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Title: TA-21 ACID WASTE LINE REMOVAL  
COMPLETION REPORT

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Submitted to:



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Facility & Waste Operations  
SWO-Deactivation & Decommissioning



TA-21 Acid Waste Line Removal

FY2002 Completion Report: TA-21 Acid Waste Line Removal

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### **EXECUTIVE SUMMARY**

The TA-21 Acid Waste Line Removal Project consisted of removing a total of 2,500 feet of 3-in. diameter, heavy-wall, wrapped line.

Key project points:

1. Total Cost was \$122,848.
2. One occurrence was reported during contract execution. Water used to flush the pipe spilled when the end cap dislodged during pipe extraction. Sampling and analysis identified no soil contamination from the spill.
3. No concrete was recycled during the project execution.
4. The project ran from March 19, 2002 to July 5, 2002.

## **1.0 INTRODUCTION**

Decontamination and decommissioning (D&D) of the TA-21 Acid Waste Line and its associated utility structures began on March 19, 2002 and was completed on July 5, 2002. The Acid Waste Line Removal Project included line removal and disposal of the low-level waste- (LLW-) contaminated piping at TA-54 Material Disposal Area (MDA) G.

## **2.0 BACKGROUND**

The TA-21 Acid Waste Line was installed in 1982 to support TA-21 Tritium System Test Assembly (TSTA) operations. The line allowed treated water to be piped directly from TA-21 to TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF). The 4,800-ft Acid Waste Line was a 3-in. diameter, Schedule 80, carbon-steel pipe wrapped in polypropylene. The line was cathodically protected. No leaks were detected during the service life of the pipeline. The pipeline has not been used since August 2001.

When the line was retired from service, the intact line was flushed three times with demineralized water by TA-50 staff, then capped and abandoned. Because the line was not installed to a specific grade, it was anticipated that liquid would remain in the line in some low areas along its length.

## **3.0 SCOPE OF WORK**

The statement of work for the TA-21 Acid Waste Line Removal Project is provided in Appendix A.

JCNNM performed the utility disconnects under the direction of TA-53 facility management before the site was turned over to FWO-SWO for decontamination and demolition.

## **4.0 PROJECT DESCRIPTION**

As part of a land transfer from LANL to Los Alamos County, RRES-ECO (Risk Reduction and Environmental Stewardship Division/Ecology Group) requested that the D&D team remove two sections of the 4,800-ft acid waste line. The D&D team issued a contract to JCNNM to use JCNNM's internal zone personnel and JCNNM equipment to remove the pipe. For the purposes of the land transfer, it was determined that a 1,000-ft southwest section of the pipe along DP road would have to be removed as well as a 1,500-ft section along the southeast side of the road. A 2,300-ft section of the acid waste line is located adjacent to an MDA; this section is not a part of the land transfer and will remain under laboratory control. Because of this, it was determined that the 2,300-ft section would be left in place.

During the initial excavation of the first bell hole (e.g., the small hole dug to expose the pipe) the backhoe operator determined that the pipe was buried shallow enough that it could be pulled through the soil in sections rather than having to expose the entire length of the pipe. The cover photo illustrates how the line was actually pulled from the soil. As a result the operator made bell holes approximately every 100 feet, cut and capped the pipe, then pulled the section from underground. The 1,000-ft

southwest section of pipe was removed first and the 1,500-ft southeast section was removed last.

It was anticipated that some liquid would have remained in the pipe after the Summer 2001 line flush. For this reason, after the segments of line were cut, the ends were capped to prevent any liquid loss that might have occurred as the line was being pulled from the ground. In addition, side holes were made in the line for sampling; these were plugged after sampling. On one occasion, however, one of the side hole plugs leaked during the line pulling process and some liquid was spilled.

After all of the line was pulled, the bell holes were backfilled and rolled to grade. The excavated sections of pipe were placed in storage boxes and sent to TA-54 for burial.

## **5.0 SUMMARY OF KNOWN HAZARDS**

Initial structure characterization data, provided by JCNNM Environmental, indicated the presence of LLW (tritium contamination) in the line. No other contaminants were noted.

## **6.0 SAFETY**

There were no safety incidents during this project.

## **7.0 SECURITY CONSIDERATIONS**

TA-21 did not have unique security requirements for the project. All site workers were trained to the on-site worker safety requirements at the beginning of the project.

