



State of Ohio Environmental Protection Agency

Northwest District Office

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Ted Strickland, Governor
Lee Fisher, Lieutenant Governor
Chris Korfeski, Director

Re: Operating Facility Ground Water Inspection
County Environmental of Wyandot
Wyandot County

December 5, 2008

Mr. Rick Kostelnick
County Environmental of Wyandot
11164 County Highway 4
Carey, Ohio 43316-9750

Dear Mr. Kostelnick:

County Environmental of Wyandot (Facility) is currently required to perform ground water detection monitoring, assessment monitoring and corrective measures activities at the facility. On November 10, 2008 the Ohio Environmental Protection Agency (Ohio EPA) completed a Operating Facility Ground Water Inspection (OFGWI). This letter documents the results of the November 10, 2008 OFGWI.

Ken Brock Division of Drinking and Groundwater (DDAGW) represented Ohio EPA during the inspection. Ground water sampling activities were performed by representatives of Eagon & Associates, Inc. of Columbus, Ohio. This inspection included the observation of Eagon's sampling procedures and surficial construction of all on-site monitoring wells/piezometers.

Attached is the inspection form. This form summarizes the inspection of the surficial well construction of the observed monitoring wells/piezometers noted above and also summarizes the inspection of the equipment and procedures used during the sampling event.

COMMENTS

Violations and Owner/Operator's Return to Compliance

1. **At the time of the September 9, 2008 inspection, the owner/operator was in violation of OAC Rule 3745-27-10(B)(3)(e) which regards the operation and maintenance of the monitoring wells and piezometers. At the time of the inspection, the landfill manager was notified of the needed repair/maintenance to monitoring wells/piezometers AW-1S, MW-1, BW-1, MW-3, MW-4, SW-1, SW-2, SW-10, SW-12, MW-5R, BP-7,**

BP-13, GP-37A, GP-40, GP-41, GP-44, SP-2, GP-5, GP-9 and BP-9. Approximately two weeks after the inspection, the landfill manager sent notification (via email) to Ohio EPA (including photos) that all of the needed repair/maintenance had been completed. Therefore, as all of the needed repair/maintenance has been completed, the owner/operator has regained compliance with OAC Rule 3745-27-10(B)(3)(e).

OAC Rule 3745-27-10(B)(3)(e) states, *"The monitoring wells, piezometers, and other measurement, sampling, and analytical devices shall be operated and maintained to perform to design specifications throughout the life of the monitoring program."*

As observed during the inspection, and as detailed in the attachment to this letter, the on-site monitoring wells required repair/maintenance. However, as noted above, all of the needed repair/maintenance has been performed.

Recommendations

2. **During the inspection, the sample bottles were kept in bags provided by the laboratory and were kept off potentially contaminated surfaces. Ohio EPA concurs with this procedure. However, the Ground Water Detection Monitoring Plan (GWDMP), Ground Water Quality Assessment Plan (GWQAP) and Ground-Water Corrective Measures Monitoring Plan (GWCMMMP) do not document that this procedure will be followed. Therefore, Ohio EPA recommends that the GWDMP, GWQAP and GWCMMMP be revised to document that the sample bottles will be off potentially contaminated surfaces.**

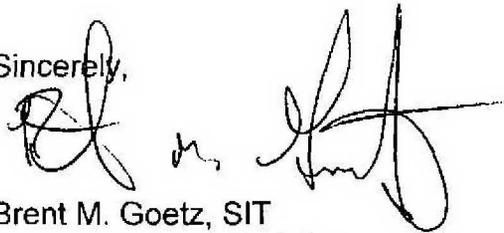
3. **Deviations from the GWDMP, GWQAP and GWCMMMP may be become necessary periodically, although they did not become necessary during the inspection. These plans do not document that necessary deviations from the plans during sampling events will be documented on the field forms. Ohio EPA recommends that the GWDMP, GWQAP and GWCMMMP be revised to document that any necessary deviations from these plans during sampling events be documented on the field forms.**

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December 5, 2008
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4. During the inspection, the sampling crew indicated that they intended to collect a matrix spike duplicate for the analytical laboratory (although this was not observed during the inspection). Ohio EPA concurs with this procedure. However, the GWDMP, GWQAP and GWCMMMP do not document that this procedure will be followed. Therefore, if matrix spike duplicate samples are being collected during sampling events, Ohio EPA recommends that the GWDMP, GWQAP and GWCMMMP be revised to document this procedure.

