#### **Ruth Nettles**

090349-WS

From:

Trina Collins [TCollins@RSBattorneys.com]

Sent:

Friday, January 15, 2010 4:03 PM

To:

Filings@psc.state.fl.us

Cc:

smlubertozzi@uiwater.com; keweeks@uiwater.com; jdwilliams@uiwater.com; pcflynn@uiwater.com; Curt

Mouring; Jennifer Brubaker; rhalleen@aol.com; Martin Friedman; Christian W. Marcelli; Trina Collins

Subject:

Filing in Docket No. 090349-WS; Cypress Lake Utilities, Inc.'s Application for a Limited Proceeding Water and

Wastewater Rate Increase in Polk County, Florida

Importance: High

Attachments: PSC Clerk 15 (Response to Brubaker letter).ltr.01-15-2010.pdf

a. Martin S. Friedman, Esq.
 Christian W. Marcelli, Esq.
 Rose, Sundstrom & Bentley, LLP
 Sanlando Center
 2180 W. State Road 434, Suite 2118
 Longwood, FL 32779

Phone: (407) 830-6331 Fax: (407) 830-8522

Email: <u>mfriedman@rsbattorneys.com</u> <u>cmarcelli@rsbattorneys.com</u>

- b. Docket No. 090349-WS; Cypress Lake Utilities, Inc.'s Application for a Limited Proceeding Water and Wastewater Rate Increase in Polk County, Florida Filing the response of Cypress Lake Utilities, Inc. to Staff's December 14, 2009 letter regarding compliance with Order No. PSC-07-0199-PAA-WS; issued March 5, 2007 (the "Order"). This letter will also address the concerns raised in Robert Halleen's December 21, 2009 letter to Staff.
- c. Cypress Lake Utilities, Inc.
- d. 43 Pages.
- e. Letter to Commission Clerk and response attachments 43 pages.

DOCUMENT NUMBER-DATE

Law Offices

# ROSE, SUNDSTROM & BENTLEY, LLP

2548 BLAIRSTONE PINES DRIVE TALLAHASSEE, FLORIDA 32301

Frederick L. Aschauer, Jr. Chris H. Bentley, P.A. Robert C. Brannan F. Marshall Deterding John R. Jenkins, P.A. Kyle L. Kemper Steven T. Mindlin, P.A. Chasity H. O'Steen William E. Sundstrom, P.A. Diane D. Tremor, P.A. John L. Wharton

ROBERT M. C. ROSE (1924-2006)

(850) 877-6555 FAX (850) 656-4029 www.rsbattorneys.com

REPLY TO CENTRAL FLORIDA OFFICE

CENTRAL FLORIDA OFFICE SANLANDO CENTER 2180 W. STATE ROAD 434, SUITE 2118 LONGWOOD, FLORIDA 32779 (407) 830-6331 FAX (407) 830-8522

MARTIN S. FRIEDMAN, P.A. BRIDGET M. GRIMSLEY CHRISTIAN W. MARCELLI BRIAN J. STREET

January 15, 2010

#### **E-FILING**

Ann Cole, Commission Clerk Office of Commission Clerk Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, FL 32399

Re: D

Docket No. 090349-WS; Cypress Lake Utilities, Inc.'s Application for a Limited Proceeding Water and Wastewater Rate Increase in Polk County, Florida Our File No. 30057.182

Dear Ms. Cole:

This letter is in response to Staff's December 14, 2009 letter regarding compliance with Order No. PSC-07-0199-PAA-WS, issued March 5, 2007 (the "Order"). This letter will also address the concerns raised in Robert Halleen's December 21, 2009 letter to Staff.

In accordance with the Order, Cypress Lakes Utilities, Inc. (the "Utility") contracted with TBE Group, Inc. ("TBE") to perform a water quality evaluation. This evaluation is attached hereto. The evaluation was completed in September of 2007, and the improvements recommended were completed in April of 2008. A memorandum summarizing its contents was filed with the Clerk's e-filing system on July 21, 2008, and is attached hereto.

Staff's December 14, 2009 letter requests an explanation of "why this evaluation was not provided to the Cypress Lakes Homeowners Association and [the Office of Public Counsel, ("OPC")] when it was originally filed with the Commission". The Utility concedes that it should have mailed hard copies of this memorandum to the Cypress Lakes Homeowner's Association (the "HOA") and OPC. However, when this memorandum was e-filed and placed onto the Commission's website, it became available

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to the HOA and OPC, as well as to all of the Utility's customers and the general public. Despite making this document available to all who may have been interested in it, the Utility did not receive any inquiries, comments or criticisms from the HOA or OPC. The Utility therefore proceeded under the assumption that the evaluation was satisfactory to the HOA and OPC. It should be noted that the Order only requires that the information be provided to the HOA and OPC. It does not require that the Utility obtain the approval of the HOA or the OPC prior to implementation of any upgrades.

Staff's letter also requests an explanation of why the "evaluation did not address any possible alternatives, and their associated costs to address the hydrogen sulfide problems at Well No. 2." Hydrogen sulfide is not and has never been an issue in the Utility's source water and the amount of total sulfide in the source water is adequately treated by adding chlorine to oxidize the sulfur.

The Utility believes that the issue the Commission intended to address was that of total sulfide and that the issue of hydrogen sulfide was raised in the Order by mistake. This assumption was based on the Order itself. On page 4 of the Order, the Commission states, "Regarding the customer water quality concerns, the utility stated it had initiated an analysis of the water produced from each of the two wells with particular attention to focus on total sulfide concentration" and that its "water facility does not have the means to remove sulfides from the source water" (emphasis supplied). This was not a reference to hydrogen sulfide, but to total sulfides. The resolution of the total sulfides problem was directly related to the chlorination issue.

The Utility also based its assumption (that the Commission made a clerical error in addressing "hydrogen sulfide") on the ordering clauses on page 34 of the Order. The relevant ordering clause states:

"ORDERED that Cypress Lakes Utilities, Inc. shall perform a complete evaluation of its distribution system to address the low chlorine residual. The evaluation shall include all viable options, as well as the cost of each option."

There is no mention of hydrogen sulfide in this clause. The Utility believes this assumption was accurate because hydrogen sulfide is not and has never been an issue

raised with the Utility's source water, and the ordering clause only mentions the chlorine residual issue (which is directly related to the total sulfides, not hydrogen sulfide).

As noted above, hydrogen sulfide is not an issue with the Cypress Lakes source water. The Utility's two public supply wells were sampled in November of 2006 and analyzed for odor and sulfides. The results indicate that neither well sample had detectable odors. Well #1 had a sulfide concentration of 0.035 mg/L while Well #2 had no sulfur detected. See Advanced Environmental Laboratories Report, dated November 14, 2006, attached hereto. Rule 62-555.315(5)(a), Florida Administrative Code, identifies the potential for impacts without sulfide removal as well as water treatment options that are appropriate depending on the range of total sulfide concentration. According to the above rule, a total sulfide concentration of less than 0.3 mg/L is adequately treated with the use of direct chlorination as is currently the treatment method utilized at the Cypress Lakes water treatment plant. Similarly, the measured iron concentration at Cypress Lakes was 0.088 mg/L when measured in 2008 (see the attached triennial sampling results), which by rule can be treated satisfactorily with direct chlorination. Based on the groundwater quality data available at Cypress Lakes, the TBE evaluation did not recommend any additional treatment. It would have been imprudent for the Utility to invest in additional treatment equipment or incur additional treatment expense that was not warranted by DEP or Polk County Health Department rules.

The TBE evaluation is the result of an engineering analysis of the issues raised in Docket No. 060257-WS. It includes a description of the issues to be addressed, the recommended solutions and likely budget of such projects. The Utility concedes that it should have requested the TBE Group prepare a list of non-viable solutions, if any, and incurred the additional expense of analyzing the budget estimates of such non-viable solutions in order to provide heightened transparency and assurance to the HOA. However, as the TBE evaluation shows, the solutions to the issues raised in the Order were easily identified and remedied with the most cost effective and efficient solution.

Robert Halleen's December 21, 2009 letter. Mr. Halleen's letter states that the TBE evaluation "does not meet the requirements of [the Order]". Mr. Halleen offers no explanation of why the TBE evaluation does not meet the requirements of the Order, nor does his letter mention hydrogen sulfide or indicate a problem with any of the

complaints commonly associated with hydrogen sulfide. As noted above, the Utility believes the TBE evaluation complied with the letter and spirit of the Order.

The Utility objects to Mr. Halleen's request for all documentation provided to TBE Group. The TBE evaluation indicates the scope and requirements of the evaluation, including recommendations and budget estimates. Further, there is no basis for Mr. Halleen's belief that the Utility failed to communicate the appropriate water quality issues to be investigated. Mr. Halleen is presumably referring to hydrogen sulfide, which is not and has never been an issue at Cypress Lakes, as detailed above. A cursory reading of the TBE evaluation reveals that the Utility efficiently communicated the issues to TBE, and that the TBE evaluation provided the most cost effective solutions. Moreover, Mr. Halleen's assertion that the Utility "undertook a corrective action that had no chance to succeed" is incorrect because the issues addressed in the TBE evaluation were the issues raised in the Order and said issues have been successfully remedied.

The Utility believes that Mr. Halleen's complaints about the quality of water are solely related to aesthetic issues and none are related to regulatory requirements. The Utility previously offered to discuss with the HOA the possibility of making additional investment in the water treatment process so as to improve the aesthetic quality of the water and reduce the complaints noted by Mr. Halleen. However, since the Commission generally does not allow such unnecessary improvements to be recovered in rates, the Utility indicated to the HOA that it would need a written agreement that the customers support such investment and will support the Utility's effort to recover the cost of such investments through an increase in the water tariff.

