Status Update Report-June 2023

For Site:

WALMART STORE #5667
222 N. Chicago Avenue
South Milwaukee
Milwaukee County, Wisconsin 53172
WDNR BRRTS Nos. 02-41-556117 & 02-41-556175

Prepared for:

WALMART, INC.
702 SW 8th Street
Bentonville, AR 72716

Prepared by:

Professional Service Industries, Inc.
821 Corporate Court
Waukesha, WI 53189
Telephone (262) 521-2125

PSI Project Number 00542644

July 31, 2023

Patrick J. Patterson, P.E., P.G.
Senior Engineer

Larry Raether, P.E.
Principal Consultant

PSI Project 00542644
Walmart Store #5667
July 31, 2023
BRRTS No. 02-41-556117 & 02-41-556175

Professional Service Industries, Inc.
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WDNR-Remediation and Redevelopment Program
1027 West St. Paul Avenue
Milwaukee, Wisconsin 53233

Attn: Eric Amadi
Advanced Hydrogeologist
Eric.Amadi@Wisconsin.gov

Re: Status Update Report-PFAS Groundwater Sampling-June 2023
CITY OF S. MILWAUKEE VACANT PARCEL AND MIDWEST TANNING CORP. (FMR)
222 N. Chicago Avenue
South Milwaukee, Wisconsin 53172
WDNR BRRTS No. 02-41-556117 & 02-41-556175
PSI Project Number: 00542644

Dear Mr. Amadi:

In June 2023, Professional Service Industries, Inc. (PSI), an Intertek Company, performed a groundwater sampling event on the groundwater wells associated with the above referenced City of S. Milwaukee Vacant Parcel and Midwest Tanning Corp. (Fmr) parcels (Subject Property) for Walmart, Inc. These activities have been completed in accordance with WDNR PFAS sampling requirements. The following is a summary of the work performed, and a field data evaluation and review of the laboratory analytical results for this sampling event.

If you have any questions or comments, please call us at (262) 521-2125.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Patrick J. Patterson, P.E., P.G.
Senior Engineer
Environmental Services

Larry Raether, P.E.
Principal Consultant
Environmental Services

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1.0 EXECUTIVE SUMMARY

The Subject Property consists of an approximate 9.6-acre commercial parcel located at 222 N. Chicago Avenue in the City of South Milwaukee, Wisconsin. An approximate 113,000 square foot commercial structure is situated in the western portion of the parcel. Asphalt parking areas, concrete drives and sidewalks, and isolated landscaped areas are present generally located to the north, east and west of the building. The Subject Property is currently used as Walmart Supercenter #5667 and these services were performed for Walmart, Inc.

The surrounding properties to the north, east, and south are generally occupied by commercial, manufacturing facilities and multifamily properties. An existing railroad line is present to the west of the Subject Property.

Two Phase I Environmental Site Assessments (Phase I ESA) were performed by PSI in 2010 for Walmart. One of the Phase I ESAs was completed on the eastern parking lot portion of the existing Walmart property (Subject Property), which was historically occupied by several manufacturing and commercial facilities and residences. One of the manufacturing facilities included the former Rapco Leather Company. The other Phase I ESA was completed on the western portion of the Subject Property that is currently occupied by the existing Walmart store, which was historically occupied by Midwest Tanning Corporation.

Numerous site investigation activities have been completed on the entire Walmart property from the 1990s to present day. Contamination from previous historical property usages on both parcels has been detected in both soil and groundwater. These contaminants generally consist of RCRA Metals, Polynuclear Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and other compounds. During the site development of the existing Walmart Store #5667, approximately 95,000 tons of impacted soil were removed from the Subject Property and disposed of at a WDNR licensed disposal facility. Residual soil contamination remains on the property within the upper 4-feet, but the residual contamination is covered with at least two feet of landscaped lawn surface, existing building pad, or asphalt parking area which addresses the direct contact exposure pathway.

In a letter issued August 17, 2020, the WDNR stated that responsible parties (RPs) are required to assess for emerging contaminants and their potential impacts on all sites that have not yet been closed. Emerging contaminants include perfluoroalkyl and polyfluoroalkyl substances (PFAS), 1,4-dioxane and other compounds. If a property is deemed a potential source of an emerging contaminants, an evaluation of potential PFAS compounds and other applicable emerging contaminants that were historically or are presently produced, used, handled, stored, or disposed at the site, per Wis. Admin. Code § NR 716.07 and Wis. Admin. Code § NR 716.09 would need to be performed.

Because of the August 17, 2020, WDNR letter and since both parcels were formerly occupied by tanning facilities or facilities that handled tanned products, a potential exists that PFAS containing materials were used, handled, stored, or disposed on these parcels. As such, it was recommended that associated investigative activities be performed to evaluate the presence of PFASs within the groundwater at six existing wells located on the Walmart property. These wells consist of MW-1 and MW-2 that are present in the eastern portion of the Subject Property and MW-4 through MW-7 that are present in the western portion of the Subject Property. The previous well MW-3 was present on the Burger King restaurant parcel located on the northwest corner of N. Chicago Avenue and Davis Avenue but was abandoned prior to the development of the restaurant. In review of the historical property information, no obvious evidence of the use, handling, storage, or the disposal of 1,4-dioxane or other compounds on the Subject Property was observed or apparent within the evaluated

data. As such, further evaluation for the presence of 1,4-dioxane or other compounds is not warranted.

In accordance with a letter issued by the WDNR on April 6, 2021, which indicated that vaporized Trichloroethene (TCE) in indoor air is more toxic than previously understood, specifically in situations where women of child-bearing years are present, an evaluation of the potential presence of TCE contaminants was performed. The evaluation included the review of available historical property usage documents, aerial photographs, Sanborn fire insurance maps and other historical resources for the past usage of TCE. PSI also reviewed available analytical test results for TCE that are associated with previous and recent investigative activities.

In review of the available historical property use information and other collected environmental data, the previous property usage does not have the likely potential for the presence of vaporized TCE. In addition, no obvious evidence was collected that indicated that the onsite subsurface material contained vaporized TCE contaminants. Based upon the soil and groundwater analytical testing and the petroleum impacted soil remedial activities performed on the Subject Property, there is no obvious evidence that vaporized TCE is present on the Subject Property. Further, in review of the vapor analytical testing of the samples collected from subsurface vapor points, no vaporized TCE was detected in any of the collected vapor samples.

On August 19, 2022, PSI collected five (5) groundwater samples from five of the existing wells. One of the wells was dry at the time of sampling. PFASs were detected in most of the water samples and several of them were above recommended NR140 standards. Because of these test results and to further evaluate the groundwater conditions, PSI recommended the completion of another groundwater sampling event to test for PFASs.

On February 6, 2023, PSI collected five (5) groundwater samples from five of the existing wells. One of the wells was dry at the time of sampling. PFASs were detected in most of the water samples and several of them were above recommended NR140 standards. Because of these test results and to further evaluate the groundwater conditions, PSI recommended the completion of another groundwater sampling event to test for PFASs.

Following approval from Walmart on June 9, 2023, PSI collected groundwater samples from five of the existing wells. One of the wells was dry at the time of sampling. PFASs were detected in the collected water samples. However, the detected compounds in MW-6 were at levels below recommended NR140 standards or were indicated as laboratory estimated values and considered as not accurate. Only one compound was detected at a level above its recommended NR140 PAL, but below its recommended NR140 ES in the sample collected from MW-1. Several compounds detected in the samples collected from MW-4, MW-5 and MW-7 were above recommended NR140 standards. MW-4, MW-5, and MW-7 are located south of the existing Walmart store and near the southern portion of the former Midwest Tanning facility. Because of these test results and in accordance with WDNR groundwater monitoring requirements, PSI recommends the completion of another groundwater sampling event to test for PFASs.

This summary is not to be used alone. The report must be read in its entirety.

2.0 INTRODUCTION AND BACKGROUND

2.1 SITE DESCRIPTION

The Subject Property consists of an approximate 9.6-acre commercial parcel located at 222 N. Chicago Avenue in the City of South Milwaukee, Wisconsin. An approximate 113,000 square foot commercial structure is situated in the western portion of the parcel. Asphalt parking areas, concrete drives and sidewalks, and isolated landscaped areas are present generally located to the north, east and west of the building. The Subject Property is currently used as Walmart Supercenter #5667. The general location of the Subject Property is shown on the Site Location Map in the Appendix.

The surrounding properties to the north, east, and south are generally occupied by commercial and manufacturing facilities and multifamily properties. An existing railroad line is present to the west of the Subject Property. A diagram showing the general site features is also included in the Appendix.

2.2 PROJECT BACKGROUND

Two Phase I Environmental Site Assessments (Phase I ESA) were performed by PSI in 2010 for Walmart. One of the Phase I ESAs was completed on the eastern parking lot portion of the existing Walmart property (Subject Property), which was historically occupied by several manufacturing and commercial facilities and residences. One of the manufacturing facilities included the former Rapco Leather Company. This portion of the Subject Property is referenced by the WDNR as "City of South Milwaukee Vacant Parcel" and assigned BRRTS No. 02-41-556175. The other Phase I ESA was completed on the western portion of the Subject Property that is currently occupied by Walmart Store #5667, which was historically occupied by Midwest Tanning Corporation. This portion of the Subject Property is referenced by the WDNR as "Midwest Tanning Corp. (Fmr)" and assigned BRRTS No. 02-41-556117.

Numerous site investigation activities have been completed on the entire Walmart property from the 1990s to present day. Contamination from previous historical property usages on both parcels has been detected in both soil and groundwater. These contaminants generally consist of RCRA Metals, Polynuclear Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and other compounds. During the site development of the existing Walmart Store #5667 in 2012, approximately 95,000 tons of impacted soil were removed from large areas of the Subject Property and disposed of at a WDNR licensed disposal facility. Residual soil contamination remains on the property within the upper 4-feet, but the residual contamination is covered with at least two feet of landscaped lawn surface, existing building pad, or asphalt parking area which addresses the direct contact exposure pathway.

In a letter issued August 17, 2020, the WDNR stated that responsible parties (RPs) are required to assess for emerging contaminants and their potential impacts on all sites that have not yet been closed. Emerging contaminants include perfluoroalkyl and polyfluoroalkyl substances (PFAS), 1,4-dioxane and other compounds. If a property is deemed a potential source of an emerging contaminants, an evaluation of potential PFAS compounds and other applicable emerging contaminants that were historically or are presently produced,

used, handled, stored, or disposed at the site, per Wis. Admin. Code § NR 716.07 and Wis. Admin. Code § NR 716.09 would need to be performed.

Because of the August 17, 2020, WDNR letter and since both parcels were formerly occupied by tanning facilities or facilities that handled tanned products, a potential exists that PFAS containing materials were used, handled, stored, or disposed on these parcels. As such, it was recommended that associated investigative activities be performed to evaluate the presence of PFASs within the groundwater associated with six existing wells present on the Walmart property. These wells consist of MW-1 and MW-2 that are present in the eastern portion of the Subject Property and MW-4 through MW-7 that are present in the western portion of the Subject Property. The previous well MW-3 was present on the Burger King restaurant parcel located on the northwest corner of N. Chicago Avenue and Davis Avenue but was abandoned prior to the development of the restaurant.

In review of the historical property information, no obvious evidence of the use, handling, storage, or the disposal of 1,4-dioxane or other compounds on the Subject Property was observed or apparent within the evaluated data. As such, further evaluation for the presence of 1,4-dioxane or other compounds is not warranted.