If you have any questions please feel free to contact Ken Brock at the Ohio EPA Northwest District Office (419-373-3143). Any written correspondence should be sent to the attention of Brent Goetz, Division of Solid and Infectious Waste Management, Ohio EPA Northwest District Office, 347 N. Dunbridge Road, Bowling Green, Ohio 43402.

Sincerely,



Brent M. Goetz, SIT
Environmental Specialist
Division of Solid and Infectious Waste Management

/csl

pc: Jeff Richey, Wyandot County Health Department
Tom Jenkins, Eagon and Associates
Joe Montello, Allied Waste

~~File: Wyandot Co., County Environmental of Wyandot, GW~~

ec: Ken Brock, DDAGW-NWDO
Jack Leow, DDAGW-NWDO, 5-8184
Mike Reiser, DSWIM-NWDO

2. The current SAP is : (circle one)		a stand alone document?	If another document, specify:	
		included in another document?		
3. Sampling and analysis procedures are often modified through correspondence between the regulated entity and Ohio EPA. A new revised SAP may not be generated as part of this process. If the current SAP has been modified through correspondence between the Ohio EPA and the regulated entity, please list in the space below, the dates of the correspondence and the modifications that were documented and approved.				
August 2006: Multiple revisions with modifications too complex to list herein				
Other Sources of Documentation				
The key document for review prior to observing field activities is the Sampling and Analysis Plan; however, it may be necessary to review other documents to establish the evaluation basis for the inspection. Which of the following documents were reviewed by Ohio EPA to determine the applicable monitoring and sampling requirements?				
Document:	Yes	No	N/A	Comments:
1. Approved Permit?		X		If yes, date approved:
2. Approved Closure Plan?		X		If yes, date approved:
3. Final enforcement actions between AGO/Ohio EPA and facility?		X		If yes, date signed:
4. Current Ground Water Detection Monitoring Plan (GWDMP)?	X			If yes, document date: August 2006
5. Current Ground Water Quality Assessment Monitoring Plan (GWQAP)?	X			If yes, document date: June 2006
6. Current Ground Water Compliance Monitoring Plan (GWCMP)?			X	If yes, document date:
7. Previous Ohio EPA inspection?	X			If yes, inspection date: 3/99, 4/02, 11/05
8. Other? Please specify _____				

Monitoring Well System

Maintenance & Sampling Information:	Yes	No	N/A	Comments:
1. Do the actual number, locations, and depths of the wells sampled correspond to the SAP or other governing document?	X			
2. Are the wells maintained properly? (Please refer to the attached <i>Ground Water Monitoring Well Inspection Form</i>)		X		See Comment No. 1
3. Are there bumper guards around the wells ?	X	X		At some wells
4. Are there additional monitoring wells or piezometers present at the site that are not currently used as part of the ground water monitoring program? a) If so, were they also inspected during this visit? b) If inspected, are they constructed/maintained properly? If inspected, please include these wells on the attached <i>Ground Water Monitoring Well Inspection Form</i> . If not inspected, please indicate why in the Comments column.	X	X		See Comment No. 1
5. Additional comments:				

Please note that for the purposes of this inspection, the terms *A monitoring well@* and *A well@* include piezometers (used to collect water level elevation data only) required by the SAP or other governing document.

Sampling & Analysis Plan Requirements and Field Procedures

Completing the ASAP Requirement section of the checklist is not meant to constitute a formal review of an already reviewed and approved SAP. It is meant to prepare the DDAGW geologist for the field inspection, where the implementation of the SAP is reviewed and evaluated.

