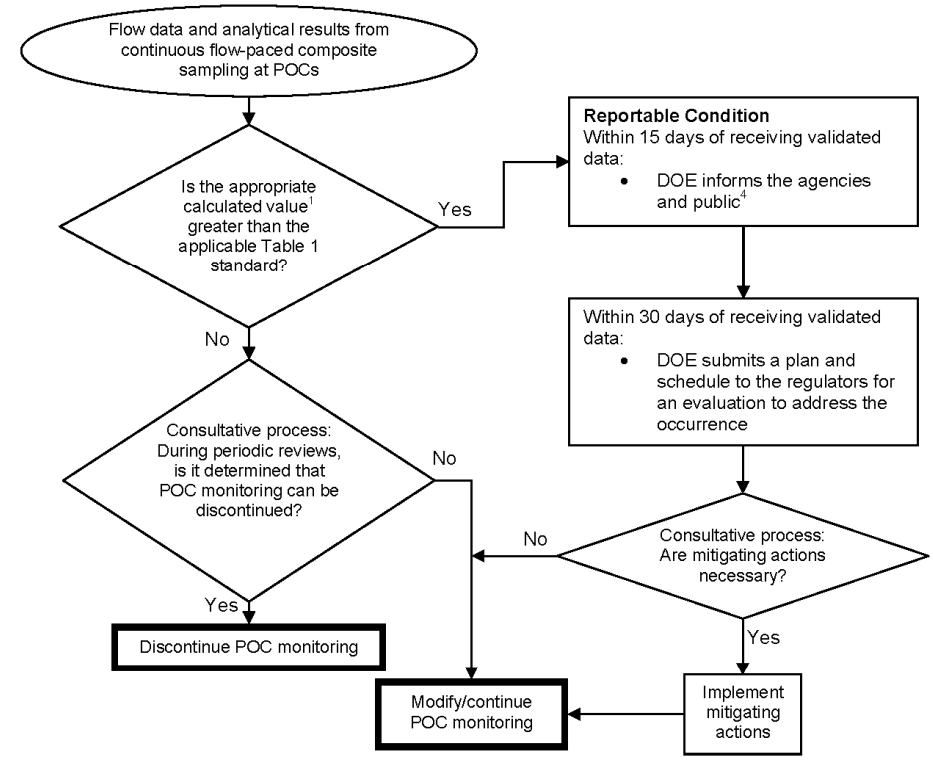
Appendix D: Data Evaluation Flowcharts Reproduced from RFLMA and the RFSOG

D.1 Points of Compliance



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

[1] Calculated values for determining Reportable Condition and exceedances of remedy performance standards at POCs.

- Reportable conditions (according to Section 6.0):
  - **plutonium, americium, uranium, nitrate** → 30-day average[2]
- Reportable Conditions and evaluation of compliance with remedy performance standards in Table 1:
  - **plutonium, americium, uranium, nitrate** → 12-month rolling average[3] for POCs inside COU; 30-day average for GS01 and GS03.

