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Environmental Analysis of Acid/Middle Pueblo Canyon, Los Alamos, New Mexico

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Environmental Restoration Program
RECORD OF COMMENT RESOLUTION

Date 31 MARCH 93

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ENVIRONMENTAL RESTORATION PROGRAM

RFI PHASE REPORT

OPERABLE UNIT 1071, SWMU AGGREGATE 0-G

LEAKAGE FROM PCB TRANSFORMERS

LOS ALAMOS NATIONAL LABORATORY

LOS ALAMOS, NEW MEXICO

April 1993

ENVIRONMENTAL RESTORATION PROGRAM

LOS ALAMOS NATIONAL LABORATORY

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1.0 INTRODUCTION

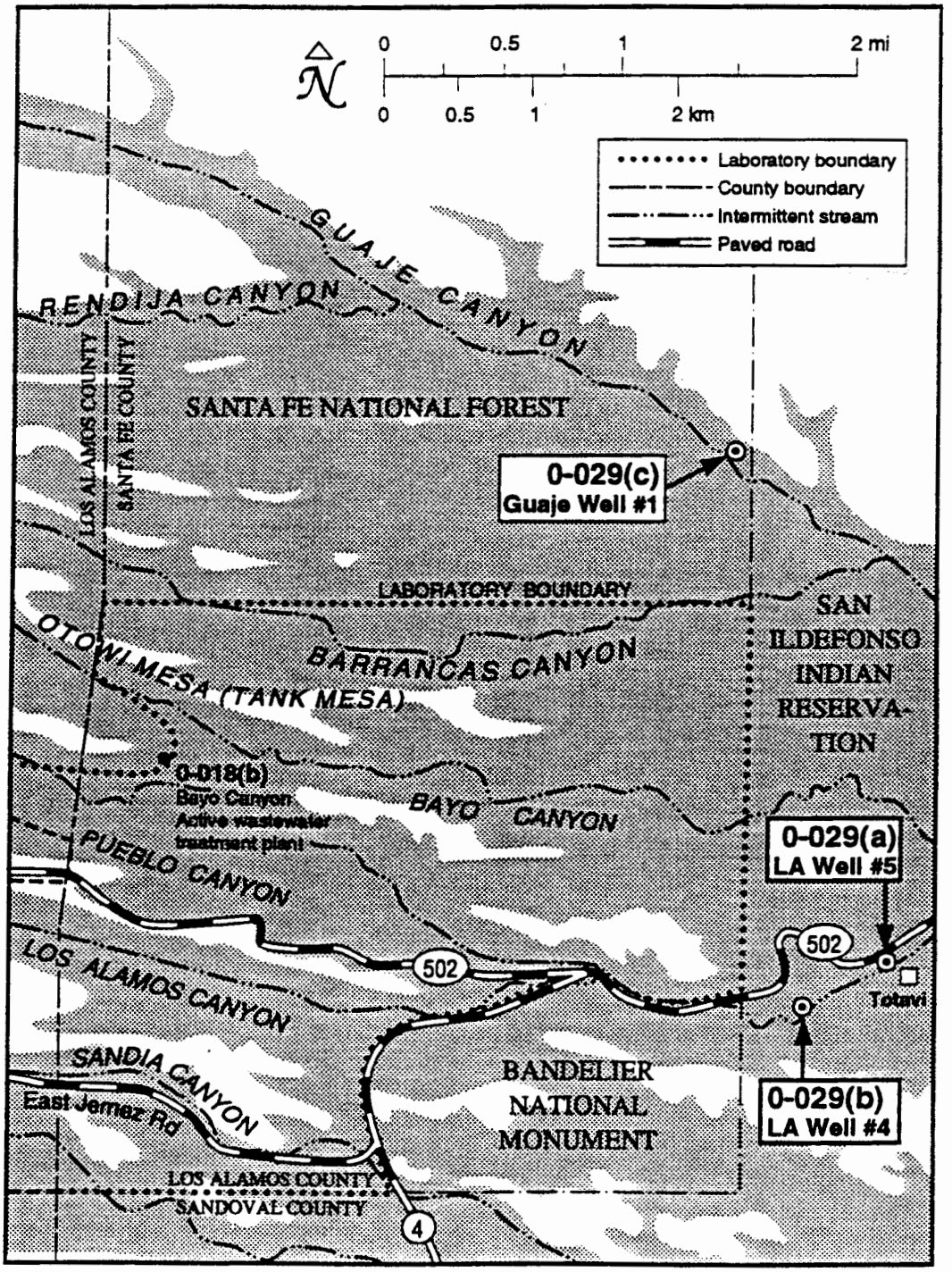
1.1 SWMU Aggregate 0-G Description

This report presents the results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Phase I field work conducted at Operable Unit (OU) 1071, Solid Waste Management Unit (SWMU) Aggregate 0-G, leakage from transformers containing polychlorinated biphenyls (PCBs). This aggregate, described in Section 5.9 of the OU 1071 RFI Work Plan (LANL 1992a), contains two former production well sites located on the San Ildefonso Indian Reservation (Los Alamos Canyon Wells #4 and #5) and one production well site located on Santa Fe National Forest land (Guaje Canyon Well #1). The SWMUs consisted of potentially contaminated soil resulting from systematic releases from transformers (with PCB-bearing oil) that were located on power poles used to supply electric power to these ground water production wells. Locations are shown in Figure 1-1.

The transformers at the wells in Aggregate 0-G reportedly released some PCB-contaminated oil to the environment. Available records suggest that an initial cleanup may have been undertaken during the decommissioning of the transformers (LANL 1990a). A more detailed description of the history of this aggregate can be found in Section 5.9 of the OU 1071 work plan (LANL 1992a).

1.2 RFI Objectives

The conceptual exposure model developed in the OU 1071 work plan identifies the area within the former fence around Los Alamos Canyon Well #4 and the fenced areas around Los Alamos Canyon Well #5 and Guaje Canyon Well #1 as the potential source areas for contamination. The most likely contaminant migration pathways away from these sources are entrainment of contamination by surface water, contaminant transport