Finally, Mr. Halleen states, "since the Utility failed to comply with the Commission directive to share the information on the various options, including projected costs, with the CLHA prior to doing any work; we fail to see why we should absorb the full cost of this project" (emphasis in original). The Order does not require that the evaluation be provided to the HOA "prior to doing any work" and it does not require consultation with or the approval of the HOA. The purpose of providing the TBE evaluation to the public was to provide transparency, not to allow the HOA to reject improvements needed to comply with health department and DEP standards. Moreover, the HOA has received the benefits of the improvements implemented by the Utility. Despite ongoing complaints about the aesthetic quality of water, the chlorine residual issue has been resolved and is benefitting the customers. If the improvements were not

benefitting the customers, they would not be considered used and useful and would not be recovered in rates.

Should you or the Staff have any questions regarding this filing, please do not hesitate to give me a call.

Very truly yours,

CHRISTIAN W. MARCELL

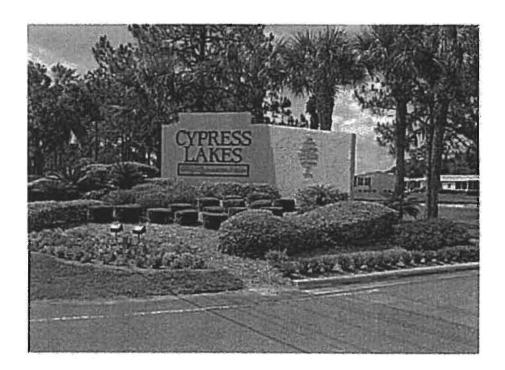
For the Firm

CWM/tlc Enclosures

cc: Steven M. Lubertozzi, Executive Director of Regulatory Accounting and Affairs (w/enclosures) (via e-mail)
Kirsten E. Weeks, Manager of Regulatory Accounting (w/enclosures) (via e-mail)
John Williams, Director of Governmental Affairs (w/enclosures) (via e-mail)
Patrick C. Flynn, Regional Director (w/enclosures) (via e-mail)
Curt Mouring, Division of Economic Regulation (w/enclosures) (via e-mail)
Jennifer Brubaker, Esquire, Office of General Counsel (w/enclosures) (via e-mail)

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# CYPRESS LAKES WATER QUALITY EVALUATION



Prepared for

Cypress Lakes Utilities, Inc. 200 Weathersfield Avenue Altamonte Springs, FL 32714

Prepared by



September 2007

TBE Project Number 00025-003-00

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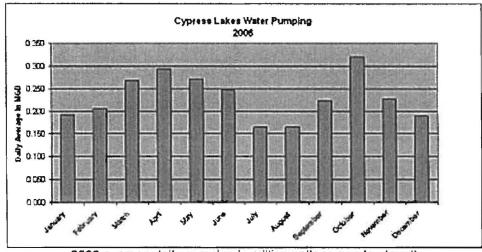
Figure 1 Cypress Lakes Aerial and Vicinity Map
Figures 2 - 5 Cypress Lakes Water Distribution System

#### 1.0 BACKGROUND AND SCOPE OF WORK

#### 1.1 Background and Purpose

Cypress Lakes Utilities. Inc. owns and operates a water treatment and distribution facility at Cypress Lakes in Lakeland, Florida. The attached Figure 1 includes an aerial and vicinity map of the Cypress Lakes development and water treatment facility. The water production and distribution facilities consist of two on-site groundwater production wells, a sodium hypochlorite chlorination system, two 10,000-gallon above ground hydropneumatic tanks, backup power generation, and a community wide distribution system.

Residents have cited odor problems within their homes from the potable water. The development experiences significant population fluctuations, with two distinct summer-season /winter season fluctuations. The higher demands during the winter have not historically caused any discernable complaint pattern, however the summer low-flow period is the time of heaviest complaint volume.



2006 average daily pumping in million gallons per day (mgd)

#### 1.2 Scope of Work

TBE was contracted by Utilities, Inc. of Florida to provide professional engineering services in connection with a Cypress Lakes water quality evaluation.

Specifically, TBE was tasked to:

- Conduct a site visit/kick-off meeting to evaluate the existing system and to determine if
  there are any operational issues that might be leading to odor issues
- 2. Data Collection and review
  - Collect water treatment equipment data, system distribution data, and water quality data

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TBE	GROUP, INC.				
	tion that addresses approve overall water		erational improve	ements to redu	ce or eliminate
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4.	Prepare a summary	report with reco	mmendations inc	luding budget o	stimates

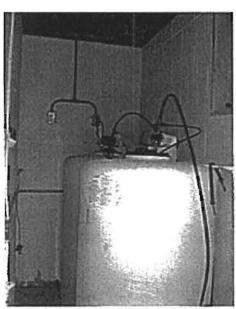
## 2.0 EXISTING CONDITIONS

### 2.1 Existing Physical Site

Cypress Lakes is a residential development located at 10000 US Highway 98 N, Lakeland, Florida. The Cypress Lakes development is a phased development project with integrated water and wastewater system utilities. The Cypress Lakes water treatment facility is located within the Cypress Lakes development, (see Figure 1), and has two wells, pumps/controls, chlorination, pressure equalization tanks, and distribution piping/valves.



Pump and Chlorine building, and pressure equalization/storage tanks at Water Facility.



Sodium Hypochlorite tanks.



South side of facility building, Well #1, and control room on the left, and sodium hypochlorite room on the right.

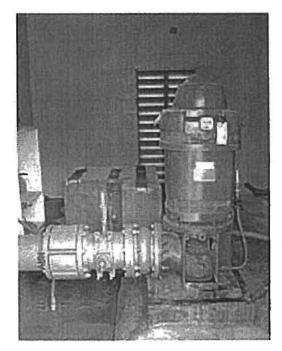
TBE GROUP, INC.

The water treatment facility provides potable water to 1,439 customer accounts on a yearly basis. The Cypress Lakes development distribution system is composed of 4, 6, and 8-inch PVC mains, with individual services of high density polyethylene pipe (HDPE). Figures 2 through 5 illustrate the existing distribution system.

# 2.2 Existing Water Treatment Facility

The Cypress Lakes water treatment facility is located within the development, on a parcel of land dedicated for that purpose. The parcel has two wells, (Well # 1 is located inside a small concrete block structure, and Well #2 is located approximately 200 feet southwest of Well #1 in an open

area of the water treatment facility property. The electrical control panels for both wells are located within the pump room housing in the same area of the concrete structure as Well No. 1. The water treatment facility is enclosed by a chain-link fence with padlocked gates.





Well#2, approximately 200' southwest of Well #1

Well #1 located inside of building



Well #1 / #2 control panel in Facility Building.



Emergency generator transfer switch.

Both water wells are approximately 540 feet deep, driven by two High Thrust US Electrical Motors, (Well #1 is 60 horsepower, and Well #2 is 50 horsepower), and manifold just outside of the concrete block structure. The water is temporarily stored in two hydropneumatic tanks located just west of Well #1. Both tanks are exposed to the elements. At the time of the initial site visit, the operating pressure of the distribution system was observed at approximately 56 pounds per square inch, (psi), with Well #1 running, and approximately 49 psi, with Well #1 off. During a second site visit on May 22, 2007, the operating pressure of the distribution system was fluctuating between 52 and 62 psi.

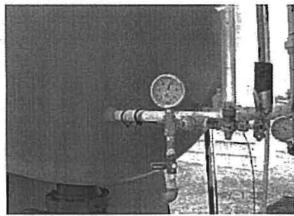
Water is pumped into the two 10,000 gallon hydropneumatic tanks. The tanks are used for pressure equalization and storage. The pressure range of the distribution system is regulated by a pressure sensor controlling the pumps. At the time of each site visit, the water level in each of the tanks was being maintained at approximately the 50% level. The pressurized air in the tanks mitigates the number of pump cycles.



Hydropneumatic tanks and manifold piping from Well #1 and Well #2.



Hydropneumatic tanks. Looking east toward Facility Building.



Well #1 running, water pressure at 56 psi.

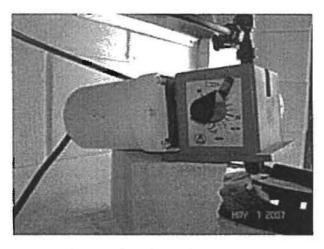


Static distribution system pressure, 49 psi, (no pumps running.)

Disinfection is accomplished by two variable feed dosing pumps supplying liquid sodium hypochlorite to the entry pipes of the pressure equalization/storage tanks. Two tanks of Sodium Hypochlorite are located within a separate room in the water treatment facility building. The sodium hypochlorite tanks are refilled approximately every 10 to 14 days depending on demand.

A follow up investigation of the yard piping was conducted on June 5, 2007 by Florida Rural Water Association utilizing Ground Penetration Radar (GPR). TBE assisted with manual probing of the area to evaluate the routing of the piping from the production wells to the tanks and out to the distribution system. It appears that the two production wells are individually piped and chlorinated prior to manifolding upstream of the hydropneumatic tanks. Well #2 is currently piped into a bypass line on the north side of the two hydropneumatic tanks. Flow goes through both tanks and then manifolds back together into the distribution line.

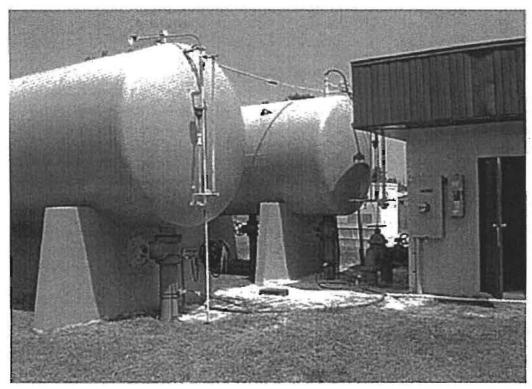
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One of two sodium hypochlorite injection pumps



Two sodium hypochlorite tanks.



