



**Groundwater Sample Results,  
Electronic Data Deliverable, Data Validation Report,  
and the Sample Location Report, SDG 280-24227-1**

*Naval Air Station South Weymouth  
South Weymouth, Massachusetts*

August 2019

"AFFF-SO-SB06-0709" "PFOA/PFOS" "RES" "280-24227-1" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "1.2" "ug/Kg" "" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.92" "20" "0" ""

"AFFF-SO-SB06-0709" "PFOA/PFOS" "RES" "280-24227-1" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "1.7" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.92" "20" "0" ""

"AFFF-SO-SB06-0709" "PFOA/PFOS" "RES" "280-24227-1" "TALDEN" "STL01052" "13C8 PFOA" "19" "ug/Kg" "" "-99" "DL" "" "SURR" "94" "" "-99" "LOQ" "YES" "20.0" "" "10.92" "20" "0" ""

"AFFF-SO-SB06-0709" "PFOA/PFOS" "RES" "280-24227-1" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "105" "" "-99" "LOQ" "YES" "19.1" "" "10.92" "20" "0" ""

"AFFF-SO-SB15-0507" "PFOA/PFOS" "RES" "280-24227-10" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.27" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.83" "20" "0" ""

"AFFF-SO-SB15-0507" "PFOA/PFOS" "RES" "280-24227-10" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "0.77" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.83" "20" "0" ""

"AFFF-SO-SB15-0507" "PFOA/PFOS" "RES" "280-24227-10" "TALDEN" "STL01052" "13C8 PFOA" "17" "ug/Kg" "" "-99" "DL" "" "SURR" "86" "" "-99" "LOQ" "YES" "20.0" "" "10.83" "20" "0" ""

"AFFF-SO-SB15-0507" "PFOA/PFOS" "RES" "280-24227-10" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "19.1" "" "10.83" "20" "0" ""

"AFFF-SO-SB11-0507" "PFOA/PFOS" "RES" "280-24227-11" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.60" "ug/Kg" "U" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "12.02" "20" "0.60" ""

"AFFF-SO-SB11-0507" "PFOA/PFOS" "RES" "280-24227-11" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "0.56" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "12.02" "20" "0" ""

"AFFF-SO-SB11-0507" "PFOA/PFOS" "RES" "280-24227-11" "TALDEN" "STL01052" "13C8 PFOA" "17" "ug/Kg" "" "-99" "DL" "" "SURR" "85" "" "-99" "LOQ" "YES" "20.0" "" "12.02" "20" "0" ""

"AFFF-SO-SB11-0507" "PFOA/PFOS" "RES" "280-24227-11" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "M" "-99" "DL" "" "SURR" "105" "" "-99" "LOQ" "YES" "19.1" "" "12.02" "20" "0" ""

"AFFF-SO-SB13-0507" "PFOA/PFOS" "RES" "280-24227-12" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.64" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "11.29" "20" "0" ""

"AFFF-SO-SB13-0507" "PFOA/PFOS" "RES" "280-24227-12" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "3.1" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "11.29" "20" "0" ""

"AFFF-SO-SB13-0507" "PFOA/PFOS" "RES" "280-24227-12" "TALDEN" "STL01052" "13C8 PFOA" "17" "ug/Kg" "" "-99" "DL" "" "SURR" "84" "" "-99" "LOQ" "YES" "20.0" "" "11.29" "20" "0" ""

"AFFF-SO-SB13-0507" "PFOA/PFOS" "RES" "280-24227-12" "TALDEN" "STL01054" "13C8 PFOS" "19" "ug/Kg" "M" "-99" "DL" "" "SURR" "102" "" "-99" "LOQ" "YES" "19.1" "" "11.29" "20" "0" ""

"AFFF-SO-SB04-0406" "PFOA/PFOS" "RES" "280-24227-13" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "5.7" "ug/Kg" "" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.76" "20" "0" ""

"AFFF-SO-SB04-0406" "PFOA/PFOS" "RES" "280-24227-13" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "16" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.76" "20" "0" ""

"YES" "-99" "" "10.76" "20" "0" ""  
 "AFFF-SO-SB04-0406" "PFOA/PFOS" "RES" "280-24227-13" "TALDEN" "STL01052" "13C8 PFOA"  
 "18" "ug/Kg" "" "-99" "DL" "" "SURR" "90" "" "-99" "LOQ" "YES" "19.9" "" "10.76" "20"  
 "0" ""  
 "AFFF-SO-SB04-0406" "PFOA/PFOS" "RES" "280-24227-13" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "19.0" "" "10.76" "20"  
 "0" ""  
 "AFFF-SO-DUP02-122811" "PFOA/PFOS" "RES" "280-24227-14" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "0.52" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.38" "20" "0" ""  
 "AFFF-SO-DUP02-122811" "PFOA/PFOS" "RES" "280-24227-14" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "2.3" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.38" "20" "0" ""  
 "AFFF-SO-DUP02-122811" "PFOA/PFOS" "RES" "280-24227-14" "TALDEN" "STL01052" "13C8  
 PFOA" "17" "ug/Kg" "" "-99" "DL" "" "SURR" "85" "" "-99" "LOQ" "YES" "19.9" ""  
 "11.38" "20" "0" ""  
 "AFFF-SO-DUP02-122811" "PFOA/PFOS" "RES" "280-24227-14" "TALDEN" "STL01054" "13C8  
 PFOS" "20" "ug/Kg" "M" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES" "19.1" ""  
 "11.38" "20" "0" ""  
 "AFFF-SO-SB18-0106" "PFOA/PFOS" "RES" "280-24227-15" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "4.4" "ug/Kg" "" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.04" "20" "0" ""  
 "AFFF-SO-SB18-0106" "PFOA/PFOS" "RES" "280-24227-15" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "11" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.04" "20" "0" ""  
 "AFFF-SO-SB18-0106" "PFOA/PFOS" "RES" "280-24227-15" "TALDEN" "STL01052" "13C8 PFOA"  
 "19" "ug/Kg" "" "-99" "DL" "" "SURR" "94" "" "-99" "LOQ" "YES" "19.9" "" "11.04" "20"  
 "0" ""  
 "AFFF-SO-SB18-0106" "PFOA/PFOS" "RES" "280-24227-15" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "" "-99" "DL" "" "SURR" "105" "" "-99" "LOQ" "YES" "19.1" "" "11.04" "20"  
 "0" ""  
 "AFFF-SO-SB20-0507" "PFOA/PFOS" "RES" "280-24227-16" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "150" "ug/Kg" "" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.07" "20" "0" ""  
 "AFFF-SO-SB20-0507" "PFOA/PFOS" "RES" "280-24227-16" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "5.9" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.07" "20" "0" ""  
 "AFFF-SO-SB20-0507" "PFOA/PFOS" "RES" "280-24227-16" "TALDEN" "STL01052" "13C8 PFOA"  
 "18" "ug/Kg" "" "-99" "DL" "" "SURR" "88" "" "-99" "LOQ" "YES" "19.9" "" "11.07" "20"  
 "0" ""  
 "AFFF-SO-SB20-0507" "PFOA/PFOS" "RES" "280-24227-16" "TALDEN" "STL01054" "13C8 PFOS"  
 "21" "ug/Kg" "" "-99" "DL" "" "SURR" "109" "" "-99" "LOQ" "YES" "19.0" "" "11.07" "20"  
 "0" ""  
 "AFFF-SO-SB19-0608" "PFOA/PFOS" "RES" "280-24227-17" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "0.60" "ug/Kg" "U" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "10.98" "20" "0.60" ""  
 "AFFF-SO-SB19-0608" "PFOA/PFOS" "RES" "280-24227-17" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "0.60" "ug/Kg" "U" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "10.98" "20" "0.60" ""  
 "AFFF-SO-SB19-0608" "PFOA/PFOS" "RES" "280-24227-17" "TALDEN" "STL01052" "13C8 PFOA"  
 "18" "ug/Kg" "" "-99" "DL" "" "SURR" "89" "" "-99" "LOQ" "YES" "20.0" "" "10.98" "20"  
 "0" ""  
 "AFFF-SO-SB19-0608" "PFOA/PFOS" "RES" "280-24227-17" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES" "19.1" "" "10.98" "20"

"0" ""

"AFFF-SO-SB21-0507" "PFOA/PFOS" "RES" "280-24227-18" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "0.62" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "10.82" "20" "0" ""

"AFFF-SO-SB21-0507" "PFOA/PFOS" "RES" "280-24227-18" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "0.60" "ug/Kg" "U" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "10.82" "20" "0.60" ""

"AFFF-SO-SB21-0507" "PFOA/PFOS" "RES" "280-24227-18" "TALDEN" "STL01052" "13C8 PFOA"  
 "17" "ug/Kg" "" "-99" "DL" "" "SURR" "85" "" "-99" "LOQ" "YES" "20.0" "" "10.82" "20"  
 "0" ""

"AFFF-SO-SB21-0507" "PFOA/PFOS" "RES" "280-24227-18" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "19.1" "" "10.82" "20"  
 "0" ""

"AFFF-SO-RB01-122911" "PFOA/PFOS" "RES" "280-24227-19" "TALDEN" "1763-23-1"  
 "Perfluorooctane Sulfonate (PFOS)" "0.0074" "ug/L" "U" "0.0016" "DL" "" "TRG" "" ""  
 "0.029" "LOQ" "YES" "-99" "" "257" "5" "0.0074" ""

"AFFF-SO-RB01-122911" "PFOA/PFOS" "RES" "280-24227-19" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "0.0078" "ug/L" "U" "0.0012" "DL" "" "TRG" "" "" "0.019"  
 "LOQ" "YES" "-99" "" "257" "5" "0.0078" ""

"AFFF-SO-RB01-122911" "PFOA/PFOS" "RES" "280-24227-19" "TALDEN" "STL01052" "13C8  
 PFOA" "0.22" "ug/L" "" "-99" "DL" "" "SURR" "112" "" "-99" "LOQ" "YES" "0.195" ""  
 "257" "5" "0" ""

"AFFF-SO-RB01-122911" "PFOA/PFOS" "RES" "280-24227-19" "TALDEN" "STL01054" "13C8 PFOS"  
 "0.20" "ug/L" "" "-99" "DL" "" "SURR" "107" "" "-99" "LOQ" "YES" "0.186" "" "257" "5"  
 "0" ""

"AFFF-SO-SB07-0709" "PFOA/PFOS" "RES" "280-24227-2" "TALDEN" "1763-23-1" "Perfluorooctane  
 Sulfonate (PFOS)" "0.72" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99"  
 "" "11.77" "20" "0" ""

"AFFF-SO-SB07-0709" "PFOA/PFOS" "RES" "280-24227-2" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "1.5" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.77" "20" "0" ""

"AFFF-SO-SB07-0709" "PFOA/PFOS" "RES" "280-24227-2" "TALDEN" "STL01052" "13C8 PFOA"  
 "18" "ug/Kg" "" "-99" "DL" "" "SURR" "92" "" "-99" "LOQ" "YES" "20.0" "" "11.77" "20"  
 "0" ""

"AFFF-SO-SB07-0709" "PFOA/PFOS" "RES" "280-24227-2" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "M" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "19.1" "" "11.77" "20"  
 "0" ""

"AFFF-SO-SB08-0608" "PFOA/PFOS" "RES" "280-24227-3" "TALDEN" "1763-23-1" "Perfluorooctane  
 Sulfonate (PFOS)" "0.45" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99"  
 "" "11.39" "20" "0" ""

"AFFF-SO-SB08-0608" "PFOA/PFOS" "RES" "280-24227-3" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "0.70" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"  
 "YES" "-99" "" "11.39" "20" "0" ""

"AFFF-SO-SB08-0608" "PFOA/PFOS" "RES" "280-24227-3" "TALDEN" "STL01052" "13C8 PFOA"  
 "18" "ug/Kg" "" "-99" "DL" "" "SURR" "91" "" "-99" "LOQ" "YES" "19.9" "" "11.39" "20"  
 "0" ""

"AFFF-SO-SB08-0608" "PFOA/PFOS" "RES" "280-24227-3" "TALDEN" "STL01054" "13C8 PFOS"  
 "20" "ug/Kg" "" "-99" "DL" "" "SURR" "105" "" "-99" "LOQ" "YES" "19.0" "" "11.39" "20"  
 "0" ""

