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Final report

Limnological health assessment of Seven Sanibel Island ponds

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A. Introduction

Seven ponds located within the barrier island of Sanibel, Collier County, Florida, were selected to be studied for their water quality and sediment characteristics. Such ponds besides one (Beach Villa) have a long history of cultural eutrophication and are, as such, a major concern for the City of Sanibel Island.

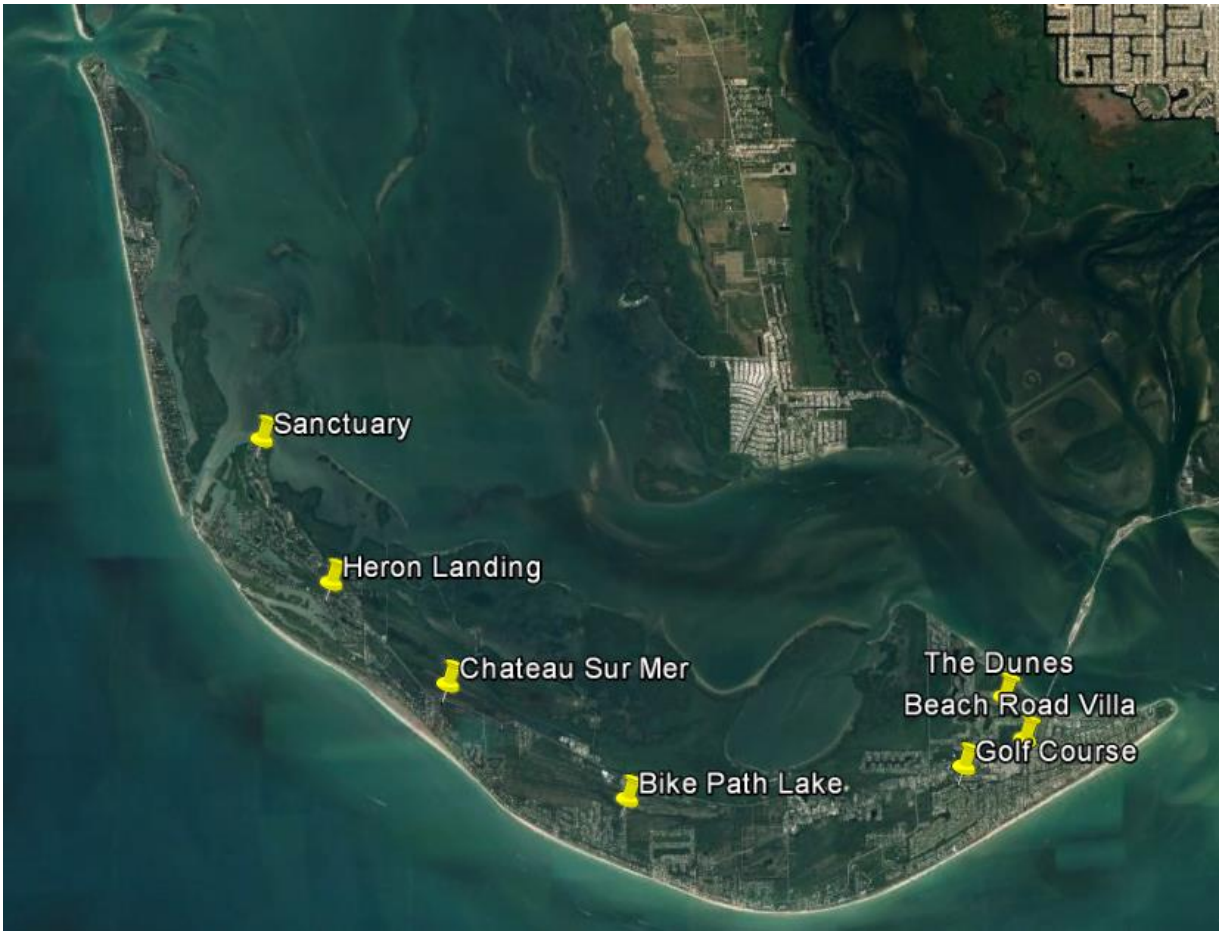

Figure 1.Ponds studied within Sanibel Island. Photo courtesy of Google Earth Pro.

B. Objectives

The objectives were to i) survey the ponds for their bathymetry, bottom hardness and submerged aquatic vegetation (SAV) using Sonar technology then to ii) select water quality and sediment coring stations so that iv) water quality be assessed once in a year in the heart of the dry season and iv) that the sediment/floc be characterized for thickness as well as nutrients contents. The City of Sanibel would then use such data summarized in this report to develop management plans customized for each pond.

C. Pond mapping

1. Methods

The bathymetry, bottom hardness and submerged aquatic vegetation (SAV) cover were done from a boat equipped with a Lowrance HDS 7 sonar connected to a 200 Khz transponder placed about 10cm below the surface. The boat traveled throughout each pond by making concentric paths which distance between paths varied from 5m to 25m depending on the pond's surface area. The position of the transponder below the surface was compensated for when the maps were generated using the Kriging method (linear variogram using an interpolation grid made of square cells of 0.5m) using the software Surfer 12 (www.goldensoftware.com). Sonar depths below 0.5m to 0.7m were automatically rejected because of the high noise generated by the transponder in very shallow water. The elevation of the surface of the pond was measured with a Trimble™ 3D R8 GNNS the day the bathymetry was made so that all depths referenced initially to the water surface were adjusted to NAVD'88 elevation. A wooden post made of a 2 by 4 treated lumber was also placed in the pond the day of the sonar deployment (the yellow star in all maps generated) and its apex NAVD'88 elevation was also determined so that a staff gage can be affixed to it on a later date. Once the bathymetric map done, volume and surface computations against a known NAVD'88 elevation of the water surface were made to generate NAVD'88 to volume, surface area and mean depth conversions (see in Appendix 1 for such relationships). The bathymetric maps were used to select the water quality station so that it would be placed in the deepest locale of the pond (yellow diamond in the maps).

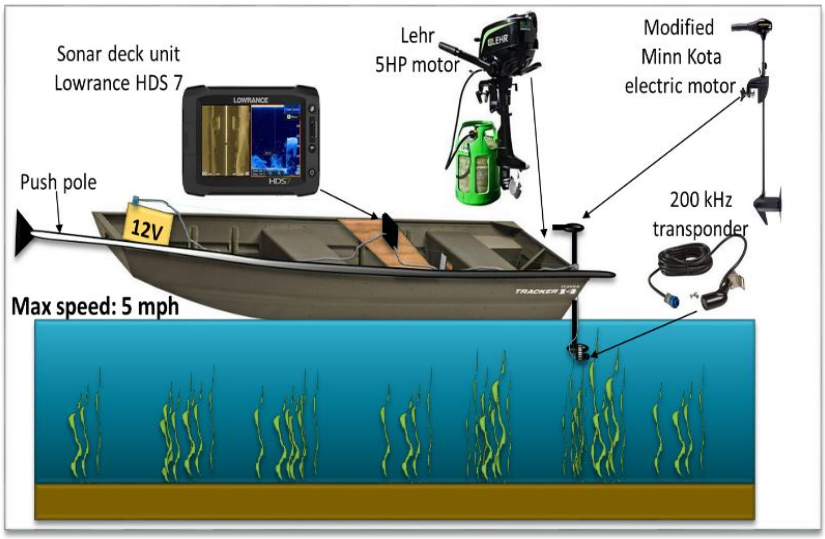

Figure 2. Sonar and boat setup. In addition, a Trimble 3D R8 GNNS was used to determine the NAVD'88 elevation of the surface water the day of the bathymetry.

Bottom hardness was determined by applying the proprietary algorithms from www.cibiobase.com. The hardness is a relative value running from 0 (very soft) to 1 (very hard) which reflects the sediment thickness located on the pond's bed in shallow water. Because the frequency used by the transponder, the signal is strong enough to penetrate well the sediment when the water is ideally less than 2-3m deep. For better penetration of the echo generated by the sonder, a lower frequency transponder should normally be used but this transponder could not then be used to determine SAV cover. The sharpness of the echo on the bottom is evaluated by the algorithm so that bottom hardness (sharp echo on the bottom= high hardness) is

estimated. Bottom hardness is not determined when too much SAV is present so that those sounding points are dropped automatically by the algorithm. The bottom hardness map was used to select the positions of the coring stations.

SAV was determined by measuring the SAV's height (as measured by the echo of the acoustic signal sent through the water column) and the its relative height compared to the water depth. As such a plant that would occupy 80% of the water column would return an 80% biovolume SAV.

2. Maps

i. Beach Villa pond

When visited, Beach Villa pond surface water was 0.247m NAVD'88. The volume of the pond was then 414m^3 for a planar surface area of 522m^2 and a mean depth of 0.8m.

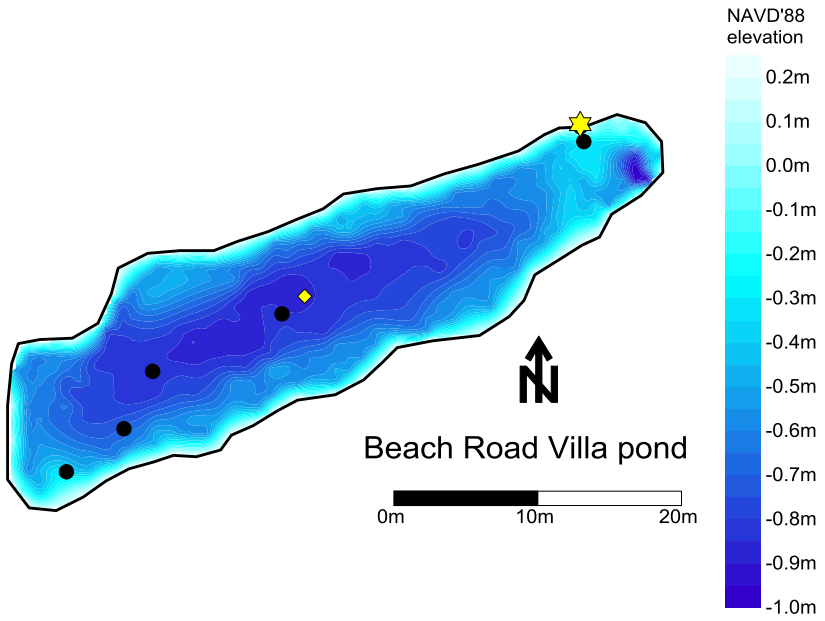

Figure 3. Bathymetry of Beach Villa pond.

The average bottom hardness of Beach Villa pond was around 0.3. The yellow portion of the map (bottom hardness around 0.3) is most accurate as the softer surrounding sediment around was extrapolated since the algorithm ran dropped out most of the depths in the shallow portion of the pond or when SAV was present. The SAV cover was found especially in the northeast corner as well as in the deepest portion of the pond.

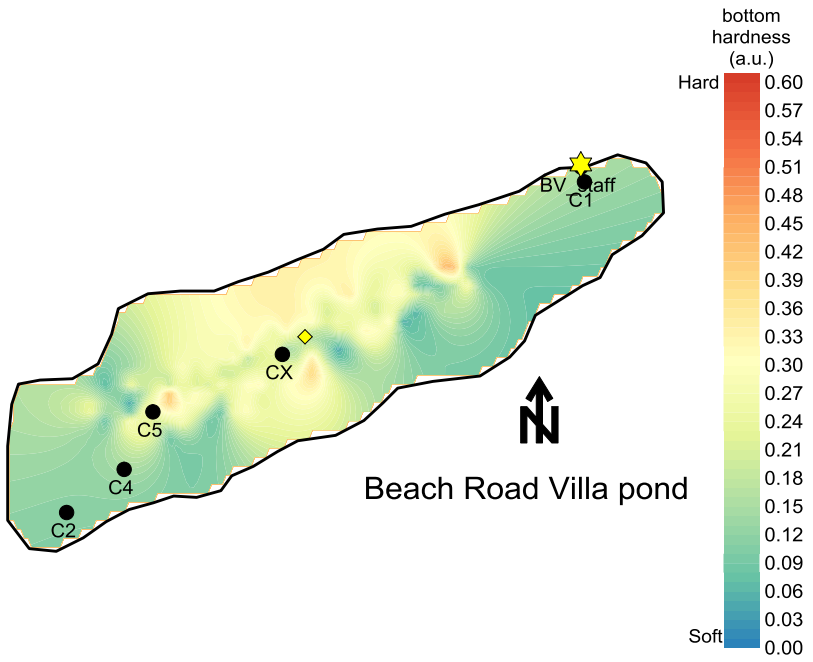

Figure 4. Bottom hardness of Beach Villa pond

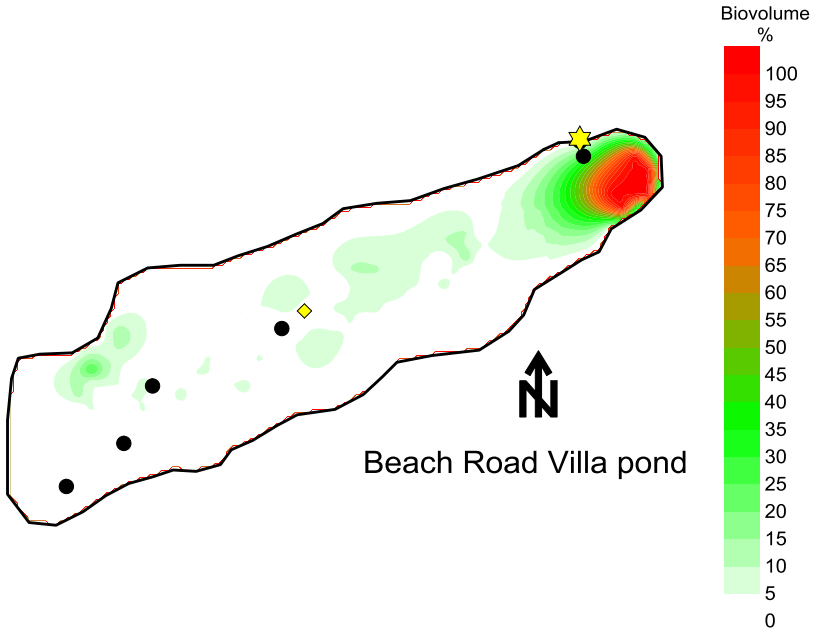

Figure 5. SAV cover in Beach Villa pond

ii. Bike Trail pond

When visited, Bike Trail pond surface water was -0.5m NAVD'88. The volume of the pond was then 27,055m^3 for a planar surface area of 15,007m^2 and a mean depth of 1.8m. The average bottom hardness of Bike trail pond was 0.39 as calculated with surfer and this was quite uniform all over the pond. The SAV cover was very sparse and limited to the shelf.

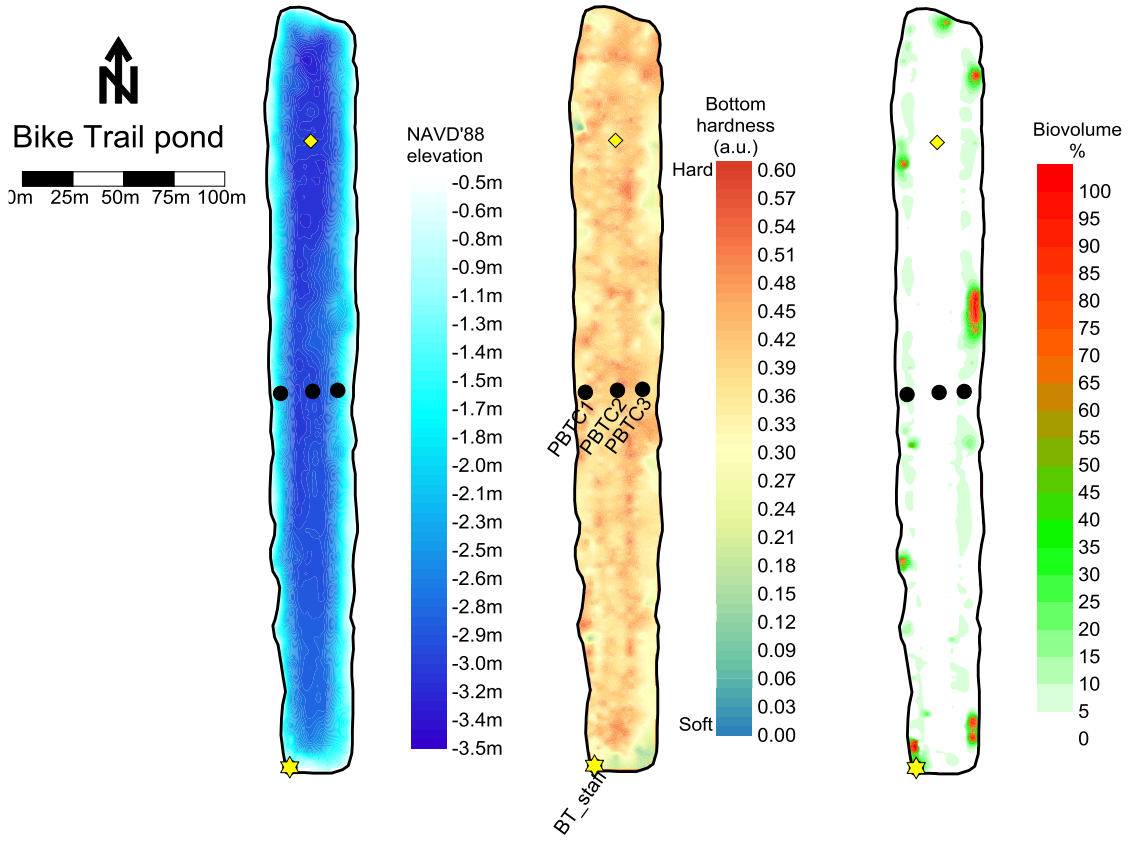

Figure 6. From left to right Bathymetry, bottom hardness and SAV cover of Bike Trail pond

iii. Chateau-Sur-Mer pond

When visited, Chateau-Sur-Mer pond surface water was -0.27m NAVD'88. The volume of the pond was then 9,791m^3 for a planar surface area of 8,219m^2 and a mean depth of 1.2m.

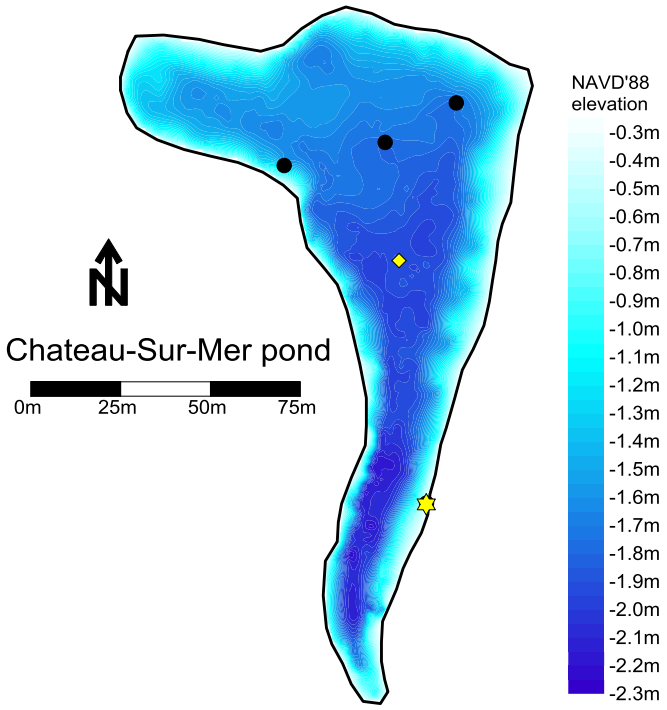

Figure 7. Bathymetry of Chateau-Sur-Mer pond

The average bottom hardness of Chateau-Sur-Mer pond was 0.37 as calculated with surfer and this was quite uniform all over the pond beside at the vicinity of the north east and central west corners where the hardness was around 0.09-0.15. SAV cover was found in very localized spots of the shelf as well as in low density in the deepest portions of the pond

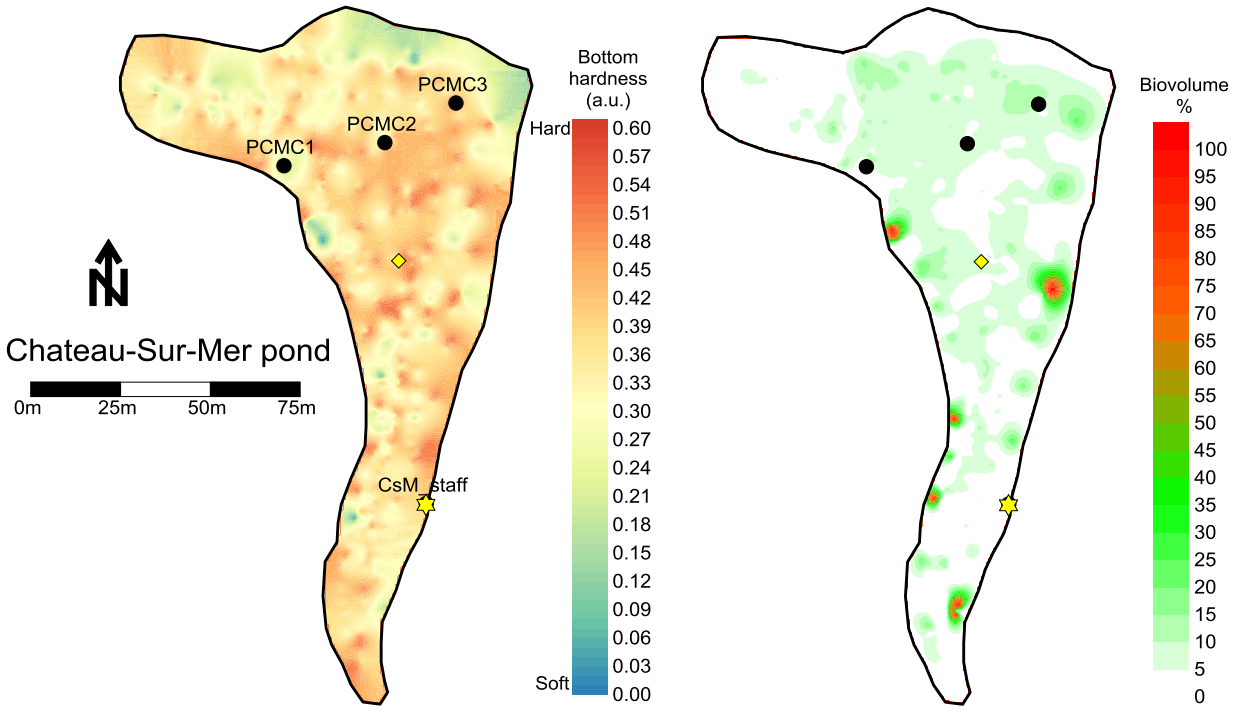

Figure 8. From left to right, bottom hardness and SAV cover in Chateau-Sur-Mer pond

iv. Golf Course pond

When visited, Golf Course pond surface water was 0.247m NAVD'88. The volume of the pond was then 12,679m^3 for a planar surface area of 8,218m^2 and a mean depth of 1.6m.

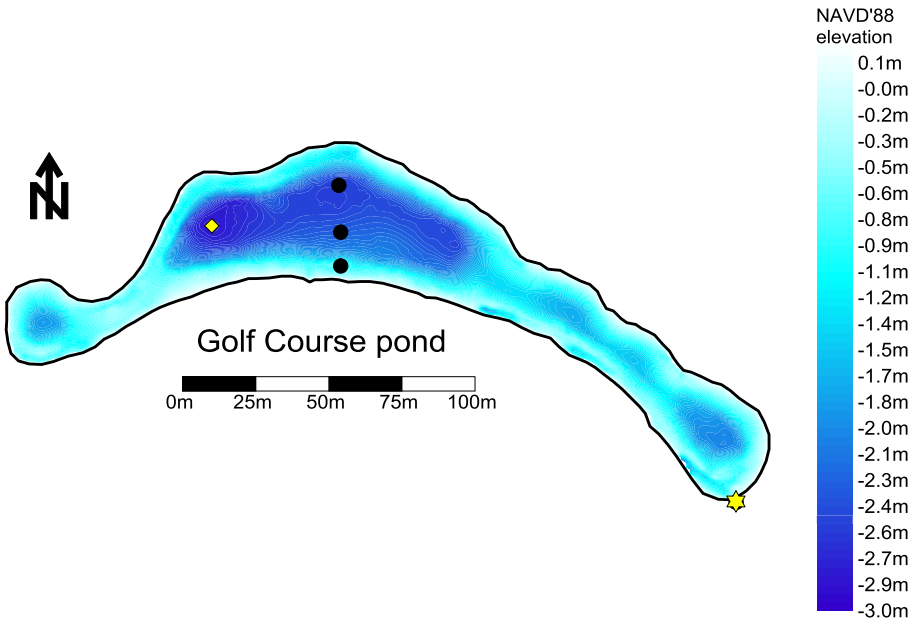

Figure 9. Bathymetry of Golf Course pond

The average bottom hardness of Golf Course pond was 0.47 as calculated with surfer with harder bottom (0.49) on the littoral zone and softer sediment (038) in the deepest portions.

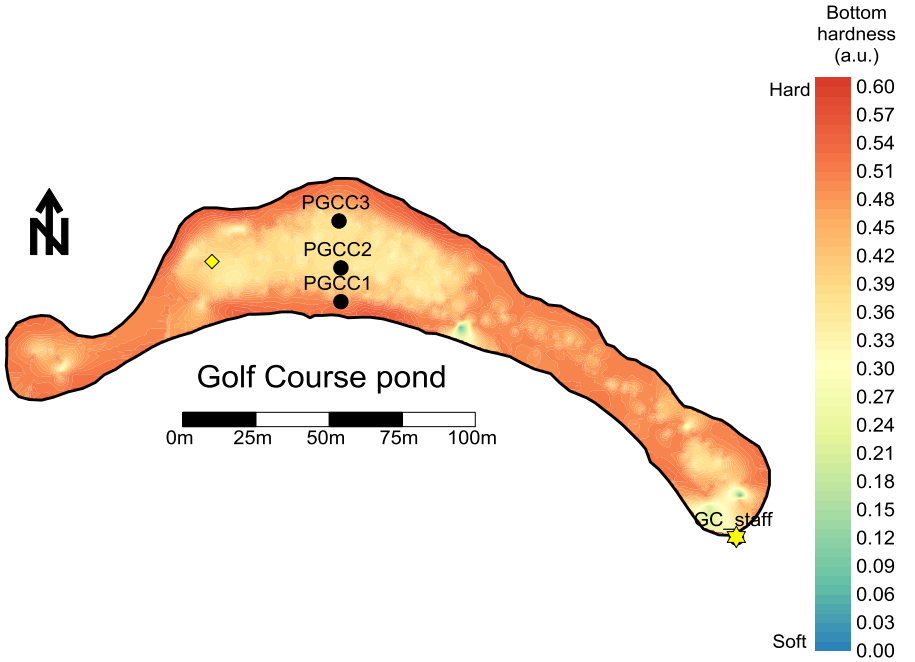

Figure 10. Bottom hardness of Golf Course pond

SAV cover was found in good density on the shelf but not in the deepest portions of the pond.

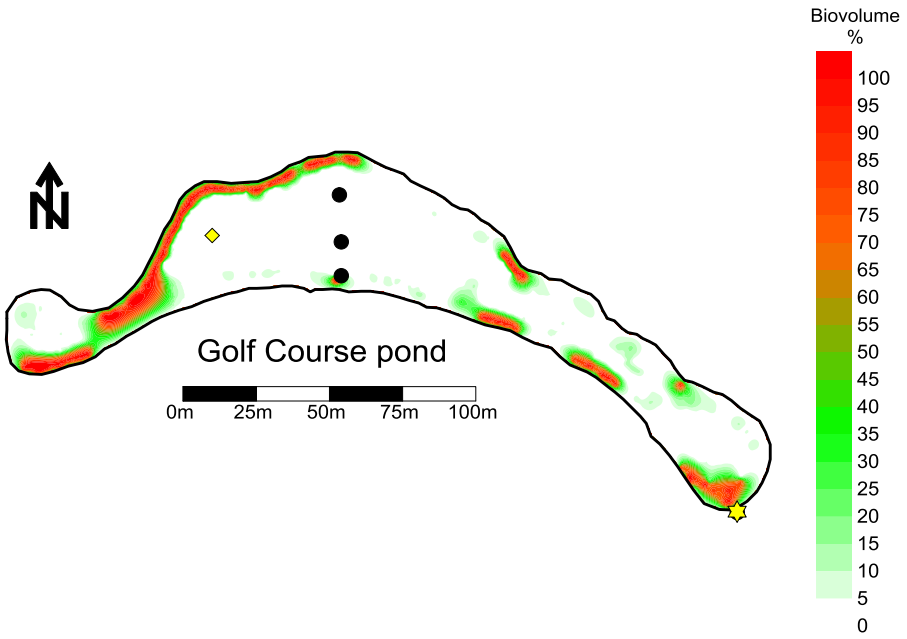

Figure 11. SAV cover in Golf Course pond

v. Heron landing pond

When visited, Heron Landing pond surface water was -0.17m NAVD'88. The volume of the pond was then 8,595m^3 for a planar surface area of 4,774m^2 and a mean depth of 1.9m.

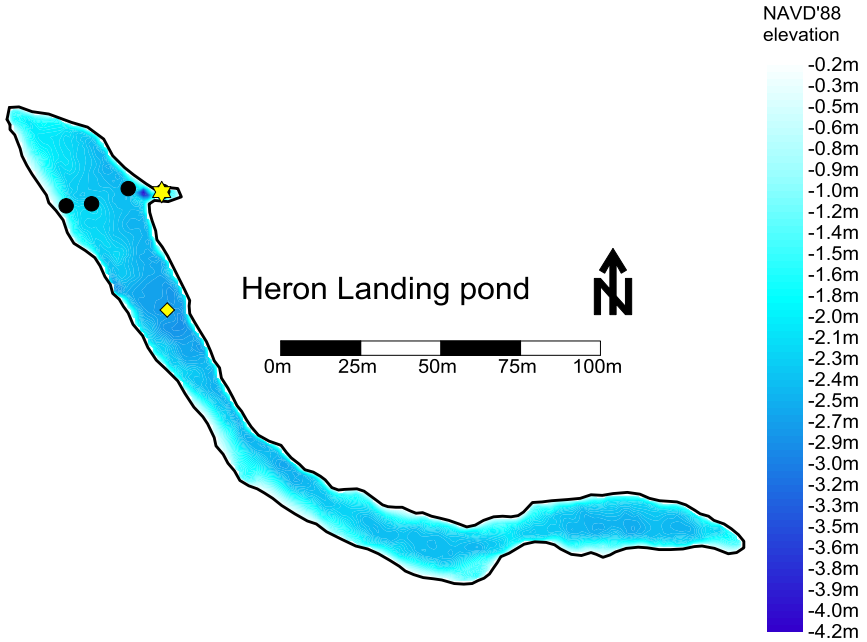

Figure 12. Bathymetry of Heron Landing pond

The average bottom hardness of Heron Landing pond was 0.44 as calculated with surfer and its bottom was harder than its shelf. SAV cover was found intermittently on the shelf but not in the deepest portions of the pond.

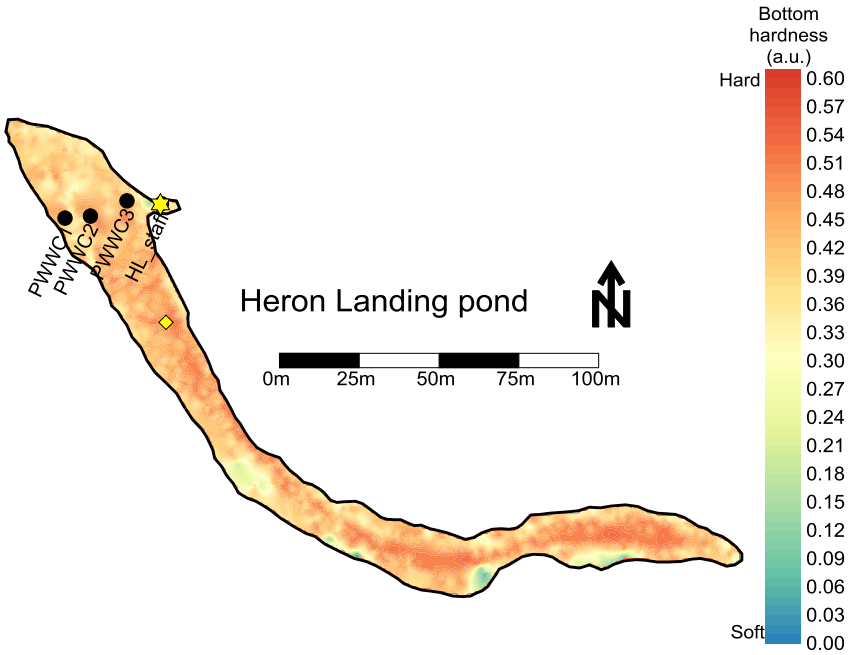

Figure 13. Bottom hardness of Heron Landing pond

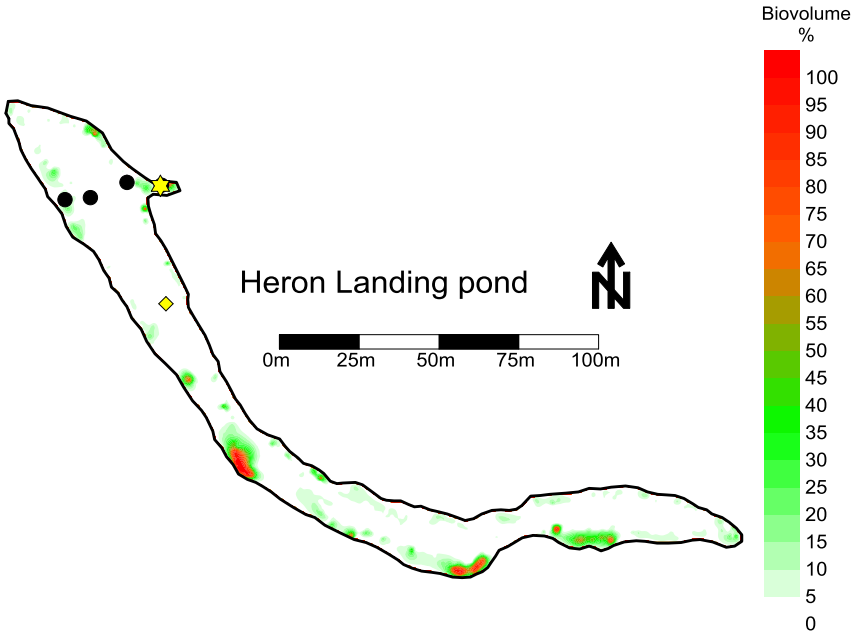

Figure 14. SAV cover in Heron Landing pond

vi. Sanctuary pond

When visited, Sanctuary pond surface water was 0.17m NAVD'88. The volume of the pond was then 9,007m^3 for a planar surface area of 4,540m^2 and a mean depth of 2.1m.
The average bottom hardness of Sanctuary pond was 0.42 as calculated with surfer and quite uniform all over beside its central east shore which had softer bottom (0.14).
SAV cover was mainly found on the shelf and especially on the eastern side of the pond.

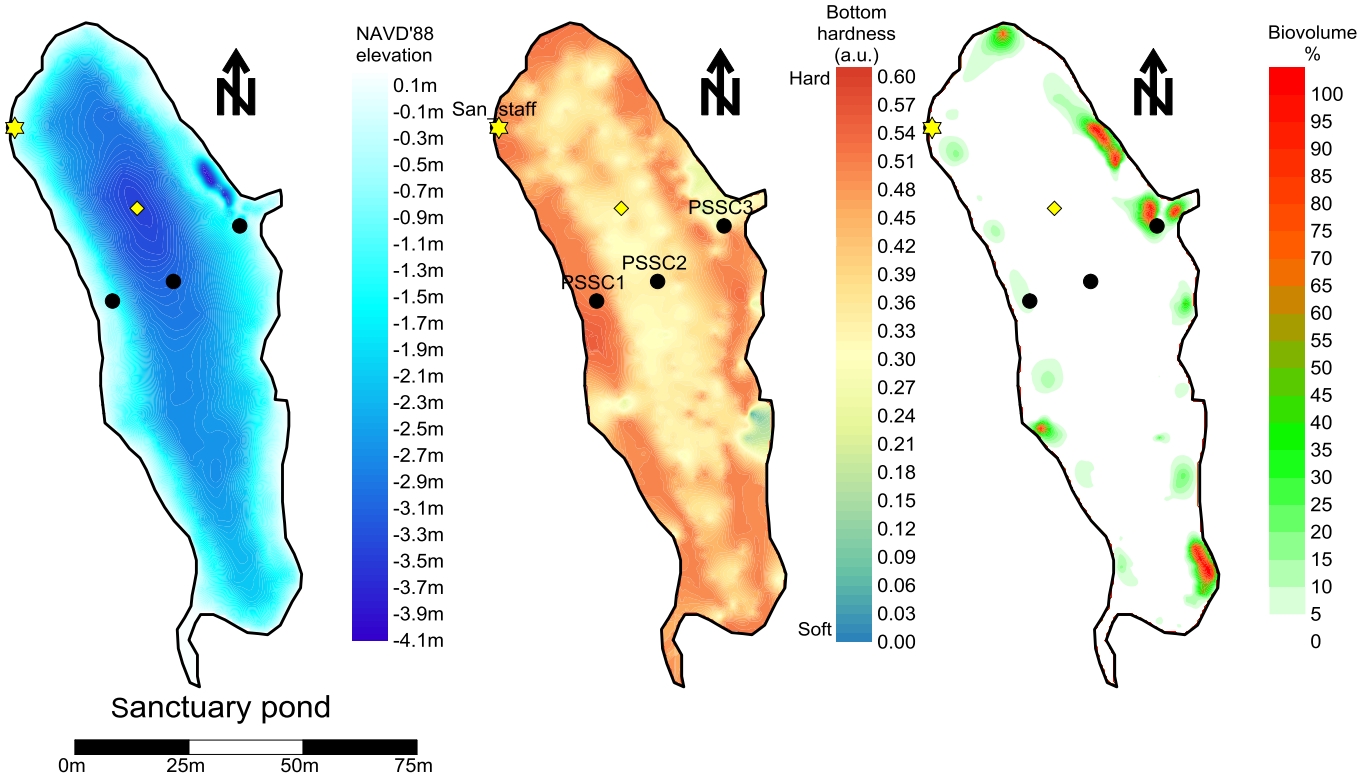

Figure 15. From left to right Bathymetry, bottom hardness and SAV cover of Sanctuary pond

vii. The Dunes pond

When visited, The Dunes pond surface water was 0.103m NAVD'88. The volume of the pond was then 207,700m^3 for a planar surface area of 81,404m^2 and a mean depth of 2.6m.

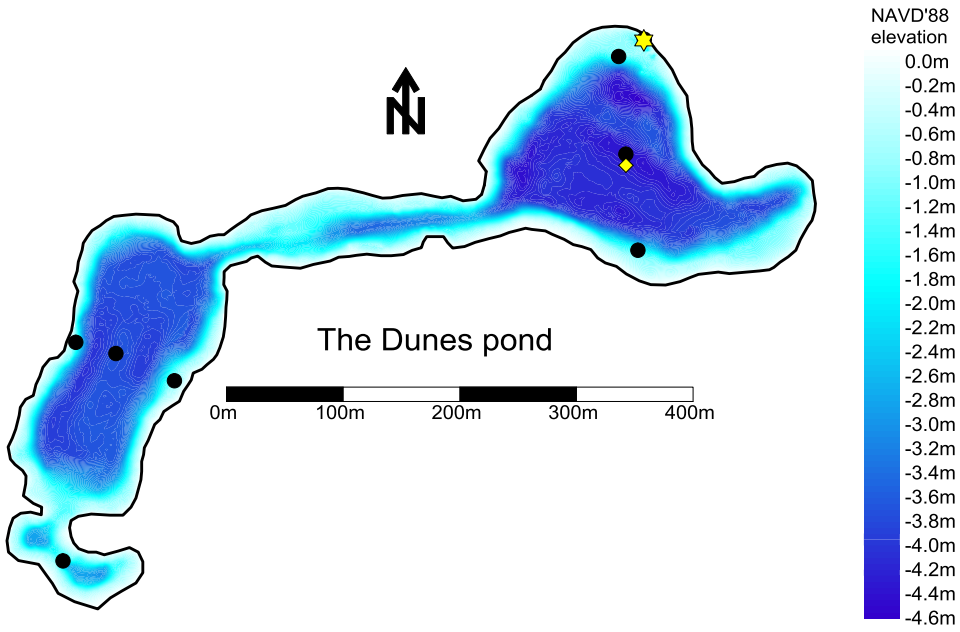

Figure 16. Bathymetry of The Dunes pond.

The average bottom hardness of The Dunes pond was 0.41 as calculated with surfer. Its shelf was considerably harder (0.5) than its deeper portions (0.3).

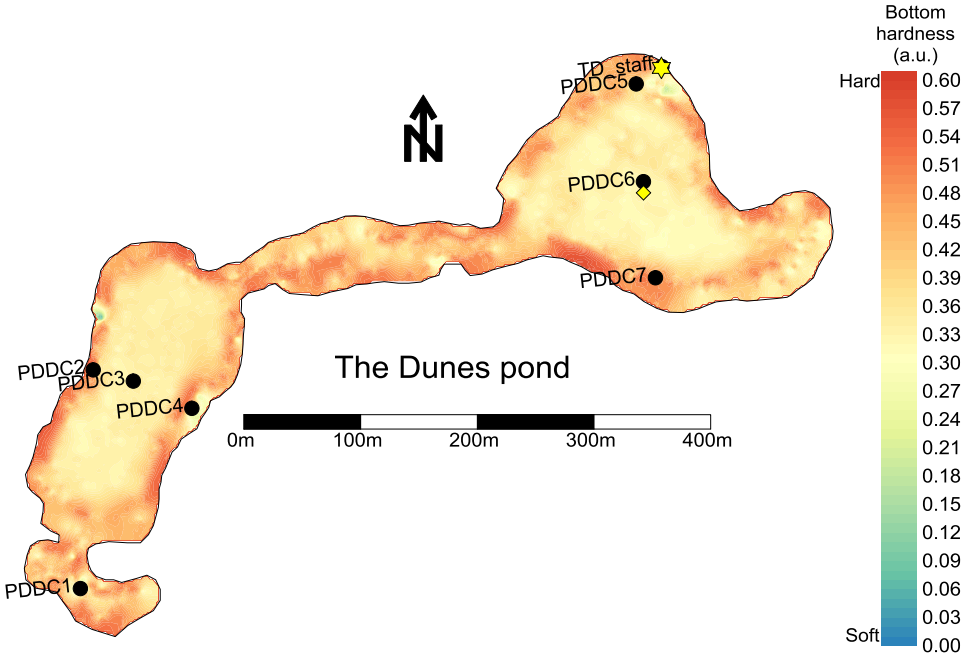

Figure 17. Bottom hardness of The Dunes pond

SAV cover was very sparse as SAV was found mainly in one spot of the north of the pond on the shelf and in the south central portion of it. Further, sporadic SAV was found in the center of the extreme south portion of the pond.

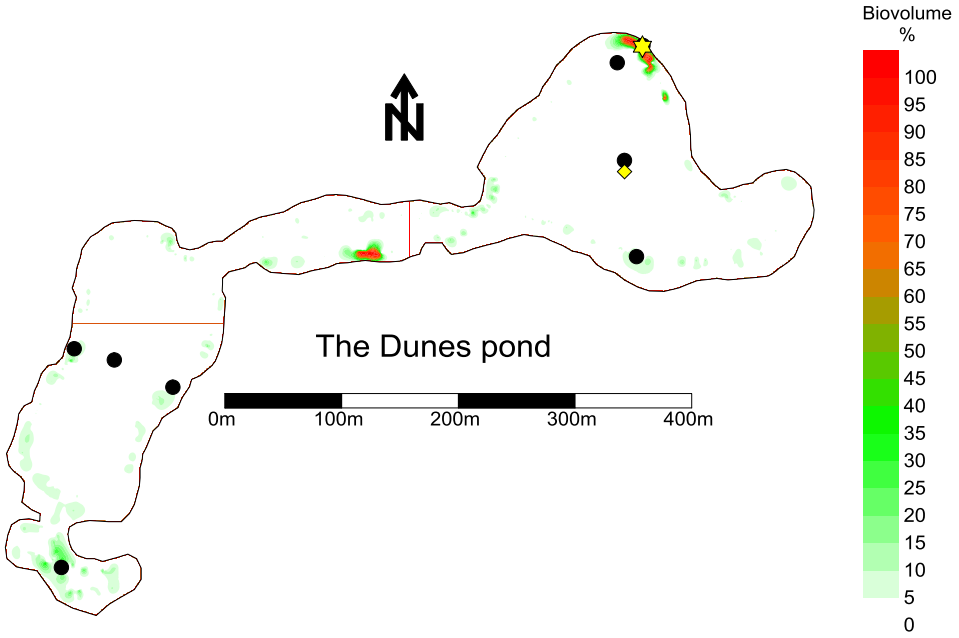

Figure 18. SAV cover in The Dunes pond

3. Conclusions

Most ponds had their water level close to 0m NAVD'88, however some ponds were substantially lower than 0m NAVD'88. Bike Trail pond was especially the lowest, followed by Chateau-Sur-Mer and Heron Landing. The other ponds had positive elevations with the Beach Villa and Golf course being the highest followed by Sanctuary and The Dunes.

The largest pond is by far The Dunes followed by Bike Trail, while Golf Course, Chateau-Sur-Mer, Sanctuary and Heron Landing are all around one hectare. Beach Villa pond is the smallest.

All ponds are shallow but the Dunes is the deepest pond followed by Sanctuary, Heron Landing and Bike Trail around 2m average depth while Chateau-Sur-Mer and especially Beach Villa are around 1m deep.

Golf course pond has the hardest bottom especially because of its shelf while Sanctuary, The Dunes, Bike Trail and Chateau-Sur-Mer had similar bottom hardness and spatial variation. Heron Landing was unique in the fact that its bottom was harder than its shelf. Beach Villa had the softest sediment but its hardness was hard to determine since nearly all the shelf data were missing in the interpolation.

Finally, SAV cover was the highest in Golf Course and Sanctuary, especially on the shelf while it was poor in all the other ponds besides Beach Villa (spotty high density on the shelf) and Chateau-Sur-Mer which had quite homogenous but low density SAV on its deepest portion.

	Elevation	Volume	Planar area	Mean depth	bottom hardness	SAV
Ponds	NAVD'88 (m)	m^3	m^2	m	a.u.	%
Beach Villa	0.247	414	522	0.8	~0.3	spotty on shelf, sparse in deep portion
Bike Path Trail	-0.5	27,055	15,007	1.8	0.39	spotty to sparse on shelf
Chateau sur Mer	-0.27	9,791	8,219	1.2	0.37	spotty on shelf, sparse in deep portion
Golf Course	0.247	12,679	8,218	1.6	0.47	fair cover on shelf
Heron Landing	-0.17	8595	4,774	1.9	0.44	spotty to sparse on shelf
Sanctuary	0.17	9,007	4,540	2.1	0.42	fair cover on shelf
The Dunes	0.103	207,700	81,404	2.6	0.41	very sparse on shelf and deeper portion

Table 1. Summary of mapping characteristics

D. Water column characteristics

Water column characteristics were assessed when the sun was around its zenith position at one location for each pond as determined subsequently to the bathymetry mapping (yellow diamond on each map). Water depth was first measured followed by the water profiling of the water column with smarTROLL multiparameter sonde (www.in-situ.com) equipped with a temperature, luminescent dissolved oxygen (DO), pH, specific conductance, oxidation-reduction (ORP) probe and a water depth sensor. The sonde was lowered in the water column at every 0.25cm waiting about 10second between each depth increment before resuming lowering the sonde at that increment until it reached the bottom. Photosynthetically active measurements (PAR) were done with a LICOR 4π Quantum type sensor connected to a LICOR 1400 meter which sensor was lowered every 0.25cm until the bottom was reached or sky conditions changed. Water clarity was also assessed with a Secchi disk and turbidity meter (Hach 2100Q, www.hach.com). All instruments were calibrated prior to getting to the sites. Such profiles were plotted in Microsoft Excel to determine whether a thermocline, oxycline and halocline/pycnocline were present as well as to determine if levels for the parameters measured were critical. Further, PAR profiles were used to determine the euphotic zone depth below which algae theoretically can no longer photosynthesize (Kirk, 2011). The Secchi disk depth was used to calculate the Trophic Status Index (TSI, Brezonik 1984).

The water column was sampled using a vertical 2.2L Beta™ Van Dorn bottle sampler at various depth intervals until 0.5m above the pond's bed. All samples were then mixed in a clean bucket so that a composite sample could be taken. Total alkalinity was then determined using a Hach kit (Model AL-DT, www.hach.com). The composite water sample was kept in an opaque 1.5L Nalgene bottle which was kept in the dark in a cooler. Within 10 hours, the water for the analysis of total phosphorus (EPA365.1) and total nitrogen (ASTM D5176) was transferred into a 125ml Nalgene bottle which was kept refrigerated until being analyzed. A 60ml subsample was additionally filtered through a Nucleopore™ 0.45µm pore size filter into an 80ml Nalgene bottle which was immediately frozen until being analyzed for dissolved nutrients: NOx (EPA353.2), NO2- (EPA353.2), NH4+ (EPA350.1) and soluble reactive phosphorus (SRP, EPA365.1). A known volume of water was further filtered onto a Whatman™ GF/F (0.7µm nominal pore size) to retain algae. The filter was then processed through acetonic extraction in a fridge for 48h to extract Chl *a* which extract was read in a spectrophotometer to determine the pigment concentration (Jeffrey and Humphrey 1975). Nutrients and Chl *a* were analyzed by Dr. Lasso de la Vega at the Water Hyacinth Control (Lee County, Florida).

1. Water column structure and clarity

i. Beach Villa pond

The water column was well mixed in Beach Villa pond with slightly less than the lower limit of DO for fishes to be stressed (less than 5mg/l). It is anticipated that such DO levels drop even further at night as respiration prevails. pH was close to circumneutral with a drop at the vicinity of the sediment which corroborates the drop in DO there as well. Specific conductance is characteristic of freshwater and increases near the bottom because of sediment porewater influence. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. The water column is clear and allows benthic phototrophs to grow (i.e. algae and SAV).

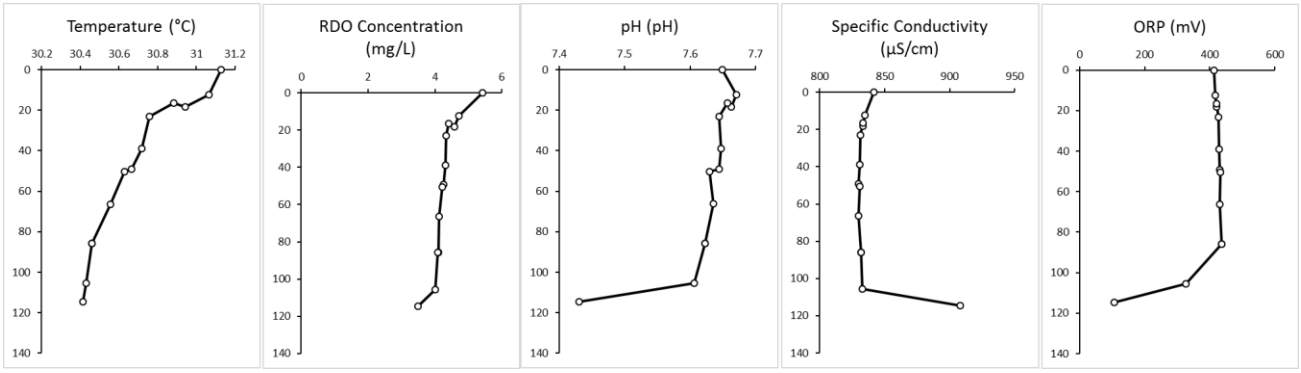

Figure 19. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Beach Villa pond

ii. Bike Trail pond

The water column was well mixed in Bike Trail pond with less than the lower limit of DO for fishes to be stressed (less than 5mg/l). It is anticipated that such DO levels drop even further at night as respiration prevails. pH was higher than circumneutral and more in par with brackish or saline systems. pH drops at the vicinity of the sediment which corroborates the decrease in DO there as well. The specific conductance is characteristic of brackish water. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. The water clarity is sufficient enough to allow algae to grow on the bottom but it restricts SAV growth.

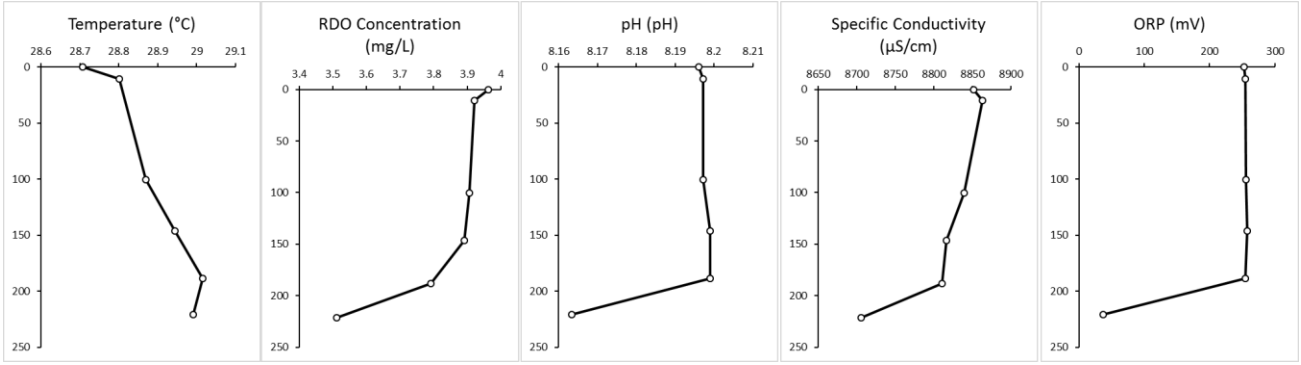

Figure 20. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Bike Trail pond

iii. Chateau-Sur-Mer pond

The water column was well mixed in Chateau-Sur-Mer pond with adequate to critical DO enough to stress fishes near the bottom (less than 5mg/l). It is anticipated that such DO levels drop even further at night as respiration prevails. pH was higher than circumneutral and more in par with brackish or saline systems. pH drops at the vicinity of the sediment which corroborates the decrease in DO there as well. Specific conductance is characteristic of slightly brackish water. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. Water clarity is fair but since this ponds is shallow, there is ample amount of light reaching the bottom to allow benthic algae and some SAV to grow.

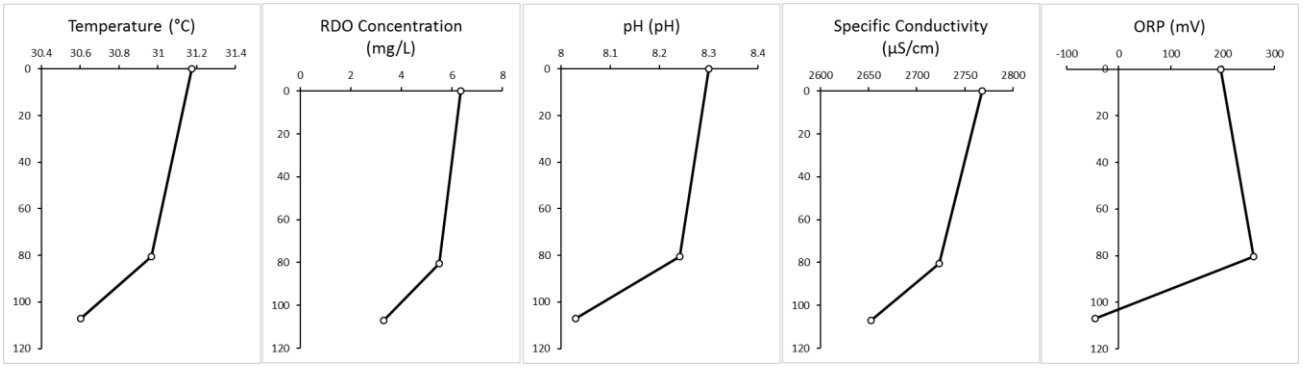

Figure 21. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Chateau-Sur-Mer pond

iv. Golf Course pond

The water column was well mixed in Golf Course pond. High DO in the surface representing biological production via photosynthesis would not stress fishes during the day but would decrease steeply at night as algae add their respiration to the one from the heterotrophs. Below 0.5m, an oxycline is present as DO drops to hypoxia near the bottom. Logically, the pH follows that pattern with high pH above 8.2 on the surface exhibiting supersaturation of DO. Specific conductance is characteristic of slightly brackish water. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. The water clarity is fair and allows light to reach most of the bottom thus allowing benthic and show SAV to grow especially on the shelf.

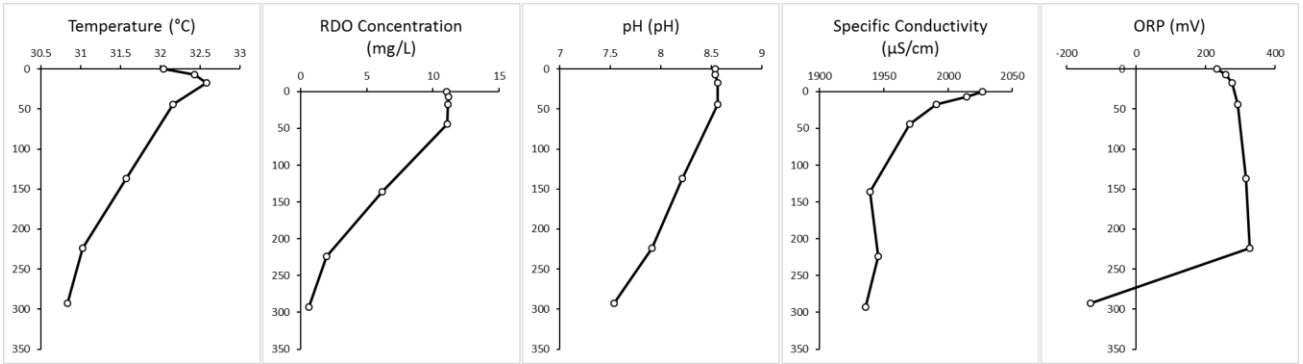

Figure 22. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Golf course pond

v. Heron landing pond

The water column is being destratified in Heron Landing pond since the temperature curve represents mixing occurring between the epi and hypolimnion. DO are alarming low and typical of anoxia. pH is typical of brackish and saline water which agrees with the specific conductance. Specific conductance is also lower on the surface than in deeper water and shows a weak halo/pycnocline which is being destroyed. ORP is very negative showing a very reducing environment in par with the anoxia observed. Water clarity is very poor as PAR profiles prove very challenging as light would attenuate too quickly. Particulates other than phytoplankton and likely heterotrophic bacteria and other particulates attenuate light in the water column.

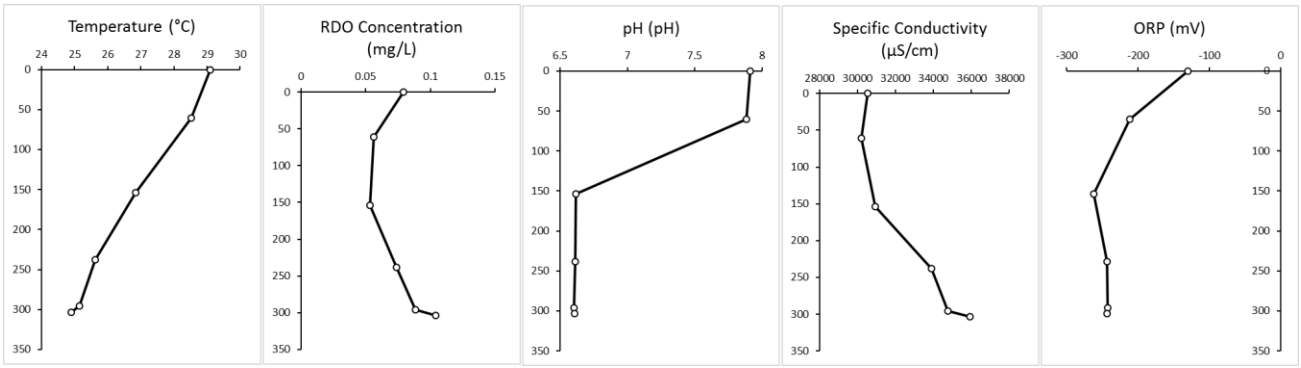

Figure 23. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Heron Landing pond

vi. Sanctuary pond

The water column was well mixed in Sanctuary pond. High DO throughout most of the water column reflect biological production via photosynthesis. Such a supersaturation in DO would not stress fishes during the day but DO would decrease steeply at night as algae add their respiration to the one from the heterotrophs. DO drop to hypoxia near the bottom. Logically, the pH follows that pattern with high pH above 8.2 on the surface exhibiting supersaturation of DO. Specific conductance is characteristic of slightly brackish water. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. Water clarity is mediocre linked to phytoplankton and other particulates. SAV will grow on the shallow shelf and algae can still grow in most of the pond's bottom and especially within the water body.

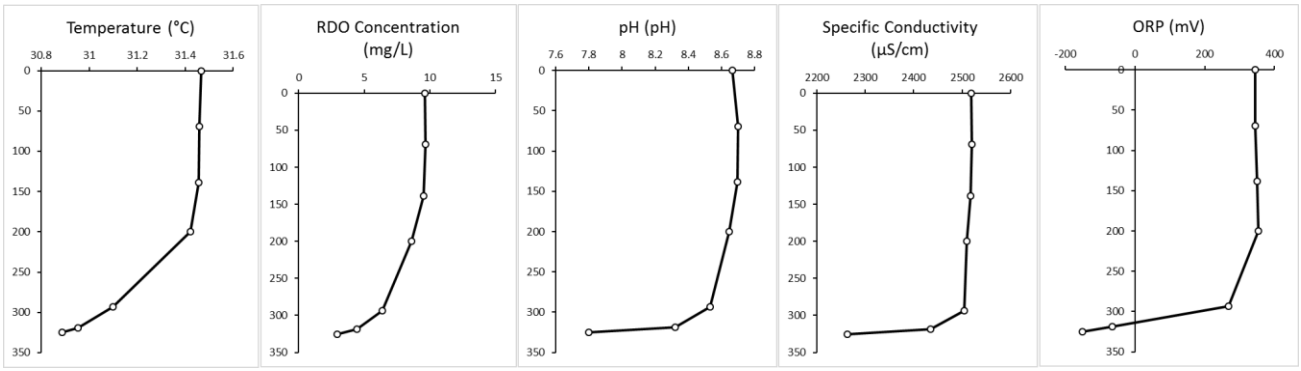

Figure 24. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Sanctuary pond

vii. The Dunes pond

The water column was well mixed in The Dunes pond even despite the relative deep depth. DO is too high in the surface representing biological production via photosynthesis which would not stress fishes during the day but would decrease steeply at night as algae add their respiration to one from the heterotrophs. Below 0.5m, a steep oxycline is present as DO drop to anoxia near the bottom. Logically, the pH follows that pattern but on a log scale with high pH above 8.2 on the surface exhibiting supersaturation of DO. Specific conductance is characteristic of slightly brackish water and it increases steeply over the bottom showing more saline pore sediment water. ORP is positive and normally drops near the bottom as DO and other elements in the oxidative state decrease. ORP however remains positive. Water clarity is mediocre to poor as light is attenuated by phytoplankton and other particulates. SAV growth is limited to the shallow shelf while algae should be able to grow there as well and up to 1.4m.

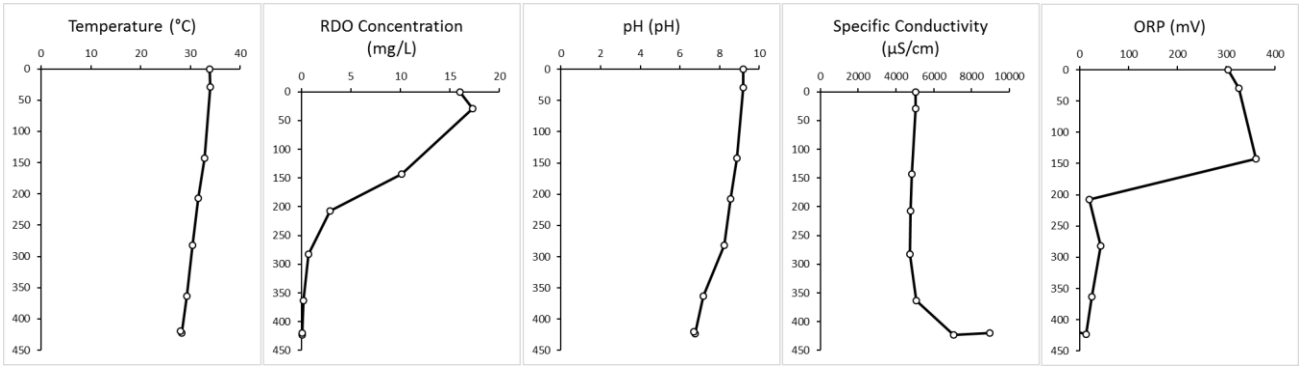

Figure 25. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in The Dunes pond

	Mean temperature	Mean sp. cond.	Mean salinity	Mean DO	Mean DO	Mean pH	Mean ORP	Turbidity	Zeu
Ponds	ºC	µS/cm	ppt	mg/l	%	a.u.	mV	NTU	m
Beach Villa	30.7±S.D.0.2	838±S.D.21	0.42±S.D.0.01	4.31±S.D.0.45	57.9±S.D.6.2	7.62±S.D.0.06	394.1±S.D.91.1	2.3	2.8
Bike Path Trail	28.9±S.D.0.1	8815±S.D.57	4.99±S.D.0.03	3.83±S.D.0.17	51.3±S.D.2.2	8.19±S.D.0.01	218.9±S.D.89.1	24.0	2.3
Chateau sur Mer	30.9±S.D.0.3	2714±S.D.58	1.42±S.D.0.03	5.05±S.D.1.57	68.5±S.D.21.6	8.19±S.D.0.14	137.1±S.D.160.9	18.6	1.9
Golf Course	31.8±S.D.0.7	1975±S.D.37	1.02±S.D.0.02	7.61±S.D.4.68	104.5±S.D.64.7	8.26±S.D.0.41	224.9±S.D.160.4	20.3	2.1
Heron Landing	26.7±S.D.1.8	32705±S.D.2455	20.77±S.D.1.71	0.08±S.D.0.02	1.1±S.D.0.3	7.04±S.D.0.67	-222.3±S.D.47.8	111.0	NA
Sanctuary	31.2±S.D.0.3	2467±S.D.95	1.29±S.D.0.05	7.3±S.D.2.75	99.7±S.D.37.9	8.48±S.D.0.33	206.6±S.D.218.1	20.2	1.6
The Dunes	31±S.D.2.4	5690±S.D.1522	3.13±S.D.0.9	5.93±S.D.7.42	84±S.D.106	8.09±S.D.1.05	136.7±S.D.161.6	38.2	1.4

Table 2. Summary table of the water characteristics over the water column. Means ± standard deviation (S.D.) are shown where appropriate.

2. Water chemistry

i. Beach Villa pond

Beach Villa pond has relatively low nutrients levels which does not trigger large phytoplankton populations and which allow the water to remain clear. It is well balanced with nutrients and has fair water quality (mesotrophic).

	Total alkalinity	Chl*a*	NOx	NH4	TN	SRP	TP	TN/TP	Limitation	TSI(SD)	TSI(Chl*a*)	TSI(TP)	TSI(TN)	TSI(Combo)
Ponds	mg/l	µg/l	mg/l	mg/l	mg/l	mg/l	mg/l	no units	P, N, both	a.u.	a.u.	a.u.	a.u.	a.u.
Beach Villa	129.5	6.0	0.024	0.033	0.799	0.016	0.027	29.6	both	54.3	42.7	43.3	54.8	48.7
Bike Path Trail	194.0	36.9	0.040	0.061	2.571	0.071	0.021	125.4	P	84.0	68.8	38.2	79.9	63.6
Chateau sur Mer	297.0	22.3	0.039	0.041	1.576	0.037	0.078	20.3	both	68.6	61.5	62.9	69.4	65.4
Golf Course	192.0	31.6	0.016	0.062	2.423	0.048	0.117	20.7	both	64.2	66.5	70.6	78.6	68.4
Heron Landing	507.0	63.2	0.079	0.533	3.030	4.120	3.821	0.8	N	91.5	76.5	135.4	83.4	84.0
Sanctuary	269.0	49.6	0.025	0.049	1.965	0.284	0.650	3.0	N	54.3	73.0	102.5	74.1	63.6
The Dunes	258.0	66.1	0.020	1.578	4.162	0.132	0.171	24.3	both	84.6	77.2	77.6	90.3	81.9

Table 3. Summary table of the water chemistry and overall water quality assessment via the TSI.

ii. Bike Trail pond

Bike Trail pond is quite nutrients rich with especially nitrogen mostly as particulate nitrogen. Ammonia however is not at critical levels for the fish population as the water column is not reducing. Such nitrogen triggers algae blooms which lower the water clarity thus leading to a eutrophic+ pond.

iii. Chateau-Sur-Mer pond

Chateau-Sur-Mer pond has good amounts of both nitrogen and phosphorus which balance each other and contribute to the grow of a fair about of phytoplankton which attenuates water clarity. The pond has thus eutrophic+ water. Ammonia levels are not critical for the fish populations are the water is not reducing enough.

iv. Golf Course pond

Golf Course pond has very good amounts of both nitrogen and phosphorus which are in balance and which feed phytoplanktonic populations. The pond has thus eutrophic+ water but ammonia are not of concerns due to low reducing conditions.

v. Heron landing pond

Heron Landing has high total alkalinity showing an eventual good connection between the pond water and the surrounding lime rich environment. Such alkalinity could limit algal and SAV growth as carbonates dominate. Cyanobacteria however can thrive in such environments and it seems to be the case as chl *a* concentration is quite high but not enough to compensate the high biological oxygen demand of the water and likely of the sediment. Nitrogen, but especially, phosphorus (*a fortiori* as labile phosphorus) levels are especially high in this pond and drive the TSI to hypereutrophy+. The pond is limited in nitrogen which can select nitrogen fixing cyanobacteria but with such high levels of nutrients, it is doubtful that any limitation exists. Ammonia levels are high linked especially to the reducing properties of the water (i.e. low ORP).

vi. Sanctuary pond

Sanctuary pond has high nitrogen and very high phosphorus contents. Nitrogen still in not reduced to alarming levels of ammonia because of the non-reducing conditions. Such nutrients should have driven to higher phytoplanktonic populations and it is hypothesized that there is some pond management which limits the algal growth via the aerator present as well as eventually the use of xenobiotics. The water indeed remains fairly clear and thus reduces artificially the TSI to eutrophic+ (in lieu of hypereutrophic).

vii. The Dunes pond

The Dunes pond has very high nitrogen and phosphorus contents. The reducing conditions of the water (even if ORP is not negative) drive the ammonia levels high so that fish could be harmed. The nutrients, mainly in the labile form, allow algae to thrive and make the water turbid which all drive the TSI to hypereutrophic+.