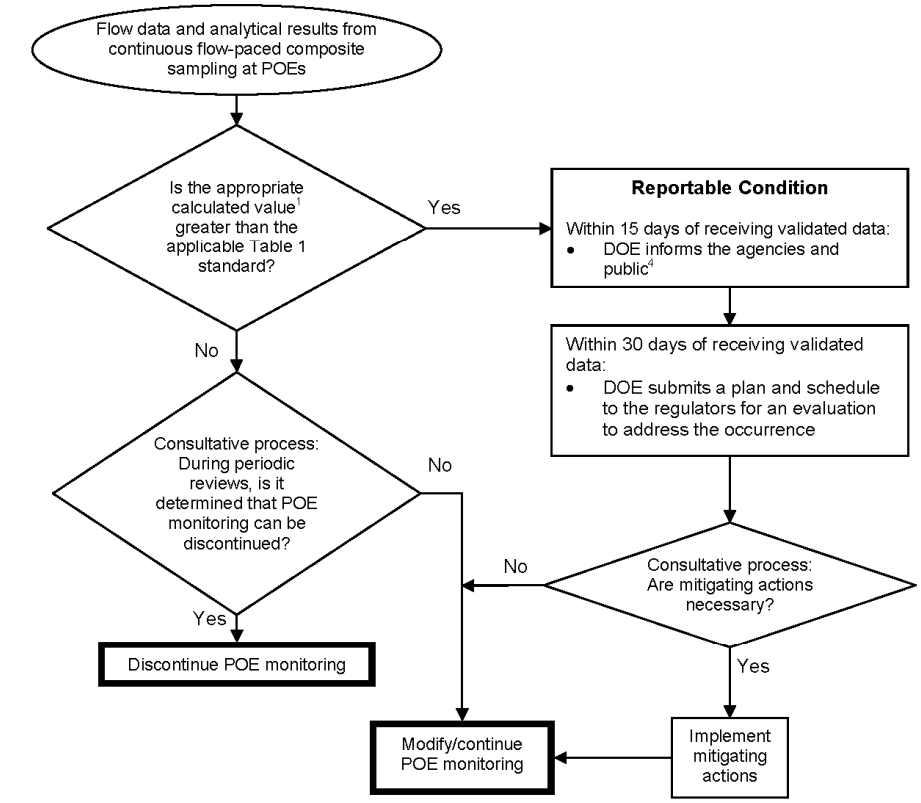
[2] The 30-day average for a particular day is calculated as a volume-weighted average of a "window" of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30-day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or non-sufficient quantity (NSQ) for analysis, no 30-day average is reported.

[3] The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a "window" of time containing the previous 12 months. Each 12-month "window" includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

[4] Agencies: EPA, CDPHE, and USFWS
Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 5. Points of Compliance

D.2 Points of Evaluation



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

[1] Calculated Values by analytes (see Table 2 for reference)
- plutonium, americium, uranium → 12-month rolling average[2]
- dissolved Cd and Ag, total Be and Cr → 85th percentile of 30-day averages[3] for previous calendar year

[2] The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a "window" of time containing the previous 12 months. Each 12-month "window" includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

[3] The 30-day average for a particular day is calculated as a volume-weighted average of a "window" of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30 day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or NSQ for analysis, no 30-day average is reported.

[4] Agencies: EPA, CDPHE, and USFWS
Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 6. Points of Evaluation

