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14 August 2014

Mr. F. Thomas Lubozynski, P.E.
Waste Program Administrator
Solid and Hazardous Waste Program
Florida Department of Environmental Protection, Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Re: 20th Semi-Annual Water Quality Monitoring Report
J.E.D. Solid Waste Management Facility, Osceola County, Florida
Permit No. SO49-0199726-024
WACS Facility ID #89544

Dear Mr. Lubozynski:

Submitted herewith is the subject report documenting the 20th semi-annual water quality monitoring event conducted at the J.E.D. Solid Waste Management (JED) Facility located in Osceola County, Florida. This report is being submitted as required for compliance with the conditions contained within the Monitoring Plan Implementation Schedule (MPIS) for the above referenced permit. In accordance with the permit conditions, this semi-annual water quality monitoring event was performed in May 2014. This report satisfies the semi-annual water quality monitoring compliance requirements as described in the Permit.

As noted in the revised MPIS, one electronic copy (Adobe pdf format) of the 20th semi-annual water quality monitoring report is being submitted to FDEP via email along with the ADaPT compatible electronic data deliverable (EDD) in .zip file format.

If you have any questions or need additional information, please do not hesitate to contact Matthew Wissler at (727) 330-9954.

Sincerely,

Matthew P. Wissler
Senior Hydrogeologist

Attachments

Copy: Mike Kaiser, WSI
Clark Moore, FDEP Tallahassee

Prepared For:

Omni Waste of Osceola County, LLC
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20th SEMI-ANNUAL WATER QUALITY MONITORING REPORT

J.E.D. Solid Waste Management Facility
1501 Omni Way
St. Cloud, Osceola County, Florida 34773

Prepared by:

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Project No. FR2220A

14 August 2014

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1. INTRODUCTION

1.1 Terms of Reference

On behalf of Omni Waste of Osceola County, LLC (Omni), Geosyntec Consultants (Geosyntec) has prepared the 20th semi-annual water quality monitoring report for the J.E.D. Solid Waste Management (JED) facility. This report summarizes and provides interpretation of the water quality monitoring performed in accordance with the Water Quality Monitoring Plan (Plan) prepared as part of the JED facility permit application. The requirements for executing the Plan were presented in Appendix 3 - Monitoring Plan Implementation Schedule (MPIS) of the current Permit (Permit Number SO49-0199726-022) that authorizes the development of Phases 1 through 4 at the JED facility issued by the Florida Department of Environmental Protection (FDEP) on 12 July 2012.

This report was prepared by Geosyntec on behalf of Omni, a Progressive Waste Solutions Company, owner and operator of the JED facility. A completed water quality certification form (FDEP Form 62-701.900[31]) is included in **Appendix A**.

1.2 Overview

The Plan and the MPIS describe a water quality monitoring program at the JED facility that has as its intent to: (i) measure and report groundwater and surface water conditions for the monitoring network; (ii) monitor the groundwater flow direction; and (iii) monitor the groundwater and surface water quality on a semi-annual basis. The 20th semi-annual water quality monitoring event was completed from 5 May through 15 May 2014. This report includes presentation and discussions of the sample locations, sampling procedures, laboratory analyses and results, field data measurements, groundwater level measurements, groundwater flow direction and surface water quality monitoring. In addition, this report includes a comparison of the analytical results of this sampling event to applicable Groundwater Cleanup Target Levels (GCTLs) as promulgated in Chapter 62-777, Florida Administrative Code (FAC).

1.3 Site Description

The JED facility is located in eastern Osceola County, Florida, west of highway U.S. 441, and approximately 6.5 miles south of Holopaw. The facility is a Class I landfill which is linked to highway U.S. 441 by a 2.9-mile access road. The JED facility comprises a total of approximately 2,179 acres. The landfill footprint at build-out will be approximately 360 acres and consist of 23 landfill cells that will provide available waste capacity for a period of approximately 30 years. The FDEP issued a permit to construct and operate Phase 1 development of the JED facility in October 2003. Phase 1 development includes four landfill cells (Cells 1 through 4), located in the northern part of the landfill encompassing

approximately 54 acres. As part of Phase 1, forty-five (45) groundwater monitoring wells were installed in fifteen (15) clusters (MW-1 through MW-15) around the perimeter of the Phase 1 development area. The baseline water quality report for the Phase 1 monitoring well network was submitted to FDEP in May 2004. All components of the Phase 1 development have been constructed.

The FDEP issued a permit to construct and operate Phases 2 and 3 at the JED facility in March 2007. The development of Phases 2 and 3 includes six cells (Cells 5 through 10) with a total footprint of approximately 72 acres. As part of Phases 2 and 3 development, and as approved by FDEP, six (6) existing Phase 1 monitoring wells (MW-14 A, B, and C, and MW-15 A, B, and C), and ten (10) piezometers were decommissioned. The wells and piezometers were decommissioned to allow for construction of future cells and construction of a storm water retention basin located within Phases 2 and 3. The decommissioning of the monitoring wells and piezometers was discussed in the Phases 2 and 3 baseline water quality report. For the development of Phases 2 and 3, twenty-four (24) additional groundwater monitoring wells were installed in eight (8) well clusters (MW-16 through MW-23) around the perimeter of the Phases 2 and 3 development areas in September 2007. The baseline water quality report for the Phases 2 and 3 monitoring well network was submitted to FDEP in January 2008.

The FDEP issued a permit to construct and operate Phases 1 through 3 with a vertical expansion at the JED facility in April 2008. In April 2009, the MPIS for the semi-annual water quality monitoring well network and sampling schedule were updated for Phases 1, 2 and 3. The modification included a reduction of the Phase 3 monitoring wells required to be sampled semi-annually until such time that waste placement commences in one of the Phase 3 cells (i.e., Cells 8, 9 and 10) and the sampling schedule was modified for the B-zone (intermediate) and C-zone (deep). These monitoring wells were sampled on an alternating annual basis. The C-zone monitoring wells MW-1 through MW-13, MW-16, MW-19 through MW-23 and B-zone monitoring well MW-16B were sampled in November and reported in January; B-zone monitoring wells MW-1 through MW-13, MW-16, MW-19 through MW-23 and C-zone monitoring well MW-16C were sampled in May and reported in July.

Cell 1 was completed in January 2004, Cell 4 was completed in May 2005, Cell 2 was completed in April 2006, Cell 3 was completed in October 2006, Cell 5 was completed in October 2007, Cell 6 was completed in July 2008 and Cell 7 was completed in August 2010. The FDEP issued a permit to construct a lateral expansion of the facility on 8 August 2011, which authorizes construction of Phases 3-8, Cells 8-23. Cell 8 was completed in April 2012. During construction startup of Cell 8 in November 2011, monitoring well cluster MW-22 (A, B and C) was decommissioned to accommodate the perimeter road access to Cell 8. The MW-22 cluster abandonment report was submitted to the FDEP in April 2012. The well cluster was replaced in March 2012 and located on the perimeter access road approximately 800 feet south of well cluster MW-23. The shallow, intermediate and deep monitoring wells

were designated MW-22RA, MW-22RB and MW-22RC, respectively. The baseline water quality report for cluster MW-22R was submitted to the FDEP in July 2012.

The Cell 9 disposal area construction was completed in October 2013 and approved by the FDEP in November 2013. As with previous construction and expansion efforts (i.e., Cell 8 disposal area) well cluster MW-20 was installed in a temporary location on the Phase 3 stormwater berm. Cell 9 construction activities included substantial modifications to the berm and as such, a request was made to abandon the well cluster. In addition, MW-16 cluster was abandon at its temporary location and replaced in a permanent location on the backside of the perimeter berm near the Cell 9 sump. Monitoring well clusters MW-16 and MW-20 were abandoned on 24 June 2013. Replacement monitoring wells MW-16AR, MW-16BR and MW-16CR were installed in October 2013. The monitoring well abandonment and installation report was submitted to the FDEP in November 2013.

A permit minor modification application was submitted to the FDEP on December 24, 2013. The minor modification application was a request to modify the MPIS prior to the initiation of construction of Cell 10 of Phase 3 and Cells 11-13 of Phase 4 as discussed with the FDEP during a 19 November 2013 meeting. The minor modification was approved by the FDEP in January 2014. The major changes include:

- Installation and sampling schedule of monitoring wells for the Phase 4 construction (includes Cells 10, 11, 12 and 13),
- Removal of the "C" zone wells from the semi-annual sampling schedule, and
- Installation of only "A" and "B" zone wells at the new monitoring well cluster locations.

Construction of the Cell 10 disposal area began in March 2014 which necessitated the abandonment of temporary groundwater monitoring well clusters MW-17, 18, 19 and 21. The wells were located on the Phase 3 interim storm water berm and were abandoned during Cell 10 construction on 5 March 2014. The monitoring well abandonment report was submitted to the FDEP on 13 March 2014.

The January 2014 MPIS revision was implemented during the 20th semi-annual groundwater sampling event in May 2014. In an email dated 14 May 2014, the FDEP, based on review of past semi-annual water quality monitoring reports, removed total phenols analysis from the laboratory parameters list in requirement 9 of the MPIS.

2. MONITORING WELL DETAILS

2.1 Well Layout and Construction

For the Phase 1 development, forty five (45) groundwater monitoring wells were installed in fifteen (15) clusters (MW-1 through MW-15) around the perimeter of the Phase 1 development area. In accordance with the FDEP permit requirements monitoring well clusters were located such that the spacing between well clusters was no greater than 500 feet. For development of Phases 2 and 3, twenty four (24) groundwater monitoring wells were installed in eight (8) clusters (MW-16 through MW-23) around the perimeter of the Phases 2 and 3 development areas. In accordance with the FDEP permit requirements, the monitoring well clusters were located such that the spacing between detection well clusters (MW-16 through MW-21) was approximately 500 feet, and the spacing between background well clusters (MW-22R and MW-23) was approximately 800 feet. Each monitoring well cluster consisted of three (3) groundwater monitoring wells installed: (i) across the water table to monitor the upper limit of the surficial aquifer (identified as A zone [shallow] wells); (ii) within the lower limit of the upper surficial aquifer above the intermediate clay layer (identified as C-zone [deep] wells); and (iii) at an intermediate depth between the shallow and deep wells (identified as B-zone [intermediate] wells).

A layout depicting the location of groundwater monitoring wells installed for Phases 2 and 3, and the previously installed groundwater monitoring wells for Phase 1 are shown for the A zone wells on **Figure 1**. As shown, groundwater monitoring well clusters MW-1 through MW-13, MW-16R, MW-22R and MW-23 were installed along the top of the outer edge of the landfill perimeter berm. The ground surface at the location of the wells in the perimeter berm is at approximately elevation 92 ft with respect to National Geodetic Vertical Datum of 1929 (NGVD, 1929). The locations of each well, in Florida state plane coordinates and latitude/longitude, and elevation NGVD, 1929 were surveyed by professional land surveyors licensed in the State of Florida.

Wells were constructed with 2-inch diameter schedule (SCH) 40 polyvinyl chloride (PVC) casing. The well screens were 10-ft in length with #6-slot (0.006-in.). A 30/45 graded silica sand was placed around the screen to a height of 2 to 3 ft above the top of the screen. A seal of 30/65 graded fine silica sand was placed above the sand filter around the screen. The remaining annular space from the top of the fine sand filter seal to the existing ground surface was grouted using a tremie pipe with a cement/bentonite mixture containing no more than 5 percent bentonite by dry weight. The PVC well casings were extended approximately 2.5 to 3 ft above the existing ground surface. Surface completion consisted of a protective aluminum casing with a lockable cover set in a concrete pad. Each well was provided with a well cap, padlock, and an identification label. A summary of the monitoring well construction details are presented in **Table 1**.

2.2 Turbidity Issues

As discussed in the baseline water quality reports for the Phase 1, and Phases 2 and 3 monitoring networks, the formation around the screened intervals consists primarily of a fine, brown to dark brown, silty sand. Due to the subsurface formation properties, fine-grained and colloidal material are able to pass through the sand filter pack in many wells, primarily in the B-zone and C-zone wells. This is the case even though the wells are constructed using the smallest screen slot size (0.006 in.) commonly available. Most of the intermediate and deep wells had turbidity values in excess of the 20 nephelometric turbidity unit (NTU) criterion even after extended well development and the removal of multiple well volumes.

The difficulty in attaining the desired turbidity criterion was originally discussed at a meeting between Geosyntec and FDEP on 12 January 2004 during the well development activities associated with the wells installed as part of the Phase 1 development. Geosyntec notified FDEP again on 14 September 2007 of the elevated turbidity levels even after extended well development during development of the Phases 2 and 3 monitoring wells. In accordance with these discussions, it was agreed to collect field-filtered (1-micron) and unfiltered samples for metals analyses for any sample with a turbidity value greater than 20 NTU. The data generated by the dual sampling is expected to help demonstrate: (i) what effect turbidity may have on metal analyses (i.e., compare total and dissolved metals concentrations); and (ii) whether groundwater samples with turbidities greater than 20 NTU showed higher concentrations of metals than those samples with turbidities less than 20 NTU.

3. MONITORING WELL SAMPLING

3.1 Sampling Locations and Procedures

In accordance with the MPIS, twenty-six (26) monitoring wells installed as part of the Phase 1 development and six (6) of the monitoring wells installed as part of the Phase 2 and 3 development were sampled during the 20th semi-annual sampling event. Monitoring wells sampled this monitoring event included A and B-zone monitoring wells MW-1 through MW-13, MW-16R, MW-22R and MW-23. Low-flow sampling techniques were used for groundwater sample collection. All groundwater sampling was performed in accordance with the current applicable FDEP Standard Operating Procedures (DEP-SOP-001-01, December 2008) for groundwater sampling. Additionally, for quality control (QC) purposes, one blind duplicate sample and one equipment blank were collected and analyzed. Peristaltic pumps were used to purge and sample each monitoring well using new tubing (silicone and/or polyethylene) at each well.

During the purging process, a YSI 556 water quality meter equipped with a flow-through cell was used to monitor the following field parameters: pH; temperature; field conductivity; oxidation-reduction potential (ORP); and dissolved oxygen. Turbidity levels were measured using a LaMotte 2020e turbidity meter. Field parameters were recorded on sample collection forms, which are contained in **Appendix B**. Observations pertaining to the color of the groundwater samples collected were also noted on the sample collection forms. When the field parameters stabilized within the acceptable tolerances required by the FDEP SOP, well purging was considered complete and groundwater samples were collected.

