NAVFAC
Naval Facilities Engineering Command

Off-Base Drinking Water Sample Results, Electronic Data Deliverable, Data Validation Report, and the Sample Location Figure, SDG 320-44805-1

Naval Air Station Willow Grove
Willow Grove, Pennsylvania

August 2019

"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","11.4","ng/L","H","0.910","DL","","TRG","","","4.79","LOQ","NO","-99","","260.9","10.00","1.92",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","11.3","ng/L","M H","2.59","DL","","TRG","","","6.71","LOQ","NO","-99","","260.9","10.00","5.75",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","5.61","ng/L","H","0.613","DL","","TRG","","","4.79","LOQ","NO","-99","","260.9","10.00","1.92",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","3.28","ng/L","J H","0.767","DL","","TRG","","","4.79","LOQ","NO","-99","","260.9","10.00","1.92",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.16","ng/L","J H","1.25","DL","","TRG","","","4.79","LOQ","NO","-99","","260.9","10.00","2.87",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.36","ng/L","J H","0.450","DL","","TRG","","","4.79","LOQ","NO","-99","","260.9","10.00","0.958",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","STL00993","13C2 PFHxA","89.3","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","95.8","","260.9","10.00","0",""
"WGNA-103118-RW-3876","537","RE","320-44805-1","TALSAC","STL00996","13C2 PFDA","94.8","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","95.8","","260.9","10.00","0",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","8.86","ng/L","Q","0.888","DL","","TRG","","","4.67","LOQ","YES","-99","","267.5","10.00","1.87",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","7.92","ng/L","M Q","2.52","DL","","TRG","","","6.54","LOQ","YES","-99","","267.5","10.00","5.61",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","4.04","ng/L","J M Q","0.598","DL","","TRG","","","4.67","LOQ","YES","-99","","267.5","10.00","1.87",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.40","ng/L","J Q","0.748","DL","","TRG","","","4.67","LOQ","YES","-99","","267.5","10.00","1.87",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","1.75","ng/L","J Q","1.21","DL","","TRG","","","4.67","LOQ","YES","-99","","267.5","10.00","2.80",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.935","ng/L","U M Q","0.439","DL","","TRG","","","4.67","LOQ","YES","-99","","267.5","10.00","0.935",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","STL00993","13C2 PFHxA","58.6","ng/L","Q","-99","DL","","SURR","63","","-99","LOQ","YES","93.5","","267.5","10.00","0",""
"WGNA-103118-RW-3876","537","RES","320-44805-1","TALSAC","STL00996","13C2 PFDA","61.6","ng/L","Q","-99","DL","","SURR","66","","-99","LOQ","YES","93.5","","267.5","10.00","0",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.91","ng/L","U H","0.908","DL","","TRG","","","4.78","LOQ","NO","-99","","261.7","10.00","1.91",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.73","ng/L","U M H","2.58","DL","","TRG","","","6.69","LOQ","NO","-99","","261.7","10.00","5.73",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.91","ng/L","U H","0.611","DL","","TRG","","","4.78","LOQ","NO","-99","","261.7","10.00","1.91",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.91","ng/L","U H","0.764","DL","","TRG","","","4.78","LOQ","NO","-99","","261.7","10.00","1.91",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.87","ng/L","U M H","1.24","DL","","TRG","","","4.78","LOQ","NO","-99","","261.7","10.00","2.87",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.955","ng/L","U H","0.449","DL","","TRG","","","4.78","LOQ","NO","-99","","261.7","10.00","0.955",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","STL00993","13C2 PFHxA","88.9","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","95.5","","261.7","10.00","0",""
"WGNA-103118-FRB-3385","537","RE","320-44805-10","TALSAC","STL00996","13C2 PFDA","104","ng/L","","-99","DL","","SURR","108","","-99","LOQ","YES","95.5","","261.7","10.00","0",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.81","ng/L","U M Q","0.858","DL","","TRG","","","4.52","LOQ","YES","-99","","276.7","10.00","1.81",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.42","ng/L","U M Q","2.44","DL","","TRG","","","6.32","LOQ","YES","-99","","276.7","10.00","5.42",""

"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.81","ng/L","U Q","0.578","DL","","TRG","","","4.52","LOQ","YES","-99","","276.7","10.00","1.81",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.81","ng/L","U Q","0.723","DL","","TRG","","","4.52","LOQ","YES","-99","","276.7","10.00","1.81",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.71","ng/L","U Q","1.17","DL","","TRG","","","4.52","LOQ","YES","-99","","276.7","10.00","2.71",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.904","ng/L","U Q","0.425","DL","","TRG","","","4.52","LOQ","YES","-99","","276.7","10.00","0.904",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","STL00993","13C2 PFHxA","43.5","ng/L","Q","-99","DL","","SURR","48","","-99","LOQ","YES","90.4","","276.7","10.00","0",""
"WGNA-103118-FRB-3385","537","RES","320-44805-10","TALSAC","STL00996","13C2 PFDA","47.7","ng/L","Q","-99","DL","","SURR","53","","-99","LOQ","YES","90.4","","276.7","10.00","0",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","18.7","ng/L","H","0.923","DL","","TRG","","","4.86","LOQ","NO","-99","","257.3","10.00","1.94",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","23.2","ng/L","M H","2.62","DL","","TRG","","","6.80","LOQ","NO","-99","","257.3","10.00","5.83",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","12.5","ng/L","H","0.622","DL","","TRG","","","4.86","LOQ","NO","-99","","257.3","10.00","1.94",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","7.74","ng/L","H","0.777","DL","","TRG","","","4.86","LOQ","NO","-99","","257.3","10.00","1.94",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","5.92","ng/L","H","1.26","DL","","TRG","","","4.86","LOQ","NO","-99","","257.3","10.00","2.91",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","3.00","ng/L","J H","0.457","DL","","TRG","","","4.86","LOQ","NO","-99","","257.3","10.00","0.972",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","STL00993","13C2 PFHxA","89.5","ng/L","","-99","DL","","SURR","92","","-99","LOQ","YES","97.2","","257.3","10.00","0",""
"NAWC-103118-RW-054","537","RE","320-44805-11","TALSAC","STL00996","13C2 PFDA","93.4","ng/L","","-99","DL","","SURR","96","","-99","LOQ","YES","97.2","","257.3","10.00","0",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","12.9","ng/L","Q","0.876","DL","","TRG","","","4.61","LOQ","YES","-99","","271.2","10.00","1.84",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","14.4","ng/L","M Q","2.49","DL","","TRG","","","6.45","LOQ","YES","-99","","271.2","10.00","5.53",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","6.91","ng/L","M Q","0.590","DL","","TRG","","","4.61","LOQ","YES","-99","","271.2","10.00","1.84",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","3.88","ng/L","J Q","0.737","DL","","TRG","","","4.61","LOQ","YES","-99","","271.2","10.00","1.84",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.56","ng/L","J Q","1.20","DL","","TRG","","","4.61","LOQ","YES","-99","","271.2","10.00","2.77",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.81","ng/L","J Q","0.433","DL","","TRG","","","4.61","LOQ","YES","-99","","271.2","10.00","0.922",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","STL00993","13C2 PFHxA","51.1","ng/L","Q","-99","DL","","SURR","55","","-99","LOQ","YES","92.2","","271.2","10.00","0",""
"NAWC-103118-RW-054","537","RES","320-44805-11","TALSAC","STL00996","13C2 PFDA","59.1","ng/L","Q","-99","DL","","SURR","64","","-99","LOQ","YES","92.2","","271.2","10.00","0",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.88","ng/L","U H","0.894","DL","","TRG","","","4.70","LOQ","NO","-99","","265.8","10.00","1.88",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.64","ng/L","U M H","2.54","DL","","TRG","","","6.58","LOQ","NO","-99","","265.8","10.00","5.64",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.88","ng/L","U H","0.602","DL","","TRG","","","4.70","LOQ","NO","-99","","265.8","10.00","1.88",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.88","ng/L","U M H","0.752","DL","","TRG","","","4.70","LOQ","NO","-99","","265.8","10.00","1.88",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.82","ng/L","U M H","1.22","DL","","TRG","","","4.70","LOQ","NO","-99","","265.8","10.00","2.82",""

"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.941","ng/L","U H","0.442","DL","","TRG","","","4.70","LOQ","NO","-99","","265.8","10.00","0.941",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","STL00993","13C2 PFHxA","82.2","ng/L","","-99","DL","","SURR","87","","-99","LOQ","YES","94.1","","265.8","10.00","0",""
"NAWC-103118-FRB-054","537","RE","320-44805-12","TALSAC","STL00996","13C2 PFDA","95.6","ng/L","","-99","DL","","SURR","102","","-99","LOQ","YES","94.1","","265.8","10.00","0",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.84","ng/L","U M Q","0.873","DL","","TRG","","","4.60","LOQ","YES","-99","","271.9","10.00","1.84",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.52","ng/L","U M Q","2.48","DL","","TRG","","","6.44","LOQ","YES","-99","","271.9","10.00","5.52",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.84","ng/L","U Q","0.588","DL","","TRG","","","4.60","LOQ","YES","-99","","271.9","10.00","1.84",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.84","ng/L","U Q","0.736","DL","","TRG","","","4.60","LOQ","YES","-99","","271.9","10.00","1.84",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.76","ng/L","U Q","1.20","DL","","TRG","","","4.60","LOQ","YES","-99","","271.9","10.00","2.76",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.919","ng/L","U Q","0.432","DL","","TRG","","","4.60","LOQ","YES","-99","","271.9","10.00","0.919",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","STL00993","13C2 PFHxA","91.2","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","91.9","","271.9","10.00","0",""
"NAWC-103118-FRB-054","537","RES","320-44805-12","TALSAC","STL00996","13C2 PFDA","95.7","ng/L","","-99","DL","","SURR","104","","-99","LOQ","YES","91.9","","271.9","10.00","0",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","20.1","ng/L","H","0.889","DL","","TRG","","","4.68","LOQ","NO","-99","","267.1","10.00","1.87",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","18.4","ng/L","M H","2.53","DL","","TRG","","","6.55","LOQ","NO","-99","","267.1","10.00","5.62",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","7.01","ng/L","H","0.599","DL","","TRG","","","4.68","LOQ","NO","-99","","267.1","10.00","1.87",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","7.99","ng/L","H","0.749","DL","","TRG","","","4.68","LOQ","NO","-99","","267.1","10.00","1.87",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","4.75","ng/L","H","1.22","DL","","TRG","","","4.68","LOQ","NO","-99","","267.1","10.00","2.81",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.55","ng/L","J H","0.440","DL","","TRG","","","4.68","LOQ","NO","-99","","267.1","10.00","0.936",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","STL00993","13C2 PFHxA","85.6","ng/L","","-99","DL","","SURR","92","","-99","LOQ","YES","93.6","","267.1","10.00","0",""
"WGNA-103118-DUP-51","537","RE","320-44805-13","TALSAC","STL00996","13C2 PFDA","89.0","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","93.6","","267.1","10.00","0",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","21.7","ng/L","M Q","0.831","DL","","TRG","","","4.38","LOQ","YES","-99","","285.7","10.00","1.75",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","20.2","ng/L","M Q","2.36","DL","","TRG","","","6.13","LOQ","YES","-99","","285.7","10.00","5.25",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","6.99","ng/L","M Q","0.560","DL","","TRG","","","4.38","LOQ","YES","-99","","285.7","10.00","1.75",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","7.90","ng/L","Q","0.700","DL","","TRG","","","4.38","LOQ","YES","-99","","285.7","10.00","1.75",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","6.12","ng/L","Q","1.14","DL","","TRG","","","4.38","LOQ","YES","-99","","285.7","10.00","2.63",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.95","ng/L","J Q","0.411","DL","","TRG","","","4.38","LOQ","YES","-99","","285.7","10.00","0.875",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","STL00993","13C2 PFHxA","86.4","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","87.5","","285.7","10.00","0",""
"WGNA-103118-DUP-51","537","RES","320-44805-13","TALSAC","STL00996","13C2 PFDA","87.4","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","87.5","","285.7","10.00","0",""

"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.91","ng/L","U H","0.910","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.74","ng/L","U H","2.59","DL","","TRG","","","6.70","LOQ","NO","-99","","261.1","10.00","5.74",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.91","ng/L","U H","0.613","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.91","ng/L","U H","0.766","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.87","ng/L","U M H","1.24","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","2.87",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.957","ng/L","U H","0.450","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","0.957",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","STL00993","13C2 PFHxA","93.8","ng/L","","-99","DL","","SURR","98","","-99","LOQ","YES","95.7","","261.1","10.00","0",""
"WGNA-103118-FRB-3876","537","RE","320-44805-2","TALSAC","STL00996","13C2 PFDA","90.0","ng/L","","-99","DL","","SURR","94","","-99","LOQ","YES","95.7","","261.1","10.00","0",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.85","ng/L","U M Q","0.878","DL","","TRG","","","4.62","LOQ","YES","-99","","270.5","10.00","1.85",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.55","ng/L","U Q","2.50","DL","","TRG","","","6.47","LOQ","YES","-99","","270.5","10.00","5.55",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.85","ng/L","U Q","0.591","DL","","TRG","","","4.62","LOQ","YES","-99","","270.5","10.00","1.85",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.85","ng/L","U Q","0.739","DL","","TRG","","","4.62","LOQ","YES","-99","","270.5","10.00","1.85",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.77","ng/L","U M Q","1.20","DL","","TRG","","","4.62","LOQ","YES","-99","","270.5","10.00","2.77",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.924","ng/L","U Q","0.434","DL","","TRG","","","4.62","LOQ","YES","-99","","270.5","10.00","0.924",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","STL00993","13C2 PFHxA","61.3","ng/L","Q","-99","DL","","SURR","66","","-99","LOQ","YES","92.4","","270.5","10.00","0",""
"WGNA-103118-FRB-3876","537","RES","320-44805-2","TALSAC","STL00996","13C2 PFDA","62.3","ng/L","Q","-99","DL","","SURR","67","","-99","LOQ","YES","92.4","","270.5","10.00","0",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","18.4","ng/L","H","0.912","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","17.9","ng/L","M H","2.59","DL","","TRG","","","6.72","LOQ","NO","-99","","260.3","10.00","5.76",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","6.09","ng/L","H","0.615","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","5.80","ng/L","H","0.768","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","5.07","ng/L","H","1.25","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","2.88",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.19","ng/L","J H","0.451","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","0.960",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","STL00993","13C2 PFHxA","89.2","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","96.0","","260.3","10.00","0",""
"NAWC-103118-RW-029","537","RE","320-44805-3","TALSAC","STL00996","13C2 PFDA","91.5","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","96.0","","260.3","10.00","0",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","10.4","ng/L","Q","0.875","DL","","TRG","","","4.61","LOQ","YES","-99","","271.3","10.00","1.84",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","10.4","ng/L","M Q","2.49","DL","","TRG","","","6.45","LOQ","YES","-99","","271.3","10.00","5.53",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","3.03","ng/L","J Q","0.590","DL","","TRG","","","4.61","LOQ","YES","-99","","271.3","10.00","1.84",""

"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.84","ng/L","J Q","0.737","DL","","TRG","","","4.61","LOQ","YES","-99","","271.3","10.00","1.84",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.53","ng/L","J Q","1.20","DL","","TRG","","","4.61","LOQ","YES","-99","","271.3","10.00","2.76",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.14","ng/L","J Q","0.433","DL","","TRG","","","4.61","LOQ","YES","-99","","271.3","10.00","0.921",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","STL00993","13C2 PFHxA","42.7","ng/L","Q","-99","DL","","SURR","46","","-99","LOQ","YES","92.1","","271.3","10.00","0",""
"NAWC-103118-RW-029","537","RES","320-44805-3","TALSAC","STL00996","13C2 PFDA","48.6","ng/L","Q","-99","DL","","SURR","53","","-99","LOQ","YES","92.1","","271.3","10.00","0",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.91","ng/L","U H","0.910","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.74","ng/L","U M H","2.59","DL","","TRG","","","6.70","LOQ","NO","-99","","261.1","10.00","5.74",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.91","ng/L","U H","0.613","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.91","ng/L","U H","0.766","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","1.91",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.87","ng/L","U M H","1.24","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","2.87",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.957","ng/L","U H","0.450","DL","","TRG","","","4.79","LOQ","NO","-99","","261.1","10.00","0.957",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","STL00993","13C2 PFHxA","93.8","ng/L","","-99","DL","","SURR","98","","-99","LOQ","YES","95.7","","261.1","10.00","0",""
"NAWC-103118-FRB-029","537","RE","320-44805-4","TALSAC","STL00996","13C2 PFDA","100","ng/L","","-99","DL","","SURR","104","","-99","LOQ","YES","95.7","","261.1","10.00","0",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.85","ng/L","U Q","0.879","DL","","TRG","","","4.63","LOQ","YES","-99","","270.2","10.00","1.85",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.55","ng/L","U M Q","2.50","DL","","TRG","","","6.48","LOQ","YES","-99","","270.2","10.00","5.55",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.85","ng/L","U Q","0.592","DL","","TRG","","","4.63","LOQ","YES","-99","","270.2","10.00","1.85",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.85","ng/L","U Q","0.740","DL","","TRG","","","4.63","LOQ","YES","-99","","270.2","10.00","1.85",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.78","ng/L","U M Q","1.20","DL","","TRG","","","4.63","LOQ","YES","-99","","270.2","10.00","2.78",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.925","ng/L","U Q","0.435","DL","","TRG","","","4.63","LOQ","YES","-99","","270.2","10.00","0.925",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","STL00993","13C2 PFHxA","52.7","ng/L","Q","-99","DL","","SURR","57","","-99","LOQ","YES","92.5","","270.2","10.00","0",""
"NAWC-103118-FRB-029","537","RES","320-44805-4","TALSAC","STL00996","13C2 PFDA","56.0","ng/L","Q","-99","DL","","SURR","61","","-99","LOQ","YES","92.5","","270.2","10.00","0",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","17.8","ng/L","H","0.912","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","15.8","ng/L","M H","2.59","DL","","TRG","","","6.72","LOQ","NO","-99","","260.3","10.00","5.76",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","9.41","ng/L","M H","0.615","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","6.01","ng/L","M H","0.768","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","1.92",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","5.34","ng/L","H","1.25","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","2.88",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.98","ng/L","J H","0.451","DL","","TRG","","","4.80","LOQ","NO","-99","","260.3","10.00","0.960",""

"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","STL00993","13C2 PFHxA","89.7","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","96.0","","260.3","10.00","0",""
"WGNA-103118-RW-3933","537","RE","320-44805-5","TALSAC","STL00996","13C2 PFDA","92.8","ng/L","","-99","DL","","SURR","97","","-99","LOQ","YES","96.0","","260.3","10.00","0",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","19.7","ng/L","M Q","0.865","DL","","TRG","","","4.55","LOQ","YES","-99","","274.5","10.00","1.82",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","16.0","ng/L","M Q","2.46","DL","","TRG","","","6.38","LOQ","YES","-99","","274.5","10.00","5.46",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","8.77","ng/L","Q","0.583","DL","","TRG","","","4.55","LOQ","YES","-99","","274.5","10.00","1.82",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","5.46","ng/L","Q","0.729","DL","","TRG","","","4.55","LOQ","YES","-99","","274.5","10.00","1.82",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","5.92","ng/L","Q","1.18","DL","","TRG","","","4.55","LOQ","YES","-99","","274.5","10.00","2.73",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.25","ng/L","J Q","0.428","DL","","TRG","","","4.55","LOQ","YES","-99","","274.5","10.00","0.911",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","STL00993","13C2 PFHxA","87.3","ng/L","","-99","DL","","SURR","96","","-99","LOQ","YES","91.1","","274.5","10.00","0",""
"WGNA-103118-RW-3933","537","RES","320-44805-5","TALSAC","STL00996","13C2 PFDA","87.3","ng/L","","-99","DL","","SURR","96","","-99","LOQ","YES","91.1","","274.5","10.00","0",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.92","ng/L","U H","0.913","DL","","TRG","","","4.80","LOQ","NO","-99","","260.2","10.00","1.92",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.76","ng/L","U H","2.59","DL","","TRG","","","6.73","LOQ","NO","-99","","260.2","10.00","5.76",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.92","ng/L","U H","0.615","DL","","TRG","","","4.80","LOQ","NO","-99","","260.2","10.00","1.92",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.92","ng/L","U H","0.769","DL","","TRG","","","4.80","LOQ","NO","-99","","260.2","10.00","1.92",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.88","ng/L","U H","1.25","DL","","TRG","","","4.80","LOQ","NO","-99","","260.2","10.00","2.88",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.961","ng/L","U H","0.452","DL","","TRG","","","4.80","LOQ","NO","-99","","260.2","10.00","0.961",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","STL00993","13C2 PFHxA","81.7","ng/L","","-99","DL","","SURR","85","","-99","LOQ","YES","96.1","","260.2","10.00","0",""
"WGNA-103118-FRB-3933","537","RE","320-44805-6","TALSAC","STL00996","13C2 PFDA","89.0","ng/L","","-99","DL","","SURR","93","","-99","LOQ","YES","96.1","","260.2","10.00","0",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.82","ng/L","U M Q","0.866","DL","","TRG","","","4.56","LOQ","YES","-99","","274.1","10.00","1.82",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.47","ng/L","U Q","2.46","DL","","TRG","","","6.38","LOQ","YES","-99","","274.1","10.00","5.47",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.82","ng/L","U Q","0.584","DL","","TRG","","","4.56","LOQ","YES","-99","","274.1","10.00","1.82",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.82","ng/L","U Q","0.730","DL","","TRG","","","4.56","LOQ","YES","-99","","274.1","10.00","1.82",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.74","ng/L","U Q","1.19","DL","","TRG","","","4.56","LOQ","YES","-99","","274.1","10.00","2.74",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.912","ng/L","U Q","0.429","DL","","TRG","","","4.56","LOQ","YES","-99","","274.1","10.00","0.912",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","STL00993","13C2 PFHxA","62.9","ng/L","Q","-99","DL","","SURR","69","","-99","LOQ","YES","91.2","","274.1","10.00","0",""
"WGNA-103118-FRB-3933","537","RES","320-44805-6","TALSAC","STL00996","13C2 PFDA","74.0","ng/L","","-99","DL","","SURR","81","","-99","LOQ","YES","91.2","","274.1","10.00","0",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","19.4","ng/L","H","0.913","DL","","TRG","","","4.81","LOQ","NO","-99","","260.1","10.00","1.92",""

"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","18.7","ng/L","M H","2.60","DL","","TRG","","","6.73","LOQ","NO","-99","","260.1","10.00","5.77",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","7.00","ng/L","H","0.615","DL","","TRG","","","4.81","LOQ","NO","-99","","260.1","10.00","1.92",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","8.10","ng/L","H","0.769","DL","","TRG","","","4.81","LOQ","NO","-99","","260.1","10.00","1.92",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","4.81","ng/L","H","1.25","DL","","TRG","","","4.81","LOQ","NO","-99","","260.1","10.00","2.88",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.55","ng/L","J H","0.452","DL","","TRG","","","4.81","LOQ","NO","-99","","260.1","10.00","0.961",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","STL00993","13C2 PFHxA","91.6","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","96.1","","260.1","10.00","0",""
"WGNA-103118-RW-0500","537","RE","320-44805-7","TALSAC","STL00996","13C2 PFDA","91.7","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","96.1","","260.1","10.00","0",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","20.5","ng/L","M Q","0.846","DL","","TRG","","","4.45","LOQ","YES","-99","","280.6","10.00","1.78",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","20.3","ng/L","M Q","2.41","DL","","TRG","","","6.24","LOQ","YES","-99","","280.6","10.00","5.35",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","7.15","ng/L","Q","0.570","DL","","TRG","","","4.45","LOQ","YES","-99","","280.6","10.00","1.78",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","7.61","ng/L","Q","0.713","DL","","TRG","","","4.45","LOQ","YES","-99","","280.6","10.00","1.78",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","5.65","ng/L","Q","1.16","DL","","TRG","","","4.45","LOQ","YES","-99","","280.6","10.00","2.67",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","2.53","ng/L","J Q","0.419","DL","","TRG","","","4.45","LOQ","YES","-99","","280.6","10.00","0.891",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","STL00993","13C2 PFHxA","92.4","ng/L","","-99","DL","","SURR","104","","-99","LOQ","YES","89.1","","280.6","10.00","0",""
"WGNA-103118-RW-0500","537","RES","320-44805-7","TALSAC","STL00996","13C2 PFDA","89.0","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","89.1","","280.6","10.00","0",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.87","ng/L","U H","0.891","DL","","TRG","","","4.69","LOQ","NO","-99","","266.7","10.00","1.87",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.62","ng/L","U M H","2.53","DL","","TRG","","","6.56","LOQ","NO","-99","","266.7","10.00","5.62",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.87","ng/L","U H","0.600","DL","","TRG","","","4.69","LOQ","NO","-99","","266.7","10.00","1.87",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.87","ng/L","U H","0.750","DL","","TRG","","","4.69","LOQ","NO","-99","","266.7","10.00","1.87",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.81","ng/L","U M H","1.22","DL","","TRG","","","4.69","LOQ","NO","-99","","266.7","10.00","2.81",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.937","ng/L","U H","0.441","DL","","TRG","","","4.69","LOQ","NO","-99","","266.7","10.00","0.937",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","STL00993","13C2 PFHxA","80.3","ng/L","","-99","DL","","SURR","86","","-99","LOQ","YES","93.7","","266.7","10.00","0",""
"WGNA-103118-FRB-0500","537","RE","320-44805-8","TALSAC","STL00996","13C2 PFDA","93.3","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","93.7","","266.7","10.00","0",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","1.84","ng/L","U M Q","0.875","DL","","TRG","","","4.61","LOQ","YES","-99","","271.4","10.00","1.84",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","5.53","ng/L","U Q","2.49","DL","","TRG","","","6.45","LOQ","YES","-99","","271.4","10.00","5.53",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","1.84","ng/L","U Q","0.590","DL","","TRG","","","4.61","LOQ","YES","-99","","271.4","10.00","1.84",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","1.84","ng/L","U Q","0.737","DL","","TRG","","","4.61","LOQ","YES","-99","","271.4","10.00","1.84",""