Sources: 1952, U.S. Geological Survey, Puye, NM Quadrangle, scale: 1:24,000
1984, U.S. Geological Survey, White Rock, NM Quadrangle, scale: 1:24,000

Figure 1-1 SWMU Locations in TA-0 East

downstream, and leaching into the underlying vadose zone. Although air entrainment of soils by wind represents another possible migration pathway, it was not identified in the conceptual model for this SWMU aggregate because it is not expected to be as signficant. Receptors that might potentially be exposed to contamination, either at the source or via these pathways, include site visitors, on-site workers, and residents. Exposure could occur via ingestion and dermal contact with soil and/or sediment. The nearest current residents are at Totavi (Figure 1-1). Non-human biota, including animals living in the channels or getting water from them, could also be affected.

The goal of the RCRA process for this SWMU aggregate is to ensure that any residual contamination within the source areas is below the cleanup level for PCBs in soil at non-restricted use areas (residential and low-density development) established by the Toxic Substances Control Act (TSCA) (FR 52 [63]: 10688). This level is 10 ppm for soil contamination at non-restricted-use areas provided the soil is excavated to a minimum depth of 10 inches and replaced with clean (PCB<1ppm) soil. This is consistent with the Environmental Protection Agency's (EPA's) intent to use TSCA PCB cleanup levels (Gunderson 1992) and with the EPA's guidance on PCB cleanup at Superfund sites (EPA 1990) that recommends 1 ppm as a preliminary remediation goal for residential sites.

The RFI Phase I objective at the three sites is to establish the level of contamination in each decision domain. Each domain is composed of the surface soils within the fenced or formerly fenced area at each site. The OU 1071 RFI Work Plan proposed collecting 20 samples from each domain and analyzing the samples for PCBs. If PCBs were found above the TSCA 10 ppm cleanup level, the potential for off-site migration would be evaluated.

2.0 INVESTIGATION PROGRAM

Characteristics common to all Aggregate 0-G SWMUs are recounted here. SWMU-specific activities are presented in Section 3.0.