D.3 Area of Concern Wells and SW018

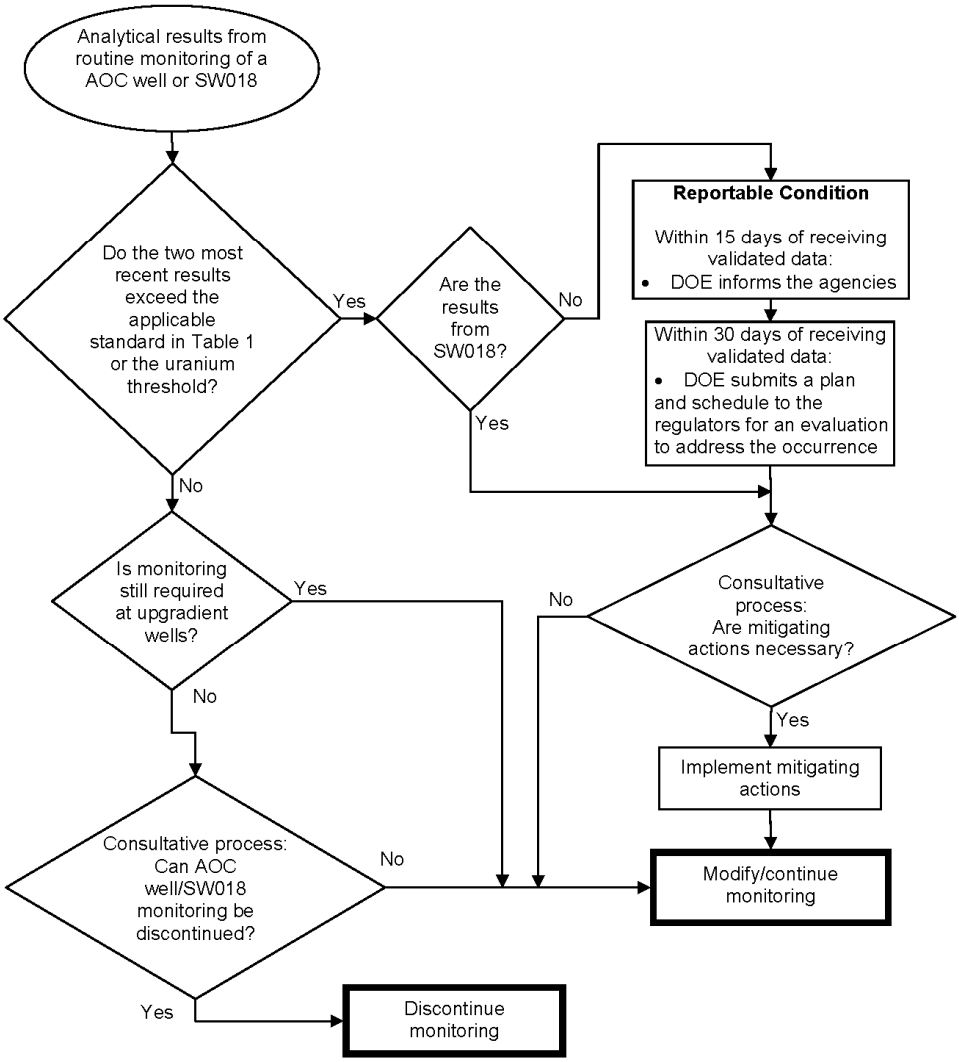
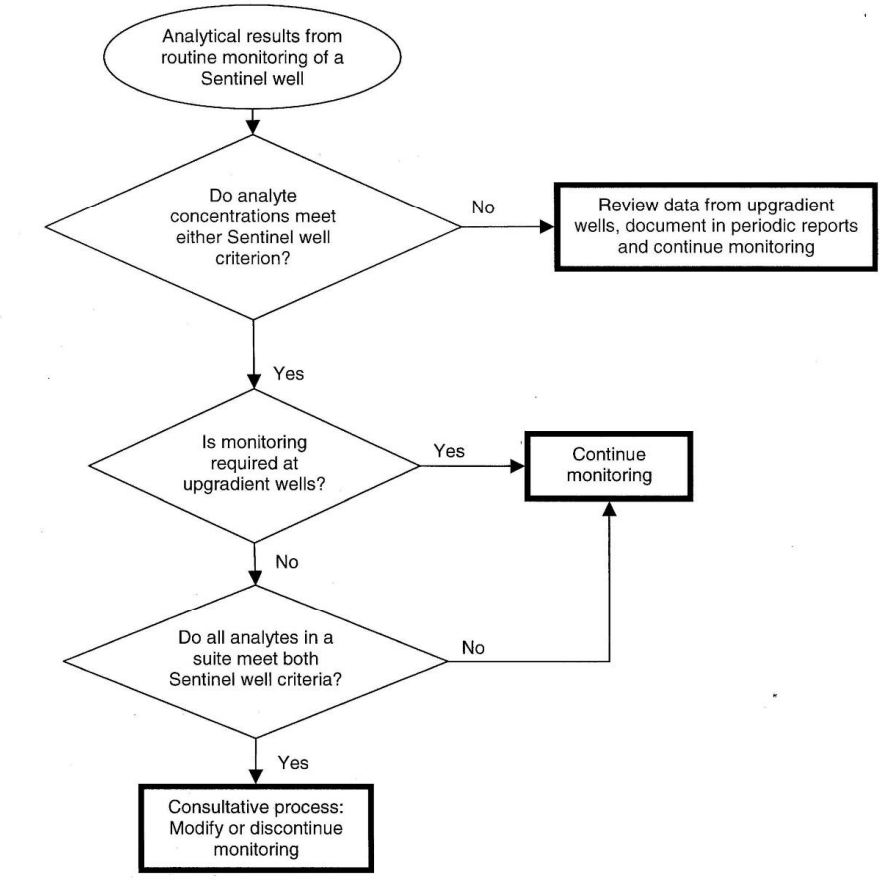