Sodium Hypochlorite supply lines on ground, split and connecting to Tank #1 and #2 distribution piping.

# 2.3 Existing Distribution System

The distribution system is composed of PVC water main, ductile iron fittings, fire hydrants, valves and appurtenances, and a variety of 2-inch blow-off assemblies. Residential services are polyethylene pipe with appropriate corporation and curb-stops, and residential meters.

Due to the development of residential lots adjacent to, and around an extensive golf course, there are numerous non-looping legs of the distribution system piping that rely on either residential usage or operational flushing/blow-off activities to maintain chlorine residuals and acceptable water quality.

Simple gate valve and 2-inch galvanized pipe blow-off.





Above ground Kupferle, 2-inch blow-off.



Typical American Darling fire hydrant.



In-ground Eclipse Blow-off assembly

## 2.4 Existing Operational Maintenance

Cypress Lakes Utilities, Inc. maintains one full time Water/Wastewater Operator on site. Routine maintenance activities are performed by this person with additional personnel available on an as-needed basis.

### 2.5 Customer Service

Cypress Lakes Utilities, Inc. receives and responds to customer inquiries and complaints as part of their operational procedures. According to a Public Service Commission report, complaints and issues have been responded to within 24 hours on average. The report states that the majority of the complaints were billing and meter related, but there were also complaints for water odor, low pressure, low chlorine, no water, and black residue in toilets. There were also complaints about the frequency of operational flushing of the water system.

### 2.6 System Expansion

Cypress Lakes is currently under construction of a new 120-lot subdivision (Phase 12). Cypress Lakes Utilities, Inc. has indicated that the existing capacity of the water treatment facility is sufficient to provide water to this new phase of homes. There is no planned expansion to the water treatment facility.

#### 3.0 ANALYSIS AND RECOMMENDATIONS

### 3.1 Water Treatment Facility

The current operation of the water treatment facility appears to be in compliance with the requirements of the Polk County Health Department (PCHD) and the Florida Department of Environmental Protection (FDEP). The water quality and production reports were examined by the Public Service Commission and were found to meet all regulatory requirements.

To improve the overall quality of the water being delivered and operational efficiency, the following is recommended:

- On-site piping should be modified so the water from both production wells is manifolded together with a single chlorine injection point. The chlorine injection supply line should be buried a minimum of 3 feet deep, from the Chlorine Storage Room, west, to the injection point.
- 2. During the on-site visit, Well #2 was not being used due to suspected high sulfides content of the water. It is recommended that Well #2 should be used in such a way that a consistent blend of water from Well #1 and Well #2 is supplied to the distributions system at all times.

### 3.2 Distribution System

Based on historical information, (system maps and information provided by on-site personnel), the main distribution system is composed of PVC piping with ductile iron valves, fittings, and fire hydrant appurtenances. Blow-off assemblies are of three observed types: above-ground Kupferle, in-ground Eclipse Blow-off Hydrants, and simple gate valve with 2-inch galvanized pipe riser. Residential services appear to be polyethylene lines with appropriate corporation and curb stop fittings.

There are 17 water distribution lines within the Cypress Lakes development that terminate with 2-inch blow-off assemblies. These lines serve 228 residential lots.

#### TBE recommends the following:

- Standardize the blow-off assemblies. Select an appropriate blow-off assembly that will
  accommodate the range of "programmable automatic blow-off devices" that allow
  programmed flushing activities during low flow system conditions. Florida Rural Water
  Association has provided Cypress Lakes Utilities, Inc. with instructions on building an
  Automatic Flushing Valve that would be an example of an appropriate automatic blowoff device.
- 2. Partially closed main line valves or a closed valve in a "looped" distribution line section could cause low flow, low pressure, and chlorine residual problems. It is recommended

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that Cypress Lakes Utilities, Inc. check all distribution line valves for "full open" position. (An updated Distribution Map, with approximate locations of line valves may be needed.) It is not uncommon for 2-inch gate valves to be broken in the shut or partially-shut position.

- 3. Perform a hydraulic model to monitor chlorine residuals, if necessary.
- 4. Test system for biofilm growth (coliform testing), if necessary.

While a chlorine booster station would increase chlorine residual, it was not evaluated in detail because of the number of other more cost effective solutions that could be explored. The capital costs of a chlorine booster station will likely be saved with the implementation of the other proposed improvements to the system and its operation.

## 3.3 Operational Maintenance

Operational maintenance is geared to meeting regulatory requirements and to provide an acceptable level of customer satisfaction.

Based on historical information, (information provided by monthly maintenance logs and conversations with on-site personnel), TBE recommends the following operational maintenance procedures:

- 1. Develop a spreadsheet to correlate low chlorine residual grab samples with location in the distribution system, water temperature, and volume of water pumped. A trend analysis can easily be performed on this data with all three parameters shown on a compound line graph. This data may provide an accurate method of predicting problems. Refine the spreadsheet to include the seasonal fluctuations of the residential population impact on low chlorine residual grab samples. The daily temperature should also be included to assist in correlating any system temperature effects on chlorine residual.
  - Use this information to develop a Standard Operating Procedure (SOP) to indicate when increased flushing of the distribution system may be required to meet regulatory requirements and to provide high quality water to the customers. The major factors affecting water quality seem to be low flow and possibly higher water temperatures during summer months. Although the water temperature may be elevated during the hottest months, this temperature is most likely stable during this period. This would leave water volume as the only real variable at any point. If water temperature does not seem to be a contributing factor, collection of this data could be stopped.
  - Use the information to identify specific locations within the distribution system
    that may experience low chlorine residuals even at the highest residential
    population demands. If there are areas that show low chlorine residuals during

this time, the option may be to increase flushing operations in this area or to install a chlorine booster station at this point,

- 2. Refine the original spreadsheet information to identify specific locations within the distribution system that may experience water quality complaints (odor, taste, black residue in toilets, and clogged filters). This information may be used to identify specific locations within the distribution system that are experiencing low velocity flow characteristics. Such areas may require periodic high velocity flushing through existing fire hydrants to clear sediment and debris from the system.
- 3. Establish a system map where water quality and low pressure can be easily evaluated. A map with colored pins may be used to differentiate the various water quality or pressure complaints.
- 4. Test chlorine residual at suspected problem areas and compile data.
- 5. Identify areas to loop system to increase flow characteristics

#### 3.4 Customer Service

Customer service is essential to the operation of the utility. From historical records, there are several areas that continue to be issues with the residents of the development. One of the most prevalent complaints is that there is "too much water wasted during flushing activities". This issue is difficult to change because the utility must use flushing activities periodically to maintain the water quality.

TBE recommends that the utility consider the following:

Meet with the Cypress Lakes Development Home Owners Association to discuss the
possibility of initiating a lawn watering program. This program would have up-front
installation costs and would have on-going operational costs. Part of the costs of this
program might be offset by a reduction in the current operational maintenance activities
to assure water quality, and the cost of the water used during the current flushing
procedures.

The benefits of this program to the utility would be that there would be an additional revenue stream from the use of water for irrigation purposes and a reduction of maintenance activities related to flushing activities.

The benefits to the residents would be that they would use the water to maintain their lawns, and that there would be less wastage of water during operational flushing activities.

#### 4.0 COST ESTIMATE

### 4.1 Water Treatment Facility

The proposed improvements to the water treatment facility include manifolding the raw water piping to allow for more consistent dosing of chorine.

**Budgetary Estimate of Cost** 

\$15,000

#### 4.2 Distribution System

The proposed improvements to the Distribution System include standardizing on blow-off assemblies and incorporation into the system. Until problem areas are determined, an estimate of 10 blow off assemblies are included.

**Budgetary Estimate of Cost** 

10 units @ \$1,500 each installed (\$15,000)

#### 4.3 Operational System

The proposed improvements to the Operational System include compiling data in a spreadsheet and creating an accurate distribution system map for documenting potential low chlorine and/or poor quality water areas. Another operational task is to operate all existing valves to confirm they are "fully open". Broken valves should be replaced.

**Budgetary Estimate of Cost** 

10 hours per month @ "manhour" cost

#### 5.0 IMPLEMENTATION STRATEGY

The following recommendations are prioritized for implementation based on the most expedient and cost-effective methods to improve water quality and optimize operational efficiency. The strategy recommended is to implement a preventative maintenance program and then assess the results of the program. This approach often resolves water quality issues without the need for more expensive water treatment systems.

#### Implementation Task #1:

Piping improvements should be made to the existing yard piping so the two wells are manifolded together with a single chlorine dosage point. Bypass piping should be incorporated into the piping improvements. Pressures and flows into and out of the two hydropneumatic tanks should also be further evaluated to ensure consistent pressures and flows can be maintained.

• Consistent chlorine dosing at the start of the distribution system should minimize fluctuating chlorine residual test results in the distribution system.

#### Implementation Task #2:

TBE recommends developing a distribution system map to correlate low chlorine residual grab samples with their respective locations within the distribution system.

• The development of the distribution system map may quickly identify water quality issues occurring within specific locations in the distribution system and allow operational maintenance activities to be applied on a prioritized basis. A table or spreadsheet may accompany the map to help document the location of problem areas.

#### Implementation Task #3:

Verify that all water distribution valves are fully open. This may correct low pressure, low chlorine residuals, odor, taste, black residue in toilets, and clogged filter complaints, with subsequent flushing activities.

