



# **GROUNDWATER MONITORING DATA RELEASE**

## **Spring 2021 SAMPLING EVENT**

### **LUCKEY FUSRAP SITE**

---

**U.S. Army Corps of Engineers**  
**Buffalo District**

**Building Strong®**

**JUNE 2021**

#### **Formerly Utilized Sites Remedial Action Program (FUSRAP)**

FUSRAP was initiated in 1974 to identify, investigate and, if necessary, clean up or control sites throughout the United States that were contaminated by Manhattan Engineer District or early Atomic Energy Commission (AEC) activities. When implementing FUSRAP, the Corps of Engineers follows the investigation and response framework of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan.

#### **Site Description**

The Luckey Site is located at 21200 Luckey Road near the Village of Luckey, Ohio, 22 miles southeast of Toledo. It is bordered by Luckey Road to the west, Gilbert Road to the south, abandoned railroad tracks to the east, and privately-owned farm fields to the north. The site is zoned industrial but is currently not being used. It covers approximately 40 acres and includes open areas as well as unused buildings, some of which are partially demolished. Several of these open areas were previously used to store byproducts from beryllium ore processing.

#### **Site History**

In 1942 the federal government built a magnesium processing facility at the site, which was operated by National Lead for the federal government from 1942 to 1945. In 1949 Brush Beryllium Company (later Brush Wellman) began production of beryllium oxide, beryllium hydroxide, and beryllium pebbles at the site under contract to the AEC. Brush Beryllium Company operated the facility for the AEC until 1958 when beryllium production ceased. In 1959, AEC contracted with Brush Beryllium Company to close the facility. Closing operations consisted of constructing a two-acre diked disposal area in the northeast corner of the property where sludge from three on-site lagoons was placed. The General Services Administration sold the facility in 1961 and the site has had various owners since then.

## Purpose

Groundwater monitoring is being performed to obtain additional information and to establish a baseline of groundwater data prior to implementing monitored natural attenuation of groundwater, as documented in the February 2008 *Record of Decision, Groundwater Operable Unit, Luckey Site*.

Hydrogeologic conditions and the nature and extent of groundwater contamination at the site are presented in the Record of Decision (ROD). Groundwater occurs in three primary water-bearing zones: shallow, intermediate, and deep bedrock. It is present under unconfined and semi-confined conditions. The horizontal flow of groundwater within these zones in the vicinity of the site is northerly and northwesterly. Constituents of concern (COCs) and associated U.S. Environmental Protection Agency (USEPA) maximum contaminant levels (MCLs) for protection of drinking water include beryllium (4 micrograms per liter [ $\mu\text{g/L}$ ]), lead (15  $\mu\text{g/L}$ ), and total uranium (30  $\mu\text{g/L}$ ).

The current groundwater monitoring program (well number and locations) varies from the 2008 ROD due to the decommissioning of site wells in conjunction with a soil remediation program. The ROD-based monitoring program will be reestablished once the soils remedy is completed.

## Results and Interpretation

During March 22 to 25, 2021, 19 groundwater monitoring wells (illustrated on Figure 1), two former production wells (PW-(E) and PW-(W)), and one residential well (GW0002) were sampled for beryllium, lead, isotopic uranium (uranium-234 [U-234], U-235, U-238), and total uranium. Groundwater surface elevations measured during this event are presented in Table 1.

Analytical results are presented in Table 2. Samples with concentrations above the USEPA MCLs are listed below and highlighted in Figure 1 and Table 2.

- Beryllium (MW-01(I), MW-02(S), MW-22R(I), and MW-26(S))
- Lead (MW-21(I))

These exceedances are consistent with previous results. The wells are located on-site and are not used for water supply. Residential well GW0002 did not contain COCs at concentrations above the MCLs.

### Beryllium

Plots of beryllium concentrations against time are presented on Figure 2 (unfiltered samples) and Figure 3 (filtered samples) for monitoring wells MW-01(I), -02(S), -22R(I), and -26(S) and for residential well GW0002. The Mann-Kendall test was used to determine if the data exhibit statistically significant upward trends or downward trends.<sup>1</sup> Results are summarized in Table 3. The following conclusions are made from the data plots and trend analysis:

---

<sup>1</sup> Statistical significance evaluated at the 90 percent level of confidence.

- Downward trends are observed for wells MW-01(I) (unfiltered samples) and MW-02(S) (filtered and unfiltered samples).
- No trends are observed for wells MW-01(I) (filtered samples), MW-22R(I) (filtered and unfiltered samples), MW-26(S) (filtered and unfiltered samples), and GW0002 (filtered and unfiltered samples).

### Lead

Plots of lead concentrations against time are presented on Figure 4 (unfiltered samples) and Figure 5 (filtered samples) for wells MW-21(I), GW0002, and PW(E) (former water supply well for the Luckey Site). Trend analysis results are summarized in Table 3. The following conclusions are made from the data plots and trend analysis:

- A downward trend is observed for well MW-21(I) (filtered and unfiltered samples).
- No trends are observed for wells GW0002 (filtered and unfiltered samples) and PW(E) (filtered and unfiltered samples).

### Total Uranium

Plots of total uranium concentrations against time are presented on Figure 6 (unfiltered samples) and Figure 7 (filtered samples) for wells MW-21(I) and GW0002. Trend analysis results are summarized in Table 3. The following conclusions are made from the data plots and trend analysis:

- A downward trend is observed for well MW-21(I) (filtered samples).
- An upward trend is observed for well GW0002 (filtered samples).<sup>2</sup>
- No trends are observed for wells GW0002 (unfiltered samples) and MW-21(I) (unfiltered samples).

---

<sup>2</sup> All results were below the MCL.

**[This page intentionally left blank]**

# FIGURES

**[This page intentionally left blank]**

# **TABLES**

**[This page intentionally left blank]**