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7/11/96

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Los Alamos National Laboratory Environmental Restoration Program  
DAILY ACTIVITY LOG

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ER ID: 59421

DATE: July 11, 1996 Field Unit: 4  
Technical Area(s): 35 Operable Unit: 1129  
Site Work Plan: Aggregate D PRS No.: 35-003(b, c, misc, and p)

Signature:   
Name: Leslie J. Sontag Title: FTL/Geologist

SUBJECT: Staff Interview and Monitoring of TA-35 D&D Activities

Personnel: Leslie Sontag and Carmella Romero  
Time: 10:30 to 14:00

Work Description:

Interviews with D&D Staff and a site visit was conducted at the TA-35-D&D project to document recent events in support of VCAs at PRS Nos. 35-003(b, c, misc, and p).

35-003(b and c) [TSL-5 and TSL-6]

Mr. Scott Benson (IDM) informed the FU4 team of a development which was discovered during sampling of TSL-5 and TSL-6. In early March of this year, the holding tanks (TSL-4, -5, and -6) were initially sampled for waste characterization and disposal purposes. At that time, TSL-4 was reported to be empty, TSL-5 was completely full, and TSL-6 was between 1/2 and 3/4 full. Conflicting reports as to the initial volume of TSL-6 were provided secondhand by Mr. Benson and Mr. Paul Terp (D&D RCT). Jeff Miller (Radian) was on site and performed the actual visual measurement, however was not on site for interview on this day. Mr. Terp provided support during this initial sampling event but does not personally recall the exact volume of TSL-6. The analytical suite requested for the March sampling was incomplete for waste characterization purposes, therefore resampling of the contents of the caustic separator in the phase separator pit and TSL-5 and TSL-6 was conducted on July 9, 1996. Mr. Terp again provided support to the resampling event and was present when the discovery was made that TSL-6 was only about 1/3 full. All piping had been disconnected in early March, therefore the tanks have been freestanding since that time. The tanks are approximately 6 ft deep and have a volume capacity of about 2000 gallons. Depending on the original volume noted during the March sampling event, a potential release of 340 to 840 gallons may have occurred, as suggested by D&D personnel. The contents of TSL-6 are known from the March sampling event to be mixed waste with high measure of radioactivity. Preliminary radiological analytical results provided by CST from the March sampling of TSL-6 are as follows:

Total Alpha Activity =  $186 \pm 95$  nCi/L ( $186,000 \pm 95,000$  pCi/L)

$^{234}\text{U}$  =  $154 \pm 125$  nCi/L

$^{238}\text{Pu}$  and/or  $^{241}\text{Am}$  =  $33 \pm 33$  nCi/L

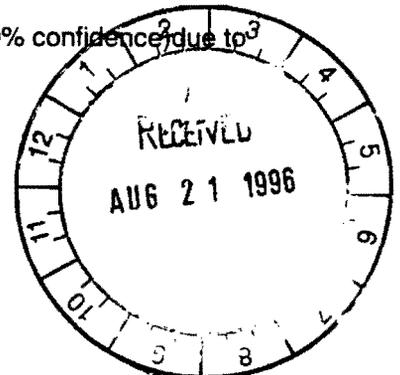
The report notes that the results for the preceding activities are semiquantitative (90% confidence) due to the high levels of the following radionuclides:

$^{137}\text{Cs}$  =  $8.1 \pm 0.8$   $\mu\text{Ci/L}$  ( $8,100,000 \pm 800,000$  pCi/L)

$^{90}\text{Sr}$  =  $113 \pm 33$   $\mu\text{Ci/L}$  ( $113,000,000 \pm 33,000,000$  pCi/L)



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Mr. Al Rey (ESA/DE) suspects that no release has occurred and that imprecise volume estimates have contributed to the belief that the volume in the tank has changed. Mr. Rey recalls an event which occurred approximately 2 years ago when TSL-6 was opened, and approximately 2 ft of liquid was present in the tank at that time. Mr. Rey's recollection of volume estimate is consistent with the volume observed during the July 9, 1996 sampling event, which suggests that a release has not necessarily occurred. A strong recommendation was made to Mr. Benson by the FU4 team to ensure that the potential release, if suspected, is promptly reported to ESH-18 per the D&D Spill Prevention Plan.

