Groundwater Sample Results, Electronic Data Deliverable, Data Validation Report, and the Sample Location Report, SDG 1803088<br>Naval Weapons Industrial Reserve Plant Bethpage Bethpage, New York

August 2019

"BP-TT-FRB04-20180914","Modified EPA 537","Initial","1803088-01","Vista","375-22-
4","PFBA","5.30","ng/L","UU","2.90","LOD","","TRG","","","8.46","LOQ","YES","-99","","0.118","0.001","5.30","" "BP-TT-FRB04-20180914","Modified EPA 537","Initial","1803088-01","Vista","2706-90-3","PFPeA","5.30","ng/L","UU","2.90","LOD","","TRG","","","8.46","LOQ","YES","-99","","0.118","0.001","5.30","" "BP-TT-FRB04-20180914","Modified EPA 537","Initial","1803088-01","Vista","375-73-5","PFBS","5.30","ng/L","UU","2.90","LOD","","TRG","","","8.46","LOQ","YES","-99","","0.118","0.001","5.30","" "BP-TT-FRB04-20180914","Modified EPA 537","Initial","1803088-01","Vista","307-24-4","PFHxA","5.30","ng/L","UU","2.90","LOD","","TRG","","","8.46","LOQ","YES","-99","","0.118","0.001","5.30"," "
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9","MeFOSAA","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.4 3",""
"BP-TT-FRB06-20180916","Modified EPA 537","Initial","1803088-03","Vista","2991-50-
6","EtFOSAA","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.43 " ""
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3","PFDS","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.43","" "BP-TT-FRB06-20180916","Modified EPA 537","Initial","1803088-03","Vista","307-55-1","PFDoA","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.43"," "BP-TT-FRB06-20180916","Modified EPA 537","Initial","1803088-03","Vista","72629-94-
8","PFTrDA","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.43", ""
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7","PFTeDA","5.43","ng/L","UU","2.98","LOD","","TRG","","","8.70","LOQ","YES","-99","","0.115","0.001","5.43", ""
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3","PFPeA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","375-73-5","PFBS","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","307-24-4","PFHxA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","
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"BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","335-67-
1","PFOA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12",""
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8","PFHpS","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","375-95-
1","PFNA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","754-91-6","PFOSA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","
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1","PFOS","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","335-76-
2","PFDA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","39108-34-4","8:2 FTS","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12",""
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9","MeFOSAA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.1 2",""
"BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","2991-50-
6","EtFOSAA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12 " ""
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8","PFUnA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12"," "
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"BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","72629-94-
8","PFTrDA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12", ""
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7","PFTeDA","5.12","ng/L","UU","2.82","LOD","","TRG","","","8.22","LOQ","YES","-99","","0.122","0.001","5.12", ""
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PFHxS","97.6","\%R","","-99","NA","","IS","97.6","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-6:2 FTS","13C2-6:2 FTS","85.1","\%R","","-99","NA","","IS","85.1","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-PFOA","13C2-PFOA","92.6","\%R","","-99","NA","","IS","92.6","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C5-PFNA","13C5-PFNA","83.8","\%R","","-99","NA","","IS","83.8","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C8-PFOSA","13C8-PFOSA","30.9","\%R","H","-99","NA","","IS","30.9","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C8-PFOS","13C8-PFOS","96.2","\%R","","-99","NA","","IS","96.2","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-PFDA","13C2-PFDA","72.5","\%R","","-99","NA","","IS","72.5","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-8:2 FTS","13C2-8:2 FTS","80.7","\%R","","-99","NA","","IS","80.7","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","d3-MeFOSAA","d3-MeFOSAA","64.6","\%R","","-99","NA","","IS","64.6","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","d5-EtFOSAA","d5-EtFOSAA","71.5","\%R","","-99","NA","","IS","71.5","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-PFUnA","13C2-PFUnA","72.1","\%R","","-99","NA","","IS","72.1","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-PFDoA","13C2-PFDoA","72.8","\%R","","-99","NA","","IS","72.8","","-99","NA","YES","100","","0.122","0.001","-99","" "BP-TT-FRB07-20180917","Modified EPA 537","Initial","1803088-04","Vista","13C2-PFTeDA","13C2-PFTeDA","72.3","\%R","","-99","NA","","IS","72.3","","-99","NA","YES","100","","0.122","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","375-22-4","PFBA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","2706-90-3","PFPeA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","375-73-5","PFBS","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","307-24-4","PFHxA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","
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4","PFHxS","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","27619-97-2","6:2
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1","PFOA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00",""