A Site Investigation Workplan, dated July 29, 2022, was prepared in accordance with WDNR requirements and submitted to the WDNR for inclusion into their files on August 12, 2022. The WDNR subsequently contacted PSI to briefly discuss the SIWP. They indicated that they concur that groundwater sampling for the presence of PFAS should occur, but they indicated that additional site investigative activities may be required in the future to complete the site investigation of the Subject Property.

In accordance with a letter issued by the WDNR on April 6, 2021, which indicated that vaporized Trichloroethene (TCE) in indoor air is more toxic than previously understood, specifically in situations where women of child-bearing years are present, an evaluation of the potential presence of TCE contaminants was performed in August 2022. The evaluation included the review of available historical property usage documents, aerial photographs, Sanborn fire insurance maps and other historical resources for the past usage of TCE. PSI also reviewed available analytical test results for TCE that are associated with previous and recent investigative activities. The evaluation did not indicated the use of Trichloroethene (TCE) on the Subject Property or evidence of the presence of high concentrations of TCE within previously collected soil, groundwater, and soil vapor samples from historical investigative activities. As such, further evaluation for vaporized TCE is not warranted.

On August 19, 2022, PSI collected five (5) groundwater samples from five of the existing wells. One of the wells was dry at the time of sampling. PFASs were detected in most of the water samples and several of them were above recommended NR140 standards. Because of these test results and to further evaluate the groundwater conditions, PSI recommended the completion of another groundwater sampling event to further test for the presence of PFASs.

On February 6, 2023, PSI collected five (5) groundwater samples from five of the existing wells. The sixth well was dry on this date. PFASs were detected in most of the water samples. However, only several PFASs detected in three of the wells were above recommended NR140 standards. Because of these test results and in accordance with WDNR groundwater sampling procedures, PSI recommended the completion of another groundwater sampling event to test for PFASs.

Because of the previous analytical test results, additional groundwater sampling activities for the presence of PFASs were completed in June 2023 for Walmart, Inc. and are discussed in the following paragraphs.

2.3 PURPOSE

The purpose of this report is to present the groundwater conditions encountered during the June 2023 groundwater sampling event of five of the existing six groundwater wells, and laboratory test results of submitted groundwater samples. The laboratory analyses included testing for the presence of PFASs/PFOSs. One of the groundwater monitoring wells was dry at the time of the sampling event and not sampled. Groundwater elevations were obtained during these recent activities.

The activities are not intended to be an all-inclusive search for hazardous substances and do not necessarily preclude the presence of other compounds or contaminants in this or other areas of the Subject Property.

3.0 GROUNDWATER INVESTIGATIVE ACTIVITIES

3.1 SCOPE SUMMARY

The scope of services described in this report included the purging of five wells, the collection and laboratory testing of groundwater samples from MW-1 and MW-4 through MW-7 on June 9, 2023, and an evaluation of the data obtained. MW-2 was dry at the time of this sampling event. The groundwater samples were submitted for analysis for the presence of PFASs/PFOSs. A well location diagram is included in the Appendix.

3.2 PREVIOUS FIELD EXPLORATION

Site investigative activities have been performed within the area of the Subject Property from the early 1990s to about 2014. This data was subsequently submitted to the WDNR for their review and comment in several documents and WDNR forms. Two separate Wisconsin Department of Natural Resources' (WDNR) Bureau of Remediation and Redevelopment Tracking (BRRTS) cases were created for the Subject Property. They consisted of the Former Midwest Tanning Corporation Parcel (BRRTS No. 02-41-556117) with a former address of 1200 Davis Avenue and is situated in the western portion of the site, and the City of South Milwaukee Vacant Parcel (BRRTS No. 02-41-556175), which is situated in the eastern portion of the site. Both sites have been investigated from the 1990s through 2014. In addition, remedial actions have been performed on the Subject Property prior to and during the existing site development of the Walmart Store in 2012.

Following past investigative and remedial activities, PSI submitted case closure requests to the WDNR for the Former Midwest Tanning Corporation parcel in 2016 and for the City of South Milwaukee Vacant Parcel in 2018. In the Midwest Tanning Corp case, the WDNR requested that additional investigation be performed around a previous soil boring completed by another consultant with high levels of Chromium to further evaluate for the presence of Hexavalent Chromium, Trivalent Chromium and Total Chromium in soil and groundwater and, also to evaluate for the presence of Cyanide in soil. In the City of South Milwaukee Vacant Parcel case, the WDNR requested revisions be completed for the submitted case closure document and an

evaluation of potential for vapor intrusion along migration pathways pertaining to requirements expressed in the WDNR document RR-800 “Addressing Vapor intrusion”.

PSI completed additional site investigation activities on both BRRTS cases associated with the Subject Property in January and February 2021. These services included the installation of five soil vapor points, the installation of a sample port on a vent stack pipe associated with an existing subsurface passive venting system, sampling collected soil vapor samples for Petroleum Volatile Organic Compounds (PVOCs) and Naphthalene, monitoring for Methane and volatile vapors on the City of South Milwaukee Parcel (BRRTS No. 02-41-556175), the installation of a NR141-compliant groundwater well, soil and groundwater collection and testing for the presence of Chromium, Hexavalent Chromium, Trivalent Chromium, and Cyanide on the former Midwest Tanning Corp. Parcel (BRRTS No. 02-41-556117).

The results of the additional site investigation activities performed on the City of South Milwaukee Parcel indicated that no PVOCs and Naphthalene vapors were detected within the five soil vapor points or the existing vent stack that exceed current WDNR Vapor Risk Screening Levels. In addition, no Methane was detected at levels that would be considered explosive levels. Further, no other volatile vapors were detected utilizing a Photoionization Detector.

The results of the additional site investigation activities performed on the Former Midwest Tanning Corp. Parcel indicated that no Dissolved Chromium, Hexavalent Chromium, Trivalent Chromium, and Cyanide were detected above the laboratory limit of detection (LOD) within the groundwater sample collected from the newly installed well (MW-7). In addition, no Hexavalent Chromium and Cyanide were detected above the laboratory LOD in the soil sample and the detected Total Chromium, and the calculated Trivalent Chromium levels are below the current NR720 BTV for Chromium.

3.3 QUALITY ASSURANCE/QUALITY CONTROL MEASURES

All equipment decontamination, sample collection, sample custody records, and analysis were performed in general accordance with methods prescribed by the United States EPA and the WDNR for the sampling of PFASs/PFOSs in groundwater. Single-use disposable Nitrile™ gloves and PFAS-free disposable bailers were used for each well attempting to eliminate cross-contamination between sampling locations. Samples were placed in laboratory supplied containers and canisters. All samples were placed in a cooler packed with ice and transported under chain-of-custody to Pace Analytical Services, LLC. (Pace) in Green Bay, Wisconsin for chemical analysis.

3.4 GROUNDWATER OBSERVATIONS AND WELL ELEVATIONS

The elevations of the top of the PVC riser pipe of each of the wells were previously determined by PSI personnel using conventional leveling techniques. The elevations were referenced to the top nut of the fire hydrant on the eastside of the intersection of Chicago Avenue and Davis Avenue with an assigned elevation of EL. 658.89±. On June 9, 2023, the groundwater levels were measured within the monitoring wells at depths ranging from 11.14 to 23.73 feet below the top of casing (EL. 641.65± to EL. 653.25±). The measured groundwater elevations have generally ranged between about EL. 640 to about EL. 655 from May 2013 to June 2023. Further, the groundwater level measurements collected from MW-5 have been consistently higher than the measurements collected from MW-1, MW-4, MW-6, and MW-7 during recent and past sampling events and, it is anticipated that the levels measured in MW-5 represent a perched groundwater table in the isolated

area of MW-5. A groundwater flow diagram using the measurements collected from MW-4, MW-6, and MW-7 is included in the Appendix. These elevations are shown on the Groundwater Elevation Table included in the Appendix.

3.5 LABORATORY ANALYSIS

Based upon the two previous analytical test results, current groundwater samples collected from the five specific wells were submitted for analytical testing for the presence of specific WDNR PFAS/PFOS. These samples were placed into PFAS-free, laboratory provided plastic containers. The samples were placed on ice, chain of custody procedures initiated, and the samples were submitted to Pace Analytical. The analytical report and chain of custody form are included in the Appendix.

4.0 DATA ANALYSIS AND INTERPRETATION

4.1 FIELD AND LABORATORY DATA ANALYSIS

Analysis and interpretation of the groundwater data generated during the sampling events is presented in the following sections. Where appropriate, the results are compared with regulatory limits for the chemicals identified in the applicable media. Copies of the laboratory analytical reports and chain-of-custody documentation are provided in the Appendix.

4.2 GROUNDWATER QUALITY STANDARDS

The Enforcement Standards (ESs) and Preventive Action Limits (PALs) are Groundwater Quality Standards for several Per- and Polyfluoroalkyl Substances (PFAS) which have been recommended by the Department of Health Services to be included in NR140 of the Wisconsin Administrative Code. The WDNR is in the process of evaluating the recommended standards for inclusion into the NR140 standard table. The DHS recommends a combined ES of 20 ng/L and combined PAL of 2 ng/L for FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFOS, and PFOA. These recommended standards are referenced when evaluating the need for further study or remedial activities. The PAL is the more stringent guideline, in terms of being lesser in magnitude than the ES but will typically require less response action when exceeded. The required action is determined by WDNR regulations, based on various site-specific considerations.

4.3 LABORATORY GROUNDWATER RESULTS

The June 2023 groundwater test results indicated the presence of several PFAS/PFOS in the collected samples from the wells. However, the detected compounds in MW-6 were at levels below recommended NR140 standards or were indicated as laboratory estimated values and considered as not accurate. Only one compound was detected at a level above its recommended NR140 PAL, but below its recommended NR140 ES in the sample collected from MW-1. Further, only concentrations of four PFASs were above current DHS-recommended NR140 standards in the remaining wells. Perfluorooctanesulfonic acid (PFOS) was detected in the samples collected from MW-4, MW-5, and MW-7 at levels of 44 nanograms per liter (ng/l), 660 ng/l, and 170 ng/l, respectively, which are above its recommended NR140 ES of 20 ng/l, while PFOS was detected in the sample collected from MW-1 at a level of 4.7 ng/l which is above its recommended NR140 ES of 2.0 ng/l.

Perfluorooctanoic acid (PFOA) was detected in the water samples collected from MW-4, MW-5, and MW-7 at levels of 74 ng/l, 260 ng/l, and 470 ng/l, respectively, which are above its recommended NR140 ES of 20 ng/l, while PFOA was detected in the sample collected from MW-6 at a level of 2.0J ng/l which is equal to its recommended NR140 ES of 2.0 ng/l. The PFOA result from MW-6 is indicated as a laboratory estimated concentration and not considered as accurate. Perfluorohexanesulfonic acid (PFHxS) was detected in the water samples collected from MW-5, and MW-7 at levels of 97 ng/l and 110 ng/l, respectively, which are above its recommended NR140 ES of 40 ng/l and a level of 20 ng/l detected in the water sample from MW-4, which is above its recommended NR140 PAL of 4.0 ng/l. N-ethylperfluoro-1-octane sulfonamidoacetic acid (NEtFOSAA) was detected in the water samples collected from MW-4 and MW-5 at levels of 20 ng/l and 2.5J ng/l, respectively, which are above its recommended NR140 PAL of 2.0 ng/l, but below its recommended NR140 ES of 20 ng/l. Other PFASs were detected in the water samples collected from these wells but were at concentrations below recommended NR140 groundwater quality standards or no NR140 standards have been recommended by the DHS.