"AFFF-SO-SB09-0507" "PFOA/PFOS" "RES" "280-24227-4" "TALDEN" "1763-23-1" "Perfluorooctane  
 Sulfonate (PFOS)" "0.60" "ug/Kg" "U" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99"  
 "" "10.68" "20" "0.60" ""

"AFFF-SO-SB09-0507" "PFOA/PFOS" "RES" "280-24227-4" "TALDEN" "335-67-1"  
 "Perfluorooctanoic acid (PFOA)" "0.48" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ"

"YES" "-99" "" "10.68" "20" "0" ""

"AFFF-SO-SB09-0507" "PFOA/PFOS" "RES" "280-24227-4" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "92" "" "-99" "LOQ" "YES" "20.0" "" "10.68" "20" "0" ""

"AFFF-SO-SB09-0507" "PFOA/PFOS" "RES" "280-24227-4" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "M" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES" "19.1" "" "10.68" "20" "0" ""

"AFFF-SO-SB12-0608" "PFOA/PFOS" "RES" "280-24227-5" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.44" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.65" "20" "0" ""

"AFFF-SO-SB12-0608" "PFOA/PFOS" "RES" "280-24227-5" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "4.0" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.65" "20" "0" ""

"AFFF-SO-SB12-0608" "PFOA/PFOS" "RES" "280-24227-5" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "91" "" "-99" "LOQ" "YES" "19.9" "" "10.65" "20" "0" ""

"AFFF-SO-SB12-0608" "PFOA/PFOS" "RES" "280-24227-5" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "107" "" "-99" "LOQ" "YES" "19.1" "" "10.65" "20" "0" ""

"AFFF-SO-DUP01-122811" "PFOA/PFOS" "RES" "280-24227-6" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.41" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.57" "20" "0" ""

"AFFF-SO-DUP01-122811" "PFOA/PFOS" "RES" "280-24227-6" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "4.1" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.57" "20" "0" ""

"AFFF-SO-DUP01-122811" "PFOA/PFOS" "RES" "280-24227-6" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "93" "" "-99" "LOQ" "YES" "20.0" "" "10.57" "20" "0" ""

"AFFF-SO-DUP01-122811" "PFOA/PFOS" "RES" "280-24227-6" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "107" "" "-99" "LOQ" "YES" "19.1" "" "10.57" "20" "0" ""

"AFFF-SO-SB16-0507" "PFOA/PFOS" "RES" "280-24227-7" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.26" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.81" "20" "0" ""

"AFFF-SO-SB16-0507" "PFOA/PFOS" "RES" "280-24227-7" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "0.46" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.81" "20" "0" ""

"AFFF-SO-SB16-0507" "PFOA/PFOS" "RES" "280-24227-7" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "91" "" "-99" "LOQ" "YES" "20.0" "" "10.81" "20" "0" ""

"AFFF-SO-SB16-0507" "PFOA/PFOS" "RES" "280-24227-7" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "19.1" "" "10.81" "20" "0" ""

"AFFF-SO-SB17-0608" "PFOA/PFOS" "RES" "280-24227-8" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.41" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.79" "20" "0" ""

"AFFF-SO-SB17-0608" "PFOA/PFOS" "RES" "280-24227-8" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "1.6" "ug/Kg" "" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.79" "20" "0" ""

"AFFF-SO-SB17-0608" "PFOA/PFOS" "RES" "280-24227-8" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "89" "" "-99" "LOQ" "YES" "19.9" "" "10.79" "20" "0" ""

"AFFF-SO-SB17-0608" "PFOA/PFOS" "RES" "280-24227-8" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "M" "-99" "DL" "" "SURR" "104" "" "-99" "LOQ" "YES" "19.0" "" "10.79" "20" "0" ""

"0" ""

"AFFF-SO-SB14-0507" "PFOA/PFOS" "RES" "280-24227-9" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.32" "ug/Kg" "J" "0.19" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.74" "20" "0" ""

"AFFF-SO-SB14-0507" "PFOA/PFOS" "RES" "280-24227-9" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "0.34" "ug/Kg" "J" "0.21" "DL" "" "TRG" "" "" "0.80" "LOQ" "YES" "-99" "" "10.74" "20" "0" ""

"AFFF-SO-SB14-0507" "PFOA/PFOS" "RES" "280-24227-9" "TALDEN" "STL01052" "13C8 PFOA" "18" "ug/Kg" "" "-99" "DL" "" "SURR" "90" "" "-99" "LOQ" "YES" "20.0" "" "10.74" "20" "0" ""

"AFFF-SO-SB14-0507" "PFOA/PFOS" "RES" "280-24227-9" "TALDEN" "STL01054" "13C8 PFOS" "20" "ug/Kg" "" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES" "19.1" "" "10.74" "20" "0" ""

"AFFF-SO-SB14-0507MS" "PFOA/PFOS" "RES" "280-24227-9MS" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "21.5" "ug/Kg" "" "0.19" "DL" "" "SPK" "111" "" "0.81" "LOQ" "YES" "19.0" "AFFF-SO-SB14-0507" "10.78" "20.4" "0" ""

"AFFF-SO-SB14-0507MS" "PFOA/PFOS" "RES" "280-24227-9MS" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "22.3" "ug/Kg" "" "0.21" "DL" "" "SPK" "111" "" "0.81" "LOQ" "YES" "19.9" "AFFF-SO-SB14-0507" "10.78" "20.4" "0" ""

"AFFF-SO-SB14-0507MS" "PFOA/PFOS" "RES" "280-24227-9MS" "TALDEN" "STL01052" "13C8 PFOA" "18.0" "ug/Kg" "" "-99" "DL" "" "SURR" "90" "" "-99" "LOQ" "YES" "19.9" "AFFF-SO-SB14-0507" "10.78" "20.4" "0" ""

"AFFF-SO-SB14-0507MS" "PFOA/PFOS" "RES" "280-24227-9MS" "TALDEN" "STL01054" "13C8 PFOS" "19.6" "ug/Kg" "" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES" "19.0" "AFFF-SO-SB14-0507" "10.78" "20.4" "0" ""

"AFFF-SO-SB14-0507MSD" "PFOA/PFOS" "RES" "280-24227-9MSD" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "21.1" "ug/Kg" "" "0.19" "DL" "" "SPK" "109" "2" "0.81" "LOQ" "YES" "19.1" "AFFF-SO-SB14-0507" "10.77" "20.4" "0" ""

"AFFF-SO-SB14-0507MSD" "PFOA/PFOS" "RES" "280-24227-9MSD" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "22.8" "ug/Kg" "" "0.21" "DL" "" "SPK" "113" "2" "0.81" "LOQ" "YES" "19.9" "AFFF-SO-SB14-0507" "10.77" "20.4" "0" ""

"AFFF-SO-SB14-0507MSD" "PFOA/PFOS" "RES" "280-24227-9MSD" "TALDEN" "STL01052" "13C8 PFOA" "17.4" "ug/Kg" "" "-99" "DL" "" "SURR" "87" "" "-99" "LOQ" "YES" "19.9" "AFFF-SO-SB14-0507" "10.77" "20.4" "0" ""

"AFFF-SO-SB14-0507MSD" "PFOA/PFOS" "RES" "280-24227-9MSD" "TALDEN" "STL01054" "13C8 PFOS" "19.8" "ug/Kg" "" "-99" "DL" "" "SURR" "104" "" "-99" "LOQ" "YES" "19.1" "AFFF-SO-SB14-0507" "10.77" "20.4" "0" ""

"LCS 280-102068/2-A" "PFOA/PFOS" "RES" "LCS 280-102068/2-A" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "0.195" "ug/L" "" "0.0016" "DL" "" "SPK" "102" "" "0.030" "LOQ" "YES" "0.191" "" "250" "5" "0" ""

"LCS 280-102068/2-A" "PFOA/PFOS" "RES" "LCS 280-102068/2-A" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "0.212" "ug/L" "" "0.0012" "DL" "" "SPK" "106" "" "0.020" "LOQ" "YES" "0.200" "" "250" "5" "0" ""

"LCS 280-102068/2-A" "PFOA/PFOS" "RES" "LCS 280-102068/2-A" "TALDEN" "STL01052" "13C8 PFOA" "0.220" "ug/L" "" "-99" "DL" "" "SURR" "110" "" "-99" "LOQ" "YES" "0.200" "" "250" "5" "0" ""

"LCS 280-102068/2-A" "PFOA/PFOS" "RES" "LCS 280-102068/2-A" "TALDEN" "STL01054" "13C8 PFOS" "0.202" "ug/L" "" "-99" "DL" "" "SURR" "106" "" "-99" "LOQ" "YES" "0.191" "" "250" "5" "0" ""

"LCS 280-102080/2-A" "PFOA/PFOS" "RES/WET" "LCS 280-102080/2-A" "TALDEN" "1763-23-1" "Perfluorooctane Sulfonate (PFOS)" "20.6" "ug/Kg" "" "0.19" "DL" "" "SPK" "108" "" "0.81" "LOQ" "YES" "19.1" "" "10.02" "20.4" "0" ""

"LCS 280-102080/2-A" "PFOA/PFOS" "RES/WET" "LCS 280-102080/2-A" "TALDEN" "335-67-1" "Perfluorooctanoic acid (PFOA)" "22.0" "ug/Kg" "" "0.21" "DL" "" "SPK" "110" "" "0.81" "LOQ" "YES" "19.1" "" "10.02" "20.4" "0" ""

"LOQ" "YES" "20.0" "" "10.02" "20.4" "0" ""

"LCS 280-102080/2-A" "PFOA/PFOS" "RES/WET" "LCS 280-102080/2-A" "TALDEN" "STL01052"

"13C8 PFOA" "20.6" "ug/Kg" "" "-99" "DL" "" "SURR" "103" "" "-99" "LOQ" "YES"

"20.0" "" "10.02" "20.4" "0" ""

"LCS 280-102080/2-A" "PFOA/PFOS" "RES/WET" "LCS 280-102080/2-A" "TALDEN" "STL01054"

"13C8 PFOS" "19.8" "ug/Kg" "" "-99" "DL" "" "SURR" "104" "" "-99" "LOQ" "YES"

"19.1" "" "10.02" "20.4" "0" ""

"MB 280-102068/1-A" "PFOA/PFOS" "RES" "MB 280-102068/1-A" "TALDEN" "1763-23-1"

"Perfluorooctane Sulfonate (PFOS)" "0.0076" "ug/L" "U" "0.0016" "DL" "" "TRG" "" "" "0.030"

"LOQ" "YES" "-99" "" "250" "5" "0.0076" ""

"MB 280-102068/1-A" "PFOA/PFOS" "RES" "MB 280-102068/1-A" "TALDEN" "335-67-1"

"Perfluorooctanoic acid (PFOA)" "0.0080" "ug/L" "U" "0.0012" "DL" "" "TRG" "" "" "0.020"

"LOQ" "YES" "-99" "" "250" "5" "0.0080" ""

"MB 280-102068/1-A" "PFOA/PFOS" "RES" "MB 280-102068/1-A" "TALDEN" "STL01052" "13C8 PFOA"

"0.224" "ug/L" "" "-99" "DL" "" "SURR" "112" "" "-99" "LOQ" "YES"

"0.200" "" "250" "5" "0" ""

"MB 280-102068/1-A" "PFOA/PFOS" "RES" "MB 280-102068/1-A" "TALDEN" "STL01054" "13C8 PFOS"

"0.200" "ug/L" "" "-99" "DL" "" "SURR" "105" "" "-99" "LOQ" "YES"

"0.191" "" "250" "5" "0" ""

"MB 280-102080/1-A" "PFOA/PFOS" "RES/WET" "MB 280-102080/1-A" "TALDEN" "1763-23-1"

"Perfluorooctane Sulfonate (PFOS)" "0.60" "ug/Kg" "U" "0.19" "DL" "" "TRG" "" "" "0.80"

"LOQ" "YES" "-99" "" "10.00" "20" "0.60" ""

"MB 280-102080/1-A" "PFOA/PFOS" "RES/WET" "MB 280-102080/1-A" "TALDEN" "335-67-1"

"Perfluorooctanoic acid (PFOA)" "0.60" "ug/Kg" "U" "0.21" "DL" "" "TRG" "" "" "0.80"

"LOQ" "YES" "-99" "" "10.00" "20" "0.60" ""

"MB 280-102080/1-A" "PFOA/PFOS" "RES/WET" "MB 280-102080/1-A" "TALDEN" "STL01052"