Volatile organic compound (VOC) sample vials were filled by removing the down well sample tubing, disconnecting the tubing from the water quality meter flow through cell, and reversing the flow direction on the peristaltic pump. The calibration of the water quality monitoring instruments was checked daily and re-calibrated when necessary. Water quality instrument calibration forms are presented in **Appendix C**. Samples were placed in coolers and packed with bagged ice for transport to the analytical laboratory. Chain-of-Custody (COC) forms were completed and accompanied the samples to the analytical laboratory. All COC forms are included in **Appendix D**. Trip blank samples accompanied all sample coolers with VOC samples. Temperature blanks were packed in each sample cooler and security seals were affixed to every cooler shipped.

3.2 Sample Analyses

Samples were analyzed by ALS Environmental of Jacksonville, Florida (ALS) in accordance with the National Environmental Laboratory Accreditation Conference (NELAC) standards. ALS holds certification from the Florida Department of Health (FDOH) for the analytical test

methods used for this project and is certified in the State of Florida for analysis of environmental samples.

Groundwater samples were analyzed by ALS for total ammonia as nitrogen, chlorides, nitrate as nitrogen, total dissolved solids (TDS), iron, mercury, sodium and the 40 Code of Federal Regulations (CFR) Part 258 Appendix I parameters. Other required parameters (i.e., pH; temperature; conductivity; turbidity; ORP; and dissolved oxygen) were measured in the field during collection of the groundwater samples.

4. ANALYTICAL RESULTS

4.1 Field Parameters

Table 2 provides a summary of the field measurements of selected water quality parameters utilized for determining sample stability for this semi-annual monitoring event.

4.2 Groundwater Monitoring Wells

The analytical laboratory results for this groundwater sampling event have been transferred to a compact disc (CD) and are included in **Appendix E**. Analytical results have been summarized in **Table 3** to show all parameters where a constituent concentration was reported above the applicable FDEP Groundwater Cleanup Target Level (GCTL). Any parameter exceeding the GCTL has been highlighted orange. The following discussion regarding groundwater quality is limited to those parameters where the GCTL was exceeded in at least one groundwater monitoring well and has been organized by analytical method.

Total Metals (Methods 6020 and 6010B)

Arsenic

Arsenic was reported above the GCTL of 10 micrograms per liter (µg/L) at MW-13A (10.4 µg/L). Please note in the MPIS under item 5, the FDEP has accepted a background arsenic concentration of 20 µg/L in MW-13A.

Iron

Iron was reported above the GCTL of 300 µg/L in each of the sixteen (16) A-zone monitoring wells sampled with the concentrations ranging between 690 and 24,200 µg/L, with the highest concentration from MW-13A. Iron was detected above the GCTL in each of the sixteen (16) B-zone monitoring wells sampled this event with concentrations ranging between 330 and 50,600 µg/L, with the highest concentration from MW-9B. Iron has historically exceeded the GCTL in all wells at the site for all monitoring events including the baseline events. The iron concentrations reported for the 20th semi-annual event are consistent with period of record data.

Sodium

Sodium was detected above the GCTL of 160 milligrams per liter (mg/L) in shallow monitoring well MW-1A (297 mg/L) which is lower than the result from the previous event (336 mg/L). The remaining monitoring wells are consistent with period of record data.

Ammonia-N (Method 350.1)

Ammonia-N was reported above the GCTL of 2.8 mg/L in eleven (11) of the A-zone monitoring wells sampled this event with the concentrations ranging between 3.62 and 19.6 mg/L, with the highest concentration from MW-1A. The GCTL for Ammonia-N was exceeded in B-zone monitoring wells MW-5B (2.94 mg/L) and MW-10B (4.64 mg/L).

As indicated in correspondence by HDR, (Class I Permit Renewal Request for Additional Information – January 2012), given that the JED facility is a double geosynthetically lined landfill including a witness zone (secondary liner), an alternative and probable source of ammonia in groundwater at the JED facility includes naturally occurring sources of nitrogen containing compounds present in the organic rich soils. Under the right biogeochemical conditions, nitrogen containing compounds can be converted to ammonia under reducing geochemical conditions. Reducing conditions can be formed in a variety of ways including, shadow effect due to reduction of oxygen rich precipitation infiltration over a large area, displacement of oxygen by landfill gas immediately above the water table, and release of organic matter which promotes the growth of microorganisms which can consume oxygen.

As HDR noted, reductive dissolution is a plausible explanation for the detection of ammonia at the facility. Researchers have recently found good correlation with arsenic and ammonia with iron which supports the concept of reductive dissolution of iron hydroxide as a dominant reaction mobilizing these compounds in groundwater. The reductive dissolution of iron and the associated mobilization of iron in groundwater are well documented in literature. More recent research demonstrates this same mechanism can explain the release of arsenic at landfills. The mechanisms of iron and arsenic chemistry are well established; however, the presence of ammonia in groundwater at landfills has only recently been evaluated.

It has been reported that ammonium will co-precipitate with iron. Conversely as a result of reductive dissolution, ammonium would be mobilized in the groundwater if no other adsorption sites are readily available for the ammonium cation. As a cation, ammonium may be bound to soil particles through ion exchange. If high concentrations of Fe^{+2} are released (such as those that occur during reductive dissolution), an increase in ammonium ion concentrations in groundwater would be expected.

A large scale leachate release would produce pronounced concentration increases of leachate indicator parameters (i.e. TDS, chloride, sodium) in groundwater, but the increases in ammonia seem to occur at the onset of construction without correlation to the filling sequence. Neither the constituents nor the concentrations detected in groundwater appear to correlate well with leachate. As discussed in the recent 4th Technical Report on Water Quality, if detections in groundwater were due to a direct leachate release, the concentrations of various indicator constituents (such as chloride, sodium etc.) found in groundwater should be relatively proportional to those found in leachate samples, particularly given the close

proximity of the groundwater wells to the leachate sumps, however this is not the case. The VOC's (and concentrations) detected in leachate are markedly different than the VOC fingerprint at individual wells (which further supports landfill gas as the source of the benzene in groundwater). A direct release of leachate should also indicate proportional levels of other indicator compounds such as sodium, chloride and metals concurrent with ammonia.

Although ammonia is considered a common leachate indicator, no definitive evidence of a leachate discharge exists. The preponderance of evidence does support the concept that the source of ammonia is from reductive dissolution reactions mobilizing ammonia present in site soils. Shallow groundwater at the site is strongly reducing favoring the process of reductive dissolution.

Total Dissolved Solids (Method SM 2540C)

TDS was detected above the GCTL of 500 mg/L in A-zone monitoring wells MW-1A (1,200 mg/L), MW-4A (678 mg/L) and MW-8A (1,570 mg/L) and in B-zone monitoring wells MW-3B (1,090 mg/L), MW-4B (1,520 mg/L), MW-7B (600 mg/L), MW-9B (1,240 mg/L) and MW-10B (627 mg/L). TDS is an indicator parameter whose value can be attributable to the presence of major cations and anions, such as calcium, magnesium, sodium, chloride, and sulfate.

Chloride (Method 300.0)

Chloride was detected above the GCTL of 250 mg/L in shallow monitoring well MW-1A (544 mg/L) which is lower than the result from the previous event (617 mg/L). The remaining monitoring wells are consistent with period of record data.

40 CFR Part 258, Appendix I Volatile Compounds (Method 8260)

Benzene was detected above the GCTL of 1.0 µg/L in eleven (11) A-zone monitoring wells at concentrations ranging from 1.2 to 7.8 µg/L, with the highest concentration from MW-1A.

As indicated in correspondence by HDR (Class I Permit Renewal Request for Additional Information – January 2012) and by Geosyntec (Groundwater Contamination and Landfill Gas Migration Investigation and Assessment – December 2013) the source of benzene in groundwater is likely attributed to landfill gas. As noted in the previous discussion for detections of Ammonia-N, neither the constituents nor the concentrations of VOC's detected in groundwater appear to correlate well with leachate results. As discussed in the 4th Technical Report, if detections in groundwater were due to a direct leachate release, the concentrations of various indicator constituents (such as chloride, sodium etc.) found in groundwater should be relatively proportional to those found in leachate samples, particularly given the close proximity of the groundwater wells to the leachate sumps, however this is not

the case with the exception of at MW-1A. The VOC's (and concentrations) detected in leachate are markedly different than the VOC fingerprint at individual wells (which further supports landfill gas as the source of the benzene in groundwater).

4.3 Data Validation

All analyses were performed within the method specified holding times.

One blind duplicate sample was collected during the 20th semi-annual monitoring event. The duplicate sample was collected at monitoring well MW-2A. Results of the duplicate samples are included in **Table 3**. Duplicate sample bottles were collected immediately following the original samples to assure near identical conditions were maintained during sampling. In addition, an equipment blank was collected in the field using a peristaltic pump with new tubing (silicone and polyethylene). De-ionized water supplied by ALS was pumped through the tubing and analyzed for the same parameters as the groundwater samples. Analysis of the equipment blank sample resulted in a detection of 1,4-Dichlorobenzene (0.16 μg/L), acetone (9.1 μg/L) and methylene chloride (4.5 μg/L) at concentrations below the Practical Quantitation Limit (PQL). All other constituents analyzed for were not detected in the equipment blank sample.

To confirm sample validity, a relative percent difference (RPD) calculation was performed between the original sample and a blind duplicate sample. The average RPD for the duplicate sample was below two percent which indicates a strong correlation. This analysis shows that the laboratory analytical results are validated.

Additionally, the surrogate recovery, trip blanks, method blanks, matrix spike and matrix spike duplicates were within acceptable criterion on each laboratory report.

4.4 Impact of Turbidity on Metals Concentrations

The use of a peristaltic pump and the minimum purge requirements were adequate to achieve turbidity levels less than the FDEP guidance of 20 NTUs in all of the wells sampled this event. Historical data shows that the turbidity levels for the monitoring well network has improved over the course of the semi-annual groundwater sampling events. The need to collect dissolved metal samples in the current well network may no longer be necessary; however, newly installed monitoring wells may still require the collection of a sample for dissolved metals analysis.

5. GROUNDWATER LEVEL MEASUREMENTS AND FLOW DIRECTION

5.1 Field Measurements

Groundwater level measurements were obtained on 5 May 2014 from all Phases 1 through 3 groundwater monitoring wells and the remaining piezometers installed as part of the original site hydrogeological investigation. All groundwater level measurements were made within an approximate 4-hr period. The groundwater level measurements from the monitoring wells and piezometers are presented in **Table 4**.

5.2 Water Level Contours

The water level contour map prepared from groundwater level measurements for the surficial aquifer in the A-zone (shallow) is presented in **Figure 1**. Historically, the direction of the horizontal component of groundwater flow for all three zones is predominantly east-northeast towards Bull Creek. The groundwater level elevation data collected on 5 May 2014 from the A-zone monitoring well network indicate the direction of groundwater flow is consistent with the historic data.

Historically, comparison of water levels between the A, B and C wells shows a similar vertical gradient ($6E^{-3}$ ft/ft). These gradients are consistent with the regional gradient in the upper surficial aquifer and indicate an interconnected, sluggish flow regime in the saturated zone above the Intermediate Confining Unit (ICU).

6. SURFACE WATER SAMPLING

6.1 Sampling Locations and Procedures

Two (2) surface water sampling locations established during the initial hydrogeological investigation were selected by FDEP for routine water quality monitoring. As stated in the Permit, surface water samples are only to be collected when there is flow in Bull Creek.

At the time of completion of the 20th semi-annual water quality monitoring event, flow was observed in Bull Creek at the upstream monitoring station (SW-4) and the downstream monitoring location (SW-3), as a result two surface water samples were collected. Surface water samples were collected from the approximate center of Bull Creek. A YSI 556 water quality meter was used to measure field parameters including temperature, pH, dissolved oxygen and specific conductance at each sampling location. Turbidity levels were measured using a LaMotte 2020e turbidity meter. Surface water samples were collected in accordance with FDEP surface water sampling SOPs.

6.2 Sample Analyses

Surface water samples were analyzed by ALS in accordance with the NELAC (National Environmental Laboratory Accreditation Conference) standards for unionized ammonia, total hardness as $CaCO_3$, total organic carbon (TOC), chlorides, nitrate, total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total nitrogen as N, nitrate as N, total phosphates as P, chlorophyll A, iron, mercury, fecal coliform, and the 40 CFR, Part 258 Appendix I parameters. Other required parameters (e.g., pH; temperature; specific conductance; turbidity; and dissolved oxygen) were field measured during collection of the surface water samples.

6.3 Field Measurements and Analytical Results

Table 5 provides a summary of the final field parameter values and laboratory analytical results for the surface water samples. The analytical laboratory results have been transferred to a CD and are included in **Appendix E**.

Parameters exceeding the Surface Water Quality Criteria (SWQC) Class III concentrations are discussed below:

Dissolved Oxygen

The dissolved oxygen reading observed in SW-4 was above the SWQC of 5 mg/L. It should be noted that the detected concentration in the background monitoring station (SW-4) is greater than the down-gradient monitoring location (SW-3), indicating that the landfill is most likely not contributing to the exceedance for dissolved oxygen.

pH

The pH concentrations at SW-3 and 4 were both lower than the SWQC range of 6-8.5 standard units, but are consistent with normal ranges of pH as measured in rainfall (i.e., precipitation).

Iron

The SWQC for iron of 1 mg/L was exceeded in SW-3 and SW-4 at concentrations of 1.33 mg/L and 1.78 mg/L, respectively. For this constituent it should be noted that the detected concentration in the background monitoring station (SW-4) and the down-gradient monitoring location are similar, indicating that the landfill is not contributing to the exceedance for iron.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Sampling Locations

The existing monitoring well network is adequate for monitoring purposes and no changes are recommended.

7.2 Sample Analyses

The detections of ammonia, iron, and arsenic above the GCTLs in specific groundwater monitoring wells have been discussed in detail in the 1st, 2nd, 3rd and 4th Technical Reports on Water Quality (November 2006, September 2008, November 2010 and November 2011, respectively). As discussed in Section 4.2, it is likely that the iron, arsenic and ammonia are not related to a leachate release from the disposal boundary, but rather mobilization of these constituents due to the presence of nitrogen containing compounds under reducing conditions. Our recommendation is to continue to monitor these constituents as part of the current MPIS and provide a review of the data collected during the prior six sampling events in the upcoming 5th Technical Report.