The results of the laboratory analyses of the collected water samples and their respective DHS-recommended NR140 standards are summarized on the groundwater analytical table included in the Appendix. The analytical laboratory test report and chain of custody form are included in the Appendix.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the historical remedial actions performed during the 2012 site development, which included the placement of an engineered cap/barrier that covers the entire Subject Property with at least a two-foot layer of imported soil fill or concrete/asphalt pavement, and the current property use, investigative activities for evaluating the subsurface soils for the presence of PFASs is not warranted.

In review of the recent and previous analytical test results, PFASs are present in the groundwater generally in the southwestern portion of the Walmart Store #5667 parcel at concentrations above the DHS-recommended NR140 ESs with lesser concentrations in the northwestern portion slightly above the DHS-recommended NR140 PAL.

Based upon the analytical test results of the recent and previous groundwater sampling events and the WDNR requirement of four groundwater monitoring events when contaminants are encountered above NR140 standards, it is recommended that an additional groundwater sampling event be performed on the existing wells to further evaluate the presence of the PFAS-impacted groundwater contamination.

The recommended additional groundwater sampling event of the above-mentioned wells should be completed in September 2023.

6.0 REPRESENTATIONS

6.1 WARRANTY

The field observations, measurements, and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the work performed at this site. The assessment, conclusions, and

recommendations presented herein are based upon the subjective evaluation of limited data. They may not represent all conditions at the Subject Property as they reflect the information gathered from specific locations. PSI warrants that the findings and conclusions contained herein have been promulgated in accordance with generally accepted environmental investigation methodology and only for the site described in this report.

The soil and groundwater investigation of this site has been developed to provide the client with information regarding apparent indications of environmental concerns relating to the Subject Property. It is necessarily limited to the conditions observed and to the information available at the time of the work.

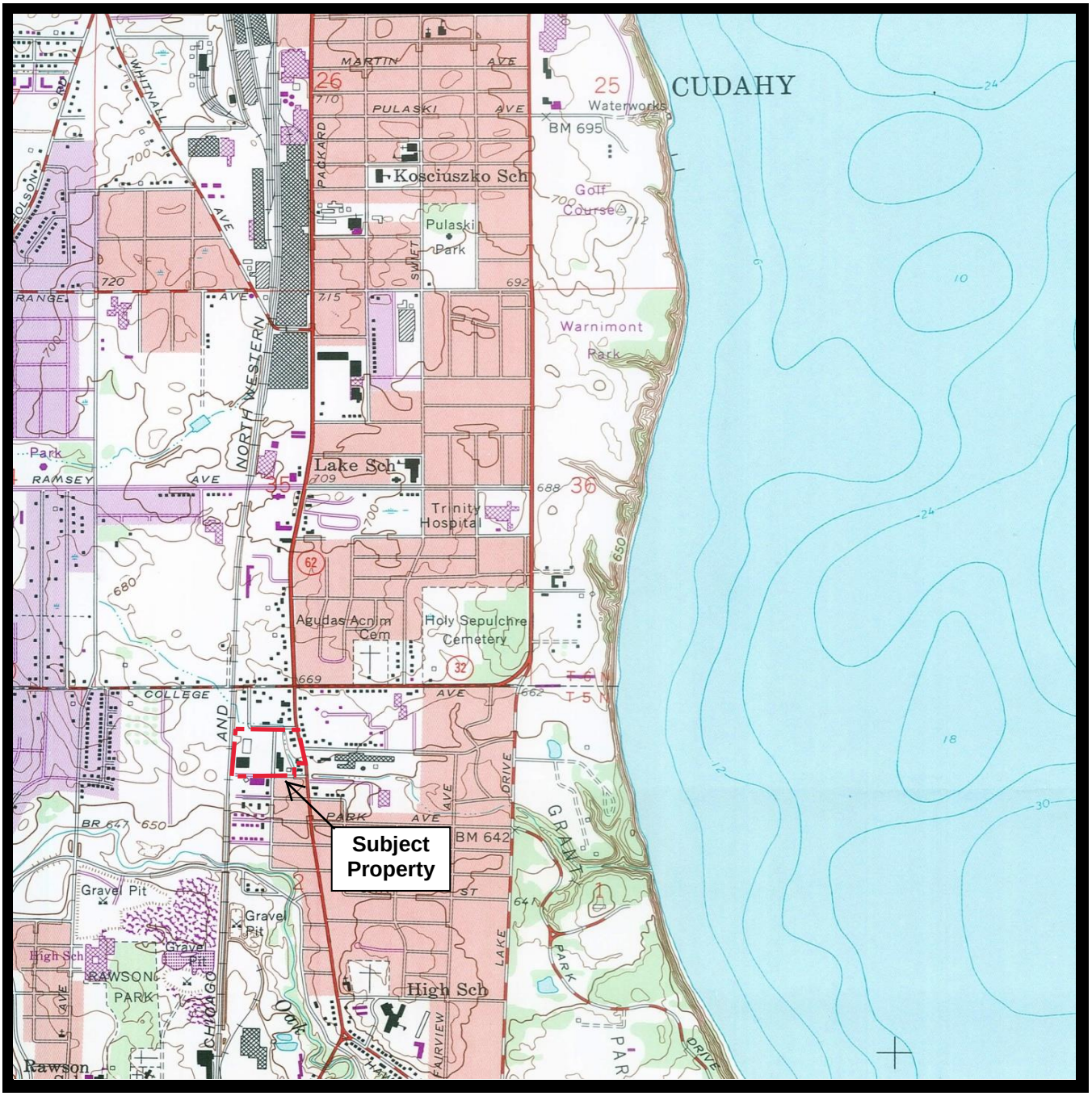
Due to the limited nature of the work, there is a possibility that there may exist conditions which could not be identified within the scope of the assessment or which were not apparent at the time of report preparation. It is also possible that the testing methods employed at the time of the report may later be superseded by other methods. The description, type, and composition of what are commonly referred to as "hazardous materials or conditions" can also change over time. PSI does not accept responsibility for changes in the state of the art, nor for changes in the scope of various lists of hazardous materials or conditions. PSI believes that the findings and conclusions provided in this report are reasonable.

6.2 THIRD PARTY USE

This report was prepared pursuant to the contract PSI has with Walmart, Inc. Because of the importance of the communication between PSI and its client, reliance or any use of this report by anyone other than Walmart, Inc.; and their respective successors, assigns, affiliates and subsidiaries, under the same conditions as if it had been prepared for them, is prohibited and therefore not foreseeable to PSI.

Reliance or use by any such third party without explicit authorization in the report does not make said third party a third-party beneficiary to PSI's contract with Walmart, Inc. Any such unauthorized reliance on or use of this report, including any of its information or conclusions, will be at third party's risk. For the same reasons, no warranties or representations, expressed or implied in this report, are made to any such third party.

APPENDIX



Source: United States Geological Survey, South Milwaukee, Wisconsin, 7.5-Minute Topographic Maps, 1958, photorevised 1971, photoinspected 1976

