



New Jersey Department of Environmental Protection (NJDEP)
Contaminated Site Remediation & Redevelopment

**INSTRUCTIONS FOR THE GROUND WATER MONITORING PLAN SPREADSHEET
FOR GROUND WATER REMEDIAL ACTION PERMIT**

Header of the Spreadsheet:

1. **Case Name** - Provide the name of the site/case.
2. **Program Interest (PI) #** - Provide the PI# assigned for the site/case.
3. **Date Spreadsheet Was Last Updated** - Provide the date this form was last updated by the Licensed Site Remediation Professional (LSRP) [this date is important as the Ground Water Monitoring Plan (GWMP) could be revised post-Remedial Action Permit (RAP) Application submission].
4. **Calendar Year to Begin Sampling Under This Plan** - Provide the year that long-term sampling under the GWMP form will begin.

Note: Long-term monitoring should begin upon submittal of a Ground Water RAP Application. It is not recommended to wait for the issuance of the Ground Water RAP to begin this sampling schedule as this schedule was deemed protective of public health and safety and of the environment by the LSRP. Waiting for the issuance of the RAP before starting long-term monitoring proposed on the GWMP may not be protective of receptors.

5. **Season With Highest Concentrations Monitoring Will Target** - If long-term monitoring under a Ground Water RAP is targeting a specific season, provide the season here.
 - Spring: Sampling will be conducted between March 1st and May 31st.
 - Summer: Sampling will be conducted between June 1st and August 31st.
 - Fall: Sampling will be conducted between September 1st and November 30th.
 - Winter: Sampling will be conducted between December 1st and February 28/29th.

If a specific season is not being targeted for long-term monitoring (e.g., seasonal fluctuations are minimal, the highest contaminant concentrations do not line up with a specific season historically, etc.), "N/A" may be selected. For more information on evaluating season trends, please refer to Section 5.3.1. of the NJDEP's Monitored Natural Attenuation (MNA) Guidance document.

Body of the Spreadsheet:

1. **Wells to Be Sampled** - List all the wells planned to be sampled as part of the Ground Water RAP monitoring, maintenance, and evaluation requirements. A well should be listed more than once if sampling parameters are listed as individual chemicals rather than by a suite of parameters or where multiple parameter groups are proposed for a well. See Section VII.2.f of the NJDEP's Ground Water RAP Guidance document as it relates to this issue.
2. **Type of Well** - For each well listed, select the applicable type of well from the drop-down list.

Note: Pore water or surface water sampling can be used in-lieu of sentinel wells in some instances. Any pore water or surface water sampling proposed as part of long-term monitoring of a RAP should be identified as sentinel points on the GWMP Spreadsheet.

- Area of Concern: well(s) located at the source area(s) and designed to monitor plume conditions at the source area(s).
- Plume Sampling Point: well(s) located outside of the source area(s), but within or near the middle of the ground water contaminant plume.
- Plume Fringe: well(s) at or near the edges of the ground water contaminant plume.
- Sentinel: well(s) or pore water/surface water sampling point(s) beyond the horizontal or vertical extent of contamination. Sentinel wells should be located no closer than three years travel time to the nearest potential downgradient receptor and no further than five years travel time from the delineated downgradient extent of the contaminant plume.
- Potable: domestic well(s), public supply well(s), community supply well(s), or any other well that is being used for potable purposes.

- Irrigation: non-potable well(s) used for irrigation.
 - Hydrostatic: well(s) used for the collection of ground water elevation data only.
3. **Easting and Northing** - Provide the State Plane Coordinates [(X,Y) coordinates] of the well, using the North American Datum of 1983 (NAD 1983) coordinate system. Locational information collected in latitude and longitude shall be converted to New Jersey state plane coordinates. Conversion programs can be obtained at <http://www.nj.gov/dep/srp/hazsite/help/software/>. Additional information can be found at <http://www.state.nj.us/dep/njgs/geodata/dgs03-1usrgd.htm?Return3=Top>.
4. **Sampling Schedule** - Select the sampling frequency for each well.
- Monthly
 - Quarterly
 - Semi-Annually
 - Annually
 - Biennially
 - At the Expiration of the CEA: Recommended for Classification Exception Areas (CEAs) with short durations (i.e., less than 2 years), or wells such as plume sampling points that may not need to be sampled regularly.
 - MNA Guidance Table 4: The following table and footnote will be added by the NJDEP in the GWMP.

