO	MM
7	7 181005G3_8	Standard	25.000	4.56	12902.569	5723.753	22.542	23.3	-7.0	NO	0.998	NO	bb
8	8 181005G3_9	Standard	50.000	4.56	27084.033	5320.454	50.905	52.5	5.0	NO	0.998	NO	bb
9	9 181005G3_10	Standard	75.000	4.56	41126.078	5696.708	72.193	74.5	-0.7	NO	0.998	NO	bd
10	10 181005G3_11	Standard	100.000	4.56	52465.574	5059.471	103.698	107.0	7.0	NO	0.998	NO	bbX

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Compound name: PFOS

Coefficient of Determination: R² = 0.996669

Calibration curve: 0.37602 * x

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.232	4.61	7.787	14224.786	0.016	0.0	-82.0	NO	0.997	NO	MMX
2	2 181005G3_3	Standard	0.464	4.62	60.454	13024.970	0.133	0.4	-23.7	NO	0.997	NO	MM
3	3 181005G3_4	Standard	0.928	4.61	125.885	14070.765	0.257	0.7	-26.4	NO	0.997	NO	MM
4	4 181005G3_5	Standard	1.860	4.61	270.434	14081.617	0.551	1.5	-21.2	NO	0.997	NO	MM
5	5 181005G3_6	Standard	4.640	4.61	777.120	14864.415	1.500	4.0	-14.0	NO	0.997	NO	MM
6	6 181005G3_7	Standard	9.240	4.61	1438.374	13089.380	3.154	8.4	-9.2	NO	0.997	NO	MM
7	7 181005G3_8	Standard	23.100	4.62	3630.333	13387.591	7.783	20.7	-10.4	NO	0.997	NO	MM
8	8 181005G3_9	Standard	46.200	4.61	7690.533	12750.208	17.311	46.0	-0.4	NO	0.997	NO	MM
9	9 181005G3_10	Standard	69.400	4.61	11607.759	12622.959	26.392	70.2	1.1	NO	0.997	NO	MM
10	10 181005G3_11	Standard	92.500	4.61	15749.727	12453.261	36.297	96.5	4.4	NO	0.997	NO	MM

Compound name: PFDA

Coefficient of Determination: R² = 0.993505

Calibration curve: 1.29047 * x

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	4.85	188.673	5750.953	0.328	0.3	1.7	NO	0.994	NO	MM
2	2 181005G3_3	Standard	0.500	4.85	284.905	6289.390	0.453	0.4	-29.8	NO	0.994	NO	MM
3	3 181005G3_4	Standard	1.000	4.85	779.928	5792.523	1.346	1.0	4.3	NO	0.994	NO	bb
4	4 181005G3_5	Standard	2.000	4.86	1606.105	5555.693	2.891	2.2	12.0	NO	0.994	NO	bb
5	5 181005G3_6	Standard	5.000	4.86	4177.451	5865.877	7.122	5.5	10.4	NO	0.994	NO	MM
6	6 181005G3_7	Standard	10.000	4.86	7281.195	5593.660	13.017	10.1	0.9	NO	0.994	NO	bd
7	7 181005G3_8	Standard	25.000	4.85	17274.590	5723.753	30.181	23.4	-6.5	NO	0.994	NO	bd
8	8 181005G3_9	Standard	50.000	4.86	37924.234	5320.454	71.280	55.2	10.5	NO	0.994	NO	MM
9	9 181005G3_10	Standard	75.000	4.84	51925.504	5696.708	91.150	70.6	-5.8	NO	0.994	NO	bd
10	10 181005G3_11	Standard	100.000	4.85	67462.273	5059.471	133.339	103.3	3.3	NO	0.994	NO	bbX

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Compound name: N-MeFOSAA

Coefficient of Determination: $R^2 = 0.994919$

Calibration curve: $0.701045 * x$

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	4.99	46.380	14384.714	0.129	0.2	-26.4	NO	0.995	NO	MM
2	2 181005G3_3	Standard	0.500	4.99	120.021	15125.046	0.317	0.5	-9.4	NO	0.995	NO	MM
3	3 181005G3_4	Standard	1.000	4.99	211.569	16107.638	0.525	0.7	-25.1	NO	0.995	NO	MM
4	4 181005G3_5	Standard	2.000	4.98	497.402	16215.109	1.227	1.8	-12.5	NO	0.995	NO	MM
5	5 181005G3_6	Standard	5.000	4.98	1344.375	13816.685	3.892	5.6	11.0	NO	0.995	NO	MM
6	6 181005G3_7	Standard	10.000	4.99	2546.825	15078.015	6.756	9.6	-3.6	NO	0.995	NO	MM
7	7 181005G3_8	Standard	25.000	4.99	6136.417	13771.519	17.824	25.4	1.7	NO	0.995	NO	MM
8	8 181005G3_9	Standard	50.000	4.98	15266.173	13206.061	46.240	66.0	31.9	NO	0.995	NO	MMX
9	9 181005G3_10	Standard	75.000	4.98	20135.230	13175.728	61.128	87.2	16.3	NO	0.995	NO	MMX
10	10 181005G3_11	Standard	100.000	4.98	26385.873	14530.470	72.636	103.6	3.6	NO	0.995	NO	MMX

Compound name: N-EtFOSAA

Coefficient of Determination: $R^2 = 0.990622$

Calibration curve: $0.647387 * x$

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	5.12	37.074	14384.714	0.103	0.2	-36.3	NO	0.991	NO	MMX
2	2 181005G3_3	Standard	0.500	5.11	52.971	15125.046	0.140	0.2	-56.7	NO	0.991	NO	MMX
3	3 181005G3_4	Standard	1.000	5.12	202.425	16107.638	0.503	0.8	-22.4	NO	0.991	NO	MM
4	4 181005G3_5	Standard	2.000	5.12	444.695	16215.109	1.097	1.7	-15.3	NO	0.991	NO	MM
5	5 181005G3_6	Standard	5.000	5.12	1326.652	13816.685	3.841	5.9	18.7	NO	0.991	NO	MM
6	6 181005G3_7	Standard	10.000	5.12	2332.617	15078.015	6.188	9.6	-4.4	NO	0.991	NO	MM
7	7 181005G3_8	Standard	25.000	5.12	5580.601	13771.519	16.209	25.0	0.2	NO	0.991	NO	MM
8	8 181005G3_9	Standard	50.000	5.12	12258.305	13206.061	37.129	57.4	14.7	NO	0.991	NO	MMX
9	9 181005G3_10	Standard	75.000	5.11	19870.506	13175.728	60.325	93.2	24.2	NO	0.991	NO	MMX
10	10 181005G3_11	Standard	100.000	5.11	21989.418	14530.470	60.533	93.5	-6.5	NO	0.991	NO	MMX

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Compound name: PFUnA

Coefficient of Determination: $R^2 = 0.997347$

Calibration curve: $1.422 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	5.14	186.869	5750.953	0.325	0.2	-8.6	NO	0.997	NO	MM
2	2 181005G3_3	Standard	0.500	5.13	356.018	6289.390	0.566	0.4	-20.4	NO	0.997	NO	bb
3	3 181005G3_4	Standard	1.000	5.13	744.950	5792.523	1.286	0.9	-9.6	NO	0.997	NO	bb
4	4 181005G3_5	Standard	2.000	5.13	1636.588	5555.693	2.946	2.1	3.6	NO	0.997	NO	bb
5	5 181005G3_6	Standard	5.000	5.13	4110.102	5865.877	7.007	4.9	-1.5	NO	0.997	NO	bb
6	6 181005G3_7	Standard	10.000	5.13	7913.447	5593.660	14.147	9.9	-0.5	NO	0.997	NO	bb
7	7 181005G3_8	Standard	25.000	5.13	18624.023	5723.753	32.538	22.9	-8.5	NO	0.997	NO	bb
8	8 181005G3_9	Standard	50.000	5.13	40225.367	5320.454	75.605	53.2	6.3	NO	0.997	NO	bb
9	9 181005G3_10	Standard	75.000	5.12	60124.441	5696.708	105.542	74.2	-1.0	NO	0.997	NO	bb
10	10 181005G3_11	Standard	100.000	5.12	73444.273	5059.471	145.162	102.1	2.1	NO	0.997	NO	bbX

Compound name: PFDoA

Coefficient of Determination: $R^2 = 0.995011$

Calibration curve: $1.21116 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	5.37	140.094	5750.953	0.244	0.2	-19.5	NO	0.995	NO	bb
2	2 181005G3_3	Standard	0.500	5.37	392.005	6289.390	0.623	0.5	2.9	NO	0.995	NO	bb
3	3 181005G3_4	Standard	1.000	5.36	661.895	5792.523	1.143	0.9	-5.7	NO	0.995	NO	bb
4	4 181005G3_5	Standard	2.000	5.37	1462.169	5555.693	2.632	2.2	8.6	NO	0.995	NO	bd
5	5 181005G3_6	Standard	5.000	5.36	3614.083	5865.877	6.161	5.1	1.7	NO	0.995	NO	bd
6	6 181005G3_7	Standard	10.000	5.36	7434.696	5593.660	13.291	11.0	9.7	NO	0.995	NO	bd
7	7 181005G3_8	Standard	25.000	5.36	17457.275	5723.753	30.500	25.2	0.7	NO	0.995	NO	bd
8	8 181005G3_9	Standard	50.000	5.36	34733.887	5320.454	65.284	53.9	7.8	NO	0.995	NO	bd
9	9 181005G3_10	Standard	75.000	5.37	48140.523	5696.708	84.506	69.8	-7.0	NO	0.995	NO	bb
10	10 181005G3_11	Standard	100.000	5.36	63080.652	5059.471	124.678	102.9	2.9	NO	0.995	NO	bbX

