

landfill construction. Measurements were made which indicated that the water was approximately eight feet in depth, but the total volume of water within the cell was unknown. Due to the fact that pumping activity was principally from the secondary leak detection sump and given the existence of water from construction activities, it was decided that the Site could not be considered to be operational and functional.

Operational and functional is defined in NCP § 300.435(f)(2) as follows:

A remedy becomes "operational and functional" either one year after construction is complete, or when the remedy is determined concurrently by EPA and the State to be functioning properly and is performing as designed, whichever is earlier. EPA may grant extensions to the one-year period, as appropriate.

Based on the measurements of water described above, and in accordance with NCP Section 300.435(f)(2), the one-year operational and functional period was extended by the EPA. By means of an interagency agreement with EPA, USACE continued remedial activities at the Site. The USACE secured a contractor and installed a permanent electrical supply box, flow meter, high and low pump limit switches, circuit and wiring modifications for automated water pumping activities, and project signs; USACE also arranged for Site mowing and other related activities. In October of 1995, Halliburton Services was contracted to cut additional slots into the sump pipes using a hydrojet. After the slots were cut, the recharge of the water into the sump pipes increased appreciably.

Pumping operations began May 20, 1996. A contractor, Griffin Electric of West Memphis, Arkansas, installed a control system on one of the pumps in March that would turn the pumps on and off automatically according to the water levels in the sump pipe. A flow totalizer was installed to record the amount of water removed from the landfill. Operational shakedown and verification of system performance were completed on July 11, 1997, and the system ran fully automatically. As of July 29, 1998, the automated system had pumped an additional 16,708 gallons. Pumping by the USACE continued until January 1999, with a decrease in the average pump rate over the course of the USACE-conducted pumping.

The Quality Assurance/Quality Control (QA/QC) program utilized throughout the Remedial Action was sufficient to enable EPA, ADEQ and USACE to determine that the testing results reported were accurate to assure satisfactory completion of the Remedial

Action consistent with the Enforcement Decision Document. All previous sampling results from the Remedial Investigation, Feasibility Study, and Remedial Design are documented in the project files and also followed appropriate QA/QC procedures.

Several types of data were collected over the course of the USACE-conducted operational and functional activities, including recharge rates to the sumps, volumetric data, hydraulic characteristics, ground water elevations, and analytical data. Based upon this data, the final engineering report prepared by USACE concluded that the Gurley Pit landfill cell appears to be operational and functional as designed and constructed. The following items support this conclusion:

- Pumping data demonstrates that the collection system is capable of maintaining less than one foot of head above the bottom liner system.
- Recharge rates into the detection and collection sumps continued to decrease throughout the USACE pumping period, refuting the possibility of a major influx of water table flow and/or recurring rainwater into the cell during or between the pumping events.
- The volume of water pumped continued to decrease steadily with each pumping event or work period, further negating concerns of major infiltration of ground water and bearing evidence of minimum rainfall permeability of the cell.
- The comparison of elevation data collected over the course of the USACE work period does not indicate hydraulic communication between the pumping water and the water bearing zone which is being monitored.
- Contaminant concentrations have remained consistently low and uniform in the ground water monitoring events.

Similarities in types of chemical constituents detected in the samples collected by USACE in both the primary and secondary leachate collection systems indicate that the two systems may be in hydraulic communication; a general trend in the data was that the majority of the water pumped was from the secondary containment system. However, while it appears that there may be a leak in the primary liner which allows water to move into the secondary containment system, there has been no evidence of detectable contamination in the tested ground water.

As documented in the Final Close-Out Report, dated July 31, 1998, EPA extensively reviewed applicable regulations and guidance to evaluate the severity of the leakage problem. EPA's review supports the determination that

there is not a serious leak of the top or bottom liner systems at the Site and that the Site remedy is fully operational and functional, and this determination is also supported by the results of the second five-year review for the Site, conducted in September 2002. The presence of water in the detection and collection systems apparently resulted from heavy rainfall during construction of the cell, which evidently saturated the sand drainage system in the cell, but did not indicate any problems with the remedy or the integrity of the cell. It also should be noted that landfill covers of this design in similar climate conditions do leak to a limited extent. Moreover, the solidified cell waste serves to further minimize leachate and ensure a low-risk facility at the Site. Continued pumping of leachate from the vault will be required throughout the operation and maintenance (O&M) period to remove construction water and leachate as they accumulate, and continued monitoring of the ground water monitoring wells will also be needed. These activities are detailed in ADEQ's O&M plan for which ADEQ has secured EPA's approval; the final O&M and monitoring plan will be implemented by ADEQ.

CERCLA requires a five-year review of all sites with hazardous substances remaining above the health-based levels for unrestricted use of the site. A five-year review was required for this Site because the selected remedy does not allow for unlimited use and unrestricted exposure. The first five-year review was completed on January 9, 1997, and a second five-year review was completed in September 2002. Ground water sampling performed by EPA in 2002 confirmed EPA's determination that the Site remedy is fully operational and functional. Further five-year reviews will be conducted pursuant to OSWER Directive 9355.7-02A, "Structure and Components of Five Year Reviews," and other applicable guidance.

On July 31, 1998, the final Close-Out Report was signed in which EPA, in consultation with ADEQ, concluded that all appropriate response actions required to ensure the protectiveness of human health and the environment at the Gurley Pit Superfund Site had been implemented. Long-term O&M of the ground water wells and the RCRA vault will be under the direction of ADEQ.

All the completion requirements for this Site have been met as specified in OSWER Directive 9320.2-09A, "Close Out Procedures for National Priorities List Sites." Confirmatory sampling conducted during the second five-year review has verified that the ROD and Enforcement Decision Document