The main purpose of the field inspection (along with a review of monitoring well maintenance) is to address whether the procedures and techniques required by the SAP were properly implemented. The questions posed here are not intended to encompass every detail that may be contained in a SAP. The comments column can be used to document, as necessary, any observations regarding SAP implementation not explicitly addressed by the questions. While the DDAGW geologist can comment if the approved procedures are inadequate to ensure collection of representative ground water samples and protection of human health and the environment, these comments would be considered recommendations.

Well Identification: Specify well numbers where ground water purging and sampling procedures were observed by Ohio EPA.	Wells: RW-2, SW-2, SW-1						
	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
1. Does the person performing the sampling have a copy of the most current SAP with him/her in the field or is one available at the site?		X		X			SAP says that crew will be knowledgeable of SAP, but SAP does not require that SAP be taken in field.
2. Measuring ground water levels/elevations (and surface water levels/elevations, if applicable), including:							
a) Measuring ground water levels (and if applicable, surface water levels) within a 24-hour period?	X			X			
b) Measuring ground water levels prior to purging and sampling?	X			X			
c) Measuring ground water levels (and if applicable, surface water levels) to an accuracy of at least 0.01 ft?	X			X			
d) Using a reference point established at the top of each well casing (and at each surface water sampling point, if applicable) to measure each water level?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
2. Measuring ground water levels/elevations, cont. :	X			X			Visual
e) Procedures for documenting and measuring both dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL)?							
f) Is the total depth for each well measured? If so, does it match the total depth of the well documented on the well log? If not, what is the facility's schedule for measuring and evaluating total depths?	X					X	When pumps removed or high turbidity, but not applicable this event.
g) Type(s) of device(s) used to measure water levels and total depths?	SAP: Elec. Meter			Field: Elec. Meter			
h) Are water levels used for determining ground water flow direction recorded on the field form with well purging and sampling information or on a separate field form?	SAP: Same form			Field: Same form			
3. Well Purging (Generic to all methods):	SAP:			Field:			
a) <u>Specify purging method(s) used for each well observed</u>							
(1) Volumetric Purge?	No			NA			
(2) Low Flow?	Yes			Yes			
(3) Minimum/No Purge?	No			No			
(4) Purge to Dryness	Yes			NA			
(5) Other: _____	NA			NA			
b) Type of equipment used to purge each well observed. (Type /material) (Note: Specify particular type of pump or bailer)	SAP: Bladder pump or bailer			Field: Bladder pump			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
3. Well Purging (Generic), cont. :	X			X			
c) Is purging equipment dedicated?							
d) If equipment is not dedicated, was the equipment properly decontaminated?			X			X	
e) If bailers are used, specify the type of cord used with the bailer.	SAP: Nylon			Field: NA			
4. For Volumetric Purging:	X		X			X	Didn't do volumetric purge this event.
a) Was the volume of water in the well column determined?							
b) Was the purging performed in a manner that minimizes mixing and aeration of the water column?	X		X			X	Didn't do volumetric purge this event.
c) <u>Were all SAP field stabilization parameters obtained to properly determine when purging is adequate?</u>	X		X			X	Didn't do volumetric purge this event.
(1) List stabilization parameters obtained:	SAP: pH, Temp, Cond.			Field: NA			Didn't do volumetric purge this event.
(2) Were stabilization parameters taken every 1 to 1 2 well volumes?	X		X			X	Didn't do volumetric purge this event.
(3) Was it demonstrated that three consecutive measurements were within their respective stabilization criteria?	X		X			X	Didn't do volumetric purge this event.
d) Were samples obtained immediately after purging?	X		X			X	Didn't do volumetric purge this event.
5. For Low-Flow Purging:	X			X			
a) Was water level drawdown measured during purging?							