N

SCALE 1:24,000
APPROXIMATE SCALE

0 1 2

0 1000 2000 3000 4000 5000 6000 7000 8000 FEET

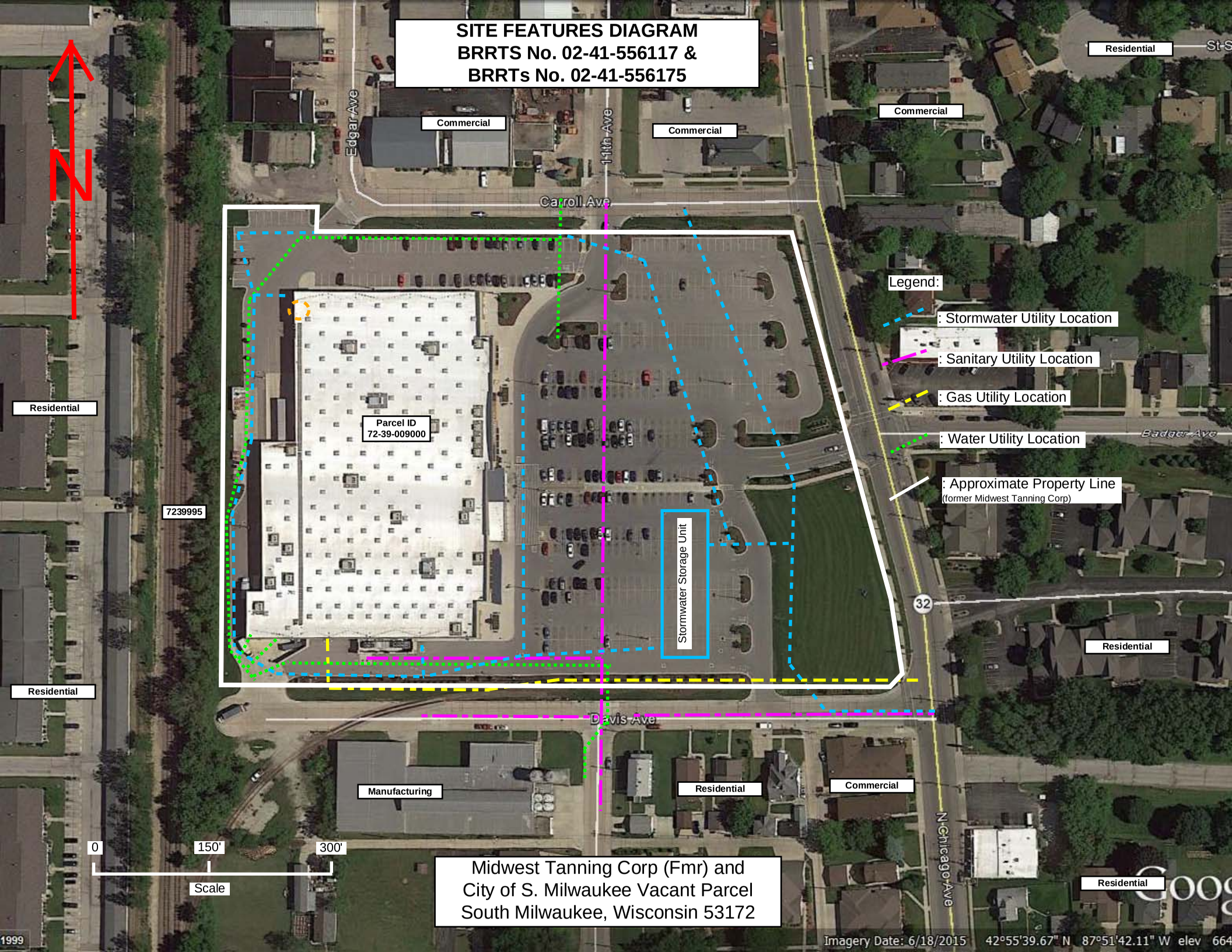
0 1 2 KILOMETERS

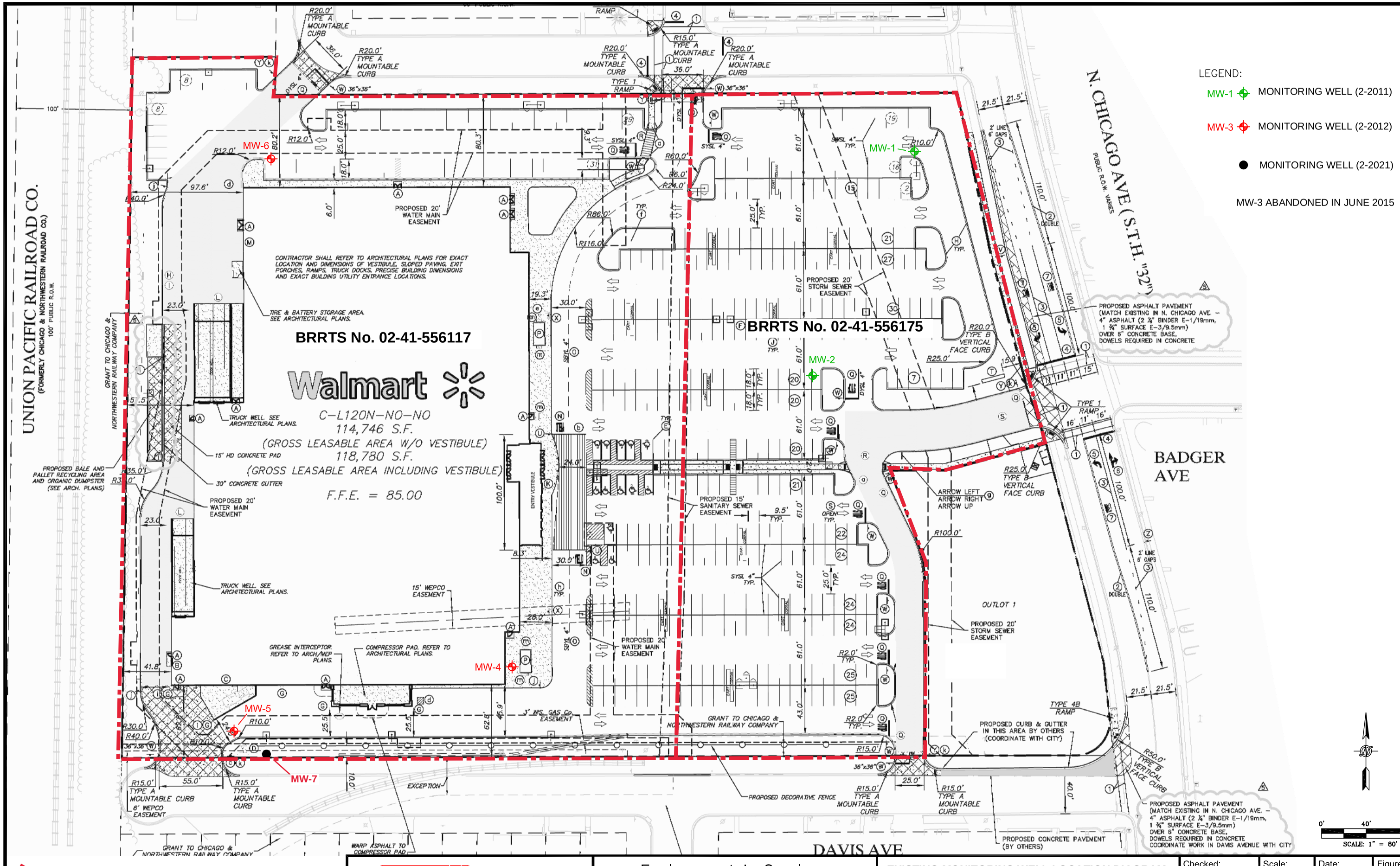
CONTOUR INTERVAL 10 FEET

Northeast 1/4 of the Northwest 1/4, Section 2, Township 5 North, Range 22 East

BRRTS No. 02-41-556117 & 02-41-556175

psi Information To Build On Engineering • Consulting • Testing	Environmental Services 821 Corporate Court Waukesha, Wisconsin 53189 (262) 347-0898 Fax (262) 521-2471	Wal-Mart Store #5667-00 222 N Chicago Ave, South Milwaukee Milwaukee County, Wisconsin 53172 **Site Location Map**	DATE: 10/27/2022 **Figure 1**	PROJECT NO: 00542644


SITE FEATURES DIAGRAM
BRRTS No. 02-41-556117 &
BRRTs No. 02-41-556175
N
Edgar Ave
11th Ave
Carroll Ave
Commercial
Commercial
Commercial
Residential
Residential
Residential
Residential
Residential
Residential
Residential
Parcel ID
72-39-009000
7239995
Stormwater Storage Unit
Legend:
: Stormwater Utility Location
: Sanitary Utility Location
: Gas Utility Location
: Water Utility Location
: Approximate Property Line
(former Midwest Tanning Corp)
Badger Ave
32
Davis Ave
Manufacturing
Residential
Commercial
N Chicago Ave
0
150'
300'
Scale
Midwest Tanning Corp (Fmr) and
City of S. Milwaukee Vacant Parcel
South Milwaukee, Wisconsin 53172
1999
Imagery Date: 6/18/2015 42°55'39.67" N 87°51'42.11" W elev 664



BRRTS Case Boundary Lines

ALL LOCATIONS ARE APPROXIMATE

psi *Information To Build On*
Engineering • Consulting • Testing

Environmental Services

EXISTING MONITORING WELL LOCATION DIAGRAM

Wal-Mart Superstore # 5667
222 N. Chicago Avenue, City of South Milwaukee
Milwaukee County, Wisconsin 53172

Checked:	Scale:	Date:	Figure:
	1" = 80'	10-27-2022	1

Drawn:	Project Number:
C. Moran 0054357-1 prop well locs.dwg	00542644

Groundwater Elevation Table

Wal-Mart Store #5667 (City of South Milwaukee and Former Midwest Tanning Corp.)

222 North Chicago Avenue

South Milwaukee, Wisconsin 53172

PSI Project No. 00542644

BRRTS No. 02-41-556175 and 02-41-556117

Date Collected	MW-1		MW-2		MW-4		MW-5		MW-6		MW-7	
	GS Elev. = 661.75		GS Elev. = 662.39		GS Elev. = 665.89		GS Elev. = 664.89		GS Elev. = 664.98		GS Elev. = 665.90	
	TOC Elev. = 661.20		TOC Elev. = 661.89		TOC Elev. = 665.34		TOC Elev. = 664.39		TOC Elev. = 664.57		TOC Elev. = 665.38	
	TOS Elev. = 656.20		TOS Elev. = 656.89		TOS Elev. = 660.34		TOS Elev. = 659.39		TOS Elev. = 659.57		TOS Elev. = 660.38	
	BOW Elev. = 636.10		BOW Elev. = 638.66		BOW Elev. = 636.06		BOW Elev. = 639.78		BOW Elev. = 639.39		BOW Elev. = 635.78	
	Depth to GW[1]	GW Elevation	Depth to GW[1]	GW Elevation	Depth to GW[1]	GW Elevation	Depth to GW[1]	GW Elevation	Depth to GW[1]	GW Elevation	Depth to GW[1]	GW Elevation
5/30/2013	---	---	---	---	22.65	642.69	11.41	652.98	21.88	642.69	---	---
6/10/2013	14.81	646.39	18.90	642.99	23.06	642.28	15.28	649.11	22.02	642.55	---	---
6/11/2013	---	---	---	---	---	---	---	---	---	---	---	---
6/17/2013	---	---	---	---	---	---	---	---	---	---	---	---
9/10/2013	15.21	645.99	19.15	642.74	23.20	642.14	11.56	652.83	22.19	642.38	---	---
11/26/2013	15.46	645.74	19.33	642.56	23.36	641.98	11.58	652.81	22.33	642.24	---	---
2/27/2014	15.83	645.37	---	---	24.11	641.23	11.72	652.67	---	---	---	---
2/28/2014	---	---	19.81	642.08	---	---	---	---	22.99	641.58	---	---
1/25/2021	---	---	---	---	22.93	642.41	9.9	654.49	21.81	642.76	---	---
3/15/2021	14.64	646.56	16.35	645.54	22.67	642.67	9.62	654.77	21.73	642.84	23.88	641.50
2/6/2023	15.6	645.60	---	---	23.55	641.79	9.97	654.42	22.47	642.10	24.57	640.81
6/9/2023	14.76	646.44	---	---	22.67	642.67	11.14	653.25	21.63	642.94	23.73	641.65

Notes:

GS Elev. - Ground Surface Elevation

TOC Elev. - Top of Casing Elevation

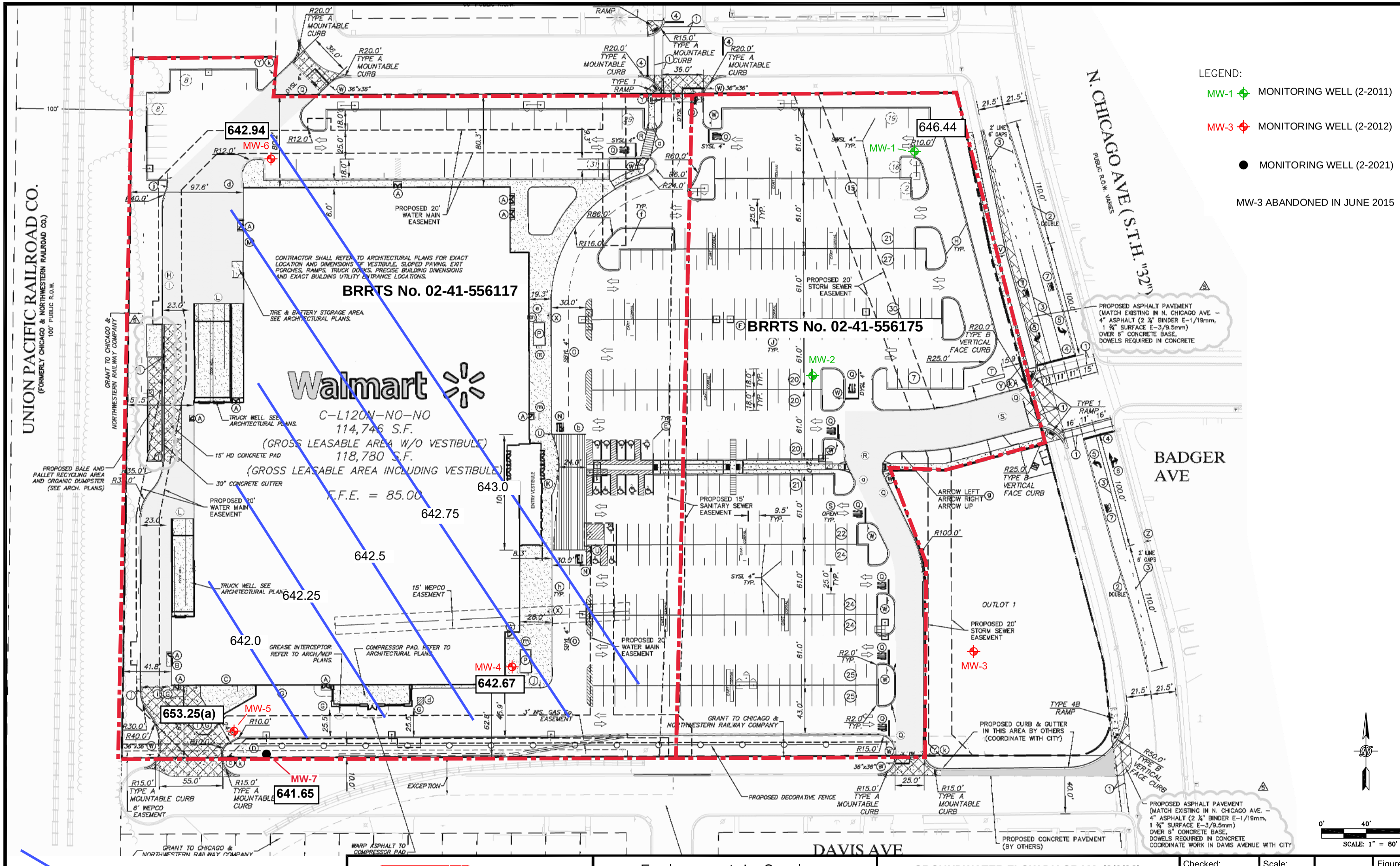
TOS Elev. - Top of Screen Elevation

BOW Elev. - Bottom of Well Elevation

GW - Groundwater

1 - Depth to groundwater measured from top of well casing

Benchmark elevation = EL. 658.89 (fire hydrant east side of Chicago Ave and Davis Ave.)