3. Conclusions

A correlation matrix was run between all the parameters measured for this study (Appendix 4). As for most water bodies, salinity is a main driver of these hydrosystems since it was positively correlated with the turbidity and therefore was negatively correlated with the Secchi disk and euphotic zone depths. More saline ponds had lower temperature, lower DO, pH, ORP but higher TP, SRP, total alkalinity and NOx. Large ponds with large volume, surface area and mean depth also had larger water concentration in ammonia and TN. Water TN and Chlorophyll *a* mainly drove the TSI of all the ponds. Hypereutrophic ponds had reducing water column properties which drove ammonia to alarming levels which as bioavailable nutrients fed algae growth which reduced water clarity.
However, Sanctuary pond slightly deviates from his expected hypereutrophy because its water is likely highly managed in such a way that its water column remains relatively clear and with less phytoplankton

than one would expect. Because of its large size and despite some managements, The Dunes pond water quality is not improved, even artificially as it is the case for the much smaller Sanctuary pond.
Heron Landing also is different than the other ponds because of the extreme conditions this pond is encountering as its high biological oxygen demand masks the photosynthesis DO production.

E. Sediment characteristics

1. Methods.

Sediment coring locations were determined upon the mapping of the bottom hardness via sonar (black dots on maps). Sediment coring was performed from a Jon boat or an aluminum 14' canoe using a handheld push corer. The corer was made of interlocking 2" PVC sections upon which a clear acrylic tube of inner diameter 6.35cm (2.5") was mounted (Appendix 3). The one-way valve of the corer allowed the water to flow one way as the corer was lowered in the water column and the acrylic core pushed through the sediment. The acrylic core was pushed in the pond's bed until rebuttal and then brought to the surface. The one-way valve held the sediment material in the acrylic tube until the surface. At the surface, the base of the acrylic tube was capped with a rubber stopper #13 to create a good seal.

Once on the boat deck, the corer was uncoupled from the acrylic tube and the tube's apex was capped with a second rubber #13 stopper. A 12MP picture of the core was then taken against a white erase board with an Olympus tough TG-1 after the total sediment core length was recorded. For the cores selected for their content analysis, sediment material was extruded upward by pushing up a piston inserted at the bottom of the tube (after the basal rubber stopper was removed). Once the sediment material was flushed to the opening of the acrylic tube, the depth of the floc layer was measured to the nearest ½ cm by letting a plastic ruler sink through it under its own weight. The flocculent layer was then sampled and kept in a ziplock bag chilled in a cooler packed with crushed ice.

The sediment was then pushed upward and its thickness measured to the nearest ½ cm until either sand, peat, clay or limestone was reached. The sediment was collected in a bucket then mixed and stored in a ziplock™ bag chilled in the cooler. All the other layers underneath the sediment were characterized, measured to the nearest cm then discarded.

Once in the laboratory, part of the sediment or floc was dried until constant weight in a drying oven set at 80 ºC (DW) and then combusted at 550ºC for one hour. The ash weight was then determined (AW) and the ash free dry weight deducted (AFDW). The organic content was finally computed as AFDW/DW (ASTM D2974-87). Another fraction of the sediment or floc was dried in the oven until constant weight, then grinded to a fine powder with a Belart MICRO-MILL® grinder. A few grams of powdered sample were then sent to the SERC/FIU laboratory for the analyses of total phosphorus (TP), total carbon (TC) and total nitrogen (TN) which were reported in g/g DW or % DW. Total phosphorus in sediments was determined using the ashing/acid hydrolysis method of Solorzano and Sharp (1980) with the resulting soluble reactive phosphorus (SRP) being measured as SRP in water (EPA365.1). Sediment TC and TN were analyzed using Perkin Elmer Series II 2400 CHNS/O Analyzer (Nelson and Sommers 1996).

2. Results and discussion

Using the correlation matrix (Appendix 4), sediment and floc characteristics had poor relationships with the water quality. This normally is the case in other ponds in the region and this could be linked to the fact that

there was only one water quality assessment over the course of a hydrologic cycle whereas water sampling once a month was conducted for the other studies that our group conducted. However, when the sediment and floc data are compared to one another, it was found that for the same core, a thick layer of floc would equate to a thick layer of sediment. The nutrient contents of these two layers did not show much correlation though. Nevertheless, for both the floc and the sediment of the same core, high nitrogen content equated to high carbon and organic content. This shows that the sediment and floc were organic and thus would leach nutrients to the water column as they are degraded. The phosphorus content did not exhibit this pattern but this could be linked to the fact that the analysis of TP was not made through a TP fractionation process which is long, costly and laborious but which would have allowed to separate the various forms of P found in the core and especially tease apart the labile and refractory forms of P.

Overall, the combined sediment and floc accumulation in all the ponds was less than 30cm which is the arbitrary threshold that has been arbitrarily used to determine whether dredging ought to be necessary. Thus, based upon this figure, it appears that all the ponds have not reached that threshold yet. Beside Chateau-Sur-Mer with an overall low sediment and floc accumulation (7.2cm in average), all ponds have accumulated about the same amount of sediment regardless of their current TSI (9.3 to 12.8 cm in average). The Dunes pond had very long sediment accumulation on its shelf but this was compensated for by a much higher sediment accumulation pass the littoral zone.

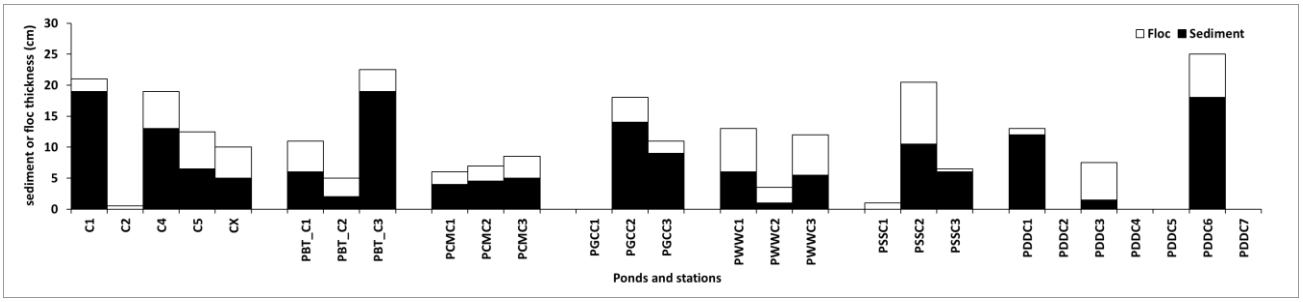

Figure 26. Sediment and floc accumulation for all the ponds at their stations selected for coring.

Nutrient content in the sediment is also a factor to consider for dredging and overall management decisions. Beside the relatively low sediment and floc accumulation, the amount of nutrients appears to be high when compared to other ponds in Lee and Collier counties and mainly located within Bayside Bay Creek Community Development Districts (CDDs referred as Pelican Landing in Estero and Bonita Springs, Thomas, 2015).

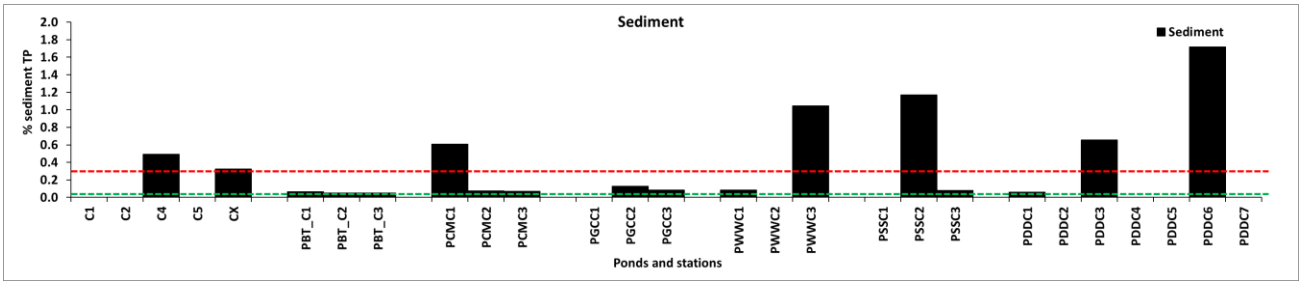

Figure 27. TP content in the sediment (2% TP equates to 20,000µg/g). The red dotted line refers to the average TP content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

It is noteworthy to point out that sediment nutrient has often more P than for the floc. This is unusual but might be linked that most P is refractory in the sediment and less refractory in the floc. Thus, the P content of the muck of the ponds studied is high, especially for the floc TP content alone.

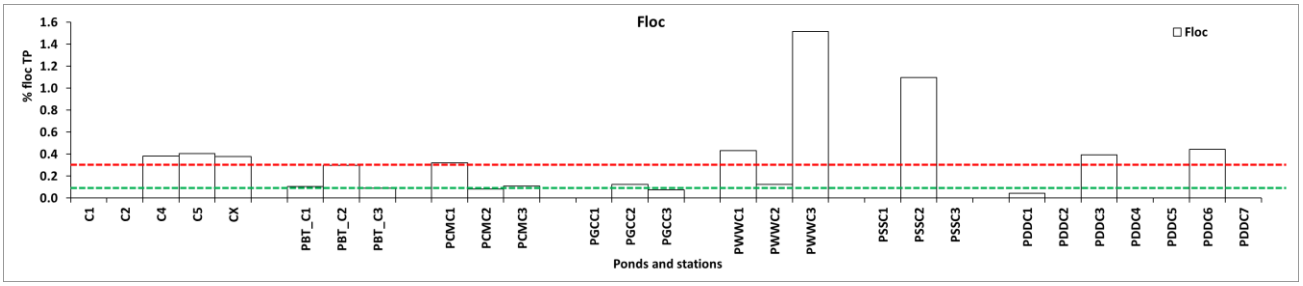

Figure 28. TP content in the floc (2% TP equates to 20,000µg/g). The red dotted line refers to the average TP content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

Sediment and floc TN (as well as TC and organic content since these are all highly correlated, so they are implicitly discussed below) were also higher than other ponds in Lee and Collier Counties. TN was more in the floc than in the sediment and has high potential for leaching back into the water column and create algae blooms (especially since the TSI is driven mainly by TN and Chlorophyll *a*). Besides for Golf Course pond, the sediment in the golf course ponds (The Dunes and Sanctuary) had high maxima.

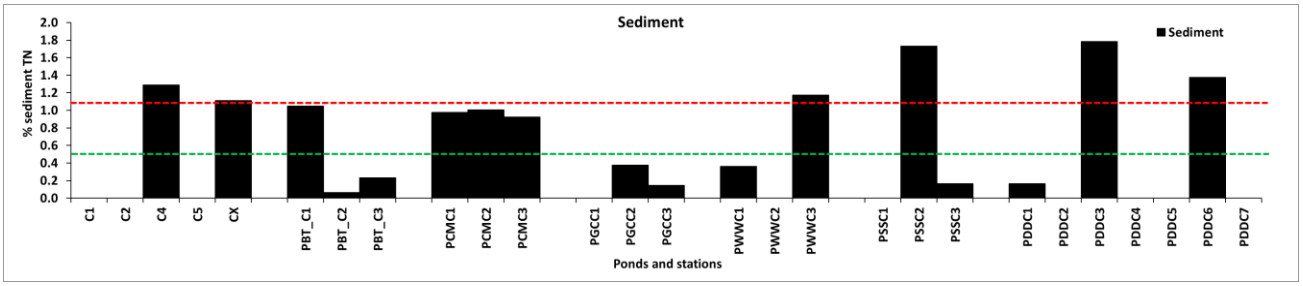

Figure 29. TN content in the sediment. The red dotted line refers to the average TN content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

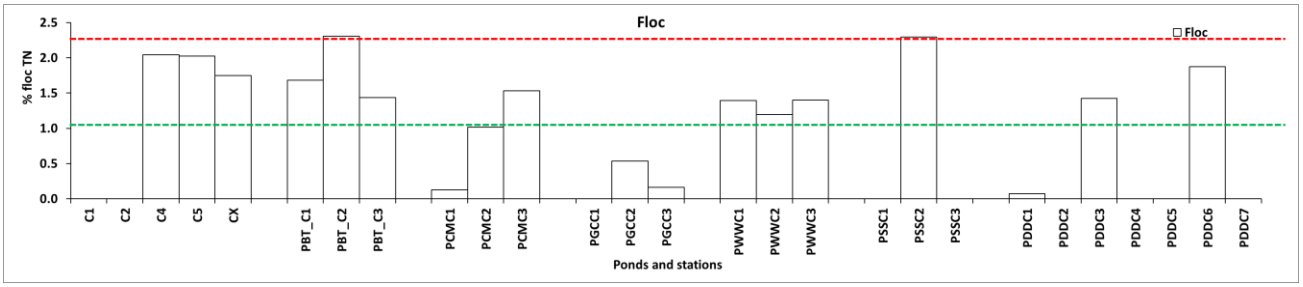

Figure 30. TN content in the floc. The red dotted line refers to the average TN content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

This was also the case for Beach Villa pond which could be linked to the high leaf litter deposits which were found in great abundance in the cores. TN in the floc was especially high except for the Golf Course pond which overall and regardless of the nutrient considered had the “healthiest” muck.

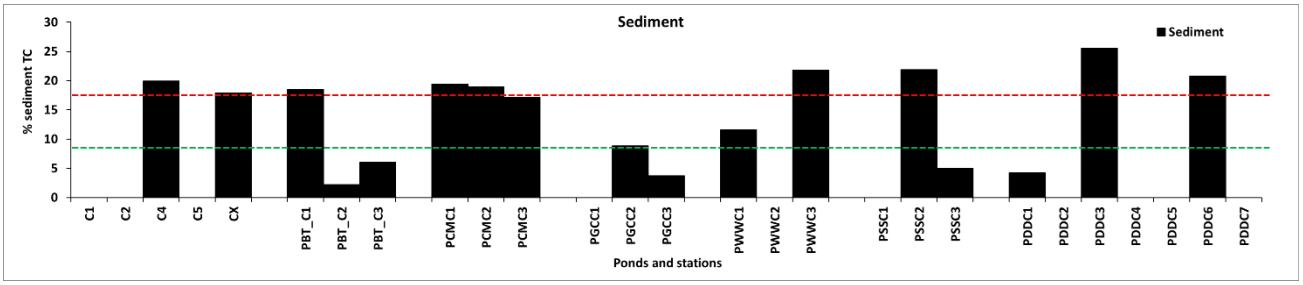

Figure 31. TC content in the sediment. The red dotted line refers to the average TC content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

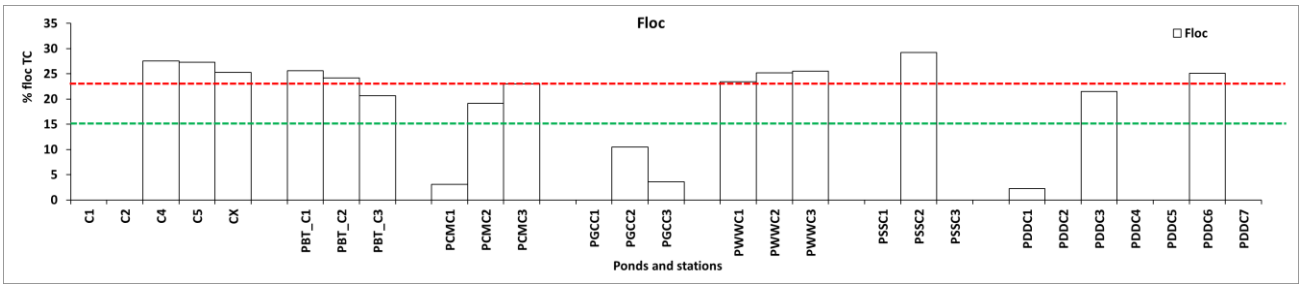

Figure 32. TC content in the floc. The red dotted line refers to the average TC content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

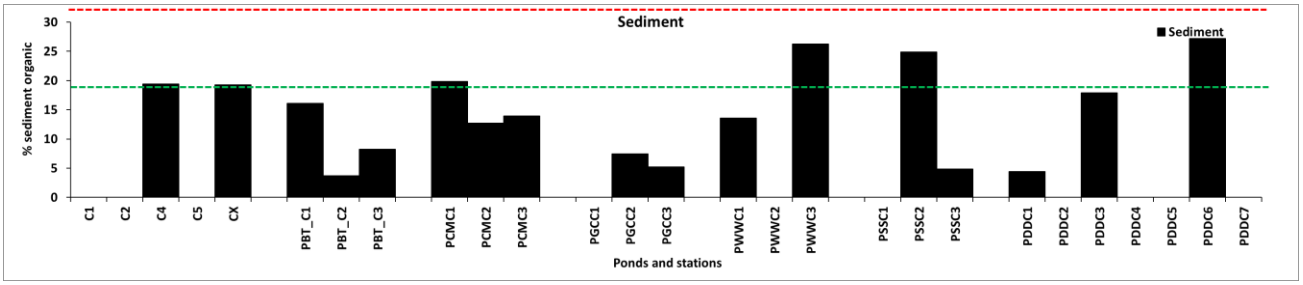

Figure 33. Organic content in the sediment. The red dotted line refers to the average organic content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

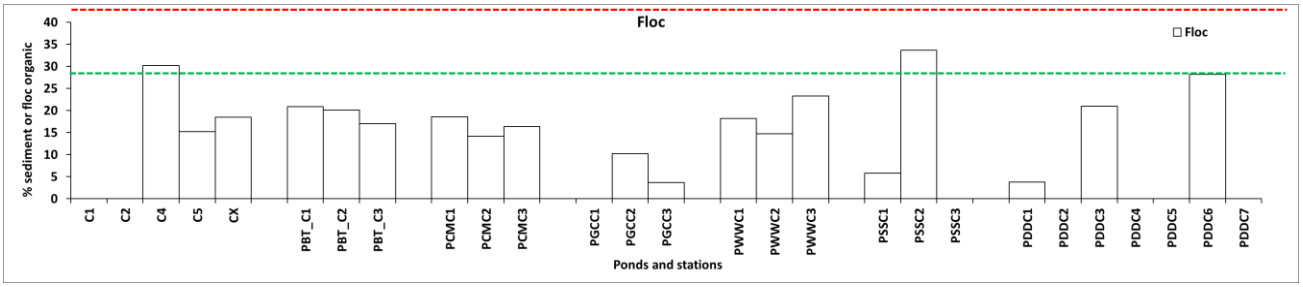

Figure 34. Organic content in the floc. The red dotted line refers to the average organic content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

F. Closing thoughts

A principal component analysis (PCA) was run in Primer-e 7 (www.primer-e.com) to assess how similar the ponds were from one another while considering all the parameters discussed in this study (cf. Appendix 4 for correlation matrix and Appendix 5 for the values of these parameters). All parameters were kept (even the redundant ones) so that the observed grouping in the hyperspace but reduced to a 3-axis volume encompassing for 79.3% of the variation are accurate. Another PCA was run when the redundant variables (those with a positive or negative correlation over 80%) were removed but ponds did not group (PCA not shown).

The two first axes of the PCA (ran on a normalized matrix after transformations were made to approach data normality) represented 63.5% of the hyperspace variability and with three axes, 79.3% of the variability was represented. The PCA shows that Bike Trail, Chateau-Sur-Mer and Sanctuary were most similar especially when the two first axes (1 and 2) were considered. Salinity is mainly representing axis 1 positively while temperature represents it negatively. Axis 2 represents positively the sediment and floc thickness and negatively the volume of the pond. Finally, axis 3 is mostly driven positively by the bottom hardness and negatively by the sediment and floc nutrients.

In this tri-dimensional scale, Heron Landing stands apart because of its high salinity while the Dunes is especially different because of its large size. Bike Trail, Chateau-Sur-Mer and Sanctuary are most similar while Beach Villa and especially Golf Course are distant from this group.

Overall, most of the ponds studied had nutrients issues whether these nutrients were found in the water column (all ponds but Beach Villa) or in the sediment or floc (all ponds besides Chateau-Sur-Mer). Beach Villa likely receives most of its nutrients via leaf litter because the pond is small and surrounded by trees, and has in consequence higher coarse organic particulates inputs (in the sense of the River Continuum concept, Vannote et al. 1980). Such inputs should be limited over time as these would eventually turn the system eutrophic. Most ponds had high levels of nutrients in the sediment and floc and since these two parameters reflect a much longer term than the water column analyses, there is evidence of cultural eutrophication especially from P as well as N. Efforts should be made to limit such nutrients loading. Some small ponds especially could benefit from local dredging done using the bottom hardness maps provided. For the larger ponds like The Dunes, intense aeration which would benefit aerobic digestion should be envisaged. The nutrients released from aeration should be captured by littoral planting which would benefit from clearer water. Flocculation of the particulates in the water would immediately improve water clarity and could be done in conjunction of aeration and planting.

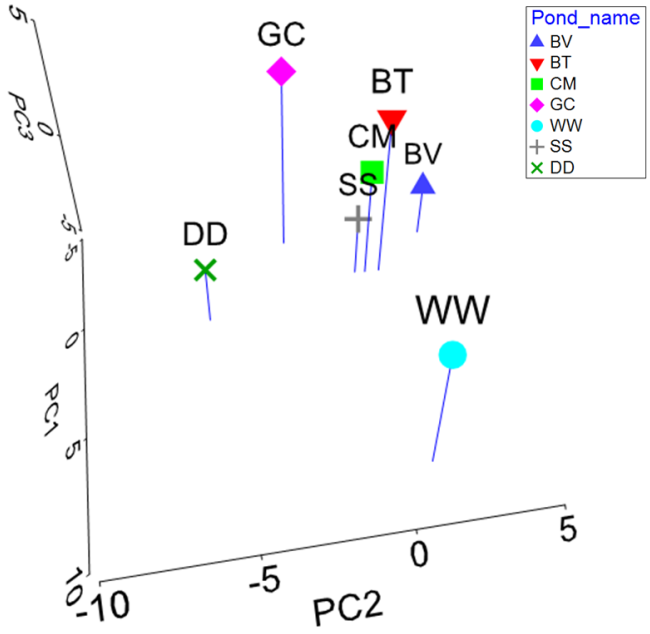

Figure 35. Pond grouping subsequent to running a PCA on all the parameters from this study (see Appendix 5 for these parameters). BV= Beach Villa, BT= Bike Trail, CM=Chateau-Sur-Mer, GC= Golf Course, WW=Heron Landing, SS= Sanctuary and DD= The Dunes.

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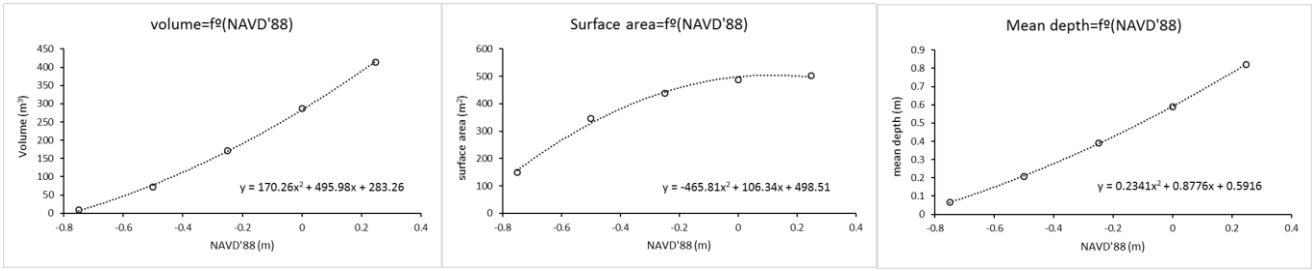
Appendix 1. Morphometric relations

These relationships relate the water level elevation expressed in NAVD'88 with the volume, the surface area of pond bed and the mean depth. The elevation of the top portion of the wooden post is provided as well as the elevation of the water level when the bathymetry was conducted.

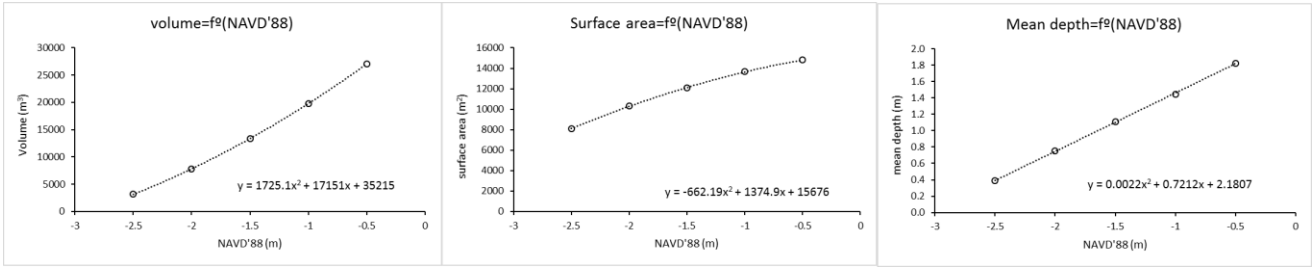
1. Beach Villa pond (2/15/17)



Appendix1_ 1. Morphometric relations for Beach Villa pond

Water level: 0.247m, top of post 1.307m

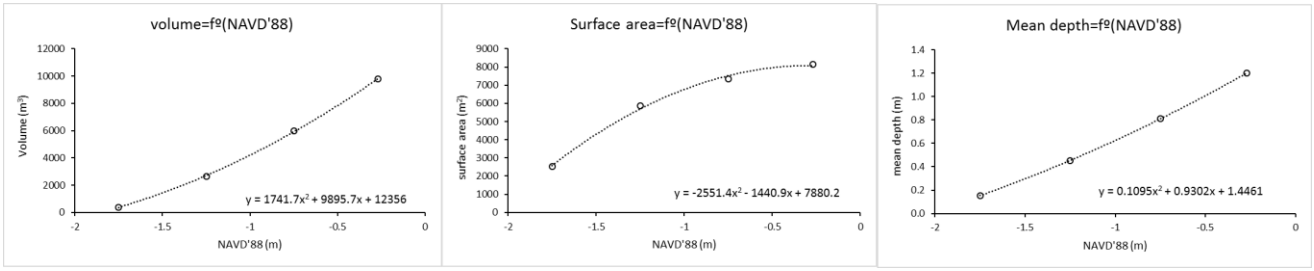
2. Bike Trail pond (2/17/17)



Appendix1_ 2. Morphometric relations for Bike Trail pond

Water level: -0.5m, top of post 0.450m

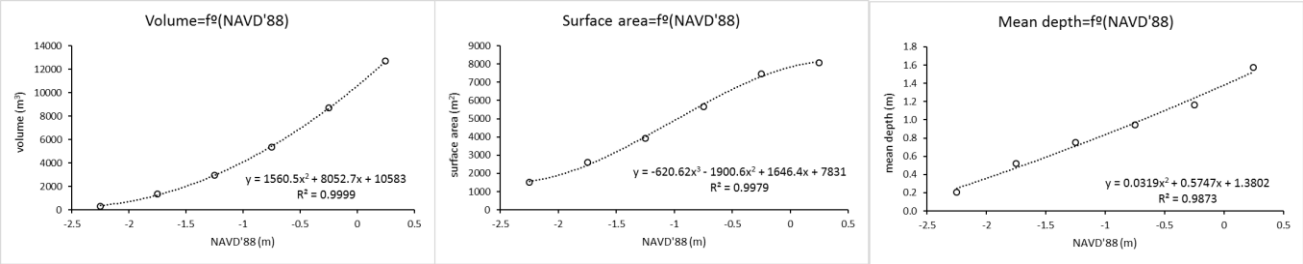
3. Chateau-Sur-Mer pond (2/15/17)



Appendix1_ 3. Morphometric relations for Chateau-Sur-Mer pond

Water level: -0.267m, , top of post 0.563m

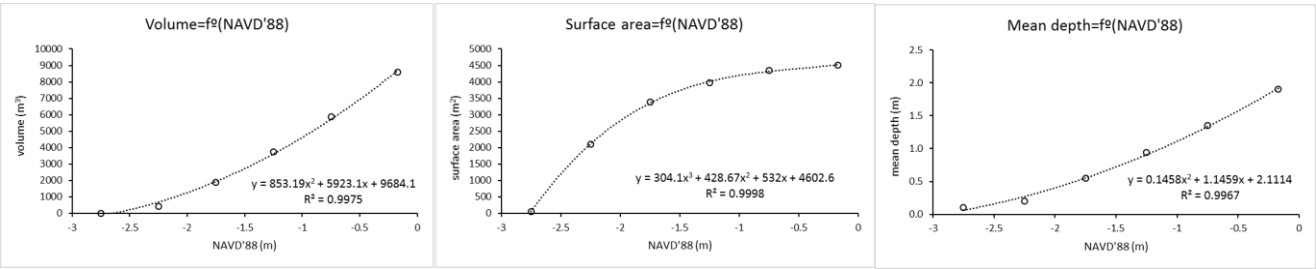
4. Golf Course pond (2/17/17)



Appendix1_ 4. Morphometric relations for Golf Course pond

Water level: 0.247m, top of post 1.442m

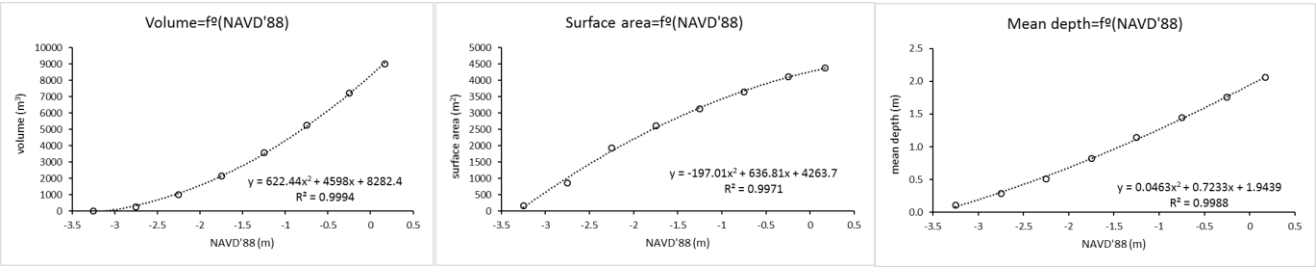
5. Heron Landing pond (3/22/17)



Appendix1_ 5. Morphometric relations for Heron Landing pond

Water level: -0.166m, top of post 0.234m

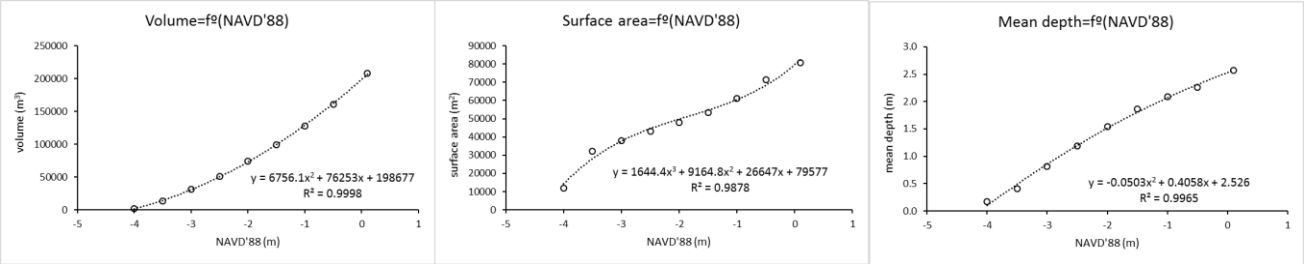
6. Sanctuary pond (3/6/17)



Appendix1_ 6. Morphometric relations for Sanctuary pond

Water level: 0.166m, top of post 0.686m

7. The Dunes pond (3/6/17)

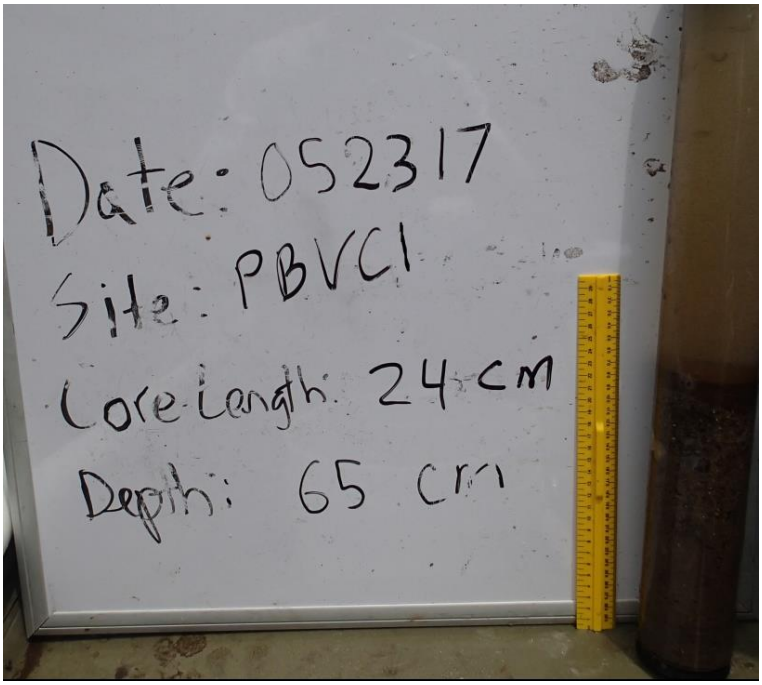


Appendix1_ 7. Morphometric relations for The Dunes pond

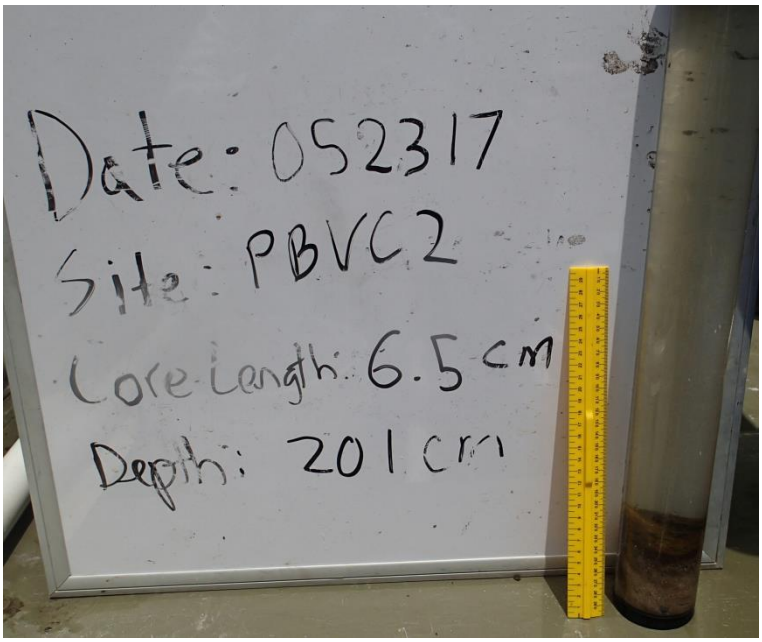
Water level: 0.103m, top of post 0.623m

Appendix 2. Pictures of cores.

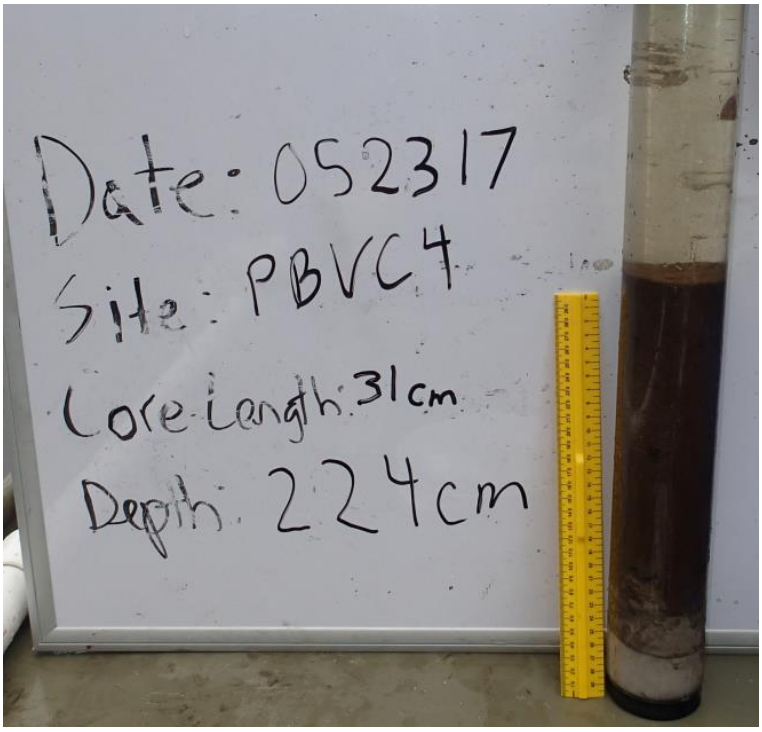
1. Beach Villa pond (2/15/17)



Appendix2_ 1. Core 1, Beach Villa pond.

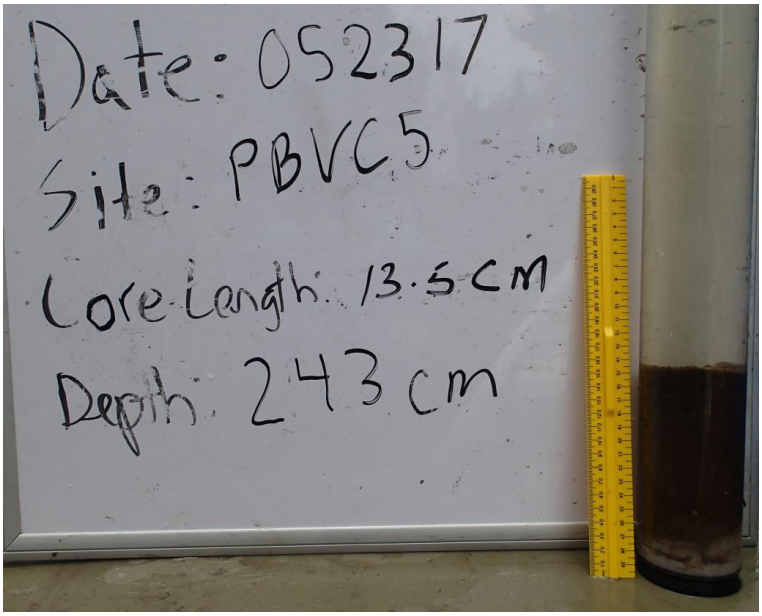


Appendix2_ 2. Core 2, Beach Villa pond.

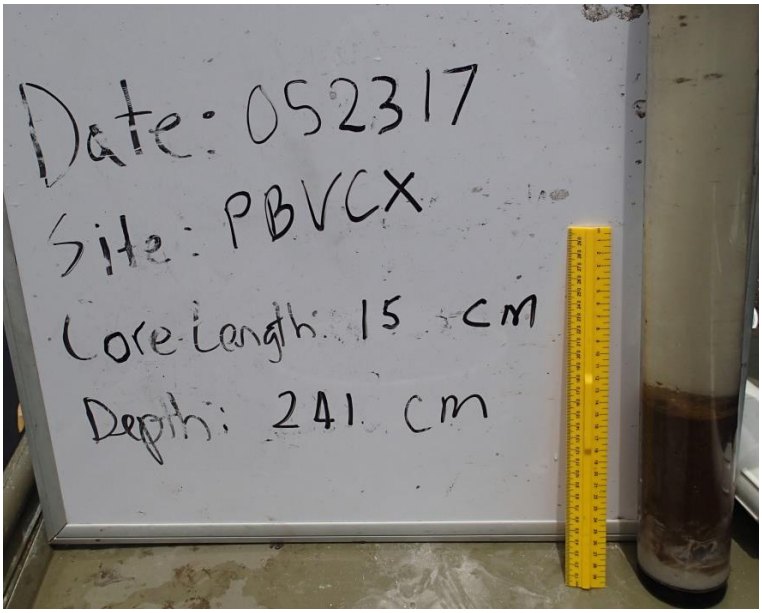


Appendix2_ 3. Core 4 in Beach Villa pond

Appendix2_ 4. Closeup of sedimentary material in core 4, Beach Villa pond.

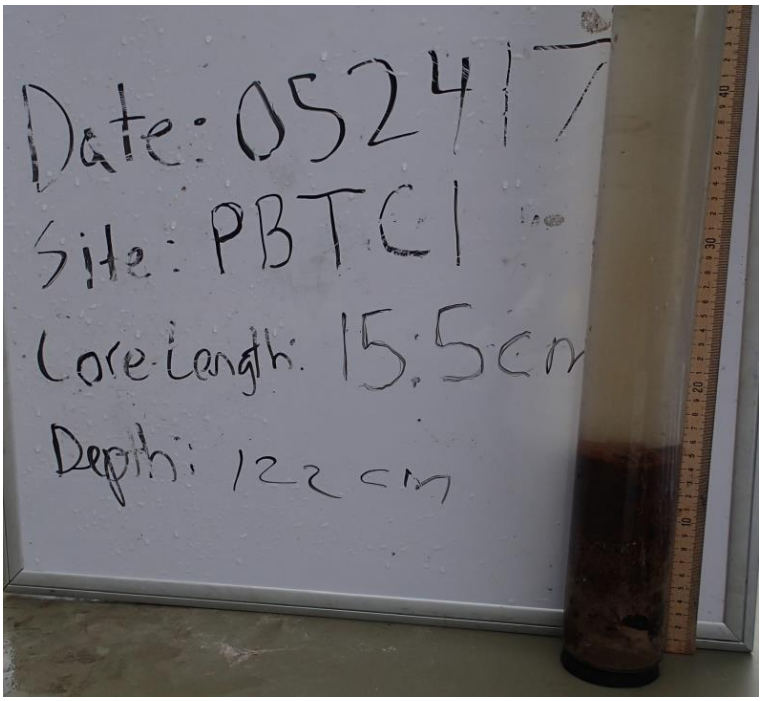


Appendix2_ 5. Core 5, Beach Villa pond.

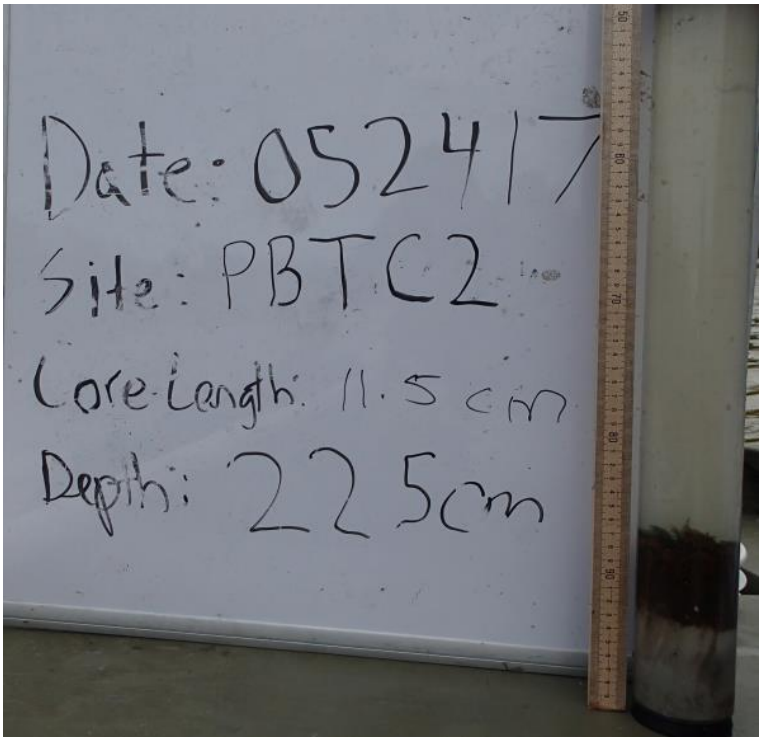


Appendix2_ 6. Core X, Beach Villa pond.

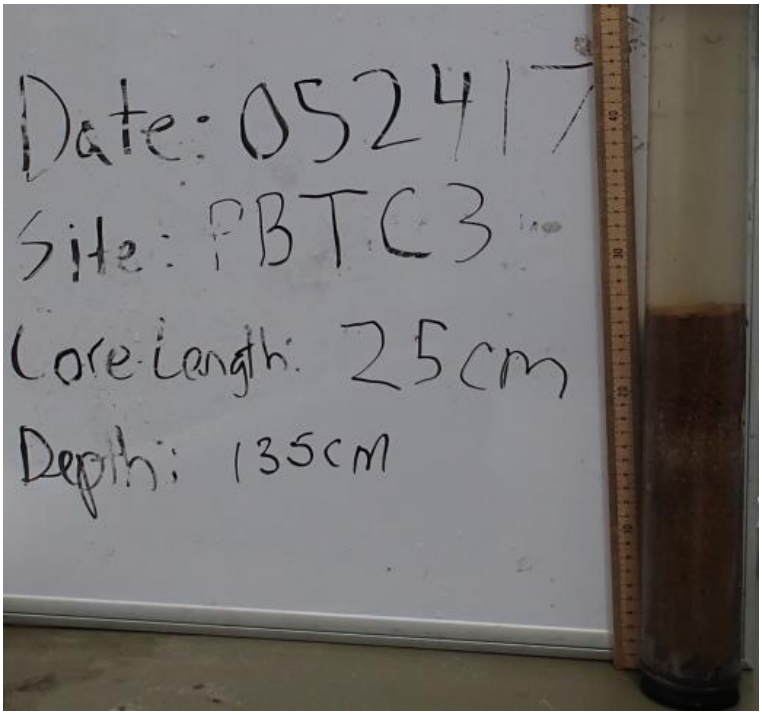
2. Bike Trail pond (2/17/17)



Appendix2_ 7. Core 1, Bike Trail pond.

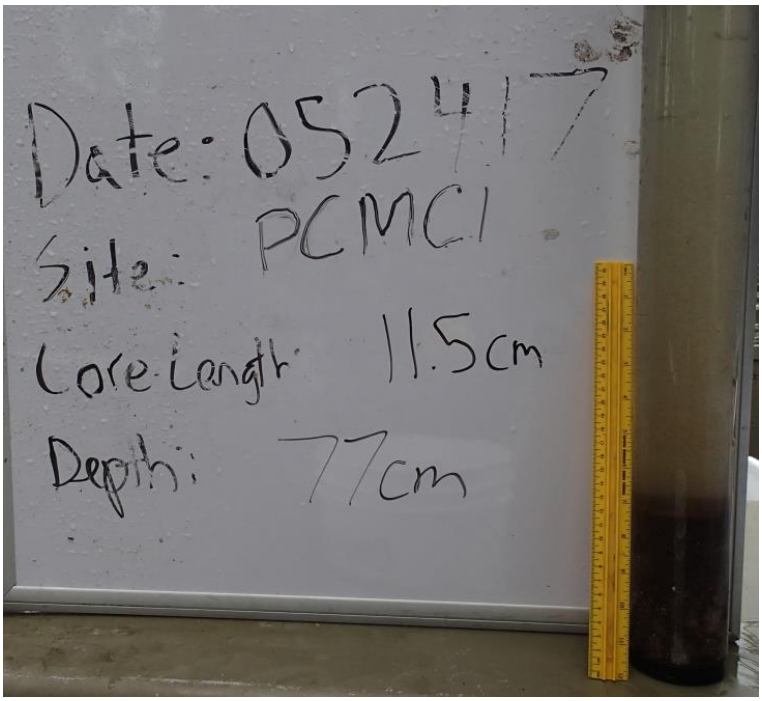


Appendix2_ 8. Core 2, Bike Trail pond.

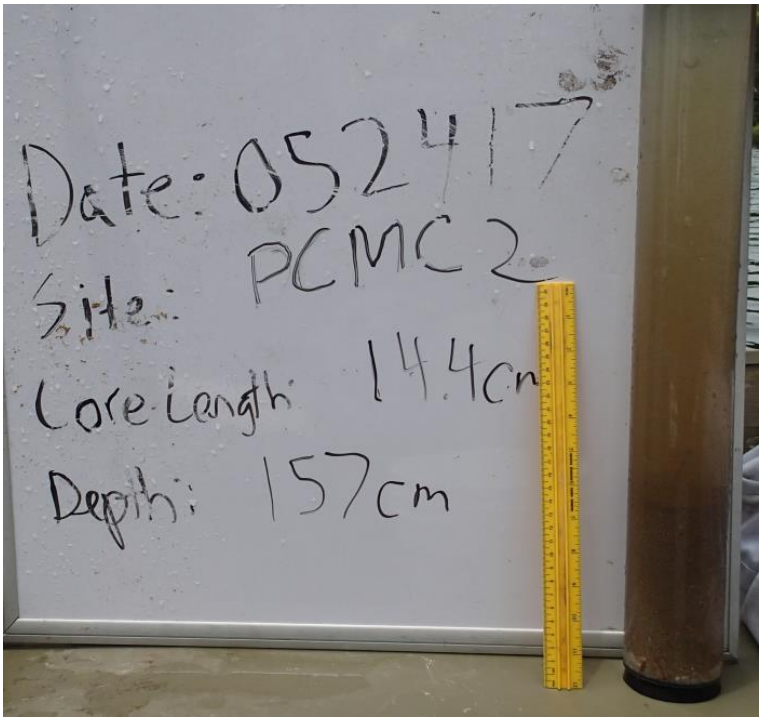


Appendix2_ 9. Core 3, Bike Trail pond.

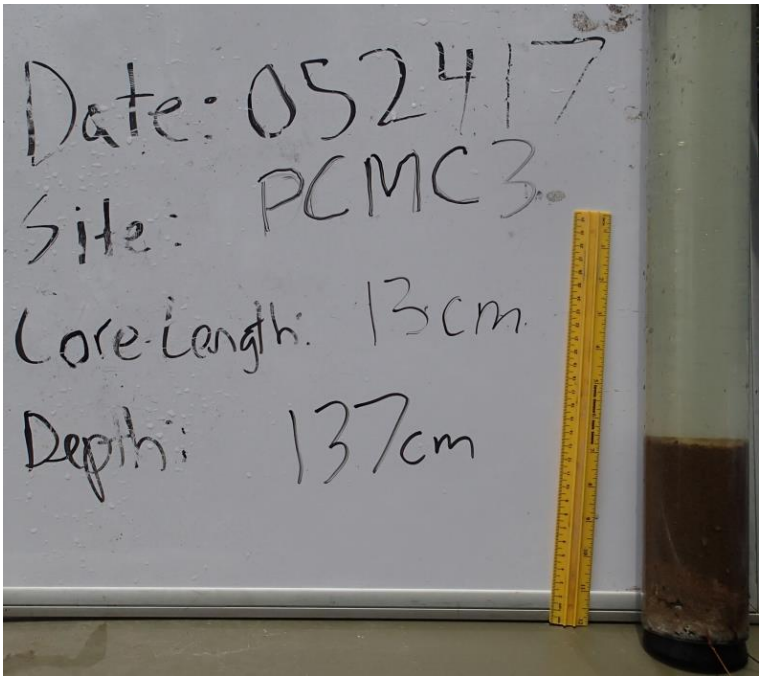
3. Chateau-Sur-Mer pond (2/15/17)



Appendix2_ 10. Core 1, Chateau-Sur-Mer pond.



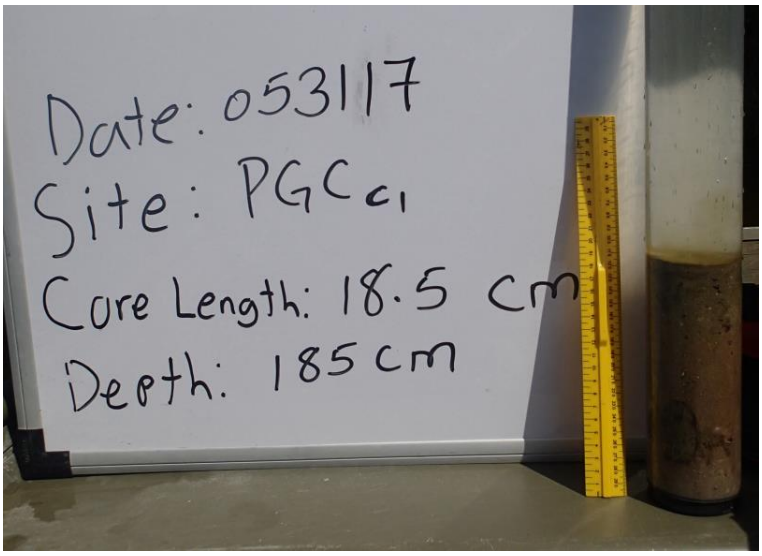
Appendix2_ 11. Core 2, Chateau-Sur-Mer pond.



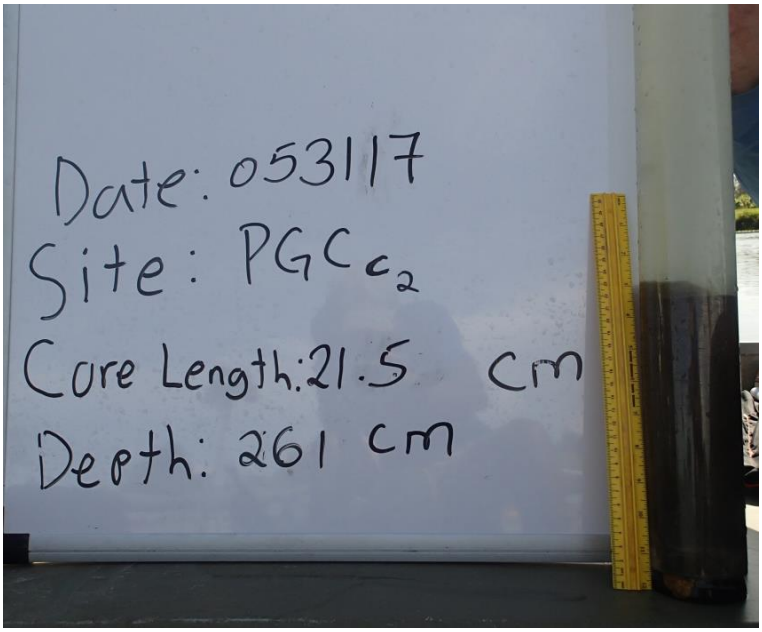
Appendix2_ 12. Core 3, Chateau-Sur-Mer pond.

Appendix2_ 13. Closeup of sedimentary material in core 3, Chateau-Sur-Mer pond.

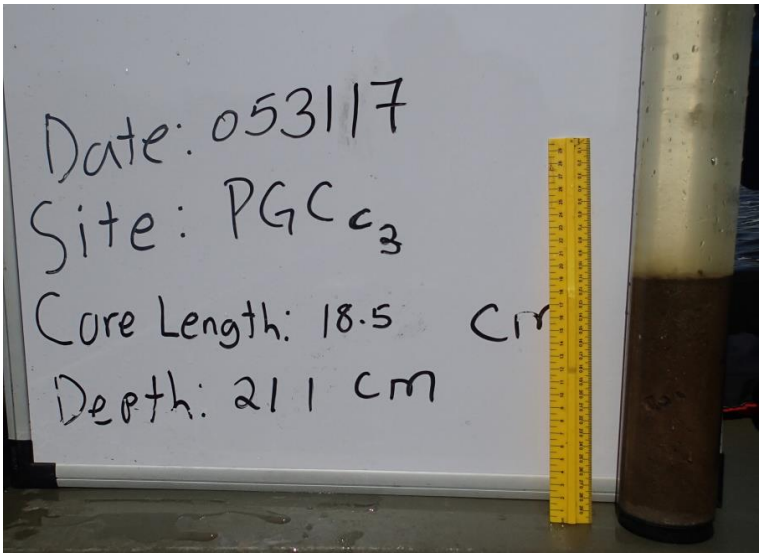
4. Golf Course pond (2/17/17)



Appendix2_ 14. Core 1, Golf Course pond.

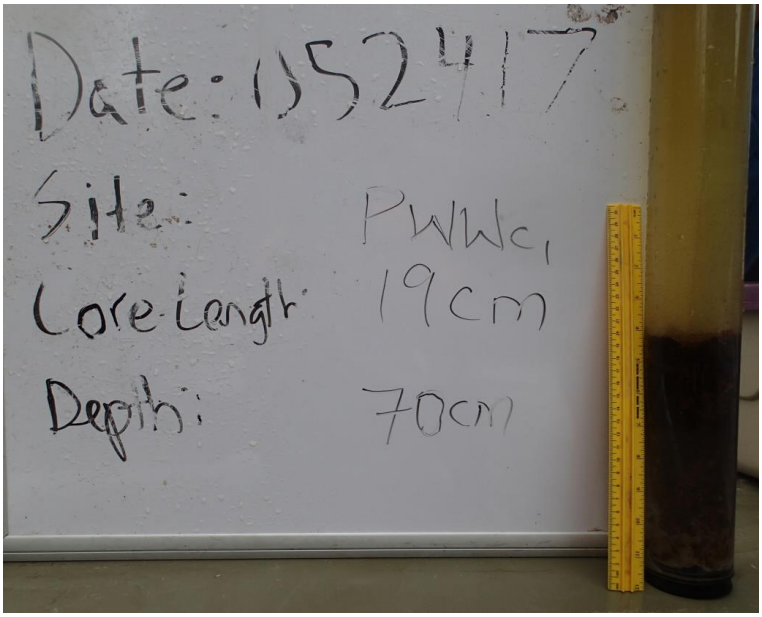


Appendix2_ 15. Core 2, Golf Course pond.

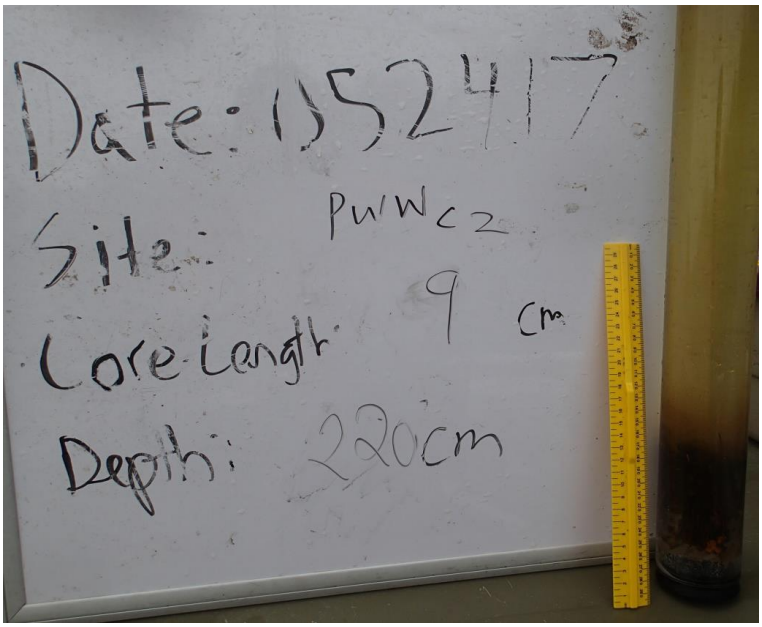


Appendix2_ 16. Core 3, Golf Course pond.

