

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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In re: Application for increase in water and wastewater rates in Alachua, Brevard, DeSoto, Highlands, Lake, Lee, Marion, Orange, Palm Beach, Pasco, Polk, Putnam, Seminole, Sumter, Volusia, and Washington Counties by Aqua Utilities Florida, Inc. | DOCKET NO. DOCKET NO. 080121-WS  
FILED: DECEMBER 24, 2008

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the Late-Filed Exhibits 201, 202, 203, and 204, on behalf of the Florida Public Service Commission, has been furnished by U.S. Mail, this 24<sup>th</sup> day of December, 2008, to the following:

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**Late Filed Exhibit 201**

**SJRWMD Consumptive Use Permit Analysis  
Of Distribution Line Flushing**

**Staff Witness Catherine A. Walker, P.E., M.B.A.**

## SJRWMD Consumptive Use Permit (CUP) Analysis of Distribution Line Flushing

Potable water main distribution line flushing is considered a “reasonable-beneficial use” under CUP permit evaluation criteria. It is identified as “Water utility use” under Rule 40C2.501(2)(u). “Reasonable-beneficial Use” is statutorily defined as “the use of water in such quantity as is necessary for economic and efficient utilization for a purpose and in a matter which is both reasonable and consistent with the public interest.” Distribution line flushing is necessary to maintain stable disinfection residuals to protect public health.

Quantities allocated for water utility use are generally based on historic quantities utilized for that purpose because the quantity necessary will vary based on a number of factors. Those factors include distribution system size, number of dead-end lines, the fraction of development within the service area, disinfection method, water temperature, pH, and water age. Because flushing is a necessary practice to protect the public health, it is very difficult to establish a maximum quantity. Similarly, the District issues an allocation for “essential use” which is dedicated to fire suppression. In this case, the allocation is generally based upon the maximum capacity that the utility can deliver. While we grant an allocation for fire protection, or essential use, there is no practical way to determine how much water will actually be needed for fire protection.

The discharge water quality is not regulated under the Consumptive Use Permitting program. Discharges to receiving water bodies are regulated by the Florida Department of Environmental Protection. Generally Class III Surface water standards under 62-302.530, Florida Administrative Code apply.

**Late Filed Exhibit 202**

**Description of Specifics of Chuluota  
Consent Order Violations**

**Staff Witness Catherine A. Walker, P.E., M.B.A.**

### Summary

Eighteen (18) conditions were tracked for CUP compliance in this Comprehensive Compliance Review (CCR). The permittee was in compliance for five (5) conditions (13 – 15, 19 and 22), compliance unknown for five (5) conditions (16, 17, 21, 27 and 29), and out of compliance for eight (8) conditions (12, 18, 20, 23 – 26 and 28).

At least 33 violations were identified over the 2-year duration for the permit. There were ten (10) documented citations (letters, email messages or phone calls) sent to the permittee for violations associated with four (4) conditions (23, 24, 26 and 28). There were 0 citations for violations associated with four (4) conditions (12, 18, 20 and 25).

District staff notified Aqua Utilities (AU) representatives that the District would be pursuing enforcement action against AU for multiple violations associated with three (3) permits. AU contacted Dave Fisk regarding the proposed enforcement action, and a meeting was arranged with District staff (Shannon Joyce and Catherine Walker) and AU representatives (William Cross and John Lihvarcik) at the Altamonte Springs Service Center on 01-28-06 to identify information needed to achieve compliance for CUP 8362 Chuluota, CUP 4555 Tavares Ridge and CUP 2608 Venetian Village. The outcomes of the meeting were that all missing information needed for achieving compliance would be submitted and future submittals would be provided to maintain compliance with the permit conditions.

Shannon Joyce sent William Cross and John Lihvarcik an email message on 06-06-06 requesting amicable resolution of continued violations of permit conditions despite the outcome of the January meeting. No response was received to this request.

<b>X</b>	<b>Condition 12</b>	<b>Out of Compliance – 1 violation with 0 citations</b>
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Permittee must implement the conservation plan approved by the District in accordance with the schedule contained therein. A report detailing the progress of plan implementation must be submitted to the District on or before the midpoint of the permit duration.

*Comments:*

The midpoint of the permit duration was 04-12-06 and the District has not received the report.

<b>✓</b>	<b>Condition 13</b>	<b>In Compliance</b>
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All submittals made to demonstrate compliance with this permit shall have the CUP number 8362 plainly labeled on the submittal.

*Comments:*

A random review of documents indicated that the CUP number was included with the submittals reviewed.

<b>✓</b>	<b>Condition 14</b>	<b>In Compliance</b>
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This permit will expire on April 12, 2007.

*Comments:*

01-24-07	A permit expiration warning letter from the District was mailed certified to AU Florida.
02-07-07	The District received confirmation that the letter was delivered to and received by the permittee on 02-05-07.
03-22-07	A reminder of permit expiration was included in a letter of Proposed Enforcement Action dated 03-22-07 from Shannon Joyce to Jack Lihvarcik.