"13C8 PFOA" "21.4" "ug/Kg" "" "-99" "DL" "" "SURR" "107" "" "-99" "LOQ" "YES"

"20.0" "" "10.00" "20" "0" ""

"MB 280-102080/1-A" "PFOA/PFOS" "RES/WET" "MB 280-102080/1-A" "TALDEN" "STL01054"

"13C8 PFOS" "20.6" "ug/Kg" "" "-99" "DL" "" "SURR" "108" "" "-99" "LOQ" "YES"

"19.1" "" "10.00" "20" "0" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB06-0709" "12/28/2011 08:15" "SO" "280-24227-1"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 15:42"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "8.4" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1" "12/30/2011 09:00" "01/18/2012 10:20" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB15-0507" "12/28/2011 13:30" "SO" "280-24227-10"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 17:27"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "7.5" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1" "12/30/2011 09:00" "01/18/2012 10:20" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB11-0507" "12/28/2011 14:00" "SO" "280-24227-11"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 17:36"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "16.6" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1" "12/30/2011 09:00" "01/18/2012 10:20" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB13-0507" "12/28/2011 14:25" "SO" "280-24227-12"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 17:44"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "11.3" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1" "12/30/2011 09:00" "01/18/2012 10:20" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB04-0406" "12/29/2011 08:55" "SO" "280-24227-13"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 17:53"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.7" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1" "12/30/2011 09:00" "01/18/2012 10:20" ""

"112G02073" "NAS South Weymouth" "AFFF-SO-DUP02-122811" "12/28/2011 00:00" "SO" "280-24227-14"

"FD" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15" "01/07/2012 18:02"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "11.9" "280-102080" "280-

102080" "NA" "280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB18-0106" "12/29/2011 11:05""SO" "280-24227-15"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 18:11"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "9.2" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB20-0507" "12/29/2011 11:35""SO" "280-24227-16"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 18:19"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "9.3" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB19-0608" "12/29/2011 12:40""SO" "280-24227-17"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 18:37"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "8.7" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB21-0507" "12/29/2011 12:10""SO" "280-24227-18"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 18:45"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "7.5" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-RB01-122911" "12/29/2011 13:20""AQ" "280-24227-19"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? 3535" "RES" "01/03/2012 09:15""01/07/2012 02:28"

"TALDEN" "COA" "WET" "NA" "1" "NA" "NA" "" "100" "280-102068" "280-102068" "NA"

"280-102652" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB07-0709" "12/28/2011 08:50""SO" "280-24227-2"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 15:51"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "15.0" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB08-0608" "12/28/2011 09:10""SO" "280-24227-3"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:00"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "11.8" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB09-0507" "12/28/2011 09:50""SO" "280-24227-4"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:08"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.3" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB12-0608" "12/28/2011 10:45""SO" "280-24227-5"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:17"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "5.8" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-DUP01-122811" "12/28/2011 00:00""SO" "280-24227-6"

"FD" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:26"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "5.2" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB16-0507" "12/28/2011 11:05""SO" "280-24227-7"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:34"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "7.4" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB17-0608" "12/28/2011 10:20""SO" "280-24227-8"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 16:43"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.9" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB14-0507" "12/28/2011 12:50""SO" "280-24227-9"

"NM" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15""01/07/2012 17:01"

"TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.8" "280-102080" "280-102080" "NA"

"280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""

"112G02073" "NAS South Weymouth" "AFFF-SO-SB14-0507MS" "12/28/2011 12:50""SO" "280-24227-



9MS" "MS" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15"  
"01/07/2012 17:09""TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.8" "280-102080"  
"280-102080" "NA" "280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""  
"112G02073" "NAS South Weymouth" "AFFF-SO-SB14-0507MSD" "12/28/2011 12:50""SO" "280-24227-  
9MSD" "MSD" "" "2.60" "PFOA/PFOS" "?ERR ? PFC leach" "RES" "01/03/2012 10:15"  
"01/07/2012 17:18""TALDEN" "COA" "DRY" "NA" "1" "NA" "NA" "" "6.8" "280-102080"  
"280-102080" "NA" "280-102705" "280-24227-1""12/30/2011 09:00""01/18/2012 10:20""  
"112G02073" "NAS South Weymouth" "LCS 280-102068/2-A" "" "AQ" "LCS 280-102068/2-A" "LCS"  
"" "-99" "PFOA/PFOS" "?ERR ? 3535" "RES" "01/03/2012 09:15""01/07/2012 02:19""TALDEN"  
"COA" "WET" "NA" "1" "NA" "NA" "" "100" "280-102068" "280-102068" "NA" "280-  
102652" "280-24227-1""01/03/2012 09:15""01/18/2012 10:20""  
"112G02073" "NAS South Weymouth" "LCS 280-102080/2-A" "" "SO" "LCS 280-102080/2-A" "LCS"  
"" "-99" "PFOA/PFOS" "?ERR ? PFC leach" "RES/WET" "01/03/2012 10:15""01/07/2012 15:33"  
"TALDEN" "COA" "WET" "NA" "1" "NA" "NA" "" "100" "280-102080" "280-102080" "NA"  
"280-102705" "280-24227-1""01/03/2012 10:15""01/18/2012 10:20""  
"112G02073" "NAS South Weymouth" "MB 280-102068/1-A" "" "AQ" "MB 280-102068/1-A" "MB"  
"" "-99" "PFOA/PFOS" "?ERR ? 3535" "RES" "01/03/2012 09:15""01/07/2012 02:10""TALDEN"  
"COA" "WET" "NA" "1" "NA" "NA" "" "100" "280-102068" "280-102068" "NA" "280-  
102652" "280-24227-1""01/03/2012 09:15""01/18/2012 10:20""  
"112G02073" "NAS South Weymouth" "MB 280-102080/1-A" "" "SO" "MB 280-102080/1-A" "MB"  
"" "-99" "PFOA/PFOS" "?ERR ? PFC leach" "RES/WET" "01/03/2012 10:15""01/07/2012 15:25"  
"TALDEN" "COA" "WET" "NA" "1" "NA" "NA" "" "100" "280-102080" "280-102080" "NA"  
"280-102705" "280-24227-1""01/03/2012 10:15""01/18/2012 10:20""



TO: P. CALL  
SDG: 280-24227-1

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**HOLD TIME**

No issues were identified.

**BLANKS**

No issues were identified.

**CALIBRATIONS**

No issues were identified.

**LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE**

No issues were identified.

**MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)**

No issues were identified.

**INTERNAL STANDARDS**

The recoveries for internal standard 13C4 PFOA were less than the quality control limit for samples as listed below.

**Affected Samples:**

AFFF-SO-SB12-0608	AFFF-SO-DUP01-122811	AFFF-SO-SB17-0608
AFFF-SO-SB15-0507	AFFF-SO-SB11-0507	AFFF-SO-SB13-0507
AFFF-SO-SB04-0406	AFFF-SO-DUP02-122811	AFFF-SO-SB18-0106
AFFF-SO-SB20-0507	AFFF-SO-SB21-0507	

**Actions:** The positive and non-detected PFOA results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively.

**SURROGATE SPIKE RECOVERIES**

No issues were identified.

**COMPOUND QUANTIFICATION / FIELD DUPLICATE PRECISION**

No issues were identified.

**ADDITIONAL COMMENTS**

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

Sample results were reported to the Limit of Detection (LOD).

TO: P. CALL  
SDG: 280-24227-1

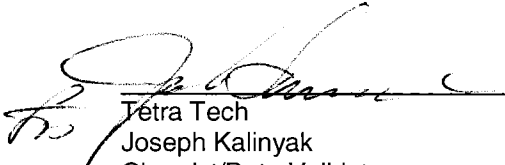
PAGE 3

**EXECUTIVE SUMMARY**

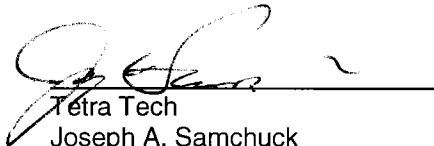
**Laboratory Performance:** Sample PFOA results were qualified for internal standard recovery quality control limit non-compliances.

**Other Factors Affecting Data Quality:** Positive results reported below the limit of quantitation (LOQ) but above the method detection limit were qualified as estimated, (J).

The data for these analyses were reviewed with reference to the "USEPA Region 1 Laboratory Data Validation Functional Guidelines – Part II" (12/96), laboratory quality control criteria as outlined in Test America SOP DV-LC-0012, and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (April 2009).



Tetra Tech  
Joseph Kalinyak  
Chemist/Data Validator



Tetra Tech  
Joseph A. Samchuck  
Quality Assurance Officer

Attachments:

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

**APPENDIX A**

**QUALIFIED LABORATORY RESULTS**

### **Value Qualifier Key (Val Qual)**

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

### **DATA QUALIFICATION CODE (QUAL CODE)**

#### **Qualifier Codes:**

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

PROJ_NO: 02073	NSAMPLE	AFF-SO-RB01-122911	
SDG: 280-24227-1	LAB_ID	280-24227-19	
FRACTION: MISC	SAMP_DATE	12/29/2011	
MEDIA: WATER	QC_TYPE	NM	
	UNITS	UG/L	
	PCT_SOLIDS	0.0	
	DUP_OF		
PARAMETER	RESULT	VQL	QLCD
PENTADEC AFLUORO OCTANOIC ACID	0.0078	U	
PERFLUORO OCTANE SULFONIC ACID	0.0074	U	

PROJ_NO: 02073	NSAMPLE	AFFF-SO-DUP01-122811	AFFF-SO-DUP02-122811	AFFF-SO-SB04-0406	AFFF-SO-SB06-0709
SDG: 280-24227-1	LAB_ID	280-24227-6	280-24227-14	280-24227-13	280-24227-1
FRACTION: MISC	SAMP_DATE	12/28/2011	12/28/2011	12/29/2011	12/28/2011
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	94.8	88.1	93.3	91.6
	DUP_OF	AFFF-SO-SB12-0608	AFFF-SO-SB13-0507		
PARAMETER		RESULT	RESULT	RESULT	RESULT
PENTADEC AFLUORO OCTANOIC ACID		4.1 J	2.3 J	16 J	1.7
PERFLUORO OCTANE SULFONIC ACID		0.41 J	0.52 J	5.7	1.2
		QLCD	QLCD	QLCD	QLCD
		N	N	N	
		P	P		







PROJ_NO: 02073	NSAMPLE	AFFF-SO-SB16-0507	AFFF-SO-SB17-0608	AFFF-SO-SB18-0106	AFFF-SO-SB19-0608
SDG: 280-24227-1	LAB_ID	280-24227-7	280-24227-8	280-24227-15	280-24227-17
FRACTION: MISC	SAMP_DATE	12/28/2011	12/28/2011	12/29/2011	12/29/2011
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	92.6	93.1	90.8	91.3
	DUP_OF				
PARAMETER	RESULT	VQL	QLCD	RESULT	VQL
PENTADECYLFLUOROOCTANOIC ACID	0.46 J	J	P	11 J	N
PERFLUOROOCTANE SULFONIC ACID	0.26 J	J	P	4.4	0.6 U
					0.6 U

PROJ_NO: 02073	NSAMPLE	AFFF-SO-SB20-0507	AFFF-SO-SB21-0507
SDG: 280-24227-1	LAB_ID	280-24227-16	280-24227-18
FRACTION: MISC	SAMP_DATE	12/29/2011	12/29/2011
MEDIA: SOIL	QC_TYPE	NM	NM
	UNITS	UG/KG	UG/KG
	PCT_SOLIDS	90.7	92.5
	DUP_OF		
PARAMETER	RESULT	VOL	QLCD
PENTADEC AFLUORO OCTANOIC ACID	5.9 J	N	N
PERFLUORO OCTANE SULFONIC ACID	150	0.62 J	P

**APPENDIX B**

**RESULTS AS REPORTED BY THE LABORATORY**

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-RB01-122911 Lab Sample ID: 280-24227-19  
 Matrix: Water Lab File ID: PC512A06108.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 13:20  
 Extraction Method: 3535 Date Extracted: 01/03/2012 09:15  
 Sample wt/vol: 257 (mL) Date Analyzed: 01/07/2012 02:28  
 Con. Extract Vol.: 5 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102652 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0078	U	0.019	0.0078	0.0012
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.0074	U	0.029	0.0074	0.0016