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6","PFOSA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","
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1","PFOS","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","335-76-2","PFDA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00",""
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9","MeFOSAA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.0 0",""
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6","EtFOSAA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00 " ""
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8","PFUnA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","
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3","PFDS","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","307-55-
1","PFDoA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00"," "
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8","PFTrDA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00", ""
"B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","376-06-
7","PFTeDA","5.00","ng/L","UU","2.74","LOD","","TRG","","","8.00","LOQ","YES","-99","","0.125","0.001","5.00", ""
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PFPeA","98.1","\%R","","-99","NA","","IS","98.1","","-99","NA","YES","100","","0.125","0.001","-99",""
"B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C3-PFBS","13C3-PFBS","92.8","\%R","","-99","NA","","IS","92.8","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-PFHxA","13C2-PFHxA","99.4","\%R","","-99","NA","","IS","99.4","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C4-PFHpA","13C4-PFHpA","98.8","\%R","","-99","NA","","IS","98.8","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","18O2-PFHxS","18O2-PFHxS","107","\%R","","-99","NA","","IS","107","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-6:2 FTS","13C2-6:2 FTS","92.4","\%R","","-99","NA","","IS","92.4","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-PFOA","13C2-PFOA","91.4","\%R","","-99","NA","","IS","91.4","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C5-PFNA","13C5-PFNA","84.6","\%R","","-99","NA","","IS","84.6","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C8-PFOSA","13C8-PFOSA","29.3","\%R","H","-99","NA","","IS","29.3","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C8-PFOS","13C8-PFOS","100","\%R","","-99","NA","","IS","100","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-PFDA","13C2-PFDA","70.4","\%R","","-99","NA","","IS","70.4","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-8:2 FTS","13C2-8:2 FTS","87.6","\%R","","-99","NA","","IS","87.6","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","d3-MeFOSAA","d3-MeFOSAA","68.2","\%R","","-99","NA","","IS","68.2","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","d5-EtFOSAA","d5-EtFOSAA","75.0","\%R","","-99","NA","","IS","75.0","","-99","NA","YES","100","","0.125","0.001","-99","" "B8I0157-BLK1","Modified EPA 537","Initial","B8I0157-BLK1","Vista","13C2-PFUnA","13C2-PFUnA","73.2","\%R","","-99","NA","","IS","73.2","","-99","NA","YES","100","","0.125","0.001","-99",""
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PFTeDA","81.7","\%R","","-99","NA","","IS","81.7","","-99","NA","YES","100","","0.125","0.001","-99",""
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4","PFBA","67.7","ng/L","","2.74","LOD","","TRG","84.7","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
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3","PFPeA","69.4","ng/L","","2.74","LOD","","TRG","86.8","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","375-73-
5","PFBS","72.3","ng/L","","2.74","LOD","","TRG","90.3","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","307-24-
4","PFHxA","68.4","ng/L","","2.74","LOD","","TRG","85.5","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","375-85-
9","PFHpA","64.9","ng/L","","2.74","LOD","","TRG","81.2","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","355-46-
4","PFHxS","69.8","ng/L","","2.74","LOD","","TRG","87.3","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","27619-97-2","6:2
FTS","67.5","ng/L","","2.74","LOD","","TRG","84.4","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00",""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","335-67-
1","PFOA","62.2","ng/L","","2.74","LOD","","TRG","77.8","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","375-92-
8","PFHpS","71.2","ng/L","","2.74","LOD","","TRG","89.0","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","375-95-
1","PFNA","71.3","ng/L","","2.74","LOD","","TRG","89.1","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","754-91-
6","PFOSA","69.7","ng/L","","2.74","LOD","","TRG","87.1","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00" ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","1763-23-
1","PFOS","69.2","ng/L","","2.74","LOD","","TRG","86.5","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","335-76-
2","PFDA","66.0","ng/L","","2.74","LOD","","TRG","82.5","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
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FTS","73.8","ng/L","","2.74","LOD","","TRG","92.2","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00",""
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9","MeFOSAA","76.7","ng/L","","2.74","LOD","","TRG","95.8","","8.00","LOQ","YES","80.0","","0.125","0.001","5. 00",""
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6","EtFOSAA","72.3","ng/L","","2.74","LOD","","TRG","90.3","","8.00","LOQ","YES","80.0","","0.125","0.001","5.0 0",""
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8","PFUnA","69.3","ng/L","","2.74","LOD","","TRG","86.6","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","335-77-