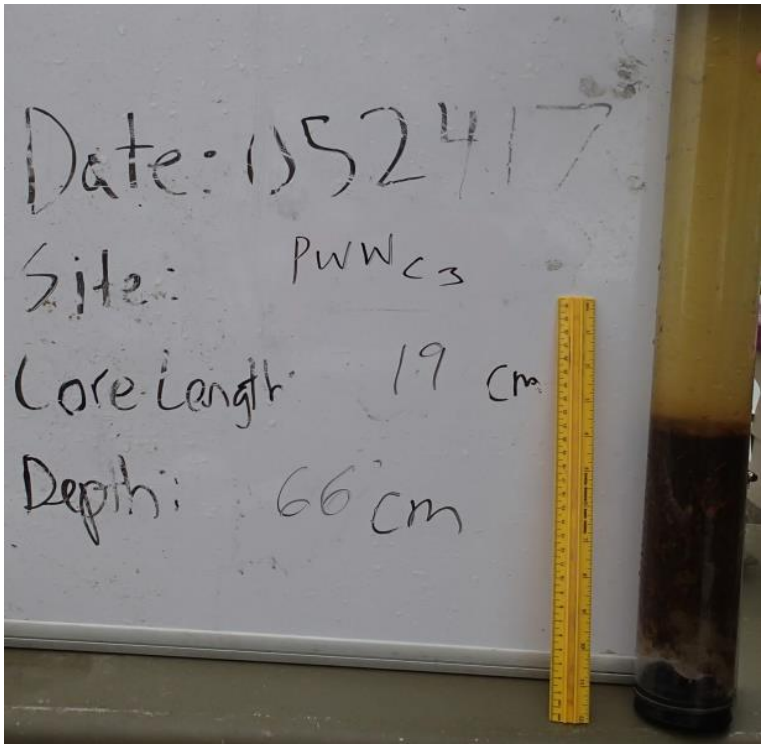
5. Heron Landing pond (3/22/17)



Appendix2_ 17. Core 1, Heron Landing Pond

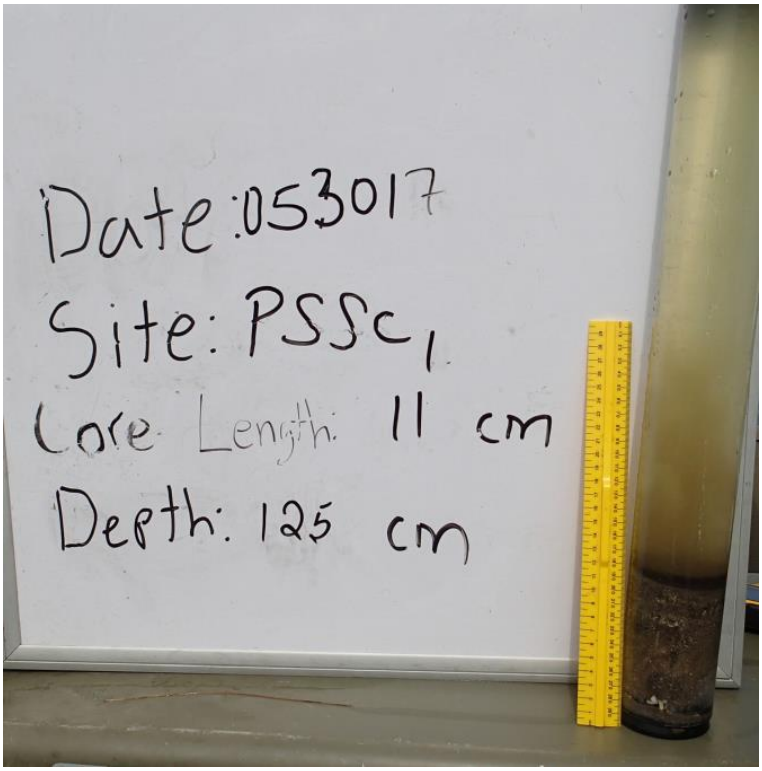


Appendix2_ 18. Core 2, Heron Landing Pond

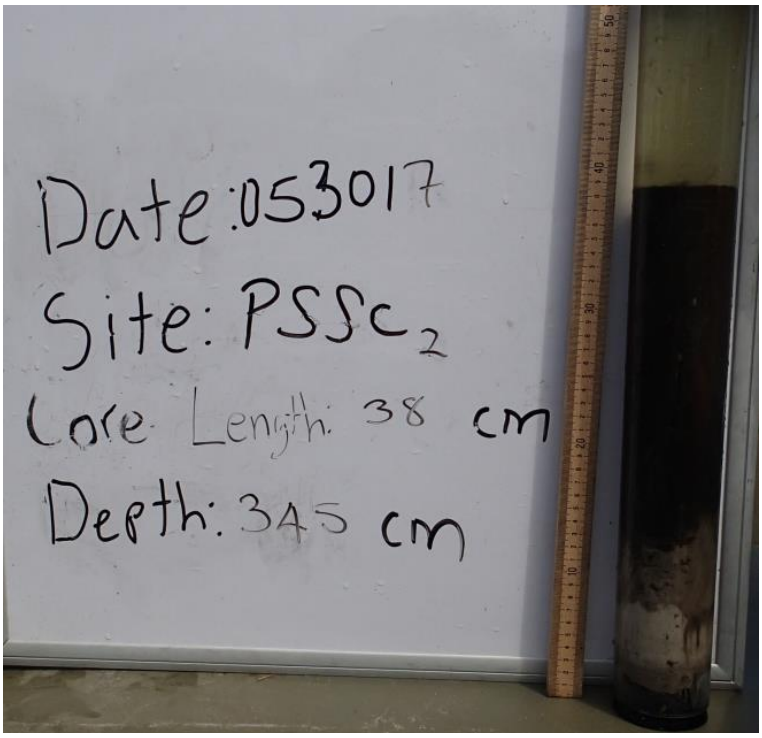


Appendix2_ 19. Core 3, Heron Landing Pond

6. Sanctuary pond (3/6/17)

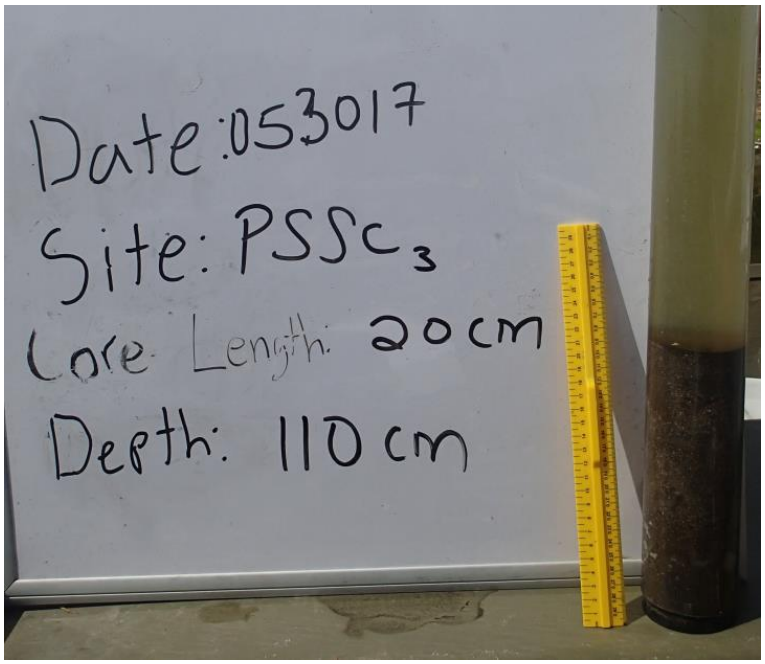


Appendix2_ 20. Core 1, Sanctuary Pond



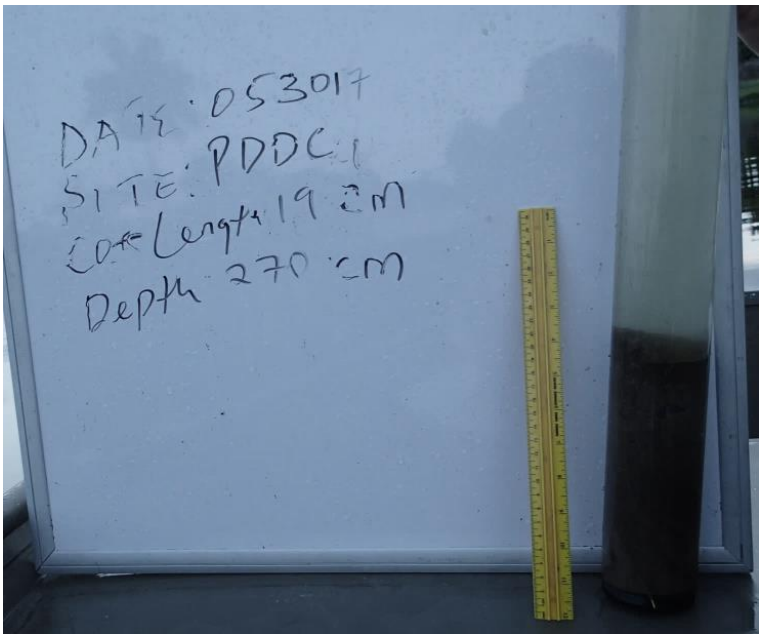
Appendix2_ 21. Core 2, Sanctuary Pond

Appendix2_ 22. Closeup of sedimentary material in core 2, Sanctuary Pond

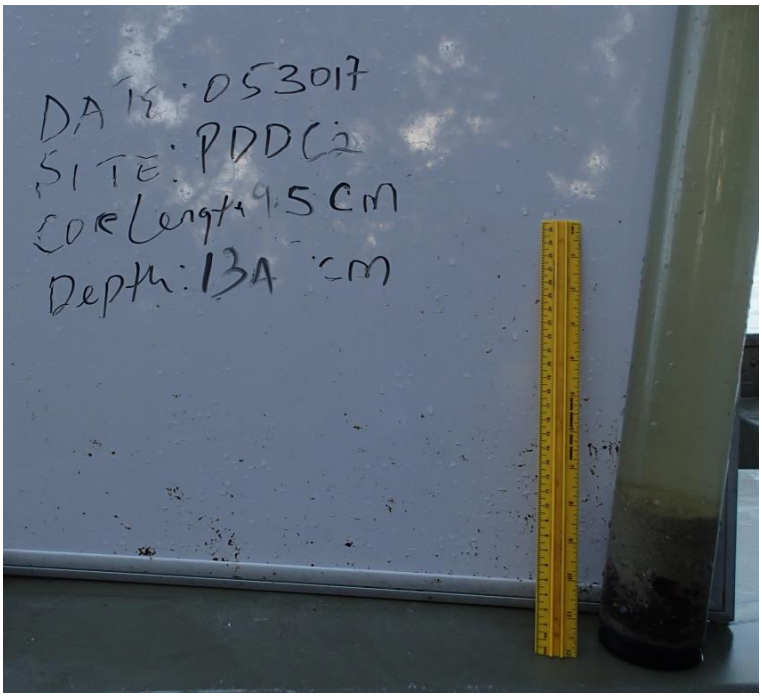


Appendix2_ 23. Core 3, Sanctuary Pond

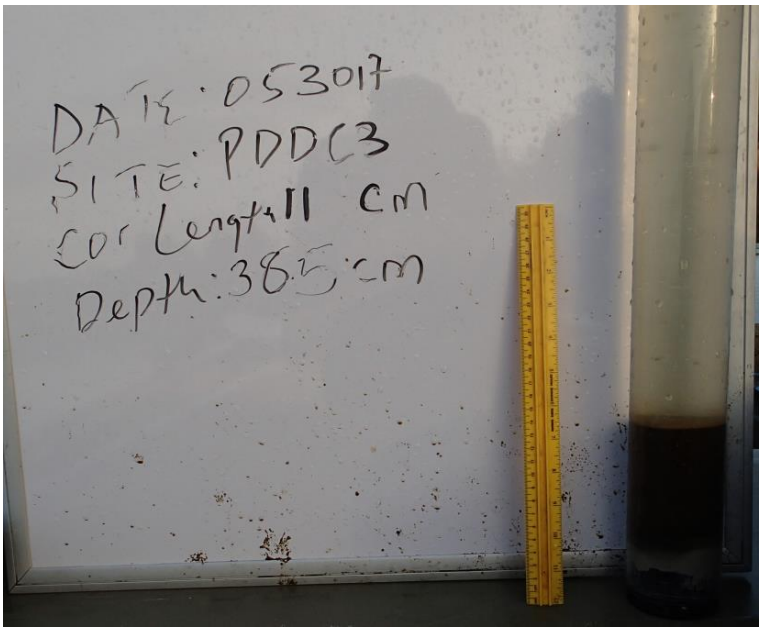
7. The Dunes pond (3/6/17)



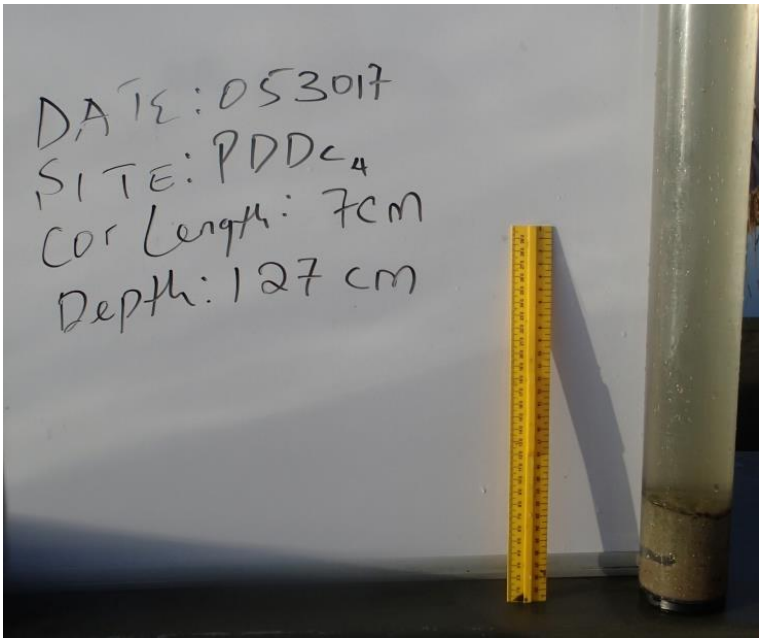
Appendix2_ 24. Core 1, The Dunes Pond



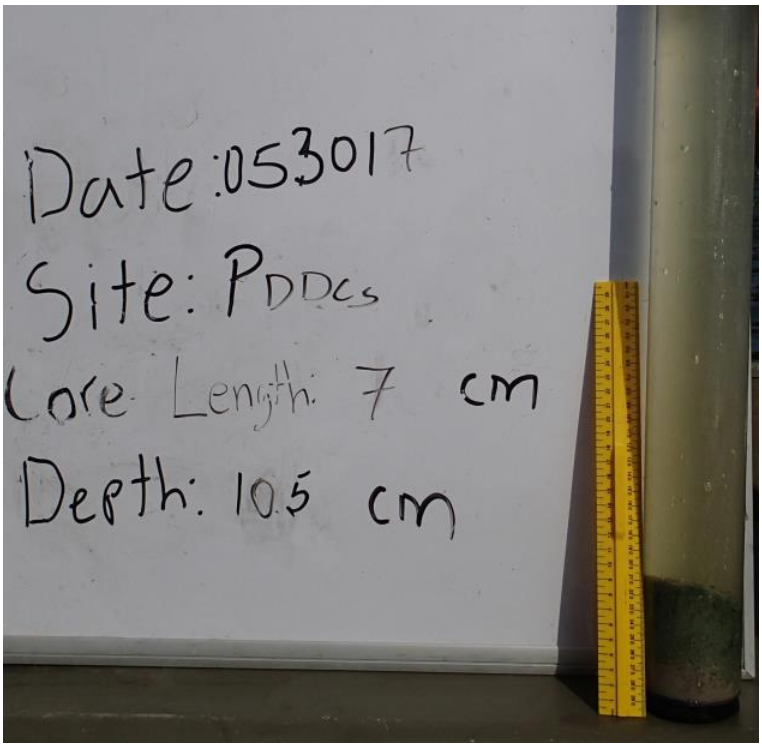
Appendix2_ 25. Core 2, The Dunes Pond



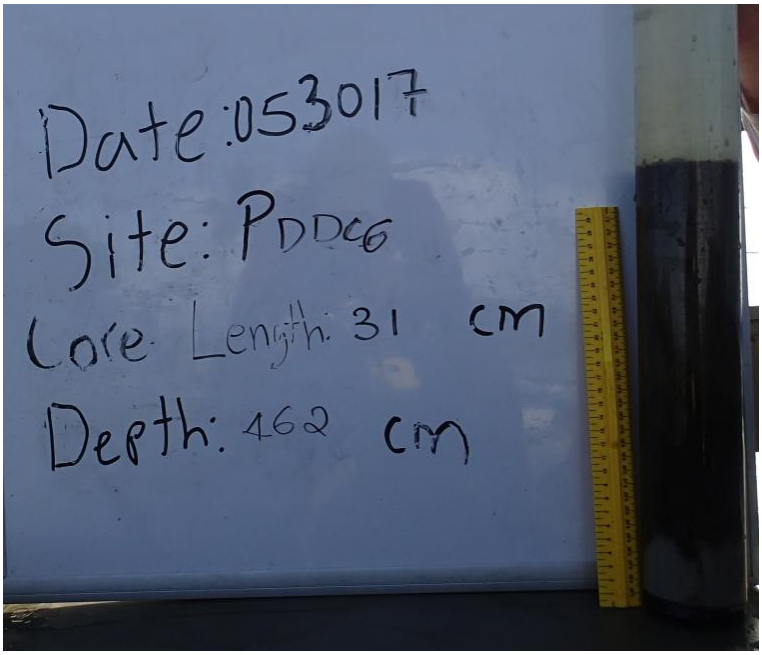
Appendix2_ 26. Core 3, The Dunes Pond



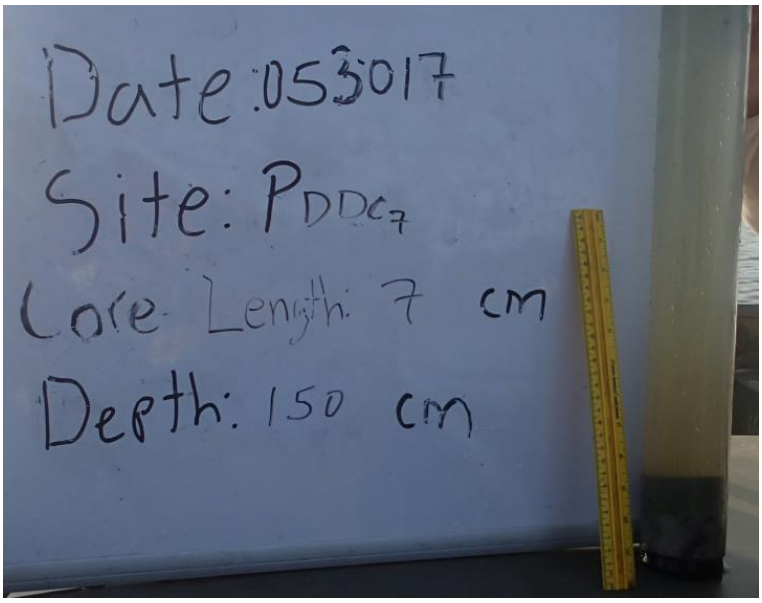
Appendix2_ 27. Core 4, The Dunes Pond



Appendix2_ 28. Core 5, The Dunes Pond

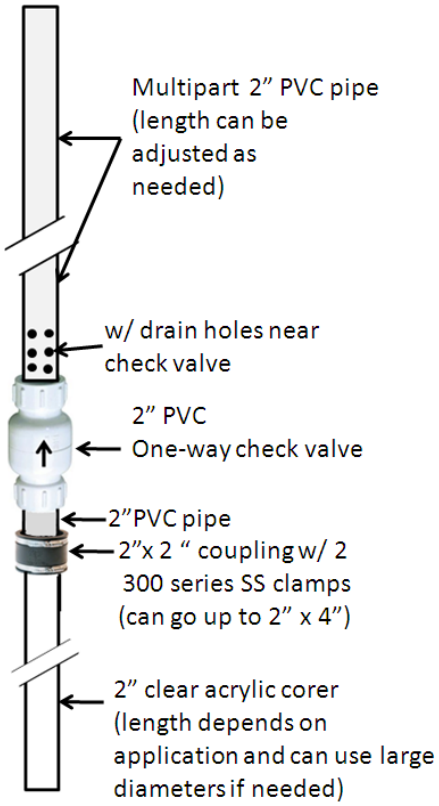


Appendix2_ 29. Core 6, The Dunes Pond



Appendix2_ 30. Core 7, The Dunes Pond

Appendix 3. Corer design



The piston consists of a 2" one-way check valve (Mfg# 101-108HC). This piston features spring-loaded poppet and stainless-steel spring with O-ring seal.

The arrow on the check valve shows that water can move only in one direction (upward in our case). The length of the clear acrylic core used depends on the intended depth of the core. Retrieving 2-m cores with this system is not a problem.

Depending on the water depth, the length of pipe above the check valve can be adjusted.

Once the corer is assembled, it is lowered until the sediment is reached, then pushed down to the desired depth, then pulled up to the surface. The water inside the pipe above the check valve is drained through the drain holes.

With the clear acrylic (or CAB) corer still in the water, a rubber is inserted at the open end, and then the corer is lifted outside the water.

The acrylic core is separated from the coupling using an electric screwdriver.

Appendix 4. Similarity matrix showing the correlations between the different parameters measured

	NAVD	Vol	SA	Mean Depth	bed_hard	Temp	cond	sal	DO	pH	ORP	Turb	Zeu	SD	Zmax	AT	Chla	NOx	NH4+	TN	TP	SRP	TN:TP	TSI	Core_Z	Floc_l	Sed_l	Floc_sed_l	Sed_TP	Sed_N	Sed_C	Floc_TP	Floc_N	Floc_C	Sed_org	Floc_org
Vol	12%																																			
SA	8%	100%																																		
Mean Depth	-3%	70%	70%																																	
bed_hard	3%	12%	13%	-10%																																
Temp	59%	18%	18%	63%	-10%																															
cond	-39%	-8%	-9%	-10%	35%	-93%																														
sal	-37%	-9%	-10%	25%	35%	-93%	100%																													
DO	53%	18%	19%	11%	14%	95%	-86%	-86%																												
pH	9%	13%	16%	18%	13%	77%	-79%	-80%	88%																											
ORP	37%	-5%	-5%	-42%	-54%	74%	-91%	-91%	66%	59%																										
Turb	-27%	6%	5%	40%	48%	-83%	97%	97%	-75%	-73%	-96%																									
Zeu	22%	18%	20%	-14%	-32%	86%	-97%	-98%	83%	85%	89%	-96%																								
SD	65%	-44%	-47%	-49%	-37%	63%	-65%	-64%	56%	36%	69%	-67%	49%																							
Zmax	40%	84%	83%	69%	39%	14%	4%	4%	20%	-1%	-9%	18%	1%	-35%																						
AT	-31%	-3%	-3%	35%	45%	-71%	87%	87%	-65%	-58%	-98%	92%	-88%	-54%	-3%																					
Chla	-10%	56%	56%	93%	66%	-38%	57%	56%	-10%	-14%	-70%	70%	-48%	-61%	59%	65%																				
NOx	-58%	-29%	-29%	2%	14%	-94%	93%	93%	-92%	-75%	-85%	86%	-91%	-57%	-30%	89%	35%																			
NH4+	12%	94%	93%	72%	20%	-7%	22%	22%	-8%	-17%	-33%	36%	-15%	-55%	85%	26%	70%	-2%																		
TN	-14%	78%	78%	89%	62%	-25%	41%	39%	-10%	-6%	-53%	53%	-27%	-76%	80%	40%	88%	14%	84%																	
TP	-16%	-18%	-20%	21%	37%	-82%	95%	96%	-76%	-78%	-89%	95%	-99%	-42%	-1%	91%	54%	88%	15%	28%																
SRP	-21%	-17%	-19%	18%	34%	-85%	97%	98%	-81%	-83%	-90%	96%	-100%	-48%	0%	90%	52%	90%	16%	29%	99%															
TN:TP	-64%	1%	4%	-4%	-22%	-17%	-13%	-15%	-9%	23%	32%	-28%	32%	-31%	-10%	-43%	-20%	-5%	-18%	3%	-39%	-34%														
TSI	-18%	53%	53%	76%	70%	-42%	66%	65%	-31%	-25%	-84%	79%	-59%	-78%	56%	75%	89%	46%	71%	89%	60%	60%	-27%													
Core_Z	71%	54%	52%	32%	10%	68%	-59%	-59%	72%	45%	57%	-48%	58%	32%	72%	-63%	5%	-84%	37%	24%	-55%	-57%	-4%	-10%												
Floc_l	-30%	-50%	-53%	-14%	-15%	-81%	70%	71%	-78%	-67%	-45%	57%	-72%	-8%	-42%	52%	12%	78%	-28%	-20%	73%	72%	0%	-1%	-62%											
Sed_l	3%	-34%	-34%	-47%	-34%	17%	-41%	-41%	18%	19%	70%	-56%	44%	33%	-15%	-77%	-63%	-38%	-51%	-44%	-50%	-47%	66%	-72%	29%	-1%										
Floc_sed_l	-13%	-55%	-56%	-48%	-37%	-26%	0%	0%	-24%	-17%	39%	-21%	3%	25%	-34%	-41%	-49%	6%	-59%	-49%	-7%	-4%	58%	-63%	-6%	49%	87%									
Sed_TP	40%	58%	54%	56%	2%	-4%	21%	22%	-7%	-22%	-30%	34%	-25%	-3%	50%	38%	61%	5%	71%	43%	33%	29%	-58%	44%	25%	11%	-65%	-51%								
Sed_N	26%	30%	27%	-8%	12%	-13%	-13%	-9%	-19%	12%	-10%	6%	28%	0%	-15%	29%	-5%	-6%	34%	-17%	-3%	-5%	-40%	-15%	3%	10%	-37%	-27%	71%							
Sed_C	5%	16%	14%	-20%	-61%	-15%	14%	15%	-39%	-45%	-16%	15%	-22%	6%	-15%	29%	-5%	26%	29%	-18%	21%	22%	-43%	-1%	-30%	25%	-50%	-31%	59%	92%						
Floc_TP	26%	-19%	-22%	29%	12%	-18%	27%	27%	-8%	-11%	-26%	29%	-34%	34%	-12%	41%	39%	24%	-5%	-6%	47%	39%	-48%	7%	-9%	57%	-36%	-3%	60%	35%	23%					
Floc_N	-5%	-18%	-21%	1%	-47%	-19%	-1%	-14%	-1%	-28%	-3%	13%	-24%	23%	-32%	15%	6%	34%	-16%	-27%	30%	27%	6%	-42%	-6%	79%	21%	49%	29%	43%	25%	66%				
Floc_C	-11%	-25%	-28%	-2%	-44%	-42%	25%	25%	-40%	-28%	-3%	13%	-24%	23%	-32%	15%	6%	34%	-16%	-27%	30%	27%	6%	-27%	-26%	79%	6%	45%	36%	47%	39%	72%	95%			
Sed_org	10%	10%	6%	-8%	-48%	-38%	39%	40%	-55%	-63%	-32%	39%	-47%	2%	-7%	45%	13%	44%	31%	-9%	48%	48%	-47%	10%	-31%	51%	-48%	-17%	69%	85%	93%	46%	40%	58%		
Floc_org	-26%	3%	1%	-2%	-64%	-40%	19%	19%	-46%	-30%	-1%	9%	-15%	4%	-24%	11%	4%	32%	8%	-16%	17%	16%	16%	-21%	-29%	62%	-5%	27%	43%	68%	63%	47%	85%	90%	71%	

Appendix 5. Parameters fed to the PCA.

	BV	BT	CM	GC	WW	SS	DD
NAVD'88 (m)	0.25	-0.50	-0.27	0.25	-0.17	0.17	0.10
Volume (m3)	414	27055	9791	12679	8595	9007	207700
Planar Surface area (m2)	522	15007	8219	8218	4774	4540	81404
Mean Depth (m)	0.80	1.80	1.20	1.60	1.90	2.10	2.60
Bottom hardness (a.u.)	0.30	0.39	0.37	0.47	0.44	0.42	0.41
Temperature (ºC)	30.70	28.89	30.92	31.81	26.69	31.25	31.01
Specific conductance (µs/cm)	838.46	8814.56	2714.40	1974.74	32705.18	2466.82	5690.12
Salinity (PSU)	0.42	4.99	1.42	1.02	20.77	1.29	3.13
DO (mg/l)	4.31	3.83	5.05	7.61	0.08	7.30	5.93
pH (a.u.)	7.62	8.19	8.19	8.26	7.04	8.48	8.09
ORP (mV)	394.14	218.86	137.06	224.85	-222.29	206.59	136.66
Turbidity (NTU)	2.31	24.00	18.60	20.30	111.00	20.20	38.20
Euphotic zone depth (m)	2.77	2.30	1.92	2.11	N.D.	1.59	1.37
Secchi disk depth (cm)	121	45	75	87	35	121	44
Water depth at station (cm)	233	235	152	316	265	233	441
Total Alkalinity (mg CaCO3eq/l)	129.50	194.00	297.00	192.00	507.00	269.00	258.00
Chl*a* (µg/l)	6.04	36.91	22.28	31.57	63.18	49.56	66.10
NOx (mg/l)	0.02	0.04	0.04	0.02	0.08	0.03	0.02
NH4+ (mg/l)	0.03	0.06	0.04	0.06	0.53	0.05	1.58
TN (mg/l)	0.80	2.57	1.58	2.42	3.03	1.96	4.16
TP (mg/l)	0.03	0.02	0.08	0.12	3.82	0.65	0.17
SRP (mg/l)	0.02	0.07	0.04	0.05	4.12	0.28	0.13
TN/TP	29.57	125.39	20.33	20.71	0.79	3.02	24.34
TSI (a.u.)	48.67	63.63	65.42	68.43	84.00	63.64	81.91
Depth at coring station (cm)	194.80	160.67	123.67	219.00	118.67	193.33	233.29
Floc thickness (cm)	3.90	3.83	2.67	2.00	5.33	3.83	2.00
Sed thickness (cm)	8.70	9.00	4.50	7.67	4.17	5.50	4.50
Floc+ sediment thickness (cm)	12.60	12.83	7.17	9.67	9.50	9.33	6.50
Sediment TP (%)	0.41	0.06	0.25	0.11	0.56	0.62	0.81
Sediment TN (%)	1.20	0.45	0.97	0.26	0.77	0.95	1.11
Sediment TC (%)	18.91	8.89	18.50	6.27	16.68	13.44	16.84
Floc TP (%)	0.39	0.16	0.17	0.10	0.69	1.10	0.29
FlocTN (%)	1.94	1.81	0.89	0.35	1.33	2.30	1.12
Floc TC (%)	26.69	23.49	15.07	7.01	24.68	29.21	16.26
Sediment organic content (%)	19.34	9.35	15.50	6.33	19.92	14.89	16.52
Floc organic content (%)	21.28	19.33	16.36	6.95	18.75	19.71	17.65

Table 4. Summary table of all the parameter studied and ran into the PCA. Some are averages. N.D. denotes as non-determined. BV= Beach Villa, BT= Bike Trail, CM=Chateau-Sur-Mer, GC= Golf Course, WW=Heron Landing, SS=Sanctuary, DD=The Dunes.

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2023 Ranking of Concern

2

out of 23

Water Quality Grade 2023

F

View All Rankings

Heron's Landing

26.47001, -82.15974

Share on Facebook | Share on Twitter

Report Algae Blooms/Fish Kills

Have you implemented some best management practices here?

Let us know!

Data Summary

Nutrients	2018	2020	2022	2023
IN	0.028	0.409	0.112	0.86
TN	3.42	2.51	11.1	2.88
OP	2.97	1.845	0.622	0.49
TP	3.02	1.89	0.75	0.48
Chl-*a*	14.5	91	36.35	199.5
TSI	99.6	98.2	93.4	88
Salinity	14.5	18.5	9.55	26.1
DO	2.8	2.4	3.35	3.4

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concerned) to 84 (least concerned) .

Recommendations

Alerts 0 new

Activity Tracker

Aeration

Aeration prevents stratification, the separation of the water column into distinct layers, of dissolved oxygen. (continue reading)

Floating Treatment Wetlands (FTWs)

A FTW is essentially a floating mat upon which plants grown hydroponically uptake excess nutrients via there root system. (continue reading)

Lake-Friendly Landscaping/Gardening

Properly planned landscapes and gardens can greatly reduce impacts to water quality (continue reading)

Mechanical Removal of Algae and Aquatic Pest Plants

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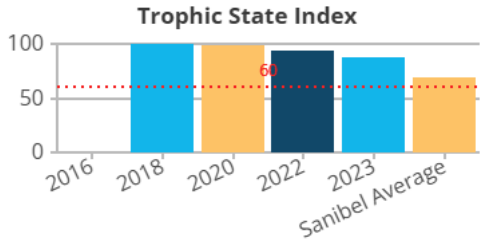
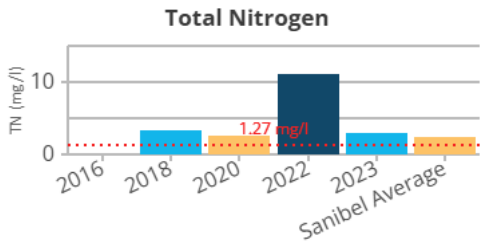
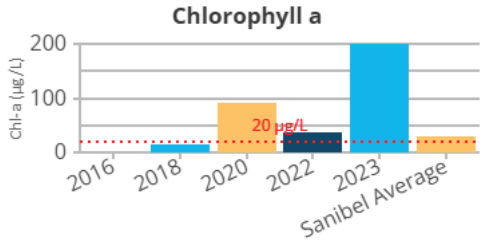
Runoff Control

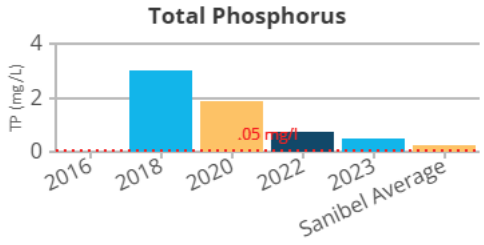
Homeowners should implement features that have the ability to deflect or slow roof and pavement runoff. (continue reading)

• • • • • = State Criteria: measurements above this line suggest impairment to the waterbody.









Historical Data

Rankings

2023 Ranking: 2

2016 Ranking: NR

Water Quality Grade

2023 Grade: F

2022 Grade: F

2020 Grade: F

2018 Grade: F

2016 Grade: NR

Most Impaired - Top 5

1. Sanibel Island Golf Course: Reclaimed Water Pond
2. Pond Apple Park: Shipley Trail
3. Sanibel Bayous: Buck Key Road
4. Pond Apple Park: Reuse Pond
5. Heron's Landing

Least Impaired - Top 5

84. Sanibel Lake Estates
83. Beach Road Villas
82. Twin Ponds (or Ranchoe Way)
81. Periwinkle Place
80. Poinciana Circle

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Your Email Address

Please select your community

Sign Up

Report Algae Blooms or Fish Kills

INTRO
ABOUT
SOLUTIONS
GET INVOLVED
NEWS
ACCESSIBILITY
CONTACT

JULY 1, 2020

Sanibel Fertilizer Blackout Period July 1-September 30

JUNE 30, 2020

Lawns are the No. 1 irrigated 'crop' in America.

Join us on social media for news and updates!

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C O A S T A L C R E E K

5301 Sanibel Captiva Road, Sanibel, Lee County FL

- Former Sanibel Bayous WWTP decommissioned 2008
- Land Use change from industrial/commercial to residential triggering FDEP screening
- ONLY Tested for 8 RCRA metals and nitrate/nitrite
- KNOWN nutrient cache in Infiltration Basin Area (very high P), anoxic Heron's Landing lake --- formal study/monitoring (2016 to current)

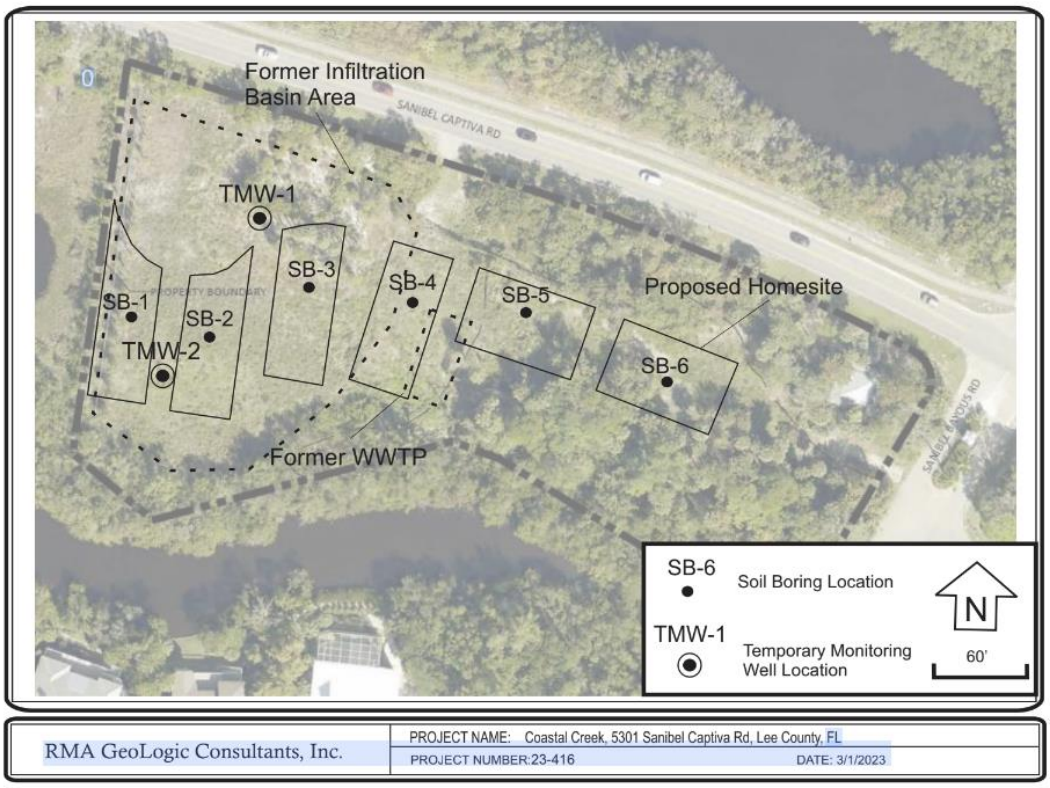
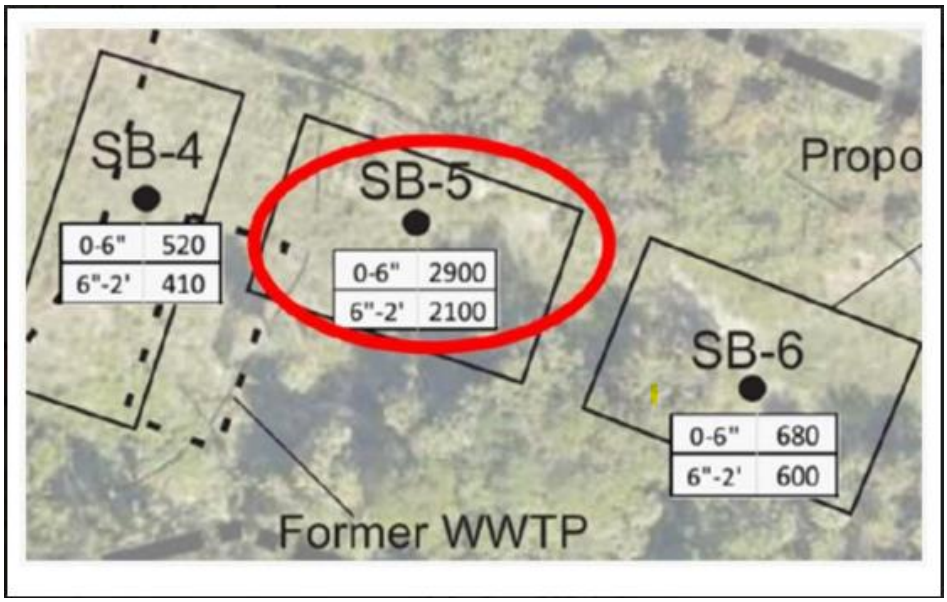


FIGURE 1 - Site Map Showing Former WWTP & Infiltration Basin, Future Homesites, and Soil and Groundwater Sample Locations



Contact marshaellis22@gmail.com (239)822-7826

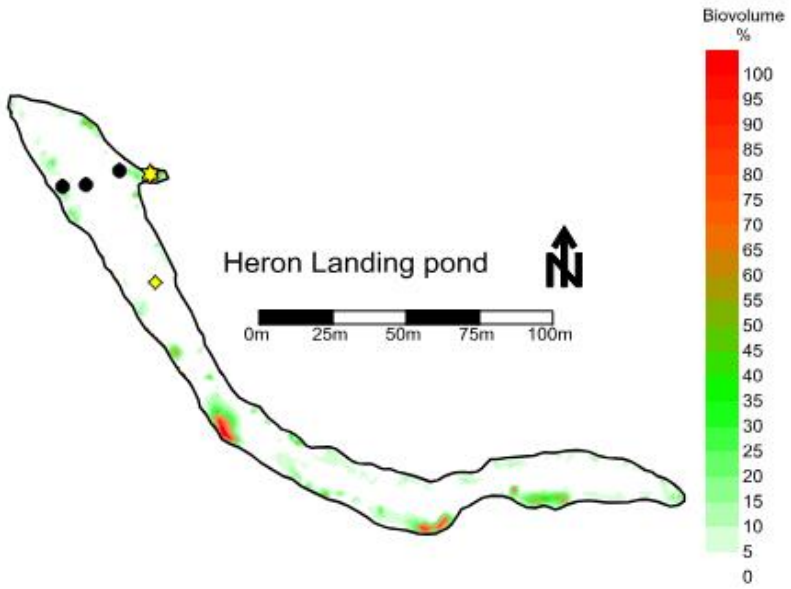


Figure 14. SAV cover in Heron Landing pond

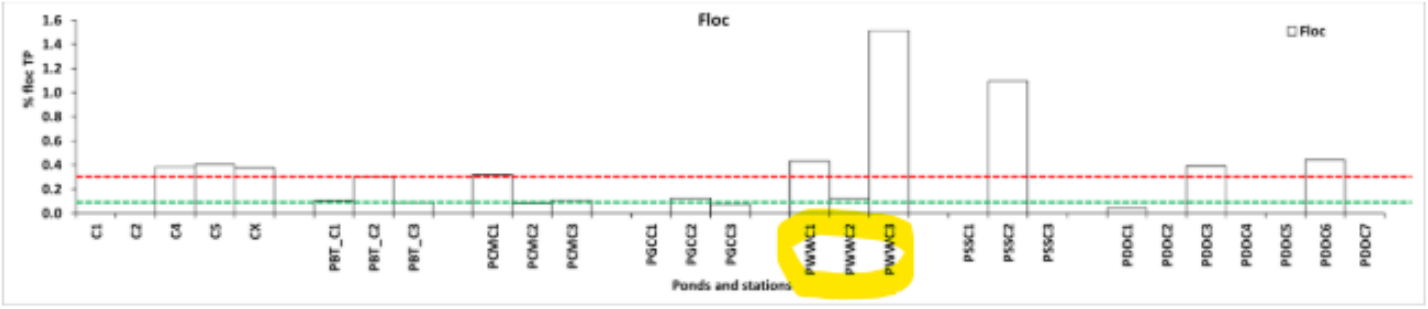


Figure 28. TP content in the floc (2% TP equates to 20,000µg/g). The red dotted line refers to the average TP content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

v. Heron landing pond

The water column is being destratified in Heron Landing pond since the temperature curve represents mixing occurring between the epi and hypolimnion. DO are alarming low and typical of anoxia. pH is typical of brackish and saline water which agrees with the specific conductance. Specific conductance is also lower on the surface than in deeper water and shows a weak halo/pycnocline which is being destroyed. ORP is very negative showing a very reducing environment in par with the anoxia observed. Water clarity is very poor as PAR profiles prove very challenging as light would attenuate too quickly. Particulates other than phytoplankton and likely heterotrophic bacteria and other particulates attenuate light in the water column.

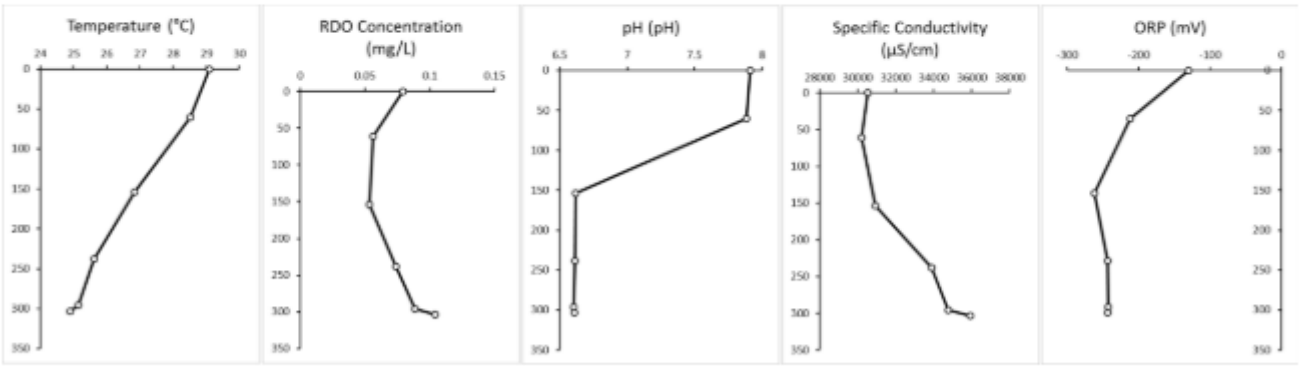


Figure 23. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Heron Landing pond

v. Heron landing pond

When visited, Heron Landing pond surface water was -0.17m NAVD'88. The volume of the pond was then 8,595m^3 for a planar surface area of 4,774m^2 and a mean depth of 1.9m.

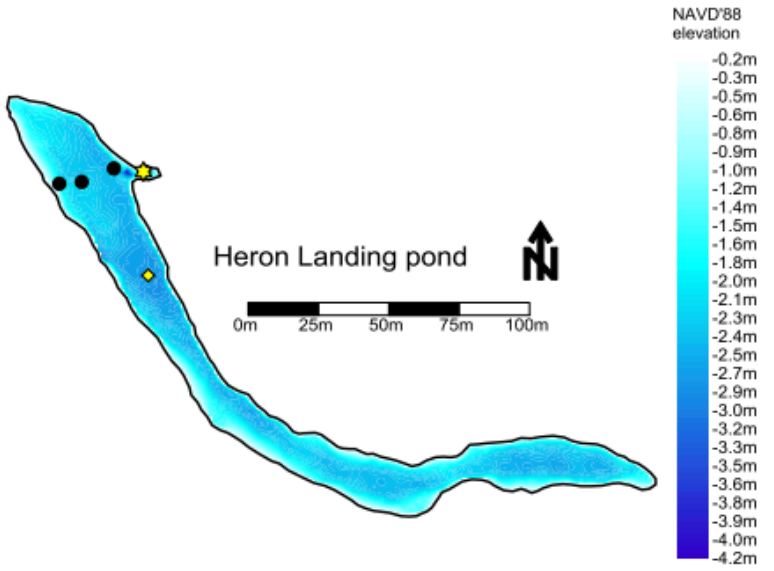


Figure 12. Bathymetry of Heron Landing pond

The average bottom hardness of Heron Landing pond was 0.44 as calculated with surfer and its bottom was harder than its shelf. SAV cover was found intermittently on the shelf but not in the deepest portions of the pond.

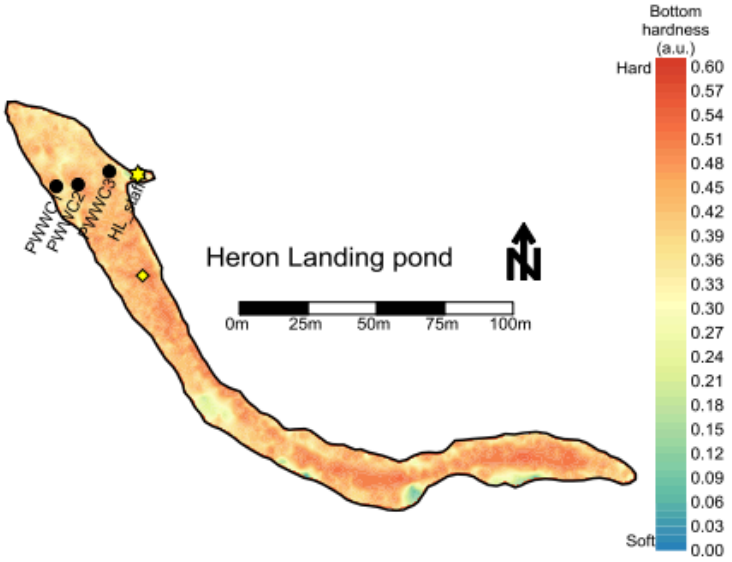


Figure 13. Bottom hardness of Heron Landing pond

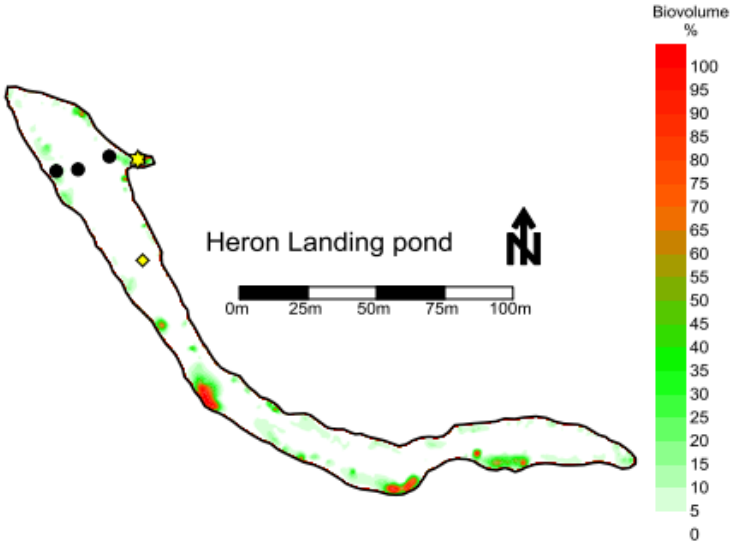


Figure 14. SAV cover in Heron Landing pond

v. Heron landing pond

The water column is being destratified in Heron Landing pond since the temperature curve represents mixing occurring between the epi and hypolimnion. DO are alarming low and typical of anoxia. pH is typical of brackish and saline water which agrees with the specific conductance. Specific conductance is also lower on the surface than in deeper water and shows a weak halo/pycnocline which is being destroyed. ORP is very negative showing a very reducing environment in par with the anoxia observed. Water clarity is very poor as PAR profiles prove very challenging as light would attenuate too quickly. Particulates other than phytoplankton and likely heterotrophic bacteria and other particulates attenuate light in the water column.

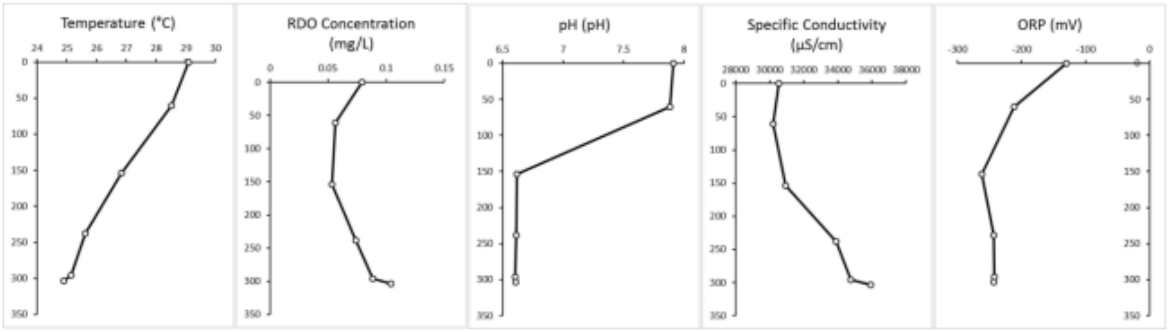


Figure 23. From left to right, water column profiles of temperature, DO, pH, specific conductance and ORP in Heron Landing pond

v. Heron landing pond

Heron Landing has high total alkalinity showing an eventual good connection between the pond water and the surrounding lime rich environment. Such alkalinity could limit algal and SAV growth as carbonates dominate. Cyanobacteria however can thrive in such environments and it seems to be the case as chl *a* concentration is quite high but not enough to compensate the high biological oxygen demand of the water and likely of the sediment. Nitrogen, but especially, phosphorus (*a fortiori* as labile phosphorus) levels are especially high in this pond and drive the TSI to hypereutrophy+. The pond is limited in nitrogen which can select nitrogen fixing cyanobacteria but with such high levels of nutrients, it is doubtful that any limitation exists. Ammonia levels are high linked especially to the reducing properties of the water (i.e. low ORP).

3. Conclusions

A correlation matrix was run between all the parameters measured for this study (Appendix 4). As for most water bodies, salinity is a main driver of these hydrosystems since it was positively correlated with the turbidity and therefore was negatively correlated with the Secchi disk and euphotic zone depths. More saline ponds had lower temperature, lower DO, pH, ORP but higher TP, SRP, total alkalinity and NOx. Large ponds with large volume, surface area and mean depth also had larger water concentration in ammonia and TN. Water TN and Chlorophyll *a* mainly drove the TSI of all the ponds. Hypereutrophic ponds had reducing water column properties which drove ammonia to alarming levels which as bioavailable nutrients fed algae growth which reduced water clarity.
However, Sanctuary pond slightly deviates from his expected hypereutrophy because its water is likely highly managed in such a way that its water column remains relatively clear and with less phytoplankton

than one would expect. Because of its large size and despite some managements, The Dunes pond water quality is not improved, even artificially as it is the case for the much smaller Sanctuary pond.
Heron Landing also is different than the other ponds because of the extreme conditions this pond is encountering as its high biological oxygen demand masks the photosynthesis DO production.

2. Results and discussion

Using the correlation matrix (Appendix 4), sediment and floc characteristics had poor relationships with the water quality. This normally is the case in other ponds in the region and this could be linked to the fact that

there was only one water quality assessment over the course of a hydrologic cycle whereas water sampling once a month was conducted for the other studies that our group conducted. However, when the sediment and floc data are compared to one another, it was found that for the same core, a thick layer of floc would equate to a thick layer of sediment. The nutrient contents of these two layers did not show much correlation though. Nevertheless, for both the floc and the sediment of the same core, high nitrogen content equated to high carbon and organic content. This shows that the sediment and floc were organic and thus would leach nutrients to the water column as they are degraded. The phosphorus content did not exhibit this pattern but this could be linked to the fact that the analysis of TP was not made through a TP fractionation process which is long, costly and laborious but which would have allowed to separate the various forms of P found in the core and especially tease apart the labile and refractory forms of P.

Overall, the combined sediment and floc accumulation in all the ponds was less than 30cm which is the arbitrary threshold that has been arbitrarily used to determine whether dredging ought to be necessary. Thus, based upon this figure, it appears that all the ponds have not reached that threshold yet. Beside Chateau-Sur-Mer with an overall low sediment and floc accumulation (7.2cm in average), all ponds have accumulated about the same amount of sediment regardless of their current TSI (9.3 to 12.8 cm in average). The Dunes pond had very long sediment accumulation on its shelf but this was compensated for by a much higher sediment accumulation pass the littoral zone.

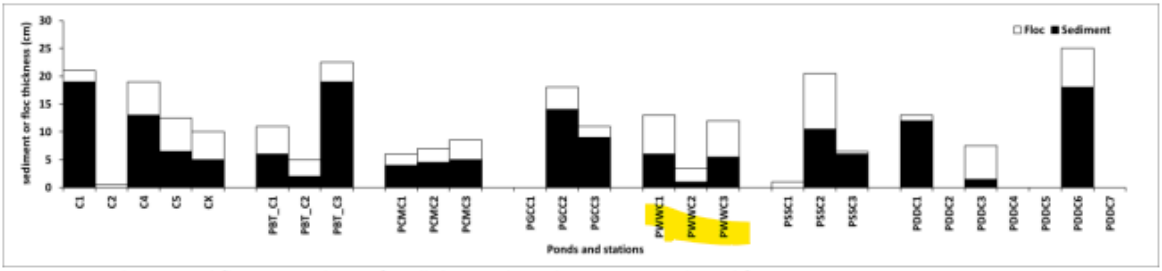


Figure 26. Sediment and floc accumulation for all the ponds at their stations selected for coring.

Nutrient content in the sediment is also a factor to consider for dredging and overall management decisions. Beside the relatively low sediment and floc accumulation, the amount of nutrients appears to be high when compared to other ponds in Lee and Collier counties and mainly located within Bayside Bay Creek Community Development Districts (CDDs referred as Pelican Landing in Estero and Bonita Springs, Thomas, 2015).

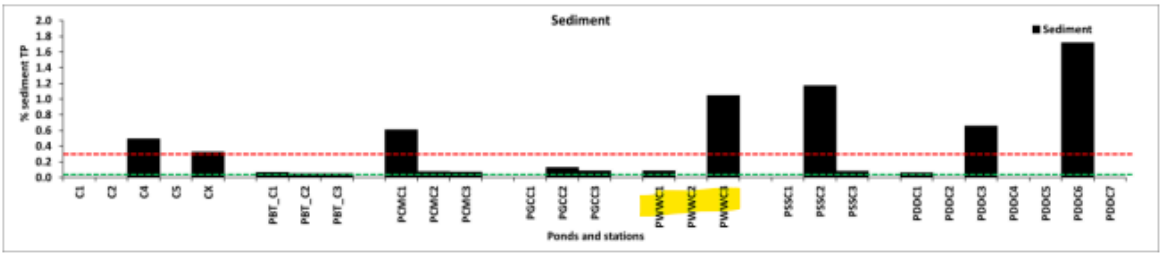


Figure 27. TP content in the sediment (2% TP equates to 20,000µg/g). The red dotted line refers to the average TP content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

It is noteworthy to point out that sediment nutrient has often more P than for the floc. This is unusual but might be linked that most P is refractory in the sediment and less refractory in the floc. Thus, the P content of the muck of the ponds studied is high, especially for the floc TP content alone.

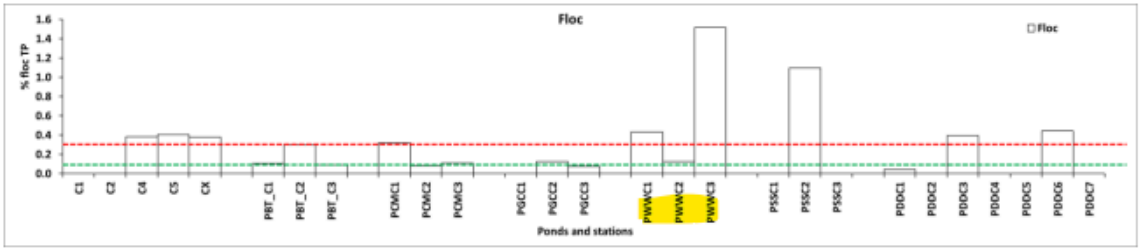


Figure 28. TP content in the floc (2% TP equates to 20,000µg/g). The red dotted line refers to the average TP content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

Sediment and floc TN (as well as TC and organic content since these are all highly correlated, so they are implicitly discussed below) were also higher than other ponds in Lee and Collier Counties. TN was more in the floc than in the sediment and has high potential for leaching back into the water column and create algae blooms (especially since the TSI is driven mainly by TN and Chlorophyll *a*). Besides for Golf Course pond, the sediment in the golf course ponds (The Dunes and Sanctuary) had high maxima.

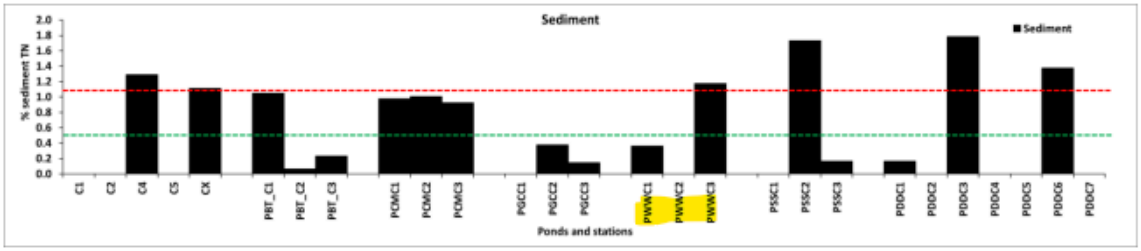


Figure 29. TN content in the sediment. The red dotted line refers to the average TN content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

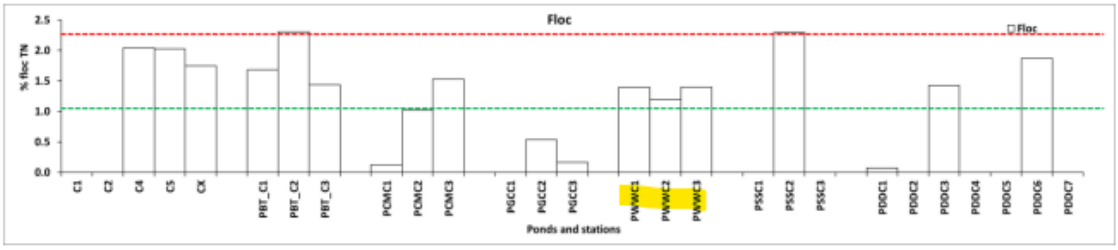


Figure 30. TN content in the floc. The red dotted line refers to the average TN content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

This was also the case for Beach Villa pond which could be linked to the high leaf litter deposits which were found in great abundance in the cores. TN in the floc was especially high except for the Golf Course pond which overall and regardless of the nutrient considered had the "healthiest" muck.

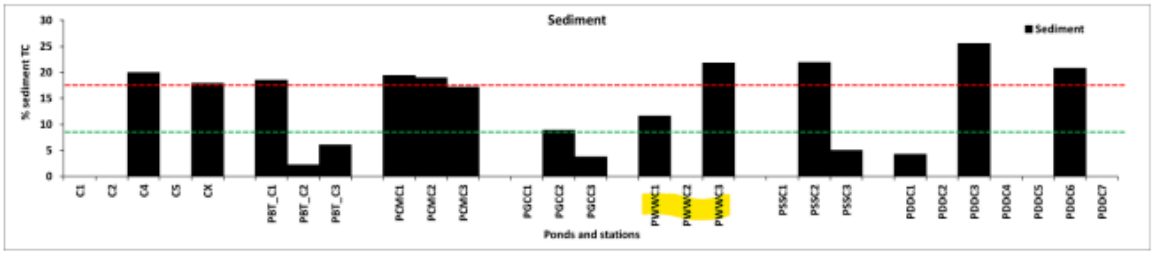


Figure 31. TC content in the sediment. The red dotted line refers to the average TC content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

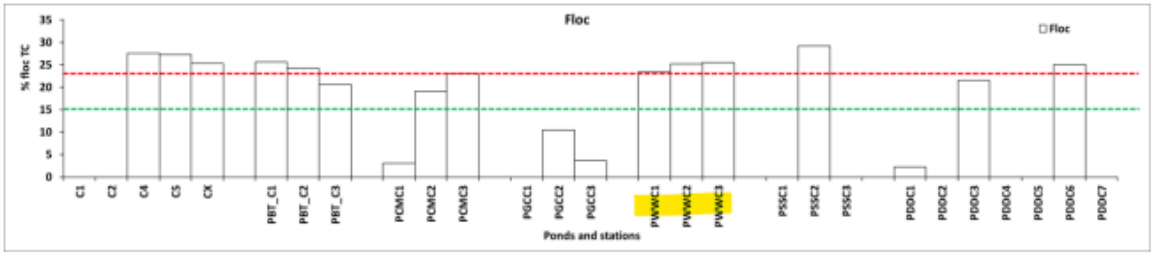


Figure 32. TC content in the floc. The red dotted line refers to the average TC content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

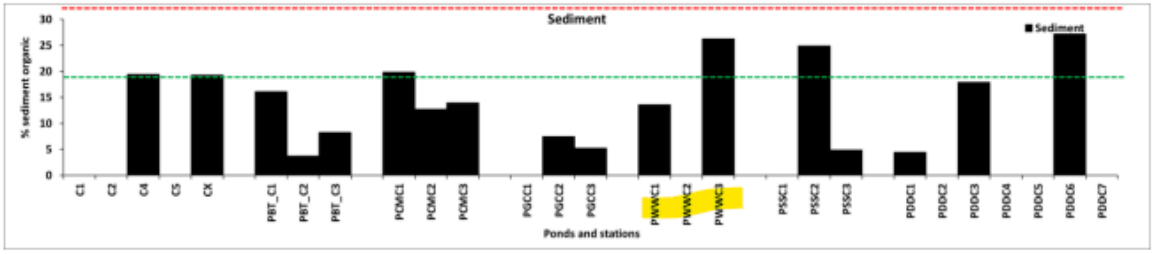


Figure 33. Organic content in the sediment. The red dotted line refers to the average organic content in the sediment of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

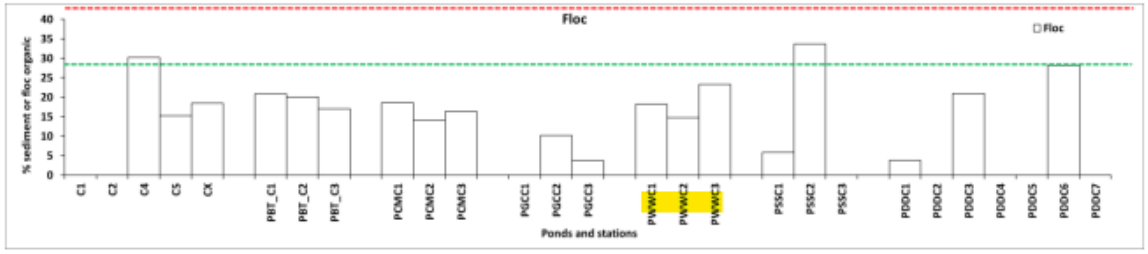


Figure 34. Organic content in the floc. The red dotted line refers to the average organic content in the floc of golf course ponds in Pelican Landing development. The green dotted line refers to the most pristine ponds (abutting a Preserve) in the same development.

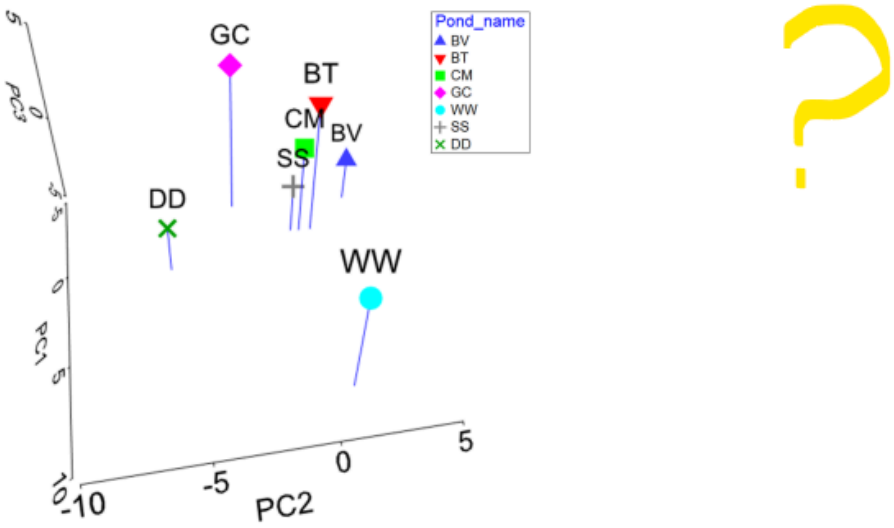


Figure 35. Pond grouping subsequent to running a PCA on all the parameters from this study (see Appendix 5 for these parameters). BV= Beach Villa, BT= Bike Trail, CM=Chateau-Sur-Mer, GC= Golf Course, WW=Heron Landing, SS= Sanctuary and DD= The Dunes.

F. Closing thoughts

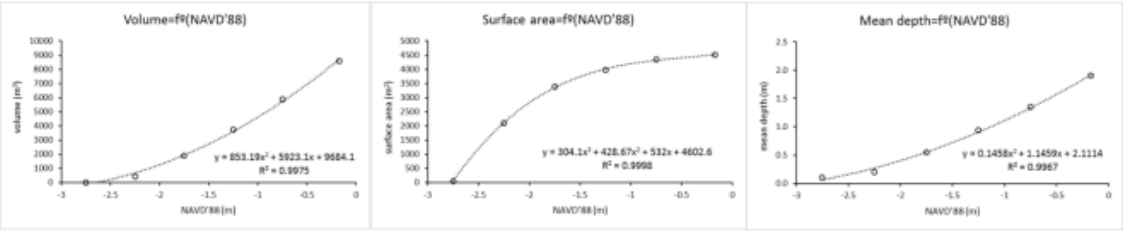
A principal component analysis (PCA) was run in Primer-e 7 (www.primer-e.com) to assess how similar the ponds were from one another while considering all the parameters discussed in this study (cf. Appendix 4 for correlation matrix and Appendix 5 for the values of these parameters). All parameters were kept (even the redundant ones) so that the observed grouping in the hyperspace but reduced to a 3-axis volume encompassing for 79.3% of the variation are accurate. Another PCA was run when the redundant variables (those with a positive or negative correlation over 80%) were removed but ponds did not group (PCA not shown).

The two first axes of the PCA (ran on a normalized matrix after transformations were made to approach data normality) represented 63.5% of the hyperspace variability and with three axes, 79.3% of the variability was represented. The PCA shows that Bike Trail, Chateau-Sur-Mer and Sanctuary were most similar especially when the two first axes (1 and 2) were considered. Salinity is mainly representing axis 1 positively while temperature represents it negatively. Axis 2 represents positively the sediment and floc thickness and negatively the volume of the pond. Finally, axis 3 is mostly driven positively by the bottom hardness and negatively by the sediment and floc nutrients.

In this tri-dimensional scale, Heron Landing stands apart because of its high salinity while the Dunes is especially different because of its large size. Bike Trail, Chateau-Sur-Mer and Sanctuary are most similar while Beach Villa and especially Golf Course are distant from this group.

Overall, most of the ponds studied had nutrients issues whether these nutrients were found in the water column (all ponds but Beach Villa) or in the sediment or floc (all ponds besides Chateau-Sur-Mer). Beach Villa likely receives most of its nutrients via leaf litter because the pond is small and surrounded by trees, and has in consequence higher coarse organic particulates inputs (in the sense of the River Continuum concept, Vannote et al. 1980). Such inputs should be limited over time as these would eventually turn the system eutrophic. Most ponds had high levels of nutrients in the sediment and floc and since these two parameters reflect a much longer term than the water column analyses, there is evidence of cultural eutrophication especially from P as well as N. Efforts should be made to limit such nutrients loading. Some small ponds especially could benefit from local dredging done using the bottom hardness maps provided. For the larger ponds like The Dunes, intense aeration which would benefit aerobic digestion should be envisaged. The nutrients released from aeration should be captured by littoral planting which would benefit from clearer water. Flocculation of the particulates in the water would immediately improve water clarity and could be done in conjunction of aeration and planting.

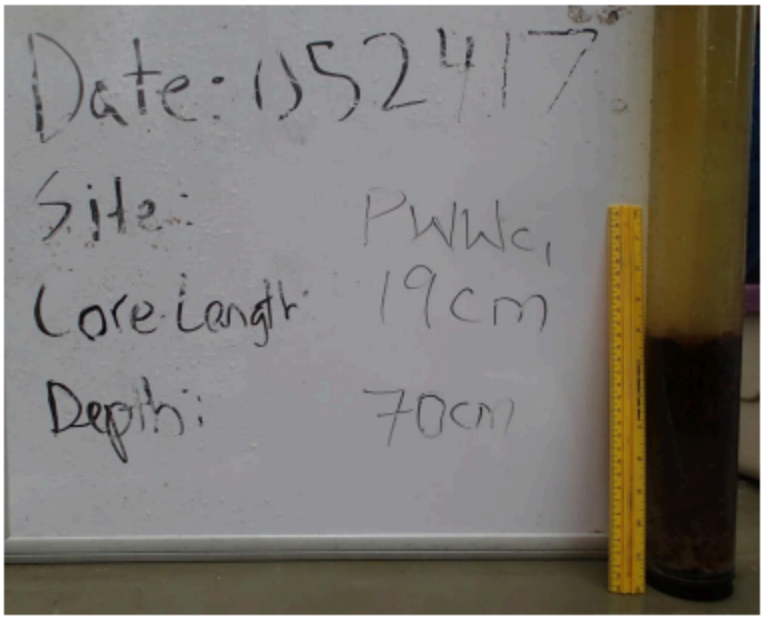
5. Heron Landing pond (3/22/17)



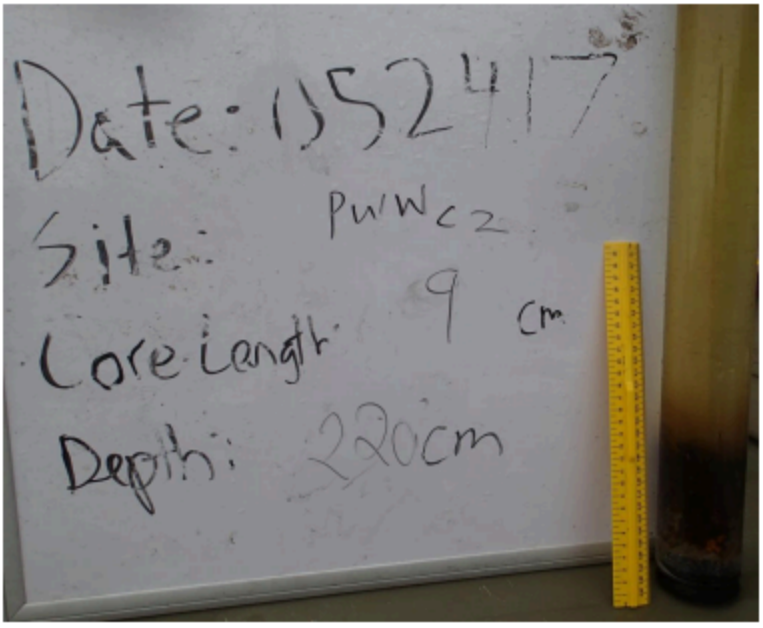
Appendix1_ 5. Morphometric relations for Heron Landing pond

Water level: -0.166m, top of post 0.234m

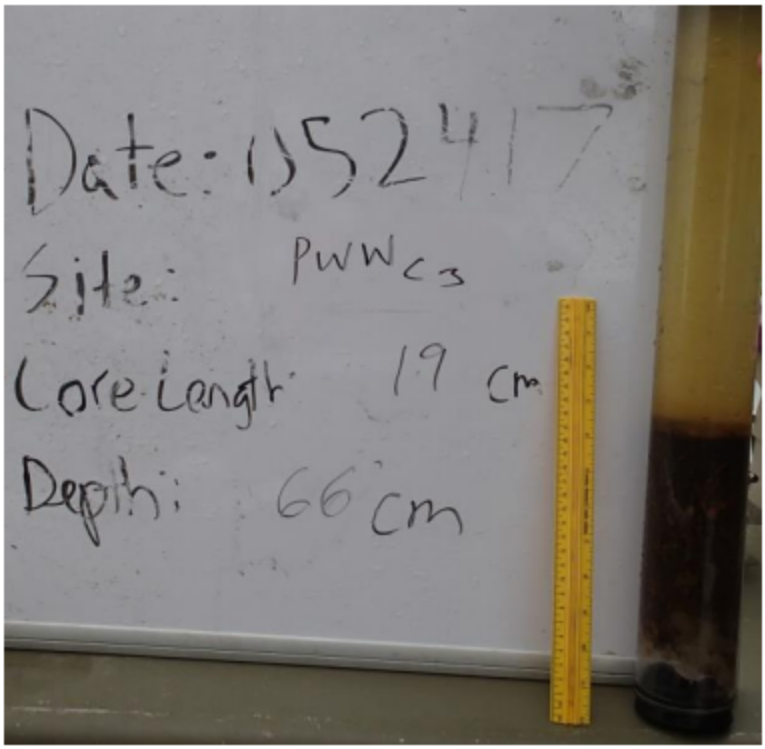
5. Heron Landing pond (3/22/17)



Appendix2_ 17. Core 1, Heron Landing Pond



Appendix2_ 18. Core 2, Heron Landing Pond

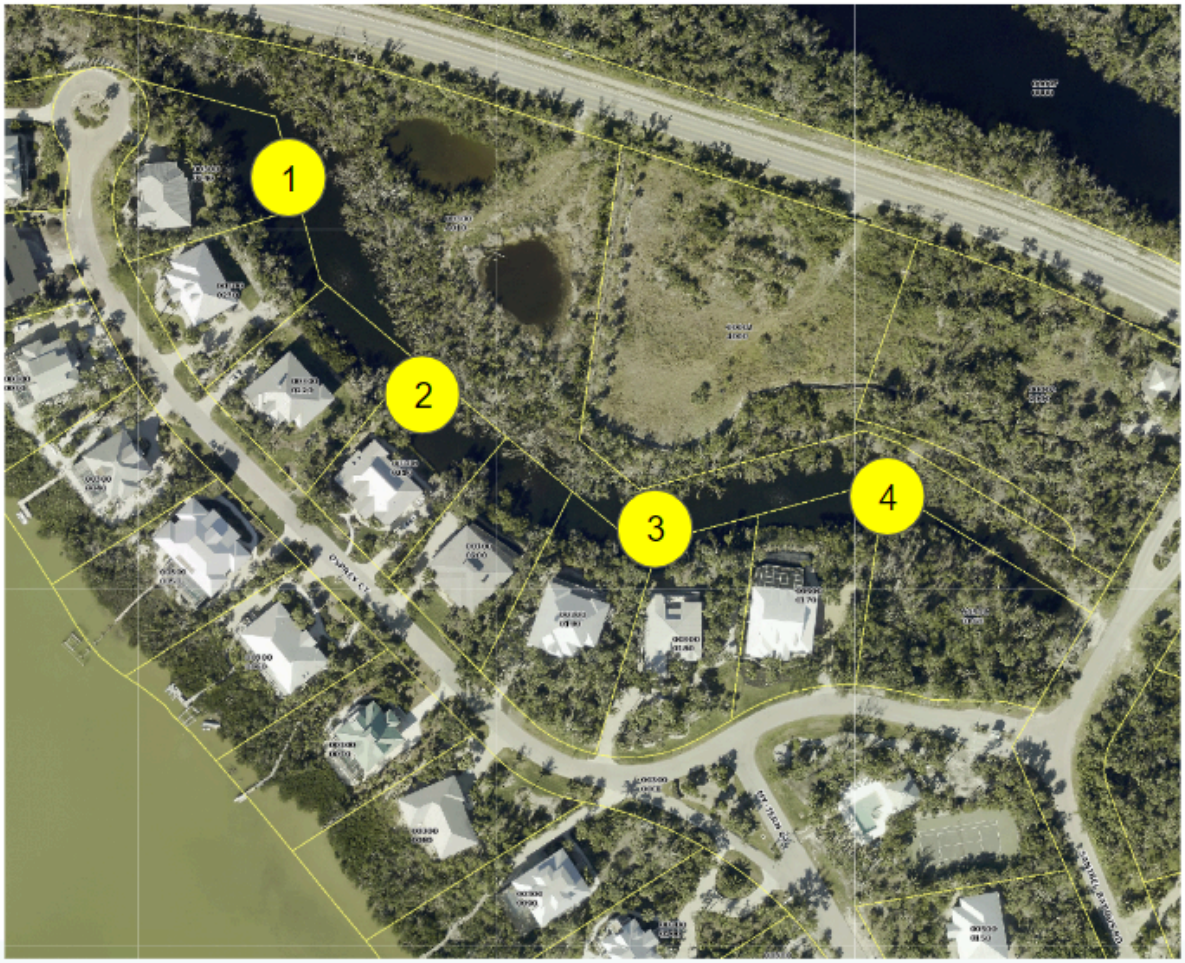


Appendix2_ 19. Core 3, Heron Landing Pond

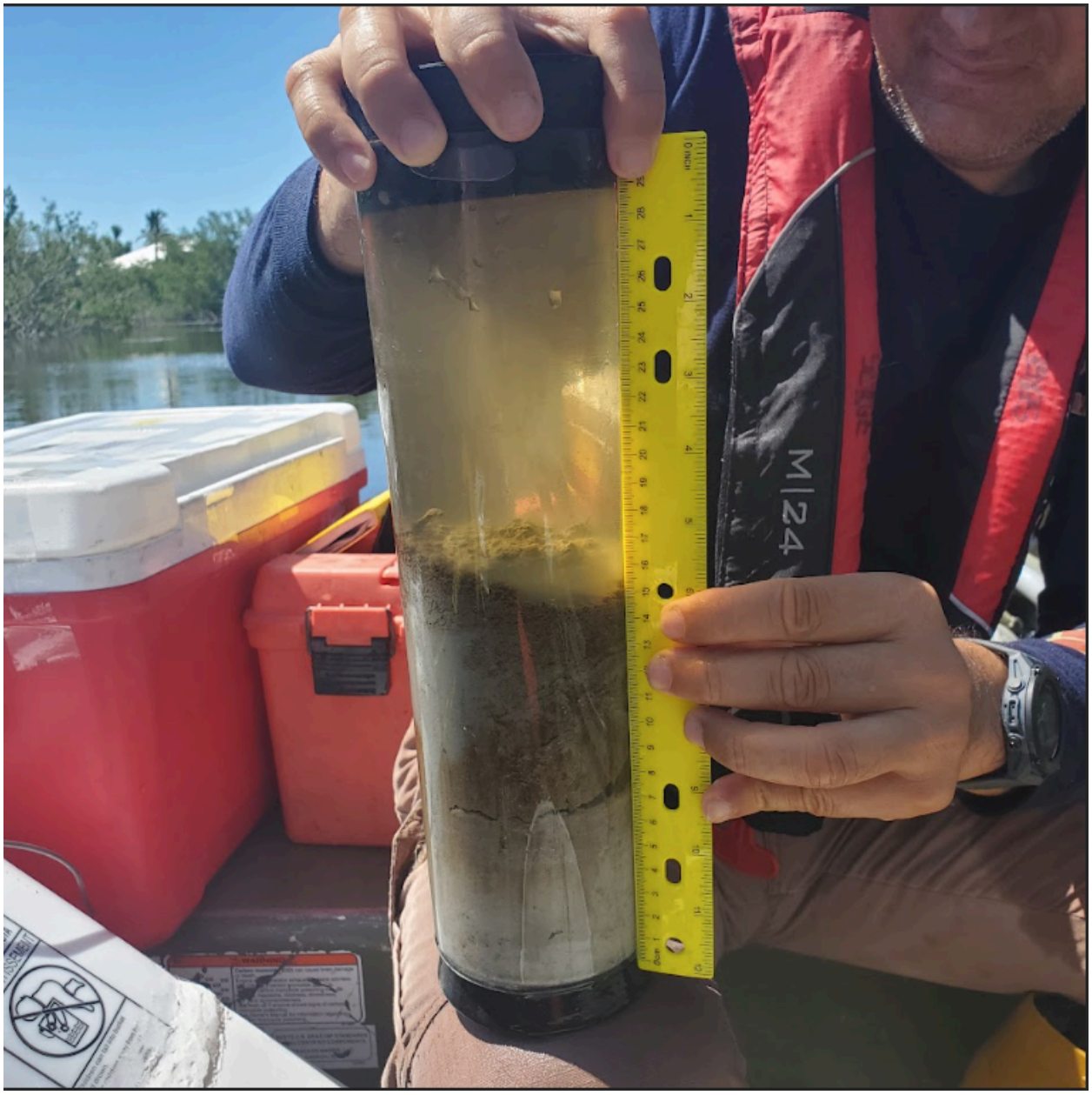
Appendix 5. Parameters fed to the PCA.

