

# ORIGINAL

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(LICENSED IN TEXAS ONLY)

October 6, 2003

Mr. Ted Davis  
Division of Economic Regulation  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, Florida 32399-0873

RECEIVED FPSC  
OCT - 6 PM 2:51  
COMMISSION  
CLERK

Re: Service Management Systems, Inc.; PSC Docket No. 021228-WS  
Application for Staff Assisted Water and Sewer Rate Increase in Brevard County  
Our File No. 36082.02

Dear Ted:

After our telephone call last week, I contacted the management at Service Management Systems to determine why there appears to be some discrepancy between the information you had obtained from one employee at the Fire Marshall's office and that which I obtained from members of the management and engineering consultants for Service Management Systems. I am attaching hereto a copy of a letter from last January, outlining not only the course of action that the Utility intended to undertake in order to correct the concerns with the fire flow system as expressed by the Fire Marshall, but also noting that the system was in full compliance, even with the old pumps, as of January of this year. As far as flow testing, that had actually been undertaken in November of 2002 and passed.

In addition, I am attaching a copy of a letter from our engineer to an employee of the Fire Marshall dated September 15, 2003 advising that the new pumping facilities had been installed. I am also attaching a letter from PBS&J certifying that the construction has been completed.

I trust that with this information, you will agree that the Utility has complied with all requirements from the Fire Marshall and that while Mr. Taggart may not have been aware of these discussions, they have been ongoing and the Utility is now in full compliance.

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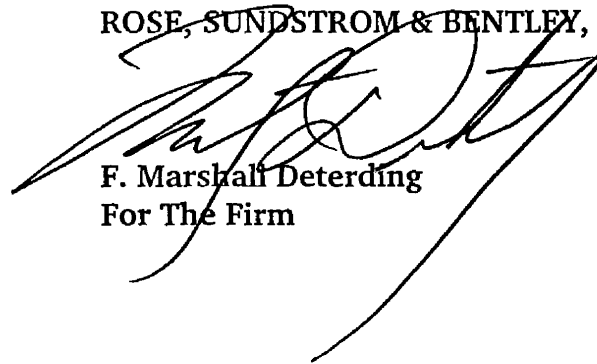
FPSC-COMMISSION CLERK

Mr. Ted Davis  
October 6, 2003  
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If you have any further questions in this regard, please do not hesitate to contact me. We would like to resolve this issue before the matter gets to agenda conference, in hopes that we can go to the agenda with a resolution of this case that is acceptable to both sides.

Sincerely,

ROSE, SUNDSTROM & BENTLEY, LLP



F. Marshall Deterding  
For The Firm

FMD\tms

cc: Blanca S. Bayo, Director  
Mr. Troy Rendell  
Ralph Jaeger, Esquire  
James Bates  
Marty Sadkin  
Robert Frazier, Esquire

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An employee-owned company

High Service Pumping System

January 14, 2003

Mr. Frank Scates  
Brevard County Fire Rescue  
2725 Judge Fran Jamieson Way  
Viera, FL 32940

Re: Aquarina P.U.D. Fire Protection System Improvements

Dear Frank,

As a follow-up to our telephone conversation last week, I'm enclosing for your information PBS&J's recommendations for modifying the Aquarina non-potable fire protection pumping system. Basically, we are recommending two new variable speed high service pumps to replace the existing fire protection and irrigation pumps. The use of variable speed pumps allows the system to respond to a broad range of flow demands, while eliminating the problems associated with water hammer. Each of the proposed high service pumps is capable of providing the ISO computed maximum fire flow of 1800 gpm at 50 psi. Thus, the new system will provide pumping redundancy. It should be noted, that the existing fire protection pumping system was tested by Brevard County on November 14, 2002 and found to be acceptable with the exception of minor hydrant maintenance, which has since be done. A copy of Mr. Scott Morissette's report is enclosed.

Enclosed is a letter from Service Management System's Inc. (SMS) outlining the actions being taken to implement PBS&J's recommendations. As you will note, SMS has contracted with Derrico Construction for installation of the improvements, and has also ordered the pumps from Custom Pump and Controls. We anticipate 8-10 weeks for pump systems delivery, and 30 days for installation and start-up. SMS has also retained PBS&J to inspect the construction.