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
5. For Low-Flow Purging, cont. :	X			X			
b) Was it demonstrated that drawdown stabilized?							
c) Specify location of pump.	SAP: In screen			Field: Not evaluated			
d) What was the purging rate?	SAP: <1 L/Min			Field: <1 L/Min			
e) <u>Were all SAP field stabilization parameters obtained to properly determine when purging is adequate?</u>				X			
(1) List stabilization parameters obtained:	SAP: pH, Temp. Cond.			Field: pH, Temp. Cond.			
(2) Were stabilization parameters taken every 3 to 5 minutes?	X			X			
(3) Was it demonstrated that three consecutive measurements were within their respective stabilization criteria?	X			X			
f) Were samples obtained immediately after purging?	X	X		X			May have to wait for dry wells
6. For Minimum/No Purge:			X			X	
a) If the pump was not dedicated, was the pump placed far enough in advance so that the effect of the pump installation has completely dissipated?							
b) Specify the location of the pump.	SAP: NA			Field: NA			
c) <u>Were steps taken to prevent stagnant water from entering the well?</u>			X			X	
(1) Was drawdown measured during purging?			X			X	

	SAP Requirement?			Field Implementation?			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
6. For Minimum/No Purge, cont. : c) (2) Was the amount of drawdown no more than the distance from the top of the screen and the position of the pump intake within the screen, minus a 2 foot safety margin maintained?			X			X	
(3) If other, specify .	SAP: NA			Field: NA			
7. For Purging to Dryness: Were samples taken as soon as sufficient water was available?	X					X	Wells observed weren't purged to dryness
8. Field parameters for ground water, surface water, and/or leachate, including: a) Are field analyses of temperature, pH, and specific conductance performed?	X			X			
b) Are field parameters checked after purging and before sampling?	X			X			
9. Ground water (and if applicable, surface water or leachate) sample collection, including: a) Specify sample collection methods and equipment used:	SAP: See above			Field: See above			
b) Is the ground water sampling equipment dedicated?	X			X			
c) If applicable, is the well sampling order from least to most contaminated?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation
	Yes	No	N/A	Yes	No	N/A	
9. Ground water sample collection, cont. :	X			X			
d) Are sample containers filled in order of parameter volatilization sensitivity, e.g., VOCs, SVOCs, total metals?	X					X	
e) If bailers are used, are samples collected in a manner which minimizes mixing and aeration of the well water column?	X					X	
f) Specify type of cord or wire used with sampling bailers:	SAP: Nylon			Field: NA			
g) If used, are bladder pumps operated in a manner that prevents sample aeration and minimizes sample turbidity?	X			X			
h) Are pumps (all types) operated at a rate low enough to prevent sample aeration and minimize sample turbidity?	X			X			
10. Calibration of field monitoring and analytical equipment:	X			X			
a) Is each device calibrated to its manufacturer's specifications?							
b) Is each device calibrated prior to use in accordance with the SAP?							
c) Are all calibration procedures and/or equipment maintenance (and the date(s) performed) documented on field forms or in a field log book?	X			X			
11. Equipment decontamination, including:				X			
a) If applicable, is all non-dedicated monitoring, purging, and sampling equipment decontaminated between sampling locations in accordance with the SAP?							