Figure 7. Area of Concern Wells and SW018

D.4 Sentinel Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

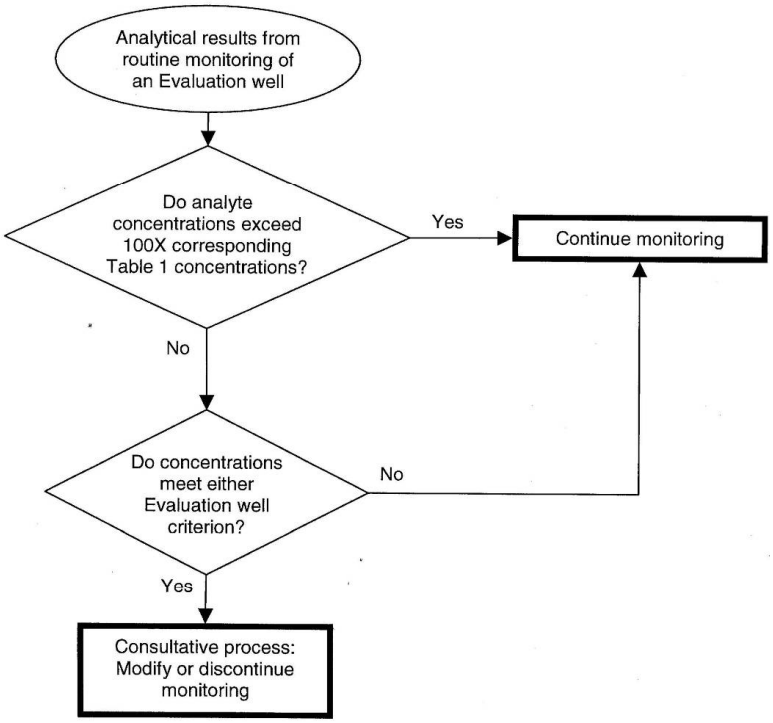
- Sentinel wells are sampled twice each year; see Table 2.
- Decisions related to uranium are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Sentinel Well Criteria

1. The 85th percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1 or, for uranium, the 85th percentile concentration does not exceed 2x120 ug/L or the highest calendar year 2005 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 8. Sentinel Wells

D.5 Evaluation Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- Evaluation wells are listed in Table 2.

Evaluation Well Criteria:

1. The 85th percentile concentration of an analyte *is less than or equal to* the corresponding concentration in Table 1, or, for uranium, 240 ug/L or highest pre-CY05 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 9. Evaluation Wells

