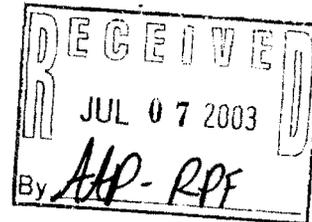


Los Alamos
NATIONAL LABORATORY
memorandum

Chemical Science and Technology
Responsible Chemistry for America

Environmental Restoration Project/CST-18
Los Alamos, New Mexico 87545

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HISTORY OF THE GENERAL'S TANKS, SWMU 21-014 AND ACID WASTE SUMP PUMP; STRUCTURE TA-21-223, SWMU 21-011(b).

The General's Tanks were installed in January 1945, by the Robert E. McKee Construction Company. See the attached drawings Eng-C2076 thru Eng-C2078, Attachment No. 1. The tanks are located at the west end of Material Disposal Area-A (MDA-A), SWMU 21-014. The purpose of the tanks was to store solutions that contained plutonium instead of dumping these solutions into disposal pits. The intention was to recover these solutions in the future and reclaim the plutonium. This was never done. The tanks are designated TA-21-107 and TA-21-108.

In March 1974, a decision was made to transfer the liquid radioactive wastes stored in the General's Tanks to the influent holding tanks, TA-21-110 and TA-21-111, at the Waste Disposal Plant, TA-21-257. This waste was then to be treated and released as effluent from the plant. A Standard Operating Procedure to accomplish this was written and implemented later in 1974. Attachment No. 2 is a copy of this procedure.

The following description of how the General's Tanks have been used was obtained from an interview with David Salazar, EM-RLW. Mr. Salazar started working at TA-21-257 in 1970 and was a Plant Operator Assistant in 1974 and helped with the liquid transfer operation. He is now the Facility Operator for TA-21-257.

A shed type of shelter, TA-21-40, was constructed at the south end of the tanks, see Attachment No. 3 for tank and shelter location. 2 1/2" hoses were laid out on the ground from TA-21-40 and connected to the 2 1/2" fill pipes located in the concrete boxes on the surface at the south end of each buried tank. Tank trailers were backed into the shelter and attached to the surface hoses and their radioactive solutions were drained into the tanks. This operation continued on an intermittent basis until 1974.

In 1974, it was decided to drain the General's Tanks to TA-21-257. Holes, with the sides sloped, were dug down to the concrete slab at about the center of each tank. Holes about one yard square were broken through the 8" reinforced concrete slab, the dirt removed from the bottom of the slab to the top of the tanks, and a hole, about 16" in diameter was cut in the top of each tank. Square metal plate covers, rolled to the same dimension as the outside radius of the tank, were fabricated to cover the 16" diameter access holes. There were no gaskets or seals used between the cover plates and the top of the tanks. A submersible pumps was lowered into a tank and the contaminated fluid was pumped from the tank and injected into the 3" force main, that connects TA-21-223 with TA-21-257, through a flushing connection at the northwest corner of the fence around MDA-A. This fluid transfer operation took about five days.



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The excavated holes were left open for four or five years. As rainwater collected in the tanks they were pumped, using the same procedure as described above, on an as required basis. At times, when the tanks were being pumped sludge samples were taken using a Bacon Bomb Sampler, see Attachment No. 4. The excavated holes were backfilled about 1979, and the shed structure TA-21-40 removed. The steel plate covers over the 16" diameter openings were not welded to the tanks nor were the one yard square holes in the concrete slab patched and sealed before the backfilling operation started.

Acid waste sump pump TA-21-223 (SWMU 21-011(b)), acid wasted manhole TA-21-222 and acid wasted manhole TA-21-221 were all built on contract AT (29-1)-1785. The contractor was Cillessen Brothers. These structures were started 7/9/64 and completed 5/27/65 on Lab Job 2920. The two manholes and the sump are connected by a 6" drain line and this acid waste sewer system is connected directly to building TA-21-155 at manhole 222, connected to building TA-21-152 at manhole 221 via manhole 173 (SWMU 21-022(f)) and connected directly to building TA-21-209 at manhole 221.. This acid waste sewer system flows by gravity to sump TA-21-223 where the influent is picked up by pumps and injected into a 3" force main that connects to the Waste Disposal Plant, TA-21-257. The sump, TA-21-223, and the two manholes TA-21-222 and 221 are shown on the location plan on drawing Eng-C42985, sheet C-1 (Attachment No. 5).

In 1976, the Acid Sewer Lift Station (sump TA-21-223) was modified by the Zia Company. A 5'-4" X 6'-8" shed type structure was built at ground level over the sump and the two pump motors with their electrical controls were relocated from inside the sump to positions inside the shed. The pumps and floats were left in place and the drive shafts between the pumps and motors and the float rods were extended. The pumps were also repiped to the force main with appropriate gate and check valves installed. See Attachment No. 5, drawings Eng-C42985, sheets 1 and 2. About 1982, the pumps and motors were replaced with submersible type pumps and the new control panels were installed on the walls of the shed.

Attachment No. 6 and No. 7 are included in this report because it was thought that the sampling data that they contain might be of interest.

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