Dataset: X:\G1.PRO\Results\2018\181005G3\181005G3-CRV.qld

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Compound name: PFTrDA

Coefficient of Determination: $R^2 = 0.999100$

Calibration curve: $1.23315 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	5.57	219.012	5750.953	0.381	0.3	23.5	NO	0.999	NO	bb
2	2 181005G3_3	Standard	0.500	5.58	385.214	6289.390	0.612	0.5	-0.7	NO	0.999	NO	bb
3	3 181005G3_4	Standard	1.000	5.57	620.404	5792.523	1.071	0.9	-13.1	NO	0.999	NO	MM
4	4 181005G3_5	Standard	2.000	5.57	1327.018	5555.693	2.389	1.9	-3.2	NO	0.999	NO	bb
5	5 181005G3_6	Standard	5.000	5.58	3456.570	5865.877	5.893	4.8	-4.4	NO	0.999	NO	bd
6	6 181005G3_7	Standard	10.000	5.57	6829.920	5593.660	12.210	9.9	-1.0	NO	0.999	NO	bb
7	7 181005G3_8	Standard	25.000	5.57	17181.029	5723.753	30.017	24.3	-2.6	NO	0.999	NO	bb
8	8 181005G3_9	Standard	50.000	5.57	34058.375	5320.454	64.014	51.9	3.8	NO	0.999	NO	bb
9	9 181005G3_10	Standard	75.000	5.57	52128.582	5696.708	91.507	74.2	-1.1	NO	0.999	NO	bb
10	10 181005G3_11	Standard	100.000	5.57	66306.430	5059.471	131.054	106.3	6.3	NO	0.999	NO	bbX

Compound name: PFTeDA

Coefficient of Determination: $R^2 = 0.997908$

Calibration curve: $1.30639 * x$

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: Linear, Origin: Force, Weighting: 1/x, Axis trans: None

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	0.250	5.76	174.105	5750.953	0.303	0.2	-7.3	NO	0.998	NO	bb
2	2 181005G3_3	Standard	0.500	5.77	359.291	6289.390	0.571	0.4	-12.5	NO	0.998	NO	bb
3	3 181005G3_4	Standard	1.000	5.76	670.953	5792.523	1.158	0.9	-11.3	NO	0.998	NO	bd
4	4 181005G3_5	Standard	2.000	5.76	1504.940	5555.693	2.709	2.1	3.7	NO	0.998	NO	bb
5	5 181005G3_6	Standard	5.000	5.76	3883.065	5865.877	6.620	5.1	1.3	NO	0.998	NO	bd
6	6 181005G3_7	Standard	10.000	5.76	7365.802	5593.660	13.168	10.1	0.8	NO	0.998	NO	bd
7	7 181005G3_8	Standard	25.000	5.76	18058.844	5723.753	31.551	24.2	-3.4	NO	0.998	NO	bd
8	8 181005G3_9	Standard	50.000	5.76	36970.469	5320.454	69.487	53.2	6.4	NO	0.998	NO	bb
9	9 181005G3_10	Standard	75.000	5.76	54054.086	5696.708	94.887	72.6	-3.2	NO	0.998	NO	bb
10	10 181005G3_11	Standard	100.000	5.77	66708.547	5059.471	131.849	100.9	0.9	NO	0.998	NO	bbX

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Compound name: 13C2-PFHxA

Response Factor: 1.10164

RRF SD: 0.0539755, Relative SD: 4.89954

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	10.000	3.28	6204.534	5750.953	10.789	9.8	-2.1	NO		NO	bd
2	2 181005G3_3	Standard	10.000	3.28	6379.967	6289.390	10.144	9.2	-7.9	NO		NO	bd
3	3 181005G3_4	Standard	10.000	3.28	6101.985	5792.523	10.534	9.6	-4.4	NO		NO	bd
4	4 181005G3_5	Standard	10.000	3.28	6344.475	5555.693	11.420	10.4	3.7	NO		NO	bb
5	5 181005G3_6	Standard	10.000	3.28	6547.506	5865.877	11.162	10.1	1.3	NO		NO	bd
6	6 181005G3_7	Standard	10.000	3.28	6500.032	5593.660	11.620	10.5	5.5	NO		NO	bb
7	7 181005G3_8	Standard	10.000	3.28	6459.735	5723.753	11.286	10.2	2.4	NO		NO	bb
8	8 181005G3_9	Standard	10.000	3.28	6207.448	5320.454	11.667	10.6	5.9	NO		NO	bb
9	9 181005G3_10	Standard	10.000	3.28	5996.309	5696.708	10.526	9.6	-4.5	NO		NO	bd
10	10 181005G3_11	Standard	10.000	3.28	5922.341	5059.471	11.705	10.6	6.3	NO		NO	bbX

Compound name: 13C2-PFDA

Response Factor: 1.19855

RRF SD: 0.0638028, Relative SD: 5.32332

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	10.000	4.86	6716.737	5750.953	11.679	9.7	-2.6	NO		NO	bb
2	2 181005G3_3	Standard	10.000	4.86	7031.245	6289.390	11.180	9.3	-6.7	NO		NO	bb
3	3 181005G3_4	Standard	10.000	4.85	6702.071	5792.523	11.570	9.7	-3.5	NO		NO	bb
4	4 181005G3_5	Standard	10.000	4.85	6320.592	5555.693	11.377	9.5	-5.1	NO		NO	bb
5	5 181005G3_6	Standard	10.000	4.85	7592.240	5865.877	12.943	10.8	8.0	NO		NO	bb
6	6 181005G3_7	Standard	10.000	4.86	6826.515	5593.660	12.204	10.2	1.8	NO		NO	bb
7	7 181005G3_8	Standard	10.000	4.85	7300.034	5723.753	12.754	10.6	6.4	NO		NO	bd
8	8 181005G3_9	Standard	10.000	4.85	6664.819	5320.454	12.527	10.5	4.5	NO		NO	bd
9	9 181005G3_10	Standard	10.000	4.84	6628.669	5696.708	11.636	9.7	-2.9	NO		NO	bd
10	10 181005G3_11	Standard	10.000	4.85	6568.925	5059.471	12.983	10.8	8.3	NO		NO	bdX

Dataset: X:\G1.PRO\Results\2018\181005G3\181005G3-CRV.qld

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Compound name: d5-N-EtFOSAA

Response Factor: 0.819843

RRF SD: 0.0602762, Relative SD: 7.35217

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	40.000	5.12	12147.907	14384.714	33.780	41.2	3.0	NO		NO	bd
2	2 181005G3_3	Standard	40.000	5.12	11551.193	15125.046	30.549	37.3	-6.8	NO		NO	bd
3	3 181005G3_4	Standard	40.000	5.12	12529.479	16107.638	31.114	38.0	-5.1	NO		NO	bd
4	4 181005G3_5	Standard	40.000	5.11	12020.289	16215.109	29.652	36.2	-9.6	NO		NO	bd
5	5 181005G3_6	Standard	40.000	5.12	12454.481	13816.685	36.056	44.0	9.9	NO		NO	bd
6	6 181005G3_7	Standard	40.000	5.12	13225.704	15078.015	35.086	42.8	7.0	NO		NO	bb
7	7 181005G3_8	Standard	40.000	5.12	11471.155	13771.519	33.318	40.6	1.6	NO		NO	bb
8	8 181005G3_9	Standard	40.000	5.11	11087.588	13206.061	33.583	41.0	2.4	NO		NO	bbX
9	9 181005G3_10	Standard	40.000	5.11	10315.094	13175.728	31.315	38.2	-4.5	NO		NO	bcX
10	10 181005G3_11	Standard	40.000	5.11	10672.975	14530.470	29.381	35.8	-10.4	NO		NO	bbX

Compound name: 13C2-PFOA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 18), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	10.000	4.25	5750.953	5750.953	10.000	10.0	0.0	NO		NO	bb
2	2 181005G3_3	Standard	10.000	4.25	6289.390	6289.390	10.000	10.0	0.0	NO		NO	MM
3	3 181005G3_4	Standard	10.000	4.25	5792.523	5792.523	10.000	10.0	0.0	NO		NO	bd
4	4 181005G3_5	Standard	10.000	4.25	5555.693	5555.693	10.000	10.0	0.0	NO		NO	MM
5	5 181005G3_6	Standard	10.000	4.25	5865.877	5865.877	10.000	10.0	0.0	NO		NO	bb
6	6 181005G3_7	Standard	10.000	4.25	5593.660	5593.660	10.000	10.0	0.0	NO		NO	MM
7	7 181005G3_8	Standard	10.000	4.25	5723.753	5723.753	10.000	10.0	0.0	NO		NO	MM
8	8 181005G3_9	Standard	10.000	4.25	5320.454	5320.454	10.000	10.0	0.0	NO		NO	bd
9	9 181005G3_10	Standard	10.000	4.25	5696.708	5696.708	10.000	10.0	0.0	NO		NO	bd
10	10 181005G3_11	Standard	10.000	4.24	5059.471	5059.471	10.000	10.0	0.0	NO		NO	bdX

