

**MEETING OF THE ORLEANS  
BOARD OF WATER COMMISSIONERS  
February 4, 2009**

*Edwin Ass*  
TOWN OF ORLEANS  
TOWN CLERKS OFFICE  
**10 MAY 27 PM 2: 22**

A meeting of the Board of Water Commissioners was held Wednesday, February 4, 2009 in the Nauset Room, Town Hall:

Those present were Victor Noerdlinger, Kenneth McKusick, Hank Schumacher and Ann Hodgkinson of the Board, Lou Briganti, Water Superintendent. Absent was Robert Rich of the Board.

Victor Noerdlinger called the Board of Water Commissioners meeting to order at 1:05 p.m.

**MINUTES**

**Kenneth McKusick made a motion seconded by Ann Hodgkinson to approve the minutes of the meeting of January 7, 2009 as written. The vote by the Board was 4-0-0.**

**SUPERINTENDENT'S REPORT**

**SEE ATTACHED REPORT**

**DPW**

David Dunford, Chairman of the BOS informed the BOWC that they were awaiting a recommendation for implementation of the organizational study from John Kelly.

For the record, Kenneth McKusick noted that the BOWC had not been interviewed as part of the organizational study. David Dunford, assured the BOWC that they would be consulted prior to any change that would affect their charge.

**COMMITMENTS/ABATEMENTS/REFUNDS**

**A motion was made by Kenneth McKusick seconded by Ann Hodgkinson to commit for the month of January 2009 to rate \$0.00, to services \$560.00, to usage \$0.00, to installations \$6,047.16 and to added billing \$2,715.69. The vote by the Board was 4-0-0.**

**OTHER BUSINESS**

**METER READING**

During the meter reading process, it was discovered that approximately 10 accounts had been billed for zero consumption for approximately 2-4 years. The register had stopped communicating with the radio transmitter. The water Department requested permission to send letters with an offer to pay the amount now due over a two-year period without penalty.

**A motion was made by Ann Hodgkinson seconded by Kenneth McKusick to approve two-year payment plans without penalty for the accounts with a malfunction between the meter register and radio transmitter that resulted in zero consumption**

**billing.** The vote by the Board was 4-0-0.

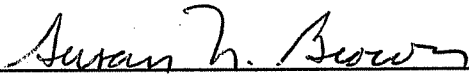
**MASTER PLAN**

The Board shall review the current Master Plan for the next meeting.

**ADJOURNMENT**

**At 2:00 p.m., a motion was made by Ann Hodgkinson and seconded by Hank Schumacher to adjourn the meeting. The vote by the Board was 4-0-0.**

The next regular meeting is scheduled for March 4, 2009 at 1:00 p.m.

  
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Secretary, Board of Water Commissioners

**Board of Water Commissioners**

**04Feb2009**

**Facility 1**

Much time has been spent installing the upgrades to Facility 1 – a good portion of each week in January.

Wells 1, 2, 3 and Facility no. 1 are all communicating via fiber optic cable through a new PLC in Facility no. 1. Chemical feed pumps are being installed to work with the new control and alarm capabilities of the system. SCADA modifications are 80% complete.

*The upgrades to Facility 1 and the replacement of SCADA1 and SCADA2 along with the upgrade of our RSView software (Rockwell International) will be treated as 1-project.*

*We have a commitment for all work to be completed by January 15 (February 12).*

**Leak Detection Grant**

During January, available leak detection equipment was investigated. Two equipment users were contacted and two vendors demonstrated their equipment.

Harwich and Orleans have decided upon Sewerin as the vendor of choice. We anticipate sharing the equipment on a quarterly basis. The equipment would be made available to either town in an emergency.

Next step will be to purchase the equipment once the money is in hand.

*Back in July the Water Dept. partnered with the Harwich Water Dept. to apply for a grant from the Mass DEP Water Conservation Grant Program. We have received notification that the grant was successful and the full amount of \$36,000 is being awarded.*

*The monies are to be used to purchase leak detection equipment that will be shared by the 2-Departments.*

**Meter Reading**

Meter reading began January 12<sup>th</sup>;

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- All readings were completed in 2-weeks.
- @2700 radio reads were collected in only 3-days.
- There were only 4-estimated reads.

This was a very smooth meter reading process – and a job well done by Sue Brown.

**NSTAR Electric**

The Cape Light Compact has provided additional assistance in reviewing the Water Dept.'s electric accounts. The review was completed by an ex-NSTAR Account Executive who now works for The Cape Light Compact.

Without drawing further attention to this issue – the correct and lowest electric rates are (and have been) applied to the Water Dept.'s accounts (including the wtp).

The assistance of the Cape Light Compact (Kevin Galligan & John Burns) is greatly appreciated.

*A review of the Dept.'s NSTAR accounts has revealed;*

- 1. The Water Dept. electric accounts are no. 33 – Small Commercial User.*
- 2. NSTAR does not analyze business rates for customers. They suggest hiring a consultant.*
- 3. NSTAR will examine an account if specifically requested. There can be a down side whereby NSTAR assigns a more expensive business rate if there has been a classification error (verified by Cape Light Compact).*
- 4. Having contacted 2-consultamnts there is little interest in just reviewing accounts and rate schedules.*
- 5. The Cape Light Compact verified that the Water Dept. accounts are G-1 which is the rate determined by the Compact. Well 7 may be an exception and if there is an error, the account will be corrected.*
- 6. Two years of electric data was emailed to the Cape Light Compact. They will "try" to have someone look at the Dept.'s accounts to assist with finding any options.*

**WTP**

**Membrane Performance**

On January 21<sup>st</sup> a conference call was held with Pall Corp. and Environmental Partners Group (EPG).