	BV	BT	CM	GC	WW	SS	DD
NAVD'88 (m)	0.25	-0.50	-0.27	0.25	-0.17	0.17	0.10
Volume (m3)	414	27055	9791	12679	8595	9007	207700
Planar Surface area (m2)	522	15007	8219	8218	4774	4540	81404
Mean Depth (m)	0.80	1.80	1.20	1.60	1.90	2.10	2.60
Bottom hardness (a.u.)	0.30	0.39	0.37	0.47	0.44	0.42	0.41
Temperature (ºC)	30.70	28.89	30.92	31.81	26.69	31.25	31.01
Specific conductance (µs/cm)	838.46	8814.56	2714.40	1974.74	32705.18	2466.82	5690.12
Salinity (PSU)	0.42	4.99	1.42	1.02	20.77	1.29	3.13
DO (mg/l)	4.31	3.83	5.05	7.61	0.08	7.30	5.93
pH (a.u.)	7.62	8.19	8.19	8.26	7.04	8.48	8.09
ORP (mV)	394.14	218.86	137.06	224.85	-222.29	206.59	136.66
Turbidity (NTU)	2.31	24.00	18.60	20.30	111.00	20.20	38.20
Euphotic zone depth (m)	2.77	2.30	1.92	2.11	N.D.	1.59	1.37
Secchi disk depth (cm)	121	45	75	87	35	121	44
Water depth at station (cm)	233	235	152	316	265	233	441
Total Alkalinity (mg CaCO3eq/l)	129.50	194.00	297.00	192.00	507.00	269.00	258.00
Chl*a* (µg/l)	6.04	36.91	22.28	31.57	63.18	49.56	66.10
NOx (mg/l)	0.02	0.04	0.04	0.02	0.08	0.03	0.02
NH4+ (mg/l)	0.03	0.06	0.04	0.06	0.53	0.05	1.58
TN (mg/l)	0.80	2.57	1.58	2.42	3.03	1.96	4.16
TP (mg/l)	0.03	0.02	0.08	0.12	3.82	0.65	0.17
SRP (mg/l)	0.02	0.07	0.04	0.05	4.12	0.28	0.13
TN/TP	29.57	125.39	20.33	20.71	0.79	3.02	24.34
TSI (a.u.)	48.67	63.63	65.42	68.43	84.00	63.64	81.91
Depth at coring station (cm)	194.80	160.67	123.67	219.00	118.67	193.33	233.29
Floc thickness (cm)	3.90	3.83	2.67	2.00	5.33	3.83	2.00
Sed thickness (cm)	8.70	9.00	4.50	7.67	4.17	5.50	4.50
Floc+ sediment thickness (cm)	12.60	12.83	7.17	9.67	9.50	9.33	6.50
Sediment TP (%)	0.41	0.06	0.25	0.11	0.56	0.62	0.81
Sediment TN (%)	1.20	0.45	0.97	0.26	0.77	0.95	1.11
Sediment TC (%)	18.91	8.89	18.50	6.27	16.68	13.44	16.84
Floc TP (%)	0.39	0.16	0.17	0.10	0.69	1.10	0.29
FlocTN (%)	1.94	1.81	0.89	0.35	1.33	2.30	1.12
Floc TC (%)	26.69	23.49	15.07	7.01	24.68	29.21	16.26
Sediment organic content (%)	19.34	9.35	15.50	6.33	19.92	14.89	16.52
Floc organic content (%)	21.28	19.33	16.36	6.95	18.75	19.71	17.65

Table 4. Summary table of all the parameter studied and ran into the PCA. Some are averages. N.D. denotes as non-determined. BV= Beach Villa, BT= Bike Trail, CM=Chateau-Sur-Mer, GC= Golf Course, WW=Heron Landing, SS=Sanctuary, DD=The Dunes.



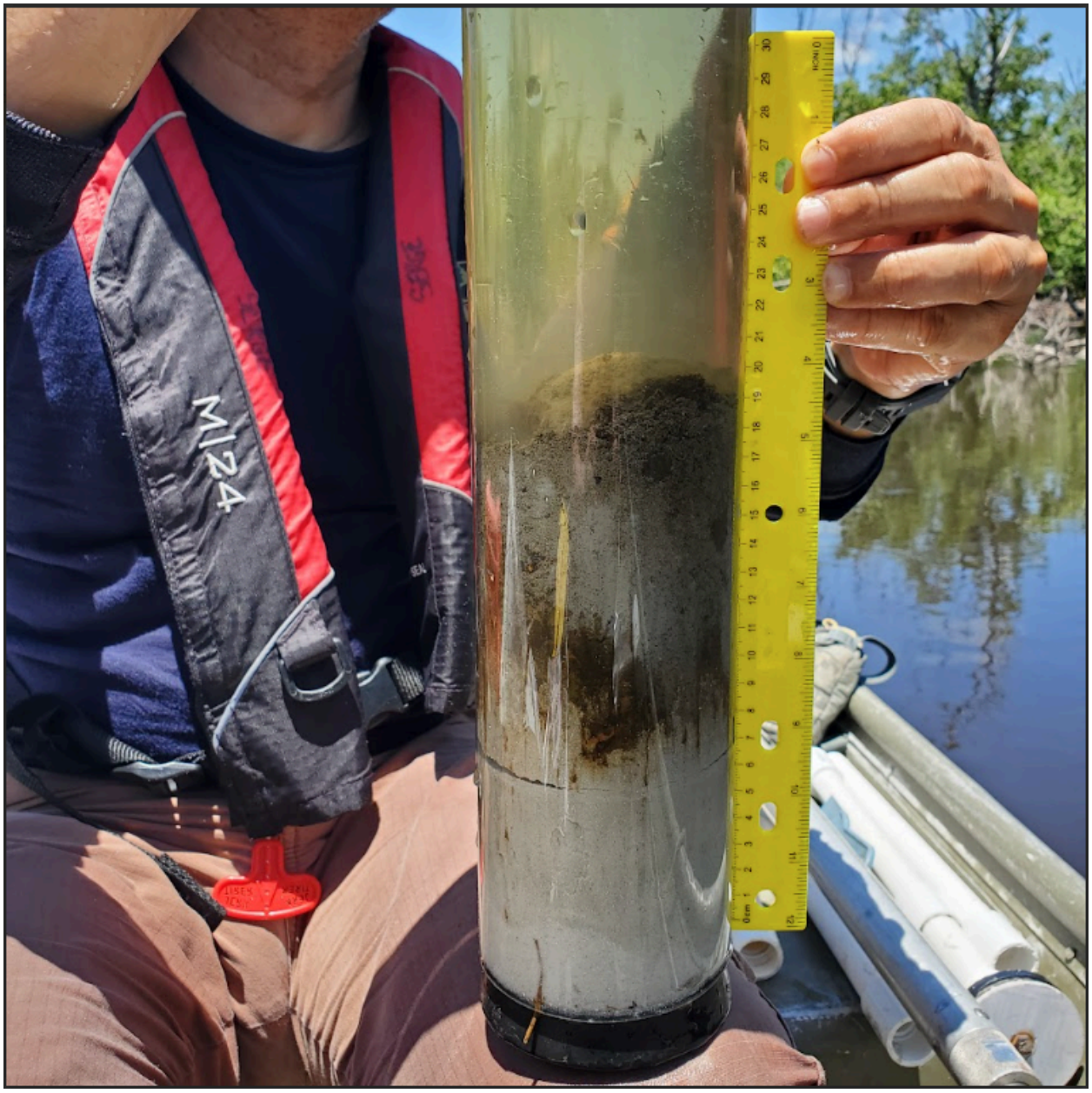
[Heron's Landing Core photos 2024]



Core 1

Core 2

Core 3



Core 4

Serge's previous data from approximately Site 1. He has sample locations marked precisely on GPS —– this is just a "rough" analysis.

1 ng/g = 1 pb 1 ng/g = 1 ug/g 1ng/g = 1000 ppt

N-ethyl perfluorooctane sulfonamido acetic acid (N-EtFOSAA) is a perfluorinated chemical (PFC) that's used in many consumer products, such

as carpets, insecticides, and packaging paper. It's also a xenobiotic and environmental contaminant that can be found in sewer systems, biosolids, and soil. N-EtFOSAA is a precursor to perfluorooctane sulfonamido acetic acid (PFOS), and its degradation is considered a major source of PFOS in the environment.

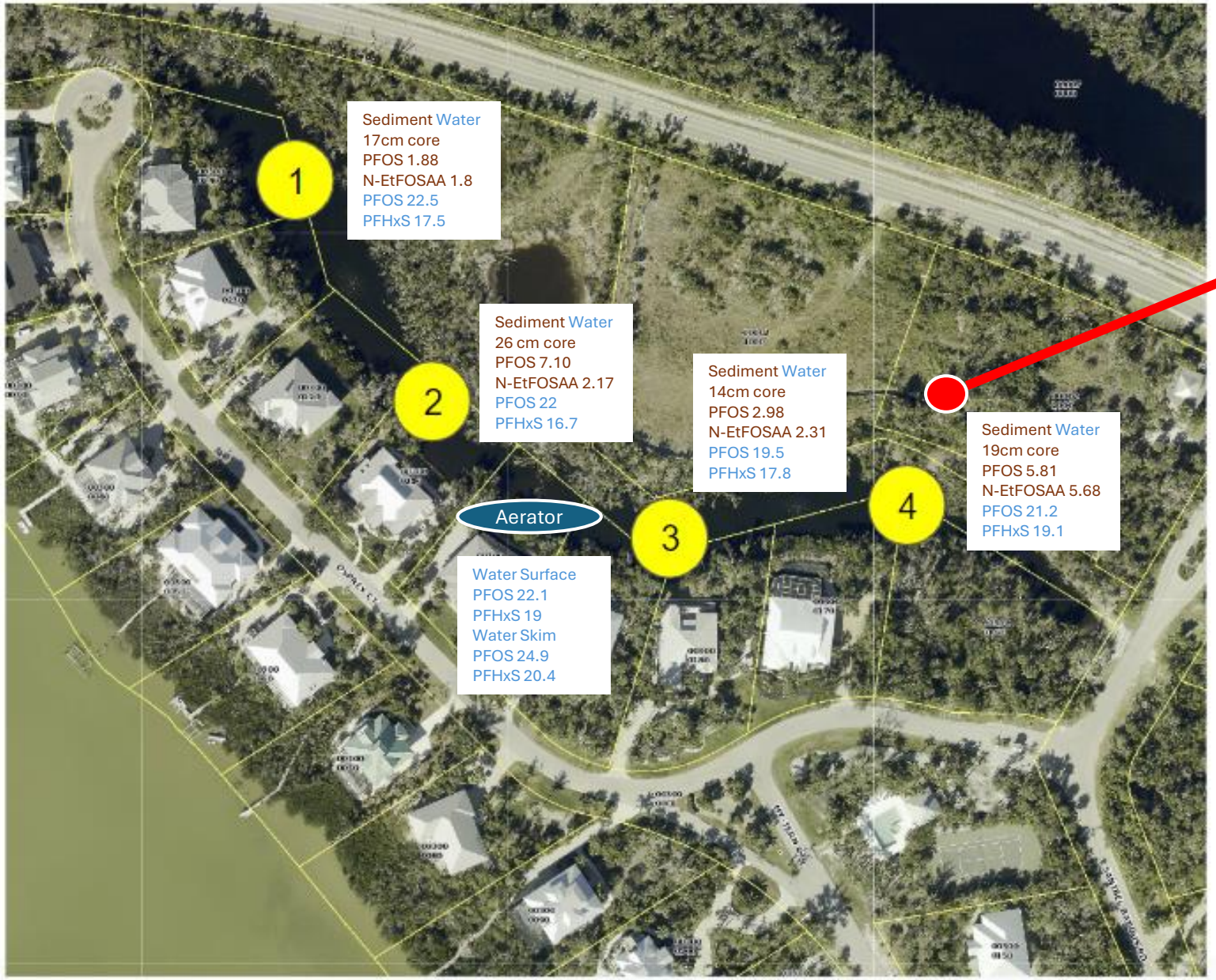
N-EtFOSAA can cause serious health issues, including: cancer, endocrine disruption, accelerated puberty, liver and immune system damage, and thyroid changes.

N-EtFOSAA can also accumulate in people and plants. For example, one study found that N-EtFOSAA was present in the roots of seven different plant species, but not in their stems or leaves.

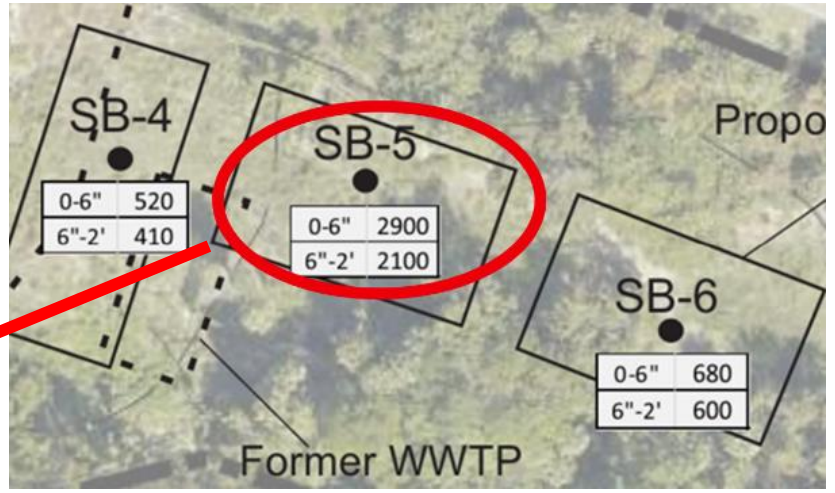
Water Sample Location	Detected PFOS ng/l	Detected PFHxS ng/l
W-1	22.5	17.5
W-2	22	16.7
W-3	19.5	17.8
W-4	21.2	19.1
W-Surface	22.1	19
W-Skim	24.9	20.4

Core Location	Core size (app) cm	PFOS ng/g	N-EtFOSAA (Other ?) ng/g	PFOS mg/kg	
1-Clay (top)	17	1.01		.00101	
1-Sediment (second	17	1.88	1.8	.00188	

layer)					
1-LSI (?)	17	0.555		.00055	
2-Clay	26	3.89		.00389	
2-Sediment	26	7.10	2.17	0071	
Core Location	Core size (app) cm	PFOS ng/g	N-EtFOSAA (Other ?) ng/g	PFOS mg/kg	
2-LSI (?)	26	0.724		.000724	
3-Clay	14	2.88		.00288	
3-Sediment	14	2.98	2.31	.00298	
3-Sand	14	clear	clear		
4-Clay	19	2.35		.00235	
4-Sediment	19	5.81	5.68	.00581	
4-Sand	19	clear	clear		



PFAS Sampling (July 17, 2024), EPA 1633 – Aqueous & Solid (units ng/l)



"Startling" Phosphorus 2900-2100 mg/kg (June 15, 2023)

Photograph Heron's Landing Lake (June 28, 2023)

Florida Gulf Coast University

14065 W. Maple Ave.
Golden, CO 80401

Client Project# 240617-FGCU-PFAS
Samples Received: 7/18/2024

Analytical Report
0724-833B

DOD QSM Table B-24 EPA (EPA 1633) - non-potable water

PFAS EPA 1633 List

Report Issue Date: 8/15/2024

I certify that to the best of my knowledge all analytical data presented in this report have been checked for completeness, accuracy, errors and legibility in addition to having been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s). This analytical report was prepared in Portable Document Format (.PDF) and contains 101 pages. This report shall not be reproduced except in full without approval of the laboratory. This will provide assurance that parts of the report are not taken out of context.

Amendment(s):

Signature:

Laura Boivin, QA Associate II

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Narrative Summary

Enthalpy Analytical Narrative Summary

Company	Florida Gulf Coast University
Job No.	0724-833
Client ID.	240617-FGCU-PFAS

1. Custody

Florida Gulf Coast University collected the samples July 17, 2024 and relinquished the samples via UPS for shipment to Enthalpy Analytical, LLC. Cherith McCullagh received the samples at 7.0 °C.

The samples were received in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.

Table 1 - Sample Inventory

EU Lab Sample ID	Client Sample ID	Matrix	Received
0724-833-003-2	SCL74_W1	Aqueous	2024-07-18
0724-833-004-2	SCL74_FIELD BLANK	Aqueous	2024-07-18
0724-833-005-1A	SCL74_C1	Solids	2024-07-18
0724-833-005-1B	SCL74_C1	Solids	2024-07-18
0724-833-006-1A	SCL74_S1	Solids	2024-07-18
0724-833-006-1B	SCL74_S1	Solids	2024-07-18
0724-833-007-1A	SCL74_LSI	Solids	2024-07-18
0724-833-007-1B	SCL74_LSI	Solids	2024-07-18
0724-833-008-2	SCL74_W2	Aqueous	2024-07-18
0724-833-009-1A	SCL74_C2	Solids	2024-07-18
0724-833-009-1B	SCL74_C2	Solids	2024-07-18
0724-833-010-1A	SCL74_S2	Solids	2024-07-18
0724-833-010-1B	SCL74_S2	Solids	2024-07-18
0724-833-011-1A	SCL74_LS2	Solids	2024-07-18
0724-833-011-1B	SCL74_LS2	Solids	2024-07-18
0724-833-012-2	SCL74_W3	Aqueous	2024-07-18
0724-833-013-1A	SCL74_C3	Solids	2024-07-18
0724-833-013-1B	SCL74_C3	Solids	2024-07-18
0724-833-014-1A	SCL74_S3	Solids	2024-07-18
0724-833-014-1B	SCL74_S3	Solids	2024-07-18
0724-833-015-1A	SCL74_Sand3	Solids	2024-07-18
0724-833-015-1B	SCL74_Sand3	Solids	2024-07-18
0724-833-016-2	SCL74_WSURF	Aqueous	2024-07-18
0724-833-017-2	SCL74_W4	Aqueous	2024-07-18
0724-833-018-2	SCL74_WSkim	Aqueous	2024-07-18
0724-833-019-1A	SCL74_C4	Solids	2024-07-18
0724-833-019-1B	SCL74_C4	Solids	2024-07-18
0724-833-020-1A	SCL74_S4	Solids	2024-07-18
0724-833-020-1B	SCL74_S4	Solids	2024-07-18
0724-833-021-1A	SCL74_Sand4	Solids	2024-07-18
0724-833-021-1B	SCL74_Sand4	Solids	2024-07-18

2. Methods and Analytes

A list of analytes of interest and corresponding methods of analysis is shown in Table 3. Abbreviations are defined in the listed Appendices.

Enthalpy Analytical Narrative Summary

Company	Florida Gulf Coast University
Job No.	0724-833
Client ID.	240617-FGCU-PFAS

Table 3 - Methods and Analytes

EU Method	Analytes	Cleanup Method
EU-062	EPA 1633 List	ENVI-Carb

3. Analysis

The samples were analyzed using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS "Pippin").

Select samples were initially screened by direct inject analysis to determine extraction mass/volume.

Subsampling and centrifugation was performed due to sample turbidity where necessary to facilitate extraction.

Select samples were analyzed using more than one extraction batch and/or analytical sequence to meet method acceptance criteria.

4. Calibration

In the initial calibration, the reported analytes exhibited an RSD or RSE of ≤ 20%. The reported analytes in the calibration standards, and Initial Calibration Verification (ICV), continuing calibration (concal), and sensitivity check met the accuracy criterion for native analytes.

5. QC Notes

Except where noted below, the QC sample analyses passed all method criteria.

QC samples that did not meet method acceptance criteria were:

• 0724-833-021MSD (ADONA)
• 0724-843-002-1MS (3:3 FTCA)
• 0724-843-002-1MSD (3:3 FTCA)

Select analyte(s) deviated outside method recovery and/or RPD limits in the matrix spike (MS) and matrix spike duplicate (MSD) samples. MS/MSD extracts were treated to a dilution factor of three (D3) and reinjected. Where results were confirmed, data is reported as-is from the initial injection. Where results met method criteria, data is reported from the reinjection. MS/MSD criteria apply to the impacted analytes detected ≥ LOQ in the parent sample. Lab precision may be affected by matrix or homogeneity of the sample.

Select analytes and surrogates (ES) deviated outside method control limits in OPR_17844_PFAS. All batched samples were re-extracted for these compounds and successfully reported in batch 17914. All data is provided.

DOD QSM Table B-24 (EPA 1633) samples were extracted within 28 days, and extracts analyzed within 28 days.

Enthalpy Analytical Narrative Summary

Company	Florida Gulf Coast University
Job No.	0724-833
Client ID.	240617-FGCU-PFAS

6. Reporting Notes

The results presented in this report are representative of the samples as provided to the laboratory.

The area responses for the non-extracted internal standards (injection standards or JS) met method criteria.

Solid results are reported on a dry weight basis. “As Is” results are available upon request.

The ion ratios for all compounds were within tolerance.

The following samples had manual integrations on one or more peaks. The associated comments are included below.

0724-833-003-2- "bb; C JDG 7/30/24"
0724-833-003-2- "bb; R JDG 7/30/24"
0724-833-003-2- "MM-; R JDG 7/30/24"
0724-833-003-2- "MM; C JDG 7/30/24"
0724-833-003-2- "MM; N JDG 7/30/24"
0724-833-004-2- "MM-; R JDG 7/30/24"
0724-833-004-2- "MM; C JDG 7/30/24"
0724-833-005-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-005-1A- "MM; c R.H.H. 08/02/2024"
0724-833-005-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-005-1B- "MM; c R.H.H. 08/08/2024"
0724-833-006-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-006-1A- "MM; c R.H.H. 08/02/2024"
0724-833-006-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-006-1B- "MM; c R.H.H. 08/08/2024"
0724-833-007-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-007-1A- "MM; c R.H.H. 08/02/2024"
0724-833-007-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-007-1B- "MM; c R.H.H. 08/08/2024"

0724-833-008-2- "MM-; R JDG 7/30/24"
0724-833-008-2- "MM-; R JDG 7/30/24"
0724-833-008-2- "MM; C JDG 7/30/24"
0724-833-008-2- "MM; N JDG 7/30/24"
0724-833-009-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-009-1A- "MM; c R.H.H. 08/02/2024"
0724-833-009-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-009-1B- "MM; c R.H.H. 08/08/2024"
0724-833-010-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-010-1A- "MM; c R.H.H. 08/02/2024"
0724-833-010-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-010-1B- "MM; c R.H.H. 08/08/2024"
0724-833-011-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-011-1A- "MM; c R.H.H. 08/02/2024"

Enthalpy Analytical Narrative Summary

Company	Florida Gulf Coast University
Job No.	0724-833
Client ID.	240617-FGCU-PFAS

0724-833-011-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-011-1B- "MM; c R.H.H. 08/08/2024"
0724-833-012-2- "MM-; R JDG 7/30/24"
0724-833-012-2- "MM-; R JDG 7/30/24"
0724-833-012-2- "MM; C JDG 7/30/24"
0724-833-012-2- "MM; N JDG 7/30/24"
0724-833-013-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-013-1A- "MM; c R.H.H. 08/02/2024"
0724-833-013-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-013-1B- "MM; c R.H.H. 08/08/2024"
0724-833-014-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-014-1A- "MM; c R.H.H. 08/02/2024"
0724-833-014-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-014-1B- "MM; c R.H.H. 08/08/2024"
0724-833-015-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-015-1A- "MM; c R.H.H. 08/02/2024"
0724-833-015-1B- "MM-; r R.H.H. 08/08/2024"

0724-833-016-2- "MM-; C JDG 7/30/24"
0724-833-016-2- "MM-; R JDG 7/30/24"
0724-833-016-2- "MM; C JDG 7/30/24"
0724-833-016-2- "MM; N JDG 7/30/24"
0724-833-017-2- "MM-; R JDG 7/30/24"
0724-833-017-2- "MM-; R JDG 7/30/24"
0724-833-017-2- "MM; C JDG 7/30/24"
0724-833-017-2- "MM; N JDG 7/30/24"
0724-833-018-2- "MM-; R JDG 7/30/24"
0724-833-018-2- "MM-; R JDG 7/30/24"
0724-833-018-2- "MM; C JDG 7/30/24"
0724-833-018-2- "MM; N JDG 7/30/24"
0724-833-019-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-019-1A- "MM; c R.H.H. 08/02/2024"
0724-833-019-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-019-1B- "MM; c R.H.H. 08/08/2024"
0724-833-020-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-020-1A- "MM; c R.H.H. 08/02/2024"
0724-833-020-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-020-1B- "MM; c R.H.H. 08/08/2024"
0724-833-020-1MS- "MM; c R.H.H. 08/08/2024"
0724-833-020-1MSD- "MM; c R.H.H. 08/08/2024"
0724-833-021-1A- "MM-; r R.H.H. 08/02/2024"
0724-833-021-1B- "MM-; r R.H.H. 08/08/2024"
0724-833-021MS- "bb; n R.H.H. 08/02/2024"
0724-833-021MS- "MM; c R.H.H. 08/02/2024"
0724-833-021MSD- "bb; n R.H.H. 08/02/2024"
0724-833-021MSD- "MM; c R.H.H. 08/02/2024"
0724-843-002-1MS- "bb; N JDG 7/30/24"
0724-843-002-1MS- "MM; C JDG 7/30/24"
0724-843-002-1MSD- "bb; N JDG 7/30/24"
0724-843-002-1MSD- "MM; C JDG 7/30/24"

Enthalpy Analytical Narrative Summary

Company	Florida Gulf Coast University
Job No.	0724-833
Client ID.	240617-FGCU-PFAS

LLOPR_17844_PFAS- "bb; n R.H.H. 08/02/2024"
LLOPR_17844_PFAS- "MM; c R.H.H. 08/02/2024"
LLOPR_17848_PFAS- "bb; R JDG 7/30/24"
LLOPR_17848_PFAS- "MM; C JDG 7/30/24"
LLOPR_17914_PFAS- "MM; c R.H.H. 08/08/2024"
MB_17844_PFAS- "MM-; r R.H.H. 08/02/2024"
MB_17848_PFAS- "bb; N JDG 7/30/24"
MB_17848_PFAS- "MM-; R JDG 7/30/24"
MB_17848_PFAS- "MM-; R JDG 7/30/24"
MB_17848_PFAS- "MM; C JDG 7/30/24"
MB_17914_PFAS- "MM-; r R.H.H. 08/08/2024"
OPR_17844_PFAS- "bb; n R.H.H. 08/02/2024"
OPR_17844_PFAS- "MM; c R.H.H. 08/02/2024"
OPR_17848_PFAS- "bb; R JDG 7/30/24"
OPR_17848_PFAS- "MM; C JDG 7/30/24"
OPR_17914_PFAS- "MM; c R.H.H. 08/08/2024"

Shaded areas in the chromatograms display the peak integration used for the final results. Dashed lines show the original integration, and solid lines show the final integration.

These analyses met the requirements of the DoD QSM 5.4. Any deviations from the requirements of the reference method or the QSM have been stated above.

Enthalpy Analytical, LLC in Wilmington NC is accredited by ANAB to perform testing to the DOD ELAP QSM 5.4 standards under certificate number ADE-2835.

General e ortin otes ata ualifiers

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC - Wilmington, NC data reports, unless specifically noted otherwise.

General ata ualifiers

Ac - Alternate calculation flag indicates the es recovery was calculated using the opening concal when either of the following situations is encountered in the data processing software: the ES recovery is over 400% or the JS is not detected.

B – The analyte was found in the method blank, at a concentration that was at least 10% of the amount in the sample.

Cxx – Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group ('xx') are shown with the number of the lowest IUPAC co-eluter

E – The reported concentration exceeds the calibration range (upper point of the calibration curve). For HRMS data, this condition does not imply additional measurement uncertainty. For LC-MS/MS data, these values should be considered as having measurement uncertainty higher than values within the calibration range.

EDL – Estimated Detection Level: The EDL is unique to isotope dilution methods and reflects the conditions of analysis at the time of analysis, including the equipment used. Where the MDL is a static value, the EDL is a dynamic value.

EMPC – Estimated Maximum Possible Concentration: EMPC is specific to Dioxin/Furan tests to indicate the determined ion-abundance ratio was outside the allowed theoretical range (usually due to being near the detection limit, although it can very rarely be caused by a co-eluting interference). The EMPC concentration is adjusted to reflect the value at the theoretical ion-abundance ratio.

I/IR – The ion ratio between the primary and secondary ions was observed to be outside the method criteria. The analyte concentration may be inaccurate due to interference.

J – The analyte has a concentration below the minimum calibration level (LOQ value) but greater than the LOD. These values should be considered as having measurement uncertainty higher than values within the calibration range

L - For reports containing PFAS analytes only, this flag indicates that an analyte has a concentration below the Minimum Detection Limit (MDL) . The reported concentration is not recommended for regulatory use as the analyte signal may have a signal-to-noise ratio less than the criteria deemed necessary to be considered a detected analyte.

LOD – Limit of Detection: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOD. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the minimum detection limit (MDL). The LOD is adjusted for sample weight or volume.

LOQ – Limit of Quantitation: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOQ. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the reporting limit (RL). The LOQ is adjusted for sample weight or volume.

<LOD() – Analyte was not found at a concentration high enough to be reported as detected. It is reported as less than the LOD, and the LOD is given in the parentheses.

<LOQ() – Analyte was not found at a concentration high enough to be reported as above the QSM-defined LOQ or TNI defined Reporting Limit. It is reported as less than the LOQ, and the LOQ is given in the parentheses.

ND – Indicates a non-detect.

NR – Indicates a value that is not reportable due to issues observed in sample preparation or analysis.

PR – The associated congener(s) is(are) poorly resolved.

QI – Indicates the presence of a quantitative interference.

RL – Reporting Limit. Lowest reportable value. The level is higher than the MDL.

SI – Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.

U – The analyte was not detected.

V / Q – The labeled standard recovery is not within method control limits.

X – Indicates the result is from re-injection/repeat/second-column analysis.

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AR – Indicates use of the archived portion of the sample extract.

CU – Indicates a sample that required additional clean-up prior to HRMS injection/processing.

D – Dilution Data. Result was obtained from the analysis of a dilution. The number that follows the "D" indicates the dilution factor.

DE – Indicates a dilution performed with the addition of ES (Extraction Standard) solution.

DUP – Designation for a duplicate sample.

MS – Designation for a matrix spike.

MSD – Designation for a matrix spike duplicate.

R – Indicates a re-extraction of the sample.

RJ – Indicates a reinjection of the sample extract.

S – Indicates a sample split. The number that follows the "S" indicates the split factor.

SAT – Indicates an analyte saturated the detector.

	PFAS Compound Acronym List		
	Acronym	**CAS #**	**Compound Name**
	*** accredited for SOP EU047 / EPA method 1633**		***# Method 537.1 Accredited ^ Method 533 Accredited ~EPA 1633 extended list***
	Target Analytes		
~	PFPrA		2,2,3,3,3-Pentafluoropropionic acid
*, ^	PFBA	375-22-4	Perfluorobutanoic Acid
*, #, ^	PFPeA	2706-90-3	Perfluoropentanoic Acid
*, #, ^	PFHxA	307-24-4	Perfluorohexanoic Acid
*, #, ^	PFHpA	375-85-9	Perfluoroheptanoic Acid
*, #, ^	PFOA	335-67-1	Perfluorooctanoic Acid
*, #, ^	PFNA	375-95-1	Perfluorononanoic Acid
*, #, ^	PFDA	335-76-2	Perfluorodecanoic acid
*, #, ^	PFUnA (PFUnDA)	2058-94-8	Perfluoroundecanoic acid
*, #	PFDoA (PFDoDA)	307-55-1	Perfluorododecanoic acid
*, #	PFTrDA (PFTriA)	72629-94-8	Perfluorotridecanoic acid
*, #, ^	PFTeDA (PFTA)	376-06-7	Perfluorotetradecanoic acid
~	PFPrS (PFPS)	423-41-6	Perfluoropropanesulfonic acid
*, ^	PFBS	375-73-5	Perfluorobutane sulfonic acid
*, #, ^	PFPeS	2706-91-4	Perfluoropentane sulfonic acid
*, ^	PFHxS	355-46-4	Perfluorohexane sulfonic acid
*, #, ^	PFHpS	375-92-8	Perfluoroheptane sulfonic acid
*, #, ^	PFOS	1763-23-1	Perfluorooctane sulfonic acid
*	PFNS	68259-12-1	Perfluorononane sulfonic acid
*	PFDS	335-77-3	Perfluorodecane sulfonic acid
*, ^	4:2 FTS	757124-72-4	4:2 fluorotelomer sulfonic acid
*, ^	6:2 FTS	27619-97-2	6:2 fluorotelomer sulfonic acid
*, ^	8:2 FTS	39108-34-4	8:2 fluorotelomer sulfonic acid
~	10:2 FTS	120226-60-0	Fluorotelomer sulfonate 10:2
~	FHxSA	41997-13-1	Perfluorohexanesulfonamide
*	PFOSA (FOSA)	754-91-6	Perfluorooctane sulfonamide
*, #	N-MeFOSAA	2355-31-9	N-methyl perfluorooctane sulfonamido acetic acid
*, #	N-EtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamido acetic acid
*, #, ^	HFPO-DA	13252-13-6	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (Gen-X)
*, #, ^	11Cl-PF3OUdS	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid
*, #, ^	9Cl-PF3ONS	756426-58-1	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
*, #, ^	ADONA	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid
*, ^	PFEESA	113507-82-7	Perfluoro(2-ethoxyethane)sulphonic acid
*, ^	PFMOBA (PFMBA)	863090-89-5	Perfluoro-4-methoxybutanic acid
*, ^	NFDHA	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid
*, ^	PFMOPrA (PFMPA)	377-73-1	Perfluoro-3-methoxypropanoic acid
~	PFMOAA	674-13-5	Perfluoro-2-methoxyacetic acid
~	PFO2HxA	39492-88-1	Perfluoro (3,5-dioxahexanoic) acid
~	PFO3OA	39492-89-2	Perfluoro (3,5,7-trioxaoctanoic) acid
~	PFO4DA	39492-90-5	Perfluoro (3,5,7,9-tetraoxadecanoic) acid
~	PFO5DA	39492-91-6	Perfluoro(3,5,7,9,11-pentaoxadodecanoic) acid
~	Nafion Byproduct 1 (PS Acid)	29311-67-9	Nafion Byproduct 1
~	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	Nafion Byproduct 2
~	PEPA	267239-61-2	Perfluoro-2-ethoxypropanoic acid
~	PMPA	13140-29-9	Perfluoro-2-methoxypropanoic acid
*	N-EtFOSA	4151-50-2	N-ethylperfluoro-1-octanesulfonamide
*	N-EtFOSE	1691-99-2	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol
*	N-MeFOSA	31506-32-8	N-methylperfluoro-1-octanesulfonamide
*	M		2-(N-methylperfluoro-1-octanesulfonamido)-ethanol

PFAS Compound Acronym List			
	Acronym	CAS #	Compound Name
	* accredited for SOP EU047 / EPA method 1633		*# Method 537.1 Accredited ^ Method 533 Accredited ~EPA 1633 extended list*
~	PFECA-G		4-(Heptafluoroisopropoxy)hexafluorobutanoic acid
~	PFHxDA		Perfluorohexadecanoic acid
~	R-PSDA (Nafion Byproduct 4)	2416366-18-0	Perfluoro-4-(2-sulfoethoxy)pentanoic acid
~	Hydrolyzed PSDA (Nafion Byproduct 5)	2416366-19-1	2-fluoro-2-[1,1,2,3,3,3-hexafluoro-2-(1,1,2,2-tetrafluoro-2-sulfoethoxy)propoxy]-acetic acid
~	R-PSDCA (Nafion Byproduct 6)	2416366-21-5	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy] ethanesulfonic acid
~	EVE Acid	69087-46-3	2,2,3,3-tetrafluoro-3-({1,1,1,2,3,3-hexafluoro-3-[(1,2,2-trifluoroethenyl)oxy]propan-2-yl}oxy)propionic acid
~	FBSA	30334-69-1	Perfluorobutylsulfonamide
~	MeFBSA	68298-12-4	1-Butanesulfonamide; (N-(Methyl)nonafluorobutanesulfonamide)
~	Hydro-EVE Acid	773804-62-9	2,2,3,3-Tetrafluoro-3-{[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid
~	R-EVE Acid	2416366-22-6	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid
~	NVHOS	1132933-86-8	Perfluoroethoxysulfonic acid
~	PFDoS	79780-39-5	Perfluorododecane sulfonic acid
~	PFODA	16517-11-6	Perfluorooctadecanoic acid
*	3:3 FTCA	356-02-5	2H,2H,3H,3H-Perfluorohexanoic acid
*	5:3 FTCA	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid
*	7:3 FTCA	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid
~			N-(3-(Dimethylamino)propyl)tridecafluoro-1-hexanesulfonamide
~	M		N-(Carboxymethyl)-N,N-dimethyl-3-(((3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)sulfonyl)amino)1-propanaminium
~			
~			r r d

Results

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Summary

	Compound	CAS	SCL74_W1 ng/L	SCL74_FIELD BLANK ng/L	SCL74_W2 ng/L	SCL74_W3 ng/L	SCL74_WSURF ng/L
Acids	PFBA	375-22-4	<LOQ (66.7) U	<LOQ (15.7) U	<LOQ (66.7) U	<LOQ (66.7) U	<LOQ (66.7) U
	PFPeA	2706-90-3	<LOQ (33.3) U	<LOQ (7.87) U	<LOQ (33.3) U	<LOQ (33.3) U	<LOQ (33.3) U
	PFHxA	307-24-4	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFHpA	375-85-9	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFOA	335-67-1	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFNA	375-95-1	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFDA	335-76-2	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFUnDA	2058-94-8	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFDoA	307-55-1	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFTrDA	72629-94-8	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFTeDA	376-06-7	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
Sulfonates	PFBS	375-73-5	<LOQ (14.8) U	<LOQ (3.49) U	<LOQ (14.8) U	<LOQ (14.8) U	<LOQ (14.8) U
	PFPeS	2706-91-4	<LOQ (15.7) U	<LOQ (3.70) U	<LOQ (15.7) U	<LOQ (15.7) U	<LOQ (15.7) U
	PFHxS	355-46-4	17.5	<LOQ (3.59) U	16.7	17.8	19.0
	PFHpS	375-92-8	<LOQ (15.9) U	<LOQ (3.75) U	<LOQ (15.9) U	<LOQ (15.9) U	<LOQ (15.9) U
	PFOS	1763-23-1	22.5	<LOQ (3.65) U	22.0	19.5	22.1
	PFNS	68259-12-1	<LOQ (16.0) U	<LOQ (3.78) U	<LOQ (16.0) U	<LOQ (16.0) U	<LOQ (16.0) U
	PFDS	335-77-3	<LOQ (16.1) U	<LOQ (3.79) U	<LOQ (16.1) U	<LOQ (16.1) U	<LOQ (16.1) U
	PFDoS	79780-39-5	<LOQ (16.2) U	<LOQ (3.81) U	<LOQ (16.2) U	<LOQ (16.2) U	<LOQ (16.2) U
	4:2 FTS	757124-72-4	<LOQ (62.5) U	<LOQ (14.7) U	<LOQ (62.5) U	<LOQ (62.5) U	<LOQ (62.5) U
	6:2 FTS	27619-97-2	<LOQ (63.3) U	<LOQ (14.9) U	<LOQ (63.3) U	<LOQ (63.3) U	<LOQ (63.3) U
	8:2 FTS	39108-34-4	<LOQ (64.0) U	<LOQ (15.1) U	<LOQ (64.0) U	<LOQ (64.0) U	<LOQ (64.0) U
Sulfonmides	PFOSA	754-91-6	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	N-MeFOSA	31506-32-8	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	N-EtFOSA	4151-50-2	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	N-MeFOSE	24448-09-7	<LOQ (167) U	<LOQ (39.3) U	<LOQ (167) U	<LOQ (167) U	<LOQ (167) U
	N-EtFOSE	1691-99-2	<LOQ (167) U	<LOQ (39.3) U	<LOQ (167) U	<LOQ (167) U	<LOQ (167) U
PFECAs	HFPO-DA	13252-13-6	<LOQ (66.7) U	<LOQ (15.7) U	<LOQ (66.7) U	<LOQ (66.7) U	<LOQ (66.7) U
	PFMBA	863090-89-5	<LOQ (33.3) U	<LOQ (7.87) U	<LOQ (33.3) U	<LOQ (33.3) U	<LOQ (33.3) U
	PFMPA	377-73-1	<LOQ (33.3) U	<LOQ (7.87) U	<LOQ (33.3) U	<LOQ (33.3) U	<LOQ (33.3) U
	NFDHA	151772-58-6	<LOQ (33.3) U	<LOQ (7.87) U	<LOQ (33.3) U	<LOQ (33.3) U	<LOQ (33.3) U
FTCAs	3:3 FTCA	356-02-5	<LOQ (83.3) U	<LOQ (19.7) U	<LOQ (83.3) U	<LOQ (83.3) U	<LOQ (83.3) U
	5:3 FTCA	914637-49-3	<LOQ (83.3) U	<LOQ (19.7) U	<LOQ (83.3) U	<LOQ (83.3) U	<LOQ (83.3) U
	7:3 FTCA	812-70-4	<LOQ (83.3) U	<LOQ (19.7) U	<LOQ (83.3) U	<LOQ (83.3) U	<LOQ (83.3) U
Other	ADONA	919005-14-4	<LOQ (63.0) U	<LOQ (14.9) U	<LOQ (63.0) U	<LOQ (63.0) U	<LOQ (63.0) U
	9Cl-PF3ONS	756426-58-1	<LOQ (62.3) U	<LOQ (14.7) U	<LOQ (62.3) U	<LOQ (62.3) U	<LOQ (62.3) U
	N-MeFOSAA	2355-31-9	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	11Cl-PF3OUdS	763051-92-9	<LOQ (63.0) U	<LOQ (14.9) U	<LOQ (63.0) U	<LOQ (63.0) U	<LOQ (63.0) U
	N-EtFOSAA	2991-50-6	<LOQ (16.7) U	<LOQ (3.93) U	<LOQ (16.7) U	<LOQ (16.7) U	<LOQ (16.7) U
	PFEESA	113507-82-7	<LOQ (29.7) U	<LOQ (7.00) U	<LOQ (29.7) U	<LOQ (29.7) U	<LOQ (29.7) U

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water
Florida Gulf Coast University 240617-FGCU-PFAS

Summary

	Compound	CAS	SCL74_W4 ng/L	SCL74_WSkim ng/L
Acids	PFBA	375-22-4	<LOQ (66.7) U	<LOQ (66.7) U
	PFPeA	2706-90-3	<LOQ (33.3) U	<LOQ (33.3) U
	PFHxA	307-24-4	<LOQ (16.7) U	<LOQ (16.7) U
	PFHpA	375-85-9	<LOQ (16.7) U	<LOQ (16.7) U
	PFOA	335-67-1	<LOQ (16.7) U	<LOQ (16.7) U
	PFNA	375-95-1	<LOQ (16.7) U	<LOQ (16.7) U
	PFDA	335-76-2	<LOQ (16.7) U	<LOQ (16.7) U
	PFUnDA	2058-94-8	<LOQ (16.7) U	<LOQ (16.7) U
	PFDoA	307-55-1	<LOQ (16.7) U	<LOQ (16.7) U
	PFTrDA	72629-94-8	<LOQ (16.7) U	<LOQ (16.7) U
	PFTeDA	376-06-7	<LOQ (16.7) U	<LOQ (16.7) U
Sulfonates	PFBS	375-73-5	<LOQ (14.8) U	<LOQ (14.8) U
	PFPeS	2706-91-4	<LOQ (15.7) U	<LOQ (15.7) U
	PFHxS	355-46-4	19.1	20.4
	PFHpS	375-92-8	<LOQ (15.9) U	<LOQ (15.9) U
	PFOS	1763-23-1	21.2	24.9
	PFNS	68259-12-1	<LOQ (16.0) U	<LOQ (16.0) U
	PFDS	335-77-3	<LOQ (16.1) U	<LOQ (16.1) U
	PFDoS	79780-39-5	<LOQ (16.2) U	<LOQ (16.2) U
	4:2 FTS	757124-72-4	<LOQ (62.5) U	<LOQ (62.5) U
	6:2 FTS	27619-97-2	<LOQ (63.3) U	<LOQ (63.3) U
	8:2 FTS	39108-34-4	<LOQ (64.0) U	<LOQ (64.0) U
Sulfonmides	PFOSA	754-91-6	<LOQ (16.7) U	<LOQ (16.7) U
	N-MeFOSA	31506-32-8	<LOQ (16.7) U	<LOQ (16.7) U
	N-EtFOSA	4151-50-2	<LOQ (16.7) U	<LOQ (16.7) U
	N-MeFOSE	24448-09-7	<LOQ (167) U	<LOQ (167) U
	N-EtFOSE	1691-99-2	<LOQ (167) U	<LOQ (167) U
PFECAs	HFPO-DA	13252-13-6	<LOQ (66.7) U	<LOQ (66.7) U
	PFMBA	863090-89-5	<LOQ (33.3) U	<LOQ (33.3) U
	PFMPA	377-73-1	<LOQ (33.3) U	<LOQ (33.3) U
	NFDHA	151772-58-6	<LOQ (33.3) U	<LOQ (33.3) U
FTCAs	3:3 FTCA	356-02-5	<LOQ (83.3) U	<LOQ (83.3) U
	5:3 FTCA	914637-49-3	<LOQ (83.3) U	<LOQ (83.3) U
	7:3 FTCA	812-70-4	<LOQ (83.3) U	<LOQ (83.3) U
Other	ADONA	919005-14-4	<LOQ (63.0) U	<LOQ (63.0) U
	9Cl-PF3ONS	756426-58-1	<LOQ (62.3) U	<LOQ (62.3) U
	N-MeFOSAA	2355-31-9	<LOQ (16.7) U	<LOQ (16.7) U
	11Cl-PF3OUdS	763051-92-9	<LOQ (63.0) U	<LOQ (63.0) U
	N-EtFOSAA	2991-50-6	<LOQ (16.7) U	<LOQ (16.7) U
	PFEESA	113507-82-7	<LOQ (29.7) U	<LOQ (29.7) U

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)

Florida Gulf Coast University 240617-FGCU-PFAS

Summary

	Compound	CAS	SCL74_C1 ng/g	SCL74_S1 ng/g	SCL74_LSI ng/g	SCL74_C2 ng/g	SCL74_S2 ng/g
Acids	PFBA	375-22-4	<LOQ (3.04) U	<LOQ (2.62) U	<LOQ (1.49) U	<LOQ (9.82) U	<LOQ (7.89) U
	PFPeA	2706-90-3	<LOQ (1.50) U	<LOQ (1.31) U	<LOQ (0.729) U	<LOQ (4.97) U	<LOQ (3.99) U
	PFHxA	307-24-4	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	PFHpA	375-85-9	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	PFOA	335-67-1	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	PFNA	375-95-1	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	PFDA	335-76-2	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
	PFUnDA	2058-94-8	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
	PFDoA	307-55-1	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
	PFTrDA	72629-94-8	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
	PFTeDA	376-06-7	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
Sulfonates	PFBS	375-73-5	<LOQ (0.675) U	<LOQ (0.581) U	<LOQ (0.330) U	<LOQ (2.18) U	<LOQ (1.75) U
	PFPeS	2706-91-4	<LOQ (0.705) U	<LOQ (0.616) U	<LOQ (0.343) U	<LOQ (2.34) U	<LOQ (1.88) U
	PFHxS	355-46-4	<LOQ (0.685) U	<LOQ (0.598) U	<LOQ (0.333) U	<LOQ (2.27) U	<LOQ (1.82) U
	PFHpS	375-92-8	<LOQ (0.725) U	<LOQ (0.624) U	<LOQ (0.355) U	<LOQ (2.34) U	<LOQ (1.88) U
	PFOS	1763-23-1	1.10	1.88	0.555	3.89	7.10
	PFNS	68259-12-1	<LOQ (0.721) U	<LOQ (0.630) U	<LOQ (0.351) U	<LOQ (2.39) U	<LOQ (1.92) U
	PFDS	335-77-3	<LOQ (0.723) U	<LOQ (0.632) U	<LOQ (0.352) U	<LOQ (2.40) U	<LOQ (1.92) U
	4:2 FTS	757124-72-4	<LOQ (2.81) U	<LOQ (2.46) U	<LOQ (1.37) U	<LOQ (9.32) U	<LOQ (7.47) U
	PFDoS	79780-39-5	<LOQ (0.727) U	<LOQ (0.635) U	<LOQ (0.354) U	<LOQ (2.41) U	<LOQ (1.93) U
	6:2 FTS	27619-97-2	<LOQ (2.85) U	<LOQ (2.49) U	<LOQ (1.39) U	<LOQ (9.44) U	<LOQ (7.57) U
	8:2 FTS	39108-34-4	<LOQ (2.92) U	<LOQ (2.51) U	<LOQ (1.43) U	<LOQ (9.43) U	<LOQ (7.58) U
Sulfonmides	PFOSA	754-91-6	<LOQ (0.761) U	<LOQ (0.655) U	<LOQ (0.373) U	<LOQ (2.46) U	<LOQ (1.97) U
	N-MeFOSA	31506-32-8	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	N-EtFOSA	4151-50-2	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	N-MeFOSE	24448-09-7	<LOQ (7.61) U	<LOQ (6.55) U	<LOQ (3.73) U	<LOQ (24.6) U	<LOQ (19.7) U
	N-EtFOSE	1691-99-2	<LOQ (7.61) U	<LOQ (6.55) U	<LOQ (3.73) U	<LOQ (24.6) U	<LOQ (19.7) U
PFECAs	HFPO-DA	13252-13-6	<LOQ (3.04) U	<LOQ (2.62) U	<LOQ (1.49) U	<LOQ (9.82) U	<LOQ (7.89) U
	PFMBA	863090-89-5	<LOQ (1.50) U	<LOQ (1.31) U	<LOQ (0.729) U	<LOQ (4.97) U	<LOQ (3.99) U
	PFMPA	377-73-1	<LOQ (1.50) U	<LOQ (1.31) U	<LOQ (0.729) U	<LOQ (4.97) U	<LOQ (3.99) U
	NFDHA	151772-58-6	<LOQ (1.50) U	<LOQ (1.31) U	<LOQ (0.729) U	<LOQ (4.97) U	<LOQ (3.99) U
FTCAs	3:3 FTCA	356-02-5	<LOQ (3.75) U	<LOQ (3.27) U	<LOQ (1.82) U	<LOQ (12.4) U	<LOQ (9.96) U
	5:3 FTCA	914637-49-3	<LOQ (3.75) U	<LOQ (3.27) U	<LOQ (1.82) U	<LOQ (12.4) U	<LOQ (9.96) U
	7:3 FTCA	812-70-4	<LOQ (3.81) U	<LOQ (3.27) U	<LOQ (1.86) U	<LOQ (12.3) U	<LOQ (9.87) U
Other	ADONA	919005-14-4	<LOQ (2.88) U	<LOQ (2.47) U	<LOQ (1.41) U	<LOQ (9.28) U	<LOQ (7.46) U
	9Cl-PF3ONS	756426-58-1	<LOQ (2.80) U	<LOQ (2.45) U	<LOQ (1.36) U	<LOQ (9.29) U	<LOQ (7.45) U
	N-MeFOSAA	2355-31-9	<LOQ (0.749) U	<LOQ (0.655) U	<LOQ (0.365) U	<LOQ (2.48) U	<LOQ (1.99) U
	11Cl-PF3OUdS	763051-92-9	<LOQ (2.83) U	<LOQ (2.47) U	<LOQ (1.38) U	<LOQ (9.39) U	<LOQ (7.53) U
	N-EtFOSAA	2991-50-6	<LOQ (0.749) U	1.80	<LOQ (0.365) U	<LOQ (2.48) U	2.17
	PFEESA	113507-82-7	<LOQ (1.33) U	<LOQ (1.17) U	<LOQ (0.649) U	<LOQ (4.42) U	<LOQ (3.55) U

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)

Florida Gulf Coast University 240617-FGCU-PFAS

Summary

	Compound	CAS	SCL74_LS2 ng/g	SCL74_C3 ng/g	SCL74_S3 ng/g	SCL74_Sand3 ng/g	SCL74_C4 ng/g
Acids	PFBA	375-22-4	<LOQ (2.01) U	<LOQ (8.91) U	<LOQ (3.40) U	<LOQ (1.04) U	<LOQ (5.17) U
	PFPeA	2706-90-3	<LOQ (1.01) U	<LOQ (4.44) U	<LOQ (1.66) U	<LOQ (0.507) U	<LOQ (2.43) U
	PFHxA	307-24-4	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	PFHpA	375-85-9	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	PFOA	335-67-1	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	PFNA	375-95-1	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	PFDA	335-76-2	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
	PFUnDA	2058-94-8	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
	PFDoA	307-55-1	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
	PFTrDA	72629-94-8	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
	PFTeDA	376-06-7	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
Sulfonates	PFBS	375-73-5	<LOQ (0.445) U	<LOQ (1.98) U	<LOQ (0.753) U	<LOQ (0.231) U	<LOQ (1.15) U
	PFPeS	2706-91-4	<LOQ (0.474) U	<LOQ (2.09) U	<LOQ (0.779) U	<LOQ (0.239) U	<LOQ (1.14) U
	PFHxS	355-46-4	<LOQ (0.460) U	<LOQ (2.03) U	<LOQ (0.757) U	<LOQ (0.232) U	<LOQ (1.11) U
	PFHpS	375-92-8	<LOQ (0.479) U	<LOQ (2.12) U	<LOQ (0.810) U	<LOQ (0.248) U	<LOQ (1.23) U
	PFOS	1763-23-1	0.724	2.88	2.98	<LOQ (0.241) U	2.35
	PFNS	68259-12-1	<LOQ (0.484) U	<LOQ (2.13) U	<LOQ (0.797) U	<LOQ (0.244) U	<LOQ (1.17) U
	PFDS	335-77-3	<LOQ (0.486) U	<LOQ (2.14) U	<LOQ (0.799) U	<LOQ (0.245) U	<LOQ (1.17) U
	4:2 FTS	757124-72-4	<LOQ (1.89) U	<LOQ (8.32) U	<LOQ (3.11) U	<LOQ (0.951) U	<LOQ (4.55) U
	PFDoS	79780-39-5	<LOQ (0.488) U	<LOQ (2.15) U	<LOQ (0.803) U	<LOQ (0.246) U	<LOQ (1.18) U
	6:2 FTS	27619-97-2	<LOQ (1.91) U	<LOQ (8.43) U	<LOQ (3.15) U	<LOQ (0.964) U	<LOQ (4.62) U
	8:2 FTS	39108-34-4	<LOQ (1.93) U	<LOQ (8.55) U	<LOQ (3.26) U	<LOQ (0.999) U	<LOQ (4.97) U
Sulfonmides	PFOSA	754-91-6	<LOQ (0.502) U	<LOQ (2.23) U	<LOQ (0.850) U	<LOQ (0.260) U	<LOQ (1.29) U
	N-MeFOSA	31506-32-8	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	N-EtFOSA	4151-50-2	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	N-MeFOSE	24448-09-7	<LOQ (5.02) U	<LOQ (22.3) U	<LOQ (8.50) U	<LOQ (2.60) U	<LOQ (12.9) U
	N-EtFOSE	1691-99-2	<LOQ (5.02) U	<LOQ (22.3) U	<LOQ (8.50) U	<LOQ (2.60) U	<LOQ (12.9) U
PFECAs	HFPO-DA	13252-13-6	<LOQ (2.01) U	<LOQ (8.91) U	<LOQ (3.40) U	<LOQ (1.04) U	<LOQ (5.17) U
	PFMBA	863090-89-5	<LOQ (1.01) U	<LOQ (4.44) U	<LOQ (1.66) U	<LOQ (0.507) U	<LOQ (2.43) U
	PFMPA	377-73-1	<LOQ (1.01) U	<LOQ (4.44) U	<LOQ (1.66) U	<LOQ (0.507) U	<LOQ (2.43) U
	NFDHA	151772-58-6	<LOQ (1.01) U	<LOQ (4.44) U	<LOQ (1.66) U	<LOQ (0.507) U	<LOQ (2.43) U
FTCAs	3:3 FTCA	356-02-5	<LOQ (2.52) U	<LOQ (11.1) U	<LOQ (4.14) U	<LOQ (1.27) U	<LOQ (6.07) U
	5:3 FTCA	914637-49-3	<LOQ (2.52) U	<LOQ (11.1) U	<LOQ (4.14) U	<LOQ (1.27) U	<LOQ (6.07) U
	7:3 FTCA	812-70-4	<LOQ (2.51) U	<LOQ (11.1) U	<LOQ (4.25) U	<LOQ (1.30) U	<LOQ (6.47) U
Other	ADONA	919005-14-4	<LOQ (1.90) U	<LOQ (8.42) U	<LOQ (3.21) U	<LOQ (0.984) U	<LOQ (4.89) U
	9Cl-PF3ONS	756426-58-1	<LOQ (1.88) U	<LOQ (8.30) U	<LOQ (3.10) U	<LOQ (0.949) U	<LOQ (4.54) U
	N-MeFOSAA	2355-31-9	<LOQ (0.503) U	<LOQ (2.22) U	<LOQ (0.828) U	<LOQ (0.254) U	<LOQ (1.21) U
	11Cl-PF3OUdS	763051-92-9	<LOQ (1.90) U	<LOQ (8.39) U	<LOQ (3.13) U	<LOQ (0.959) U	<LOQ (4.59) U
	N-EtFOSAA	2991-50-6	<LOQ (0.503) U	<LOQ (2.22) U	2.31	<LOQ (0.254) U	<LOQ (1.21) U
	PFEESA	113507-82-7	<LOQ (0.896) U	<LOQ (3.95) U	<LOQ (1.47) U	<LOQ (0.451) U	<LOQ (2.16) U

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Summary

	Compound	CAS	SCL74_S4 ng/g	SCL74_Sand4 ng/g
Acids	PFBA	375-22-4	<LOQ (7.77) U	<LOQ (1.07) U
	PFPeA	2706-90-3	<LOQ (3.84) U	<LOQ (0.530) U
	PFHxA	307-24-4	<LOQ (1.92) U	<LOQ (0.265) U
	PFHpA	375-85-9	<LOQ (1.92) U	<LOQ (0.265) U
	PFOA	335-67-1	<LOQ (1.92) U	<LOQ (0.265) U
	PFNA	375-95-1	<LOQ (1.92) U	<LOQ (0.265) U
	PFDA	335-76-2	<LOQ (1.94) U	<LOQ (0.267) U
	PFUnDA	2058-94-8	<LOQ (1.94) U	<LOQ (0.267) U
	PFDoA	307-55-1	<LOQ (1.94) U	<LOQ (0.267) U
	PFTrDA	72629-94-8	<LOQ (1.94) U	<LOQ (0.267) U
	PFTeDA	376-06-7	<LOQ (1.94) U	<LOQ (0.267) U
Sulfonates	PFBS	375-73-5	<LOQ (1.72) U	<LOQ (0.237) U
	PFPeS	2706-91-4	<LOQ (1.81) U	<LOQ (0.249) U
	PFHxS	355-46-4	<LOQ (1.75) U	<LOQ (0.242) U
	PFHpS	375-92-8	<LOQ (1.85) U	<LOQ (0.254) U
	PFOS	1763-23-1	5.81	<LOQ (0.248) U
	PFNS	68259-12-1	<LOQ (1.85) U	<LOQ (0.255) U
	PFDS	335-77-3	<LOQ (1.85) U	<LOQ (0.255) U
	4:2 FTS	757124-72-4	<LOQ (7.20) U	<LOQ (0.993) U
	PFDoS	79780-39-5	<LOQ (1.86) U	<LOQ (0.257) U
	6:2 FTS	27619-97-2	<LOQ (7.29) U	<LOQ (1.01) U
	8:2 FTS	39108-34-4	<LOQ (7.46) U	<LOQ (1.02) U
Sulfonmides	PFOSA	754-91-6	<LOQ (1.94) U	<LOQ (0.267) U
	N-MeFOSA	31506-32-8	<LOQ (1.94) U	<LOQ (0.265) U
	N-EtFOSA	4151-50-2	<LOQ (1.94) U	<LOQ (0.265) U
	N-MeFOSE	24448-09-7	<LOQ (19.4) U	<LOQ (2.67) U
	N-EtFOSE	1691-99-2	<LOQ (19.4) U	<LOQ (2.67) U
PFECAs	HFPO-DA	13252-13-6	<LOQ (7.77) U	<LOQ (1.07) U
	PFMBA	863090-89-5	<LOQ (3.84) U	<LOQ (0.530) U
	PFMPA	377-73-1	<LOQ (3.84) U	<LOQ (0.530) U
	NFDHA	151772-58-6	<LOQ (3.84) U	<LOQ (0.530) U
FTCAs	3:3 FTCA	356-02-5	<LOQ (9.59) U	<LOQ (1.32) U
	5:3 FTCA	914637-49-3	<LOQ (9.59) U	<LOQ (1.32) U
	7:3 FTCA	812-70-4	<LOQ (9.71) U	<LOQ (1.33) U
Other	ADONA	919005-14-4	<LOQ (7.34) U	<LOQ (1.01) U
	9Cl-PF3ONS	756426-58-1	<LOQ (7.18) U	<LOQ (0.990) U
	N-MeFOSAA	2355-31-9	<LOQ (1.92) U	<LOQ (0.265) U
	11Cl-PF3OUdS	763051-92-9	<LOQ (7.25) U	<LOQ (1.00) U
	N-EtFOSAA	2991-50-6	5.68	<LOQ (0.265) U
	PFEESA	113507-82-7	<LOQ (3.42) U	<LOQ (0.471) U