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Compound name: 13C4-PFOS

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 19), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	28.700	4.62	14224.786	14224.786	28.700	28.7	0.0	NO		NO	MM
2	2 181005G3_3	Standard	28.700	4.62	13024.970	13024.970	28.700	28.7	0.0	NO		NO	MM
3	3 181005G3_4	Standard	28.700	4.61	14070.765	14070.765	28.700	28.7	0.0	NO		NO	bd
4	4 181005G3_5	Standard	28.700	4.61	14081.617	14081.617	28.700	28.7	0.0	NO		NO	bd
5	5 181005G3_6	Standard	28.700	4.62	14864.415	14864.415	28.700	28.7	0.0	NO		NO	MM
6	6 181005G3_7	Standard	28.700	4.62	13089.380	13089.380	28.700	28.7	0.0	NO		NO	bd
7	7 181005G3_8	Standard	28.700	4.62	13387.591	13387.591	28.700	28.7	0.0	NO		NO	bd
8	8 181005G3_9	Standard	28.700	4.61	12750.208	12750.208	28.700	28.7	0.0	NO		NO	MM
9	9 181005G3_10	Standard	28.700	4.61	12622.959	12622.959	28.700	28.7	0.0	NO		NO	bd
10	10 181005G3_11	Standard	28.700	4.61	12453.261	12453.261	28.700	28.7	0.0	NO		NO	bd

Compound name: d3-N-MeFOSAA

Response Factor: 1

RRF SD: 0, Relative SD: 0

Response type: Internal Std (Ref 20), Area * (IS Conc. / IS Area)

Curve type: RF

#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 181005G3_2	Standard	40.000	4.98	14384.714	14384.714	40.000	40.0	0.0	NO		NO	bd
2	2 181005G3_3	Standard	40.000	4.98	15125.046	15125.046	40.000	40.0	0.0	NO		NO	bd
3	3 181005G3_4	Standard	40.000	4.98	16107.638	16107.638	40.000	40.0	0.0	NO		NO	bd
4	4 181005G3_5	Standard	40.000	4.98	16215.109	16215.109	40.000	40.0	0.0	NO		NO	bd
5	5 181005G3_6	Standard	40.000	4.98	13816.685	13816.685	40.000	40.0	0.0	NO		NO	bd
6	6 181005G3_7	Standard	40.000	4.98	15078.015	15078.015	40.000	40.0	0.0	NO		NO	bd
7	7 181005G3_8	Standard	40.000	4.98	13771.519	13771.519	40.000	40.0	0.0	NO		NO	MM
8	8 181005G3_9	Standard	40.000	4.98	13206.061	13206.061	40.000	40.0	0.0	NO		NO	bdX
9	9 181005G3_10	Standard	40.000	4.98	13175.728	13175.728	40.000	40.0	0.0	NO		NO	MMX
10	10 181005G3_11	Standard	40.000	4.97	14530.470	14530.470	40.000	40.0	0.0	NO		NO	bdX

Dataset: X:\G1.PRO\Results\2018\181005G3\181005G3-CRV.qld

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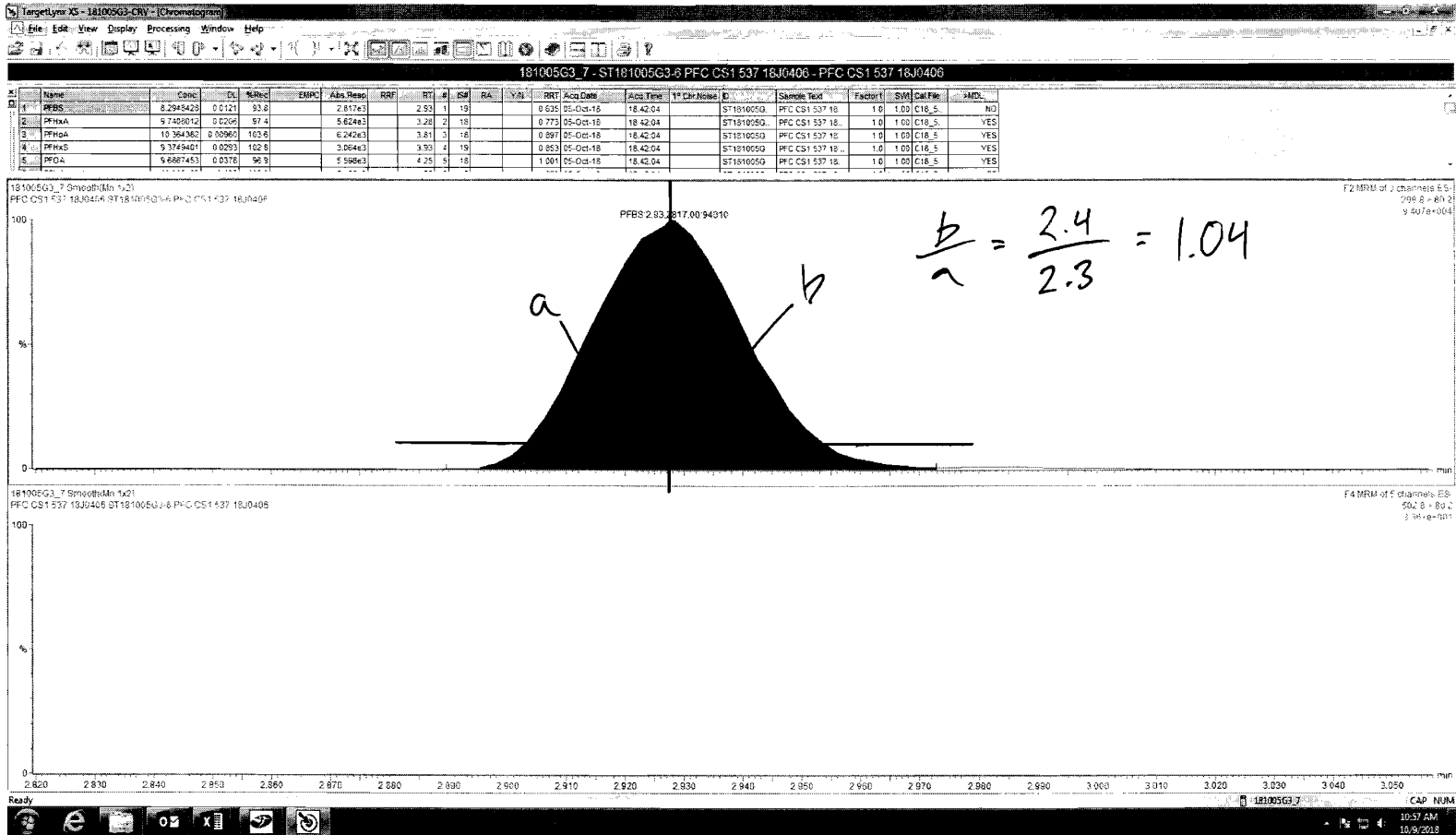
Printed: Tuesday, October 09, 2018 10:43:04 Pacific Daylight Time

