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15th SEMI-ANNUAL WATER QUALITY MONITORING REPORT

J.E.D. SOLID WASTE MANAGEMENT FACILITY

OSCEOLA COUNTY, FLORIDA

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TABLE OF CONTENTS

1. INTRODUCTION 1

1.1 Terms of Reference 1

1.2 Overview 1

1.3 Site Description 1

2. MONITORING WELL DETAILS 3

2.1 Well Layout and Construction 3

2.2 Turbidity Issues 4

3. MONITORING WELL SAMPLING 5

3.1 Sampling Locations and Procedures 5

3.2 Sample Analyses 6

4. ANALYTICAL RESULTS 7

4.1 Field Parameters 7

4.2 Groundwater Monitoring Wells 7

4.3 Data Validation 10

4.4 Impact of Turbidity on Metals Concentrations 11

5. GROUNDWATER LEVEL MEASUREMENTS AND FLOW DIRECTION12

5.1 Field Measurements 12

5.2 Water level Contours 12

6. SURFACE WATER SAMPLING 13

6.1 Sampling Locations and Procedures 13

6.2 Sample Analyses 13

6.3 Field Measurements and Analytical Results 13

7. LEACHATE SAMPLING 15

7.1 Sampling Location and Procedures 15

7.2 Sample Analyses 15

7.3 Field Measurements and Analytical Results 15

8. CONCLUSIONS AND RECOMMENDATIONS 16

8.1 Sampling Locations 16

8.2 Sample Analyses 16

LIST OF TABLES

Table 1 Summary of Monitoring Well Construction Details
Table 2 Summary of Final Field Parameter Results and Field Data
Table 3 Summary of Groundwater Analytical Results
Table 4 Groundwater Level Measurements
Table 5 Summary of Field Measurements and Analytical Results for Surface Water Samples
Table 6 Summary of Field Measurements and Analytical Results for Leachate Samples

LIST OF FIGURES

Figure 1 "A" Zone (Shallow) Wells – Water Level Contours

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

Appendix B: Field Sampling Logs

Appendix C: Field Instrument Calibration Logs

Appendix D: Chain-of-Custody Forms

Appendix E: CD Containing Analytical Laboratory Reports

1. INTRODUCTION

1.1 Terms of Reference

On behalf of Omni Waste of Osceola County, LLC (Omni), Geo-Services and Consulting, LLC (GS&C) has prepared the 15th semi-annual water quality monitoring report for the J.E.D. Solid Waste Management (JED) facility. This report summarizes and interprets 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 Exhibit 1 - Monitoring Plan Implementation Schedule (MPIS) of the current Permit (Permit Number SO49-0199726-015) that authorizes the development of Phases 1 through 3 at the JED facility issued by the Florida Department of Environmental Protection (FDEP) on March 22, 2007. It is noted that this permit was modified by Permit Numbers SC49-0199726-006 and SO49-0199726-007, issued by FDEP on April 4, 2008 for the vertical expansion of the JED facility, and by Permit Number SO49-0199726-11 issued by FDEP on June 22, 2009 which updated the electronic data submittal requirements. In addition to these Permit modifications, the MPIS was revised on April 6, 2009 updating the sampling locations and schedule.

This report was prepared on behalf of Waste Services Incorporated (WSI), parent company of Omni Waste of Osceola County, LLC, owner and operator of the JED facility by Mr. Robert Thompson of GS&C. 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; (iii) monitor the groundwater and surface water quality on a semi-annual basis; and (iv) monitor leachate quality on an annual basis. The 15th semi-annual water quality monitoring event was completed November 7th through the 16th, 2011. 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, surface water quality monitoring, and leachate 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 2.86-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, construction of a storm water retention basin located within Phases 2 and 3, and due to the close proximity of piezometers to the new network wells installed. 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 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 are now sampled on an alternating annual basis. C-zone monitoring wells MW-1 through MW-14, MW-16, MW-19,MW-23 and B-zone monitoring well MW-16B are sampled in November and reported in January; B-zone monitoring wells MW-1 through MW-14, MW-16, MW-19, MW-23 and C-zone monitoring well MW-16C are 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, Cell 7 was completed in August 2010 and currently Cell 8 is under construction. For monitoring purposes, the JED facility was assigned Water Assurance Compliance System (WACS) facility identification number 89544.

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-22 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, and the piezometers installed as part of the hydro-geologic investigation are shown for the shallow zone ("A" wells) on Figure 1. As shown, groundwater monitoring well clusters MW-1 through MW-13 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). Groundwater monitoring well clusters MW-16 and MW-17 were installed along the outer edge of the landfill perimeter berm that serves as the initial storm water berm. The ground surface at these two well locations is at approximately Elevation 85 ft NGVD, 1929. Monitoring well clusters MW-18 through MW-22 were installed along the interim Phase 3 storm water berm at the southern limit of the Phase 3 development at approximately Elevation 84 ft 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 40 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 steel or 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 Consultants (Geosyntec) and FDEP on January 12, 2004 during the well development activities associated with the wells installed as part of the Phase 1 development. Geosyntec notified FDEP again on September 14, 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 current MPIS (revised June 22, 2009), twenty-six (26) monitoring wells installed as part of the Phase 1 development and seven (7) of the monitoring wells installed as part of the Phase 2 and 3 development were sampled. Monitoring wells sampled this monitoring event included A and C-Zone monitoring wells MW-1 through MW-14, MW-16, MW-19, MW-23 and B-Zone monitoring well MW-16B. Low-flow sampling techniques were used for groundwater sample collection. Except for the turbidity considerations as described in the previous section, 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, two equipment blanks were collected and analyzed.

Peristaltic pumps were used to purge and sample all A-zone (shallow) and the majority of the C-zone (deep) groundwater monitoring wells. Because of continued issues relative to turbidity levels, a stainless steel submersible pump was used to purge and sample C-Zone MW-19C and MW-23C (deep) and one B-zone (intermediate) groundwater well (MW-16B A submersible pump is utilized in select monitoring wells where the pump rate of the peristaltic pump is not sufficient to adequately purge the wells. New tubing (silicone and/or polyethylene) was used at each monitoring 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. For wells where the turbidity was not less than 20 NTU, stability was established by purging at least 5 well volumes and observing variations in the measured turbidity. For problematic wells, once the turbidity had stabilized and all other parameters conformed to the guidance set forth in the FDEP SOP's, samples were collected. A non-filtered and field-filtered (1-micron) metals sample was collected from each monitoring well where turbidity measurements exceeded the 20 NTU level.

For monitoring wells where peristaltic pumps were used, 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.

For the monitoring wells that were purged and sampled with the stainless steel submersible pump, all sample aliquots were filled directly from the down-well tubing.

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 Columbia Analytical Services, Inc. (Columbia) of Jacksonville, Florida in accordance with the National Environmental Laboratory Accreditation Conference (NELAC) standards. Columbia 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 Columbia for total ammonia as nitrogen (N), chlorides, nitrate, 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 (Method 6020 and Method 7470 for Mercury)

Arsenic was reported (above the method reporting limit [MRL]) in nine (9) "A" zone monitoring wells in concentrations ranging from 1.1 to 16.8 micrograms per liter (µg/L). With the exception of the sample from MW-13A (16.8 µg/L) the reported concentrations were less than the GCTL of 10 µg/L. As discussed in the fourth biennial water quality monitoring report (November 2011), a positive correlation exists between iron and arsenic levels for monitoring wells at the site. This has been documented throughout the State of Florida, and is due to the fact that low levels of naturally occurring arsenic are bound up primarily by ferric (iron) hydroxides in many Florida soils. This has been discussed in previous correspondence with FDEP. The arsenic concentrations detected in MW-13A for the 15th semi-annual event are comparable to period of record data.

Iron was reported above the GCTL of 300 µg/L in fifteen (15) of the "A" zone monitoring wells sampled with the concentrations ranging between 620 and 20,400 µg/L. The reported concentrations of iron for the "A" zone monitoring wells from the 14th semi-annual monitoring event ranged from 370 µg/L to 29,000 µg/L. Iron was reported above the GCTL in sixteen (16) of the "C" zone monitoring wells and the concentrations ranged from 440 µg/L to 1,150 µg/L. The reported range of concentrations for the "C" zone monitoring wells from the 13th semi-annual monitoring event ranged from 420 µg/L to 1,090 µg/L.

Iron was reported above the GCTL in "B" zone well MW-16B at a concentration of 890 μg/L.

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 15th semi-annual event are consistent with period of record data.

Ammonia-N (Method 350.1)

Ammonia-N was detected in groundwater samples from all thirty-three (33) monitoring wells sampled. The concentrations in samples collected from "A" zone monitoring wells ranged from 0.018 to 13.6 milligrams per liter (mg/L) with concentrations in MW-1A, 3A, 5A, 6A, 7A, 8A, 9A, 10A, 11A, 19A and 23A exceeding the GCTL (2.8 mg/L) and ranging from 2.95 mg/L to 13.6 mg/L The highest reported concentration was in the sample from MW-19A (13.6 mg/L) and is less than the baseline result (16.0 mg/L) collected in November 2007. The reported concentrations of Ammonia-N for samples from "A" zone monitoring wells for samples collected during the 14th semi-annual monitoring event ranged from 0.25 mg/L to 21.6 mg/L. The locations where ammonia exceeded the GCTL during the 14th semi-annual event were MW-1A, 2A, 3A, 6A, 7A, 8A, 9A, 10A, 11A, 19A and 23A and the reported concentrations ranged from 3.2 mg/L to 21.6 mg/L. The GCTL for Ammonia-N of 2.8 mg/L was not exceeded in any samples collected from "C" zone monitoring wells and the reported concentrations ranged from 0.077 mg/L to 0.258 mg/L. Of all the monitoring wells sampled as part of the semi-annual monitoring, MW-19A is located the furthest from any active disposal cell.

As indicated in recent 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 biogeochmecial 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 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 Biennial 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. 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. Ongoing research by the Univ. of Florida and FAU support the concept that reductive dissolution is a plausible mechanism for the release of ammonia in the absence of a direct landfill discharge.

Total Dissolved Solids (Method SM 2540C)

TDS was detected above the MRL in all wells sampled during this sampling event with the concentrations in MW-5A (1,230 mg/L) and MW-19A (632 mg/L) exceeding the GCTL of 500 mg/L.

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

Benzene was detected (above the MRL) in eight (8) monitoring wells (MW-1A, 3A, 4A, 8A, 9A, 11A, 12A, and 13A) at concentrations ranging from 1.1 to 11.1 µg/L, which are all above the GCTL of 1.0 µg/L.

Total xylenes were reported above the GCTL of 20 µg/L in the sample from MW-1A (25.48 µg/L) collected in November 2011.

In accordance with Chapter 62-701.510(7)(a) F.A.C. and Paragraph 4 of Monitoring Plan Implementation Schedule section of the FDEP Permit, the FDEP is to be notified within 14 days after the receipt of the laboratory data of any GCTL exceedances. The notification is to also inform the FDEP if any confirmational samples will be collected from any of the wells or if the data will be accepted as indicative of groundwater conditions. Omni notified Mr. Thomas Lubozynski (FDEP) in a letter dated December 28, 2011 of all the GCTL exceedances for which certified data was received by Omni. The letter also notified the FDEP that due to the change in concentration of xylenes in MW-1A and TDS in MW-5A from historical data Omni elected to collect confirmatory samples from these two wells. FDEP responded to the notification letter in an email from Mr. Lubozynski dated December 29, 2011 allowing the collection of confirmatory samples from MW-1A and MW-5A. On January 3, 2012 Omni collected one confirmatory sample from MW-1A for total xylenes analysis; the reported concentration was 10.24 µg/L. A sample from MW-5A for TDS analysis could not be collected at the time because the depth to water was below the bottom of the screen (collected in the well sump) and would not provide a representative sample.

As indicated in recent correspondence by HDR, (Class I Permit Renewal Request for Additional Information – January 2012) 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 recent 4th Biennial 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. 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.

Two equipment blanks were collected during the 15th semi-annual monitoring event. One (1) equipment blank was collected using the stainless steel submersible pump used for collection of the groundwater sample at MW-16B. The second equipment blank was collected using the peristaltic pump used for collection of the groundwater sample from MW-9A. De-ionized water supplied by Columbia was pumped through the decontaminated submersible pump and new tubing and analyzed for the same parameters as the groundwater samples. The same procedure was also used for the peristaltic pump and associated tubing.

Analysis of the QC sample collected through the submersible pump (Equipment Blank - 1) resulted in a detection of methylene chloride (9.9 μg/L); however, methylene chloride was not detected in any of the monitoring wells sampled with the submersible pump indicating this is most likely a laboratory contaminant. Chromium, copper, sodium, zinc and nitrate were detected in the QC sample at a concentration below the method reporting limit; however, sodium, zinc and nitrate were also detected in the laboratory method blank, possibly indicating contamination from the analytical process. All other constituents analyzed for were not detected in the QC sample collected through the submersible pump.

Analysis of the QC sample collected through the peristaltic pump (Equipment Blank -2) resulted in a detection of methylene chloride (10.4 μg/L); however, methylene chloride was not detected in any of the monitoring wells sampled with the peristaltic pump indicating this is most likely a laboratory contaminant. Copper, sodium, zinc and nitrate were detected in the QC sample at a concentration below the method reporting limit; however, sodium and zinc were also detected in the laboratory method blank, possibly indicating contamination from the analytical process. All other constituents analyzed for were not detected in the QC sample collected through the peristaltic pump.

