



State of Ohio Environmental Protection Agency

Northwest District Office

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Laura H. Powell, Acting Director

Re: Hancock County Landfill
Ground Water

January 31, 2007

Hancock County Board of Commissioners
300 South Main Street
Findlay, Ohio 45840

Dear Commissioners:

On December 18, 2006, the Ohio Environmental Protection Agency (Ohio EPA), Northwest District Office, received a document titled "Ohio EPA comments on the Groundwater Monitoring Report, Year Twelve, Second Semi-Annual Statistical Analysis Update" (dated July 28, 2006) for the Hancock County Sanitary Landfill (Facility), dated December 13, 2006. Ohio EPA reviewed the submittal to determine compliance with Ohio Administrative Code (OAC) Rule 3745-27-10. Below are Ohio EPA's comments regarding this submittal.

COMMENTS

RESPONSE TO CITED VIOLATIONS

1. Ohio EPA cited OAC Rule 3745-27-10 (C)(10) and OAC Rule 3745-27-10 (D)(5)(d) and indicated that the owner/operator was in violation of these rules by not providing the field analytical results for temperature, pH, and conductivity, as required, for silt zone wells SW-4, SW-5, SW-13, SW-14, and SW-15. These data were collected prior to the wells being purged dry, but were not collected for the water which subsequently recharged the well.

In response the owner/operator indicated that all data were reported within the 75 day limit and they do not believe they are in violation of OAC Rule 3745-27-10 (C)(10). The owner/operator also indicated that they provided all the data that they collected during the sampling event and they do not believe they are in violation of OAC Rule 3745-27-10 (D)(5)(d). The owner/operator also requested information which indicates the water analyzed was stagnant. The owner/operator did, however, indicate that their sampling and analysis plan requires the collection of temperature, pH, and conductivity data at the time of sampling if the wells are not sampled immediately after purging.

The owner/operator indicated that the sampling team will be reminded to measure field parameters when the wells are sampled if there is sufficient water. In addition the owner/operator requested clarification regarding the reference to a previous sampling event. Ohio EPA appreciates the owner/operator's efforts to ensure that this data will be provided in the future.

Regarding OAC Rule 3745-27-10 (C)(10) the owner/operator is correct. Since it is now clear that the owner/operator never collected the temperature, pH and conductivity results for the fresh water which reentered the well following purging the well dry, the owner/operator is not in violation of this rule.

Regarding OAC Rule 3745-27-10 (D)(5)(d), it is required, based on OAC Rule 3746-27-10 (C)(1) and (C)(1)(a), that the owner/operator utilize procedures that are designed to produce results that are an accurate representation of ground water quality. The results required by OAC Rule 3745-27-10 (D)(5)(d), therefore, must be representative of the ground water of the site. The field parameters that were determined were from water which potentially had been in the well since the last sampling event. Procedure requires that this "stagnant" water be purged from the well before fresh water, which is representative of the ground water of the site, can reenter the well. The owner/operator did provide field parameter results for the stagnant water, but did not meet the requirements of OAC Rule 3745-27-10 (D)(5)(d) by not determining values for the field parameters of the fresh water which is representative of the ground water of the site. This violation cannot be corrected. In order to prevent a violation in the future sampling events, the owner/operator should ensure that field parameters are measured in fresh ground water.

Regarding the reference to the previous sampling event, as indicated by the owner/operator the data was collected, but not provided to Ohio EPA as required by OAC Rule 3745-27-10 (C)(10) due to an "equipment malfunction". Because the data was not provided, the owner/operator was notified of a violation of this rule. It should be noted that in a submittal dated December 14, 2006, the owner/operator provided this missing information.

2. Ohio EPA cited OAC Rule 3745-27-10 (C)(1)(a) and indicated that the owner/operator was in violation of this rule by not purging the plan-required volume of water from wells SW-15 and SZ-2. The field data sheets for these two wells did not indicate that they were bailed dry and less than the plan-required minimum 3 volumes were removed.

The owner/operator responded that the wells were actually bailed dry, but this information was not noted on the field forms. The owner/operator also indicated that the information relating to whether the wells are purged dry will be noted on the field forms. To assist in completing this objective the forms have been modified. Because the information indicating that the wells were actually purged dry has been supplied to Ohio EPA the owner/operator is no longer in violation of OAC Rule 3745-27-10 (C)(1)(a). In addition, the owner/operator is reminded that any change to forms or procedures described in the sampling and analysis plan may require a change in the plan before these changes are implemented. Please refer to OAC Rule 3745-27-10 (A)(6).

3. Ohio EPA cited OAC Rule 3745-27-10 (C)(10) and OAC Rule 3745-27-10 (C)(1)(a) and indicated that the owner/operator was in violation of these rules by not following the plan and by not providing the plan-required well recovery data. The owner/operator responded that the wells recharge slowly and that the requirement in the plan to monitor the recovery of the wells will be removed from the sampling and analysis plan. The plan required information was not provided for this event or previous events. The owner/operator remains in violation of these rules. In order to return to compliance the owner/operator should provide the plan-required recovery data if available. If this information is not available, in order to prevent a violation in future sampling events, the owner/operator should ensure that recovery data is provided. It would be helpful if the owner/operator provided documentation how slowly these wells recharge. Based on data provided in the original January 2006 submittal, wells SW-4, SW-5, SW-13, SW-15, and SZ-4A will recharge soon after cessation of purging. There would be no need to wait as much as 23.9 hours to sample these wells.