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
11. Equipment decontamination, including, cont. : b) Is clean or decontaminated sampling equipment placed on the ground or in other potentially contaminated areas prior to use?		X			X		See Comment No. 2
c) Are all decontamination fluids contained and disposed in accordance with the SAP?	X			X			
12. Purge water disposal, including: a) If previous monitoring results indicate that a well has not been contaminated, is all purge water disposed in an area where it cannot affect purging or sampling activities at any sampling location during the ongoing event?	X			X			
b) If previous monitoring results indicate that a well has been contaminated, or if the ground water is known to be contaminated, is all purge water properly contained, stored, transported, and disposed per applicable federal, state, and local laws?	X			X			
13. Field sample preparation, including: a) <u>Sample containers and handling</u> (1) Are all sample containers pre-cleaned and provided by the laboratory?	X			X			
(2) Are any samples field filtered prior to being transferred to their appropriate containers?		X			X		
(3) Are samples transferred directly from the sampling device to their appropriate containers in a manner that minimizes agitation and aeration?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
13. a) <u>Sample containers and handling, cont.:</u>	X			X			
(4) Are VOC sample containers completely filled to form a meniscus and capped in a prompt manner to minimize volatilization?	X			X			
(5) Are VOC containers checked for air bubbles after filling and capping?	X			X			
b) <u>Sample preservation (per SW-846, Revision 1, 12/96, Chapter 2, Table 2-36):</u>	X			X			
(1) To the extent applicable, are samples for all organic parameters, PCBs, chromium VI, phenols, coliform bacteria, oil and grease, pesticides, specific conductance, alkalinity, COD, cyanide, nitrate/nitrite, phosphorous, sulfate, sulfide, TDS, TOC, and/or turbidity immediately placed in a cooler with ice for preservation at 4° C?	X			X			
(2) Are VOC samples field-acidified to pH < 2 with HCl?	X			X			
(3) To the extent applicable, are samples for metals and/or radiological parameters (gross alpha, gross beta, radium); endrin; lindane; methoxychlor; toxaphene; 2,4-D; and/or 2,4,5-TP Silvex field-acidified to pH < 2 with HNO ₃ ?	X			X			
(4) To the extent applicable, are samples for phenols, oil and grease, ammonia, COD, nitrate/nitrite, phosphorous, TOX, and/or TOC field-acidified to pH < 2 with H ₂ SO ₄ ?	X	X		X	X		Ammonia - yes, Nitrate - no
(5) Are CN samples field-preserved pH>12/50% w/NaOH?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
13. Field Sample Preparation, cont. :	X			X			
c) Sample labeling:							
(1) Unique sample (field) identification number that clearly associates the sample and the sampling location?							
(2) Facility/site name?	X			X			
(3) Sample type (matrix) and date and time of collection?	X			X			
(4) Parameters and analyses requested?	X			X			
(5) Sample preservatives?	X			X			
(6) Name or initials of sampler and company affiliation?	X			X			
(7) Is an indelible pen or marker used to complete sample labels?							Unable to determine indelibility
(8) Are sample labels secured and protected to ensure legibility when delivered to the laboratory?	X	X		X	X		Secured – yes, protected - no
14. Field Quality Assurance/Quality Control (QA/QC), including:	X	X		X	X		Documented throughout this form.
a) Use of standard procedures that ensure the validity and reliability of field and laboratory data, as well as representative analytical results?							
b) Documentation of all deviations from SAP-required procedures?		X				X	See Comment No. 3

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
14. Field QA/QC, cont.:	X			X			
c) Collection of the following QA/QC samples in accordance with the SAP:							
(1) Duplicate samples?							
(2) Field blanks?		X			X		
(3) Equipment blanks?		X			X		
(4) Trip blanks?		X			X		
d) Collection of all necessary laboratory QA/QC samples (e.g., matrix spike, matrix spike duplicate)?		X		X			See Comment No. 4
15. Chain-of-Custody (COC) procedures, including:				X			
a) Are all SAP-required COC procedures followed? (If not, explain why.)							
b) Are standardized COC forms used to establish a complete custody record from the field to the laboratory for all samples?	X			X			
c) Is the following field and laboratory information properly documented on the COC form to provide effective sample tracking and to ensure that samples are not misidentified; are properly preserved; and are properly analyzed?							
(1) Address and contact information for the site/facility, laboratory, and, if applicable, all consulting firms performing sampling?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
15. Chain-of-Custody (COC) procedures, cont. :	X			X			
<i>c) (2) Unique sample (field) identification numbers that clearly associate the sampling location and sample?</i>							
<i>(3) Sample type (matrix) and date and time of collection?</i>	X			X			
<i>(4) Requested parameters, or a reference for the requested parameters?</i>	X			X			
<i>(5) Requested analytical methods, or a reference for the requested analytical methods?</i>	X			X			
<i>(6) Types of sampling containers used, or a reference for the types of sampling containers used?</i>	X			X			
<i>(7) Types of sample preservatives used, or a reference for the types of sample preservatives used?</i>	X			X			
<i>(8) Sample shipping information, including but not limited to the transporter(s), tracking #(s), and delivery time frame(s)?</i>	X			X			
<i>(9) Legible names (printed) and signatures of all field and laboratory personnel relinquishing and/or receiving the samples and inclusive dates and times of possession that provide a complete record of sample custody? (Names and signatures of commercial shipping personnel are not required.)</i>	X			X			
d) Are custody seals (signed by the sampler) placed on sample coolers prior to shipment to indicate if the cooler has been opened or tampered with during shipment?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
<p>16. Is the following sampling and water level elevation information properly documented on field forms or in a field log book for each well, surface water, or leachate sampling location observed?</p> <p>a) Monitoring program (detection, assessment, or compliance) identified?</p>		X			X		
b) Correct reference to well identification number or specific well location?	X			X			
c) Static ground water level (elevation), associated measurement technique, date, and time?	X			X			
d) Surface water level (elevation), associated measurement technique, date, and time?			X			X	
e) Total depth and associated measurement technique for each well?	X					X	
f) Presence and thickness of immiscible layers and associated measurement technique?	X			X			
g) Well purging procedures and all associated SAP-required information?	X			X			
h) Field analyses procedures and all associated SAP-required information?	X			X			
i) Sampling procedures and all associated SAP-required information?	X			X			
j) Field observations, including but not limited to unusual sample characteristics (appearance, odor, etc.), unusual well recharge rates, apparent well damage, potential contamination sources, and unusual climatic conditions?	X			X			