4.4 Impact of Turbidity on Metals Concentrations

Turbidity levels were less than the FDEP guidance of 20 NTUs in thirty one (31) of the thirty-three (33) wells sampled. A review of the analytical results for MW-19A and 23A, (the only wells sampled with a final measured turbidity level > 20 NTUs) shows no significant difference between the dissolved and total metals concentrations. Historical data shows that the turbidity levels for the wells has improved over the course of the semi-annual water quality monitoring events and the need to continue collection of dissolved metal samples may no longer be necessary.

5. GROUNDWATER LEVEL MEASUREMENTS AND FLOW DIRECTION

5.1 Field Measurements

Groundwater level measurements were obtained on November 7, 2011 from all accessible Phases 1 through 3 groundwater monitoring wells and the remaining piezometers installed as part of the original site hydrogeological investigation. All groundwater levels measurements were made within an approximate 6-hr period. The groundwater level measurements from the monitoring wells and piezometers are presented in Table 4.

It should be noted that, as part of the site hydrogeological investigation, a total of 27 piezometers were installed. Two (2) piezometers (DP-1 and DP-2) located at the northern part of the site within Cell 1 footprint were decommissioned and abandoned on October 3, 2003 by Ambient Technologies, Inc. (ATI) of St. Petersburg, Florida. Two (2) additional piezometers (DP-3 and DP-4) located within Cell 3 footprint were decommissioned and abandoned on January 16, 2006 by National Environmental Technology, Inc (NET) Drilling Services of Dover, Florida. For the development of Phases 2 and 3, six (6) of the Phase 1 groundwater monitoring wells (MW-14A, 14B, 14C, 15A, 15B, and 15C) and ten (10) additional piezometers (DP-5, DP-6, DP-7, DP-8, DP-9, DP-10, DP-11, DP-12, DP-13, and SZ-1) were decommissioned and abandoned on July 10 and 11, 2007 by NET Drilling Services.

5.2 Water level Contours

The water level contour map prepared from groundwater level measurements for the upper surficial aquifer zone (i.e., A-zone) 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. However, the dewatering operation for the Bronson's borrow area has created a localized groundwater depression on the west side of the Phase 1 and 2 development areas. Groundwater flow along the western property boundary is predominantly west towards the dewatering area. The groundwater level elevation data collected from the remainder of the A-zone monitoring well network indicate the direction of the horizontal component of groundwater flow is predominantly east-northeast toward Bull Creek.

Comparison of water levels between the A, B and C wells shows a similar vertical gradient ($1E^{-3}$ 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 15th 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 Columbia in accordance with the NELAC (National Environmental Laboratory Accreditation Conference) standards for unionized ammonia, total hardness as $CaCO_3$, total organic carbon, 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 coli form, 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 field data measured 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:

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).

7. LEACHATE SAMPLING

7.1 Sampling Location and Procedures

In accordance with the permit requirements, a leachate sample is to be collected from each disposal cell on an annual basis. To date, Cells 1 through 7 have been constructed and have received waste. Therefore, leachate samples for this 15th semi-annual sampling event were collected from primary leachate sump risers for Cells 1 through 7. The leachate samples collected as part of the 15th semi-annual sampling event fulfills the leachate sampling requirement for the 2011 calendar year.

The leachate samples were collected from sampling ports that are connected to each of the primary leachate sump risers. A YSI 556 water quality meter was used to measure field parameters including temperature, pH, dissolved oxygen, conductivity, and oxidation-reduction potential (ORP).Turbidity levels were measured using a LaMotte 2020e turbidity meter. The leachate samples were collected in accordance with the applicable FDEP SOPs.

7.2 Sample Analyses

The leachate sample was analyzed by Columbia in accordance with the NELAC standards for total ammonia-N, total alkalinity (as mg/L CaCO3), chlorides, nitrate, total dissolved solids (TDS), iron, mercury, sodium, BOD, COD and the 40 CFR, Part 258 Appendix II parameters. Other required parameters (i.e., pH; temperature; conductivity; turbidity; ORP and dissolved oxygen) were field measured during collection of the leachate samples.

7.3 Field Measurements and Analytical Results

The analytical laboratory results have been transferred to a CD and are included in Appendix E. Analytical results have been summarized in Table 6 to show all parameters where a constituent concentration was reported above the method detection limit. No constituents were reported above the regulatory levels listed in 40 CFR Part 261.24. It should be noted that the leachate from the JED facility is removed from the site for treatment at the City of St. Cloud waste water treatment facility or re-circulated within the active disposal area.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Sampling Locations

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

8.2 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 Biennial Technical Reports on Water Quality (November 2006, September 2008, November 2010and November 2011). As discussed in Section 4.2, we believe 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.

As reported in the 4th Biennial Technical Report on Groundwater Quality it was originally thought that the prior detections of benzene were attributable to residual contamination from the erosion caused by surface water run-off from the landfill in the vicinity of MW-9A, but as benzene has been detected in more wells around the Phase 1 area it appears that this is not the primary cause. As discussed in Section 4.2, it is more likely that the elevated benzene and other volatile organic compound (VOCs) detections may be attributable to landfill gas migration. As a result of this, Omni has initiated several investigations and corrective measures related to landfill gas migration. The most recent included augmentation of the existing methane gas recovery system with two "test" supplemental gas recovery wells which was documented in a correspondence dated June 2011. It is anticipated that the addition of these two supplemental gas recovery wells within the sump areas at Cells 2 and 5 will help mitigate the methane migration issues which will result in a reduction of VOCs in groundwater samples collected at MW-1A and MW-9A during subsequent semi-annual monitoring events. Finally, Omni intends to design and install a perimeter soil gas extraction system at the perimeter berm of Cells 1 through 7 to mitigate further gas migration issues. A Soil Vapor Extraction Pilot Test Plan was submitted to the FDEP on January 27, 2012. Upon approval of the plan by the FDEP, it is anticipated installation and monitoring of the SVE pilot system will occur over the next 6-12 months.

Our recommendation is to continue semi-annual monitoring of these constituents as part of the current MPIS while the on-going gas migration investigation continues.

Tables

Table 1 (1 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	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-1A	28 03 48.55	81 05 59.88	19900	9-Dec-03	95.1	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	95.2	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	94.6	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	95.5	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	95.3	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	94.7	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	95.5	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	94.7	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	94.7	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	96.3	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	93.6	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	95.1	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	95.2	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	28 03 44.55	81 05 40.22	22342	21-Sep-07	88.69	18.63	8.1	18.1	80.6	70.6	6.1	5.1
MW-17A	28 03 42.38	81 05 35.42	22345	22-Sep-07	88.86	19.88	9.4	19.4	79.5	69.5	7.4	6.4
MW-18A	28 03 37.21	81 05 35.16	22348	11-Sep-07	87.56	17.70	7.2	17.2	80.4	70.4	5.2	4.2
MW-19A	28 03 33.40	81 05 39.60	22351	11-Sep-07	87.54	17.65	7.2	17.2	80.4	70.4	5.2	4.2
MW-20A	28 03 31.82	81 05 45.45	22354	19-Sep-07	87.12	17.93	7.4	17.4	79.7	69.7	5.4	4.4
MW-21A	28 03 32.10	81 05 52.48	22357	14-Sep-07	87.20	18.04	7.5	17.5	79.7	69.7	5.5	4.5
MW-22A	28 03 32.35	81 05 59.48	22360	14-Sep-07	87.71	18.00	7.5	17.5	80.2	70.2	5.5	4.5
MW-23A	28 03 42.41	81 05 59.79	22363	25-Sep-07	97.90	27.75	17.3	27.3	80.7	70.7	15.3	14.3

Table 1 (2 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	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-1B	28 03 48.59	81 05 59.89	19901	9-Dec-03	95.0	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	95.2	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	94.7	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	95.2	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	95.3	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	94.6	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	95.3	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	94.6	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	94.6	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	96.2	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	93.6	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	95.0	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	95.1	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	28 03 44.52	81 05 40.17	22343	21-Sep-07	88.73	38.09	27.6	37.6	61.1	51.1	25.6	24.6
MW-17B	28 03 42.35	81 05 35.36	22346	20-Sep-07	88.79	40.18	29.7	39.7	59.1	49.1	27.7	26.7
MW-18B	28 03 37.16	81 05 35.19	22349	11-Sep-07	87.43	37.80	27.3	37.3	60.1	50.1	25.3	24.3
MW-19B	28 03 33.38	81 05 39.66	22352	11-Sep-07	87.64	37.73	27.2	37.2	60.4	50.4	25.2	24.2
MW-20B	28 03 31.82	81 05 45.51	22355	19-Sep-07	87.27	37.76	27.3	37.3	60.0	50.0	25.3	24.3
MW-21B	28 03 32.09	81 05 52.55	22358	17-Sep-07	87.23	37.63	27.1	37.1	60.1	50.1	25.1	24.1
MW-22B	28 03 32.36	81 05 59.54	22361	14-Sep-07	87.69	37.96	27.5	37.5	60.2	50.2	25.5	24.5
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

Table 1 (3 of 3)

SUMMARY OF MONITORING WELL CONSTRUCTION DETAILS
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well Designation	Latitude (NAD 1983)	Longitude (NAD 1983)	WACS ID	Date Installed	Top of Casing Elevation, TOC (feet)	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	95.2	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	95.3	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	94.7	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	95.4	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	95.4	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	94.6	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	94.9	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	94.5	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	94.5	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	96.4	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	93.7	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	95.1	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	95.0	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	28 03 44.50	81 05 40.11	22344	21-Sep-07	88.8	67.7	57.2	67.2	31.6	21.6	55.2	54.2
MW-17C	28 03 42.31	81 05 35.31	22347	20-Sep-07	88.9	67.3	56.8	66.8	32.0	22.0	54.8	53.8
MW-18C	28 03 37.10	81 05 35.22	22350	12-Sep-07	87.4	67.2	56.7	66.7	30.8	20.8	54.7	53.7
MW-19C	28 03 33.37	81 05 39.72	22353	10-Sep-07	87.4	66.7	56.2	66.2	31.2	21.2	54.2	53.2
MW-20C	28 03 31.82	81 05 45.57	22356	18-Sep-07	87.4	66.8	56.3	66.3	31.1	21.1	54.3	53.3
MW-21C	28 03 32.10	81 05 52.61	22359	17-Sep-07	87.1	62.6	52.1	62.1	35.1	25.1	50.1	49.1
MW-22C	28 03 32.36	81 05 59.60	22362	13-Sep-07	87.6	67.3	56.8	66.8	30.8	20.8	54.8	53.8
MW-23C	28 03 42.51	81 05 59.80	22365	24-Sep-07	97.9	67.1	56.6	66.6	41.4	31.4	54.6	53.6

Table 2

SUMMARY OF FINAL FIELD PARAMETER RESULTS AND FIELD DATA
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Monitoring Well	Temperature (°C)[1]	pH (Standard Units)	Specific Conductance (uS/cm) [2]	Turbidity (NTUs) [3]	Oxidation-Reduction Potential (mV) [4]	DO (mg/L) [5]	Purging Method
MW-1A	27.41	5.09	191	3.3	-55.7	0.59	Peristaltic Pump
MW-2A	26.67	5.25	235	2.1	-105.2	0.58	Peristaltic Pump
MW-3A	27.47	4.94	250	1.2	-60.7	0.79	Peristaltic Pump
MW-4A	28.13	4.75	88	0.0	-88.0	0.82	Peristaltic Pump
MW-5A	28.71	5.74	1578	18.7	-172.5	0.30	Peristaltic Pump
MW-6A	27.21	5.21	375	1.1	-137.6	0.57	Peristaltic Pump
MW-7A	26.04	5.25	262	0.2	-132.1	0.54	Peristaltic Pump
MW-8A	25.62	4.41	291	1.4	-31.2	0.67	Peristaltic Pump
MW-9A	27.19	4.85	169	5.5	-65.2	0.39	Peristaltic Pump
MW-10A	27.04	4.83	530	2.5	-123.8	1.12	Peristaltic Pump
MW-11A	27.39	5.13	410	6.9	-66.3	1.08	Peristaltic Pump
MW-12A	26.97	4.50	148	0.8	9.7	1.21	Peristaltic Pump
MW-13A	27.47	5.21	212	1.2	-3.5	0.89	Peristaltic Pump
MW-16A	25.52	4.93	36	10.5	79.7	1.35	Peristaltic Pump
MW-19A	25.88	5.84	520	54.7	-107.3	0.25	Peristaltic Pump
MW-23A	25.75	6.19	389	42.0	-182.5	0.32	Peristaltic Pump
MW-16B	25.29	4.96	45	16.2	-73.8	0.23	Submersible Pump
MW-1C	26.42	5.24	68	5.0	-47.6	0.45	Peristaltic Pump
MW-2C	25.50	4.45	51	0.4	226.5	0.39	Peristaltic Pump
MW-3C	26.44	5.17	87	0.7	38.5	0.48	Peristaltic Pump
MW-4C	28.20	5.78	156	0.8	-55.0	0.57	Peristaltic Pump
MW-5C	26.65	5.04	73	0.8	-31.9	0.47	Peristaltic Pump
MW-6C	26.16	5.00	53	1.7	-20.6	0.47	Peristaltic Pump
MW-7C	24.80	5.18	68	1.0	-30.6	0.55	Peristaltic Pump
MW-8C	24.59	4.87	83	0.7	-15.4	0.60	Peristaltic Pump
MW-9C	25.45	5.46	121	1.0	-100.3	0.44	Peristaltic Pump
MW-10C	25.98	5.15	100	4.0	-45.6	0.93	Peristaltic Pump
MW-11C	26.55	5.42	118	1.6	-72.2	0.95	Peristaltic Pump
MW-12C	25.61	5.05	56	2.1	-14.9	0.70	Peristaltic Pump
MW-13C	25.75	5.04	75	3.5	-0.8	0.82	Peristaltic Pump
MW-16C	25.52	5.11	113	1.0	69.9	1.49	Peristaltic Pump
MW-19C	24.96	5.25	114	17.9	-46.3	0.29	Submersible Pump
MW-23C	24.16	5.72	115	9.9	3.7	0.70	Submersible Pump

