ER Site No. 166: Bldg 919 Septic System

ADS: 1303
Operable Unit: Tech Area II

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Site History

Building 919, the Explosive Devices Building, was constructed in 1969 and is located in the central part of Technical Area II (TA-II). The building is 6,530 sq. ft. and was used for testing thermal batteries, neutron generators, laser research, and disassembling HE devices. It also contained a chemistry laboratory, a darkroom for photo-processing, one bathroom, and offices. The wastewater from the building discharged to the building septic system which is east of the building and consisted of two 1250-gal septic tanks, a seepage pit, and a leachfield. The leachfield consists of four 2-ft-wide by 15-ft-long gravel-filled trenches in a herringbone containing 4-in. diameter PVC perforated pipes.

A small drywell southeast of the building may have served a sink or fumehood in the south end of the building. No information is available on constituents of concern that may have been discharged to the drywell.

The building was connected to the City of Albuquerque Sanitary Sewer System in 1990, and use of the septic and drain systems were discontinued at that time.

Little information is available regarding early operations and the types and amounts of potentially hazardous materials that may have been used at the building or discharged to the septic and drain systems. Limited indoor HE testing was conducted in the southeast corner of Building 919. HE components were removed from weapons using the organic compound n-methyl-pyrolidone. This compound, typically stored in a 55-gal drum, was biodegradable and was only used once every three or four months. Other potential COCs may include metals related to work on thermal batteries or photo-processing and possibly tritium related to work on neutron generators.

The regional aquifer in the vicinity of ER Site 166 is within the upper unit of the Santa Fe Group. The depth to the regional aquifer in the nearest monitor well to ER Site 166 (TA2-NW1-595) is

approximately 520 feet (ft) below ground surface (fbgs) or 4,889.3 ft above mean sea level (famsl). A shallow water-bearing zone also exists in the vicinity of ER Site 166. The depth of the shallow zone ranges from approximately 267 to 320 fbgs (5,081 to 4,889 famsl). Monitor wells TA2-SW1-325, TA2-NW1-320, WYO-2, TA2-W-19, and TA2-W-01 are located in the vicinity of ER Site 166 and are screened in the shallow water-bearing zone.

The area is essentially flat, with a gentle slope to the west of approximately 4 percent. Tijeras Arroyo, the largest drainage feature at SNL/NM, is located approximately one half mile from the site. The surface geology consists of unconsolidated alluvial and colluvial sedimentary deposits ranging from clay to gravel derived from the the granitic rocks of the Sandia Mountains and greenstone, limestone, and quartzite derived from the Manzanita Mountains. The surface deposits are underlain by the upper unit of the Santa Fe Group. In this area, the piedmont-slope alluvium may be up to 100 ft thick, and the upper Santa Fe unit is approximately 1,200 ft thick.

The piedmont-slope alluvium, which was deposited by the ancestral Tijeras Arroyo, is generally coarse-grained sand and gravel. The upper Santa Fe unit was deposited from 5 to 1 million years ago and consists of coarse- to fine-grained fluvial deposits from the ancestral Rio Grande that intertongue with coarse-grained alluvial-fan/piedmont-veneer facies, which extend westward from the Sandia and Manzanita Mountains. ER Site 166 is near the easternmost limit of the ancestral Rio Grande deposits.

Several rift-bounding faults are located east of ER Site 166. The nearest is the Sandia fault-zone, characterized by north-trending, west-dipping normal faults. The westernmost fault is located approximately 1.2 miles east of the site.

Constituents of Concern

HE
Organic Compounds
Tritium
Metals

Current Hazards

There are no hazards at this site related to chemical or radioactive contamination of surface or subsurface soils. The open landfill excavation could be a hazard to carelessly operated vehicles. The shower and dress-out trailer east of Bldg. 919 contains cylinders of compressed breathing air and some instrument calibration gases. A shed on the southeast corner of Bldg. 919 and the trailer northeast of Bldg. 919 contain a few cylinders of P-10 calibration gas. Bldg. 919 contains some radioactive instrument calibration sources but they are secured and properly posted.

Current Status of Work

Investigations have included passive soil vapor surveys and soil sampling. Waste was removed from the septic tanks, and the empty tanks were inspected by a New Mexico Environment

Department (NMED)inspector in late 1995. Tank concrete samples were collected to verify that no COCs remain.

Based on an absence of contamination, ER Site 166 was proposed for No Further Action (NFA) in June 1995. Regulatory approval of the NFA is pending results of the TA-II groundwater investigation. In May 2000, the leachfield and drywell were excavated to accurately map their configuration and depth for future sampling. In September 2000, the leachfield and drywell were resampled to verify that no constituents of concern remain in concentrations that pose a risk to human health or the environment.

Future Work Planned

Additional sampling results from 2000 and a revised risk assessment will be submitted to NMED once evaluation and documentation is complete. Further investigations may be necessary at the discretion of NMED.

Waste Volume Estimated/Generated

Twelve drums of very mildly radioactive septage were generated. All waste has been disposed off-site.

Information for ER Site 166 was last updated Jan 24, 2003.