

66265.98 Detection Monitoring Program

(a)

An owner or operator required, pursuant to section 66265.91 of this article, to establish a detection monitoring program for a regulated unit shall, at a minimum, comply with the requirements of this section for that unit.

(b)

The owner or operator shall install water quality monitoring systems that are appropriate for detection monitoring and that comply with the provisions of section 66265.97 of this article.

(c)

The owner or operator shall establish a background value pursuant to section 66265.97(e)(11) for each monitoring parameter specified under subsection (e) of this section and for each constituent of concern specified under section 66265.97(e)(11) of this article 66265.93.

(d)

The owner or operator shall specify the water quality protection standard under section 66265.92 in the water quality sampling and analysis plan.

(e)

The owner or operator shall specify in the water quality sampling plan a list of monitoring parameters for each medium (groundwater, surface water and the unsaturated zone) to be monitored pursuant to section 66265.97. The list for each

medium shall include those physical parameters, hazardous constituents, waste constituents and reaction products that provide a reliable indication of a release from the regulated unit to that medium. The owner or operator shall specify each list of monitoring parameters in the water quality sampling and analysis plan after considering the following factors: (1) the types, quantities and concentrations of constituents in wastes managed at the regulated unit; (2) the expected or demonstrated correlation between the proposed monitoring parameters and the constituents of concern specified for the unit under section 66265.93; (3) the mobility, stability and persistence of waste constituents or their reaction products; (4) the detectability of physical parameters, waste constituents and reaction products; (5) the background values and the coefficients of variation of proposed monitoring parameters in groundwater, surface water and the unsaturated zone; and (6) the list of suggested detection monitoring analytes presented in Appendix VI of this chapter.

(1)

the types, quantities and concentrations of constituents in wastes managed at the regulated unit;

(2)

the expected or demonstrated correlation between the proposed monitoring parameters and the constituents of concern specified for the unit under section 66265.93;

(3)

the mobility, stability and persistence of waste constituents or their reaction products;

(4)

the detectability of physical parameters, waste constituents and reaction products;

(5)

the background values and the coefficients of variation of proposed monitoring parameters in groundwater, surface water and the unsaturated zone; and

(6)

the list of suggested detection monitoring analytes presented in Appendix VI of this chapter.

(f)

Except as provided below, the owner or operator shall include in the list of monitoring parameters specified for groundwater pursuant to subsection (e) of this section each parameter listed in Table 1. The owner or operator may substitute a more appropriate parameter for a parameter listed in Table 1 if the owner or operator receives written approval for the substitution from the Department and documents in the facility operating record that the parameter is not appropriate for use as a monitoring parameter and that monitoring for the substitute parameter is more likely to provide early detection of a release from the regulated unit.

Chloride	Iron
Manganese	pH
Phenols	Sodium
Specific conductance	Sulfate
Total organic carbon	Total organic halogen

(g)

The owner or operator shall conduct sampling and analyses for the monitoring parameters listed in the water quality sampling and analysis plan. The owner or operator shall specify the frequencies for collecting samples and conducting statistical analyses to determine whether there is statistically significant evidence of a release from the regulated unit for any monitoring parameter specified in the water quality sampling and analysis plan pursuant to subsection (e) of this section. For groundwater, samples from each monitoring point and each background monitoring point shall be collected at least quarterly during detection

monitoring, including the times of expected highest and lowest annual elevations of the groundwater surface. The Department may approve sampling at times other than the expected highest and lowest annual elevations, if appropriate, however quarterly sampling is still required. The owner or operator shall conduct more frequent sampling and statistical analyses where necessary to protect human health or the environment. When specifying the frequencies for collecting samples and conducting statistical analyses for groundwater, the owner or operator shall consider the groundwater flow rate and any variation in groundwater flow rate and direction.

(h)

In addition to monitoring for the monitoring parameters specified under subsection (e) of this section, the owner or operator shall periodically monitor for all constituents of concern specified in the water quality sampling and analysis plan and determine whether the regulated unit is in compliance with the water quality protection standard there is statistically significant evidence of a release for any constituent of concern using the statistical procedure specified pursuant to section 66265.97(e)(7) of this article. Whenever the regulated unit is not in compliance with the water quality protection standard, it shall be considered statistically significant evidence of a release from the regulated unit. The owner or operator shall specify in the water quality sampling and analysis plan the frequencies and locations for monitoring pursuant to this subsection after considering the degree of certainty associated with the expected or demonstrated correlation between values for monitoring parameters and values for the constituents of concern. Monitoring pursuant to this subsection shall be conducted at least every five years.