The detections of sodium and chloride above the GCTLs in groundwater monitoring well MW-1A have decreased since the 19th semi-annual water quality monitoring event. Sodium and chloride are leachate indicator parameters; however the concentrations seen in MW-1A are well below those observed in past leachate analyses. A release of leachate is not suspected to be the cause of the increased sodium and chloride. Rather, these detections are likely due to stormwater runoff and cover soil erosion from uncapped areas that occurred within the past year directly upslope of the Cell 5 sump area and MW-1A. Omni has assessed the stormwater drainage issues in this area and is in the process of installing additional stormwater downpiping and an outfall structure in this area. These improvements are expected to correct stormwater drainage issues in the vicinity of MW-1A and therefore, the concentrations of sodium and chloride are expected to decrease in the well over time. Our recommendation is to continue to monitor these constituents as part of the current MPIS.

Compliance monitoring activities were initiated in November 2013 to further assess groundwater conditions adjacent to MW-3A, MW-10A and MW-11A. These activities included the installation of compliance assessment wells CW-1A, CW-2A and CW-3A at the locations indicated on **Figure 1**. The monitoring well installation details and sample analyses will be provided under separate cover.

Our recommendation is to continue semi-annual monitoring as stipulated in the current MPIS and continuation of the quarterly monitoring at CW-1A, CW-2A and CW-3A.

TABLES

Table 1 (1 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD83)	Longitude (NAD83)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet NGVD29)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation NGVD29)			
							Top	Bottom	Top	Bottom		
MW-1A	28 03 48.55	81 05 59.88	19900	9-Dec-03	95.12	23.0	13.0	23.0	82.1	72.1	10.6	8.2
MW-2A	28 03 51.99	81 05 59.90	19903	10-Dec-03	95.21	22.6	12.6	22.6	82.6	72.6	10.3	8.9
MW-3A	28 03 55.34	81 05 59.91	19906	11-Dec-03	94.64	22.8	12.8	22.8	81.9	71.9	10.4	9.0
MW-4A	28 03 58.97	81 05 59.92	19909	12-Dec-03	95.48	23.1	13.1	23.1	82.4	72.4	10.8	9.4
MW-5A	28 04 02.92	81 05 59.95	19912	24-Nov-03	95.32	22.5	12.5	22.5	82.8	72.8	10.1	9.1
MW-6A	28 04 06.50	81 05 59.15	19915	25-Nov-03	94.72	22.6	12.6	22.6	82.2	72.2	10.6	8.6
MW-7A	28 04 07.13	81 05 54.78	19918	26-Nov-03	95.48	23.3	13.3	23.3	82.2	72.2	10.3	9.3
MW-8A	28 04 06.20	81 05 50.64	19921	5-Dec-03	94.67	22.5	12.5	22.5	82.2	72.2	10.2	8.6
MW-9A	28 04 04.34	81 05 46.60	19924	4-Dec-03	94.66	22.4	12.4	22.4	82.3	72.3	10.0	8.6
MW-10A	28 04 00.07	81 05 44.77	19927	3-Dec-03	96.25	22.1	12.1	22.1	84.1	74.1	9.8	7.6
MW-11A	28 03 55.43	81 05 43.27	19930	3-Dec-03	93.56	22.8	12.8	22.8	80.7	70.7	10.5	9.1
MW-12A	28 03 52.08	81 05 43.26	19933	2-Dec-03	95.10	23.0	13.0	23.0	82.1	72.1	10.7	9.3
MW-13A	28 03 48.67	81 05 43.25	19936	8-Dec-03	95.19	22.5	12.5	22.5	82.7	72.7	10.2	7.7
MW-14A	Monitoring Well Abandoned 10 July 2007											
MW-15A	Monitoring Well Abandoned 10 July 2007											
MW-16A	Monitoring Well Abandoned 24 June 2013											
MW-16AR	28 03 44.56	81 05 40.18	22342	15-Oct-13	95.01	23.9	13.5	23.5	81.5	71.5	9.0	8.0
MW-17A	Monitoring Well Abandoned 5 March 2014											
MW-18A	Monitoring Well Abandoned 5 March 2014											
MW-19A	Monitoring Well Abandoned 5 March 2014											
MW-20A	Monitoring Well Abandoned 24 June 2013											
MW-21A	Monitoring Well Abandoned 5 March 2014											
MW-22A	Monitoring Well Abandoned 11 November 2011											
MW-22AR	28 03 34.703	81 06 0.622	28685	14-Mar-12	95.00	23.7	13.0	23.0	82.0	72.0	10.5	9.5
MW-23A	28 03 42.41	81 05 59.79	22363	25-Sep-07	97.90	27.8	17.3	27.3	80.7	70.7	15.3	14.3
MW-24A	28 03 10.54	81 05 30.92	27860	26-Aug-10	86.97	23.34	23.3	23.3	63.6	63.6	23.3	23.3
MW-25A	28 03 26.45	81 05 30.47	27861	26-Aug-10	82.36	23.49	23.5	23.5	58.9	58.9	23.5	23.5
MW-26A	28 03 20.38	81 05 21.22	27862	26-Aug-10	82.01	23.83	23.8	23.8	58.2	58.2	23.8	23.8

Notes:

NAD83 indicates the North American Datum of 1983

NGVD29 indicates the National Geodetic Vertical Datum of 1929

TOC indicates top of casing

BTOC indicates below top of casing

Table 1 (2 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD83)	Longitude (NAD83)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet NGVD29)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation NGVD29)			
							Top	Bottom	Top	Bottom		
MW-1B	28 03 48.59	81 05 59.89	19901	9-Dec-03	95.00	47.9	37.9	47.9	57.1	47.1	35.6	33.1
MW-2B	28 03 51.94	81 05 59.90	19904	10-Dec-03	95.17	48.3	38.3	48.3	56.9	46.9	36.0	34.6
MW-3B	28 03 55.31	81 05 59.91	19907	11-Dec-03	94.68	47.6	37.6	47.6	57.1	47.1	35.3	33.9
MW-4B	28 03 59.01	81 05 59.92	19910	12-Dec-03	95.18	47.4	37.4	47.4	57.8	47.8	35.1	33.5
MW-5B	28 04 02.88	81 05 59.95	19913	24-Nov-03	95.30	47.1	37.1	47.1	58.2	48.2	34.4	32.7
MW-6B	28 04 06.48	81 05 59.18	19916	25-Nov-03	94.60	47.4	37.4	47.4	57.2	47.2	34.9	33.5
MW-7B	28 04 07.13	81 05 54.81	19919	26-Nov-03	95.27	47.5	37.5	47.5	57.8	47.8	34.5	33.5
MW-8B	28 04 06.19	81 05 50.60	19922	5-Dec-03	94.58	49.6	39.6	49.6	55.0	45.0	37.1	35.6
MW-9B	28 04 04.31	81 05 46.56	19925	4-Dec-03	94.63	49.1	39.1	49.1	55.5	45.5	36.8	35.3
MW-10B	28 04 00.04	81 05 44.75	19928	3-Dec-03	96.23	48.3	38.3	48.3	58.0	48.0	35.9	33.9
MW-11B	28 03 55.40	81 05 43.27	19931	2-Dec-03	93.59	47.9	37.9	47.9	55.7	45.7	35.5	34.0
MW-12B	28 03 52.05	81 05 43.27	19934	1-Dec-03	95.01	49.0	39.0	49.0	56.1	46.1	36.6	35.1
MW-13B	28 03 48.64	81 05 43.24	19937	8-Dec-03	95.12	47.2	37.2	47.2	58.0	48.0	34.8	33.4
MW-14B	Monitoring Well Abandoned 10 July 2007											
MW-15B	Monitoring Well Abandoned 10 July 2007											
MW-16B	Monitoring Well Abandoned 24 June 2013											
MW-16RBR	28 03 44.54	81 05 40.14	22343	15-Oct-13	94.97	46.6	36.5	46.5	58.5	48.5	33.0	31.0
MW-17B	Monitoring Well Abandoned 5 March 2014											
MW-18B	Monitoring Well Abandoned 5 March 2014											
MW-19B	Monitoring Well Abandoned 5 March 2014											
MW-20B	Monitoring Well Abandoned 24 June 2013											
MW-21B	Monitoring Well Abandoned 5 March 2014											
MW-22B	Monitoring Well Abandoned 11 November 2011											
MW-22BR	28 03 34.665	81 05 59.850	28686	15-Mar-12	94.86	46.1	35.5	45.5	59.4	49.4	33.0	28.0
MW-23B	28 03 42.46	81 05 59.79	22364	25-Sep-07	97.91	42.75	32.3	42.3	65.7	55.7	30.3	29.3

Notes:

NAD83 indicates the North American Datum of 1983

NGVD29 indicates the National Geodetic Vertical Datum of 1929

TOC indicates top of casing

BTOC indicates below top of casing

Table 1 (3 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD83)	Longitude (NAD83)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet NGVD29)	Total Depth (feet BTOC)	Screen Setting				Sand Pack (feet BTOC)	Fine-Grained Sand Seal (feet BTOC)
							(feet BTOC)		(feet Elevation)			
							Top	Bottom	Top	Bottom		
MW-1C	28 03 48.63	81 05 59.88	19902	9-Dec-03	95.18	75.2	65.2	75.2	30.0	20.0	62.9	61.4
MW-2C	28 03 51.90	81 05 59.89	19905	10-Dec-03	95.32	68.4	58.4	68.4	36.9	26.9	56.1	53.7
MW-3C	28 03 55.28	81 05 59.91	19908	11-Dec-03	94.66	68.7	58.7	68.7	36.0	26.0	56.3	54.8
MW-4C	28 03 59.04	81 05 59.92	19911	12-Dec-03	95.39	72.5	62.5	72.5	32.9	22.9	61.2	59.6
MW-5C	28 04 02.83	81 05 59.95	19914	24-Nov-03	95.39	73.0	63.0	73.0	32.4	22.4	60.7	58.7
MW-6C	28 04 06.46	81 05 59.22	19917	25-Nov-03	94.58	73.2	63.2	73.2	31.4	21.4	60.2	57.7
MW-7C	28 04 07.13	81 05 54.86	19920	25-Nov-03	94.93	73.3	63.3	73.3	31.6	21.6	60.3	59.3
MW-8C	28 04 06.17	81 05 50.55	19923	5-Dec-03	94.50	73.9	63.9	73.9	30.6	20.6	61.6	59.8
MW-9C	28 04 04.29	81 05 46.53	19926	4-Dec-03	94.54	73.8	63.8	73.8	30.8	20.8	61.4	59.4
MW-10C	28 04 00.01	81 05 44.74	19929	3-Dec-03	96.36	73.7	63.7	73.7	32.7	22.7	61.4	60.0
MW-11C	28 03 55.36	81 05 43.26	19932	2-Dec-03	93.65	73.4	63.4	73.4	30.3	20.3	61.0	59.6
MW-12C	28 03 52.01	81 05 43.26	19935	1-Dec-03	95.10	73.6	63.6	73.6	31.5	21.5	60.2	58.7
MW-13C	28 03 48.60	81 05 43.25	19938	8-Dec-03	95.04	73.0	63.0	73.0	32.1	22.1	60.7	58.2
MW-14C	Monitoring Well Abandoned 10 July 2007											
MW-15C	Monitoring Well Abandoned 10 July 2007											
MW-16C	Monitoring Well Abandoned 24 June 2013											
MW-16CR	28 03 44.52	81 05 40.11	22344	16-Oct-13	95.03	75.3	65.0	75.0	30.0	20.0	60.0	59.0
MW-17C	Monitoring Well Abandoned 5 March 2014											
MW-18C	Monitoring Well Abandoned 5 March 2014											
MW-19C	Monitoring Well Abandoned 5 March 2014											
MW-20C	Monitoring Well Abandoned 24 June 2013											
MW-21C	Monitoring Well Abandoned 5 March 2014											
MW-22C	Monitoring Well Abandoned 11 November 2011											
MW-22CR	28 03 34.629	81 05 59.854	28687	15-Mar-12	95.13	66.6	56.0	66.0	39.1	29.1	50.0	49.0
MW-23C	28 03 42.51	81 05 59.80	22365	24-Sep-07	97.93	67.1	56.6	66.6	41.4	31.4	54.6	53.6
MW-27C	28 03 12.45	81 05 17.15	27863	27-Aug-10	81.66	58.3	48.3	58.3	33.4	23.4	46.3	45.3

Notes:

NAD83 indicates the North American Datum of 1983

NGVD29 indicates the National Geodetic Vertical Datum of 1929

TOC indicates top of casing

BTOC indicates below top of casing

Table 2

SUMMARY OF FINAL FIELD PARAMETER RESULTS AND FIELD DATA
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Monitoring Well	Temperature (°C)	pH (Standard Units)	Specific Conductance (uS/cm)	Turbidity (NTUs)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Purging Method
MW-1A	25.92	4.66	2,344	1.3	-1.1	0.54	Peristaltic Pump
MW-2A	24.14	3.80	398	0.8	69.0	0.74	Peristaltic Pump
MW-3A	28.89	5.25	768	2.3	11.3	0.51	Peristaltic Pump
MW-4A	28.83	5.07	1,054	7.2	-13.6	0.51	Peristaltic Pump
MW-5A	25.30	5.20	370	18.7	12.6	0.74	Peristaltic Pump
MW-6A	26.05	4.89	473	0.5	15.4	1.06	Peristaltic Pump
MW-7A	25.85	4.67	284	0.7	23.9	0.63	Peristaltic Pump
MW-8A	24.89	4.29	1,698	0.3	18.3	0.69	Peristaltic Pump
MW-9A	25.83	4.99	310	8.8	22.2	0.66	Peristaltic Pump
MW-10A	25.04	4.81	249	1.7	42.3	0.83	Peristaltic Pump
MW-11A	26.07	4.88	428	4.4	24.6	0.60	Peristaltic Pump
MW-12A	26.92	4.29	180	0.0	60.4	0.78	Peristaltic Pump
MW-13A	27.10	5.08	545	0.0	49.3	0.60	Peristaltic Pump
MW-16AR	25.15	5.37	164	2.3	34.7	1.18	Peristaltic Pump
MW-22AR	22.68	5.15	357	0.6	46.5	0.67	Peristaltic Pump
MW-23A	25.64	5.26	651	1.5	2.2	0.66	Peristaltic Pump
MW-1B	25.84	4.42	106	1.5	58.6	0.67	Peristaltic Pump
MW-2B	24.93	4.34	66	0.6	65.5	0.71	Peristaltic Pump
MW-3B	27.78	4.09	1,395	0.6	26.9	0.56	Peristaltic Pump
MW-4B	28.92	3.73	1,844	2.5	120.5	0.65	Peristaltic Pump
MW-5B	25.54	3.81	945	2.1	68.7	1.37	Peristaltic Pump
MW-6B	26.40	4.79	95	0.0	41.9	0.78	Peristaltic Pump
MW-7B	24.91	4.30	827	0.0	34.0	1.52	Peristaltic Pump
MW-8B	24.47	4.43	465	1.8	34.1	1.34	Peristaltic Pump
MW-9B	25.92	4.10	1,435	0.0	67.4	0.80	Peristaltic Pump
MW-10B	25.38	4.10	869	0.3	65.9	1.17	Peristaltic Pump
MW-11B	25.80	4.62	117	2.1	59.0	1.05	Peristaltic Pump
MW-12B	26.74	4.38	120	0.2	82.7	0.82	Peristaltic Pump
MW-13B	26.11	4.42	140	0.4	66.1	0.58	Peristaltic Pump
MW-16BR	24.71	4.88	93	12.0	39.6	1.28	Peristaltic Pump
MW-22BR	22.91	4.40	106	2.1	40.6	1.05	Peristaltic Pump
MW-23B	25.04	4.09	407	0.4	53.2	0.89	Peristaltic Pump