LEGEND:

- MW-1 — MONITORING WELL (2-2011)
- MW-3 — MONITORING WELL (2-2012)
- ● MONITORING WELL (2-2021)

MW-3 ABANDONED IN JUNE 2015

Groundwater Elevation Contour

BRRTS Case Boundary Lines

(a) anticipated perched groundwater level

Information To Build On

Engineering • Consulting • Testing

Environmental Services

W237 N2878 Woodgate Road, Suite 2
Pewaukee, Wisconsin 53072
(262) 347-0898 (262) 347-2256 fax

GROUNDWATER FLOW DIAGRAM (2/6/23)

Wal-Mart Superstore # 5667
222 N. Chicago Avenue, City of South Milwaukee
Milwaukee County, Wisconsin 53172

Checked:	Scale:		Figure:
	1" = 80'		1

Drawn:	Project Number:
C. Moran 0054357-1 prop well locs.dwg	00542744

Groundwater Analytical Results Table

City of S. Milwaukee Vacant Parcel and Midwest Tanning Corp. (FMR)
222 N. Chicago Avenue
South Milwaukee, Wisconsin 53172
PSI Project No. 00542644

BRRTS No. 02-41-556175 & 02-41-556117

Analytical Par	Location	MW-1			MW-4			MW-5			MW-6			MW-7			Recommended NR140	
	Date	8/19/22	2/6/23	6/9/23	8/19/22	2/6/23	6/9/23	8/19/22	2/6/23	6/9/23	8/19/22	2/6/23	6/9/23	8/19/22	2/6/23	6/9/23	ES	PAL
	Units																	
Detected PFAS/PFOS																		
PFBA	ng/l	6.6	4.6	4.4	16	17	14	14	15	17	5.2	5.8	5.8	18	18	40	**10,000**	*2,000*
PFPeA	ng/l	3.2	1.6J	2.7J	15	15	11	11	11	14	2.9	3.4J	2.8J	18	21	38	---	---
PFBS	ng/l	0.64J	0.72J	0.51J	18	15	12	20	24	26	2.4	2.6J	1.8J	23	28	41	**450,000**	*90,000*
PFHxA	ng/l	<0.89	1.4J	<0.64	35	28	28	24	25	33	3.1	2.4J	2.5J	45	50	94	**150,000**	*30,000*
PFPeS	ng/l	<0.59	<0.52	<0.55	12	6.7	8.1	24	28	29	<0.6	<0.54	<0.54	17	21	39	---	---
PFHpA	ng/l	<0.68	<0.39	<0.41	17	11	14	22	21	27	1.3J	1.1J	1.0J	24	30	58	---	---
PFHxS	ng/l	<0.52	<0.48	0.95J	*28*	*14*	*20*	**92**	**110**	**97**	<0.53	<0.51	<0.50	**43**	**55**	**110**	**40**	*4*
PFOA	ng/l	1.1J	<0.73	1.3J	**100**	**43**	**74**	**180**	**190S**	**260**	*2.2*	*2.2J*	*2.0J*	**120**	**170**	**470**	**a**	*a*
6:2 FTS	ng/l	<0.66	<1.8	<1.9	0.95J	<1.9	<1.9	<0.65	<1.9	<1.8	<0.67	<1.9	<1.8	<0.7	<1.9	<1.8	---	---
PFHpS	ng/l	<0.65	<0.44	<0.46	3.2	1.3J	1.9J	25	20	17	<0.66	<0.46	<0.45	7.5	9.3	11	---	---
PFNA	ng/l	<0.78	<0.45	<0.43	1.1J	<0.44	0.71J	*3.9*	*4.1*	2.9J	<0.79	<0.41	<0.42	1.5J	2.0J	1.9J	**30**	*3*
PFOSAm	ng/l	<0.56	<0.46	<0.57	4.3	2.1J	2.8J	46	19	8.5	<0.71	<0.42	<0.56	<0.74	<0.56	<0.55	---	---
PFOS	ng/l	**28**	<0.47	*4.7*	**64**	**40**	**44**	**940D**	**930**	**660**	<0.66	<1.8	<1.8	**48I**	**270**	**170**	**a**	*a*
MeFOSA	ng/l	<0.54	<0.48	<1.2	0.79J	<1.2	<1.2	<0.53	<1.2	<1.1	<0.55	<1.2	<1.1	<0.57	<1.2	<1.1	---	---
PFDA	ng/l	<0.6	<0.49	<0.49	<0.6	<0.5	<0.49	0.96J	0.81J	0.59J	<0.6	<0.48	<0.48	<0.63	<0.48	<0.46	**300**	*60*
NMeFOSAA	ng/l	<0.68	<0.50	<0.86	78	66	63	17	8.6	3.8J	<0.69	<0.85	<0.85	<0.72	<0.85	<0.83	---	---
NEtFOSAA	ng/l	1.3J	<0.51	<0.70	**17**	**19**	**20**	**8**	**4.1J**	**2.5J**	<0.81	<0.69	<0.69	<0.84	<0.69	<0.67	**a**	*a*

Notes:

Bold concentrations exceed DHS Recommended NR 140 Enforcement Standards (ESs)

Italicized/underlined concentrations exceed DHS Recommended NR 140 Preventive Action Limits (PALs)

--- - Not analyzed/Not Established

ng/l -nanograms per liter

a - DHS recommends a combined ES of 20 ng/L and combined PAL of 2 ng/L for FOSA, NEtFOSE, NEtFOSA, NEtFOSAA, PFOS, and PFOA

D - result obtained from analysis of diluted sample

I - isotope ratio out of specification

S - MS/MSD failure

Q - Surrogate failure

J - laboratory estimated concentration detected between the laboratory Limit of Detection and the Limit of Quantitation

PFPeA detected in 2-2023 field blank at 0.71J ng/l

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

July 21, 2023

Patrick Patterson
PSI
821 Corporate Ct.
Suite 102
Waukesha, WI 53189

RE: Project: 0054 2644-WALMART
Pace Project No.: 40263440

Dear Patrick Patterson:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela Lane
angela.lane@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 0054 2644-WALMART
Pace Project No.: 40263440

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40263440001	**MW-1**	Water	06/09/23 11:55	06/10/23 08:35
40263440002	**MW-4**	Water	06/09/23 12:30	06/10/23 08:35
40263440003	**MW-5**	Water	06/09/23 13:25	06/10/23 08:35
40263440004	**MW-6**	Water	06/09/23 12:55	06/10/23 08:35
40263440005	**MW-7**	Water	06/09/23 13:50	06/10/23 08:35
40263440006	**FIELD BLANK**	Water	06/09/23 13:20	06/10/23 08:35

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

This data package has been reviewed for quality and completeness and is approved for release.

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40263440

ALL SHADED AREAS are for LAB USE ONLY

Company: PSI, Inc	Billing Information: Same
Address: 821 Corporate Ct, Waukesha	
Report To: Pat Patterson	Email To:
Copy To:	Site Collection Info/Address: South Milwaukee
Customer Project Name/Number: 00542644 - Walmart	State: WI / County/City: / Time Zone Collected: [ ]PT [ ]MT [ ]CT [ ]ET
Phone: 262-521-2125 Email:	Site/Facility ID #: / Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Kay Harpell	Purchase Order #: / Quote #: / DW PWS ID #: / DW Location Code:
Collected By (signature): Kay Heppl	Turnaround Date Required: / Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type **: U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Analyses: PFAS

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	PFAS	Lab Sample # / Comments
MW-1	GW		6/9	1155				2	X	001
MW-2	—			—				—	—	002
MW-4	GW			1230				2	X	003
MW-5	↓			1325				2	X	004
MW-6	↓			1255				2	X	005
MW-7	↓			1350				2	X	006
Field Blank	OT		↓	1320				2	X	007
										008

6/10 ARM

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2784853

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ____oC
Cooler 1 Therm Corr. Factor: ____oC
Cooler 1 Corrected Temp: ____oC
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Kay Heppl	6/9/23 15:45		
CS Logistics	6/10/23 0855	Angel R. Till	6/10/23 0855

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Non Conformance(s): YES / NO

Sample Preservation Receipt Form

Client Name: PSI Inc

Project # 40263440

All containers needing preservation have been checked and noted below ☐Yes ☐No ☒N/A

Lab Lot# of pH paper. Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm)*	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	Initial when completed: pH after adjusted	Date/ Time: Volume (mL)
001																																		2.5 / 5
002																																		2.5 / 5
003																																		2.5 / 5
004																																		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		2.5 / 5
009																																		2.5 / 5
010																																		2.5 / 5
011																																		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

6/10/23 SMG

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): ☐Yes ☐No ☒N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40263440

40263440

Client Name: PSI Inc.

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other Ziplocs 6/10/23 dRd

Thermometer Used SR - 129 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: 1.0

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:
Date: 6/10/23 Initials: dRd

Labeled By Initials: SC

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used: Correct Type: (Pace Green Bay) Pace IR, Non-Pace	☒Yes ☐No	9.
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☒Yes ☐No ☐N/A	12.
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☒No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Page 2 of 2

Report of Analysis

Pace Analytical Services, LLC
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
Attention: Angela Lane

Project Name: 0054 2644-WALMART

Project Number: 40263440

Lot Number:**YF13013**

Date Completed:06/29/2023

06/30/2023 12:13 PM
Approved and released by:
Project Coordinator 1: **Jenna S. Holliday**

Case Narrative
Pace Analytical Services, LLC
Lot Number: YF13013

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: Drinking Water: VOC (excluding BTEX, MTBE, Naphthalene, & 1,2-dichloroethane) EPA 524.2, E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18, PFAS by Isotope Dilution SOP.

Pace is a DoD/DoE and TNI accredited laboratory; however, Pace is not accredited for PFAS Direct Aqueous Injection or Method D8421.