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	112		60-155
STL01054	13C8 PFOS	107		45-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-DUP01-122811 Lab Sample ID: 280-24227-6  
 Matrix: Solid Lab File ID: PC512A07047.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 00:00  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.57(g) Date Analyzed: 01/07/2012 16:26  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 5.2 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.1		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.41	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	93		57-153
STL01054	13C8 PFOS	107		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-DUP02-122811 Lab Sample ID: 280-24227-14  
 Matrix: Solid Lab File ID: PC512A07058.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 00:00  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.38(g) Date Analyzed: 01/07/2012 18:02  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 11.9 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.3		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.52	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	85		57-153
STL01054	13C8 PFOS	103	M	70-130



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB04-0406 Lab Sample ID: 280-24227-13  
 Matrix: Solid Lab File ID: PC512A07057.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 08:55  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.76(g) Date Analyzed: 01/07/2012 17:53  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 6.7 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	16		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	5.7		0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	90		57-153
STL01054	13C8 PFOS	106		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB06-0709 Lab Sample ID: 280-24227-1  
 Matrix: Solid Lab File ID: PC512A07042.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 08:15  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.92(g) Date Analyzed: 01/07/2012 15:42  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 8.4 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.7		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	1.2		0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	94		57-153
STL01054	13C8 PFOS	105		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB07-0709 Lab Sample ID: 280-24227-2  
 Matrix: Solid Lab File ID: PC512A07043.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 08:50  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.77(g) Date Analyzed: 01/07/2012 15:51  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 15.0 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.5		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.72	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	92		57-153
STL01054	13C8 PFOS	106	M	70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB08-0608 Lab Sample ID: 280-24227-3  
 Matrix: Solid Lab File ID: PC512A07044.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 09:10  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.39(g) Date Analyzed: 01/07/2012 16:00  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 11.8 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.70	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.45	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	91		57-153
STL01054	13C8 PFOS	105		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB09-0507 Lab Sample ID: 280-24227-4  
 Matrix: Solid Lab File ID: PC512A07045.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 09:50  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.68(g) Date Analyzed: 01/07/2012 16:08  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 6.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.48	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.60	U	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	92		57-153
STL01054	13C8 PFOS	103	M	70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB11-0507 Lab Sample ID: 280-24227-11  
 Matrix: Solid Lab File ID: PC512A07055.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 14:00  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 12.02(g) Date Analyzed: 01/07/2012 17:36  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 16.6 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.56	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.60	U	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	85		57-153
STL01054	13C8 PFOS	105	M	70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB12-0608 Lab Sample ID: 280-24227-5  
 Matrix: Solid Lab File ID: PC512A07046.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 10:45  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.65(g) Date Analyzed: 01/07/2012 16:17  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 5.8 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.0		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.44	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	91		57-153
STL01054	13C8 PFOS	107		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB13-0507 Lab Sample ID: 280-24227-12  
 Matrix: Solid Lab File ID: PC512A07056.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 14:25  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.29(g) Date Analyzed: 01/07/2012 17:44  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 11.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.1		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.64	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	84		57-153
STL01054	13C8 PFOS	102	M	70-130



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB14-0507 Lab Sample ID: 280-24227-9  
 Matrix: Solid Lab File ID: PC512A07051.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 12:50  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.74(g) Date Analyzed: 01/07/2012 17:01  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 6.8 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.34	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.32	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	90		57-153
STL01054	13C8 PFOS	103		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB15-0507 Lab Sample ID: 280-24227-10  
 Matrix: Solid Lab File ID: PC512A07054.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 13:30  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.83(g) Date Analyzed: 01/07/2012 17:27  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 7.5 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.77	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.27	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	86		57-153
STL01054	13C8 PFOS	106		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB16-0507 Lab Sample ID: 280-24227-7  
 Matrix: Solid Lab File ID: PC512A07048.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 11:05  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.81(g) Date Analyzed: 01/07/2012 16:34  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 7.4 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.46	J	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.26	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	91		57-153
STL01054	13C8 PFOS	106		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB17-0608 Lab Sample ID: 280-24227-8  
 Matrix: Solid Lab File ID: PC512A07049.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/28/2011 10:20  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.79(g) Date Analyzed: 01/07/2012 16:43  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 6.9 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.6		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.41	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	89		57-153
STL01054	13C8 PFOS	104	M	70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB18-0106 Lab Sample ID: 280-24227-15  
 Matrix: Solid Lab File ID: PC512A07059.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 11:05  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.04(g) Date Analyzed: 01/07/2012 18:11  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 9.2 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	11		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	4.4		0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	94		57-153
STL01054	13C8 PFOS	105		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB19-0608 Lab Sample ID: 280-24227-17  
 Matrix: Solid Lab File ID: PC512A07062.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 12:40  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.98(g) Date Analyzed: 01/07/2012 18:37  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 8.7 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.60	U	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.60	U	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	89		57-153
STL01054	13C8 PFOS	103		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB20-0507 Lab Sample ID: 280-24227-16  
 Matrix: Solid Lab File ID: PC512A07060.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 11:35  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 11.07(g) Date Analyzed: 01/07/2012 18:19  
 Con. Extract Vol.: 20(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 9.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	5.9		0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	150		0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	88		57-153
STL01054	13C8 PFOS	109		70-130

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: AFFF-SO-SB21-0507 Lab Sample ID: 280-24227-18  
 Matrix: Solid Lab File ID: PC512A07063.d  
 Analysis Method: PFOA/PFOS Date Collected: 12/29/2011 12:10  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.82(g) Date Analyzed: 01/07/2012 18:45  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: 7.5 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.60	U	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.62	J	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	85		57-153
STL01054	13C8 PFOS	106		70-130



**APPENDIX C**

**REGIONAL WORKSHEETS**

REGION I, EPA-NE ORGANIC REGIONAL DATA ASSESSMENT (ORDA)\*

CASE #: 02073

SITE NAME: NAS South Weymouth

LAB NAME: TetraTech

# OF SAMPLES/MATRIX: \_\_\_\_\_

SDG #: 280-24227-1

VALIDATION CONTRACTOR: TetraTech

SOW #/CONTRACT #: CTO WE11

VALIDATOR'S NAME: J. Kalinyak

EPA-NE DV TIER LEVEL: II

DATE DP REC'D BY EPA-NE: \_\_\_\_\_

TPO/PO: \*\*ACTION \_\_\_ FYI \_\_\_

DV COMPLETION DATE: \_\_\_\_\_

ANALYTICAL DATA QUALITY SUMMARY

	VOA	SV	PFOA/PFOS Pest/PCB
1. Preservation and Contractual Holding Times			
2. GC/MS / GC/ECD Instrument Performance Check	/	/	
3. Initial Calibration	/	/	
4. Continuing Calibration	/	/	
5. Blanks	/	/	
6. Surrogate Compounds	/	/	
7. Internal Standards	/	/	
8. Matrix Spike/Matrix Spike Duplicate	/	/	
9. Sensitivity Check	/	/	
10. PE Samples-Accuracy Check	/	/	
11. Target Compound Identification	/	/	
12. Compound Quantitation and Reported QLs	/	/	
13. Tentatively Identified Compounds	/	/	
14. Semivolatile Cleanup/Pesticide/PCB Cleanup	/	/	
15. Data Completeness	/	/	
16. Overall Evaluation of Data	/	/	/

o = Data had no problems or were qualified due to minor contractual problems.  
 m = Data were qualified due to major contractual problems.  
 z = Data were rejected as unusable due major contractual problems.

ACTION ITEMS: (z items) See DV Report

AREAS OF CONCERN: (m items) \_\_\_\_\_

COMMENTS: \_\_\_\_\_

\*This form assesses the analytical data quality in terms of contractual compliance only. It does not assess sampling errors and/or non-contractual analytical issues that affect data quality.

\*\*Check "ACTION" only if contractual defects resulted in reduced payment/data rejection recommendations.

Validator: J. Kalinyak

Date: 01/27/12

REGION I ORGANIC DATA VALIDATION

The following data package has been validated:

Lab Name Test America SOW/Method No. \_\_\_\_\_  
Case/Project No. CO Well Sampling Date(s) \_\_\_\_\_  
SDG No. 280-24227-1 Shipping Date(s) \_\_\_\_\_  
No. of Samples/Matrix \_\_\_\_\_ Date Rec'd by lab \_\_\_\_\_

Traffic Report Sample Nos. See DV Report

Trip Blank No. \_\_\_\_\_  
Equipment Blank No. \_\_\_\_\_  
Bottle Blank No. \_\_\_\_\_  
Field Duplicate Nos. \_\_\_\_\_

PES Nos. \_\_\_\_\_

The Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses, revision \_\_\_\_\_ was used to evaluate the data and/or approved modifications to the EPA-NE Functional Guidelines were used to evaluate the data and are attached to this cover page: (attach modified criteria from EPA approved QAPjP or amendment to QAPjP).

A Tier II or Tier III evaluation was used to validate the data (circle one). If a Tier II validation with a partial Tier III was used, then identify samples, parameters, etc. that received partial Tier III validation

The data were evaluated based upon the following parameters:

- Overall Evaluation of Data
- Data Completeness (CSF Audit - Tier I)
- Preservation & Technical Holding Times
- GC/MS & GC/ECD Instrument Performance Check
- Initial & Continuing Calibrations
- Blanks
- Surrogate Compounds
- Internal Standards
- Matrix Spike/Matrix Spike Duplicate
- Field Duplicates
- Sensitivity Check
- PE Samples/Accuracy Check
- Target Compound Identification
- Compound Quantitation and Reported Quantitation Limits
- TICs
- Semivolatile and Pesticide/PCB Cleanup
- System Performance

Region I Definitions and Qualifiers:

- A - Acceptable Data
- J - Numerical value associated with compound is an estimated quantity.
- R - The data are rejected as unusable. The R replaces the numerical value or sample quantitation limit.
- U - Compound not detected at that numerical sample quantitation limit.
- UJ - The sample quantitation limit is an estimated quantity.
- TB, BB, EB - Compound detected in aqueous trip blank, aqueous bottle blank, or aqueous equipment blank associated with soil/sediment samples.

Validator's Name J Kalinyak Company Name Tetra Tech Phone Number 412-921-7132

Date Validation Started \_\_\_\_\_ Date Validation Completed \_\_\_\_\_



EPA-NE - Data Validation Worksheet  
**Overall Evaluation of Data - Data Validation Memorandum - Table II**

*See DV Report*

VOLATILE ORGANICS					
DQO (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		

\* The evaluation of "sampling error" cannot be completely assessed in data validation.

\*\* Sampling variability is not assessed in data validation.

Validator: \_\_\_\_\_

Date: 01/27/12

EPA-NE - Data Validation Worksheet  
**Overall Evaluation of Data - Data Validation Memorandum - Table II**

*See DV Report*

SEMIVOLATILE ORGANICS					
DQO (list all DQOs)	Sampling and/or Analytical Method Appropriate Yes or No	Measurement Error		Sampling Variability**	Potential Usability Issues
		Analytical Error	Sampling Error*		

\* The evaluation of "sampling error" cannot be completely assessed in data validation.

\*\* Sampling variability is not assessed in data validation.

Validator: *JK*

Date: *01/27/12*







*See DV Report*

**II. GC/MS INSTRUMENT PERFORMANCE CHECK (TUNING)**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

Volatile Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ion(s) Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							
Comments:							
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW OLM03.1, then the validator should include a copy of the method-specific tuning criteria with this worksheet.

*JK*

Validator: \_\_\_\_\_

Date: 01/27/12





*See DV Report*

**V. BLANK ANALYSIS**

List the blank contamination below.

Concentration Level: \_\_\_\_\_  
 Contacted: Yes No Date: \_\_\_\_\_

Sampler: \_\_\_\_\_ Company: \_\_\_\_\_

**1. Laboratory: Method, Storage and Instrument Blanks**

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)

**2. Field: Equipment (Rinsate), Trip and Bottle Blanks**

Date Extracted	Date Analyzed	Parameter/ Matrix	Sample No. (Blank Type)	Instrument/ Column	Compound	Conc. (units)

Validator: \_\_\_\_\_ Date: *01/27/12*















See DV Report

**X. SENSITIVITY CHECK (Method Detection Limit Study)**

List all compounds, surrogates, and internal standards that are outside the MDL criteria.

- Has an appropriate MDL study been submitted with seven replicates for each compound and matrix of interest? Y
- Date of Preparation/Analysis: \_\_\_\_\_ Within 1 year? Y
- Instrument I.D.: \_\_\_\_\_ Same as samples? Y
- Column I.D.: \_\_\_\_\_ Same as samples? Y

N  
N  
N  
N

Matrix	Compound	MDL > QL	Method QC Limits < 80% or > 120%	IS Outside Area Count and/or RT Criteria	RSD > 20%	Samples Affected	Action


If an MDL study has not been submitted, use only the LFB results to evaluate data.