Notes:

^{o}C indicates degrees Celsius

uS/cm indicates micro Siemens per centimeter

NTU indicates Nephelometric Turbidity Units

mV indicates millivolts

mg/L indicates milligram per liter

Table 3

SUMMARY OF GROUNDWATER ANALYTICAL DATA
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well ID	1,4-Dichlorobenzene	Benzene	Ethylbenzene	Toluene	Total Xylenes	Arsenic	Barium	Beryllium	Cobalt	Chromium	Copper	Iron	Nickel	Lead	Selenium	Sodium	Vanadium	Zinc	Ammonia	Chloride	TDS
	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (mg/L)	GCTL (ug/L)	GCTL (ug/L)	GCTL (mg/L)	GCTL (mg/L)	GCTL (mg/L)
	75	1	700	40	10,000	10	2,000	4	420	100	1,000	300	100	15	50	160	49	5,000	2.8	250	500
MW-1A	2.6	7.8	0.48 i	0.19 u	2.2 i	3.2	71.9	0.04 i	3.0	3.1	0.5 i	16,200	6.6	0.21 i	2.3	297	12.2	4.2 i	19.6	544	1,200
MW-1B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.6 i	12.0	0.04 u	0.07 i	0.5 i	0.3 u	330	0.5 u	0.12 u	1.1 u	12.0	0.3 u	4.3 i	0.462	21.8	73
MW-2A	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	43.0	0.12 i	2.1	2.1	0.3 u	6,900	3.1	0.12 u	1.1 u	20.7	2.4	3.2 i	1.92	39.2	255
Dup (MW-2A)	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	41.7	0.11 i	2.1	2.0	0.3 u	6,930	3.1	0.12 u	1.1 u	21.0	2.4	3.2 i	1.93	38.9	241
MW-2B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	9.0	0.04 i	0.3 i	0.3 i	0.3 u	870	0.5 u	0.12 u	1.1 u	6.26	0.4 i	1.6 u	0.106	11.5	40
MW-3A	1.2	6.5	1.1	0.19 u	0.19 i	1.5	22.1	0.04 u	1.2	3.1	0.8 i	6,580	1.1 i	0.17 i	1.1 u	60.1	14.1	1.6 u	7.89	98	382
MW-3B	0.16 u	1.1	0.21 u	0.19 u	0.31 u	0.8 i	181	0.69	8.3	0.2 i	0.3 u	32,700	3.1	0.12 u	1.1 u	41.9	1.8 i	2.7 i	0.703	26.2	1,090
MW-4A	0.16 u	2.9	0.21 u	0.19 u	0.31 u	1.8	54.4	0.04 u	1.3	1.6	0.7 i	4,440	3.0	0.22 i	1.1 u	38.4	2.8	1.6 u	8.33	57.8	678
MW-4B	0.16 u	0.41 i	0.21 u	0.19 u	0.31 u	0.5 u	94.0	1.26	2.2	1.0	0.4 i	17,900	3.2	0.12 u	1.1 u	28.3	6.0	2.2 i	1.76	32.2	1,520
MW-5A	0.16 u	1.2	0.21 u	1.5	0.31 u	2.8	7.9	0.04 u	0.3 i	2.4	2.4	690	1.0 i	0.92	1.1 u	15.4	1.9 i	1.6 u	12.1	24.6	294
MW-5B	0.16 u	0.32 i	0.21 u	0.19 u	0.31 u	0.5 i	186	0.89	2.2	1.1	0.3 u	6,060	3.6	0.12 u	1.1 u	33.1	2.3	1.6 u	2.94	33.3	736
MW-6A	0.16 u	2.3	0.21 u	0.19 u	0.31 u	1.5	11.0	0.04 u	0.9 i	0.9 i	0.3 u	18,600	0.6 i	0.12 u	1.1 u	40.7	2.2	1.6 u	6.93	97.5	200
MW-6B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	20.9	0.07 i	0.2 i	0.8 i	0.3 u	920	0.5 u	0.12 u	1.1 u	7.80	1.3 i	1.6 u	0.103	14.5	57
MW-7A	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	1.1	17.0	0.04 u	1.9	1.6	0.3 u	12,000	0.9 i	0.12 u	1.1 u	16.8	2.1	1.7 i	6.80	34.8	155
MW-7B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	87.6	0.44 i	4.2	0.6 i	0.3 u	23,100	2.8	0.12 u	1.1 u	54.8	1.9 i	3.3 i	0.546	42.9	600
MW-8A	1.3	4.4	0.21 u	0.19 u	0.22 i	0.7 i	49.7	0.26 i	3.4	2.0	0.5 i	11,700	10.3	0.13 i	1.1 u	26.8	4.1	2.2 i	0.231	17.1	1,570
MW-8B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.7 i	137	0.12 i	2.0	0.3 i	0.3 u	9,860	1.2 i	0.25 i	1.1 u	28.3	2.1	3.1 i	0.350	58.0	283
MW-9A	1.5	6.6	0.21 u	0.21 i	0.35 i	2.7	8.4	0.04 u	0.5 i	2.3	2.1	1,820	1.7 i	0.37 i	1.1 u	26.8	1.6 i	2.9 i	5.57	20.5	205
MW-9B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.6 i	41.0	2.32	16.6	1.8	0.3 u	50,600	6.4	0.12 u	1.1 u	49.1	5.3	9.3	1.92	40.4	1,240
MW-10A	0.16 u	7.7	0.21 u	0.45 i	2.57 i	0.8 i	8.2	0.04 u	0.2 i	1.4	0.3 u	960	0.6 i	0.12 u	1.1 u	12.9	0.3 i	1.6 u	5.10	24.0	136
MW-10B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.8 i	38.9	0.91	11.9	0.9 i	0.3 u	17,500	2.8	0.12 u	1.1 u	47.7	1.7 i	1.9 i	4.64	44.2	627
MW-11A	1.5	6.3	0.4 i	0.19 u	0.61 i	2.1	53.2	0.1 i	1.0 i	3.0	1.2	4,660	2.5	0.48 i	1.1 u	34.5	4.6	2.0 i	3.62	29.8	271
MW-11B	0.16 u	0.9 i	0.21 u	0.19 u	0.31 u	1.4	18.0	0.04 u	0.07 i	1.4	0.3 u	460	0.5 u	0.39 i	1.1 u	16.9	1.8 i	1.6 u	0.042	17.9	80
MW-12A	0.16 u	4.3	0.21 u	0.19 u	0.56 i	1.4	20.7	0.11 i	1.4	1.1	0.3 u	2,520	2.6	0.12 u	1.1 u	13.6	1.2 i	2.3 i	0.499	28.5	108
MW-12B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	32.5	0.04 u	0.2 i	0.5 i	0.3 u	1,210	0.5 u	0.12 u	1.1 u	9.76	0.6 i	1.6 u	0.102	24.2	79
MW-13A	0.16 u	1.7	0.21 u	0.19 u	0.31 u	10.4	36.0	0.06 i	0.6 i	2.1	0.3 u	24,200	0.6 i	0.39 i	1.1 u	50.8	3.6	2.2 i	1.56	104	309
MW-13B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	19.2	0.04 i	0.4 i	0.5 i	0.3 u	1,790	0.5 u	0.12 u	1.1 u	14.4	0.3 u	1.6 u	0.156	32.2	86
MW-16AR	0.16 u	0.21 u	0.21 u	0.43 i	0.31 u	0.7 i	15.4	0.04 u	0.1 i	1.4	0.3 u	770	0.7 i	0.18 i	1.1 u	5.90	1.8 i	2.3 i	1.41	9.7	114
MW-16BR	0.16 u	0.21 u	0.21 u	0.90 i	0.31 u	0.5 u	14.3	0.04 u	0.2 i	1.3	0.4 i	870	0.5 u	0.68	1.1 u	7.52	2.0 i	1.6 u	0.141	8.9	61
MW-22AR	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.9 i	27.0	0.04 u	0.1 i	2.4	0.3 u	7,600	0.5 u	0.12 u	1.1 u	21.2	3.2	4.1 i	5.00	27.5	231
MW-22BR	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.6 i	14.3	0.04 u	0.5 i	0.8 i	0.3 u	1,270	0.6 i	0.29 i	1.1 u	15.3	0.8 i	4.2 i	0.107	24.9	74
MW-23A	0.16 u	0.32 i	0.21 u	0.19 u	0.31 u	1.1	15.2	0.04 u	0.3 i	2.1	0.3 u	930	1.1 i	0.12 u	1.1 u	23.9	3.3	5.1	4.74	23.1	433
MW-23B	0.16 u	0.21 u	0.21 u	0.19 u	0.31 u	0.5 u	114	0.15 i	0.6 i	0.7 i	0.3 u	1,860	0.5 u	0.12 u	1.1 u	40.4	1.2 i	3.2 i	2.23	43.3	234

NOTES: Only parameters with detections above the Method Reporting Limit are shown.

GCTL indictates groundwater cleanup target level

µg/L indicates micrograms per liter

mg/L indicates milligrams per liter

u indicates that the compound was analyzed for but not detected at or above the value shown

i indicates the Reported Value is between the Laboratory Method Detection Limit (MDL) and the Laboratory Practical Quantitation Limit (PQL)

indicates that the compond was detected above the PQL

indicates that the compond was detected above the GCTL

Table 4

(1 of 3)

GROUNDWATER LEVEL MEASUREMENTS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility
Location: Osceola County, Florida
Date: 5-May-2014

Sampling Personnel: Joe Terry, Jon Lake
Field Conditions: clear, 72°F

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
DP-1	Piezometer Abandoned 3 October 2003					
DP-2	Piezometer Abandoned 3 October 2003					
DP-3	Piezometer Abandoned 16 January 2006					
DP-4	Piezometer Abandoned 16 January 2006					
DP-5	Piezometer Abandoned 10 July 2007					
DP-6	Piezometer Abandoned 10 July 2007					
DP-7	Piezometer Abandoned 10 July 2007					
DP-8	Piezometer Abandoned 10 July 2007					
DP-9	Piezometer Abandoned 10 July 2007					
DP-10	Piezometer Abandoned 10 July 2007					
DP-11	Piezometer Abandoned 10 July 2007					
DP-12	Piezometer Abandoned 10 July 2007					
DP-13	Piezometer Abandoned 11 July 2007					
DP-14	10:10	81.97	2.91	18.62	79.06	
DP-15	10:10	81.98	3.12	53.70	78.86	
DP-16	10:21	82.57	3.11	18.53	79.46	
DP-17	10:21	82.58	3.14	53.75	79.44	
DP-18	10:37	84.38	4.10	52.90	80.28	
DP-19	10:37	84.34	3.97	18.40	80.37	
DP-20	10:30	83.07	3.26	18.35	79.81	
DP-21	10:30	83.00	3.29	53.68	79.71	
DP-22	10:00	81.00	2.36	18.63	78.64	
DP-23	10:01	81.27	2.45	53.73	78.82	
DP-24	NM	82.22	NM	18.52	NM	Not Measured, inaccesible, area flooded
SZ-1	Piezometer Abandoned 10 July 2007					
SZ-2	10:30	83.16	5.12	75.39	78.04	
SZ-3	9:59	81.27	3.79	78.85	77.48	
MW-1A	11:00	95.12	14.42	23.19	80.70	
MW-1B	11:00	95.00	14.30	48.11	80.70	
MW-1C	11:00	95.18	14.55	74.63	80.63	
MW-2A	11:10	95.21	14.29	22.89	80.92	
MW-2B	11:10	95.17	14.28	48.31	80.89	
MW-2C	11:10	95.32	14.61	68.59	80.71	
MW-3A	11:15	94.64	13.73	23.02	80.91	
MW-3B	11:15	94.68	13.75	47.89	80.93	
MW-3C	11:15	94.66	13.85	69.02	80.81	

Table 4

(2 of 3)

GROUNDWATER LEVEL MEASUREMENTS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility
Location: Osceola County, Florida
Date: 5-May-2014

Sampling Personnel: Joe Terry, Jon Lake
Field Conditions: clear, 72°F

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-4A	11:20	95.48	14.55	23.33	80.93	
MW-4B	11:20	95.18	14.29	47.69	80.89	
MW-4C	11:20	95.39	14.75	72.73	80.64	
MW-5A	11:25	95.32	14.61	22.76	80.71	
MW-5B	11:25	95.30	14.77	47.36	80.53	
MW-5C	11:25	95.39	15.40	73.32	79.99	
MW-6A	11:30	94.72	15.35	22.88	79.37	
MW-6B	11:30	94.60	15.20	47.73	79.40	
MW-6C	11:30	94.58	15.42	73.28	79.16	
MW-7A	11:35	95.48	15.89	23.58	79.59	
MW-7B	11:35	95.27	15.71	48.18	79.56	
MW-7C	11:35	94.93	15.70	73.55	79.23	
MW-8A	11:45	94.67	14.76	22.76	79.91	
MW-8B	11:45	94.58	14.75	49.50	79.83	
MW-8C	11:45	94.50	16.11	73.99	78.39	
MW-9A	11:50	94.66	15.19	22.63	79.47	
MW-9B	11:50	94.63	15.22	49.33	79.41	
MW-9C	11:50	94.54	15.52	73.99	79.02	
MW-10A	12:00	96.25	17.32	22.43	78.93	
MW-10B	12:00	96.23	17.31	48.48	78.92	
MW-10C	12:00	96.36	17.60	73.83	78.76	
MW-11A	12:05	93.56	14.80	22.89	78.76	
MW-11B	12:05	93.59	15.00	48.03	78.59	
MW-11C	12:05	93.65	15.08	73.78	78.57	
MW-12A	12:15	95.10	16.30	23.27	78.80	
MW-12B	12:15	95.01	16.32	49.19	78.69	
MW-12C	12:15	95.10	16.45	73.79	78.65	
MW-13A	12:20	95.19	16.40	22.79	78.79	
MW-13B	12:20	95.12	16.32	47.46	78.80	
MW-13C	12:20	95.04	16.30	73.26	78.74	
MW-14A	Monitoring Well Abandoned 10 July 2007					
MW-14B	Monitoring Well Abandoned 10 July 2007					
MW-14C	Monitoring Well Abandoned 10 July 2007					
MW-15A	Monitoring Well Abandoned 10 July 2007					
MW-15B	Monitoring Well Abandoned 10 July 2007					
MW-15C	Monitoring Well Abandoned 10 July 2007					