<b>✓</b>	<b>Condition 15</b>	<b>In Compliance</b>
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<p>Maximum annual ground water withdrawals must not exceed:</p> <p>193.99-million gallons (mg) in 2005;</p> <p>202.91-mg in 2006;</p> <p>212.24-mg in 2007.</p> <p><i>Comments:</i></p> <p>Withdrew 141.130-mg of ground water in 2005, which was about 52.86-mg (27%) below the permitted maximum annual ground water withdrawal;</p> <p>Withdrew 161.538-mg of ground water in 2006, which was about 41.46-mg (20%) below the permitted maximum annual ground water withdrawal.</p>
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<b>?</b>	<b>Condition 16</b>	<b>Compliance Unknown</b>
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<p>Wells no 1 (GRS Station No 19800), 2 (GRS Station No 19801), 3 (GRS Station No 19802) and 5 (GRS Station No 33865) as listed on the application must continue to be monitored with totalizing flow meters. These flow meters must maintain 95% accuracy, be verifiable and be installed according to manufacturer's specifications.</p> <p><i>Comments:</i></p> <p>Please refer to <i>Comments</i> for Condition 18.</p>
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<b>?</b>	<b>Condition 17</b>	<b>Compliance Unknown</b>
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<p>The permittee must maintain all flow meters. In case of failure or breakdown of any meter, the District must be notified in writing within 5-days of its discovery. A defective meter must be repaired or replaced within 30-days of its discovery.</p> <p><i>Comments:</i></p> <p>The permittee has not reported to the District that any defective flow meters were repaired or replaced.</p>
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<b>X</b>	<b>Condition 18</b>	<b>Out of Compliance – 4 violations (4 meters) with 0 citations</b>
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<p>The permittee must have all flow meters calibrated once every 3 years within 30 days of the anniversary date of permit issuance, and recalibrated if the difference between the actual flow and the meter reading is greater than 5%. District Form No. EN-51 must be submitted to the District within 10 days of the inspection/ calibration.</p>
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*Comments:*

Although the permittee was issued a CUP with a 2-year expiration date, flow meters must be tested for accuracy every 3-years and calibrated or replaced (if necessary). The CUP was transferred from Florida Water Services to AU during the application for modification, and the permittee agreed to comply with the conditions for the permit as documented in a notice of transfer letter dated 07-01-04 to Jim Lemine from Glenn LaBrecque.

There were no GRS digital or file hardcopy records documenting that the flow meter for PW-1 had been tested for accuracy within the last 3-years.

The District received EN-51 flow meter accuracy reports from Florida Water Services on 01-14-04 for PW-2 and PW-3 flow meter tests performed on 12-17-02. There was no documentation that the flow meters for these wells have been tested for accuracy within at least 4-years.

PW-4 was modified to a monitoring well (MW-4) and does not require a flow meter.

The well completion report (GRS 80815) indicated that PW-5 was completed on 12-23-02. Assuming that a new flow meter was installed with the new well, this well has been operating without a flow meter accuracy test for about 4-years.

The EN-51 reports were not entered into the GRS compliance submittals with the TSR, and the District has not provided the permittee with courtesy notification of the need for meter testing.

✓	Condition 19	In Compliance
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Total withdrawal from each well, as listed on the application, must be recorded continuously, totaled monthly, and reported to the District at least every six months using District Form No. EN-50

<u>Reporting Period</u>	<u>Report Due Date</u>
January – June	July 31
July – December	January 31

*Comments:*

For 4 reporting periods, the permittee submitted water use reports an average 20.5-days before the required submittal date.

07-19-05 The District received EN-50 water use reports for Jan – Jun 2005 (12-days before the required submittal date).

01-09-06 The District received EN-50 water use reports for Jul – Dec 2005 (22-days before the required submittal date).

07-05-06 The District received EN-50 water use reports for Jan – Jun 2006 (26-days before the required submittal date).

01-09-07 The District received EN-50 water use reports for Jul – Dec 2006 (22-days before the required submittal date).

X	Condition 20	Out of Compliance – 3 violations with 0 citations
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Combined withdrawals from Wells 3 and 5 shall not exceed 12.00-mg in any month.

*Comments:*

The monthly combined withdrawal of ground water from Wells 3 and 5 exceeded the 12.00-mg combined withdrawal threshold for 3-months (12%) of the 24-month period:

- The May 2005 withdrawal of 12.93-mg exceeded 12.00-mg by 0.93-mg (about 8%).
- The Apr 2006 withdrawal of 13.50-mg exceeded 12.00-mg by 1.50-mg (about 12%).
- The May 2006 withdrawal of 13.71-mg exceeded 12.00-mg by 1.71-mg (about 14%).

The monthly combined withdrawal of ground water from Wells 3 and 5 was below the 12.00-mg combined withdrawal threshold for 21-months (88%) of the 24-month period.

The average combined withdrawal of ground water from Wells 3 and 5 for the 24-month period was 10.67-mg, which was 1.33-mg (about 11%) below the 12.00-mg combined withdrawal threshold.