Notes:

[1] °C = degrees Celsius

[2] uS/cm = micro Siemens per centimeter

[3] NTU = Nephelometric Turbidity Units

[4] mV = millivolts

[5] mg/L = milligram per liter

Table 3

SUMMARY OF GROUNDWATER ANALYTICAL DATA
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Well ID	Acetone	Cis-1,2 Dichloroethene	1,4-Dichlorobenzene	Benzene	Carbon Disulfide	Chlorobenzene	Ethylbenzene	Toluene	Total Xylenes	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Mercury	Nickel	Selenium	Sodium	Vanadium	Zinc	Ammonia	Chloride	Nitrate as N	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 (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)	GCTL (mg/L)
	6,300	**70**	**75**	**1**	**700**	**100**	**30**	**40**	**20**	**6**	**10**	**2,000**	**4**	**5**	**100**	**420**	**1,000**	**300**	**15**	**2**	**100**	**50**	**160**	**49**	**5,000**	**2.8**	**250**	**10**	**500**
MW-1A	<5.6	0.65 i	2.97	11.1	<2.4	0.5 i	11.1	1.19	25.48	<0.2	2.2	3.3	<0.04	<0.12	3.6	0.5 i	0.7 i	2,450	0.15 i	<0.02	<0.8	<1.1	14.6	3.4	<0.9	7.31	21.8	<0.03	97
MW-1C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	12.7	0.06 i	<0.12	0.9 i	<0.06	0.2 i	500	0.12 i	<0.02	<0.8	<1.1	4.62	1.1 i	<0.9	0.077	5.82	<0.03	41
MW-2A	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	0.7 i	15	0.08 i	<0.12	2.1	1.2	0.8 i	5,290	0.15 i	<0.02	1.7 i	<1.1	16.7	2.7	2.1 i	1.87	27.8	<0.03	148
MW-2C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	11.9	0.15 i	<0.12	0.4 i	<0.06	0.4 i	460	<0.06	<0.02	1.2 i	<1.1	4.83	<0.4	<0.9	0.092	6	<0.03	35
MW-3A	<5.6	<0.36	<0.16	4.46	<2.4	<0.16	0.44 i	<0.19	<0.31	<0.2	1.2	41.7	<0.04	<0.12	0.8 i	1.2	0.6 i	4,210	0.1 i	<0.02	<0.8	<1.1	29.1	1.5 i	1.6 i	4.41	71.8	<0.03	192
MW-3C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	8.4	<0.04	<0.12	0.8 i	<0.06	0.3 i	620	<0.06	<0.02	<0.8	<1.1	5.26	0.4 i	<0.9	0.086	7.57	<0.03	51
MW-4A	<5.6	<0.36	<0.16	1.11	<2.4	<0.16	0.44 i	<0.19	<0.31	<0.2	<0.5	24.8	0.04 i	<0.12	0.9 i	0.08 i	0.4 i	810	<0.06	<0.02	<0.8	<1.1	3.91	1	<0.9	1.3	9.75	<0.03	40
MW-4C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	6.9	<0.04	<0.12	0.8 i	<0.06	<0.2	440	<0.06	<0.02	1.4 i	<1.1	6.63	0.4 i	<0.9	0.091	9.58	<0.03	76
MW-5A	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	0.6 i	1.4	64.2	0.06 i	<0.12	1	1.3	1.5	2,600	0.77	0.03 i	2.9	<1.1	24.2	1.3 i	5.7	5.95	23.1	<0.03	1,230
MW-5C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	15.7	0.05 i	<0.12	0.4 i	<0.06	0.2 i	620	<0.06	<0.02	<0.8	<1.1	7.46	0.4 i	28.2	0.081	11	<0.03	48
MW-6A	<5.6	<0.36	<0.16	0.75 i	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	8.2	<0.04	<0.12	1.3	0.8 i	<0.2	18,300	0.14 i	<0.02	<0.8	<1.1	29.6	2.3	1.5 i	2.95	51.4	<0.03	192
MW-6C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	26.5	0.09 i	<0.12	1.1	<0.06	<0.2	620	0.06 i	<0.02	<0.8	<1.1	5.11	2	2.1 i	0.128	5.48	<0.03	27
MW-7A	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	0.7 i	18.7	<0.04	<0.12	1.3	1.6	<0.2	12,100	<0.06	<0.02	<0.8	<1.1	22.4	1.5 i	1.4 i	3.89	26.9	<0.03	161
MW-7C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	23.3	0.06 i	<0.12	0.7 i	<0.06	<0.2	690	0.12 i	<0.02	<0.8	<1.1	5.88	1.5 i	1.4 i	0.094	7.01	<0.03	48
MW-8A	<5.6	<0.36	<0.16	4.96	<2.4	0.28 i	<0.21	0.23 i	0.91 i	<0.2	0.7 i	30.7	0.11 i	<0.12	2.6	1.3	0.4 i	2,290	0.3 i	<0.02	2.8	<1.1	30.2	5.2	2.2 i	3.66	53.8	<0.03	185
MW-8C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	17.4	0.05 i	<0.12	0.5 i	<0.06	<0.2	1,150	<0.06	<0.02	<0.8	<1.1	7.35	1.1 i	1.7 i	0.14	13.2	<0.03	60
MW-9A	<5.6	0.78 i	1.46	10.3	<2.4	<0.16	1.05	0.38 i	4.16	<0.2	1.1	3.9	<0.04	<0.12	2.2	0.2 i	1.1	620	0.25 i	0.04 i	1 i	<1.1	15.3	2.7	2.3 i	5.58	18.8	<0.03	124
MW-9C	<5.6	<0.36	<0.16	0.22 i	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	25.2	0.07 i	<0.12	0.7 i	<0.06	0.2 i	660	<0.06	<0.02	2.3	<1.1	7.94	1.9 i	1.7 i	0.258	14.1	<0.03	88
MW-10A	<5.6	<0.36	<0.16	0.89 i	<2.4	<0.16	<0.21	<0.19	0.41 i	<0.2	1.1	47.8	<0.04	<0.12	0.8 i	0.7 i	0.5 i	5,460	0.07 i	0.03 i	2.1	<1.1	12	0.9 i	4.1 i	4.69	13.8	<0.03	349
MW-10C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	23.7	0.06 i	<0.12	0.9 i	<0.06	<0.2	980	0.1 i	<0.02	<0.8	<1.1	9.37	1.3 i	31.9	0.165	15.7	<0.03	57
MW-11A	<5.6	<0.36	0.32 i	2.95	11.5	<0.16	<0.21	<0.19	<0.31	<0.2	8.2	44.8	0.13 i	<0.12	3.1	0.8 i	0.9 i	5,910	0.47 i	<0.02	2	<1.1	44	5.4	1.8 i	4.17	22.6	<0.03	268
MW-11C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	12.6	<0.04	<0.12	0.7 i	<0.06	0.4 i	610	0.06 i	<0.02	<0.8	<1.1	11.6	1.7 i	1.9 i	0.078	17.1	<0.03	68
MW-12A	21.9 i	0.59 i	<0.16	3.5	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	2.5	15.6	0.07 i	0.12 i	1.4	1.2	0.5 i	2,910	0.07 i	<0.02	2.5	<1.1	10.8	1.9 i	1.8 i	0.377	16.1	<0.03	77
MW-12C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	19	0.13 i	<0.12	0.8 i	<0.06	0.5 i	650	0.06 i	<0.02	<0.8	<1.1	5.94	1 i	1.8 i	0.101	7.61	<0.03	42
MW-13A	<5.6	<0.36	<0.16	1.14	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	16.8	13.3	0.06 i	<0.12	2.3	0.8 i	0.3 i	20,400	<0.06	<0.02	<0.8	<1.1	12.5	3	1.4 i	1.25	11.5	<0.03	143
MW-13C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	21.5	0.08 i	<0.12	0.7 i	0.08 i	<0.2	590	0.1 i	<0.02	<0.8	<1.1	8.55	1.2 i	1.6 i	0.121	12.6	<0.03	46
MW-16A	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	0.8 i	<0.5	11.6	0.05 i	<0.12	1.5	0.08 i	0.4 i	90 i	0.43 i	0.04 i	<0.8	1.1 i	1.73	9.1	1.3 i	0.018	1.59	0.17 i	32
MW-16B	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	17	0.04 i	<0.12	1.5	0.2 i	0.5 i	890	1.08	0.05 i	<0.8	<1.1	5.73	1.7 i	1.5 i	0.124	2.57	<0.03	22
MW-16C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	1.16	<0.19	<0.31	<0.2	<0.5	14.1	0.07 i	<0.12	0.7 i	<0.06	0.2 i	910	<0.06	<0.02	<0.8	<1.1	13	0.9 i	1.5 i	0.123	20.5	<0.03	73
MW-19A	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	0.9 i	<0.31	<0.2	7.7	35.2	0.65	<0.12	26.7	1.2	1.4	8,280	7.01	0.29	3.9	4.1	19.5	23	2.9 i	13.6	22	<0.03	632
MW-19C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	0.2 i	<0.5	47.9	0.28 i	<0.12	2.7	0.07 i	0.5 i	940	0.36 i	0.03 i	<0.8	<1.1	9.93	3.2	2.2 i	0.064	17	<0.03	66
MW-23A	<5.6	<0.36	<0.16	0.41 i	<2.4	<0.16	<0.21	<0.19	<0.31	0.4 i	1.2	17.9	0.05 i	<0.12	3.7	0.3 i	1	970	1.41	0.1 i	1.6 i	0.1 i	19.7	4.1	1.5 i	3.77	24.6	<0.03	249
MW-23C	<5.6	<0.36	<0.16	<0.21	<2.4	<0.16	<0.21	<0.19	<0.31	<0.2	<0.5	8.4	<0.04	<0.12	1.1	<0.06	<0.2	460	0.15 i	<0.02	<0.8	<1.1	5.32	1 i	1.6 i	0.094	7.4	<0.03	67

Estimated value - reported between MDL and MRL

Detect

Exceeds GCTL

Table 4

(1 of 3)

GROUNDWATER LEVEL MEASUREMENTS
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility **Sampling Personnel:** Joe Terry
Location: Osceola County, Florida **Field Conditions:** m. cloudy, gusty wind, ~78°F
Date: November 7, 2011

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
DP-1	Piezometer Abandoned 03 October 2003					
DP-2	Piezometer Abandoned 03 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	13:58	81.97	4.17	18.62	77.80	
DP-15	13:58	81.98	4.11	53.70	77.87	
DP-16	13:43	82.57	3.60	18.53	78.97	
DP-17	13:43	82.58	3.65	53.75	78.93	
DP-18	16:00	84.38	3.34	52.90	81.04	
DP-19	16:00	84.34	3.23	18.40	81.11	
DP-20	--	83.07	NM	18.35	NM	
DP-21	--	83.00	NM	53.68	NM	
DP-22	13:15	81.00	3.19	18.63	77.81	
DP-23	13:17	81.27	3.37	53.73	77.90	
DP-24	13:46	82.22	3.50	18.52	78.72	
SZ-1	Piezometer Abandoned 10 July 2007					
SZ-2	--	83.16	NM	75.39	NM	
SZ-3	13:05	81.27	3.84	78.85	77.43	
MW-1A	15:47	95.12	15.74	23.19	79.38	
MW-1B	15:47	95.00	15.63	48.11	79.37	
MW-1C	15:47	95.18	15.94	74.63	79.24	
MW-2A	15:40	95.21	17.43	22.89	77.78	
MW-2B	15:40	95.17	17.39	48.31	77.78	
MW-2C	15:40	95.32	17.73	68.59	77.59	
MW-3A	15:34	94.64	19.07	23.02	75.57	
MW-3B	15:34	94.68	19.15	47.89	75.53	
MW-3C	15:34	94.66	19.25	69.02	75.41	

Table 4

(2 of 3)

GROUNDWATER LEVEL MEASUREMENTS
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Site Name: JED Solid Waste Management Facility **Sampling Personnel:** Joe Terry
Location: Osceola County, Florida **Field Conditions:** m. cloudy, gusty wind, ~78°F
Date: November 7, 2011

