

## Tim Begley

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**From:** Chuck Burgess <cburgess@eceservices.com>  
**Sent:** Tuesday, November 03, 2015 2:08 PM  
**To:** Tim Begley  
**Subject:** Crossville Closed Landfill - Recent TDEC Letter  
**Attachments:** Letter from Doug Brady about Sampling Program 9-3-2015.pdf

Mr. Begley,

You recently received correspondence from Mr. Doug Brady with TDEC, Division of Solid Waste Management requesting you to "...incorporate appropriate measures to acquire representative ground water samples." The Division of Solid Waste Management has regulatory oversight over your closed landfill in its post closure period. TDEC's role consist of assessing landfill maintenance activities and compliance monitoring requirements to protect public health and prevent releases to the environment. Landfills must monitor required groundwater monitoring points during the course of operation and for a period of thirty years (30) after the date of closure, unless in assessment. Your facility has one upgradient and two down-gradient monitoring wells as part of your base groundwater monitoring system and recently TDEC added three surface monitoring points downgradient of the landfill of which we are currently monitoring one to assess a developing seep. The four sampling locations are monitored on a semi-annual basis for 64 parameters known to be typical in most waste streams, this is referred to as detection monitoring.

Landfill are permanent storage facilities for environmental contaminants and the purpose of detection monitoring is to obtain actual groundwater levels and utilizing statistical modeling to determine if a potential release is occurring to the groundwater. Over the course of monitoring your groundwater, we have seen seasonal and naturally occurring level spikes for all of the 17 required metals with no established trend indicating a potential release.

If a trend develops or TDEC directs, your facility is placed in Assessment Monitoring, which consist of monitoring quarterly for the 64 parameters or the enhanced appendix II list, a groundwater assessment plan, a one-mile well survey map and installation of a new groundwater monitoring well. Assessment monitoring will more than double your annual monitoring cost and potentially extend the 30-year monitoring requirement for your landfill. The letter you received touched on high turbidity in the groundwater samples obtained, and TDEC has been focused on finding a "representative groundwater sample" with low turbidity. We have been asked to field settle the samples, and laboratory filter the samples in an attempt to reduce the turbidity and ultimately lower the metal readings in the samples. It is the desire of Mr. Brady that landfills install sampling pumps to minimize turbidity during sampling with the hope of reducing the naturally occurring metal spikes. In the letter, he states that future MCLs exceedances will result in assessment monitoring. We provide monitoring for multiple landfill clients and any that enter assessment monitoring have not been allowed to return to detection monitoring. The Groundwater Assessment Plan required when entering assessment monitoring is to outline how you will assess the landfill for a release and the cleanup measures you will take to correct it. Even though no landfill have been allowed out of assessment, none has been pushed to the assessment and mitigation phase other than install a new monitoring well. This position by TDEC will likely change as we are see new focus for action on landfills in assessment monitoring.

As your consultant, It would be wise to consider installation of dedicated groundwater pumps in the three monitoring wells. It will give you consistent samples with lower turbidity levels, however there is no

guarantee it will prevent MCL and statistical exceedances and being placed in assessment monitoring. We would recommend to TDEC if you installed the sampling pump that you be allowed 2- 4 monitoring periods to evaluate the levels and allow any trends to develop, which could save you the same monitoring cost by preventing being placed into assessment monitoring at the end of this year, potentially. This saving will pay for the pump cost and give the ability to obtain the best sample possible.

The cost would be as follows:

- Initial Cost - Installation, pump, tubing, cable, and well head fittings - \$1575 / well
- The monitoring cost would change and we would need additional time at each well, pump controller equipment, and inert gas refills for an estimated cost of \$125 /sampling point with pump or \$375 per monitoring event based on three wells.

If you have any questions or need additional information, please let me know and I will gladly help.

Sincerely,



**Environmental & Civil Engineering Services**

A handwritten signature in black ink that reads 'Chuck F. Burgess P.E.'.

**Chuck F. Burgess, P.E.**

**Partner**

**931.484.9321**

**931.484.9322 FAX**

**[cburgess@ecservices.com](mailto:cburgess@ecservices.com)**

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