**(Laboratory Fortified Blank) - List all LFB compounds, surrogates and internal standards that are outside criteria.**

- Has an appropriate and complete LFB been submitted at the proper frequency?
- Does it contain all target compounds at the method-required QLs?
- Was the LFB spiked with a standard from a source (vendor) independent of the calibration standard?

N  
N  
N

Matrix	Compound	Method QC Limits < 60% or > 140% Other:	IS Outside Area Count and/or RT Criteria	Samples Affected	Action

Validator:  Date: 01/27/12





EPA-NE - Data Validation Worksheet  
 VOA/SV - Pest/PCB-XIII

*See DV Report*

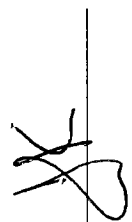
**XIII. SAMPLE QUANTITATION**

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although Section XIII, C.1.a, requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%?  
 If no, list sample numbers \_\_\_\_\_

Y N

Fraction		Calculation
<b>VOA</b>		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
<b>BNA</b>		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
<b>Pesticide/PCB</b>		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: 

Date: 01/27/12







**APPENDIX D**

**SUPPORT DOCUMENTATION**

**HOLD TIME**

**SDG 280-24227-1**

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
ACID	UG/KG	AFFF-SO-SB14-0507	280-24227-9	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-DUP02-122811	280-24227-14	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB04-0406	280-24227-13	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9
ACID	UG/KG	AFFF-SO-SB06-0709	280-24227-1	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB07-0709	280-24227-2	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB08-0608	280-24227-3	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB09-0507	280-24227-4	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB11-0507	280-24227-11	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-DUP01-122811	280-24227-6	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB13-0507	280-24227-12	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB15-0507	280-24227-10	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB16-0507	280-24227-7	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB17-0608	280-24227-8	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/KG	AFFF-SO-SB18-0106	280-24227-15	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9
ACID	UG/KG	AFFF-SO-SB19-0608	280-24227-17	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
ACID	UG/KG	AFFF-SO-SB20-0507	280-24227-16	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9
ACID	UG/KG	AFFF-SO-SB21-0507	280-24227-18	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9
ACID	UG/KG	AFFF-SO-SB12-0608	280-24227-5	NM	12/28/2011	1/3/2012	1/7/2012	6	4	10
ACID	UG/L	AFFF-SO-RB01-122911	280-24227-19	NM	12/29/2011	1/3/2012	1/7/2012	5	4	9

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sampler ID 261911  
 Temperature on Receipt  Yes  No  
 Drinking Water? Yes  No

## Chain of Custody Record

TAL-4124-280 (0508)

Client: Extra Tech, Inc Project Manager: P. Cole Chain of Custody Number: 146414  
 Address: 250 Andover St, Suite 200 Telephone Number (Area Code)/Fax Number: 978-474/8402 / 978-474-8499 Date: 12/28/11 Page 1 of 2  
 City: Wilmington State: MA Zip Code: 01887 Site Contact: J. Traut Lab Contact: Michelle / Johnson Analysis (Attach list if more space is needed):  
 Project Name and Location (State): AFFF / NWS Southway Months MA Carrier/Waybill Number: FECA/PROS  
 Contract/Purchase Order/Quote No.: 112602073 / CTD WEL

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix						Containers & Preservatives						Special Instructions/ Conditions of Receipt		
			Air	Aqueous	Sed	Soil	Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc	NH4OH				
AFFF-50-SB06-0709	12/28/11	0815			X		X	X									
AFFF-50-SB07-0709	12/28/11	0850			X		X	X									
AFFF-50-SB08-0608	12/28/11	0910			X		X	X									
AFFF-50-SB09-0507	12/28/11	0950			X		X	X									
AFFF-50-SB12-0608	12/28/11	1045			X		X	X									
AFFF-50-DUP01-122811	12/28/11	0900			X		X	X									
AFFF-50-SB16-0507	12/28/11	1105			X		X	X									
AFFF-50-SB17-0608	12/28/11	1020			X		X	X									
AFFF-50-SB14-0507	12/28/11	1250			X		X	X									
AFFF-50-SB15-0507	12/28/11	1330			X		X	X									
AFFF-50-SB11-0507	12/28/11	1400			X		X	X									
AFFF-50-SB13-0507	12/28/11	1425			X		X	X									

Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months  
 Sample Disposal:  Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months (A fee may be assessed if samples are retained longer than 1 month)  
 Turn Around Time Required:  24 Hours  48 Hours  7 Days  14 Days  21 Days  Other \_\_\_\_\_  
 1. Relinquished By: Shane Arent Date: 12/29/11 Time: 1500  
 2. Relinquished By: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 3. Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 1. Received By: [Signature] Date: 12/30/11 Time: 0900  
 2. Received By: [Signature] Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 3. Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Comments: \_\_\_\_\_

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sampler ID \_\_\_\_\_  
 Temperature on Receipt \_\_\_\_\_  
 Drinking Water? Yes  No

## Chain of Custody Record

TAL-4124-280 (05/08)

Client: **TetraTech** Project Manager: **Phoebe Caw** Chain of Custody Number: **146415**  
 Address: **250 Andover St, Suite 200** Telephone Number (Area Code)/Fax Number: **978-474-8400/978-474-8499** Date: **12/28/11** Page **2** of **2**  
 City: **Wilmington** State: **MA** Zip Code: **01887** Site Contact: **J. Trout** Lab Contact: **Michelle Johnston** Analysis (Attach list if more space is needed):  
 Project Name and Location (State): **Perfluorinated Compounds/Weymouth, MA** Carrier/Waybill Number: \_\_\_\_\_  
 Contract/Purchase Order/Quote No.: **11202073 / CTOWE11**

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix			Containers & Preservatives					Special Instructions/ Conditions of Receipt	
			Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH		ZnAc/NaOH
AFFF-SO-SB04-0406	12/29/11	0855			X	X						
AFFF-SO-02002-122811	12/28/11	0800			X	X						
AFFF-SO-SB18-0106	12/29/11	1105			X	X						
AFFF-SO-SB20-0507	12/29/11	1135			X	X						
AFFF-SO-SB19-0608	12/29/11	1240			X	X						
AFFF-SO-SB21-0507	12/29/11	1210			X	X						
AFFF-SO-RB01-122911	12/29/11	1320	X			X						

Sample Disposal:  Return To Client  Archive For \_\_\_\_\_ Months  (A fee may be assessed if samples are retained longer than 1 month)

Possible Hazard Identification:  Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Turn Around Time Required:  24 Hours  48 Hours  7 Days  14 Days  21 Days  Other

1. Relinquished By: **J. Trout** Date: **12/29/11** Time: **1300** 1. Received By: **TA FedEx** Date: **12/29/11** Time: **0900**  
 2. Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ 2. Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 3. Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ 3. Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

## Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 280-24227-1

Login Number: 24227

List Source: TestAmerica Denver

List Number: 1

Creator: Hostetler, Jeffrey M

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**CASE NARRATIVE**  
**Client: Tetra Tech**  
**Project: NAS South Weymouth**  
**Contract Task Order: WE11 / N62470-08-D-1001**  
**Project Manager: Phoebe Call**  
**Report Number: 280-24227-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

The PFC method DV-LC-0012 is an isotope dilution method; therefore, the internal standards are added prior to the extraction process. This technique inherently corrects for variability in the extraction efficiency due to sample matrix. Dilution of samples beyond the ability of the instrument to detect the internal standards is not recommended. Analyses performed at a dilution level requiring additional internal standard to be added after the extraction step in order to quantitate results has been shown to yield results with a significant low bias. As a result, data have been reported that exceed the calibration range and are qualified as estimated.

The PFC method is an isotope dilution method where the internal standards are added prior to extraction and used to quantitate results; therefore, the use of dilution factors is inappropriate. Application of dilution factors would yield results that are artificially high. Reporting limits and method detection limits are not adjusted for dilutions unless samples are fortified with additional internal standard, which is not recommended.

Internal standard abundances may vary depending upon both recovery and the dilution at which the analysis is performed. This is an inherent feature of the isotope dilution technique and is not indicative of bias to the reported results.

#### **RECEIPT**

The following report contains the analytical results for nineteen samples received at TestAmerica Denver on December 30, 2011, according to documented sample acceptance procedures. The samples were received in good condition at a temperature of 2.0°C.

A sample collection time discrepancy was noted between the information listed on the chain-of-custody and the sample container label for sample AFFF-SO-SB07-0709 (280-24227-2). The chain-of-custody lists the sample collection time as 08:50, while one of the three container labels lists the sample collection time as 08:45. The sample collection time was logged per the chain-of-custody. The client was notified on December 30, 2011.

A sample collection time discrepancy was noted between the information listed on the chain-of-custody and the sample container label for sample AFFF-SO-SB15-0507 (280-24227-10). The chain-of-custody lists the sample collection time as 13:30, while one of the three container labels lists the sample collection time as 13:25. The sample collection time was logged per the chain-of-custody. The client was notified on December 30, 2011.

No anomalies were encountered during sample receipt.

#### **PFOA & PFOS**

Samples AFFF-SO-SB06-0709 (280-24227-1), AFFF-SO-SB07-0709 (280-24227-2), AFFF-SO-SB08-0608 (280-24227-3), AFFF-SO-SB09-0507 (280-24227-4), AFFF-SO-SB12-0608 (280-24227-5), AFFF-SO-DUP01-122811 (280-24227-6), AFFF-SO-SB16-0507 (280-24227-7), AFFF-SO-SB17-0608 (280-24227-8), AFFF-SO-SB14-0507 (280-24227-9), AFFF-SO-SB15-0507 (280-24227-10), AFFF-SO-SB11-0507 (280-24227-11), AFFF-SO-SB13-0507 (280-24227-12), AFFF-SO-SB04-0406 (280-24227-13), AFFF-SO-DUP02-122811 (280-24227-14), AFFF-SO-SB18-0106 (280-24227-15), AFFF-SO-SB20-0507 (280-24227-16), AFFF-SO-SB19-0608 (280-24227-17) and AFFF-SO-SB21-0507 (280-24227-18) were analyzed for PFOA/PFOS LC/MS/MS in accordance with LCMS PFOA. The samples were prepared on 01/03/2012 and analyzed on 01/07/2012.

Sample AFFF-SO-RB01-122911 (280-24227-19) was analyzed for PFC in accordance with SOP DV-LC-0012. The sample was prepared on 01/03/2012 and analyzed on 01/07/2012.

MS/MSD analyses for prep batch 280-102068 were not requested.

Internal standard responses were outside the control limits for samples AFFF-SO-SB12-0608 (280-24227-5), AFFF-SO-DUP01-122811 (280-24227-6), AFFF-SO-SB17-0608 (280-24227-8), AFFF-SO-SB14-0507 (280-24227-9 MS), AFFF-SO-SB14-0507 (280-24227-9 MSD), AFFF-SO-SB15-0507 (280-24227-10), AFFF-SO-SB11-0507 (280-24227-11), AFFF-SO-SB13-0507 (280-24227-12), AFFF-SO-SB04-0406 (280-24227-13), AFFF-SO-DUP02-122811 (280-24227-14), AFFF-SO-SB18-0106 (280-24227-15),

AFFF-SO-SB20-0507 (280-24227-16) and AFFF-SO-SB21-0507 (280-24227-18) in prep batch 280-102080. The samples show evidence of matrix interferences. The internal standards were in control for the Method Blank and LCS, indicating that the sample matrix may be causing the internal standard outages.

No other difficulties were encountered during the LCMS analyses.

All quality control parameters were within the acceptance limits.

#### **PERCENT SOLIDS**

Samples AFFF-SO-SB06-0709 (280-24227-1), AFFF-SO-SB07-0709 (280-24227-2), AFFF-SO-SB08-0608 (280-24227-3), AFFF-SO-SB09-0507 (280-24227-4), AFFF-SO-SB12-0608 (280-24227-5), AFFF-SO-DUP01-122811 (280-24227-6), AFFF-SO-SB16-0507 (280-24227-7), AFFF-SO-SB17-0608 (280-24227-8), AFFF-SO-SB14-0507 (280-24227-9), AFFF-SO-SB15-0507 (280-24227-10), AFFF-SO-SB11-0507 (280-24227-11), AFFF-SO-SB13-0507 (280-24227-12), AFFF-SO-SB04-0406 (280-24227-13), AFFF-SO-DUP02-122811 (280-24227-14), AFFF-SO-SB18-0106 (280-24227-15), AFFF-SO-SB20-0507 (280-24227-16), AFFF-SO-SB19-0608 (280-24227-17) and AFFF-SO-SB21-0507 (280-24227-18) were analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 12/30/2011.