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W1		
Sampling Site			
Enthalpy ID	0724-833-003-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 10:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:46	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724040	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724040	<LOQ (33.3)	bb1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724040	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724040	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724040	<LOQ (16.7)	MM1*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724040	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724040	<LOQ (16.7)	bb2*	15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724040	<LOQ (16.7)		15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724040	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724040	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724040	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724040	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724040	<LOQ (15.7)	MM2*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724040	17.5	MM1*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724040	<LOQ (15.9)	MM1*	14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724040	22.5	MM1*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724040	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724040	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724040	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724040	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724040	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724040	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724040	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724040	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724040	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724040	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724040	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724040	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724040	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724040	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724040	<LOQ (33.3)	MM3*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724040	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724040	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724040	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724040	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724040	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724040	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724040	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724040	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724040	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724040		bb				100	5-130%	91.5%	
	M5PFPeA		P290724040		bs				50.0	40-130%	89.4%	
	M5PFHxA		P290724040		bb				25.0	40-130%	86.4%	
	M4PFHpA		P290724040		bs				25.0	40-130%	96.4%	
	M8PFOA		P290724040		bs				25.0	40-130%	89.3%	
	M9PFNA		P290724040		bs				12.5	40-130%	83.3%	
	M6PFDA		P290724040		bb				12.5	40-130%	75.1%	
	M7PFUdA		P290724040		bb				12.5	30-130%	56.4%	
	M2-PFDoA		P290724040		bs				12.5	10-130%	46.4%	
	13C2-PFTeDA		P290724040		bb				12.5	10-130%	35.2%	
	M3PFBS		P290724040		bb				23.3	40-135%	90.9%	
	M3PFHxS		P290724040		bb				23.7	40-130%	83.8%	
	M8PFOS		P290724040		bb				24.0	40-130%	63.5%	
	M2-4:2 FTS		P290724040		bb				46.9	40-200%	85.7%	
	M2-6:2 FTS		P290724040		bs				47.6	40-200%	68.5%	
	M2-8:2 FTS		P290724040		bs				48.0	40-300%	60.7%	
	M8PFOSA		P290724040		bb				25.0	40-130%	73.9%	
	d3-N-MeFOSA		P290724040		bb				25.0	10-130%	47.7%	
	d5-N-EtFOSA		P290724040		bb				25.0	10-130%	44.5%	
	d3-N-MeFOSAA		P290724040		bb				50.0	40-170%	52.8%	
	d5-N-EtFOSAA		P290724040		bs				50.0	25-135%	48.8%	
	d7-N-MeFOSE		P290724040		bb				250	10-130%	37.7%	
	d9-N-EtFOSE		P290724040		bb				250	10-130%	44.6%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W1		
Sampling Site			
Enthalpy ID	0724-833-003-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 10:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:46	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724040		bb				100	40-130%	100.1%	
JS	M3PFBA		P290724040		bb				50.0	>30%	127.8%	
	M2-PFHxA		P290724040		bs				25.0	>30%	122.6%	
	M4-PFOA		P290724040		bb				25.0	>30%	118.8%	
	M5-PFNA		P290724040		bb				12.5	>30%	107.8%	
	M2-PFDA		P290724040		bb				12.5	>30%	114.6%	
	18O2PFHxS		P290724040		bb				23.7	>30%	123.5%	
	M4-PFOS		P290724040		bb				24.0	>30%	124.7%	

Peak Flags
bb1* bb;R JDG 7/30/24
bb2* bb;C JDG 7/30/24
MM1* MM;C JDG 7/30/24
MM2* MM;N JDG 7/30/24
MM3* MM-;R JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_FIELD BLANK		
Sampling Site			
Enthalpy ID	0724-833-004-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 10:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	254.29
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:09	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724041	<LOQ (15.7)	bb	14.2	15.7	3.70				U
	PFPeA	2706-90-3	P290724041	<LOQ (7.87)	MM1*	7.08	7.87	1.24				U
	PFHxA	307-24-4	P290724041	<LOQ (3.93)	bb	3.54	3.93	1.30				U
	PFHpA	375-85-9	P290724041	<LOQ (3.93)		3.54	3.93	1.19				U
	PFOA	335-67-1	P290724041	<LOQ (3.93)	MM2*	3.54	3.93	0.963				U
	PFNA	375-95-1	P290724041	<LOQ (3.93)		3.54	3.93	0.753				U
	PFDA	335-76-2	P290724041	<LOQ (3.93)		3.54	3.93	1.79				U
	PFUnDA	2058-94-8	P290724041	<LOQ (3.93)		3.54	3.93	1.33				U
	PFDoA	307-55-1	P290724041	<LOQ (3.93)		3.54	3.93	1.33				U
	PFTrDA	72629-94-8	P290724041	<LOQ (3.93)		3.54	3.93	1.35				U
	PFTeDA	376-06-7	P290724041	<LOQ (3.93)		3.54	3.93	1.01				U
Sulfonates	PFBS	375-73-5	P290724041	<LOQ (3.49)		3.14	3.49	0.753				U
	PFPeS	2706-91-4	P290724041	<LOQ (3.70)		3.33	3.70	1.01				U
	PFHxS	355-46-4	P290724041	<LOQ (3.59)		3.23	3.59	1.52				U
	PFHpS	375-92-8	P290724041	<LOQ (3.75)		3.37	3.75	1.30				U
	PFOS	1763-23-1	P290724041	<LOQ (3.65)	MM2*	3.28	3.65	1.38				U
	PFNS	68259-12-1	P290724041	<LOQ (3.78)		3.40	3.78	0.920				U
	PFDS	335-77-3	P290724041	<LOQ (3.79)		3.42	3.79	0.342				U
	PFDoS	79780-39-5	P290724041	<LOQ (3.81)		3.43	3.81	0.946				U
	4:2 FTS	757124-72-4	P290724041	<LOQ (14.7)		13.3	14.7	6.17				U
	6:2 FTS	27619-97-2	P290724041	<LOQ (14.9)		13.4	14.9	3.72				U
	8:2 FTS	39108-34-4	P290724041	<LOQ (15.1)		13.6	15.1	9.46				U
Sulfonmides	PFOSA	754-91-6	P290724041	<LOQ (3.93)		3.54	3.93	0.372				U
	N-MeFOSA	31506-32-8	P290724041	<LOQ (3.93)		3.54	3.93	1.08				U
	N-EtFOSA	4151-50-2	P290724041	<LOQ (3.93)		3.54	3.93	2.69				U
	N-MeFOSE	24448-09-7	P290724041	<LOQ (39.3)		35.4	39.3	6.23				U
	N-EtFOSE	1691-99-2	P290724041	<LOQ (39.3)		35.4	39.3	5.29				U
PFECAs	HFPO-DA	13252-13-6	P290724041	<LOQ (15.7)		14.2	15.7	4.56				U
	PFMBA	863090-89-5	P290724041	<LOQ (7.87)		7.08	7.87	3.22				U
	PFMPA	377-73-1	P290724041	<LOQ (7.87)		7.08	7.87	1.48				U
	NFDHA	151772-58-6	P290724041	<LOQ (7.87)		7.08	7.87	3.97				U
FTCAs	3:3 FTCA	356-02-5	P290724041	<LOQ (19.7)		17.7	19.7	2.34				U
	5:3 FTCA	914637-49-3	P290724041	<LOQ (19.7)		17.7	19.7	5.74				U
	7:3 FTCA	812-70-4	P290724041	<LOQ (19.7)		17.7	19.7	3.97				U
Other	ADONA	919005-14-4	P290724041	<LOQ (14.9)		13.4	14.9	3.30				U
	9Cl-PF3ONS	756426-58-1	P290724041	<LOQ (14.7)		13.2	14.7	4.19				U
	N-MeFOSAA	2355-31-9	P290724041	<LOQ (3.93)		3.54	3.93	2.01				U
	11Cl-PF3OUdS	763051-92-9	P290724041	<LOQ (14.9)		13.4	14.9	3.34				U
	N-EtFOSAA	2991-50-6	P290724041	<LOQ (3.93)		3.54	3.93	1.90				U
	PFEESA	113507-82-7	P290724041	<LOQ (7.00)		6.30	7.00	1.24				U
ES	M4PFBA		P290724041		bb				100	5-130%	94.7%	
	M5PFPeA		P290724041		bs				50.0	40-130%	93.4%	
	M5PFHxA		P290724041		bb				25.0	40-130%	96.2%	
	M4PFHpA		P290724041		bb				25.0	40-130%	95.1%	
	M8PFOA		P290724041		bs				25.0	40-130%	94.4%	
	M9PFNA		P290724041		bs				12.5	40-130%	93.1%	
	M6PFDA		P290724041		bb				12.5	40-130%	85.3%	
	M7PFUdA		P290724041		bs				12.5	30-130%	80.2%	
	M2-PFDoA		P290724041		bs				12.5	10-130%	83.2%	
	13C2-PFTeDA		P290724041		bb				12.5	10-130%	76.1%	
	M3PFBS		P290724041		bb				23.3	40-135%	96.0%	
	M3PFHxS		P290724041		bs				23.7	40-130%	94.4%	
	M8PFOS		P290724041		bs				24.0	40-130%	89.3%	
	M2-4:2 FTS		P290724041		bb				46.9	40-200%	87.2%	
	M2-6:2 FTS		P290724041		bb				47.6	40-200%	80.8%	
	M2-8:2 FTS		P290724041		bs				48.0	40-300%	71.6%	
	M8PFOSA		P290724041		bb				25.0	40-130%	82.6%	
	d3-N-MeFOSA		P290724041		bb				25.0	10-130%	41.0%	
	d5-N-EtFOSA		P290724041		bb				25.0	10-130%	41.1%	
	d3-N-MeFOSAA		P290724041		bs				50.0	40-170%	77.8%	
	d5-N-EtFOSAA		P290724041		bb				50.0	25-135%	73.4%	
	d7-N-MeFOSE		P290724041		bb				250	10-130%	76.5%	
	d9-N-EtFOSE		P290724041		bb				250	10-130%	70.7%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_FIELD BLANK		
Sampling Site			
Enthalpy ID	0724-833-004-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 10:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	254.29
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:09	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724041		bb				100	40-130%	106.4%	
JS	M3PFBA		P290724041		bb				50.0	>30%	147.5%	
	M2-PFHxA		P290724041		bb				25.0	>30%	138.2%	
	M4-PFOA		P290724041		bb				25.0	>30%	139.4%	
	M5-PFNA		P290724041		bs				12.5	>30%	123.9%	
	M2-PFDA		P290724041		bb				12.5	>30%	141.3%	
	18O2PFHxS		P290724041		bs				23.7	>30%	152.0%	
	M4-PFOS		P290724041		bb				24.0	>30%	148.4%	

Peak Flags MM1* MM-;R JDG 7/30/24
MM2* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W2		
Sampling Site			
Enthalpy ID	0724-833-008-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 11:40	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:32	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724042	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724042	<LOQ (33.3)	MM1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724042	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724042	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724042	<LOQ (16.7)	MM2*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724042	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724042	<LOQ (16.7)	MM3*	15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724042	<LOQ (16.7)		15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724042	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724042	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724042	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724042	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724042	<LOQ (15.7)	MM4*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724042	16.7	MM2*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724042	<LOQ (15.9)	MM2*	14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724042	22.0	MM2*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724042	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724042	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724042	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724042	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724042	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724042	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724042	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724042	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724042	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724042	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724042	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724042	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724042	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724042	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724042	<LOQ (33.3)	MM1*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724042	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724042	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724042	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724042	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724042	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724042	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724042	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724042	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724042	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724042		bb				100	5-130%	96.0%	
	M5PFPeA		P290724042		bs				50.0	40-130%	93.4%	
	M5PFHxA		P290724042		bb				25.0	40-130%	92.9%	
	M4PFHpA		P290724042		bs				25.0	40-130%	100.8%	
	M8PFOA		P290724042		bs				25.0	40-130%	92.4%	
	M9PFNA		P290724042		bs				12.5	40-130%	96.6%	
	M6PFDA		P290724042		bb				12.5	40-130%	89.6%	
	M7PFUdA		P290724042		bb				12.5	30-130%	74.7%	
	M2-PFDoA		P290724042		bb				12.5	10-130%	67.9%	
	13C2-PFTeDA		P290724042		bb				12.5	10-130%	49.1%	
	M3PFBS		P290724042		bs				23.3	40-135%	95.3%	
	M3PFHxS		P290724042		bs				23.7	40-130%	100.1%	
	M8PFOS		P290724042		bb				24.0	40-130%	87.4%	
	M2-4:2 FTS		P290724042		bb				46.9	40-200%	93.9%	
	M2-6:2 FTS		P290724042		bb				47.6	40-200%	80.8%	
	M2-8:2 FTS		P290724042		bb				48.0	40-300%	68.7%	
	M8PFOSA		P290724042		bb				25.0	40-130%	83.8%	
	d3-N-MeFOSA		P290724042		bb				25.0	10-130%	64.3%	
	d5-N-EtFOSA		P290724042		bb				25.0	10-130%	69.2%	
	d3-N-MeFOSAA		P290724042		bs				50.0	40-170%	74.2%	
	d5-N-EtFOSAA		P290724042		bb				50.0	25-135%	72.1%	
	d7-N-MeFOSE		P290724042		bb				250	10-130%	55.3%	
	d9-N-EtFOSE		P290724042		bb				250	10-130%	65.1%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W2		
Sampling Site			
Enthalpy ID	0724-833-008-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 11:40	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:32	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724042		bs				100	40-130%	112.0%	
JS	M3PFBA		P290724042		bb				50.0	>30%	127.4%	
	M2-PFHxA		P290724042		bb				25.0	>30%	119.8%	
	M4-PFOA		P290724042		bb				25.0	>30%	117.2%	
	M5-PFNA		P290724042		bb				12.5	>30%	100.4%	
	M2-PFDA		P290724042		bb				12.5	>30%	113.5%	
	18O2PFHxS		P290724042		bb				23.7	>30%	123.1%	
	M4-PFOS		P290724042		bs				24.0	>30%	120.1%	

Peak Flags
MM1* MM-;R JDG 7/30/24
MM2* MM;C JDG 7/30/24
MM3* MM-;R JDG 7/30/24
MM4* MM;N JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W3		
Sampling Site			
Enthalpy ID	0724-833-012-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:15	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:55	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724043	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724043	<LOQ (33.3)	MM1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724043	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724043	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724043	<LOQ (16.7)	MM2*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724043	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724043	<LOQ (16.7)	MM3*	15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724043	<LOQ (16.7)		15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724043	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724043	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724043	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724043	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724043	<LOQ (15.7)	MM4*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724043	17.8	MM2*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724043	<LOQ (15.9)	MM2*	14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724043	19.5	MM2*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724043	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724043	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724043	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724043	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724043	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724043	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724043	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724043	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724043	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724043	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724043	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724043	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724043	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724043	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724043	<LOQ (33.3)	MM1*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724043	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724043	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724043	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724043	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724043	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724043	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724043	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724043	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724043	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724043		bb				100	5-130%	95.5%	
	M5PFPeA		P290724043		bs				50.0	40-130%	92.7%	
	M5PFHxA		P290724043		bs				25.0	40-130%	96.1%	
	M4PFHpA		P290724043		bs				25.0	40-130%	98.8%	
	M8PFOA		P290724043		bb				25.0	40-130%	90.8%	
	M9PFNA		P290724043		bb				12.5	40-130%	94.3%	
	M6PFDA		P290724043		bb				12.5	40-130%	87.0%	
	M7PFUdA		P290724043		bs				12.5	30-130%	78.8%	
	M2-PFDoA		P290724043		bs				12.5	10-130%	72.0%	
	13C2-PFTeDA		P290724043		bb				12.5	10-130%	54.1%	
	M3PFBS		P290724043		bb				23.3	40-135%	95.9%	
	M3PFHxS		P290724043		bb				23.7	40-130%	93.9%	
	M8PFOS		P290724043		bb				24.0	40-130%	86.0%	
	M2-4:2 FTS		P290724043		bb				46.9	40-200%	96.6%	
	M2-6:2 FTS		P290724043		bb				47.6	40-200%	75.1%	
	M2-8:2 FTS		P290724043		bb				48.0	40-300%	68.0%	
	M8PFOSA		P290724043		bs				25.0	40-130%	80.6%	
	d3-N-MeFOSA		P290724043		bb				25.0	10-130%	69.6%	
	d5-N-EtFOSA		P290724043		bb				25.0	10-130%	68.5%	
	d3-N-MeFOSAA		P290724043		bb				50.0	40-170%	68.9%	
	d5-N-EtFOSAA		P290724043		bb				50.0	25-135%	70.2%	
	d7-N-MeFOSE		P290724043		bb				250	10-130%	59.1%	
	d9-N-EtFOSE		P290724043		bb				250	10-130%	68.8%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W3		
Sampling Site			
Enthalpy ID	0724-833-012-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:15	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 02:55	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724043		bb				100	40-130%	113.4%	
JS	M3PFBA		P290724043		bb				50.0	>30%	126.1%	
	M2-PFHxA		P290724043		bs				25.0	>30%	119.6%	
	M4-PFOA		P290724043		bb				25.0	>30%	116.7%	
	M5-PFNA		P290724043		bb				12.5	>30%	98.2%	
	M2-PFDA		P290724043		bb				12.5	>30%	109.2%	
	18O2PFHxS		P290724043		bb				23.7	>30%	124.9%	
	M4-PFOS		P290724043		bb				24.0	>30%	123.9%	

Peak Flags
- MM1* MM-;R JDG 7/30/24
- MM2* MM;C JDG 7/30/24
- MM3* MM-;R JDG 7/30/24
- MM4* MM;N JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_WSURF		
Sampling Site			
Enthalpy ID	0724-833-016-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:40	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 03:18	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724044	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724044	<LOQ (33.3)	MM1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724044	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724044	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724044	<LOQ (16.7)	MM2*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724044	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724044	<LOQ (16.7)		15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724044	<LOQ (16.7)	MM3*	15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724044	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724044	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724044	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724044	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724044	<LOQ (15.7)	MM4*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724044	19.0	MM2*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724044	<LOQ (15.9)		14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724044	22.1	MM2*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724044	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724044	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724044	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724044	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724044	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724044	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724044	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724044	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724044	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724044	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724044	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724044	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724044	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724044	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724044	<LOQ (33.3)	MM1*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724044	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724044	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724044	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724044	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724044	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724044	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724044	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724044	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724044	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724044		bb				100	5-130%	96.2%	
	M5PFPeA		P290724044		bs				50.0	40-130%	93.2%	
	M5PFHxA		P290724044		bb				25.0	40-130%	93.0%	
	M4PFHpA		P290724044		bb				25.0	40-130%	98.8%	
	M8PFOA		P290724044		bs				25.0	40-130%	93.0%	
	M9PFNA		P290724044		bb				12.5	40-130%	92.9%	
	M6PFDA		P290724044		bb				12.5	40-130%	88.9%	
	M7PFUdA		P290724044		bb				12.5	30-130%	78.1%	
	M2-PFDoA		P290724044		bs				12.5	10-130%	68.7%	
	13C2-PFTeDA		P290724044		bb				12.5	10-130%	51.2%	
	M3PFBS		P290724044		bs				23.3	40-135%	90.9%	
	M3PFHxS		P290724044		bb				23.7	40-130%	92.7%	
	M8PFOS		P290724044		bb				24.0	40-130%	89.9%	
	M2-4:2 FTS		P290724044		bb				46.9	40-200%	93.8%	
	M2-6:2 FTS		P290724044		bb				47.6	40-200%	79.4%	
	M2-8:2 FTS		P290724044		bb				48.0	40-300%	70.1%	
	M8PFOSA		P290724044		bb				25.0	40-130%	86.6%	
	d3-N-MeFOSA		P290724044		bb				25.0	10-130%	66.9%	
	d5-N-EtFOSA		P290724044		bb				25.0	10-130%	67.1%	
	d3-N-MeFOSAA		P290724044		bb				50.0	40-170%	75.2%	
	d5-N-EtFOSAA		P290724044		bb				50.0	25-135%	70.7%	
	d7-N-MeFOSE		P290724044		bb				250	10-130%	52.7%	
	d9-N-EtFOSE		P290724044		bb				250	10-130%	67.2%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_WSURF		
Sampling Site			
Enthalpy ID	0724-833-016-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:40	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 03:18	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724044		bb				100	40-130%	115.3%	
JS	M3PFBA		P290724044		bb				50.0	>30%	119.5%	
	M2-PFHxA		P290724044		bs				25.0	>30%	116.0%	
	M4-PFOA		P290724044		bb				25.0	>30%	109.2%	
	M5-PFNA		P290724044		bb				12.5	>30%	93.5%	
	M2-PFDA		P290724044		bb				12.5	>30%	103.6%	
	18O2PFHxS		P290724044		bb				23.7	>30%	116.3%	
	M4-PFOS		P290724044		bb				24.0	>30%	112.8%	

Peak Flags
MM1* MM-;R JDG 7/30/24
MM2* MM;C JDG 7/30/24
MM3* MM-;C JDG 7/30/24
MM4* MM;N JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W4		
Sampling Site			
Enthalpy ID	0724-833-017-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 03:40	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724045	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724045	<LOQ (33.3)	MM1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724045	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724045	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724045	<LOQ (16.7)	MM2*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724045	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724045	<LOQ (16.7)	MM3*	15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724045	<LOQ (16.7)	MM3*	15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724045	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724045	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724045	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724045	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724045	<LOQ (15.7)	MM4*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724045	19.1	MM2*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724045	<LOQ (15.9)		14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724045	21.2	MM2*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724045	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724045	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724045	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724045	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724045	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724045	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724045	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724045	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724045	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724045	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724045	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724045	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724045	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724045	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724045	<LOQ (33.3)	MM1*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724045	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724045	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724045	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724045	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724045	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724045	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724045	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724045	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724045	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724045		bb				100	5-130%	96.3%	
	M5PFPeA		P290724045		bs				50.0	40-130%	93.5%	
	M5PFHxA		P290724045		bb				25.0	40-130%	98.8%	
	M4PFHpA		P290724045		bs				25.0	40-130%	97.3%	
	M8PFOA		P290724045		bs				25.0	40-130%	93.2%	
	M9PFNA		P290724045		bb				12.5	40-130%	89.4%	
	M6PFDA		P290724045		bb				12.5	40-130%	80.9%	
	M7PFUdA		P290724045		bs				12.5	30-130%	67.4%	
	M2-PFDoA		P290724045		bs				12.5	10-130%	61.2%	
	13C2-PFTeDA		P290724045		bb				12.5	10-130%	49.3%	
	M3PFBS		P290724045		bb				23.3	40-135%	92.0%	
	M3PFHxS		P290724045		bb				23.7	40-130%	93.5%	
	M8PFOS		P290724045		bb				24.0	40-130%	84.8%	
	M2-4:2 FTS		P290724045		bb				46.9	40-200%	91.1%	
	M2-6:2 FTS		P290724045		bb				47.6	40-200%	77.4%	
	M2-8:2 FTS		P290724045		bb				48.0	40-300%	65.8%	
	M8PFOSA		P290724045		bs				25.0	40-130%	79.2%	
	d3-N-MeFOSA		P290724045		bb				25.0	10-130%	62.9%	
	d5-N-EtFOSA		P290724045		bb				25.0	10-130%	64.3%	
	d3-N-MeFOSAA		P290724045		bs				50.0	40-170%	64.6%	
	d5-N-EtFOSAA		P290724045		bs				50.0	25-135%	65.0%	
	d7-N-MeFOSE		P290724045		bb				250	10-130%	47.6%	
	d9-N-EtFOSE		P290724045		bb				250	10-130%	60.8%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_W4		
Sampling Site			
Enthalpy ID	0724-833-017-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 12:48	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 03:40	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724045		bs				100	40-130%	111.6%	
JS	M3PFBA		P290724045		bb				50.0	>30%	127.6%	
	M2-PFHxA		P290724045		bb				25.0	>30%	119.7%	
	M4-PFOA		P290724045		bs				25.0	>30%	120.1%	
	M5-PFNA		P290724045		bb				12.5	>30%	101.8%	
	M2-PFDA		P290724045		bb				12.5	>30%	113.4%	
	18O2PFHxS		P290724045		bs				23.7	>30%	130.7%	
	M4-PFOS		P290724045		bb				24.0	>30%	125.6%	

Peak Flags
MM1* MM-;R JDG 7/30/24
MM2* MM;C JDG 7/30/24
MM3* MM-;R JDG 7/30/24
MM4* MM;N JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_WSkim		
Sampling Site			
Enthalpy ID	0724-833-018-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 13:08	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 04:03	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724046	<LOQ (66.7)	bb	60.0	66.7	15.7				U
	PFPeA	2706-90-3	P290724046	<LOQ (33.3)	MM1*	30.0	33.3	5.24				U
	PFHxA	307-24-4	P290724046	<LOQ (16.7)	bb	15.0	16.7	5.50				U
	PFHpA	375-85-9	P290724046	<LOQ (16.7)	bb	15.0	16.7	5.02				U
	PFOA	335-67-1	P290724046	<LOQ (16.7)	MM2*	15.0	16.7	4.08				U
	PFNA	375-95-1	P290724046	<LOQ (16.7)	bb	15.0	16.7	3.19				U
	PFDA	335-76-2	P290724046	<LOQ (16.7)	MM3*	15.0	16.7	7.59				U
	PFUnDA	2058-94-8	P290724046	<LOQ (16.7)		15.0	16.7	5.63				U
	PFDoA	307-55-1	P290724046	<LOQ (16.7)		15.0	16.7	5.63				U
	PFTrDA	72629-94-8	P290724046	<LOQ (16.7)		15.0	16.7	5.73				U
	PFTeDA	376-06-7	P290724046	<LOQ (16.7)		15.0	16.7	4.29				U
Sulfonates	PFBS	375-73-5	P290724046	<LOQ (14.8)	bb	13.3	14.8	3.19				U
	PFPeS	2706-91-4	P290724046	<LOQ (15.7)	MM4*	14.1	15.7	4.27				U
	PFHxS	355-46-4	P290724046	20.4	MM2*	13.7	15.2	6.44				
	PFHpS	375-92-8	P290724046	<LOQ (15.9)	MM2*	14.3	15.9	5.50				U
	PFOS	1763-23-1	P290724046	24.9	MM2*	13.9	15.5	5.87				
	PFNS	68259-12-1	P290724046	<LOQ (16.0)		14.4	16.0	3.90				U
	PFDS	335-77-3	P290724046	<LOQ (16.1)		14.5	16.1	1.45				U
	PFDoS	79780-39-5	P290724046	<LOQ (16.2)		14.6	16.2	4.01				U
	4:2 FTS	757124-72-4	P290724046	<LOQ (62.5)		56.2	62.5	26.2				U
	6:2 FTS	27619-97-2	P290724046	<LOQ (63.3)		57.0	63.3	15.8				U
	8:2 FTS	39108-34-4	P290724046	<LOQ (64.0)		57.6	64.0	40.1				U
Sulfonmides	PFOSA	754-91-6	P290724046	<LOQ (16.7)	bb	15.0	16.7	1.58				U
	N-MeFOSA	31506-32-8	P290724046	<LOQ (16.7)		15.0	16.7	4.58				U
	N-EtFOSA	4151-50-2	P290724046	<LOQ (16.7)		15.0	16.7	11.4				U
	N-MeFOSE	24448-09-7	P290724046	<LOQ (167)		150	167	26.4				U
	N-EtFOSE	1691-99-2	P290724046	<LOQ (167)		150	167	22.4				U
PFECAs	HFPO-DA	13252-13-6	P290724046	<LOQ (66.7)		60.0	66.7	19.3				U
	PFMBA	863090-89-5	P290724046	<LOQ (33.3)		30.0	33.3	13.6				U
	PFMPA	377-73-1	P290724046	<LOQ (33.3)		30.0	33.3	6.26				U
	NFDHA	151772-58-6	P290724046	<LOQ (33.3)	MM1*	30.0	33.3	16.8				U
FTCAs	3:3 FTCA	356-02-5	P290724046	<LOQ (83.3)		75.0	83.3	9.92				U
	5:3 FTCA	914637-49-3	P290724046	<LOQ (83.3)		75.0	83.3	24.3				U
	7:3 FTCA	812-70-4	P290724046	<LOQ (83.3)		75.0	83.3	16.8				U
Other	ADONA	919005-14-4	P290724046	<LOQ (63.0)		56.7	63.0	14.0				U
	9Cl-PF3ONS	756426-58-1	P290724046	<LOQ (62.3)		56.1	62.3	17.8				U
	N-MeFOSAA	2355-31-9	P290724046	<LOQ (16.7)		15.0	16.7	8.50				U
	11Cl-PF3OUdS	763051-92-9	P290724046	<LOQ (63.0)		56.7	63.0	14.2				U
	N-EtFOSAA	2991-50-6	P290724046	<LOQ (16.7)		15.0	16.7	8.07				U
	PFEESA	113507-82-7	P290724046	<LOQ (29.7)		26.7	29.7	5.27				U
ES	M4PFBA		P290724046		bb				100	5-130%	94.0%	
	M5PFPeA		P290724046		bs				50.0	40-130%	91.5%	
	M5PFHxA		P290724046		bb				25.0	40-130%	89.3%	
	M4PFHpA		P290724046		bs				25.0	40-130%	97.3%	
	M8PFOA		P290724046		bb				25.0	40-130%	89.3%	
	M9PFNA		P290724046		bb				12.5	40-130%	90.2%	
	M6PFDA		P290724046		bb				12.5	40-130%	86.0%	
	M7PFUdA		P290724046		bb				12.5	30-130%	76.3%	
	M2-PFDoA		P290724046		bs				12.5	10-130%	68.3%	
	13C2-PFTeDA		P290724046		bb				12.5	10-130%	53.0%	
	M3PFBS		P290724046		bb				23.3	40-135%	89.0%	
	M3PFHxS		P290724046		bb				23.7	40-130%	89.3%	
	M8PFOS		P290724046		bb				24.0	40-130%	89.1%	
	M2-4:2 FTS		P290724046		bb				46.9	40-200%	94.1%	
	M2-6:2 FTS		P290724046		bb				47.6	40-200%	78.1%	
	M2-8:2 FTS		P290724046		bb				48.0	40-300%	65.1%	
	M8PFOSA		P290724046		bb				25.0	40-130%	81.4%	
	d3-N-MeFOSA		P290724046		bb				25.0	10-130%	65.8%	
	d5-N-EtFOSA		P290724046		bb				25.0	10-130%	64.7%	
	d3-N-MeFOSAA		P290724046		bb				50.0	40-170%	68.8%	
	d5-N-EtFOSAA		P290724046		bb				50.0	25-135%	68.3%	
	d7-N-MeFOSE		P290724046		bb				250	10-130%	54.3%	
	d9-N-EtFOSE		P290724046		bb				250	10-130%	64.6%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_WSkim		
Sampling Site			
Enthalpy ID	0724-833-018-2	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date	2024-07-17 13:08	Instrument	Pippin
Received Date	2024-07-18	Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 04:03	Split Factor	N/A
SampleType	Sample	Method Code	Eu-062
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724046		bb				100	40-130%	111.2%	
JS	M3PFBA		P290724046		bb				50.0	>30%	118.4%	
	M2-PFHxA		P290724046		bs				25.0	>30%	114.2%	
	M4-PFOA		P290724046		bb				25.0	>30%	110.1%	
	M5-PFNA		P290724046		bb				12.5	>30%	93.8%	
	M2-PFDA		P290724046		bb				12.5	>30%	104.1%	
	18O2PFHxS		P290724046		bb				23.7	>30%	121.3%	
	M4-PFOS		P290724046		bb				24.0	>30%	116.4%	

Peak Flags
MM1* MM-;R JDG 7/30/24
MM2* MM;C JDG 7/30/24
MM3* MM-;R JDG 7/30/24
MM4* MM;N JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C1				
Sampling Site					
Enthalpy ID	0724-833-005-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.49
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.39
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.16
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.53
AnalysisDate	2024-08-02 02:51	Split Factor	N/A	Dry Weight (g)	2.39
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	25.9%
Bottle ID	-			Dry Wt. Equiv (g)	1.33

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824034	<LOQ (3.00)	MM1*	2.70	3.00	0.704				U
	PFPeA	2706-90-3	P010824034	<LOQ (1.50)	MM1*	1.35	1.50	0.236				U
	PFHxA	307-24-4	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.247				U
	PFHpA	375-85-9	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.226				U
	PFOA	335-67-1	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.184				U
	PFNA	375-95-1	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.144				U
	PFDA	335-76-2	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.341				U
	PFUnDA	2058-94-8	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.253				U
	PFDoA	307-55-1	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.253				U
	PFTrDA	72629-94-8	P010824034	<LOQ (0.749)	MM1*	0.674	0.749	0.258				U
	PFTeDA	376-06-7	P010824034	<LOQ (0.749)		0.674	0.749	0.193				U
Sulfonates	PFBS	375-73-5	P010824034	<LOQ (0.665)		0.598	0.665	0.144				U
	PFPeS	2706-91-4	P010824034	<LOQ (0.705)		0.635	0.705	0.192				U
	PFHxS	355-46-4	P010824034	<LOQ (0.685)	MM1*	0.616	0.685	0.290				U
	PFHpS	375-92-8	P010824034	<LOQ (0.714)		0.643	0.714	0.247				U
	PFOS	1763-23-1	P010824034	1.22	MM2*	0.626	0.695	0.264				
	PFNS	68259-12-1	P010824034	<LOQ (0.721)		0.649	0.721	0.175				U
	PFDS	335-77-3	P010824034	<LOQ (0.723)		0.651	0.723	0.0652				U
	4:2 FTS	757124-72-4	P010824034	<LOQ (2.81)		2.53	2.81	1.18				U
	PFDoS	79780-39-5	P010824034	<LOQ (0.727)		0.654	0.727	0.180				U
	6:2 FTS	27619-97-2	P010824034	<LOQ (2.85)		2.56	2.85	0.708				U
	8:2 FTS	39108-34-4	P010824034	<LOQ (2.88)		2.59	2.88	1.80				U
Sulfonmides	PFOSA	754-91-6	P010824034	<LOQ (0.749)		0.674	0.749	0.0708				U
	N-MeFOSA	31506-32-8	P010824034	<LOQ (0.749)		0.674	0.749	0.206				U
	N-EtFOSA	4151-50-2	P010824034	<LOQ (0.749)		0.674	0.749	0.513				U
	N-MeFOSE	24448-09-7	P010824034	<LOQ (7.49)		6.74	7.49	1.19				U
	N-EtFOSE	1691-99-2	P010824034	<LOQ (7.49)		6.74	7.49	1.01				U
PFECAs	HFPO-DA	13252-13-6	P010824034	<LOQ (3.00)		2.70	3.00	0.869				U
	PFMBA	863090-89-5	P010824034	<LOQ (1.50)		1.35	1.50	0.613				U
	PFMPA	377-73-1	P010824034	<LOQ (1.50)		1.35	1.50	0.281				U
	NFDHA	151772-58-6	P010824034	<LOQ (1.50)		1.35	1.50	0.757				U
FTCAs	3:3 FTCA	356-02-5	P010824034	<LOQ (3.75)		3.37	3.75	0.446				U
	5:3 FTCA	914637-49-3	P010824034	<LOQ (3.75)		3.37	3.75	1.09				U
	7:3 FTCA	812-70-4	P010824034	<LOQ (3.75)		3.37	3.75	0.757				U
Other	ADONA	919005-14-4	P010824034	<LOQ (2.83)		2.55	2.83	0.630				U
	9Cl-PF3ONS	756426-58-1	P010824034	<LOQ (2.80)		2.52	2.80	0.798				U
	N-MeFOSAA	2355-31-9	P010824034	<LOQ (0.749)		0.674	0.749	0.382				U
	11Cl-PF3OUdS	763051-92-9	P010824034	<LOQ (2.83)		2.55	2.83	0.637				U
	N-EtFOSAA	2991-50-6	P010824034	<LOQ (0.749)		0.674	0.749	0.363				U
	PFEESA	113507-82-7	P010824034	<LOQ (1.33)		1.20	1.33	0.237				U
ES	M4PFBA		P010824034		bb				100	8-130%	92.5%	
	M5PFPeA		P010824034		bs				50.0	35-130%	94.9%	
	M5PFHxA		P010824034		bb				25.0	40-130%	92.4%	
	M4PFHpA		P010824034		bs				25.0	40-130%	92.6%	
	M8PFOA		P010824034		bs				25.0	40-130%	88.5%	
	M9PFNA		P010824034		bb				12.5	40-130%	93.4%	
	M6PFDA		P010824034		bb				12.5	40-130%	87.7%	
	M7PFUdA		P010824034		bs				12.5	40-130%	84.3%	
	M2-PFDoA		P010824034		bs				12.5	40-130%	90.9%	
	13C2-PFTeDA		P010824034		bb				12.5	20-130%	82.9%	
	M3PFBS		P010824034		bb				23.3	40-135%	97.8%	
	M3PFHxS		P010824034		bb				23.7	40-130%	89.7%	
	M8PFOS		P010824034		bb				24.0	40-130%	82.8%	
	M2-4:2 FTS		P010824034		bb				46.9	40-165%	80.6%	
	M2-6:2 FTS		P010824034		bb				47.6	40-215%	74.2%	
	M2-8:2 FTS		P010824034		bb				48.0	40-275%	86.7%	
	M8PFOSA		P010824034		bb				25.0	40-130%	72.2%	
	d3-N-MeFOSA		P010824034		bb				25.0	10-130%	48.5%	
	d5-N-EtFOSA		P010824034		bb				25.0	10-130%	45.8%	
	d3-N-MeFOSAA		P010824034		bb				50.0	40-135%	91.2%	
	d5-N-EtFOSAA		P010824034		bb				50.0	40-150%	98.2%	
	d7-N-MeFOSE		P010824034		bb				250	20-130%	60.4%	
	d9-N-EtFOSE		P010824034		bb				250	15-130%	55.7%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C1				
Sampling Site					
Enthalpy ID	0724-833-005-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.49
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.39
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.16
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.53
AnalysisDate	2024-08-02 02:51	Split Factor	N/A	Dry Weight (g)	2.39
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	25.9%
Bottle ID	-			Dry Wt. Equiv (g)	1.33

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824034		bs				100	40-130%	113.0%	
JS	M3PFBA		P010824034		bb				50.0	>30%	99.9%	
	M2-PFHxA		P010824034		bs				25.0	>30%	101.3%	
	M4-PFOA		P010824034		bs				25.0	>30%	103.8%	
	M5-PFNA		P010824034		bb				12.5	>30%	85.7%	
	M2-PFDA		P010824034		bb				12.5	>30%	99.9%	
	18O2PFHxS		P010824034		bb				23.7	>30%	116.1%	
	M4-PFOS		P010824034		bb				24.0	>30%	113.7%	

Peak Flags
MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
c: Peak was integrated incorrectly by the software
r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C1				
Sampling Site					
Enthalpy ID	0724-833-005-1B	Prep Batch	EU17914	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.49
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.39
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.08
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.53
AnalysisDate	2024-08-07 20:39	Split Factor	N/A	Dry Weight (g)	2.39
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	25.9%
Bottle ID	-			Dry Wt. Equiv (g)	1.31

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824017	<LOQ (3.04)	MM1*	2.74	3.04	0.716				U
	PFDA	335-76-2	P070824017	<LOQ (0.761)	MM1*	0.685	0.761	0.347				U
	PFUnDA	2058-94-8	P070824017	<LOQ (0.761)	MM1*	0.685	0.761	0.257				U
	PFDoA	307-55-1	P070824017	<LOQ (0.761)	MM1*	0.685	0.761	0.257				U
	PFTrDA	72629-94-8	P070824017	<LOQ (0.761)	MM1*	0.685	0.761	0.262				U
	PFTeDA	376-06-7	P070824017	<LOQ (0.761)		0.685	0.761	0.196				U
Sulfonates	PFBS	375-73-5	P070824017	<LOQ (0.675)		0.608	0.675	0.146				U
	PFHpS	375-92-8	P070824017	<LOQ (0.725)		0.653	0.725	0.251				U
	PFOS	1763-23-1	P070824017	1.10	MM2*	0.636	0.706	0.268				
	8:2 FTS	39108-34-4	P070824017	<LOQ (2.92)		2.63	2.92	1.83				U
Sulfonmides	PFOSA	754-91-6	P070824017	<LOQ (0.761)		0.685	0.761	0.0719				U
	N-MeFOSE	24448-09-7	P070824017	<LOQ (7.61)		6.85	7.61	1.21				U
	N-EtFOSE	1691-99-2	P070824017	<LOQ (7.61)		6.85	7.61	1.02				U
PFECAs	HFPO-DA	13252-13-6	P070824017	<LOQ (3.04)		2.74	3.04	0.883				U
FTCAs	7:3 FTCA	812-70-4	P070824017	<LOQ (3.81)		3.43	3.81	0.769				U
Other	ADONA	919005-14-4	P070824017	<LOQ (2.88)		2.59	2.88	0.639				U
ES	M4PFBA		P070824017		bb				100	8-130%	79.6%	
	M5PFHxA		P070824017		bb				25.0	40-130%	74.5%	
	M6PFDA		P070824017		bb				12.5	40-130%	80.2%	
	M7PFUdA		P070824017		bb				12.5	40-130%	71.4%	
	M2-PFDoA		P070824017		bs				12.5	40-130%	79.6%	
	13C2-PFTeDA		P070824017		bb				12.5	20-130%	70.0%	
	M3PFBS		P070824017		bb				23.3	40-135%	88.4%	
	M8PFOS		P070824017		bs				24.0	40-130%	72.9%	
	M2-8:2 FTS		P070824017		bb				48.0	40-275%	84.4%	
	M8PFOSA		P070824017		bb				25.0	40-130%	71.1%	
	d7-N-MeFOSE		P070824017		bb				250	20-130%	73.1%	
	d9-N-EtFOSE		P070824017		bb				250	15-130%	69.8%	
	M3HFPO-DA		P070824017		bb				100	40-130%	100.0%	
JS	M3PFBA		P070824017		bb				50.0	>30%	98.4%	
	M2-PFHxA		P070824017		bs				25.0	>30%	99.4%	
	M2-PFDA		P070824017		bb				12.5	>30%	93.9%	
	M4-PFOS		P070824017		bb				24.0	>30%	113.9%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S1				
Sampling Site					
Enthalpy ID	0724-833-006-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.65
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.07
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.61
AnalysisDate	2024-08-02 03:14	Split Factor	N/A	Dry Weight (g)	2.65
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	30.1%
Bottle ID	-			Dry Wt. Equiv (g)	1.53

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824035	<LOQ (2.62)	MM1*	2.36	2.62	0.615				U
	PFPeA	2706-90-3	P010824035	<LOQ (1.31)	MM1*	1.18	1.31	0.206				U
	PFHxA	307-24-4	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.216				U
	PFHpA	375-85-9	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.197				U
	PFOA	335-67-1	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.160				U
	PFNA	375-95-1	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.125				U
	PFDA	335-76-2	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.298				U
	PFUnDA	2058-94-8	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.221				U
	PFDoA	307-55-1	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.221				U
	PFTrDA	72629-94-8	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.225				U
	PFTeDA	376-06-7	P010824035	<LOQ (0.655)		0.589	0.655	0.169				U
Sulfonates	PFBS	375-73-5	P010824035	<LOQ (0.581)	MM1*	0.523	0.581	0.125				U
	PFPeS	2706-91-4	P010824035	<LOQ (0.616)		0.554	0.616	0.168				U
	PFHxS	355-46-4	P010824035	<LOQ (0.598)	MM1*	0.539	0.598	0.253				U
	PFHpS	375-92-8	P010824035	<LOQ (0.624)		0.562	0.624	0.216				U
	PFOS	1763-23-1	P010824035	2.05	MM2*	0.547	0.608	0.230				
	PFNS	68259-12-1	P010824035	<LOQ (0.630)		0.567	0.630	0.153				U
	PFDS	335-77-3	P010824035	<LOQ (0.632)		0.569	0.632	0.0570				U
	4:2 FTS	757124-72-4	P010824035	<LOQ (2.46)		2.21	2.46	1.03				U
	PFDoS	79780-39-5	P010824035	<LOQ (0.635)		0.572	0.635	0.157				U
	6:2 FTS	27619-97-2	P010824035	<LOQ (2.49)		2.24	2.49	0.619				U
	8:2 FTS	39108-34-4	P010824035	<LOQ (2.51)		2.26	2.51	1.57				U
Other	ADONA	919005-14-4	P010824035	<LOQ (2.47)		2.23	2.47	0.550				U
	9Cl-PF3ONS	756426-58-1	P010824035	<LOQ (2.45)		2.20	2.45	0.697				U
	N-MeFOSAA	2355-31-9	P010824035	<LOQ (0.655)	MM2*	0.589	0.655	0.334				U
	11Cl-PF3OUdS	763051-92-9	P010824035	<LOQ (2.47)		2.23	2.47	0.557				U
	N-EtFOSAA	2991-50-6	P010824035	1.80	MM2*	0.589	0.655	0.317				
	PFEESA	113507-82-7	P010824035	<LOQ (1.17)		1.05	1.17	0.207				U
Sulfonmides	PFOSA	754-91-6	P010824035	<LOQ (0.655)	MM1*	0.589	0.655	0.0619				U
	N-MeFOSA	31506-32-8	P010824035	<LOQ (0.655)		0.589	0.655	0.180				U
	N-EtFOSA	4151-50-2	P010824035	<LOQ (0.655)		0.589	0.655	0.448				U
	N-MeFOSE	24448-09-7	P010824035	<LOQ (6.55)		5.89	6.55	1.04				U
	N-EtFOSE	1691-99-2	P010824035	<LOQ (6.55)		5.89	6.55	0.881				U
PFECAs	HFPO-DA	13252-13-6	P010824035	<LOQ (2.62)		2.36	2.62	0.759				U
	PFMBA	863090-89-5	P010824035	<LOQ (1.31)		1.18	1.31	0.536				U
	PFMPA	377-73-1	P010824035	<LOQ (1.31)		1.18	1.31	0.246				U
	NFDHA	151772-58-6	P010824035	<LOQ (1.31)		1.18	1.31	0.661				U
FTCAs	3:3 FTCA	356-02-5	P010824035	<LOQ (3.27)		2.95	3.27	0.390				U
	5:3 FTCA	914637-49-3	P010824035	<LOQ (3.27)		2.95	3.27	0.956				U
	7:3 FTCA	812-70-4	P010824035	<LOQ (3.27)		2.95	3.27	0.661				U
ES	M4PFBA		P010824035		bb				100	8-130%	75.9%	
	M5PFPeA		P010824035		bs				50.0	35-130%	98.9%	
	M5PFHxA		P010824035		bb				25.0	40-130%	93.7%	
	M4PFHpA		P010824035		bs				25.0	40-130%	99.7%	
	M8PFOA		P010824035		bs				25.0	40-130%	89.6%	
	M9PFNA		P010824035		bb				12.5	40-130%	93.6%	
	M6PFDA		P010824035		bb				12.5	40-130%	94.0%	
	M7PFUdA		P010824035		bs				12.5	40-130%	86.2%	
	M2-PFDoA		P010824035		bb				12.5	40-130%	89.4%	
	13C2-PFTeDA		P010824035		bb				12.5	20-130%	81.9%	
	M3PFBS		P010824035		bb				23.3	40-135%	101.5%	
	M3PFHxS		P010824035		bb				23.7	40-130%	86.0%	
	M8PFOS		P010824035		bb				24.0	40-130%	84.8%	
	M2-4:2 FTS		P010824035		bb				46.9	40-165%	99.9%	
	M2-6:2 FTS		P010824035		bs				47.6	40-215%	88.8%	
	M2-8:2 FTS		P010824035		bb				48.0	40-275%	113.2%	
	M8PFOSA		P010824035		bs				25.0	40-130%	80.8%	
	d3-N-MeFOSA		P010824035		bb				25.0	10-130%	55.9%	
	d5-N-EtFOSA		P010824035		bb				25.0	10-130%	54.9%	
	d3-N-MeFOSAA		P010824035		bs				50.0	40-135%	109.7%	
	d5-N-EtFOSAA		P010824035		bb				50.0	40-150%	106.1%	
	d7-N-MeFOSE		P010824035		bb				250	20-130%	69.5%	
	d9-N-EtFOSE		P010824035		bb				250	15-130%	65.2%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S1				
Sampling Site					
Enthalpy ID	0724-833-006-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.65
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.07
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.61
AnalysisDate	2024-08-02 03:14	Split Factor	N/A	Dry Weight (g)	2.65
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	30.1%
Bottle ID	-			Dry Wt. Equiv (g)	1.53

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824035		bs				100	40-130%	112.8%	
JS	M3PFBA		P010824035		bb				50.0	>30%	101.1%	
	M2-PFHxA		P010824035		bb				25.0	>30%	102.3%	
	M4-PFOA		P010824035		bs				25.0	>30%	104.7%	
	M5-PFNA		P010824035		bb				12.5	>30%	87.5%	
	M2-PFDA		P010824035		bb				12.5	>30%	102.3%	
	18O2PFHxS		P010824035		bs				23.7	>30%	117.4%	
	M4-PFOS		P010824035		bb				24.0	>30%	116.9%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S1				
Sampling Site					
Enthalpy ID	0724-833-006-1B	Prep Batch	EU17914	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	2.65
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.07
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.61
AnalysisDate	2024-08-07 21:02	Split Factor	N/A	Dry Weight (g)	2.65
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	30.1%
Bottle ID	-			Dry Wt. Equiv (g)	1.53

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824018	<LOQ (2.62)	MM1*	2.36	2.62	0.615				U
	PFDA	335-76-2	P070824018	<LOQ (0.655)	MM1*	0.589	0.655	0.298				U
	PFUnDA	2058-94-8	P070824018	<LOQ (0.655)	MM1*	0.589	0.655	0.221				U
	PFDoA	307-55-1	P070824018	<LOQ (0.655)	MM1*	0.589	0.655	0.221				U
	PFTrDA	72629-94-8	P070824018	<LOQ (0.655)	MM1*	0.589	0.655	0.225				U
	PFTeDA	376-06-7	P070824018	<LOQ (0.655)		0.589	0.655	0.169				U
Sulfonates	PFBS	375-73-5	P070824018	<LOQ (0.581)		0.523	0.581	0.125				U
	PFHpS	375-92-8	P070824018	<LOQ (0.624)		0.562	0.624	0.216				U
	PFOS	1763-23-1	P070824018	1.88	MM2*	0.547	0.608	0.230				
	8:2 FTS	39108-34-4	P070824018	<LOQ (2.51)		2.26	2.51	1.57				U
Sulfonmides	PFOSA	754-91-6	P070824018	<LOQ (0.655)	MM1*	0.589	0.655	0.0619				U
	N-MeFOSE	24448-09-7	P070824018	<LOQ (6.55)		5.89	6.55	1.04				U
	N-EtFOSE	1691-99-2	P070824018	<LOQ (6.55)		5.89	6.55	0.881				U
PFECAs	HFPO-DA	13252-13-6	P070824018	<LOQ (2.62)		2.36	2.62	0.759				U
FTCAs	7:3 FTCA	812-70-4	P070824018	<LOQ (3.27)		2.95	3.27	0.661				U
Other	ADONA	919005-14-4	P070824018	<LOQ (2.47)		2.23	2.47	0.550				U
ES	M4PFBA		P070824018		bb				100	8-130%	79.7%	
	M5PFHxA		P070824018		bs				25.0	40-130%	80.3%	
	M6PFDA		P070824018		bb				12.5	40-130%	77.2%	
	M7PFUdA		P070824018		bb				12.5	40-130%	61.9%	
	M2-PFDoA		P070824018		bb				12.5	40-130%	75.9%	
	13C2-PFTeDA		P070824018		bb				12.5	20-130%	70.6%	
	M3PFBS		P070824018		bb				23.3	40-135%	87.4%	
	M8PFOS		P070824018		bb				24.0	40-130%	76.4%	
	M2-8:2 FTS		P070824018		bb				48.0	40-275%	85.3%	
	M8PFOSA		P070824018		bs				25.0	40-130%	79.1%	
	d7-N-MeFOSE		P070824018		bb				250	20-130%	71.8%	
	d9-N-EtFOSE		P070824018		bb				250	15-130%	70.4%	
	M3HFPO-DA		P070824018		bb				100	40-130%	96.3%	
JS	M3PFBA		P070824018		bb				50.0	>30%	112.3%	
	M2-PFHxA		P070824018		bb				25.0	>30%	107.3%	
	M2-PFDA		P070824018		bb				12.5	>30%	111.9%	
	M4-PFOS		P070824018		bb				24.0	>30%	125.7%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
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- v: peak starts or ends on a valley
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- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LSI				
Sampling Site					
Enthalpy ID	0724-833-007-1A	Prep Batch	EU17844	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.7
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	4.06
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.11
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.7
AnalysisDate	2024-08-02 03:37	Split Factor	N/A	Dry Weight (g)	4.06
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	53.7%
Bottle ID	-			Dry Wt. Equiv (g)	2.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824036	<LOQ (1.46)	MM1*	1.31	1.46	0.343				U
	PFPeA	2706-90-3	P010824036	<LOQ (0.729)	MM1*	0.656	0.729	0.115				U
	PFHxA	307-24-4	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.120				U
	PFHpA	375-85-9	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.110				U
	PFOA	335-67-1	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.0893				U
	PFNA	375-95-1	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.0698				U
	PFDA	335-76-2	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.166				U
	PFUnDA	2058-94-8	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.123				U
	PFDoA	307-55-1	P010824036	<LOQ (0.365)		0.328	0.365	0.123				U
	PFTrDA	72629-94-8	P010824036	<LOQ (0.365)		0.328	0.365	0.125				U
	PFTeDA	376-06-7	P010824036	<LOQ (0.365)		0.328	0.365	0.0939				U
Sulfonates	PFBS	375-73-5	P010824036	<LOQ (0.323)	MM1*	0.291	0.323	0.0698				U
	PFPeS	2706-91-4	P010824036	<LOQ (0.343)		0.309	0.343	0.0933				U
	PFHxS	355-46-4	P010824036	<LOQ (0.333)	MM1*	0.300	0.333	0.141				U
	PFHpS	375-92-8	P010824036	<LOQ (0.347)		0.313	0.347	0.120				U
	PFOS	1763-23-1	P010824036	0.558	MM2*	0.304	0.338	0.128				
	PFNS	68259-12-1	P010824036	<LOQ (0.351)		0.316	0.351	0.0853				U
	PFDS	335-77-3	P010824036	<LOQ (0.352)		0.317	0.352	0.0317				U
	4:2 FTS	757124-72-4	P010824036	<LOQ (1.37)		1.23	1.37	0.572				U
	PFDoS	79780-39-5	P010824036	<LOQ (0.354)		0.318	0.354	0.0877				U
	6:2 FTS	27619-97-2	P010824036	<LOQ (1.39)		1.25	1.39	0.344				U
	8:2 FTS	39108-34-4	P010824036	<LOQ (1.40)		1.26	1.40	0.877				U
Sulfonmides	PFOSA	754-91-6	P010824036	<LOQ (0.365)	MM1*	0.328	0.365	0.0344				U
	N-MeFOSA	31506-32-8	P010824036	<LOQ (0.365)		0.328	0.365	0.100				U
	N-EtFOSA	4151-50-2	P010824036	<LOQ (0.365)		0.328	0.365	0.250				U
	N-MeFOSE	24448-09-7	P010824036	<LOQ (3.65)		3.28	3.65	0.578				U
	N-EtFOSE	1691-99-2	P010824036	<LOQ (3.65)		3.28	3.65	0.490				U
PFECAs	HFPO-DA	13252-13-6	P010824036	<LOQ (1.46)		1.31	1.46	0.423				U
	PFMBA	863090-89-5	P010824036	<LOQ (0.729)		0.656	0.729	0.298				U
	PFMPA	377-73-1	P010824036	<LOQ (0.729)		0.656	0.729	0.137				U
	NFDHA	151772-58-6	P010824036	<LOQ (0.729)		0.656	0.729	0.368				U
FTCAs	3:3 FTCA	356-02-5	P010824036	<LOQ (1.82)		1.64	1.82	0.217				U
	5:3 FTCA	914637-49-3	P010824036	<LOQ (1.82)		1.64	1.82	0.532				U
	7:3 FTCA	812-70-4	P010824036	<LOQ (1.82)		1.64	1.82	0.368				U
Other	ADONA	919005-14-4	P010824036	<LOQ (1.38)		1.24	1.38	0.306				U
	9Cl-PF3ONS	756426-58-1	P010824036	<LOQ (1.36)		1.23	1.36	0.388				U
	N-MeFOSAA	2355-31-9	P010824036	<LOQ (0.365)		0.328	0.365	0.186				U
	11Cl-PF3OUdS	763051-92-9	P010824036	<LOQ (1.38)		1.24	1.38	0.310				U
	N-EtFOSAA	2991-50-6	P010824036	<LOQ (0.365)	MM2*	0.328	0.365	0.176				U
	PFEESA	113507-82-7	P010824036	<LOQ (0.649)		0.584	0.649	0.115				U
ES	M4PFBA		P010824036		bb				100	8-130%	93.7%	
	M5PFPeA		P010824036		bs				50.0	35-130%	95.7%	
	M5PFHxA		P010824036		bb				25.0	40-130%	90.0%	
	M4PFHpA		P010824036		bb				25.0	40-130%	96.5%	
	M8PFOA		P010824036		bs				25.0	40-130%	92.7%	
	M9PFNA		P010824036		bb				12.5	40-130%	93.9%	
	M6PFDA		P010824036		bb				12.5	40-130%	89.1%	
	M7PFUdA		P010824036		bb				12.5	40-130%	82.5%	
	M2-PFDoA		P010824036		bs				12.5	40-130%	84.9%	
	13C2-PFTeDA		P010824036		bb				12.5	20-130%	81.0%	
	M3PFBS		P010824036		bb				23.3	40-135%	101.3%	
	M3PFHxS		P010824036		bb				23.7	40-130%	92.6%	
	M8PFOS		P010824036		bb				24.0	40-130%	82.7%	
	M2-4:2 FTS		P010824036		bb				46.9	40-165%	82.5%	
	M2-6:2 FTS		P010824036		bb				47.6	40-215%	66.9%	
	M2-8:2 FTS		P010824036		bs				48.0	40-275%	88.7%	
	M8PFOSA		P010824036		bs				25.0	40-130%	71.6%	
	d3-N-MeFOSA		P010824036		bb				25.0	10-130%	41.4%	
	d5-N-EtFOSA		P010824036		bb				25.0	10-130%	41.4%	
	d3-N-MeFOSAA		P010824036		bb				50.0	40-135%	86.2%	
	d5-N-EtFOSAA		P010824036		bs				50.0	40-150%	94.5%	
	d7-N-MeFOSE		P010824036		bb				250	20-130%	64.5%	
	d9-N-EtFOSE		P010824036		bb				250	15-130%	59.5%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LSI				
Sampling Site					
Enthalpy ID	0724-833-007-1A	Prep Batch	EU17844	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.7
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	4.06
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.11
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.7
AnalysisDate	2024-08-02 03:37	Split Factor	N/A	Dry Weight (g)	4.06
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	53.7%
Bottle ID	-			Dry Wt. Equiv (g)	2.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824036		bb				100	40-130%	108.8%	
JS	M3PFBA		P010824036		bb				50.0	>30%	104.2%	
	M2-PFHxA		P010824036		bs				25.0	>30%	107.6%	
	M4-PFOA		P010824036		bb				25.0	>30%	102.9%	
	M5-PFNA		P010824036		bb				12.5	>30%	87.8%	
	M2-PFDA		P010824036		bb				12.5	>30%	103.3%	
	18O2PFHxS		P010824036		bb				23.7	>30%	117.6%	
	M4-PFOS		P010824036		bs				24.0	>30%	120.8%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LSI				
Sampling Site					
Enthalpy ID	0724-833-007-1B	Prep Batch	EU17914	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.7
Sampling Date	2024-07-17 10:48	Instrument	Pippin	Dry Weight (g)	4.06
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.7
AnalysisDate	2024-08-07 21:24	Split Factor	N/A	Dry Weight (g)	4.06
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	53.7%
Bottle ID	-			Dry Wt. Equiv (g)	2.68

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824019	<LOQ (1.49)	MM1*	1.34	1.49	0.350				U
	PFDA	335-76-2	P070824019	<LOQ (0.373)	MM1*	0.335	0.373	0.170				U
	PFUnDA	2058-94-8	P070824019	<LOQ (0.373)	MM1*	0.335	0.373	0.126				U
	PFDoA	307-55-1	P070824019	<LOQ (0.373)		0.335	0.373	0.126				U
	PFTrDA	72629-94-8	P070824019	<LOQ (0.373)		0.335	0.373	0.128				U
	PFTeDA	376-06-7	P070824019	<LOQ (0.373)		0.335	0.373	0.0959				U
Sulfonates	PFBS	375-73-5	P070824019	<LOQ (0.330)		0.297	0.330	0.0713				U
	PFHpS	375-92-8	P070824019	<LOQ (0.355)		0.320	0.355	0.123				U
	PFOS	1763-23-1	P070824019	0.555	MM2*	0.311	0.346	0.131				
	8:2 FTS	39108-34-4	P070824019	<LOQ (1.43)		1.29	1.43	0.896				U
Sulfonmides	PFOSA	754-91-6	P070824019	<LOQ (0.373)	MM1*	0.335	0.373	0.0352				U
	N-MeFOSE	24448-09-7	P070824019	<LOQ (3.73)		3.35	3.73	0.590				U
	N-EtFOSE	1691-99-2	P070824019	<LOQ (3.73)		3.35	3.73	0.501				U
PFECAs	HFPO-DA	13252-13-6	P070824019	<LOQ (1.49)		1.34	1.49	0.432				U
FTCAs	7:3 FTCA	812-70-4	P070824019	<LOQ (1.86)		1.68	1.86	0.376				U
Other	ADONA	919005-14-4	P070824019	<LOQ (1.41)		1.27	1.41	0.313				U
ES	M4PFBA		P070824019		bb				100	8-130%	76.6%	
	M5PFHxA		P070824019		bb				25.0	40-130%	74.5%	
	M6PFDA		P070824019		bb				12.5	40-130%	74.4%	
	M7PFUdA		P070824019		bb				12.5	40-130%	65.6%	
	M2-PFDoA		P070824019		bs				12.5	40-130%	72.3%	
	13C2-PFTeDA		P070824019		bb				12.5	20-130%	67.4%	
	M3PFBS		P070824019		bb				23.3	40-135%	75.6%	
	M8PFOS		P070824019		bb				24.0	40-130%	73.9%	
	M2-8:2 FTS		P070824019		bb				48.0	40-275%	75.6%	
	M8PFOSA		P070824019		bs				25.0	40-130%	74.5%	
	d7-N-MeFOSE		P070824019		bb				250	20-130%	67.8%	
	d9-N-EtFOSE		P070824019		bb				250	15-130%	65.3%	
	M3HFPO-DA		P070824019		bb				100	40-130%	96.5%	
JS	M3PFBA		P070824019		bb				50.0	>30%	112.0%	
	M2-PFHxA		P070824019		bs				25.0	>30%	111.2%	
	M2-PFDA		P070824019		bb				12.5	>30%	108.3%	
	M4-PFOS		P070824019		bb				24.0	>30%	122.5%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

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- M: The peak start or end point was manually altered
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C2				
Sampling Site					
Enthalpy ID	0724-833-009-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.49
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.02
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.61
AnalysisDate	2024-08-02 03:59	Split Factor	N/A	Dry Weight (g)	1.49
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.40

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824037	<LOQ (9.94)	MM1*	8.94	9.94	2.34				U
	PFPeA	2706-90-3	P010824037	<LOQ (4.97)	MM1*	4.47	4.97	0.781				U
	PFHxA	307-24-4	P010824037	<LOQ (2.48)	MM1*	2.24	2.48	0.820				U
	PFHpA	375-85-9	P010824037	<LOQ (2.48)		2.24	2.48	0.749				U
	PFOA	335-67-1	P010824037	<LOQ (2.48)	MM1*	2.24	2.48	0.609				U
	PFNA	375-95-1	P010824037	<LOQ (2.48)	MM1*	2.24	2.48	0.476				U
	PFDA	335-76-2	P010824037	<LOQ (2.48)	MM1*	2.24	2.48	1.13				U
	PFUnDA	2058-94-8	P010824037	<LOQ (2.48)		2.24	2.48	0.840				U
	PFDoA	307-55-1	P010824037	<LOQ (2.48)	MM1*	2.24	2.48	0.840				U
	PFTrDA	72629-94-8	P010824037	<LOQ (2.48)		2.24	2.48	0.855				U
	PFTeDA	376-06-7	P010824037	<LOQ (2.48)		2.24	2.48	0.640				U
Sulfonates	PFBS	375-73-5	P010824037	<LOQ (2.20)	MM1*	1.98	2.20	0.476				U
	PFPeS	2706-91-4	P010824037	<LOQ (2.34)		2.10	2.34	0.636				U
	PFHxS	355-46-4	P010824037	<LOQ (2.27)	MM1*	2.04	2.27	0.960				U
	PFHpS	375-92-8	P010824037	<LOQ (2.37)		2.13	2.37	0.820				U
	PFOS	1763-23-1	P010824037	<LOQ (2.31)	MM2*	2.07	2.31	0.875				U
	PFNS	68259-12-1	P010824037	<LOQ (2.39)		2.15	2.39	0.581				U
	PFDS	335-77-3	P010824037	<LOQ (2.40)		2.16	2.40	0.216				U
	4:2 FTS	757124-72-4	P010824037	<LOQ (9.32)		8.38	9.32	3.90				U
	PFDoS	79780-39-5	P010824037	<LOQ (2.41)		2.17	2.41	0.597				U
	6:2 FTS	27619-97-2	P010824037	<LOQ (9.44)		8.50	9.44	2.35				U
	8:2 FTS	39108-34-4	P010824037	<LOQ (9.54)		8.59	9.54	5.97				U
Sulfonmides	PFOSA	754-91-6	P010824037	<LOQ (2.48)		2.24	2.48	0.235				U
	N-MeFOSA	31506-32-8	P010824037	<LOQ (2.48)		2.24	2.48	0.683				U
	N-EtFOSA	4151-50-2	P010824037	<LOQ (2.48)		2.24	2.48	1.70				U
	N-MeFOSE	24448-09-7	P010824037	<LOQ (24.8)		22.4	24.8	3.94				U
	N-EtFOSE	1691-99-2	P010824037	<LOQ (24.8)		22.4	24.8	3.34				U
Other	ADONA	919005-14-4	P010824037	<LOQ (9.39)		8.45	9.39	2.09				U
	9Cl-PF3ONS	756426-58-1	P010824037	<LOQ (9.29)		8.36	9.29	2.65				U
	N-MeFOSAA	2355-31-9	P010824037	<LOQ (2.48)		2.24	2.48	1.27				U
	11Cl-PF3OUdS	763051-92-9	P010824037	<LOQ (9.39)		8.45	9.39	2.11				U
	N-EtFOSAA	2991-50-6	P010824037	<LOQ (2.48)		2.24	2.48	1.20				U
	PFEESA	113507-82-7	P010824037	<LOQ (4.42)		3.98	4.42	0.785				U
PFECAs	HFPO-DA	13252-13-6	P010824037	<LOQ (9.94)		8.94	9.94	2.88				U
	PFMBA	863090-89-5	P010824037	<LOQ (4.97)		4.47	4.97	2.03				U
	PFMPA	377-73-1	P010824037	<LOQ (4.97)		4.47	4.97	0.933				U
	NFDHA	151772-58-6	P010824037	<LOQ (4.97)		4.47	4.97	2.51				U
FTCAs	3:3 FTCA	356-02-5	P010824037	<LOQ (12.4)		11.2	12.4	1.48				U
	5:3 FTCA	914637-49-3	P010824037	<LOQ (12.4)		11.2	12.4	3.63				U
	7:3 FTCA	812-70-4	P010824037	<LOQ (12.4)		11.2	12.4	2.51				U
ES	M4PFBA		P010824037		bb				100	8-130%	92.6%	
	M5PFPeA		P010824037		bs				50.0	35-130%	94.3%	
	M5PFHxA		P010824037		bb				25.0	40-130%	90.6%	
	M4PFHpA		P010824037		bs				25.0	40-130%	97.7%	
	M8PFOA		P010824037		bs				25.0	40-130%	91.0%	
	M9PFNA		P010824037		bb				12.5	40-130%	82.7%	
	M6PFDA		P010824037		bb				12.5	40-130%	79.9%	
	M7PFUdA		P010824037		bb				12.5	40-130%	70.7%	
	M2-PFDoA		P010824037		bs				12.5	40-130%	75.0%	
	13C2-PFTeDA		P010824037		bb				12.5	20-130%	72.5%	
	M3PFBS		P010824037		bb				23.3	40-135%	98.4%	
	M3PFHxS		P010824037		bb				23.7	40-130%	93.2%	
	M8PFOS		P010824037		bb				24.0	40-130%	82.2%	
	M2-4:2 FTS		P010824037		bb				46.9	40-165%	86.2%	
	M2-6:2 FTS		P010824037		bb				47.6	40-215%	74.6%	
	M2-8:2 FTS		P010824037		bb				48.0	40-275%	77.3%	
	M8PFOSA		P010824037		bb				25.0	40-130%	73.5%	
	d3-N-MeFOSA		P010824037		bb				25.0	10-130%	36.6%	
	d5-N-EtFOSA		P010824037		bb				25.0	10-130%	31.0%	
	d3-N-MeFOSAA		P010824037		bb				50.0	40-135%	83.7%	
	d5-N-EtFOSAA		P010824037		bb				50.0	40-150%	81.0%	
	d7-N-MeFOSE		P010824037		bb				250	20-130%	53.0%	
	d9-N-EtFOSE		P010824037		bb				250	15-130%	49.9%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C2				
Sampling Site					
Enthalpy ID	0724-833-009-1A	Prep Batch	EU17844	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.49
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.02
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.61
AnalysisDate	2024-08-02 03:59	Split Factor	N/A	Dry Weight (g)	1.49
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.40

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824037		bb				100	40-130%	111.1%	
JS	M3PFBA		P010824037		bb				50.0	>30%	101.1%	
	M2-PFHxA		P010824037		bs				25.0	>30%	103.3%	
	M4-PFOA		P010824037		bb				25.0	>30%	99.6%	
	M5-PFNA		P010824037		bb				12.5	>30%	86.8%	
	M2-PFDA		P010824037		bb				12.5	>30%	98.9%	
	18O2PFHxS		P010824037		bs				23.7	>30%	110.0%	
	M4-PFOS		P010824037		bb				24.0	>30%	106.6%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
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- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C2				
Sampling Site					
Enthalpy ID	0724-833-009-1B	Prep Batch	EU17914	Tare Weight (g)	0.96
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.49
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.08
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	6.61
AnalysisDate	2024-08-07 21:47	Split Factor	N/A	Dry Weight (g)	1.49
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.41