<b>?</b>	<b>Condition 21</b>	<b>Compliance Unknown</b>
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Maximum daily groundwater withdrawals for essential use, for fire protection must not exceed 2.88-mg.

*Comments:*

The permittee has not reported to the District that water has been withdrawn for fire protection.

<b>✓</b>	<b>Condition 22</b>	<b>In Compliance</b>
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The lowest quality water source, such as reclaimed water or surface/storm water, must be used as irrigation water when deemed feasible pursuant to District rules and applicable state law.

*Comments:*

District staff concluded during review of the CUP modification application that it was not feasible to make use of reclaimed water over the recommended duration of this permit.

<b>X</b>	<b>Condition 23</b>	<b>Out of Compliance – 2 violations with 2 citations</b>
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The permittee shall install a monitor well (MW-1) to monitor water quality in the basal horizon of the upper production zone of the upper Floridan aquifer no later than October 31, 2005.

*Comments:*

- 07-20-05 Cheryl Astey sent Brian Heath a NOV letter regarding installation of MW-1.
- 09-12-05 Gary Eichler (Connect Consulting) sent Bill Adams an email message with an attached map representing the proposed location for MW-1.
- 09-13-05 Bill Adams sent Gary Eichler an email message indicating the proposed location was not acceptable.



- 09-14-05 Bill Adams received from Gary Eichler an email message with an attached map representing possible locations for MW-1.
- 09-20-05 Bill Adams sent Gary Eichler an email message indicating the proposed location was not acceptable and proposed alternative locations.
- 11-14-05 Bill Adams received from Gary Eichler an email message providing more information regarding the proposed location for MW-1 (AU Brian Heath, Phil Maio and Candice McClure received a cc).
- 11-16-05 Bill Adams sent Gary Eichler an email message approving the monitoring well location near the intersection of Snow Hill Road and Vista Cove.
- 12-13-05 Bill Adams received from Gary Eichler an email message with same day notification that construction would begin on MW-1 (AU Brian Heath, John Lihvarcik, Jaime Uchuya and Candice McClure received a cc).
- 01-04-06 Jim Frazee received from Gary Eichler an email message with the MW-1 completion report (Bill Adams and Shannon Joyce received a cc).
- 01-04-06 Bill Adams sent an email message to Jim Frazee and Shannon Joyce reporting that there was too much open hole in the monitoring well to meet the objective of the permit condition.
- 01-05-06 District staff exchanged internal email messages regarding the depth of MW-1 and consistency with the requirement to monitor the basal horizon of the upper production zone of the UFA.
- 03-27-06 Bill Adams sent Glenn LaBrecque a letter reporting that the open hole interval for MW-1 was not constructed to isolate the basal horizon of the upper production zone of the UFA and proposed packer installation for correcting the problem.
- 06-21-06 Bill Adams and Gary Eichler exchanged email messages regarding ideas for modifying MW-1.
- 06-28-06 District staff exchanged internal email messages regarding potential enforcement for out of compliance items.
- 06-29-06 Gary Eichler sent Bill Adams an email message reporting that a letter would be provided that outlined a proposed alternative sampling protocol for review and approval (Shannon Joyce received a cc).
- 10-19-06 Gary Eichler sent Bill Adams an email message with an update on the MW-1 sampling protocol (Jerry Connolly and Phil Maio received a cc).
- 01-12-07 Bill Adams sent Gary Eichler an email message requesting the status for modification to MW-1. Gary Eichler replied with an email message that the well had been modified but additional work was still required.
- 01-23-07 Gary Eichler sent Bill Adams an email message documenting construction modifications to MW-1.
- 01-24-07 Bill Adams sent Gary Eichler an email message with confirmation that the District received the well construction report documenting the modification.
- 02-13-07 Bill Adams sent Gary Eichler an email message requesting additional information for the MW-1 modification to resolve construction detail

inconsistencies for the well completion reports submitted by Connect Consulting and the drilling contractor.

02-22-07 Gary Eichler met with Bill Adams, Jim Frazee and Jim Lemine at the ASSC to clarify construction modification details for MW-1.

The well completion report submitted to the District indicated that MW-1 was completed on 12-16-05, which was 46-days beyond the 10-31-05 required completion date. The open hole interval for the well extended from 134-feet through 240-feet below ground surface (bgs), which spanned the entire upper production zone of the Upper Floridan aquifer (UFA) and not the basal production zone of the UFA. MW-1 was not constructed according to the criteria specified in the condition.

The well completion report submitted to the District indicated that modification to MW-1 was completed on 11-15-06, which was 380-days beyond the 10-31-05 required completion date and 332-days beyond the 12-18-05 well completion date. The open hole interval for modified MW-1 extended from 240-feet through 260-feet bgs, which may monitor the lower middle portion of the upper production zone of the UFA. The marker bed for the contact with the lower production zone of the UFA occurred from 317-327 feet bgs at the WTP #2. Although MW-1 is located about 0.5-miles northeast from WTP #2, it may be possible that the well need to be drilled about 70-feet deeper in order to reach the required monitoring horizon.