No difficulties were encountered during the % solids analyses.

All quality control parameters were within the acceptance limits.



## SAMPLE SUMMARY

Client: Tetra Tech, Inc.

Job Number: 280-24227-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
280-24227-1	AFFF-SO-SB06-0709	Solid	12/28/2011 0815	12/30/2011 0900
280-24227-2	AFFF-SO-SB07-0709	Solid	12/28/2011 0850	12/30/2011 0900
280-24227-3	AFFF-SO-SB08-0608	Solid	12/28/2011 0910	12/30/2011 0900
280-24227-4	AFFF-SO-SB09-0507	Solid	12/28/2011 0950	12/30/2011 0900
280-24227-5	AFFF-SO-SB12-0608	Solid	12/28/2011 1045	12/30/2011 0900
280-24227-6FD	AFFF-SO-DUP01-122811	Solid	12/28/2011 0000	12/30/2011 0900
280-24227-7	AFFF-SO-SB16-0507	Solid	12/28/2011 1105	12/30/2011 0900
280-24227-8	AFFF-SO-SB17-0608	Solid	12/28/2011 1020	12/30/2011 0900
280-24227-9	AFFF-SO-SB14-0507	Solid	12/28/2011 1250	12/30/2011 0900
280-24227-9MS	AFFF-SO-SB14-0507	Solid	12/28/2011 1250	12/30/2011 0900
280-24227-9MSD	AFFF-SO-SB14-0507	Solid	12/28/2011 1250	12/30/2011 0900
280-24227-10	AFFF-SO-SB15-0507	Solid	12/28/2011 1330	12/30/2011 0900
280-24227-11	AFFF-SO-SB11-0507	Solid	12/28/2011 1400	12/30/2011 0900
280-24227-12	AFFF-SO-SB13-0507	Solid	12/28/2011 1425	12/30/2011 0900
280-24227-13	AFFF-SO-SB04-0406	Solid	12/29/2011 0855	12/30/2011 0900
280-24227-14FD	AFFF-SO-DUP02-122811	Solid	12/28/2011 0000	12/30/2011 0900
280-24227-15	AFFF-SO-SB18-0106	Solid	12/29/2011 1105	12/30/2011 0900
280-24227-16	AFFF-SO-SB20-0507	Solid	12/29/2011 1135	12/30/2011 0900
280-24227-17	AFFF-SO-SB19-0608	Solid	12/29/2011 1240	12/30/2011 0900
280-24227-18	AFFF-SO-SB21-0507	Solid	12/29/2011 1210	12/30/2011 0900
280-24227-19	AFFF-SO-RB01-122911	Water	12/29/2011 1320	12/30/2011 0900

## METHOD SUMMARY

Client: Tetra Tech, Inc.

Job Number: 280-24227-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Solid</b>			
PFOA/PFOS LC/MS/MS Leaching procedure for PFCs	TAL DEN	TestAmerica SOP PFOA/PFOS	TAL-DEN PFC leach
Percent Moisture	TAL DEN	EPA Moisture	
<b>Matrix: Water</b>			
PFOA/PFOS LC/MS/MS Solid-Phase Extraction (SPE)	TAL DEN	TestAmerica SOP PFOA/PFOS	SW846 3535

### Lab References:

TAL DEN = TestAmerica Denver

### Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-DEN = TestAmerica Laboratories, Denver, Facility Standard Operating Procedure.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

**METHOD / ANALYST SUMMARY**

Client: Tetra Tech, Inc.

Job Number: 280-24227-1

<b>Method</b>	<b>Analyst</b>	<b>Analyst ID</b>
TestAmerica SOP PFOA/PFOS	Bonnett, Jaqueline C	JCB
EPA Moisture	Berry III, Paul B	PBB

## DATA REPORTING QUALIFIERS

Client: Tetra Tech, Inc.

Job Number: 280-24227-1

<b>Lab Section</b>	<b>Qualifier</b>	<b>Description</b>
LCMS		
	J	Estimated: The analyte was positively identified; the quantitation is an estimation
	M	Manual integrated compound.
	U	Undetected at the Limit of Detection.

# Method LCMS PFOA

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PFOA/PFOS (LC/MS/MS) by Method  
LCMS\_PFOA

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver

Job No.: 280-24227-1

SDG No.: \_\_\_\_\_

Instrument ID: LC\_LCMS5

Start Date: 01/07/2012 00:08

Analysis Batch Number: 102652

End Date: 01/07/2012 02:37

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ICB 280-102652/1		01/07/2012 00:08	1		Gemini-NX
STD0002 280-102652/2 IC		01/07/2012 00:17	1	PC512A06093.d	Gemini-NX
STD0005 280-102652/3 IC		01/07/2012 00:25	1	PC512A06094.d	Gemini-NX
STD0010 280-102652/4 IC		01/07/2012 00:34	1	PC512A06095.d	Gemini-NX
ICISAV 280-102652/5		01/07/2012 00:43	1	PC512A06096.d	Gemini-NX
STD0050 280-102652/6 IC		01/07/2012 00:52	1	PC512A06097.d	Gemini-NX
STD0100 280-102652/7 IC		01/07/2012 01:00	1	PC512A06098.d	Gemini-NX
STD0200 280-102652/8 IC		01/07/2012 01:09	1	PC512A06099.d	Gemini-NX
STD0500 280-102652/9 IC		01/07/2012 01:18	1	PC512A06100.d	Gemini-NX
STD1250 280-102652/10 IC		01/07/2012 01:27	1	PC512A06101.d	Gemini-NX
<del>CCB 280-102652/11</del>		<del>01/07/2012 01:35</del>	1	PC512A06102.d	Gemini-NX
<del>ICV 280-102652/12</del>		<del>01/07/2012 01:44</del>	1	PC512A06103.d	Gemini-NX
DLCK 280-102652/13		01/07/2012 01:53	1	PC512A06104.d	Gemini-NX
<del>CCV 280-102652/15</del>		<del>01/07/2012 02:02</del>	1	PC512A06105.d	Gemini-NX
MB 280-102068/1-A		01/07/2012 02:10	1	PC512A06106.d	Gemini-NX
LCS 280-102068/2-A		01/07/2012 02:19	1	PC512A06107.d	Gemini-NX
280-24227-19	AFFF-SO-RB01-122911	01/07/2012 02:28	1	PC512A06108.d	Gemini-NX
<del>CCV 280-102652/19</del>		<del>01/07/2012 02:37</del>	1	PC512A06109.d	Gemini-NX

FORM VI  
LCMS INITIAL CALIBRATION DATA  
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Denver Job No.: 280-24227-1 Analy Batch No.: 102652

SDG No.: \_\_\_\_\_ Instrument ID: LC LCMS5 GC Column: Gemini-NX ID: \_\_\_\_\_ Heated Purge: (Y/N) N  
 Calibration Start Date: 01/07/2012 00:17 Calibration End Date: 01/07/2012 01:27 Calibration ID: 8245

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0002 280-102652/2	PC512A06093.d
Level 2	STD0005 280-102652/3	PC512A06094.d
Level 3	STD0010 280-102652/4	PC512A06095.d
Level 4	ICISAV 280-102652/5	PC512A06096.d
Level 5	STD0050 280-102652/6	PC512A06097.d
Level 6	STD0100 280-102652/7	PC512A06098.d
Level 7	STD0200 280-102652/8	PC512A06099.d
Level 8	STD0500 280-102652/9	PC512A06100.d
Level 9	STD1250 280-102652/10	PC512A06101.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 8	LVL 4 LVL 9	LVL 5	B		M1	M2								
Ammonium Perfluorooctanoate (APFO)	1.2470 0.9417	1.0633 0.8773	1.0169 0.8539	0.9781 0.7455	0.8503	0.0841	0.8729		0.9930			0.9930				0.9800	
Perfluorooctanoic acid (PFOA)	1.2977 0.9827	1.1202 0.9155	1.0684 0.8901	1.0209 0.7761	0.8877	0.0843	0.9124		0.9930			0.9930				0.9800	
Perfluorooctane Sulfonate (PFOS)	1.3164 1.1675	1.1602 1.0680	1.1606 1.0695	1.1980 0.9400	1.0523	0.0478	1.0766		0.9950			0.9950				0.9800	
13C8 PFOA	0.9447 0.8553	0.8518 0.8177	0.8687 0.7819	0.8713 0.6950	0.7797	0.0311	0.7989		0.9950			0.9950				0.9800	
13C8 PFOS	1.0277 0.9194	0.8980 0.8461	0.8942 0.8266	0.8684 0.7377	0.8175	0.0379	0.8315		0.9960			0.9960				0.9800	

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS INITIAL CALIBRATION DATA  
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Denver      Job No.: 280-24227-1      Analy Batch No.: 102652

SDG No.: \_\_\_\_\_  
Instrument ID: LC\_LCMS5      GC Column: Gemini-NX      ID: \_\_\_\_\_      Heated Purge: (Y/N) N  
Calibration Start Date: 01/07/2012 00:17      Calibration End Date: 01/07/2012 01:27      Calibration ID: 8245

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0002 280-102652/2	PC512A06093.d
Level 2	STD0005 280-102652/3	PC512A06094.d
Level 3	STD0010 280-102652/4	PC512A06095.d
Level 4	ICISAV 280-102652/5	PC512A06096.d
Level 5	STD0050 280-102652/6	PC512A06097.d
Level 6	STD0100 280-102652/7	PC512A06098.d
Level 7	STD0200 280-102652/8	PC512A06099.d
Level 8	STD0500 280-102652/9	PC512A06100.d
Level 9	STD1250 280-102652/10	PC512A06101.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE									CONCENTRATION (UG/L)					
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5					
Ammonium Perfluorooctanoate (APFO)	OA	Lin2	568379	1312710	2333842	4681255	11394242	0.208	0.520	1.04	2.08	5.20	0.200	0.500	1.00	2.00	5.00
Perfluorooctanoic acid (PFOA)	OA	Lin2	22320708	40850188	84094517	152208587	11431050	0.200	0.500	1.00	2.00	5.00	0.200	0.500	1.00	2.00	5.00
Perfluorooctane Sulfonate (PFOS)	PFOS	Lin2	22384370	40966088	84243532	152286257	3438463	0.191	0.478	0.956	1.91	4.78	0.191	0.478	0.956	1.91	4.78
13C8 PFOA	OA	Lin2	6651514	12789929	26896010	47620076	10039665	0.200	0.500	1.00	2.00	5.00	0.200	0.500	1.00	2.00	5.00
13C8 PFOS	PFOS	Lin2	19481506	36591810	74000081	136361283	2671235	0.191	0.478	0.956	1.91	4.78	0.191	0.478	0.956	1.91	4.78
			5238147	10132789	20786775	37372586		9.56	19.1	47.8	120	305	9.56	19.1	47.8	120	305

Curve Type Legend:  
Lin2 = Linear 1/conc^2 ISTD



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: CCB 280-102652/11  
 Matrix: Water Lab File ID: PC512A06102.d  
 Analysis Method: PFOA/PFOS Date Collected: \_\_\_\_\_  
 Extraction Method: \_\_\_\_\_ Date Extracted: \_\_\_\_\_  
 Sample wt/vol: 1 (mL) Date Analyzed: 01/07/2012 01:35  
 Con. Extract Vol.: 1.0 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102652 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0080	U	0.55	0.0080	0.0012
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.0076	U	0.15	0.0076	0.0016

