

**ATTACHMENT VII-4**

**DETECTION AND COMPLIANCE MONITORING PROTOCOL**

EXPLANATION OF DECISION CRITERIA AND ACTIONS UNDER DETECTION / COMPLIANCE PROTOCOL	
ITEM	EXPLANATION
Semi-annual monitoring, sampling, and analysis	The routine schedule for detection monitoring is to be followed, except under conditions noted below:
Report all gas-chromatograph/mass spectrometry (GC/MS) and practical quantitation limit (PQL) values for each well and blanks.	CHGM shall follow the permit schedule for reporting of detection monitoring data and shall report the data as defined in Attachment VII-3, Table 1 and Module VII Condition. E.1. of the permit. CHGM shall also report results for field, trip, and laboratory blanks run for the current sampling period
Report all tentative J values (as defined in Module VII Condition D.5.c) and inorganic data to the Director.	CHGM shall also report tentative values for all detection monitoring compounds (less than the Laboratory PQL/LOQ and identified with a "J") and required inorganic and indicator monitoring parameters as defined in Module VII Condition D.5.a.iv. of this Permit.
Are any values reportable?	CHGM shall report for each well all those reportable detection monitoring values defined in Module VII Condition D.5.b.iii. which are equal to or exceed the laboratory detection limit
Is there a pattern with other wells?	After reviewing the data, CHGM may determine that a common source of sampling or analytical contamination resulted in unexpected occurrences. This may be demonstrated by showing comparable levels of concentration of contaminants in background wells with a waste management area monitoring system, or prevalence of the compound in other unrelated waste management area monitoring wells.
Can the source be identified?	CHGM may use independent evidence to establish that the source of common contamination was attributable to specific sampling or analytical sources.

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Need to resample?	At the discretion of the Director, CHGM may be required to resample the GC/MS fraction showing detectable values for all positive wells. The Director shall also consider whether resampling may be necessary at wells where reportable values are found in monitoring wells and blanks or contamination from sampling or laboratory sources.
Do the values exceed the critical level?	All reportable Class 1 compound values in downgradient monitoring wells shall be compared against critical level values in Attachment VII-3, Table 1 of this permit. Concentrations equal to or exceeding these limits are considered significant at the critical level. For most compounds, this level is equal to the 40 CFR 264 Appendix IX PQL, except where a specific value is given in Attachment VII-3, Table 1.
Are compound concentrations similar to concentrations in the blanks?	CHGM may demonstrate that the compounds occurring at a significant level were also found at comparable concentrations in field, trip, or laboratory blanks for the current round of sampling.
Was a source identified from sampling or the lab?	CHGM may also demonstrate that detected compounds were observed in historical blank data or that a specific new source was discovered during the current round of sampling.
Retest for compounds found at the critical level at those wells.	CHGM shall resample within a month of notification by the laboratory for all compounds found at the critical level in those specific downgradient monitoring wells not excluded by the criteria above. Monitoring only need be for those compounds and those wells showing values above the critical level.

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False positive source identified?	In the intervening period, CHGM may present additional evidence of false positive contamination based on the criteria above. The Director shall determine whether CHGM has sufficiently demonstrated the presence of false positives.
Are values repeated at the critical level?	Repeat values at concentrations exceeding the critical levels are considered highly significant and are presumptive evidence of groundwater contamination.
Consider data of next sampling round as confirmatory.	If the false positive source in the first round of sampling can be identified, or the repeat test does not confirm initial findings, CHGM may resume the regular semi-annual sampling schedule. However, further indications of significant compound concentrations by the criteria above in the same well in two consecutive subsequent sampling rounds shall be considered confirmatory of groundwater contamination.
Does data from previous sampling confirm contamination?	See comment above. Successive instances of contamination in a given well for the same compound(s) are considered highly likely indications of contamination. Three instances of consecutive contamination shall trigger automatic compliance monitoring.

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Sampling of all detection parameters at affected wells.	<p>For purposes of determining contamination, three sampling periods within the normal semi-annual monitoring schedule shall be followed:</p> <ul style="list-style-type: none"> <li>• Test (semi-annual event),</li> <li>• retest (one month from notification of facility), and</li> <li>• third resample (45 days from the second resampling event).</li> </ul> <p>Only those wells showing contamination must be resampled.</p>
Are these uncommon compounds?	Compounds not routinely showing above detection limit values or occurring in sampling or laboratory data are further indications of the likelihood of contamination.
Did more than one well in the same waste management area show contamination?	The presence of similar hazardous constituents in adjoining wells of a waste management area would be highly indicative of widespread contamination. Only one well need show contamination, however.
Other monitoring parameter evidence?	The GC/MS listed detection monitoring parameters are considered the best evidence of direct contamination. With suspected contamination, other required reporting data for inorganics or indicator may also provide further evidence. Evidence of oil and grease or elevated total organic carbon (TOC) levels may show obvious evidence of contamination, which can also mask GC/MS detection. Elevated phenols, unusual changes in metals, total dissolved solids (TDS), or inorganic parameters could be associated with introduction of leachate into groundwater. The Director may require analysis of leachate or other unit wastes at any point.

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Waste Management Area in compliance monitoring.	At this point, the waste management monitoring area is under compliance monitoring and must meet all the terms of R315-264-99 and R315-264-100 of the Utah Administrative Code (UAC).
Full 40 C.F.R. § 264 Appendix IX (groundwater monitoring list) scan for all wells in waste management area.	CHGM shall run a GC/MS analysis for all compounds listed in Attachment VII-3, Table 2, at all wells within the waste management area.
Detection monitoring at other wells and waste management areas (not on the figure in Attachment VII-1).	The Director shall determine the extent of the waste management area under compliance monitoring. Although the permit initially has defined separable waste management areas, additional wells of other waste management areas may be included in the compliance monitoring system, depending on the pathways of contamination established. The remaining wells of the facility monitoring system may remain in detection monitoring.