A summary of the teleconference is included with the Board's packet.

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To date Pall Corp. has provided recipe's for the typical and aggressive CIP's and agreed to the contents of the teleconference summary.

*With 1-year having passed since the aggressive chemical cleanings of each membrane rack, I have prepared a tentative schedule for 2009. Our plan will be to complete this year's aggressive cleans by March.*

**Watershed**

We have submitted a request for AmeriCorps. volunteers to again work with the Water Dept. in our watershed. The Tree Warden supports the work and is helping with the application process.

**Well no. 8**

- Met with Rise Engineering and Action Energy to pursue funds that might be available for energy compliant components of well no. 8 (i.e. motor & VFD). This is part of the continuing efforts of the Cape Light Compact.

*The application to construct well no. 8 was submitted to MA DEP 12/05/2008. Environmental Partners Group (EPG) forwarded completed copies of the plans along with the application. The plans were done in such a way as to help facilitate bidding of portions of the work. MA DEP acknowledged receipt of the application on 12/16;*

**Miscellaneous**

- Classification & Compensation analysis by D.I. Jacobs Consulting, Inc.

*Prepared a current- organizational chart and reviewed & provided comments to the job descriptions prepared for each Dept. staff member.*

*Each member of staff has been provided with a draft job description prepared by D.I. Jacobs Consulting, Inc. and subsequently interviewed for accuracy and comment.*

- DPW-Organizational Analysis by Matrix Consulting Group.  
Reviewed the final report (BOS 01/28/2009). No further comments were provided.

## MEMBRANE STATUS

The CIP/Permeability data provided in the spreadsheet 2008.12.26\_owd.PermSumm\_Pall2008.12.26.xls (via email 12/26/2006) - shows that there has been a declining recovery of permeability for each rack, over the past operating year. That is the time since the last Caustic/Chlorine CIP's ("strong cleaning") that achieved permeability's >6 GFD/psid at 20°C and which were done on each rack between January and February of 2008. Since that time, 2% Citric Acid CIP's have been performed at least every 8 weeks for each rack.

## CIP PROTOCOL

1. The typical or routine CIP is 2% Citric Acid.
2. Hydrochloric Acid has been used to spike 2% Citric Acid for a few CIP's (to insure the pH of the solution). It was suggested that Sulfuric Acid be substituted for Hydrochloric Acid in that it might be less aggressive to stainless steel. Sulfuric Acid was never used just as the use of Hydrochloric Acid was terminated. Pall Corp. does not recommend the use of Sulfuric Acid at this time. We would only consider the use of Sulfuric Acid if Pall Corp. provided authorization.
3. A Caustic/Chlorine CIP was recommended as a "strong cleaning". This protocol included pre- and post- 2% Citric Acid CIP's and was recommended as a one-time-only procedure, pending operating results. The goal is to achieve a permeability better than 5 GFD/psid at 20°C.

## O&M RECOMMENDATIONS

1. A 2% Citric Acid CIP should be performed on a rack when the TMP reaches a value of 20 psi.
2. Racks should receive the typical CIP after 8 weeks of operation, regardless of the value of TMP, or feed pressure.
3. The O&M manual specifies 35 psi as terminal TMP. This refers to the physical limits of the modules and does not take into account the individual nature and characteristics of the treatment facility. It is agreed that earlier attempts to increase the value of terminal TMP in order to achieve longer runtimes between CIP's were ineffective. These efforts resulted in permeability losses that could not be recovered with the 2% Citric Acid CIP and successively shorter runtimes between CIP's.
4. The Caustic/Chlorine CIP ("strong cleaning") should be performed once per year.
5. Lance will verify the Caustic/Chlorine CIP Recipe and provide it as a recommended procedure.
6. Orleans will begin Caustic/Chlorine CIP's once the procedure is verified.
7. For the O&M Manual Lance will support:
  - a. The operating limit before a CIP is performed is 20 psi TMP at 500 GPM flow.
  - b. A CIP should be performed after 8 weeks of operation, regardless of the value of TMP.
  - c. A Caustic/Chlorine CIP ("strong cleaning") should be performed annually.

## MEMBRANE REPLACEMENT

1. At this time, Orleans intends to begin replacing the membrane racks at the end of the current warranty that expires in 2010.
2. It is anticipated that Orleans will replace the ultra- modules with micro-.
3. The replacement will take place with 1-rack being replaced in each of 3 successive years.

4. It will be possible to operate with a mix of micro and ultra racks (i.e. 2 ultra-racks and 1-micro rack). The mix of membrane types will require operational and software accommodations.
5. Achieving a permeability of 4 to 4.5 GFD/psid at 20°C after a "strong cleaning" CIP will be considered indicative of significant irreversible losses where membrane replacement is recommended. That being said, the 4 to 4.5 GFD/psid is, at this point, an estimate. If this level of permeability is not achieved after the next "strong cleaning" CIP, then Pall corp. may consider other options to improve permeability.
6. It is anticipated that the trend of irreversible permeability loss will not be linear. The rate of loss is typically higher at the beginning and the end of membrane lifetime. Also, it is possible that fiber breakage could become an issue.