3","PFDS","56.9","ng/L","","2.74","LOD","","TRG","71.1",","8.00","LOQ","YES","80.0","","0.125","0.001","5.00"," "
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","307-55-
1","PFDoA","66.0","ng/L","","2.74","LOD","","TRG","82.5","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00", ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","72629-94-
8","PFTrDA","69.4","ng/L","","2.74","LOD","","TRG","86.8","","8.00","LOQ","YES","80.0","","0.125","0.001","5.00 " ""
"B8I0157-BS1","Modified EPA 537","Initial","B8I0157-BS1","Vista","376-06-
7","PFTeDA","61.2","ng/L","","2.74","LOD","","TRG","76.5","","8.00","LOQ","YES","80.0",","0.125","0.001","5.00 " ""
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# VALIDATA 

| Chemical Services, Inc. | (770) $232-0130$ |
| :--- | :---: |
| 2159 Wynnton Pointe, Duluth, GA 30097 | (770) $232-5082$ (Fax) |

DATA VALIDATION SUMMARY REPORT - RADIOCHEMISTRY

COMPANY:
PROJECT NAME:

SITE NAME:
CONTRACTED LAB:
CONTRACT NO.:
QA/QC LEVEL:
ANALYTICAL METHODS:
VALIDATION GUIDELINES:

SAMPLE MATRIX:
TYPES OF ANALYSES:

DATA VALIDATION DATE:
DATA REVIEWER(S):
SDG NUMBER:
SAMPLING DATE(S):
SAMPLES:

Client Sample ID
BP-TT-FRB05-20180915
BP-TT-FRB06-20180916
BP-TT-FRB07-20180917

Tetra Tech, Inc., Norfolk, VA
Basewide Radiological Groundwater Investigation, Naval
Weapons Industrial Reserve Plant (NWIRP), Bethpage, NY
CTO-WE09
Vista Analytical Laboratory
N62470-16-D-9008
EPA Stage 4
EPA 537 Modified
Sampling and Analysis Plan for Per- and polyfluoroalkyl Substances Investigation, February 2018, QSM 5.1, and
Professional Judgment
Water
Per- and Polyfluoroalkyl Substances (PFAS) Using Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)
March 12, 2019
Thomas B. Granat
1803088
September 14-17, 2018

| Laboratory ID | PFAS |
| :---: | :---: |
| 1803088-01 | X |
| 1803088-02 | X |
| 1803088-03 | X |
| 1803088-04 | X |