• Examination of the distribution map with problem areas shown may identify specific areas to be field verified for proper water valve position. If any valves are found to be in a closed or partially closed condition, they should be noted in the spreadsheet by entering the date and specific location of the valve. The valve should be fully opened and subsequent flushing of the upstream/downstream distribution system should be accomplished. Standard field testing of chlorine residuals should be taken. Periodic chlorine residual sampling will need to be scheduled to assure residuals are being maintained.

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- Monitor any location where a valve has been found and corrected to a fully open position
  for other historical water quality issues such as: low pressure, odor, taste, black residue in
  toilets, and clogged filter complaints. If these complaints continue, a high velocity
  flushing program may need to be implemented, and results monitored and recorded.
  Persistent odor, taste, black residue in toilets, and clogged filters may require additional
  cleaning methods to augment high velocity flushing procedures.
- Identify all water valves on the Distribution System map and develop a SOP for a periodic valve exercising program.

## Implementation Task #4:

Schedule physical upgrades to the Water Distribution System.

 If results of Immediate Action Implementation Tasks 1, 2, and 3 are not effective in reducing or eliminating water quality complaints in the areas of the distribution system that terminate in 2-inch blow-off assemblies, schedule the installation of standardized blow-off assemblies that will accommodate programmable automatic blow-off devices. From: ADVANCED ENVIRONMENTAL LABS 813 630 4327

11/15/2006 15:48 #078 P.013/024



9510 Princess Palm Avenus Temps, Florida 33610 (313) 530-0516 FAX (813) 530-4327

Client: Utinties, Inc.	Report No.:	T0612443	
Project Name: Cyprees Lake	Date Sampled:	11/01/2006	
Project Number:	Date Received:	11/2/06 16:30	
	Date Reported:	11/14/2008	

Attention: David Shoffstall Phone Number: 8002721919

Address: 200 Weathersfield Avo.

Altamonte Springs, FL 32714

### **Project Description**

The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody.

Project Nama: Cypress Lake

Approved By:

From: ADVANCED ENVIRONMENTAL LABS 818 630 4327

11/15/2006 15:48 #078 P.014/024

# Advanced Environmental Laboratories, Inc.

#### Analytical Report

Client: Utilities, Inc.

Report No.: T0812443

Project Name: Cyproce Listo

Date/Time Received: 11/2/06 10:30

Lab Code: T0612443-01

Date/Time Sampled: 11/01/2006 09:28

Client Semple ID: Well #1

Shipping Method: AEL Pick-up Sampled By: Jason B

Site: WWTP

Sampling Method: G

Metric: Water

Miscellaneous Analytes

Analytes:	Dilution	Adjusted MDL	Adjusted POL	Results	Unite	Qualifier(s)	Mathed	Parameter Construct	Lab
Ordor	1	1.0	1.0	1.0	TON	υ	59421508		7
Sattion (en S)	1	0.0076	0.030	8.038	mat		3M(30080)		7

Lab Code: T0612443-02

Data/Time Sampled: 11/01/2006 09:28

Client Bample ID: Well #2

Shipping Method: AEL Pick-up

8No: WWTP

Sampled By: Jeson B Sampling Method: O

Mairbu Wator

#### Miscellaneous Analytes

Analytes:	Dilution	Adjusted MDL	Adjusted POL	Results	Units	Casalifier(s)	Method	Parameter Continued	), into
Older	3	1,0	1.0	1.0	TON	U	\$1421508		T
Sulficia (no 8)	1	OCOURS.	0.030	0.9076	mg/L	U.	SMILLOOSED		7

The compound was analyzed by but not detected.

The compound tion analysis for but not adviscost.
DOH cartification MEINSBO CARL-Tamps) (F.I. NESAC Cartification).

DOH correction meadable (ALL-Temps) #1. InQ.AC Continueson)

# Advanced Environmental Laboratories, Inc.

## Analytical Report

Client: Litities, Inc.

Report No.: 70012443

Project Name: Cyprose Laks

Date/Time Received: 11/2/08 16:30

#### Sample Cross Reference Information

Lab Code: T0012443-01						<b>\$</b> 8	יידאראי זא	*
Client Sample Number: Well #1				•		Matr	be: Water	
Test Description	Analysis Mathod	Prop Hethod	Analytical Batch 10	Antihisis Date/Time		Armylynt	Prep Baich fO	Prep Dese/Time
Odor	SM21500	HONE	west f Gaptigatur	11/02/2008 17	7×15	AK		70-11-
Sullide (se 0)	SIMEOCED	NONE	week! 1080/29/20x	11/06/2006 17	-	AK		
If the Acelytical States ID and Prop States	4				-		d leboratory will be	provided
	4				-	boontracts	d leboratory will be	provided
If the Acelysical Batch ID and Prop Butch contenting this biformation.	4				-	SII	**************************************	provided
If the Assiyical Batch ID and Prop Betch costelling this information, Lab Code: T0812443-02	4				* 54.5	SII	e: WWTP	provided: Prep Date/Terre
if the Asslytical Batch ID and Prop Butch contenting this biscreadors, Lab Code: Y0812443-02 Client Sazapia Mamber; Well #2	iOte noli, 150 seutynia	was not performed	by ABL, and the origin	of report from 0		Sil Matri	in: WIVIP	Prep

If the Analytical Batch (D and Peop Batch (Discout, the energies was not performed by AEL, and the original report from the subcontracted laboratory said be provided constalated this behavior.

## Advanced Environmental Laboratories, Inc.

Analytical Report

Chent: Utilities, Inc. Project Name: Cypross Lake Report No.: T0612443

Date/Time Received: 11/2/06 16:30

Owherholesia:

Water counts refers to all aquecum ministens ancept disbling water, including but not tryined in, went-wenter, pround water, curiese water, secures and handSoll metric refers to all non-equations, including solls, sollide, statigue, senti-counts, and non-equations waste earnifule
All results in singling or % are reported in day weight beart, unless noticed otheration. All results in myt, are reported in well weight beart.

Adjusted Paperting Limit in the MDL accounting for all different and proletters content.

Adjusted Paperting Limit in the MDL accounting for all different and proletters content, cuclustons.

POL is defined to be 4 times the MDL, for all results specified with at 1 qualifier. Bamping Helbolt Gridge, Person, O-Composite

> The actimated measurements of uncertainty can be provided upon request This is the last page of the analytical report.

- a. Each water main passing through a conflict manhole shall have a flexible, watertight joint on each side of the manhole to accommodate differential settling between the main and the manhole.
- b. Within each conflict manhole, the water main passing through the manhole shall be installed in a watertight casing pipe having high impact strength (i.e., having an impact strength at least equal to that of 0.25-inch-thick ductile iron pipe).
  - c. Each conflict manhole shall have an access opening, and shall be sized, to allow for easy cleaning of the manhole.
- d. Gratings shall be installed at all storm sewer inlets upstream of each conflict manhole to prevent large objects from entering the manhole.
- (4) Separation Between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems. New or relocated fire hydrants with underground drains shall be located so that the drains are at least three feet from any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; at least three feet, and preferably ten feet, from any existing or proposed vacuum-type sanitary sewer; at least six feet, and preferably ten feet, from any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S., and Rule 64E-6.002, F.A.C.
- (5) Exceptions. Where it is not technically feasible or economically sensible to comply with the requirements in subsection (1) or (2) above, the Department shall allow exceptions to these requirements if suppliers of water or construction permit applicants provide technical or economic justification for each exception and provide alternative construction features that afford a similar level of reliability and public health protection. Acceptable alternative construction features include the following:
- (a) Where an underground water main is being laid less than the required minimum horizontal distance from another pipeline and where an underground water main is crossing another pipeline and joints in the water main are being located less than the required minimum distance from joints in the other pipeline:
- 1. Use of pressure-rated pipe conforming to the American Water Works Association standards incorporated into Rule 62-555.330, F.A.C., for the other pipeline if it is a gravity- or vacuum-type pipeline;
  - 2. Use of welded, fused, or otherwise restrained joints for either the water main or the other pipeline; or
  - 3. Use of watertight casing pipe or concrete encasement at least four inches thick for either the water main or the other pipeline.
- (b) Where an underground water main is being laid less than three feet horizontally from another pipeline and where an underground water main is crossing another pipeline and is being laid less than the required minimum vertical distance from the other pipeline:
- 1. Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25-inch-thick ductile iron pipe) or concrete encasement at least four inches thick for the water main; and
- 2. Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25-inch-thick ductile iron pipe) or concrete encasement at least four inches thick for the other pipeline if it is new and is conveying wastewater or reclaimed water.

Specific Authority 403.861(9) FS. Law Implemented 403.853(3), 403.861(12) FS. History-New 1-1-93, Formerly 17-555.314, Amended 8-28-03.