If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PFAS Analysis
Surrogate recovery for samples YF13013-003 and -005 were outside the acceptance limits. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Sample Summary
Pace Analytical Services, LLC
Lot Number: YF13013
Project Name: 0054 2644-WALMART
Project Number: 40263440

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-1	Aqueous	06/09/2023 1155	06/13/2023
002	MW-4	Aqueous	06/09/2023 1230	06/13/2023
003	MW-5	Aqueous	06/09/2023 1325	06/13/2023
004	MW-6	Aqueous	06/09/2023 1255	06/13/2023
005	MW-7	Aqueous	06/09/2023 1350	06/13/2023
006	FIELD BLANK	Aqueous	06/09/2023 1320	06/13/2023

(6 samples)

Detection Summary
Pace Analytical Services, LLC
Lot Number: YF13013
Project Name: 0054 2644-WALMART
Project Number: 40263440

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-1	Aqueous	PFBS	PFAS by ID	0.51	J	ng/L	6
001	MW-1	Aqueous	PFHxS	PFAS by ID	0.95	J	ng/L	6
001	MW-1	Aqueous	PFBA	PFAS by ID	4.4		ng/L	6
001	MW-1	Aqueous	PFOA	PFAS by ID	1.3	J	ng/L	6
001	MW-1	Aqueous	PFPeA	PFAS by ID	2.7	J	ng/L	6
001	MW-1	Aqueous	PFOS	PFAS by ID	4.7		ng/L	6
002	MW-4	Aqueous	EtFOSAA	PFAS by ID	20		ng/L	8
002	MW-4	Aqueous	MeFOSAA	PFAS by ID	63		ng/L	8
002	MW-4	Aqueous	PFBS	PFAS by ID	12		ng/L	8
002	MW-4	Aqueous	PFHpS	PFAS by ID	1.9	J	ng/L	8
002	MW-4	Aqueous	PFOSA	PFAS by ID	2.8	J	ng/L	8
002	MW-4	Aqueous	PFPeS	PFAS by ID	8.1		ng/L	8
002	MW-4	Aqueous	PFHxS	PFAS by ID	20		ng/L	8
002	MW-4	Aqueous	PFBA	PFAS by ID	14		ng/L	8
002	MW-4	Aqueous	PFHpA	PFAS by ID	14		ng/L	8
002	MW-4	Aqueous	PFHxA	PFAS by ID	28		ng/L	8
002	MW-4	Aqueous	PFNA	PFAS by ID	0.71	J	ng/L	8
002	MW-4	Aqueous	PFOA	PFAS by ID	74		ng/L	8
002	MW-4	Aqueous	PFPeA	PFAS by ID	11		ng/L	8
002	MW-4	Aqueous	PFOS	PFAS by ID	44		ng/L	8
003	MW-5	Aqueous	EtFOSAA	PFAS by ID	2.5	J	ng/L	10
003	MW-5	Aqueous	MeFOSAA	PFAS by ID	3.8	J	ng/L	10
003	MW-5	Aqueous	PFBS	PFAS by ID	26		ng/L	10
003	MW-5	Aqueous	PFHpS	PFAS by ID	17		ng/L	10
003	MW-5	Aqueous	PFOSA	PFAS by ID	8.5		ng/L	10
003	MW-5	Aqueous	PFPeS	PFAS by ID	29		ng/L	10
003	MW-5	Aqueous	PFHxS	PFAS by ID	97		ng/L	10
003	MW-5	Aqueous	PFBA	PFAS by ID	17		ng/L	10
003	MW-5	Aqueous	PFDA	PFAS by ID	0.59	J	ng/L	10
003	MW-5	Aqueous	PFHpA	PFAS by ID	27		ng/L	10
003	MW-5	Aqueous	PFHxA	PFAS by ID	33		ng/L	10
003	MW-5	Aqueous	PFNA	PFAS by ID	2.9	J	ng/L	10
003	MW-5	Aqueous	PFOA	PFAS by ID	260		ng/L	10
003	MW-5	Aqueous	PFPeA	PFAS by ID	14		ng/L	10
003	MW-5	Aqueous	PFOS	PFAS by ID	660		ng/L	10
004	MW-6	Aqueous	PFBS	PFAS by ID	1.8	J	ng/L	12
004	MW-6	Aqueous	PFBA	PFAS by ID	5.8		ng/L	12
004	MW-6	Aqueous	PFHpA	PFAS by ID	1.0	J	ng/L	12
004	MW-6	Aqueous	PFHxA	PFAS by ID	2.5	J	ng/L	12
004	MW-6	Aqueous	PFOA	PFAS by ID	2.0	J	ng/L	12
004	MW-6	Aqueous	PFPeA	PFAS by ID	2.8	J	ng/L	12
005	MW-7	Aqueous	PFBS	PFAS by ID	41		ng/L	14
005	MW-7	Aqueous	PFHpS	PFAS by ID	11		ng/L	14

Detection Summary (Continued)

Lot Number: YF13013

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
005	MW-7	Aqueous	PFPeS	PFAS by ID	39		ng/L	14
005	MW-7	Aqueous	PFHxS	PFAS by ID	110		ng/L	14
005	MW-7	Aqueous	PFBA	PFAS by ID	40		ng/L	14
005	MW-7	Aqueous	PFHpA	PFAS by ID	58		ng/L	14
005	MW-7	Aqueous	PFHxA	PFAS by ID	94		ng/L	14
005	MW-7	Aqueous	PFNA	PFAS by ID	1.9	J	ng/L	14
005	MW-7	Aqueous	PFOA	PFAS by ID	470		ng/L	14
005	MW-7	Aqueous	PFPeA	PFAS by ID	38		ng/L	14
005	MW-7	Aqueous	PFOS	PFAS by ID	170		ng/L	14

(52 detections)

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-001**

Description: **MW-1** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1155** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/27/2023 2316	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.4	0.61	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.4	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.4	0.81	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.4	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.4	0.70	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.4	0.88	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.4	0.86	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.4	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**0.51**	**J**	**3.7**	**0.38**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.72	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.7	0.46	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.66	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.7	0.55	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.4	0.97	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**0.95**	**J**	**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**4.4**		**3.7**	**0.56**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.7	0.41	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.7	0.64	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**1.3**	**J**	**3.7**	**0.77**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**2.7**	**J**	**3.7**	**0.50**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.58	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**4.7**		**3.7**	**1.9**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		110	25-150
13C2_6:2FTS		107	25-150
13C2_8:2FTS		93	25-150
13C2_PFDoA		86	25-150
13C2_PFTeDA		81	25-150
13C3_PFBS		110	25-150
13C3_PFHxS		105	25-150
13C3-HFPO-DA		107	25-150
13C4_PFBA		93	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC**		Laboratory ID: **YF13013-001**
Description: **MW-1**		Matrix: **Aqueous**
Date Sampled: **06/09/2023 1155**	Project Name: **0054 2644-WALMART**	
Date Received: **06/13/2023**	Project Number: **40263440**	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		103	25-150
13C5_PFHxA		103	25-150
13C5_PFPeA		103	25-150
13C6_PFDA		97	25-150
13C7_PFUdA		88	25-150
13C8_PFOA		115	25-150
13C8_PFOS		90	25-150
13C8_PFOSA		97	10-150
13C9_PFNA		95	25-150
d-EtFOSA		67	10-150
d5-EtFOSAA		101	25-150
d9-EtFOSE		80	10-150
d-MeFOSA		61	10-150
d3-MeFOSAA		99	25-150
d7-MeFOSE		82	10-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-002**

Description: **MW-4** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1230** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/27/2023 2326	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.4	0.62	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.4	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.4	0.81	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.4	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.4	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.4	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	**2991-50-6**	**PFAS by ID SOP**	**20**		**7.4**	**0.70**	**ng/L**	**1**
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.4	0.89	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	**2355-31-9**	**PFAS by ID SOP**	**63**		**7.4**	**0.87**	**ng/L**	**1**
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.4	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**12**		**3.7**	**0.39**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.72	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	**375-92-8**	**PFAS by ID SOP**	**1.9**	**J**	**3.7**	**0.46**	**ng/L**	**1**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.66	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	**754-91-6**	**PFAS by ID SOP**	**2.8**	**J**	**3.7**	**0.57**	**ng/L**	**1**
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**8.1**		**3.7**	**0.55**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.4	0.97	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**20**		**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**14**		**3.7**	**0.56**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**14**		**3.7**	**0.42**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**28**		**3.7**	**0.64**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**0.71**	**J**	**3.7**	**0.43**	**ng/L**	**1**
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**74**		**3.7**	**0.77**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**11**		**3.7**	**0.51**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.58	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**44**		**3.7**	**1.9**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		144	25-150
13C2_6:2FTS		104	25-150
13C2_8:2FTS		92	25-150
13C2_PFDoA		81	25-150
13C2_PFTeDA		78	25-150
13C3_PFBS		101	25-150
13C3_PFHxS		102	25-150
13C3-HFPO-DA		98	25-150
13C4_PFBA		85	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC**		Laboratory ID: **YF13013-002**
Description: **MW-4**		Matrix: **Aqueous**
Date Sampled: **06/09/2023 1230**	Project Name: **0054 2644-WALMART**	
Date Received: **06/13/2023**	Project Number: **40263440**	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		96	25-150
13C5_PFHxA		99	25-150
13C5_PFPeA		101	25-150
13C6_PFDA		97	25-150
13C7_PFUdA		84	25-150
13C8_PFOA		114	25-150
13C8_PFOS		85	25-150
13C8_PFOSA		89	10-150
13C9_PFNA		93	25-150
d-EtFOSA		59	10-150
d5-EtFOSAA		89	25-150
d9-EtFOSE		70	10-150
d-MeFOSA		64	10-150
d3-MeFOSAA		92	25-150
d7-MeFOSE		72	10-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-003**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1325** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/27/2023 2337	ARC2	06/26/2023 1009	78566
2	SOP SPE	PFAS by ID SOP	5	06/28/2023 1616	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.3	0.60	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.3	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.3	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.3	0.80	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.3	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND	Q	7.3	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	**2991-50-6**	**PFAS by ID SOP**	**2.5**	**J**	**7.3**	**0.68**	**ng/L**	**1**
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.3	0.87	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	**2355-31-9**	**PFAS by ID SOP**	**3.8**	**J**	**7.3**	**0.85**	**ng/L**	**1**
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**26**		**3.6**	**0.38**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.71	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	**375-92-8**	**PFAS by ID SOP**	**17**		**3.6**	**0.45**	**ng/L**	**1**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.65	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	**754-91-6**	**PFAS by ID SOP**	**8.5**		**3.6**	**0.56**	**ng/L**	**1**
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**29**		**3.6**	**0.54**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.3	0.95	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**97**		**3.6**	**0.50**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**17**		**3.6**	**0.55**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	**335-76-2**	**PFAS by ID SOP**	**0.59**	**J**	**3.6**	**0.48**	**ng/L**	**1**
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.43	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**27**		**3.6**	**0.41**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**33**		**3.6**	**0.63**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**2.9**	**J**	**3.6**	**0.42**	**ng/L**	**1**
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**260**		**3.6**	**0.75**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**14**		**3.6**	**0.50**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.57	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**660**		**18**	**9.1**	**ng/L**	**2**

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS	N	197	25-150		118	25-150
13C2_6:2FTS		125	25-150		95	25-150
13C2_8:2FTS		83	25-150		94	25-150
13C2_PFDoA		74	25-150		79	25-150
13C2_PFTeDA		43	25-150		74	25-150
13C3_PFBS		93	25-150		104	25-150
13C3_PFHxS		97	25-150		95	25-150
13C3-HFPO-DA		92	25-150		99	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-003**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1325** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		64	25-150		99	25-150
13C4_PFHpA		85	25-150		97	25-150
13C5_PFHxA		94	25-150		104	25-150
13C5_PFPeA		91	25-150		107	25-150
13C6_PFDA		96	25-150		95	25-150
13C7_PFUdA		82	25-150		91	25-150
13C8_PFOA		113	25-150		105	25-150
13C8_PFOS		82	25-150		91	25-150
13C8_PFOSA		83	10-150		85	10-150
13C9_PFNA		86	25-150		94	25-150
d-EtFOSA	N	7.3	10-150	N	8.1	10-150
d5-EtFOSAA		90	25-150		80	25-150
d9-EtFOSE		46	10-150		49	10-150
d-MeFOSA		12	10-150		15	10-150
d3-MeFOSAA		87	25-150		92	25-150
d7-MeFOSE		51	10-150		66	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
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L = LCS/LCSD failure
H = Out of holding time
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-004**