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-4A	15:25	95.48	21.58	23.33	73.90	
MW-4B	15:25	95.18	21.02	47.69	74.16	
MW-4C	15:25	95.39	20.96	72.73	74.43	
MW-5A	15:20	95.32	15.98	22.76	79.34	
MW-5B	15:20	95.30	17.92	47.36	77.38	
MW-5C	15:20	95.39	18.70	73.32	76.69	
MW-6A	15:12	94.72	16.14	22.88	78.58	
MW-6B	15:12	94.60	16.02	47.73	78.58	
MW-6C	15:12	94.58	16.58	73.28	78.00	
MW-7A	15:06	95.48	16.53	23.58	78.95	
MW-7B	15:06	95.27	16.36	48.18	78.91	
MW-7C	15:06	94.93	16.39	73.55	78.54	
MW-8A	15:00	94.67	14.84	22.76	79.83	
MW-8B	15:00	94.58	14.89	49.50	79.69	
MW-8C	15:00	94.50	15.32	73.99	79.18	
MW-9A	14:54	94.66	14.50	22.63	80.16	
MW-9B	14:54	94.63	14.69	49.33	79.94	
MW-9C	14:54	94.54	15.42	73.99	79.12	
MW-10A	14:47	96.25	16.80	22.43	79.45	
MW-10B	14:47	96.23	16.86	48.48	79.37	
MW-10C	14:47	96.36	17.56	73.83	78.80	
MW-11A	14:38	93.56	14.69	22.89	78.87	
MW-11B	14:38	93.59	14.93	48.03	78.66	
MW-11C	14:38	93.65	15.04	73.78	78.61	
MW-12A	14:30	95.10	16.18	23.27	78.92	
MW-12B	14:30	95.01	16.27	49.19	78.74	
MW-12C	14:30	95.10	16.41	73.79	78.69	
MW-13A	14:22	95.19	16.10	22.79	79.09	
MW-13B	14:22	95.12	16.04	47.46	79.08	
MW-13C	14:22	95.04	16.04	73.26	79.00	
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
15th 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: November 7, 2011
Sampling Personnel: Joe Terry
Field Conditions: m. cloudy, gusty wind, ~78°F

Well ID	Time	TOC Elevation	Depth to Water (ft)	Well Depth (ft)	GW Elevation	Field Observations
MW-16A	14:15	88.69	6.60	18.89	82.09	
MW-16B	14:15	88.73	8.27	38.38	80.46	
MW-16C	14:15	88.77	8.90	67.94	79.87	
MW-17A	14:05	88.86	8.10	20.17	80.76	
MW-17B	14:05	88.79	8.37	40.47	80.42	
MW-17C	14:05	88.85	8.76	67.55	80.09	
MW-18A	16:35	87.56	8.24	17.98	79.32	
MW-18B	16:35	87.43	8.11	38.10	79.32	
MW-18C	16:35	87.42	8.11	67.38	79.31	
MW-19A	16:40	87.54	7.80	17.93	79.74	
MW-19B	16:40	87.64	7.88	37.97	79.76	
MW-19C	16:40	87.44	7.75	66.95	79.69	
MW-20A	16:27	87.12	6.19	18.21	80.93	
MW-20B	16:27	87.27	6.78	38.05	80.49	
MW-20C	16:27	87.35	7.18	67.03	80.17	
MW-21A	16:20	87.20	6.88	18.32	80.32	
MW-21B	16:20	87.23	7.46	37.92	79.77	
MW-21C	16:20	87.13	7.34	62.48	79.79	
MW-22A	16:10	87.71	7.42	18.29	80.29	
MW-22B	16:10	87.69	8.96	38.26	78.73	
MW-22C	16:10	87.55	8.62	67.47	78.93	
MW-23A	15:56	97.90	17.22	28.03	80.68	
MW-23B	15:56	97.91	17.29	43.00	80.62	
MW-23C	15:56	97.93	17.40	67.32	80.53	
MW-24A	12:55	86.97	6.05	24.21	80.92	
MW-25A	13:00	82.36	3.79	24.76	78.57	
MW-26A	13:22	82.01	4.20	24.03	77.81	
MW-27C	13:29	81.66	3.51	58.37	78.15	

Notes: Well caps removed site wide and wells allowed to stabilize prior to measurements.
NM = not measured [area inaccessible (flooded)]

Table 5

SUMMARY OF SURFACE WATER FIELD MEASUREMENTS AND ANALYTICAL RESULTS
15th 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
Arsenic	6020	ug/L	50	< 0.5	0.6 i
Barium	6020	ug/L	-	9.1	9.1
Chromium	6020	ug/L	-	1 i	1.1
BOD	405.1	mg/L	-	< 2	< 2
Chlorophyll a	SM 10200H	mg/m^3	-	3.8	3
COD	410.2	mg/L	-	66	59
Fecal Coliform	SM 9222D	#/100mL	800	25 B	10 Z
Hardness as CaCO3	SM 2340B	mg/L	-	14.6	9.7
Iron	6010B	mg/L	1	0.58	500
Nitrogen, Total as N	351.2/300.0	mg/L	-	0.92	0.79
Organic Carbon, Total	415.1	mg/L	-	18.3	15.5
Phosphorus, Total	365.1	mg/L	-	0.0302	0.0276
Total Dissolved Solids	160.1	mg/L	-	81	62
Total Suspended Solids	160.2	mg/L	-	< 5	< 6.7
Zinc	6020	ug/L	37*	5.9	4.4 i
Dissolved Oxygen	Field Measurement	mg/L	5	4.13	4.44
pH	Field Measurement	std units	6-8.5	5.35	4.30
Temperature	Field Measurement	^oC	-	17.11	17.33
Conductivity	Field Measurement	uS/cm	< 50% above background or 1275, whichever is >	68	65
Turbidity	Field Measurement	NTU	< 29 above background	0.1	0.0
Water Elevation (1)	Field Measurement	ft	-	73.58	77.78

Notes:

(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 = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

B = results based upon colony counts outside acceptable range (see lab report narrative)

Z = too many colonies present, the numeric value represents the filtration volume (see lab report narrative)

Table 6

SUMMARY OF FIELD MEASUREMENTS AND ANALYTICAL RESULTS FOR LEACHATE SAMPLES
15th SEMI-ANNUAL WATER QUALITY MONITORING EVENT
J.E.D. SOLID WASTE MANAGEMENT FACILITY

Parameter	Units	Regulatory Level [1]	L-1	L-2	L-3	L-4	L-5	L-6	L-7
			Nov-11	Nov-11	Nov-11	Nov-11	Nov-11	Nov-11	Nov-11
FIELD MEASUREMENTS									
Temperature	°C[2]		28.99	29.15	29.12	32.59	32.96	36.44	22.84
pH	Std Units		7.32	6.95	7.27	7.26	7.16	7.46	5.48
Conductivity	mS/cm[3]		22.629	21.027	21.318	20.644	15.185	22.086	0.956
Turbidity	NTU[4]		4.5	0.0	0.9	2.3	8.1	1.1	18.5
ORP[5]	mV[6]		-252.8	-227.8	-224.0	-198.5	-61.7	-194.4	88.8
Dissolved Oxygen	mg/L[7]		1.17	2.89	0.42	0.58	1.43	0.73	4.67
ANALYTICAL RESULTS									
2-Butanone (MEK)	µg/L[8]	200,000	< 190	727	< 190	906	< 190	< 190	< 7.6
Acetone	µg/L		< 280	753	< 280	945 i	< 280	< 280	< 11.2
Toluene	µg/L		< 9.5	33 i	< 9.5	21 i	23 i	61	< 0.38
2-Methylphenol	µg/L		1.7 i	< 1.37	< 1.46	9.98	2.9 i	15.5	< 1.35
4-Methylphenol	µg/L	200,000	< 1.07	23.4	< 1.12	106	< 1.04	< 1.06	< 1.04
Naphthalene	µg/L		2.3 i	1.13 i	1.51 i	7.81	3.44 i	2.2 i	< 0.547
o-Toluidine	µg/L		137	16.5	2.88 i	< 1.94	39.4	8.85	< 1.86
Phenol	µg/L		9.74	25.5	< 0.66	136	< 0.609	< 0.622	< 0.609
Antimony	µg/L		76.3	101	33.9	57.4	24	25.4	0.8 i
Arsenic	µg/L	5,000	126	234	62	97.6	44	96	1.3
Barium	µg/L	100,000	562	426	341	254	188	420	116
Chromium	µg/L	5,000	536	743	463	660	320	504	1.4
Cobalt	µg/L		37.5	24.1	38.3	48	27.3	36.5	1.6
Copper	µg/L		18.7	22	14.7	29.1	16.1	41	38
Iron	µg/L		7,460	5,100	4,550	2,510	3,370	3,610	3,610
Lead	µg/L	5,000	36.9	21.4	15.1	16.7	12.7	25.6	0.71
Nickel	µg/L		616	223	284	326	237	320	6.4
Selenium	µg/L	1,000	79	116	113	154	60	155	< 1.1
Sodium	mg/L		2,480	2,350	2,490	1,980	1,460	2,090	72.2
Vanadium	µg/L		507	990	642	731	372	810	13.3
Zinc	µg/L		46	38	39	35	37	104	15.8
Alkalinity (Total as $CaCO_3$)	mg/L		4,860 Q	2,830 Q	4,080 Q	4,060 Q	3,180 Q	4,410	9.6 Q
Ammonia-N	mg/L		1,250	996	946	1,280	723	990	9.36
Biochemical Oxygen Demand (BOD)	mg/L		152	199	120	151	97.6	186	42
Chemical Oxygen Demand (COD)	mg/L		7,400	10,300	8,700	9,700	4,500	6,800	55
Chloride	mg/L		4,000	4,580	3,950	3,220	2,310	3,000	99.9
Cyanide, Total	µg/L		28	39	35	26	20	37	< 7
Total Dissolved Solids (TDS)	mg/L		14,200	13,700	12,300	13,000	7,720	10,400	614
Sulfide	mg/L		0.7 i	0.5 i	< 0.4	< 0.4	< 0.4	< 0.4	2.1

Notes:

1 Maximum concentration of contaminants for the toxicity characteristic listed in 40 CFR 261.24.
2 °C = degrees Celsius
3 mS/cm = milli Siemens per centimeter
4 NTU = Nephelometric Turbidity Units
5 ORP = Oxidation-Reduction Potential
6 mV = millivolts
7 mg/L = milligram per liter
8 µg/L = microgram per liter
i = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Q = through an oversight by the laboratory, the total alkalinity analysis was done out the recommended hold time

Figures

Legend

Monitor Well Location

Water Level Contours

NOTES:

AERIAL PHOTOGRAPH PROVIDED BY BULLSEYE DESIGN (2009).
WATER LEVEL MEASUREMENTS ACQUIRED 16 MAY 2011.
WACS FACILITY ID 89455

200 100 0 200 400 600 800 Feet

1 in = 600 ft

15th SEMI-ANNUAL MONITORING EVENT (NOVEMBER 2011) "A"-ZONE (SHALLOW) WELLS-WATER LEVEL CONTOURS

WASTE SERVICES OF FLORIDA, INC.
J.E.D. SOLID WASTE
1501 OMNI WAY
ST. CLOUD, FLORIDA

Geo-Services and Consulting, LLC

TAMPA, FL

JAN 2012

FIGURE 1

I:\gis\WS\JED\Maps\wq_2010\fig1_11_may_10.mxd

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 SC49-0199726-017 & SO49-0199726-017

(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) mkaiser@wsii.us

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.

1/6/2012 (Date)

Mike Kaiser (Owner or Authorized Representative's Signature)

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Waste Services of Florida, Inc.