- 62-555.315 Public Water System Wells Security; Number; Capacity; Under the Direct Influence of Surface Water; Control of Copper Pipe Corrosion and Black Water; and Disinfection and Bacteriological Surveys and Evaluations. In addition to the rules set forth in Chapters 62-524 and 62-532, F.A.C., the requirements of this section apply to public water system wells.
- (1) Well Security. Wellheads shall be enclosed by fences with lockable access gates, housed in lockable buildings or enclosures, or otherwise protected against tampering, vandalism, and sabotage.
- (2) Number of Wells. A minimum of two wells shall be connected to each community water system that is using only ground water and that is serving, or is designed to serve, 350 or more persons or 150 or more service connections.
- (3) Well Capacity. The total well capacity connected to a water system using only ground water shall equal at least the system's design maximum-day water demand (including design fire-flow demand if fire protection is being provided). In addition, if the water system is a community system serving, or designed to serve, 350 or more persons or 150 or more service connections, the total well capacity with the largest producing well out of operation shall equal at least the design average daily water demand, and preferably the design maximum-day water demand, for the system. If a community water system interconnects with another community water system to meet the requirements in subsection (2) above regarding number of wells, the total well capacity for the combined systems shall equal at least the total design maximum-day water demand for the combined systems and, with the largest producing well out of operation for the combined systems, shall equal at least the design average daily water demand, and preferably the design maximum-day water demand, for the combined systems.
- (4) Wells Under the Direct Influence of Surface Water. Ground water from some wells, especially shallow wells and radial horizontal collector wells, and ground water from springs or infiltration galleries may be under the direct influence of surface water. The Department shall determine whether ground water is under the direct influence of surface water by using the procedures

described in subsection 62-550.517(2), F.A.C., and subparagraph 62-550.817(2)(a)1., F.A.C. Suppliers of water using ground water that is determined by the Department to be under the direct influence of surface water shall comply with applicable requirements under Rule 62-550.817, F.A.C.

- (5) Control of Copper Pipe Corrosion and Black Water. Applicants for a construction permit to connect a new or altered well to a community water system, except those applicants who have submitted a complete application to the Department before August 28, 2003, shall include in the preliminary design report or design data accompanying their permit application the results of measurements for alkalinity, dissolved iron, dissolved oxygen, pH, total sulfide, and turbidity in a minimum of one sample of raw water from the new or altered well. These measurements may be performed by any authorized representative of the supplier of water or applicant; but field measurements for dissolved oxygen, pH, and turbidity shall be performed following the appropriate procedures in the Department of Environmental Protection Standard Operating Procedures for Field Activities, DEP-SOP-001/01, as incorporated into Rule 62-160.800, F.A.C., and all other measurements shall be performed using an appropriate method referenced in subsection 62-550.550(1), F.A.C., or in *Standard Methods for the Examination of Water and Wastewater* as adopted in Rule 62-555.335, F.A.C. If the result for total sulfide equals or exceeds 0.3 mg/L, the applicant shall do the following:
- (a) Provide aeration or other appropriate treatment of the water from the new or altered well to remove total sulfide as necessary. Recommended types of aeration treatment for different water quality ranges are listed in the table below, which is incorporated herein as guidance and not as a requirement. Direct chlorination shall not be used to remove (i.e., oxidize) 0.3 mg/L or more of total sulfide unless the elemental sulfur formed during chlorination is removed.

POTENTIAL FOR IMPACTS WITHOUT TOTAL SULFIDE REMOVAL	WATER QUALITY RANGES	POTENTIAL WATER TREATMENT
Low	Total Sulfide < 0.3 mg/L Dissolved Iron < 0.1 mg/L <sup>1</sup>	Direct Chlorination <sup>2</sup>
Moderate .	0.3 mg/L $\leq$ Total Sulfide $\leq$ 0.6 mg/L (pH $\leq$ 7.2 or 0.3 mg/L $\leq$ Total Sulfide $\leq$ 0.6 mg/L (pH $>$ 7.2	removal efficiency ≈ 40-50%) or
Significant	0.6 mg/L < Total Sulfide $\leq$ 3.0 mg/L (pH $\leq$ 7.2 or 0.6 mg/L < Total Sulfide $\leq$ 3.0 mg/L (pH $>$ 7.2	removal efficiency ≈ 90%)
Very Significant	Total Sulfide > 3.0 mg/L	Packed Tower Aeration with pH Adjustment <sup>4,5</sup> (maximum removal efficiency > 90%)

<sup>1</sup>High iron content raises concern if chlorination alone is used and significant dissolved oxygen exists in the source water. Filtration may be required to remove particulate iron prior to water distribution.

<sup>2</sup>Direct chlorination of sulfide in water in the pH range normally found in potable sources produces elemental sulfur and increased turbidity. Finished-water turbidity should not be more than two nephelometric turbidity units greater than raw-water turbidity.

<sup>3</sup>Increased dissolved oxygen entrained during aeration may increase corrosivity.

<sup>4</sup>Reduction of alkalinity during pH adjustment and high dissolved oxygen entrained during aeration may increase corrosivity. Corrosion control treatment such as pH adjustment, alkalinity recovery, or use of inhibitors may be required.

<sup>5</sup>High alkalinity will make pH adjustment more costly, and use of other treatment may be in order. Treatment that preserves the natural alkalinity of the source water may enhance the stability of finished water.

PUBLIC WATER SYSTEM INFORMATION	(to be completed by sampler – Please type or print legibly)
System Name: Utilities, Inc. CYPre	25 Lahe pws I.D.#:
System Type (check one): Community	Nontransient Noncommunity Transient Noncommunity
Address: -	
City:	State: ZIP Code:
Phone #:	
E-Mail Address:	
SAMPLE INFORMATION (to be completed	by sampler)
Sample Number: T0810779004	Location Code (if known):
Sample Date: 08/13/2008	Sample Time: 15:00 AM PM (circle one)
Sample Location (be specific): SOC	
Disinfectant Residual (Required when reporting	results for trihalomethanes and haloacetic acids): mg/L Field pH:
	·
Sample Type (Check Only One)	Reason(s) for Sample (Check all that apply)
Distribution	Routine Compliance (with 62-550) Quarterly (Which Quarter?)
Entry Point (to Distribution)	Confirmation of MCL Exceedance * Special (not for compliance with 62-550)
Plant Tap (not for compliance with 62-550)	Composite of Multiple Sites ** Violation Resolution
Raw (at well or intake)	Clearance (permitting) Replacement (of Invalidated Sample)
Max Residence Time	Other:
Ave Residence Time	Sampling Procedure Used or Other Comments:
Near First Customer	
*See 62-550.500(6) for require NOTE: See 62-550.512(3) for for nitrate or nitrite MC	additional attach a results page for each site.
Sampler's Name:	shoffstall_
Sampler's Phone #:	Sampler's Fax #:
Sampler's E-Mail Address:	
CERTIFICATION (to be completed by sa	ampler) //
1, David shoff	stall
(Print Name)	(Print Title)
complete and correct.	ve public water system and sample collection information is
Signature:	Date:

LABORATORY CERTIFICATION INFORMATION (to be completed by lab ~ Please type or print legibly) ATTACH CURRENT DOH ANALYTE SHEET *	
Lab Name: Advanced Environmental Laboratories, Inc Florida Certification #:	E84589
Address: 9610 Princess Palm Avenue Certification Expiration Date	e: <u>06/30/2008</u>
Tampa, FL 33619 Phone #: _(813)630-9616	
ANALYSIS INFORMATION (to be completed by lab) Date Sample(s) Received: 08/14/2008	
PWS ID (From Page 1): Sample Number (From Page 1): T081077	'9001
Lab Assigned Report Number or Job ID: T0810779001	
Group(s) Analyzed & Results attached for compliance with Chapter 62-550, F.A.C. (Check all that apply):	
Inorganics       Synthetic Organics       Volatile Organics       Disinfection Byp         Mall 17       All 30       All 21       Trihalometha         Partial       All Except Dioxin       Partial       Haloacetic A         Nitrate       Partial       Bromate         Nitrite       Dioxin Only       Radionuclides       Chlorite         Asbestos Only       Qtrly Composite**       Secondaries	anes
Were any analyses subcontracted?   ✓ Yes   No   Partial	
If yes, please provide DOH certification numbers: [-83574, E83033]	
ATTACH DOH ANALYTE SHEET FOR EACH SUBCONTRACTED LAB*	
I, Tammie Heslin	
(Print Name) (Print Title)	
do HEREBY CERTIFY that all attached analytical data are correct and unless noted meet all requiremental Laboratory Accreditation Conference (NELAC).	ents of the National
Signature: Date: 9/15	3/08
* Failure to provide a valid and current Florida DOH lab certification number and a current Analyte Sheet for the a results will result in rejection of the report, possible enforcement against the public water system for failure to sa result in notification of the DOH Bureau of Laboratory Services.  ** Please provide radiological sample dates & locations for each quarter.	
COMPLIANCE DETERMINATION (to be completed by DEP or DOH)	
Sample Collection Info Satisfactory: Yes No Sample Analysis Info Satisfactory:	Yes No
Replacement Sample(s) Requested (circle or highlight group(s) above) Revised Report Requested (circle or	highlight group(s) above)
Additional Monitoring Required (circle or highlight group(s) above)	
Reason(s): MCL(s) Exceeded Detection(s) Incomplet  Missing Analyte Sheet(s) Location Unsatisfactory Analysis I  Other:	te Report Unsatisfactory
Person Notified: Date Notified:	
Comments:	
Date Reviewed: DEP/DOH Reviewing Official:	-

# **INORGANIC CONTAMINANTS**

62-550.310(1)

Report Number / Job ID: T0810779001

PWS ID (From Page 1):