<b>X</b>	<b>Condition 24</b>	<b>Out of Compliance – 10 violations with 6 citations</b>
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The permittee shall collect groundwater samples from Well 1 (GRS Station No. 19800), Well 5 (GRS Station No. 33865), Well 4 (GRS Station No. 33971), and MW-1 in January, April, July, and October of each year of this permit. The permittee shall notify the District of the date on which samples will be collected 14 days prior to each sample collection event and shall afford the District the opportunity to split samples at the time of each sample event. Sample collection and handling procedures shall be performed by a qualified person and shall follow the requirements of all relevant Florida Department of Environmental Protection Standard Operating Procedures (DEP SOPs). Analyses shall include field measurements of temperature, pH, and specific conductance following DEP SOPs and laboratory measurements of chloride, sulfate, carbonate, bicarbonate, calcium, magnesium, sodium, and potassium. Laboratory analyses shall be performed by a laboratory that has been certified to perform the specified analyses by the Florida Department of Health Environmental Laboratory Certification Program. The permittee shall submit a report of each sample event's data no later than 30 days following collection of the samples. The report shall include field sample data records and calibration records for field measurements, chain of custody records, Piper diagrams of the major ion data, and laboratory reports for laboratory measurements.

*Comments:*

Production wells PW-1 and PW-5 and monitoring well MW-4 were sampled from the 2<sup>nd</sup> Q 2005 through the 1<sup>st</sup> Q 2007. MW-1 was sampled for the 1<sup>st</sup> Q 2006, but not for 3<sup>rd</sup> Q 2005 through 4<sup>th</sup> Q 2006 because the open hole portion of the well did not monitor the correct horizon. Modification to MW-1 was completed on 11-15-06, but a sample was not collected during the 1<sup>st</sup> Q 2007 sampling event. Water samples were analyzed for the parameters as required under the condition.

14-Day Advance Notification

There is no documentation that advance notification was provided for 4 of 8 sampling events (2<sup>nd</sup> Q, 3<sup>rd</sup> Q and 4<sup>th</sup> Q of 2005 and 1<sup>st</sup> Q 2006). The average advance notification for 4 sampling events was about 10-days.

- 04-05-06 Bill Adams received from Bill Trendel an email message with advance notification that the 2<sup>nd</sup> Q 2006 water quality sampling would be performed on 04-20-06 (15-day advance notification).
- 07-16-06 Bill Adams received from Candice McClure an email message with advance notification that the 3<sup>rd</sup> Q 2006 water quality sampling would be performed on 07-27-06 (10-day advance notification).
- 10-23-06 Bill Adams received from Candice McClure an email message with advance notification that the 4<sup>th</sup> Q 2006 water quality sampling would be performed on 10-31-06 (8-day advance notification).
- 01-18-06 Bill Adams received from Candice McClure an email message with advance notification that the 1<sup>st</sup> Q 2007 water quality sampling would be performed on 01-26-07 (8-day advance notification).
- 01-23-07 Jim Lemine received from Candice McClure an email message reporting that the 1<sup>st</sup> Q 2007 water quality sampling was changed from 01-26-07 to 01-29-07 (6-day advance notification).

#### Sampling Procedures

AU Chuluota WTP staff performed the 2<sup>nd</sup> Q 2005 water quality samplings, and Andreyev Engineering staff performed the 3<sup>rd</sup> Q 2005 through 1<sup>st</sup> Q 2007 water quality samplings. Sampling protocol generally conformed with FDEP SOPs with respect to calibration of field equipment and measurement of field parameters (temperature, pH and specific conductivity to stabilization).

#### Laboratory Analytical Results

Although anion-cation balances were not required under the condition, the anion-cation balances were less than 10% difference for all results except PW-1 10-31-06 (29.2%) and PW-5 10-31-06 (-20.3%), and less than 5% difference for all results except MW-4 07-27-06 (-6.5%) and PW-5 07-21-05 (8.4%) and 04-20-06 (6.9%).

#### Laboratories

Harbor Branch Environmental Laboratories, Inc. performed the water quality chemical analyses for the 2<sup>nd</sup> Q 2005 sampling.

PC&B Environmental Laboratories, Inc. performed the water quality chemical analyses for the 3<sup>rd</sup> Q 2005 through 1<sup>st</sup> Q 2007 samplings.

Harbor Branch and PC&B laboratories are both certified under the Florida Department of Health Environmental Laboratory Certification Program.

#### Submittals of Laboratory Analytical Results for Water Quality Samplings:

The District received the laboratory analytical results for the water quality samplings within 30-days from the sampling date for every quarterly sampling except for the 4<sup>th</sup> Q 2006.

- 05-16-05 The District received the 2<sup>nd</sup> Q 2005 laboratory analytical results for the water quality samples collected on 04-28-05 (18-days).