Analytical Lab NELAC / HRS Certification # E82502

Lab Name Columbia Analytical Services (CAS)

Address 9143 Philips Highway, Suite 200 Jacksonville, Florida 32256

Phone Number (904) 739-2277

Email address (if available)

Appendix B

Field 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: 16 November 2011

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): 15.83	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 – 15.83 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: 1200	PURGING ENDED AT: 1250	TOTAL VOLUME PURGED (gallons): 4.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1240	3.2	3.2	0.08	16.20	5.06	27.40	189	0.68	3.3	clear	-54.5
1245	0.4	3.6	0.08	16.20	5.09	27.42	192	0.61	3.4	clear	-54.5
1250	0.4	4.0	0.08	16.20	5.09	27.41	191	0.59	3.3	clear	-55.7

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1255	SAMPLING ENDED AT: 1308
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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
MW-1A	3	CG	40mL	None	None		8011	RFPP	<100
MW-1A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-1A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-1A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: sulfur-like
weather: mcloudy, 78°F, slight breeze, humid

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: 16 November 2011

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): 17.83	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 – 17.83 feet) X 0.16 gallons/foot = 0.8 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: 1010	PURGING ENDED AT: 1115	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1105	4.4	4.4	0.08	18.04	5.26	26.70	235	0.64	2.3	clear	-97.5
1110	0.4	4.8	0.08	18.04	5.26	26.65	234	0.59	2.1	clear	-105.7
1115	0.4	5.2	0.08	18.04	5.25	26.67	235	0.58	2.1	clear	-105.2

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 / WSI	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1125
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-2A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-2A	3	CG	40mL	None	None		8011	RFPP	<100
MW-2A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-2A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-2A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: none
weather: m.cloudy, 78°F, slight wind, humid

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: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.8 feet to 22.8 feet	STATIC DEPTH TO WATER (feet): 19.62	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)
= (22.8 feet – 19.62 feet) X 0.16 gallons/foot = 0.51 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): 21	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21	PURGING INITIATED AT: 0835	PURGING ENDED AT: 0930	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0920	2.75	2.75	0.05	19.80	4.94	27.49	349	0.93	0.9	clear	-55.0
0925	0.25	2.50	0.05	19.80	4.94	27.45	350	0.82	1.5	clear	-58.5
0930	0.25	2.75	0.05	19.80	4.94	27.47	350	0.79	1.2	clear	-60.7

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0935	SAMPLING ENDED AT: 0945
PUMP OR TUBING DEPTH IN WELL (feet): 21	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-3A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-3A	3	CG	40mL	None	None		8011	RFPP	<100
MW-3A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	200
MW-3A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
MW-3A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200

REMARKS: Odor: sulfur-like
weather: mi cloudy, 78°F, 4mph wind, humid

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: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 13.1 feet to 23.1 feet	STATIC DEPTH TO WATER (feet): 22.13	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 – 22.13 feet) X 0.16 gallons/foot = 0.14 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): 22.8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~~22.8~~ 23 11-16-11	PURGING INITIATED AT: 0645	PURGING ENDED AT: 0805	TOTAL VOLUME PURGED (gallons): 1.6

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0750	1.3	1.3	0.02	22.78	4.75	28.10	88	0.77	0.0	clear	-71.8
0757	0.14	1.44	0.02	22.78	4.75	28.12	88	0.84	0.0	clear	-86.2
0805	0.16	1.6	0.02	22.78	4.75	28.13	88	0.82	0.0	clear	-88.0

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0805	SAMPLING ENDED AT: 0815
PUMP OR TUBING DEPTH IN WELL (feet): ~~22.8~~ 23 11-16-11	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-4A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-4A	3	CG	40mL	None	None		8011	RFPP	<100
MW-4A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	100
MW-4A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	100
MW-4A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	100

REMARKS: Odor: none
weather: overcast, 76°F, slight breeze, humid

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: 15 November 2011

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): 16.35	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 – 16.35 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): 19	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 19	PURGING INITIATED AT: 1325	PURGING ENDED AT: 1430	TOTAL VOLUME PURGED (gallons): 3.25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1420	2.75	2.75	0.05	16.68	5.76	28.78	1599	0.33	19.4	slightly yellow	-170.3
1425	0.25	3.00	0.05	16.68	5.72	28.70	1576	0.31	19.0	" "	-171.3
1430	0.25	3.25	0.05	16.68	5.74	28.71	1578	0.30	18.7	" "	-172.5

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1435	SAMPLING ENDED AT: 1445
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-5A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-5A	3	CG	40mL	None	None		8011	RFPP	<100
MW-5A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	200
MW-5A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
MW-5A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200

REMARKS: Odor: sulfur-like
weather: p.cloudy, 84°F, slight breeze, humid

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: 15 November 2011

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): 16.43	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 – 16.43 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: 1145	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (gallons): 4.8

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1235	4.0	4.0	0.08	16.54	5.20	27.23	383	0.56	1.6	clear	-126.6
1240	0.4	4.4	0.08	16.54	5.20	27.20	375	0.56	1.1	clear	-136.6
1245	0.4	4.8	0.08	16.54	5.21	27.21	375	0.57	1.1	clear	-137.6

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1250	SAMPLING ENDED AT: 1258
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-6A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-6A	3	CG	40mL	None	None		8011	RFPP	<100
MW-6A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-6A	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

REMARKS: Odor: sulfur like
Weather: m. sunny, 81°F, 3mph breeze, humid

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: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 13.3 feet to 23.3 feet	STATIC DEPTH TO WATER (feet): 16.70	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 – 16.7 feet) X 0.16 gallons/foot = 1.1 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: 1005	PURGING ENDED AT: 1110	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1100	3.85	3.85	0.07	16.77	5.21	26.04	259	0.55	0.4	clear	-109.7
1105	0.35	4.2	0.07	16.77	5.25	26.07	262	0.55	0.2	clear	-127.4
1110	0.35	4.55	0.07	16.77	5.25	26.04	262	0.54	0.2	clear	-132.1

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1115	SAMPLING ENDED AT: 1120
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-7A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-7A	3	CG	40mL	None	None		8011	RFPP	<100
MW-7A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-7A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-7A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: sulfur-like
Weather: Mostly sunny, 80°F, ~3 mph breeze, humid

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 November 2011

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): 15.00	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)
= (22.5 feet – 15 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): 19	PURGING INITIATED AT: 0830	PURGING ENDED AT: 0930	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0920	3.0	3.0	0.06	15.58	4.42	25.68	291	0.67	1.4	clear	-16.4
0925	0.3	3.3	0.06	15.60	4.41	25.64	290	0.71	1.5	clear	-24.0
0928	0.18	3.48	0.06	15.60	4.41	25.60	289	0.67	1.5	clear	-27.2
0930	0.12	3.6	0.06	15.60	4.41	25.62	291	0.67	1.4	clear	-31.2

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0935	SAMPLING ENDED AT: 0943
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-8A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-8A	3	CG	40mL	None	None		8011	RFPP	<100
MW-8A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	220
MW-8A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	220
MW-8A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	220

REMARKS: Odor: sulfur-like
weather: mostly sunny, 77°F, humid, 3mph breeze

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 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.4 feet to 22.4 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)
= (22.4 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): 18	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 18	PURGING INITIATED AT: 0630	PURGING ENDED AT: 0725	TOTAL VOLUME PURGED (gallons): 4.4

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0715	3.6	3.6	0.08	14.80	4.84	27.16	170	0.49	5.2	light yellow	-65.5
0720	0.4	4.0	0.08	14.80	4.85	27.20	170	0.40	5.5	" "	-65.0
0725	0.4	4.4	0.08	14.80	4.85	27.19	169	0.39	5.5	" "	-65.2

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0730	SAMPLING ENDED AT: 0745
PUMP OR TUBING DEPTH IN WELL (feet): 18	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	~~DUPLICATE:~~ Y (N) ~~QT 11-15-11~~ Equipment Blank	

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-9A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-9A	3	CG	40mL	None	None		8011	RFPP	<100
MW-9A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-9A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-9A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: sulfur-like. Collected an equipment blank w/lab supplied DI water, ID: Equipment Blank-2 time: 0740
weather: overcast, 74°F, very humid.

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-10A	SAMPLE ID: MW-10A	DATE: 14 November 2011

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): 16.93	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 – 16.93 feet) X 0.16 gallons/foot = 0.81 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: 1415	PURGING ENDED AT: 1510	TOTAL VOLUME PURGED (gallons): 3.85

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1500	3.15	3.15	0.07	17.11	4.84	27.08	531	1.16	2.4	clear	-105.8
1505	0.35	3.5	0.07	17.11	4.83	27.03	529	1.13	2.6	clear	-115.0
1510	0.35	3.85	0.07	17.11	4.83	27.04	530	1.12	2.5	clear	-123.8

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1515	SAMPLING ENDED AT: 1525
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-10A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-10A	3	CG	40mL	None	None		8011	RFPP	<100
MW-10A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-10A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-10A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: sulfur-like
weather: p. cloudy, 86°F, slight breeze

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 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 12.8 feet to 22.8 feet	STATIC DEPTH TO WATER (feet): 14.95	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)
= (22.8 feet – 14.95 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: 1230	PURGING ENDED AT: 1340	TOTAL VOLUME PURGED (gallons): 6.3

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1327	5.13	5.13	0.09	15.72	5.13	27.40	411	1.09	7.5	clear	-61.9
1335	0.72	5.85	0.09	15.72	5.13	27.40	410	1.12	7.1	clear	-64.2
1340	0.45	6.3	0.09	15.72	5.13	27.39	410	1.08	6.9	clear	-66.3

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1345	SAMPLING ENDED AT: 1350
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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
MW-11A	3	CG	40mL	None	None		8011	RFPP	<100
MW-11A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	350
MW-11A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	350
MW-11A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	350

REMARKS: Odor: sulfur-like
weather: m. sunny, 86°F, ~2mph breeze

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 November 2011

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): 16.45	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 – 16.45 feet) X 0.16 gallons/foot = 1.05 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: 1050	PURGING ENDED AT: 1153	TOTAL VOLUME PURGED (gallons): 4.41

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1140	3.5	3.5	0.07	16.85	4.48	26.91	147	1.31	0.7	clear	7.7
1145	0.35	3.85	0.07	16.85	4.50	26.96	148	1.19	0.8	clear	2.4
1148	0.21	4.06	0.07	16.85	4.51	26.98	148	1.21	0.9	clear	3.6
1153	0.35	4.41	0.07	16.85	4.50	26.97	148	1.21	0.8	clear	9.7

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1155	SAMPLING ENDED AT: 1202
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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-12A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-12A	3	CG	40mL	None	None		8011	RFPP	<100
MW-12A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-12A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-12A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: sulfur like
weather: clear, 86°F, slight breeze

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 November 2011

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): 16.35	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 – 16.35 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: 0915	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (gallons): 4.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1005	3.5	3.5	0.07	16.55	5.17	27.45	212	1.72	1.2	clear	-2.0
1010	0.35	3.85	0.07	16.55	5.20	27.42	214	1.03	1.3	clear	-2.1
1015	0.35	4.2	0.07	16.55	5.21	27.47	212	0.89	1.2	clear	-3.5

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1020	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 Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-13A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-13A	3	CG	40mL	None	None		8011	RFPP	<100
MW-13A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-13A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-13A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: none
weather: clear, 86°F

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-16A	SAMPLE ID: MW-16A	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 8.5 feet to 18.5 feet	STATIC DEPTH TO WATER (feet): 6.67	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)
= (18.5 feet – 6.67 feet) X 0.16 gallons/foot = 1.9 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): 14	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1155	TOTAL VOLUME PURGED (gallons): 7.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1140	6.0	6.0	0.1	8.05	5.02	25.57	37	1.51	10.8	clear	109.7
1145	0.5	6.5	0.1	8.10	4.94	25.54	36	1.38	10.5	clear	80.4
1150	0.5	7.0	0.1	8.10	4.92	25.54	36	1.32	10.7	clear	78.7
1155	0.5	7.5	0.1	8.10	4.93	25.52	36	1.35	10.5	clear	79.7

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1158	SAMPLING ENDED AT: 1210
PUMP OR TUBING DEPTH IN WELL (feet): 14	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N replaced)	DUPLICATE: 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-16A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-16A	3	CG	40mL	None	None		8011	RFPP	<100
MW-16A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-16A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-16A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: none
weather: M. sunny, 87°F, ~3 mph breeze. initial turbidity: 32.2 NTU

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-19A	SAMPLE ID: MW-19A	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 7.65 feet to 17.65 feet	STATIC DEPTH TO WATER (feet): 7.81	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)
= (17.65 feet – 7.81 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): 13	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1457	TOTAL VOLUME PURGED (gallons): 10.05

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1445	8.25	8.25	0.15	8.51	5.89	25.86	525	0.29	54.4	brown	-93.8
1450	0.75	9.00	0.15	8.51	5.85	25.85	520	0.27	55.3	brown	-99.0
1457	1.05	10.05	0.15	8.51	5.84	25.88	520	0.25	54.7	brown	-107.3

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1507
PUMP OR TUBING DEPTH IN WELL (feet): 13	TUBING MATERIAL CODE: PE	FIELD-FILTERED: (Y) N Filtration Equipment Type: in line cartridge	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-19A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-19A	3	CG	40mL	None	None		8011	RFPP	<100
MW-19A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	350
MW-19A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	350
MW-19A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	350
MW-19A	1	PE	250mL	HNO_3	Prefilled by lab		Dissolved Metals	APP	350

REMARKS: Initial turbidity: 55 NTU. Odor: sulfur-like. Turbidity after filter: 8.8 NTU
weather: m. cloudy, 82°F, 7 mph gusts of wind.