| Qualifier | Definition |
| :---: | :--- |
| No qualifier | Confirmed identification. The analyte was positively identified at the reported <br> value. The reported concentration is within the calibrated range of the <br> instrument and the result is not affected by any deficiencies in the associated <br> quality control criteria. |
| J | The analyte was detected at the reported concentration; the quantitation is an <br> estimate. |
| J- | The analyte was detected at the reported concentration; the quantitation is an <br> estimate and may be biased low. |
| J+ | The analyte was detected at the reported concentration; the quantitation is an <br> estimate and may be biased high. |
| U | Not considered detected. The associated number is the reported <br> concentration. |
| UJ | Not considered detected. The associated number is the reported <br> concentration, which may be inaccurate. |
|  | The sample results (including non-detects) were affected by serious <br> deficiencies in the ability to analyze the sample and to meet published <br> method and project quality control criteria. The presence or absence <br> of the analyte cannot be substantiated by the data provided. <br> Acceptance or rejection of the data should be decided by the project <br> team (which should include a project chemist), but exclusion of the <br> data is recommended. |

## DATA VALIDATION SUMMARY

Vista Analytical Laboratory - SDG: 1803088

## PFAS (Per- and polyfluoroalkyl substances)

## SUMMARY

I.) General:

The samples were extracted and analyzed by LC/MS/MS 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.
II.) Overall Assessment of Data:

All laboratory data were acceptable with qualifications.

## MAJOR ISSUES

There were no major problems for this fraction of the SDG.

## MINOR ISSUES

I.) Laboratory Data Package:

The required documentation was present and complete. The laboratory presented a complete and accurate case narrative in the data package. The data package contains results for all samples and method types listed on the COC.
II.) Sample Receipt, Preservation, and Holding Times:

The samples were received intact with proper COC documentation and signatures. The samples were received within the method temperature requirements and were stored securely in accordance with Vista standard operating procedures and EPA methodology. The samples were extracted and analyzed within the method hold times.

## III.) LC-MS Tune:

All LC-MS Tune criteria were met. No data qualification was necessary.
IV.) Initial Calibration (ICAL) and Initial Calibration Verification (ICV):

All Initial Calibration and Initial Calibration Verification criteria were met. No data qualification was
necessary.
V.) Continuing Calibration (CCV):

All Continuing Calibration Verification criteria were met. No data qualification was necessary.
VI.) CRDL / CRQL standards:

All CRDL / CRQL standards criteria were met. No data qualification was necessary.
VII.) Blanks:

Calibration Blanks:
There were no detections in the calibration blanks. No data qualification was necessary.
Preparation Blanks:
There were no detections in the preparation blanks. No data qualification was necessary.

## Equipment Blanks:

There were no equipment blanks identified in this SDG. No data qualification was necessary.
Field Blanks:

The four SDG samples were field reagent blanks. There were no detections in the field reagent blanks. No data qualification was necessary.
VIII.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

Since the only SDG samples were field QC samples, MS / MSD analyses were not performed. No data qualification was necessary.
IV.) Duplicate Sample Analysis:

Since the only SDG samples were field QC samples, MD analysis was not performed. No data qualification was necessary.
X.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met. No data qualification was necessary.
XI.) Field Duplicates:

There were no field duplicates identified in the SDG. No data qualification was necessary.
XII.) Internal Standards Performance (ISTD):

ISTD percent recoveries (\%R) for 13C8-PFOSA were below the QC lower limit of 50\%. Below are the associated analytes:

| Client Sample ID | $\underline{\text { Lab ID }}$ |  | Analyte |  | ISTD \%R |  | Qualifier |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Code |  |  |  |  |  |  |  |
| BP-TT-FRB04-20180914 |  | $1803088-01$ |  | PFOSA |  | 35.7 | UJ |
| N | N |  |  |  |  |  |  |
| BP-TT-FRB05-20180915 | $1803088-02$ | PFOSA | 40.3 | UJ | N |  |  |
| BP-TT-FRB06-20180916 | $1803088-03$ | PFOSA | 39.2 | UJ | N |  |  |
| BP-TT-FRB07-20180917 | $1803088-04$ | PFOSA | 30.9 | UJ | N |  |  |

The above associated analyte results were qualified as estimated (UJ) with reason code N .
XIII.) Ion Transitions:

Proper Ion transitions were used to quantify the analytes. No data qualification was necessary.
XIV.) Ion Ratio:

There were no detections in the SDG samples. No data qualification was necessary.
XV.) Reporting limits (RLs):

All LOQs were less than the project quantitation limits for the applicable analytes. No data qualification was necessary.
XVI.) Instrument Performance criteria (Stage 4):

All Instrument Performance criteria were met. No data qualification was necessary.
XVII.) Sample Calculation Verification (Stage 4):

All analyte results were non-detects.