	SAP Requirement?			Field Implementation			Comments Regarding SAP Requirements and/or Field Implementation:
	Yes	No	N/A	Yes	No	N/A	
16. Field Log Forms/Log Book, cont. :		X				X	See Comment No. 3
k) Equipment malfunction(s)?		X				X	See Comment No. 3
l) Any deviations from the SAP and explanation of why such modifications were necessary?		X				X	See Comment No. 3
m) Sampling team personnel and company affiliation?	X			X			
17. Are copies of all field forms (and/or field log book), COC forms, and sample shipping documents stored at the site/facility as part of the operating record?		X			X		Upon report submittal
<p>Have all discrepancies between the SAP and the field implementation been described in the AComment@ section? Comments should include specific monitoring well (or other sampling) locations where deviations from the SAP and/or other regulatory requirements were observed.</p>							
<p>Additional Comments & Notes:</p>							

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

Wyandot Landfill
November 10, 2008

Well identification number:	AW-1S	AW-1D	MW-1	BW-1	MW-2	BW-2	MW-3	BW-3
Correct location?	Yes							
Clearly and correctly labeled?	Yes							
Locked prior to arrival at well location?	Yes							
Ground water depth:	12.01	9.32	7.74	7.24	8.31	7.02	8.30	4.77
Well total depth:	Not meas.							
For above ground completions:								
a) Protective outer casing present?	Yes							
(1) Condition?	Settled	Good	Settled	Settled	Good	Good	Good	Good
(2) Locking cap? Condition?	Good							
(3) Weep hole present?	Yes							
(4) Standing water between protective casing & well casing?	No							
b) Surface seal/apron present?	Yes							
(1) Condition?	Good	Good	Good	Good	Good	Good	Heaved	Good
(2) Poned surface water?	No							

Well identification number:	AW-1S	AW-1D	MW-1	BW-1	MW-2	BW-2	MW-3	BW-3
For flush mount completions:								
a) Well vault present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Covered with bolted vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Standing water in vault? Covering top of inner casing?	NA	NA	NA	NA	NA	NA	NA	NA
b) Surface seal/apron present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Raised at least slightly above grade and sloped away from the top of the vault?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Ponded surface water on top of vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
Well (inner) Inner well casing condition?	Good	Good	Good	Good	Good	Good	Good	Good
a) Material?	2" PVC	2" PVC	2" SS					
b) Survey reference mark?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
c) Cap present?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
d) If the completion is flush mount, is the cap expandable and locking?	NA	NA	NA	NA	NA	NA	NA	NA
e) Condition of casing and cap?	Good	Good	Good	Good	Good	Good	Good	Good

Notes: The steel protective casings of AW-1S, MW-1 and BW-1 had settled so that the well riser was pushing against the lid of the steel protective casing. The concrete pad at MW-3 had heaved.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