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: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 17.75 feet to 27.75 feet	STATIC DEPTH TO WATER (feet): 17.25	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)
= (27.75 feet – 17.25 feet) X 0.16 gallons/foot = 1.7 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: 0730	PURGING ENDED AT: 0915	TOTAL VOLUME PURGED (gallons): 7.35

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0830	4.2	4.2	0.07	17.91	5.85	25.66	358	0.39	47	hazy	-176.2
0855	1.75	5.95	0.07	17.91	5.97	25.70	379	0.31	43	hazy	-172.3
0900	0.35	6.30	0.07	17.91	6.14	25.72	384	0.29	45	hazy	-178.1
0905	0.35	6.65	0.07	17.91	6.18	25.72	386	0.35	40	hazy	-177.1
0910	0.35	7.00	0.07	17.91	6.17	25.74	389	0.31	40	hazy	-183.3
0915	0.35	7.35	0.07	17.91	6.19	25.75	389	0.32	42	hazy	-182.5

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0920	SAMPLING ENDED AT: 0928
PUMP OR TUBING DEPTH IN WELL (feet): 23	TUBING MATERIAL CODE: PE	FIELD-FILTERED: (Y) N Filtration Equipment Type: inline filter cartridge	FILTER SIZE: 1 µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-23A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-23A	3	CG	40mL	None	None		8011	RFPP	<100
MW-23A	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-23A	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-23A	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250
MW-23A	1	PE	250mL	HNO_3	Prefilled by lab		Dissolved Metals	APP	250

REMARKS: Odor: sulfur-like
weather: clear, 67°F, ~3 mph breeze
Turbidity after filter: 4.3 NTU
Initial turbidity: 30 NTU

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-16B	SAMPLE ID: MW-16B	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches):0.375	WELL SCREEN INTERVAL DEPTH: 28 feet to 38 feet	STATIC DEPTH TO WATER (feet): 8.33	PURGE PUMP TYPE OR BAILER: electric submersible

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 + (0.006 gallons/foot X 38 feet) + 0.12 gallons = 0.35 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 33	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 33	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1225	TOTAL VOLUME PURGED (gallons): 52

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1215	48	48	0.4	8.84	4.96	25.29	45	0.26	17.8	clear	-71.3
1220	2	50	0.4	8.84	4.96	25.30	45	0.26	18	clear	-72.3
1225	2	52	0.4	8.84	4.96	25.29	45	0.23	16.2	clear	-73.8

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1235
PUMP OR TUBING DEPTH IN WELL (feet): 33	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N) (replaced)	~~DUPLICATE:~~ (Y) N Equipment Blank	

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-16B	3	CG	40mL	HCL	Prefilled by lab		8260	ESP	<100
MW-16B	3	CG	40mL	None	None		8011	ESP	<100
MW-16B	1	PE	250mL	HNO_3	Prefilled by lab		Metals	ESP	300
MW-16B	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	ESP	300
MW-16B	1	PE	250mL	None	None		TDS, Cl, NO_3	ESP	300

REMARKS: Odor: sulfur-like. 3 equipment vol: 1.05 gal (Equipment Blank - 1 @ 1250 collected w/ lab supplied DI H_2O and for same parameters as the gr. H_2O.
Weather: M. Sunny, 87°F, ~3 mph breeze. Initial turbidity: 148 NTU

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-1C	SAMPLE ID: MW-1C	DATE: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 65.2 feet to 75.2 feet	STATIC DEPTH TO WATER (feet): 16.03	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 90 feet) + 0.12 gallons = 0.33 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 70	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 70	PURGING INITIATED AT: 1200	PURGING ENDED AT: 1225	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1215	1.35	1.35	0.09	16.29	5.28	26.42	68	0.65	2.0	clear	-43.2
1220	0.45	1.8	0.09	16.29	5.24	26.40	68	0.44	5.1	clear	-44.3
1225	0.45	2.25	0.09	16.29	5.24	26.42	68	0.45	5.0	clear	-47.6

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1235
PUMP OR TUBING DEPTH IN WELL (feet): 70	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-1C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-1C	3	CG	40mL	None	None		8011	RFPP	<100
MW-1C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	350
MW-1C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	350
MW-1C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	350

REMARKS: Odor: none. 3 equipvol: 1.0gal
weather: m. cloudy, 78°F, slight breeze, humid

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-2C	SAMPLE ID: MW-2C — DATE: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 58.4 feet to 68.4 feet	STATIC DEPTH TO WATER (feet): 18.12	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 70 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 63	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 63	PURGING INITIATED AT: 1010	PURGING ENDED AT: 1045	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1030	1.4	1.4	0.07	18.30	4.35	25.51	50	0.44	0.3	clear	145.6
1035	0.35	1.75	0.07	18.30	4.46	25.48	50	0.42	0.4	clear	138.7
1040	0.35	2.1	0.07	18.30	4.45	25.46	52	0.38	0.4	clear	223.5
1045	0.35	2.45	0.07	18.30	4.45	25.50	51	0.39	0.4	clear	226.5

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 / WSI	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1058
PUMP OR TUBING DEPTH IN WELL (feet): 63	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-2C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-2C	3	CG	40mL	None	None		8011	RFPP	<100
MW-2C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-2C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-2C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: none 3 equip vol: 1.0 gal
weather: m. cloudy, 78°F, 5 mph wind, humid

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-3C	SAMPLE ID: MW-3C	DATE: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 58.7 feet to 68.7 feet	STATIC DEPTH TO WATER (feet): 19.88	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 70 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 63	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 63	PURGING INITIATED AT: 0835	PURGING ENDED AT: 0910	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. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0850	1.05	1.05	0.07	20.03	5.22	26.45	88	0.68	0.3	clear	34.4
0855	0.35	1.4	0.07	20.03	5.21	26.43	88	0.61	0.6	clear	32.8
0900	0.35	1.75	0.07	20.03	5.19	26.40	88	0.54	0.7	clear	33.0
0905	0.35	2.1	0.07	20.03	5.17	26.46	88	0.49	0.7	clear	38.7
0910	0.35	2.45	0.07	20.03	5.17	26.44	87	0.48	0.7	clear	38.5

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0910	SAMPLING ENDED AT: 0917
PUMP OR TUBING DEPTH IN WELL (feet): 63	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-3C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-3C	3	CG	40mL	None	None		8011	RFPP	<100
MW-3C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-3C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-3C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: none 3 equip vol: 1.0 gal
weather: p. cloudy, 79°F, 4mph wind, humid

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-4C	SAMPLE ID: MW-4C	DATE: 16 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 62.5 feet to 72.5 feet	STATIC DEPTH TO WATER (feet): 21.41	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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 67	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 67	PURGING INITIATED AT: 0640	PURGING ENDED AT: 0735	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0705	1.5	1.5	0.06	22.11	6.02	28.22	205	0.85	1.4	clear	-34.0
0710	0.3	1.8	0.06	22.11	5.97	28.23	197	0.73	1.5	clear	-37.8
0715	0.3	2.1	0.06	22.11	5.91	28.23	182	0.67	1.1	clear	-45.8
0720	0.3	2.4	0.06	22.11	5.84	28.18	165	0.58	0.6	clear	-52.1
0725	0.3	2.7	0.06	22.11	5.79	28.20	157	0.54	0.8	clear	-51.8
0730	0.3	3.0	0.06	22.11	5.78	28.20	156	0.58	0.7	clear	-55.0
0735	0.3	3.3	0.06	22.11	5.78	28.20	156	0.57	0.8	clear	-55.0

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0735	SAMPLING ENDED AT: 0744
PUMP OR TUBING DEPTH IN WELL (feet): 67	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-4C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-4C	3	CG	40mL	None	None		8011	RFPP	<100
MW-4C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	240
MW-4C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	240
MW-4C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	240

REMARKS: Odor: none 3 equip vol: 1.0gal
weather: overcast, 76°F, slight breeze, humid

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-5C	SAMPLE ID: MW-5C	DATE: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63 feet to 73 feet	STATIC DEPTH TO WATER (feet): 19.55	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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 69	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 1325	PURGING ENDED AT: 1400	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. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1350	1.75	1.75	0.07	19.73	5.02	26.65	74	0.46	0.7	clear	-28.9
1355	0.35	2.1	0.07	19.73	5.02	26.63	73	0.45	0.8	clear	-26.9
1400	0.35	2.45	0.07	19.73	5.04	26.65	73	0.47	0.8	clear	-31.9

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 / WSI	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1413
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-5C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-5C	3	CG	40mL	None	None		8011	RFPP	<100
MW-5C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-5C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-5C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: none
weather: p. cloudy, ~84°F, slight breeze, humid

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-6C	SAMPLE ID: MW-6C	DATE: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.2 feet to 73.2 feet	STATIC DEPTH TO WATER (feet): 16.97	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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 1145	PURGING ENDED AT: 1220	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1205	1.6	1.6	0.08	17.10	4.98	26.12	51	0.52	1.9	clear	-14.0
1210	0.4	2.0	0.08	17.10	4.99	26.15	52	0.52	1.7	clear	-19.3
1215	0.4	2.4	0.08	17.10	4.99	26.17	53	0.51	2.0	clear	-20.6
1220	0.4	2.8	0.08	17.10	5.00	26.16	53	0.47	1.7	clear	-20.6

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1225	SAMPLING ENDED AT: 1230
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-6C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-6C	3	CG	40mL	None	None		8011	RFPP	<100
MW-6C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-6C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-6C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: none. 3 equip vol: 1.0 gal
weather: m. sunny, 84°F, 3 mph wind, humid

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-7C	SAMPLE ID: MW-7C — DATE: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.3 feet to 73.3 feet	STATIC DEPTH TO WATER (feet): 16.60	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 80 feet) + 0.12 gallons = 0.33 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1045	TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1030	1.25	1.25	0.05	16.69	5.21	24.74	68	0.60	1.1	clear	-21.9
1035	0.25	1.50	0.05	16.69	5.19	24.80	68	0.59	0.9	clear	-26.4
1040	0.25	1.75	0.05	16.69	5.18	24.77	68	0.57	1.0	clear	-26.9
1045	0.25	2.00	0.05	16.69	5.18	24.80	68	0.55	1.0	clear	-30.6

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1058
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-7C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-7C	3	CG	40mL	None	None		8011	RFPP	<100
MW-7C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	200
MW-7C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	200
MW-7C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	200

REMARKS: Odor: none. 3 equipment: 1.0 gal
weather: m. sunny, 80°F, ~3 mph breeze, humid

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-8C	SAMPLE ID: MW-8C	DATE: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.9 feet to 73.9 feet	STATIC DEPTH TO WATER (feet): 15.46	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 80 feet) + 0.12 gallons = 0.33 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 69	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 69	PURGING INITIATED AT: 0830	PURGING ENDED AT: 0900	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0850	1.4	1.4	0.07	15.57	4.87	24.56	83	0.64	0.4	clear	-1.9
0855	0.35	1.75	0.07	15.57	4.88	24.58	83	0.63	0.7	clear	-11.6
0900	0.35	2.1	0.07	15.57	4.87	24.59	83	0.60	0.7	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 / WSI	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 0905	SAMPLING ENDED AT: 0908 11-15-11
PUMP OR TUBING DEPTH IN WELL (feet): 69	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-8C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-8C	3	CG	40mL	None	None		8011	RFPP	<100
MW-8C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	250
MW-8C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	250
MW-8C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	250

REMARKS: Odor: none. 3 equip vol: 1.0 gal
Weather: mostly, 77°F, humid, 3 mph breeze

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-9C	SAMPLE ID: MW-9C	DATE: 15 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.8 feet to 73.8 feet	STATIC DEPTH TO WATER (feet): 15.56	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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 0635	PURGING ENDED AT: 0805	TOTAL VOLUME PURGED (gallons): 7.2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0754	6.32	6.32	0.08	15.70	5.46	25.42	123	0.60	1.2	clear	-99.2
0759	0.4	6.72	0.08	15.70	5.45	25.43	121	0.54	1.1	clear	-98.8
0805	0.48	7.2	0.08	15.70	5.46	25.45	121	0.44	1.0	clear	-100.3

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0810	SAMPLING ENDED AT: 0815
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-9C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-9C	3	CG	40mL	None	None		8011	RFPP	<100
MW-9C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-9C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-9C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: none
weather: overcast, 74°F, very humid

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-10C	SAMPLE ID: MW-10C	DATE: 14 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.5 feet to 73.5 feet	STATIC DEPTH TO WATER (feet): 17.73	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)
= (73.5 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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 1415	PURGING ENDED AT: 1445	TOTAL VOLUME PURGED (gallons): 2.7

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1435	1.8	1.8	0.09	17.83	5.16	25.98	101	0.87	4.0	clear	-38.3
1440	0.45	2.25	0.09	17.83	5.17	25.95	99	0.86	4.0	clear	-42.6
1445	0.45	2.7	0.09	17.83	5.15	25.98	100	0.93	4.0	clear	-45.6

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1450	SAMPLING ENDED AT: 1457
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-10C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-10C	3	CG	40mL	None	None		8011	RFPP	<100
MW-10C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	350
MW-10C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	350
MW-10C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	350

REMARKS: Odor: none. 3 equip vol: 1.0 gal
weather: p. cloudy, 86°F, slight breeze

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-11C	SAMPLE ID: MW-11C	DATE: 14 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.4 feet to 73.4 feet	STATIC DEPTH TO WATER (feet): 15.26	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)
= (73.4 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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 1225	PURGING ENDED AT: 1310	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1250	2.0	2.0	0.08	15.38	5.43	26.57	118	0.93	1.7	clear	-53.3
1255	0.4	2.4	0.08	15.38	5.44	26.56	117	0.93	1.9	clear	-57.1
1310	1.2	3.6	0.08	15.38	5.42	26.55	118	0.95	1.6	clear	-72.2

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 / WSI	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1315	SAMPLING ENDED AT: 1322
PUMP OR TUBING DEPTH IN WELL (feet): 68	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-11C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-11C	3	CG	40mL	None	None		8011	RFPP	<100
MW-11C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-11C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-11C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: Odor: none 3 equip. vol: 1.0 gal
weather: m. sunny, 86°F, ~2mph breeze