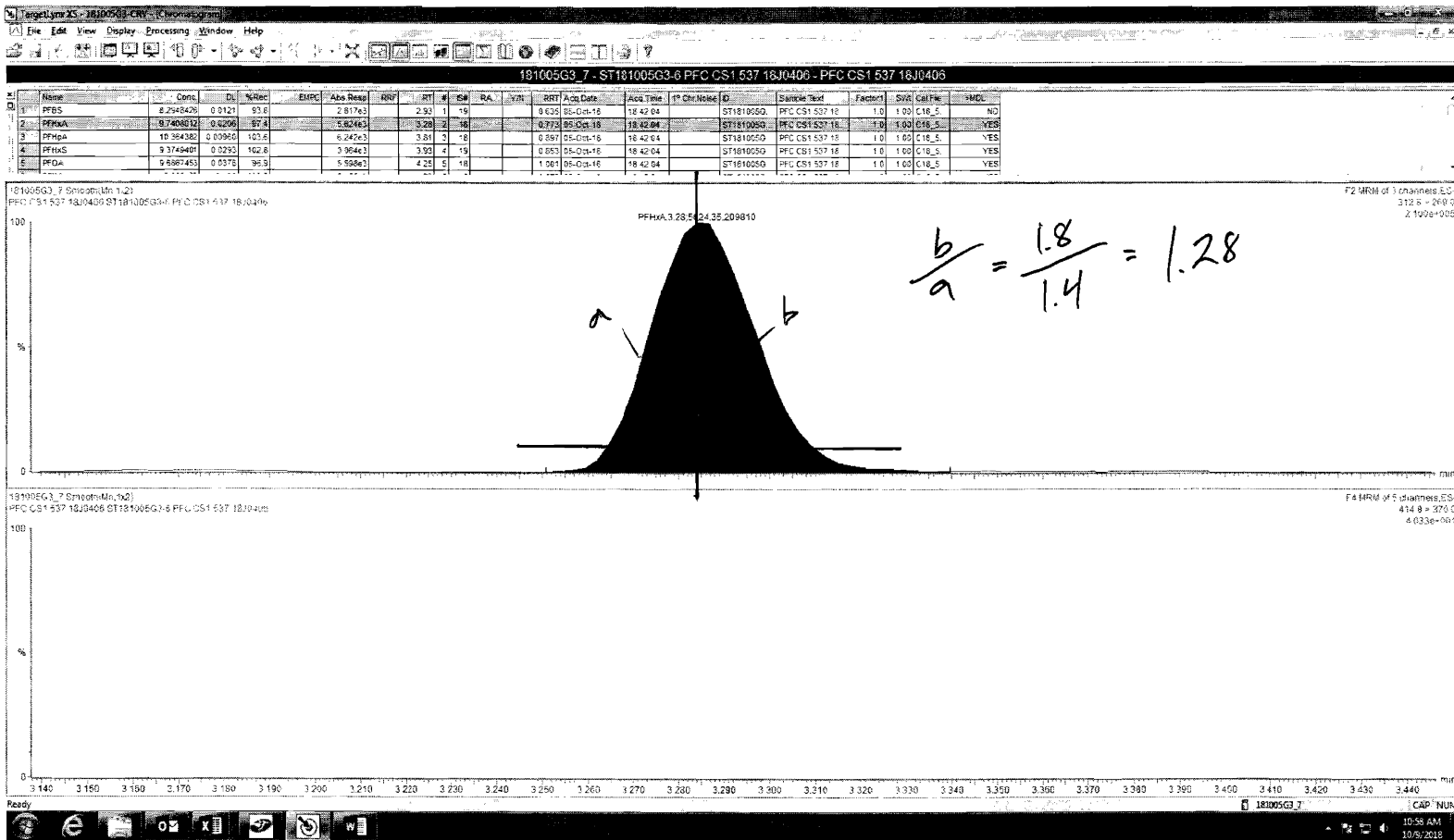
Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1005.mdb 06 Oct 2018 09:05:09

Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

Name: 181005G3_2, Date: 05-Oct-2018, Time: 17:37:20, ID: ST181005G3-1 PFC CS-4 537 18J0401, Description: PFC CS-4 537 18J0401

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBS	19	0.9991	NO	
2	2 PFHxA	18	0.9986	NO	
3	3 PFHpA	18	0.9988	NO	
4	4 PFHxS	19	0.9993	NO	
5	5 PFOA	18	0.9971	NO	
6	6 PFNA	18	0.9979	NO	
7	7 PFOS	19	0.9967	NO	
8	8 PFDA	18	0.9935	NO	
9	9 N-MeFOSAA	20	0.9949	NO	
10	10 N-EtFOSAA	20	0.9906	NO	
11	11 PFUnA	18	0.9973	NO	
12	12 PFDoA	18	0.9950	NO	
13	13 PFTTrDA	18	0.9991	NO	
14	14 PFTeDA	18	0.9979	NO	
15	15 13C2-PFHxA	18		NO	4.900
16	16 13C2-PFDA	18		NO	5.323
17	17 d5-N-EtFOSAA	20		NO	7.352
18	18 13C2-PFOA	18		NO	0.000
19	19 13C4-PFOS	19		NO	0.000
20	20 d3-N-MeFOSAA	20		NO	0.000





Dataset: X:\G1.PRO\Results\2018\181005G3\181005G3-ICV.qld

Last Altered: Tuesday, October 09, 2018 10:46:00 Pacific Daylight Time

Printed: Tuesday, October 09, 2018 10:46:17 Pacific Daylight Time

Method: X:\G1.PRO\MethDB\PFAS_DW_L14_1005.mdb 06 Oct 2018 09:05:09

Calibration: X:\G1.PRO\CurveDB\C18_537_Q1_10-05-18_L14.cdb 09 Oct 2018 10:37:25

Name: 181005G3_13, Date: 05-Oct-2018, Time: 19:59:53, ID: ST181005G3-1 PFC ICV 537 18J0411, Description: PFC ICV 537 18J0411

#	Name	Trace	Area	S Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	298.8 > 80.2	3.74e3	1.40e4	1.00		2.90	2.93	7.66	10.3	102.9
2	2 PFHxA	312.8 > 269.0	5.96e3	5.74e3	1.00		3.28	3.28	10.4	10.0	100.5
3	3 PFHpA	362.8 > 319.0	6.59e3	5.74e3	1.00		3.81	3.81	11.5	10.7	106.6
4	4 PFHxS	398.7 > 80.2	3.39e3	1.40e4	1.00		3.91	3.94	6.94	9.68	96.8
5	5 PFOA	412.7 > 368.9	5.65e3	5.74e3	1.00		4.24	4.24	9.84	9.52	95.2
6	6 PFNA	462.8 > 419.0	5.86e3	5.74e3	1.00		4.58	4.56	10.2	10.5	105.2
7	7 PFOS	498.7 > 80.2	1.62e3	1.40e4	1.00		4.61	4.61	3.31	8.80	88.0
8	8 PFDA	512.8 > 468.9	8.12e3	5.74e3	1.00		4.86	4.85	14.1	11.0	109.6
9	9 N-MeFOSAA	569.8 > 419.0	2.50e3	1.62e4	1.00		4.98	4.98	6.18	8.82	88.2
10	10 N-EtFOSAA	583.8 > 419.0	2.06e3	1.62e4	1.00		5.11	5.11	5.09	7.87	78.7
11	11 PFUnA	562.7 > 518.9	7.78e3	5.74e3	1.00		5.12	5.13	13.5	9.52	95.2
12	12 PFDoA	612.8 > 569.0	6.57e3	5.74e3	1.00		5.37	5.37	11.4	9.44	94.4
13	13 PFTrDA	662.8 > 619.0	6.86e3	5.74e3	1.00		5.59	5.57	11.9	9.68	96.8
14	14 PFTeDA	712.8 > 669.0	7.80e3	5.74e3	1.00		5.77	5.76	13.6	10.4	104.0
15	15 13C2-PFHxA	314.9 > 270.0	6.30e3	5.74e3	1.00	1.102	3.31	3.28	11.0	9.95	99.5
16	16 13C2-PFDA	514.8 > 470.0	7.02e3	5.74e3	1.00	1.199	4.89	4.85	12.2	10.2	102.0
17	17 d5-N-EtFOSAA	588.8 > 419.0	1.27e4	1.62e4	1.00	0.820	5.11	5.11	31.3	38.1	95.3
18	18 13C2-PFOA	414.8 > 370.0	5.74e3	5.74e3	1.00	1.000	4.26	4.25	10.0	10.0	100.0
19	19 13C4-PFOS	502.8 > 80.2	1.40e4	1.40e4	1.00	1.000	4.65	4.61	28.7	28.7	100.0
20	20 d3-N-MeFOSAA	572.7 > 419.0	1.62e4	1.62e4	1.00	1.000	4.99	4.98	40.0	40.0	100.0

KBF 10/9/18
J. C. H.
 10/9/18

Calverton
SDG 1803255

Sample Identification

B8J0073-BS1 LFB

SAMPLE CALCULATION

Compound

Perfluorobutanesulfonic acid (PFBS)

Sample volume (L)

0.25

Internal standard concentration

28.7

Concentration using quadratic/calibration curve

Area*(IS concentration/IS area)
4660*(28.7/10600)

12.61717

Curve

Calibration curve (y)=0.744632*x
12.61717=0.744632*x

x= 16.94417

PFBS result Conc = x/wt
result reported

67.77667 ng/L
67.8 ng/L

LABELED STANDARD (SURROGATE) CALCULATION

Compound

13C2-PFHxA

Sample volume (L)