"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","2.76","ng/L","U Q","1.20","DL","","TRG","","","4.61","LOQ","YES","-99","","271.4","10.00","2.76",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.921","ng/L","U Q","0.433","DL","","TRG","","","4.61","LOQ","YES","-99","","271.4","10.00","0.921",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","STL00993","13C2 PFHxA","75.5","ng/L","","-99","DL","","SURR","82","","-99","LOQ","YES","92.1","","271.4","10.00","0",""
"WGNA-103118-FRB-0500","537","RES","320-44805-8","TALSAC","STL00996","13C2 PFDA","75.0","ng/L","","-99","DL","","SURR","81","","-99","LOQ","YES","92.1","","271.4","10.00","0",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","15.7","ng/L","H","0.927","DL","","TRG","","","4.88","LOQ","NO","-99","","256.1","10.00","1.95",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","16.1","ng/L","M H","2.64","DL","","TRG","","","6.83","LOQ","NO","-99","","256.1","10.00","5.86",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","3.66","ng/L","J H","0.625","DL","","TRG","","","4.88","LOQ","NO","-99","","256.1","10.00","1.95",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.69","ng/L","J H","0.781","DL","","TRG","","","4.88","LOQ","NO","-99","","256.1","10.00","1.95",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","4.07","ng/L","J H","1.27","DL","","TRG","","","4.88","LOQ","NO","-99","","256.1","10.00","2.93",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.70","ng/L","J H","0.459","DL","","TRG","","","4.88","LOQ","NO","-99","","256.1","10.00","0.976",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","STL00993","13C2 PFHxA","98.7","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","97.6","","256.1","10.00","0",""
"WGNA-103118-RW-3385","537","RE","320-44805-9","TALSAC","STL00996","13C2 PFDA","98.0","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","97.6","","256.1","10.00","0",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","15.0","ng/L","M Q","0.849","DL","","TRG","","","4.47","LOQ","YES","-99","","279.9","10.00","1.79",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","13.4","ng/L","M Q","2.41","DL","","TRG","","","6.25","LOQ","YES","-99","","279.9","10.00","5.36",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","3.25","ng/L","J Q","0.572","DL","","TRG","","","4.47","LOQ","YES","-99","","279.9","10.00","1.79",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.18","ng/L","J Q","0.715","DL","","TRG","","","4.47","LOQ","YES","-99","","279.9","10.00","1.79",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.70","ng/L","J Q","1.16","DL","","TRG","","","4.47","LOQ","YES","-99","","279.9","10.00","2.68",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","0.893","ng/L","U M Q","0.420","DL","","TRG","","","4.47","LOQ","YES","-99","","279.9","10.00","0.893",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","STL00993","13C2 PFHxA","71.2","ng/L","","-99","DL","","SURR","80","","-99","LOQ","YES","89.3","","279.9","10.00","0",""
"WGNA-103118-RW-3385","537","RES","320-44805-9","TALSAC","STL00996","13C2 PFDA","74.8","ng/L","","-99","DL","","SURR","84","","-99","LOQ","YES","89.3","","279.9","10.00","0",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","63.67","ng/L","Q","0.950","DL","","SPK","69","","5.00","LOQ","YES","92.8","","250","10.00","2.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","65.81","ng/L","Q","2.70","DL","","SPK","66","","7.00","LOQ","YES","100","","250","10.00","6.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","56.25","ng/L","Q","0.640","DL","","SPK","62","","5.00","LOQ","YES","91.0","","250","10.00","2.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","48.54","ng/L","Q","0.800","DL","","SPK","55","","5.00","LOQ","YES","88.4","","250","10.00","2.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","60.07","ng/L","Q","1.30","DL","","SPK","60","","5.00","LOQ","YES","100","","250","10.00","3.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","65.79","ng/L","Q","0.470","DL","","SPK","66","","5.00","LOQ","YES","100","","250","10.00","1.00",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","STL00993","13C2

PFHxA","59.91","ng/L","Q","-99","DL","","SURR","60","","-99","LOQ","YES","100","","250","10.00","0",""
"LCS 320-258878/2-A","537","RES","LCS 320-258878/2-A","TALSAC","STL00996","13C2
PFDA","75.31","ng/L","","-99","DL","","SURR","75","","-99","LOQ","YES","100","","250","10.00","0",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","165.1","ng/L","","0.950","DL","","SPK","89","","5.00","LOQ","YES","186","","250.00","10.00","2.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","175.1","ng/L","","2.70","DL","","SPK","87","","7.00","LOQ","YES","200","","250.00","10.00","6.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","165.4","ng/L","","0.640","DL","","SPK","91","","5.00","LOQ","YES","182","","250.00","10.00","2.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","168.8","ng/L","","0.800","DL","","SPK","95","","5.00","LOQ","YES","177","","250.00","10.00","2.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","169.7","ng/L","","1.30","DL","","SPK","85","","5.00","LOQ","YES","200","","250.00","10.00","3.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","209.3","ng/L","","0.470","DL","","SPK","105","","5.00","LOQ","YES","200","","250.00","10.00","1.00",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","STL00993","13C2
PFHxA","93.55","ng/L","","-99","DL","","SURR","94","","-99","LOQ","YES","100","","250.00","10.00","0",""
"LCS 320-262132/2-A","537","RES","LCS 320-262132/2-A","TALSAC","STL00996","13C2
PFDA","98.01","ng/L","","-99","DL","","SURR","98","","-99","LOQ","YES","100","","250.00","10.00","0",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","100.6","ng/L","Q","0.950","DL","","SPK","108","45","5.00","LOQ","YES","92.8","LCS 320-258878/2-
A","250","10.00","2.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","106.1","ng/L","Q","2.70","DL","","SPK","106","47","7.00","LOQ","YES","100","LCS 320-258878/2-
A","250","10.00","6.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic
acid (PFHxS)","91.63","ng/L","Q","0.640","DL","","SPK","101","48","5.00","LOQ","YES","91.0","LCS 320-
258878/2-A","250","10.00","2.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","77.56","ng/L","Q","0.800","DL","","SPK","88","46","5.00","LOQ","YES","88.4","LCS 320-258878/2-
A","250","10.00","2.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","103.8","ng/L","Q","1.30","DL","","SPK","104","53","5.00","LOQ","YES","100","LCS 320-258878/2-
A","250","10.00","3.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","112.6","ng/L","Q","0.470","DL","","SPK","113","52","5.00","LOQ","YES","100","LCS 320-258878/2-
A","250","10.00","1.00",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","STL00993","13C2
PFHxA","98.84","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","100","LCS 320-258878/2-
A","250","10.00","0",""
"LCSD 320-258878/3-A","537","RES","LCSD 320-258878/3-A","TALSAC","STL00996","13C2
PFDA","106.5","ng/L","","-99","DL","","SURR","107","","-99","LOQ","YES","100","LCS 320-258878/2-
A","250","10.00","0",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","165.4","ng/L","","0.950","DL","","SPK","89","0","5.00","LOQ","YES","186","LCS 320-262132/2-
A","250.00","10.00","2.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","170.7","ng/L","","2.70","DL","","SPK","85","3","7.00","LOQ","YES","200","LCS 320-262132/2-
A","250.00","10.00","6.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic
acid (PFHxS)","169.8","ng/L","","0.640","DL","","SPK","93","3","5.00","LOQ","YES","182","LCS 320-262132/2-
A","250.00","10.00","2.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","156.0","ng/L","","0.800","DL","","SPK","88","8","5.00","LOQ","YES","177","LCS 320-262132/2-

A","250.00","10.00","2.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","168.9","ng/L","","1.30","DL","","SPK","84","1","5.00","LOQ","YES","200","LCS 320-262132/2-A","250.00","10.00","3.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","182.2","ng/L","","0.470","DL","","SPK","91","14","5.00","LOQ","YES","200","LCS 320-262132/2-A","250.00","10.00","1.00",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","STL00993","13C2 PFHxA","84.15","ng/L","","-99","DL","","SURR","84","","-99","LOQ","YES","100","LCS 320-262132/2-A","250.00","10.00","0",""
"LCSD 320-262132/3-A","537","RES","LCSD 320-262132/3-A","TALSAC","STL00996","13C2 PFDA","95.35","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","100","LCS 320-262132/2-A","250.00","10.00","0",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","2.00","ng/L","U","0.950","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","6.00","ng/L","U","2.70","DL","","TRG","","","7.00","LOQ","YES","-99","","250","10.00","6.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","2.00","ng/L","U","0.640","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.00","ng/L","U","0.800","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.00","ng/L","U","1.30","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","3.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.00","ng/L","U","0.470","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","1.00",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","STL00993","13C2 PFHxA","51.31","ng/L","Q","-99","DL","","SURR","51","","-99","LOQ","YES","100","","250","10.00","0",""
"MB 320-258878/1-A","537","RES","MB 320-258878/1-A","TALSAC","STL00996","13C2 PFDA","61.35","ng/L","Q","-99","DL","","SURR","61","","-99","LOQ","YES","100","","250","10.00","0",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid (PFOS)","2.00","ng/L","U","0.950","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","335-67-1","Perfluorooctanoic acid (PFOA)","6.00","ng/L","U M","2.70","DL","","TRG","","","7.00","LOQ","YES","-99","","250.00","10.00","6.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid (PFHxS)","2.00","ng/L","U","0.640","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid (PFBS)","2.00","ng/L","U","0.800","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","375-85-9","Perfluoroheptanoic acid (PFHpA)","3.00","ng/L","U M","1.30","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","3.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","375-95-1","Perfluorononanoic acid (PFNA)","1.00","ng/L","U M","0.470","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","1.00",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","STL00993","13C2 PFHxA","94.53","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","100","","250.00","10.00","0",""
"MB 320-262132/1-A","537","RES","MB 320-262132/1-A","TALSAC","STL00996","13C2 PFDA","99.71","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","100","","250.00","10.00","0",""
"Unknown","Unknown","NAWC-110118-RW-365","11/01/2018 07:10","AQ","320-44850-1","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018 13:11","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-FRB-304","11/01/2018 10:05","AQ","320-44850-10","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018 15:37","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-RW-206","11/01/2018 11:10","AQ","320-44850-

11","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
15:44","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-FRB-206","11/01/2018 11:05","AQ","320-44850-
12","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
15:51","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-RW-0518","11/01/2018 11:40","AQ","320-44850-
13","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
15:59","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-FRB-0518","11/01/2018 11:35","AQ","320-44850-
14","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
16:06","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-RW-363","11/01/2018 15:10","AQ","320-44850-
15","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
16:14","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-FRB-363","11/01/2018 15:05","AQ","320-44850-
16","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
16:21","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-FRB-365","11/01/2018 07:05","AQ","320-44850-
2","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:19","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-RW-0617","11/01/2018 07:40","AQ","320-44850-
3","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:26","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-FRB-0617","11/01/2018 07:35","AQ","320-44850-
4","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:34","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-RW-286","11/01/2018 08:10","AQ","320-44850-
5","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:41","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-FRB-286","11/01/2018 08:05","AQ","320-44850-
6","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:49","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-RW-4015","11/01/2018 09:10","AQ","320-44850-
7","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:56","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","WGNA-110118-FRB-4015","11/01/2018 09:05","AQ","320-44850-
8","FB","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
15:22","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","NAWC-110118-RW-304","11/01/2018 10:10","AQ","320-44850-
9","NM","","0.70","537","METHOD","RES","11/15/2018 07:37","11/16/2018
15:29","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-

259682","320-44850-1","11/02/2018 09:20","11/05/2018 09:35",""
"Unknown","Unknown","LCS 320-259305/2-A","","AQ","LCS 320-259305/2-
A","LCS","","-99","537","METHOD","RES","11/15/2018 07:37","11/16/2018
12:56","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/15/2018 07:37","11/05/2018 09:35",""
"Unknown","Unknown","LCSD 320-259305/3-A","","AQ","LCSD 320-259305/3-
A","LCSD","","-99","537","METHOD","RES","11/15/2018 07:37","11/16/2018
13:04","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/15/2018 07:37","11/05/2018 09:35",""
"Unknown","Unknown","MB 320-259305/1-A","","AQ","MB 320-259305/1-
A","MB","","-99","537","METHOD","RES","11/15/2018 07:37","11/16/2018
12:49","TALSAC","COA","WET","NA","1","NA","NA","","100","320-259305","320-259305","NA","320-
259680","320-44850-1","11/15/2018 07:37","11/05/2018 09:35",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","16.8","ng/L","","0.940","DL","","TRG","","","4.95","LOQ","YES","-99","","252.6","10.00","1.98",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","13.1","ng/L","M","2.67","DL","","TRG","","","6.93","LOQ","YES","-99","","252.6","10.00","5.94",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","10.2","ng/L","M","0.633","DL","","TRG","","","4.95","LOQ","YES","-99","","252.6","10.00","1.98",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","10.5","ng/L","","0.792","DL","","TRG","","","4.95","LOQ","YES","-99","","252.6","10.00","1.98",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.81","ng/L","J M","1.29","DL","","TRG","","","4.95","LOQ","YES","-99","","252.6","10.00","2.97",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.21","ng/L","J","0.465","DL","","TRG","","","4.95","LOQ","YES","-99","","252.6","10.00","0.990",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","STL00993","13C2
PFHxA","99.8","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","99.0","","252.6","10.00","0",""
"NAWC-110118-RW-365","537","RES","320-44850-1","TALSAC","STL00996","13C2
PFDA","96.0","ng/L","","-99","DL","","SURR","97","","-99","LOQ","YES","99.0","","252.6","10.00","0",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.96","ng/L","U","0.932","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.89","ng/L","U","2.65","DL","","TRG","","","6.87","LOQ","YES","-99","","254.7","10.00","5.89",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.96","ng/L","U","0.628","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.96","ng/L","U","0.785","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.94","ng/L","U","1.28","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","2.94",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.982","ng/L","U","0.461","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","0.982",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","STL00993","13C2
PFHxA","101","ng/L","","-99","DL","","SURR","103","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"NAWC-110118-FRB-304","537","RES","320-44850-10","TALSAC","STL00996","13C2
PFDA","101","ng/L","","-99","DL","","SURR","103","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","12.8","ng/L","","0.948","DL","","TRG","","","4.99","LOQ","YES","-99","","250.6","10.00","2.00",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","11.4","ng/L","M","2.69","DL","","TRG","","","6.98","LOQ","YES","-99","","250.6","10.00","5.99",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","3.01","ng/L","J M","0.638","DL","","TRG","","","4.99","LOQ","YES","-99","","250.6","10.00","2.00",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","5.26","ng/L","","0.798","DL","","TRG","","","4.99","LOQ","YES","-99","","250.6","10.00","2.00",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","375-85-9","Perfluoroheptanoic acid

(PFHpA)","3.49","ng/L","J","1.30","DL","","TRG","","","4.99","LOQ","YES","-99","","250.6","10.00","2.99",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.84","ng/L","J","0.469","DL","","TRG","","","4.99","LOQ","YES","-99","","250.6","10.00","0.998",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","STL00993","13C2
PFHxA","105","ng/L","","-99","DL","","SURR","105","","-99","LOQ","YES","99.8","","250.6","10.00","0",""
"NAWC-110118-RW-206","537","RES","320-44850-11","TALSAC","STL00996","13C2
PFDA","105","ng/L","","-99","DL","","SURR","105","","-99","LOQ","YES","99.8","","250.6","10.00","0",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.93","ng/L","U","0.918","DL","","TRG","","","4.83","LOQ","YES","-99","","258.6","10.00","1.93",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.80","ng/L","U","2.61","DL","","TRG","","","6.77","LOQ","YES","-99","","258.6","10.00","5.80",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.93","ng/L","U","0.619","DL","","TRG","","","4.83","LOQ","YES","-99","","258.6","10.00","1.93",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.93","ng/L","U","0.773","DL","","TRG","","","4.83","LOQ","YES","-99","","258.6","10.00","1.93",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.90","ng/L","U","1.26","DL","","TRG","","","4.83","LOQ","YES","-99","","258.6","10.00","2.90",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.967","ng/L","U","0.454","DL","","TRG","","","4.83","LOQ","YES","-99","","258.6","10.00","0.967",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","STL00993","13C2
PFHxA","98.9","ng/L","","-99","DL","","SURR","102","","-99","LOQ","YES","96.7","","258.6","10.00","0",""
"NAWC-110118-FRB-206","537","RES","320-44850-12","TALSAC","STL00996","13C2
PFDA","96.2","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","96.7","","258.6","10.00","0",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","20.1","ng/L","M","0.916","DL","","TRG","","","4.82","LOQ","YES","-99","","259.3","10.00","1.93",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","24.0","ng/L","M","2.60","DL","","TRG","","","6.75","LOQ","YES","-99","","259.3","10.00","5.78",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","7.83","ng/L","","0.617","DL","","TRG","","","4.82","LOQ","YES","-99","","259.3","10.00","1.93",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","15.2","ng/L","","0.771","DL","","TRG","","","4.82","LOQ","YES","-99","","259.3","10.00","1.93",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","5.28","ng/L","M","1.25","DL","","TRG","","","4.82","LOQ","YES","-99","","259.3","10.00","2.89",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","2.63","ng/L","J","0.453","DL","","TRG","","","4.82","LOQ","YES","-99","","259.3","10.00","0.964",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","STL00993","13C2
PFHxA","106","ng/L","","-99","DL","","SURR","110","","-99","LOQ","YES","96.4","","259.3","10.00","0",""
"WGNA-110118-RW-0518","537","RES","320-44850-13","TALSAC","STL00996","13C2
PFDA","101","ng/L","","-99","DL","","SURR","104","","-99","LOQ","YES","96.4","","259.3","10.00","0",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.94","ng/L","U","0.923","DL","","TRG","","","4.86","LOQ","YES","-99","","257.3","10.00","1.94",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.83","ng/L","U","2.62","DL","","TRG","","","6.80","LOQ","YES","-99","","257.3","10.00","5.83",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.94","ng/L","U","0.622","DL","","TRG","","","4.86","LOQ","YES","-99","","257.3","10.00","1.94",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.94","ng/L","U","0.777","DL","","TRG","","","4.86","LOQ","YES","-99","","257.3","10.00","1.94",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.91","ng/L","U","1.26","DL","","TRG","","","4.86","LOQ","YES","-99","","257.3","10.00","2.91",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.972","ng/L","U","0.457","DL","","TRG","","","4.86","LOQ","YES","-99","","257.3","10.00","0.972",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","STL00993","13C2
PFHxA","92.2","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","97.2","","257.3","10.00","0",""
"WGNA-110118-FRB-0518","537","RES","320-44850-14","TALSAC","STL00996","13C2

PFDA","92.8","ng/L","","-99","DL","","SURR","96","","-99","LOQ","YES","97.2","","257.3","10.00","0",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","18.7","ng/L","","0.935","DL","","TRG","","","4.92","LOQ","YES","-99","","254.1","10.00","1.97",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","20.7","ng/L","M","2.66","DL","","TRG","","","6.89","LOQ","YES","-99","","254.1","10.00","5.90",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","8.24","ng/L","","0.630","DL","","TRG","","","4.92","LOQ","YES","-99","","254.1","10.00","1.97",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","15.1","ng/L","","0.787","DL","","TRG","","","4.92","LOQ","YES","-99","","254.1","10.00","1.97",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","6.77","ng/L","M","1.28","DL","","TRG","","","4.92","LOQ","YES","-99","","254.1","10.00","2.95",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","2.42","ng/L","J","0.462","DL","","TRG","","","4.92","LOQ","YES","-99","","254.1","10.00","0.984",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","STL00993","13C2
PFHxA","93.1","ng/L","","-99","DL","","SURR","95","","-99","LOQ","YES","98.4","","254.1","10.00","0",""
"NAWC-110118-RW-363","537","RES","320-44850-15","TALSAC","STL00996","13C2
PFDA","98.6","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","98.4","","254.1","10.00","0",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.93","ng/L","U","0.916","DL","","TRG","","","4.82","LOQ","YES","-99","","259.2","10.00","1.93",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.79","ng/L","U M","2.60","DL","","TRG","","","6.75","LOQ","YES","-99","","259.2","10.00","5.79",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.93","ng/L","U","0.617","DL","","TRG","","","4.82","LOQ","YES","-99","","259.2","10.00","1.93",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.93","ng/L","U","0.772","DL","","TRG","","","4.82","LOQ","YES","-99","","259.2","10.00","1.93",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.89","ng/L","U","1.25","DL","","TRG","","","4.82","LOQ","YES","-99","","259.2","10.00","2.89",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.965","ng/L","U","0.453","DL","","TRG","","","4.82","LOQ","YES","-99","","259.2","10.00","0.965",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","STL00993","13C2
PFHxA","95.8","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","96.5","","259.2","10.00","0",""
"NAWC-110118-FRB-363","537","RES","320-44850-16","TALSAC","STL00996","13C2
PFDA","99.2","ng/L","","-99","DL","","SURR","103","","-99","LOQ","YES","96.5","","259.2","10.00","0",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","2.00","ng/L","U","0.950","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","6.00","ng/L","U M","2.70","DL","","TRG","","","7.00","LOQ","YES","-99","","250","10.00","6.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","2.00","ng/L","U","0.640","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","2.00","ng/L","U","0.800","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","2.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.00","ng/L","U","1.30","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","3.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.00","ng/L","U","0.470","DL","","TRG","","","5.00","LOQ","YES","-99","","250","10.00","1.00",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","STL00993","13C2
PFHxA","102","ng/L","","-99","DL","","SURR","102","","-99","LOQ","YES","100","","250","10.00","0",""
"NAWC-110118-FRB-365","537","RES","320-44850-2","TALSAC","STL00996","13C2
PFDA","100","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","100","","250","10.00","0",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","18.2","ng/L","","0.953","DL","","TRG","","","5.02","LOQ","YES","-99","","249.2","10.00","2.01",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","19.5","ng/L","M","2.71","DL","","TRG","","","7.02","LOQ","YES","-99","","249.2","10.00","6.02",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","355-46-4","Perfluorohexanesulfonic acid

(PFHxS)","7.69","ng/L","","0.642","DL","","TRG","","","5.02","LOQ","YES","-99","","249.2","10.00","2.01",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","22.1","ng/L","","0.803","DL","","TRG","","","5.02","LOQ","YES","-99","","249.2","10.00","2.01",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","7.02","ng/L","M","1.30","DL","","TRG","","","5.02","LOQ","YES","-99","","249.2","10.00","3.01",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","2.90","ng/L","J","0.472","DL","","TRG","","","5.02","LOQ","YES","-99","","249.2","10.00","1.00",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","STL00993","13C2
PFHxA","105","ng/L","","-99","DL","","SURR","105","","-99","LOQ","YES","100","","249.2","10.00","0",""
"WGNA-110118-RW-0617","537","RES","320-44850-3","TALSAC","STL00996","13C2
PFDA","103","ng/L","","-99","DL","","SURR","102","","-99","LOQ","YES","100","","249.2","10.00","0",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.96","ng/L","U M","0.931","DL","","TRG","","","4.90","LOQ","YES","-99","","255","10.00","1.96",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.88","ng/L","U M","2.65","DL","","TRG","","","6.86","LOQ","YES","-99","","255","10.00","5.88",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.96","ng/L","U M","0.627","DL","","TRG","","","4.90","LOQ","YES","-99","","255","10.00","1.96",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.96","ng/L","U","0.784","DL","","TRG","","","4.90","LOQ","YES","-99","","255","10.00","1.96",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.94","ng/L","U","1.27","DL","","TRG","","","4.90","LOQ","YES","-99","","255","10.00","2.94",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.980","ng/L","U","0.461","DL","","TRG","","","4.90","LOQ","YES","-99","","255","10.00","0.980",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","STL00993","13C2
PFHxA","107","ng/L","","-99","DL","","SURR","109","","-99","LOQ","YES","98.0","","255","10.00","0",""
"WGNA-110118-FRB-0617","537","RES","320-44850-4","TALSAC","STL00996","13C2
PFDA","104","ng/L","","-99","DL","","SURR","107","","-99","LOQ","YES","98.0","","255","10.00","0",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","18.0","ng/L","","0.932","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","16.8","ng/L","M","2.65","DL","","TRG","","","6.87","LOQ","YES","-99","","254.7","10.00","5.89",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","5.99","ng/L","","0.628","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","10.5","ng/L","","0.785","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.89","ng/L","J M","1.28","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","2.94",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.97","ng/L","J","0.461","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","0.982",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","STL00993","13C2
PFHxA","101","ng/L","","-99","DL","","SURR","103","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"NAWC-110118-RW-286","537","RES","320-44850-5","TALSAC","STL00996","13C2
PFDA","99.1","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.98","ng/L","U","0.939","DL","","TRG","","","4.94","LOQ","YES","-99","","252.8","10.00","1.98",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.93","ng/L","U","2.67","DL","","TRG","","","6.92","LOQ","YES","-99","","252.8","10.00","5.93",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.98","ng/L","U","0.633","DL","","TRG","","","4.94","LOQ","YES","-99","","252.8","10.00","1.98",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.98","ng/L","U","0.791","DL","","TRG","","","4.94","LOQ","YES","-99","","252.8","10.00","1.98",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.97","ng/L","U","1.29","DL","","TRG","","","4.94","LOQ","YES","-99","","252.8","10.00","2.97",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","375-95-1","Perfluorononanoic acid