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-12C	SAMPLE ID: MW-12C	DATE: 14 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63.6 feet to 73.6 feet	STATIC DEPTH TO WATER (feet): 16.67	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 75 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 69	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 69	PURGING INITIATED AT: 1045	PURGING ENDED AT: 1125 ~~1195~~ 11-14-11	TOTAL VOLUME PURGED (gallons): 4.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1115	3.0	3.0	0.1	6.80	5.05	25.57	56	0.73	2.4	clear	-13.2
1120	0.5	3.5	0.1	6.80	5.05	25.60	56	0.68	2.1	clear	-15.2
1125	0.5	4.0	0.1	6.80	5.05	25.61	56	0.70	2.1	clear	-14.9

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 69	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-12C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-12C	3	CG	40mL	None	None		8011	RFPP	<100
MW-12C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	400
MW-12C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	400
MW-12C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	400

REMARKS: Odor: none 3 equip vol: 1.0 gal
weather: clear, 86°F, slight breeze

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-13C	SAMPLE ID: MW-13C	DATE: 14 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 63 feet to 73 feet	STATIC DEPTH TO WATER (feet): 16.28	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 78 feet) + 0.12 gallons = 0.32 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 68	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 68	PURGING INITIATED AT: 0910	PURGING ENDED AT: 0945	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. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0935	2.5	2.5	0.1	16.42	5.00	25.75	75	1.14	3.3	clear	25.4
0940	0.5	3.0	0.1	16.42	5.05	25.74	75	0.96	3.5	clear	9.9
0945	0.5	3.5	0.1	16.42	5.04	25.75	75	0.82	3.5	clear	-0.8

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0950	SAMPLING ENDED AT: 0957
PUMP OR TUBING DEPTH IN WELL (feet): 69	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-13C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-13C	3	CG	40mL	None	None		8011	RFPP	<100
MW-13C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	400
MW-13C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	400
MW-13C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	400

REMARKS: Odor: none. 3 equip. vol = 1.0 gal
weather: Clear, 86°F

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-16C	SAMPLE ID: MW-16C	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.25	WELL SCREEN INTERVAL DEPTH: 57.7 feet to 67.7 feet	STATIC DEPTH TO WATER (feet): 8.95	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 69 feet) + 0.12 gallons = 0.3 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 63	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 63	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1113	TOTAL VOLUME PURGED (gallons): 3.87

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1100	2.7	2.7	0.09	9.23	5.07	25.51	114	1.56	1.0	clear	71.9
1105	0.45	3.15	0.09	9.23	5.08	25.53	114	1.45	1.0	clear	72.3
1113	0.72	3.87	0.09	9.23	5.11	25.52	113	1.49	1.0	clear	69.9

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1115	SAMPLING ENDED AT: 1132
PUMP OR TUBING DEPTH IN WELL (feet): 63	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-16C	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100
MW-16C	3	CG	40mL	None	None		8011	RFPP	<100
MW-16C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	APP	300
MW-16C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	APP	300
MW-16C	1	PE	250mL	None	None		TDS, Cl, NO_3	APP	300

REMARKS: 3 equip vol: 0.9 gal, Odor: none
weather: mostly sunny, 87°F, ~3 mph breeze, Initial turbidity: 1.1 NTU

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-19C	SAMPLE ID: MW-19C	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.375	WELL SCREEN INTERVAL DEPTH: 56.7 feet to 66.7 feet	STATIC DEPTH TO WATER (feet): 7.78	PURGE PUMP TYPE OR BAILER: electric submersible

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 + (0.006 gallons/foot X 72 feet) + 0.12 gallons = 0.6 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 62	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 62	PURGING INITIATED AT: 1345	PURGING ENDED AT: 1525	TOTAL VOLUME PURGED (gallons): 70

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
1515	63	63	0.7	10.35	5.26	24.96	115	0.30	22	clear	-47.0
1520	3.5	66.5	0.7	10.35	5.25	24.96	114	0.29	19	clear	-46.3
1525	3.5	70	0.7	10.35	5.25	24.96	114	0.29	17.9	clear	-46.3

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 1530	SAMPLING ENDED AT: 1535
PUMP OR TUBING DEPTH IN WELL (feet): 62	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N) (replaced)	DUPLICATE: 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-19C	3	CG	40mL	HCL	Prefilled by lab		8260	ESP	<100
MW-19C	3	CG	40mL	None	None		8011	ESP	<100
MW-19C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	ESP	
MW-19C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	ESP	
MW-19C	1	PE	250mL	None	None		TDS, Cl, NO_3	ESP	

REMARKS: Initial Turbidity: 243 NTU 3 EV = 1.8 gal
weather: m.cloudy, 82°F, 7mph gusts of 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-23C	SAMPLE ID: MW-23C	DATE: 8 November 2011

PURGING DATA

WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): 0.375	WELL SCREEN INTERVAL DEPTH: 57 feet to 67 feet	STATIC DEPTH TO WATER (feet): 17.41	PURGE PUMP TYPE OR BAILER: electric submersible

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 + (0.006 gallons/foot X 70 feet) + 0.12 gallons = 0.2 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 62	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 62	PURGING INITIATED AT: 0720	PURGING ENDED AT: 0810	TOTAL VOLUME PURGED (gallons): 25

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0800	20	20	0.5	18.09	5.73	24.15	117	1.47	10.8	clear	25.7
0805	2.5	22.5	0.5	18.09	5.71	24.14	115	1.37	9.9	clear	11.3
0810	2.5	25	0.5	18.09	5.72	24.16	115	0.70	9.9	clear	3.7

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0815	SAMPLING ENDED AT: 0824
PUMP OR TUBING DEPTH IN WELL (feet): 62	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N) (replaced)	DUPLICATE: 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-23C	3	CG	40mL	HCL	Prefilled by lab		8260	ESP	<100
MW-23C	3	CG	40mL	None	None		8011	ESP	<100
MW-23C	1	PE	250mL	HNO_3	Prefilled by lab		Metals	ESP	250
MW-23C	1	PE	125mL	H_2SO_4	Prefilled by lab		NH_3	ESP	250
MW-23C	1	PE	250mL	None	None		TDS, Cl, NO_3	ESP	250

REMARKS: Odor: none 3 equipment vol = 0.6 gal
weather: Clear, 67°F, ~3mph breeze. initial turbidity: 61 NTU

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-1A	SAMPLE ID: MW-1A	DATE: January 3, 2012

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): 18.55	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 – 18.55 feet) X 0.16 gallons/foot = 0.71 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): 21	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 21	PURGING INITIATED AT: 0750	PURGING ENDED AT: 0835	TOTAL VOLUME PURGED (gallons): 4.05

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	COLOR (describe)	ORP (mV)
0815	2.25	2.25	0.09	18.98	4.98	19.63	146	1.68	4.2	clear	-54.5
0825	0.9	3.15	0.09	18.98	4.98	19.98	148	0.71	1.7	clear	-74.5
0830	0.45	3.6	0.09	18.98	4.98	19.97	148	0.66	1.0	clear	-74.8
0835	0.45	4.05	0.09	18.98	4.98	19.98	147	0.65	1.0	clear	-75.1

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 / WSI	SAMPLER(S) SIGNATURE(S): Joe Terry	SAMPLING INITIATED AT: 0840	SAMPLING ENDED AT: 0845
PUMP OR TUBING DEPTH IN WELL (feet): 21	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y (N) (replaced)	DUPLICATE: 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-1A	3	CG	40mL	HCL	Prefilled by lab		8260	RFPP	<100

REMARKS: weather: 42°F, clear, gusting 15 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

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 SWMF SAMPLERS: Joe Terry METER # NA

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) (flowing)		11/11/11	09:00	1.5	0.75	17.11	4.13	42.8	68	0.04	5.35	0.1	251.5

FIELD CONDITIONS FOR STATION# SW-3 AT TIME 0900 : M. Sunny, 51°F, 54% humidity

CLOUD COVER (%): 30 WIND DIRECTION: SE TIDAL STAGE: NA

PREVIOUS RAINFALL: 0 WIND SPEED (MPH/KNOTS): ~1.5 WAVE CONDITIONS: NA

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

Water Elevation: 73.58

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 SWMF SAMPLERS: [illegible] METER # NA

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) (flowing)		11/11/11	09:40	1.0	0.5	17.33	4.44	46.5	65	0.03	4.30	0.0	286.3

FIELD CONDITIONS FOR STATION# SW-4 AT TIME 0940: m. sunny, 51°F, 54% humidity, 2-3 mph breeze

CLOUD COVER (%): 30 WIND DIRECTION: SE TIDAL STAGE: NA

PREVIOUS RAINFALL: 0 WIND SPEED (MPH/KNOTS): 2-3 WAVE CONDITIONS: NA

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

Water Elevation: 77.78

Revision Date: February 1, 2004

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 1 Primary Sump WACS ID: 19947

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1230	28.99	7.32	22.629	4.5	-252.8	1.17	dk brown	

Field Conditions/Observations: clear, ~78°F, ~3mph breeze

Detectable Odor: X Yes ___ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-1 Sample Time: 1235 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 2 Primary Sump WACS ID: 19948

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1120	29.15	6.95	21.027	0	-227.8	2.89	dk brown	

Field Conditions/Observations: clear, ~68°F, ~3mph breeze

Detectable Odor: X Yes ___ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-2 Sample Time: 1125 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 3 Primary Sump WACS ID: 19949

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1015	29.12	7.27	21.318	0.9	-224.0	0.42	dk brown	

Field Conditions/Observations: clear, ~65°F, slight breeze

Detectable Odor: x Yes ___ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-3 Sample Time: 1020 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 4 Primary Sump WACS ID: 19950

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1320	32.59	7.26	20.644	2.3	-198.5	0.58	brown	

Field Conditions/Observations: clear, 78°F, ~5 mph wind (easterly)

Detectable Odor: X Yes ___ No Describe: smoke-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-4 Sample Time: 1325 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 5 Primary Sump WACS ID: 22369

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1405	32.96	7.16	15.185	8.1	-61.7	1.43	dk brown	

Field Conditions/Observations: Clear, 80°F, ~5mph easterly breeze

Detectable Odor: X Yes ___ No Describe: sulfur-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-5 Sample Time: 1415 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. ___) ___ Other (___)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 6 Primary Sump WACS ID: 22370

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
0925	36.44	7.46	22.086	1.1	-194.4	0.73	dk brown	

Field Conditions/Observations: clear, 65°F

Detectable Odor: X Yes ___ No Describe: sulfur-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	None	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	~~500~~ 1000 JT 11-10-11	None	None	Cl, NO_3, BOD_5, TDS, ALK, JT 11-10-11 Full Cation & Anion scan
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-6 Sample Time: 0930 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations. When filling preserved VOA vials leachate effervesces when contacts HCL. Preserved VOA vials were rinsed with sample leachate to remove HCL and then filled unpreserved with no head space.

Leachate Sampling Form

Site: J.E.D. Solid Waste Management Facility Date: November 10, 2011 Sampled By: J. Terry

Station: Cell 7 Primary Sump WACS ID: 22371

Sample Rate: ~1.0 L/min Sample Rate (VOC's): < 100 ml/min Water Quality Meter (Make & Model): YSI 556 S/N or ID: 06A2173AL

Sampling Method: ___ Bailer ___ Peristaltic Pump ___ Submersible Pump X Port* Pump (Make & Model): cell sump pump

Time	Temp (°C)	PH	Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Color	Comments
1515	22.84	5.48	0.956	18.5	88.3	4.67	clear	

Field Conditions/Observations: clear, ~80°F, 3-5 mph breeze (easterly)

Detectable Odor: X Yes ___ No Describe: sulfur-like

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD
# CONTAINERS	MATERIAL	VOLUME (ml)	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	
3	Clear glass	40	HCL	Pre-filled by Lab	8260
1	HDPE	250	HNO3	Pre-filled by Lab	Metals
1	HDPE	125	H2SO4	Pre-filled by Lab	NH_3, COD
1	HDPE	250	NaOH	Pre-filled by Lab	Cyanide
1	HDPE	250	NaOH & ZnAc	Pre-filled by Lab	Sulfide
1	HDPE	500	None	None	Cl, NO_3, BOD_5, TDS, ALK
6	Amber Glass	1000	None	None	8270, 8081, 8082, 8151
3	Clear Glass	40	None	None	8011

Sample ID: L-7 Sample Time: 1520 Laboratory Performing Analysis: Columbia Analytical Services

Method of Shipment: X Courier ___ UPS (Airbill No. _____) ___ Other (_____)

Notes: *Leachate was collected into a 5 gallon food-grade plastic bucket from port in sump piping and then decanted into a 1-litre glass pitcher and then poured into sample containers. The bucket and glass pitcher was decontaminated in between sampling locations.