Table 4

(3 of 3)

GROUNDWATER LEVEL MEASUREMENTS
20th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility
Location: Osceola County, Florida
Date: 5-May-2014

Sampling Personnel: Joe Terry, Jon Lake
Field Conditions: clear, 72°F

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-16A	Monitoring Well Abandoned 24 June 2013					
MW-16B	Monitoring Well Abandoned 24 June 2013					
MW-16C	Monitoring Well Abandoned 24 June 2013					
MW-16AR	12:25	95.01	15.95	21.00	79.06	
MW-16BR	12:25	94.97	15.95	44.00	79.02	
MW-16CR	12:25	95.03	16.04	73.00	78.99	
MW-17A	Monitoring Well Abandoned 5 March 2014					
MW-17B	Monitoring Well Abandoned 5 March 2014					
MW-17C	Monitoring Well Abandoned 5 March 2014					
MW-18A	Monitoring Well Abandoned 5 March 2014					
MW-18B	Monitoring Well Abandoned 5 March 2014					
MW-18C	Monitoring Well Abandoned 5 March 2014					
MW-19A	Monitoring Well Abandoned 5 March 2014					
MW-19B	Monitoring Well Abandoned 5 March 2014					
MW-19C	Monitoring Well Abandoned 5 March 2014					
MW-20A	Monitoring Well Abandoned 24 June 2013					
MW-20B	Monitoring Well Abandoned 24 June 2013					
MW-20C	Monitoring Well Abandoned 24 June 2013					
MW-21A	Monitoring Well Abandoned 5 March 2014					
MW-21B	Monitoring Well Abandoned 5 March 2014					
MW-21C	Monitoring Well Abandoned 5 March 2014					
MW-22A	Monitoring Well Abandoned 11 November 2011					
MW-22B	Monitoring Well Abandoned 11 November 2011					
MW-22C	Monitoring Well Abandoned 11 November 2011					
MW-22AR	10:45	95.00	14.78	23.66	80.22	
MW-22BR	10:45	94.86	14.65	46.13	80.21	
MW-22CR	10:45	95.13	14.95	66.58	80.18	
MW-23A	10:55	97.90	17.41	28.03	80.49	
MW-23B	10:55	97.91	17.33	43.00	80.58	
MW-23C	10:55	97.93	17.40	67.32	80.53	
MW-24A	9:12	86.97	7.44	24.21	79.53	
MW-25A	9:12	82.36	3.26	24.76	79.10	
MW-26A	NM	82.01	NM	24.03	NM	Not Measured, inaccesible, area flooded
MW-27C	NM	81.66	NM	58.37	NM	Not Measured, inaccesible, area flooded
CW-1A	15:40	84.53	3.55	18.46	80.98	
CW-2A	14:40	82.81	4.30	18.48	78.51	
CW-3A	13:35	81.89	3.58	18.42	78.31	

Notes:

Elevation presented in North American Vertical Datum of 1929 (NAVD29)
Well caps removed site wide and wells allowed to stabilize prior to measurements.

Table 5

SUMMARY OF SURFACE WATER FIELD MEASUREMENTS AND ANALYTICAL RESULTS
20th SEMI-ANNUAL WATER QUALITY MONITORING REPORT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Parameter	Analytical Method	Units	FL-SWQC Class III	Monitoring Location	
				SW-3	SW-4
Barium	6020	ug/L	-	27.2	26.6
Biochemical Oxygen Demand	405.1	mg/L	-	4.0 u	2.1
Chlorophyll A	SM 10200H	mg/m^3	-	12.9	8.2 u
Chemical Oxygen Demand	410.2	mg/L	-	77	87
Fecal Coliform	SM 9222D	#/100mL	800	340	430
Hardness as CaCO3	SM 2340B	mg/L	-	58.5	39.9
Iron	6010B	mg/L	1	1.33	1.78
Nitrogen, Total as N	351.2/300.0	mg/L	-	1.61	2.24
Organic Carbon, Total	415.1	mg/L	-	27.1	26.1
Phosphorus, Total	365.1	mg/L	-	0.137	0.159
Total Dissolved Solids	160.1	mg/L	-	167	138
Total Suspended Solids	160.2	mg/L	-	5.0 u	5.5
Zinc	6020	ug/L	37*	3.6 i	18.0
Dissolved Oxygen	Field Measurement	mg/L	5	2.65	6.67
pH	Field Measurement	std units	6-8.5	5.76	3.79
Temperature	Field Measurement	^oC	-	23.31	21.19
Conductivity	Field Measurement	uS/cm	< 50% above background or 1275, whichever is >	196	171
Turbidity	Field Measurement	NTU	< 29 above background	1.0	1.1
Water Elevation (1)	Field Measurement	ft	-	73.00	77.35

Notes:

Only parameters with detetctions above the Method Reporting Limit are shown.

(1): Surface Water Elevations referenced to NGVD 1929

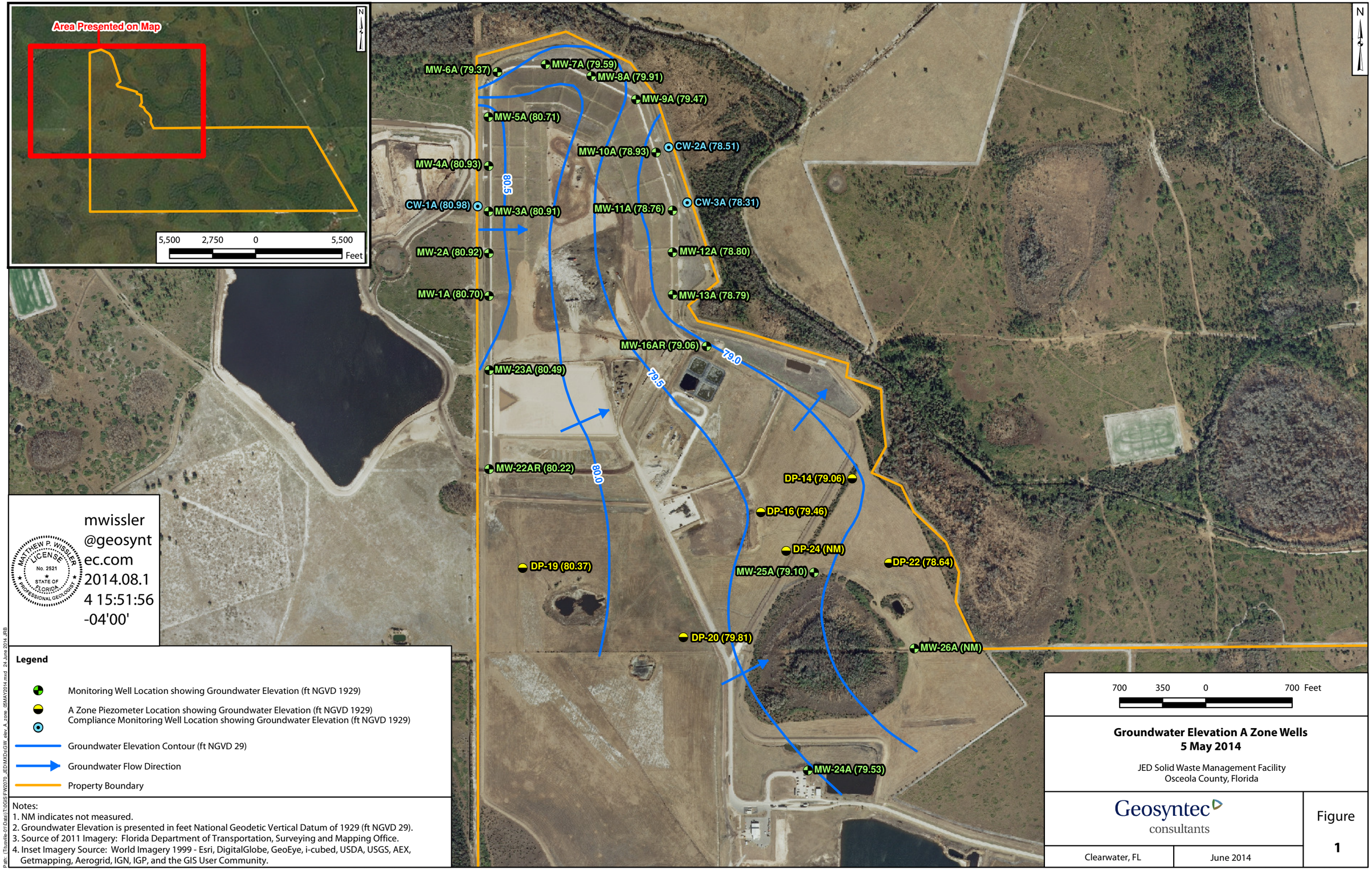
* = Zinc criteria is less than or equal to: e(0.8473[lnH]+0.884) where lnH is the natural logarithm of total hardness as mg/L $CaCO_3$

i indicate the Reported Value is between the Laboratory Method Detection Limit (MDL) and the Laboratory Practical Quantitation Limit (PQL).

indicate the detected in surface water sample

indicate the detection exceeds the FL-SWQC Class III concentration

FIGURE



mwissler
@geosyntec.com
2014.08.14 15:51:56
-04'00'

MATTHEW P. WISSLER LICENSE No. 2521 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Legend

- Monitoring Well Location showing Groundwater Elevation (ft NGVD 1929)
- A Zone Piezometer Location showing Groundwater Elevation (ft NGVD 1929)
- Compliance Monitoring Well Location showing Groundwater Elevation (ft NGVD 1929)
- Groundwater Elevation Contour (ft NGVD 29)
- Groundwater Flow Direction
- Property Boundary

Notes:
1. NM indicates not measured.
2. Groundwater Elevation is presented in feet National Geodetic Vertical Datum of 1929 (ft NGVD 29).
3. Source of 2011 Imagery: Florida Department of Transportation, Surveying and Mapping Office.
4. Inset Imagery Source: World Imagery 1999 - Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community.

Groundwater Elevation A Zone Wells
5 May 2014

JED Solid Waste Management Facility
Osceola County, Florida

Geosyntec consultants

Clearwater, FL | June 2014

Figure **1**

Path: (Tlusville-01\Data)\T:\GIS\FW2070_JED\MXDs\GW_elev_A_zone_05MAY2014.mxd 24 June 2014 JRB

APPENDIX A

Water Quality Monitoring Certification
FDEP Form 62-701.900(31)

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

DEP Form #: 62-701.900(31), F.A.C.
Form Title: Water Quality Monitoring Certification
Effective Date: January 6, 2010
Incorporated in Rule 62-701.510(9), F.A.C.

WATER QUALITY MONITORING CERTIFICATION

PART I GENERAL INFORMATION

(1) Facility Name J.E.D. Soild Waste Management Facility

Address 1501 Omni Way

City Saint Cloud Zip 34773 County Osceola

Telephone Number (407) 891-3720

(2) WACS Facility ID 89544

(3) DEP Permit Number SO49-0199726-022

(4) Authorized Representative's Name Mike Kaiser Title Engineer

Address 1099 Miller Drive

City Altamonte Springs Zip 32701 County Seminole

Telephone Number (904) 673-0446

Email address (if available) michael.kaiser@progressivewaste.com

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

6/18/14
(Date)

Mike Kaiser
(Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Progressive Waste Solutions of FL, Inc.

Analytical Lab NELAC / HRS Certification # E82502

Lab Name ALS Environmental

Address 9143 Philips Highway, Suite 200 Jacksonville, Florida 32256

Phone Number (904)739-2277

Email address (if available) Craig.Myers@ALSGlobal.com

WSI Waste Services, Inc.

2893 Executive Park Drive, Suite 305, Weston, Florida 33331

January 24, 2011

RE: Omni Waste of Osceola County, LLC

To Whom It May Concern:

This is to confirm that Michael Kaiser is an authorized signatory of Omni Waste of Osceola County, LLC (the "Corporation"), with authority to execute and deliver all documents and instruments required in connection with environmental matters for the Corporation, including without limitation, permit applications, modifications and financial assurances for permits issued to the Corporation.

Omni Waste of Osceola County, LLC

William P. Hulligan
Manager

Waste Services, Inc.