(PFNA)","0.989","ng/L","U","0.465","DL","","TRG","","","4.94","LOQ","YES","-99","","252.8","10.00","0.989",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","STL00993","13C2
PFHxA","102","ng/L","","-99","DL","","SURR","103","","-99","LOQ","YES","98.9","","252.8","10.00","0",""
"NAWC-110118-FRB-286","537","RES","320-44850-6","TALSAC","STL00996","13C2
PFDA","98.3","ng/L","","-99","DL","","SURR","99","","-99","LOQ","YES","98.9","","252.8","10.00","0",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","15.5","ng/L","","0.932","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","14.6","ng/L","M","2.65","DL","","TRG","","","6.87","LOQ","YES","-99","","254.7","10.00","5.89",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","8.74","ng/L","","0.628","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","5.67","ng/L","","0.785","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","1.96",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","4.43","ng/L","J M","1.28","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","2.94",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","2.31","ng/L","J","0.461","DL","","TRG","","","4.91","LOQ","YES","-99","","254.7","10.00","0.982",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","STL00993","13C2
PFHxA","100","ng/L","","-99","DL","","SURR","102","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"WGNA-110118-RW-4015","537","RES","320-44850-7","TALSAC","STL00996","13C2
PFDA","99.3","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","98.2","","254.7","10.00","0",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","1.92","ng/L","U","0.913","DL","","TRG","","","4.81","LOQ","YES","-99","","260","10.00","1.92",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","5.77","ng/L","U M","2.60","DL","","TRG","","","6.73","LOQ","YES","-99","","260","10.00","5.77",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","1.92","ng/L","U","0.615","DL","","TRG","","","4.81","LOQ","YES","-99","","260","10.00","1.92",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","1.92","ng/L","U","0.769","DL","","TRG","","","4.81","LOQ","YES","-99","","260","10.00","1.92",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","2.88","ng/L","U","1.25","DL","","TRG","","","4.81","LOQ","YES","-99","","260","10.00","2.88",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","0.962","ng/L","U","0.452","DL","","TRG","","","4.81","LOQ","YES","-99","","260","10.00","0.962",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","STL00993","13C2
PFHxA","97.5","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","96.2","","260","10.00","0",""
"WGNA-110118-FRB-4015","537","RES","320-44850-8","TALSAC","STL00996","13C2
PFDA","95.8","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","96.2","","260","10.00","0",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","17.4","ng/L","","0.940","DL","","TRG","","","4.95","LOQ","YES","-99","","252.7","10.00","1.98",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","14.2","ng/L","M","2.67","DL","","TRG","","","6.93","LOQ","YES","-99","","252.7","10.00","5.94",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","6.72","ng/L","M","0.633","DL","","TRG","","","4.95","LOQ","YES","-99","","252.7","10.00","1.98",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","5.90","ng/L","","0.791","DL","","TRG","","","4.95","LOQ","YES","-99","","252.7","10.00","1.98",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.79","ng/L","J","1.29","DL","","TRG","","","4.95","LOQ","YES","-99","","252.7","10.00","2.97",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.61","ng/L","J","0.465","DL","","TRG","","","4.95","LOQ","YES","-99","","252.7","10.00","0.989",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","STL00993","13C2
PFHxA","98.8","ng/L","","-99","DL","","SURR","100","","-99","LOQ","YES","98.9","","252.7","10.00","0",""
"NAWC-110118-RW-304","537","RES","320-44850-9","TALSAC","STL00996","13C2
PFDA","100","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","98.9","","252.7","10.00","0",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid

(PFOS)","178.3","ng/L","","0.950","DL","","SPK","96","","5.00","LOQ","YES","186","","250.00","10.00","2.00",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","206.8","ng/L","","2.70","DL","","SPK","103","","7.00","LOQ","YES","200","","250.00","10.00","6.00",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","184.5","ng/L","M","0.640","DL","","SPK","101","","5.00","LOQ","YES","182","","250.00","10.00","2.00",
""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","180.3","ng/L","","0.800","DL","","SPK","102","","5.00","LOQ","YES","177","","250.00","10.00","2.00",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","200.1","ng/L","","1.30","DL","","SPK","100","","5.00","LOQ","YES","200","","250.00","10.00","3.00",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","202.7","ng/L","","0.470","DL","","SPK","101","","5.00","LOQ","YES","200","","250.00","10.00","1.00",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","STL00993","13C2
PFHxA","108.0","ng/L","","-99","DL","","SURR","108","","-99","LOQ","YES","100","","250.00","10.00","0",""
"LCS 320-259305/2-A","537","RES","LCS 320-259305/2-A","TALSAC","STL00996","13C2
PFDA","100.6","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","100","","250.00","10.00","0",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","1763-23-1","Perfluorooctanesulfonic
acid (PFOS)","179.1","ng/L","","0.950","DL","","SPK","96","0","5.00","LOQ","YES","186","LCS 320-259305/2-
A","250.00","10.00","2.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","192.5","ng/L","","2.70","DL","","SPK","96","7","7.00","LOQ","YES","200","LCS 320-259305/2-
A","250.00","10.00","6.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","355-46-4","Perfluorohexanesulfonic
acid (PFHxS)","177.1","ng/L","M","0.640","DL","","SPK","97","4","5.00","LOQ","YES","182","LCS 320-259305/2-
A","250.00","10.00","2.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","183.4","ng/L","","0.800","DL","","SPK","104","2","5.00","LOQ","YES","177","LCS 320-259305/2-
A","250.00","10.00","2.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","180.7","ng/L","","1.30","DL","","SPK","90","10","5.00","LOQ","YES","200","LCS 320-259305/2-
A","250.00","10.00","3.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","188.5","ng/L","","0.470","DL","","SPK","94","7","5.00","LOQ","YES","200","LCS 320-259305/2-
A","250.00","10.00","1.00",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","STL00993","13C2
PFHxA","101.1","ng/L","","-99","DL","","SURR","101","","-99","LOQ","YES","100","LCS 320-259305/2-
A","250.00","10.00","0",""
"LCSD 320-259305/3-A","537","RES","LCSD 320-259305/3-A","TALSAC","STL00996","13C2
PFDA","97.28","ng/L","","-99","DL","","SURR","97","","-99","LOQ","YES","100","LCS 320-259305/2-
A","250.00","10.00","0",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","1763-23-1","Perfluorooctanesulfonic acid
(PFOS)","2.00","ng/L","U","0.950","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","335-67-1","Perfluorooctanoic acid
(PFOA)","6.00","ng/L","U M","2.70","DL","","TRG","","","7.00","LOQ","YES","-99","","250.00","10.00","6.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","355-46-4","Perfluorohexanesulfonic acid
(PFHxS)","2.00","ng/L","U","0.640","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","375-73-5","Perfluorobutanesulfonic acid
(PFBS)","2.00","ng/L","U","0.800","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","2.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","375-85-9","Perfluoroheptanoic acid
(PFHpA)","3.00","ng/L","U","1.30","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","3.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","375-95-1","Perfluorononanoic acid
(PFNA)","1.00","ng/L","U","0.470","DL","","TRG","","","5.00","LOQ","YES","-99","","250.00","10.00","1.00",""
"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","STL00993","13C2
PFHxA","104.8","ng/L","","-99","DL","","SURR","105","","-99","LOQ","YES","100","","250.00","10.00","0",""

"MB 320-259305/1-A","537","RES","MB 320-259305/1-A","TALSAC","STL00996","13C2 PFDA","97.59","ng/L","","-99","DL","","SURR","98","","-99","LOQ","YES","100","","250.00","10.00","0",""
"Unknown","Unknown","WGNA-103118-RW-3876","10/31/2018 07:55","AQ","320-44805-1","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:02","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-3876","10/31/2018 07:55","AQ","320-44805-1","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:05","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3385","10/31/2018 10:35","AQ","320-44805-10","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:24","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3385","10/31/2018 10:35","AQ","320-44805-10","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 21:12","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-RW-054","10/31/2018 12:10","AQ","320-44805-11","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:31","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-RW-054","10/31/2018 12:10","AQ","320-44805-11","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 21:34","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262818","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-FRB-054","10/31/2018 12:05","AQ","320-44805-12","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:39","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-FRB-054","10/31/2018 12:05","AQ","320-44805-12","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 21:41","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262818","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-DUP-51","10/31/2018 07:00","AQ","320-44805-13","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:46","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-DUP-51","10/31/2018 07:00","AQ","320-44805-13","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 21:49","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262818","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3876","10/31/2018 07:50","AQ","320-44805-2","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:09","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3876","10/31/2018 07:50","AQ","320-44805-2","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:12","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-RW-029","10/31/2018 08:40","AQ","320-44805-3","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:17","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""

"Unknown","Unknown","NAWC-103118-RW-029","10/31/2018 08:40","AQ","320-44805-3","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:20","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-FRB-029","10/31/2018 08:35","AQ","320-44805-4","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:24","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","NAWC-103118-FRB-029","10/31/2018 08:35","AQ","320-44805-4","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:27","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-3933","10/31/2018 09:40","AQ","320-44805-5","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:32","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-3933","10/31/2018 09:40","AQ","320-44805-5","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:35","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3933","10/31/2018 09:35","AQ","320-44805-6","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:39","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-3933","10/31/2018 09:35","AQ","320-44805-6","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:42","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-0500","10/31/2018 10:10","AQ","320-44805-7","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 02:47","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-0500","10/31/2018 10:10","AQ","320-44805-7","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:49","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-0500","10/31/2018 10:05","AQ","320-44805-8","FB","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:09","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-FRB-0500","10/31/2018 10:05","AQ","320-44805-8","FB","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 20:57","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-3385","10/31/2018 10:40","AQ","320-44805-9","NM","","3.30","537","METHOD","RES","11/13/2018 12:46","11/16/2018 03:16","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259499","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","WGNA-103118-RW-3385","10/31/2018 10:40","AQ","320-44805-9","NM","","3.30","537","METHOD","RE","11/30/2018 08:13","12/03/2018 21:04","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262808","320-44805-1","11/01/2018 10:20","12/06/2018 15:52",""
"Unknown","Unknown","LCS 320-258878/2-A","","AQ","LCS 320-258878/2-A","LCS","","-99","537","METHOD","RES","11/13/2018 12:46","11/16/2018

01:47","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/13/2018 12:46","12/06/2018 15:52",""
"Unknown","Unknown","LCS 320-262132/2-A","","AQ","LCS 320-262132/2-A","LCS","","-99","537","METHOD","RES","11/30/2018 08:13","12/03/2018 18:43","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262816","320-44805-1","11/30/2018 08:13","12/06/2018 15:52",""
"Unknown","Unknown","LCSD 320-258878/3-A","","AQ","LCSD 320-258878/3-A","LCSD","","-99","537","METHOD","RES","11/13/2018 12:46","11/16/2018 01:54","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/13/2018 12:46","12/06/2018 15:52",""
"Unknown","Unknown","LCSD 320-262132/3-A","","AQ","LCSD 320-262132/3-A","LCSD","","-99","537","METHOD","RES","11/30/2018 08:13","12/03/2018 18:50","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262816","320-44805-1","11/30/2018 08:13","12/06/2018 15:52",""
"Unknown","Unknown","MB 320-258878/1-A","","AQ","MB 320-258878/1-A","MB","","-99","537","METHOD","RES","11/13/2018 12:46","11/16/2018 01:40","TALSAC","COA","WET","NA","1","NA","NA","","100","320-258878","320-258878","NA","320-259497","320-44805-1","11/13/2018 12:46","12/06/2018 15:52",""
"Unknown","Unknown","MB 320-262132/1-A","","AQ","MB 320-262132/1-A","MB","","-99","537","METHOD","RES","11/30/2018 08:13","12/03/2018 18:35","TALSAC","COA","WET","NA","1","NA","NA","","100","320-262132","320-262132","NA","320-262816","320-44805-1","11/30/2018 08:13","12/06/2018 15:52",""

TETRA TECH

INTERNAL CORRESPONDENCE

TO: **A. FREBOWITZ** **DATE:** **DECEMBER 11, 2018**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION –POLYFLUOROALKYL SUBSTANCES (PFAS)**
NAS JRB WILLOW GROVE
SAMPLE DELIVERY GROUP (SDG) 320-44805-1

SAMPLES: 6/Field Reagent Blank (FRB)

NAWC-103118-FRB-029	NAWC-103118-FRB-054
WGNA-103118-FRB-0500	WGNA-103118-FRB-3385
WGNA-103118-FRB-3876	WGNA-103118-FRB-3933

7/Drinking Water

NAWC-103118-RW-029	NAWC-103118-RW-054
WGNA-103118-DUP-51	WGNA-103118-RW-0500
WGNA-103118-RW-3385	WGNA-103118-RW-3876
WGNA-103118-RW-3933	

Overview

The sample set for NAS JRB Willow Grove, SDG 320-44805-1, consisted of seven (7) drinking water samples and six (6) FRB samples. All samples were analyzed for select perfluorinated alkyl acids including pentadecafluorooctanoic acid (PFOA), perfluorobutane sulfonic acid (PFBS), perfluoroheptanoic acid (PFHpA), perfluorohexanesulfonic acid (PFHxS), perfluorononanoic acid (PFNA) and perfluorooctane sulfonic acid (PFOS). One field duplicate pair, WGNA-103118-RW-0500 / WGNA-103118-DUP-51, was included in this SDG.

The samples were collected by Tetra Tech on October 31, 2018 and analyzed by Test America-Sacramento. All sample analyses were conducted in accordance with EPA Method 537 version 1.1 analytical and reporting protocols.

The data contained in this SDG was validated with regard to the following parameters: data completeness, holding times, mass calibration, mass spectral acquisition rate, instrument sensitivity check, initial/continuing calibrations, ion transitions, laboratory method/FRB results, surrogate spike recoveries, laboratory control sample / laboratory control sample duplicate results, injected internal standard areas and recoveries, field duplicate results, chromatographic resolution, analyte identification, analyte quantitation, and detection limits. Areas of concern are listed below.

Major

None.

Minor

The following surrogate recoveries were below the 70% quality control limit.

Sample	Surrogate
WGNA-103118-RW-3876	13C2-PFHxA; 13C2-PFDA
WGNA-103118-FRB-3876	13C2-PFHxA; 13C2-PFDA
NAWC-103118-RW-029	13C2-PFHxA; 13C2-PFDA
NAWC-103118-FRB-029	13C2-PFHxA; 13C2-PFDA
WGNA-103118-FRB-3933	13C2-PFHxA
WGNA-103118-FRB-3385	13C2-PFHxA; 13C2-PFDA
NAWC-103118-RW-054	13C2-PFHxA; 13C2-PFDA

The nondetected results reported for the affected samples were qualified as estimated (UJ). The detected results were qualified as estimated (J) as a result of conflicting noncompliances or estimated biased low (J-) as a result of several low recovery noncompliances.

All laboratory control sample (LCS) percent recoveries were below the 70% quality control limit affecting all samples. The laboratory control sample duplicate (LCSD) percent recoveries were within quality control limits. All LCS/LCSD relative percent differences (RPDs) were greater than the 30% quality control limits. The nondetected results reported for the affected samples were qualified as estimated (UJ). The detected results were qualified as estimated (J) as a result of conflicting noncompliances or estimated biased low (J-) as a result of several low recovery noncompliances.

The internal standard areas compared to the ending continuing calibration areas for 13-PFOA and PFOS were below the quality control limits for sample WGNA-103118-RW-3933. The internal areas compared to the initial calibration and beginning continuing calibration were with quality control limits. The sample was re-extracted outside hold time and the results between the original and reanalysis were comparable. The detected results reported in the affected sample were qualified as estimated (J).

The internal standard areas compared to the beginning continuing calibration areas for 13-PFOA and PFOS were below the quality control limits for samples WGNA-103118-RW-3385 and NAWC-103118-FRB-054. The internal areas compared to the initial calibration and ending continuing calibration were with quality control limits. The samples were re-extracted outside hold time and the results between the original and reanalysis were comparable. The detected and nondetected results reported in the affected samples were qualified as estimated (J) and (UJ), respectively.

Notes

All samples were re-extracted, as part of the corrective action process, 16 days past the 14 day hold time due to LCS percent recoveries for all compounds below the 70% quality control limit and several surrogate and injected internal standard recoveries outside the quality control limits. The original LCSD percent recoveries were within the quality control limits. The original results were used for validation as EPA Method 537 version 1.1 states that sample results are only valid if samples are extracted within sample holding times. No total sample results for PFOA and PFOS were above the 70 ng/L EPA advisory limit for either the original or re-extracted results.

Samples with detections and their associated FRBs are summarized below. No detected results were present in the FRBs.

Sample	Associated FRB
NAWC-103118-RW-029	NAWC-103118-FRB-029
NAWC-103118-RW-054	NAWC-103118-FRB-054
WGNA-103118-DUP-51	WGNA-103118-FRB-0500
WGNA-103118-RW-0500	WGNA-103118-FRB-0500
WGNA-103118-RW-3385	WGNA-103118-FRB-3385
WGNA-103118-RW-3876	WGNA-103118-FRB-3876
WGNA-103118-RW-3933	WGNA-103118-FRB-3933

Non-detected results were reported to the Limit of Detection (LOD).

The buffering agent Trizma was added to all drinking water samples.

Executive Summary

Laboratory Performance: Several surrogate recoveries were below the quality control limit. All LCS recoveries were below the quality control limits. Several internal standard areas were outside the quality control limits.

Other Factors Affecting Data Quality: Results below the RL were estimated.

The data for these analyses were reviewed with reference to 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), US EPA National Functional Guidelines for Organic Data Review (January 2017), and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013) as applicable. The text of this report has been formulated to address only those areas affecting data quality.

Tetra Tech, Inc.
Terri L. Solomon
Chemist/Data Validator

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

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 x 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-WE04	NSAMPLE	NAWC-103118-FRB-029			NAWC-103118-FRB-054			NAWC-103118-RW-029			NAWC-103118-RW-054		
SDG: 320-44805-1	LAB_ID	320-44805-4			320-44805-12			320-44805-3			320-44805-11		
FRACTION: PFAS	SAMP_DATE	10/31/2018			10/31/2018			10/31/2018			10/31/2018		
MEDIA: WATER	QC_TYPE	FB			FB			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
PENTADECAFLUOROOCTANOIC ACID (PFOA)		5.55	UJ	ER	5.52	UJ	EN	10.4	J-	ER	14.4	J-	ER
PERFLUOROBUTANESULFONIC ACID (PFBS)		1.85	UJ	ER	1.84	UJ	EN	2.84	J	EPR	3.88	J	EPR
PERFLUOROHEPTANOIC ACID (PFHPA)		2.78	UJ	ER	2.76	UJ	EN	3.53	J	EPR	3.56	J	EPR
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1.85	UJ	ER	1.84	UJ	EN	3.03	J	EPR	6.91	J-	ER
PERFLUORONONANOIC ACID (PFNA)		0.925	UJ	ER	0.919	UJ	EN	1.14	J	EPR	1.81	J	EPR
PERFLUOROOCTANESULFONIC ACID (PFOS)		1.85	UJ	ER	1.84	UJ	EN	10.4	J-	ER	12.9	J-	ER

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-103118-DUP-51			WGNA-103118-FRB-0500			WGNA-103118-FRB-3385			WGNA-103118-FRB-3876		
SDG: 320-44805-1	LAB_ID	320-44805-13			320-44805-8			320-44805-10			320-44805-2		
FRACTION: PFAS	SAMP_DATE	10/31/2018			10/31/2018			10/31/2018			10/31/2018		
MEDIA: WATER	QC_TYPE	NM			FB			FB			FB		
	UNITS	NG/L			NG/L			NG/L			NG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	WGNA-103118-RW-0500											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID (PFOA)		20.2	J	E	5.53	UJ	E	5.42	UJ	ER	5.55	UJ	ER
PERFLUOROBUTANESULFONIC ACID (PFBS)		7.9	J	E	1.84	UJ	E	1.81	UJ	ER	1.85	UJ	ER
PERFLUOROHEPTANOIC ACID (PFHPA)		6.12	J	E	2.76	UJ	E	2.71	UJ	ER	2.77	UJ	ER
PERFLUOROHEXANESULFONIC ACID (PFHXS)		6.99	J	E	1.84	UJ	E	1.81	UJ	ER	1.85	UJ	ER
PERFLUORONONANOIC ACID (PFNA)		2.95	J	EP	0.921	UJ	E	0.904	UJ	ER	0.924	UJ	ER
PERFLUOROOCTANESULFONIC ACID (PFOS)		21.7	J	E	1.84	UJ	E	1.81	UJ	ER	1.85	UJ	ER

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-103118-FRB-3933			WGNA-103118-RW-0500			WGNA-103118-RW-3385			WGNA-103118-RW-3876		
SDG: 320-44805-1	LAB_ID	320-44805-6			320-44805-7			320-44805-9			320-44805-1		
FRACTION: PFAS	SAMP_DATE	10/31/2018			10/31/2018			10/31/2018			10/31/2018		
MEDIA: WATER	QC_TYPE	FB			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
PENTADECAFLUOROOCTANOIC ACID (PFOA)		5.47	UJ	ER	20.3	J	E	13.4	J	EN	7.92	J-	ER
PERFLUOROBUTANESULFONIC ACID (PFBS)		1.82	UJ	ER	7.61	J	E	2.18	J	ENP	2.4	J	EPR
PERFLUOROHEPTANOIC ACID (PFHPA)		2.74	UJ	ER	5.65	J	E	3.7	J	ENP	1.75	J	EPR
PERFLUOROHEXANESULFONIC ACID (PFHXS)		1.82	UJ	ER	7.15	J	E	3.25	J	ENP	4.04	J	EPR
PERFLURONONANOIC ACID (PFNA)		0.912	UJ	ER	2.53	J	EP	0.893	UJ	EN	0.935	UJ	ER
PERFLUOROOCTANESULFONIC ACID (PFOS)		1.82	UJ	ER	20.5	J	E	15	J	EN	8.86	J-	ER

PROJ_NO: 08005-WE04	NSAMPLE	WGNA-103118-RW-3933		
SDG: 320-44805-1	LAB_ID	320-44805-5		
FRACTION: PFAS	SAMP_DATE	10/31/2018		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	NG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
PENTADECAFLUOROOCTANOIC ACID (PFOA)		16	J	EN
PERFLUOROBUTANESULFONIC ACID (PFBS)		5.46	J	EN
PERFLUOROHEPTANOIC ACID (PFHPA)		5.92	J	EN
PERFLUOROHEXANESULFONIC ACID (PFHXS)		8.77	J	EN
PERFLUORONONANOIC ACID (PFNA)		2.25	J	ENP
PERFLUOROOCTANESULFONIC ACID (PFOS)		19.7	J	EN

FORM I
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Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3876 | Lab Sample ID: 320-44805-1

Matrix: Water | Lab File ID: 2018.11.15_537BB_029.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:55

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 267.5(mL) | Date Analyzed: 11/16/2018 02:02

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.86	~~Q~~ J-	4.67	1.87	0.888
335-67-1	Perfluorooctanoic acid (PFOA)	7.92	~~M Q~~ J-	6.54	5.61	2.52
375-95-1	Perfluorononanoic acid (PFNA)	0.935	~~U M Q~~ UJ	4.67	0.935	0.439
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	4.04	J ~~M Q~~	4.67	1.87	0.598
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.75	J ~~Q~~	4.67	2.80	1.21
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.40	J ~~Q~~	4.67	1.87	0.748

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	63	Q	70-130
STL00996	13C2 PFDA	66	Q	70-130

Terri L Salomon
12/11/2018

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LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3876 | Lab Sample ID: 320-44805-2

Matrix: Water | Lab File ID: 2018.11.15_537BB_030.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:50

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 270.5(mL) | Date Analyzed: 11/16/2018 02:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.85	~~U M Q~~ UJ	4.62	1.85	0.878
335-67-1	Perfluorooctanoic acid (PFOA)	5.55	~~U Q~~ UJ	6.47	5.55	2.50
375-95-1	Perfluorononanoic acid (PFNA)	0.924	~~U Q~~ UJ	4.62	0.924	0.434
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.85	~~U Q~~ UJ	4.62	1.85	0.591
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.77	~~U M Q~~ UJ	4.62	2.77	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.85	~~U Q~~ UJ	4.62	1.85	0.739

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	66	Q	70-130
STL00996	13C2 PFDA	67	Q	70-130

12/11/2018

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Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-029 | Lab Sample ID: 320-44805-3

Matrix: Water | Lab File ID: 2018.11.15_537BB_031.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.3(mL) | Date Analyzed: 11/16/2018 02:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	10.4	~~Q~~ J-	4.61	1.84	0.875
335-67-1	Perfluorooctanoic acid (PFOA)	10.4	~~M Q~~ J-	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	1.14	J ~~Q~~	4.61	0.921	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.03	J ~~Q~~	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.53	J ~~Q~~	4.61	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.84	J ~~Q~~	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	46	Q	70-130
STL00996	13C2 PFDA	53	Q	70-130

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Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-029 | Lab Sample ID: 320-44805-4

Matrix: Water | Lab File ID: 2018.11.15_537BB_032.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:35