Mr. Terp also described the details of a small release which occurred during the March sampling of TSL-5 (see Koch, DAL 4/5/96). Negative air containment was set up around TSL-5 on the evening before the sampling was to be conducted. The containment consists of a wood-framed "cabana"-like structure with walls and ceiling composed of thick poly sheeting. The sheeting was folded under the bottom of the containment to form a "floor" around the inside perimeter of the structure. Upon arriving to the site the following morning, a damp spot in the soil approximately 1 x 2 ft was discovered near the northwest corner within the containment structure. Additional liquid had accumulated in the folds of the floor sheeting at the northwest corner of the containment. The soil was excavated to an unspecified depth and placed into a 55-gallon drum. The liquid on the poly sheeting was absorbed and also placed into the drum. Notifications to ESH-18 were promptly made in accordance with the D&D Spill Prevention Plan. The source of the release was the breaching of a metering line from TSL-5. The metering line is a 1/4 to 1/2" wide hollow metal line which extends into TSL-5 near the valve at the top of the tank. Since the tank was full, the opening of the metering line inside TSL-5 was below the current liquid level. In preparation for sampling, excavation was conducted to expose the top of the tank. The metering line was very near the surface, but went unnoticed. During containment setup, a worker stepped on the metering line, causing the breach. Due to the high hydraulic head in the tank, liquid from TSL-5 began to seep through the metering line and was not discovered until the next morning. The radiological analytical results from the March sampling event of TSL-5 indicate alpha activities below detection limits and <sup>90</sup>Sr and <sup>137</sup>Cs activities in the low nCi/L range.

**35-003(p) [TA-35-7]**

Information was sought regarding TA-37-7 removal activities to support a proposed VCA plan for PRS 35-003(p) (Building 7). Mr. Scott Benson (IDM) and Mr. Ron Duffy (IDM) summarized the strategy for field radiological screening characterization of the soil beneath the excavated TA-35-7 foundation and footers. Field screening during excavation had indicated activities of up to 300,000 cpm on the concrete footers at approximately 3-4 ft depth, and around 100,000 cpm on soil at that same depth. Activities on the floor drains ranged from 25,000 to 30,000 cpm above background. FU4 team members were shown engineering drawing C-14008, sheet 7 of 57, which includes the detail for the floor drains. Mr. Paul Terp (D&D RCT) explained that floor cracks were identified where scrubbers had previously been used near the southwest corner of the building prior to removal, and may be a suspect area for elevated activity. During the TA-35 D&D Weekly Status Meeting of July 2, 1996, the FU4 team requested all monitoring results for screening conducted during the removal of the foundation, footings, drain lines and soil at TA-35-7. The soil surface at TA-35-7 upon removal of all structures reflects a flat surface beneath the foundation cut by a number of trenches which were formed during the removal of the footings and drain lines. Mr. Duffy explained that initially the screening was performed only for waste segregation, and that an organized characterization effort was not being conducted. Health and safety concerns were realized when field screening required personnel entry into trenches that were lined with unstable spoils piles. After finding several elevated readings near the northeast corner of the former building, the need for characterization was recognized, and a strategy was proposed by IDM, Radian, and Al Rey (ESA/DE) to employ a more methodical approach, which is as follows:

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The trenches will be refilled to create an even surface approximately 1 ft below the former foundation. All soil previously excavated will be screened by a NAI detector and beta-gamma pancake probe prior to being used for trench fill. The excavated soil has been stored in spoils piles directly adjacent to the source trench, and not underlain by poly sheeting, therefore it is possible that mixing of surface and excavation soil has occurred. Once the site is leveled, the area will be divided into 5 meter grids (approximately 15 x 15 ft). Soil areas which yield elevated readings will be identified for each grid. At these "hotspot" locations, a 2' deep test pit will be excavated. If no hotspot is identified for a particular grid, then the test pit will be excavated in the center of the grid. Rad screening will be conducted on the walls and bottom of each pit, and a sample will be collected from the bottom of each pit and submitted for fixed lab gamma-spec analysis. Test pit data will provide a means of characterizing the TA-35-7 subsurface at a depth of 2 ft, which is the maximum depth of excavation required of the D&D scope. However, the strategy does not address the additional depths beneath footings and floor drains which would also be included in the D&D scope, which requires soil removal to depths up to 2 ft below all removed structures if contamination is encountered. FU4 team members will monitor and document progress on the TA-35-7 gridding, excavation, and characterization effort on a daily or as-needed basis.

**35-003(misc)**

Draft Phase Reports for Phases 2 and 5 were completed and submitted to Al Rey (ESA/DE) within the last few weeks. FU4 team members requested copies from Mr. Paul Terp (D&D RCT). Mr. Terp was observed by FU4 team members leaving a hand-written request for Ms. Sue Duffy (Radian) to provide either a hardcopy or electronic copy as available.

Ms. Carmella Romero began the task of documenting the locations of all materials and waste storage areas associated with the TA-35 D&D activities. These storage areas overlap and rest within many FU4 Aggregate D PRS boundaries. A map will be created to document the size, nature, and location of all active storage areas in support of future Phase II and Interim Action activities in the event that the potential impact of these areas should need to be evaluated.