(i)

The owner or operator shall conduct water quality monitoring for each monitoring parameter and each constituent of concern in accordance with section 66265.97(e)(12) of this article. The owner or operator shall maintain a record of water quality analytical data as measured and in a form necessary for the determination of statistical significance under subsections (h) and (j) of this section.

(j)

For each monitoring point, the owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit for any monitoring parameter specified in the water quality sampling and analysis plan pursuant to subsection (e) of this section at a frequency specified pursuant subsection (g) of this section. (1) In determining whether statistically significant evidence of a release from the regulated unit exists, the owner or operator shall use the method(s) specified in the water quality sampling and analysis plan under section 66265.97(e)(7). This method(s) shall be used to compare data collected at the monitoring point(s) with the background water quality data. (2) The owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit at each monitoring point within a reasonable period of time after completion of sampling. The owner or operator shall specify in the water quality sampling and analysis plan what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of samples. (3) The provisions of this section shall not preclude the Department from making an independent finding that there is statistically significant evidence of a release from the regulated unit. If the Department makes such a finding, the owner or operator shall comply with the provisions of this section that are required in response to statistically

significant evidence of a release from the regulated unit.

(1)

In determining whether statistically significant evidence of a release from the regulated unit exists, the owner or operator shall use the method(s) specified in the water quality sampling and analysis plan under section 66265.97(e)(7). This method(s) shall be used to compare data collected at the monitoring point(s) with the background water quality data.

(2)

The owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit at each monitoring point within a reasonable period of time after completion of sampling. The owner or operator shall specify in the water quality sampling and analysis plan what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of samples.

(3)

The provisions of this section shall not preclude the Department from making an independent finding that there is statistically significant evidence of a release from the regulated unit. If the Department makes such a finding, the owner or operator shall comply with the provisions of this section that are required in response to statistically significant evidence of a release from the regulated unit.

(k)

If the owner or operator determines pursuant to subsection (h) or (j) of this section that there is statistically significant evidence of a release from the regulated unit for any monitoring parameter or constituent of concern at any monitoring point, the owner or operator: (1) shall notify the Department of the finding by certified mail within seven days of such determination. The notification shall identify for

each affected monitoring point the monitoring parameters and constituents of concern that have indicated statistically significant evidence of a release from the regulated unit; and (2) may immediately initiate a procedure to verify that there is statistically significant evidence of a release from the regulated unit for a parameter or constituent which has indicated a release at a monitoring point if that verification procedure has been specified for that constituent or parameter in the water quality sampling and analysis plan pursuant to section 66265.97(e)(8)(E).

(1)

shall notify the Department of the finding by certified mail within seven days of such determination. The notification shall identify for each affected monitoring point the monitoring parameters and constituents of concern that have indicated statistically significant evidence of a release from the regulated unit; and

(2)

may immediately initiate a procedure to verify that there is statistically significant evidence of a release from the regulated unit for a parameter or constituent which has indicated a release at a monitoring point if that verification procedure has been specified for that constituent or parameter in the water quality sampling and analysis plan pursuant to section 66265.97(e)(8)(E).

(I)

If the resampling pursuant to subsection (k)(2) of this section confirms that there is statistically significant evidence of a release from the regulated unit or if the owner or operator does not resample pursuant to subsection (k)(2) of this section, then the owner or operator shall: (1) for that regulated unit, immediately sample all monitoring points affected by a release from the regulated unit and determine the concentration of all constituents of concern. The owner or operator may

modify the number of monitoring points and constituents of concern after receiving written approval from the Department; (2) for that regulated unit, immediately sample all monitoring points affected by a release from the regulated unit and determine whether constituents in the list of Appendix IX to chapter 14 are present, and if so, in what concentration(s). The owner or operator may modify the number of monitoring points and specific Appendix IX analytes after receiving written approval from the Department; (3) for any Appendix IX constituents found in the analysis pursuant to subsection (l)(2) of this section that are not specified in the list of constituents of concern for that unit, the owner or operator may resample within one month and repeat the analysis for those constituents. Resampling may occur within a different time frame provided the owner or operator receives written approval from the Department. Each constituent detected in both analyses shall be added to the list of constituents of concern specified in the water quality protection standard for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit. If the owner or operator does not resample for the constituents found pursuant to subsection (l)(2) of this section, the constituents found during this initial Appendix IX analysis will be added to the list of constituents of concern specified in the water quality protection standard for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit; (4) for each Appendix IX constituent added to the list of constituents of concern pursuant to subsection (k)(3) of this section, the owner or operator shall: (A) collect all data necessary for establishing the background concentration for that constituent and for