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 270.2(mL) | Date Analyzed: 11/16/2018 02:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.85	~~U Q~~ UJ	4.63	1.85	0.879
335-67-1	Perfluorooctanoic acid (PFOA)	5.55	~~U M Q~~ UJ	6.48	5.55	2.50
375-95-1	Perfluorononanoic acid (PFNA)	0.925	~~U Q~~ UJ	4.63	0.925	0.435
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.85	~~U Q~~ UJ	4.63	1.85	0.592
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.78	~~U M Q~~ UJ	4.63	2.78	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.85	~~U Q~~ UJ	4.63	1.85	0.740

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	57	Q	70-130
STL00996	13C2 PFDA	61	Q	70-130

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Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3933 | Lab Sample ID: 320-44805-5

Matrix: Water | Lab File ID: 2018.11.15_537BB_033.d

Analysis Method: 537 | Date Collected: 10/31/2018 09:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 274.5(mL) | Date Analyzed: 11/16/2018 02:32

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19.7	~~M Q~~ J	4.55	1.82	0.865
335-67-1	Perfluorooctanoic acid (PFOA)	16.0	~~M Q~~ J	6.38	5.46	2.46
375-95-1	Perfluorononanoic acid (PFNA)	2.25	J ~~Q~~	4.55	0.911	0.428
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.77	~~Q~~ J	4.55	1.82	0.583
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.92	~~Q~~ J	4.55	2.73	1.18
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.46	~~Q~~ J	4.55	1.82	0.729

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	96		70-130
STL00996	13C2 PFDA	96		70-130

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12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3933 | Lab Sample ID: 320-44805-6

Matrix: Water | Lab File ID: 2018.11.15_537BB_034.d

Analysis Method: 537 | Date Collected: 10/31/2018 09:35

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 274.1(mL) | Date Analyzed: 11/16/2018 02:39

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.82	~~U M Q~~ UJ	4.56	1.82	0.866
335-67-1	Perfluorooctanoic acid (PFOA)	5.47	~~U Q~~ UJ	6.38	5.47	2.46
375-95-1	Perfluorononanoic acid (PFNA)	0.912	~~U Q~~ UJ	4.56	0.912	0.429
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.82	~~U Q~~ UJ	4.56	1.82	0.584
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.74	~~U Q~~ UJ	4.56	2.74	1.19
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.82	~~U Q~~ UJ	4.56	1.82	0.730

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	69	Q	70-130
STL00996	13C2 PFDA	81		70-130

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12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-0500 | Lab Sample ID: 320-44805-7

Matrix: Water | Lab File ID: 2018.11.15_537BB_035.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:10

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 280.6(mL) | Date Analyzed: 11/16/2018 02:47

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	20.5	~~M Q~~ J	4.45	1.78	0.846
335-67-1	Perfluorooctanoic acid (PFOA)	20.3	~~M Q~~ J	6.24	5.35	2.41
375-95-1	Perfluorononanoic acid (PFNA)	2.53	J ~~Q~~	4.45	0.891	0.419
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	7.15	~~Q~~ J	4.45	1.78	0.570
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.65	~~Q~~ J	4.45	2.67	1.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.61	~~Q~~ J	4.45	1.78	0.713

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	104		70-130
STL00996	13C2 PFDA	100		70-130

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12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-0500 | Lab Sample ID: 320-44805-8

Matrix: Water | Lab File ID: 2018.11.15_537BB_038.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:05

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.4(mL) | Date Analyzed: 11/16/2018 03:09

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.84	~~U M Q~~ UJ	4.61	1.84	0.875
335-67-1	Perfluorooctanoic acid (PFOA)	5.53	~~U Q~~ UJ	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	0.921	~~U Q~~ UJ	4.61	0.921	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.84	~~U Q~~ UJ	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.76	~~U Q~~ UJ	4.61	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.84	~~U Q~~ UJ	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	81		70-130

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12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3385 | Lab Sample ID: 320-44805-9

Matrix: Water | Lab File ID: 2018.11.15_537BB_039.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 279.9(mL) | Date Analyzed: 11/16/2018 03:16

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15.0	~~M Q~~ J	4.47	1.79	0.849
335-67-1	Perfluorooctanoic acid (PFOA)	13.4	~~M Q~~ J	6.25	5.36	2.41
375-95-1	Perfluorononanoic acid (PFNA)	0.893	~~U M Q~~ UJ	4.47	0.893	0.420
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.25	J ~~Q~~ J	4.47	1.79	0.572
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.70	J ~~Q~~ J	4.47	2.68	1.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.18	J ~~Q~~ J	4.47	1.79	0.715

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	84		70-130

Toni L Salomon
12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3385 | Lab Sample ID: 320-44805-10

Matrix: Water | Lab File ID: 2018.11.15_537BB_040.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:35

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 276.7(mL) | Date Analyzed: 11/16/2018 03:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.81	~~U M Q~~ UJ	4.52	1.81	0.858
335-67-1	Perfluorooctanoic acid (PFOA)	5.42	~~U M Q~~ UJ	6.32	5.42	2.44
375-95-1	Perfluorononanoic acid (PFNA)	0.904	~~U Q~~ UJ	4.52	0.904	0.425
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.81	~~U Q~~ UJ	4.52	1.81	0.578
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.71	~~U Q~~ UJ	4.52	2.71	1.17
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.81	~~U Q~~ UJ	4.52	1.81	0.723

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	48	Q	70-130
STL00996	13C2 PFDA	53	Q	70-130

12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-054 | Lab Sample ID: 320-44805-11

Matrix: Water | Lab File ID: 2018.11.15_537BB_041.d

Analysis Method: 537 | Date Collected: 10/31/2018 12:10

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.2(mL) | Date Analyzed: 11/16/2018 03:31

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12.9	~~Q~~ J-	4.61	1.84	0.876
335-67-1	Perfluorooctanoic acid (PFOA)	14.4	~~M Q~~ J-	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	1.81	J ~~Q~~	4.61	0.922	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.91	~~M Q~~ J-	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.56	J ~~Q~~	4.61	2.77	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.88	J ~~Q~~	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	55	Q	70-130
STL00996	13C2 PFDA	64	Q	70-130

Teri L Salemen
12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-054 | Lab Sample ID: 320-44805-12

Matrix: Water | Lab File ID: 2018.11.15_537BB_042.d

Analysis Method: 537 | Date Collected: 10/31/2018 12:05

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.9(mL) | Date Analyzed: 11/16/2018 03:39

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.84	~~U M Q~~ UJ	4.60	1.84	0.873
335-67-1	Perfluorooctanoic acid (PFOA)	5.52	~~U M Q~~ UJ	6.44	5.52	2.48
375-95-1	Perfluorononanoic acid (PFNA)	0.919	~~U Q~~ UJ	4.60	0.919	0.432
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.84	~~U Q~~ UJ	4.60	1.84	0.588
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.76	~~U Q~~ UJ	4.60	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.84	~~U Q~~ UJ	4.60	1.84	0.736

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	104		70-130

12/11/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-DUP-51 | Lab Sample ID: 320-44805-13

Matrix: Water | Lab File ID: 2018.11.15_537BB_043.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:00

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 285.7(mL) | Date Analyzed: 11/16/2018 03:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21.7	~~M Q~~ J	4.38	1.75	0.831
335-67-1	Perfluorooctanoic acid (PFOA)	20.2	~~M Q~~ J	6.13	5.25	2.36
375-95-1	Perfluorononanoic acid (PFNA)	2.95	J ~~Q~~ J	4.38	0.875	0.411
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.99	~~M Q~~ J	4.38	1.75	0.560
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.12	~~Q~~ J	4.38	2.63	1.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.90	~~Q~~ J	4.38	1.75	0.700

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	100		70-130

12/11/2018

Appendix B

Results as Reported by the Laboratory

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3876 | Lab Sample ID: 320-44805-1

Matrix: Water | Lab File ID: 2018.11.15_537BB_029.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:55

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 267.5(mL) | Date Analyzed: 11/16/2018 02:02

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	8.86	Q	4.67	1.87	0.888
335-67-1	Perfluorooctanoic acid (PFOA)	7.92	M Q	6.54	5.61	2.52
375-95-1	Perfluorononanoic acid (PFNA)	0.935	U M Q	4.67	0.935	0.439
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	4.04	J M Q	4.67	1.87	0.598
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.75	J Q	4.67	2.80	1.21
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.40	J Q	4.67	1.87	0.748

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	63	Q	70-130
STL00996	13C2 PFDA	66	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3876 RE Lab Sample ID: 320-44805-1 RE

Matrix: Water Lab File ID: 2018.12.03_537A_025.d

Analysis Method: 537 Date Collected: 10/31/2018 07:55

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 260.9(mL) Date Analyzed: 12/03/2018 20:05

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*11.4*	*H*	*4.79*	1.92	*0.910*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*11.3*	*M H*	*6.71*	5.75	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*1.36*	*J H*	*4.79*	0.958	*0.450*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*5.61*	*H*	*4.79*	1.92	*0.613*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.16*	*J H*	*4.79*	2.87	*1.25*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*3.28*	*J H*	*4.79*	1.92	*0.767*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	99		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3876 Lab Sample ID: 320-44805-2

Matrix: Water Lab File ID: 2018.11.15_537BB_030.d

Analysis Method: 537 Date Collected: 10/31/2018 07:50

Extraction Method: 537 Date Extracted: 11/13/2018 12:46

Sample wt/vol: 270.5(mL) Date Analyzed: 11/16/2018 02:09

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.85	U M Q	4.62	1.85	0.878
335-67-1	Perfluorooctanoic acid (PFOA)	5.55	U Q	6.47	5.55	2.50
375-95-1	Perfluorononanoic acid (PFNA)	0.924	U Q	4.62	0.924	0.434
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.85	U Q	4.62	1.85	0.591
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.77	U M Q	4.62	2.77	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.85	U Q	4.62	1.85	0.739

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	66	Q	70-130
STL00996	13C2 PFDA	67	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3876 RE Lab Sample ID: 320-44805-2 RE

Matrix: Water Lab File ID: 2018.12.03_537A_026.d

Analysis Method: 537 Date Collected: 10/31/2018 07:50

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 261.1(mL) Date Analyzed: 12/03/2018 20:12

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.91*	*U H*	*4.79*	1.91	*0.910*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.74*	*U H*	*6.70*	5.74	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.957*	*U H*	*4.79*	0.957	*0.450*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.91*	*U H*	*4.79*	1.91	*0.613*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.87*	*U M H*	*4.79*	2.87	*1.24*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.91*	*U H*	*4.79*	1.91	*0.766*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	94		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-029 | Lab Sample ID: 320-44805-3

Matrix: Water | Lab File ID: 2018.11.15_537BB_031.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.3(mL) | Date Analyzed: 11/16/2018 02:17

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	10.4	Q	4.61	1.84	0.875
335-67-1	Perfluorooctanoic acid (PFOA)	10.4	M Q	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	1.14	J Q	4.61	0.921	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.03	J Q	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.53	J Q	4.61	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.84	J Q	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	46	Q	70-130
STL00996	13C2 PFDA	53	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-029 RE | Lab Sample ID: 320-44805-3 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_027.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:40

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 260.3(mL) | Date Analyzed: 12/03/2018 20:20

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*18.4*	*H*	*4.80*	1.92	*0.912*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*17.9*	*M H*	*6.72*	5.76	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*2.19*	*J H*	*4.80*	0.960	*0.451*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*6.09*	*H*	*4.80*	1.92	*0.615*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*5.07*	*H*	*4.80*	2.88	*1.25*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*5.80*	*H*	*4.80*	1.92	*0.768*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	95		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-029 | Lab Sample ID: 320-44805-4

Matrix: Water | Lab File ID: 2018.11.15_537BB_032.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:35

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 270.2(mL) | Date Analyzed: 11/16/2018 02:24

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.85	U Q	4.63	1.85	0.879
335-67-1	Perfluorooctanoic acid (PFOA)	5.55	U M Q	6.48	5.55	2.50
375-95-1	Perfluorononanoic acid (PFNA)	0.925	U Q	4.63	0.925	0.435
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.85	U Q	4.63	1.85	0.592
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.78	U M Q	4.63	2.78	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.85	U Q	4.63	1.85	0.740

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	57	Q	70-130
STL00996	13C2 PFDA	61	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-029 RE | Lab Sample ID: 320-44805-4 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_028.d

Analysis Method: 537 | Date Collected: 10/31/2018 08:35

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 261.1(mL) | Date Analyzed: 12/03/2018 20:27

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.91*	*U H*	*4.79*	1.91	*0.910*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.74*	*U M H*	*6.70*	5.74	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.957*	*U H*	*4.79*	0.957	*0.450*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.91*	*U H*	*4.79*	1.91	*0.613*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.87*	*U M H*	*4.79*	2.87	*1.24*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.91*	*U H*	*4.79*	1.91	*0.766*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	98		70-130
STL00996	13C2 PFDA	104		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3933 | Lab Sample ID: 320-44805-5

Matrix: Water | Lab File ID: 2018.11.15_537BB_033.d

Analysis Method: 537 | Date Collected: 10/31/2018 09:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 274.5(mL) | Date Analyzed: 11/16/2018 02:32

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	19.7	M Q	4.55	1.82	0.865
335-67-1	Perfluorooctanoic acid (PFOA)	16.0	M Q	6.38	5.46	2.46
375-95-1	Perfluorononanoic acid (PFNA)	2.25	J Q	4.55	0.911	0.428
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.77	Q	4.55	1.82	0.583
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.92	Q	4.55	2.73	1.18
375-73-5	Perfluorobutanesulfonic acid (PFBS)	5.46	Q	4.55	1.82	0.729

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	96		70-130
STL00996	13C2 PFDA	96		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3933 RE Lab Sample ID: 320-44805-5 RE

Matrix: Water Lab File ID: 2018.12.03_537A_029.d

Analysis Method: 537 Date Collected: 10/31/2018 09:40

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 260.3(mL) Date Analyzed: 12/03/2018 20:35

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*17.8*	*H*	*4.80*	1.92	*0.912*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*15.8*	*M H*	*6.72*	5.76	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*1.98*	*J H*	*4.80*	0.960	*0.451*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*9.41*	*M H*	*4.80*	1.92	*0.615*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*5.34*	*H*	*4.80*	2.88	*1.25*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*6.01*	*M H*	*4.80*	1.92	*0.768*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	97		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3933 Lab Sample ID: 320-44805-6

Matrix: Water Lab File ID: 2018.11.15_537BB_034.d

Analysis Method: 537 Date Collected: 10/31/2018 09:35

Extraction Method: 537 Date Extracted: 11/13/2018 12:46

Sample wt/vol: 274.1(mL) Date Analyzed: 11/16/2018 02:39

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.82	U M Q	4.56	1.82	0.866
335-67-1	Perfluorooctanoic acid (PFOA)	5.47	U Q	6.38	5.47	2.46
375-95-1	Perfluorononanoic acid (PFNA)	0.912	U Q	4.56	0.912	0.429
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.82	U Q	4.56	1.82	0.584
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.74	U Q	4.56	2.74	1.19
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.82	U Q	4.56	1.82	0.730

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	69	Q	70-130
STL00996	13C2 PFDA	81		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3933 RE Lab Sample ID: 320-44805-6 RE

Matrix: Water Lab File ID: 2018.12.03_537A_030.d

Analysis Method: 537 Date Collected: 10/31/2018 09:35

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 260.2(mL) Date Analyzed: 12/03/2018 20:42

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.92*	*U H*	*4.80*	1.92	*0.913*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.76*	*U H*	*6.73*	5.76	*2.59*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.961*	*U H*	*4.80*	0.961	*0.452*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.92*	*U H*	*4.80*	1.92	*0.615*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.88*	*U H*	*4.80*	2.88	*1.25*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.92*	*U H*	*4.80*	1.92	*0.769*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	85		70-130
STL00996	13C2 PFDA	93		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-0500 | Lab Sample ID: 320-44805-7

Matrix: Water | Lab File ID: 2018.11.15_537BB_035.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:10

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 280.6(mL) | Date Analyzed: 11/16/2018 02:47

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	20.5	M Q	4.45	1.78	0.846
335-67-1	Perfluorooctanoic acid (PFOA)	20.3	M Q	6.24	5.35	2.41
375-95-1	Perfluorononanoic acid (PFNA)	2.53	J Q	4.45	0.891	0.419
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	7.15	Q	4.45	1.78	0.570
375-85-9	Perfluoroheptanoic acid (PFHpA)	5.65	Q	4.45	2.67	1.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.61	Q	4.45	1.78	0.713

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	104		70-130
STL00996	13C2 PFDA	100		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-0500 RE | Lab Sample ID: 320-44805-7 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_031.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:10

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 260.1(mL) | Date Analyzed: 12/03/2018 20:49

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*19.4*	*H*	*4.81*	1.92	*0.913*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*18.7*	*M H*	*6.73*	5.77	*2.60*
375-95-1	*Perfluorononanoic acid (PFNA)*	*2.55*	*J H*	*4.81*	0.961	*0.452*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*7.00*	*H*	*4.81*	1.92	*0.615*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*4.81*	*H*	*4.81*	2.88	*1.25*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*8.10*	*H*	*4.81*	1.92	*0.769*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	95		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-0500 Lab Sample ID: 320-44805-8

Matrix: Water Lab File ID: 2018.11.15_537BB_038.d

Analysis Method: 537 Date Collected: 10/31/2018 10:05

Extraction Method: 537 Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.4(mL) Date Analyzed: 11/16/2018 03:09

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.84	U M Q	4.61	1.84	0.875
335-67-1	Perfluorooctanoic acid (PFOA)	5.53	U Q	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	0.921	U Q	4.61	0.921	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.84	U Q	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.76	U Q	4.61	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.84	U Q	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	82		70-130
STL00996	13C2 PFDA	81		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-0500 RE Lab Sample ID: 320-44805-8 RE

Matrix: Water Lab File ID: 2018.12.03_537A_032.d

Analysis Method: 537 Date Collected: 10/31/2018 10:05

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 266.7(mL) Date Analyzed: 12/03/2018 20:57

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.87*	*U H*	*4.69*	1.87	*0.891*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.62*	*U M H*	*6.56*	5.62	*2.53*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.937*	*U H*	*4.69*	0.937	*0.441*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.87*	*U H*	*4.69*	1.87	*0.600*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.81*	*U M H*	*4.69*	2.81	*1.22*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.87*	*U H*	*4.69*	1.87	*0.750*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	86		70-130
STL00996	13C2 PFDA	100		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3385 | Lab Sample ID: 320-44805-9

Matrix: Water | Lab File ID: 2018.11.15_537BB_039.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:40

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 279.9(mL) | Date Analyzed: 11/16/2018 03:16

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	15.0	M Q	4.47	1.79	0.849
335-67-1	Perfluorooctanoic acid (PFOA)	13.4	M Q	6.25	5.36	2.41
375-95-1	Perfluorononanoic acid (PFNA)	0.893	U M Q	4.47	0.893	0.420
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	3.25	J Q	4.47	1.79	0.572
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.70	J Q	4.47	2.68	1.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.18	J Q	4.47	1.79	0.715

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		70-130
STL00996	13C2 PFDA	84		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-RW-3385 RE | Lab Sample ID: 320-44805-9 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_033.d

Analysis Method: 537 | Date Collected: 10/31/2018 10:40

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 256.1(mL) | Date Analyzed: 12/03/2018 21:04

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*15.7*	*H*	*4.88*	1.95	*0.927*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*16.1*	*M H*	*6.83*	5.86	*2.64*
375-95-1	*Perfluorononanoic acid (PFNA)*	*1.70*	*J H*	*4.88*	0.976	*0.459*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*3.66*	*J H*	*4.88*	1.95	*0.625*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*4.07*	*J H*	*4.88*	2.93	*1.27*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*2.69*	*J H*	*4.88*	1.95	*0.781*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	101		70-130
STL00996	13C2 PFDA	100		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3385 Lab Sample ID: 320-44805-10

Matrix: Water Lab File ID: 2018.11.15_537BB_040.d

Analysis Method: 537 Date Collected: 10/31/2018 10:35

Extraction Method: 537 Date Extracted: 11/13/2018 12:46

Sample wt/vol: 276.7(mL) Date Analyzed: 11/16/2018 03:24

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.81	U M Q	4.52	1.81	0.858
335-67-1	Perfluorooctanoic acid (PFOA)	5.42	U M Q	6.32	5.42	2.44
375-95-1	Perfluorononanoic acid (PFNA)	0.904	U Q	4.52	0.904	0.425
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.81	U Q	4.52	1.81	0.578
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.71	U Q	4.52	2.71	1.17
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.81	U Q	4.52	1.81	0.723

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	48	Q	70-130
STL00996	13C2 PFDA	53	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-FRB-3385 RE Lab Sample ID: 320-44805-10 RE

Matrix: Water Lab File ID: 2018.12.03_537A_034.d

Analysis Method: 537 Date Collected: 10/31/2018 10:35

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 261.7(mL) Date Analyzed: 12/03/2018 21:12

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262808 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.91*	*U H*	*4.78*	1.91	*0.908*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.73*	*U M H*	*6.69*	5.73	*2.58*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.955*	*U H*	*4.78*	0.955	*0.449*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.91*	*U H*	*4.78*	1.91	*0.611*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.87*	*U M H*	*4.78*	2.87	*1.24*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.91*	*U H*	*4.78*	1.91	*0.764*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	93		70-130
STL00996	13C2 PFDA	108		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-054 | Lab Sample ID: 320-44805-11

Matrix: Water | Lab File ID: 2018.11.15_537BB_041.d

Analysis Method: 537 | Date Collected: 10/31/2018 12:10

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.2(mL) | Date Analyzed: 11/16/2018 03:31

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12.9	Q	4.61	1.84	0.876
335-67-1	Perfluorooctanoic acid (PFOA)	14.4	M Q	6.45	5.53	2.49
375-95-1	Perfluorononanoic acid (PFNA)	1.81	J Q	4.61	0.922	0.433
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.91	M Q	4.61	1.84	0.590
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.56	J Q	4.61	2.77	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	3.88	J Q	4.61	1.84	0.737

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	55	Q	70-130
STL00996	13C2 PFDA	64	Q	70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-RW-054 RE | Lab Sample ID: 320-44805-11 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_037.d

Analysis Method: 537 | Date Collected: 10/31/2018 12:10

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 257.3(mL) | Date Analyzed: 12/03/2018 21:34

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262818 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*18.7*	*H*	*4.86*	1.94	*0.923*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*23.2*	*M H*	*6.80*	5.83	*2.62*
375-95-1	*Perfluorononanoic acid (PFNA)*	*3.00*	*J H*	*4.86*	0.972	*0.457*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*12.5*	*H*	*4.86*	1.94	*0.622*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*5.92*	*H*	*4.86*	2.91	*1.26*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*7.74*	*H*	*4.86*	1.94	*0.777*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	96		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-054 Lab Sample ID: 320-44805-12

Matrix: Water Lab File ID: 2018.11.15_537BB_042.d

Analysis Method: 537 Date Collected: 10/31/2018 12:05

Extraction Method: 537 Date Extracted: 11/13/2018 12:46

Sample wt/vol: 271.9(mL) Date Analyzed: 11/16/2018 03:39

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.84	U M Q	4.60	1.84	0.873
335-67-1	Perfluorooctanoic acid (PFOA)	5.52	U M Q	6.44	5.52	2.48
375-95-1	Perfluorononanoic acid (PFNA)	0.919	U Q	4.60	0.919	0.432
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.84	U Q	4.60	1.84	0.588
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.76	U Q	4.60	2.76	1.20
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.84	U Q	4.60	1.84	0.736

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	104		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: NAWC-103118-FRB-054 RE | Lab Sample ID: 320-44805-12 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_038.d

Analysis Method: 537 | Date Collected: 10/31/2018 12:05

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 265.8(mL) | Date Analyzed: 12/03/2018 21:41

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262818 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*1.88*	*U H*	*4.70*	1.88	*0.894*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*5.64*	*U M H*	*6.58*	5.64	*2.54*
375-95-1	*Perfluorononanoic acid (PFNA)*	*0.941*	*U H*	*4.70*	0.941	*0.442*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*1.88*	*U H*	*4.70*	1.88	*0.602*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*2.82*	*U M H*	*4.70*	2.82	*1.22*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*1.88*	*U M H*	*4.70*	1.88	*0.752*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	87		70-130
STL00996	13C2 PFDA	102		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-DUP-51 | Lab Sample ID: 320-44805-13

Matrix: Water | Lab File ID: 2018.11.15_537BB_043.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:00

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 285.7(mL) | Date Analyzed: 11/16/2018 03:46

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259499 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	21.7	M Q	4.38	1.75	0.831
335-67-1	Perfluorooctanoic acid (PFOA)	20.2	M Q	6.13	5.25	2.36
375-95-1	Perfluorononanoic acid (PFNA)	2.95	J Q	4.38	0.875	0.411
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.99	M Q	4.38	1.75	0.560
375-85-9	Perfluoroheptanoic acid (PFHpA)	6.12	Q	4.38	2.63	1.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	7.90	Q	4.38	1.75	0.700

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	99		70-130
STL00996	13C2 PFDA	100		70-130

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: WGNA-103118-DUP-51 RE | Lab Sample ID: 320-44805-13 RE