Also, the owner/operator is reminded that OAC Rule 3745-27-10 (C)(1) requires that, "The ground water monitoring program shall include consistent sampling and analysis procedures and statistical methods that are protective of human health and the environment and that are designed to ensure monitoring results that provide an accurate representation of ground water quality at the background and downgradient wells installed in accordance with paragraph (B), (D), (E), or (F) of this rule." In addition, OAC Rule 3745-27-10 (C)(2)(c)(i) and (ii) requires that, "A sampling and analysis plan shall, at a minimum, include a detailed description of the equipment, procedures, and techniques to be used for the following: (c) Collection of ground water samples, including the following: (i) Well evacuation. (ii) Sample withdrawal." In general, therefore, it will be necessary to be able to demonstrate, with enough detail, how representative samples are collected. Samples of stagnant water are not considered representative. It may, then, be necessary to provide recharge information.

4. Ohio EPA cited OAC Rule 3745-27-10 (C)(10)(g) and indicated that the owner/operator was in violation of this rule by not providing the required practical quantitation limits (PQL) and the required method detection limits (MDL) for several herbicide analyses. The owner/operator responded with discussions from their laboratory. The laboratory provided the PQL and MDL values for the herbicides in question. Since the owner/operator has now provided the required information, the owner/operator is no longer in violation of OAC Rule 3745-27-10 (C)(10)(g).

RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION

5. Ohio EPA cited OAC Rule 3745-27-10 (C)(1) and indicated that compliance with this rule could not be determined at that time. Ohio EPA had requested information relating to the collection of representative samples from a number of wells which were not purged dry but were sampled the day after purging. The owner/operator responded by indicating that the wells were actually purged dry, but that information was not recorded on the field data forms. Ohio EPA also referenced several wells where the time between purging and sampling appears to be excessive.

Some of the wells which, it is now known, were purged dry, appear to recharge very quickly. The total volume purged from well SW-2 was 3.4 well volumes before it was purged dry; the total volume purged from well SZ-2 was 2.8 volumes before it was purged dry; and the total volume purged from well SZ-1A was 5.3 volumes before it was purged dry. These wells certainly recharge quickly. In order to determine compliance with OAC Rule 3745-27-10 (C)(1), the owner/operator needs to indicate how the collection of samples the next day when the wells recharge soon after being purged dry is a procedure that provides for the collection of samples which are representative of the ground water of the site. It would be appropriate to provide recharge rates for these wells.

6. Ohio EPA cited OAC Rule 3745-27-10 (B)(3)(e) and indicated that compliance with this rule could not be determined at that time. Ohio EPA had requested information on how well SZ-1A is meeting the requirements of OAC Rule 3745-27-10 (B)(3)(e). This well has consistently displayed high turbidity readings in samples. The well was allowed to set for 20.8 hours after purging before sampling and the turbidity reading was 299 NTU. The owner/operator responded that the well was properly installed using a 0.007 in. slot screen with a prepacked sand pack.

They indicated that the well will produce silty, turbid water since it is installed in a silt zone of saturation. They also indicated that it is unlikely that re-development would be effective in reducing turbidity. Ohio EPA appreciates the owner/operator's response. In the interest of producing lower turbidity samples, the agency encourages the owner/operator to investigate possible additional procedures to reduce turbidity in this well. The information submitted was sufficient to avert a violation.

7. Ohio EPA cited OAC Rule 3745-27-10 (C)(1) and indicated that compliance with this rule could not be determined at that time. Ohio EPA had requested information on how detections of several volatile organic compounds in the method blanks result in representative analyses of the samples collected at the site. The owner/operator responded that although they were detected in the method blank they were not detected in the samples. They also indicated that in the future the laboratory will provide an explanation when the quality control is outside acceptance limits. Ohio EPA appreciates the owner/operator's response. The information submitted was sufficient to avert a violation.
8. Ohio EPA cited OAC Rule 3745-27-10 (C)(1) and indicated that compliance with this rule could not be determined at that time. Ohio EPA had requested information relating to the purging of less than one well volume of water from well SW-13 when it was purged dry, and representativeness of the collected sample. The owner/operator's response speculated that the 0.9 volume noted on the field data sheet may have been an error caused by miscounting the number of bailers removed from the well. A corrected field data sheet was provided in the submittal. The information submitted was sufficient to avert a violation.

While purging dry is usually rather definitive, this issue underscores the need to utilize procedures that will produce representative data as required by OAC Rule 3745-27-10 (C)(1). Counting bailers, the method described by the owner/operator, can be problematic because of miscounting, accurate understanding of the volume of the bailers, the removal of partial bailers of water during purging, etc. While the field personnel likely purged the well dry and the owner/operator is likely in compliance with this rule they are encouraged to utilize a more positive method of purging including the utilization of a calibrated bucket.