0.25

Internal standard concentration

10

Concentration using quadratic/calibration curve

Area*(IS concentration/IS area)/RRF
5490*(10/5560)/1.102

8.960164

PFDA result Conc = x/wt
result reported

35.84066 ng/L
35.8 ng/L

True Value

40 ng/L

% recovery

89.60164

LFBD %R

B8J0073-BS1

PFBS
95.76

Spike amount
70.8

LCS concentration
67.8

Dataset: X:\G1.PRO\Results\2018\181011G1\181011G1-3.qld

AMR 10/15/18

Last Altered: Friday, October 12, 2018 13:50:09 Pacific Daylight Time

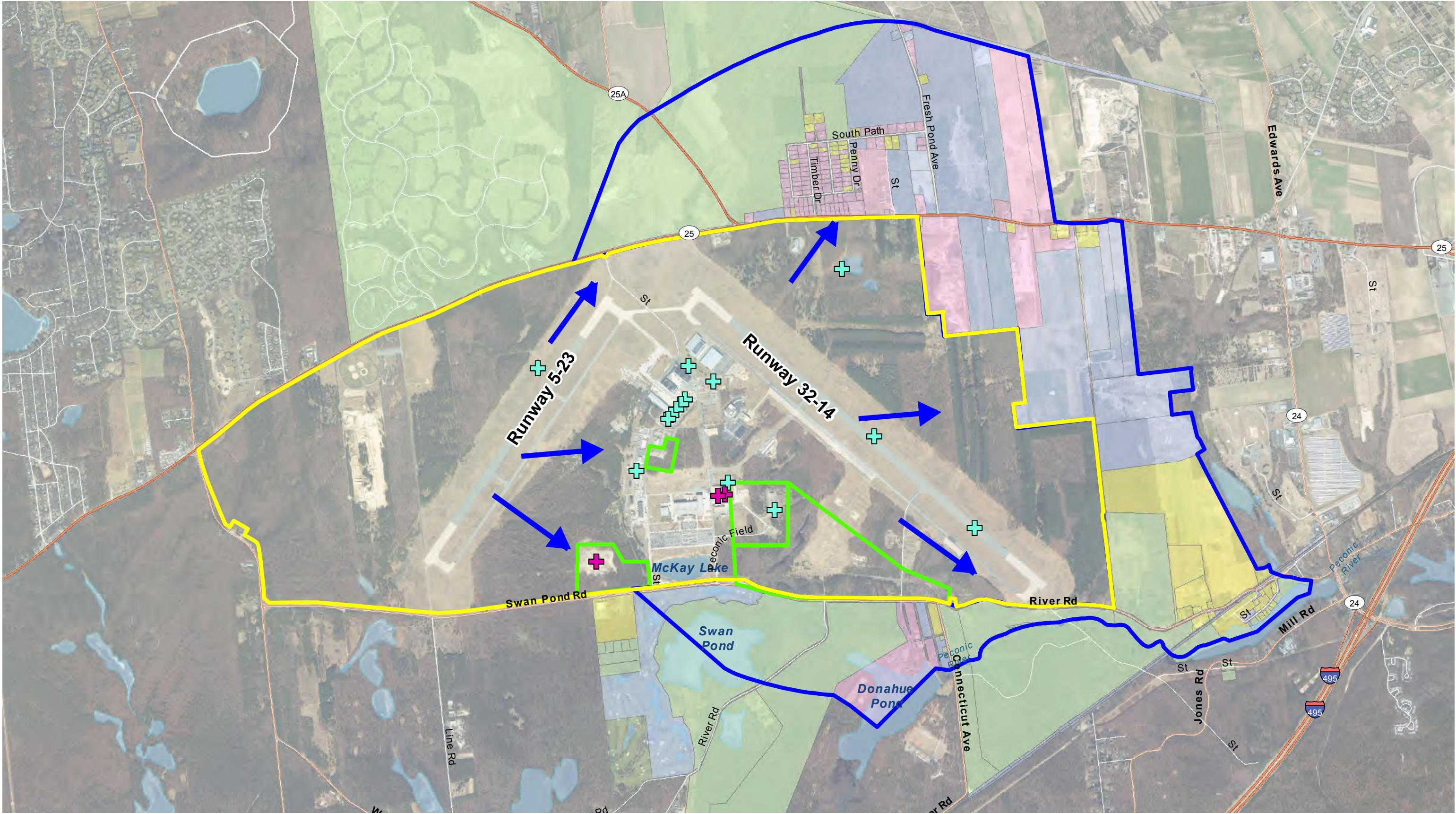
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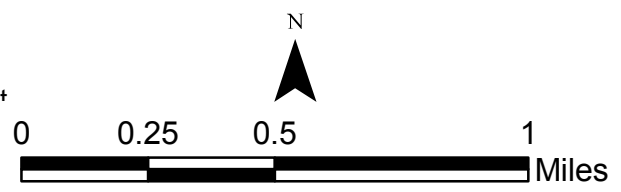
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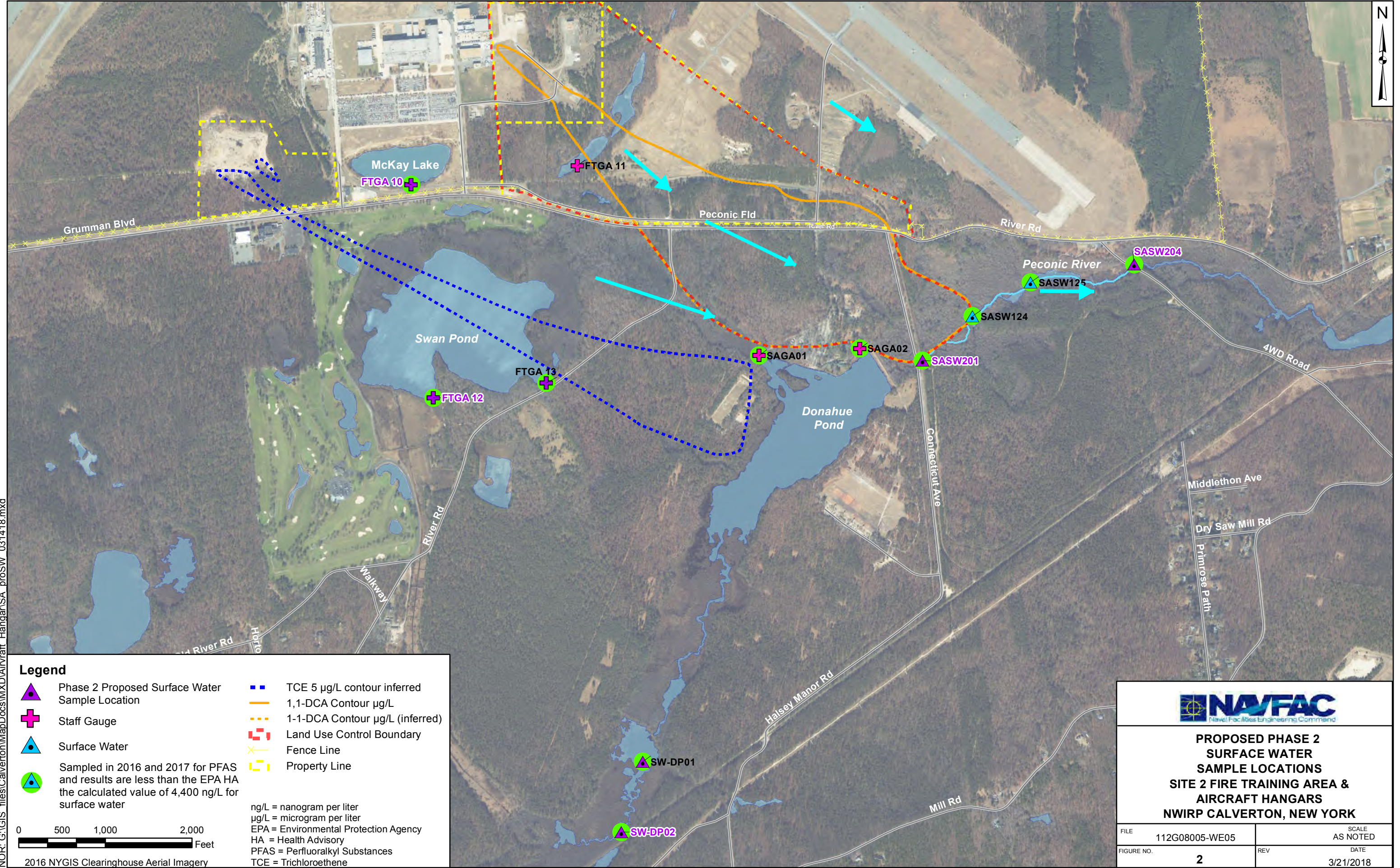
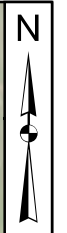
	# Name	Trace	Area	IS Area	Wt./Vol.	RRF	Pred.RT	RT	y Axis Resp.	Conc.	%Rec
1	1 PFBS	298.8 > 80.2	4.66e3	1.06e4	0.250		2.92	2.91	12.6	67.8	95.7
2	2 PFHxA	312.8 > 269.0	1.04e4	5.56e3	0.250		3.28	3.29	18.7	72.3	90.4
3	3 PFHpA	362.8 > 319.0	1.17e4	5.56e3	0.250		3.80	3.81	20.9	77.8	97.2
4	4 PFHxS	398.7 > 80.2	5.34e3	1.06e4	0.250		3.92	3.93	14.5	80.8	111.0
5	5 PFOA	412.7 > 368.9	1.13e4	5.56e3	0.250		4.23	4.24	20.4	78.9	98.6
6	6 PFNA	462.8 > 419.0	1.28e4	5.56e3	0.250		4.55	4.55	22.9	94.7	118.4
7	7 PFOS	498.7 > 80.2	2.94e3	1.06e4	0.250		4.61	4.61	7.95	84.6	114.3
8	8 PFDA	512.8 > 468.9	1.65e4	5.56e3	0.250		4.82	4.83	29.6	91.7	114.7
9	9 N-MeFOSAA	569.8 > 419.0	6.36e3	1.54e4	0.250		4.96	4.96	16.5	94.1	117.6
10	10 N-EtFOSAA	583.8 > 419.0	5.93e3	1.54e4	0.250		5.11	5.11	15.4	94.9	118.6
11	11 PFUnA	562.7 > 518.9	1.74e4	5.56e3	0.250		5.11	5.12	31.3	88.0	110.0
12	12 PFDoA	612.8 > 569.0	1.62e4	5.56e3	0.250		5.37	5.38	29.2	96.5	120.6
13	13 PFTrDA	662.8 > 619.0	1.71e4	5.56e3	0.250		5.58	5.59	30.7	99.7	124.6
14	14 PFTeDA	712.8 > 669.0	1.61e4	5.56e3	0.250		5.75	5.76	28.9	88.4	110.5
15	15 13C2-PFHxA	314.9 > 270.0	5.49e3	5.56e3	0.250	1.102	3.30	3.28	9.86	35.8	89.5
16	16 13C2-PFDA	514.8 > 470.0	7.30e3	5.56e3	0.250	1.199	4.87	4.83	13.1	43.8	109.5
17	17 d5-N-EtFOSAA	588.8 > 419.0	1.52e4	1.54e4	0.250	0.820	5.09	5.10	39.4	192	120.1
18	18 13C2-PFOA	414.8 > 370.0	5.56e3	5.56e3	0.250	1.000	4.23	4.23	10.0	40.0	100.0
19	19 13C4-PFOS	502.8 > 80.2	1.06e4	1.06e4	0.250	1.000	4.61	4.61	28.7	115	100.0
20	20 d3-N-MeFOSAA	572.7 > 419.0	1.54e4	1.54e4	0.250	1.000	4.95	4.96	40.0	160	100.0