- 08-15-05 The District received the 3<sup>rd</sup> Q 2005 laboratory analytical results for the water quality samples collected on 07-21-05 (25-days).
- 11-01-05 The District received the 4<sup>th</sup> Q 2005 laboratory analytical results for the water quality samples collected on 10-12-05 (20-days).
- 02-15-06 The District received the 1<sup>st</sup> Q 2006 laboratory analytical results for the water quality samples collected on 01-27-06 (19-days).
- 05-08-06 The District received the 2<sup>nd</sup> Q 2006 laboratory analytical results for the water quality samples collected on 04-20-06 (18-days).
- 07-27-06 The District received the 3<sup>rd</sup> Q 2006 laboratory analytical results for the water quality samples collected on 07-16-06 (11-days).
- 02-27-07 The District received the 1<sup>st</sup> Q 2007 laboratory analytical results for the water quality samples collected on 01-29-07 (29-days).
- 03-06-07 The District received the 4<sup>th</sup> Q 2006 laboratory analytical results for the water quality samples collected on 10-31-06 (126-days).

Water quality reports submitted include all of the required information except for the Piper plots. Staff has made numerous attempts to notify the permittee through letters, phone calls and emails regarding the missing Piper plots. The permittee has not included any additional Piper plots with reports submitted after a 03-15-06 response to two NOV letters.

Chronology of Violations and Notifications:

- 05-25-05 Cheryl Astey sent Brian Heath a NOV letter regarding permittee failure to include field equipment calibration measurements and Piper Plots with the 2<sup>nd</sup> Q 2005 report. No response received.
- 06-30-05 Cheryl Astey sent Brian Heath a 2<sup>nd</sup> NOV letter regarding permittee failure to include the requested information with the 2<sup>nd</sup> Q 2005 report.
- 03-15-06 The District received from Jaime Uchuya the information that was requested in 05-25-05 NOV letter.
- 01-19-07 Jim Lemine sent Candice McClure an email message reporting that the District had not received the laboratory analytical results for the 4<sup>th</sup> Q 2006 water quality sampling. No response received.
- 01-23-07 Jim Lemine sent Candice McClure another email message reporting that the District had not received the laboratory analytical results for the 4<sup>th</sup> Q 2006 water quality sampling. No response received.
- 02-15-07 Jim Lemine sent Jerry Connolly an email message reporting that the District had not received the laboratory analytical results for the 4<sup>th</sup> Q 2006 water quality sampling (Candice McClure received a cc). Jerry Connolly replied in an email message that he would discuss this with Candice McClure and the information would be provided to the District.
- 03-05-07 Jim Lemine sent Jerry Connolly another email message reporting that the District had not received the laboratory analytical results for the 4<sup>th</sup> Q 2006 water quality sampling (Candice McClure received a cc). Candice McClure replied in an email message that the information would be sent that afternoon.

<b>X</b>	<b>Condition 25</b>	<b>Out of Compliance – 4 violations with 0 citations</b>
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Within 18 months of the date of issuance of this permit, permittee shall identify viable, potential water supply partners including those that could provide water supplies or partner with the permittee in the development of water supplies. In addition, permittee shall identify potential water supply projects that could be implemented with these partners to secure the quantities of water necessary to meet permittee's projected demands through 2025 without unacceptable impacts to water resources and related natural systems. Permittee shall contact these potential partners to determine the viability of developing partnership agreements with them for the identified potential water supply projects. A written description of the potential partners and projects along with a description of the contacts between permittee and the potential partners and the viability of the development of partnership agreements shall be submitted to the District no later than October 31, 2006.

*Comments:*

The District has not received the submittal documenting these activities, and it was about 4-months overdue at the time of the review.

<b>X</b>	<b>Condition 26</b>	<b>Out of Compliance – 2 violations with 1 citation</b>
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The permittee shall continue to pursue an agreement to construct an inter-connect with other nearby reclaimed water systems to provide public access reclaimed water on a bulk basis to such reclaimed water systems. The permittee shall provide a status report by January 31 of each year for the duration this permit of actions taken in conformance with this condition and agreements reached as a result of those actions.

*Comments:*

04-11-06 Cheryl Astey sent John Lihvarcik a NOV letter for permittee failure to submit a status report describing the status of an agreement to construct a reuse water inter-connect with other nearby utilities. No response received.

05-18-06 Cheryl Astey re-sent the 04-11-06 NOV letter to Glen LaBrecque. No response received.

<b>?</b>	<b>Condition 27</b>	<b>Compliance Unknown</b>
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If the District determines that unacceptable saline water intrusion or salt water interface migration is occurring as a result of the withdrawals authorized by this permit, the District shall revoke the permit in whole or in part to curtail or abate the saline water intrusion.

*Comments:*

Based upon water quality laboratory analytical results, it appears that ground water quality has experienced salinity degradation over the decade. Statistical multi-variant regression analyses will be required for determining compliance with this condition.