## Appendix A

Data Qualification Summary Table (DQST) with Qualification Codes

| SAMPLE_ID | SAMP_DATE | LAB_ID | PARAMETER | LAB_RES | VAL_RES | VAL_QUAL | VAL_REASON_CODE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BP-TT-FRB04-20180914 | 9/14/2018 0:00 | 1803088-01 | PFOSA | 5.3 | 5.3 | UJ | N |
| BP-TT-FRB05-20180915 | 9/15/2018 0:00 | 1803088-02 | PFOSA | 5.17 | 5.17 | UJ | N |
| BP-TT-FRB06-20180916 | 9/16/2018 0:00 | 1803088-03 | PFOSA | 5.43 | 5.43 | UJ | N |
| BP-TT-FRB07-20180917 | 9/17/2018 0:00 | 1803088-04 | PFOSA | 5.12 | 5.12 | UJ | N |

## Appendix B

## Laboratory Sample Results

| Sample ID: BP-TT-FRB04-20180914 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 11:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & 19-S e p-18 \end{aligned}$ | $\begin{aligned} & 1 \\ & 09: 13 \end{aligned}$ | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFPeA | 2706-90-3 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFBS | 375-73-5 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHxA | 307-24-4 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHpA | 375-85-9 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHxS | 355-46-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOA | 335-67-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHpS | 375-92-8 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFNA | 375-95-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOSA | 754-91-6 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOS | 1763-23-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDA | 335-76-2 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFUnA | 2058-94-8 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDS | 335-77-3 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDoA | 307-55-1 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFTeDA | 376-06-7 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 95.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C3-PFPeA | IS | 91.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C3-PFBS | IS | 92.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFHxA | IS | 88.7 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C4-PFHpA | IS | 94.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 1802-PFHxS | IS | 95.3 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-6:2 FTS | IS | 94.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFOA | IS | 82.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C5-PFNA | IS | 79.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C8-PFOSA | IS | 35.7 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C8-PFOS | IS | 94.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFDA | IS | 66.7 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-8:2 FTS | IS | 84.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| d3-MeFOSAA | IS | 72.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| d5-EtFOSAA | IS | 73.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFUnA | IS | 69.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |

Analytical Laboratory

| Sample ID: BP-TT-FRB | 180914 |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix: <br> Date Collected: | QC Water 14-Sep-18 11:00 | Laboratory Data Lab Sample: Date Received: | $\begin{aligned} & 1803088- \\ & \text { 19-Sep-1 } \end{aligned}$ | $\begin{aligned} & 1 \\ & 09: 13 \end{aligned}$ | Column: | BEH C18 |  |
| Labeled Standards | Type | \% Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C2-PFDoA | IS | 73.7 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFTeDA | IS | 75.6 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| DL - Detection Limit | LOD - Limit of Detection <br> 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: BP-TT-FRB05-20180915 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 13:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & \text { 19-Sep-18 } \end{aligned}$ | $09: 13$ | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFPeA | 2706-90-3 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFBS | 375-73-5 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHxA | 307-24-4 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHpA | 375-85-9 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHxS | 355-46-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOA | 335-67-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHpS | 375-92-8 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFNA | 375-95-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOSA | 754-91-6 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOS | 1763-23-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDA | 335-76-2 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFUnA | 2058-94-8 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDS | 335-77-3 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDoA | 307-55-1 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFTeDA | 376-06-7 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 93.8 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C3-PFPeA | IS | 88.0 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C3-PFBS | IS | 98.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFHxA | IS | 88.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C4-PFHpA | IS | 90.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 1802-PFHxS | IS | 98.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-6:2 FTS | IS | 89.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFOA | IS | 82.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C5-PFNA | IS | 79.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C8-PFOSA | IS | 40.3 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C8-PFOS | IS | 87.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFDA | IS | 67.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-8:2 FTS | IS | 78.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| d3-MeFOSAA | IS | 66.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| d5-EtFOSAA | IS | 71.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFUnA | IS | 69.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |

Analytical Laboratory

| Sample ID: BP-TT-FRB | 180915 |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix: <br> Date Collected: | QC Water 15-Sep-18 13:00 | Laboratory Data <br> Lab Sample: <br> Date Received: | $\begin{aligned} & 1803088-0 \\ & \text { 19-Sep-18 } \end{aligned}$ | 09:13 | Column: | BEH C18 |  |
| Labeled Standards | Type | \% Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C2-PFDoA | IS | 67.4 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFTeDA | IS | 69.7 | 50-150 |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| DL - Detection Limit | $\begin{aligned} & \text { LOD - Limit of Detection } \\ & \text { LOQ - Limit of quantitation } \end{aligned}$ | 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: BP-TT-FRB06-20180916 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix: <br> Date C | d: | 13:40 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & 19-S e p-18 \end{aligned}$ | $09: 13$ | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFPeA | 2706-90-3 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFBS | 375-73-5 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHxA | 307-24-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHpA | 375-85-9 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHxS | 355-46-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOA | 335-67-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHpS | 375-92-8 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFNA | 375-95-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOSA | 754-91-6 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOS | 1763-23-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDA | 335-76-2 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFUnA | 2058-94-8 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDS | 335-77-3 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDoA | 307-55-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFTeDA | 376-06-7 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 95.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C3-PFPeA | IS | 92.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C3-PFBS | IS | 101 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFHxA | IS | 91.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C4-PFHpA | IS | 96.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 1802-PFHxS | IS | 97.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-6:2 FTS | IS | 89.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFOA | IS | 86.7 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C5-PFNA | IS | 78.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C8-PFOSA | IS | 39.2 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C8-PFOS | IS | 95.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFDA | IS | 71.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-8:2 FTS | IS | 84.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| d3-MeFOSAA | IS | 69.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| d5-EtFOSAA | IS | 72.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFUnA | IS | 64.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |

Analytical Laboratory

| Sample ID: BP-TT-FRB | 180916 |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix: <br> Date Collected: | QC Water 16-Sep-18 13:40 | Laboratory Data <br> Lab Sample: <br> Date Received: | $\begin{aligned} & 1803088-0 \\ & \text { 19-Sep-18 } \end{aligned}$ | $09: 13$ | Column: | BEH C18 |  |
| Labeled Standards | Type | \% Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C2-PFDoA | IS | 66.5 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFTeDA | IS | 74.1 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 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: BP-TT-FRB07-20180917 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 11:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & 19-S e p-18 \end{aligned}$ | 09:13 | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFPeA | 2706-90-3 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFBS | 375-73-5 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHxA | 307-24-4 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHpA | 375-85-9 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHxS | 355-46-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOA | 335-67-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHpS | 375-92-8 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFNA | 375-95-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOSA | 754-91-6 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOS | 1763-23-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDA | 335-76-2 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFUnA | 2058-94-8 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDS | 335-77-3 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDoA | 307-55-1 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFTeDA | 376-06-7 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 97.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C3-PFPeA | IS | 90.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C3-PFBS | IS | 95.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFHxA | IS | 92.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C4-PFHpA | IS | 98.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 1802-PFHxS | IS | 97.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-6:2 FTS | IS | 85.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFOA | IS | 92.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C5-PFNA | IS | 83.8 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C8-PFOSA | IS | 30.9 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C8-PFOS | IS | 96.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFDA | IS | 72.5 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-8:2 FTS | IS | 80.7 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| d3-MeFOSAA | IS | 64.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| d5-EtFOSAA | IS | 71.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFUnA | IS | 72.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |

Analytical Laboratory

| Sample ID: BP-TT-FRB07-20180917 |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix: <br> Date Collected: | QC Water 17-Sep-18 11:00 | Laboratory Data <br> Lab Sample: <br> Date Received: | $\begin{aligned} & 1803088-0 \\ & \text { 19-Sep-18 } \end{aligned}$ | $09: 13$ | Column: | BEH C18 |  |
| Labeled Standards | Type | \% Recovery | Limits | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C2-PFDoA | IS | 72.8 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFTeDA | IS | 72.3 | 50-150 |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| DL - Detection Limit | LOD - Limit of Detection <br> 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 Documents

## A. Documents Supporting Qualifications

| Sample ID: BP-TT-FRB04-20180914 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 11:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & 19-S e p-18 \end{aligned}$ | $\begin{aligned} & 1 \\ & 09: 13 \end{aligned}$ | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFPeA | 2706-90-3 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFBS | 375-73-5 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHxA | 307-24-4 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHpA | 375-85-9 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHxS | 355-46-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOA | 335-67-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFHpS | 375-92-8 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFNA | 375-95-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOSA | 754-91-6 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFOS | 1763-23-1 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDA | 335-76-2 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFUnA | 2058-94-8 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDS | 335-77-3 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFDoA | 307-55-1 | ND | 2.90 | 5.30 | 8.46 | U | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| PFTeDA | 376-06-7 | ND | 2.90 | 5.30 | 8.46 | U | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 95.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C3-PFPeA | IS | 91.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C3-PFBS | IS | 92.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFHxA | IS | 88.7 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C4-PFHpA | IS | 94.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 1802-PFHxS | IS | 95.3 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-6:2 FTS | IS | 94.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFOA | IS | 82.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C5-PFNA | IS | 79.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C8-PFOSA | IS | 35.7 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C8-PFOS | IS | 94.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFDA | IS | 66.7 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-8:2 FTS | IS | 84.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| d3-MeFOSAA | IS | 72.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| d5-EtFOSAA | IS | 73.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |
| 13C2-PFUnA | IS | 69.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.118 L | 02-Oct-18 21:32 | 1 |


| Sample ID: BP-TT-FRB05-20180915 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 13:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & \text { 19-Sep-18 } \end{aligned}$ | $09: 13$ | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFPeA | 2706-90-3 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFBS | 375-73-5 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHxA | 307-24-4 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHpA | 375-85-9 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHxS | 355-46-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOA | 335-67-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFHpS | 375-92-8 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFNA | 375-95-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOSA | 754-91-6 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFOS | 1763-23-1 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDA | 335-76-2 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFUnA | 2058-94-8 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDS | 335-77-3 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFDoA | 307-55-1 | ND | 2.84 | 5.17 | 8.30 | U | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| PFTeDA | 376-06-7 | ND | 2.84 | 5.17 | 8.30 | U | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 93.8 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C3-PFPeA | IS | 88.0 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C3-PFBS | IS | 98.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFHxA | IS | 88.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C4-PFHpA | IS | 90.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 1802-PFHxS | IS | 98.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-6:2 FTS | IS | 89.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFOA | IS | 82.0 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C5-PFNA | IS | 79.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C8-PFOSA | IS | 40.3 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C8-PFOS | IS | 87.9 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFDA | IS | 67.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-8:2 FTS | IS | 78.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| d3-MeFOSAA | IS | 66.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| d5-EtFOSAA | IS | 71.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |
| 13C2-PFUnA | IS | 69.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.121 L | 02-Oct-18 21:43 | 1 |