selecting an appropriate statistical procedure pursuant to section 66265.97(e)(6); (B) select an appropriate statistical procedure pursuant to section 66265.97(e)(7); (C) select a procedure to establish the background concentration for that constituent pursuant to section 66265.97(e)(10); and (D) establish the background concentration pursuant to section 66265.97(e)(11); (5) within 90 days of determining statistically significant evidence of a release, submit to the Department an amended water quality sampling and analysis plan to establish an evaluation monitoring program meeting the provisions of section 66265.99. The amended plan shall include the following information: (A) an identification of the concentration of each constituent of concern at each monitoring point as determined during the most recent sampling events, and an identification of the concentration of each Appendix IX constituent at each monitoring point affected by a release from the regulated unit; (B) any proposed changes to the water quality monitoring systems at the facility necessary to meet the requirements of section 66265.99; (C) any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods or statistical methods used at the facility necessary to meet the requirements of section 66265.99. (D) a detailed description of the measures to be taken by the owner or operator to assess the nature and extent of the release from the regulated unit; and (E) a schedule of implementation. (6) within 180 days of determining statistically significant evidence of a release, submit to the Department an engineering feasibility study for a corrective action program necessary to meet the requirements of section 66264.100 of article 6 of chapter 14. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern; and (7) if the owner or operator determines, pursuant to subsection (g) or (i) of this

section, that there is statistically significant evidence of a release from the regulated unit at any monitoring point, the owner or operator may demonstrate that a source other than the regulated unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis or statistical evaluation, or by natural variation in the groundwater, surface water or the unsaturated zone. The owner or operator may make a demonstration pursuant to this subsection in addition to, or in lieu of, submitting both an amended water quality sampling and analysis plan pursuant to subsection (k)(5) of this section and an engineering feasibility study pursuant to subsection (k)(6) of this section; however, the owner or operator is not relieved of the requirements specified in subsections (k)(5) and (k)(6) of this section unless the demonstration made under this subsection shows to the satisfaction of the Department that a source other than the regulated unit caused the evidence of a release or that the indication evidence resulted from error in sampling, analysis or evaluation or from natural variation in groundwater, surface water or the unsaturated zone. In making a demonstration pursuant to this subsection, the owner or operator shall: (A) within seven days of determining statistically significant evidence of a release, notify the Department by certified mail that the owner or operator intends to make a demonstration under this subsection; (B) within 90 days of determining statistically significant evidence of a release, submit a report to the Department that demonstrates that a source other than the regulated unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone; (C) within 90 days of determining statistically significant evidence of a release, submit to the Department an amended water quality sampling and analysis plan to make any appropriate changes to the detection

monitoring program; and (D) continue to monitor in accordance with the detection monitoring program established under this section.

(1)

for that regulated unit, immediately sample all monitoring points affected by a release from the regulated unit and determine the concentration of all constituents of concern.

The owner or operator may modify the number of monitoring points and constituents of concern after receiving written approval from the Department;

(2)

for that regulated unit, immediately sample all monitoring points affected by a release from the regulated unit and determine whether constituents in the list of Appendix IX to chapter 14 are present, and if so, in what concentration(s). The owner or operator may modify the number of monitoring points and specific Appendix IX analytes after receiving written approval from the Department;

(3)

for any Appendix IX constituents found in the analysis pursuant to subsection (1)(2) of this section that are not specified in the list of constituents of concern for that unit, the owner or operator may resample within one month and repeat the analysis for those constituents. Resampling may occur within a different time frame provided the owner or operator receives written approval from the Department. Each constituent detected in both analyses shall be added to the list of constituents of concern specified in the water quality protection standard for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit. If the owner or operator does not resample for the constituents found pursuant to subsection (1)(2) of this section, the constituents found during this initial Appendix IX analysis will be added to the list of constituents of concern specified in the water quality protection

standard for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit;

(4)

for each Appendix IX constituent added to the list of constituents of concern pursuant to subsection (k)(3) of this section, the owner or operator shall: (A) collect all data necessary for establishing the background concentration for that constituent and for selecting an appropriate statistical procedure pursuant to section 66265.97(e)(6); (B) select an appropriate statistical procedure pursuant to section 66265.97(e)(7); (C) select a procedure to establish the background concentration for that constituent pursuant to section 66265.97(e)(10); and (D) establish the background concentration pursuant to section 66265.97(e)(11);

(A)

collect all data necessary for establishing the background concentration for that constituent and for selecting an appropriate statistical procedure pursuant to section 66265.97(e)(6);

(B)

select an appropriate statistical procedure pursuant to section 66265.97(e)(7);