Wyandot Landfill

November 10, 2008

Well-identification number:	MW-4	BW-4	BP-12R	GP-13	SW-1	RW-1	SW-2	RW-2
Correct location?	Yes							
Clearly and correctly labeled?	Yes							
Locked prior to arrival at well location?	Yes							
Ground water depth:	12.36	9.95	5.86	10.93	30.15	27.33	28.45	26.94
Well total depth:	Not meas.							
For above ground completions:								
a) Protective outer casing present?	Yes							
(1) Condition?	Settled	Good						
(2) Locking cap? Condition?	Good							
(3) Weep hole present?	Yes							
(4) Standing water between protective casing & well casing?	No							
b) Surface seal/apron present?	Yes							
(1) Condition?	Good	Good	Good	Good	Heaved	Good	Heaved	Good
(2) Poned surface water?	No							

Well identification number:	MW-4	BW-4	BP-12R	GP-13	SW-1	RW-1	SW-2	RW-2
For flush mount completions:								
a) Well vault present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Covered with bolted vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Standing water in vault? Covering top of inner casing?	NA	NA	NA	NA	NA	NA	NA	NA
b) Surface seal/apron present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Raised at least slightly above grade and sloped away from the top of the vault?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Ponded surface water on top of vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
Well (inner) Inner well casing condition?	Good	Good	Good	Good	Good	Good	Good	Good
a) Material?	2" SS	2" SS	2" PVC					
b) Survey reference mark?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
c) Cap present?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
d) If the completion is flush mount, is the cap expandable and locking?	NA	NA	NA	NA	NA	NA	NA	NA
e) Condition of casing and cap?	Good	Good	Good	Good	Good	Good	Good	Good

Notes: The steel protective casing of MW-4 had settled so that the well riser was pushing against the lid of the steel protective casing. The concrete pads at SW-1 and SW-2 had heaved.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

Wyandot Landfill

November 10, 2008

Well identification number:	SW-9	RW-9	SW-10	RW-10	SW-11	RW-11	SW-12	RW-12
Correct location?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clearly and correctly labeled?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Locked prior to arrival at well location?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ground water depth:	27.48	24.86	29.01	29.52	29.71	31.80	Dry?	36.17
Well total depth:	Not meas.	Not meas.	Not meas.	Not meas.	Not meas.	Not meas.	Not meas.	Not meas.
For above ground completions:								
a) Protective outer casing present?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(1) Condition?	Good	Good	Good	Good	Good	Good	Good	Good
(2) Locking cap? Condition?	Good	Good	Good	Good	Good	Good	Good	Good
(3) Weep hole present?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
(4) Standing water between protective casing & well casing?	No	No	No	No	No	No	No	No
b) Surface seal/apron present?	Yes	Yes	Not visible	Yes	Yes	Yes	Yes	Yes
(1) Condition?	Good	Good	Good	Good	Good	Good	Heaved	Good
(2) Ponded surface water?	No	No	No	No	No	No	No	No

Well identification number:	SW-9	RW-9	SW-10	RW-10	SW-11	RW-11	SW-12	RW-12
For flush mount completions:								
a) Well vault present?	NA							
(1) Condition?	NA							
(2) Covered with bolted vault lid?	NA							
(3) Standing water in vault? Covering top of inner casing?	NA							
b) Surface seal/apron present?	NA							
(1) Condition?	NA							
(2) Raised at least slightly above grade and sloped away from the top of the vault?	NA							
(3) Ponded surface water on top of vault lid?	NA							
Well (inner) Inner well casing condition?	Good							
a) Material?	2" PVC							
b) Survey reference mark?	Yes							
c) Cap present?	Yes							
d) If the completion is flush mount, is the cap expandable and locking?	NA							
e) Condition of casing and cap?	Good							

Notes: A concrete pad was not visible at SW-10. The pad either needs to be excavated and regraded, or a new pad needs to be placed. The concrete pad at SW-12 had heaved.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