Matrix: Water | Lab File ID: 2018.12.03_537A_039.d

Analysis Method: 537 | Date Collected: 10/31/2018 07:00

Extraction Method: 537 | Date Extracted: 11/30/2018 08:13

Sample wt/vol: 267.1(mL) | Date Analyzed: 12/03/2018 21:49

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 14(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 262818 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	*Perfluorooctanesulfonic acid (PFOS)*	*20.1*	*H*	*4.68*	1.87	*0.889*
335-67-1	*Perfluorooctanoic acid (PFOA)*	*18.4*	*M H*	*6.55*	5.62	*2.53*
375-95-1	*Perfluorononanoic acid (PFNA)*	*2.55*	*J H*	*4.68*	0.936	*0.440*
355-46-4	*Perfluorohexanesulfonic acid (PFHxS)*	*7.01*	*H*	*4.68*	1.87	*0.599*
375-85-9	*Perfluoroheptanoic acid (PFHpA)*	*4.75*	*H*	*4.68*	2.81	*1.22*
375-73-5	*Perfluorobutanesulfonic acid (PFBS)*	*7.99*	*H*	*4.68*	1.87	*0.749*

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	92		70-130
STL00996	13C2 PFDA	95		70-130

Appendix C

Support Documentation

ANALYTE	ORIGINAL WGNA-103118-RW-0500	DUPLICATE WGNA-103118-DUP-51	RL	RPD	RPD > 30% Aqueous	ORIGINAL SAMPLE CONC >2xRL	DUPLICATE SAMPLE CONC >2xRL	DIFFERENCE >2XRL
PENTADECAFLUOROOCTANOIC ACID (PFOA)	20.3	20.2	6.24	0.49	FALSE	TRUE	TRUE	FALSE
PERFLUOROBUTANESULFONIC ACID (PFBS)	7.61	7.9	4.45	3.74	FALSE	FALSE	FALSE	FALSE
PERFLUOROHEPTANOIC ACID (PFHPA)	5.65	6.12	4.45	7.99	FALSE	FALSE	FALSE	FALSE
PERFLUOROHEXANESULFONIC ACID (PFHXS)	7.15	6.99	4.45	2.26	FALSE	FALSE	FALSE	FALSE
PERFLUORONONANOIC ACID (PFNA)	2.53	2.95	4.45	15.33	FALSE	FALSE	FALSE	FALSE
PERFLUOROOCTANESULFONIC ACID (PFOS)	20.5	21.7	4.45	5.69	FALSE	TRUE	TRUE	FALSE

TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605-1500
phone 916.373.5600 fax 303.467.7248

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☑DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Andy Frebowitz	Site Contact: Mary Kay Bond	Date: 10/31/2018	COC No:
TetraTech	Tel/Fax: 610.382.2920	Lab Contact: Dave Alltucker	Carrier: FedEx	1 of 1 COCs
234 Mall Boulevard Suite 260	**Analysis Turnaround Time**			Sampler: Mary Kay Bond
King of Prussia, PA 19406	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
610-382-2924	TAT if different from Below 21			Walk-in Client:
610-491-9688	☑ 2 weeks			Lab Sampling:
Project Name: WE04	☐ 1 week			
Site: WE04	☐ 2 days			Job / SDG No.:
P O # 1132358 (through EarthToxics)	☐ 1 day			

320-44805 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 537 UCMR3	Sample Specific Notes:
WGNA-103118-RW-3876	10/31/2018	07:55	G	DW	2	N	N	Y	
WGNA-103118-FRB-3876	10/31/2018	07:50	G	DW	2	N	N	Y	Field Reagent Blank
NAWC-103118-RW-029	10/31/2018	08:40	G	DW	2	N	N	Y	
NAWC-103118-FRB-029	10/31/2018	08:35	G	DW	2	N	N	Y	Field Reagent Blank
WGNA-103118-RW-3933	10/31/2018	09:40	G	DW	2	N	N	Y	
WGNA-103118-FRB-3933	10/31/2018	09:35	G	DW	2	N	N	Y	Field Reagent Blank
WGNA-103118-RW-0500	10/31/2018	10:10	G	DW	2	N	N	Y	
WGNA-103118-FRB-0500	10/31/2018	10:05	G	DW	2	N	N	Y	Field Reagent Blank
WGNA-103118-RW-3385	10/31/2018	10:40	G	DW	2	N	N	Y	
WGNA-103118-FRB-3385	10/31/2018	10:35	G	DW	2	N	N	Y	Field Reagent Blank
NAWC-103118-RW-054	10/31/2018	12:10	G	DW	2	N	N	Y	
NAWC-103118-FRB-054	10/31/2018	12:05	G	DW	2	N	N	Y	Field Reagent Blank
WGNA-103118-DUP-51	10/31/2018	07:00	G	DW	2	N	N	Y	Duplicate

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other: Trizma — 6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☑Disposal by Lab ☐Archive for_____ Months

Fed Ex Tracking: 7735 9632 9892

Custody Seals Intact: ☑ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 3.5 Corr'd: 3.3 | Therm ID No.: AK3

Relinquished by: Mary Kay Bond	Company: Tetra Tech	Date/Time: 10/31/2018 16:00	Received by: Jaime Rosas	Company: TA-SAC	Date/Time: 11/1/18 10:20
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.11, dated 1/24/2017

S:\TWillowGrove PFOs Private Well\COCs TT\COC 20181031.xls

Qualifiers

LCMS

Qualifier	Qualifier Description
Q	One or more quality control criteria failed.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
U	Undetected at the Limit of Detection.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job Narrative
320-44805-1

Receipt
The samples were received on 11/1/2018 10:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

LCMS
Method(s) 537: The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

Method(s) 537: The laboratory control sample (LCS) for preparation batch 320-258878 and analytical batch 320-259497 recovered outside control limits for all the target analytes. The failing LCS caused the RPD between the LCS and LCSD to also be out of control. The associated samples were re-prepared and re-analyzed outside holding time. Both sets of data have been reported.

Method(s) 537: Surrogate recovery for the following samples was outside control limits: WGNA-103118-RW-3876 (320-44805-1), WGNA-103118-FRB-3876 (320-44805-2), NAWC-103118-RW-029 (320-44805-3), NAWC-103118-FRB-029 (320-44805-4), WGNA-103118-FRB-3933 (320-44805-6), WGNA-103118-FRB-3385 (320-44805-10), NAWC-103118-RW-054 (320-44805-11), (LCS 320-258878/2-A) and (MB 320-258878/1-A). Re-extraction and re-analysis was performed outside of holding time and the surrogate recoveries were within limits. Both sets of data have been reported..

Method(s) 537: Internal standard (ISTD) response for the following samples was outside control limits: NAWC-103118-FRB-054 (320-44805-12). The samples were re-extracted and re-analyzed outside of holding time and the ISTD response was within limits. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 537: The following sample was observed to be light yellow after eluding.

Method(s) 537: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 320-262132.

Method(s) 537: The following samples were re-prepared outside of preparation holding time due to low LCS and surrogate recoveries: WGNA-103118-RW-3876 (320-44805-1), WGNA-103118-FRB-3876 (320-44805-2), NAWC-103118-RW-029 (320-44805-3), NAWC-103118-FRB-029 (320-44805-4), WGNA-103118-RW-3933 (320-44805-5), WGNA-103118-FRB-3933 (320-44805-6), WGNA-103118-RW-0500 (320-44805-7), WGNA-103118-FRB-0500 (320-44805-8), WGNA-103118-RW-3385 (320-44805-9), WGNA-103118-FRB-3385 (320-44805-10), NAWC-103118-RW-054 (320-44805-11), NAWC-103118-FRB-054 (320-44805-12) and WGNA-103118-DUP-51 (320-44805-13) in preparation batch 320-262132.

Method(s) 537: The following sample: NAWC-103118-RW-054 (320-44805-11) in preparation batch 320-262132 was observed to be a yellow color and contain sediment prior to extraction.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Method Summary

Client: Tetra Tech, Inc. TestAmerica Job ID: 320-44805-1
Project/Site: Warminster: PFAS, NAS JRB Willow Grove

Method	Method Description	Protocol	Laboratory
537	Perfluorinated Alkyl Acids (LC/MS)	EPA	TAL SAC
537	Extraction of Perfluorinated Alkyl Acids	EPA	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Tetra Tech, Inc. TestAmerica Job ID: 320-44805-1
Project/Site: Warminster: PFAS, NAS JRB Willow Grove

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-44805-1	WGNA-103118-RW-3876	Water	10/31/18 07:55	11/01/18 10:20
320-44805-2	WGNA-103118-FRB-3876	Water	10/31/18 07:50	11/01/18 10:20
320-44805-3	NAWC-103118-RW-029	Water	10/31/18 08:40	11/01/18 10:20
320-44805-4	NAWC-103118-FRB-029	Water	10/31/18 08:35	11/01/18 10:20
320-44805-5	WGNA-103118-RW-3933	Water	10/31/18 09:40	11/01/18 10:20
320-44805-6	WGNA-103118-FRB-3933	Water	10/31/18 09:35	11/01/18 10:20
320-44805-7	WGNA-103118-RW-0500	Water	10/31/18 10:10	11/01/18 10:20
320-44805-8	WGNA-103118-FRB-0500	Water	10/31/18 10:05	11/01/18 10:20
320-44805-9	WGNA-103118-RW-3385	Water	10/31/18 10:40	11/01/18 10:20
320-44805-10	WGNA-103118-FRB-3385	Water	10/31/18 10:35	11/01/18 10:20
320-44805-11	NAWC-103118-RW-054	Water	10/31/18 12:10	11/01/18 10:20
320-44805-12	NAWC-103118-FRB-054	Water	10/31/18 12:05	11/01/18 10:20
320-44805-13	WGNA-103118-DUP-51	Water	10/31/18 07:00	11/01/18 10:20

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA	#	PFDA	#
WGNA-103118-RW-3876	320-44805-1	63	Q	66	Q
WGNA-103118-RW-3876 RE	320-44805-1 RE	93		99	
WGNA-103118-FRB-3876	320-44805-2	66	Q	67	Q
WGNA-103118-FRB-3876 RE	320-44805-2 RE	98		94	
NAWC-103118-RW-029	320-44805-3	46	Q	53	Q
NAWC-103118-RW-029 RE	320-44805-3 RE	93		95	
NAWC-103118-FRB-029	320-44805-4	57	Q	61	Q
NAWC-103118-FRB-029 RE	320-44805-4 RE	98		104	
WGNA-103118-RW-3933	320-44805-5	96		96	
WGNA-103118-RW-3933 RE	320-44805-5 RE	93		97	
WGNA-103118-FRB-3933	320-44805-6	69	Q	81	
WGNA-103118-FRB-3933 RE	320-44805-6 RE	85		93	
WGNA-103118-RW-0500	320-44805-7	104		100	
WGNA-103118-RW-0500 RE	320-44805-7 RE	95		95	
WGNA-103118-FRB-0500	320-44805-8	82		81	
WGNA-103118-FRB-0500 RE	320-44805-8 RE	86		100	
WGNA-103118-RW-3385	320-44805-9	80		84	
WGNA-103118-RW-3385 RE	320-44805-9 RE	101		100	
WGNA-103118-FRB-3385	320-44805-10	48	Q	53	Q
WGNA-103118-FRB-3385 RE	320-44805-10 RE	93		108	
NAWC-103118-RW-054	320-44805-11	55	Q	64	Q
NAWC-103118-RW-054 RE	320-44805-11 RE	92		96	
NAWC-103118-FRB-054	320-44805-12	99		104	
NAWC-103118-FRB-054 RE	320-44805-12 RE	87		102	
WGNA-103118-DUP-51	320-44805-13	99		100	

	QC LIMITS
PFHxA = 13C2 PFHxA	70-130
PFDA = 13C2 PFDA	70-130

Column to be used to flag recovery values

FORM II 537

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	PFDA #
WGNA-103118-DUP-51 RE	320-44805-13 RE	92	95
	MB 320-258878/1-A	51 Q	61 Q
	MB 320-262132/1-A	95	100
	LCS 320-258878/2-A	60 Q	75
	LCS 320-262132/2-A	94	98
	LCSD 320-258878/3-A	99	107
	LCSD 320-262132/3-A	84	95

	QC LIMITS
PFHxA = 13C2 PFHxA	70-130
PFDA = 13C2 PFDA	70-130

Column to be used to flag recovery values

FORM II 537

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.11.15_537BB_027.d

Lab ID: LCS 320-258878/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	92.8	63.67	69	70-130	Q
Perfluorooctanoic acid (PFOA)	100	65.81	66	70-130	Q
Perfluorononanoic acid (PFNA)	100	65.79	66	70-130	Q
Perfluorohexanesulfonic acid (PFHxS)	91.0	56.25	62	70-130	Q
Perfluoroheptanoic acid (PFHpA)	100	60.07	60	70-130	Q
Perfluorobutanesulfonic acid (PFBS)	88.4	48.54	55	70-130	Q

Column to be used to flag recovery and RPD values

FORM III 537

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.12.03_537A_014.d

Lab ID: LCS 320-262132/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	186	165.1	89	70-130	
Perfluorooctanoic acid (PFOA)	200	175.1	87	70-130	
Perfluorononanoic acid (PFNA)	200	209.3	105	70-130	
Perfluorohexanesulfonic acid (PFHxS)	182	165.4	91	70-130	
Perfluoroheptanoic acid (PFHpA)	200	169.7	85	70-130	
Perfluorobutanesulfonic acid (PFBS)	177	168.8	95	70-130	

Column to be used to flag recovery and RPD values

FORM III 537

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.11.15_537BB_028.d

Lab ID: LCSD 320-258878/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	92.8	100.6	108	45	30	70-130	Q
Perfluorooctanoic acid (PFOA)	100	106.1	106	47	30	70-130	Q
Perfluorononanoic acid (PFNA)	100	112.6	113	52	30	70-130	Q
Perfluorohexanesulfonic acid (PFHxS)	91.0	91.63	101	48	30	70-130	Q
Perfluoroheptanoic acid (PFHpA)	100	103.8	104	53	30	70-130	Q
Perfluorobutanesulfonic acid (PFBS)	88.4	77.56	88	46	30	70-130	Q

Column to be used to flag recovery and RPD values

FORM III 537

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 2018.12.03_537A_015.d

Lab ID: LCSD 320-262132/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorooctanesulfonic acid (PFOS)	186	165.4	89	0	30	70-130	
Perfluorooctanoic acid (PFOA)	200	170.7	85	3	30	70-130	
Perfluorononanoic acid (PFNA)	200	182.2	91	14	30	70-130	
Perfluorohexanesulfonic acid (PFHxS)	182	169.8	93	3	30	70-130	
Perfluoroheptanoic acid (PFHpA)	200	168.9	84	1	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	177	156.0	88	8	30	70-130	

Column to be used to flag recovery and RPD values

FORM III 537

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab File ID: 2018.11.15_537BB_026.d Lab Sample ID: MB 320-258878/1-A

Matrix: Water Date Extracted: 11/13/2018 12:46

Instrument ID: A8_N Date Analyzed: 11/16/2018 01:40

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-258878/2-A	2018.11.15_537BB_027.d	11/16/2018 01:47
	LCSD 320-258878/3-A	2018.11.15_537BB_028.d	11/16/2018 01:54
WGNA-103118-RW-3876	320-44805-1	2018.11.15_537BB_029.d	11/16/2018 02:02
WGNA-103118-FRB-3876	320-44805-2	2018.11.15_537BB_030.d	11/16/2018 02:09
NAWC-103118-RW-029	320-44805-3	2018.11.15_537BB_031.d	11/16/2018 02:17
NAWC-103118-FRB-029	320-44805-4	2018.11.15_537BB_032.d	11/16/2018 02:24
WGNA-103118-RW-3933	320-44805-5	2018.11.15_537BB_033.d	11/16/2018 02:32
WGNA-103118-FRB-3933	320-44805-6	2018.11.15_537BB_034.d	11/16/2018 02:39
WGNA-103118-RW-0500	320-44805-7	2018.11.15_537BB_035.d	11/16/2018 02:47
WGNA-103118-FRB-0500	320-44805-8	2018.11.15_537BB_038.d	11/16/2018 03:09
WGNA-103118-RW-3385	320-44805-9	2018.11.15_537BB_039.d	11/16/2018 03:16
WGNA-103118-FRB-3385	320-44805-10	2018.11.15_537BB_040.d	11/16/2018 03:24
NAWC-103118-RW-054	320-44805-11	2018.11.15_537BB_041.d	11/16/2018 03:31
NAWC-103118-FRB-054	320-44805-12	2018.11.15_537BB_042.d	11/16/2018 03:39
WGNA-103118-DUP-51	320-44805-13	2018.11.15_537BB_043.d	11/16/2018 03:46

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-44805-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-258878/1-A

Matrix: Water | Lab File ID: 2018.11.15_537BB_026.d

Analysis Method: 537 | Date Collected:

Extraction Method: 537 | Date Extracted: 11/13/2018 12:46

Sample wt/vol: 250(mL) | Date Analyzed: 11/16/2018 01:40

Con. Extract Vol.: 10.00(mL) | Dilution Factor: 1

Injection Volume: 20(uL) | GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 259497 | Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	5.00	2.00	0.950
335-67-1	Perfluorooctanoic acid (PFOA)	6.00	U	7.00	6.00	2.70
375-95-1	Perfluorononanoic acid (PFNA)	1.00	U	5.00	1.00	0.470
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.00	U	5.00	2.00	0.640
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.00	U	5.00	3.00	1.30
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	5.00	2.00	0.800

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	51	Q	70-130
STL00996	13C2 PFDA	61	Q	70-130

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab File ID: 2018.12.03_537A_013.d Lab Sample ID: MB 320-262132/1-A

Matrix: Water Date Extracted: 11/30/2018 08:13

Instrument ID: A8_N Date Analyzed: 12/03/2018 18:35

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-262132/2-A	2018.12.03_537A_014.d	12/03/2018 18:43
	LCSD 320-262132/3-A	2018.12.03_537A_015.d	12/03/2018 18:50
WGNA-103118-RW-3876 RE	320-44805-1 RE	2018.12.03_537A_025.d	12/03/2018 20:05
WGNA-103118-FRB-3876 RE	320-44805-2 RE	2018.12.03_537A_026.d	12/03/2018 20:12
NAWC-103118-RW-029 RE	320-44805-3 RE	2018.12.03_537A_027.d	12/03/2018 20:20
NAWC-103118-FRB-029 RE	320-44805-4 RE	2018.12.03_537A_028.d	12/03/2018 20:27
WGNA-103118-RW-3933 RE	320-44805-5 RE	2018.12.03_537A_029.d	12/03/2018 20:35
WGNA-103118-FRB-3933 RE	320-44805-6 RE	2018.12.03_537A_030.d	12/03/2018 20:42
WGNA-103118-RW-0500 RE	320-44805-7 RE	2018.12.03_537A_031.d	12/03/2018 20:49
WGNA-103118-FRB-0500 RE	320-44805-8 RE	2018.12.03_537A_032.d	12/03/2018 20:57
WGNA-103118-RW-3385 RE	320-44805-9 RE	2018.12.03_537A_033.d	12/03/2018 21:04
WGNA-103118-FRB-3385 RE	320-44805-10 RE	2018.12.03_537A_034.d	12/03/2018 21:12
NAWC-103118-RW-054 RE	320-44805-11 RE	2018.12.03_537A_037.d	12/03/2018 21:34
NAWC-103118-FRB-054 RE	320-44805-12 RE	2018.12.03_537A_038.d	12/03/2018 21:41
WGNA-103118-DUP-51 RE	320-44805-13 RE	2018.12.03_537A_039.d	12/03/2018 21:49

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-262132/1-A

Matrix: Water Lab File ID: 2018.12.03_537A_013.d

Analysis Method: 537 Date Collected:

Extraction Method: 537 Date Extracted: 11/30/2018 08:13

Sample wt/vol: 250.00(mL) Date Analyzed: 12/03/2018 18:35

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 14(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 262816 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00	U	5.00	2.00	0.950
335-67-1	Perfluorooctanoic acid (PFOA)	6.00	U	7.00	6.00	2.70
375-95-1	Perfluorononanoic acid (PFNA)	1.00	U	5.00	1.00	0.470
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.00	U	5.00	2.00	0.640
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.00	U	5.00	3.00	1.30
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00	U	5.00	2.00	0.800

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL00993	13C2 PFHxA	95		70-130
STL00996	13C2 PFDA	100		70-130

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Calibration Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 11/14/2018 16:18

Calibration ID: 42213

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		2143224	3.19	1685078	3.57		
UPPER LIMIT		3214836	3.69	2527617	4.07		
LOWER LIMIT		1071612	2.69	842539	3.07		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-259204/10		2247447	3.17	1692246	3.56		
ICV 320-259204/12		2119637	3.19	1739951	3.57		
CCVL 320-259483/1		1949396	3.24	1646261	3.62		
CCV 320-259497/20 CCVIS		1703244	3.16	1385311	3.54		
MB 320-258878/1-A		1411027	3.16	1217648	3.54		
LCS 320-258878/2-A		1476889	3.16	1249409	3.54		
LCSD 320-258878/3-A		1246381	3.16	1068011	3.54		
320-44805-1	WGNA-103118-RW-3876	2087759	3.16	1716267	3.54		
320-44805-2	WGNA-103118-FRB-3876	1834510	3.16	1628888	3.54		
320-44805-3	NAWC-103118-RW-029	2077936	3.17	1768576	3.56		
320-44805-4	NAWC-103118-FRB-029	1602983	3.17	1340334	3.56		
320-44805-5	WGNA-103118-RW-3933	1287994	3.16	1059245	3.54		
320-44805-6	WGNA-103118-FRB-3933	1976935	3.16	1681985	3.54		
320-44805-7	WGNA-103118-RW-0500	1796914	3.16	1569726	3.54		
CCV 320-259497/32 CCVIS		2231449	3.17	1860190	3.56		
CCV 320-259499/32 CCVIS		2231449	3.17	1860190	3.56		
320-44805-8	WGNA-103118-FRB-0500	2196064	3.14	1700399	3.53		
320-44805-9	WGNA-103118-RW-3385	1501538Q	3.16	1171625Q	3.54		
320-44805-10	WGNA-103118-FRB-3385	2173077	3.16	1854848	3.54		
320-44805-11	NAWC-103118-RW-054	2175305	3.16	1829296	3.54		
320-44805-12	NAWC-103118-FRB-054	1512750Q	3.16	1175392Q	3.54		
320-44805-13	WGNA-103118-DUP-51	1570654	3.16	1323733	3.54		
CCV 320-259499/40 CCVIS		1788931	3.17	1434971	3.56		

13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-259497/20 Date Analyzed: 11/16/2018 01:25

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.11.15_537BB_02 Heated Purge: (Y/N) N

Calibration ID: 42213

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1703244	3.16	1385311	3.54		
UPPER LIMIT		2384542	3.66	1939435	4.04		
LOWER LIMIT		1192271	2.66	969718	3.04		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-258878/1-A		1411027	3.16	1217648	3.54		
LCS 320-258878/2-A		1476889	3.16	1249409	3.54		
LCSD 320-258878/3-A		1246381	3.16	1068011	3.54		
320-44805-1	WGNA-103118-RW-3876	2087759	3.16	1716267	3.54		
320-44805-2	WGNA-103118-FRB-3876	1834510	3.16	1628888	3.54		
320-44805-3	NAWC-103118-RW-029	2077936	3.17	1768576	3.56		
320-44805-4	NAWC-103118-FRB-029	1602983	3.17	1340334	3.56		
320-44805-5	WGNA-103118-RW-3933	1287994	3.16	1059245	3.54		
320-44805-6	WGNA-103118-FRB-3933	1976935	3.16	1681985	3.54		
320-44805-7	WGNA-103118-RW-0500	1796914	3.16	1569726	3.54		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-259497/32 Date Analyzed: 11/16/2018 02:54

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.11.15_537BB_03 Heated Purge: (Y/N) N

Calibration ID: 42213

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2231449	3.17	1860190	3.56		
UPPER LIMIT		3124029	3.67	2604266	4.06		
LOWER LIMIT		1562014	2.67	1302133	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-258878/1-A		1411027	3.16	1217648	3.54		
LCS 320-258878/2-A		1476889	3.16	1249409	3.54		
LCSD 320-258878/3-A		1246381	3.16	1068011	3.54		
320-44805-1	WGNA-103118-RW-3876	2087759	3.16	1716267	3.54		
320-44805-2	WGNA-103118-FRB-3876	1834510	3.16	1628888	3.54		
320-44805-3	NAWC-103118-RW-029	2077936	3.17	1768576	3.56		
320-44805-4	NAWC-103118-FRB-029	1602983	3.17	1340334	3.56		
320-44805-5	WGNA-103118-RW-3933	1287994	3.16	1059245	3.54		
320-44805-6	WGNA-103118-FRB-3933	1976935	3.16	1681985	3.54		
320-44805-7	WGNA-103118-RW-0500	1796914	3.16	1569726	3.54		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-259499/32 Date Analyzed: 11/16/2018 02:54

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.11.15_537BB_03 Heated Purge: (Y/N) N

Calibration ID: 42213

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2231449	3.17	1860190	3.56		
UPPER LIMIT		3124029	3.67	2604266	4.06		
LOWER LIMIT		1562014	2.67	1302133	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-8	WGNA-103118-FRB-0500	2196064	3.14	1700399	3.53		
320-44805-9	WGNA-103118-RW-3385	1501538Q	3.16	1171625Q	3.54		
320-44805-10	WGNA-103118-FRB-3385	2173077	3.16	1854848	3.54		
320-44805-11	NAWC-103118-RW-054	2175305	3.16	1829296	3.54		
320-44805-12	NAWC-103118-FRB-054	1512750Q	3.16	1175392Q	3.54		
320-44805-13	WGNA-103118-DUP-51	1570654	3.16	1323733	3.54		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-259499/40 Date Analyzed: 11/16/2018 03:53