(C)

select a procedure to establish the background concentration for that constituent pursuant to section 66265.97(e)(10); and

(D)

establish the background concentration pursuant to section 66265.97(e)(11);

(5)

within 90 days of determining statistically significant evidence of a release, submit to the Department an amended water quality sampling and analysis plan to establish an evaluation monitoring program meeting the provisions of section 66265.99. The

amended plan shall include the following information: (A) an identification of the concentration of each constituent of concern at each monitoring point as determined during the most recent sampling events, and an identification of the concentration of each Appendix IX constituent at each monitoring point affected by a release from the regulated unit; (B) any proposed changes to the water quality monitoring systems at the facility necessary to meet the requirements of section 66265.99; (C) any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods or statistical methods used at the facility necessary to meet the requirements of section 66265.99. (D) a detailed description of the measures to be taken by the owner or operator to assess the nature and extent of the release from the regulated unit; and (E) a schedule of implementation.

(A)

an identification of the concentration of each constituent of concern at each monitoring point as determined during the most recent sampling events, and an identification of the concentration of each Appendix IX constituent at each monitoring point affected by a release from the regulated unit;

(B)

any proposed changes to the water quality monitoring systems at the facility necessary to meet the requirements of section 66265.99;

(C)

any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods or statistical methods used at the facility necessary to meet the requirements of section 66265.99.

(D)

a detailed description of the measures to be taken by the owner or operator to assess the nature and extent of the release from the regulated unit; and

(E)

a schedule of implementation.

(6)

within 180 days of determining statistically significant evidence of a release, submit to the Department an engineering feasibility study for a corrective action program necessary to meet the requirements of section 66264.100 of article 6 of chapter 14. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern; and

(7)

if the owner or operator determines, pursuant to subsection (g) or (i) of this section, that there is statistically significant evidence of a release from the regulated unit at any monitoring point, the owner or operator may demonstrate that a source other than the regulated unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis or statistical evaluation, or by natural variation in the groundwater, surface water or the unsaturated zone. The owner or operator may make a demonstration pursuant to this subsection in addition to, or in lieu of, submitting both an amended water quality sampling and analysis plan pursuant to subsection (k)(5) of this section and an engineering feasibility study pursuant to subsection (k)(6) of this section; however, the owner or operator is not relieved of the requirements specified in subsections (k)(5) and (k)(6) of this section unless the demonstration made under this subsection shows to the satisfaction of the Department that a source other than the regulated unit caused the evidence of a release or that the indication evidence resulted from error in sampling, analysis or evaluation or from natural variation in groundwater, surface water or the unsaturated zone. In making a demonstration pursuant to this subsection, the owner or operator shall: (A) within

seven days of determining statistically significant evidence of a release, notify the Department by certified mail that the owner or operator intends to make a demonstration under this subsection; (B) within 90 days of determining statistically significant evidence of a release, submit a report to the Department that demonstrates that a source other than the regulated unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone; (C) within 90 days of determining statistically significant evidence of a release, submit to the Department an amended water quality sampling and analysis plan to make any appropriate changes to the detection monitoring program; and (D) continue to monitor in accordance with the detection monitoring program established under this section.

(A)

within seven days of determining statistically significant evidence of a release, notify the Department by certified mail that the owner or operator intends to make a demonstration under this subsection;

(B)

within 90 days of determining statistically significant evidence of a release, submit a report to the Department that demonstrates that a source other than the regulated unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water, or the unsaturated zone;

(C)

within 90 days of determining statistically significant evidence of a release, submit to the Department an amended water quality sampling and analysis plan to make any appropriate changes to the detection monitoring program; and

(D)

continue to monitor in accordance with the detection monitoring program established under

this section.

(m)

If the owner or operator determines that there is significant physical evidence of a release as described in section 66265.91(a)(3) or that the detection monitoring program does not satisfy the requirements of this section, the owner or operator shall: (1) notify the Department by certified mail within 7 days of such determination; and (2) within 90 days of such determination, submit an amended water quality sampling and analysis plan to make any appropriate changes to the program.

(1)

notify the Department by certified mail within 7 days of such determination; and

(2)

within 90 days of such determination, submit an amended water quality sampling and analysis plan to make any appropriate changes to the program.

(n)

Any time the Department determines that the detection monitoring program does not satisfy the requirements of this section, the Department shall send written notification of such determination to the owner or operator by certified mail, return receipt requested. The owner or operator shall, within 90 days after receipt of such notification by the Department, submit an amended water quality sampling and analysis plan to make any appropriate changes to the program.