Legend

- + Location of Known PFAS Release
- + Location of Potential PFAS Release
- ➔ Groundwater Flow Direction
- Designated Area for Sampling
- Former NWIRP Calverton
- Current Navy Property
- Government Parcels
- Other Parcels
- Parcels Serviced by Riverhead Water District*
- Suspected Vacant or Unknown Parcels





NOR: G:\GIS_files\Calverton\MapDocs\MXD\Air\craft_Hangars\SA_proSW_031418.mxd

Legend

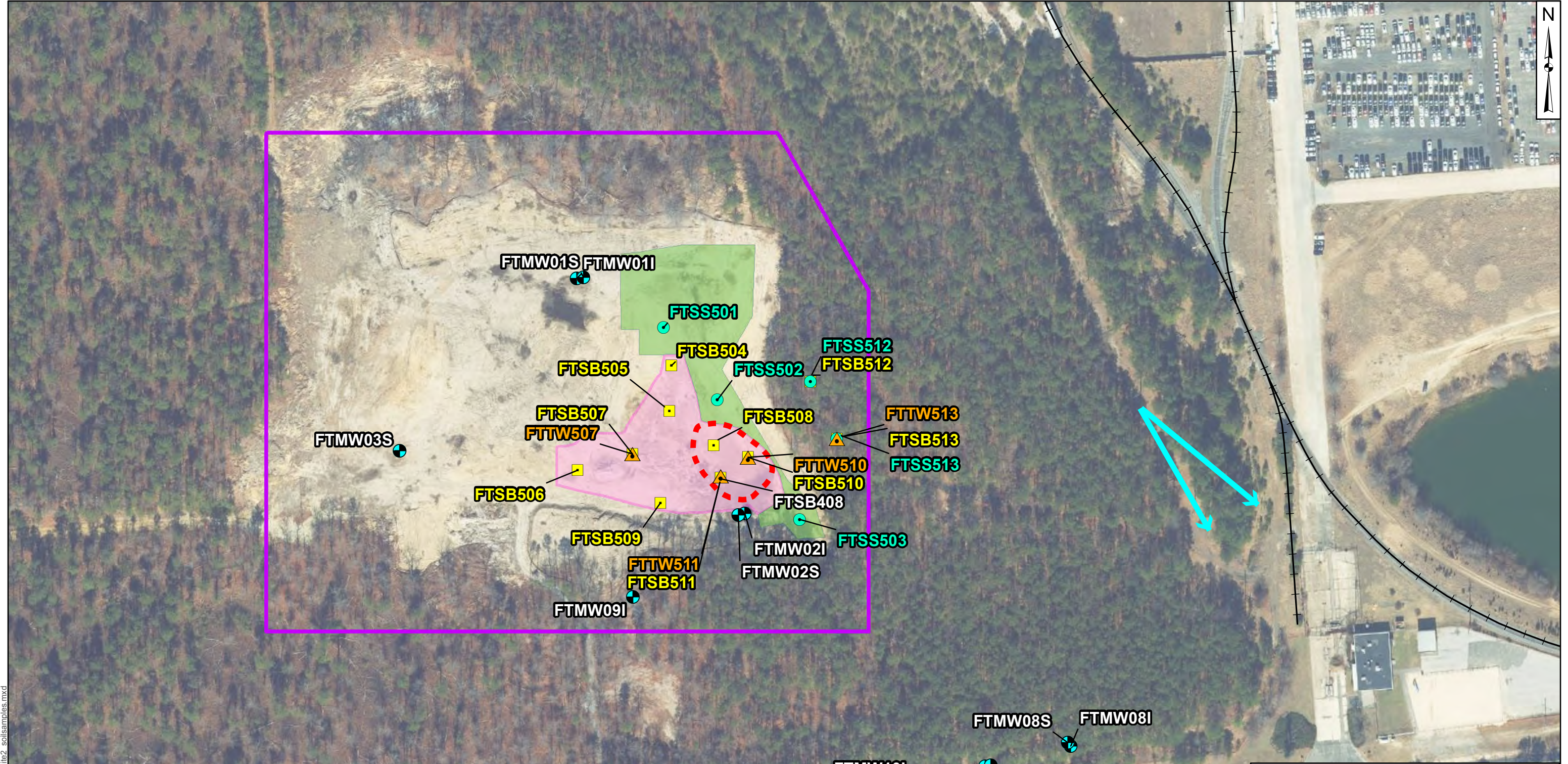
- Phase 2 Proposed Surface Water Sample Location
- Staff Gauge
- Surface Water
- Sampled in 2016 and 2017 for PFAS and results are less than the EPA HA the calculated value of 4,400 ng/L for surface water
- TCE 5 µg/L contour inferred
- 1,1-DCA Contour µg/L
- 1-1-DCA Contour µg/L (inferred)
- Land Use Control Boundary
- Fence Line
- Property Line

ng/L = nanogram per liter
 µg/L = microgram per liter
 EPA = Environmental Protection Agency
 HA = Health Advisory
 PFAS = Perfluoralkyl Substances
 TCE = Trichloroethene



**PROPOSED PHASE 2
 SURFACE WATER
 SAMPLE LOCATIONS
 SITE 2 FIRE TRAINING AREA &
 AIRCRAFT HANGARS
 NWRP CALVERTON, NEW YORK**

FILE	112G08005-WE05	SCALE	AS NOTED
FIGURE NO.	2	REV	DATE
			3/21/2018



Legend

- Proposed Soil boring
- Proposed Surface Soil Sample Location
- ▲ Proposed Temporary Well
- Monitoring Well
- ➔ Groundwater Flow
- Manually Cleared MEC Area
- 2008/2009 Excavation Area
- Subsurface Petroleum Contamination
- Site 2 Boundary [2016]

0 75 150 300 Feet

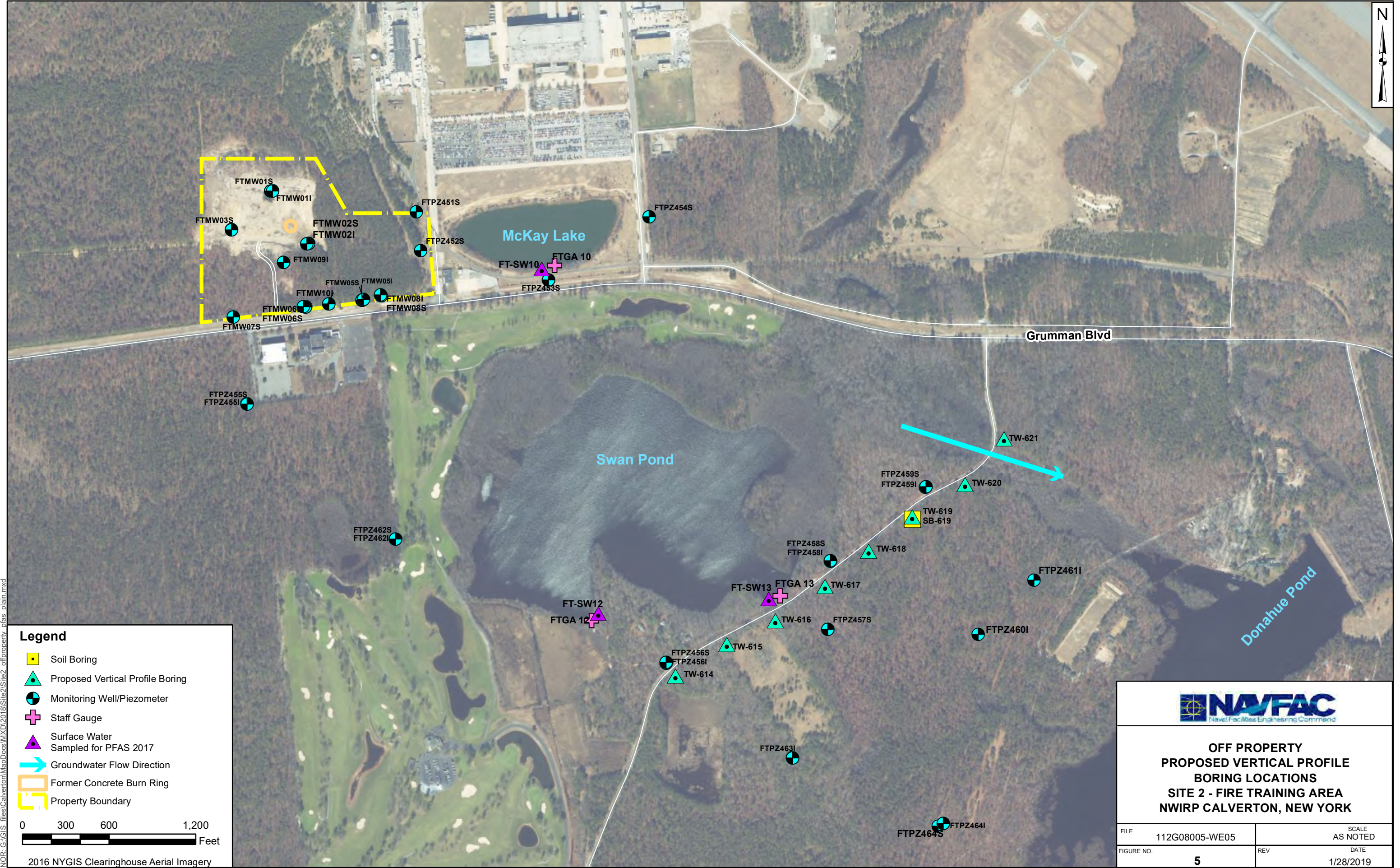
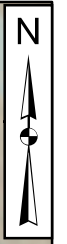
2016 NYGIS Clearinghouse Aerial Imagery