Contam ID	Contam Name	MCL	Units	Analysis Result	Qualifier*	Anályticál Method	Lab MDL	Analysis Date	Analysis Time	DOH Lab Certification
1040	Nitrate (as N)	10	mg/L	0.047	U	SM 4500NO3-F	0.047	08/15/2008	09:43	E84589
1041	Nitrite (as N)	1	mg/L	0.039	U	SM 4500NO3-F	0.039	08/15/2008	09:43	E84589
1005	Arsenic	0.010	mg/L	0.00072	U	EPA 200.8	0.00072	08/20/2008	22:05	E82574
1010	Barium	2	mg/L	0.0057		EPA 200.8	0.00030	08/20/2008	22:05	E82574
1015	Cadmium	0.005	mg/L	0.0002	I	EPA 200.8	0.00016	08/26/2008	16:39	E82574
1020	Chromium	0.1	mg/L	0.00043	U	EPA 200.7	0.00043	08/18/2008	15:47	E82574
1024	Cyanide	0.2	mg/L	0.0014	U	SM 4500-CN-E	0.0014	08/26/2008	18:06	E84589
1025	Fluoride	4.0	mg/L	0.16	1	EPA 300.0	0.047	08/21/2008	12:11	E84589
1030	Lead	0.015	mg/L	0.0003	1	EPA 200.8	0.00012	08/20/2008	22:05	E82574
1035	Mercury	0.002	mg/L	0.000024	U	EPA 245.1	0.000024	08/27/2008	17:27	E82574
1036	Nickel	0.1	mg/L	0.00098	U	EPA 200.7	0.00098	08/20/2008	13:25	E82574
1045	Selenium	0.05	mg/L	0.001	1	EPA 200.8	0.00098	08/20/2008	22:05	E82574
1052	Sodium	160	mg/L	11		EPA 200.7	0.18	08/18/2008	15:47	E82574
1074	Antimony	0.006	mg/L	0.00018	U	EPA 200.8	0.00018	08/20/2008	22:05	E82574
1075	Beryllium	0.004	mg/L	0.00011	U	EPA 200.7	0.00011	08/18/2008	15:47	E82574
1085	Thallium	0.002	mg/L	0.000061	U	EPA 200.8	0.000061	08/20/2008	22:05	E82574

Reporting Format 62-550.730 Effective January 1995. Revised January 2004

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<sup>\*</sup>Results must be reported with appropriate qualifiers in accordance with Florida Administrative Code Rule 62-160, Table 1. Results qualified with A. F. H. N. O. T. Z. ?, \*, are unacceptable for compliance with 62-550. Results qualified with a J, Q, R, or Y must be accompanied by written justification and will be evaluated on a case by case basis. To avoid a monity of a violation unacceptable Passifts must be replaced with a Peopleta resolfs from samples collected during the modificing period

SECONDARY	<b>CONTAMINANTS</b>
62-550.320	

Report Number / Job ID: <u>T0810779001</u>

PWS ID (From Page 1): \_\_\_\_\_

Contam ID	Contam Name	MCL	Units	Analysis Result	Qualifier	Analytical Method	Lab MDL	Analysis Date	Analysis Time	DOH Lab Certification #
1002	Aluminum	0.2	mg/L	0.058	1	EPA 200.7	0.056	08/18/2008	15:47	E82574
1017	Chloride	250	mg/L	13		EPA 300.0	2.7	08/21/2008	12:11	E84589
1022	Copper	7 1 1 1	mg/L	0.0038		EPA 200.8	0.00040	08/20/2008	22:05	E82574
1025	Fluoride	2.0	mg/L	0.16	ı	EPA 300.0	0.047	08/21/2008	12:11	E84589
1028	Iron	0.3	mg/L	0.088	1	EPA 200.7	0.012	08/18/2008	15:47	E82574
1032	Manganese	0.05	ing/L	0.006		EPA 200.8	0.00023	08/20/2008	22:05	E82574
1050	Silver	0.1	mg/L	0.000062	U	EPA 200.8	0.000062	08/20/2008	22:05	E82574
1055	Sulfate	250	mg/L	3.3	U	EPA 300.0	3.3	08/21/2008	12:11	E84589
1095	Zinc	5	mg/L	0.022		EPA 200.8	0.0043	08/20/2008	22:05	E82574
1905	Color	15	Color Units	3.2	U	SM 2120B	3.2	08/14/2008	17:37	E84589
1920	Odor	a 14 3	T.O.N @	1.0	U	SM 2150B	1.0	08/14/2008	14:00	E84589
1925	pH	6.5 - 8.5	pH unit	7.8		EPA 150.1	0.10	08/22/2008	10:20	E84589
1930	Total Dissolved Solids	500	mg/L	250		EPA 160.1	10	08/15/2008	09:03	E84589
2905	Foaming Agents	0.5	mg/L	0.09	ı	EPA 425.1	0.051	08/15/2008	10:05	E84589

Reporting Formal 62-550.730 Effective January 1995, Revised January 2004

Page 4 of 5

<sup>\*</sup>Results must be reported with appropriate qualifiers in accordance with Florida Administrative Code Rule 62-160, Table 1. Results qualified with A. F. H. N. O, T. Z. ?. \*, are unacceptable for compliance with 62-550. Results qualified with a J. Q. R. or Y must be accompanied by written justification and will be evaluated on a case by case basis. To avoid a monitoring violation, unacceptable results must be replaced with acceptable results from samples collected during the same monitoring period.

RADIONUCLIDES 62-550.310(6)

Report Number / Job	1009/501807
PWS ID (From Page 1):	

Contain ID	Contain Name	MCL U	nits Anal Res	LG/G-IIIII	er* Analytical Method	Lab MDL	RDL	Analysis Error	Analysis : Date	Analysis Time	DOH Lab Certification #
4006	Combined Uranium (U-234,U-235, & U-238)	30 u	g/L 0.0	38 U	EPA 200.8	0.038	0.038		08/20/2008	22:05	E82574

<sup>\*\*</sup> If the results exceed 5 pCi/L, a measurement for radium-226 is required.

Reporting Format 62-550,730 Effective January 1995, Revised January 2004

Page 5 of 5

\*Results must be reported with appropriate qualifiers in accordance with Florida Administrative Code Rule 62-160, Table 1. Results qualified with A. F. H. N. O, T. Z. ?, \*, are unacceptable for compliance with 62-550. Results qualified with a J. Q. R, or Y must be accompanied by written justification and will be evaluated on a case by case basis. To avoid a monitoring violation, unacceptable results must be replaced with acceptable results from samples collected during the same monitoring period

<sup>\*\*\*</sup> If the results exceed 5 pCi/L, a measurement for radium-226 is required. If the results exceed 15 pCi/L, measurements for radium-226 and uranium are required.

<sup>\*\*\*\*</sup> If uranium (U) is reported as a measurement of activity (pCi/L) it will be converted to a mass measurement (µg/L) by multiplying the result by 1.5.

<sup>\*\*\*\*\*</sup> Reserved

RADIONUCLIDES 62-550.310(6)

report reamber 7 000 fb. 100 to 770 002	Report Number /	Job ID:	T0810779-002	
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PWS ID (From Page 1):\_\_\_\_

Contam ID	Contam Name	MCL	Units	Analysis Result	Qualifier*	Analytical Method	Lab MDL	RDL	Analysis Error	Analysis Date	Analysis Time	DOH Lab Certification #
4000	Gross Alpha (Excl Uranium)	15**	pCi/L	2.1		EPA 900	0.9	3	0.7	08/23/08	10:06	E83033
4002	Gross Alpha (Incl Uranium)	***	pCi/L					1				E
4006	Combined Uranium	****	pCi/L			~		****	_			E
4000	(U-234, U-235, & U-238)	30	μg/L					1				Е
4020	Radium-226	_	-C:/I	1.3		EPA 903.1	0.1	1	0.2	08/27/08	11:48	E83033
4030	Radium-228		pCi/L	0.7	U	EPA Ra-	0.7	1	0.5	08/27/08	10:41	E83033

<sup>\*\*</sup> If the results exceed 5 pCi/L, a measurement for radium-226 is required.

If the results exceed 5 pCi/L, a measurement for radium-226 is required. If the results exceed 15 pCi/L, measurements for radium-226 and uranium are required.

If uranium (U) is reported as a measurement of activity (pCi/L) it will be converted to a mass measurement (µg/L) by multiplying the result by 1.5.

<sup>\*\*\*\*\*</sup> Reserved

VOLATILE ORGANICS 62-550.310(4)(a)

Report Number / Job ID:	T0810779003	
PWS ID (From Page 1):		

Contam ID	Contam Name	MCL	Units	Analysis Result	Qualifier	Analytical Method	Lab MDL	RDL	Aĥalysis Date	Analysis Time	DOH Lab Certification #
2378	1,2,4-Trichlorobenzene	70	ug/L	0.38	U	EPA 524.2	0.38	0.5	08/16/2008	01:20	E82574
2380	cis-1,2-Dichloroethylene	70	ug/L	0.22	U	EPA 524.2	0.22	0.5	08/16/2008	01:20	E82574
2955	Xylenes (total)	10,000	ug/L	0.50	U	EPA 524.2	0.50	0.5	08/16/2008	01:20	E82574
2964	Dichloromethane	5	ug/L	0.42	U	EPA 524.2	0.42	0.5	08/16/2008	01:20	E82574
2968	o-Dichlorobenzene	600	ug/L	0.21	U	EPA 524.2	0.21	0.5	08/16/2008	01:20	E82574
2969	para-Dichlorobenzene	-75	ug/L	0.17	U	EPA 524.2	0.17	0.5	08/16/2008	01:20	E82574
2976	Vinyl Chloride	11	ug/L	0.19	U	EPA 524.2	0.19	0.5	08/16/2008	01:20	E82574
2977	1,1-Dichloroethylene	7	ug/L	0.19	U	EPA 524.2	0.19	0.5	08/16/2008	01:20	E82574
2979	trans-1,2-Dichloroethylene	100	ug/L	0.18	U	EPA 524.2	0.18	0.5	08/16/2008	01:20	E82574
2980	1;2-Dichloroethane	3	ug/L	0.23	U	EPA 524.2	0.23	0.5	08/16/2008	01:20	E82574
2981	1,1,1-Trichloroethane	200	ug/L	0.27	U	EPA 524.2	0.27	0.5	08/16/2008	01:20	E82574
2982	Carbon tetrachloride	3.	ug/L	0.23	U	EPA 524.2	0.23	0.5	08/16/2008	01:20	E82574
2983	1,2-Dichloropropane	5	ug/L	0.18	U	EPA 524.2	0.18	0.5	08/16/2008	01:20	E82574
2984	Trichloroethylene	3	ug/L	0.37	U	EPA 524.2	0.37	0.5	08/16/2008	01:20	E82574
2985	1,1,2-Trichloroethane	5	ug/L	0.22	U	EPA 524.2	0.22	0,5	08/16/2008	01:20	E82574
2987	Tetrachloroethylene	3	ug/L	0.40	U	EPA 524.2	0.40	0.5	08/16/2008	01:20	E82574
2989	Monochlorobenzene	100	ug/L	0.19	U	EPA 524.2	0.19	0.5	08/16/2008	01:20	E82574
2990	Benzene	1	ug/L	0.20	U	EPA 524.2	0.20	0.5	08/16/2008	01:20	E82574
2991	Toluene	1,000	ug/L	0.18	U	EPA 524.2	0.18	0.5	08/16/2008	01:20	E82574
2992	Ethylbenzene	700	ug/L	0.19	U	EPA 524.2	0.19	0.5	08/16/2008	01:20	E82574
2996	Styrene	100	ug/L	0.18	U	EPA 524.2	0.18	0.5	08/16/2008	01:20	E82574