As it relates to your recent review comments on the Aquarina Golf Course Clubhouse/Sales Trailer Addition (SP#02-12-002, 1<sup>st</sup> Review), I trust the enclosed information adequately demonstrates that SMS is actively responding to Brevard County's concerns regarding Aquarina's fire protection system. This fact, plus the fact that the existing in-place system is currently operational, should be sufficient to allow your approval of the site plan. If this is not the case, please contact me at your earliest convenience.

As always, your assistance is appreciated. Please call me should you have any questions or require additional information.

Respectfully,

**PBSJ**



Edwin R. Krug, P.E.  
Division Manager

## **AQUARINA PLANNED UNIT DEVELOPMENT EVALUATION OF NON-POTABLE WATER PUMPING FACILITIES**

### **Background**

Aquarina's water needs are divided into two categories, potable drinking water and non-potable irrigation and fire protection water. To reduce impacts to the shallow aquifer fresh water lens utilized by others in the region, the potable water needs of Aquarina have been met by drilling deeper wells into brackish water and using reverse osmosis to produce drinking water. Non-potable demands (irrigation and fire protection) were originally to be met by reclaiming and recycling the project's generated wastewater. However, since the volume of generated wastewater is insufficient to meet the project's non-potable needs, surface water is currently used. Due to past presence of aquatic life in the fire protection distribution system, surface water is no longer a source of non-potable water. Separate distribution systems for each use have been installed throughout the project.

The original facilities were designed for the ultimate build-out of the project. The actual development has been significantly reduced from the original build-out program, thus affecting the generation of wastewater and the volume of non-potable water needed for irrigation. The required fire flow remains large due to the presence of the first mid-rise multi-family building. The range between the lower irrigation flow requirement and the still high fire flow requirement creates a problem with pressure regulation and control of the system. This problem was addressed by converting the recirculation pump to an irrigation pump, with appropriate replumbing and control modifications. Since there have been no major fire type demands on the system, the lone irrigation/recirculation pump has been providing most all of the non-potable supply.

### **Proposed Facilities**

The recommended system modifications will use two pumps, each being capable of meeting the required ISO fire flow of 1800 gpm at 50 psi. Each pump will be controlled by variable frequency drives, capable of operating at slower speeds for varying irrigation flows and at a very low speed for the jockey pump function. This allows continuous operation at the lowest speed, but does not require the jockey pump, hydro-pneumatic tank, or air compressor. A timer will be used to provide pump alternation, keeping each pump regularly exercised. Variable speed drives will eliminate the potential of water hammer by virtue of a gradual buildup in speed and flow.

The existing piping and pump barrels will be reused to the maximum extent possible, with only new connecting pieces and possible new check valves. The existing irrigation pump will be left in place as a recirculation pump, since the need to direct reclaimed wastewater into the storage tank will be necessary once the plant flow reaches 100,000 gallons per day. The hydro-pneumatic tank, air compressor and jockey pump will be removed. This physical space will be used for the new variable frequency drive cabinetry. The existing control cabinet will become a junction box for connecting the power and control wires using the existing conduits. The existing emergency generator will be connected to the new pump system controls for operations during power outages.

### Estimated Construction Cost

Several pump manufacturers and models were examined. The recommended pumps have less pressure capabilities than the current pumps, but greater flow capabilities. This reflects the changes in build-out concepts since the original Aquarina development program. The recommended pumps are Layne Verti-line model 12FHL, 1770 rpm, 9.469" impeller, 60 horsepower. Each pump will include a variable frequency drive (VFD) unit in a NEMA 3R stainless steel cabinet, with a bypass contactor.

