

05.17.2017

## May, 2017 Main Breaks Incident

To  
Board of Commissioners

From  
William Neal,  
General Manager

### Report on Main Breaks:

At approximately 5:30 am on Thursday May 11, 2017 there was a main break on Bay Avenue approximately 600 feet west of U Street. The cause of the main break was pipe defection due to soil erosion near the Pacific County drainage culvert where it crosses Bay Avenue.

The main was repaired by 9:20 am and shortly after that the crew began flushing the main in the area of the repair.

The control valve at the North Wellfield Booster Station failed during the flushing process which resulted in a momentary increase of pressure in the distribution system. We are not certain how high the water pressure got or for how long the increased pressure lasted. We know the pressure was in excess of 95 psi and for not more than five minutes.

The increased pressure caused two main breaks. Both main breaks were on 6-inch asbestos cement water mains. One main break was at the corner of 273<sup>rd</sup> and Sandridge, 273<sup>rd</sup> is the frontage street for Jolly Rogers Seafood. The other main break was located on Bay Avenue approximately 900 feet west of Vernon Avenue. The two main breaks were isolated within 30 minutes and repairs were started shortly thereafter. North Beach Water District and Surfside Homeowners Association have a Mutual Aid Agreement. Most of our customers out of water due to these main breaks are commercial customers. In an effort to minimize the time our customers would be out of water I called Surfside Water Department to help with the repairs.

All repairs were complete before 2:00 pm. Restoration of right-of ways was performed early the next week. Restoration for the main break on 273<sup>rd</sup> and Sandridge will require asphalt replacement. Nacelle Rock has been contacted and will replace the asphalt sometime in the next two weeks.

The District held a "lessons learned" meeting Friday May 12, 2017 at 2:00 pm. The meeting lasted for two hours. Those present at the meeting were:

## North Beach Water District

<b>Tel</b> 360.665.4144 <b>Fax</b> 360.665.4641	2212 272 <sup>nd</sup> Street. Ocean Park, WA 98640	<a href="http://www.northbeachwater.com">www.northbeachwater.com</a>
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Bill Neal, General Manager  
Jack McCarty, Office Manager  
Robert Hunt, Field Superintendent  
Dennis Schweizer, Treatment Plant Operator  
Jon Fleming, Senior Water Operator  
Joshua Maxey, Water Operator

The following issues were discussed during the meeting:

Cause of the main breaks;  
Response to main breaks;  
Response to customers;  
Safety;  
NBWD preparedness for emergency;  
Things we did well;  
Things we can improve on.

At the end of the meeting we determined the following:

The cause of the first main break was due to shifting and settling of soils near the recently replace culvert on the drainage ditch. There is very little that can be done to correct the soil condition but a possible solution would be to schedule the replacement of all AC and PVC pipe up to 10 feet on each side of the culvert with steel pipe.

The Clay Valve in the NWF Booster Station is unreliable and can cause catastrophic damage to the distribution system. The reason for the Clay Valve being unreliable has to do with age of the valve and improper orientation of the valve.

Correction Options:

1. Replace the Clay Valve with one that is properly oriented.

Pros: lowest initial cost. Can be completed in the least amount of time.

Cons: Control valves such as Clay Valves are not very efficient and require excessive energy to move water.

2. Install a new booster pump skid that operates off of variable speed drives. (such as the South Wellfield)

Pros: The booster pumps in the NWF Booster Station are near the end of their expected life cycle. Variable Speed Drives (Drives) do not do not need control valves to operate. Pumps controlled with Drives are very efficient reducing power required to pump water. Pumps controlled by Drives have greater life expectancy cycles. The telemetry system being installed by the DWSRF project is designed to integrate drives at the NWF Booster Station.

Cons: Highest initial cost.

The crew responded well to the main breaks. All main breaks were isolated quickly and repairs were completed in a timely manner.

We discussed right-of-way restoration requirements from our franchise agreements with Pacific County and WSDT. The crew will implement those restoration requirements into their SOP.

Jack reported that the ATT Office at Hand feature of the telephone system worked perfectly. The recorded message indicating a water main break greeted most of the over 100 telephone calls received in the first ten minutes of the second and third main breaks. This allowed Jack to contact all of the commercial accounts on our call list within 30 minutes of the main break.

During the discussion on safety it was noted that we did not have enough traffic cones or warning signs for the incidents. Jack and Jon will shop for traffic cones and traffic signs that are identified as belonging to NBWD.

It was also discovered that not all employees knew how to contact the PUD and Century Tel for emergency locates. Bob will train all employees on the procedure for requesting emergency locates.

During the NBWD preparedness discussion it came to light that there are many improvements that need to be implemented in this regard. First, we will organize our spare parts inventory so that we can easily find and identify the parts needed for making water main repairs. Bob and Jon will provide a list of parts needed for repairs along with parts for the inventory. Jack will inventory that list of parts on a weekly basis and place replacement orders to keep inventory at par levels. Joshua Maxey will be responsible for keeping the parts organized on the shelves. Each truck driver will be responsible for keeping inventory on their trucks.

During the discussion we noted that certain materials and tools for making repairs were not included in the tool inventory. We purchased two commercial cordless 1/2 inch impact drivers and two commercial reciprocating saw. We also purchased two commercial torque wrenches. These tools will be kept on the two service trucks. The drivers of the trucks will be responsible for the maintenance and repair of the tools. The battery chargers will be wall mounted near the exterior door in the crew room.

We also increased our inventory of repair couplings and bands. We needed to buy some repair couplings from Surfside to make all of the repairs for the day. We also purchased pipe pigs for all sizes of pipe. Pipe pigs are the only practical way to clean and disinfect the inside of pipe used for repairs. Pipe pigs are not expensive but due to chlorine damage will not last more than one repair.

Needless to say, all of these purchases will have a noticeable impact on the budget for safety equipment, tools, and parts.

**End of Report**

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