| Sample ID: BP-TT-FRB06-20180916 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | $13: 40$ |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & \text { 19-Sep-18 } \end{aligned}$ | 09:13 | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFPeA | 2706-90-3 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFBS | 375-73-5 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHxA | 307-24-4 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHpA | 375-85-9 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHxS | 355-46-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOA | 335-67-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFHpS | 375-92-8 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFNA | 375-95-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOSA | 754-91-6 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFOS | 1763-23-1 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDA | 335-76-2 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFUnA | 2058-94-8 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDS | 335-77-3 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFDoA | 307-55-1 | ND | 2.98 | 5.43 | 8.70 | U | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| PFTeDA | 376-06-7 | ND | 2.98 | 5.43 | 8.70 | U | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 95.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C3-PFPeA | IS | 92.0 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C3-PFBS | IS | 101 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFHxA | IS | 91.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C4-PFHpA | IS | 96.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 1802-PFHxS | IS | 97.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-6:2 FTS | IS | 89.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFOA | IS | 86.7 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C5-PFNA | IS | 78.9 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C8-PFOSA | IS | 39.2 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C8-PFOS | IS | 95.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFDA | IS | 71.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-8:2 FTS | IS | 84.2 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| d3-MeFOSAA | IS | 69.0 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| d5-EtFOSAA | IS | 72.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |
| 13C2-PFUnA | IS | 64.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.115 L | 02-Oct-18 21:53 | 1 |


| Sample ID: BP-TT-FRB07-20180917 |  |  |  |  |  |  |  |  | PFAS Isotope Dilution Method |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Client Data  <br> Name: Tetra Tech <br> Project: Bethpage |  | Matrix <br> Date C | d: | 11:00 |  | tory Data mple: eceived: | $\begin{aligned} & 1803088-1 \\ & 19-S e p-18 \end{aligned}$ | 09:13 | Column: | BEH C18 |  |
| Analyte | CAS Number | Conc. (ng/L) | DL | LOD | LOQ | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| PFBA | 375-22-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFPeA | 2706-90-3 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFBS | 375-73-5 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHxA | 307-24-4 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHpA | 375-85-9 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHxS | 355-46-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 6:2 FTS | 27619-97-2 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOA | 335-67-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFHpS | 375-92-8 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFNA | 375-95-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOSA | 754-91-6 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFOS | 1763-23-1 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDA | 335-76-2 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 8:2 FTS | 39108-34-4 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| MeFOSAA | 2355-31-9 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| EtFOSAA | 2991-50-6 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFUnA | 2058-94-8 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDS | 335-77-3 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFDoA | 307-55-1 | ND | 2.82 | 5.12 | 8.22 | U | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFTrDA | 72629-94-8 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| PFTeDA | 376-06-7 | ND | 2.82 | 5.12 | 8.22 | U | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| Labeled Standards | Type | \% Recovery |  | Limits |  | Qualifiers | Batch | Extracted | Samp Size | Analyzed | Dilution |
| 13C3-PFBA | IS | 97.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C3-PFPeA | IS | 90.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C3-PFBS | IS | 95.4 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFHxA | IS | 92.0 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C4-PFHpA | IS | 98.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 1802-PFHxS | IS | 97.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-6:2 FTS | IS | 85.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFOA | IS | 92.6 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C5-PFNA | IS | 83.8 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C8-PFOSA | IS | 30.9 |  | 50-150 |  | H | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C8-PFOS | IS | 96.2 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFDA | IS | 72.5 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-8:2 FTS | IS | 80.7 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| d3-MeFOSAA | IS | 64.6 |  | 50-150 |  |  | B810157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| d5-EtFOSAA | IS | 71.5 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |
| 13C2-PFUnA | IS | 72.1 |  | 50-150 |  |  | B8I0157 | 28-Sep-18 | 0.122 L | 05-Oct-18 11:32 | 1 |

## Appendix C

## Support Documents

B. Chain of Custody (COC)




## Appendix C

## Support Documents

C. Calculations for Stage 4

The results for the 4 SDG field reagent blanks were all non-detects.