NAVFAC
Naval Facilities Engineering Command









PROPOSED 2017 SOIL BORING AND TEMPORARY WELL LOCATIONS FOR 2017 PFAS INVESTIGATION SITE 2 - FIRE TRAINING AREA NWIRP CALVERTON CALVERTON, NEW YORK

FILE	112G08005-WE05	SCALE	AS NOTED
FIGURE NO.	5	REV	DATE
			10/19/2017

NOR: G:\GIS\files\Calverton\MapDocs\MXD\2016\Site2\Site2_soil_samples.mxd




Legend

-  Soil Boring
-  Proposed Vertical Profile Boring
-  Monitoring Well/Piezometer
-  Staff Gauge
-  Surface Water Sampled for PFAS 2017
-  Groundwater Flow Direction
-  Former Concrete Burn Ring
-  Property Boundary

0 300 600 1,200 Feet

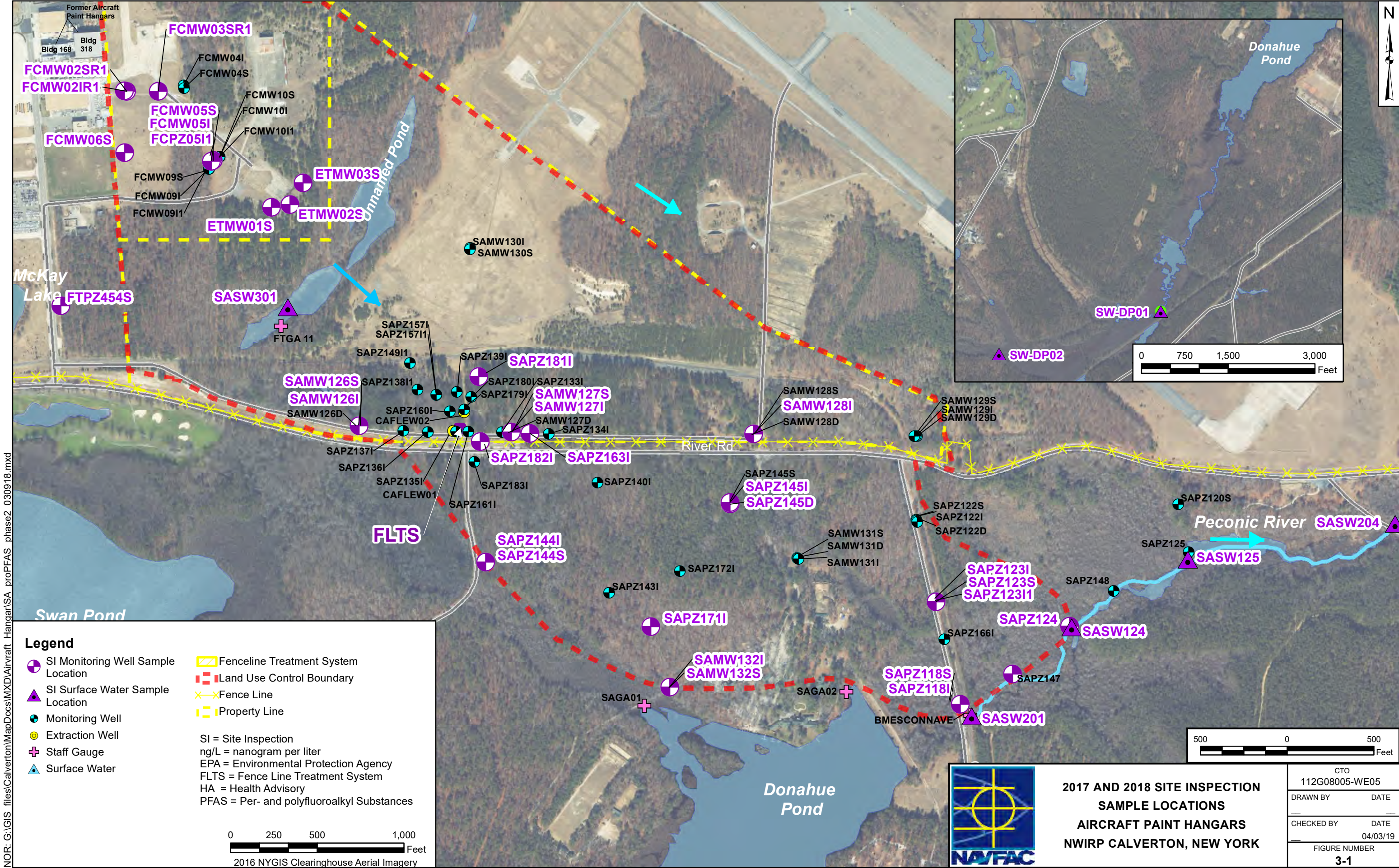
2016 NYGIS Clearinghouse Aerial Imagery



**OFF PROPERTY
PROPOSED VERTICAL PROFILE
BORING LOCATIONS
SITE 2 - FIRE TRAINING AREA
NWIRP CALVERTON, NEW YORK**

FILE	112G08005-WE05	SCALE	AS NOTED
FIGURE NO.	5	REV	DATE
			1/28/2019

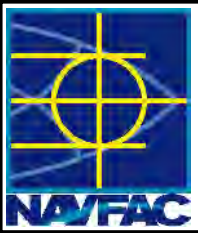
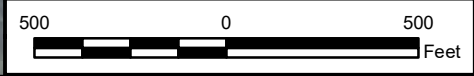
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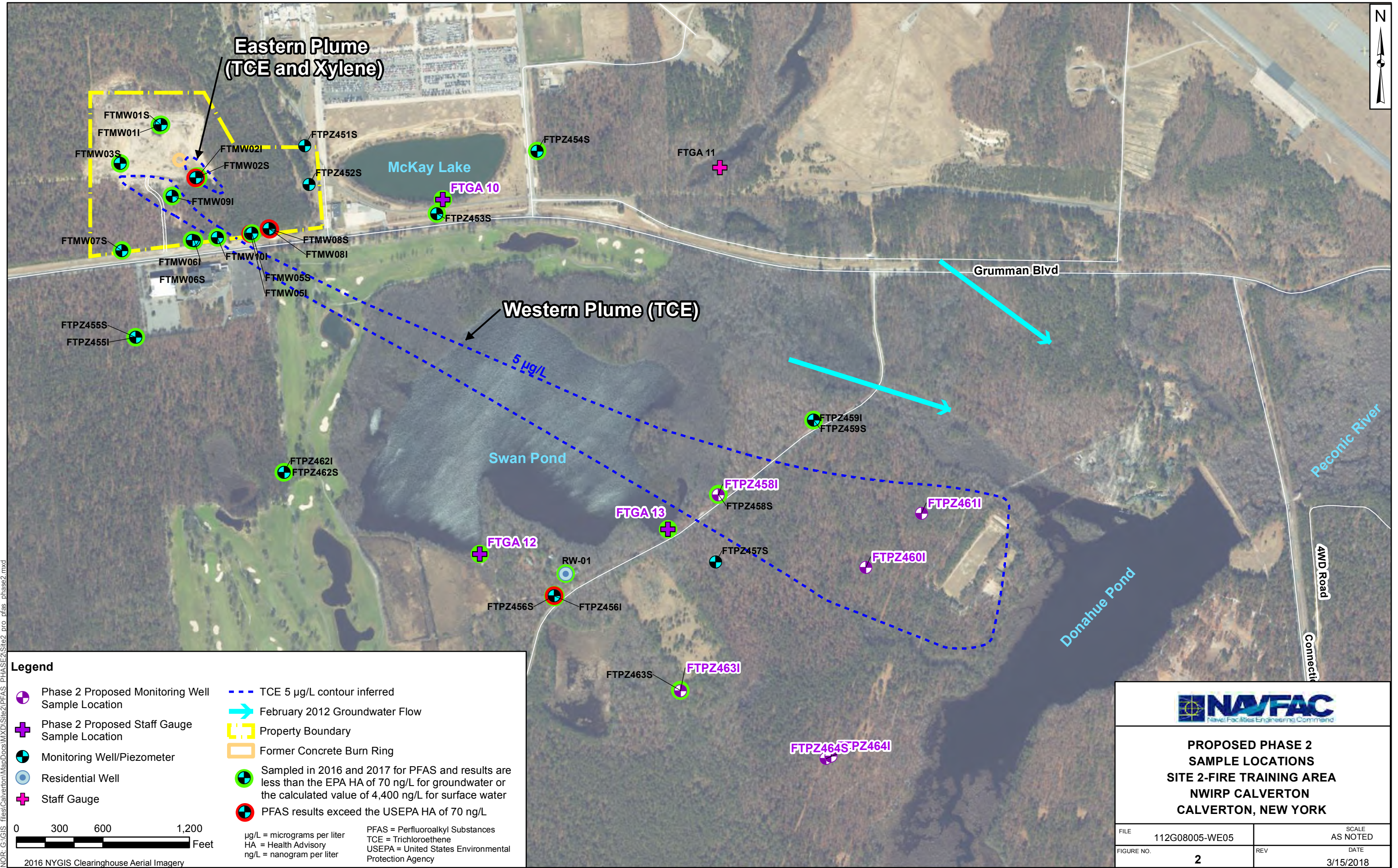
Legend

