

WAC 173-306-500 Monitoring and sampling methods. (1) Applicability. These requirements apply to owners and operators of incinerators, energy recovery facilities, disposal facilities, and management facilities who are required to perform ash sampling, analyses and testing, groundwater and air quality monitoring under this chapter.

(2) Groundwater monitoring requirements.

(a) The groundwater monitoring system:

(i) Must consist of at least one background or up-gradient well and three down-gradient wells, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer and all hydraulically connected aquifers below the active portion of the facility.

(ii) Must represent the quality of background water that has not been affected by leakage from the active area; and

(iii) Must represent the quality of groundwater passing the point of compliance. Additional wells may be required by the department in complicated hydrogeological settings or to define the extent of contamination detected.

(b) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must allow collection of representative groundwater samples. Wells must be constructed in such a manner as to prevent contamination of the samples, the sampled strata, other substrata aquifers and waterbearing strata. Construction must be accomplished in accordance with chapter 173-160 WAC, minimum standards for construction and maintenance of water wells.

(c) The groundwater monitoring program shall include, at a minimum, procedures and techniques for:

(i) Decontamination of drilling and sampling equipment;

(ii) Sample collection;

(iii) Sample preservation and shipment;

(iv) Analytical procedures and quality assurance;

(v) Chain of custody control; and

(vi) Procedures to ensure employee health and safety during well installation and monitoring.

(d) Sample constituents.

(i) Owners or operators of all facilities shall test for the following parameters:

(A) Temperature;

(B) Conductivity;

(C) pH;

(D) Chloride;

(E) Nitrate, nitrite, and ammonia as nitrogen;

(F) Sulfate;

(G) Dissolved iron, cadmium, lead, and mercury;

(H) Dissolved zinc and manganese;

(I) Chemical oxygen demand;

(J) Total organic carbon;

(K) Calcium and sodium; and

(L) Gamma radiation.

(ii) The department may specify additional or fewer constituents depending upon the leachate analyses, the composition of the ash, and other information.

(iii) To detect the parameters of (d)(i) of this subsection, EPA Publication Number SW-846, "Test methods for evaluating solid waste physical/chemical methods" must be used.

(e) The groundwater monitoring program must include a determination of the groundwater surface elevation each time groundwater is sampled.

(f) The owner or operator shall use a department-approved statistical procedure for determining whether a significant change over background has occurred.

(g) The owner or operator must determine groundwater quality at each monitoring well at the compliance point at least quarterly from start up through the post-closure care period. The owner or operator must express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant increases.

(h) The owner or operator must determine and report the groundwater flow rate and direction in the uppermost aquifer at least annually.

(i) If the owner or operator determines that there is a statistically significant increase for parameters or constituents at any monitoring well at the compliance point, the owner or operator must:

(i) Notify the department of this finding in writing within seven days of receipt of the sampling data. The notification must indicate which parameters or constituents have shown statistically significant increases;

(ii) Immediately resample the groundwater in all monitoring wells and determine the concentration of all constituents listed in the definition of contamination in WAC 173-306-100 including additional constituents identified in the permit and whether there is a statistically significant increase such that the groundwater performance standard has been exceeded. The department must be notified within fourteen days of receipt of the sampling data.

(j) The department may require modifications to the disposal facility, the plan of operation or the permit, including facility closure, if the performance standard of WAC 173-306-440 (2)(a) is exceeded and, in addition, may revoke any permit and require reapplication under WAC 173-306-310.

(3) Modifications. An owner or operator required to modify the facility or plan of operation under this section must first obtain approval from the department and must at a minimum:

(a) Implement modifications that reduce contamination and, if possible, prevent constituents from exceeding their respective concentration limits at the compliance point by removing the constituents, treating them in place or other remedial measures; and

(b) Begin modifications according to a written schedule after the groundwater performance standard is exceeded.

(4) Ash and soil sampling, and analysis.

(a) Ash residue samples taken for the purpose of determining their designation status as a special incinerator ash waste must be conducted according to guidance established by the department. Ash samples taken for the purpose of determining carbon residue and for determining dioxins and dibenzofuran content, if different from samples taken for designation status under chapter 173-303 WAC, must also be conducted according to guidance established by the department. Representative sampling methods and frequency as developed in guidelines by the department must be employed.

(b) Ash samples must be analyzed as follows:

(i) For designation purposes, as a special incinerator ash waste, the samples must be analyzed according to:

(A) "Chemical testing methods for complying with the state of Washington dangerous waste regulation," WDOE 83-13;

(B) "Biological testing methods," WDOE 80-12;

(C) "Test methods for evaluating solid waste, physical/chemical methods," SW 846.

(ii) For chlorinated-p-dioxins and dibenzofurans, 40 C.F.R. Part 261 Appendix X is adopted by reference.

(iii) For cadmium in soil, method 7130 or 7131 cited in "Test methods for evaluating solid waste, physical/chemical methods," SW 846.

(5) Ambient air quality sampling for lead. Ambient lead concentrations must be measured and reported according to 40 C.F.R. Part 50 Appendix G, which is adopted by reference, except that the sampling frequency will be determined by the department: Provided, That the department has not adopted "Compendium of methods for the determination of inorganic compounds in ambient air" (EPA/625/R-96/01a, July 1999).

[Statutory Authority: Chapter 70.138 RCW. WSR 00-19-018 (Order 00-17), § 173-306-500, filed 9/8/00, effective 10/9/00; WSR 90-10-047, § 173-306-500, filed 4/30/90, effective 5/31/90.]