Appendix C

Field Instrument Calibration Logs

Field Instrument Calibration Record

Site: JED SWMF Date: November 7, 2011

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AL

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

Time: 1945

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						
C146449	Aug 1, 2013	pH = 4.00	4.00	0.00	0.2	Y	I	JT
C146962	Aug 13, 2013	pH = 7.00	7.00	0.00	0.2	Y	I	JT
C142848	Mar 11, 2013	pH = 10.00	9.99	0.01	0.2	Y	I	JT
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.91	0.9	10%	Y	I	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.084	0.0	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.004	0.4	5%	Y	C	JT
	Per Table →	D.O. = 8.34 mg/L @ 24.5 °C	8.41	0.07	0.2 mg/l	Y	I	JT

Date: November 9, 2011 Time: 11:00

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						
C146449	Aug 1, 2013	pH = 4.00	4.01	0.01	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.02	0.02	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00	9.97	0.03	0.2	Y	C	JT
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.96	0.4	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.086	2.4	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.002	0.2	5%	Y	C	JT
	Per Table →	D.O. = 8.173 mg/L @ 25.6 °C	8.19	0.017	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 SWMF Date: November 10, 2011

Water Quality Instrument Make: YSI Instrument Model Number: 556 Instrument Serial Number: 06A2173AL

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

Time: 20:00

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						
C146449	Aug 1, 2013	pH = 4.00	4.06	0.06	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.08	0.08	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00	10.09	0.09	0.2	Y	C	JT
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.92	0.8	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.085	1.2	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.016	1.6	5%	Y	C	JT
	Per Table →	D.O. = 8.57 mg/L @ 23.0°C	8.58	0.002	0.2 mg/l	Y	I	JT

Date: November 11, 2011 Time: 18:00

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						
C146449	Aug 1, 2013	pH = 4.00	4.04	0.04	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.07	0.07	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00	10.10	0.10	0.2	Y	C	JT
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.89	1.1	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.087	3.6	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.017	1.7	5%	Y	C	JT
	Per Table →	D.O. = 8.24 mg/L @ 24.8 °C	8.30	0.006	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 SWMF Date: November 14, 2011

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: 0515

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						
C146449	Aug 1, 2013	pH = 4.00	4.15	0.15	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.05	0.05	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	10.02	0.2	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.084	0.0	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.007	0.7	5%	Y	C	JT
	Per Table →	D.O. = 8.53 mg/L @ 23.3°C	8.53	0.05	0.2 mg/l	Y	I	JT

Date: November 14, 2011 Time: 1900

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						
C146449	Aug 1, 2013	pH = 4.00	4.07	0.07	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.03	0.03	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	10.06	0.6	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.085	1.2	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	1.010	1.0	5%	Y	C	JT
	Per Table →	D.O. = 8.46 mg/L @ 23.7 °C	8.51	0.041	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 SWMF Date: November 15, 2011

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						
C146449	Aug 1, 2013	pH = 4.00	4.14	0.14	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.04	0.04	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.89	1.1	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.086	2.4	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	0.998	0.2	5%	Y	C	JT
	Per Table →	D.O. = 8.24 mg/L @ 24.8°C	8.33	0.036	0.2 mg/l	Y	I	JT

Date: November 16, 2011 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						
C146449	Aug 1, 2013	pH = 4.00	4.10	0.10	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.06	0.06	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.87	1.3	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.085	1.2	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	0.997	0.3	5%	Y	C	JT
	Per Table →	D.O. = 8.35 mg/L @ 24.4°C	8.39	0.034	0.2 mg/l	Y	F	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: J.E.D. SWMF Date: January 2, 2012

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

Turbidity Instrument Make: LaMotte Instrument Model Number: 2020e Instrument Serial Number: ME10404

Time: 1845

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						
C146449	Aug 1, 2013	pH = 4.00	4.09	0.09	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.03	0.03	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.93	0.7	10%	Y	I	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.084	0.0	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	0.986	1.4	5%	Y	C	JT
	Per Table →	D.O. = 8.546 mg/L @ 23.2°C	8.64	0.094	0.2 mg/l	Y	I	JT

Date: January 3, 2012 Time: 1630

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						
C146449	Aug 1, 2013	pH = 4.00	4.06	0.06	0.2	Y	C	JT
C146962	Aug 13, 2013	pH = 7.00	7.02	0.02	0.2	Y	C	JT
C142848	Mar 11, 2013	pH = 10.00			0.2			
		Turbidity = 0.0 NTU						
		Turbidity = 1.0 NTU			10%			
CO40074	Aug 2012	Turbidity = 10 NTU	9.94	0.6	10%	Y	C	JT
		Turbidity = 50 NTU			6.5%			
C143339	Mar 29, 2012	Conductivity = 0.084 mS/cm	0.086	2.4	5%	Y	C	JT
C146644	Aug 14, 2013	Conductivity = 1.000 mS/cm	0.984	1.1	5%	Y	C	JT
	Per Table →	D.O. = 8.482 mg/L @ 23.6°C	8.51	0.029	0.2 mg/l	Y	F	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

Columbia Analytical Services™

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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PAGE 1 OF 1

SR #

CAS Contact

Project Name: JED SWMF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsiinc.us
Company/Address: WSI 11500 43rd St. North Clearwater, FL 33762	
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	8260	8011	Metals	NH3	TKN, CL, NO3	Dissolved Metals	REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE					1	0	2	3	0	2	
NUMBER OF CONTAINERS											
MW-16A		11-8-11	1158	GW	9	3	3	1	1	1	
MW-16B			1230		9						
MW-16C			1115		9						
MW-19A			1500		10					1	
MW-19C			1530		9						
MW-23A			0920		10					1	
MW-23C			0815	GW	9						
Equipment Blank-1		11-8-11	1250	DI H_2O	9	3	3	1	1	1	
Trip Blank		11-1-11	0800	DI H_2O	2	2					

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: 11312-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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 11-8-11/1630	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

JSCOC-06/20/08

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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SR #

CAS Contact

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI, 11500 43rd St. North, Clearwater, FL 33762	
Phone #: 813-943-8633	FAX#:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE	see below	0	3	2	4 & 5	4	0	0	0	0	0			
NUMBER OF CONTAINERS		8260	8011	NH3, COD	Metals	Sulfide	Cyanide	CO, NO3, Alk, TDS, BOD	8270	8081	8082	8151		

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		8260	8011	NH3, COD	Metals	Sulfide	Cyanide	CO, NO3, Alk, TDS, BOD	8270	8081	8082	8151				REMARKS/ ALTERNATE DESCRIPTION
L-1		11-10-11	1235	Leachate	17	X	X	X	X	X	X	X	X	X	X	X				
L-2			1125																	
L-3			1020																	
L-4			1325																	
L-5			1415																	
L-7		11-10-11	1520	Leachate	17	X	X	X	X	X	X	X	X	X	X	X				
Trip Blank		11-1-11	0800	DI H_2O	2	X														

SPECIAL INSTRUCTIONS/COMMENTS

Cooler ID: 11304-JED-1-4

* Leachate sample vials for 8260 for L-1, L-2, L-3, L-4, L-5 are unpreserved. Sample vials for L-7 have HCl preservative

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. Speicalized 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: Robert Nicholas	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name: Robert Nicholas	Printed Name	Printed Name	Printed Name	Printed Name
Firm: WSI	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time: 11-11-11 / 12:05	Date/Time: 11/11/11 12:05	Date/Time	Date/Time	Date/Time	Date/Time

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

JSCOC-3/11

Columbia Analytical Services™

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

SR #

CAS Contact

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PAGE 1 OF 1

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI, 11500 43rd St. North, Clearwater, FL 33762	
Phone #: 813-943-8633	FAX#:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

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

PRESERVATIVE		0	0	3	2	4 & 5	4	0	0	0	0	0	0					
NUMBER OF CONTAINERS		8260	8011	NH_3, COD	Metals	Sulfide	Cyanide	Cl, Br, SO_4, NO_2, NO_3, Alk, F, TSS	BOD	8270	8081	8082	8151					
CLIENT SAMPLE ID	LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX														REMARKS/ ALTERNATE DESCRIPTION
L-6		11-10-11	0930	Leachate	17	X	X	X	X	X	X	X	X	X	X	X	X	
Trip Blank		11-7-11	0830	DI H_2O	2	2												

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: 11314-JED-5

(8260 vials are unpreserved)

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. Speicalized 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	Signature
Printed Name: Joe Terry	Printed Name: Robert Nicholas	Printed Name	Printed Name	Printed Name	Printed Name
Firm: WSI	Firm: GFS	Firm	Firm	Firm	Firm
Date/Time: 11-11-11/1205	Date/Time: 11/11/11 12:05	Date/Time	Date/Time	Date/Time	Date/Time

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

JSCOC-3/11

Columbia Analytical Services™

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

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

PAGE 1 OF 1

SR #

CAS Contact

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsiiius
Company/Address: WSI	
11500 43rd St. North	
Clearwater, FL 33762	
Phone #: 813-943-8633	FAX#:
Sampler's Signature: Joe Terry	Sampler's Printed Name: Joe Terry

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

PRESERVATIVE	1	0	1	2	3	0	0	7							
NUMBER OF CONTAINERS	8260	8011	TOC	metals	NH_3, TKN, Total P, COD	NO_2, NO_3, TDS, TSS, BOD	Chlorophyll A	Fecal Coliform							

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	8260	8011	TOC	metals	NH_3, TKN, Total P, COD	NO_2, NO_3, TDS, TSS, BOD	Chlorophyll A	Fecal Coliform							REMARKS/ ALTERNATE DESCRIPTION
SW-3		11-11-11	0900	SW	13	3	3	2	1	1	1	1	1						
SW-4		11-11-11	0940	SW	13	3	3	2	1	1	1	1	1						
Trip Blank		11-1-11	0930	DI H_2O	2	X													

SPECIAL INSTRUCTIONS/COMMENTS

Cooler ID: 11315-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. Speicalized 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: Robert Nicholas	Signature	Signature	Signature	Signature
Printed Name: Joe Terry	Printed Name: Robert Nicholas	Printed Name	Printed Name	Printed Name	Printed Name
Firm: WSI	Firm: CAS	Firm	Firm	Firm	Firm
Date/Time: 11-11-11/1205	Date/Time: 11/14/11 12:05	Date/Time	Date/Time	Date/Time	Date/Time

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

JSCOC-3/11

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

SR #

CAS Contact

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Project Name: JED SWDF

Project Number:

Project Manager: Joe Terry

Email Address: jterry@wsii.us

Company/Address: WSI
11500 43rd St. North
Clearwater, FL 33762

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	8260 (PRESERVATIVE 1)	8011 (PRESERVATIVE 0)	NH_3 (PRESERVATIVE 3)	metals (PRESERVATIVE 2)	TSS, Cl, Alk (PRESERVATIVE 0)	REMARKS/ ALTERNATE DESCRIPTION
MW-13A		11-14-11	1020	GW	9	3	3	1	1	1
MW-13C			0950							
MW-12A			1155							
MW-12C			1130							
MW-11A			1345							
MW-11C			1315							
MW-10A			1515							
MW-10C		11-14-11	1450	GW	9	3	3	1	1	1
Trip Blank		11-1-11	0900	DI H_2O	2	2				

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: 11318-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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 11-14-11/1630	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

SR #

CAS Contact

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www.caslab.com

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI	
11500 43rd St. North	
Clearwater, FL 33762	
Phone #: 813-943-8633	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
NUMBER OF CONTAINERS	8260	8011	Nitr	Metals	TDS, Cl, NO3

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	8260	8011	Nitr	Metals	TDS, Cl, NO3		REMARKS/ ALTERNATE DESCRIPTION
MW-9A		11-15-11	0730	GW	9	3	3	1	1	1	
MW-9C			0810								
MW-8A			0935								
MW-8C			0905								
MW-7A			1115								
MW-7C			1050								
MW-6A			1250								
MW-6C			1225								
MW-5A			1435								
MW-5C		11-15-11	1405	GW	9	3	3	1	1	1	

SPECIAL INSTRUCTIONS/COMMENTS

Cooler ID: 11319-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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 11-15-11/1530	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

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SR #

CAS Contact

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI, 11500 43rd St. North, Clearwater, FL 33762	
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	8260	8011	NH3	metals	TDS, Cl, NO3	REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE					1	0	3	2	0	
NUMBER OF CONTAINERS										
Equipment Blank-2		11-15-11	0740	DI H_2O	9	3	3	1	1	1
Trip Blank		11-1-11	1000	DI H_2O	2	2				

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: 11319-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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 11-15-11/1530	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

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PAGE 1 OF 1

SR #

CAS Contact

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI 11500 43rd St. North Clearwater, FL 33762	
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	8260	8011	NH3	metals	TDS, Cl, NO3											REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE					1	0	3	2	0											
MW-4A		11-16-11	0805	GW	9	3	3	1	1	1										
MW-4C			0735																	
MW-3A			0935																	
MW-3C			0910																	
MW-2A			1120																	
MW-2C			1050																	
MW-1A			1255																	
MW-1C		11-16-11	1230	GW	9	3	3	1	1	1										
Trip Blank		11-1-11	1035	DI H_2O	2	2														

NUMBER OF CONTAINERS

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: 11320 - 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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 11-16-11/1400	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

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CAS Contact

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PAGE 1 OF 1

Project Name: JED SWDF	Project Number:
Project Manager: Joe Terry	Email Address: jterry@wsii.us
Company/Address: WSI, 11500 43rd St. N., Clearwater, FL 33762	
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	Xylenes															REMARKS/ ALTERNATE DESCRIPTION
PRESERVATIVE						1															
MW-1A		1-3-12	0840	GW	3	3															

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: 12003-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. Speicalized 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: WSI	Firm	Firm	Firm	Firm	Firm
Date/Time: 1-3-12 / 0930	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

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

JSCOC-06/20/08

Appendix E

CD Containing Analytical Laboratory Reports