Reporting Formal 62-550.730 Effective January 1995, Revised January 2004



<sup>\*</sup>Results must be reported with appropriate qualifiers in accordance with Florida Administrative Code Rule 62-160, Table 1. Results qualified with A. F. H. N. O. T. Z. ?. \*, are unacceptable for compliance with 62-550. Results qualified with a J. Q. R. or Y must be accompanied by written justification and will be evaluated on a case by case basis. To avoid a monitoring violation, unacceptable results must be replaced with acceptable results from samples collected during the same monitoring period

## SYNTHETIC ORGANICS 62-550.310(4)(b)

Report Number / Job ID: T0810779004

PWS ID (From Page 1): \_\_\_\_\_

Contain ID	Contam Name	MCL	Units	Analysis Result	Qualifie	Analytical Method	Lab MDL	RDL	Extraction Date	Analysis Date	Analysis Time	DOH Lab Certification
2005	Endrig .	2	ug/L	0.0020	U	EPA 508	0.0020	0.01	08/18/2008	08/21/2008	15:07	E82574
2010	Lindane	0.2	ug/L	0.0033	U	EPA 508	0.0033	0.02	08/18/2008	08/21/2008	15:07	E82574
2015	Methoxychlor	40	-ug/L	0.011	U	EPA 508	0.011	0.1	08/18/2008	08/21/2008	15:07	E82574
2020	Toxaphene	3	. ug/L	0.091	U	EPA 508	0.091		08/18/2008	08/21/2008	15:07	E82574
2031	Dalapon	200	ug/L	1.0	U	EPA 515.3	1.0	1	08/23/2008	08/25/2008	14:32	E82574
2032	Diquat	20	ug/L	7.6	U	EPA 549.2	7.6	0.4	08/19/2008	08/19/2008	17:36	E82574
2033	Endothall	100	ug/L	4.8	U	EPA 548.1	4.8	9	08/19/2008	08/20/2008	13:18	E82574
2034	Glyphosate	700	ug/L	6.5	U	EPA 547	6.5	6	08/26/2008	08/26/2008	18:59	E82574
2035	DI(2-ethylhexyl)adipate	400	ug/L	0.95	U	EPA 525.2	0.95	0.6	08/25/2008	08/25/2008	23:17	E82574
2036	Oxamyl (Vydate)	200	ug/L	0.57	U	EPA 531.1	0.57	2	08/21/2008	08/21/2008	19:56	E82574
2037	Simazine	4	ug/L	0.19	U	EPA 525.2	0.19	0.07	08/25/2008	08/25/2008	23:17	E82574
2039	Di(2-Ethylhexyl)phthalate	6	ug/L	0.77	U	EPA 525.2	0.77	0.6	08/25/2008	08/25/2008	23:17	E82574
2040	Picloram	500	ug/L	0.23	U	EPA 515.3	0.23	0.1	08/23/2008	08/25/2008	14:32	E82574
2041	Dinoseb	7	ug/L	0.67	U	EPA 515.3	0.67	0.2	08/23/2008	08/25/2008	14:32	E82574
2042	Hexachlorocyclopenladiene	50	ug/L	0.015	U	EPA 508	0.015	0.1	08/18/2008	08/21/2008	15:07	E82574
2046	Carbofuran	40	ug/L.	0.28	U	EPA 531.1	0.28	0.9	08/21/2008	08/21/2008	19:56	E82574
2050	Atrazine	3	ug/L	0.16	U	EPA 525.2	0.16	0.1	08/25/2008	08/25/2008	23:17	E82574
2051	Alachlor	25	ug/L	0.26	U	EPA 525.2	0.26	0.2	08/25/2008	08/25/2008	23:17	E82574
2065	Heptachlor	0.4	ug/L	0.0063	U	EPA 508	0.0063	0.04	08/18/2008	08/21/2008	15:07	E82574
2067	Heptachlor Epoxide	0.2	ug/L	0.0028	U	EPA 508	0.0028	0.02	08/18/2008	08/21/2008	15:07	E82574
	2,4-D	70	ug/L	0.55	U	EPA 515.3	0.55	0.1	08/23/2008	08/25/2008	14:32	E82574
	2,4,5-TP (Silvex)	50	ug/L	0.32	U	EPA 515.3	0.32	0.2	08/23/2008	08/25/2008	14:32	E82574
2274	Hexachlorobenzene		ug/L	0.0027	U	EPA 508	0.0027	0.1	08/18/2008	08/21/2008	15:07	E82574
2306	Benzo(a)pyrene	0.2	ug/L	0.096	U	EPA 525.2	0.096	0.02	08/25/2008	08/25/2008	23:17	E82574
2326	Pentachlorophenol	1.0	ug/L	0.069	U	EPA 515.3	0.069	0.04	08/23/2008	08/25/2008	14:32	E82574
2383	Polychlorinated biphenyls(PCB)	0.5	ug/L	0.11	U	EPA 508	0.11	0.1	08/18/2008	08/21/2008	15:07	E82574
2931	Dibromochloropropane	0.2	ug/L_	0.0082	U	EPA 504.1	0.0082	0.02	08/19/2008	08/19/2008	15:31	E82574
2946	Ethylene Dibromide (EDB)	0.02	ug/L	0.0091	U	EPA 504.1	0.0091	0.01	08/19/2008	08/19/2008	15:31	E82574
2959	Chlordane	2	ug/L	0.048	U	EPA 508	0.048	0.2	08/18/2008	08/21/2008	15:07	E82574

NOTE: Effective January 1, 2004, results indicating non-detection with a reported lab MDL >50% of the MCL will not be accepted for compliance with 62-550.310(4)(b).

Reporting Format 62-550.730 Effective January 1995, Revised January 2004

Page 3 of 3

<sup>\*</sup>Results must be reported with appropriate qualifiers in accordance with Florida Administrative Code Rule 62-160, Table 1. Results qualified with A. F. H, N. O, T. Z. ?, \*, are unacceptable for compliance with 62-550. Results qualified with a J, Q, R, or Y must be accompanied by written justification and will be evaluated on a case by case basis. To avoid a monitoring violation, unacceptable results must be replaced with acceptable results from samples collected during the same monitoring period

# Florida Radiochemistry Services, Inc.

Contact: Michael J. Naumann 5456 Hoffner Ave., Suite 201 Orlando, FL 32812 Phone: (407) 382-7733 Fax: (407)382-7744 Certification I. D. # E83033

Work Order #: 0808100 Report Date: 08/28/08

Report to:

Advanced Environmental Laboratories, Inc. 9610 Princess Palm Ave. Tampa, FL 33619
Attention: Tammie Heslin

I do hereby affirm that this record contains no willful misrepresentations and that this information given by me is true to the best of my knowledge and belief. I further certify that the methods and quality control measures used to produce these laboratory results were implemented in accordance with the requirements of this laboratory's certification and NELAC Standards. The test results in this report relate only to the samples received.