<b>X</b>	<b>Condition 28</b>	<b>Out of Compliance – 6 violations with 0 citations</b>
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The permittee shall conduct hydrologic and photo monitoring at each of the six (6) wetland areas listed below:

- a. CPH #5, Unnamed Shallow Marsh, (Sec. 22, T. 21 S., R. 32 E.);
- b. CPH #21 Unnamed Shallow Lake/Marsh, (Sec. 21, T. 21 S., R. 32 E.);
- c. CPH #22 Unnamed Lake, (Sec. 21, T. 21 S., R. 32 E.);
- d. CPH #40 Bayhead, (Sec. 29, T. 21 S., R. 32 E.);
- e. CPH #41 Horseshoe Lake, (Sec. 29, T. 21 S., R. 32 E.);
- f. CPH #52 Marsh, (Sec. 21, T. 21 S., R. 32 E.).

The permittee shall install staff gauges and/or shallow wells (hereinafter referred to as monitoring devices) in each of the above-listed wetland sites. The monitoring devices and specific locations must be approved in writing by the District. The monitoring wells must be installed by a licensed water well contractor (as required in 373.336 (1)(b), F.S.), and all monitoring devices shall be surveyed to NGVD (1929) to an accuracy of +/- 0.01 foot. The permittee must submit station location and descriptor data electronically as spreadsheets in a District approved format. Station descriptor information must include: latitude/longitude, brief text site description, date of installation, type of instrument, installation entity, maintenance entity, and access instructions.

If another agency or utility is monitoring the same water body, then the same monitoring equipment/data can, upon written approval by SJRWMD, be used with the owner's consent. Data collection at all six (6) sites must be daily at midday. Water level monitoring must be initiated within 6 months of issuance of this permit.

At each wetland monitoring site, an elevation profile along a transect 150 feet in length must be surveyed such that 50 feet of the adjacent upland is included. If the adjacent upland consists of placed fill, then the transect may be limited to 120 feet in length, such that 20 feet of the adjacent upland is included. The location of each transect must be reviewed and approved by the District prior to survey. Soil elevations must be recorded at 5-foot intervals and wherever there is a change in soil profile and/or change in plant community to an accuracy of +/- 0.1-foot. Other environmental features such as current water level, cypress buttress inflection points, lower extent of lichen lines, upper extent of moss collars, watermarks, and palmetto lines must be surveyed, if present. A general description of the vegetation present at each vegetation zone must include the dominant species in each stratum and the presence of nuisance/weedy/exotic species. A full soil description must be made in the top 24 inches of soil at each of the transect elevations described above. If the soil survey depicts the soils as open water, then the soil description will occur out to a water depth of 3 feet, and depth to sediment surface, and depth of organic substrate will be recorded for the remaining intervals. The data collection described in this paragraph is a one-time event. Well completion reports for the piezometers will also be included in this report. The vegetation and soil survey must be submitted within 6 months of permit issuance.

Permanent photo stations must be monumented and panoramic photographs must be taken in September for each of the wetland monitoring sites, starting in 2005 and annually thereafter. These stations must be reviewed and approved by the District prior to monumentation.

Weekly rainfall data must be obtained for each monitored location from the nearest existing rain gauge approved by the District. The same rainfall station may be used for more than one monitoring site.

The following information must be recorded by the permittee for each monitoring site: water level (weekly without data loggers, daily with data loggers), rainfall (weekly), and pumping volume (weekly by well). Monitoring data must be submitted electronically as spreadsheets every six months in a District approved computer accessible format. Permittee must contact the District for specific details on how to submit the computer accessible information. This data must also be submitted as a legible paper copy (two copies) along with the EN-50 forms for the project. On January 31<sup>st</sup>, the permittee must submit an annual report summarizing the monitoring efforts. The report must include the panoramic photographs, and graphs summarizing the rainfall and monitoring data.

*Comments:*

- 03-31-06 Bob Fewster received from Bill Brammell of Johnson Engineering, Inc. (JEI) a phone call with notification that they had been retained to install the monitoring wells.
- 05-17-06 Bob Fewster received from Bill Brammell a phone call with notification that they were attempting to gain permission from landowners to site the monitoring well locations.
- 12-14-06 Bob Fewster received from Jerry Connolly a phone call with notification that JEI could gain access to only one location. Bob Fewster informed him that they were very late in getting the monitoring started and needed to get the one site started as soon as possible while attempting to gain access to the remaining monitoring sites.
- 01-16-07 Bob Fewster received from Bill Brammell a phone call reporting that they had obtained permission for 2 sites. Bob Fewster informed him that they needed to get the transects and monitoring well locations selected, and he would make a field site visit to review the proposed locations.
- 01-23-07 Bob Fewster received from Bill Brammell a phone call reporting that 4 sites had been set up for his review. A field site meeting was scheduled for 01-29-07.
- 01-29-07 Bob Fewster approved the locations for 4 monitoring sites during the field site meeting with Bill Brammell.
- 02-08-07 Bob Fewster received from Bill Brammell an email message requesting that only one monitoring well location be located in the Little Big Econ State Forest due to the reluctance of the DOF to allow access from monitoring additional locations in the forest.
- 03-15-07 Bob Fewster sent Bill Brammell an email message requiring that a total of 2 replacement monitoring well locations be selected so that the monitoring sites are replaced on a one-to-one basis.
- 04-02-07 The District received from Bill Brammell a report documenting the methodology for installing the ground water monitoring instruments and one-time biological monitoring for 4 sites (Jerry Connolly received a cc).