Description: **MW-6** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1255** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/27/2023 2358	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.3	0.60	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.3	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.3	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.3	0.80	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.3	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.3	0.44	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.3	0.68	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.3	0.87	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.3	0.85	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.3	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**1.8**	**J**	**3.6**	**0.38**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.71	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.6	0.45	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.65	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.6	0.56	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.6	0.54	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.3	0.95	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.6	0.50	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**5.8**		**3.6**	**0.55**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.43	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.0**	**J**	**3.6**	**0.41**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**2.5**	**J**	**3.6**	**0.63**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.6	0.42	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**2.0**	**J**	**3.6**	**0.75**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**2.8**	**J**	**3.6**	**0.50**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.48	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.57	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.6	1.8	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		111	25-150
13C2_6:2FTS		83	25-150
13C2_8:2FTS		70	25-150
13C2_PFDoA		75	25-150
13C2_PFTeDA		72	25-150
13C3_PFBS		87	25-150
13C3_PFHxS		90	25-150
13C3-HFPO-DA		85	25-150
13C4_PFBA		70	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC**		Laboratory ID: **YF13013-004**
Description: **MW-6**		Matrix: **Aqueous**
Date Sampled: **06/09/2023 1255**	Project Name: **0054 2644-WALMART**	
Date Received: **06/13/2023**	Project Number: **40263440**	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		86	25-150
13C5_PFHxA		83	25-150
13C5_PFPeA		84	25-150
13C6_PFDA		86	25-150
13C7_PFUdA		77	25-150
13C8_PFOA		94	25-150
13C8_PFOS		71	25-150
13C8_PFOSA		81	10-150
13C9_PFNA		81	25-150
d-EtFOSA		52	10-150
d5-EtFOSAA		80	25-150
d9-EtFOSE		68	10-150
d-MeFOSA		50	10-150
d3-MeFOSAA		84	25-150
d7-MeFOSE		69	10-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-005**

Description: **MW-7** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1350** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/28/2023 0009	ARC2	06/26/2023 1009	78566
2	SOP SPE	PFAS by ID SOP	5	06/28/2023 1627	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.2	0.43	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.2	0.59	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.2	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.2	1.8	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.2	0.78	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.2	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.2	0.43	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.2	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.2	0.67	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.2	0.85	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.2	0.83	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.2	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**41**		**3.6**	**0.37**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.6	0.70	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	**375-92-8**	**PFAS by ID SOP**	**11**		**3.6**	**0.45**	**ng/L**	**1**
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.6	0.64	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.6	0.55	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**39**		**3.6**	**0.53**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.2	0.94	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**110**		**3.6**	**0.49**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**40**		**3.6**	**0.54**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.6	0.47	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.6	0.42	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**58**		**3.6**	**0.40**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**94**		**3.6**	**0.62**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**1.9**	**J**	**3.6**	**0.41**	**ng/L**	**1**
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**470**		**18**	**3.7**	**ng/L**	**2**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**38**		**3.6**	**0.49**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.6	0.54	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.6	0.47	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.6	0.56	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**170**		**3.6**	**1.8**	**ng/L**	**1**

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS	N	164	25-150		112	25-150
13C2_6:2FTS		116	25-150		102	25-150
13C2_8:2FTS		86	25-150		93	25-150
13C2_PFDoA		88	25-150		87	25-150
13C2_PFTeDA		84	25-150		84	25-150
13C3_PFBS		95	25-150		109	25-150
13C3_PFHxS		102	25-150		92	25-150
13C3-HFPO-DA		91	25-150		108	25-150

LOQ = Limit of Quantitation
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DL = Detection Limit
Q = Surrogate failure
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N = Recovery is out of criteria
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L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-005**

Description: **MW-7** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1350** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		60	25-150		98	25-150
13C4_PFHpA		89	25-150		100	25-150
13C5_PFHxA		95	25-150		106	25-150
13C5_PFPeA		85	25-150		105	25-150
13C6_PFDA		97	25-150		106	25-150
13C7_PFUdA		81	25-150		93	25-150
13C8_PFOA		110	25-150		109	25-150
13C8_PFOS		92	25-150		100	25-150
13C8_PFOSA		99	10-150		96	10-150
13C9_PFNA		92	25-150		93	25-150
d-EtFOSA		71	10-150		81	10-150
d5-EtFOSAA		92	25-150		89	25-150
d9-EtFOSE		78	10-150		77	10-150
d-MeFOSA		73	10-150		74	10-150
d3-MeFOSAA		96	25-150		94	25-150
d7-MeFOSE		80	10-150		81	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YF13013-006**

Description: **FIELD BLANK** Matrix: **Aqueous**

Date Sampled: **06/09/2023 1320** Project Name: **0054 2644-WALMART**

Date Received: **06/13/2023** Project Number: **40263440**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	06/28/2023 0019	ARC2	06/26/2023 1009	78566

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.5	0.62	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.5	1.5	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.5	0.82	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.5	1.9	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.5	0.45	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.5	1.3	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.5	0.70	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.5	0.89	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		15	1.2	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.5	0.87	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.5	1.2	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.7	0.39	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.7	0.73	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.7	0.47	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.7	0.66	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.7	0.57	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.7	0.55	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.5	0.98	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.7	0.51	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.7	0.44	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.7	0.42	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.7	0.64	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.7	0.43	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.7	0.77	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.7	0.51	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.7	0.56	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.7	0.49	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.7	0.58	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.7	1.9	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		92	25-150
13C2_6:2FTS		101	25-150
13C2_8:2FTS		83	25-150
13C2_PFDoA		84	25-150
13C2_PFTeDA		85	25-150
13C3_PFBS		98	25-150
13C3_PFHxS		98	25-150
13C3-HFPO-DA		103	25-150
13C4_PFBA		96	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC**		Laboratory ID: **YF13013-006**
Description: **FIELD BLANK**		Matrix: **Aqueous**
Date Sampled: **06/09/2023 1320**	Project Name: **0054 2644-WALMART**	
Date Received: **06/13/2023**	Project Number: **40263440**	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		98	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		91	25-150
13C6_PFDA		96	25-150
13C7_PFUdA		88	25-150
13C8_PFOA		111	25-150
13C8_PFOS		85	25-150
13C8_PFOSA		90	10-150
13C9_PFNA		89	25-150
d-EtFOSA		68	10-150
d5-EtFOSAA		92	25-150
d9-EtFOSE		78	10-150
d-MeFOSA		65	10-150
d3-MeFOSAA		93	25-150
d7-MeFOSE		83	10-150

LOQ = Limit of Quantitation	B = Detected in the method blank	E = Quantitation of compound exceeded the calibration range	DL = Detection Limit	Q = Surrogate failure
ND = Not detected at or above the DL	N = Recovery is out of criteria	P = The RPD between two GC columns exceeds 40%	J = Estimated result < LOQ and ≥ DL	L = LCS/LCSD failure
H = Out of holding time	W = Reported on wet weight basis			S = MS/MSD failure

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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: YQ78566-001
Batch: 78566
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	06/27/2023 2255
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	06/27/2023 2255
8:2 FTS	ND		1	8.0	1.6	ng/L	06/27/2023 2255
6:2 FTS	ND		1	8.0	2.0	ng/L	06/27/2023 2255
4:2 FTS	ND		1	8.0	0.87	ng/L	06/27/2023 2255
GenX	ND		1	8.0	2.1	ng/L	06/27/2023 2255
ADONA	ND		1	8.0	0.48	ng/L	06/27/2023 2255
EtFOSA	ND		1	8.0	1.4	ng/L	06/27/2023 2255
EtFOSAA	ND		1	8.0	0.75	ng/L	06/27/2023 2255
EtFOSE	ND		1	8.0	0.95	ng/L	06/27/2023 2255
MeFOSA	ND		1	16	1.3	ng/L	06/27/2023 2255
MeFOSAA	ND		1	8.0	0.93	ng/L	06/27/2023 2255
MeFOSE	ND		1	8.0	1.3	ng/L	06/27/2023 2255
PFBS	ND		1	4.0	0.41	ng/L	06/27/2023 2255
PFDS	ND		1	4.0	0.78	ng/L	06/27/2023 2255
PFHpS	ND		1	4.0	0.50	ng/L	06/27/2023 2255
PFNS	ND		1	4.0	0.71	ng/L	06/27/2023 2255
PFOSA	ND		1	4.0	0.61	ng/L	06/27/2023 2255
PFPeS	ND		1	4.0	0.59	ng/L	06/27/2023 2255
PFDOS	ND		1	8.0	1.0	ng/L	06/27/2023 2255
PFHxS	ND		1	4.0	0.55	ng/L	06/27/2023 2255
PFBA	ND		1	4.0	0.60	ng/L	06/27/2023 2255
PFDA	ND		1	4.0	0.52	ng/L	06/27/2023 2255
PFDoA	ND		1	4.0	0.47	ng/L	06/27/2023 2255
PFHpA	ND		1	4.0	0.45	ng/L	06/27/2023 2255
PFHxA	ND		1	4.0	0.69	ng/L	06/27/2023 2255
PFNA	ND		1	4.0	0.46	ng/L	06/27/2023 2255
PFOA	ND		1	4.0	0.83	ng/L	06/27/2023 2255
PFPeA	ND		1	4.0	0.54	ng/L	06/27/2023 2255
PFTeDA	ND		1	4.0	0.60	ng/L	06/27/2023 2255
PFTrDA	ND		1	4.0	0.53	ng/L	06/27/2023 2255
PFUdA	ND		1	4.0	0.63	ng/L	06/27/2023 2255
PFOS	ND		1	4.0	2.0	ng/L	06/27/2023 2255

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		83	25-150
13C2_6:2FTS		88	25-150
13C2_8:2FTS		77	25-150
13C2_PFDoA		83	25-150
13C2_PFTeDA		80	25-150
13C3_PFBS		86	25-150
13C3_PFHxS		95	25-150
13C3-HFPO-DA		91	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - MB

Sample ID: YQ78566-001
Batch: 78566
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		84	25-150
13C4_PFHpA		89	25-150
13C5_PFHxA		80	25-150
13C5_PFPeA		83	25-150
13C6_PFDA		83	25-150
13C7_PFUdA		78	25-150
13C8_PFOA		93	25-150
13C8_PFOS		76	25-150
13C8_PFOSA		80	10-150
13C9_PFNA		73	25-150
d-EtFOSA		58	10-150
d5-EtFOSAA		87	25-150
d9-EtFOSE		75	10-150
d-MeFOSA		59	10-150
d3-MeFOSAA		86	25-150
d7-MeFOSE		73	10-150