William P. Hulligan
Executive Vice President, U.S. Operations

APPENDIX B

Monitoring Well Sampling Logs

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-1A	SAMPLE ID: MW-1A	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH TO WATER (feet): 14.45	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (23 feet – 14.45 feet) X 0.16 gallons/foot = 1.4 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1145	TOTAL VOLUME PURGED (gallons): 5.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1135	4.4	4.4	0.08	14.85	4.59	25.87	2282	0.57	3.3	clear	2.1
1140	0.4	4.8	0.08	14.85	4.63	25.89	2345	0.53	1.3	clear	-1.0
1143	0.24	5.04	0.08	14.85	4.65	25.90	2345	0.51	1.2	clear	-0.5
1145	0.16	5.2	0.08	14.85	4.66	25.92	2344	0.54	1.3	clear	-1.1

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1145	SAMPLING ENDED AT: 1200
PUMP OR TUBING DEPTH IN WELL (feet): 19	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-1A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-1A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~ QT

5-18-14

REMARKS:
weather: clear, 70°F
odor: sulfur-like

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-1B	SAMPLE ID: MW-1B	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 47.5 feet	STATIC DEPTH TO WATER (feet): 14.36	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = .26 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1120	TOTAL VOLUME PURGED (gallons): 3.2

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1100	1.6	1.6	~~0.3~~ .08	14.4	4.24	25.83	110	0.8 ~~+2.5%~~	1.86	clear	78.7
1105	0.4	2	.08	14.4	4.31	25.89	109	0.71 ~~+2.5%~~	1.47	clear	72.4
1110	0.4	2.4	.08	14.4	4.45	25.95	106	0.7 ~~+2.9%~~	2.09	clear	67.8
1115	0.4	2.8	.08	14.4	4.43	25.85	106	0.7	1.62	clear	59.2
1120	0.4	3.2	.08	14.4	4.42	25.84	106	0.67	1.5	clear	58.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Joe Terry/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-1B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-1B~~	1	AG	250mL	H_2SO_4	Prefilled by lab		~~Total Phenols~~	~~APP~~	~~300~~ QT

REMARKS:
weather: clear, 70°F

odor:

5/8/14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-2A	SAMPLE ID: MW-2A	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 12.6 feet to 22.6 feet	STATIC DEPTH TO WATER (feet): 14.62	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.6 feet – 14.62 feet) X 0.16 gallons/foot = 1.3 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (gallons): 2.8

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0925	2	2	0.08	14.85	3.78	24.14	398	1.02	1.32	clear	71.8
0930	0.4	2.4	0.08	14.85	3.80	24.16	397	0.81	1.85	clear	70.6
0935	0.4	2.8	0.08	14.85	3.80	24.14	398	0.74	0.82	clear	69.0

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0940	SAMPLING ENDED AT: 1005
PUMP OR TUBING DEPTH IN WELL (feet): 19	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-2A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-2A~~	1	AG	250mL	H_2SO_4	Prefilled by lab		~~Total Phenols~~	~~APP~~	300

REMARKS:
weather: clear, 75°F

odor: none

5-18-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-2B	SAMPLE ID: MW-2B	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 38 feet to 48 feet	STATIC DEPTH TO WATER (feet): 14.61	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 0900	PURGING ENDED AT: 1005	TOTAL VOLUME PURGED (gallons): 5.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0950	4	4	0.08	14.69	4.29	24.90	121	0.69	0.9	clear	66.9
0956	0.5	4.5	0.08	14.69	4.35	24.94	67	0.68	0.9	clear	67.4
1000	0.3	4.8	0.08	14.69	4.35	24.96	66	0.72	0.6	clear	66.7
1005	0.4	5.2	0.08	14.69	4.34	24.93	66	0.71	0.6	clear	65.5

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1010	SAMPLING ENDED AT: 1025
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-2B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-2B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	~~300~~ 300

REMARKS:
weather: Clear, 75°F

odor: none

5-18-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-3A	SAMPLE ID: MW-3A	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 14.57	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.5 feet − 14.57 feet) X 0.16 gallons/foot = 1.3 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING INITIATED AT: 1115	PURGING ENDED AT: 1205	TOTAL VOLUME PURGED (gallons): 3.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1155	2.8	2.8	0.07	14.67	5.24	28.86	793	0.55	2.3	clear	10.6
1200	0.35	3.15	0.07	14.67	5.24	28.90	764	0.53	2.5	clear	12.2
1205	0.35	3.5	0.07	14.67	5.25	28.89	768	0.51	2.3	clear	11.3

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Joe Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1210	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 19	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-3A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	280
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	280
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	280
~~MW-3A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	~~280~~ QT 5/8/14

REMARKS:
weather: clear, 79°F

odor:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-3B	SAMPLE ID: MW-3B	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 47.5 feet	STATIC DEPTH TO WATER (feet): 14.59	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 1105	PURGING ENDED AT: 1140	TOTAL VOLUME PURGED (gallons): 2.45

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1130	1.75	1.75	.07	14.63	4.04	27.79	1369	0.72	0	clear	31.0
1135	0.35	2.1	.07	14.63	4.07	27.8	1389	0.64	0.27	clear	29.5
1140	0.35	2.45	.07	14.63	4.09	27.78	1395	0.56	0.61	clear	26.9

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Joe Iake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1145	SAMPLING ENDED AT: 1200
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-3B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	280
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	280
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	280
~~MW-3B~~	~~1~~	AG	250mL	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	~~280~~

REMARKS:
weather: Clear, 79°F

odor:

DT 5-8-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-4A	SAMPLE ID: MW-4A	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH TO WATER (feet): 15.52	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (23.1 feet – 15.52 feet) X 0.16 gallons/foot = 1.3 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1410	TOTAL VOLUME PURGED (gallons): 3

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1350	2	2	0.05	15.84	4.67	28.89	1225	0.52	15.8	clear	12.2
1355	0.25	2.25	0.05	15.84	4.85	28.84	1174	0.51	16	clear	4.1
1400	0.25	2.5	0.05	15.84	5.05	28.86	1050	0.5	11.7	clear	-13.4
1405	0.25	2.75	0.05	15.84	5.07	28.82	1052	0.5	8.7	clear	-13.5
1410	0.25	3	0.05	15.84	5.07	28.83	1054	0.51	7.2	clear	-13.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Luke/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1425
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-4A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-4A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	200

REMARKS:
weather: Clear, 82°F
odor: sulfur-like
Equipment Blank collected at 1440 w/ lab supplied DI water through new tubing.
Cooler ID: 12128-JED-2

DI 5.8.14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-4B	SAMPLE ID: MW-4B	DATE: 8 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 37 feet to 47 feet	STATIC DEPTH TO WATER (feet): 15.36	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet − feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1350	TOTAL VOLUME PURGED (gallons): 2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1340	1.5	1.5	0.05	15.64	3.70	28.91	1882	0.91	2.38	clear	129.8
1345	0.25	1.75	0.05	15.64	3.72	28.94	1863	0.74	1.92	clear	123.2
1350	0.25	2.0	0.05	15.64	3.73	28.92	1844	0.65	2.51	clear	120.5

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Lup	SAMPLING INITIATED AT: 1355	SAMPLING ENDED AT: 1408
PUMP OR TUBING DEPTH IN WELL (feet): 42	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-4B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-4B~~	~~1~~	~~AG~~	~~250mL~~	H_2SO_4	Prefilled by lab		Total Phenols	APP	~~200~~

REMARKS:
weather: Clear, 85°F
odor: none
Cooler ID: 12128-JED-2

5/8/14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-5A	SAMPLE ID: MW-5A	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 16.10	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.5 feet – 16.10 feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0945	PURGING ENDED AT: 1035	TOTAL VOLUME PURGED (gallons): 4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1015	2.4	2.4	.08	16.47	5.20	25.30	380	1.3	30.1	light yellow	-1.4
1020	0.4	2.8	.08	16.47	5.23	25.32	368	0.96	24.7	light yellow	-0.7
1025	0.4	3.2	.08	16.47	5.19	25.28	361	0.85	19.1	light yellow	7.1
1035	0.8	4	0.08	16.47	5.20	25.30	370	0.74	18.7	light yellow	12.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1035	SAMPLING ENDED AT: 1050
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-5A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-5A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	300

REMARKS:
weather: M. sunny, light breeze, 80°F
odor: sulfur-like

5-18-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-5B	SAMPLE ID: MW-5B	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 37 feet to 47 feet	STATIC DEPTH TO WATER (feet): 16.25	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING INITIATED AT: 0945	PURGING ENDED AT: 1010	TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1000	1.05	1.05	0.07	16.32	3.79	25.59	952	1.79	2.8	clear	69.5
1005	0.35	1.4	0.07	16.32	3.81	25.49	941	1.46	2.1	clear	68.8
1010	0.35	1.75	0.07	16.32	3.81	25.54	945	1.37	2.1	clear	68.7

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1015	SAMPLING ENDED AT: 1030
PUMP OR TUBING DEPTH IN WELL (feet): 42	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-5B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	250
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250
~~MW-5B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	250

JT 5-18-14

REMARKS:
weather: m. sunny, light breeze, 80°F

odor:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 16.54	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.6 feet – 16.54 feet) X 0.16 gallons/foot = 1.0 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1115	PURGING ENDED AT: 1150	TOTAL VOLUME PURGED (gallons): 2.8

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1140	2	2	.08	16.54	4.94	26.07	488	1.46	0.88	clear	12.0
1145	0.4	2.4	.08	16.54	4.90	26.02	482	1.18	0.54	clear	12.1
1150	0.4	2.8	.08	16.54	4.89	26.05	473	1.06	0.45	clear	15.4

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1205
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-6A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-6A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-6A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

QT
5-18-14

REMARKS:
weather: M. sunny, light breeze, 82°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-6B	SAMPLE ID: MW-6B	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 37 feet to 47 feet	STATIC DEPTH TO WATER (feet): 16.40	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING INITIATED AT: 1115	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet) DT	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1200	3.6	3.6	0.08	16.64 16.40	4.83	26.39	115	0.76	0	clear	25.1
1205	0.4	4	0.08	16.64	4.83	26.41	95	0.79	0	clear	24.7
1210	0.4	4.4	0.08	16.64	4.75	26.36	93	0.8	0	clear	35.9
1215	0.4	4.8	0.08	16.64	4.79	26.40	95	0.78	0	clear	41.9

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1215	SAMPLING ENDED AT: 1230
PUMP OR TUBING DEPTH IN WELL (feet): 42	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-6B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-6B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

JT 5-18-14

REMARKS:
weather: m.sunny, light breeze, 80°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-7A	SAMPLE ID: MW-7A	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH TO WATER (feet): 17.16	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (23.3 feet – 17.16 feet) X 0.16 gallons/foot = 1.0 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1255	PURGING ENDED AT: 1330	TOTAL VOLUME PURGED (gallons): 2.1

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1315	1.2	1.2	0.06	17.25	4.35	25.84	248	0.74	0.6	clear	54.6
1320	0.3	1.5	0.06	17.25	4.66	25.85	287	0.67	0.6	clear	30.9
1325	0.3	1.8	0.06	17.25	4.69	25.86	280	0.64	0.6	clear	25.1
1330	0.3	2.1	0.06	17.25	4.67	25.85	284	0.63	0.7	clear	23.9

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1345
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-7A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	225
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	225
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	225
~~MW-7A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	225

JT 5-18-14

REMARKS:
weather: Cloudy, slight breeze, 82°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-7B	SAMPLE ID: MW-7B	DATE: 13 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 47.5 feet	STATIC DEPTH TO WATER (feet): 16.95	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 1255	PURGING ENDED AT: 1350	TOTAL VOLUME PURGED (gallons): 3.3

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1340	2.7	2.7	0.06	17.21	4.22	24.84	815	1.63	0.3	clear	43.3
1345	0.3	3	0.06	17.21	4.31	24.89	829	1.5	0	clear	34.2
1350	0.3	3.3	0.06	17.21	4.30	24.91	827	1.52	0	clear	34.0

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lukz/PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1350	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-7B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	225
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	225
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	225
~~MW-7B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	225

JT 5-18-14

REMARKS:
weather: m, cloudy, slight breeze, 82°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-8A	SAMPLE ID: MW-8A	DATE: 15 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 16.26	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.5 feet – 16.26 feet) X 0.16 gallons/foot = 1.0 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (gallons): 2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0945	2.25	2.25	0.05	16.80	4.29	24.89	1694	0.69	0.5	clear	18.9
0950	0.25	2.5	0.05	16.80	4.29	24.90	1696	0.70	0.6	clear	19.5
0955	0.25	2.75	0.05	16.80	4.29	24.89	1698	0.69	0.3	clear	18.3

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1015
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-8A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
↓	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-8A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	200

REMARKS:
weather: p. cloudy, 76°F

odor: none

5-18-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-8B	SAMPLE ID: MW-8B	DATE: 15 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 34.5 feet to 49.5 feet	STATIC DEPTH TO WATER (feet): 16.25	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0925	TOTAL VOLUME PURGED (gallons): 1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0915	0.75	0.75	0.05	16.78	4.44	24.43	466	1.43	1.6	clear	33.0
0920	0.25	1	0.05	16.78	4.44	24.44	467	1.37	1.5	clear	33.1
0925	0.25	1.25	0.05	16.78	4.43	24.47	465	1.34	1.8	clear	34.1

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0925	SAMPLING ENDED AT: 0938
PUMP OR TUBING DEPTH IN WELL (feet): 45	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-8B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-8B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~200~~ QT

5-18-14

REMARKS:
weather: p. cloudy, 76°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-9A	SAMPLE ID: MW-9A	DATE: 15 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12 feet to 22 feet	STATIC DEPTH TO WATER (feet): 16.53	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.4 feet − 16.53 feet) X 0.16 gallons/foot = 1.0 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0710	PURGING ENDED AT: 0815	TOTAL VOLUME PURGED (gallons): 4.55

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0805	3.85	3.85	0.07	16.81	4.93	25.77	319	0.67	8.9	clear	26.8
0810	0.35	4.2	0.07	16.81	4.99	25.80	309	0.66	8.6	clear	21.8
0815	0.35	4.55	0.07	16.81	4.99	25.83	310	0.66	8.8	clear	22.2

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0820	SAMPLING ENDED AT: 0832
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW9A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	275
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	275
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	275
MW9A	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	275

JT 5.15.14

REMARKS:
weather: Sunny, 76°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-9B	SAMPLE ID: MW-9B	DATE: 15 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 39 feet to 49 feet	STATIC DEPTH TO WATER (feet): 16.54	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 44	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 44	PURGING INITIATED AT: 0710	PURGING ENDED AT: 0745	TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0730	1	1	0.05	16.89	4.10	25.86	1492	0.95	0.2	clear	63.9
0740	0.5	1.5	0.05	16.89	4.11	25.90	1426	0.83	0	clear	67.2
0745	0.25	1.75	0.05	16.89	4.10	25.92	1435	0.80	0	clear	67.4

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0745	SAMPLING ENDED AT: 0755
PUMP OR TUBING DEPTH IN WELL (feet): 44	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-9B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
↓	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
MW-9B	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~200~~

JT 5.15.14

REMARKS:
weather: M-Sunny, 76°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-104	SAMPLE ID: MW-104	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12 feet to 22 feet	STATIC DEPTH TO WATER (feet): 18.19	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22 feet – 18.19 feet) X 0.16 gallons/foot = .6 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19.7	PURGING INITIATED AT: 1415	PURGING ENDED AT: 1500	TOTAL VOLUME PURGED (gallons): 3.15