## **8.0 PROJECT MANAGEMENT/OVERSIGHT**

This project was managed by the Facility and Waste Operations Division, Solid Waste Management Deactivation & Decommissioning team (SWO-D&D). JCNNM (Zone 13) removed and disposed of the 2,500 feet of pipe.

Responsible individuals on this project included:

SWO-D&D Group Leader	Ray Hahn
SWO-D&D Team Leader	Gilbert Montoya
SWO-D&D Project Leader	Henry Nunes
HSR-1, Rad Worker Protection	John Jameson
HSR-5, Health & Safety	Robert Baran
JCNNM Project Manager	Michael Dominguez

## **9.0 WASTE OPERATIONS**

Two general types of waste were generated during the project: clean, non-radioactive/non-hazardous demolition debris and LLW-contaminated materials including piping, personal protective equipment (PPE), and wastewater. All hazardous solid materials were disposed of at TA-54, and the liquid waste was

disposed of at TA-50. The table below specifies waste disposal quantities and the results of the recycling efforts by Washington Group International, Inc.

<b>Waste Material</b>	<b>Waste Classification</b>	<b>Volume Estimate (m<sup>3</sup>)</b>	<b>Volume Actual (m<sup>3</sup>)</b>
Metal Pipe (LLW)	LLW	9.5	8.1
Cellulose LLW (PPE)	LLW	1	2
Water	LLW	2	1.5
Soil	LLW	0	1.2
Absorbed Hydraulic Fluid	LLW	0.2	0
Absorbed Antifreeze	LLW	0.2	0

## 10.0 SITE ANALYTICAL RESULTS

Site characterization performed before Project startup determined that the site was clean. After the liquid spill during line removal, samples were taken and analyses performed; no contamination was identified.

## 11.0 FINAL SITE CONDITION

The area was regraded to the existing contours. All bell holes were refilled and compacted to grade to a nominal 90%. This compaction was estimated and was not tested. No residual contaminants were left as a result of the acid line removal. The land is available for free release.

## 12.0 COSTS

The total project cost and the total cost invoiced to LANL are provided below.

Contractor (JCNNM) Work Order:	\$99,226
LANL Support Personnel Costs	<u>23,622</u>
<b>TOTAL PROJECT COSTS:</b>	<b>\$122,848</b>

## 13.0 CHANGE ORDER DESCRIPTION

There were no change orders issued during the course of the project.

## 14.0 PROJECT SCHEDULE PERFORMANCE

The initial cost estimate was for 18 weeks of on-site line removal. Using a suggestion offered by Jeff Stratton of JCNNM, the schedule was shortened to 13 weeks; this eliminated the need for 2,500 feet of trench.

A formalized Project Schedule was not developed for this project.

## **15.0 LESSONS LEARNED**

Input from Project crafts-people is crucial and can lead to more efficient use of time, materials, and equipment.

## **16.0 ACKNOWLEDGEMENTS**

Two individuals helped the project from its inception to its completion and deserve a special mention for their roles: Jeff Stratton for his unique skill in the actual line removal and Mike Dominguez for his oversight during the entire removal operation.

## **17.0 ACRONYMS AND ABBREVIATIONS**

BOA	basic ordering agreement
D&D	decontamination and decommissioning
FWO	Facility and Waste Operations
HSR-1	Health Physics Operations Group
HSR-5	Industrial Hygiene and Safety Group
JCNNM	Johnson Controls Northern New Mexico
LANL	Los Alamos National Laboratory
LLW	Low-level Waste
MDA	Material Disposal Area
PPE	Personal Protective Equipment
RRES	Risk Reduction and Environmental Stewardship Division
RRES-ECO	RRES Division-Ecology Group
SWO-D&D	Solid Waste Operations Group-D&D
TA	technical area
TSTA	Tritium System Test Assembly

## **18.0 APPENDICES**

Appendix A. BOA Contractor Bid Statement of Work

Appendix B. Photographs

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**APPENDIX A. BOA CONTRACTOR BID STATEMENT OF WORK**

Statement of Work: TA-21, Acid Line Removal

JCNNM/FS13 is to provide the personnel, equipment, material, and disposal service for the following statement of work.