?	Condition 29	Compliance Unknown
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Wetlands, lakes, and spring flows may not be adversely impacted as a result of the consumptive use authorized by this permit. If unanticipated significant adverse impacts occur, the SJRWMD shall revoke the permit in whole or in part to curtail or abate the adverse impacts, unless the impacts can be mitigated by the permittee.

*Comments:*

District staff could not make this determination because the wetland monitoring data was incomplete at the time this CCR was written.



**Chuluota and the City of Oviedo:  
Average Use per Day per Customer  
And Calculations**

**Staff Witness Catherine A. Walker, P.E., M.B.A.**

**Source of Chuluota data: Response to SJRWMD's request for additional information regarding renewal of Consumptive Use Permit (CUP) No. 8362.**

**Source of Oviedo data: City of Oviedo's renewal application for CUP No. 8252.**

# CHULUOTA

## TABLE 1

### HISTORIC WATER USE

Last 5 years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. day (mgal)	Household Max. Day (mgal)	Commercial/Industrial Avg. day (mgal)	Commercial/Industrial Max. day (mgal)	Irrigation (urban landscape or common areas) (mgal)(ave. day)	Irrigation (urban landscape or common areas) (mgal) (max. day)	Water Utility (mgal)	Unaccounted for water (mgals)	Total Annual Avg. day (mgal)	Total Annual Max day (mgal)
2002	2,725	1,095	71					0	0			0.19337	
2003	3,079	1,237	96.1					0	0			0.295863	0.402677
2004	3,479	1,397	121.5					0	0			0.422705	0.572842
2005	3,500	1,406	114.4					0	0			0.4005	0.465564
2006	3,521	1,414	125.6					0	0			0.442319	0.549907
2007	3,541	1,422	134.8					0	0			0.477137	0.616268
19													

#### Table Definitions

\*Estimated 90% system efficiency, 5% commercial use and 95% household use of treated water

- Household Use: Amount sold or given to domestic customers. Typically includes 5/8 and 3/4 inch metered accounts. Includes private lawn irrigation.
- Population: Estimated number of residents served.
- # of Units: Number of residential units served.
- Per Capita Use: Use per person per household; Average household use (column 5) divided by population (column 2)
- Commercial/Industrial Use: Amount sold to commercial customers. Typically includes meters larger than 1 inch. Include bulk customers in this use.
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- Water Utility: Misc. monitored use (eg. fire protection, sewer flushing, construction use, & maint. features)
- Unaccounted Water: Unaccounted for water use. Obtained from an audit of system.
- Total Use: Sum of all uses - household + comm/ind. + irrigation + water util. = MOR's for year



CHULUOTA

TABLE 2  
PROJECTED WATER USE

Next 20 years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. day (mgal)	Household Max. Day (mgal)	Commercial/Industrial Avg. day (mgal)	Commercial/Industrial Max. day (mgal)	Irrigation (urban landscape or common areas) (mgal)(ave. day)	Irrigation (urban landscape or common areas) (mgal)(max. day)	Water Utility (mgal)	Unaccounted for water (mgals)	Total Annual Avg. day (mgal)	Total Annual Max day (mgal)
2008	3,952	1,587	140	0.520	0.676	0.0277	0.036	0	0	0.055	0.0615	0.6147	0.799
2009	3,955	1,589	140	0.5205	0.6766	0.0277	0.036	0	0	0.0554	0.0615	0.6152	0.8
2010	3,955	1,589	140	0.5205	0.6766	0.0277	0.036	0	0	0.0554	0.0615	0.6152	0.8
2011	3,955	1,589	140	0.5205	0.6766	0.0277	0.036	0	0	0.0554	0.0615	0.6152	0.8
2012	3,955	1,589	140	0.5205	0.6766	0.0277	0.036	0	0	0.0554	0.0615	0.6152	0.8

\*see table definitions from Table 1.



OVIEDO

TABLE 1

HISTORIC WATER USE

Last 5 Years	Past Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. Day (mgal)	Household Max. Day (mgal)	Commercial/Industrial Avg. Day (mgal)	Commercial/Industrial Max. Day (mgal)	Irrigation Avg. Day (mgal)	Irrigation Max. Day (mgal)	Water Utility (a) (mgal)	Unaccounted for Water (b) (mgals)	Total Annual Avg. Day (mgal)	Total Annual Max. Day (mgal)
2001	27,165	9,958	135	3.352	6.262	0.538	1.006	0.177	0.331	---	---	3.659	6.835
2002	28,012	10,250	136	3.110	6.292	0.517	1.046	0.145	0.293	---	0.051	3.822	7.734
2003	29,018	10,538	136	3.081	6.027	0.534	1.044	0.147	0.288	---	0.191	3.953	7.732
2004	29,928	11,140	137	3.348	6.895	0.482	0.993	0.168	0.346	---	0.092	4.091	8.424
2005	31,834	11,440	129	3.439	6.236	0.499	0.904	0.168	0.305	---	0.002	4.108	7.448
<b>Average</b>			<b>135</b>	<b>3.266</b>	<b>6.342</b>	<b>0.514</b>	<b>0.999</b>	<b>0.161</b>	<b>0.312</b>	<b>---</b>	<b>0.084</b>	<b>3.927</b>	<b>7.635</b>

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(a) City does not record Water Utility Use.