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.11.15_537BB_04 Heated Purge: (Y/N) N

Calibration ID: 42213

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1788931	3.17	1434971	3.56		
UPPER LIMIT		2504503	3.67	2008959	4.06		
LOWER LIMIT		1252252	2.67	1004480	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-8	WGNA-103118-FRB-0500	2196064	3.14	1700399	3.53		
320-44805-9	WGNA-103118-RW-3385	1501538Q	3.16	1171625Q	3.54		
320-44805-10	WGNA-103118-FRB-3385	2173077	3.16	1854848	3.54		
320-44805-11	NAWC-103118-RW-054	2175305	3.16	1829296	3.54		
320-44805-12	NAWC-103118-FRB-054	1512750Q	3.16	1175392Q	3.54		
320-44805-13	WGNA-103118-DUP-51	1570654	3.16	1323733	3.54		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Calibration Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 11/28/2018 13:51

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		3424979	3.19	2530065	3.59		
UPPER LIMIT		5137469	3.69	3795098	4.09		
LOWER LIMIT		1712490	2.69	1265033	3.09		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 320-261708/10		3361485	3.19	2496845	3.57		
ICV 320-261708/12		3358714	3.20	2579571	3.59		
CCVL 320-262743/1		3465917	3.20	2524367	3.59		
CCV 320-262816/8 CCVIS		3297128	3.19	2374658	3.59		
MB 320-262132/1-A		3711253	3.20	2751273	3.59		
LCS 320-262132/2-A		3771104	3.19	2714734	3.57		
LCSD 320-262132/3-A		3812437	3.19	2673655	3.58		
CCV 320-262816/20 CCVIS		3365294	3.19	2420397	3.57		
CCV 320-262808/20 CCVIS		3365294	3.19	2420397	3.57		
320-44805-1 RE	WGNA-103118-RW-3876 RE	3734355	3.19	2705278	3.57		
320-44805-2 RE	WGNA-103118-FRB-3876 RE	3823202	3.19	2739041	3.57		
320-44805-3 RE	NAWC-103118-RW-029 RE	3782048	3.20	2794658	3.58		
320-44805-4 RE	NAWC-103118-FRB-029 RE	3655220	3.17	2708097	3.56		
320-44805-5 RE	WGNA-103118-RW-3933 RE	3810200	3.19	2693185	3.57		
320-44805-6 RE	WGNA-103118-FRB-3933 RE	3978191	3.17	2803240	3.57		
320-44805-7 RE	WGNA-103118-RW-0500 RE	3728883	3.19	2669614	3.57		
320-44805-8 RE	WGNA-103118-FRB-0500 RE	3806285	3.19	2793293	3.57		
320-44805-9 RE	WGNA-103118-RW-3385 RE	3503638	3.17	2723642	3.56		
320-44805-10 RE	WGNA-103118-FRB-3385 RE	3518014	3.17	2703391	3.57		
CCV 320-262808/32 CCVIS		3297576	3.17	2453401	3.56		
CCV 320-262818/32 CCVIS		3297576	3.17	2453401	3.56		
320-44805-11 RE	NAWC-103118-RW-054 RE	3702043	3.19	2774984	3.57		
320-44805-12 RE	NAWC-103118-FRB-054 RE	3594914	3.19	2642895	3.57		

13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Calibration Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3(mm) Calibration End Date: 11/28/2018 13:51

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		3424979	3.19	2530065	3.59		
UPPER LIMIT		5137469	3.69	3795098	4.09		
LOWER LIMIT		1712490	2.69	1265033	3.09		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-13 RE	WGNA-103118-DUP-51 RE	3807942	3.19	2638994	3.57		
CCV 320-262818/37 CCVIS		3327865	3.17	2419335	3.56		

13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS

Area Limit = 50%-150% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262816/8 Date Analyzed: 12/03/2018 18:20

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_011 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3297128	3.19	2374658	3.59		
UPPER LIMIT		4615979	3.69	3324521	4.09		
LOWER LIMIT		2307990	2.69	1662261	3.09		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-262132/1-A		3711253	3.20	2751273	3.59		
LCS 320-262132/2-A		3771104	3.19	2714734	3.57		
LCSD 320-262132/3-A		3812437	3.19	2673655	3.58		

13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262808/20 Date Analyzed: 12/03/2018 19:50

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_023 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3365294	3.19	2420397	3.57		
UPPER LIMIT		4711412	3.69	3388556	4.07		
LOWER LIMIT		2355706	2.69	1694278	3.07		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-1 RE	WGNA-103118-RW-3876 RE	3734355	3.19	2705278	3.57		
320-44805-2 RE	WGNA-103118-FRB-3876 RE	3823202	3.19	2739041	3.57		
320-44805-3 RE	NAWC-103118-RW-029 RE	3782048	3.20	2794658	3.58		
320-44805-4 RE	NAWC-103118-FRB-029 RE	3655220	3.17	2708097	3.56		
320-44805-5 RE	WGNA-103118-RW-3933 RE	3810200	3.19	2693185	3.57		
320-44805-6 RE	WGNA-103118-FRB-3933 RE	3978191	3.17	2803240	3.57		
320-44805-7 RE	WGNA-103118-RW-0500 RE	3728883	3.19	2669614	3.57		
320-44805-8 RE	WGNA-103118-FRB-0500 RE	3806285	3.19	2793293	3.57		
320-44805-9 RE	WGNA-103118-RW-3385 RE	3503638	3.17	2723642	3.56		
320-44805-10 RE	WGNA-103118-FRB-3385 RE	3518014	3.17	2703391	3.57		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262816/20 Date Analyzed: 12/03/2018 19:50

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_023 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3365294	3.19	2420397	3.57		
UPPER LIMIT		4711412	3.69	3388556	4.07		
LOWER LIMIT		2355706	2.69	1694278	3.07		
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 320-262132/1-A		3711253	3.20	2751273	3.59		
LCS 320-262132/2-A		3771104	3.19	2714734	3.57		
LCSD 320-262132/3-A		3812437	3.19	2673655	3.58		

13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS

Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262808/32 Date Analyzed: 12/03/2018 21:19

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_035 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3297576	3.17	2453401	3.56		
UPPER LIMIT		4616606	3.67	3434761	4.06		
LOWER LIMIT		2308303	2.67	1717381	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-1 RE	WGNA-103118-RW-3876 RE	3734355	3.19	2705278	3.57		
320-44805-2 RE	WGNA-103118-FRB-3876 RE	3823202	3.19	2739041	3.57		
320-44805-3 RE	NAWC-103118-RW-029 RE	3782048	3.20	2794658	3.58		
320-44805-4 RE	NAWC-103118-FRB-029 RE	3655220	3.17	2708097	3.56		
320-44805-5 RE	WGNA-103118-RW-3933 RE	3810200	3.19	2693185	3.57		
320-44805-6 RE	WGNA-103118-FRB-3933 RE	3978191	3.17	2803240	3.57		
320-44805-7 RE	WGNA-103118-RW-0500 RE	3728883	3.19	2669614	3.57		
320-44805-8 RE	WGNA-103118-FRB-0500 RE	3806285	3.19	2793293	3.57		
320-44805-9 RE	WGNA-103118-RW-3385 RE	3503638	3.17	2723642	3.56		
320-44805-10 RE	WGNA-103118-FRB-3385 RE	3518014	3.17	2703391	3.57		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262818/32 Date Analyzed: 12/03/2018 21:19

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_035 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3297576	3.17	2453401	3.56		
UPPER LIMIT		4616606	3.67	3434761	4.06		
LOWER LIMIT		2308303	2.67	1717381	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-11 RE	NAWC-103118-RW-054 RE	3702043	3.19	2774984	3.57		
320-44805-12 RE	NAWC-103118-FRB-054 RE	3594914	3.19	2642895	3.57		
320-44805-13 RE	WGNA-103118-DUP-51 RE	3807942	3.19	2638994	3.57		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Sample No.: CCV 320-262818/37 Date Analyzed: 12/03/2018 21:56

Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3(mm)

Lab File ID (Standard): 2018.12.03_537A_040 Heated Purge: (Y/N) N

Calibration ID: 42464

		13PFOA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		3327865	3.17	2419335	3.56		
UPPER LIMIT		4659011	3.67	3387069	4.06		
LOWER LIMIT		2329506	2.67	1693535	3.06		
LAB SAMPLE ID	CLIENT SAMPLE ID						
320-44805-11 RE	NAWC-103118-RW-054 RE	3702043	3.19	2774984	3.57		
320-44805-12 RE	NAWC-103118-FRB-054 RE	3594914	3.19	2642895	3.57		
320-44805-13 RE	WGNA-103118-DUP-51 RE	3807942	3.19	2638994	3.57		

13PFOA = 13C2 PFOA
13PFOA = 13C2 PFOA
PFOS = 13C4 PFOS
PFOS = 13C4 PFOS
Area Limit = 70%-140% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 537

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 259204

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/14/2018 15:33 Calibration End Date: 11/14/2018 16:18 Calibration ID: 42213

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-259204/2	2018.11.14_537ICAL_003.d
Level 2	IC 320-259204/3	2018.11.14_537ICAL_004.d
Level 3	IC 320-259204/4	2018.11.14_537ICAL_005.d
Level 4	IC 320-259204/5	2018.11.14_537ICAL_006.d
Level 5	IC 320-259204/6	2018.11.14_537ICAL_007.d
Level 6	IC 320-259204/7	2018.11.14_537ICAL_008.d
Level 7	IC 320-259204/8	2018.11.14_537ICAL_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanesulfonic acid (PFBS)	1.0268 1.2043	1.1593 1.2224	1.1117	1.1904	1.1308	Ave		1.1494				5.8		30.0			
Perfluoroheptanoic acid (PFHpA)	1.2764 1.0404	1.1086 1.0391	1.0063	1.1292	1.0633	Ave		1.0948				8.3		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.6242 1.5609	1.5040 1.5651	1.5324	1.6466	1.5544	Ave		1.5697				3.2		30.0			
Perfluorooctanoic acid (PFOA)	1.1148 1.0474	1.0737 1.1034	1.0751	1.0884	1.0505	Ave		1.0790				2.3		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.1258 1.0952	1.0746 1.0960	1.1030	1.0826	1.0318	Ave		1.0870				2.7		30.0			
Perfluorononanoic acid (PFNA)	0.7515 0.8075	0.8542 0.8156	0.7826	0.8133	0.8069	Ave		0.8045				3.9		30.0			
13C2 PFHxA	0.9879 0.9250	0.9984 1.0062	1.0169	1.0143	0.9482	Ave		0.9853				3.6		30.0			
13C2 PFDA	0.6834 0.6881	0.6833 0.7143	0.6610	0.6769	0.7097	Ave		0.6881				2.7		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 259204

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/14/2018 15:33 Calibration End Date: 11/14/2018 16:18 Calibration ID: 42213

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-259204/2	2018.11.14_537ICAL_003.d
Level 2	IC 320-259204/3	2018.11.14_537ICAL_004.d
Level 3	IC 320-259204/4	2018.11.14_537ICAL_005.d
Level 4	IC 320-259204/5	2018.11.14_537ICAL_006.d
Level 5	IC 320-259204/6	2018.11.14_537ICAL_007.d
Level 6	IC 320-259204/7	2018.11.14_537ICAL_008.d
Level 7	IC 320-259204/8	2018.11.14_537ICAL_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	15683 3728477	37321 7505043	179783	740553	1712763	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	26257 4596641	47614 8731320	223724	996215	2189863	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	25538 4974719	49844 9891630	255107	1054475	2423784	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	22956 4631947	46160 9280287	239262	961167	2165714	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	18051 3559497	36317 7063859	187257	707030	1640609	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)	13PF OA	Ave	15459 3567485	36688 6853167	173995	717527	1661767	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C2 PFHxA	13PF OA	Ave	2032303 2043261	2144017 2113559	2260899	2237073	1952728	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	1405792 1520095	1467447 1500447	1469552	1492981	1461716	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:
Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 259204

SDG No.:

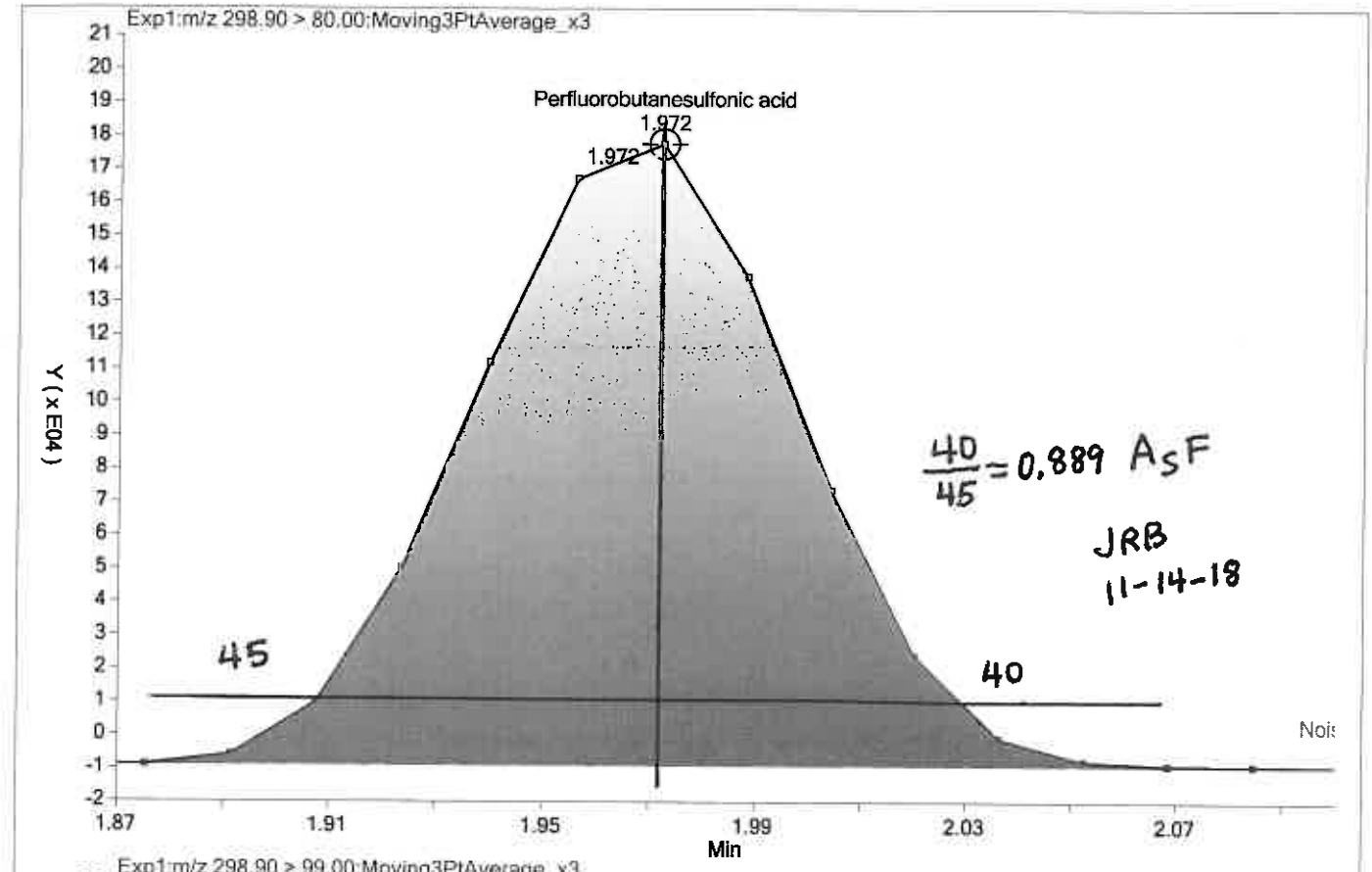
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

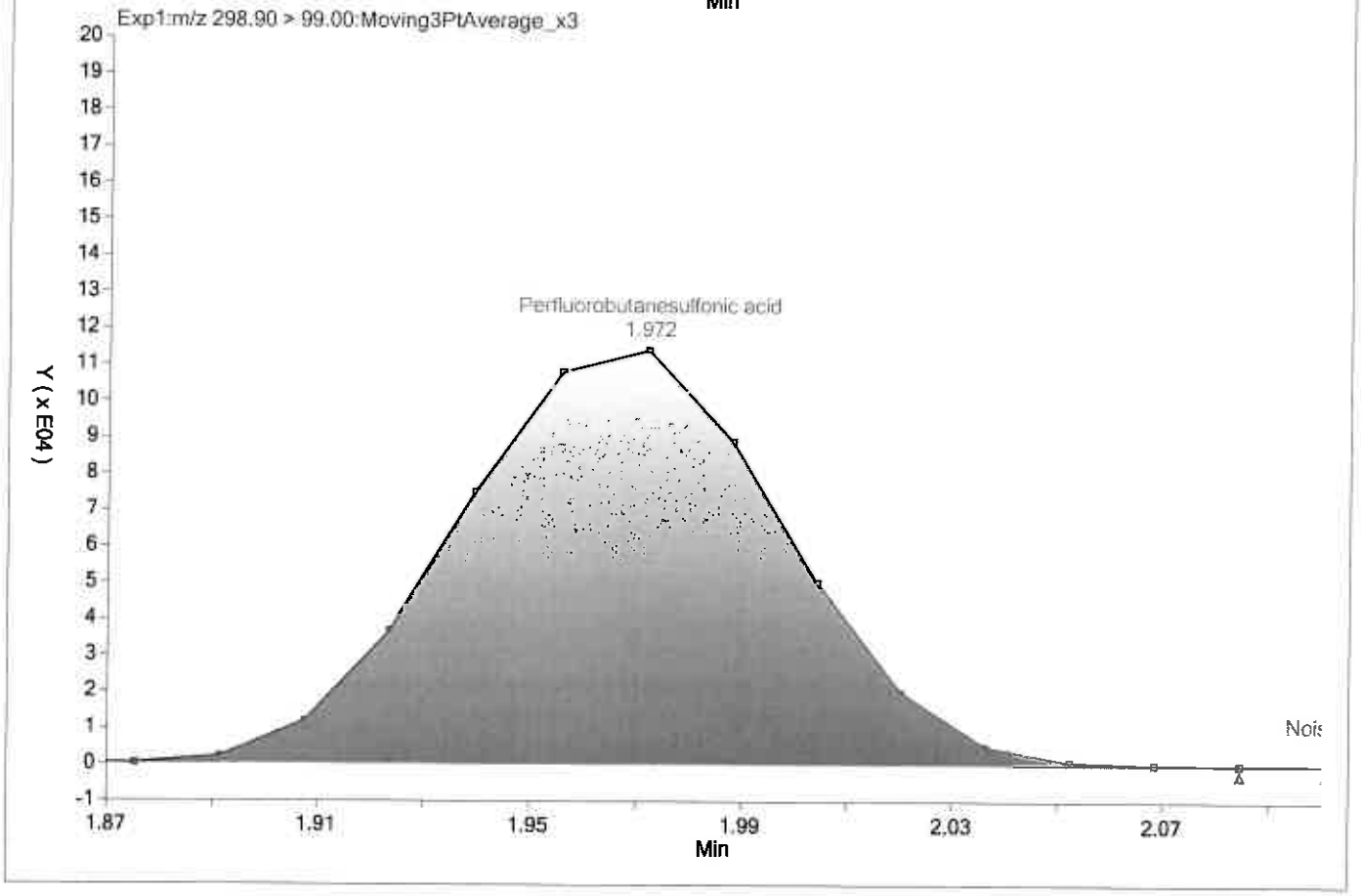
Calibration Start Date: 11/14/2018 15:33 Calibration End Date: 11/14/2018 16:18 Calibration ID: 42213

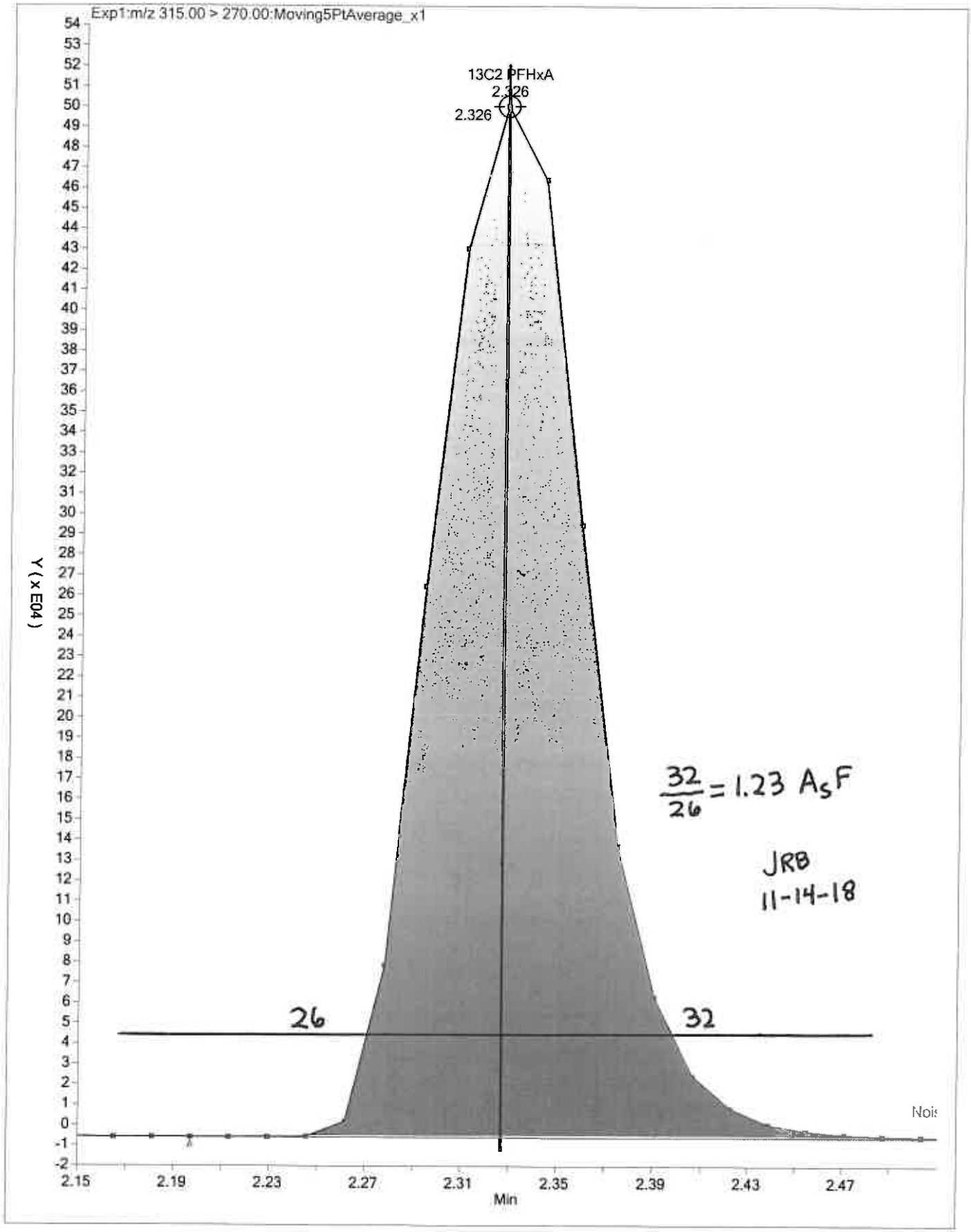
Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-259204/2	2018.11.14_537ICAL_003.d
Level 2	IC 320-259204/3	2018.11.14_537ICAL_004.d
Level 3	IC 320-259204/4	2018.11.14_537ICAL_005.d
Level 4	IC 320-259204/5	2018.11.14_537ICAL_006.d
Level 5	IC 320-259204/6	2018.11.14_537ICAL_007.d
Level 6	IC 320-259204/7	2018.11.14_537ICAL_008.d
Level 7	IC 320-259204/8	2018.11.14_537ICAL_009.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-10.7 6.4	0.9	-3.3	3.6	-1.6	4.8	50 30	30	30	30	30	30
Perfluoroheptanoic acid (PFHpA)	16.6 -5.1	1.3	-8.1	3.1	-2.9	-5.0	50 30	30	30	30	30	30
Perfluorohexanesulfonic acid (PFHxS)	3.5 -0.3	-4.2	-2.4	4.9	-1.0	-0.6	50 30	30	30	30	30	30
Perfluorooctanoic acid (PFOA)	3.3 2.3	-0.5	-0.4	0.9	-2.6	-2.9	50 30	30	30	30	30	30
Perfluorooctanesulfonic acid (PFOS)	3.6 0.8	-1.1	1.5	-0.4	-5.1	0.8	50 30	30	30	30	30	30
Perfluorononanoic acid (PFNA)	-6.6 1.4	6.2	-2.7	1.1	0.3	0.4	50 30	30	30	30	30	30
13C2 PFHxA	0.3 2.1	1.3	3.2	2.9	-3.8	-6.1	30 30	30	30	30	30	30
13C2 PFDA	-0.7 3.8	-0.7	-3.9	-1.6	3.1	0.0	30 30	30	30	30	30	30


Exp1:m/z 298.90 > 80.00:Moving3PtAverage_x3
Perfluorobutanesulfonic acid
1.972
1.972
Y (x E04)
Min
45
40
40/45 = 0.889 ASF
JRB
11-14-18


Exp1:m/z 298.90 > 99.00:Moving3PtAverage_x3
Perfluorobutanesulfonic acid
1.972
Y (x E04)
Min


