

From: Sybil Kolon
To: Fotouhi, Farsad
Date: 10/21/2005 2:30:29 PM
Subject: Re: Transmission Pipeline

Farsad,

We have reviewed your proposal to re-start the Evergreen System extraction wells (LB 1, LB 2 & AE-3) and conditionally approve your proposal as a temporary measure to control the leading edge of the Evergreen plume until a new method of handling the extracted groundwater can be implemented. We do have some comments and questions about this situation.

It is our understanding from the information you have provided that you believe the leak is close to the middle of the north transmission line, approximately under Jackson Road, at approximately 74 feet below the ground surface, into the already contaminated aquifer.

Conditions:

1. Every two weeks, collect and analyze samples from LB 1, LB-2 & AE-3 and from the north horizontal well for 1,4 dioxane and provide the data to the DEQ within one week of sampling (the purpose of this sampling is to determine the relative concentration of 1,4 dioxane leaking into the aquifer to the concentration present in the aquifer).
2. On November 8, 2005, and every two weeks thereafter, provide us with the daily extraction rates from LB 1, LB-2 & AE-3 and from the north horizontal well for the previous two weeks (the purpose of this data is to determine the net loss of water from the north transmission line).
3. As previously requested, collect and analyze a sample from the residential well at 545 Allison each month, as this well could be impacted due to the lack of extraction during the past month. This should continue until the DEQ is confident that this well is no longer threatened, or until the home is connected to the city water supply, which will be Pall Life Sciences' (PLS) responsibility if the DEQ determines this well is threatened with 1,4 dioxane contamination above 85 parts per billion.
4. Additional sampling and analysis may be requested as needed.
5. Provide us with a weekly update of your efforts to permanently resolve this problem.
6. Notify the DEQ when the Evergreen System extraction resumes and within 24 hours if the extraction wells are turned off.
7. The DEQ reserves the right to rescind this approval if we determine there is any threat to public health, safety, welfare or the environment.

We do not believe PLS adequately informed us about this situation. On July 19, 2005, I was informed by e-mail by Laurel Beyer that the north section of the transmission line had been shut down due to possible negative pressure. We received the July monthly NPDES report on August 11 and reviewed it on August 17, 2005. I saw that none of the Evergreen system purge wells had been on from July 19, 2005, through the end of the month. I immediately sent Farsad a note requesting the status of the extraction. Farsad informed me that the extraction had been resumed (on August 2, according to the NPDES report for August), that there was a loss of 25 gallons per minute into the (contaminated) aquifer, and that PLS was in the process of finding contractors who could photograph the inside of the pipeline and that putting a liner inside of the leaking pipeline was being considered. I spoke with Farsad briefly about the situation on September 9 and he had contact with at least two contractors but had not decided on a course of action. On September 19, 2005, we were informed that there was a loss of flow from the transmission line and that the Evergreen extraction wells had been turned off.

By October 31, 2005, please provide us with: 1) the daily flow rates from the north transmission line from July 1, 2005 to September 19, 2005; 2) more detailed information on your efforts to secure a contractor to address the north transmission line leak from July 1, 2005 to September 19, 2005.

As you are aware, the Consent Judgment (paragraph V.A.4.) requires PLS to continuously operate the Evergreen System. It is our intention to evaluate the information we have requested to determine if enforcement action is warranted under these circumstances.

Please contact me if you have any questions.

Sybil

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>>> "Farsad Fotouhi" <Farsad_Fotouhi@pall.com> 10/20/05 1:24 PM >>>
Pall has been actively investigating and attempting to repair the source of the leak(s) in the north horizontal transmission line. This work has involved jetting the line, camera investigations, and attempting to pass a cable through the line. The work Pall has done to date strongly suggests the leak or leaks are in the portion of the line that is within the 1,4-dioxane contaminated Unit D2 aquifer. Support for this position includes:

1. On October 3, 2005, a camera was inserted into the northern exit of the line (near Valley) and used to investigate a 470 foot section of the line. At a distance of 470 feet, the depth of the line would be approximately 855 feet above mean sea level (amsl). The top of the Unit D2 aquifer in this region is estimated to be approximately 840 to 860 feet amsl (based data from 98-02 and 96-01).
2. On September 30, 2005, a camera was inserted into the southern exit of the line (near Porter) and used to investigate a 120 foot section of line. At that point, the camera became submerged and the view of the line became obscured. At a distance of 120 feet, the line would be at an elevation of approximately 890 feet, placing it approximately 30 feet above the aquifer.
3. Jetting and work related to trying to insert a cable into the line all indicate scale build-up was greatest in the lower portion of the line (the horizontal section of the line).
4. On October 6th, a rod machine was located at Porter Street and the contractor began pushing a rod through the transmission line. On Friday, October 7th, a rod was pushed to 968 feet, at which time the rod became lodged and kinked behind the machine. The rod had to be cut from the machine and for the next two days, attempts were made to splice the rod together to achieve the full length of the transmission line. All attempts were unsuccessful. On October 12th, the rod machine was repositioned at MDOT property in an attempt to send the rod through the transmission line to attach to the rod which was then 968 feet inside the transmission line. When a total of 1,116 feet had been achieved, the rod once again kinked in the machine. The rod was cut and the contractor proceeded to hook the line to grab the line and pull it several hundred feet. However, due to the stress on the rod and the length attempted, the hook broke. Several days were spent, unsuccessfully, attempting to fish this line out. We believe that the difficulties encountered at 968 feet and 1116 feet relate to the condition of the line in these areas.

Our collective work strongly suggests that a leak or leaks from the transmission line would be in the contaminated Unit D2 aquifer. Water lost from the line

would eventually be captured, either by the northern horizontal well (which is extracting water immediately adjacent to the transmission line), or by the leading edge capture wells. As such, Pall proposes that groundwater extraction at the leading edge and use of the northern horizontal transmission line commence immediately, recognizing that a portion of the water from the leading edge will be returned to the aquifer during transmission. This loss, in the short term, will not effect capture of the plume. Pall will also attempt to increase the flow from the northern horizontal well to compensate for the water entering the aquifer in this area.

In the meantime, Pall will continue seeking a solution to this situation. Such solutions may include lining the transmission line, or installing a newer line. Both of these options are being evaluated at this time.

Please call if you have any questions.

Regards.

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