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824020	<LOQ (9.82)	MM1*	8.84	9.82	2.31				U
	PFDA	335-76-2	P070824020	<LOQ (2.46)	MM1*	2.21	2.46	1.12				U
	PFUnDA	2058-94-8	P070824020	<LOQ (2.46)	MM1*	2.21	2.46	0.830				U
	PFDoA	307-55-1	P070824020	<LOQ (2.46)	MM1*	2.21	2.46	0.830				U
	PFTrDA	72629-94-8	P070824020	<LOQ (2.46)	MM1*	2.21	2.46	0.845				U
	PFTeDA	376-06-7	P070824020	<LOQ (2.46)		2.21	2.46	0.632				U
Sulfonates	PFBS	375-73-5	P070824020	<LOQ (2.18)		1.96	2.18	0.470				U
	PFHpS	375-92-8	P070824020	<LOQ (2.34)		2.11	2.34	0.810				U
	PFOS	1763-23-1	P070824020	3.89	MM2*	2.05	2.28	0.864				
	8:2 FTS	39108-34-4	P070824020	<LOQ (9.43)		8.48	9.43	5.90				U
Sulfonmides	PFOSA	754-91-6	P070824020	<LOQ (2.46)		2.21	2.46	0.232				U
	N-MeFOSE	24448-09-7	P070824020	<LOQ (24.6)		22.1	24.6	3.89				U
	N-EtFOSE	1691-99-2	P070824020	<LOQ (24.6)		22.1	24.6	3.30				U
PFECAs	HFPO-DA	13252-13-6	P070824020	<LOQ (9.82)		8.84	9.82	2.85				U
FTCAs	7:3 FTCA	812-70-4	P070824020	<LOQ (12.3)		11.0	12.3	2.48				U
Other	ADONA	919005-14-4	P070824020	<LOQ (9.28)		8.35	9.28	2.06				U
ES	M4PFBA		P070824020		bb				100	8-130%	64.9%	
	M5PFHxA		P070824020		bb				25.0	40-130%	83.5%	
	M6PFDA		P070824020		bb				12.5	40-130%	84.9%	
	M7PFUdA		P070824020		bb				12.5	40-130%	72.3%	
	M2-PFDoA		P070824020		bs				12.5	40-130%	82.1%	
	13C2-PFTeDA		P070824020		bb				12.5	20-130%	76.2%	
	M3PFBS		P070824020		bs				23.3	40-135%	85.9%	
	M8PFOS		P070824020		bb				24.0	40-130%	76.7%	
	M2-8:2 FTS		P070824020		bb				48.0	40-275%	83.3%	
	M8PFOSA		P070824020		bb				25.0	40-130%	78.6%	
	d7-N-MeFOSE		P070824020		bb				250	20-130%	78.0%	
	d9-N-EtFOSE		P070824020		bb				250	15-130%	75.7%	
	M3HFPO-DA		P070824020		bb				100	40-130%	102.6%	
JS	M3PFBA		P070824020		bb				50.0	>30%	113.7%	
	M2-PFHxA		P070824020		bs				25.0	>30%	109.5%	
	M2-PFDA		P070824020		bb				12.5	>30%	109.9%	
	M4-PFOS		P070824020		bb				24.0	>30%	130.8%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S2				
Sampling Site					
Enthalpy ID	0724-833-010-1A	Prep Batch	EU17844	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.55
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-02 04:22	Split Factor	N/A	Dry Weight (g)	1.55
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.50

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824038	<LOQ (7.97)	MM1*	7.17	7.97	1.87				U
	PFPeA	2706-90-3	P010824038	<LOQ (3.99)	MM1*	3.59	3.99	0.627				U
	PFHxA	307-24-4	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.658				U
	PFHpA	375-85-9	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.601				U
	PFOA	335-67-1	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.488				U
	PFNA	375-95-1	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.382				U
	PFDA	335-76-2	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.908				U
	PFUnDA	2058-94-8	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.674				U
	PFDoA	307-55-1	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.674				U
	PFTrDA	72629-94-8	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.686				U
	PFTeDA	376-06-7	P010824038	<LOQ (1.99)	MM1*	1.79	1.99	0.513				U
Sulfonates	PFBS	375-73-5	P010824038	<LOQ (1.77)	MM1*	1.59	1.77	0.382				U
	PFPeS	2706-91-4	P010824038	<LOQ (1.88)		1.69	1.88	0.510				U
	PFHxS	355-46-4	P010824038	<LOQ (1.82)	MM1*	1.64	1.82	0.770				U
	PFHpS	375-92-8	P010824038	<LOQ (1.90)		1.71	1.90	0.658				U
	PFOS	1763-23-1	P010824038	7.41	MM2*	1.66	1.85	0.701				
	PFNS	68259-12-1	P010824038	<LOQ (1.92)		1.73	1.92	0.466				U
	PFDS	335-77-3	P010824038	<LOQ (1.92)		1.73	1.92	0.173				U
	4:2 FTS	757124-72-4	P010824038	<LOQ (7.47)		6.73	7.47	3.13				U
	PFDoS	79780-39-5	P010824038	<LOQ (1.93)		1.74	1.93	0.479				U
	6:2 FTS	27619-97-2	P010824038	<LOQ (7.57)		6.82	7.57	1.88				U
	8:2 FTS	39108-34-4	P010824038	<LOQ (7.65)		6.89	7.65	4.79				U
Sulfonmides	PFOSA	754-91-6	P010824038	<LOQ (1.99)		1.79	1.99	0.188				U
	N-MeFOSA	31506-32-8	P010824038	<LOQ (1.99)		1.79	1.99	0.548				U
	N-EtFOSA	4151-50-2	P010824038	<LOQ (1.99)		1.79	1.99	1.37				U
	N-MeFOSE	24448-09-7	P010824038	<LOQ (19.9)		17.9	19.9	3.16				U
	N-EtFOSE	1691-99-2	P010824038	<LOQ (19.9)		17.9	19.9	2.68				U
PFECAs	HFPO-DA	13252-13-6	P010824038	<LOQ (7.97)		7.17	7.97	2.31				U
	PFMBA	863090-89-5	P010824038	<LOQ (3.99)		3.59	3.99	1.63				U
	PFMPA	377-73-1	P010824038	<LOQ (3.99)		3.59	3.99	0.748				U
	NFDHA	151772-58-6	P010824038	<LOQ (3.99)	MM1*	3.59	3.99	2.01				U
FTCAs	3:3 FTCA	356-02-5	P010824038	<LOQ (9.96)		8.97	9.96	1.19				U
	5:3 FTCA	914637-49-3	P010824038	<LOQ (9.96)		8.97	9.96	2.91				U
	7:3 FTCA	812-70-4	P010824038	<LOQ (9.96)		8.97	9.96	2.01				U
Other	ADONA	919005-14-4	P010824038	<LOQ (7.53)		6.78	7.53	1.67				U
	9Cl-PF3ONS	756426-58-1	P010824038	<LOQ (7.45)		6.71	7.45	2.12				U
	N-MeFOSAA	2355-31-9	P010824038	<LOQ (1.99)	MM2*	1.79	1.99	1.02				U
	11Cl-PF3OUdS	763051-92-9	P010824038	<LOQ (7.53)		6.78	7.53	1.69				U
	N-EtFOSAA	2991-50-6	P010824038	2.17	MM2*	1.79	1.99	0.965				
	PFEESA	113507-82-7	P010824038	<LOQ (3.55)		3.19	3.55	0.630				U
ES	M4PFBA		P010824038		bb				100	8-130%	71.5%	
	M5PFPeA		P010824038		bs				50.0	35-130%	92.3%	
	M5PFHxA		P010824038		bb				25.0	40-130%	87.8%	
	M4PFHpA		P010824038		bb				25.0	40-130%	90.8%	
	M8PFOA		P010824038		bs				25.0	40-130%	87.6%	
	M9PFNA		P010824038		bb				12.5	40-130%	86.0%	
	M6PFDA		P010824038		bb				12.5	40-130%	82.6%	
	M7PFUdA		P010824038		bs				12.5	40-130%	77.9%	
	M2-PFDoA		P010824038		bs				12.5	40-130%	81.6%	
	13C2-PFTeDA		P010824038		bb				12.5	20-130%	82.5%	
	M3PFBS		P010824038		bb				23.3	40-135%	101.2%	
	M3PFHxS		P010824038		bb				23.7	40-130%	94.0%	
	M8PFOS		P010824038		bb				24.0	40-130%	83.1%	
	M2-4:2 FTS		P010824038		bs				46.9	40-165%	97.1%	
	M2-6:2 FTS		P010824038		bb				47.6	40-215%	86.2%	
	M2-8:2 FTS		P010824038		bb				48.0	40-275%	102.3%	
	M8PFOSA		P010824038		bb				25.0	40-130%	79.2%	
	d3-N-MeFOSA		P010824038		bb				25.0	10-130%	56.4%	
	d5-N-EtFOSA		P010824038		bb				25.0	10-130%	56.2%	
	d3-N-MeFOSAA		P010824038		bs				50.0	40-135%	107.3%	
	d5-N-EtFOSAA		P010824038		bs				50.0	40-150%	112.2%	
	d7-N-MeFOSE		P010824038		bb				250	20-130%	63.4%	
	d9-N-EtFOSE		P010824038		bb				250	15-130%	61.7%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S2				
Sampling Site					
Enthalpy ID	0724-833-010-1A	Prep Batch	EU17844	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.55
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-02 04:22	Split Factor	N/A	Dry Weight (g)	1.55
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.50

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824038		bs				100	40-130%	99.5%	
JS	M3PFBA		P010824038		bb				50.0	>30%	100.3%	
	M2-PFHxA		P010824038		bs				25.0	>30%	100.7%	
	M4-PFOA		P010824038		bs				25.0	>30%	99.7%	
	M5-PFNA		P010824038		bb				12.5	>30%	87.0%	
	M2-PFDA		P010824038		bb				12.5	>30%	102.1%	
	18O2PFHxS		P010824038		bb				23.7	>30%	110.8%	
	M4-PFOS		P010824038		bb				24.0	>30%	111.0%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S2				
Sampling Site					
Enthalpy ID	0724-833-010-1B	Prep Batch	EU17914	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.57
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	1.55
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-07 22:10	Split Factor	N/A	Dry Weight (g)	1.55
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.0%
Bottle ID	-			Dry Wt. Equiv (g)	0.51

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824021	<LOQ (7.89)	MM1*	7.10	7.89	1.85				U
	PFDA	335-76-2	P070824021	<LOQ (1.97)	MM1*	1.78	1.97	0.899				U
	PFUnDA	2058-94-8	P070824021	<LOQ (1.97)	MM1*	1.78	1.97	0.667				U
	PFDoA	307-55-1	P070824021	<LOQ (1.97)	MM1*	1.78	1.97	0.667				U
	PFTrDA	72629-94-8	P070824021	<LOQ (1.97)	MM1*	1.78	1.97	0.679				U
	PFTeDA	376-06-7	P070824021	<LOQ (1.97)	MM1*	1.78	1.97	0.508				U
Sulfonates	PFBS	375-73-5	P070824021	<LOQ (1.75)	MM1*	1.57	1.75	0.378				U
	PFHpS	375-92-8	P070824021	<LOQ (1.88)		1.69	1.88	0.651				U
	PFOS	1763-23-1	P070824021	7.10	MM2*	1.65	1.83	0.695				
	8:2 FTS	39108-34-4	P070824021	<LOQ (7.58)		6.82	7.58	4.75				U
Sulfonmides	PFOSA	754-91-6	P070824021	<LOQ (1.97)		1.78	1.97	0.186				U
	N-MeFOSE	24448-09-7	P070824021	<LOQ (19.7)		17.8	19.7	3.13				U
	N-EtFOSE	1691-99-2	P070824021	<LOQ (19.7)		17.8	19.7	2.65				U
PFECAs	HFPO-DA	13252-13-6	P070824021	<LOQ (7.89)		7.10	7.89	2.29				U
FTCAs	7:3 FTCA	812-70-4	P070824021	<LOQ (9.87)		8.88	9.87	1.99				U
Other	ADONA	919005-14-4	P070824021	<LOQ (7.46)		6.71	7.46	1.66				U
ES	M4PFBA		P070824021		bb				100	8-130%	82.7%	
	M5PFHxA		P070824021		bb				25.0	40-130%	82.5%	
	M6PFDA		P070824021		bb				12.5	40-130%	81.4%	
	M7PFUdA		P070824021		bb				12.5	40-130%	72.0%	
	M2-PFDoA		P070824021		bs				12.5	40-130%	83.1%	
	13C2-PFTeDA		P070824021		bb				12.5	20-130%	71.8%	
	M3PFBS		P070824021		bb				23.3	40-135%	85.8%	
	M8PFOS		P070824021		bb				24.0	40-130%	75.9%	
	M2-8:2 FTS		P070824021		bb				48.0	40-275%	86.6%	
	M8PFOSA		P070824021		bs				25.0	40-130%	78.5%	
	d7-N-MeFOSE		P070824021		bb				250	20-130%	78.6%	
	d9-N-EtFOSE		P070824021		bb				250	15-130%	74.9%	
	M3HFPO-DA		P070824021		bb				100	40-130%	107.3%	
JS	M3PFBA		P070824021		bb				50.0	>30%	110.8%	
	M2-PFHxA		P070824021		bb				25.0	>30%	108.7%	
	M2-PFDA		P070824021		bb				12.5	>30%	106.7%	
	M4-PFOS		P070824021		bb				24.0	>30%	127.7%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LS2				
Sampling Site					
Enthalpy ID	0724-833-011-1A	Prep Batch	EU17844	Tare Weight (g)	1.003
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.51
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	3.17
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.507
AnalysisDate	2024-08-02 04:45	Split Factor	N/A	Dry Weight (g)	3.17
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	39.3%
Bottle ID	-			Dry Wt. Equiv (g)	1.99

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824039	<LOQ (2.01)	MM1*	1.81	2.01	0.473				U
	PFPeA	2706-90-3	P010824039	<LOQ (1.01)	MM1*	0.906	1.01	0.158				U
	PFHxA	307-24-4	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.166				U
	PFHpA	375-85-9	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.152				U
	PFOA	335-67-1	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.123				U
	PFNA	375-95-1	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.0964				U
	PFDA	335-76-2	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.229				U
	PFUnDA	2058-94-8	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.170				U
	PFDoA	307-55-1	P010824039	<LOQ (0.503)		0.453	0.503	0.170				U
	PFTrDA	72629-94-8	P010824039	<LOQ (0.503)		0.453	0.503	0.173				U
	PFTeDA	376-06-7	P010824039	<LOQ (0.503)		0.453	0.503	0.130				U
Sulfonates	PFBS	375-73-5	P010824039	<LOQ (0.446)		0.402	0.446	0.0964				U
	PFPeS	2706-91-4	P010824039	<LOQ (0.474)		0.426	0.474	0.129				U
	PFHxS	355-46-4	P010824039	<LOQ (0.460)	MM1*	0.414	0.460	0.194				U
	PFHpS	375-92-8	P010824039	<LOQ (0.480)		0.432	0.480	0.166				U
	PFOS	1763-23-1	P010824039	0.747	MM2*	0.420	0.467	0.177				
	PFNS	68259-12-1	P010824039	<LOQ (0.484)		0.436	0.484	0.118				U
	PFDS	335-77-3	P010824039	<LOQ (0.486)		0.437	0.486	0.0438				U
	4:2 FTS	757124-72-4	P010824039	<LOQ (1.89)		1.70	1.89	0.790				U
	PFDoS	79780-39-5	P010824039	<LOQ (0.488)		0.439	0.488	0.121				U
	6:2 FTS	27619-97-2	P010824039	<LOQ (1.91)		1.72	1.91	0.476				U
	8:2 FTS	39108-34-4	P010824039	<LOQ (1.93)		1.74	1.93	1.21				U
Sulfonmides	PFOSA	754-91-6	P010824039	<LOQ (0.503)	MM1*	0.453	0.503	0.0476				U
	N-MeFOSA	31506-32-8	P010824039	<LOQ (0.503)		0.453	0.503	0.138				U
	N-EtFOSA	4151-50-2	P010824039	<LOQ (0.503)		0.453	0.503	0.345				U
	N-MeFOSE	24448-09-7	P010824039	<LOQ (5.03)		4.53	5.03	0.798				U
	N-EtFOSE	1691-99-2	P010824039	<LOQ (5.03)		4.53	5.03	0.677				U
PFECAs	HFPO-DA	13252-13-6	P010824039	<LOQ (2.01)		1.81	2.01	0.584				U
	PFMBA	863090-89-5	P010824039	<LOQ (1.01)		0.906	1.01	0.412				U
	PFMPA	377-73-1	P010824039	<LOQ (1.01)		0.906	1.01	0.189				U
	NFDHA	151772-58-6	P010824039	<LOQ (1.01)		0.906	1.01	0.508				U
FTCAs	3:3 FTCA	356-02-5	P010824039	<LOQ (2.52)		2.26	2.52	0.299				U
	5:3 FTCA	914637-49-3	P010824039	<LOQ (2.52)		2.26	2.52	0.735				U
	7:3 FTCA	812-70-4	P010824039	<LOQ (2.52)		2.26	2.52	0.508				U
Other	ADONA	919005-14-4	P010824039	<LOQ (1.90)		1.71	1.90	0.423				U
	9Cl-PF3ONS	756426-58-1	P010824039	<LOQ (1.88)		1.69	1.88	0.536				U
	N-MeFOSAA	2355-31-9	P010824039	<LOQ (0.503)		0.453	0.503	0.257				U
	11Cl-PF3OUdS	763051-92-9	P010824039	<LOQ (1.90)		1.71	1.90	0.428				U
	N-EtFOSAA	2991-50-6	P010824039	<LOQ (0.503)	MM2*	0.453	0.503	0.244				U
	PFEESA	113507-82-7	P010824039	<LOQ (0.896)		0.806	0.896	0.159				U
ES	M4PFBA		P010824039		bb				100	8-130%	70.1%	
	M5PFPeA		P010824039		bs				50.0	35-130%	95.5%	
	M5PFHxA		P010824039		bs				25.0	40-130%	94.9%	
	M4PFHpA		P010824039		bb				25.0	40-130%	91.4%	
	M8PFOA		P010824039		bs				25.0	40-130%	88.2%	
	M9PFNA		P010824039		bb				12.5	40-130%	87.9%	
	M6PFDA		P010824039		bb				12.5	40-130%	83.5%	
	M7PFUdA		P010824039		bb				12.5	40-130%	75.3%	
	M2-PFDoA		P010824039		bb				12.5	40-130%	81.4%	
	13C2-PFTeDA		P010824039		bb				12.5	20-130%	77.1%	
	M3PFBS		P010824039		bb				23.3	40-135%	99.8%	
	M3PFHxS		P010824039		bb				23.7	40-130%	93.5%	
	M8PFOS		P010824039		bb				24.0	40-130%	86.6%	
	M2-4:2 FTS		P010824039		bb				46.9	40-165%	89.2%	
	M2-6:2 FTS		P010824039		bb				47.6	40-215%	76.0%	
	M2-8:2 FTS		P010824039		bb				48.0	40-275%	88.3%	
	M8PFOSA		P010824039		bs				25.0	40-130%	79.3%	
	d3-N-MeFOSA		P010824039		bb				25.0	10-130%	52.6%	
	d5-N-EtFOSA		P010824039		bb				25.0	10-130%	49.0%	
	d3-N-MeFOSAA		P010824039		bb				50.0	40-135%	94.4%	
	d5-N-EtFOSAA		P010824039		bb				50.0	40-150%	94.3%	
	d7-N-MeFOSE		P010824039		bb				250	20-130%	60.3%	
	d9-N-EtFOSE		P010824039		bb				250	15-130%	56.7%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LS2				
Sampling Site					
Enthalpy ID	0724-833-011-1A	Prep Batch	EU17844	Tare Weight (g)	1.003
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.51
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	3.17
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.507
AnalysisDate	2024-08-02 04:45	Split Factor	N/A	Dry Weight (g)	3.17
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	39.3%
Bottle ID	-			Dry Wt. Equiv (g)	1.99

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824039		bs				100	40-130%	110.4%	
JS	M3PFBA		P010824039		bb				50.0	>30%	99.7%	
	M2-PFHxA		P010824039		bb				25.0	>30%	99.5%	
	M4-PFOA		P010824039		bb				25.0	>30%	101.4%	
	M5-PFNA		P010824039		bb				12.5	>30%	83.3%	
	M2-PFDA		P010824039		bb				12.5	>30%	99.9%	
	18O2PFHxS		P010824039		bb				23.7	>30%	109.1%	
	M4-PFOS		P010824039		bb				24.0	>30%	104.2%	

Peak Flags
MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
c: Peak was integrated incorrectly by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_LS2				
Sampling Site					
Enthalpy ID	0724-833-011-1B	Prep Batch	EU17914	Tare Weight (g)	1.03
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.51
Sampling Date	2024-07-17 11:40	Instrument	Pippin	Dry Weight (g)	3.17
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.1
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.48
AnalysisDate	2024-08-07 22:33	Split Factor	N/A	Dry Weight (g)	3.17
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	39.1%
Bottle ID	-			Dry Wt. Equiv (g)	1.99

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824022	<LOQ (2.01)	MM1*	1.81	2.01	0.472				U
	PFDA	335-76-2	P070824022	<LOQ (0.502)	MM1*	0.452	0.502	0.229				U
	PFUnDA	2058-94-8	P070824022	<LOQ (0.502)		0.452	0.502	0.170				U
	PFDoA	307-55-1	P070824022	<LOQ (0.502)		0.452	0.502	0.170				U
	PFTrDA	72629-94-8	P070824022	<LOQ (0.502)		0.452	0.502	0.173				U
	PFTeDA	376-06-7	P070824022	<LOQ (0.502)		0.452	0.502	0.129				U
Sulfonates	PFBS	375-73-5	P070824022	<LOQ (0.445)	MM1*	0.401	0.445	0.0962				U
	PFHpS	375-92-8	P070824022	<LOQ (0.479)		0.431	0.479	0.166				U
	PFOS	1763-23-1	P070824022	0.724	MM2*	0.419	0.466	0.177				
	8:2 FTS	39108-34-4	P070824022	<LOQ (1.93)		1.74	1.93	1.21				U
Sulfonmides	PFOSA	754-91-6	P070824022	<LOQ (0.502)	MM1*	0.452	0.502	0.0474				U
	N-MeFOSE	24448-09-7	P070824022	<LOQ (5.02)		4.52	5.02	0.796				U
	N-EtFOSE	1691-99-2	P070824022	<LOQ (5.02)		4.52	5.02	0.675				U
PFECAs	HFPO-DA	13252-13-6	P070824022	<LOQ (2.01)		1.81	2.01	0.582				U
FTCAs	7:3 FTCA	812-70-4	P070824022	<LOQ (2.51)		2.26	2.51	0.507				U
Other	ADONA	919005-14-4	P070824022	<LOQ (1.90)		1.71	1.90	0.422				U
ES	M4PFBA		P070824022		bb				100	8-130%	77.7%	
	M5PFHxA		P070824022		bb				25.0	40-130%	79.4%	
	M6PFDA		P070824022		bb				12.5	40-130%	79.3%	
	M7PFUdA		P070824022		bb				12.5	40-130%	66.5%	
	M2-PFDoA		P070824022		bb				12.5	40-130%	76.5%	
	13C2-PFTeDA		P070824022		bb				12.5	20-130%	69.5%	
	M3PFBS		P070824022		bb				23.3	40-135%	82.5%	
	M8PFOS		P070824022		bb				24.0	40-130%	76.4%	
	M2-8:2 FTS		P070824022		bb				48.0	40-275%	70.8%	
	M8PFOSA		P070824022		bs				25.0	40-130%	76.4%	
	d7-N-MeFOSE		P070824022		bb				250	20-130%	71.4%	
	d9-N-EtFOSE		P070824022		bb				250	15-130%	68.4%	
	M3HFPO-DA		P070824022		bb				100	40-130%	96.7%	
JS	M3PFBA		P070824022		bb				50.0	>30%	114.1%	
	M2-PFHxA		P070824022		bb				25.0	>30%	108.7%	
	M2-PFDA		P070824022		bb				12.5	>30%	109.7%	
	M4-PFOS		P070824022		bb				24.0	>30%	127.3%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

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- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C3				
Sampling Site					
Enthalpy ID	0724-833-013-1A	Prep Batch	EU17844	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.88
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	1.6
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.09
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.89
AnalysisDate	2024-08-02 05:08	Split Factor	N/A	Dry Weight (g)	1.6
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.9%
Bottle ID	-			Dry Wt. Equiv (g)	0.45

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824040	<LOQ (8.88)	MM1*	7.99	8.88	2.09				U
	PFPeA	2706-90-3	P010824040	<LOQ (4.44)	MM1*	3.99	4.44	0.698				U
	PFHxA	307-24-4	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.732				U
	PFHpA	375-85-9	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.669				U
	PFOA	335-67-1	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.544				U
	PFNA	375-95-1	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.425				U
	PFDA	335-76-2	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	1.01				U
	PFUnDA	2058-94-8	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.750				U
	PFDoA	307-55-1	P010824040	<LOQ (2.22)	MM1*	2.00	2.22	0.750				U
	PFTrDA	72629-94-8	P010824040	<LOQ (2.22)		2.00	2.22	0.763				U
	PFTeDA	376-06-7	P010824040	<LOQ (2.22)		2.00	2.22	0.571				U
Sulfonates	PFBS	375-73-5	P010824040	<LOQ (1.97)		1.77	1.97	0.425				U
	PFPeS	2706-91-4	P010824040	<LOQ (2.09)		1.88	2.09	0.568				U
	PFHxS	355-46-4	P010824040	<LOQ (2.03)	MM1*	1.83	2.03	0.858				U
	PFHpS	375-92-8	P010824040	<LOQ (2.11)		1.90	2.11	0.732				U
	PFOS	1763-23-1	P010824040	2.93	MM2*	1.85	2.06	0.781				
	PFNS	68259-12-1	P010824040	<LOQ (2.13)		1.92	2.13	0.519				U
	PFDS	335-77-3	P010824040	<LOQ (2.14)		1.93	2.14	0.193				U
	4:2 FTS	757124-72-4	P010824040	<LOQ (8.32)		7.49	8.32	3.48				U
	PFDoS	79780-39-5	P010824040	<LOQ (2.15)		1.94	2.15	0.534				U
	6:2 FTS	27619-97-2	P010824040	<LOQ (8.43)	MM1*	7.59	8.43	2.10				U
	8:2 FTS	39108-34-4	P010824040	<LOQ (8.52)		7.67	8.52	5.34				U
Sulfonmides	PFOSA	754-91-6	P010824040	<LOQ (2.22)		2.00	2.22	0.210				U
	N-MeFOSA	31506-32-8	P010824040	<LOQ (2.22)		2.00	2.22	0.610				U
	N-EtFOSA	4151-50-2	P010824040	<LOQ (2.22)		2.00	2.22	1.52				U
	N-MeFOSE	24448-09-7	P010824040	<LOQ (22.2)		20.0	22.2	3.52				U
	N-EtFOSE	1691-99-2	P010824040	<LOQ (22.2)		20.0	22.2	2.98				U
PFECAs	HFPO-DA	13252-13-6	P010824040	<LOQ (8.88)		7.99	8.88	2.57				U
	PFMBA	863090-89-5	P010824040	<LOQ (4.44)		3.99	4.44	1.81				U
	PFMPA	377-73-1	P010824040	<LOQ (4.44)		3.99	4.44	0.833				U
	NFDHA	151772-58-6	P010824040	<LOQ (4.44)		3.99	4.44	2.24				U
FTCAs	3:3 FTCA	356-02-5	P010824040	<LOQ (11.1)		9.99	11.1	1.32				U
	5:3 FTCA	914637-49-3	P010824040	<LOQ (11.1)		9.99	11.1	3.24				U
	7:3 FTCA	812-70-4	P010824040	<LOQ (11.1)		9.99	11.1	2.24				U
Other	ADONA	919005-14-4	P010824040	<LOQ (8.39)		7.55	8.39	1.86				U
	9Cl-PF3ONS	756426-58-1	P010824040	<LOQ (8.30)		7.47	8.30	2.36				U
	N-MeFOSAA	2355-31-9	P010824040	<LOQ (2.22)		2.00	2.22	1.13				U
	11Cl-PF3OUdS	763051-92-9	P010824040	<LOQ (8.39)		7.55	8.39	1.89				U
	N-EtFOSAA	2991-50-6	P010824040	<LOQ (2.22)	MM2*	2.00	2.22	1.07				U
	PFEESA	113507-82-7	P010824040	<LOQ (3.95)		3.55	3.95	0.701				U
ES	M4PFBA		P010824040		bb				100	8-130%	92.7%	
	M5PFPeA		P010824040		bs				50.0	35-130%	92.1%	
	M5PFHxA		P010824040		bb				25.0	40-130%	93.8%	
	M4PFHpA		P010824040		bb				25.0	40-130%	89.6%	
	M8PFOA		P010824040		bs				25.0	40-130%	88.1%	
	M9PFNA		P010824040		bb				12.5	40-130%	89.8%	
	M6PFDA		P010824040		bb				12.5	40-130%	89.8%	
	M7PFUdA		P010824040		bb				12.5	40-130%	81.0%	
	M2-PFDoA		P010824040		bb				12.5	40-130%	84.9%	
	13C2-PFTeDA		P010824040		bb				12.5	20-130%	80.5%	
	M3PFBS		P010824040		bb				23.3	40-135%	93.1%	
	M3PFHxS		P010824040		bb				23.7	40-130%	94.9%	
	M8PFOS		P010824040		bb				24.0	40-130%	85.9%	
	M2-4:2 FTS		P010824040		bb				46.9	40-165%	81.4%	
	M2-6:2 FTS		P010824040		bb				47.6	40-215%	71.4%	
	M2-8:2 FTS		P010824040		bb				48.0	40-275%	96.5%	
	M8PFOSA		P010824040		bb				25.0	40-130%	75.3%	
	d3-N-MeFOSA		P010824040		bb				25.0	10-130%	50.1%	
	d5-N-EtFOSA		P010824040		bb				25.0	10-130%	48.4%	
	d3-N-MeFOSAA		P010824040		bb				50.0	40-135%	90.8%	
	d5-N-EtFOSAA		P010824040		bs				50.0	40-150%	99.4%	
	d7-N-MeFOSE		P010824040		bb				250	20-130%	64.7%	
	d9-N-EtFOSE		P010824040		bb				250	15-130%	61.3%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C3				
Sampling Site					
Enthalpy ID	0724-833-013-1A	Prep Batch	EU17844	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.88
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	1.6
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.09
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.89
AnalysisDate	2024-08-02 05:08	Split Factor	N/A	Dry Weight (g)	1.6
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.9%
Bottle ID	-			Dry Wt. Equiv (g)	0.45

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824040		bb				100	40-130%	107.4%	
JS	M3PFBA		P010824040		bb				50.0	>30%	94.3%	
	M2-PFHxA		P010824040		bb				25.0	>30%	93.0%	
	M4-PFOA		P010824040		bs				25.0	>30%	95.2%	
	M5-PFNA		P010824040		bb				12.5	>30%	78.8%	
	M2-PFDA		P010824040		bb				12.5	>30%	91.0%	
	18O2PFHxS		P010824040		bb				23.7	>30%	100.3%	
	M4-PFOS		P010824040		bb				24.0	>30%	102.9%	

Peak Flags
MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
c: Peak was integrated incorrectly by the software
r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C3				
Sampling Site					
Enthalpy ID	0724-833-013-1B	Prep Batch	EU17914	Tare Weight (g)	0.99
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.88
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	1.6
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.07
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	6.89
AnalysisDate	2024-08-07 22:55	Split Factor	N/A	Dry Weight (g)	1.6
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	8.9%
Bottle ID	-			Dry Wt. Equiv (g)	0.45

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824023	<LOQ (8.91)	MM1*	8.02	8.91	2.09				U
	PFDA	335-76-2	P070824023	<LOQ (2.23)	MM1*	2.01	2.23	1.01				U
	PFUnDA	2058-94-8	P070824023	<LOQ (2.23)	MM1*	2.01	2.23	0.753				U
	PFDoA	307-55-1	P070824023	<LOQ (2.23)	MM1*	2.01	2.23	0.753				U
	PFTrDA	72629-94-8	P070824023	<LOQ (2.23)		2.01	2.23	0.766				U
	PFTeDA	376-06-7	P070824023	<LOQ (2.23)		2.01	2.23	0.574				U
Sulfonates	PFBS	375-73-5	P070824023	<LOQ (1.98)		1.78	1.98	0.427				U
	PFHpS	375-92-8	P070824023	<LOQ (2.12)		1.91	2.12	0.735				U
	PFOS	1763-23-1	P070824023	2.88	MM2*	1.86	2.07	0.784				
	8:2 FTS	39108-34-4	P070824023	<LOQ (8.55)		7.70	8.55	5.36				U
Sulfonmides	PFOSA	754-91-6	P070824023	<LOQ (2.23)		2.01	2.23	0.211				U
	N-MeFOSE	24448-09-7	P070824023	<LOQ (22.3)		20.1	22.3	3.53				U
	N-EtFOSE	1691-99-2	P070824023	<LOQ (22.3)		20.1	22.3	3.00				U
PFECAs	HFPO-DA	13252-13-6	P070824023	<LOQ (8.91)		8.02	8.91	2.58				U
FTCAs	7:3 FTCA	812-70-4	P070824023	<LOQ (11.1)		10.0	11.1	2.25				U
Other	ADONA	919005-14-4	P070824023	<LOQ (8.42)		7.58	8.42	1.87				U
ES	M4PFBA		P070824023		bb				100	8-130%	83.2%	
	M5PFHxA		P070824023		bb				25.0	40-130%	85.2%	
	M6PFDA		P070824023		bb				12.5	40-130%	80.8%	
	M7PFUdA		P070824023		bb				12.5	40-130%	71.1%	
	M2-PFDoA		P070824023		bb				12.5	40-130%	81.5%	
	13C2-PFTeDA		P070824023		bb				12.5	20-130%	75.7%	
	M3PFBS		P070824023		bb				23.3	40-135%	89.8%	
	M8PFOS		P070824023		bb				24.0	40-130%	73.3%	
	M2-8:2 FTS		P070824023		bb				48.0	40-275%	76.9%	
	M8PFOSA		P070824023		bb				25.0	40-130%	76.6%	
	d7-N-MeFOSE		P070824023		bb				250	20-130%	77.8%	
	d9-N-EtFOSE		P070824023		bb				250	15-130%	74.3%	
	M3HFPO-DA		P070824023		bb				100	40-130%	101.7%	
JS	M3PFBA		P070824023		bb				50.0	>30%	108.0%	
	M2-PFHxA		P070824023		bb				25.0	>30%	101.2%	
	M2-PFDA		P070824023		bb				12.5	>30%	105.1%	
	M4-PFOS		P070824023		bb				24.0	>30%	126.1%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
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- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S3				
Sampling Site					
Enthalpy ID	0724-833-014-1A	Prep Batch	EU17844	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.63
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	2.32
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.15
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.63
AnalysisDate	2024-08-02 06:16	Split Factor	N/A	Dry Weight (g)	2.32
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	23.4%
Bottle ID	-			Dry Wt. Equiv (g)	1.21

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824043	<LOQ (3.31)	MM1*	2.98	3.31	0.778				U
	PFPeA	2706-90-3	P010824043	<LOQ (1.66)	MM1*	1.49	1.66	0.260				U
	PFHxA	307-24-4	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.273				U
	PFHpA	375-85-9	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.250				U
	PFOA	335-67-1	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.203				U
	PFNA	375-95-1	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.159				U
	PFDA	335-76-2	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.377				U
	PFUnDA	2058-94-8	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.280				U
	PFDoA	307-55-1	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.280				U
	PFTrDA	72629-94-8	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.285				U
	PFTeDA	376-06-7	P010824043	<LOQ (0.828)		0.745	0.828	0.213				U
Sulfonates	PFBS	375-73-5	P010824043	<LOQ (0.734)	MM1*	0.661	0.734	0.159				U
	PFPeS	2706-91-4	P010824043	<LOQ (0.779)		0.701	0.779	0.212				U
	PFHxS	355-46-4	P010824043	<LOQ (0.757)	MM1*	0.681	0.757	0.320				U
	PFHpS	375-92-8	P010824043	<LOQ (0.789)		0.710	0.789	0.273				U
	PFOS	1763-23-1	P010824043	3.48	MM2*	0.692	0.769	0.292				
	PFNS	68259-12-1	P010824043	<LOQ (0.797)		0.717	0.797	0.194				U
	PFDS	335-77-3	P010824043	<LOQ (0.799)	MM1*	0.719	0.799	0.0721				U
	4:2 FTS	757124-72-4	P010824043	<LOQ (3.11)		2.80	3.11	1.30				U
	PFDoS	79780-39-5	P010824043	<LOQ (0.803)		0.723	0.803	0.199				U
	6:2 FTS	27619-97-2	P010824043	<LOQ (3.15)	MM1*	2.83	3.15	0.783				U
	8:2 FTS	39108-34-4	P010824043	<LOQ (3.18)		2.86	3.18	1.99				U
Sulfonmides	PFOSA	754-91-6	P010824043	<LOQ (0.828)	MM1*	0.745	0.828	0.0783				U
	N-MeFOSA	31506-32-8	P010824043	<LOQ (0.828)		0.745	0.828	0.228				U
	N-EtFOSA	4151-50-2	P010824043	<LOQ (0.828)		0.745	0.828	0.567				U
	N-MeFOSE	24448-09-7	P010824043	<LOQ (8.28)		7.45	8.28	1.31				U
	N-EtFOSE	1691-99-2	P010824043	<LOQ (8.28)		7.45	8.28	1.11				U
Other	ADONA	919005-14-4	P010824043	<LOQ (3.13)		2.82	3.13	0.696				U
	9Cl-PF3ONS	756426-58-1	P010824043	<LOQ (3.10)		2.79	3.10	0.882				U
	N-MeFOSAA	2355-31-9	P010824043	<LOQ (0.828)	MM2*	0.745	0.828	0.422				U
	11Cl-PF3OUdS	763051-92-9	P010824043	<LOQ (3.13)		2.82	3.13	0.704				U
	N-EtFOSAA	2991-50-6	P010824043	2.31	MM2*	0.745	0.828	0.401				
	PFEESA	113507-82-7	P010824043	<LOQ (1.47)		1.33	1.47	0.262				U
PFECAs	HFPO-DA	13252-13-6	P010824043	<LOQ (3.31)		2.98	3.31	0.961				U
	PFMBA	863090-89-5	P010824043	<LOQ (1.66)		1.49	1.66	0.677				U
	PFMPA	377-73-1	P010824043	<LOQ (1.66)		1.49	1.66	0.311				U
	NFDHA	151772-58-6	P010824043	<LOQ (1.66)	MM1*	1.49	1.66	0.836				U
FTCAs	3:3 FTCA	356-02-5	P010824043	<LOQ (4.14)		3.73	4.14	0.493				U
	5:3 FTCA	914637-49-3	P010824043	<LOQ (4.14)		3.73	4.14	1.21				U
	7:3 FTCA	812-70-4	P010824043	<LOQ (4.14)		3.73	4.14	0.836				U
ES	M4PFBA		P010824043		bb				100	8-130%	90.1%	
	M5PFPeA		P010824043		bs				50.0	35-130%	91.3%	
	M5PFHxA		P010824043		bb				25.0	40-130%	90.3%	
	M4PFHpA		P010824043		bs				25.0	40-130%	92.3%	
	M8PFOA		P010824043		bs				25.0	40-130%	87.1%	
	M9PFNA		P010824043		bb				12.5	40-130%	84.9%	
	M6PFDA		P010824043		bb				12.5	40-130%	83.4%	
	M7PFUdA		P010824043		bs				12.5	40-130%	77.5%	
	M2-PFDoA		P010824043		bs				12.5	40-130%	81.1%	
	13C2-PFTeDA		P010824043		bb				12.5	20-130%	77.8%	
	M3PFBS		P010824043		bb				23.3	40-135%	96.8%	
	M3PFHxS		P010824043		bb				23.7	40-130%	86.9%	
	M8PFOS		P010824043		bb				24.0	40-130%	83.8%	
	M2-4:2 FTS		P010824043		bs				46.9	40-165%	94.4%	
	M2-6:2 FTS		P010824043		bb				47.6	40-215%	81.3%	
	M2-8:2 FTS		P010824043		bs				48.0	40-275%	111.0%	
	M8PFOSA		P010824043		bs				25.0	40-130%	78.8%	
	d3-N-MeFOSA		P010824043		bb				25.0	10-130%	50.3%	
	d5-N-EtFOSA		P010824043		bb				25.0	10-130%	51.6%	
	d3-N-MeFOSAA		P010824043		bs				50.0	40-135%	108.5%	
	d5-N-EtFOSAA		P010824043		bb				50.0	40-150%	109.0%	
	d7-N-MeFOSE		P010824043		bb				250	20-130%	63.5%	
	d9-N-EtFOSE		P010824043		bb				250	15-130%	59.5%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S3				
Sampling Site					
Enthalpy ID	0724-833-014-1A	Prep Batch	EU17844	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.63
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	2.32
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.15
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.63
AnalysisDate	2024-08-02 06:16	Split Factor	N/A	Dry Weight (g)	2.32
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	23.4%
Bottle ID	-			Dry Wt. Equiv (g)	1.21

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824043		bs				100	40-130%	102.4%	
JS	M3PFBA		P010824043		bb				50.0	>30%	101.5%	
	M2-PFHxA		P010824043		bs				25.0	>30%	99.7%	
	M4-PFOA		P010824043		bb				25.0	>30%	102.4%	
	M5-PFNA		P010824043		bb				12.5	>30%	89.2%	
	M2-PFDA		P010824043		bb				12.5	>30%	105.5%	
	18O2PFHxS		P010824043		bb				23.7	>30%	118.1%	
	M4-PFOS		P010824043		bb				24.0	>30%	110.1%	

Peak Flags
MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
c: Peak was integrated incorrectly by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S3				
Sampling Site					
Enthalpy ID	0724-833-014-1B	Prep Batch	EU17914	Tare Weight (g)	1
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.63
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	2.32
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.02
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.63
AnalysisDate	2024-08-08 00:04	Split Factor	N/A	Dry Weight (g)	2.32
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	23.4%
Bottle ID	-			Dry Wt. Equiv (g)	1.18

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824026	<LOQ (3.40)	MM1*	3.06	3.40	0.799				U
	PFDA	335-76-2	P070824026	<LOQ (0.850)	MM1*	0.765	0.850	0.387				U
	PFUnDA	2058-94-8	P070824026	<LOQ (0.850)	MM1*	0.765	0.850	0.287				U
	PFDoA	307-55-1	P070824026	<LOQ (0.850)	MM1*	0.765	0.850	0.287				U
	PFTrDA	72629-94-8	P070824026	<LOQ (0.850)	MM1*	0.765	0.850	0.292				U
	PFTeDA	376-06-7	P070824026	<LOQ (0.850)		0.765	0.850	0.219				U
Sulfonates	PFBS	375-73-5	P070824026	<LOQ (0.753)		0.678	0.753	0.163				U
	PFHpS	375-92-8	P070824026	<LOQ (0.810)		0.729	0.810	0.280				U
	PFOS	1763-23-1	P070824026	2.98	MM2*	0.710	0.788	0.299				
	8:2 FTS	39108-34-4	P070824026	<LOQ (3.26)		2.94	3.26	2.04				U
Sulfonmides	PFOSA	754-91-6	P070824026	<LOQ (0.850)	MM1*	0.765	0.850	0.0803				U
	N-MeFOSE	24448-09-7	P070824026	<LOQ (8.50)		7.65	8.50	1.35				U
	N-EtFOSE	1691-99-2	P070824026	<LOQ (8.50)		7.65	8.50	1.14				U
PFECAs	HFPO-DA	13252-13-6	P070824026	<LOQ (3.40)		3.06	3.40	0.986				U
FTCAs	7:3 FTCA	812-70-4	P070824026	<LOQ (4.25)		3.82	4.25	0.858				U
Other	ADONA	919005-14-4	P070824026	<LOQ (3.21)		2.89	3.21	0.714				U
ES	M4PFBA		P070824026		bb				100	8-130%	84.1%	
	M5PFHxA		P070824026		bs				25.0	40-130%	86.7%	
	M6PFDA		P070824026		bb				12.5	40-130%	81.1%	
	M7PFUdA		P070824026		bb				12.5	40-130%	73.9%	
	M2-PFDoA		P070824026		bb				12.5	40-130%	79.3%	
	13C2-PFTeDA		P070824026		bb				12.5	20-130%	72.6%	
	M3PFBS		P070824026		bb				23.3	40-135%	91.8%	
	M8PFOS		P070824026		bs				24.0	40-130%	78.3%	
	M2-8:2 FTS		P070824026		bb				48.0	40-275%	85.9%	
	M8PFOSA		P070824026		bb				25.0	40-130%	76.4%	
	d7-N-MeFOSE		P070824026		bb				250	20-130%	76.8%	
	d9-N-EtFOSE		P070824026		bb				250	15-130%	74.3%	
	M3HFPO-DA		P070824026		bb				100	40-130%	101.3%	
JS	M3PFBA		P070824026		bb				50.0	>30%	108.0%	
	M2-PFHxA		P070824026		bb				25.0	>30%	104.1%	
	M2-PFDA		P070824026		bb				12.5	>30%	105.8%	
	M4-PFOS		P070824026		bb				24.0	>30%	123.3%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand3				
Sampling Site					
Enthalpy ID	0724-833-015-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.56
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	5.26
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.14
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-02 06:39	Split Factor	N/A	Dry Weight (g)	5.26
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	76.7%
Bottle ID	-			Dry Wt. Equiv (g)	3.94

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824044	<LOQ (1.01)	MM1*	0.913	1.01	0.238				U
	PFPeA	2706-90-3	P010824044	<LOQ (0.507)	MM1*	0.457	0.507	0.0798				U
	PFHxA	307-24-4	P010824044	<LOQ (0.254)	MM1*	0.228	0.254	0.0837				U
	PFHpA	375-85-9	P010824044	<LOQ (0.254)		0.228	0.254	0.0765				U
	PFOA	335-67-1	P010824044	<LOQ (0.254)	MM1*	0.228	0.254	0.0621				U
	PFNA	375-95-1	P010824044	<LOQ (0.254)	MM1*	0.228	0.254	0.0486				U
	PFDA	335-76-2	P010824044	<LOQ (0.254)	MM1*	0.228	0.254	0.116				U
	PFUnDA	2058-94-8	P010824044	<LOQ (0.254)		0.228	0.254	0.0857				U
	PFDoA	307-55-1	P010824044	<LOQ (0.254)	MM1*	0.228	0.254	0.0857				U
	PFTrDA	72629-94-8	P010824044	<LOQ (0.254)		0.228	0.254	0.0873				U
	PFTeDA	376-06-7	P010824044	<LOQ (0.254)		0.228	0.254	0.0653				U
Sulfonates	PFBS	375-73-5	P010824044	<LOQ (0.225)		0.202	0.225	0.0486				U
	PFPeS	2706-91-4	P010824044	<LOQ (0.239)		0.215	0.239	0.0649				U
	PFHxS	355-46-4	P010824044	<LOQ (0.232)		0.209	0.232	0.0980				U
	PFHpS	375-92-8	P010824044	<LOQ (0.242)		0.218	0.242	0.0837				U
	PFOS	1763-23-1	P010824044	<LOQ (0.235)	MM2*	0.212	0.235	0.0893				U
	PFNS	68259-12-1	P010824044	<LOQ (0.244)		0.220	0.244	0.0594				U
	PFDS	335-77-3	P010824044	<LOQ (0.245)		0.220	0.245	0.0221				U
	4:2 FTS	757124-72-4	P010824044	<LOQ (0.951)		0.856	0.951	0.398				U
	PFDoS	79780-39-5	P010824044	<LOQ (0.246)		0.221	0.246	0.0610				U
	6:2 FTS	27619-97-2	P010824044	<LOQ (0.964)		0.867	0.964	0.240				U
	8:2 FTS	39108-34-4	P010824044	<LOQ (0.974)		0.877	0.974	0.610				U
Sulfonmides	PFOSA	754-91-6	P010824044	<LOQ (0.254)		0.228	0.254	0.0240				U
	N-MeFOSA	31506-32-8	P010824044	<LOQ (0.254)		0.228	0.254	0.0698				U
	N-EtFOSA	4151-50-2	P010824044	<LOQ (0.254)		0.228	0.254	0.174				U
	N-MeFOSE	24448-09-7	P010824044	<LOQ (2.54)		2.28	2.54	0.402				U
	N-EtFOSE	1691-99-2	P010824044	<LOQ (2.54)		2.28	2.54	0.341				U
PFECAs	HFPO-DA	13252-13-6	P010824044	<LOQ (1.01)		0.913	1.01	0.294				U
	PFMBA	863090-89-5	P010824044	<LOQ (0.507)		0.457	0.507	0.207				U
	PFMPA	377-73-1	P010824044	<LOQ (0.507)		0.457	0.507	0.0952				U
	NFDHA	151772-58-6	P010824044	<LOQ (0.507)		0.457	0.507	0.256				U
FTCAs	3:3 FTCA	356-02-5	P010824044	<LOQ (1.27)		1.14	1.27	0.151				U
	5:3 FTCA	914637-49-3	P010824044	<LOQ (1.27)		1.14	1.27	0.370				U
	7:3 FTCA	812-70-4	P010824044	<LOQ (1.27)		1.14	1.27	0.256				U
Other	ADONA	919005-14-4	P010824044	<LOQ (0.959)		0.863	0.959	0.213				U
	9Cl-PF3ONS	756426-58-1	P010824044	<LOQ (0.949)		0.854	0.949	0.270				U
	N-MeFOSAA	2355-31-9	P010824044	<LOQ (0.254)		0.228	0.254	0.129				U
	11Cl-PF3OUdS	763051-92-9	P010824044	<LOQ (0.959)		0.863	0.959	0.216				U
	N-EtFOSAA	2991-50-6	P010824044	<LOQ (0.254)		0.228	0.254	0.123				U
	PFEESA	113507-82-7	P010824044	<LOQ (0.451)		0.406	0.451	0.0802				U
ES	M4PFBA		P010824044		bb				100	8-130%	85.9%	
	M5PFPeA		P010824044		ds				50.0	35-130%	88.4%	
	M5PFHxA		P010824044		bb				25.0	40-130%	87.8%	
	M4PFHpA		P010824044		bb				25.0	40-130%	92.8%	
	M8PFOA		P010824044		bs				25.0	40-130%	82.3%	
	M9PFNA		P010824044		bb				12.5	40-130%	84.7%	
	M6PFDA		P010824044		bb				12.5	40-130%	84.8%	
	M7PFUdA		P010824044		bb				12.5	40-130%	76.6%	
	M2-PFDoA		P010824044		bs				12.5	40-130%	82.3%	
	13C2-PFTeDA		P010824044		bb				12.5	20-130%	71.4%	
	M3PFBS		P010824044		bb				23.3	40-135%	89.6%	
	M3PFHxS		P010824044		bs				23.7	40-130%	78.7%	
	M8PFOS		P010824044		bb				24.0	40-130%	80.7%	
	M2-4:2 FTS		P010824044		bb				46.9	40-165%	74.3%	
	M2-6:2 FTS		P010824044		bb				47.6	40-215%	68.0%	
	M2-8:2 FTS		P010824044		bb				48.0	40-275%	69.6%	
	M8PFOSA		P010824044		bs				25.0	40-130%	70.8%	
	d3-N-MeFOSA		P010824044		bb				25.0	10-130%	28.5%	
	d5-N-EtFOSA		P010824044		bb				25.0	10-130%	24.6%	
	d3-N-MeFOSAA		P010824044		bs				50.0	40-135%	80.8%	
	d5-N-EtFOSAA		P010824044		bs				50.0	40-150%	80.4%	
	d7-N-MeFOSE		P010824044		bb				250	20-130%	50.5%	
	d9-N-EtFOSE		P010824044		bb				250	15-130%	45.1%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand3				
Sampling Site					
Enthalpy ID	0724-833-015-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.56
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	5.26
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.14
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-02 06:39	Split Factor	N/A	Dry Weight (g)	5.26
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	76.7%
Bottle ID	-			Dry Wt. Equiv (g)	3.94

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824044		bb				100	40-130%	104.0%	
JS	M3PFBA		P010824044		bb				50.0	>30%	96.0%	
	M2-PFHxA		P010824044		bb				25.0	>30%	92.6%	
	M4-PFOA		P010824044		bb				25.0	>30%	96.5%	
	M5-PFNA		P010824044		bb				12.5	>30%	80.6%	
	M2-PFDA		P010824044		bb				12.5	>30%	92.9%	
	18O2PFHxS		P010824044		bs				23.7	>30%	110.3%	
	M4-PFOS		P010824044		bb				24.0	>30%	104.0%	

Peak Flags
MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand3				
Sampling Site					
Enthalpy ID	0724-833-015-1B	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.56
Sampling Date	2024-07-17 12:15	Instrument	Pippin	Dry Weight (g)	5.26
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.01
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.58
AnalysisDate	2024-08-08 00:26	Split Factor	N/A	Dry Weight (g)	5.26
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	76.7%
Bottle ID	-			Dry Wt. Equiv (g)	3.84

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824027	<LOQ (1.04)	MM1*	0.937	1.04	0.245				U
	PFDA	335-76-2	P070824027	<LOQ (0.260)	MM1*	0.234	0.260	0.119				U
	PFUnDA	2058-94-8	P070824027	<LOQ (0.260)		0.234	0.260	0.0880				U
	PFDoA	307-55-1	P070824027	<LOQ (0.260)		0.234	0.260	0.0880				U
	PFTrDA	72629-94-8	P070824027	<LOQ (0.260)		0.234	0.260	0.0895				U
	PFTeDA	376-06-7	P070824027	<LOQ (0.260)		0.234	0.260	0.0670				U
Sulfonates	PFBS	375-73-5	P070824027	<LOQ (0.231)		0.208	0.231	0.0498				U
	PFHpS	375-92-8	P070824027	<LOQ (0.248)		0.223	0.248	0.0859				U
	PFOS	1763-23-1	P070824027	<LOQ (0.241)	bb	0.217	0.241	0.0916				U
	8:2 FTS	39108-34-4	P070824027	<LOQ (0.999)		0.899	0.999	0.626				U
Sulfonmides	PFOSA	754-91-6	P070824027	<LOQ (0.260)		0.234	0.260	0.0246				U
	N-MeFOSE	24448-09-7	P070824027	<LOQ (2.60)		2.34	2.60	0.412				U
	N-EtFOSE	1691-99-2	P070824027	<LOQ (2.60)		2.34	2.60	0.350				U
PFECAs	HFPO-DA	13252-13-6	P070824027	<LOQ (1.04)		0.937	1.04	0.302				U
FTCAs	7:3 FTCA	812-70-4	P070824027	<LOQ (1.30)		1.17	1.30	0.263				U
Other	ADONA	919005-14-4	P070824027	<LOQ (0.984)		0.885	0.984	0.219				U
ES	M4PFBA		P070824027		bb				100	8-130%	78.6%	
	M5PFHxA		P070824027		bs				25.0	40-130%	77.9%	
	M6PFDA		P070824027		bb				12.5	40-130%	77.9%	
	M7PFUdA		P070824027		bs				12.5	40-130%	68.0%	
	M2-PFDoA		P070824027		bb				12.5	40-130%	74.3%	
	13C2-PFTeDA		P070824027		bb				12.5	20-130%	66.8%	
	M3PFBS		P070824027		bb				23.3	40-135%	80.0%	
	M8PFOS		P070824027		bb				24.0	40-130%	74.8%	
	M2-8:2 FTS		P070824027		bb				48.0	40-275%	72.9%	
	M8PFOSA		P070824027		bs				25.0	40-130%	72.3%	
	d7-N-MeFOSE		P070824027		bb				250	20-130%	68.7%	
	d9-N-EtFOSE		P070824027		bb				250	15-130%	65.8%	
	M3HFPO-DA		P070824027		bb				100	40-130%	94.2%	
JS	M3PFBA		P070824027		bb				50.0	>30%	113.0%	
	M2-PFHxA		P070824027		bb				25.0	>30%	108.6%	
	M2-PFDA		P070824027		bb				12.5	>30%	110.5%	
	M4-PFOS		P070824027		bb				24.0	>30%	126.8%	

Peak Flags MM1* MM-;r R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
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- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
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Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C4				
Sampling Site					
Enthalpy ID	0724-833-019-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.15
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.98
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.08
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.17
AnalysisDate	2024-08-02 07:01	Split Factor	N/A	Dry Weight (g)	1.98
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	16.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.82

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824045	<LOQ (4.86)	MM1*	4.37	4.86	1.14				U
	PFPeA	2706-90-3	P010824045	<LOQ (2.43)	MM1*	2.19	2.43	0.382				U
	PFHxA	307-24-4	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.401				U
	PFHpA	375-85-9	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.366				U
	PFOA	335-67-1	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.298				U
	PFNA	375-95-1	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.233				U
	PFDA	335-76-2	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.553				U
	PFUnDA	2058-94-8	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.411				U
	PFDoA	307-55-1	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.411				U
	PFTrDA	72629-94-8	P010824045	<LOQ (1.21)	MM1*	1.09	1.21	0.418				U
	PFTeDA	376-06-7	P010824045	<LOQ (1.21)		1.09	1.21	0.313				U
Sulfonates	PFBS	375-73-5	P010824045	<LOQ (1.08)		0.969	1.08	0.233				U
	PFPeS	2706-91-4	P010824045	<LOQ (1.14)		1.03	1.14	0.311				U
	PFHxS	355-46-4	P010824045	<LOQ (1.11)	MM1*	0.999	1.11	0.469				U
	PFHpS	375-92-8	P010824045	<LOQ (1.16)		1.04	1.16	0.401				U
	PFOS	1763-23-1	P010824045	2.68	MM2*	1.01	1.13	0.428				
	PFNS	68259-12-1	P010824045	<LOQ (1.17)		1.05	1.17	0.284				U
	PFDS	335-77-3	P010824045	<LOQ (1.17)		1.05	1.17	0.106				U
	4:2 FTS	757124-72-4	P010824045	<LOQ (4.55)		4.10	4.55	1.91				U
	PFDoS	79780-39-5	P010824045	<LOQ (1.18)		1.06	1.18	0.292				U
	6:2 FTS	27619-97-2	P010824045	<LOQ (4.62)		4.15	4.62	1.15				U
	8:2 FTS	39108-34-4	P010824045	<LOQ (4.66)		4.20	4.66	2.92				U
Sulfonmides	PFOSA	754-91-6	P010824045	<LOQ (1.21)		1.09	1.21	0.115				U
	N-MeFOSA	31506-32-8	P010824045	<LOQ (1.21)		1.09	1.21	0.334				U
	N-EtFOSA	4151-50-2	P010824045	<LOQ (1.21)		1.09	1.21	0.832				U
	N-MeFOSE	24448-09-7	P010824045	<LOQ (12.1)		10.9	12.1	1.93				U
	N-EtFOSE	1691-99-2	P010824045	<LOQ (12.1)		10.9	12.1	1.63				U
PFECAs	HFPO-DA	13252-13-6	P010824045	<LOQ (4.86)		4.37	4.86	1.41				U
	PFMBA	863090-89-5	P010824045	<LOQ (2.43)		2.19	2.43	0.993				U
	PFMPA	377-73-1	P010824045	<LOQ (2.43)		2.19	2.43	0.456				U
	NFDHA	151772-58-6	P010824045	<LOQ (2.43)		2.19	2.43	1.23				U
FTCAs	3:3 FTCA	356-02-5	P010824045	<LOQ (6.07)		5.47	6.07	0.723				U
	5:3 FTCA	914637-49-3	P010824045	<LOQ (6.07)		5.47	6.07	1.77				U
	7:3 FTCA	812-70-4	P010824045	<LOQ (6.07)		5.47	6.07	1.23				U
Other	ADONA	919005-14-4	P010824045	<LOQ (4.59)		4.13	4.59	1.02				U
	9Cl-PF3ONS	756426-58-1	P010824045	<LOQ (4.54)		4.09	4.54	1.29				U
	N-MeFOSAA	2355-31-9	P010824045	<LOQ (1.21)		1.09	1.21	0.619				U
	11Cl-PF3OUdS	763051-92-9	P010824045	<LOQ (4.59)		4.13	4.59	1.03				U
	N-EtFOSAA	2991-50-6	P010824045	<LOQ (1.21)	MM2*	1.09	1.21	0.588				U
	PFEESA	113507-82-7	P010824045	<LOQ (2.16)		1.95	2.16	0.384				U
ES	M4PFBA		P010824045		bb				100	8-130%	100.8%	
	M5PFPeA		P010824045		bs				50.0	35-130%	103.0%	
	M5PFHxA		P010824045		bb				25.0	40-130%	97.6%	
	M4PFHpA		P010824045		bb				25.0	40-130%	99.0%	
	M8PFOA		P010824045		bb				25.0	40-130%	93.5%	
	M9PFNA		P010824045		bb				12.5	40-130%	93.3%	
	M6PFDA		P010824045		bb				12.5	40-130%	92.8%	
	M7PFUdA		P010824045		bs				12.5	40-130%	86.5%	
	M2-PFDoA		P010824045		bs				12.5	40-130%	89.9%	
	13C2-PFTeDA		P010824045		bb				12.5	20-130%	87.5%	
	M3PFBS		P010824045		bb				23.3	40-135%	110.9%	
	M3PFHxS		P010824045		bb				23.7	40-130%	101.0%	
	M8PFOS		P010824045		bb				24.0	40-130%	89.5%	
	M2-4:2 FTS		P010824045		bb				46.9	40-165%	95.1%	
	M2-6:2 FTS		P010824045		bb				47.6	40-215%	85.6%	
	M2-8:2 FTS		P010824045		bb				48.0	40-275%	96.3%	
	M8PFOSA		P010824045		bs				25.0	40-130%	78.5%	
	d3-N-MeFOSA		P010824045		bb				25.0	10-130%	51.0%	
	d5-N-EtFOSA		P010824045		bb				25.0	10-130%	50.7%	
	d3-N-MeFOSAA		P010824045		bs				50.0	40-135%	101.3%	
	d5-N-EtFOSAA		P010824045		bb				50.0	40-150%	106.0%	
	d7-N-MeFOSE		P010824045		bb				250	20-130%	64.9%	
	d9-N-EtFOSE		P010824045		bb				250	15-130%	63.1%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C4				
Sampling Site					
Enthalpy ID	0724-833-019-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.15
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.98
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.08
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	6.17
AnalysisDate	2024-08-02 07:01	Split Factor	N/A	Dry Weight (g)	1.98
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	16.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.82

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824045		bb				100	40-130%	113.9%	
JS	M3PFBA		P010824045		bb				50.0	>30%	94.3%	
	M2-PFHxA		P010824045		bs				25.0	>30%	96.4%	
	M4-PFOA		P010824045		bb				25.0	>30%	97.1%	
	M5-PFNA		P010824045		bb				12.5	>30%	84.2%	
	M2-PFDA		P010824045		bb				12.5	>30%	95.7%	
	18O2PFHxS		P010824045		bb				23.7	>30%	105.4%	
	M4-PFOS		P010824045		bb				24.0	>30%	109.0%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_C4				
Sampling Site					
Enthalpy ID	0724-833-019-1B	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	7.15
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.98
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	4.77
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	6.17
AnalysisDate	2024-08-08 00:49	Split Factor	N/A	Dry Weight (g)	1.98
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	16.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.77

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824028	<LOQ (5.17)	MM1*	4.66	5.17	1.22				U
	PFDA	335-76-2	P070824028	<LOQ (1.29)	MM1*	1.16	1.29	0.589				U
	PFUnDA	2058-94-8	P070824028	<LOQ (1.29)	MM1*	1.16	1.29	0.437				U
	PFDoA	307-55-1	P070824028	<LOQ (1.29)	MM1*	1.16	1.29	0.437				U
	PFTrDA	72629-94-8	P070824028	<LOQ (1.29)	MM1*	1.16	1.29	0.445				U
	PFTeDA	376-06-7	P070824028	<LOQ (1.29)		1.16	1.29	0.333				U
Sulfonates	PFBS	375-73-5	P070824028	<LOQ (1.15)		1.03	1.15	0.248				U
	PFHpS	375-92-8	P070824028	<LOQ (1.23)		1.11	1.23	0.427				U
	PFOS	1763-23-1	P070824028	2.35	MM2*	1.08	1.20	0.455				
	8:2 FTS	39108-34-4	P070824028	<LOQ (4.97)		4.47	4.97	3.11				U
Sulfonmides	PFOSA	754-91-6	P070824028	<LOQ (1.29)		1.16	1.29	0.122				U
	N-MeFOSE	24448-09-7	P070824028	<LOQ (12.9)		11.6	12.9	2.05				U
	N-EtFOSE	1691-99-2	P070824028	<LOQ (12.9)		11.6	12.9	1.74				U
PFECAs	HFPO-DA	13252-13-6	P070824028	<LOQ (5.17)		4.66	5.17	1.50				U
FTCAs	7:3 FTCA	812-70-4	P070824028	<LOQ (6.47)		5.82	6.47	1.31				U
Other	ADONA	919005-14-4	P070824028	<LOQ (4.89)		4.40	4.89	1.09				U
ES	M4PFBA		P070824028		bb				100	8-130%	82.8%	
	M5PFHxA		P070824028		bb				25.0	40-130%	84.9%	
	M6PFDA		P070824028		bb				12.5	40-130%	81.5%	
	M7PFUdA		P070824028		bs				12.5	40-130%	79.1%	
	M2-PFDoA		P070824028		bs				12.5	40-130%	83.9%	
	13C2-PFTeDA		P070824028		bb				12.5	20-130%	76.4%	
	M3PFBS		P070824028		bb				23.3	40-135%	90.0%	
	M8PFOS		P070824028		bb				24.0	40-130%	80.4%	
	M2-8:2 FTS		P070824028		bb				48.0	40-275%	88.4%	
	M8PFOSA		P070824028		bs				25.0	40-130%	79.2%	
	d7-N-MeFOSE		P070824028		bb				250	20-130%	77.8%	
	d9-N-EtFOSE		P070824028		bb				250	15-130%	74.8%	
	M3HFPO-DA		P070824028		bs				100	40-130%	103.5%	
JS	M3PFBA		P070824028		bb				50.0	>30%	109.0%	
	M2-PFHxA		P070824028		bs				25.0	>30%	105.4%	
	M2-PFDA		P070824028		bb				12.5	>30%	106.5%	
	M4-PFOS		P070824028		bb				24.0	>30%	122.0%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
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- !: Flagged peak
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- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S4				
Sampling Site					
Enthalpy ID	0724-833-020-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.84
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.58
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.09
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.86
AnalysisDate	2024-08-02 07:24	Split Factor	N/A	Dry Weight (g)	1.58
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.52