- SI Monitoring Well Sample Location
 - SI Surface Water Sample Location
 - Monitoring Well
 - Extraction Well
 - Staff Gauge
 - Surface Water
 - Fenceline Treatment System
 - Land Use Control Boundary
 - Fence Line
 - Property Line
- SI = Site Inspection
 ng/L = nanogram per liter
 EPA = Environmental Protection Agency
 FLTS = Fence Line Treatment System
 HA = Health Advisory
 PFAS = Per- and polyfluoroalkyl Substances



**2017 AND 2018 SITE INSPECTION
 SAMPLE LOCATIONS
 AIRCRAFT PAINT HANGARS
 NWIRP CALVERTON, NEW YORK**

CTO 112G08005-WE05	
DRAWN BY	DATE
CHECKED BY	DATE 04/03/19
FIGURE NUMBER 3-1	



NOR: G:\GIS - files\Calverton\MapDocs\MXD\Site2\PFAS - PHASE2\Site2 pro pfas phase2.mxd

Legend

- Phase 2 Proposed Monitoring Well Sample Location
- + Phase 2 Proposed Staff Gauge Sample Location
- Monitoring Well/Piezometer
- Residential Well
- + Staff Gauge
- - - TCE 5 µg/L contour inferred
- February 2012 Groundwater Flow
- - - Property Boundary
- - - Former Concrete Burn Ring
- Sampled in 2016 and 2017 for PFAS and results are less than the EPA HA of 70 ng/L for groundwater or the calculated value of 4,400 ng/L for surface water
- PFAS results exceed the USEPA HA of 70 ng/L

0 300 600 1,200 Feet

2016 NYGIS Clearinghouse Aerial Imagery

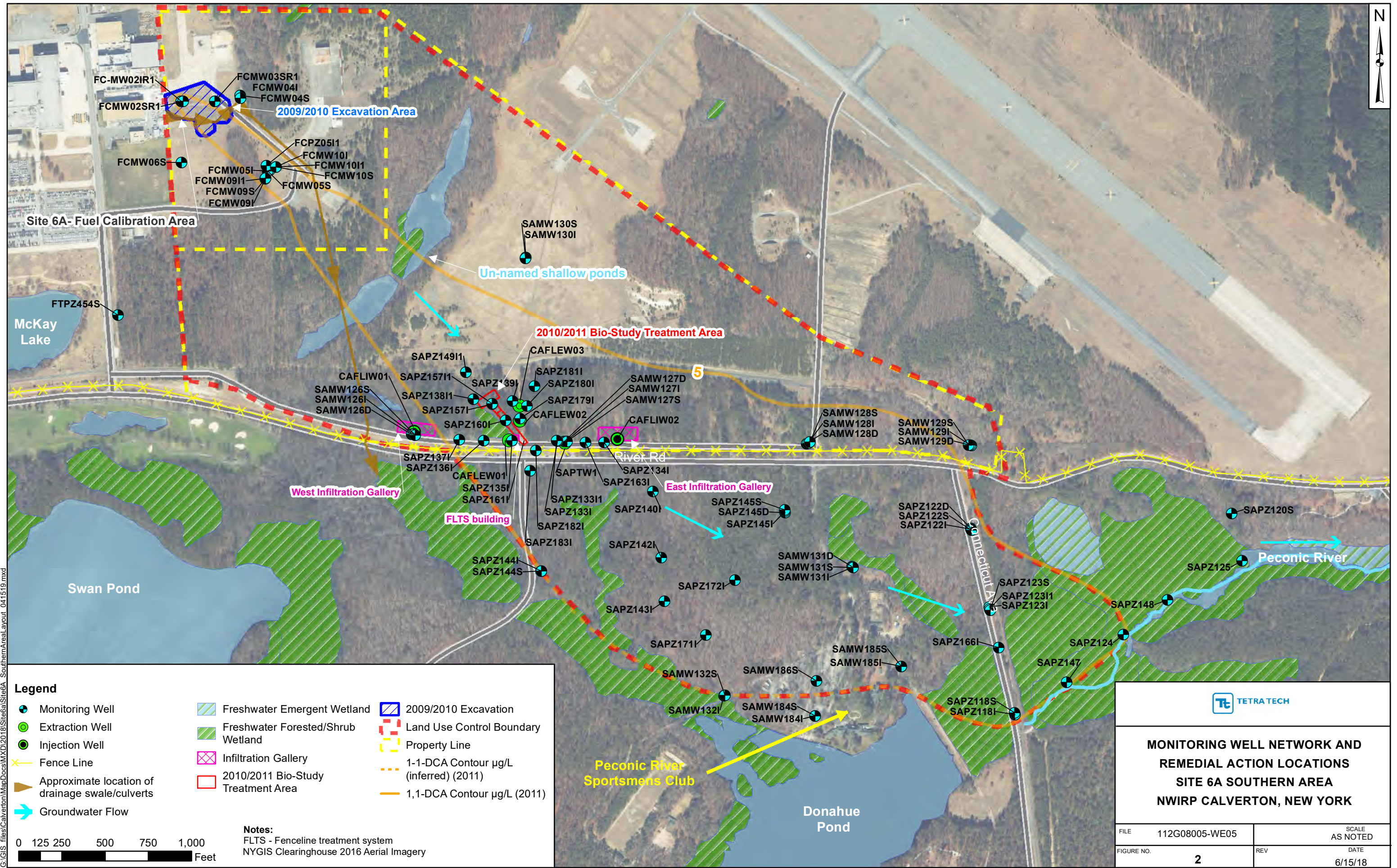
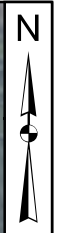
µg/L = micrograms per liter
 HA = Health Advisory
 ng/L = nanogram per liter

PFAS = Perfluoroalkyl Substances
 TCE = Trichloroethene
 USEPA = United States Environmental Protection Agency



**PROPOSED PHASE 2
 SAMPLE LOCATIONS
 SITE 2-FIRE TRAINING AREA
 NWIRP CALVERTON
 CALVERTON, NEW YORK**

FILE 112G08005-WE05	SCALE AS NOTED
FIGURE NO. 2	REV DATE 3/15/2018

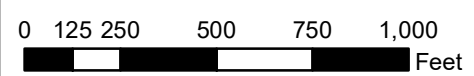


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Legend

- Monitoring Well
- Extraction Well
- Injection Well
- Fence Line
- Approximate location of drainage swale/culverts
- Groundwater Flow
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Infiltration Gallery
- 2010/2011 Bio-Study Treatment Area
- 2009/2010 Excavation
- Land Use Control Boundary
- Property Line
- 1-1-DCA Contour $\mu\text{g/L}$ (inferred) (2011)
- 1,1-DCA Contour $\mu\text{g/L}$ (2011)

Notes:
 FLTS - Fenceline treatment system
 NYGIS Clearinghouse 2016 Aerial Imagery



TETRA TECH

**MONITORING WELL NETWORK AND
 REMEDIAL ACTION LOCATIONS
 SITE 6A SOUTHERN AREA
 NWIRP CALVERTON, NEW YORK**

FILE	112G08005-WE05	SCALE	AS NOTED
FIGURE NO.	2	REV	DATE
			6/15/18