Wyandot Landfill
November 10, 2008

Well identification number:	MW-5R	BP-7	BP-13	GP-37A	GP-40	GP-41	GP-44	SP-2
Correct location?	Yes							
Clearly and correctly labeled?	Yes							
Locked prior to arrival at well location?	Yes							
Ground water depth:	Not Recd.							
Well total depth:	Not meas.							
For above ground completions:								
a) Protective outer casing present?	Yes							
(1) Condition?	Settled	Settled	Settled	Good	Good	Settled	Settled	Settled
(2) Locking cap? Condition?	Good							
(3) Weep hole present?	Yes							
(4) Standing water between protective casing & well casing?	No							
b) Surface seal/apron present?	Yes							
(1) Condition?	Good	Good	Good	Heaved	Heaved	Good	Good	Good
(2) Ponded surface water?	No							

Well identification number:	MW-5R	BP-7	BP-13	GP-37A	GP-40	GP-41	GP-44	SP-2
For flush mount completions:								
a) Well vault present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Covered with bolted vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Standing water in vault? Covering top of inner casing?	NA	NA	NA	NA	NA	NA	NA	NA
b) Surface seal/apron present?	NA	NA	NA	NA	NA	NA	NA	NA
(1) Condition?	NA	NA	NA	NA	NA	NA	NA	NA
(2) Raised at least slightly above grade and sloped away from the top of the vault?	NA	NA	NA	NA	NA	NA	NA	NA
(3) Ponded surface water on top of vault lid?	NA	NA	NA	NA	NA	NA	NA	NA
Well (inner) Inner well casing condition?	Good	Good	Good	Good	Good	Good	Good	Good
a) Material?	2" PVC	2" PVC	2" SS	2" SS	2" SS	2" SS	2" SS	2" SS
b) Survey reference mark?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
c) Cap present?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
d) If the completion is flush mount, is the cap expandable and locking?	NA	NA	NA	NA	NA	NA	NA	NA
e) Condition of casing and cap?	Good	Good	Good	Good	Good	Good	Good	Good

Notes: The steel protective casings of MW-5R, BP-7, BP-13, GP-41, GP-44 and SP-2 had settled so that the well riser was pushing against the lid of the steel protective casing. The concrete pads at GP-37A and GP-40 had heaved.

GROUND WATER MONITORING WELL FIELD INSPECTION FORM

Wyandot Landfill
November 10, 2008

Well identification number:	GP-5	GP-9	BP-9					
Correct location?	Yes	Yes	Yes					
Clearly and correctly labeled?	Yes	Yes	Yes					
Locked prior to arrival at well location?	Yes	Yes	Yes					
Ground water depth:	Not Recd.	Not Recd.	Not Recd.					
Well total depth:	Not meas.	Not meas.	Not meas.					
For above ground completions:								
a) Protective outer casing present?	Yes	Yes	Yes					
(1) Condition?	Settled	Good	Good					
(2) Locking cap? Condition?	Good	Good	Good					
(3) Weep hole present?	Yes	Yes	Yes					
(4) Standing water between protective casing & well casing?	No	No	No					
b) Surface seal/apron present?	Yes	Yes	Yes					
(1) Condition?	Good	Heaved	Heaved					
(2) Poned surface water?	No	No	No					

Well identification number:	GP-5	GP-9	BP-9					
For flush mount completions:								
a) Well vault present?	NA	NA	NA					
(1) Condition?	NA	NA	NA					
(2) Covered with bolted vault lid?	NA	NA	NA					
(3) Standing water in vault? Covering top of inner casing?	NA	NA	NA					
b) Surface seal/apron present?	NA	NA	NA					
(1) Condition?	NA	NA	NA					
(2) Raised at least slightly above grade and sloped away from the top of the vault?	NA	NA	NA					
(3) Poned surface water on top of vault lid?	NA	NA	NA					
Well (inner) Inner well casing condition?	Good	Good	Good					
a) Material?	2" PVC	2" PVC	2" PVC					
b) Survey reference mark?	Yes	Yes	Yes					
c) Cap present?	Yes	Yes	Yes					
d) If the completion is flush mount, is the cap expandable and locking?	NA	NA	NA					
e) Condition of casing and cap?	Good	Good	Good					

Notes: The steel protective casing of GP-5 had settled so that the well riser was pushing against the lid of the steel protective casing. The concrete pads at GP-9 and BP-9 had heaved.