9. Ohio EPA cited OAC Rule 3745-27-10 (C)(1) and indicated that compliance with this rule could not be determined at that time. Ohio EPA had requested information regarding significant differences in concentration recorded in the two samples of a duplicate sample set. A table of the values was provided by Ohio EPA.

The owner/operator responded that both samples were representative, but one was more turbid than the other. They also indicated that turbid water is expected in this well. In addition they indicated that the, "Proper order when collecting a duplicate sample is to fill all of the bottles for the "original" sample, then fill all of the bottles for the duplicate sample."

At least one of the samples in the duplicate set is not representative of the ground water of the site since it contains high concentrations of turbidity producing material. It is unknown if the other sample is representative of the ground water of the site. It appears that the owner/operator may be using an inappropriate method for collecting field duplicates. Field duplicates are samples collected as close to each other in time and space as practical at a specific location. Since it is practical to collect both samples in a duplicate set on a bottle for bottle basis, this is the procedure that should be followed. The purpose of field duplicates is to help determine if there are problems with the field or laboratory procedures. A significant difference between the samples in the duplicate set would suggest problems with one or both of these procedures. It appears that collecting the field duplicates in the manner described by the owner/operator above is not a consistent sampling procedure that will ensure monitoring results that provide an accurate representation of the ground water quality of the site as required by OAC Rule 3745-27-10 (C)(1).

Again, the owner/operator needs to explain how samples with significant differences between the two samples in the duplicate set result in representative data. The owner/operator also needs to indicate which, if either, result is representative of ground water for the site and provide evidence for their conclusion. If neither sample can be shown to be representative, neither should be used in the background data set.

- 10-19. These comments are recommendations and statements and no response is required for recommendations and statements. However, Ohio EPA believes it is important to respond to comment number 15 which is a statement.
15. Ohio EPA commented on the detection of herbicide 2,4,5-TP (Silvex) in the samples collected from upgradient well SW-02 and downgradient wells SW-04, SW-05, and SW-13 in November 2005. The agency indicated that a demonstration in accordance with OAC Rule 3745-27-10 (D)(7)(c) or OAC Rule 3745-27-10 (E)(9)(b), as appropriate, may be necessary. The agency also indicated that these wells should be considered affected relative to Silvex.

The owner/operator responded in part, "The largest concentration was detected in upgradient well SW-2, therefore Silvex's presence in the downgradient wells is not attributed to the landfill." Since the presence of Silvex was observed in these wells and since they are also in assessment for potassium; before returning to detection monitoring utilizing a demonstration consistent with OAC Rule 3745-27-10 (E)(9) the owner/operator is reminded that reinstatement must be approved by the director for both potassium and Silvex.

NEW VIOLATION

- A. OAC Rule 3745-27-10 (C)(1)(a): The owner/operator is in violation of OAC Rule 3745-27-10 (C)(1)(a). This rule states in part, "The owner or operator is required to use the procedures documented within the sampling and analysis plan." As noted by the owner/operator, the sampling and analysis plan, in section (C)(2)(c)(ii) Sample Withdrawal, states, "Field parameters will also be collected at the time of sampling if sampling does not occur immediately following purging." Since, based on the owner/operator's response to comment 1 above, the field analytical results for temperature, pH, and conductivity were not collected, as required by the plan, for silt zone wells SW-4, SW-5, SW-13, SW-14, and SW-15, the owner/operator is in violation of OAC Rule 3745-27-10 (C)(1)(a). The owner/operator needs to ensure that all required data is properly gathered and reported.

NEW REQUEST FOR ADDITIONAL INFORMATION

- B. OAC Rule 3745-27-10 (C)(1)(a): Compliance with OAC Rule 3745-27-10 (C)(1)(a) cannot be determined at this time. This rule states in part, "The owner or operator is required to use the procedures documented within the sampling and analysis plan." In the owner/operator's sampling and analysis plan on page (C)-12, in section (C)(2)(g)(i) the owner/operator states, "The field duplicate samples will be collected on a bottle for bottle basis following the same procedures as those used to collect the other samples." Based on the owner/operator's response to comment number 9 in the submittal, it is unclear how the duplicates in well SZ-1A were actually collected. It appears that they were collected on a set for set basis. That is, the entire set of bottles for one sample in the duplicate set was collected followed by the other entire set. In order to determine compliance with OAC Rule 3745-27-10 (C)(1)(a) the owner/operator needs to indicate if the field duplicates were collected on a bottle for bottle basis or on a set for set basis as suggested in their response.

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If you have any questions, please feel free to contact Randy Skrzyniecki at the Ohio EPA Northwest District Office (419) 373-3149. Any written correspondence should be sent to the attention of Jeremy Scoles, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,



Jeremy Scoles, S.I.T., CHMM
Environmental Specialist
Division of Solid and Infectious Waste Management

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