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - LCS

Sample ID: YQ78566-002
Batch: 78566
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	14		1	93	50-150	06/27/2023 2305
11Cl-PF3OUdS	15	14		1	95	50-150	06/27/2023 2305
8:2 FTS	15	15		1	99	50-150	06/27/2023 2305
6:2 FTS	15	14		1	90	50-150	06/27/2023 2305
4:2 FTS	15	15		1	98	50-150	06/27/2023 2305
GenX	32	32		1	101	50-150	06/27/2023 2305
ADONA	15	16		1	106	50-150	06/27/2023 2305
EtFOSA	16	16		1	99	50-150	06/27/2023 2305
EtFOSAA	16	17		1	107	50-150	06/27/2023 2305
EtFOSE	16	16		1	98	50-150	06/27/2023 2305
MeFOSA	16	15		1	96	50-150	06/27/2023 2305
MeFOSAA	16	16		1	102	50-150	06/27/2023 2305
MeFOSE	16	15		1	91	50-150	06/27/2023 2305
PFBS	14	14		1	102	50-150	06/27/2023 2305
PFDS	15	14		1	93	50-150	06/27/2023 2305
PFHpS	15	16		1	105	50-150	06/27/2023 2305
PFNS	15	15		1	96	50-150	06/27/2023 2305
PFOSA	16	18		1	113	50-150	06/27/2023 2305
PFPeS	15	15		1	103	50-150	06/27/2023 2305
PFDOS	15	14		1	89	50-150	06/27/2023 2305
PFHxS	15	16		1	109	50-150	06/27/2023 2305
PFBA	16	16		1	102	50-150	06/27/2023 2305
PFDA	16	17		1	105	50-150	06/27/2023 2305
PFDoA	16	16		1	101	50-150	06/27/2023 2305
PFHpA	16	17		1	106	50-150	06/27/2023 2305
PFHxA	16	16		1	99	50-150	06/27/2023 2305
PFNA	16	17		1	103	50-150	06/27/2023 2305
PFOA	16	16		1	99	50-150	06/27/2023 2305
PFPeA	16	17		1	103	50-150	06/27/2023 2305
PFTeDA	16	16		1	102	50-150	06/27/2023 2305
PFTrDA	16	15		1	96	50-150	06/27/2023 2305
PFUdA	16	17		1	106	50-150	06/27/2023 2305
PFOS	15	15		1	103	50-150	06/27/2023 2305

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		93	25-150
13C2_6:2FTS		97	25-150
13C2_8:2FTS		88	25-150
13C2_PFDoA		96	25-150
13C2_PFTeDA		95	25-150
13C3_PFBS		97	25-150
13C3_PFHxS		100	25-150
13C3-HFPO-DA		107	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - LCS

Sample ID: YQ78566-002
Batch: 78566
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		100	25-150
13C4_PFHpA		97	25-150
13C5_PFHxA		95	25-150
13C5_PFPeA		98	25-150
13C6_PFDA		93	25-150
13C7_PFUdA		89	25-150
13C8_PFOA		112	25-150
13C8_PFOS		94	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		95	25-150
d-EtFOSA		61	10-150
d5-EtFOSAA		101	25-150
d9-EtFOSE		82	10-150
d-MeFOSA		60	10-150
d3-MeFOSAA		94	25-150
d7-MeFOSE		80	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - Duplicate

Sample ID: YF13013-003DU
Batch: 78566
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Parameter	Sample Amount (ng/L)	Result (ng/L)	Q	Dil	% RPD	%RPD Limit	Analysis Date
9Cl-PF3ONS	ND	ND		1	0.00	20	06/27/2023 2348
11Cl-PF3OUdS	ND	ND		1	0.00	20	06/27/2023 2348
8:2 FTS	ND	ND		1	0.00	20	06/27/2023 2348
6:2 FTS	ND	ND		1	0.00	20	06/27/2023 2348
4:2 FTS	ND	ND		1	0.00	20	06/27/2023 2348
GenX	ND	ND		1	0.00	20	06/27/2023 2348
ADONA	ND	ND		1	0.00	20	06/27/2023 2348
EtFOSA	ND	ND		1	0.00	20	06/27/2023 2348
EtFOSAA	2.5	1.9	J,+	1	25	20	06/27/2023 2348
EtFOSE	ND	ND		1	0.00	20	06/27/2023 2348
MeFOSA	ND	ND		1	0.00	20	06/27/2023 2348
MeFOSAA	3.8	4.4	J	1	14	20	06/27/2023 2348
MeFOSE	ND	ND		1	0.00	20	06/27/2023 2348
PFBS	26	23		1	9.2	20	06/27/2023 2348
PFDS	ND	ND		1	0.00	20	06/27/2023 2348
PFHpS	17	15		1	12	20	06/27/2023 2348
PFNS	ND	ND		1	0.00	20	06/27/2023 2348
PFOSA	8.5	8.5		1	0.45	20	06/27/2023 2348
PFPeS	29	27		1	4.9	20	06/27/2023 2348
PFDOS	ND	ND		1	0.00	20	06/27/2023 2348
PFHxS	97	86		1	12	20	06/27/2023 2348
PFBA	17	16		1	3.1	20	06/27/2023 2348
PFDA	0.59	0.59	J	1	0.80	20	06/27/2023 2348
PFDoA	ND	ND		1	0.00	20	06/27/2023 2348
PFHpA	27	27		1	0.96	20	06/27/2023 2348
PFHxA	33	31		1	5.6	20	06/27/2023 2348
PFNA	2.9	2.6	J	1	11	20	06/27/2023 2348
PFOA	260	240		1	7.7	20	06/27/2023 2348
PFPeA	14	15		1	6.6	20	06/27/2023 2348
PFTeDA	ND	ND		1	0.00	20	06/27/2023 2348
PFTrDA	ND	ND		1	0.00	20	06/27/2023 2348
PFUdA	ND	ND		1	0.00	20	06/27/2023 2348
PFOS	680	620	E	1	9.4	20	06/27/2023 2348

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS	N	224	25-150
13C2_6:2FTS	N	151	25-150
13C2_8:2FTS		101	25-150
13C2_PFDoA		90	25-150
13C2_PFTeDA		100	25-150
13C3_PFBS		108	25-150
13C3_PFHxS		113	25-150
13C3-HFPO-DA		109	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - Duplicate

Sample ID: YF13013-003DU
Batch: 78566
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 06/26/2023 1009

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		69	25-150
13C4_PFHpA		98	25-150
13C5_PFHxA		109	25-150
13C5_PFPeA		98	25-150
13C6_PFDA		106	25-150
13C7_PFUdA		102	25-150
13C8_PFOA		127	25-150
13C8_PFOS		102	25-150
13C8_PFOSA		107	10-150
13C9_PFNA		102	25-150
d-EtFOSA		76	10-150
d5-EtFOSAA		111	25-150
d9-EtFOSE		85	10-150
d-MeFOSA		71	10-150
d3-MeFOSAA		103	25-150
d7-MeFOSE		84	10-150

LOQ = Limit of Quantitation
DL = Detection Limit

ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria

N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

Chain of Custody
and
Miscellaneous Documents

Internal Transfer Chain of Custody

Pace Analytical
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☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 6/10/2023 Results Requested By: 7/12/2023

Workorder: 40263440 **Workorder Name:** 0054 2644-WALMART

Report To	Subcontract To	Requested Analysis
Angela Lane Pace Analytical Green Bay 1241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436	Pace Analytical West Columbia 106 Vantage Point Drive West Columbia, SC 29172 Phone (803)791-9700	

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers	WI 3035 GW 3Pns	LAB USE ONLY
1	MW-1	PS	6/9/2023 11:55	40263440001	Water	2	X	
2	MW-4	PS	6/9/2023 12:30	40263440002	Water	2	X	
3	MW-5	PS	6/9/2023 13:25	40263440003	Water	2	X	
4	MW-6	PS	6/9/2023 12:55	40263440004	Water	2	X	
5	MW-7	PS	6/9/2023 13:50	40263440005	Water	2	X	
6	FIELD BLANK	PS	6/9/2023 13:20	40263440006	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	6/12/23 1615		
2				
3	[signature]	6-13-23 950	[signature]	6-13-23 950

Comments

Cooler Temperature on Receipt 2.1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

Pace Analytical Services, LLC (formerly Shealy Environmental Services, Inc.)
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PACE ANALYTICAL SERVICES, LLC

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-In Number Here: 40263440

ALL SHADED AREAS are for LAB USE ONLY

Company: PSI, Inc

Billing Information: Same

Address: 821 Corporate Ct, Waukesha

Report To: Pat Patterson

Email To:

Copy To:

Site Collection Info/Address: South Milwaukee

Customer Project Name/Number: 0054 2644 - Walmart

State: WI | County/City: | Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Phone: 262-521-2125
Email:

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print): Kay Harpell

Collected By (signature):

Purchase Order #:
Quote #:

DW PWS ID #:
DW Location Code:

Turnaround Date Required:

Immediately Packed on Ice: [ ] Yes [ ] No

Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____

Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: PFAS	Lab Sample # / Comments
MW-1	GW		6/9	1155				2	X	001
MW-2	—			—				—	—	002
MW-4	GW			1230				2	X	003
MW-5				1325				2	X	004
MW-6				1255				2	X	005
MW-7				1350				2	X	006
Field Blank	OT			1320				2	X	007
										008

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2784853

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#:
Cooler 1 Temp Upon Receipt: ___ oC
Cooler 1 Therm Corr. Factor: ___ oC
Cooler 1 Corrected Temp: ___ oC
Comments:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	6/9/23 15:45		
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
CS Logistics	6/10/23 0855	Angel R. Hill	6/10/23 0855
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

PACE ANALYTICAL SERVICES, LLC

Client Name: PSI Inc

Sample Preservation Receipt Form

Project # 40263440

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☒N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	Initial when completed:				Date/ Time:	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2		H2SO4 pH ≤2	NaOH+Zn Acet pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	
001																																		2.5 / 5
002																																		2.5 / 5
003																																		2.5 / 5
004																																		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		2.5 / 5
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017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☒N/A *If yes look in headspace column

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4
BP2Z	500 mL plastic NaOH + Zn

VG9C	40 mL clear ascorbic w/ HCl
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN 1	
GN 2	

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DC#_Title: ENV-FRM-GBAY-0014 v03_SCUR
Effective Date: 8/17/2022

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40263440

40263440

Client Name: PSI Inc.

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other:

Tracking #:

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☒ Other Ziplocs 6/10/23 dRY

Thermometer Used SR - 129 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: 1.0

Temp Blank Present: ☐ yes ☐ no **Biological Tissue Is Frozen:** ☐ yes ☐ no

Person examining contents:
Date: 6/10/23 Initials: dRY

Labeled By Initials:

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9.
Correct Type: (Pace Green Bay) Pace IR, Non-Pace		
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☒Yes ☐No ☐N/A	12.
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☒No ☐N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login

Page 2 of 2

Qualtrax ID: 41292 Pace® Analytical Services, LLC Page 1 of 2

DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

Sample Receipt Checklist (SRC)

Client: PACE Cooler Inspected by/date: BRB / 06/13/23 Lot #: YF13013

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☑ FedEx ☐ Other:			
☑ Yes	☐ No		1. Were custody seals present on the cooler?
☑ Yes	☐ No	☐ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA
Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA
2.1 / 2.1 °C NA / NA °C NA / NA °C NA / NA °C
Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C
Method of coolant: ☑ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☑ Yes	☐ No	☐ NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC and all sample containers?
☑ Yes	☐ No		7. Was collection date & time listed on the COC and all sample containers?
☑ Yes	☐ No		8. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		9. Were tests to be performed listed on the COC?
☑ Yes	☐ No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		11. Was adequate sample volume available?
☑ Yes	☐ No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☑ Yes	☐ No		13. Were all samples containers accounted for? (No missing/excess)
☐ Yes	☐ No	☑ NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☑ No	☐ NA	18. Was the quote number listed on the container label? If yes, Quote #

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. ☐
Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1