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DOCKET
WM-42

Philip Ting, Chief
U.S. Nuclear Regulatory Commission
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety and Safeguards
Mail Stop T8A33
Washington, DC 20555-0001

Subject: Clarification of Reduced Ground Water and Surface Water Monitoring as Proposed in the Revised Long-Term Surveillance Plan for the Burrell Vicinity Property, Blairsville, Pennsylvania

Reference: Revised *Long-Term Surveillance Plan for the U.S. Department of Energy Burrell Vicinity Property, Blairsville, Pennsylvania,* April 2000

Dear Mr. Ting:

As a follow up to a telephone conversation with Ms. Jill Caverly of your staff, this letter clarifies the basis for reducing the ground water and surface water monitoring requirements at the Burrell vicinity property near Blairsville, Pennsylvania, as specified in the referenced document.

The changes to the ground water and surface water monitoring practice for this site occur in four areas as follows:

- Reduction in number of analytes
- Reduction in sampling frequency
- Elimination of surface water sampling in the Conemaugh River
- Elimination of two monitor wells (one well pair) from the monitoring network

Historic Ground Water and Surface Water Monitoring Practice

Ground water monitoring at the Burrell vicinity property has been conducted since 1987. Monitor wells were sampled twice per year for 5 years from 1987 through January 1993. Monitor wells have been sampled annually since 1993. Ground water samples were acquired from ten monitor wells (five pairs). Samples were analyzed for the 20 analytes shown in Table 1.

Surface water samples were collected from the Conemaugh River both upstream and downstream of the site and from two seeps in the vicinity of the disposal cell. The river was sampled on the same frequency as the ground water. The seeps were also sampled on the same schedule, if water was present during the sampling event.

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**Table 1. Constituents Historically Analyzed in Ground Water**

| Constituent | Constituent |
|---|---|
| Ammonium | Nitrate |
| Calcium | Potassium |
| Chloride | Radium-226 |
| Cyanide | Radium-228 |
| Gross alpha | Selenium |
| Iron | Sodium |
| Lead | Sulfate |
| Magnesium | Total dissolved solids |
| Manganese | Uranium |
| Molybdenum | Vanadium |

Future Ground Water and Surface Water Monitoring Practice

- Reduction in number of analytes

The analyte list is being reduced from 20 to 14. The new list of analytes is shown in Table 2. Radium-226 and radium-228 concentrations have never exceeded their respective maximum contaminant levels (MCLs) and were therefore deleted from the analyte list. Vanadium and gross alpha results have consistently been below their respective detection limits and were therefore deleted from the analyte list. Ammonium, though detected, is an unregulated substance and was not providing useful information to the DOE and was therefore deleted from the analyte list. Cyanide has never been detected and was therefore deleted from the analyte list. The DOE is confident that the remaining suite of 14 analytes provides sufficient information for disposal cell performance evaluation.

**Table 2. Constituents for Future Ground Water Analysis**

| Constituent | Constituent |
|---|---|
| Calcium | Nitrate |
| Chloride | Potassium |
| Iron | Selenium |
| Lead | Sodium |
| Magnesium | Sulfate |
| Manganese | Total dissolved solids |
| Molybdenum | Uranium |

- Reduction in sampling frequency

Following disposal site closure in 1987 and until 1992, a few constituents occasionally exceeded MCLs. Since 1992, the results of the sample analyses have failed to demonstrate meaningful trends. Most results are below detection limits. Results that do exceed detection limits have been consistently very low. For those constituents with published MCLs the measured concentrations are orders of magnitude below the MCL, if detected at all. Therefore, DOE is confident that reducing the sampling frequency to once every 5 years is justifiable and warranted.

- Elimination of surface water sampling in the Conemaugh River

Surface water sampling from the Conemaugh River will be discontinued because the upstream and downstream sample analysis results have never exhibited meaningful differences. Given the low concentrations of contaminants found in the ground water and the essentially infinite dilution effect on samples by the river, meaningful results cannot be reasonably expected.

Surface water sampling of two seeps will continue. Samples are taken from the two seeps exhibiting the greatest flow at the time of the sampling event. In some years there is insufficient flow to support seep sampling.

- Elimination of two monitor wells (one well pair) from the monitoring network

Monitor well pair 421 and 521 will no longer be sampled. The DOE has determined that these wells are located on property owned by the railroad, and DOE has been unable to obtain permanent access to the wells from the railroad. Monitor wells 421 and 521 are up-gradient wells. Since there is another pair of up-gradient wells that are screened in the same hydrologic units (420 and 520), it is DOE's position that discontinuing monitoring of wells 421 and 521 will not negatively affect the credibility of the site ground water monitoring program. The enclosed MACTEC-ERS memorandum provides further analysis and justification for discontinuing the sampling of monitor wells 421 and 521. The DOE plans to formally decommission monitor wells 421 and 521 as soon as possible.

Please call me at (970) 248-6037 if you have questions.

Sincerely,

Art Kleinrath

Art Kleinrath
Program Manager

cc:

Enclosure

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Project Record File LBUR 1.1 (A. Garcia)

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MACTEC ENVIRONMENTAL RESTORATION SERVICES, LLC

CONTRACT NO.: DE-AC13-96GJ87335
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MEMO TO: Distribution

FROM: Tim Bartlett TRB

DATE: May 15, 2000

SUBJECT: Ground water monitoring wells 0421 & 0521 at the Burrell, PA UMTRA Title I Site

I have briefly reviewed pertinent information for the Burrell site and my opinion is that the monitoring network will not be compromised if wells 421 (alluvial well) and 521 (bedrock well) are abandoned. Apparently, these wells, in addition to paired wells 420 and 520, are hydraulically upgradient of the disposal cell. A third pair (wells 422 and 522) is reported to be cross-gradient of the cell, and is used to monitor background water quality. The database lacks the information needed to confirm the flow relationships. Each of these wells has been sampled with the same frequency since post-closure monitoring began in 1987. The same depth interval in the alluvium and bedrock is sampled at the three well pairs and, among alluvial and bedrock wells, seasonal fluctuations in water levels are the same. This information suggests that the same portion of the aquifer is sampled at the different locations.

COC levels in site ground water are, and have been, generally much lower than MCLs (site water quality benchmarks). Except for several anomalous results, which occurred primarily during the first 3 years following closure, MCLs have not been exceeded. Since about 1990, COC concentrations in all downgradient wells (423, 424, 523, and 524) have remained stable at low levels consistent with background. The exceptions are downgradient alluvial wells 423 and 424, where molybdenum and uranium concentrations are commonly about one-third to one-half the MCL. These occurrences are not likely from an off-site (upgradient) source but rather derive on-site.

For the past 10 years, trace metal and radiological COCs at each background location have been below or only marginally greater than the limit of detection. Nitrate levels have also been very low. Concentrations of COCs among samples from well 421 are essentially no different from those from wells 420 and 422, per analyte. Similarly, there is no difference in the results, per analyte, among wells 520, 521, and 522.

Because ground water characterization has been completed, the occurrences of apparent contamination have been accounted for, and a substantial record of background water quality has been established, future monitoring of wells 421 and 521 is probably unnecessary. Instead, continued monitoring at well pairs 420/520 and 422/522, plus the historical record for wells 421

and 521, should provide an adequate assessment of background water quality. The monitoring network will remain effective if wells 421 and 521 are abandoned.

TB/ld

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