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1450	2.45	2.45	0.07	~~18.12~~ 18.27	4.74	25.06	257	0.85	2.3	clear	51.2
1455	0.35	2.8	0.07	18.27	4.80	25.06	248	0.84	1.9	clear	43.7
1500	0.35	3.15	0.07	18.27	4.81	25.04	249	0.83	1.7	clear	42.3

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1510
PUMP OR TUBING DEPTH IN WELL (feet): 19.7	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-104	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
↓	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	280
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	280
MW-104	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	280
~~—~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	280

RT 5-18-14

REMARKS:
weather: overcast, occasional rain, 78°F, ~3-5 mph wind
odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-10B	SAMPLE ID: MW-10B	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 30 feet to 40 feet	STATIC DEPTH TO WATER (feet): 18.07	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 1415	PURGING ENDED AT: 1440	TOTAL VOLUME PURGED (gallons): 2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1430	1.2	1.2	.08	18.21	4.14	25.39	878	8.07	0.80	clear	50
1435	0.4	1.6	.08	18.21	4.10	25.42	878	3.35	0.40	clear	66.9
1440	0.4	2	.08	18.21	4.10	25.38	869	1.17	0.33	clear	65.9

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1445	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-10B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
↓	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
↓	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-10B	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~QT~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

5-18-14

REMARKS:
weather: overcast, occasional rain, 78°F, ~3-5mph wind

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-11A	SAMPLE ID: MW-11A	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 15.65	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (22.0 feet − 15.65 feet) X 0.16 gallons/foot = 1.2 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1330	TOTAL VOLUME PURGED (gallons): 3.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1320	3.25	3.25	0.05	16.55	4.84	26.05	427	0.62	3.6	clear	28.0
1325	0.25	3.5	0.05	16.55	4.86	26.10	428	0.61	4.4	clear	25.9
1330	0.25	3.75	0.05	16.55	4.88	26.07	428	0.60	4.4	clear	24.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1347
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-11A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-11A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	~~200~~

DT 5.18.14

REMARKS:
weather: Overcast, light rain, 78°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-11B	SAMPLE ID: MW-11B	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 37.5 feet to 47.5 feet	STATIC DEPTH TO WATER (feet): 15.85	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 43	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 43	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1300	TOTAL VOLUME PURGED (gallons): 3.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1250	2.8	2.8	0.08	15.98	4.63	25.80	119	1.06	2-6	clear	58.6
1255	0.4	3.2	0.08	15.98	4.62	25.80	118	1.05	2.4	clear	58.7
1300	0.4	3.6	0.08	15.98	4.62	25.80	117	1.05	2.1	clear	59.0

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1313
PUMP OR TUBING DEPTH IN WELL (feet): 43	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-11B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-11B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	300

REMARKS:
weather: overcast, rain, 79°F
odor: none

JT 5/15/14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-12A	SAMPLE ID: MW-12A	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH TO WATER (feet): 17.00	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (23 feet – 17 feet) X 0.16 gallons/foot = 1.00 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1045	PURGING ENDED AT: 1135	TOTAL VOLUME PURGED (gallons): 4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1125	3.2	3.2	0.09	17.33	4.26	26.93	178	0.87	0	clear	73.5
1130	0.4	3.6	0.08	17.33	4.21	26.96	181	0.79	0	clear	72.9
1135	0.4	4	0.08	17.33	4.29	26.92	180	0.78	0	clear	60.4

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1135	SAMPLING ENDED AT: 1145
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-12A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-12A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

DI 5.18.14

REMARKS:
weather: M.Sunny, 82°F, light breeze

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-12B	SAMPLE ID: MW-12B	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 39 feet to 49 feet	STATIC DEPTH TO WATER (feet): 17.03	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = .3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 44	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 44	PURGING INITIATED AT: 1045	PURGING ENDED AT: 1110	TOTAL VOLUME PURGED (gallons): 2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1100	1.2	1.2	.08	17.20	4.36	26.72	120	1.12	0.42	clear	99.3
1105	0.4	1.6	.08	17.20	4.36	26.72	119	0.97	0.50	clear	102.9
1110	0.4	2.0	.08	17.20	4.38	26.74	120	0.82	0.17	clear	82.7

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1132
PUMP OR TUBING DEPTH IN WELL (feet): 44	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-12B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-12B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

QT 5.18.14

REMARKS:
weather: mostly, 82°F, light breeze

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-13A	SAMPLE ID: MW-13A	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.5 feet to 22.5 feet	STATIC DEPTH TO WATER (feet): 16.90	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (22.5 feet – 16.90 feet) X 0.16 gallons/foot = 0.9 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0925	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (gallons): 4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0955 ~~0940~~	2.4	2.4	0.08	17.09	4.95	26.44	489	0.77	0	clear	47.7
1000	0.4	2.8	0.08	17.09	4.97	26.46	531	0.63	0	clear	129.8
1005	0.4	3.2	0.08	17.09	5.07	27.14	541	0.6	0	clear	55.1
1010	0.4	3.6	0.08	17.09	5.10	27.16	545	0.6	0	clear	49.7
1015	0.4	4	0.08	17.09	5.08	27.10	545	0.6	0	clear	49.3

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1015	SAMPLING ENDED AT: 1030
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-13A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	300
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300
~~MW-13A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~300~~

DT 5/16/14

REMARKS:
weather: mostly sunny, 80°F, light breeze

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-13B	SAMPLE ID: MW-13B	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 37 feet to 47 feet	STATIC DEPTH TO WATER (feet): 16.80	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47	PURGING INITIATED AT: 0925	PURGING ENDED AT: 0950	TOTAL VOLUME PURGED (gallons): 2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0940	1.2	1.2	.08	16.88	4.25	26.11	137	0.67	0.63	clear	66.8
0945	0.4	1.6	.08	16.88	4.40	26.13	138	0.62	0.19	clear	71.2
0950	0.4	2.0	.08	16.88	4.42	26.11	140	0.58	0.36	clear	66.1

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL Jon Lake/PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0955	SAMPLING ENDED AT: 1012
PUMP OR TUBING DEPTH IN WELL (feet): 47	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-13B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	320
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	320
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	320
~~MW-13B~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	320

QT 5-18-14

REMARKS:
weather: mi sunny, 80°F, light breeze

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-16RA	SAMPLE ID: MW-16RA	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 13.5 feet to 23.5 feet	STATIC DEPTH TO WATER (feet): 16.58	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (23.93 feet – 16.58 feet) X 0.16 gallons/foot = 1.2 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0755	PURGING ENDED AT: 0850	TOTAL VOLUME PURGED (gallons): 2.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0840	2.25	2.75	0.05	16.78	5.39	25.20	166	1.18	2.5	clear	39.6
0845	0.25	2.5	0.05	16.78	5.37	25.20	164	1.16	2.1	clear	37.3
0850	0.25	2.75	0.05	16.78	5.37	25.15	164	1.18	2.3	clear	34.7

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0850	SAMPLING ENDED AT: 0910
PUMP OR TUBING DEPTH IN WELL (feet): 20	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW16RA	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW16RA~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		Total Phenols	APP	200

REMARKS:
weather: Mostly cloudy, 77°F

odor: none

DT 5-18-14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-16RB	SAMPLE ID: MW 16RB	DATE: 14 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 36.5 feet to 46.5 feet	STATIC DEPTH TO WATER (feet): 16.57	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (46.63 feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42	PURGING INITIATED AT: 0750	PURGING ENDED AT: 0815	TOTAL VOLUME PURGED (gallons): 1.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0805	0.75	0.75	0.05	16.63	4.88	24.67	95	1.56	10	clear	39.5
0810	0.25	1.0	0.05	16.63	4.88	24.70	93	1.34	12	clear	41.4
0815	0.25	1.25	0.05	16.63	4.88	24.71	93	1.28	12	clear	39.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0815	SAMPLING ENDED AT: 0835
PUMP OR TUBING DEPTH IN WELL (feet): 42	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
MW-16RB	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-16RB~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	~~APP~~	~~200~~

DT 5-18-14

REMARKS:
weather: m. cloudy, 77°F
odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-22RA	SAMPLE ID: MW-22RA	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 13 feet to 23 feet	STATIC DEPTH TO WATER (feet): 14.89	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (23.7 feet – 14.89 feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING INITIATED AT: 0725	PURGING ENDED AT: 0825	TOTAL VOLUME PURGED (gallons): 3.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0815	3	3	0.06	15.08	5.12	22.70	360	0.77	1	clear	44.3
0820	0.3	3.3	0.06	15.08	5.14	22.68	355	0.71	1.1	clear	46.5
0825	0.3	3.6	0.06	15.08	5.15	22.68	357	0.67	0.6	clear	46.5

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0825	SAMPLING ENDED AT: 0840
PUMP OR TUBING DEPTH IN WELL (feet): 19	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-22RA	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	225
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	225
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	225
~~MW-22RA~~	1	AG	250mL	H_2SO_4	Prefilled by lab		Total Phenols	APP	225

REMARKS:
weather: clear, 62°F

odor: none

JT 5.18.14

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-22RB	SAMPLE ID: ~~MW2~~ DT 5-6-14 MW-22RB	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 36 feet to 46 feet	STATIC DEPTH TO WATER (feet): 14.75	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

= 0.0 gallons + (0.0026 gallons/foot X 55 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 41	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 41	PURGING INITIATED AT: 0720	PURGING ENDED AT: 0755	TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0745	1.25	1.25	0.05	14.89	4.40	22.97	105	0.99	2.6	Clear	40.0
0750	0.25	1.5	0.05	14.89	4.40	22.92	106	1.06	2.2	Clear	41.2
0755	0.25	1.75	0.05	14.89	4.40	22.91	106	1.05	2.1	Clear	40.6

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0755	SAMPLING ENDED AT: 0810
PUMP OR TUBING DEPTH IN WELL (feet): 41	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)	DUPLICATE or EQUIPMENT BLANK: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-22RB	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-22RB~~	1	AG	250mL	H_2SO_4	Prefilled by lab		~~Total Phenols~~	APP	200

DT 5-16-14

REMARKS:
weather: clear, 62°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-23A	SAMPLE ID: MW-23A	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 17 feet to 27 feet	STATIC DEPTH TO WATER (feet): 17.42	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (27.3 feet – 17.42 feet) X 0.16 gallons/foot = 1.6 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X feet) + 0.12 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 23	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 23	PURGING INITIATED AT: 0910	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (gallons): 2.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0945	1.75	1.75	0.05	17.83	5.25	25.56	639	0.86	2.2	clear	2.0
0950	0.25	2	0.05	17.83	5.24	25.56	658	0.77	1.5	clear	2.0
0955	0.25	2.25	0.05	17.83	5.26	25.64	651	0.66	1.5	clear	2.2

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL / Joe Lake PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0955	SAMPLING ENDED AT: 1010
PUMP OR TUBING DEPTH IN WELL (feet): 23	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-23A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-23A~~	~~1~~	~~AG~~	~~250mL~~	~~H_2SO_4~~	~~Prefilled by lab~~		~~Total Phenols~~	APP	200

QT 5.16.14

REMARKS:
weather: clear, 65°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: J.E.D. SWMF (WACs Facility ID: 89544)	SITE LOCATION: 1501 Omni Way, St. Cloud, Osceola County, Florida, 34773	
WELL NO: MW-23B	SAMPLE ID: MW-23B	DATE: 6 May 2014

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.25	WELL SCREEN INTERVAL DEPTH: 32 feet to 42 feet	STATIC DEPTH TO WATER (feet): 17.45	PURGE PUMP TYPE OR BAILER: peristaltic

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (feet – feet) X 0.16 gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0.0 gallons + (0.0026 gallons/foot X 50 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 37	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 37	PURGING INITIATED AT: 0905	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0925	1	1	0.05	17.45	4.14	24.95	405	1.49	0.8	clear	54.1
0930	0.25	1.25	0.05	17.45	4.07	24.91	406	1.02	0.4	clear	69.5
0935	0.25	1.5	0.05	17.45	4.09	25.04	407	0.89	0.4	clear	53.2

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Joe Terry / PWSFL	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0935	SAMPLING ENDED AT: 0950
PUMP OR TUBING DEPTH IN WELL (feet): 37	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP No	TUBING No (replaced)		DUPLICATE or EQUIPMENT BLANK: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
MW-23B	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
	3	CG	40mL	None	None		8011	RFPP	<100
	1	PE	500mL	HNO_3	Prefilled by lab		Metals	APP	200
	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200
~~MW-23B~~	~~1~~	~~AG~~	~~250mL~~	H_2SO_4	Prefilled by lab		~~Total Phenols~~	~~APP~~	~~200~~

DT 5/8/14

REMARKS:
weather: clear, 65°F

odor: none

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

DEP-SOP-001/01
FT 1100 Field Measurement of Hydrogen Ion Activity (pH)

Form FD 9000-7: Field Parameter Data Sheet for Surface Water

SURVEY/PROJECT: JED SAMPLERS: Joe Terry, Jon Lake METER # SW-3

STATION NUMBER	STATION DESCRIPTION	PARAMETER	DATE	TIME	TOTAL DEPTH	SAMPLE DEPTH	WATER TEMP	DO	%SAT DO	COND	SALINITY	PH	TURBIDITY	ORP
		UNIT	yy/mm/dd	hr:min	feet	feet	Celsius	mg/L	%	µS/cm	ppt	su	NTU	mV
		STORET CODE	73672		81903	68	10	299	301	94	480	400	82078	
SW-3	Bull Creek (downstream)		14/05/09	09:20	1.0	0.5	23.31	2.65	31	196	0.1	5.76	1.0	117.8

FIELD CONDITIONS FOR STATION# SW-3 AT TIME 0920 : water elevation 73.00'

CLOUD COVER (%): 5 WIND DIRECTION: NA TIDAL STAGE: NA

PREVIOUS RAINFALL: 0 WIND SPEED (MPH/KNOTS): 0 WAVE CONDITIONS: NA

Note: This Sheet is used for recording Sample Data – Calibration information must also be documented

Revision Date: February 1, 2004

DEP-SOP-001/01
FT 1100 Field Measurement of Hydrogen Ion Activity (pH)