Exp1:m/z 315.00 > 270.00:Moving5PtAverage_x1
13C2 PFHxA
2.326
2.326
Y (x E04)
Min
2.15
2.19
2.23
2.27
2.31
2.35
2.39
2.43
2.47
26
32
Nois
32/26 = 1.23 ASF
JRB
11-14-18

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 261708

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/28/2018 13:06 Calibration End Date: 11/28/2018 13:51 Calibration ID: 42464

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-261708/2	2018.11.28_537ICALTPX_002.d
Level 2	IC 320-261708/3	2018.11.28_537ICALTPX_003.d
Level 3	IC 320-261708/4	2018.11.28_537ICALTPX_004.d
Level 4	IC 320-261708/5	2018.11.28_537ICALTPX_005.d
Level 5	IC 320-261708/6	2018.11.28_537ICALTPX_006.d
Level 6	IC 320-261708/7	2018.11.28_537ICALTPX_007.d
Level 7	IC 320-261708/8	2018.11.28_537ICALTPX_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanesulfonic acid (PFBS)	1.0388 1.1489	1.1365 1.1585	1.0547	1.1161	1.0610	Ave		1.1021				4.5		30.0			
Perfluoroheptanoic acid (PFHpA)	1.1785 1.0717	1.1773 1.0331	1.0436	1.0795	1.0602	Ave		1.0920				5.6		30.0			
Perfluorohexanesulfonic acid (PFHxS)	1.5510 1.5200	1.5154 1.5186	1.4306	1.6489	1.4266	Ave		1.5159				5.0		30.0			
Perfluorooctanoic acid (PFOA)	1.3708 1.0949	1.0876 1.0617	1.0316	1.0346	1.0862	Ave		1.1096				10.6		30.0			
Perfluorooctanesulfonic acid (PFOS)	1.3564 1.0553	1.1480 1.1008	1.0855	1.0475	1.0232	Ave		1.1167				10.1		30.0			
Perfluorononanoic acid (PFNA)	0.8532 0.8136	0.8026 0.7695	0.7938	0.7765	0.8213	Ave		0.8044				3.5		30.0			
13C2 PFHxA	1.0211 0.9588	0.9790 0.9541	0.9550	0.9581	0.9800	Ave		0.9723				2.5		30.0			
13C2 PFDA	0.7170 0.6883	0.7063 0.6634	0.6923	0.6499	0.7060	Ave		0.6890				3.5		30.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 261708

SDG No.:

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/28/2018 13:06 Calibration End Date: 11/28/2018 13:51 Calibration ID: 42464

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-261708/2	2018.11.28_537ICALTPX_002.d
Level 2	IC 320-261708/3	2018.11.28_537ICALTPX_003.d
Level 3	IC 320-261708/4	2018.11.28_537ICALTPX_004.d
Level 4	IC 320-261708/5	2018.11.28_537ICALTPX_005.d
Level 5	IC 320-261708/6	2018.11.28_537ICALTPX_006.d
Level 6	IC 320-261708/7	2018.11.28_537ICALTPX_007.d
Level 7	IC 320-261708/8	2018.11.28_537ICALTPX_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanesulfonic acid (PFBS)	PFOS	Ave	24683 5388468	51738 10213970	251462	1046520	2596086	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
Perfluoroheptanoic acid (PFHpA)	13PF OA	Ave	40652 7139685	80331 13578406	368755	1552410	3571313	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)	PFOS	Ave	37936 7338783	71018 13781782	351103	1591569	3593335	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
Perfluorooctanoic acid (PFOA)	13PF OA	Ave	47331 7301376	74285 13968411	364884	1489386	3662288	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)	PFOS	Ave	33833 5196086	54866 10188257	271684	1031103	2628210	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)	13PF OA	Ave	29431 5420001	54763 10113962	280495	1116613	2766383	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C2 PFHxA	13PF OA	Ave	3522233 3193611	3340174 3135028	3374605	3444540	3300906	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	2473031 2292639	2409794 2179789	2446341	2336562	2377959	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:
Ave = Average ISTD

FORM VI
LCMS BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1 Analy Batch No.: 261708

SDG No.:

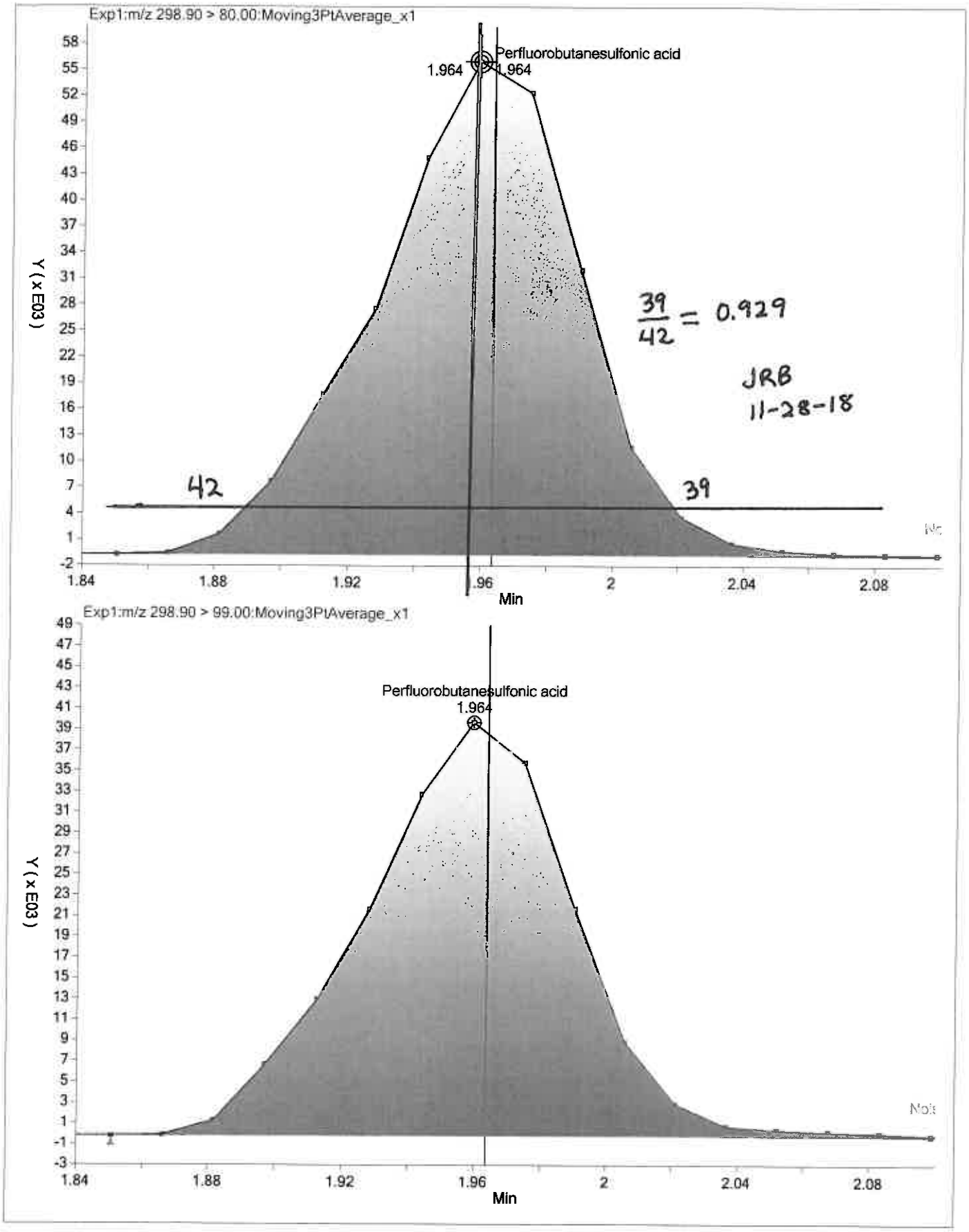
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/28/2018 13:06 Calibration End Date: 11/28/2018 13:51 Calibration ID: 42464

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-261708/2	2018.11.28_537ICALTPX_002.d
Level 2	IC 320-261708/3	2018.11.28_537ICALTPX_003.d
Level 3	IC 320-261708/4	2018.11.28_537ICALTPX_004.d
Level 4	IC 320-261708/5	2018.11.28_537ICALTPX_005.d
Level 5	IC 320-261708/6	2018.11.28_537ICALTPX_006.d
Level 6	IC 320-261708/7	2018.11.28_537ICALTPX_007.d
Level 7	IC 320-261708/8	2018.11.28_537ICALTPX_008.d

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Perfluorobutanesulfonic acid (PFBS)	-5.7 5.1	3.1	-4.3	1.3	-3.7	4.2	50 30	30	30	30	30	30
Perfluoroheptanoic acid (PFHpA)	7.9 -5.4	7.8	-4.4	-1.1	-2.9	-1.9	50 30	30	30	30	30	30
Perfluorohexanesulfonic acid (PFHxS)	2.3 0.2	0.0	-5.6	8.8	-5.9	0.3	50 30	30	30	30	30	30
Perfluorooctanoic acid (PFOA)	23.5 -4.3	-2.0	-7.0	-6.8	-2.1	-1.3	50 30	30	30	30	30	30
Perfluorooctanesulfonic acid (PFOS)	21.5 -1.4	2.8	-2.8	-6.2	-8.4	-5.5	50 30	30	30	30	30	30
Perfluorononanoic acid (PFNA)	6.1 -4.3	-0.2	-1.3	-3.5	2.1	1.1	50 30	30	30	30	30	30
13C2 PFHxA	5.0 -1.9	0.7	-1.8	-1.5	0.8	-1.4	30 30	30	30	30	30	30
13C2 PFDA	4.1 -3.7	2.5	0.5	-5.7	2.5	-0.1	30 30	30	30	30	30	30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Perfluorobutanesulfonic acid
1.964
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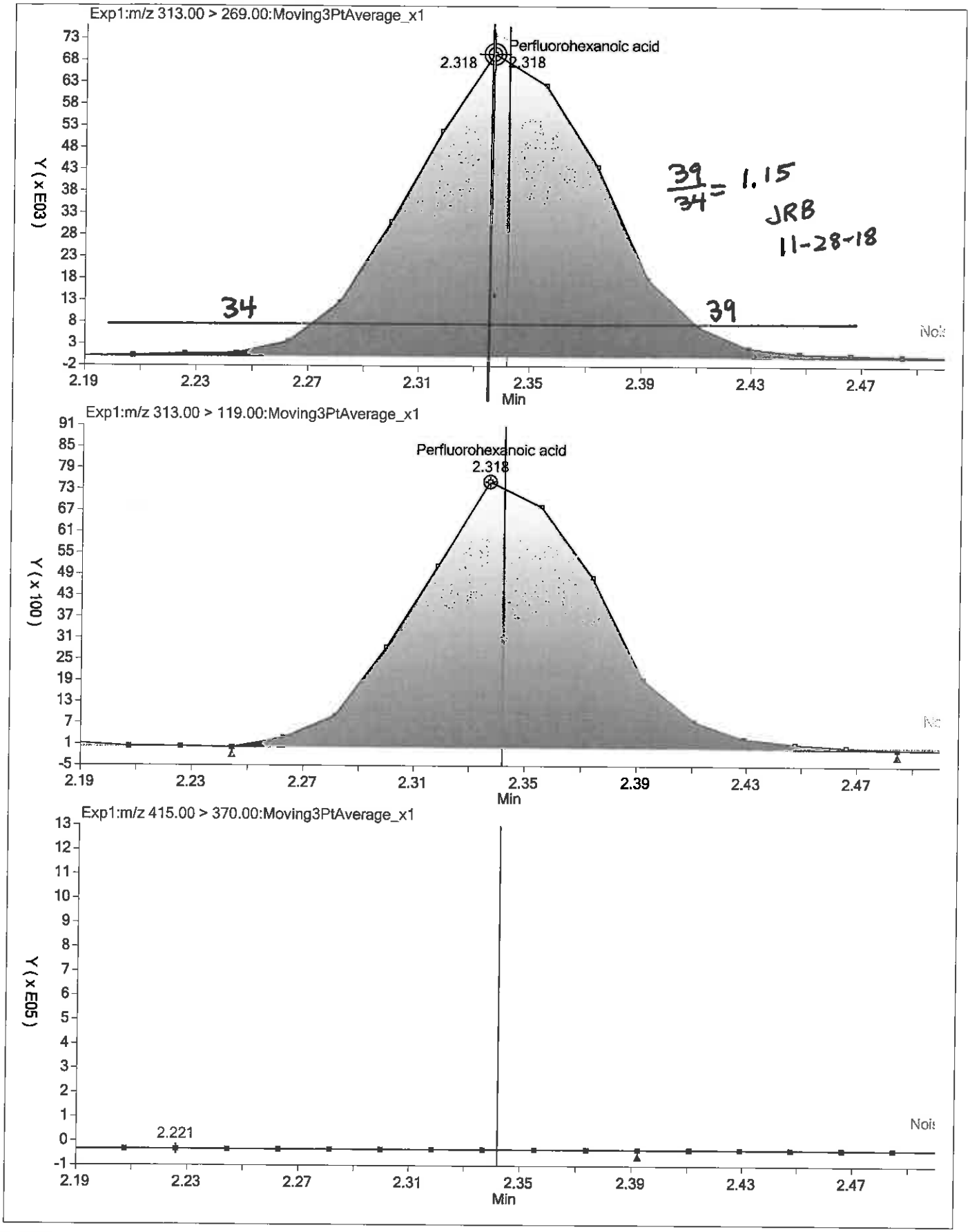
Y (x E03)
Min
42
39
39/42 = 0.929
JRB
11-28-18
Exp1:m/z 298.90 > 99.00:Moving3PtAverage_x1
Perfluorobutanesulfonic acid
1.964
Y (x E03)
Min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Perfluorohexanoic acid
2.318
2.318
Y (x E03)
34
39
39/34 = 1.15
JRB
11-28-18
Min
Exp1:m/z 313.00 > 119.00:Moving3PtAverage_x1
Perfluorohexanoic acid
2.318
Y (x 100)
Min
Exp1:m/z 415.00 > 370.00:Moving3PtAverage_x1
2.221
Y (x E05)
Min

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCVL 320-259204/10 Calibration Date: 11/14/2018 16:33

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.14_537ICAL_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.218		9.00	0.0442	5.9	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.278		1.00	0.0500	16.7	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.632		3.00	0.0455	4.0	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.331		2.00	0.0501	23.3	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.164		4.00	0.0464	7.1	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.8920		5.00	0.0500	10.9	50.0
13C2 PFHxA	Ave	0.9853	1.046		2.66	2.50	6.2	30.0
13C2 PFDA	Ave	0.6881	0.6855		2.49	2.50	-0.4	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: ICV 320-259204/12 Calibration Date: 11/14/2018 16:48

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.14_537ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.077		9.00	1.77	-6.3	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.022		1.87	2.00	-6.6	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.414		1.64	1.82	-9.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.058		1.96	2.00	-1.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.7944		5.00	2.00	-1.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.021		1.74	1.85	-6.0	30.0
13C2 PFHxA	Ave	0.9853	1.012		2.57	2.50	2.7	30.0
13C2 PFDA	Ave	0.6881	0.6742		2.45	2.50	-2.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCVL 320-259483/1 Calibration Date: 11/15/2018 15:07

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.15_537AA_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	0.9760		9.00	0.0442	-15.1	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	0.9373		1.00	0.0500	-14.4	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.500		3.00	0.0455	-4.4	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.129		2.00	0.0501	4.6	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.092		4.00	0.0464	0.4	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.7995		5.00	0.0500	-0.6	50.0
13C2 PFHxA	Ave	0.9853	0.9429		2.39	2.50	-4.3	30.0
13C2 PFDA	Ave	0.6881	0.6127		2.23	2.50	-11.0	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-259497/20 Calibration Date: 11/16/2018 01:25

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.15_537BB_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.243		4.78	4.42	8.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.109		5.07	5.00	1.3	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.581		4.58	4.55	0.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.082		5.02	5.01	0.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.117		4.77	4.64	2.8	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.8177		5.08	5.00	1.6	30.0
13C2 PFHxA	Ave	0.9853	0.9728		2.47	2.50	-1.3	30.0
13C2 PFDA	Ave	0.6881	0.6254		2.27	2.50	-9.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-259497/32 Calibration Date: 11/16/2018 02:54

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.15_537BB_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.137		9.00	0.884	-1.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.042		0.952	1.00	-4.8	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.527		3.00	0.910	-2.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.022		0.948	1.00	-5.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.061		4.00	0.928	-2.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.7766		5.00	1.00	-3.5	30.0
13C2 PFHxA	Ave	0.9853	0.9810		2.49	2.50	-0.4	30.0
13C2 PFDA	Ave	0.6881	0.6501		2.36	2.50	-5.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-259499/32 Calibration Date: 11/16/2018 02:54

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.15_537BB_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.137		9.00	0.884	-1.1	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.042		0.952	1.00	-4.8	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.527		3.00	0.910	-2.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.022		0.948	1.00	-5.3	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.061		4.00	0.928	-2.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.7766		5.00	1.00	-3.5	30.0
13C2 PFHxA	Ave	0.9853	0.9810		2.49	2.50	-0.4	30.0
13C2 PFDA	Ave	0.6881	0.6501		2.36	2.50	-5.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-259499/40 Calibration Date: 11/16/2018 03:53

Instrument ID: A8_N Calib Start Date: 11/14/2018 15:33

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/14/2018 16:18

Lab File ID: 2018.11.15_537BB_044.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.149	1.246		4.79	4.42	8.4	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.095	1.084		4.95	5.00	-1.0	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.570	1.651		4.79	4.55	5.2	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.079	1.074		4.98	5.01	-0.4	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8045	0.7927		4.93	5.00	-1.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.087	1.065		4.55	4.64	-2.0	30.0
13C2 PFHxA	Ave	0.9853	1.019		2.59	2.50	3.4	30.0
13C2 PFDA	Ave	0.6881	0.7192		2.61	2.50	4.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCVL 320-261708/10 Calibration Date: 11/28/2018 14:06

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.11.28_537ICALTPX_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.065		9.00	0.0442	-3.4	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.020		1.00	0.0500	-6.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.483		3.00	0.0455	-2.2	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.169		2.00	0.0501	5.4	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.236		4.00	0.0464	10.7	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8258		5.00	0.0500	2.7	50.0
13C2 PFHxA	Ave	0.9723	0.9667		2.49	2.50	-0.6	30.0
13C2 PFDA	Ave	0.6890	0.6934		2.52	2.50	0.6	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: ICV 320-261708/12 Calibration Date: 11/28/2018 14:21

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.11.28_537ICALTPX_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.069		9.00	1.77	-3.0	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.104		2.02	2.00	1.1	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.504		1.81	1.82	-0.8	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.096		1.98	2.00	-1.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8428		2.10	2.00	4.8	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.005		4.00	1.85	-10.0	30.0
13C2 PFHxA	Ave	0.9723	0.9637		2.48	2.50	-0.9	30.0
13C2 PFDA	Ave	0.6890	0.7109		2.58	2.50	3.2	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCVL 320-262743/1 Calibration Date: 12/03/2018 17:28

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.046		9.00	0.0442	-5.0	50.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.017		1.00	0.0500	-6.9	50.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.526		3.00	0.0455	0.7	50.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.269		2.00	0.0501	14.4	50.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.140		4.00	0.0464	2.0	50.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.9779		5.00	0.0500	21.6	50.0
13C2 PFHxA	Ave	0.9723	0.9347		2.40	2.50	-3.9	30.0
13C2 PFDA	Ave	0.6890	0.7354		2.67	2.50	6.7	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262816/8 Calibration Date: 12/03/2018 18:20

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.204		4.83	4.42	9.3	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.131		5.18	5.00	3.6	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.601		4.81	4.55	5.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.100		4.96	5.01	-0.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8528		5.30	5.00	6.0	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.066		4.43	4.64	-4.5	30.0
13C2 PFHxA	Ave	0.9723	0.9751		2.51	2.50	0.3	30.0
13C2 PFDA	Ave	0.6890	0.7527		2.73	2.50	9.2	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262808/20 Calibration Date: 12/03/2018 19:50

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.211		9.00	0.884	9.9	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.076		0.986	1.00	-1.4	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.540		3.00	0.910	1.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.070		0.966	1.00	-3.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.070		4.00	0.928	-4.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8142		5.00	1.00	1.2	30.0
13C2 PFHxA	Ave	0.9723	0.9530		2.45	2.50	-2.0	30.0
13C2 PFDA	Ave	0.6890	0.7617		2.76	2.50	10.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262816/20 Calibration Date: 12/03/2018 19:50

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_023.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.211		9.00	0.884	9.9	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.076		0.986	1.00	-1.4	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.540		3.00	0.910	1.6	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.070		0.966	1.00	-3.5	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.070		4.00	0.928	-4.2	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8142		5.00	1.00	1.2	30.0
13C2 PFHxA	Ave	0.9723	0.9530		2.45	2.50	-2.0	30.0
13C2 PFDA	Ave	0.6890	0.7617		2.76	2.50	10.5	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262808/32 Calibration Date: 12/03/2018 21:19

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.177		4.72	4.42	6.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.127		5.16	5.00	3.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.560		4.68	4.55	2.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.091		4.92	5.01	-1.7	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8466		5.26	5.00	5.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.079		4.48	4.64	-3.4	30.0
13C2 PFHxA	Ave	0.9723	1.010		2.60	2.50	3.9	30.0
13C2 PFDA	Ave	0.6890	0.7312		2.65	2.50	6.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262818/32 Calibration Date: 12/03/2018 21:19

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.177		4.72	4.42	6.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.127		5.16	5.00	3.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.560		4.68	4.55	2.9	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.091		4.92	5.01	-1.7	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8466		5.26	5.00	5.2	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.079		4.48	4.64	-3.4	30.0
13C2 PFHxA	Ave	0.9723	1.010		2.60	2.50	3.9	30.0
13C2 PFDA	Ave	0.6890	0.7312		2.65	2.50	6.1	30.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Lab Sample ID: CCV 320-262818/37 Calibration Date: 12/03/2018 21:56

Instrument ID: A8_N Calib Start Date: 11/28/2018 13:06

GC Column: GeminiC18 3x100 ID: 3.00(mm) Calib End Date: 11/28/2018 13:51

Lab File ID: 2018.12.03_537A_040.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanesulfonic acid (PFBS)	Ave	1.102	1.188		9.00	0.884	7.8	30.0
Perfluoroheptanoic acid (PFHpA)	Ave	1.092	1.003		0.918	1.00	-8.2	30.0
Perfluorohexanesulfonic acid (PFHxS)	Ave	1.516	1.526		3.00	0.910	0.7	30.0
Perfluorooctanoic acid (PFOA)	Ave	1.110	1.066		0.962	1.00	-3.9	30.0
Perfluorooctanesulfonic acid (PFOS)	Ave	1.117	1.095		4.00	0.928	-1.9	30.0
Perfluorononanoic acid (PFNA)	Ave	0.8044	0.8031		5.00	1.00	-0.2	30.0
13C2 PFHxA	Ave	0.9723	0.9517		2.45	2.50	-2.1	30.0
13C2 PFDA	Ave	0.6890	0.7027		2.55	2.50	2.0	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 11/14/2018 15:33

Analysis Batch Number: 259204 End Date: 11/14/2018 16:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-259204/2		11/14/2018 15:33	1	2018.11.14_537I CAL 003.d	GeminiC18 3x100 3(mm)
IC 320-259204/3		11/14/2018 15:41	1	2018.11.14_537I CAL 004.d	GeminiC18 3x100 3(mm)
IC 320-259204/4		11/14/2018 15:48	1	2018.11.14_537I CAL 005.d	GeminiC18 3x100 3(mm)
IC 320-259204/5 ICISAV		11/14/2018 15:56	1	2018.11.14_537I CAL 006.d	GeminiC18 3x100 3(mm)
IC 320-259204/6		11/14/2018 16:03	1	2018.11.14_537I CAL 007.d	GeminiC18 3x100 3(mm)
IC 320-259204/7		11/14/2018 16:11	1	2018.11.14_537I CAL 008.d	GeminiC18 3x100 3(mm)
IC 320-259204/8		11/14/2018 16:18	1	2018.11.14_537I CAL 009.d	GeminiC18 3x100 3(mm)
CCVL 320-259204/10		11/14/2018 16:33	1	2018.11.14_537I CAL 011.d	GeminiC18 3x100 3(mm)
ICB 320-259204/11		11/14/2018 16:40	1		GeminiC18 3x100 3(mm)
ICV 320-259204/12		11/14/2018 16:48	1	2018.11.14_537I CAL 013.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/14/2018 16:55	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 11/15/2018 15:07

Analysis Batch Number: 259483 End Date: 11/15/2018 16:06

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-259483/1		11/15/2018 15:07	1	2018.11.15_537A A 004.d	GeminiC18 3x100 3(mm)
CCV 320-259483/2 CCVIS		11/15/2018 15:14	1		GeminiC18 3x100 3(mm)
ZZZZZ		11/15/2018 15:29	1		GeminiC18 3x100 3(mm)
ZZZZZ		11/15/2018 15:37	1		GeminiC18 3x100 3(mm)
ZZZZZ		11/15/2018 15:44	1		GeminiC18 3x100 3(mm)
ZZZZZ		11/15/2018 15:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		11/15/2018 15:59	1		GeminiC18 3x100 3(mm)
CCV 320-259483/9 CCVIS		11/15/2018 16:06	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 11/16/2018 01:25