D.6 RCRA Wells

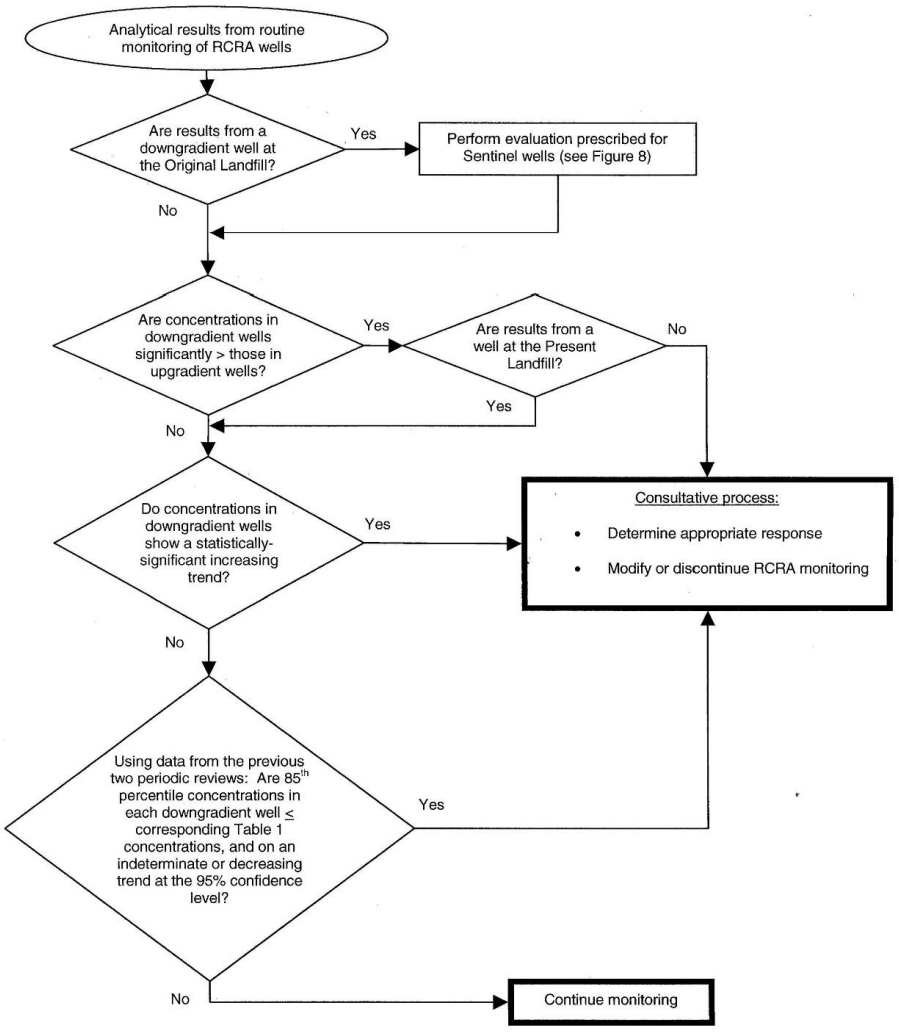


Figure 10. RCRA Wells

D.7 Groundwater Treatment Systems

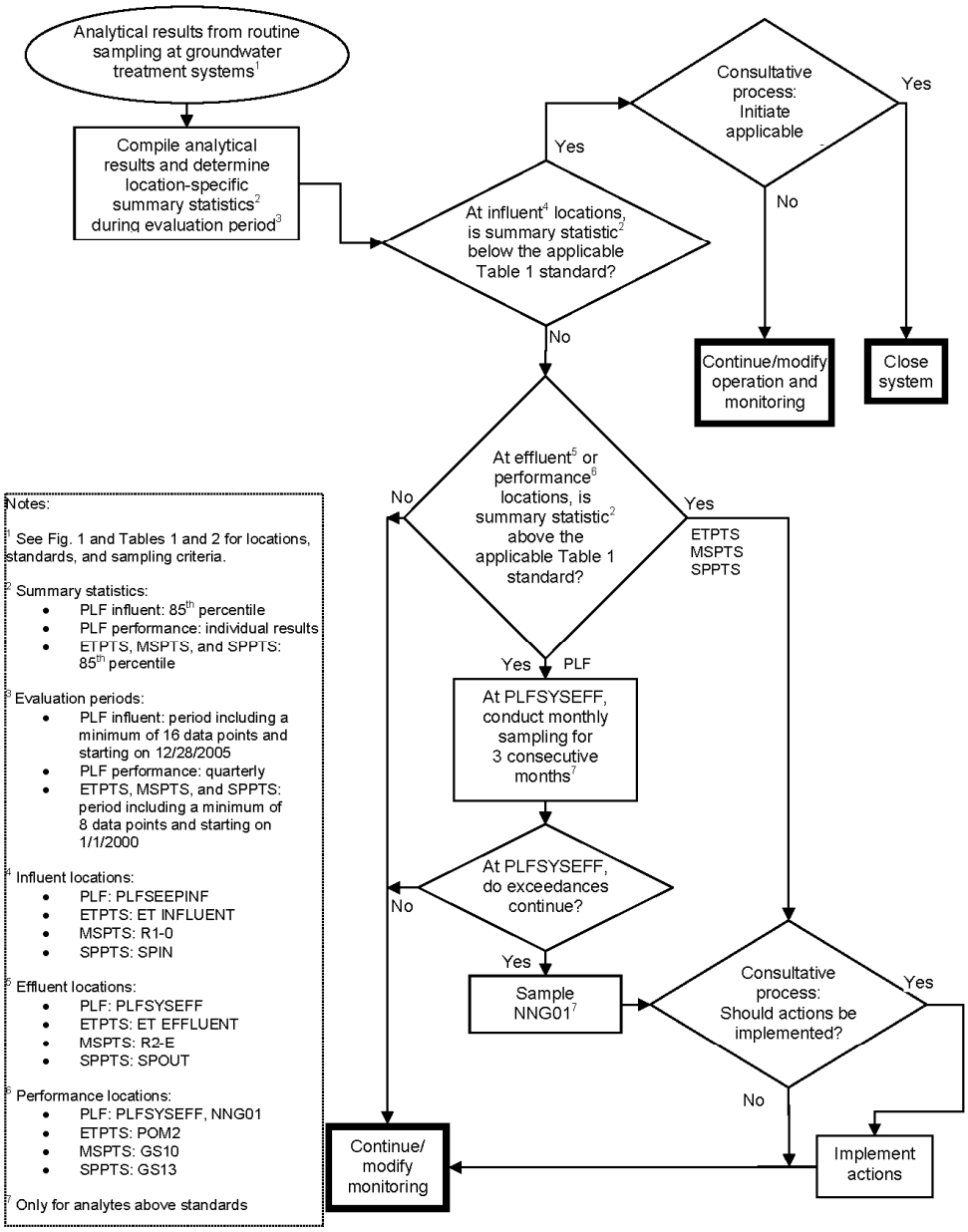