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA			
STL01054	13C8 PFOS			

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 280-102652/12 Calibration Date: 01/07/2012 01:44  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A06103.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9282		2.12	2.08	1.9	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.9720		2.04	2.00	2.0	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.196		2.20	2.02	8.9	30.0
13C8 PFOA	Lin2		0.7990		1.96	2.00	-2.0	30.0
13C8 PFOS	Lin2		0.8463		1.90	1.91	-0.6	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102652/15 Calibration Date: 01/07/2012 02:02  
 Instrument ID: LC LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A06105.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.8583		5.02	5.20	-3.5	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.8964		4.82	5.00	-3.6	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.080		4.75	4.78	-0.6	30.0
13C8 PFOA	Lin2		0.7970		4.95	5.00	-1.0	30.0
13C8 PFOS	Lin2		0.8353		4.76	4.78	-0.4	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102652/19 Calibration Date: 01/07/2012 02:37  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A06109.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.8335		4.87	5.20	-6.4	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.8711		4.68	5.00	-6.4	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.082		4.76	4.78	-0.4	30.0
13C8 PFOA	Lin2		0.7688		4.77	5.00	-4.6	30.0
13C8 PFOS	Lin2		0.8305		4.73	4.78	-1.0	30.0

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Denver

Job No.: 280-24227-1

SDG No.:

Instrument ID: LC\_LCMS5

Start Date: 01/07/2012 15:16

Analysis Batch Number: 102705

End Date: 01/07/2012 18:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 280-102705/20		01/07/2012 15:16	1	PC512A07039.d	Gemini-NX
MB 280-102080/1-A		01/07/2012 15:25	1	PC512A07040.d	Gemini-NX
LCS 280-102080/2-A		01/07/2012 15:33	1	PC512A07041.d	Gemini-NX
280-24227-1	AFFF-SO-SB06-0709	01/07/2012 15:42	1	PC512A07042.d	Gemini-NX
280-24227-2	AFFF-SO-SB07-0709	01/07/2012 15:51	1	PC512A07043.d	Gemini-NX
280-24227-3	AFFF-SO-SB08-0608	01/07/2012 16:00	1	PC512A07044.d	Gemini-NX
280-24227-4	AFFF-SO-SB09-0507	01/07/2012 16:08	1	PC512A07045.d	Gemini-NX
280-24227-5	AFFF-SO-SB12-0608	01/07/2012 16:17	1	PC512A07046.d	Gemini-NX
280-24227-6	AFFF-SO-DUP01-122811	01/07/2012 16:26	1	PC512A07047.d	Gemini-NX
280-24227-7	AFFF-SO-SB16-0507	01/07/2012 16:34	1	PC512A07048.d	Gemini-NX
280-24227-8	AFFF-SO-SB17-0608	01/07/2012 16:43	1	PC512A07049.d	Gemini-NX
CCV 280-102705/31		01/07/2012 16:52	1	PC512A07050.d	Gemini-NX
280-24227-9	AFFF-SO-SB14-0507	01/07/2012 17:01	1	PC512A07051.d	Gemini-NX
280-24227-9 MS	AFFF-SO-SB14-0507 MS	01/07/2012 17:09	1	PC512A07052.d	Gemini-NX
280-24227-9 MSD	AFFF-SO-SB14-0507 MSD	01/07/2012 17:18	1	PC512A07053.d	Gemini-NX
280-24227-10	AFFF-SO-SB15-0507	01/07/2012 17:27	1	PC512A07054.d	Gemini-NX
280-24227-11	AFFF-SO-SB11-0507	01/07/2012 17:36	1	PC512A07055.d	Gemini-NX
280-24227-12	AFFF-SO-SB13-0507	01/07/2012 17:44	1	PC512A07056.d	Gemini-NX
280-24227-13	AFFF-SO-SB04-0406	01/07/2012 17:53	1	PC512A07057.d	Gemini-NX
280-24227-14	AFFF-SO-DUP02-122811	01/07/2012 18:02	1	PC512A07058.d	Gemini-NX
280-24227-15	AFFF-SO-SB18-0106	01/07/2012 18:11	1	PC512A07059.d	Gemini-NX
280-24227-16	AFFF-SO-SB20-0507	01/07/2012 18:19	1	PC512A07060.d	Gemini-NX
CCV 280-102705/42		01/07/2012 18:28	1	PC512A07061.d	Gemini-NX
280-24227-17	AFFF-SO-SB19-0608	01/07/2012 18:37	1	PC512A07062.d	Gemini-NX
280-24227-18	AFFF-SO-SB21-0507	01/07/2012 18:45	1	PC512A07063.d	Gemini-NX
CCV 280-102705/45		01/07/2012 18:54	1	PC512A07064.d	Gemini-NX

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102705/20 Calibration Date: 01/07/2012 15:16  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A07039.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.8577		5.02	5.20	-3.5	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.8941		4.81	5.00	-3.8	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.076		4.73	4.78	-1.0	30.0
13C8 PFOA	Lin2		0.7846		4.87	5.00	-2.6	30.0
13C8 PFOS	Lin2		0.8430		4.80	4.78	0.4	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102705/31 Calibration Date: 01/07/2012 16:52  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A07050.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9529		11.3	10.4	8.6	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.9926		10.8	10.0	8.0	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.169		10.3	9.56	7.7	30.0
13C8 PFOA	Lin2		0.7371		9.19	10.0	-8.1	30.0
13C8 PFOS	Lin2		0.8714		9.97	9.56	4.3	30.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102705/42 Calibration Date: 01/07/2012 18:28  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A07061.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.8509		4.98	5.20	-4.3	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.8897		4.78	5.00	-4.4	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.088		4.79	4.78	0.2	30.0
13C8 PFOA	Lin2		0.6468		4.01	5.00	-19.8	30.0
13C8 PFOS	Lin2		0.8164		4.65	4.78	-2.7	30.0



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 280-102705/45 Calibration Date: 01/07/2012 18:54  
 Instrument ID: LC\_LCMS5 Calib Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calib End Date: 01/07/2012 01:27  
 Lab File ID: PC512A07064.d Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ammonium Perfluorooctanoate (APFO)	Lin2		0.9354		11.1	10.4	6.7	30.0
Perfluorooctanoic acid (PFOA)	Lin2		0.9772		10.6	10.0	6.0	30.0
Perfluorooctane Sulfonate (PFOS)	Lin2		1.187		10.5	9.56	9.8	30.0
13C8 PFOA	Lin2		0.7110		8.86	10.0	-11.4	30.0
13C8 PFOS	Lin2		0.8895		10.2	9.56	6.7	30.0

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
SDG No.: \_\_\_\_\_  
Lab File ID: PC512A06106.d Lab Sample ID: MB 280-102068/1-A  
Matrix: Water Date Extracted: 01/03/2012 09:15  
Instrument ID: LC\_LCMS5 Date Analyzed: 01/07/2012 02:10  
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-102068/2-A	PC512A06107 .d	01/07/2012 02:19
AFFF-SO-RB01-122911	280-24227-19	PC512A06108 .d	01/07/2012 02:28

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 280-102068/1-A  
 Matrix: Water Lab File ID: PC512A06106.d  
 Analysis Method: PFOA/PFOS Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 01/03/2012 09:15  
 Sample wt/vol: 250(mL) Date Analyzed: 01/07/2012 02:10  
 Con. Extract Vol.: 5(mL) Dilution Factor: 1  
 Injection Volume: 20(uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102652 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.0080	U	0.020	0.0080	0.0012
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.0076	U	0.030	0.0076	0.0016

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	112		60-155
STL01054	13C8 PFOS	105		45-130

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: PC512A06107.d  
 Lab ID: LCS 280-102068/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.200	0.212	106	70-130	
Perfluorooctane Sulfonate (PFOS)	0.191	0.195	102	60-128	

# Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: PC512A07040.d Lab Sample ID: MB 280-102080/1-A  
 Matrix: Solid Date Extracted: 01/03/2012 10:15  
 Instrument ID: LC\_LCMS5 Date Analyzed: 01/07/2012 15:25  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 280-102080/2-A	PC512A07041 .d	01/07/2012 15:33
AFFF-SO-SB06-0709	280-24227-1	PC512A07042 .d	01/07/2012 15:42
AFFF-SO-SB07-0709	280-24227-2	PC512A07043 .d	01/07/2012 15:51
AFFF-SO-SB08-0608	280-24227-3	PC512A07044 .d	01/07/2012 16:00
AFFF-SO-SB09-0507	280-24227-4	PC512A07045 .d	01/07/2012 16:08
AFFF-SO-SB12-0608	280-24227-5	PC512A07046 .d	01/07/2012 16:17
AFFF-SO-DUP01-122811	280-24227-6	PC512A07047 .d	01/07/2012 16:26
AFFF-SO-SB16-0507	280-24227-7	PC512A07048 .d	01/07/2012 16:34
AFFF-SO-SB17-0608	280-24227-8	PC512A07049 .d	01/07/2012 16:43
AFFF-SO-SB14-0507	280-24227-9	PC512A07051 .d	01/07/2012 17:01
AFFF-SO-SB14-0507 MS	280-24227-9 MS	PC512A07052 .d	01/07/2012 17:09
AFFF-SO-SB14-0507 MSD	280-24227-9 MSD	PC512A07053 .d	01/07/2012 17:18
AFFF-SO-SB15-0507	280-24227-10	PC512A07054 .d	01/07/2012 17:27
AFFF-SO-SB11-0507	280-24227-11	PC512A07055 .d	01/07/2012 17:36
AFFF-SO-SB13-0507	280-24227-12	PC512A07056 .d	01/07/2012 17:44
AFFF-SO-SB04-0406	280-24227-13	PC512A07057 .d	01/07/2012 17:53
AFFF-SO-DUP02-122811	280-24227-14	PC512A07058 .d	01/07/2012 18:02
AFFF-SO-SB18-0106	280-24227-15	PC512A07059 .d	01/07/2012 18:11
AFFF-SO-SB20-0507	280-24227-16	PC512A07060 .d	01/07/2012 18:19
AFFF-SO-SB19-0608	280-24227-17	PC512A07062 .d	01/07/2012 18:37
AFFF-SO-SB21-0507	280-24227-18	PC512A07063 .d	01/07/2012 18:45

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 280-102080/1-A  
 Matrix: Solid Lab File ID: PC512A07040.d  
 Analysis Method: PFOA/PFOS Date Collected: \_\_\_\_\_  
 Extraction Method: PFC leach Date Extracted: 01/03/2012 10:15  
 Sample wt/vol: 10.00(g) Date Analyzed: 01/07/2012 15:25  
 Con. Extract Vol.: 20 (mL) Dilution Factor: 1  
 Injection Volume: 20 (uL) GC Column: Gemini-NX ID: \_\_\_\_\_  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 102705 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.60	U	0.80	0.60	0.21
1763-23-1	Perfluorooctane Sulfonate (PFOS)	0.60	U	0.80	0.60	0.19

CAS NO.	SURROGATE	%REC	Q	LIMITS
STL01052	13C8 PFOA	107		57-153
STL01054	13C8 PFOS	108		70-130

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: PC512A07041.d  
 Lab ID: LCS 280-102080/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	20.0	22.0	110	70-130	
Perfluorooctane Sulfonate (PFOS)	19.1	20.6	108	74-115	

# Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

FORM III  
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: PC512A07052.d  
 Lab ID: 280-24227-9 MS Client ID: AFFF-SO-SB14-0507 MS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	19.9	0.34 J	22.3	111	70-130	
Perfluorooctane Sulfonate (PFOS)	19.0	0.32 J	21.5	111	74-115	

# Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS



FORM III  
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: PC512A07053.d  
 Lab ID: 280-24227-9 MSD Client ID: AFFF-SO-SB14-0507 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	19.9	22.8	113	2	20	70-130	
Perfluorooctane Sulfonate (PFOS)	19.1	21.1	109	2	20	74-115	

# Column to be used to flag recovery and RPD values

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 280-24227-1

SDG No.: \_\_\_\_\_

Matrix: Solid

Level: Low

GC Column (1): Gemini-NX ID: \_\_\_\_\_

Client Sample ID	Lab Sample ID	PFOA #	PFOS #
AFFF-SO-SB06-0709	280-24227-1	94	105
AFFF-SO-SB07-0709	280-24227-2	92	106 M
AFFF-SO-SB08-0608	280-24227-3	91	105
AFFF-SO-SB09-0507	280-24227-4	92	103 M
AFFF-SO-SB12-0608	280-24227-5	91	107
AFFF-SO-DUP01-1228 11	280-24227-6	93	107
AFFF-SO-SB16-0507	280-24227-7	91	106
AFFF-SO-SB17-0608	280-24227-8	89	104 M
AFFF-SO-SB14-0507	280-24227-9	90	103
AFFF-SO-SB15-0507	280-24227-10	86	106
AFFF-SO-SB11-0507	280-24227-11	85	105 M
AFFF-SO-SB13-0507	280-24227-12	84	102 M
AFFF-SO-SB04-0406	280-24227-13	90	106
AFFF-SO-DUP02-1228 11	280-24227-14	85	103 M
AFFF-SO-SB18-0106	280-24227-15	94	105
AFFF-SO-SB20-0507	280-24227-16	88	109
AFFF-SO-SB19-0608	280-24227-17	89	103
AFFF-SO-SB21-0507	280-24227-18	85	106
	MB 280-102080/1-A	107	108
	LCS 280-102080/2-A	103	104
AFFF-SO-SB14-0507 MS	280-24227-9 MS	90	103
AFFF-SO-SB14-0507 MSD	280-24227-9 MSD	87	104