JCNNM/FS13 will perform the following:

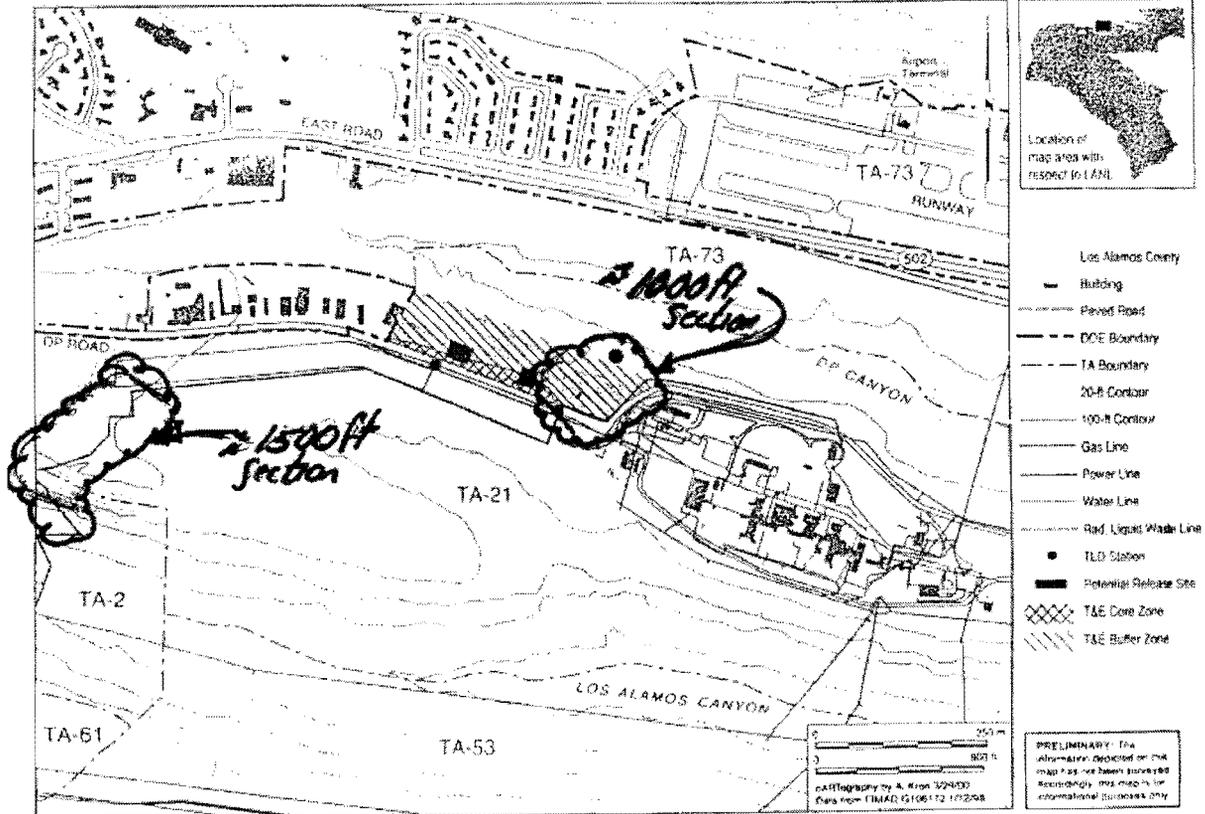
- A. Remove and dispose of 1,500 lineal feet of 3" steel acid waste line.
- B. Remove and dispose of 1,000 lineal feet of 3" steel acid waste line.

Each section is to meet the below requirements:

1. Characterize the site, a plan is needed to monitor all removed material for possible Rad contamination. A process should be in place to sample and analyze any stain soils encountered during excavation.
2. Generate a set of as-built drawings of the existing pipeline and its support structures.
3. Prepare a bid estimate for the work, including a waste estimate and characterization plan.
4. Prepare a baseline removal schedule.
5. Locate the existing line.
6. Identify all waste disposal estimates and their intended disposal site.
7. Provide work safety oversight.
8. Prepare a task hazardous analysis and safety plan to support the effort.
9. Excavate the 3" welded steel line and dispose of all waste or recyclable materials.
10. Backfill the excavation trench to 90% relative compaction.
11. Prepare a cost proposal for the above work.

Refer to the attached layout plan for locations.

### Technical Area-21



**APPENDIX B. PHOTOGRAPHS**