Figure 11. Groundwater Treatment Systems

D.8 Original Landfill Surface Water

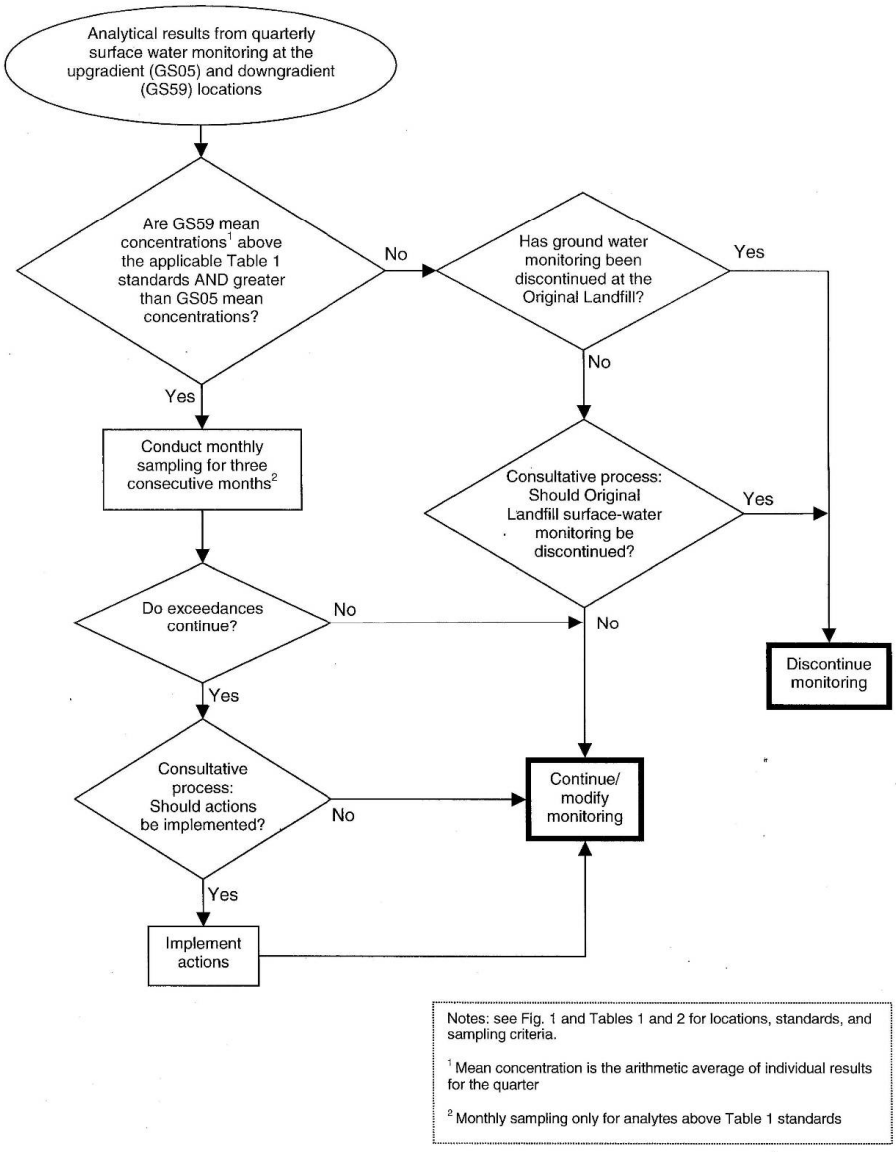


