**Section 616.207 Determining Background Values and Maximum Allowable Results (MARs)**

a) The owner or operator must, by the start of operation of the unit and continuing for at least one year, sample each monitoring well at least every two months and analyze each sample according to the following program:

1) For a unit subject to Subpart E (land treatment units), Subpart F (surface impoundments), Subpart K (road oil storage and handling units), or Subpart L (de-icing agent storage and handling units), samples must be analyzed for pH, specific conductance, total organic carbon, total organic halogen, and any other parameter that meets the following criteria:

A) Material containing the parameter is stored, treated, or disposed of at the unit; and

B) There is a groundwater standard for the parameter.

2) For a unit subject to Subpart I for the storage and handling of pesticides, analysis must be for each pesticide stored or handled at the unit.

3) For a unit subject to Subpart J for the storage and handling of fertilizer, samples must be analyzed for pH, specific conductance, total organic carbon, nitrates as nitrogen, ammonia nitrogen, and any other parameter that meets the following criteria:

A) Material containing the parameter is stored or handled at the unit; and

B) There is a groundwater standard for the parameter.

b) The results obtained under subsection (a) must be used to calculate the background mean, background standard deviation, and Maximum Allowable Result (MAR) for each parameter using the following procedures:

1) Results from all samples collected during the year must be used in the calculations unless the owner or operator demonstrates to the Agency that one or more of the results was due to error in sampling, analysis, or evaluation.

2) All calculations must be based on at least six sample measurements per parameter per well.

3) If any measured value is equal to or greater than its PQL, or if any measured value is greater than its corresponding groundwater standard, the actual measured value must be used to calculate the mean and standard deviation.

4) If any measured value is less than its PQL and less than its corresponding groundwater standard, the PQL rather than the measured value must be used in calculating the mean and standard deviation.

5) Except for pH, the MAR is the quantity equal to the measured mean value of the contaminant plus the product of the contaminant's standard deviation times the following constant:

|  |  |
| --- | --- |
| Sample Size | Constant |
| 6 | 2.10 |
| 7 | 2.03 |
| 8 | 1.97 |
| 9 | 1.93 |
| 10 | 1.90 |
| 11 | 1.88 |
| 12 | 1.85 |
| 13 | 1.84 |
| 14 | 1.82 |

6) For pH, the upper limit for the MAR is the quantity equal to the measured background mean pH plus the product of the calculated background standard deviation of the samples times the constant tabulated in subsection (b)(5).

7) For pH, the lower limit of the MAR is the quantity equal to the measured background mean pH minus the product of the calculated background standard deviation of the samples times the constant tabulated in subsection (b)(5).

(Source: Amended at 47 Ill. Reg. 7631, effective May 16, 2023)