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P010824046	<LOQ (7.68)	MM1*	6.91	7.68	1.80				U
	PFPeA	2706-90-3	P010824046	<LOQ (3.84)	MM1*	3.45	3.84	0.603				U
	PFHxA	307-24-4	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.633				U
	PFHpA	375-85-9	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.579				U
	PFOA	335-67-1	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.470				U
	PFNA	375-95-1	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.367				U
	PFDA	335-76-2	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.874				U
	PFUnDA	2058-94-8	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.649				U
	PFDoA	307-55-1	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.649				U
	PFTrDA	72629-94-8	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.660				U
	PFTeDA	376-06-7	P010824046	<LOQ (1.92)		1.73	1.92	0.494				U
Sulfonates	PFBS	375-73-5	P010824046	<LOQ (1.70)	MM1*	1.53	1.70	0.367				U
	PFPeS	2706-91-4	P010824046	<LOQ (1.81)		1.63	1.81	0.491				U
	PFHxS	355-46-4	P010824046	<LOQ (1.75)	MM1*	1.58	1.75	0.742				U
	PFHpS	375-92-8	P010824046	<LOQ (1.83)		1.65	1.83	0.633				U
	PFOS	1763-23-1	P010824046	6.15	MM2*	1.60	1.78	0.675				
	PFNS	68259-12-1	P010824046	<LOQ (1.85)		1.66	1.85	0.449				U
	PFDS	335-77-3	P010824046	<LOQ (1.85)		1.67	1.85	0.167				U
	4:2 FTS	757124-72-4	P010824046	<LOQ (7.20)		6.48	7.20	3.01				U
	PFDoS	79780-39-5	P010824046	<LOQ (1.86)		1.68	1.86	0.461				U
	6:2 FTS	27619-97-2	P010824046	<LOQ (7.29)		6.56	7.29	1.81				U
	8:2 FTS	39108-34-4	P010824046	<LOQ (7.37)		6.63	7.37	4.61				U
Other	ADONA	919005-14-4	P010824046	<LOQ (7.25)		6.53	7.25	1.61				U
	9Cl-PF3ONS	756426-58-1	P010824046	<LOQ (7.18)		6.46	7.18	2.04				U
	N-MeFOSAA	2355-31-9	P010824046	<LOQ (1.92)	MM2*	1.73	1.92	0.979				U
	11Cl-PF3OUdS	763051-92-9	P010824046	<LOQ (7.25)		6.53	7.25	1.63				U
	N-EtFOSAA	2991-50-6	P010824046	5.68	MM2*	1.73	1.92	0.929				
	PFEESA	113507-82-7	P010824046	<LOQ (3.42)		3.07	3.42	0.606				U
Sulfonmides	PFOSA	754-91-6	P010824046	<LOQ (1.92)	MM1*	1.73	1.92	0.181				U
	N-MeFOSA	31506-32-8	P010824046	<LOQ (1.92)		1.73	1.92	0.528				U
	N-EtFOSA	4151-50-2	P010824046	<LOQ (1.92)		1.73	1.92	1.31				U
	N-MeFOSE	24448-09-7	P010824046	<LOQ (19.2)		17.3	19.2	3.04				U
	N-EtFOSE	1691-99-2	P010824046	<LOQ (19.2)		17.3	19.2	2.58				U
PFECAs	HFPO-DA	13252-13-6	P010824046	<LOQ (7.68)		6.91	7.68	2.23				U
	PFMBA	863090-89-5	P010824046	<LOQ (3.84)		3.45	3.84	1.57				U
	PFMPA	377-73-1	P010824046	<LOQ (3.84)		3.45	3.84	0.721				U
	NFDHA	151772-58-6	P010824046	<LOQ (3.84)	MM1*	3.45	3.84	1.94				U
FTCAs	3:3 FTCA	356-02-5	P010824046	<LOQ (9.59)		8.63	9.59	1.14				U
	5:3 FTCA	914637-49-3	P010824046	<LOQ (9.59)		8.63	9.59	2.80				U
	7:3 FTCA	812-70-4	P010824046	<LOQ (9.59)		8.63	9.59	1.94				U
ES	M4PFBA		P010824046		bb				100	8-130%	97.5%	
	M5PFPeA		P010824046		bs				50.0	35-130%	98.0%	
	M5PFHxA		P010824046		bb				25.0	40-130%	98.1%	
	M4PFHpA		P010824046		bb				25.0	40-130%	98.6%	
	M8PFOA		P010824046		bs				25.0	40-130%	93.3%	
	M9PFNA		P010824046		bb				12.5	40-130%	90.4%	
	M6PFDA		P010824046		bb				12.5	40-130%	84.3%	
	M7PFUdA		P010824046		bb				12.5	40-130%	75.3%	
	M2-PFDoA		P010824046		bb				12.5	40-130%	83.5%	
	13C2-PFTeDA		P010824046		bb				12.5	20-130%	80.2%	
	M3PFBS		P010824046		bb				23.3	40-135%	104.6%	
	M3PFHxS		P010824046		bb				23.7	40-130%	94.4%	
	M8PFOS		P010824046		bb				24.0	40-130%	85.5%	
	M2-4:2 FTS		P010824046		bs				46.9	40-165%	97.4%	
	M2-6:2 FTS		P010824046		bb				47.6	40-215%	87.5%	
	M2-8:2 FTS		P010824046		bb				48.0	40-275%	96.9%	
	M8PFOSA		P010824046		bs				25.0	40-130%	73.7%	
	d3-N-MeFOSA		P010824046		bb				25.0	10-130%	47.4%	
	d5-N-EtFOSA		P010824046		bb				25.0	10-130%	50.7%	
	d3-N-MeFOSAA		P010824046		bb				50.0	40-135%	103.3%	
	d5-N-EtFOSAA		P010824046		bb				50.0	40-150%	106.1%	
	d7-N-MeFOSE		P010824046		bb				250	20-130%	63.9%	
	d9-N-EtFOSE		P010824046		bb				250	15-130%	61.2%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S4				
Sampling Site					
Enthalpy ID	0724-833-020-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.84
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.58
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.09
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.86
AnalysisDate	2024-08-02 07:24	Split Factor	N/A	Dry Weight (g)	1.58
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.52

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P010824046		bs				100	40-130%	115.3%	
JS	M3PFBA		P010824046		bb				50.0	>30%	96.5%	
	M2-PFHxA		P010824046		bs				25.0	>30%	96.1%	
	M4-PFOA		P010824046		bb				25.0	>30%	95.9%	
	M5-PFNA		P010824046		bb				12.5	>30%	83.1%	
	M2-PFDA		P010824046		bb				12.5	>30%	98.1%	
	18O2PFHxS		P010824046		bb				23.7	>30%	112.3%	
	M4-PFOS		P010824046		bs				24.0	>30%	105.5%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024
MM2* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_S4				
Sampling Site					
Enthalpy ID	0724-833-020-1B	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.84
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	1.58
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.03
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.86
AnalysisDate	2024-08-08 01:12	Split Factor	N/A	Dry Weight (g)	1.58
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	10.2%
Bottle ID	-			Dry Wt. Equiv (g)	0.52

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824029	<LOQ (7.77)	MM1*	6.99	7.77	1.83				U
	PFDA	335-76-2	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.884				U
	PFUnDA	2058-94-8	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.656				U
	PFDoA	307-55-1	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.656				U
	PFTrDA	72629-94-8	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.668				U
	PFTeDA	376-06-7	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.500				U
Sulfonates	PFBS	375-73-5	P070824029	<LOQ (1.72)		1.55	1.72	0.372				U
	PFHpS	375-92-8	P070824029	<LOQ (1.85)		1.67	1.85	0.641				U
	PFOS	1763-23-1	P070824029	5.81	MM2*	1.62	1.80	0.683				
	8:2 FTS	39108-34-4	P070824029	<LOQ (7.46)		6.71	7.46	4.67				U
Sulfonmides	PFOSA	754-91-6	P070824029	<LOQ (1.94)	MM1*	1.75	1.94	0.183				U
	N-MeFOSA	31506-32-8	P070824029	<LOQ (1.94)		1.75	1.94	0.534				U
	N-EtFOSA	4151-50-2	P070824029	<LOQ (1.94)		1.75	1.94	1.33				U
	N-MeFOSE	24448-09-7	P070824029	<LOQ (19.4)		17.5	19.4	3.08				U
	N-EtFOSE	1691-99-2	P070824029	<LOQ (19.4)		17.5	19.4	2.61				U
PFECAs	HFPO-DA	13252-13-6	P070824029	<LOQ (7.77)		6.99	7.77	2.25				U
FTCAs	7:3 FTCA	812-70-4	P070824029	<LOQ (9.71)		8.74	9.71	1.96				U
Other	ADONA	919005-14-4	P070824029	<LOQ (7.34)		6.61	7.34	1.63				U
ES	M4PFBA		P070824029		bb				100	8-130%	83.7%	
	M5PFHxA		P070824029		bb				25.0	40-130%	83.9%	
	M6PFDA		P070824029		bb				12.5	40-130%	78.3%	
	M7PFUdA		P070824029		bb				12.5	40-130%	75.4%	
	M2-PFDoA		P070824029		bs				12.5	40-130%	82.5%	
	13C2-PFTeDA		P070824029		bb				12.5	20-130%	74.5%	
	M3PFBS		P070824029		bs				23.3	40-135%	92.7%	
	M8PFOS		P070824029		bb				24.0	40-130%	79.9%	
	M2-8:2 FTS		P070824029		bb				48.0	40-275%	83.5%	
	M8PFOSA		P070824029		bs				25.0	40-130%	79.2%	
	d3-N-MeFOSA		P070824029		bb				25.0	10-130%	76.5%	
	d5-N-EtFOSA		P070824029		bb				25.0	10-130%	78.2%	
	d7-N-MeFOSE		P070824029		bb				250	20-130%	77.4%	
	d9-N-EtFOSE		P070824029		bb				250	15-130%	73.0%	
	M3HFPO-DA		P070824029		bb				100	40-130%	102.3%	
JS	M3PFBA		P070824029		bb				50.0	>30%	111.8%	
	M2-PFHxA		P070824029		bb				25.0	>30%	110.9%	
	M2-PFDA		P070824029		bb				12.5	>30%	108.8%	
	M4-PFOS		P070824029		bb				24.0	>30%	128.0%	

Peak Flags
MM1* MM-;r R.H.H. 08/08/2024
MM2* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand4				
Sampling Site					
Enthalpy ID	0724-833-021-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	4.92
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.1
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 10:27	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-			Dry Wt. Equiv (g)	3.78

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P310724043	<LOQ (1.06)	MM1*	0.953	1.06	0.249				U
	PFPeA	2706-90-3	P310724043	<LOQ (0.530)	MM1*	0.477	0.530	0.0833				U
	PFHxA	307-24-4	P310724043	<LOQ (0.265)	MM1*	0.238	0.265	0.0874				U
	PFHpA	375-85-9	P310724043	<LOQ (0.265)		0.238	0.265	0.0798				U
	PFOA	335-67-1	P310724043	<LOQ (0.265)	MM1*	0.238	0.265	0.0649				U
	PFNA	375-95-1	P310724043	<LOQ (0.265)	MM1*	0.238	0.265	0.0507				U
	PFDA	335-76-2	P310724043	<LOQ (0.265)		0.238	0.265	0.121				U
	PFUnDA	2058-94-8	P310724043	<LOQ (0.265)		0.238	0.265	0.0895				U
	PFDoA	307-55-1	P310724043	<LOQ (0.265)		0.238	0.265	0.0895				U
	PFTrDA	72629-94-8	P310724043	<LOQ (0.265)		0.238	0.265	0.0911				U
	PFTeDA	376-06-7	P310724043	<LOQ (0.265)		0.238	0.265	0.0682				U
Sulfonates	PFBS	375-73-5	P310724043	<LOQ (0.235)		0.211	0.235	0.0507				U
	PFPeS	2706-91-4	P310724043	<LOQ (0.249)		0.224	0.249	0.0678				U
	PFHxS	355-46-4	P310724043	<LOQ (0.242)		0.218	0.242	0.102				U
	PFHpS	375-92-8	P310724043	<LOQ (0.252)		0.227	0.252	0.0874				U
	PFOS	1763-23-1	P310724043	<LOQ (0.246)		0.221	0.246	0.0932				U
	PFNS	68259-12-1	P310724043	<LOQ (0.255)		0.229	0.255	0.0620				U
	PFDS	335-77-3	P310724043	<LOQ (0.255)		0.230	0.255	0.0230				U
	4:2 FTS	757124-72-4	P310724043	<LOQ (0.993)		0.894	0.993	0.416				U
	PFDoS	79780-39-5	P310724043	<LOQ (0.257)		0.231	0.257	0.0637				U
	6:2 FTS	27619-97-2	P310724043	<LOQ (1.01)		0.905	1.01	0.250				U
	8:2 FTS	39108-34-4	P310724043	<LOQ (1.02)		0.915	1.02	0.637				U
Sulfonmides	PFOSA	754-91-6	P310724043	<LOQ (0.265)		0.238	0.265	0.0250				U
	N-MeFOSA	31506-32-8	P310724043	<LOQ (0.265)		0.238	0.265	0.0728				U
	N-EtFOSA	4151-50-2	P310724043	<LOQ (0.265)		0.238	0.265	0.181				U
	N-MeFOSE	24448-09-7	P310724043	<LOQ (2.65)		2.38	2.65	0.420				U
	N-EtFOSE	1691-99-2	P310724043	<LOQ (2.65)		2.38	2.65	0.356				U
PFECAs	HFPO-DA	13252-13-6	P310724043	<LOQ (1.06)		0.953	1.06	0.307				U
	PFMBA	863090-89-5	P310724043	<LOQ (0.530)		0.477	0.530	0.217				U
	PFMPA	377-73-1	P310724043	<LOQ (0.530)		0.477	0.530	0.0994				U
	NFDHA	151772-58-6	P020824017	<LOQ (0.530)		0.477	0.530	0.267				U
FTCAs	3:3 FTCA	356-02-5	P310724043	<LOQ (1.32)		1.19	1.32	0.158				U
	5:3 FTCA	914637-49-3	P310724043	<LOQ (1.32)		1.19	1.32	0.387				U
	7:3 FTCA	812-70-4	P310724043	<LOQ (1.32)		1.19	1.32	0.267				U
Other	ADONA	919005-14-4	P310724043	<LOQ (1.00)		0.901	1.00	0.222				U
	9Cl-PF3ONS	756426-58-1	P310724043	<LOQ (0.990)		0.891	0.990	0.282				U
	N-MeFOSAA	2355-31-9	P310724043	<LOQ (0.265)		0.238	0.265	0.135				U
	11Cl-PF3OUdS	763051-92-9	P310724043	<LOQ (1.00)		0.901	1.00	0.225				U
	N-EtFOSAA	2991-50-6	P310724043	<LOQ (0.265)		0.238	0.265	0.128				U
	PFEESA	113507-82-7	P310724043	<LOQ (0.471)		0.424	0.471	0.0837				U
ES	M4PFBA		P310724043		bb				100	8-130%	82.1%	
	M5PFPeA		P310724043		bs				50.0	35-130%	84.4%	
	M5PFHxA		P310724043		bs				25.0	40-130%	84.5%	
	M4PFHpA		P310724043		bb				25.0	40-130%	86.0%	
	M8PFOA		P310724043		bs				25.0	40-130%	79.4%	
	M9PFNA		P310724043		bb				12.5	40-130%	77.2%	
	M6PFDA		P310724043		bb				12.5	40-130%	76.6%	
	M7PFUdA		P310724043		bs				12.5	40-130%	75.2%	
	M2-PFDoA		P310724043		bb				12.5	40-130%	71.0%	
	13C2-PFTeDA		P310724043		bb				12.5	20-130%	62.0%	
	M3PFBS		P310724043		bs				23.3	40-135%	86.7%	
	M3PFHxS		P310724043		bb				23.7	40-130%	81.8%	
	M8PFOS		P310724043		bb				24.0	40-130%	71.1%	
	M2-4:2 FTS		P310724043		bb				46.9	40-165%	61.9%	
	M2-6:2 FTS		P020824017		bb				47.6	40-215%	79.1%	
	M2-8:2 FTS		P310724043		bb				48.0	40-275%	67.3%	
	M8PFOSA		P310724043		bb				25.0	40-130%	65.4%	
	d3-N-MeFOSA		P310724043		bb				25.0	10-130%	34.8%	
	d5-N-EtFOSA		P310724043		bb				25.0	10-130%	27.3%	
	d3-N-MeFOSAA		P310724043		bs				50.0	40-135%	76.2%	
	d5-N-EtFOSAA		P310724043		bb				50.0	40-150%	75.5%	
	d7-N-MeFOSE		P310724043		bb				250	20-130%	51.6%	
	d9-N-EtFOSE		P310724043		bb				250	15-130%	46.9%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand4				
Sampling Site					
Enthalpy ID	0724-833-021-1A	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	4.92
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.1
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 10:27	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-			Dry Wt. Equiv (g)	3.78

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P310724043		bb				100	40-130%	107.4%	
JS	M3PFBA		P310724043		bb				50.0	>30%	103.4%	
	M2-PFHxA		P310724043		bb				25.0	>30%	97.2%	
	M4-PFOA		P310724043		bb				25.0	>30%	100.0%	
	M5-PFNA		P310724043		bs				12.5	>30%	89.0%	
	M2-PFDA		P310724043		bb				12.5	>30%	99.5%	
	18O2PFHxS		P310724043		bb				23.7	>30%	119.0%	
	M4-PFOS		P310724043		bb				24.0	>30%	123.0%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	SCL74_Sand4				
Sampling Site					
Enthalpy ID	0724-833-021-1B	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date	2024-07-17 13:08	Instrument	Pippin	Dry Weight (g)	4.92
Received Date	2024-07-18	Sample Vol mL	N/A	Extr. Mass (g)	5.06
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-08 01:35	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	Sample	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-			Dry Wt. Equiv (g)	3.75

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824030	<LOQ (1.07)	MM1*	0.961	1.07	0.251				U
	PFDA	335-76-2	P070824030	<LOQ (0.267)		0.240	0.267	0.122				U
	PFUnDA	2058-94-8	P070824030	<LOQ (0.267)		0.240	0.267	0.0902				U
	PFDoA	307-55-1	P070824030	<LOQ (0.267)		0.240	0.267	0.0902				U
	PFTrDA	72629-94-8	P070824030	<LOQ (0.267)		0.240	0.267	0.0918				U
	PFTeDA	376-06-7	P070824030	<LOQ (0.267)		0.240	0.267	0.0687				U
Sulfonates	PFBS	375-73-5	P070824030	<LOQ (0.237)		0.213	0.237	0.0511				U
	PFHpS	375-92-8	P070824030	<LOQ (0.254)		0.229	0.254	0.0881				U
	PFOS	1763-23-1	P070824030	<LOQ (0.248)		0.223	0.248	0.0939				U
	8:2 FTS	39108-34-4	P070824030	<LOQ (1.02)		0.922	1.02	0.642				U
Sulfonmides	PFOSA	754-91-6	P070824030	<LOQ (0.267)		0.240	0.267	0.0252				U
	N-MeFOSE	24448-09-7	P070824030	<LOQ (2.67)		2.40	2.67	0.423				U
	N-EtFOSE	1691-99-2	P070824030	<LOQ (2.67)		2.40	2.67	0.359				U
PFECAs	HFPO-DA	13252-13-6	P070824030	<LOQ (1.07)		0.961	1.07	0.310				U
FTCAs	7:3 FTCA	812-70-4	P070824030	<LOQ (1.33)		1.20	1.33	0.270				U
Other	ADONA	919005-14-4	P070824030	<LOQ (1.01)		0.908	1.01	0.224				U
ES	M4PFBA		P070824030		bb				100	8-130%	66.0%	
	M5PFHxA		P070824030		bb				25.0	40-130%	79.9%	
	M6PFDA		P070824030		bb				12.5	40-130%	80.5%	
	M7PFUdA		P070824030		bb				12.5	40-130%	73.5%	
	M2-PFDoA		P070824030		bb				12.5	40-130%	80.7%	
	13C2-PFTeDA		P070824030		bb				12.5	20-130%	72.2%	
	M3PFBS		P070824030		bb				23.3	40-135%	87.3%	
	M8PFOS		P070824030		bb				24.0	40-130%	76.2%	
	M2-8:2 FTS		P070824030		bb				48.0	40-275%	75.2%	
	M8PFOSA		P070824030		bb				25.0	40-130%	74.1%	
	d7-N-MeFOSE		P070824030		bb				250	20-130%	73.5%	
	d9-N-EtFOSE		P070824030		bb				250	15-130%	71.5%	
	M3HFPO-DA		P070824030		bb				100	40-130%	100.3%	
JS	M3PFBA		P070824030		bb				50.0	>30%	110.5%	
	M2-PFHxA		P070824030		bb				25.0	>30%	108.9%	
	M2-PFDA		P070824030		bb				12.5	>30%	103.1%	
	M4-PFOS		P070824030		bb				24.0	>30%	129.6%	

Peak Flags MM1* MM-;r R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
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- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

QC Data

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	MB_17848_PFAS		
Sampling Site			
Enthalpy ID	MB_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 00:38	Split Factor	N/A
SampleType	Blank	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724037	<LOQ (8.00)	bb	7.20	8.00	1.88				U
	PFPeA	2706-90-3	P290724037	<LOQ (4.00)	MM1*	3.60	4.00	0.629				U
	PFHxA	307-24-4	P290724037	<LOQ (2.00)	MM1*	1.80	2.00	0.660				U
	PFHpA	375-85-9	P290724037	<LOQ (2.00)		1.80	2.00	0.603				U
	PFOA	335-67-1	P290724037	<LOQ (2.00)	bb	1.80	2.00	0.490				U
	PFNA	375-95-1	P290724037	<LOQ (2.00)	bb1*	1.80	2.00	0.383				U
	PFDA	335-76-2	P290724037	<LOQ (2.00)		1.80	2.00	0.911				U
	PFUnDA	2058-94-8	P290724037	<LOQ (2.00)		1.80	2.00	0.676				U
	PFDoA	307-55-1	P290724037	<LOQ (2.00)		1.80	2.00	0.676				U
	PFTrDA	72629-94-8	P290724037	<LOQ (2.00)	MM2*	1.80	2.00	0.688				U
	PFTeDA	376-06-7	P290724037	<LOQ (2.00)		1.80	2.00	0.515				U
Sulfonates	PFBS	375-73-5	P290724037	<LOQ (1.77)		1.60	1.77	0.383				U
	PFPeS	2706-91-4	P290724037	<LOQ (1.88)		1.69	1.88	0.512				U
	PFHxS	355-46-4	P290724037	<LOQ (1.83)		1.65	1.83	0.773				U
	PFHpS	375-92-8	P290724037	<LOQ (1.91)		1.72	1.91	0.660				U
	PFOS	1763-23-1	P290724037	<LOQ (1.86)	MM3*	1.67	1.86	0.704				U
	PFNS	68259-12-1	P290724037	<LOQ (1.92)		1.73	1.92	0.468				U
	PFDS	335-77-3	P290724037	<LOQ (1.93)		1.74	1.93	0.174				U
	PFDoS	79780-39-5	P290724037	<LOQ (1.94)		1.75	1.94	0.481				U
	4:2 FTS	757124-72-4	P290724037	<LOQ (7.50)		6.75	7.50	3.14				U
	6:2 FTS	27619-97-2	P290724037	<LOQ (7.60)		6.84	7.60	1.89				U
	8:2 FTS	39108-34-4	P290724037	<LOQ (7.68)		6.91	7.68	4.81				U
Sulfonmides	PFOSA	754-91-6	P290724037	<LOQ (2.00)		1.80	2.00	0.189				U
	N-MeFOSA	31506-32-8	P290724037	<LOQ (2.00)		1.80	2.00	0.550				U
	N-EtFOSA	4151-50-2	P290724037	<LOQ (2.00)		1.80	2.00	1.37				U
	N-MeFOSE	24448-09-7	P290724037	<LOQ (20.0)		18.0	20.0	3.17				U
	N-EtFOSE	1691-99-2	P290724037	<LOQ (20.0)		18.0	20.0	2.69				U
PFECAs	HFPO-DA	13252-13-6	P290724037	<LOQ (8.00)		7.20	8.00	2.32				U
	PFMBA	863090-89-5	P290724037	<LOQ (4.00)		3.60	4.00	1.64				U
	PFMPA	377-73-1	P290724037	<LOQ (4.00)		3.60	4.00	0.751				U
	NFDHA	151772-58-6	P290724037	<LOQ (4.00)		3.60	4.00	2.02				U
FTCAs	3:3 FTCA	356-02-5	P290724037	<LOQ (10.0)		9.00	10.0	1.19				U
	5:3 FTCA	914637-49-3	P290724037	<LOQ (10.0)		9.00	10.0	2.92				U
	7:3 FTCA	812-70-4	P290724037	<LOQ (10.0)		9.00	10.0	2.02				U
Other	ADONA	919005-14-4	P290724037	<LOQ (7.56)		6.80	7.56	1.68				U
	9Cl-PF3ONS	756426-58-1	P290724037	<LOQ (7.48)		6.73	7.48	2.13				U
	N-MeFOSAA	2355-31-9	P290724037	<LOQ (2.00)		1.80	2.00	1.02				U
	11Cl-PF3OUdS	763051-92-9	P290724037	<LOQ (7.56)		6.80	7.56	1.70				U
	N-EtFOSAA	2991-50-6	P290724037	<LOQ (2.00)		1.80	2.00	0.968				U
	PFEESA	113507-82-7	P290724037	<LOQ (3.56)		3.20	3.56	0.632				U
ES	M4PFBA		P290724037		bb				100	5-130%	94.3%	
	M5PFPeA		P290724037		bs				50.0	40-130%	94.3%	
	M5PFHxA		P290724037		bs				25.0	40-130%	95.8%	
	M4PFHpA		P290724037		bs				25.0	40-130%	96.8%	
	M8PFOA		P290724037		bb				25.0	40-130%	90.9%	
	M9PFNA		P290724037		bs				12.5	40-130%	91.6%	
	M6PFDA		P290724037		bb				12.5	40-130%	94.6%	
	M7PFUdA		P290724037		bb				12.5	30-130%	87.2%	
	M2-PFDoA		P290724037		bs				12.5	10-130%	87.5%	
	13C2-PFTeDA		P290724037		bb				12.5	10-130%	81.2%	
	M3PFBS		P290724037		bb				23.3	40-135%	89.0%	
	M3PFHxS		P290724037		bb				23.7	40-130%	89.0%	
	M8PFOS		P290724037		bb				24.0	40-130%	93.3%	
	M2-4:2 FTS		P290724037		bb				46.9	40-200%	92.0%	
	M2-6:2 FTS		P290724037		bs				47.6	40-200%	81.0%	
	M2-8:2 FTS		P290724037		bb				48.0	40-300%	78.1%	
	M8PFOSA		P290724037		bb				25.0	40-130%	90.1%	
	d3-N-MeFOSA		P290724037		bb				25.0	10-130%	57.1%	
	d5-N-EtFOSA		P290724037		bb				25.0	10-130%	55.3%	
	d3-N-MeFOSAA		P290724037		bb				50.0	40-170%	86.3%	
	d5-N-EtFOSAA		P290724037		bs				50.0	25-135%	82.7%	
	d7-N-MeFOSE		P290724037		bb				250	10-130%	87.3%	
	d9-N-EtFOSE		P290724037		bb				250	10-130%	84.1%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	MB_17848_PFAS		
Sampling Site			
Enthalpy ID	MB_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 00:38	Split Factor	N/A
SampleType	Blank	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724037		bb				100	40-130%	100.7%	
JS	M3PFBA		P290724037		bb				50.0	>30%	133.6%	
	M2-PFHxA		P290724037		bs				25.0	>30%	128.0%	
	M4-PFOA		P290724037		bb				25.0	>30%	129.5%	
	M5-PFNA		P290724037		bs				12.5	>30%	119.7%	
	M2-PFDA		P290724037		bb				12.5	>30%	126.3%	
	18O2PFHxS		P290724037		bb				23.7	>30%	136.2%	
	M4-PFOS		P290724037		bs				24.0	>30%	128.5%	

Peak Flags
bb1* bb;N JDG 7/30/24
MM1* MM-;R JDG 7/30/24
MM2* MM-;R JDG 7/30/24
MM3* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	MB_17844_PFAS				
Sampling Site					
Enthalpy ID	MB_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 07:26	Split Factor	N/A	Dry Weight (g)	5
SampleType	Blank	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P310724037	<LOQ (0.800)	MM1*	0.720	0.800	0.188				U
	PFPeA	2706-90-3	P310724037	<LOQ (0.400)	MM1*	0.360	0.400	0.0629				U
	PFHxA	307-24-4	P310724037	<LOQ (0.200)	MM1*	0.180	0.200	0.0660				U
	PFHpA	375-85-9	P310724037	<LOQ (0.200)		0.180	0.200	0.0603				U
	PFOA	335-67-1	P310724037	<LOQ (0.200)	MM1*	0.180	0.200	0.0490				U
	PFNA	375-95-1	P310724037	<LOQ (0.200)		0.180	0.200	0.0383				U
	PFDA	335-76-2	P310724037	<LOQ (0.200)		0.180	0.200	0.0911				U
	PFUnDA	2058-94-8	P310724037	<LOQ (0.200)		0.180	0.200	0.0676				U
	PFDoA	307-55-1	P310724037	<LOQ (0.200)		0.180	0.200	0.0676				U
	PFTrDA	72629-94-8	P310724037	<LOQ (0.200)		0.180	0.200	0.0688				U
	PFTeDA	376-06-7	P310724037	<LOQ (0.200)		0.180	0.200	0.0515				U
Sulfonates	PFBS	375-73-5	P310724037	<LOQ (0.177)	MM1*	0.160	0.177	0.0383				U
	PFPeS	2706-91-4	P310724037	<LOQ (0.188)		0.169	0.188	0.0512				U
	PFHxS	355-46-4	P310724037	<LOQ (0.183)		0.165	0.183	0.0773				U
	PFHpS	375-92-8	P310724037	<LOQ (0.191)		0.172	0.191	0.0660				U
	PFOS	1763-23-1	P310724037	<LOQ (0.186)		0.167	0.186	0.0704				U
	PFNS	68259-12-1	P310724037	<LOQ (0.192)		0.173	0.192	0.0468				U
	PFDS	335-77-3	P310724037	<LOQ (0.193)		0.174	0.193	0.0174				U
	4:2 FTS	757124-72-4	P310724037	<LOQ (0.750)		0.675	0.750	0.314				U
	PFDoS	79780-39-5	P310724037	<LOQ (0.194)		0.175	0.194	0.0481				U
	6:2 FTS	27619-97-2	P310724037	<LOQ (0.760)		0.684	0.760	0.189				U
	8:2 FTS	39108-34-4	P310724037	<LOQ (0.768)		0.691	0.768	0.481				U
Other	ADONA	919005-14-4	P310724037	<LOQ (0.756)		0.680	0.756	0.168				U
	9Cl-PF3ONS	756426-58-1	P310724037	<LOQ (0.748)		0.673	0.748	0.213				U
	N-MeFOSAA	2355-31-9	P310724037	<LOQ (0.200)		0.180	0.200	0.102				U
	11Cl-PF3OUdS	763051-92-9	P310724037	<LOQ (0.756)		0.680	0.756	0.170				U
	N-EtFOSAA	2991-50-6	P310724037	<LOQ (0.200)		0.180	0.200	0.0968				U
	PFEESA	113507-82-7	P310724037	<LOQ (0.356)		0.320	0.356	0.0632				U
Sulfonmides	PFOSA	754-91-6	P310724037	<LOQ (0.200)		0.180	0.200	0.0189				U
	N-MeFOSA	31506-32-8	P310724037	<LOQ (0.200)		0.180	0.200	0.0550				U
	N-EtFOSA	4151-50-2	P310724037	<LOQ (0.200)		0.180	0.200	0.137				U
	N-MeFOSE	24448-09-7	P310724037	<LOQ (2.00)		1.80	2.00	0.317				U
	N-EtFOSE	1691-99-2	P310724037	<LOQ (2.00)		1.80	2.00	0.269				U
PFECAs	HFPO-DA	13252-13-6	P310724037	<LOQ (0.800)		0.720	0.800	0.232				U
	PFMBA	863090-89-5	P310724037	<LOQ (0.400)		0.360	0.400	0.164				U
	PFMPA	377-73-1	P310724037	<LOQ (0.400)		0.360	0.400	0.0751				U
	NFDHA	151772-58-6	P020824011	<LOQ (0.400)		0.360	0.400	0.202				U
FTCAs	3:3 FTCA	356-02-5	P310724037	<LOQ (1.00)		0.900	1.00	0.119				U
	5:3 FTCA	914637-49-3	P310724037	<LOQ (1.00)		0.900	1.00	0.292				U
	7:3 FTCA	812-70-4	P310724037	<LOQ (1.00)		0.900	1.00	0.202				U
ES	M4PFBA		P310724037		bb				100	8-130%	95.5%	
	M5PFPeA		P310724037		bs				50.0	35-130%	97.6%	
	M5PFHxA		P310724037		bs				25.0	40-130%	94.1%	
	M4PFHpA		P310724037		bs				25.0	40-130%	97.5%	
	M8PFOA		P310724037		bs				25.0	40-130%	90.9%	
	M9PFNA		P310724037		bb				12.5	40-130%	79.3%	
	M6PFDA		P310724037		bb				12.5	40-130%	60.6%	
	M7PFUdA		P310724037		bs				12.5	40-130%	47.2%	
	M2-PFDoA		P310724037		bb				12.5	40-130%	47.8%	
	13C2-PFTeDA		P310724037		bb				12.5	20-130%	52.2%	
	M3PFBS		P310724037		bb				23.3	40-135%	105.5%	
	M3PFHxS		P310724037		bb				23.7	40-130%	94.0%	
	M8PFOS		P310724037		bb				24.0	40-130%	65.6%	
	M2-4:2 FTS		P310724037		bb				46.9	40-165%	80.4%	
	M2-6:2 FTS		P020824011		bb				47.6	40-215%	91.5%	
	M2-8:2 FTS		P310724037		bb				48.0	40-275%	52.8%	
	M8PFOSA		P310724037		bs				25.0	40-130%	60.2%	
	d3-N-MeFOSA		P310724037		bb				25.0	10-130%	22.1%	
	d5-N-EtFOSA		P310724037		bb				25.0	10-130%	18.1%	
	d3-N-MeFOSAA		P310724037		bb				50.0	40-135%	51.4%	
	d5-N-EtFOSAA		P310724037		bb				50.0	40-150%	50.6%	
	d7-N-MeFOSE		P310724037		bb				250	20-130%	39.1%	
	d9-N-EtFOSE		P310724037		bb				250	15-130%	37.9%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	MB_17844_PFAS				
Sampling Site					
Enthalpy ID	MB_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 07:26	Split Factor	N/A	Dry Weight (g)	5
SampleType	Blank	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P310724037		bb				100	40-130%	117.7%	
JS	M3PFBA		P310724037		bb				50.0	>30%	105.2%	
	M2-PFHxA		P310724037		bb				25.0	>30%	105.3%	
	M4-PFOA		P310724037		bs				25.0	>30%	105.3%	
	M5-PFNA		P310724037		bb				12.5	>30%	85.8%	
	M2-PFDA		P310724037		bb				12.5	>30%	103.3%	
	18O2PFHxS		P310724037		bb				23.7	>30%	117.3%	
	M4-PFOS		P310724037		bb				24.0	>30%	118.2%	

Peak Flags MM1* MM-;r R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	MB_17914_PFAS				
Sampling Site					
Enthalpy ID	MB_17914_PFAS	Prep Batch	EU17914	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	1
Sampling Date		Instrument	Pippin	Dry Weight (g)	1
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	1
AnalysisDate	2024-08-07 18:22	Split Factor	N/A	Dry Weight (g)	1
SampleType	Blank	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824011	<LOQ (0.800)	MM1*	0.720	0.800	0.188				U
	PFDA	335-76-2	P070824011	<LOQ (0.200)		0.180	0.200	0.0911				U
	PFUnDA	2058-94-8	P070824011	<LOQ (0.200)		0.180	0.200	0.0676				U
	PFDoA	307-55-1	P070824011	<LOQ (0.200)		0.180	0.200	0.0676				U
	PFTrDA	72629-94-8	P070824011	<LOQ (0.200)		0.180	0.200	0.0688				U
	PFTeDA	376-06-7	P070824011	<LOQ (0.200)		0.180	0.200	0.0515				U
Sulfonates	PFBS	375-73-5	P070824011	<LOQ (0.177)	MM1*	0.160	0.177	0.0383				U
	PFHpS	375-92-8	P070824011	<LOQ (0.191)		0.172	0.191	0.0660				U
	PFOS	1763-23-1	P070824011	<LOQ (0.186)		0.167	0.186	0.0704				U
	8:2 FTS	39108-34-4	P070824011	<LOQ (0.768)		0.691	0.768	0.481				U
Sulfonmides	PFOSA	754-91-6	P070824011	<LOQ (0.200)		0.180	0.200	0.0189				U
	N-MeFOSA	31506-32-8	P070824011	<LOQ (0.200)		0.180	0.200	0.0550				U
	N-EtFOSA	4151-50-2	P070824011	<LOQ (0.200)		0.180	0.200	0.137				U
	N-MeFOSE	24448-09-7	P070824011	<LOQ (2.00)		1.80	2.00	0.317				U
	N-EtFOSE	1691-99-2	P070824011	<LOQ (2.00)		1.80	2.00	0.269				U
PFECAs	HFPO-DA	13252-13-6	P070824011	<LOQ (0.800)		0.720	0.800	0.232				U
FTCAs	7:3 FTCA	812-70-4	P070824011	<LOQ (1.00)		0.900	1.00	0.202				U
Other	ADONA	919005-14-4	P070824011	<LOQ (0.756)		0.680	0.756	0.168				U
ES	M4PFBA		P070824011		bb				100	8-130%	83.6%	
	M5PFHxA		P070824011		bb				25.0	40-130%	83.3%	
	M6PFDA		P070824011		bb				12.5	40-130%	86.0%	
	M7PFUdA		P070824011		bb				12.5	40-130%	77.4%	
	M2-PFDoA		P070824011		bs				12.5	40-130%	83.7%	
	13C2-PFTeDA		P070824011		bb				12.5	20-130%	77.2%	
	M3PFBS		P070824011		bb				23.3	40-135%	84.4%	
	M8PFOS		P070824011		bb				24.0	40-130%	82.4%	
	M2-8:2 FTS		P070824011		bb				48.0	40-275%	77.8%	
	M8PFOSA		P070824011		bb				25.0	40-130%	75.0%	
	d3-N-MeFOSA		P070824011		bb				25.0	10-130%	69.3%	
	d5-N-EtFOSA		P070824011		bb				25.0	10-130%	69.2%	
	d7-N-MeFOSE		P070824011		bb				250	20-130%	78.7%	
	d9-N-EtFOSE		P070824011		bb				250	15-130%	75.6%	
	M3HFPO-DA		P070824011		bb				100	40-130%	104.2%	
JS	M3PFBA		P070824011		bb				50.0	>30%	116.9%	
	M2-PFHxA		P070824011		bb				25.0	>30%	114.0%	
	M2-PFDA		P070824011		bb				12.5	>30%	110.0%	
	M4-PFOS		P070824011		bs				24.0	>30%	133.2%	

Peak Flags MM1* MM-;r R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	LLOPR_17848_PFAS		
Sampling Site			
Enthalpy ID	LLOPR_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:01	Split Factor	N/A
SampleType	Control	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724038	14.0	bb	7.20	8.00	1.88	8.00	70-140%	87.8%	
	PFPeA	2706-90-3	P290724038	7.20	bb1*	3.60	4.00	0.629	4.00	65-135%	90.0%	
	PFHxA	307-24-4	P290724038	3.60	bb	1.80	2.00	0.660	2.00	70-145%	89.9%	
	PFHpA	375-85-9	P290724038	3.40	bb	1.80	2.00	0.603	2.00	70-150%	85.0%	
	PFOA	335-67-1	P290724038	3.55	bb	1.80	2.00	0.490	2.00	70-150%	88.6%	
	PFNA	375-95-1	P290724038	3.57	bb	1.80	2.00	0.383	2.00	70-150%	89.3%	
	PFDA	335-76-2	P290724038	3.51	bb	1.80	2.00	0.911	2.00	70-140%	87.7%	
	PFUnDA	2058-94-8	P290724038	3.60	bb	1.80	2.00	0.676	2.00	70-145%	90.0%	
	PFDoA	307-55-1	P290724038	3.64	bb	1.80	2.00	0.676	2.00	70-140%	90.9%	
	PFTrDA	72629-94-8	P290724038	3.38	bb	1.80	2.00	0.688	2.00	65-140%	84.6%	
	PFTeDA	376-06-7	P290724038	3.57	bb	1.80	2.00	0.515	2.00	60-140%	89.4%	
Sulfonates	PFBS	375-73-5	P290724038	2.98	bb	1.60	1.77	0.383	1.77	60-145%	83.9%	
	PFPeS	2706-91-4	P290724038	3.18	bb	1.69	1.88	0.512	1.88	65-140%	84.4%	
	PFHxS	355-46-4	P290724038	3.09	MM1*	1.65	1.83	0.773	1.83	65-145%	84.4%	
	PFHpS	375-92-8	P290724038	3.33	MM1*	1.72	1.91	0.660	1.91	70-150%	87.3%	
	PFOS	1763-23-1	P290724038	3.15	MM	1.67	1.86	0.704	1.86	55-150%	84.8%	
	PFNS	68259-12-1	P290724038	3.09	bb	1.73	1.92	0.468	1.92	65-145%	80.4%	
	PFDS	335-77-3	P290724038	3.01	bb	1.74	1.93	0.174	1.93	60-145%	78.0%	
	PFDoS	79780-39-5	P290724038	3.09	bb	1.75	1.94	0.481	1.94	50-145%	79.6%	
	4:2 FTS	757124-72-4	P290724038	13.2	bb	6.75	7.50	3.14	7.50	70-145%	87.7%	
	6:2 FTS	27619-97-2	P290724038	13.3	bb	6.84	7.60	1.89	7.60	65-155%	87.3%	
	8:2 FTS	39108-34-4	P290724038	13.7	bb	6.91	7.68	4.81	7.68	60-150%	89.1%	
Sulfonmides	PFOSA	754-91-6	P290724038	3.51	bb	1.80	2.00	0.189	2.00	70-145%	87.7%	
	N-MeFOSA	31506-32-8	P290724038	3.46	bb	1.80	2.00	0.550	2.00	60-150%	86.6%	
	N-EtFOSA	4151-50-2	P290724038	3.49	bb	1.80	2.00	1.37	2.00	65-145%	87.2%	
	N-MeFOSE	24448-09-7	P290724038	36.8	bb	18.0	20.0	3.17	20.0	70-145%	92.0%	
	N-EtFOSE	1691-99-2	P290724038	37.5	bb	18.0	20.0	2.69	20.0	70-135%	93.8%	
PFECAs	HFPO-DA	13252-13-6	P290724038	15.0	bb	7.20	8.00	2.32	8.00	70-140%	93.5%	
	PFMBA	863090-89-5	P290724038	7.03	bb	3.60	4.00	1.64	4.00	60-150%	87.9%	
	PFMPA	377-73-1	P290724038	7.07	bb	3.60	4.00	0.751	4.00	55-140%	88.4%	
	NFDHA	151772-58-6	P290724038	7.45	bb	3.60	4.00	2.02	4.00	50-150%	93.1%	
FTCAs	3:3 FTCA	356-02-5	P290724038	18.6	bb	9.00	10.0	1.19	10.0	65-130%	93.2%	
	5:3 FTCA	914637-49-3	P290724038	18.5	bb	9.00	10.0	2.92	10.0	70-135%	92.5%	
	7:3 FTCA	812-70-4	P290724038	17.5	bb	9.00	10.0	2.02	10.0	50-145%	87.5%	
Other	ADONA	919005-14-4	P290724038	13.5	bs	6.80	7.56	1.68	7.56	65-145%	89.2%	
	9Cl-PF3ONS	756426-58-1	P290724038	13.2	bb	6.73	7.48	2.13	7.48	70-155%	87.9%	
	N-MeFOSAA	2355-31-9	P290724038	3.47	MM1*	1.80	2.00	1.02	2.00	50-140%	86.8%	
	11Cl-PF3OUdS	763051-92-9	P290724038	13.3	bb	6.80	7.56	1.70	7.56	55-160%	87.9%	
	N-EtFOSAA	2991-50-6	P290724038	3.45	MM1*	1.80	2.00	0.968	2.00	70-145%	86.1%	
	PFEESA	113507-82-7	P290724038	6.14	bb	3.20	3.56	0.632	3.56	70-140%	86.2%	
ES	M4PFBA		P290724038		bb				100	5-130%	92.7%	
	M5PFPeA		P290724038		bs				50.0	40-130%	92.4%	
	M5PFHxA		P290724038		bs				25.0	40-130%	95.0%	
	M4PFHpA		P290724038		bb				25.0	40-130%	94.2%	
	M8PFOA		P290724038		bs				25.0	40-130%	90.3%	
	M9PFNA		P290724038		bb				12.5	40-130%	93.5%	
	M6PFDA		P290724038		bb				12.5	40-130%	92.8%	
	M7PFUdA		P290724038		bb				12.5	30-130%	86.2%	
	M2-PFDoA		P290724038		bs				12.5	10-130%	87.9%	
	13C2-PFTeDA		P290724038		bb				12.5	10-130%	78.0%	
	M3PFBS		P290724038		bb				23.3	40-135%	92.8%	
	M3PFHxS		P290724038		bb				23.7	40-130%	88.6%	
	M8PFOS		P290724038		bs				24.0	40-130%	91.6%	
	M2-4:2 FTS		P290724038		bb				46.9	40-200%	88.0%	
	M2-6:2 FTS		P290724038		bb				47.6	40-200%	78.8%	
	M2-8:2 FTS		P290724038		bb				48.0	40-300%	77.8%	
	M8PFOSA		P290724038		bs				25.0	40-130%	89.8%	
	d3-N-MeFOSA		P290724038		bb				25.0	10-130%	57.3%	
	d5-N-EtFOSA		P290724038		bb				25.0	10-130%	59.8%	
	d3-N-MeFOSAA		P290724038		bb				50.0	40-170%	85.5%	
	d5-N-EtFOSAA		P290724038		bb				50.0	25-135%	80.4%	
	d7-N-MeFOSE		P290724038		bb				250	10-130%	87.2%	
	d9-N-EtFOSE		P290724038		bb				250	10-130%	83.4%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	LLOPR_17848_PFAS		
Sampling Site			
Enthalpy ID	LLOPR_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:01	Split Factor	N/A
SampleType	Control	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724038		bb				100	40-130%	94.2%	
JS	M3PFBA		P290724038		bb				50.0	>30%	137.4%	
	M2-PFHxA		P290724038		bb				25.0	>30%	133.8%	
	M4-PFOA		P290724038		bb				25.0	>30%	134.9%	
	M5-PFNA		P290724038		bb				12.5	>30%	124.8%	
	M2-PFDA		P290724038		bb				12.5	>30%	133.6%	
	18O2PFHxS		P290724038		bs				23.7	>30%	143.7%	
	M4-PFOS		P290724038		bs				24.0	>30%	135.6%	

Peak Flags bb1* bb;R JDG 7/30/24
MM1* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	OPR_17848_PFAS		
Sampling Site			
Enthalpy ID	OPR_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:24	Split Factor	N/A
SampleType	Control	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724039	89.2	bb	7.20	8.00	1.88	50.0	70-140%	89.2%	
	PFPeA	2706-90-3	P290724039	44.5	bb1*	3.60	4.00	0.629	25.0	65-135%	89.0%	
	PFHxA	307-24-4	P290724039	22.4	bb	1.80	2.00	0.660	12.5	70-145%	89.6%	
	PFHpA	375-85-9	P290724039	21.9	bb	1.80	2.00	0.603	12.5	70-150%	87.7%	
	PFOA	335-67-1	P290724039	23.6	bs	1.80	2.00	0.490	12.5	70-150%	94.6%	
	PFNA	375-95-1	P290724039	23.2	bb	1.80	2.00	0.383	12.5	70-150%	92.9%	
	PFDA	335-76-2	P290724039	22.1	bb	1.80	2.00	0.911	12.5	70-140%	88.4%	
	PFUnDA	2058-94-8	P290724039	23.8	bs	1.80	2.00	0.676	12.5	70-145%	95.1%	
	PFDoA	307-55-1	P290724039	22.6	bb	1.80	2.00	0.676	12.5	70-140%	90.3%	
	PFTrDA	72629-94-8	P290724039	21.2	bb	1.80	2.00	0.688	12.5	65-140%	84.9%	
	PFTeDA	376-06-7	P290724039	21.7	bb	1.80	2.00	0.515	12.5	60-140%	86.6%	
Sulfonates	PFBS	375-73-5	P290724039	19.2	bb	1.60	1.77	0.383	11.1	60-145%	86.7%	
	PFPeS	2706-91-4	P290724039	20.9	bb	1.69	1.88	0.512	11.8	65-140%	89.0%	
	PFHxS	355-46-4	P290724039	19.7	MM1*	1.65	1.83	0.773	11.4	65-145%	86.0%	
	PFHpS	375-92-8	P290724039	21.8	MM1*	1.72	1.91	0.660	11.9	70-150%	91.4%	
	PFOS	1763-23-1	P290724039	19.7	MM1*	1.67	1.86	0.704	11.6	55-150%	85.1%	
	PFNS	68259-12-1	P290724039	21.6	bb	1.73	1.92	0.468	12.0	65-145%	89.8%	
	PFDS	335-77-3	P290724039	20.0	bb	1.74	1.93	0.174	12.1	60-145%	82.9%	
	PFDoS	79780-39-5	P290724039	20.1	bb	1.75	1.94	0.481	12.1	50-145%	82.9%	
	4:2 FTS	757124-72-4	P290724039	82.0	bb	6.75	7.50	3.14	46.9	70-145%	87.4%	
	6:2 FTS	27619-97-2	P290724039	81.5	bb	6.84	7.60	1.89	47.5	65-155%	85.8%	
	8:2 FTS	39108-34-4	P290724039	88.1	bb	6.91	7.68	4.81	48.0	60-150%	91.8%	
Sulfonmides	PFOSA	754-91-6	P290724039	21.4	bb	1.80	2.00	0.189	12.5	70-145%	85.7%	
	N-MeFOSA	31506-32-8	P290724039	22.9	bb	1.80	2.00	0.550	12.5	60-150%	91.6%	
	N-EtFOSA	4151-50-2	P290724039	21.9	bb	1.80	2.00	1.37	12.5	65-145%	87.8%	
	N-MeFOSE	24448-09-7	P290724039	229	bb	18.0	20.0	3.17	125	70-145%	91.6%	
	N-EtFOSE	1691-99-2	P290724039	228	bb	18.0	20.0	2.69	125	70-135%	91.1%	
Other	ADONA	919005-14-4	P290724039	82.4	bs	6.80	7.56	1.68	47.3	65-145%	87.2%	
	9Cl-PF3ONS	756426-58-1	P290724039	89.5	bs	6.73	7.48	2.13	46.8	70-155%	95.8%	
	N-MeFOSAA	2355-31-9	P290724039	24.4	MM1*	1.80	2.00	1.02	12.5	50-140%	97.7%	
	11Cl-PF3OUdS	763051-92-9	P290724039	86.2	bs	6.80	7.56	1.70	47.3	55-160%	91.2%	
	N-EtFOSAA	2991-50-6	P290724039	22.5	MM1*	1.80	2.00	0.968	12.5	70-145%	89.9%	
	PFEESA	113507-82-7	P290724039	40.4	bs	3.20	3.56	0.632	22.3	70-140%	90.8%	
PFECAs	HFPO-DA	13252-13-6	P290724039	92.1	bs	7.20	8.00	2.32	50.0	70-140%	92.1%	
	PFMBA	863090-89-5	P290724039	44.2	bb	3.60	4.00	1.64	25.0	60-150%	88.4%	
	PFMPA	377-73-1	P290724039	44.6	bb	3.60	4.00	0.751	25.0	55-140%	89.3%	
	NFDHA	151772-58-6	P290724039	47.3	bb	3.60	4.00	2.02	25.0	50-150%	94.6%	
FTCAs	3:3 FTCA	356-02-5	P290724039	116	bb	9.00	10.0	1.19	62.5	65-130%	92.9%	
	5:3 FTCA	914637-49-3	P290724039	117	bb	9.00	10.0	2.92	62.5	70-135%	93.3%	
	7:3 FTCA	812-70-4	P290724039	113	bs	9.00	10.0	2.02	62.5	50-145%	90.4%	
ES	M4PFBA		P290724039		bb				100	5-130%	93.2%	
	M5PFPeA		P290724039		bs				50.0	40-130%	93.0%	
	M5PFHxA		P290724039		bb				25.0	40-130%	90.4%	
	M4PFHpA		P290724039		bs				25.0	40-130%	97.0%	
	M8PFOA		P290724039		bb				25.0	40-130%	89.5%	
	M9PFNA		P290724039		bb				12.5	40-130%	90.5%	
	M6PFDA		P290724039		bb				12.5	40-130%	91.6%	
	M7PFUdA		P290724039		bb				12.5	30-130%	87.1%	
	M2-PFDoA		P290724039		bb				12.5	10-130%	89.9%	
	13C2-PFTeDA		P290724039		bb				12.5	10-130%	88.1%	
	M3PFBS		P290724039		bb				23.3	40-135%	89.7%	
	M3PFHxS		P290724039		bs				23.7	40-130%	95.4%	
	M8PFOS		P290724039		bb				24.0	40-130%	88.1%	
	M2-4:2 FTS		P290724039		bb				46.9	40-200%	89.2%	
	M2-6:2 FTS		P290724039		bs				47.6	40-200%	80.8%	
	M2-8:2 FTS		P290724039		bb				48.0	40-300%	71.4%	
	M8PFOSA		P290724039		bb				25.0	40-130%	90.6%	
	d3-N-MeFOSA		P290724039		bb				25.0	10-130%	59.3%	
	d5-N-EtFOSA		P290724039		bb				25.0	10-130%	61.9%	
	d3-N-MeFOSAA		P290724039		bb				50.0	40-170%	77.6%	
	d5-N-EtFOSAA		P290724039		bb				50.0	25-135%	77.7%	
	d7-N-MeFOSE		P290724039		bb				250	10-130%	91.4%	
	d9-N-EtFOSE		P290724039		bb				250	10-130%	88.0%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	OPR_17848_PFAS		
Sampling Site			
Enthalpy ID	OPR_17848_PFAS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	500
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 01:24	Split Factor	N/A
SampleType	Control	Method Code	Eu-062
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724039		bs				100	40-130%	102.2%	
JS	M3PFBA		P290724039		bb				50.0	>30%	154.7%	
	M2-PFHxA		P290724039		bb				25.0	>30%	153.2%	
	M4-PFOA		P290724039		bb				25.0	>30%	144.2%	
	M5-PFNA		P290724039		bb				12.5	>30%	136.1%	
	M2-PFDA		P290724039		bb				12.5	>30%	144.0%	
	18O2PFHxS		P290724039		bb				23.7	>30%	149.8%	
	M4-PFOS		P290724039		bb				24.0	>30%	151.1%	

Peak Flags bb1* bb;R JDG 7/30/24
MM1* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	LLOPR_17844_PFAS				
Sampling Site					
Enthalpy ID	LLOPR_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 07:48	Split Factor	N/A	Dry Weight (g)	5
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P310724038	1.42	bb	0.720	0.800	0.188	8.00	70-140%	89.0%	
	PFPeA	2706-90-3	P310724038	0.738	bb1*	0.360	0.400	0.0629	4.00	60-150%	92.2%	
	PFHxA	307-24-4	P310724038	0.380	bb	0.180	0.200	0.0660	2.00	65-140%	95.0%	
	PFHpA	375-85-9	P310724038	0.340	bb	0.180	0.200	0.0603	2.00	65-145%	85.1%	
	PFOA	335-67-1	P310724038	0.377	bb	0.180	0.200	0.0490	2.00	70-150%	94.3%	
	PFNA	375-95-1	P310724038	0.408	bb	0.180	0.200	0.0383	2.00	70-155%	102.1%	
	PFDA	335-76-2	P310724038	0.350	bb	0.180	0.200	0.0911	2.00	70-155%	87.6%	
	PFUnDA	2058-94-8	P310724038	0.370	bb	0.180	0.200	0.0676	2.00	70-155%	92.5%	
	PFDoA	307-55-1	P310724038	0.352	bb	0.180	0.200	0.0676	2.00	70-150%	88.1%	
	PFTrDA	72629-94-8	P310724038	0.340	bb	0.180	0.200	0.0688	2.00	65-150%	85.1%	
	PFTeDA	376-06-7	P310724038	0.364	bb	0.180	0.200	0.0515	2.00	65-150%	90.9%	
Sulfonates	PFBS	375-73-5	P310724038	0.292	bb	0.160	0.177	0.0383	1.77	65-145%	82.3%	
	PFPeS	2706-91-4	P310724038	0.340	bb	0.169	0.188	0.0512	1.88	55-160%	90.4%	
	PFHxS	355-46-4	P310724038	0.337	MM1*	0.165	0.183	0.0773	1.83	60-150%	92.1%	
	PFHpS	375-92-8	P310724038	0.327	bb	0.172	0.191	0.0660	1.91	65-155%	85.7%	
	PFOS	1763-23-1	P310724038	0.313	MM1*	0.167	0.186	0.0704	1.86	65-160%	84.4%	
	PFNS	68259-12-1	P310724038	0.281	bb	0.173	0.192	0.0468	1.92	55-140%	73.1%	
	PFDS	335-77-3	P310724038	0.302	bb	0.174	0.193	0.0174	1.93	40-155%	78.3%	
	4:2 FTS	757124-72-4	P310724038	1.28	bb	0.675	0.750	0.314	7.50	60-150%	85.6%	
	PFDoS	79780-39-5	P310724038	0.296	bb	0.175	0.194	0.0481	1.94	25-160%	76.4%	
	6:2 FTS	27619-97-2	P310724038	1.36	bb	0.684	0.760	0.189	7.60	55-200%	89.2%	
	8:2 FTS	39108-34-4	P310724038	1.30	bb	0.691	0.768	0.481	7.68	70-150%	84.9%	
Sulfonmides	PFOSA	754-91-6	P310724038	0.348	bb	0.180	0.200	0.0189	2.00	70-140%	86.9%	
	N-MeFOSA	31506-32-8	P310724038	0.483	bb	0.180	0.200	0.0550	2.00	70-155%	120.6%	
	N-EtFOSA	4151-50-2	P310724038	0.452	bb	0.180	0.200	0.137	2.00	70-140%	113.0%	
	N-MeFOSE	24448-09-7	P310724038	3.68	bb	1.80	2.00	0.317	20.0	70-140%	92.0%	
	N-EtFOSE	1691-99-2	P310724038	3.71	bb	1.80	2.00	0.269	20.0	70-135%	92.6%	
PFECAs	HFPO-DA	13252-13-6	P310724038	1.50	bb	0.720	0.800	0.232	8.00	70-145%	93.8%	
	PFMBA	863090-89-5	P310724038	0.726	bb	0.360	0.400	0.164	4.00	60-150%	90.7%	
	PFMPA	377-73-1	P310724038	0.676	bb	0.360	0.400	0.0751	4.00	30-140%	84.5%	
	NFDHA	151772-58-6	P020824012	0.870	bb	0.360	0.400	0.202	4.00	60-155%	108.8%	
FTCAs	3:3 FTCA	356-02-5	P310724038	1.69	bb	0.900	1.00	0.119	10.0	45-130%	84.4%	
	5:3 FTCA	914637-49-3	P310724038	1.75	bb	0.900	1.00	0.292	10.0	60-130%	87.5%	
	7:3 FTCA	812-70-4	P310724038	1.33	bb	0.900	1.00	0.202	10.0	60-150%	66.6%	
Other	ADONA	919005-14-4	P310724038	1.12	bb	0.680	0.756	0.168	7.56	70-160%	74.3%	
	9Cl-PF3ONS	756426-58-1	P310724038	1.41	bb	0.673	0.748	0.213	7.48	70-150%	93.9%	
	N-MeFOSAA	2355-31-9	P310724038	0.377	MM1*	0.180	0.200	0.102	2.00	65-155%	94.2%	
	11Cl-PF3OUdS	763051-92-9	P310724038	1.26	bb	0.680	0.756	0.170	7.56	45-160%	83.1%	
	N-EtFOSAA	2991-50-6	P310724038	0.317	MM1*	0.180	0.200	0.0968	2.00	65-165%	79.2%	
	PFEESA	113507-82-7	P310724038	0.654	bb	0.320	0.356	0.0632	3.56	70-140%	91.8%	
ES	M4PFBA		P310724038		bb				100	8-130%	94.7%	
	M5PFPeA		P310724038		bs				50.0	35-130%	96.8%	
	M5PFHxA		P310724038		bb				25.0	40-130%	94.4%	
	M4PFHpA		P310724038		bb				25.0	40-130%	99.0%	
	M8PFOA		P310724038		bb				25.0	40-130%	88.9%	
	M9PFNA		P310724038		bs				12.5	40-130%	87.9%	
	M6PFDA		P310724038		bb				12.5	40-130%	84.9%	
	M7PFUdA		P310724038		bb				12.5	40-130%	75.1%	
	M2-PFDoA		P310724038		bs				12.5	40-130%	78.7%	
	13C2-PFTeDA		P310724038		bb				12.5	20-130%	72.3%	
	M3PFBS		P310724038		bb				23.3	40-135%	100.2%	
	M3PFHxS		P310724038		bb				23.7	40-130%	93.7%	
	M8PFOS		P310724038		bb				24.0	40-130%	83.1%	
	M2-4:2 FTS		P310724038		bb				46.9	40-165%	80.3%	
	M2-6:2 FTS		P020824012		bb				47.6	40-215%	93.2%	
	M2-8:2 FTS		P310724038		bb				48.0	40-275%	65.0%	
	M8PFOSA		P310724038		bb				25.0	40-130%	71.1%	
	d3-N-MeFOSA		P310724038		bb				25.0	10-130%	33.6%	
	d5-N-EtFOSA		P310724038		bb				25.0	10-130%	29.2%	
	d3-N-MeFOSAA		P310724038		bb				50.0	40-135%	69.4%	
	d5-N-EtFOSAA		P310724038		bs				50.0	40-150%	70.7%	
	d7-N-MeFOSE		P310724038		bb				250	20-130%	59.8%	
	d9-N-EtFOSE		P310724038		bb				250	15-130%	53.8%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	LLOPR_17844_PFAS				
Sampling Site					
Enthalpy ID	LLOPR_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 07:48	Split Factor	N/A	Dry Weight (g)	5
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P310724038		bs				100	40-130%	123.1%	
JS	M3PFBA		P310724038		bb				50.0	>30%	108.1%	
	M2-PFHxA		P310724038		bb				25.0	>30%	105.6%	
	M4-PFOA		P310724038		bb				25.0	>30%	104.2%	
	M5-PFNA		P310724038		bs				12.5	>30%	91.5%	
	M2-PFDA		P310724038		bb				12.5	>30%	101.9%	
	18O2PFHxS		P310724038		bs				23.7	>30%	121.2%	
	M4-PFOS		P310724038		bb				24.0	>30%	120.3%	

Peak Flags bb1* bb;n R.H.H. 08/02/2024
MM1* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	LLOPR_17914_PFAS				
Sampling Site					
Enthalpy ID	LLOPR_17914_PFAS	Prep Batch	EU17914	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	1
Sampling Date		Instrument	Pippin	Dry Weight (g)	1
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	1
AnalysisDate	2024-08-07 18:45	Split Factor	N/A	Dry Weight (g)	1
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824012	1.60	MM1*	0.720	0.800	0.188	8.00	70-140%	99.9%	
	PFDA	335-76-2	P070824012	0.386	bb	0.180	0.200	0.0911	2.00	70-155%	96.5%	
	PFUnDA	2058-94-8	P070824012	0.389	bb	0.180	0.200	0.0676	2.00	70-155%	97.1%	
	PFDoA	307-55-1	P070824012	0.366	bb	0.180	0.200	0.0676	2.00	70-150%	91.6%	
	PFTrDA	72629-94-8	P070824012	0.347	bb	0.180	0.200	0.0688	2.00	65-150%	86.7%	
	PFTeDA	376-06-7	P070824012	0.377	bb	0.180	0.200	0.0515	2.00	65-150%	94.3%	
Sulfonates	PFBS	375-73-5	P070824012	0.321	bb	0.160	0.177	0.0383	1.77	65-145%	90.4%	
	PFHpS	375-92-8	P070824012	0.315	bb	0.172	0.191	0.0660	1.91	65-155%	82.5%	
	PFOS	1763-23-1	P070824012	0.305	MM1*	0.167	0.186	0.0704	1.86	65-160%	82.1%	
	8:2 FTS	39108-34-4	P070824012	1.35	bb	0.691	0.768	0.481	7.68	70-150%	87.8%	
Sulfonmides	PFOSA	754-91-6	P070824012	0.377	bb	0.180	0.200	0.0189	2.00	70-140%	94.4%	
	N-MeFOSA	31506-32-8	P070824012	0.435	bb	0.180	0.200	0.0550	2.00	70-155%	108.7%	
	N-EtFOSA	4151-50-2	P070824012	0.387	bb	0.180	0.200	0.137	2.00	70-140%	96.8%	
	N-MeFOSE	24448-09-7	P070824012	3.92	bb	1.80	2.00	0.317	20.0	70-140%	98.0%	
	N-EtFOSE	1691-99-2	P070824012	3.80	bb	1.80	2.00	0.269	20.0	70-135%	95.0%	
PFECAs	HFPO-DA	13252-13-6	P070824012	1.64	MM1*	0.720	0.800	0.232	8.00	70-145%	102.6%	
FTCAs	7:3 FTCA	812-70-4	P070824012	1.76	bb	0.900	1.00	0.202	10.0	60-150%	87.9%	
Other	ADONA	919005-14-4	P070824012	1.33	bb	0.680	0.756	0.168	7.56	70-160%	87.9%	
ES	M4PFBA		P070824012		bb				100	8-130%	62.9%	
	M5PFHxA		P070824012		bb				25.0	40-130%	81.6%	
	M6PFDA		P070824012		bb				12.5	40-130%	79.6%	
	M7PFUdA		P070824012		bb				12.5	40-130%	73.7%	
	M2-PFDoA		P070824012		bb				12.5	40-130%	79.1%	
	13C2-PFTeDA		P070824012		bb				12.5	20-130%	72.2%	
	M3PFBS		P070824012		bb				23.3	40-135%	82.5%	
	M8PFOS		P070824012		bb				24.0	40-130%	83.0%	
	M2-8:2 FTS		P070824012		bb				48.0	40-275%	77.8%	
	M8PFOSA		P070824012		bs				25.0	40-130%	76.2%	
	d3-N-MeFOSA		P070824012		bb				25.0	10-130%	74.7%	
	d5-N-EtFOSA		P070824012		bb				25.0	10-130%	73.6%	
	d7-N-MeFOSE		P070824012		bb				250	20-130%	74.4%	
	d9-N-EtFOSE		P070824012		bb				250	15-130%	71.3%	
	M3HFPO-DA		P070824012		bb				100	40-130%	98.1%	
JS	M3PFBA		P070824012		bb				50.0	>30%	118.2%	
	M2-PFHxA		P070824012		bb				25.0	>30%	114.2%	
	M2-PFDA		P070824012		bb				12.5	>30%	112.0%	
	M4-PFOS		P070824012		bb				24.0	>30%	131.5%	

Peak Flags MM1* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	OPR_17844_PFAS				
Sampling Site					
Enthalpy ID	OPR_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 08:11	Split Factor	N/A	Dry Weight (g)	5
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P310724039	6.68	MM1*	0.720	0.800	0.188	50.0	70-140%	66.8%	Q
	PFPeA	2706-90-3	P310724039	3.41	bb1*	0.360	0.400	0.0629	25.0	60-150%	68.3%	
	PFHxA	307-24-4	P310724039	1.70	bb	0.180	0.200	0.0660	12.5	65-140%	68.0%	
	PFHpA	375-85-9	P310724039	1.66	bb	0.180	0.200	0.0603	12.5	65-145%	66.4%	
	PFOA	335-67-1	P020824013	1.76	bb	0.180	0.200	0.0490	12.5	70-150%	70.3%	
	PFNA	375-95-1	P310724039	1.83	bb	0.180	0.200	0.0383	12.5	70-155%	73.4%	
	PFDA	335-76-2	P310724039	1.62	bb	0.180	0.200	0.0911	12.5	70-155%	64.6%	Q
	PFUnDA	2058-94-8	P310724039	1.64	bb	0.180	0.200	0.0676	12.5	70-155%	65.8%	Q
	PFDoA	307-55-1	P310724039	1.52	bb	0.180	0.200	0.0676	12.5	70-150%	61.0%	Q
	PFTrDA	72629-94-8	P310724039	1.50	bb	0.180	0.200	0.0688	12.5	65-150%	60.1%	Q
	PFTeDA	376-06-7	P310724039	1.57	bb	0.180	0.200	0.0515	12.5	65-150%	62.8%	Q
Sulfonates	PFBS	375-73-5	P310724039	1.39	bb	0.160	0.177	0.0383	11.1	65-145%	62.5%	Q
	PFPeS	2706-91-4	P310724039	1.60	bb	0.169	0.188	0.0512	11.8	55-160%	68.2%	
	PFHxS	355-46-4	P310724039	1.45	MM1*	0.165	0.183	0.0773	11.4	60-150%	63.3%	
	PFHpS	375-92-8	P310724039	1.44	bb	0.172	0.191	0.0660	11.9	65-155%	60.6%	Q
	PFOS	1763-23-1	P310724039	1.27	MM1*	0.167	0.186	0.0704	11.6	65-160%	54.9%	Q
	PFNS	68259-12-1	P310724039	1.36	bb	0.173	0.192	0.0468	12.0	55-140%	56.7%	
	PFDS	335-77-3	P310724039	1.35	bb	0.174	0.193	0.0174	12.1	40-155%	56.1%	
	4:2 FTS	757124-72-4	P310724039	6.28	bb	0.675	0.750	0.314	46.9	60-150%	67.0%	
	PFDoS	79780-39-5	P310724039	1.23	bb	0.175	0.194	0.0481	12.1	25-160%	50.6%	
	6:2 FTS	27619-97-2	P310724039	5.67	bb	0.684	0.760	0.189	47.5	55-200%	59.6%	
	8:2 FTS	39108-34-4	P310724039	5.72	bb	0.691	0.768	0.481	48.0	70-150%	59.6%	Q
Other	ADONA	919005-14-4	P310724039	5.18	MM1*	0.680	0.756	0.168	47.3	70-160%	54.8%	Q
	9Cl-PF3ONS	756426-58-1	P310724039	6.58	bs	0.673	0.748	0.213	46.8	70-150%	70.3%	
	N-MeFOSAA	2355-31-9	P310724039	1.69	MM1*	0.180	0.200	0.102	12.5	65-155%	67.8%	
	11Cl-PF3OUdS	763051-92-9	P310724039	5.78	bs	0.680	0.756	0.170	47.3	45-160%	61.1%	
	N-EtFOSAA	2991-50-6	P310724039	1.63	MM1*	0.180	0.200	0.0968	12.5	65-165%	65.1%	
	PFEESA	113507-82-7	P310724039	3.26	bb	0.320	0.356	0.0632	22.3	70-140%	73.2%	
Sulfonmides	PFOSA	754-91-6	P310724039	1.57	bb	0.180	0.200	0.0189	12.5	70-140%	62.8%	Q
	N-MeFOSA	31506-32-8	P310724039	1.90	bb	0.180	0.200	0.0550	12.5	70-155%	76.1%	
	N-EtFOSA	4151-50-2	P310724039	1.91	bb	0.180	0.200	0.137	12.5	70-140%	76.5%	
	N-MeFOSE	24448-09-7	P310724039	16.3	bb	1.80	2.00	0.317	125	70-140%	65.3%	Q
	N-EtFOSE	1691-99-2	P310724039	16.6	bb	1.80	2.00	0.269	125	70-135%	66.2%	Q
PFECAs	HFPO-DA	13252-13-6	P310724039	6.93	MM1*	0.720	0.800	0.232	50.0	70-145%	69.3%	Q
	PFMBA	863090-89-5	P310724039	3.41	bb	0.360	0.400	0.164	25.0	60-150%	68.1%	
	PFMPA	377-73-1	P310724039	3.21	bb	0.360	0.400	0.0751	25.0	30-140%	64.2%	
FTCAs	3:3 FTCA	356-02-5	P310724039	7.98	bb	0.900	1.00	0.119	62.5	45-130%	63.9%	
	5:3 FTCA	914637-49-3	P310724039	8.30	bb	0.900	1.00	0.292	62.5	60-130%	66.4%	
	7:3 FTCA	812-70-4	P310724039	7.04	bb	0.900	1.00	0.202	62.5	60-150%	56.3%	Q
ES	M4PFBA		P310724039		MM1*				100	8-130%	130.0%	
	M5PFPeA		P020824013		bs				50.0	35-130%	126.9%	
	M5PFHxA		P310724039		bs				25.0	40-130%	133.6%	Q
	M4PFHpA		P310724039		bb				25.0	40-130%	131.3%	Q
	M8PFOA		P310724039		bs				25.0	40-130%	126.2%	
	M9PFNA		P310724039		bs				12.5	40-130%	125.0%	
	M6PFDA		P310724039		bb				12.5	40-130%	128.2%	
	M7PFUdA		P310724039		bb				12.5	40-130%	121.1%	
	M2-PFDoA		P310724039		bs				12.5	40-130%	123.5%	
	13C2-PFTeDA		P310724039		bb				12.5	20-130%	107.3%	
	M3PFBS		P310724039		bs				23.3	40-135%	138.0%	Q
	M3PFHxS		P020824013		bb				23.7	40-130%	126.8%	
	M8PFOS		P310724039		bb				24.0	40-130%	125.3%	
	M2-4:2 FTS		P310724039		bs				46.9	40-165%	97.6%	
	M2-6:2 FTS		P020824013		bb				47.6	40-215%	122.6%	
	M2-8:2 FTS		P310724039		bb				48.0	40-275%	103.7%	
	M8PFOSA		P310724039		bb				25.0	40-130%	106.5%	
	d3-N-MeFOSA		P310724039		bb				25.0	10-130%	43.0%	
	d5-N-EtFOSA		P310724039		bb				25.0	10-130%	33.2%	
	d3-N-MeFOSAA		P310724039		bb				50.0	40-135%	111.1%	
	d5-N-EtFOSAA		P310724039		bb				50.0	40-150%	107.8%	
	d7-N-MeFOSE		P310724039		bb				250	20-130%	86.5%	
	d9-N-EtFOSE		P310724039		bb				250	15-130%	76.6%	
	M3HFPO-DA		P310724039		MM1*				100	40-130%	168.6%	Q