Figure 12. Original Landfill Surface Water

D.9 Pre-discharge Pond Sampling

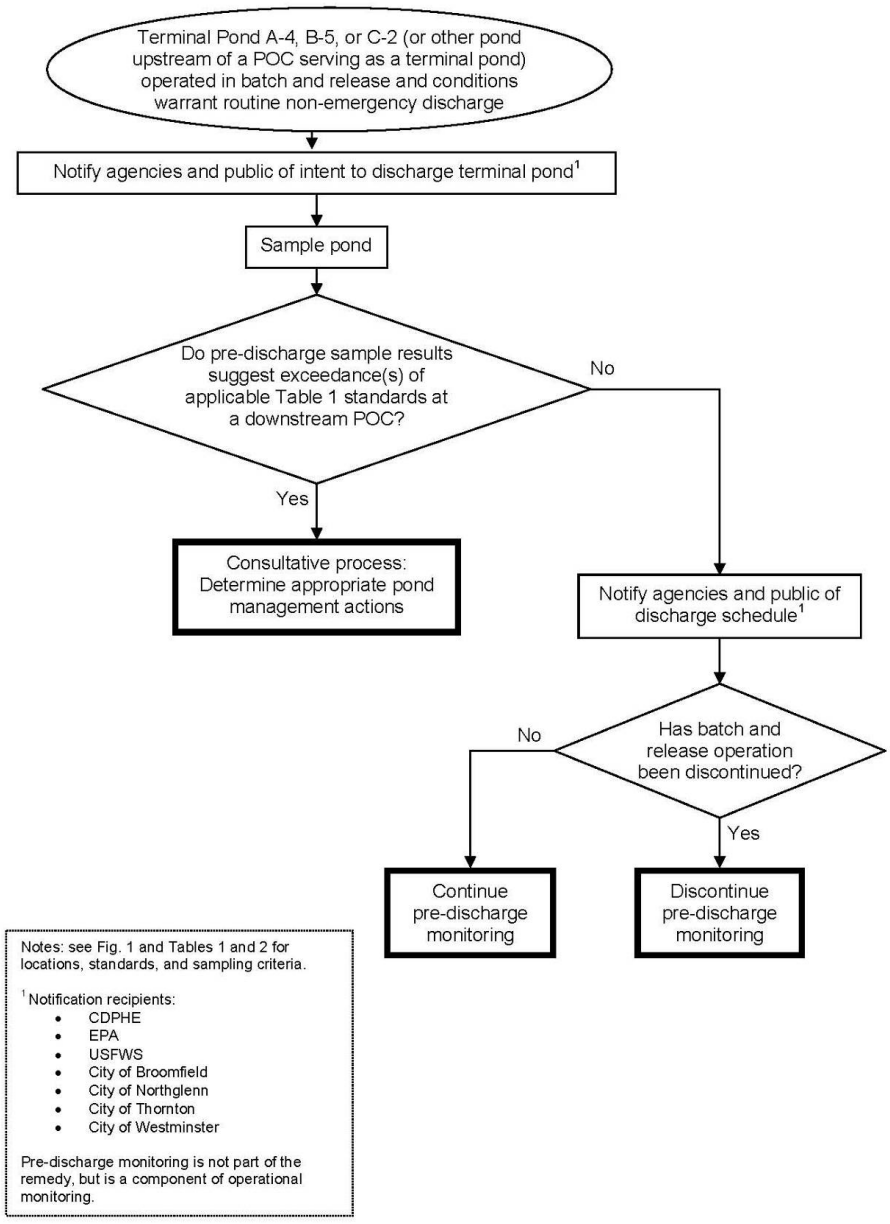


Figure 13. Pre-discharge Pond Sampling