Analysis Batch Number: 259497 End Date: 11/16/2018 02:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-259497/20 CCVIS		11/16/2018 01:25	1	2018.11.15_537B B_024.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/16/2018 01:32	1		GeminiC18 3x100 3(mm)
MB 320-258878/1-A		11/16/2018 01:40	1	2018.11.15_537B B_026.d	GeminiC18 3x100 3(mm)
LCS 320-258878/2-A		11/16/2018 01:47	1	2018.11.15_537B B_027.d	GeminiC18 3x100 3(mm)
LCSD 320-258878/3-A		11/16/2018 01:54	1	2018.11.15_537B B_028.d	GeminiC18 3x100 3(mm)
320-44805-1		11/16/2018 02:02	1	2018.11.15_537B B_029.d	GeminiC18 3x100 3(mm)
320-44805-2		11/16/2018 02:09	1	2018.11.15_537B B_030.d	GeminiC18 3x100 3(mm)
320-44805-3		11/16/2018 02:17	1	2018.11.15_537B B_031.d	GeminiC18 3x100 3(mm)
320-44805-4		11/16/2018 02:24	1	2018.11.15_537B B_032.d	GeminiC18 3x100 3(mm)
320-44805-5		11/16/2018 02:32	1	2018.11.15_537B B_033.d	GeminiC18 3x100 3(mm)
320-44805-6		11/16/2018 02:39	1	2018.11.15_537B B_034.d	GeminiC18 3x100 3(mm)
320-44805-7		11/16/2018 02:47	1	2018.11.15_537B B_035.d	GeminiC18 3x100 3(mm)
CCV 320-259497/32 CCVIS		11/16/2018 02:54	1	2018.11.15_537B B_036.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 11/16/2018 02:54

Analysis Batch Number: 259499 End Date: 11/16/2018 03:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-259499/32 CCVIS		11/16/2018 02:54	1	2018.11.15_537B B_036.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/16/2018 03:01	1		GeminiC18 3x100 3(mm)
320-44805-8		11/16/2018 03:09	1	2018.11.15_537B B_038.d	GeminiC18 3x100 3(mm)
320-44805-9		11/16/2018 03:16	1	2018.11.15_537B B_039.d	GeminiC18 3x100 3(mm)
320-44805-10		11/16/2018 03:24	1	2018.11.15_537B B_040.d	GeminiC18 3x100 3(mm)
320-44805-11		11/16/2018 03:31	1	2018.11.15_537B B_041.d	GeminiC18 3x100 3(mm)
320-44805-12		11/16/2018 03:39	1	2018.11.15_537B B_042.d	GeminiC18 3x100 3(mm)
320-44805-13		11/16/2018 03:46	1	2018.11.15_537B B_043.d	GeminiC18 3x100 3(mm)
CCV 320-259499/40 CCVIS		11/16/2018 03:53	1	2018.11.15_537B B_044.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 11/28/2018 13:06

Analysis Batch Number: 261708 End Date: 11/28/2018 14:28

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-261708/2		11/28/2018 13:06	1	2018.11.28_537I CALTPX_002.d	GeminiC18 3x100 3(mm)
IC 320-261708/3		11/28/2018 13:14	1	2018.11.28_537I CALTPX_003.d	GeminiC18 3x100 3(mm)
IC 320-261708/4		11/28/2018 13:21	1	2018.11.28_537I CALTPX_004.d	GeminiC18 3x100 3(mm)
IC 320-261708/5 ICISAV		11/28/2018 13:29	1	2018.11.28_537I CALTPX_005.d	GeminiC18 3x100 3(mm)
IC 320-261708/6		11/28/2018 13:36	1	2018.11.28_537I CALTPX_006.d	GeminiC18 3x100 3(mm)
IC 320-261708/7		11/28/2018 13:44	1	2018.11.28_537I CALTPX_007.d	GeminiC18 3x100 3(mm)
IC 320-261708/8		11/28/2018 13:51	1	2018.11.28_537I CALTPX_008.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/28/2018 13:59	1		GeminiC18 3x100 3(mm)
CCVL 320-261708/10		11/28/2018 14:06	1	2018.11.28_537I CALTPX_010.d	GeminiC18 3x100 3(mm)
ICB 320-261708/11		11/28/2018 14:13	1		GeminiC18 3x100 3(mm)
ICV 320-261708/12		11/28/2018 14:21	1	2018.11.28_537I CALTPX_012.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/28/2018 14:28	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 12/03/2018 17:28

Analysis Batch Number: 262743 End Date: 12/03/2018 18:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-262743/1		12/03/2018 17:28	1	2018.12.03_537A 004.d	GeminiC18 3x100 3(mm)
CCV 320-262743/2 CCVIS		12/03/2018 17:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 17:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 17:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 17:58	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 18:06	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 18:13	1		GeminiC18 3x100 3(mm)
CCV 320-262743/8 CCVIS		12/03/2018 18:20	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 12/03/2018 19:50

Analysis Batch Number: 262808 End Date: 12/03/2018 21:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-262808/20 CCVIS		12/03/2018 19:50	1	2018.12.03_537A_023.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:57	1		GeminiC18 3x100 3(mm)
320-44805-1 RE		12/03/2018 20:05	1	2018.12.03_537A_025.d	GeminiC18 3x100 3(mm)
320-44805-2 RE		12/03/2018 20:12	1	2018.12.03_537A_026.d	GeminiC18 3x100 3(mm)
320-44805-3 RE		12/03/2018 20:20	1	2018.12.03_537A_027.d	GeminiC18 3x100 3(mm)
320-44805-4 RE		12/03/2018 20:27	1	2018.12.03_537A_028.d	GeminiC18 3x100 3(mm)
320-44805-5 RE		12/03/2018 20:35	1	2018.12.03_537A_029.d	GeminiC18 3x100 3(mm)
320-44805-6 RE		12/03/2018 20:42	1	2018.12.03_537A_030.d	GeminiC18 3x100 3(mm)
320-44805-7 RE		12/03/2018 20:49	1	2018.12.03_537A_031.d	GeminiC18 3x100 3(mm)
320-44805-8 RE		12/03/2018 20:57	1	2018.12.03_537A_032.d	GeminiC18 3x100 3(mm)
320-44805-9 RE		12/03/2018 21:04	1	2018.12.03_537A_033.d	GeminiC18 3x100 3(mm)
320-44805-10 RE		12/03/2018 21:12	1	2018.12.03_537A_034.d	GeminiC18 3x100 3(mm)
CCV 320-262808/32 CCVIS		12/03/2018 21:19	1	2018.12.03_537A_035.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 12/03/2018 18:20

Analysis Batch Number: 262816 End Date: 12/03/2018 19:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-262816/8 CCVIS		12/03/2018 18:20	1	2018.12.03_537A_011.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 18:28	1		GeminiC18 3x100 3(mm)
MB 320-262132/1-A		12/03/2018 18:35	1	2018.12.03_537A_013.d	GeminiC18 3x100 3(mm)
LCS 320-262132/2-A		12/03/2018 18:43	1	2018.12.03_537A_014.d	GeminiC18 3x100 3(mm)
LCSD 320-262132/3-A		12/03/2018 18:50	1	2018.12.03_537A_015.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 18:58	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 19:42	1		GeminiC18 3x100 3(mm)
CCV 320-262816/20 CCVIS		12/03/2018 19:50	1	2018.12.03_537A_023.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Instrument ID: A8_N Start Date: 12/03/2018 21:19

Analysis Batch Number: 262818 End Date: 12/03/2018 21:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-262818/32 CCVIS		12/03/2018 21:19	1	2018.12.03_537A_035.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/03/2018 21:27	1		GeminiC18 3x100 3(mm)
320-44805-11 RE		12/03/2018 21:34	1	2018.12.03_537A_037.d	GeminiC18 3x100 3(mm)
320-44805-12 RE		12/03/2018 21:41	1	2018.12.03_537A_038.d	GeminiC18 3x100 3(mm)
320-44805-13 RE		12/03/2018 21:49	1	2018.12.03_537A_039.d	GeminiC18 3x100 3(mm)
CCV 320-262818/37 CCVIS		12/03/2018 21:56	1	2018.12.03_537A_040.d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 258878 Batch Start Date: 11/13/18 12:46 Batch Analyst: Hoang, Dalena T

Batch Method: 537 Batch End Date: 11/13/18 18:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00090
MB 320-258878/1		537, 537				250 mL	10.00 mL	7 SU	500 uL
LCS 320-258878/2		537, 537				250 mL	10.00 mL	7 SU	500 uL
LCSD 320-258878/3		537, 537				250 mL	10.00 mL	7 SU	500 uL
320-44805-B-1	WGNA-103118-RW-3876	537, 537	T	296.68 g	29.17 g	267.5 mL	10.00 mL	7 SU	500 uL
320-44805-B-2	WGNA-103118-FRB-3876	537, 537	T	298.13 g	27.64 g	270.5 mL	10.00 mL	7 SU	500 uL
320-44805-B-3	NAWC-103118-RW-029	537, 537	T	300.02 g	28.71 g	271.3 mL	10.00 mL	7 SU	500 uL
320-44805-B-4	NAWC-103118-FRB-029	537, 537	T	299.13 g	28.91 g	270.2 mL	10.00 mL	7 SU	500 uL
320-44805-A-5	WGNA-103118-RW-3933	537, 537	T	303.33 g	28.80 g	274.5 mL	10.00 mL	7 SU	500 uL
320-44805-A-6	WGNA-103118-FRB-3933	537, 537	T	301.71 g	27.60 g	274.1 mL	10.00 mL	7 SU	500 uL
320-44805-A-7	WGNA-103118-RW-0500	537, 537	T	308.82 g	28.25 g	280.6 mL	10.00 mL	7 SU	500 uL
320-44805-A-8	WGNA-103118-FRB-0500	537, 537	T	299.74 g	28.37 g	271.4 mL	10.00 mL	7 SU	500 uL
320-44805-B-9	WGNA-103118-RW-3385	537, 537	T	309.32 g	29.45 g	279.9 mL	10.00 mL	7 SU	500 uL
320-44805-B-10	WGNA-103118-FRB-3385	537, 537	T	304.92 g	28.26 g	276.7 mL	10.00 mL	7 SU	500 uL
320-44805-B-11	NAWC-103118-RW-054	537, 537	T	300.06 g	28.90 g	271.2 mL	10.00 mL	7 SU	500 uL
320-44805-A-12	NAWC-103118-FRB-054	537, 537	T	300.06 g	28.16 g	271.9 mL	10.00 mL	7 SU	500 uL
320-44805-B-13	WGNA-103118-DUP-51	537, 537	T	315.59 g	29.92 g	285.7 mL	10.00 mL	7 SU	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-SU 00084	LC537MSP 00001	AnalysisComment			
MB 320-258878/1		537, 537		500 uL		Chlorine ND			
LCS 320-258878/2		537, 537		500 uL	500 uL	Chlorine ND			
LCSD 320-258878/3		537, 537		500 uL	500 uL	Chlorine ND			
320-44805-B-1	WGNA-103118-RW-3876	537, 537	T	500 uL		Chlorine ND			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 258878 Batch Start Date: 11/13/18 12:46 Batch Analyst: Hoang, Dalena T

Batch Method: 537 Batch End Date: 11/13/18 18:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-SU 00084	LC537MSP 00001	AnalysisComment			
320-44805-B-2	WGNA-103118-FRB-3876	537, 537	T	500 uL		Chlorine ND			
320-44805-B-3	NAWC-103118-RW-029	537, 537	T	500 uL		Chlorine ND			
320-44805-B-4	NAWC-103118-FRB-029	537, 537	T	500 uL		Chlorine ND			
320-44805-A-5	WGNA-103118-RW-3933	537, 537	T	500 uL		Chlorine ND			
320-44805-A-6	WGNA-103118-FRB-3933	537, 537	T	500 uL		Chlorine ND			
320-44805-A-7	WGNA-103118-RW-0500	537, 537	T	500 uL		Chlorine ND			
320-44805-A-8	WGNA-103118-FRB-0500	537, 537	T	500 uL		Chlorine ND			
320-44805-B-9	WGNA-103118-RW-3385	537, 537	T	500 uL		Chlorine ND			
320-44805-B-10	WGNA-103118-FRB-3385	537, 537	T	500 uL		Chlorine ND			
320-44805-B-11	NAWC-103118-RW-054	537, 537	T	500 uL		Chlorine ND			
320-44805-A-12	NAWC-103118-FRB-054	537, 537	T	500 uL		Chlorine ND			
320-44805-B-13	WGNA-103118-DUP-51	537, 537	T	500 uL		Chlorine ND			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 258878 Batch Start Date: 11/13/18 12:46 Batch Analyst: Hoang, Dalena T

Batch Method: 537 Batch End Date: 11/13/18 18:50

Batch Notes	
Analyst ID - Aliquot Step	DTH
Batch Comment	Client Id matches label: DTH 11/13/18
Analyst ID - Final Volume Step	DTH
Internal Standard ID#	1408098
Manifold ID	Q/D
Methanol ID	1430699
pH Indicator ID	3718
Pipette ID	I46162G
Analyst ID - IS Reagent Drop	VPM
Analyst ID - IS Reagent Drop Witness	DTH
Analyst ID - SU Reagent Drop	VPM
Analyst ID - SU Reagent Drop Witness	DTH
Analyst ID - TA Reagent Drop	VPM
Analyst ID - TA Reagent Drop Witness	DTH
SPE Cartridge Lot ID	64113968-03
Trizma ID	SLBR8241V
Reagent Water ID	11/12/18

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 262132 Batch Start Date: 11/30/18 08:13 Batch Analyst: Kouchari, Shamiran

Batch Method: 537 Batch End Date: 11/30/18 14:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	ReceivedpH	LC537-IS 00089
MB 320-262132/1		537, 537				250.00 mL	10.00 mL	7 SU	500 uL
LCS 320-262132/2		537, 537				250.00 mL	10.00 mL	7 SU	500 uL
LCSD 320-262132/3		537, 537				250.00 mL	10.00 mL	7 SU	500 uL
320-44805-A-1	WGNA-103118-RW-3876	537, 537	T	288.93 g	28.01 g	260.9 mL	10.00 mL	7 SU	500 uL
320-44805-A-2	WGNA-103118-FRB-3876	537, 537	T	288.55 g	27.43 g	261.1 mL	10.00 mL	7 SU	500 uL
320-44805-A-3	NAWC-103118-RW-029	537, 537	T	288.46 g	28.20 g	260.3 mL	10.00 mL	7 SU	500 uL
320-44805-A-4	NAWC-103118-FRB-029	537, 537	T	288.61 g	27.53 g	261.1 mL	10.00 mL	7 SU	500 uL
320-44805-B-5	WGNA-103118-RW-3933	537, 537	T	289.41 g	29.08 g	260.3 mL	10.00 mL	7 SU	500 uL
320-44805-B-6	WGNA-103118-FRB-3933	537, 537	T	288.32 g	28.10 g	260.2 mL	10.00 mL	7 SU	500 uL
320-44805-B-7	WGNA-103118-RW-0500	537, 537	T	288.83 g	28.71 g	260.1 mL	10.00 mL	7 SU	500 uL
320-44805-B-8	WGNA-103118-FRB-0500	537, 537	T	294.25 g	27.53 g	266.7 mL	10.00 mL	7 SU	500 uL
320-44805-A-9	WGNA-103118-RW-3385	537, 537	T	284.36 g	28.25 g	256.1 mL	10.00 mL	7 SU	500 uL
320-44805-A-10	WGNA-103118-FRB-3385	537, 537	T	289.85 g	28.12 g	261.7 mL	10.00 mL	7 SU	500 uL
320-44805-A-11	NAWC-103118-RW-054	537, 537	T	286.36 g	29.06 g	257.3 mL	10.00 mL	7 SU	500 uL
320-44805-B-12	NAWC-103118-FRB-054	537, 537	T	293.59 g	27.84 g	265.8 mL	10.00 mL	7 SU	500 uL
320-44805-A-13	WGNA-103118-DUP-51	537, 537	T	295.90 g	28.78 g	267.1 mL	10.00 mL	7 SU	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-SU 00087	LC537HSP 00001	AnalysisComment			
MB 320-262132/1		537, 537		500 uL		Chlorine, ND			
LCS 320-262132/2		537, 537		500 uL	500 uL	Chlorine, ND			
LCSD 320-262132/3		537, 537		500 uL	500 uL	Chlorine, ND			
320-44805-A-1	WGNA-103118-RW-3876	537, 537	T	500 uL		Chlorine, ND			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 262132 Batch Start Date: 11/30/18 08:13 Batch Analyst: Kouchari, Shamiran

Batch Method: 537 Batch End Date: 11/30/18 14:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	LC537-SU 00087	LC537HSP 00001	AnalysisComment			
320-44805-A-2	WGNA-103118-FRB-3876	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-3	NAWC-103118-RW-029	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-4	NAWC-103118-FRB-029	537, 537	T	500 uL		Chlorine, ND			
320-44805-B-5	WGNA-103118-RW-3933	537, 537	T	500 uL		Chlorine, ND			
320-44805-B-6	WGNA-103118-FRB-3933	537, 537	T	500 uL		Chlorine, ND			
320-44805-B-7	WGNA-103118-RW-0500	537, 537	T	500 uL		Chlorine, ND			
320-44805-B-8	WGNA-103118-FRB-0500	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-9	WGNA-103118-RW-3385	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-10	WGNA-103118-FRB-3385	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-11	NAWC-103118-RW-054	537, 537	T	500 uL		Chlorine, ND			
320-44805-B-12	NAWC-103118-FRB-054	537, 537	T	500 uL		Chlorine, ND			
320-44805-A-13	WGNA-103118-DUP-51	537, 537	T	500 uL		Chlorine, ND			

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-44805-1

SDG No.:

Batch Number: 262132 Batch Start Date: 11/30/18 08:13 Batch Analyst: Kouchari, Shamiran

Batch Method: 537 Batch End Date: 11/30/18 14:50

Batch Notes	
Analyst ID - Aliquot Step	SKD
Batch Comment	Client labels match TA labels, SKD 11/30/18
Analyst ID - Final Volume Step	SKD
Internal Standard ID#	1408097
Manifold ID	F, K
Methanol ID	1447928
pH Indicator ID	3718
Pipette ID	I46162G
Analyst ID - IS Reagent Drop	SKD
Analyst ID - IS Reagent Drop Witness	TWL
Analyst ID - SU Reagent Drop	SKD
Analyst ID - SU Reagent Drop Witness	MNV
Analyst ID - TA Reagent Drop	SKD
Analyst ID - TA Reagent Drop Witness	MNV
SPE Cartridge Lot ID	6413968-05
Trizma ID	SLBR5241V
Reagent Water ID	11/30/18

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

PFAS Calibration Calculations:

Initial Calibration 11/14/2018
Instrument A8_N

PFHxS

Analyte Concentration	Analyte Response	Internal Standard Response	Internal Standard Amount	RRF	Reported RRF
0.0228	25538	1651823	0.239	0.16206	1.6242
0.0455	49844	1740769	0.239	0.15040	1.504
0.228	255107	1748868	0.239	0.15291	1.5324
0.91	1054475	1681942	0.239	0.16466	1.6466
2.28	2423784	1638078	0.239	0.15510	1.5544
4.55	4974719	1674122	0.239	0.15609	1.5609
9.1	9891630	1659947	0.239	0.15651	1.5651
			Average	0.15682	1.5697
			Standard Deviation	0.0050	
			RSD	0.0318	
			%RSD	3.17761	3.2

Continuing Calibration 11/15/2018 @ 15:07
PFHxS

Analyte Concentration	Analyte Response	Internal Standard Response	Internal Standard Amount	RRF	%D	Reported RRF	Reported %D
0.0455	47011	1646261	2.39	1.5000	-4.441209	1.5	-4.4

Sample Identification WGNA-103118-RW-3876
Compound PFHxS

Compound Area	121936	Average RRF	1.5697
Internal Standard Amount (ng)	2.39	Sample Volume(ml)	267.5
Dilution Factor	1	Volume Extract (ml)	10
Internal Standard Area	1716267		
Concentration	4.0439 ng/L		
Reported Result	4.04 ng/L		

Surrogate PFHxA

Compound Area	1290549		
Internal Standard Amount (ng)	2.5		
Dilution Factor	1	Volume Extract (ml)	1
Internal Standard Area	2087759	Injection Volume (µl)	1
Average RRF	0.9853		
Concentration	1.5684		
Surrogate %R	62.74	Spike amount	2.5

LCS %R 320-258878/2-A

PFHxS	Spike amount	LCS concentration
61.81	91	56.25

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181115-67772.b\2018.11.15_537BB_029.d
Lims ID: 320-44805-B-1-A
Client ID: WGNA-103118-RW-3876
Sample Type: Client
Inject. Date: 16-Nov-2018 02:02:16 ALS Bottle#: 25 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-44805-b-1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20181115-67772.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 04-Dec-2018 18:22:19 Calib Date: 14-Nov-2018 16:18:35
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181114-67705.b\2018.11.14_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: barnettj Date: 04-Dec-2018 18:10:17
Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	S/N	Flags
1 Perfluorobutanesulfonic acid									
298.90 > 80.00	1.948	1.948	0.0	1.000	52959	0.0642	Target=1.62	36.4	
298.90 > 99.00	1.948	1.948	0.0	1.000	36125		1.47(0.00-0.00)	11.2	
$ 2 13C2 PFHxA									
315.00 > 270.00	2.302	2.302	0.0	1.000	1290549	1.57		1418	
4 Perfluoroheptanoic acid									
363.00 > 319.00	2.736	2.736	0.0	1.000	42920	0.0469	Target=2.52	2.3	
363.00 > 169.00	2.736	2.736	0.0	1.000	16404		2.62(0.00-0.00)	3.4	
3 Perfluorohexanesulfonic acid									M
399.00 > 80.00	2.753	2.752	0.0	1.000	121936	0.1082	Target=2.45	121	
399.00 > 99.00	2.753	2.752	0.0	1.000	35536		3.43(0.00-0.00)	10.2	M
* 5 13C2 PFOA									
415.00 > 370.00	3.155	3.155	0.0		2087759	2.50		3034	
6 Perfluorooctanoic acid									M
413.00 > 369.00	3.155	3.155	0.0	1.000	190984	0.2119	Target=1.66	10.1	M
413.00 > 169.00	3.155	3.155	0.0	1.000	111251		1.72(0.00-0.00)	17.5	M
* 7 13C4 PFOS									
503.00 > 80.00	3.541	3.541	0.0		1716267	2.39		3476	
8 Perfluorooctanesulfonic acid									
499.00 > 80.00	3.412	3.574	-0.162	1.000	184991	0.2370	Target=3.26	120	
499.00 > 99.00	3.541	3.574	-0.033	1.038	33543		5.52(0.00-0.00)	14.8	
$ 10 13C2 PFDA									
515.00 > 470.00	3.912	3.911	0.001	1.000	946610	1.65		3174	
* 12 d3-NMeFOSAA									
573.00 > 419.00	4.073	4.072	0.001		532306	2.50		1307	
$ 11 d5-NEtFOSAA									
589.00 > 419.00	4.233	4.233	0.0	1.040	424942	1.89		535	

TestAmerica Sacramento
Recovery Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181115-67772.b\2018.11.15_537BB_029.d
Lims ID: 320-44805-B-1-A
Client ID: WGNA-103118-RW-3876
Sample Type: Client
Inject. Date: 16-Nov-2018 02:02:16 ALS Bottle#: 25 Worklist Smp#: 25
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-44805-b-1-a
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Method: \\ChromNa\Sacramento\ChromData\A8_N\20181115-67772.b\537_A8_N.m
Limit Group: LC 537 ICAL
Last Update: 04-Dec-2018 18:22:19 Calib Date: 14-Nov-2018 16:18:35
Integrator: Picker
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181114-67705.b\2018.11.14_537ICAL_009.d

Column 1 : Det: EXP1
Process Host: CTX0312

First Level Reviewer: barnettj Date: 04-Dec-2018 18:10:17

Compound	Amount Added	Amount Recovered	% Rec.
$ 2 13C2 PFHxA	2.50	1.57	62.74
$ 10 13C2 PFDA	2.50	1.65	65.89
$ 11 d5-NEtFOSAA	2.50	1.89	75.68

Preliminary Data - For Official Use Only

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N

NSDALE

UPPER GWYNEDD

MONTGOMERY

WARRINGTON

WARWICK

NORTHAMPTON

IVYLAND

WARMINSTER

HORSHAM

HAGS

NASJRB Willow Grove

LOWER GWYNEDD

HATBORO

UPPER SOUTHAMPTON

UPPER DUBLIN

UPPER MORELAND

LOWER MORELAND

LEGEND

- PFOA & PFOS BELOW DETECTION LIMITS
- SUM OF PFOA & PFOS CONCENTRATIONS AT OR BELOW 40 PPT
- SUM OF PFOA & PFOS CONCENTRATIONS BETWEEN 40 PPT AND 70 PPT
- SUM OF PFOA & PFOS CONCENTRATIONS ABOVE 70 PPT
- PUBLIC WATER CONNECTION (SOME NOT BY NAVY)
- SAMPLING AREA
- HORSHAM AIR GUARD (HAGS)
- FORMER NASJRB WILLOW GROVE
- TOWNSHIP BOUNDARY

5,000 2,500 0 5,000

Feet

NAVFAC

PFC SAMPLE RESULTS MAP
FORMER NASJRB WILLOW GROVE
AND HORSHAM AIR GUARD
MONTGOMERY COUNTY, PENNSYLVANIA

SCALE	
AS NOTED	
FILE	
WGNA	
REV	DATE
0	02/14/19
FIGURE NUMBER	
FIGURE 1	