(b) Currently there is 2.1% unaccounted for water. Billing record water consumption exceeded MOR recorded water demand to City by 409,000 gallons in 2001

Table Definitions:

- Household Use: Amount sold or given to domestic customers. Typically includes 5/8 and 3/4 inch metered accounts. Includes private lawn irrigation. (from Billing Records).
- Population: Estimated number of residents served
- # of Units: Number of residential units served.
- Per Capita Use: Use per person per household; Average household use (column 5) divided by population (column 2)
- Commercial/Industrial Use: Amount sold to commercial customers. Typically includes meters larger than 1 inch. Include bulk customers in this use (from Billing Records).
- Irrigation Use: Amount used for common area irrigation owned or maintained by a public entity. This does not include areas privately owned areas or amounts previously accounted for under household use (from Billing Records).
- Water Utility: Misc. monitored use (e.g. fire protection, sewer flushing, construction use, & maint. features) (Not recorded)
- Unaccounted Water: Unaccounted for water use. Obtained from an audit of system (difference between Billing Records and MORs)
- Total Use: Sum of all uses - household + comm/ind. + irrigation + water util. = MOR's for year (from MORs)

OVIEDO

TABLE 2  
PROJECTED WATER USE

Next 20 Years	Projected Population	Number of Units	Per Capita Usage (gpcd)	Household Avg. Day (mgal)	Household Max. Day (mgal)	Commercial /Industrial Avg. Day (mgal)	Commercial /Industrial Max. Day (mgal)	Irrigation Avg. Day (mgal)	Irrigation Max. Day (mgal)	Water Utility (mgal)	Unaccounted for Water (mgals)	Total Annual Avg. Day (mgal)	Total Annual Max. Day (mgal)
2006	32,956	10,735	135	3.45	6.70	0.514	1.00	0.095	0.185	---	0.168	4.44	8.62
2007	34,078	11,100	135	3.41	6.62	0.527	1.02	0.145	0.282	---	0.173	4.59	9.63
2008	35,200	11,466	135	3.32	6.45	0.538	1.05	0.140	0.272	---	0.179	4.74	9.95
2009	36,322	11,831	135	3.25	6.32	0.547	1.06	0.168	0.327	---	0.185	4.89	10.27
2010	37,444	12,197	135	3.33	6.47	0.563	1.09	0.168	0.327	---	0.191	5.04	10.59
2011	38,490	12,538	135	3.42	6.65	0.579	1.13	0.168	0.327	---	0.196	5.18	10.88
2012	39,536	12,878	135	3.51	6.83	0.595	1.16	0.168	0.327	---	0.201	5.32	11.18
2013	40,583	13,219	135	3.61	7.01	0.610	1.19	0.168	0.327	---	0.207	5.46	11.47
2014	41,629	13,560	135	3.70	7.19	0.626	1.22	0.168	0.327	---	0.212	5.60	11.77
2015	42,675	13,901	135	3.79	7.37	0.642	1.25	0.168	0.327	---	0.217	5.74	12.06
2016	43,721	14,241	135	3.88	7.55	0.657	1.28	0.168	0.327	---	0.222	5.89	12.36
2017	44,768	14,582	135	3.98	7.73	0.673	1.31	0.168	0.327	---	0.228	6.03	12.66
2018	45,814	14,923	135	4.07	7.91	0.689	1.34	0.168	0.327	---	0.233	6.17	12.95
2019	46,861	15,264	135	4.16	8.09	0.705	1.37	0.168	0.327	---	0.238	6.31	13.25
2020	47,907	15,605	135	4.26	8.27	0.720	1.40	0.168	0.327	---	0.244	6.45	13.54
2021	48,953	15,946	135	4.35	8.46	0.736	1.43	0.168	0.327	---	0.249	6.59	13.84
2022	49,999	16,286	135	4.44	8.64	0.752	1.46	0.168	0.327	---	0.254	6.73	14.13
2023	51,046	16,627	135	4.54	8.82	0.768	1.49	0.168	0.327	---	0.260	6.87	14.43
2024	52,092	16,968	135	4.63	9.00	0.783	1.52	0.168	0.327	---	0.265	7.01	14.73
2025	53,138	17,309	135	4.72	9.18	0.799	1.55	0.168	0.327	---	0.270	7.15	15.02

PAGE 4

See table definitions from Table 1.

**Chuluota Area: New Homes/Additions  
Included in the Service Territory**

**Staff Witness Catherine A. Walker, P.E., M.B.A.**

**Source of Chuluota data: Response to SJRWMD's request for additional information regarding renewal of Consumptive Use Permit (CUP) No. 8362.**

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PAGE 1



TABLE 2  
PROJECTED WATER USE

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\*see table definitions from Table 1.