Timeframe	Performance Well Sampling Frequency*	Sentinel Well Sampling Frequency
Years 1 through 4	Annually	½ travel time to nearest receptor or annual, whichever is more frequent
Years 5 through 8	Biennially	½ travel time to nearest receptor or biennial, whichever is more frequent
After Year 8	BTEX: Every 8 years for the remainder of the permit. Contaminants other than BTEX > 10X GWQS: every 4 years Contaminants other than BTEX < 10X GWQS: every 8 years for remainder of the permit	½ travel time to nearest receptor or the same frequency as the performance wells, whichever is more frequent

* Progression through this sampling schedule is appropriate only if contaminant degradation is occurring as predicted during each monitoring event, and the remedy remains protective of receptors. If contaminant degradation is not occurring as predicted, the applicability of the MNA remedy must be re-evaluated in accordance with the MNA guidance.

- Other: The “other” sampling schedule should be selected when the proposed schedule is different than all other selections available on the GWMP Spreadsheet. Describe the proposed sampling schedule in the excel tab titled “Describe Other Schedule”. Sections of the “Describe Other Schedule” tab include:
 - Year Range: Enter the range of time a sampling schedule will be implemented. Some examples of time ranges include “Years One Through Four”, “Years Five Through Eight”, and “After Year Eight”. Note: These time ranges should be based on the year provided in the “Calendar Year to Begin Sampling Under This Plan” section in the header of the main spreadsheet tab.
 - Sampling Schedule: Select the sampling schedule frequency from this drop down. Sampling schedule options include: Monthly, Quarterly, Semi-Annually, Annually, Biennially, Every four years, Every six years, Every eight years, and At the expiration of the CEA.
 - Comments: Fill out the comments column if you believe more information needs to be provided to describe your sampling plan.

Example: Below is an example of how the “Describe Other Schedule” tab should be filled out for a site where sampling is planned to progress from semi-annually to biennially for all monitoring wells.

Year Range	Sampling Schedule	Comments
Years One and Two	Semi-Annually	All monitoring wells on GWMP
Years Three and Four	Annually	All monitoring wells on GWMP
After Year Four	Biennially	All monitoring wells on GWMP

Note: The NJDEP will add the following footer to any GWMP in the RAP where tiered sampling is proposed:

“Progression through this sampling schedule is appropriate only if contaminant degradation is occurring as predicted during each monitoring event, and the remedy remains protective of receptors. If contaminant degradation is not occurring as predicted, the applicability of the MNA remedy must be re-evaluated in accordance with the MNA guidance.”

5. **Sampling Method** - Select the sampling method category which will be utilized for each well on the GWMP. The sampling method selections include the following:
 - Volume Averaged: Suggested for site characterization and site closeout purposes.
 - Low-Flow*: Suggested when limiting sample turbidity is necessary or when working with wells yielding low volumes of water.
 - Passive Diffusion Bags (PDB)*: Suggested when limiting sample turbidity is necessary, or when long-term monitoring of specific depth intervals is warranted.
 - Flute/Multi-Port*: Select when proposing to perform long-term sampling via flute/multi-port sampling methods.
 - Pore Water: Should only be selected when it is not possible to install a clean monitoring well between the plume and a surface water body. Pore water sampling should only be identified as a “sentinel” point on the GWMP.
 - Surface Water: Should only be selected when it is not possible to install a clean monitoring well between the plume and a surface water body. Surface water sampling should only be identified as a “sentinel” point on the GWMP.
 - Other*: Select “other” when proposing to perform long-term sampling with a sampling method other than the types listed above (e.g., Snap, HydraSleeve, CMT, etc.). When selecting “other”, describe the sampling method that will be used in the “comments” column.

* Per the NJDEP Field Sampling Procedures Manual (FSPM) at 6.9.1.4.5, wells being sampled for the purpose of collecting data for site or well closeout should be sampled by the Volume Averaged method for at least the confirmatory second sampling event accounting for seasonal fluctuation. Line(s) of evidence (i.e., for wells that are only being sampled for compounds that are sediment/turbidity sensitive) should be provided when deviating from this guidance. See the ground water sampling policy section within Chapter 6 of the FSPM for more details.
6. **Parameters for Each Well** - Use the listed names for the suite of parameters in the drop-down list (e.g., Volatile Organics, BTEX, Metals, etc.) unless a significantly reduced list of parameters, in relation to all the parameters included in the suite, is proposed (e.g., Arsenic or Benzene only). Sampling for Synthetic Organic Chemicals (AKA Tentatively Identified Compounds) is to be indicated by the applicable choice of SOC on the drop-down menu.
7. **Comments** - The comments column should be used when the investigator believes there is additional information which needs to be provided with the GWMP. Examples of information which should be included in the “comments” column, include, but are not limited to the following information:
 - When a proposed sampling method is not available in drop down selections.
 - When sampling via low-flow or PDBs and more than 5 feet of saturated screen is present, the planned depth of sample collection should be noted, particularly for sentinel wells which will require one sample to be collected for every 5 feet of saturated screen per Chapter 6 of the FSPM.