PFOA = 13C8 PFOA  
PFOS = 13C8 PFOS

QC LIMITS  
57-153  
70-130

# Column to be used to flag recovery values

FORM II PFOA/PFOS

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Denver

Job No.: 280-24227-1

SDG No.: \_\_\_\_\_

Matrix: Water

Level: Low

GC Column (1): Gemini-NX ID: \_\_\_\_\_

Client Sample ID	Lab Sample ID	PFOA #	PFOS #
AFFF-SO-RB01-12291 1	280-24227-19	112	107
	MB 280-102068/1-A	112	105
	LCS 280-102068/2-A	110	106
	DLCK 280-102652/13	98	95

PFOA = 13C8 PFOA  
PFOS = 13C8 PFOS

QC LIMITS  
60-155  
45-130

# Column to be used to flag recovery values

FORM II PFOA/PFOS

FORM VIII  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Instrument ID: LC\_LCMS5 Calibration Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calibration End Date: 01/07/2012 01:27  
 Calibration ID: 8245

		OA		PFOS			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MEAN AREA AND MEAN RT		21801342	5.15	5677546	5.25		
UPPER LIMIT		33792080	5.65	7380810	5.75		
LOWER LIMIT		13080805	4.65	2554896	4.75		
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 280-102652/11		24101992	5.17	5906295	5.28		
ICV 280-102652/i2		24942348	5.18	6275385	5.29		
DLCK 280-102652/13		24440931	5.18	5976544	5.29		
CCV 280-102652/15		26000856	5.18	6407961	5.29		
MB 280-102068/1-A		23647302	5.14	4933160	5.23		
LCS 280-102068/2-A		21715258	5.12	4950005	5.21		
280-24227-19	AFFF-SO-RB01-122911	22549401	5.11	4835408	5.20		
CCV 280-102652/19		23871205	5.14	6332577	5.23		
CCV 280-102705/20		28440588	5.28	6687629	5.38		
MB 280-102080/1-A		25061084	5.31	6140755	5.41		
LCS 280-102080/2-A		23093944	5.31	6018729	5.42		
280-24227-1	AFFF-SO-SB06-0709	15350669	5.31	5671747	5.41		
280-24227-2	AFFF-SO-SB07-0709	14475665	5.31	5360495	5.42		
280-24227-3	AFFF-SO-SB08-0608	13312617	5.30	5502296	5.41		
280-24227-4	AFFF-SO-SB09-0507	16458547	5.31	6187901	5.41		
280-24227-5	AFFF-SO-SB12-0608	97995100	5.30	5753698	5.41		
280-24227-6	AFFF-SO-DUP01-122811	100304090	5.30	5665968	5.41		
280-24227-7	AFFF-SO-SB16-0507	14475029	5.30	5802965	5.41		
280-24227-8	AFFF-SO-SB17-0608	120653120	5.31	5782819	5.41		
CCV 280-102705/31		20357484	5.30	5764261	5.40		
280-24227-9	AFFF-SO-SB14-0507	13327634	5.31	5786703	5.41		
280-24227-9 MS	AFFF-SO-SB14-0507 MS	103394270	5.31	5468073	5.41		
280-24227-9 MSD	AFFF-SO-SB14-0507 MSD	111463480	5.30	5606779	5.41		
280-24227-10	AFFF-SO-SB15-0507	116197250	5.31	5694463	5.41		
280-24227-11	AFFF-SO-SB11-0507	90953860	5.31	5353953	5.41		
280-24227-12	AFFF-SO-SB13-0507	93480960	5.31	6009742	5.41		
280-24227-13	AFFF-SO-SB04-0406	25460210	5.30	5475859	5.41		
280-24227-14	AFFF-SO-DUP02-122811	103920690	5.31	5980428	5.41		
280-24227-15	AFFF-SO-SB18-0106	23518960	5.31	5011224	5.42		
280-24227-16	AFFF-SO-SB20-0507	35588400	5.32	4715180	5.42		

OA = 13C4 PFOA (IS)  
 PFOS = 13C4 PFOS (IS)

Area Limit = 60%-155% of internal standard area  
 RT Limit = ± 0.5 minutes of internal standard RT

# Column used to flag values outside QC limits

FORM VIII  
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Instrument ID: LC\_LCMS5 Calibration Start Date: 01/07/2012 00:17  
 GC Column: Gemini-NX ID: \_\_\_\_\_ Calibration End Date: 01/07/2012 01:27  
 Calibration ID: 8245

	OA		PFOS		AREA #	RT #
	AREA #	RT #	AREA #	RT #		
INITIAL CALIBRATION MEAN AREA AND MEAN RT	21801342	5.15	5677546	5.25		
UPPER LIMIT	33792080	5.65	7380810	5.75		
LOWER LIMIT	13080805	4.65	2554896	4.75		
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCV 280-102705/42		22333092	5.32	6643715	5.42	
280-24227-17	AFFF-SO-SB19-0608	16729554	5.33	6398897	5.43	
280-24227-18	AFFF-SO-SB21-0507	12669908Q	5.33	6269702	5.44	
CCV 280-102705/45		21741175	5.32	6020404	5.42	

OA = 13C4 PFOA (IS)  
 PFOS = 13C4 PFOS (IS)

Area Limit = 60%-155% of internal standard area  
 RT Limit = ± 0.5 minutes of internal standard RT

# Column used to flag values outside QC limits

FORM VIII PFOA/PFOS

FORM III  
LCMS DETECTION LIMIT CHECK STANDARD RECOVERY

Lab Name: TestAmerica Denver Job No.: 280-24227-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: PC512A06104.d  
 Lab ID: DLCK 280-102652/13 Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/L)	DLCK CONCENTRATION (ug/L)	DLCK % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	0.500	0.491 J	98	70-130	
Perfluorooctane Sulfonate (PFOS)	0.478	0.506	106	70-130	

# Column to be used to flag recovery and RPD values

FORM III PFOA/PFOS

**NAS SOUTH WEYMOUTH  
SOIL DATA  
280-24227-1**

<b>FRACTION</b>	<b>CHEMICAL</b>	<b>AFFF-SO-DUP01-122811</b>	<b>UNITS</b>	<b>AFFF-SO-SB12-0608</b>	<b>RPD</b>	<b>D</b>
MISC	PENTADECAFLUOROOCTANOIC ACID	4.1 J	UG/KG	4 J	2.47	0.10
MISC	PERFLUOROOCTANE SULFONIC ACID	0.41 J	UG/KG	0.44 J	7.06	0.03

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.

**NAS SOUTH WEYMOUTH  
SOIL DATA  
280-24227-1**

<b>FRACTION</b>	<b>CHEMICAL</b>	<b>AFFF-SO-DUP02-122811</b>	<b>UNITS</b>	<b>AFFF-SO-SB13-0507</b>	<b>RPD</b>	<b>D</b>
MISC	PENTADEC AFLUORO OCTANOIC ACID	2.3 J	UG/KG	3.1 J	29.63	0.80
MISC	PERFLUORO OCTANE SULFONIC ACID	0.52 J	UG/KG	0.64 J	20.69	0.12

Current RPD Quality Control Limit: 50 %.

Shaded cells indicate RPDs that exceed the applicable quality control limit.



**SAP Addendum Worksheet #17 -- Reference Limits and Evaluation Table**  
 (UFP-QAPP Manual Section 2.8.1)

**Matrix:** Soil/Sediment  
**Analytical Group:** PFCs  
**Preparation and Analysis Method/** SOP DV-LC-0012  
**Method Modified (Yes/No)?** N  
**Data Type (definitive or screening):** Definitive

Analyte	Project Screening Level (PSL) <sup>1</sup> (mg/kg)	Limit of Quantitation (LOQ) Goal (mg/kg)	Test America/Denver Limits <sup>2</sup>		
			LOQ (mg/kg)	Limit of Detection (LOD) (mg/kg)	Detection Limit (DL) (mg/kg)
<b>PFCs</b>					
Perfluorooctane sulfonate, PFOS	6.4	0.64	0.002	0.002	0.000376
Perfluorooctanoic acid, PFOA	16	0.16	0.005	0.002	0.001015

<sup>1</sup> EPA Region 1 calculated risk-based child resident soil exposure values, 2010.

<sup>2</sup> Laboratory-specific LOQs, LODs, and DLs from Test America/Denver for listed method. The laboratory updates DLs at least every 12 months; therefore, the LOQs, LODs, and DLs may be different at the time of analysis.

**Matrix:** Groundwater/Surface Water  
**Analytical Group:** PFCs  
**Preparation and Analysis Method/** SOP DV-LC-0012  
**Method Modified (Yes/No)?** N  
**Data Type (definitive or screening):** Definitive

Analyte	PSL (µg/L)	LOQ Goal (µg/L)	Test America/Denver Limits <sup>1</sup>		
			LOQ (µg/L)	LOD (µg/L)	DL (µg/L)
<b>PFCs</b>					
Perfluorooctane sulfonate, PFOS	0.2 <sup>2</sup>	0.02	0.03	0.02	0.01331
Perfluorooctanoic acid, PFOA	0.4 <sup>2</sup>	0.05	0.02	0.01	0.00979

<sup>1</sup> Laboratory-specific LOQs, LODs, and DLs from Test America/Denver for listed method. The laboratory updates DLs at least every 12 months; therefore, the LOQs, LODs, and DLs may be different at the time of analysis.

<sup>2</sup> EPA provisional health advisories, 2009.

DODCMD_ID	INSTALLATION_ID	SDG	SITE_NAME	NORM_SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	CONTRACT_ID	DO_CTO_NUMBER	CONTR_NAME	SAMPLE_NAME	SAMPLE_MATRIX_DESC	SAMPLE_TYPE_DESC	COLLECT_DATE	ANALYTICAL_METHOD	ANALYTICAL_METHOD_GRP_DESC
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB21	Borehole/Soil boring	808715.5104	2881666.168	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB21-0507	Soil	Normal (Regular)	29-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB14	Borehole/Soil boring	808112.2133	2881513.651	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB14-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB15	Borehole/Soil boring	808073.7483	2881466.2	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB15-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB19	Borehole/Soil boring	808308.0745	2881613.125	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB19-0608	Soil	Normal (Regular)	29-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB09	Borehole/Soil boring	808211.5849	2881711.044	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB09-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB07	Borehole/Soil boring	808085.4002	2881662.977	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB07-0709	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB08	Borehole/Soil boring	808165.7824	2881720.428	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB08-0608	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB18	Borehole/Soil boring	808297.3853	2881534.514	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB18-0106	Soil	Normal (Regular)	29-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB16	Borehole/Soil boring	808156.5293	2881504.976	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB16-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB06	Borehole/Soil boring	808006.303	2881653.64	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB06-0709	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB13	Borehole/Soil boring	808055.6875	2881521.865	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB13-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB13	Borehole/Soil boring	808055.6875	2881521.865	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB13-0507-D	Soil	Field duplicate	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB12	Borehole/Soil boring	808222.9078	2881595.441	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB12-0608	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB11	Borehole/Soil boring	808030.0785	2881478.554	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB11-0507	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB12	Borehole/Soil boring	808222.9078	2881595.441	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB12-0608-D	Soil	Field duplicate	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB04	Borehole/Soil boring	807963.5458	2881698.805	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB04-0406	Soil	Normal (Regular)	29-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004													
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB20	Borehole/Soil boring	808492.2334	2881541.4	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB20-0507	Soil	Normal (Regular)	29-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds
MID_ATLANTIC	SOUTH_WEYMOUTH_NAS	280-24227-1	SITE 00004	SITE 00004	AFFF-SB17	Borehole/Soil boring	808248.0441	2881532.305	N62470-08D100	WE11	TETRA TECH NUS, INC.	AFFF-SO-SB17-0608	Soil	Normal (Regular)	28-Dec-11	TA_WS-LC-0025	Perfluoroalkyl Compounds