The estimate construction cost for the improvements is as follows:

Purchase price of the pumps, 2 at \$24,400 each	\$ 48,800
Purchase price of the VFD's, 2 at \$19,100 each	38,200
Contractor mobilization	600
Materials	800
Labor, including removal of the existing pumps and tank switch box, installation of the new pumps with tie-ins on successive days, installation of new electrical chase, and cleanup.	8,200
Electrical work, including the permits and installing the new controls, breaker, wires and conduits.	7,600
Sub-Total	\$104,200
Contingency (10%)	<u>\$ 10,400</u>
<b>TOTAL</b>	<b>\$114,600</b>



**BREVARD COUNTY**  
BOARD OF COUNTY COMMISSIONERS

**INTER-OFFICE  
MEMORANDUM**

To: Frank Scates

October 14, 2002

Subject: AQUARINA Water System

Frank on 10/14/02 I performed a hydrant (subdivision style) inspection on a new (un-named) street in Aquarina. There were 5 (five) new hydrants, they still needed blue reflectors, grease on the threads and bonnet colors painted. All hydrants achieved a 1250 gpm, within 30 seconds, of being fully opened.

On 10/14/02 I received a phone call from Ron of Aquarina advising that the reflectors had been provided.

A handwritten signature in black ink, appearing to read "Scott Morissette".

Scott Morissette, Fire Inspector



*An employee-owned company*

September 15, 2003

Mr. Frank Scates

Brevard County Fire Rescue  
2725 Judge Fran Jamieson Way  
Viera, FL 32940

**Re: Aquarina P.U.D. Fire Protection System Improvements**

Dear Frank,

Please be advised that the new Aquarina non-potable water fire protection pumping facilities have been installed, tested, and put into service. The new facilities include two pumps, each capable of meeting the required ISO fire flow of 1800 gpm at 50 psi. Each pump is controlled by variable frequency drives, capable of operating at a wide range of flows depending on system demand.

As always, your assistance regarding the Aquarina project is appreciated. Please call me should you have any questions or wish to schedule an inspection of the new facilities.

Respectfully,

The logo for PBSJ, featuring the letters 'PBSJ' in a bold, stylized font with an ampersand symbol integrated into the letter 'J'.

A handwritten signature in black ink, appearing to read 'Edwin R. Krug'.

Edwin R. Krug, P.E.  
Division Manager

C: James Bates (Service Management Systems, Inc.)

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An engineer-owned company

September 11, 2003

James Bales  
Service Management Systems, Inc.  
235 Hammock Shore Drive  
Melbourne Beach, Florida 32961

Dear Jim,

The new non-potable water pumping system at the Aquarina utilities site consists of two pumps designed for 1800 gallons per minute at 120 feet of head, one pressure transmitter at the pump pad and a control panel in a nearby building with the motor control center and variable speed drive built into it.

On September 8, 2003, the new non-potable water pumps were tested and performed satisfactorily in the automatic mode. Present at the tests were Robert Segerson of Derrico Construction Company (contractor) and his crew, C. J. Belmers, P.E. of PBS&J (engineer of record), Dixon Electric Co. (electrical subcontractor), Leslie Hardigree of Sta-Con, Inc. (controls supplier), Skip Darton of Custom Pump & Controls, Inc. (pump supplier) and members of the Aquarina staff.

The initial pressure set-point was 75 psi, which was satisfied by each pump running at less than 100% of its full speed. When a nearby hydrant was opened fully, the pump ran up to 100% as expected. The system was left in the automatic mode overnight.

A punch-list of minor items observed during the test is attached. The contractor has already begun addressing these items.

On the basis of the foregoing, PBS&J hereby certifies that the construction has been substantially completed as designed, with only the punch-list items remaining.

If you have any questions, please feel free to call.

Respectfully,

Charles J. Belmers, P.E.  
Project Engineer



*An employee-owned company*

October 2, 2003

James Bates  
Service Management Systems, Inc.  
235 Hammock Shore Drive  
Melbourne Beach, Florida 32951

Dear Jim,

As a follow-up to the non-potable water pump station test on September 8, 2003, I visited the site again on October 1, 2003 to verify that the punch list items had been completed, which they had.

On the basis of the foregoing, PBS&J hereby certifies that the construction has been completed as designed.

If you have any questions, please feel free to call.

Respectfully,

The logo for PBS&amp;J, featuring the letters 'PBS' in a large, bold, serif font, with an ampersand and the letter 'J' to its right.

A handwritten signature in black ink, appearing to read 'CJB'.

Charles J. Beimers, P.E.  
Project Engineer