Form FD 9000-7: Field Parameter Data Sheet for Surface Water

SURVEY/PROJECT: JED SAMPLERS: Joe Terry, Jon Lake METER # SW-4

STATION NUMBER	STATION DESCRIPTION	PARAMETER	DATE	TIME	TOTAL DEPTH	SAMPLE DEPTH	WATER TEMP	DO	%SAT DO	COND	SALINITY	PH	TURBIDITY	ORP
		UNIT	yy/mm/dd	hr:min	feet	feet	Celsius	mg/L	%	µS/cm	ppt	su	NTU	mV
		STORET CODE	73672		81903	68	10	299	301	94	480	400	82078	
SW-4	Bull Creek (upstream)		14/05/09	10:10	1.0	0.5	21.19	6.67	75	171	0.09	3.79	1.1	235.6

FIELD CONDITIONS FOR STATION# SW-4 AT TIME 1010: water elevation 77.35'

CLOUD COVER (%): 5 WIND DIRECTION: NA TIDAL STAGE: NA

PREVIOUS RAINFALL: 0 WIND SPEED (MPH/KNOTS): 0 WAVE CONDITIONS: NA

Note: This Sheet is used for recording Sample Data – Calibration information must also be documented

Revision Date: February 1, 2004

APPENDIX C

Field Instrument Calibration Logs

Field Instrument Calibration Record

Site: JED SWMF Date: 4 May 2014

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME12953

Time: 1730

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
3AH355	Aug 2015	pH = 4.00	3.85	0.15	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	6.96	0.04	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	10.23	2.3	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	86	2.4	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	501	0.2	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1003	0.3	5%	Y	C	JT
	Per Table →	D.O. = 8.514 mg/L @ 23.4 °C	8.55	0.04	0.2 mg/l	Y	I	JT

Date: 6 May 2014 Time: 0530

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
C359207	Feb 15, 2015	pH = 4.00	3.92	0.08	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	6.98	0.02	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	10.01	0.1	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	84	0	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	502	0.4	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1005	0.5	5%	Y	C	JT
	Per Table →	D.O. = 8.4 mg/L @ 24.1 °C	8.43	0.03	0.2 mg/l	Y	I	JT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L; Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ±8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ±5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Site: JED Date: 7 May 2014

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME12953

Time: 1815

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
3AH355	Aug 2015	pH = 4.00	3.93	0.07	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	6.96	0.04	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	9.85	1.5	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	84	0	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	502	0.4	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1006	0.6	5%	Y	C	JT
	Per Table →	D.O. = 8.55 mg/L @ 23.2°C	8.58	0.03	0.2 mg/l	Y	I	JT

Date: 9 May 2014 Time: 0550

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
C359207	Feb 15, 2015	pH = 4.00	3.96	0.04	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	7.00	0.00	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	9.89	1.1	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	86	2.4	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	503	0.6	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1004	0.4	5%	Y	C	JT
	Per Table →	D.O. = 8.45 mg/L @ 23.8°C	8.46	0.01	0.2 mg/l	Y	C	JT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L; Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ±8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ±5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Site: JED Date: 12 May 2014

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME12953

Time: 1800

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
3AH355	Aug 2015	pH = 4.00	4.00	0	0.2	Y	I	JT
C358930	Feb 7, 2015	pH = 7.00	7.00	0	0.2	Y	I	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	10.12	1.2	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	84	0	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	501	0.2	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1010	1.0	5%	Y	C	JT
	Per Table →	D.O. = 7.954 mg/L @ 27.1 °C	7.99	0.04	0.2 mg/l	Y	I	JT

Date: 14 May 2014 Time: 0600

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
C359207	Feb 15, 2015	pH = 4.00	4.02	0.02	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	6.91	0.09	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	9.92	0.8	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	86	2.4	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	503	0.6	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1014	1.4	5%	Y	C	JT
	Per Table →	D.O. = 8.68 mg/L @ 22.4 °C	8.70	0.02	0.2 mg/l	Y	I	JT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L; Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ±8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ±5% of Standard Value

Note (3): Initial, Continual, Final

Field Instrument Calibration Record

Site: JED SWDF Date: 15 May 2014

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AM

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME12953

Time: 0530

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
3AH355	Aug 2015	pH = 4.00	4.04	0.04	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	7.00	0	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	10.16	1.6	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	87	3.6	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	510	2	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1003	0.3	5%	Y	C	JT
	Per Table →	D.O. = 8.71 mg/L @ 22.2°C	8.72	0.01	0.2 mg/l	Y	I	JT

Date: 16 May 2014 Time: 0815

Calibration Standard			Instrument Response	Percent Deviation[1] or Difference	Allowable Deviation[2]	Calibrated? Yes or No	Type of Calibration[3]	Calibration Performed By:
Lot No.	Expiration Date	Standard Value						
C359207	Feb 15, 2015	pH = 4.00	4.02	0.02	0.2	Y	C	JT
C358930	Feb 7, 2015	pH = 7.00	7.03	0.03	0.2	Y	C	JT
C256078	Oct 2014	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
C364881	June 2015	Turbidity = 10 NTU	10.22	2.2	10%	Y	C	JT
3AJ929	Oct 2014	Conductivity = 84 µS/cm	87	3.6	5%	Y	C	JT
4AA137	Jan 2015	Conductivity = 500 µS/cm	512	2.4	5%	Y	C	JT
4AA941	Jan 2015	Conductivity = 1,000 µS/cm	1015	1.5	5%	Y	C	JT
	Per Table →	D.O. = 8.403 mg/L @ 24.1 °C	8.42	0.02	0.2 mg/l	Y	C	JT

Note (1): Percent Deviation = (Standard Value – Instrument Response) ÷ Standard Value x 100

Note (2): Allowable Deviation: pH ± 0.2 of Standard Value; Conductivity ± 5 % of Standard Value; Salinity ± 3 % of Standard Value; DO ± 0.2 mg/L; Turbidity 0.1-10 NTU ± 10% of Standard Value, 11-40 NTU ±8% of Standard Value, 41-100 NTU ± 6.5% of Standard Value, >100 NTU ±5% of Standard Value

Note (3): Initial, Continual, Final

APPENDIX D

Chain-of-Custody Forms

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

9143 Philips Highway, Ste 200 • Jacksonville, FL 32256 (904) 739-2277 • 800-695-7222 x06 • FAX (904) 739-2011

SR#

CAS Contract

Project Name: JED SWSF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWS FL 11457 C.R. 672 Riverview, FL 33569	
Phone #: 813-943-8637	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1 0 3 2 0

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	8260	8011	NH_3	Metals	TDS, Cl, NO3, Fluoride	SGT 5-18-14	REMARKS/ ALTERNATE DESCRIPTION
MW-1A		5-6-14	1145	GW	10	3	3	1	1	1	1	
MW-1B			1120									
MW-22RA			0825									
MW-22RB			0755									
MW-23A			0955									
MW-23B			0935	GW	10	3	3	1	1	1	1	
Trip Blk-1		5-6-14	0000	DI H_2O	1	1						

SPECIAL I NSTRUCTIONS/COMMENTS

Cooler ID: 14126-JED

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

X STANDARD

REQUESTED FAX DATE

_____

REQUESTED REPORT DATE

_____

REPORT REQUIREMENTS

____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

____ V. Specialized Forms / Custom Report

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Joe Terry	Signature	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: PWSFL	Firm	Firm	Firm	Firm	Firm
Date/Time: 5-6-14/1715	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

9143 Philips Highway, Ste 200 • Jacksonville, FL 32256 (904) 739-2277 • 800-695-7222 x06 • FAX (904) 739-2011

SR#

CAS Contract

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWSFL 11457 C.R. 672 Riverview, FL 33569	
Phone #: 813-943-8637	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	8260	8011	NH_3	Metals	TDS, Cl, NO_3	~~Total Phenols~~ QT 5.18.14								REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE						1	0	3	2	0	3								
MW-2A		5.8.14	0940	GW	10	3	3	1	1	1	1								
MW-2B		↓	1010	↓	↓	↓	↓	↓	↓	↓	↓								
MW-3A		↓	1210	↓	↓	↓	↓	↓	↓	↓	↓								
MW-3B		↓	1145	↓	↓	↓	↓	↓	↓	↓	↓								
MW-4A		↓	1410	↓	↓	↓	↓	↓	↓	↓	↓								
MW-4B		↓	1355	↓	↓	↓	↓	↓	↓	↓	↓								
Duplicate		↓	0000	GW	↓	↓	↓	↓	↓	↓	↓								
Equipment Blank		↓	1440	DI H_2O	10	3	3	1	1	1	1								
Trip Blank-2		↓	0000	DI H_2O	1	1													
Trip Blank-3		5.8.14	0000	DI H_2O	1	1													

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other ______

SPECIAL INSTRUCTIONS/COMMENTS

Cooler IDs: 14128-JED-1
14128-JED-2

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

X STANDARD

REQUESTED FAX DATE ____________

REQUESTED REPORT DATE ____________

REPORT REQUIREMENTS

_____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

_____ III. Results + QC and Calibration Summaries

_____ IV. Data Validation Report with Raw Data

_____ V. Specialized Forms / Custom Report

Edata _____ Yes _____ No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP:

CUSTODY SEALS: Y N

	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Joe Terry					
Printed Name	Joe Terry					
Firm	PWSFL					
Date/Time	5.9.14/1545					

Distribution: White - Return to Originator; Yellow - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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PAGE 1 OF 1

SR#

CAS Contract

Project Name: JED SWSF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWSFL 11457 C.R. 672 Riverview, FL 33569	
Phone #: 813-943-8633	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	8260	9011	NH_3	metals	TDS, Cl, NO_3	TOTAL PHENOLICS	VOT 5-18-14	REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE						1	0	3	2	0	3		
MW-5A		5-13-14	1035	GW	10	3	3	1	1	1	1		
MW-5B			1015										
MW-6A			1150										
MW-6B			1215										
MW-7A			1330										
MW-7B			1350	GW	10	3	3	1	1	1	1		
Trip Blk-5		5-13-14	0000	$DI H_2O$	1	1							

VOT

Preservative Key
0. NONE
1. HCl
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL I NSTRUCTIONS/COMMENTS

Cooler ID: 14133-JED

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

__X__ STANDARD

REQUESTED FAX DATE

_____

REQUESTED REPORT DATE

_____

REPORT REQUIREMENTS

____ I. Results Only

__X__ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

____ V. Specialized Forms / Custom Report

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP:

CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Joe Terry	Signature	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: PWSFL	Firm	Firm	Firm	Firm	Firm
Date/Time: 5-13-14/1500	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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PAGE 1 OF 1

SR#

CAS Contract

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWSFL	
11457 C.R. 672	
Riverview, FL 33569	
Phone #: 813-943-8633	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	8260	8011	NH_3	Metals	TDS, Cl, NO_3											REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE						1	0	3	2	0											
MW-10A		5.14.14	1500	GW	9	3	3	1	1	1											
MW-10B			1445																		
MW-11A			1330																		
MW-11B			1300																		
MW-12A			1135																		
MW-12B			1120																		
MW-13A			1015																		
MW-13B			0955																		
MW-16RA			0850																		
MW-16RB			0815	GW	9	3	3	1	1	1											
Trip Blank-6		5.14.14	0000	DI_{H_2O}	1	1															

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL I NSTRUCTIONS/COMMENTS

Cooler ID: 14134-JED

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

__X__ STANDARD

REQUESTED FAX DATE

_____

REQUESTED REPORT DATE

_____

REPORT REQUIREMENTS

____ I. Results Only

__X__ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

____ V. Specialized Forms / Custom Report

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Joe Terry	Signature	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: PWSFL	Firm	Firm	Firm	Firm	Firm
Date/Time: 5.14.14/1615	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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PAGE 1 OF 1

SR#

CAS Contract

Project Name: SED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWSFL	
11457 C.R. 672	
Riverview, FL 33569	
Phone #: 813-443-8633	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE	NUMBER OF CONTAINERS	8260	9011	NH_3	Metals	TDS, Cl, NO_3											REMARKS/ ALTERNATE DESCRIPTION
							1	0	3	2	0											
MW-8A		5.15.14	1000	GW		9	3	3	1	1	1											
MW-8B			0925	GW		9																
MW-9A			0820	GW		9																
MW-9B			0745	GW		9	3	3	1	1	1											
Trip Blank-7		5.15.14	0000	DI H_2O		1	1															

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS

Cooler ID: 14135-JED

See QAPP ☐

TURNAROUND REQUIREMENTS

_____ RUSH (SURCHARGES APPLY)

__X__ STANDARD

REQUESTED FAX DATE

REQUESTED REPORT DATE

REPORT REQUIREMENTS

____ I. Results Only

__X__ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

____ V. Specialized Forms / Custom Report

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Joe Terry	Signature	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: PWSFL	Firm	Firm	Firm	Firm	Firm
Date/Time: 5.15.14/1130	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Retained by Client

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

ALS Environmental

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PAGE 1 OF 1

SR#

CAS Contract

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: joseph.terry@progressivewaste.com
Company/Address: PWSFL 11457 C.R. 672 Riverview, FL 33569	
Phone #: 813-9443-8633	FAX #:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1 0 1 3 3 2 0 0 0 0 8

CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	8260	8011	TOC	Total Phenols, Un-ionized NH3, TKN, Total-P, COD	Metals	NO3, Total-N, TDS	TSS, BOD	Chlorophyll A	Fecal Coliform					REMARKS/ ALTERNATE DESCRIPTION
SW-3		5.9.14	0920	SW	14	X	X	X	X	X	X	X	X	X	X	X			
SW-4		5.9.14	1010	SW	14	X	X	X	X	X	X	X	X	X	X	X			
Trip Blank-4		5.9.14	0000	DI H2O	1	X													

5-18-14 QT

Preservative Key
0. NONE
1. HCl
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL I NSTRUCTIONS/COMMENTS

Cooler ID: 14129-JED

See QAPP ☐

TURNAROUND REQUIREMENTS

____ RUSH (SURCHARGES APPLY)

X STANDARD

REQUESTED FAX DATE

REQUESTED REPORT DATE

REPORT REQUIREMENTS

____ I. Results Only

X II. Results + QC Summaries (LCS, DUP, MS/MSD as required)

____ III. Results + QC and Calibration Summaries

____ IV. Data Validation Report with Raw Data

____ V. Specialized Forms / Custom Report

Edata ____Yes ____No

INVOICE INFORMATION

PO #

BILL TO:

SAMPLE RECEIPT: CONDITION/COOLER TEMP:

CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Joe Terry	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Joe Terry	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: PWSFL	Firm: ALS	Firm:	Firm:	Firm:	Firm:
Date/Time: 5-9-14/1200	Date/Time: 5/9/14 1200	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Return to Originator; Yellow - Retained by Client

APPENDIX E

CD Containing Analytical Laboratory Reports