Signed Meha J. Maumann - President

Date 8-28-08

Page 1 of 3

P.7 P.9



# Florida Radiochemistry Services, Inc.

### Sample Login

Client:	Advanced Environmental Laboratories, Inc.	Date / Time Received 08/15/08 15:10	Work order # 0808100
Client Contact:	Tammie Heslin	56/10/06 15.10	0000,00
Client P.O.			
Project I.D.	T0810779		
Lab Sample I.D.	Client Sample I.D.	Sample Date/Time	Analysis Requested
0808100-01	T0810779-002	06/13/08 14:00	Ga, Ra226, Ra228
	Analysis Results		
Gross Alpha	2.1		
Error +/-	0.7		
MDL,	0.9		
EPA Method	900.0		
Prep Date	08/21/08		
Prep Time Analysis Date	06;38 08/23/08		
Analysis Date	10:06		
Analyst	NIM		
Minnyat	MIAPL		
Radium 226	1.3	Radium 228	<b>0.7</b> U
Error +/-	0.2	Error +/-	0.8
MDL	0.1	MDL	0.7
EPA Method	903.1	<b>EPA Method</b>	Ra-05
Prep Date	08/20/08	Prep Date	08/20/05
Prep Time	05:15	Prep Time	05;18
Analysis Date	08/27/08	Analysis Date	08/27/08
Analysis Time Analyst	11:48	Analysis Time	10:41
Analyst	NLM	Analyst	PJ
Units	PGVI	Units	рСИ

1.8P.10

Page 2 of 3

AUG. 28. 2008 11:05AM NO. 341 P. 3



# Florida Radiochemistry Services, Inc.

#### QA Page

Analyte	Sample #	Date Analyzed	Sample Result	Amount Spiked	Spika Result	Spike /Dup Result	Spiks % Rec.	Spike Dup % Rpd
Gross Alpha	0898103-01	08/22/08	<1,4	10.2	9.6	10.4	94	6.0
Radium 226	0808100-01	08/27/08	1.3	25.2	26.0	22.8	98	13.1
Radium 228	0808100-01	08/27/08	<0.7	6,0	6,0	5,3	100	12.4
		Quality	Control	Limits				
		% RPD		% Rec.				
Gross Alpha		23.5		62-121				
Radium 226		25.0		72-125				
Radium 228		20.5		80-123				

2.59

P.11

Page 3 of 3

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NU. 341

. . . Circle if Applicable:

RUSH

**SHORT HOLD** 



Document 72265 - HBN 33181	Project Reference	Number : T0810779	າວິ Resu	Ils Requested By 8/29/2008	
Tammie Hestin Advanced Environmental Laboratories, Inc	sub to 1	Fl. Badlochem	TRIEST	18	
9610 Princess Palm Avenue			158	N 8	
Tampa, FL 33619 Phone (813)630-9616			1 / 18/2	र्री हैं। । । । । ।	
Fax (813)630-4327			111101		
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Comments:					
Preservative Codes	Transfers	Released By	Date/Time	Received By	Date/Time
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# **Internal Transfer Chain of Custody**

Ship Work to AEL/Jacksonville



Transfer From

Transfer To

AEL-Tampa

Circle if applicable:

(If SHORT HOLD is circled, these samples must be batched for receiving immediately and managers notified) RUSH

SHORT HOLD

	Chain	72244	- HBN	33178						
Kenta	the state of the state of	0702001-A	A Type	Hiresenv.	Matrix. DW	16 allegated 15-10	8/13/2008 12:40	IPM MP	1801-W, 2008-D	
V3			RECEIVING		DVV	6/11/2006 15.50	8/13/2008 12.40	IVII	1001-44, 2000-5	
1	SCHOOL STATE	0,762002-A	TPL RECEIVING	HNOS	DW	8,11/2008 16/05	48/03/2008 12:46	MF.	180124, 2008 2	
	Children Co. Co.	0702003-A	LP	HNO3	DW	8/11/2008 15:45	8/13/2008 12:40	MP	1801-W, 2008-D	
1	-	Location -	RECEIVING	HINGS VI	From Ast	ายสาราวาการสาธาร	B/18/2008/12:40	ME	51801-W 2008-D	
V	Providu	Location	RECEIVING	4				4		
J.		0702005-A	LP RECEIVING	HNO3	DW	8/11/2008 14:50	8/13/2008 12:40	MP	1801-W, 2008-D	
V	TOBIL	0.700200m;A.	OUP X	HINO8	dBW	8/12/2008/07/10	B/13/2008 12:40	MP	. 1801-W, 2008-D	
1	7	0702007-A	RECEIVING LP	HNO3	DW	8/11/2008 15:00	8/13/2008 12:40	MP	1801-W, 2008-D	的 新
4	/ Previous	Location -	RECEIVING	CONTRACTOR AND	U SANCE CONTRA		The state of the same of the			griessi
4	是人员会的人们是	Artstifergerin Leistressell	in Le Receiving	FINOR.	DW.	8/11/2000/11/55/20 2	3/13/2008 T2/40	WP.	1801-W 2008-D	
	T081	0702009-A	LP	ниоз	DW	8/11/2008 14:00	8/13/2008 12:40	MP	1801-W, 2008-D	
. /	CONTRACTOR OF THE PARTY OF	Location -	RECEIVING	THNOS	DW	B/02/2008 16/00	//8/13/2008 (12/48)	MP	1801-W, 2008-D	
	STATE OF THE PARTY OF	CHARLES HAVE AND ADDRESS.	RECEIVING							
	/	)707001-A Location - I	40CVOA RECEIVING	HCI	DW	8/12/2008 09:56	8/13/2008 12:40	MP	5242-W	
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/2	THE REAL PROPERTY.	741002-A	LP	HNO3	DW	8/13/2008 06:30	8/13/2008 14:30	MAL	1801-W, 2008-D	
sele	Contract of the last of the la	THE RESERVE OF THE PARTY OF THE	RECEIVING	<u></u>	DE WATER			1040000000	property and the second second	
		7 41003 A Location a F	NECE VINE	TINOS	DW.	3/15/2008 US 31	B/13/2008;14:30.	MAL	7801-W/2006-D	
تدكر		741004-A Location - F	LP	ниоз	DW	8/13/2008 06:00	8/13/2008 14:30	MAL	1801-W, 2008-D	
	DAY THE THE PARTY NAMED	741005 A	ALP S	HNO3	DW :	18/13/2008 06:40	8/13/2008 14:30	MAL	1801-W, 2008-D	
,	-	cognition + 741006-A	REGENTING LP	HNO3	DW	8/12/D009 06/20	8/13/2008 14:30	MAI	4004 W 0000 D	
		Location - F		HNOS	DW	0/13/2008 06:30	6/13/2006 14:30	MAL	1801-W, 2008-D	12
	<b>新</b> 斯特	<b>*******</b>	5000	HINOS	SL	87 13/2003 CAUGE	8/16/2008/15:59	MED.	3050ES P.6010BS 7471AS P. HG7471AS	
14	organization in	779001-A	Brown State	HNO3	DW	8/13/2008 14:15	8/14/2008 13:00	ТМН	1801-W, 2007-D, 2008-D, 2451-	
<i>)</i> /	Previous	_ocation - R	ECEIVING						W-P, HG2451-W	- MOOLS
	THE PARTY OF THE P	779002 B Oralion - R	STATE OF THE PERSON NAMED IN	IEINOS	DW	8/43/2008   4100	8/14/2008 13:00	TIMIL	1801-W-2008-0, E228 D. V	THE TAOUR
V31	T08107	779003-A	40CVOA	HCI	DW	8/13/2008 14:30	8/14/2008 13:00	TMH	5242-W	8/4/1/8
1	Annual Control of the	ocation - R	A CONTRACTOR OF THE PARTY OF TH	Na2S04	DW	B/1379hap: 45/00	B/14/2009 12:05	-March 19	E508-W E508-W-P	in the second
Milato		が自然の場合	The state of the s	The state of the s	Design and the	The state of the s	011-12000-13:00		LOUG-W, COUG-VV-P	1526

\* - The noted container is no longer on the chain

P.13

# **Internal Transfer Chain of Custody**



Transfer From

AEL-Tampa

Transfer To

Ship Work to AEL/Jacksonville

Circle if applicable:

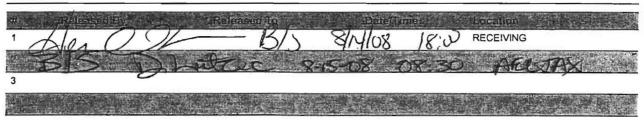
(If SHORT HOLD is circled, these samples must be batched for receiving immediately and managers notified) **RUSH** 

SHORT HOLD

Chain 72244 - HBN 33178

	Post cint mer.		Preservi	Wrating	Callected	Received	and Service	Milization 1
/	23 T0810779004-0	40CVOA	Na2S2O4M	DW	8/13/2008 15:00	8/14/2008 13:00	ТМН	5311-W
<u> </u>	Previous Location	) - #DAVIO)A	AC.	DW (d)	8/13/2008 1500	8/14/2008 13/90	TMH	5)(58-W, 5458-W-P
✓.	25 T0810779004-G		Na2SO4	DW	8/13/2008 15:00	8/14/2008 13:00	ТМН	5252-W, 5252-W-P
/	216 - 1108 ( 077 Asis) on 1 ( Pareviological Manesity of 1		Negeo (	10 <b>%</b> /	36321000 FY00 3	9/14/2008 TS00	ТМН	-548/1-W 548/1-W-P
1	27 T0810779004-J Previous Location		Na2SO4	DW	8/13/2008 15:00	8/14/2008 13:00	ТМН	5041-W, 5041-W-P
~	igo i provincia de la compania del compania del compania de la compania del compania del compania de la compania de la compania del c	<b>电影 经通知的企业</b>	Navsor	DW .	6/1 3/2/008 15/00 3	9/14/2001:13/00	HMI)	
/	29 T0810779004-N		Na2SO4	DW	8/13/2008 15:00	8/14/2008 13:00	ТМН	5492-W, 5492-W-P
/	eio: "Tuenevalouris» Previous Cocalions	The second second	HNOS	DW, ***	B/14/2008 90:45	8/14/2008 13:00	TMH A	1601-W, 2067-D
ر	31 T0810796001-A		ниоз	SL	8/14/2008 09:30	8/14/2008 13:20	MP	3050BS-P, 6010BS, 7471AS-P, HG7471AS

### **Transfers**



\* - The noted container is no longer on the chain.

P12 0.14

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Matrix Code: WW	= wastewater SW = surface water GW = gro	ound water <b>DW</b> = 0	lrinking wate	r <b>O</b> = oil	A = air S	O = soil	SL = slud	ge	Preserva	tion Co	de: I=i	ce H=(HC	I) S = (H	2SO4) N	= (HNO3)	T = (Soc	tium Thi	osulfat
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FOR DRINKING WATER USE:	
(When PWS Information not otherwise supplied)	PWS ID:
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Supplier of Water:	
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