

**Solid Waste Groundwater Monitoring Plan  
Review Checklist for landfills monitoring under 9 VAC 20-81-250**

**Facility Name (            ) Permit Number (    )**

Updated 2013

GMP review items have been grouped topically below and the appropriate VSWMR reference is given for each required topic. Columns on the left hand side record when a review topic has been judged to be complete by DEQ.

During the completeness review stage, please provide the page number or appendix within the GMP document where the required information has been presented. For the GMP to be considered complete, all rows within the completeness review column should contain a page # reference. If a page # is lacking, it indicates that the topic is absent from the submitted document and the document is incomplete. Use N/A for rows that do not correspond to the type of GMP being reviewed.

Under the technical review columns, please post an "X" in the box that corresponds to the stage of technical review (TR) during which the reviewer has determined that the topic listed to the right has been addressed with technical accuracy sufficient to meet the regulatory intent. Only those items which have not yet received an "X" during the Review phase would require review during a second TR process. This design will help avoid unnecessary duplication of the review process during latter stages of TR efforts thereby shortening overall DEQ staff review and response time.

<b>Items Related to Monitoring Wells / Well Network</b>					
<i>Document Page No.</i>	<i>Technical Discussion Included?</i>	<i>DEQ revision requested?</i>	<i>Technically Complete</i>	<i>Topic Req'd to be Discussed in GMP Submission</i>	<i>20-81-250 Reference</i>
				Identify total number of MW's within network	A3f(2)
				Provide map showing location of all MW's	A3d
				Discussion of UG MW placement	A3a(1)
				Discussion of DG MW placement	A3a(2)
				Discussion of drilling methods used	A3c
				Description of MW casing size	A3c
				Description of length of screened interval	A3c
				Discussion of filter pack	A3c
				Annular space grouting procedure	A3c
				Discussion of well development procedure	A3e
				Submission of MW construction data	A3d
				Submission of MW boring logs	A3d
				Submission of MW certification	A3g
				Discussion of MW abandonment procedure	A3e
				Discussion of MW O&M procedures	A3e
				Discussion of potential well replacement actions	A3e

Items Related to Aquifer Recognition/Description					
				Discussion of soil types	A3f(1)(a)
				Discussion of aquifer matrix	A3f(1)(b)
				Analysis of porosity	A3f(1)(c)
				Hydraulic conductivity	A3f(1)(c)
				Confining unit discussion	A3f(1)(c)
				Discussion on frequency of GW elev. measurement	A4c
				GW elevation accuracy to 0.01 foot	A4c
				GW flow rate discussion	A3f(1)(d)
				Flow direction discussion.	A3f(1)(d)
				Discussion of seasonal variations in GW levels	A3f(1)(d)
				Potentiometric surface map submission	E1a E2a(2)(h) E2b(1)(e)
				Evaluation of changes in GW flow direction	E2a(2)(h) E2b(1)(e)
				Field book record keeping	E
Items Related to Sample Collection					
				MW purge procedure	A4a(1)
				MW sampling procedure	A4a(1)
				GW elevation data	A4c
				MW sampling equipment	A4a(1)
				Discussion of equipment 'decon'	A4a(1)
				Process of determining MW sampling order	A4a(1)
				Process of determining parameter sampling order	A4a(1)
				Types of sample containers to be used	A4a(2)
				Sample quantity required per analytical method	A4a(2)
				Sample preservation required per parameter	A4a(2)
				Sample analytical request sheet	A4a(3)
				Sample label Attachment	A4a(4)
				Sample seal attachment	A4a(4)
				Chain-of-Custody procedure	A4a(4)
				Field book record keeping	E
				Development of field QA/QC program	A4a(5)

<b>Items Related to Analytical Procedures</b>					
				Analytical method disc.	A4b
				Lab QA/QC program	A4a(5)
				Statistical methods to be applied to GW data	A4g D1
				Number of samples obtained at each well per event	A4f
				Use of verification samples	A4i
				Use of Data Validation methods	A4j
				Timeline for determining SSI	A4h(2)
				Use of Alternate Source Demonstration allowance	A5
<b>Items Related to First Determination Monitoring Programs</b>					
				Sampling parameter list	C2a
				Background development process	C2b
				Sampling frequency for background	C2b(1)(a)
				Submission of FD Report	C2b(2)
				Routine sampling frequency post FDR submission	C2c
<b>Items Related to Phase II Monitoring Programs</b>					
				Timeline for initiation of Phase II Monitoring	C2d4
				Sample parameter list	C3a
				Sampling frequency	C3a
				Notification requirements for Table 3.1 detects	C3b(2)/C3e(2)
				Timeline for establishing GPS	C3c(1)
				GPS establishment and revision procedures	A6b A6d/e
				GMP revisions	C3d
				Description of statistical methods for GPS	C3e(1)
				GPS exceedence trigger actions	C3e(3)
				Record keeping requirements	E1(a-e)
				Reporting requirements	E2b

<b>Items Related to Detection Monitoring Programs</b>					
				Sample parameter list	B2a
				Sampling frequency	B2a(1-3)
				Record keeping requirements	E1(a-e)
				Reporting requirements	E2(a-c)
<b>Items Related to Assessment Monitoring Programs</b>					
				Timeline for initiation of Assessment Monitoring	B3a
				Sample parameter list	B3a
				Sampling frequency	B3a B3b(3)
				Well subset allowance	B3b(1)
				Notification requirements for Table 3.1 detects	B3c(1)
				Development of background	B3c(3)
				Timeline for establishing GPS	B3d
				GPS establishment (and revision) procedures	A6b A6d/e
				Description of statistical methods for GPS	B3f(3)
				GPS exceedence trigger actions	B3f(3)(a)
				GMP revisions	B3e
				Record keeping requirements	E1(a-e)
				Reporting requirements	E2b