STATE OF WASHINGTON

DEPARTMENT OF HEALTH

20435 72nd Ave. S., Suite 200, K17-12 • Kent, Washington 98032-2358

December 19, 2000

DAVE DORLAND
ALDER LAKE WATER SYSTEM
PO BOX 20429
SEATTLE WA 98102

Subject: Alder Lake Water System (ID#26995H) Pierce County
Out of Water Incident - Need for a Reliable Source of Supply
Groundwater Under the Influence of Surface Water (GWI)
Hydraulic Connection - Disinfection Required (CT=6)

Dear Mr. Dorland:

In follow up to our telephone conversation on December 13th and 19th, 2000, I understand that the two wells supplying the Alder Lake water system went dry as a result of a historic low water level in the nearby Alder Lake. I appreciate your timely response to truck water to the reservoir on-site, but as you indicated, this is not a long-term solution. This letter summarizes the main issues of our conversation.

1. As a result of the out of water condition, we need to confirm that no contaminants were drawn into the distribution system as the system drained and experienced negative pressures. In our conversation, you indicated that the trucked water supply had a free chlorine residual of 1.5ppm prior to injection into the system and that the water mains were flushed to remove trapped air in the system. It is hoped that the available chlorine and flushing addressed any potential contamination incident; nonetheless, it is prudent to increase coliform monitoring during the period in which the system is supplied by trucked water. **Please collect 5 routine samples per month, every month, until otherwise notified by the department. Samples should be collected at representative locations in the distributions system. Please send a copy of your revised Coliform Monitoring Plan to DOH (guidance enclosed).**

   In addition, please advise the Alder Lake customers that the trucked water they are receiving from the Town of Eatonville may be incompletely treated groundwater that has been determined by the Department of Health to be "ground water under the influence of surface water". This means that the Eatonville water may be at a higher risk to contain surface water pathogens such as *Giardia* and *Cryptosporidium* than a completely treated surface water or protected groundwater supply. Customers of the Eatonville water system were provided with such notice from their purveyor. Please send the enclosed notice to your customers with a copy to DOH.

2. I understand that you and your well driller have done a preliminary assessment of existing wells and have found that groundwater resources in the area are limited and/or contain naturally occurring arsenic. You described a plan to attempt to deepen one of the two existing wells as soon as possible in an attempt to draw from the bottom of the unconfined aquifer. **Based on this assessment, I have no objections to the deepening of the well with the following provisions:**

i) Well construction is done in accordance with the Department of Ecology well drilling regulations WAC 173-160.

ii) A professional engineer prepares an as-built submittal of the well improvements (including, but not limited to: a new well log, depth to open interval or top of screened interval, results of a pumping test that shows the wells can meet maximum day demand while achieving a stabilized draw down for a minimum of 4 hours, well pump specifications with hydraulic calculations, and water quality results for bacteria, IOC, and VOC). The well can be placed on-line upon approval from DOH.

iii) A professional engineer submits a design for the install disinfection facilities to achieve a CT [concentration (C) x time (T)] of at least 6 at both of the existing wells ("Hypochlorination Checklist" is enclosed). Presumably the design would include a dedicated line to storage. Disinfection should be installed within 30 days of DOH approval.

3. The wells serving the Alder Lake water system are clearly in "hydraulic connection" to Alder Lake and are vulnerable to contamination from surface water pathogens such as *Giardia* and *Cryptosporidium*. As such, the following action is required per WAC 246-290-640:

   i) Provide disinfection to achieve a CT of at least 6 as described above.

   ii) Provide microscopic particulate analyses (MPA) results based on samples collected using a specific protocol (guidance enclosed). Please contact our regional GWI Program Manager, Jim Nilson 253/395-6764, for direction on the specific conditions of when to collect MPA samples.

   MPA monitoring results are used to determine whether the wells are limited to hydraulic connection or are confirmed to be under the direct influence of surface water. [Groundwater sources determined to be in hydraulic connection with surface water must be disinfected to achieve a CT of at least 6. Groundwater sources confirmed to be directly influence by surface water must be treated as surface water, i.e. filtration and disinfection].

Please respond to this letter with your schedule to address these issues. The Department of Health considers these issues a high public health priority. Please give me a call at (253) 395-6763 if you have any questions or concerns.

Sincerely,

Derek M. Pell, PE
Regional Engineer
NW Drinking Water Operations

Enclosures

cc: Rick Dickerson - Tacoma Pierce County Health Department
Carol Stuckey, Coliform Program - DOH
Jim Nilson, GWI Program– DOH