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	OPR_17844_PFAS				
Sampling Site					
Enthalpy ID	OPR_17844_PFAS	Prep Batch	EU17844	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	5
Sampling Date		Instrument	Pippin	Dry Weight (g)	5
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5
AnalysisDate	2024-08-01 08:11	Split Factor	N/A	Dry Weight (g)	5
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
JS	M3PFBA		P310724039		bb				50.0	>30%	108.4%	
	M2-PFHxA		P310724039		bb				25.0	>30%	102.7%	
	M4-PFOA		P310724039		bb				25.0	>30%	108.9%	
	M5-PFNA		P310724039		bs				12.5	>30%	95.5%	
	M2-PFDA		P310724039		bb				12.5	>30%	104.6%	
	18O2PFHxS		P310724039		bb				23.7	>30%	121.0%	
	M4-PFOS		P310724039		bb				24.0	>30%	126.6%	

Peak Flags bb1* bb;n R.H.H. 08/02/2024
MM1* MM;c R.H.H. 08/02/2024

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- v: peak starts or ends on a valley
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- X: Point manually excluded from the calibration curve

Secondary Code
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Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	OPR_17914_PFAS				
Sampling Site					
Enthalpy ID	OPR_17914_PFAS	Prep Batch	EU17914	Tare Weight (g)	0
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	1
Sampling Date		Instrument	Pippin	Dry Weight (g)	1
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	1
AnalysisDate	2024-08-07 19:08	Split Factor	N/A	Dry Weight (g)	1
SampleType	Control	Method Code	WM-B-24-Solid	% Solids	100.0%
Bottle ID	-			Dry Wt. Equiv (g)	5.00

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824013	9.88	MM1*	0.720	0.800	0.188	50.0	70-140%	98.8%	
	PFDA	335-76-2	P070824013	2.48	bb	0.180	0.200	0.0911	12.5	70-155%	99.2%	
	PFUnDA	2058-94-8	P070824013	2.49	bb	0.180	0.200	0.0676	12.5	70-155%	99.6%	
	PFDoA	307-55-1	P070824013	2.33	bb	0.180	0.200	0.0676	12.5	70-150%	93.4%	
	PFTrDA	72629-94-8	P070824013	2.22	bb	0.180	0.200	0.0688	12.5	65-150%	88.9%	
	PFTeDA	376-06-7	P070824013	2.46	bb	0.180	0.200	0.0515	12.5	65-150%	98.2%	
Sulfonates	PFBS	375-73-5	P070824013	1.97	bb	0.160	0.177	0.0383	11.1	65-145%	88.8%	
	PFHpS	375-92-8	P070824013	2.14	bb	0.172	0.191	0.0660	11.9	65-155%	90.0%	
	PFOS	1763-23-1	P070824013	1.95	MM1*	0.167	0.186	0.0704	11.6	65-160%	84.0%	
	8:2 FTS	39108-34-4	P070824013	8.33	bb	0.691	0.768	0.481	48.0	70-150%	86.8%	
Sulfonmides	PFOSA	754-91-6	P070824013	2.43	bb	0.180	0.200	0.0189	12.5	70-140%	97.1%	
	N-MeFOSA	31506-32-8	P070824013	2.75	bb	0.180	0.200	0.0550	12.5	70-155%	109.8%	
	N-EtFOSA	4151-50-2	P070824013	2.77	bb	0.180	0.200	0.137	12.5	70-140%	110.7%	
	N-MeFOSE	24448-09-7	P070824013	25.8	bb	1.80	2.00	0.317	125	70-140%	103.0%	
	N-EtFOSE	1691-99-2	P070824013	24.8	bb	1.80	2.00	0.269	125	70-135%	99.3%	
PFECAs	HFPO-DA	13252-13-6	P070824013	10.4	MM1*	0.720	0.800	0.232	50.0	70-145%	104.2%	
FTCAs	7:3 FTCA	812-70-4	P070824013	11.3	bb	0.900	1.00	0.202	62.5	60-150%	90.4%	
Other	ADONA	919005-14-4	P070824013	7.91	bb	0.680	0.756	0.168	47.3	70-160%	83.7%	
ES	M4PFBA		P070824013		bb				100	8-130%	80.6%	
	M5PFHxA		P070824013		bb				25.0	40-130%	77.3%	
	M6PFDA		P070824013		bb				12.5	40-130%	78.9%	
	M7PFUdA		P070824013		bb				12.5	40-130%	76.0%	
	M2-PFDoA		P070824013		bs				12.5	40-130%	78.5%	
	13C2-PFTeDA		P070824013		bb				12.5	20-130%	71.6%	
	M3PFBS		P070824013		bb				23.3	40-135%	86.8%	
	M8PFOS		P070824013		bb				24.0	40-130%	78.3%	
	M2-8:2 FTS		P070824013		bs				48.0	40-275%	75.5%	
	M8PFOSA		P070824013		bb				25.0	40-130%	71.5%	
	d3-N-MeFOSA		P070824013		bb				25.0	10-130%	66.8%	
	d5-N-EtFOSA		P070824013		bb				25.0	10-130%	65.6%	
	d7-N-MeFOSE		P070824013		bb				250	20-130%	73.8%	
	d9-N-EtFOSE		P070824013		bb				250	15-130%	71.4%	
	M3HFPO-DA		P070824013		bb				100	40-130%	104.9%	
JS	M3PFBA		P070824013		bb				50.0	>30%	119.9%	
	M2-PFHxA		P070824013		bs				25.0	>30%	119.5%	
	M2-PFDA		P070824013		bb				12.5	>30%	114.6%	
	M4-PFOS		P070824013		bb				24.0	>30%	137.5%	

Peak Flags MM1* MM;c R.H.H. 08/08/2024

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- X: Point manually excluded from the calibration curve

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Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-843-002-1MS		
Sampling Site			
Enthalpy ID	0724-843-002-1MS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 08:36	Split Factor	N/A
SampleType	MS	Method Code	Eu-062
Bottle ID	M1	Parent Sample ID	0724-843-002-1

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P290724058	720	bb	60.0	66.7	15.7	50.0	70-140%	86.5%	
	PFPeA	2706-90-3	P290724058	372	bb1*	30.0	33.3	5.24	25.0	65-135%	89.3%	
	PFHxA	307-24-4	P290724058	198	bb	15.0	16.7	5.50	12.5	70-145%	87.4%	
	PFHpA	375-85-9	P290724058	185	bb	15.0	16.7	5.02	12.5	70-150%	85.5%	
	PFOA	335-67-1	P290724058	220	MM1*	15.0	16.7	4.08	12.5	70-150%	85.8%	
	PFNA	375-95-1	P290724058	204	bs	15.0	16.7	3.19	12.5	70-150%	96.9%	
	PFDA	335-76-2	P290724058	182	bb	15.0	16.7	7.59	12.5	70-140%	87.0%	
	PFUnDA	2058-94-8	P290724058	186	bb	15.0	16.7	5.63	12.5	70-145%	89.3%	
	PFDoA	307-55-1	P290724058	176	bb	15.0	16.7	5.63	12.5	70-140%	84.6%	
	PFTrDA	72629-94-8	P290724058	161	bb	15.0	16.7	5.73	12.5	65-140%	77.3%	
	PFTeDA	376-06-7	P290724058	178	bb	15.0	16.7	4.29	12.5	60-140%	85.6%	
Sulfonates	PFBS	375-73-5	P290724058	171	bb	13.3	14.8	3.19	11.1	60-145%	79.2%	
	PFPeS	2706-91-4	P290724058	168	bb	14.1	15.7	4.27	11.8	65-140%	85.9%	
	PFHxS	355-46-4	P290724058	186	MM1*	13.7	15.2	6.44	11.4	65-145%	94.6%	
	PFHpS	375-92-8	P290724058	176	bb	14.3	15.9	5.50	11.9	70-150%	88.7%	
	PFOS	1763-23-1	P290724058	172	MM1*	13.9	15.5	5.87	11.6	55-150%	79.0%	
	PFNS	68259-12-1	P290724058	144	bb	14.4	16.0	3.90	12.0	65-145%	71.8%	
	PFDS	335-77-3	P290724058	133	bb	14.5	16.1	1.45	12.1	60-145%	66.0%	
	PFDoS	79780-39-5	P290724058	108	bb	14.6	16.2	4.01	12.1	50-145%	53.6%	
	4:2 FTS	757124-72-4	P290724058	653	bb	56.2	62.5	26.2	46.9	70-145%	83.6%	
	6:2 FTS	27619-97-2	P290724058	676	bs	57.0	63.3	15.8	47.5	65-155%	85.0%	
	8:2 FTS	39108-34-4	P290724058	640	bb	57.6	64.0	40.1	48.0	60-150%	79.9%	
Sulfonmides	PFOSA	754-91-6	P290724058	176	bb	15.0	16.7	1.58	12.5	70-145%	84.6%	
	N-MeFOSA	31506-32-8	P290724058	206	bb	15.0	16.7	4.58	12.5	60-150%	98.7%	
	N-EtFOSA	4151-50-2	P290724058	202	bb	15.0	16.7	11.4	12.5	65-145%	96.9%	
	N-MeFOSE	24448-09-7	P290724058	1920	bb	150	167	26.4	125	70-145%	92.4%	
	N-EtFOSE	1691-99-2	P290724058	1900	bb	150	167	22.4	125	70-135%	91.0%	
PFECAs	HFPO-DA	13252-13-6	P290724058	750	bs	60.0	66.7	19.3	50.0	70-140%	90.0%	
	PFMBA	863090-89-5	P290724058	375	bb	30.0	33.3	13.6	25.0	60-150%	90.0%	
	PFMPA	377-73-1	P290724058	358	bb	30.0	33.3	6.26	25.0	55-140%	86.0%	
	NFDHA	151772-58-6	P290724058	378	bb	30.0	33.3	16.8	25.0	50-150%	90.7%	
FTCAs	3:3 FTCA	356-02-5	P290724058	280	bb	75.0	83.3	9.92	62.5	65-130%	26.8%	Q
	5:3 FTCA	914637-49-3	P290724058	749	bb	75.0	83.3	24.3	62.5	70-135%	71.9%	
	7:3 FTCA	812-70-4	P290724058	843	bb	75.0	83.3	16.8	62.5	50-145%	80.9%	
Other	ADONA	919005-14-4	P290724058	677	bs	56.7	63.0	14.0	47.3	65-145%	86.0%	
	9Cl-PF3ONS	756426-58-1	P290724058	712	bb	56.1	62.3	17.8	46.8	70-155%	91.4%	
	N-MeFOSAA	2355-31-9	P290724058	165	bb	15.0	16.7	8.50	12.5	50-140%	79.2%	
	11Cl-PF3OUdS	763051-92-9	P290724058	576	bb	56.7	63.0	14.2	47.3	55-160%	73.2%	
	N-EtFOSAA	2991-50-6	P290724058	176	MM1*	15.0	16.7	8.07	12.5	70-145%	84.2%	
	PFEESA	113507-82-7	P290724058	334	bb	26.7	29.7	5.27	22.3	70-140%	90.0%	
ES	M4PFBA		P290724058		bb				100	5-130%	97.3%	
	M5PFPeA		P290724058		bs				50.0	40-130%	93.7%	
	M5PFHxA		P290724058		bb				25.0	40-130%	94.9%	
	M4PFHpA		P290724058		bb				25.0	40-130%	96.1%	
	M8PFOA		P290724058		bs				25.0	40-130%	94.3%	
	M9PFNA		P290724058		bb				12.5	40-130%	96.6%	
	M6PFDA		P290724058		bb				12.5	40-130%	90.4%	
	M7PFUdA		P290724058		bb				12.5	30-130%	77.8%	
	M2-PFDoA		P290724058		bb				12.5	10-130%	79.5%	
	13C2-PFTeDA		P290724058		bb				12.5	10-130%	65.4%	
	M3PFBS		P290724058		bb				23.3	40-135%	102.8%	
	M3PFHxS		P290724058		bb				23.7	40-130%	88.6%	
	M8PFOS		P290724058		bs				24.0	40-130%	83.3%	
	M2-4:2 FTS		P290724058		bb				46.9	40-200%	138.7%	
	M2-6:2 FTS		P290724058		bb				47.6	40-200%	101.6%	
	M2-8:2 FTS		P290724058		bb				48.0	40-300%	80.0%	
	M8PFOSA		P290724058		bs				25.0	40-130%	82.4%	
	d3-N-MeFOSA		P290724058		bb				25.0	10-130%	72.6%	
	d5-N-EtFOSA		P290724058		bb				25.0	10-130%	67.4%	
	d3-N-MeFOSAA		P290724058		bs				50.0	40-170%	90.6%	
	d5-N-EtFOSAA		P290724058		bs				50.0	25-135%	93.8%	
	d7-N-MeFOSE		P290724058		bb				250	10-130%	77.6%	
	d9-N-EtFOSE		P290724058		bb				250	10-130%	74.0%	

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-843-002-1MS		
Sampling Site			
Enthalpy ID	0724-843-002-1MS	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 08:36	Split Factor	N/A
SampleType	MS	Method Code	Eu-062
Bottle ID	M1	Parent Sample ID	0724-843-002-1

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P290724058		bb				100	40-130%	109.9%	
JS	M3PFBA		P290724058		bb				50.0	>30%	128.0%	
	M2-PFHxA		P290724058		bs				25.0	>30%	126.7%	
	M4-PFOA		P290724058		bb				25.0	>30%	125.3%	
	M5-PFNA		P290724058		bb				12.5	>30%	102.7%	
	M2-PFDA		P290724058		bb				12.5	>30%	115.4%	
	18O2PFHxS		P290724058		bs				23.7	>30%	138.7%	
	M4-PFOS		P290724058		bb				24.0	>30%	131.7%	

Peak Flags bb1* bb;N JDG 7/30/24
MM1* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-843-002-1MSD		
Sampling Site			
Enthalpy ID	0724-843-002-1MSD	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 08:59	Split Factor	N/A
SampleType	MSD	Method Code	Eu-062
Bottle ID	M1	Parent Sample ID	0724-843-002-1

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	MSD RPD Limits	MSD RPD	Flags
Acids	PFBA	375-22-4	P290724059	715	bb	60.0	66.7	15.7	50.0	70-140%	85.8%	< 30%	0.7%	
	PFPeA	2706-90-3	P290724059	371	bb1*	30.0	33.3	5.24	25.0	65-135%	88.9%	< 30%	0.4%	
	PFHxA	307-24-4	P290724059	200	bb	15.0	16.7	5.50	12.5	70-145%	88.5%	< 30%	1.2%	
	PFHpA	375-85-9	P290724059	190	bs	15.0	16.7	5.02	12.5	70-150%	87.8%	< 30%	2.6%	
	PFOA	335-67-1	P290724059	219	MM1*	15.0	16.7	4.08	12.5	70-150%	85.2%	< 30%	0.7%	
	PFNA	375-95-1	P290724059	209	bs	15.0	16.7	3.19	12.5	70-150%	99.2%	< 30%	2.3%	
	PFDA	335-76-2	P290724059	182	bb	15.0	16.7	7.59	12.5	70-140%	87.0%	< 30%	0.1%	
	PFUnDA	2058-94-8	P290724059	177	bb	15.0	16.7	5.63	12.5	70-145%	85.2%	< 30%	4.7%	
	PFDoA	307-55-1	P290724059	174	bs	15.0	16.7	5.63	12.5	70-140%	83.7%	< 30%	1.1%	
	PFTrDA	72629-94-8	P290724059	157	bs	15.0	16.7	5.73	12.5	65-140%	75.6%	< 30%	2.3%	
	PFTeDA	376-06-7	P290724059	183	bs	15.0	16.7	4.29	12.5	60-140%	87.8%	< 30%	2.6%	
Sulfonates	PFBS	375-73-5	P290724059	193	bb	13.3	14.8	3.19	11.1	60-145%	90.9%	< 30%	13.8%	
	PFPeS	2706-91-4	P290724059	190	bb	14.1	15.7	4.27	11.8	65-140%	97.0%	< 30%	12.1%	
	PFHxS	355-46-4	P290724059	167	MM1*	13.7	15.2	6.44	11.4	65-145%	85.0%	< 30%	10.7%	
	PFHpS	375-92-8	P290724059	175	bb	14.3	15.9	5.50	11.9	70-150%	88.3%	< 30%	0.4%	
	PFOS	1763-23-1	P290724059	171	MM1*	13.9	15.5	5.87	11.6	55-150%	78.4%	< 30%	0.8%	
	PFNS	68259-12-1	P290724059	137	bb	14.4	16.0	3.90	12.0	65-145%	68.3%	< 30%	5.0%	
	PFDS	335-77-3	P300724010	144	bb	14.5	16.1	1.45	12.1	60-145%	71.6%	< 30%	8.2%	
	PFDoS	79780-39-5	P300724010	112	bb	14.6	16.2	4.01	12.1	50-145%	55.6%	< 30%	3.6%	
	4:2 FTS	757124-72-4	P290724059	656	bb	56.2	62.5	26.2	46.9	70-145%	84.0%	< 30%	0.4%	
	6:2 FTS	27619-97-2	P290724059	685	bs	57.0	63.3	15.8	47.5	65-155%	86.1%	< 30%	1.3%	
	8:2 FTS	39108-34-4	P290724059	627	bb	57.6	64.0	40.1	48.0	60-150%	78.4%	< 30%	2.0%	
Sulfonmides	PFOSA	754-91-6	P290724059	175	bb	15.0	16.7	1.58	12.5	70-145%	84.2%	< 30%	0.5%	
	N-MeFOSA	31506-32-8	P290724059	200	bb	15.0	16.7	4.58	12.5	60-150%	96.0%	< 30%	2.8%	
	N-EtFOSA	4151-50-2	P290724059	199	bb	15.0	16.7	11.4	12.5	65-145%	95.7%	< 30%	1.2%	
	N-MeFOSE	24448-09-7	P290724059	1920	bb	150	167	26.4	125	70-145%	92.4%	< 30%	0.0%	
	N-EtFOSE	1691-99-2	P290724059	1920	bb	150	167	22.4	125	70-135%	91.9%	< 30%	1.0%	
PFECAs	HFPO-DA	13252-13-6	P290724059	733	bb	60.0	66.7	19.3	50.0	70-140%	88.0%	< 30%	2.2%	
	PFMBA	863090-89-5	P290724059	381	bb	30.0	33.3	13.6	25.0	60-150%	91.5%	< 30%	1.7%	
	PFMPA	377-73-1	P290724059	371	bb	30.0	33.3	6.26	25.0	55-140%	89.1%	< 30%	3.5%	
	NFDHA	151772-58-6	P290724059	378	bb	30.0	33.3	16.8	25.0	50-150%	90.6%	< 30%	0.1%	
FTCAs	3:3 FTCA	356-02-5	P290724059	305	bb	75.0	83.3	9.92	62.5	65-130%	29.3%	< 30%	8.6%	Q
	5:3 FTCA	914637-49-3	P290724059	905	bb	75.0	83.3	24.3	62.5	70-135%	86.9%	< 30%	18.9%	
	7:3 FTCA	812-70-4	P290724059	871	bb	75.0	83.3	16.8	62.5	50-145%	83.6%	< 30%	3.2%	
Other	ADONA	919005-14-4	P290724059	667	bs	56.7	63.0	14.0	47.3	65-145%	84.7%	< 30%	1.4%	
	9Cl-PF3ONS	756426-58-1	P290724059	722	bs	56.1	62.3	17.8	46.8	70-155%	92.6%	< 30%	1.3%	
	N-MeFOSAA	2355-31-9	P290724059	193	MM1*	15.0	16.7	8.50	12.5	50-140%	92.7%	< 30%	15.6%	
	11Cl-PF3OUdS	763051-92-9	P290724059	536	bb	56.7	63.0	14.2	47.3	55-160%	68.1%	< 30%	7.1%	
	N-EtFOSAA	2991-50-6	P290724059	171	MM1*	15.0	16.7	8.07	12.5	70-145%	82.2%	< 30%	2.5%	
	PFEESA	113507-82-7	P290724059	340	bb	26.7	29.7	5.27	22.3	70-140%	91.7%	< 30%	1.8%	
ES	M4PFBA		P290724059		bb				100	5-130%	95.0%			
	M5PFPeA		P290724059		bs				50.0	40-130%	89.2%			
	M5PFHxA		P290724059		bb				25.0	40-130%	91.0%			
	M4PFHpA		P290724059		bb				25.0	40-130%	95.6%			
	M8PFOA		P290724059		bs				25.0	40-130%	91.7%			
	M9PFNA		P290724059		bb				12.5	40-130%	90.6%			
	M6PFDA		P290724059		bb				12.5	40-130%	83.8%			
	M7PFUdA		P290724059		bs				12.5	30-130%	71.4%			
	M2-PFDoA		P290724059		bs				12.5	10-130%	70.2%			
	13C2-PFTeDA		P290724059		bb				12.5	10-130%	54.0%			
	M3PFBS		P290724059		bb				23.3	40-135%	86.4%			
	M3PFHxS		P290724059		bb				23.7	40-130%	97.7%			
	M8PFOS		P290724059		bs				24.0	40-130%	81.4%			
	M2-4:2 FTS		P290724059		bb				46.9	40-200%	148.0%			
	M2-6:2 FTS		P290724059		bs				47.6	40-200%	102.1%			
	M2-8:2 FTS		P290724059		bb				48.0	40-300%	79.3%			
	M8PFOSA		P290724059		bs				25.0	40-130%	80.3%			
	d3-N-MeFOSA		P290724059		bb				25.0	10-130%	64.0%			
	d5-N-EtFOSA		P290724059		bb				25.0	10-130%	59.1%			
	d3-N-MeFOSAA		P290724059		bb				50.0	40-170%	84.5%			
	d5-N-EtFOSAA		P290724059		bb				50.0	25-135%	94.9%			
	d7-N-MeFOSE		P290724059		bb				250	10-130%	64.3%			
	d9-N-EtFOSE		P290724059		bb				250	10-130%	61.2%			

Enthalpy Analytical

Job No.: 0724-833-2 DOD QSM Table B-24 (EPA 1633) - non-potable water

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-843-002-1MSD		
Sampling Site			
Enthalpy ID	0724-843-002-1MSD	Prep Batch	EU17848
Matrix	Aqueous	Analyst	jogres
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	60
Prep Date	2024-07-26 12:45	Extract Vol mL	5
AnalysisDate	2024-07-30 08:59	Split Factor	N/A
SampleType	MSD	Method Code	Eu-062
Bottle ID	M1	Parent Sample ID	0724-843-002-1

	Compound	CAS	Injection File Name	Sample Concentration ng/L	Peak Flags	LOD ng/L	LOQ ng/L	DL ng/L	Spike Amt. (ng)	Recovery Limits	Recovery	MSD RPD Limits	MSD RPD	Flags
	M3HFPO-DA		P290724059		bs				100	40-130%	101.4%			
JS	M3PFBA		P290724059		bb				50.0	>30%	140.4%			
	M2-PFHxA		P290724059		bb				25.0	>30%	137.6%			
	M4-PFOA		P290724059		bb				25.0	>30%	133.1%			
	M5-PFNA		P290724059		bs				12.5	>30%	114.8%			
	M2-PFDA		P290724059		bb				12.5	>30%	131.2%			
	18O2PFHxS		P290724059		bb				23.7	>30%	141.8%			
	M4-PFOS		P290724059		bb				24.0	>30%	139.7%			

Peak Flags bb1* bb;N JDG 7/30/24
MM1* MM;C JDG 7/30/24

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-020-1MS				
Sampling Site					
Enthalpy ID	0724-833-020-1MS	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.84
Sampling Date		Instrument	Pippin	Dry Weight (g)	1.58
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5.06
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.86
AnalysisDate	2024-08-08 01:57	Split Factor	N/A	Dry Weight (g)	1.58
SampleType	MS	Method Code	WM-B-24-Solid	% Solids	10.2%
Bottle ID	-	Parent Sample ID	0724-833-020-1B	Dry Wt. Equiv (g)	0.52

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P070824031	96.0	bb	6.95	7.72	1.81	50.0	70-140%	99.4%	
	PFDA	335-76-2	P070824031	23.7	bb	1.74	1.93	0.879	12.5	70-155%	98.1%	
	PFUnDA	2058-94-8	P070824031	24.2	bb	1.74	1.93	0.652	12.5	70-155%	100.3%	
	PFDoA	307-55-1	P070824031	22.7	bb	1.74	1.93	0.652	12.5	70-150%	94.2%	
	PFTrDA	72629-94-8	P070824031	21.5	bb	1.74	1.93	0.664	12.5	65-150%	88.9%	
	PFTeDA	376-06-7	P070824031	23.5	bb	1.74	1.93	0.497	12.5	65-150%	97.6%	
Sulfonates	PFBS	375-73-5	P070824031	17.8	bb	1.54	1.71	0.370	11.1	65-145%	83.3%	
	PFHpS	375-92-8	P070824031	19.7	bb	1.66	1.84	0.637	11.9	65-155%	85.6%	
	PFOS	1763-23-1	P070824031	23.7	MM1*	1.61	1.79	0.679	11.6	65-160%	80.0%	
	8:2 FTS	39108-34-4	P070824031	81.8	bb	6.67	7.41	4.64	48.0	70-150%	88.3%	
Sulfonmides	PFOSA	754-91-6	P070824031	23.5	bb	1.74	1.93	0.182	12.5	70-140%	97.3%	
	N-MeFOSA	31506-32-8	P070824031	27.2	bb	1.74	1.93	0.531	12.5	70-155%	112.9%	
	N-EtFOSA	4151-50-2	P070824031	27.9	bb	1.74	1.93	1.32	12.5	70-140%	115.7%	
	N-MeFOSE	24448-09-7	P070824031	245	bb	17.4	19.3	3.06	125	70-140%	101.5%	
	N-EtFOSE	1691-99-2	P070824031	240	bb	17.4	19.3	2.60	125	70-135%	99.6%	
PFECAs	HFPO-DA	13252-13-6	P070824031	101	bb	6.95	7.72	2.24	50.0	70-145%	104.5%	
FTCAs	7:3 FTCA	812-70-4	P070824031	114	bb	8.69	9.65	1.95	62.5	60-150%	94.7%	
Other	ADONA	919005-14-4	P070824031	77.6	bb	6.57	7.30	1.62	47.3	70-160%	85.1%	
ES	M4PFBA		P070824031		bb				100	8-130%	83.0%	
	M5PFHxA		P070824031		bb				25.0	40-130%	81.9%	
	M6PFDA		P070824031		bb				12.5	40-130%	80.2%	
	M7PFUdA		P070824031		bb				12.5	40-130%	75.5%	
	M2-PFDoA		P070824031		bb				12.5	40-130%	81.2%	
	13C2-PFTeDA		P070824031		bb				12.5	20-130%	73.0%	
	M3PFBS		P070824031		bb				23.3	40-135%	93.9%	
	M8PFOS		P070824031		bb				24.0	40-130%	84.1%	
	M2-8:2 FTS		P070824031		bb				48.0	40-275%	84.6%	
	M8PFOSA		P070824031		bs				25.0	40-130%	78.4%	
	d3-N-MeFOSA		P070824031		bb				25.0	10-130%	77.7%	
	d5-N-EtFOSA		P070824031		bb				25.0	10-130%	78.6%	
	d7-N-MeFOSE		P070824031		bb				250	20-130%	75.6%	
	d9-N-EtFOSE		P070824031		bb				250	15-130%	72.7%	
	M3HFPO-DA		P070824031		bb				100	40-130%	101.9%	
JS	M3PFBA		P070824031		bb				50.0	>30%	113.1%	
	M2-PFHxA		P070824031		bb				25.0	>30%	110.5%	
	M2-PFDA		P070824031		bb				12.5	>30%	110.6%	
	M4-PFOS		P070824031		bb				24.0	>30%	126.0%	

Peak Flags MM1* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-020-1MSD				
Sampling Site					
Enthalpy ID	0724-833-020-1MSD	Prep Batch	EU17914	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.84
Sampling Date		Instrument	Pippin	Dry Weight (g)	1.58
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5
Prep Date	2024-08-07 09:16	Extract Vol mL	5	Net Weight (g)	5.86
AnalysisDate	2024-08-08 02:20	Split Factor	N/A	Dry Weight (g)	1.58
SampleType	MSD	Method Code	WM-B-24-Solid	% Solids	10.2%
Bottle ID	-	Parent Sample ID	0724-833-020-1B	Dry Wt. Equiv (g)	0.51

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	MSD RPD Limits	MSD RPD	Flags
Acids	PFBA	375-22-4	P070824032	96.4	bb	7.03	7.81	1.84	50.0	70-140%	98.7%	< 30%	0.7%	
	PFDA	335-76-2	P070824032	23.7	bb	1.76	1.95	0.890	12.5	70-155%	96.9%	< 30%	1.2%	
	PFUnDA	2058-94-8	P070824032	24.2	bb	1.76	1.95	0.660	12.5	70-155%	99.3%	< 30%	1.0%	
	PFDoA	307-55-1	P070824032	22.3	bb	1.76	1.95	0.660	12.5	70-150%	91.3%	< 30%	3.1%	
	PFTrDA	72629-94-8	P070824032	20.8	bb	1.76	1.95	0.672	12.5	65-150%	85.2%	< 30%	4.2%	
	PFTeDA	376-06-7	P070824032	24.0	bb	1.76	1.95	0.503	12.5	65-150%	98.3%	< 30%	0.7%	
Sulfonates	PFBS	375-73-5	P070824032	18.3	bb	1.56	1.73	0.374	11.1	65-145%	84.6%	< 30%	1.5%	
	PFHpS	375-92-8	P070824032	20.7	bb	1.68	1.86	0.645	11.9	65-155%	89.1%	< 30%	3.9%	
	PFOS	1763-23-1	P070824032	24.4	MM1*	1.63	1.81	0.688	11.6	65-160%	81.9%	< 30%	2.3%	
	8:2 FTS	39108-34-4	P070824032	84.7	bb	6.75	7.50	4.70	48.0	70-150%	90.4%	< 30%	2.3%	
Sulfonmides	PFOSA	754-91-6	P070824032	23.4	bb	1.76	1.95	0.185	12.5	70-140%	96.0%	< 30%	1.3%	
	N-MeFOSA	31506-32-8	P070824032	27.4	bb	1.76	1.95	0.537	12.5	70-155%	112.2%	< 30%	0.6%	
	N-EtFOSA	4151-50-2	P070824032	27.0	bb	1.76	1.95	1.34	12.5	70-140%	110.5%	< 30%	4.6%	
	N-MeFOSE	24448-09-7	P070824032	245	bb	17.6	19.5	3.10	125	70-140%	100.2%	< 30%	1.2%	
	N-EtFOSE	1691-99-2	P070824032	244	bb	17.6	19.5	2.63	125	70-135%	99.9%	< 30%	0.3%	
PFECAs	HFPO-DA	13252-13-6	P070824032	106	bb	7.03	7.81	2.27	50.0	70-145%	108.5%	< 30%	3.8%	
FTCAs	7:3 FTCA	812-70-4	P070824032	115	bs	8.79	9.77	1.97	62.5	60-150%	94.3%	< 30%	0.3%	
Other	ADONA	919005-14-4	P070824032	79.6	bb	6.65	7.38	1.64	47.3	70-160%	86.3%	< 30%	1.4%	
ES	M4PFBA		P070824032		bb				100	8-130%	81.7%			
	M5PFHxA		P070824032		bs				25.0	40-130%	83.7%			
	M6PFDA		P070824032		bb				12.5	40-130%	80.3%			
	M7PFUdA		P070824032		bb				12.5	40-130%	75.0%			
	M2-PFDoA		P070824032		bb				12.5	40-130%	80.1%			
	13C2-PFTeDA		P070824032		bb				12.5	20-130%	69.9%			
	M3PFBS		P070824032		bb				23.3	40-135%	93.1%			
	M8PFOS		P070824032		bb				24.0	40-130%	78.2%			
	M2-8:2 FTS		P070824032		bb				48.0	40-275%	81.4%			
	M8PFOSA		P070824032		bb				25.0	40-130%	76.2%			
	d3-N-MeFOSA		P070824032		bb				25.0	10-130%	75.5%			
	d5-N-EtFOSA		P070824032		bb				25.0	10-130%	77.9%			
	d7-N-MeFOSE		P070824032		bb				250	20-130%	74.3%			
	d9-N-EtFOSE		P070824032		bb				250	15-130%	70.8%			
	M3HFPO-DA		P070824032		bb				100	40-130%	98.3%			
JS	M3PFBA		P070824032		bb				50.0	>30%	111.9%			
	M2-PFHxA		P070824032		bs				25.0	>30%	110.8%			
	M2-PFDA		P070824032		bb				12.5	>30%	113.1%			
	M4-PFOS		P070824032		bb				24.0	>30%	131.1%			

Peak Flags MM1* MM;c R.H.H. 08/08/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-021MS				
Sampling Site					
Enthalpy ID	0724-833-021MS	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date		Instrument	Pippin	Dry Weight (g)	4.92
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 10:49	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	MS	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-	Parent Sample ID	0724-833-021-1A	Dry Wt. Equiv (g)	3.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P310724044	11.8	bb	0.963	1.07	0.251	50.0	70-140%	88.6%	
	PFPeA	2706-90-3	P310724044	6.04	bb1*	0.481	0.535	0.0841	25.0	60-150%	90.4%	
	PFHxA	307-24-4	P310724044	3.03	bb	0.241	0.267	0.0882	12.5	65-140%	90.7%	
	PFHpA	375-85-9	P310724044	2.86	bb	0.241	0.267	0.0806	12.5	65-145%	85.7%	
	PFOA	335-67-1	P310724044	3.09	bb	0.241	0.267	0.0655	12.5	70-150%	92.3%	
	PFNA	375-95-1	P310724044	3.35	bb	0.241	0.267	0.0512	12.5	70-155%	100.1%	
	PFDA	335-76-2	P310724044	3.06	bb	0.241	0.267	0.122	12.5	70-155%	91.5%	
	PFUnDA	2058-94-8	P310724044	3.14	bb	0.241	0.267	0.0904	12.5	70-155%	93.8%	
	PFDoA	307-55-1	P310724044	2.89	bb	0.241	0.267	0.0904	12.5	70-150%	86.4%	
	PFTrDA	72629-94-8	P310724044	2.91	bb	0.241	0.267	0.0920	12.5	65-150%	87.0%	
	PFTeDA	376-06-7	P310724044	3.00	bb	0.241	0.267	0.0688	12.5	65-150%	89.7%	
Sulfonates	PFBS	375-73-5	P310724044	2.62	bb	0.213	0.237	0.0512	11.1	65-145%	88.4%	
	PFPeS	2706-91-4	P310724044	2.98	bb	0.226	0.252	0.0684	11.8	55-160%	94.8%	
	PFHxS	355-46-4	P310724044	2.72	MM1*	0.220	0.244	0.103	11.4	60-150%	89.1%	
	PFHpS	375-92-8	P310724044	2.83	bb	0.229	0.255	0.0882	11.9	65-155%	88.7%	
	PFOS	1763-23-1	P310724044	2.56	MM1*	0.223	0.248	0.0941	11.6	65-160%	82.7%	
	PFNS	68259-12-1	P310724044	2.61	bb	0.231	0.257	0.0626	12.0	55-140%	81.1%	
	PFDS	335-77-3	P310724044	2.52	bb	0.232	0.258	0.0233	12.1	40-155%	78.0%	
	4:2 FTS	757124-72-4	P310724044	11.2	bb	0.902	1.00	0.420	46.9	60-150%	89.7%	
	PFDoS	79780-39-5	P310724044	2.51	bb	0.233	0.259	0.0643	12.1	25-160%	77.3%	
	6:2 FTS	27619-97-2	P310724044	11.0	bb	0.914	1.02	0.253	47.5	55-200%	86.9%	
	8:2 FTS	39108-34-4	P310724044	11.0	bb	0.924	1.03	0.643	48.0	70-150%	85.4%	
Sulfonmides	PFOSA	754-91-6	P310724044	2.94	bb	0.241	0.267	0.0253	12.5	70-140%	88.1%	
	N-MeFOSA	31506-32-8	P310724044	3.47	bb	0.241	0.267	0.0735	12.5	70-155%	103.7%	
	N-EtFOSA	4151-50-2	P310724044	3.36	bb	0.241	0.267	0.183	12.5	70-140%	100.5%	
	N-MeFOSE	24448-09-7	P310724044	30.7	bb	2.41	2.67	0.424	125	70-140%	91.9%	
	N-EtFOSE	1691-99-2	P310724044	31.0	bb	2.41	2.67	0.360	125	70-135%	92.7%	
PFECAs	HFPO-DA	13252-13-6	P310724044	12.5	bb	0.963	1.07	0.310	50.0	70-145%	93.7%	
	PFMBA	863090-89-5	P310724044	6.14	bb	0.481	0.535	0.219	25.0	60-150%	91.8%	
	PFMPA	377-73-1	P310724044	5.72	bb	0.481	0.535	0.100	25.0	30-140%	85.6%	
	NFDHA	151772-58-6	P020824018	7.06	bb	0.481	0.535	0.270	25.0	60-155%	105.6%	
FTCAs	3:3 FTCA	356-02-5	P310724044	13.9	bb	1.20	1.34	0.159	62.5	45-130%	82.9%	
	5:3 FTCA	914637-49-3	P310724044	14.2	bb	1.20	1.34	0.390	62.5	60-130%	85.1%	
	7:3 FTCA	812-70-4	P310724044	10.7	bb	1.20	1.34	0.270	62.5	60-150%	64.0%	
Other	ADONA	919005-14-4	P310724044	9.87	bs	0.910	1.01	0.225	47.3	70-160%	78.1%	
	9Cl-PF3ONS	756426-58-1	P310724044	11.9	bb	0.900	1.000	0.285	46.8	70-150%	95.3%	
	N-MeFOSAA	2355-31-9	P310724044	3.02	MM1*	0.241	0.267	0.136	12.5	65-155%	90.4%	
	11Cl-PF3OUdS	763051-92-9	P310724044	10.8	bs	0.910	1.01	0.227	47.3	45-160%	85.2%	
	N-EtFOSAA	2991-50-6	P310724044	2.91	MM1*	0.241	0.267	0.129	12.5	65-165%	87.0%	
	PFEESA	113507-82-7	P310724044	5.72	bs	0.428	0.476	0.0845	22.3	70-140%	96.1%	
ES	M4PFBA		P310724044		bb				100	8-130%	82.9%	
	M5PFPeA		P310724044		bs				50.0	35-130%	83.1%	
	M5PFHxA		P310724044		bs				25.0	40-130%	81.4%	
	M4PFHpA		P310724044		bs				25.0	40-130%	87.5%	
	M8PFOA		P310724044		bs				25.0	40-130%	79.1%	
	M9PFNA		P310724044		bs				12.5	40-130%	78.5%	
	M6PFDA		P310724044		bb				12.5	40-130%	77.1%	
	M7PFUdA		P310724044		bb				12.5	40-130%	70.5%	
	M2-PFDoA		P310724044		bb				12.5	40-130%	70.9%	
	13C2-PFTeDA		P310724044		bb				12.5	20-130%	66.8%	
	M3PFBS		P310724044		bb				23.3	40-135%	82.3%	
	M3PFHxS		P310724044		bs				23.7	40-130%	81.5%	
	M8PFOS		P310724044		bb				24.0	40-130%	75.1%	
	M2-4:2 FTS		P310724044		bb				46.9	40-165%	63.9%	
	M2-6:2 FTS		P020824018		bb				47.6	40-215%	77.0%	
	M2-8:2 FTS		P310724044		bb				48.0	40-275%	64.9%	
	M8PFOSA		P310724044		bb				25.0	40-130%	60.2%	
	d3-N-MeFOSA		P310724044		bb				25.0	10-130%	19.1%	
	d5-N-EtFOSA		P310724044		bb				25.0	10-130%	17.2%	
	d3-N-MeFOSAA		P310724044		bs				50.0	40-135%	73.7%	
	d5-N-EtFOSAA		P310724044		bs				50.0	40-150%	72.1%	
	d7-N-MeFOSE		P310724044		bb				250	20-130%	50.7%	
	d9-N-EtFOSE		P310724044		bb				250	15-130%	47.5%	

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-021MS				
Sampling Site					
Enthalpy ID	0724-833-021MS	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date		Instrument	Pippin	Dry Weight (g)	4.92
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 10:49	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	MS	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-	Parent Sample ID	0724-833-021-1A	Dry Wt. Equiv (g)	3.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	Flags
	M3HFPO-DA		P310724044		bb				100	40-130%	105.5%	
JS	M3PFBA		P310724044		bb				50.0	>30%	95.1%	
	M2-PFHxA		P310724044		bs				25.0	>30%	93.8%	
	M4-PFOA		P310724044		bb				25.0	>30%	92.0%	
	M5-PFNA		P310724044		bs				12.5	>30%	80.7%	
	M2-PFDA		P310724044		bb				12.5	>30%	90.6%	
	18O2PFHxS		P310724044		bb				23.7	>30%	105.3%	
	M4-PFOS		P310724044		bb				24.0	>30%	108.5%	

Peak Flags
bb1* bb;n R.H.H. 08/02/2024
MM1* MM;c R.H.H. 08/02/2024

Primary Code
b: Peak starts or ends on the baseline
d: Peak starts or ends on a drop line
v: peak starts or ends on a valley
s: Peak is a shoulder on another peak
!: Flagged peak
l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
t: Peak starts or ends at the start or end of the trace
M: The peak start or end point was manually altered
-: The peak was manually deleted
X: Point manually excluded from the calibration curve

Secondary Code
n: Peak was not integrated by the software
c: Peak was integrated incorrectly by the software
r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)
Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-021MSD				
Sampling Site					
Enthalpy ID	0724-833-021MSD	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date		Instrument	Pippin	Dry Weight (g)	4.92
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 11:12	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	MSD	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-	Parent Sample ID	0724-833-021-1A	Dry Wt. Equiv (g)	3.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	MSD RPD Limits	MSD RPD	Flags
Acids	PFBA	375-22-4	P310724045	10.7	bb	0.963	1.07	0.251	50.0	70-140%	79.7%	< 30%	10.6%	
	PFPeA	2706-90-3	P310724045	5.42	bb1*	0.481	0.535	0.0841	25.0	60-150%	81.0%	< 30%	10.9%	
	PFHxA	307-24-4	P310724045	2.64	bb	0.241	0.267	0.0882	12.5	65-140%	78.9%	< 30%	14.0%	
	PFHpA	375-85-9	P310724045	2.71	bb	0.241	0.267	0.0806	12.5	65-145%	81.0%	< 30%	5.6%	
	PFOA	335-67-1	P310724045	2.69	bb	0.241	0.267	0.0655	12.5	70-150%	80.4%	< 30%	13.8%	
	PFNA	375-95-1	P310724045	2.95	bb	0.241	0.267	0.0512	12.5	70-155%	88.3%	< 30%	12.6%	
	PFDA	335-76-2	P310724045	2.62	bb	0.241	0.267	0.122	12.5	70-155%	78.4%	< 30%	15.3%	
	PFUnDA	2058-94-8	P310724045	2.85	bb	0.241	0.267	0.0904	12.5	70-155%	85.2%	< 30%	9.7%	
	PFDoA	307-55-1	P310724045	2.63	bb	0.241	0.267	0.0904	12.5	70-150%	78.7%	< 30%	9.4%	
	PFTrDA	72629-94-8	P310724045	2.48	bb	0.241	0.267	0.0920	12.5	65-150%	74.3%	< 30%	15.8%	
	PFTeDA	376-06-7	P310724045	2.58	bb	0.241	0.267	0.0688	12.5	65-150%	77.2%	< 30%	15.0%	
Sulfonates	PFBS	375-73-5	P310724045	2.22	bb	0.213	0.237	0.0512	11.1	65-145%	74.7%	< 30%	16.7%	
	PFPeS	2706-91-4	P310724045	2.51	bb	0.226	0.252	0.0684	11.8	55-160%	79.9%	< 30%	17.0%	
	PFHxS	355-46-4	P310724045	2.40	MM1*	0.220	0.244	0.103	11.4	60-150%	78.5%	< 30%	12.7%	
	PFHpS	375-92-8	P310724045	2.50	bb	0.229	0.255	0.0882	11.9	65-155%	78.4%	< 30%	12.3%	
	PFOS	1763-23-1	P310724045	2.33	MM1*	0.223	0.248	0.0941	11.6	65-160%	75.1%	< 30%	9.6%	
	PFNS	68259-12-1	P310724045	2.44	bb	0.231	0.257	0.0626	12.0	55-140%	76.0%	< 30%	6.5%	
	PFDS	335-77-3	P310724045	2.37	bb	0.232	0.258	0.0233	12.1	40-155%	73.6%	< 30%	5.9%	
	4:2 FTS	757124-72-4	P310724045	9.43	bb	0.902	1.00	0.420	46.9	60-150%	75.3%	< 30%	17.4%	
	PFDoS	79780-39-5	P310724045	2.36	bb	0.233	0.259	0.0643	12.1	25-160%	72.7%	< 30%	6.1%	
	6:2 FTS	27619-97-2	P310724045	9.59	bb	0.914	1.02	0.253	47.5	55-200%	75.5%	< 30%	14.1%	
	8:2 FTS	39108-34-4	P310724045	9.16	bb	0.924	1.03	0.643	48.0	70-150%	71.4%	< 30%	17.9%	
Sulfonmides	PFOSA	754-91-6	P310724045	2.50	bb	0.241	0.267	0.0253	12.5	70-140%	74.7%	< 30%	16.4%	
	N-MeFOSA	31506-32-8	P310724045	3.06	bb	0.241	0.267	0.0735	12.5	70-155%	91.6%	< 30%	12.4%	
	N-EtFOSA	4151-50-2	P310724045	3.02	bb	0.241	0.267	0.183	12.5	70-140%	90.2%	< 30%	10.8%	
	N-MeFOSE	24448-09-7	P310724045	27.8	bb	2.41	2.67	0.424	125	70-140%	83.1%	< 30%	10.1%	
	N-EtFOSE	1691-99-2	P310724045	27.4	bb	2.41	2.67	0.360	125	70-135%	82.0%	< 30%	12.2%	
PFECAs	HFPO-DA	13252-13-6	P310724045	11.0	bb	0.963	1.07	0.310	50.0	70-145%	82.6%	< 30%	12.6%	
	PFMBA	863090-89-5	P310724045	5.45	bb	0.481	0.535	0.219	25.0	60-150%	81.5%	< 30%	11.9%	
	PFMPA	377-73-1	P310724045	5.10	bb	0.481	0.535	0.100	25.0	30-140%	76.3%	< 30%	11.6%	
	NFDHA	151772-58-6	P020824019	6.12	bb	0.481	0.535	0.270	25.0	60-155%	91.5%	< 30%	14.3%	
FTCAs	3:3 FTCA	356-02-5	P310724045	12.5	bb	1.20	1.34	0.159	62.5	45-130%	74.5%	< 30%	10.7%	
	5:3 FTCA	914637-49-3	P310724045	12.5	bb	1.20	1.34	0.390	62.5	60-130%	74.6%	< 30%	13.1%	
	7:3 FTCA	812-70-4	P310724045	10.7	bb	1.20	1.34	0.270	62.5	60-150%	63.9%	< 30%	0.1%	
Other	ADONA	919005-14-4	P310724045	8.02	MM1*	0.910	1.01	0.225	47.3	70-160%	63.5%	< 30%	20.6%	Q
	9Cl-PF3ONS	756426-58-1	P310724045	11.0	bs	0.900	1.000	0.285	46.8	70-150%	87.9%	< 30%	8.0%	
	N-MeFOSAA	2355-31-9	P310724045	2.77	MM1*	0.241	0.267	0.136	12.5	65-155%	82.8%	< 30%	8.8%	
	11Cl-PF3OUdS	763051-92-9	P310724045	9.74	bb	0.910	1.01	0.227	47.3	45-160%	77.1%	< 30%	10.0%	
	N-EtFOSAA	2991-50-6	P310724045	2.51	MM1*	0.241	0.267	0.129	12.5	65-165%	75.0%	< 30%	14.9%	
	PFEESA	113507-82-7	P310724045	4.88	bb	0.428	0.476	0.0845	22.3	70-140%	82.1%	< 30%	15.8%	
ES	M4PFBA		P310724045		bb				100	8-130%	88.3%			
	M5PFPeA		P310724045		bs				50.0	35-130%	88.6%			
	M5PFHxA		P310724045		bs				25.0	40-130%	91.3%			
	M4PFHpA		P310724045		bs				25.0	40-130%	90.7%			
	M8PFOA		P310724045		bs				25.0	40-130%	87.3%			
	M9PFNA		P310724045		bb				12.5	40-130%	82.2%			
	M6PFDA		P310724045		bb				12.5	40-130%	82.0%			
	M7PFUdA		P310724045		bs				12.5	40-130%	74.4%			
	M2-PFDoA		P310724045		bb				12.5	40-130%	78.2%			
	13C2-PFTeDA		P310724045		bb				12.5	20-130%	74.1%			
	M3PFBS		P310724045		bb				23.3	40-135%	92.6%			
	M3PFHxS		P310724045		bb				23.7	40-130%	85.1%			
	M8PFOS		P310724045		bb				24.0	40-130%	79.8%			
	M2-4:2 FTS		P310724045		bb				46.9	40-165%	74.1%			
	M2-6:2 FTS		P020824019		bb				47.6	40-215%	85.4%			
	M2-8:2 FTS		P310724045		bs				48.0	40-275%	75.7%			
	M8PFOSA		P310724045		bs				25.0	40-130%	70.0%			
	d3-N-MeFOSA		P310724045		bb				25.0	10-130%	26.3%			
	d5-N-EtFOSA		P310724045		bb				25.0	10-130%	20.7%			
	d3-N-MeFOSAA		P310724045		bs				50.0	40-135%	77.6%			
	d5-N-EtFOSAA		P310724045		bs				50.0	40-150%	82.1%			
	d7-N-MeFOSE		P310724045		bb				250	20-130%	52.4%			
	d9-N-EtFOSE		P310724045		bb				250	15-130%	48.9%			

Enthalpy Analytical

Job No.: 0724-833-3 EPA Method 1633 compliant with Table B-24 (soils/solids)

Florida Gulf Coast University 240617-FGCU-PFAS

Details

Sample Name	0724-833-021MSD				
Sampling Site					
Enthalpy ID	0724-833-021MSD	Prep Batch	EU17844	Tare Weight (g)	0.98
Matrix	Solids	Analyst	ext-richardhuntwork	Wet Weight (g)	6.3
Sampling Date		Instrument	Pippin	Dry Weight (g)	4.92
Received Date		Sample Vol mL	N/A	Extr. Mass (g)	5.05
Prep Date	2024-07-24 15:28	Extract Vol mL	5	Net Weight (g)	5.32
AnalysisDate	2024-08-01 11:12	Split Factor	N/A	Dry Weight (g)	4.92
SampleType	MSD	Method Code	WM-B-24-Solid	% Solids	74.1%
Bottle ID	-	Parent Sample ID	0724-833-021-1A	Dry Wt. Equiv (g)	3.74

	Compound	CAS	Injection File Name	Sample Concentration ng/g	Peak Flags	LOD ng/g	LOQ ng/g	DL ng/g	Spike Amt. (ng)	Recovery Limits	Recovery	MSD RPD Limits	MSD RPD	Flags
	M3HFPO-DA		P310724045		bs				100	40-130%	113.1%			
JS	M3PFBA		P310724045		bb				50.0	>30%	93.8%			
	M2-PFHxA		P310724045		bb				25.0	>30%	90.9%			
	M4-PFOA		P310724045		bb				25.0	>30%	90.5%			
	M5-PFNA		P310724045		bs				12.5	>30%	81.4%			
	M2-PFDA		P310724045		bb				12.5	>30%	91.2%			
	18O2PFHxS		P310724045		bb				23.7	>30%	105.5%			
	M4-PFOS		P310724045		bb				24.0	>30%	103.5%			

Peak Flags bb1* bb;n R.H.H. 08/02/2024
MM1* MM;c R.H.H. 08/02/2024

Primary Code
- b: Peak starts or ends on the baseline
- d: Peak starts or ends on a drop line
- v: peak starts or ends on a valley
- s: Peak is a shoulder on another peak
- !: Flagged peak
- l: The response would either give a negative concentration or the calibration equation is not solvable for the given response (indeterminate flag)
- t: Peak starts or ends at the start or end of the trace
- M: The peak start or end point was manually altered
- -: The peak was manually deleted
- X: Point manually excluded from the calibration curve

Secondary Code
- n: Peak was not integrated by the software
- c: Peak was integrated incorrectly by the software
- r: The wrong peak was integrated by the software creating a false positive result based on retention time, qualifier ratios, or other criteria

Sample Custody

0724-833

Chain of Custody Record

ENTHALPY ANALYTICAL

Enthalpy Ultratrace Job#: 240617-FGCU-PFAS COC Page 1 of 2

Special Handling:
- [x] Standard Turn Around Time
- [ ] Rush Turn Around Time -- Date Needed_____
- All Fast TATs Subject to Approval by Enthalpy Analytical, LLC
- All Samples Disposed of After 6 months Unless Otherwise Instructed.

Enthalpy Analytical-Wilmington, NC has added enhancements to standard methods to improve accuracy, precision and permit an assessment of laboratory performance in the context of your specific data needs.

Client Name: Gayle Dendinger
Project Manager: Marsha Ellis
Report To: Serge Thomas

Project Number: 240617-FGCU-PFAS
Site Name: Lehigh Acres Wells/Heron's Landing
Location: Lehigh Acres / Sanibel Island

PO#: N/A
Telephone#: (239) 822-7826
Email: marshaellis22@gmail.com

This Chain of Custody is applicable to Non-Air samples. Standard TAT differ per analysis and are provided by request.

Client Special Instructions: Opted for EPA 1633 not DOD FL

NO Field or Blank with DW samples (DSS_S1/DSS_S2)

Matrix: GW-Groundwater, WW-Wastewater, NW-Non-Potable Water, DW-Drinking Water, S-Soil, SL-Sludge, BT-Biological Tissue, O-Other

Type: G=Grab C=Composite Q=Quality Control

SAMPLED BY:

Analyte list selections for PFAS by Isotope Dilution: PF = PFOA/PFOS; L24 = Legacy 24 + GenX; P49 = PFAS 49 List; CL = custom list attached

Sample ID	Date	Time	Sample Volume	Type	Matrix	# of Bottles	# of Jars	# of Bags	# Other	PFAS by Isotope Dilution method	Drinking water EPA 533	Drinking water EPA 537.1	PFAS by Isotope Dilution 1633 list	PFAS by DoD Draft 1633 Method	Total Oxidizable Precursor (TOP)	Dioxins/Furans Method 8290A	Dioxins/Furans Method 1613B	Samples to hold	Analyte List and Notes:
DSS_S1	7.16.24	6:10pm	2x 250ml	~~DW~~ Grab	DW	2					X								Standard List (49)
DSS_S2	7.16.24	6:40pm	2x 250ml	~~DW~~ Grab	DW	2					X								Standard List (49)
SCL74_W1	7.17.24	10:48AM	2x 500ml+	Grab	NW	3							X						Standard List of (49)
SCL74_FIELD BLANK	7.17.24	10:48AM	2x 500ml+	~~Blank~~ QC	NW	3							X						"
SCL74_C1	7.17.24	10:48AM	N/A	Grab	S	1	1						X						"
SCL74_S1	7.17.24	10:48AM	N/A	Grab	S	1	1						X						"
SCL74-LS1	7.17.24	10:48AM	N/A	Grab	S	1	1						X						"
SCL74-W2	7.17.24	11:40AM	2x 500 250ml+	Grab	NW	3							X						"
SCL74_C2	7.17.24	11:40AM	N/A	Grab	S	1	1						X						"
SCL74_S2	7.17.24	11:40AM	N/A	Grab	S	1	1						X						"
SCL74_LS2	7.17.24	11:40AM	N/A	Grab	S	1	1						X						"
SCL74_W3	7.17.24	12:15PM	2x 500ml+ N/A	Grab	NW	3							X						"
SCL74_C3	7.17.24	12:15PM	N/A	Grab	S	1	1						X						"

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Temperature Upon Receipt:
		C. McMullan	7.18.24	1011	[x] Iced [ ] Ambient °C 7.0
					[ ] Iced [ ] Ambient °C_____
					[ ] Iced [ ] Ambient °C_____

Ship samples to: 2712A Exchange Drive • Wilmington, NC 28405 Office: 2714 Exchange Drive • Wilmington, NC 28405 • (910) 212-5858 • www.enthalpy.com

0724-833

Chain of Custody Record

Enthalpy Ultratrace Job#: 240617-76CU-PFAS COC Page 2 of 2

Special Handling:
- ☒ Standard Turn Around Time
- ☐ Rush Turn Around Time -- Date Needed_____
- All Fast TATs Subject to Approval by Enthalpy Analytical, LLC
- All Samples Disposed of After 6 months Unless Otherwise Instructed.

Enthalpy Analytical-Wilmington, NC has added enhancements to standard methods to improve accuracy, precision and permit an assessment of laboratory performance in the context of your specific data needs.

Client Name: Gayle Dendinger
Project Manager: Marsha Ellis
Report To: Serge Thomas

Project Number: 240617-FGCU-PFAS
Site Name: Heron's Landing
Location: Sanibel Island, FL

PO#: N/A
Telephone#: (239) 822-7826
Email: marshaellis22@gmail.com

This Chain of Custody is applicable to Non-Air samples. Standard TAT differ per analysis and are provided by request.

Client Special Instructions: opted for EPA 1633 not DOD

Matrix: GW-Groundwater, WW-Wastewater, NW-Non-Potable Water, DW-Drinking Water, S-Soil, SL-Sludge, BT-Biological Tissue, O-Other

Type: G=Grab C=Composite Q=Quality Control

SAMPLED BY:

Sample ID	Date	Time	Sample Volume	Type	Matrix	Sample Containers: # of Bottles	# of Jars	# of Bags	# Other	Analyses: PFAS by Isotope Dilution method	Drinking water EPA 533	Drinking water EPA 537.1	PFAS by Isotope Dilution 1633 list	PFAS by DoD Draft 1633 Method	Total Oxidizable Precursor (TOP)	Dioxins/Furans Method 8290A	Dioxins/Furans Method 1613B	Samples to hold		
SCL74_S3	7.17.24	12:15pm	N/A	GRAB	S	NM	1						X							
SCL74_Sand3	7.17.24	12:15pm	N/A	Grab	S		1						X							
SCL74_WSURF	7.17.24	12:40PM	2x500ml+	Grab	NW	3							X							
SCL74_W4	7.17.24	12:48pm	2x500ml+	Grab	NW	3							X							
SCL74_WSKim	7.17.24	1:08PM	2x500ml+	Grab	NW	3							X							
SCL74_C4	7.17.24	1:08PM	N/A	Grab	S		1						X							
SCL74_S4	7.17.24	1:08PM	N/A	Grab	S		1						X							
SCL74_Sand4	7.17.24	1:08PM	N/A	Grab	S		1						X							

Analyte list selections for PFAS by Isotope Dilution

PF = PFOA/PFOS
L24 = Legacy 24 + GenX
P49 = PFAS 49 List
CL = custom list attached

Analyte List and Notes:

Stand List of (40)
Stand List of (40)
"
"
"
"
"
"
"

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Temperature Upon Receipt:
		C. McMullen	7.18.24	1011	☑ Iced ☐ Ambient °C 7.0
					☐ Iced ☐ Ambient °C_____
					☐ Iced ☐ Ambient °C_____

Ship samples to: 2712A Exchange Drive • Wilmington, NC 28405 **Office: 2714 Exchange Drive • Wilmington, NC 28405 • (910) 212-5858 • www.enthalpy.com**

JOB ID: 0724-833 Date / Time: 7/18/24 10:11 Initials: C.A.M

OR

Client: Florida Gulf Coast University

Cooler 1 of 1

Temp °C: 7.0 Thermometer ID: T15

Received via
FedEx ☐
UPS ☑
DHL ☐
USPS ☐
Courier ☐
Other ☐

Check one	
On ice:	☑
Melted ice:	☐
Ambient:	☐

Check one	
in a Box:	☐
in a Cooler:	☑
Cooler in Box:	☐

	Yes	No
Cooler seals:	☐	☑
Sample seals:	☐	☑
Good condition:	☑	☐

Comment:

Cooler ____ of ____

Temp °C: ____ Thermometer ID: ____

Received via
FedEx ☐
UPS ☐
DHL ☐
USPS ☐
Courier ☐
Other ☐

Check one	
On ice:	☐
Melted ice:	☐
Ambient:	☐

Check one	
in a Box:	☐
in a Cooler:	☐
Cooler in Box:	☐

	Yes	No
Cooler seals:	☐	☐
Sample seals:	☐	☐
Good condition:	☐	☐

Comment:

Cooler ____ of ____

Temp °C: ____ Thermometer ID: ____

Received via
FedEx ☐
UPS ☐
DHL ☐
USPS ☐
Courier ☐
Other ☐

Check one	
On ice:	☐
Melted ice:	☐
Ambient:	☐

Check one	
in a Box:	☐
in a Cooler:	☐
Cooler in Box:	☐

	Yes	No
Cooler seals:	☐	☐
Sample seals:	☐	☐
Good condition:	☐	☐

Comment:

SERGE THOMAS
MIEL'S APIARY
17850 DEVORE LANE
FORT MYERS FL 33913

60 LBS

1 OF 1

DWT: 24,14,14
AH

SHIP TO:
IP VERHEUL
ENTHALPY ANALYTICAL
2712A EXCHANGE DR
WILMINGTON NC 28405-6459

NC 284 0-01

UPS NEXT DAY AIR 1

TRACKING #: 1Z G53 7J4 01 2195 8423

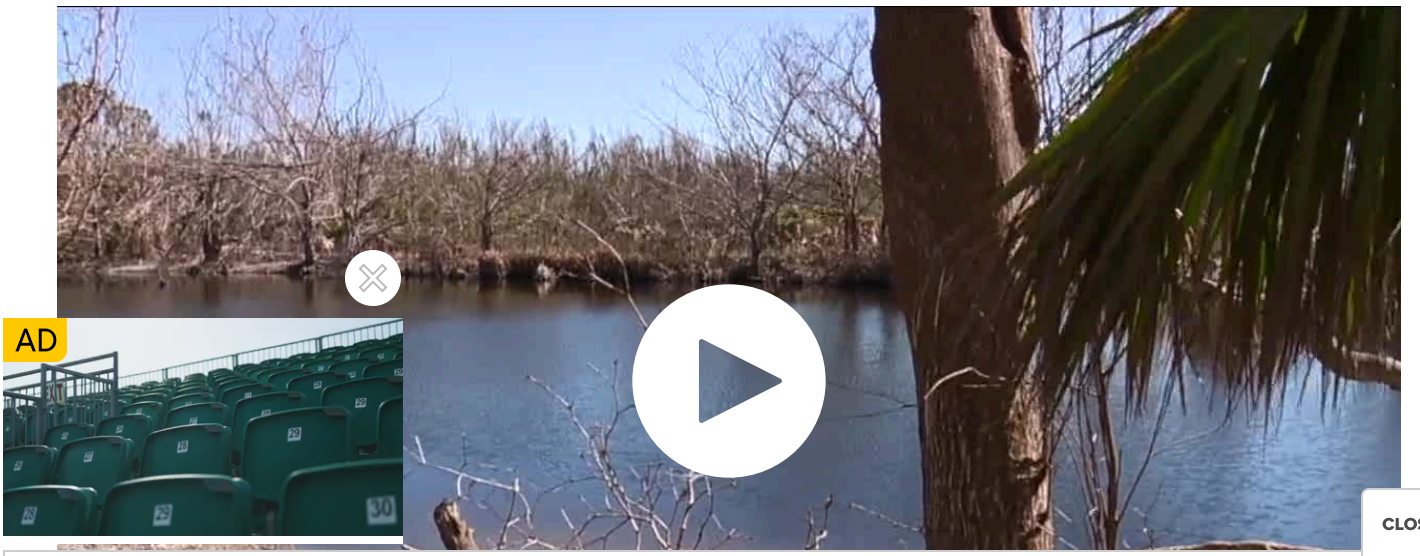
ENTHALPY ANALYTICAL

2023/01/24

This Is The Last Page Of This Report.

ENTHALPY ANALYTICAL

Ian's storm surge changed Sanibel's freshwater lake environments and now brings a new algae concern



Ian's storm surge changed Sanibel's freshwater lake environments


By: Andrew Shipley

Posted 6:21 PM, Feb 15, 2023 and last updated 6:46 PM, Mar 02, 2023

SANIBEL, Fla. — Like many things in Sanibel, after Hurricane Ian, the environment changed significantly. Ponds that once were freshwater before the storm, are now saltwater. That is due to the 8 to 14 feet of storm surge that occurred on Sanibel. And now, that change going back to freshwater could be a slow-go to reverse.

“I expect it to last 1 to 4 years depending on the pond,” said Dr. Serge Thomas with Florida Gulf Coast University’s Water School. Hurricane Ian’s storm surge changed these lakes and ponds in 24 hours' time.

“All the life that was in those lakes pretty much died off immediately,” said Mark Thompson, a research associate with the Sanibel Captiva Conservation Foundation. “We lost fish. We lost plants. We lost everything that depended on them to survive in our freshwater habitat.”

The changes in salinity are being studied separately by both SCCF and FGCU’s Water School. Both organizations are clear that these changes could cause algae blooms of all types over the next few years.

“We are going to get different kinds of algae blooms in our lakes that people haven’t seen before, just because they are in different habits than before,” said Thompson. “But, there is always going to be some kind of algae that wants to bloom no matter what kind of water you have in your system.”

But why? Dr. Serge Thomas said it is due to the nutrient loading that was in the freshwater lakes prior to Ian.

nutrient nitrogen-rich pond that is in salt water, which actually triggers the algae blooms."

Thompson agrees. He says the best thing we can do is wait it out. And when these become freshwater ecosystems again, we then can address the potential algae issue and remove nutrients that can spark new blooms.

But there's really not much you can do other than wait for the rain. Once we get rain in the system, it will start fresh again, and we then can look at the proper plants in the yard to proper plants in our lakes to control the nutrients.

The clear consensus is it will take some time for the systems to flush themselves out and return to their pre-Ian status. Dr. Thomas adds that this research is key because it hasn't been well documented after previous hurricanes and this could help other locations prepare and recover.