2.1 Field Program

2.1.1 Activities

The start of the investigations was accelerated because of major road construction planned for the summer of 1992 along the section of NM Route 502 west of Totavi (Figure 1-1). On March 11 and 13, 1992, the Los Alamos National Laboratory (LANL) Environmental Protection Group (EM-8) collected 20 to 21 soil surface (0-6 inch depth) samples from each of the three well sites from established grid point nodes. All soil samples were screened for gross alpha, beta, and gamma activity before they were submitted to the LANL Environmental Chemistry Group (EM-9) for analysis of PCBs.

2.1.2 General Procedures

All soil samples were collected and processed according to the protocol described in EPA SW-846. Los Alamos National Laboratory Environmental Restoration Standard Operating Procedures (LANL 1992b) followed during this sampling operation included: 01.01 General Instructions for Field Investigations, 01.02 Sample Containers and Preservation, 01.03 Handling, Packaging, and Shipping of Samples, 01.05 Field Quality Control Samples, and 06.10 Hand Auger and Thin-Wall Tube Sampler.

A grid with a node spacing of 20 feet was established over each of the sites, providing approximately 20-21 samples per site (Fresquez 1992a, and Fresquez 1992b). A soil sample was also collected underneath the transformers near the base of the utility poles. At each sampling point, a surface soil sample was collected with a stainless steel bucket auger to a depth of 6 inches. Samples were placed into a stainless steel bowl, homogenized, placed into 250-ml wide-mouth jars, labeled, sealed with chain-of-custody tape, bagged into Ziploc plastic bags, and transported to Technical Area (TA) 59 in a locked ice chest at 4°C. One replicate soil sample per site was also collected.

All sample locations were surveyed using the New Mexico State Plane coordinate system for future reference. All records associated with this sampling effort were filed in the LANL Environmental Restoration (ER) Records Processing Facility at the conclusion of the study. These records include (1) the approved sampling plan, (2) chain-of-custody forms, (3) survey coordinates, (4) raw data, and (5) an EM-8 report summarizing sampling activities.

2.2 General Analytical Methodology

Samples were screened by EM-8 for gross alpha and beta activity using a Berthold low-level counter and for gamma activity using a deep well counter before they were submitted with chain-of-custody documentation to EM-9 for analysis. Samples were analyzed for PCBs using gas chromatograph electron capture (GCEC) (EPA SW-8080). The standard method provides a detection level of about 0.06 ppm, several orders of magnitude below the cleanup level of 10 ppm.

2.3 General Evaluation Methodology

The EM-9 evaluation of blind and non-blind samples submitted with all batches indicates that the measurement process defined in the LANL Quality Assurance Plan for Health and Environmental Chemistry (LANL 1990b) was followed.

The observations were evaluated by comparison with the TSCA standards for unlimited exposure, which range from 1 to 10 ppm in soils. In all batches, both the mean and the maximum observation fell below the low end of this range. A further, conservative bound on the probability that 10 ppm is exceeded at any point on the site can be calculated using the Tchebychev inequality:

$$\Pr\{X \geq 10\} \leq \frac{E(X^2)}{10^2}$$

where $\Pr\{X \geq 10\}$ denotes the probability that a random variable X is greater than or equal to 10, and E(X) is the expected value of the random variable X. Specifically, we will consider the concentration of PCBs in ppm (denoted by [PCB]) as a random variable associated with its distribution across the site (which is, of course, unknown), and we will use the above equation together with an upper 95% confidence bound on $E([PCB]^2)$ to bound the probability that any part of the site could be contaminated above 10 ppm.

3.0 RFI PHASE I INVESTIGATIONS

3.1 SWMU 0-029(a), Los Alamos Canyon Well #5

3.1.1 Background

3.1.1.1 Description and Historical Information

SWMU 0-029(a) consists of possible soil contamination as a result of systematic releases from three transformers located on a power pole of a ground water production well (Well #5) in Los Alamos Canyon (Figure 3-1). The well is located in the bottom of Los Alamos Canyon adjacent to the stream channel, approximately 0.5 mile upstream of Totavi. The power pole is located about 20 feet from the site boundary closest to the stream channel. The well is no longer part of the water supply system of LANL or Los Alamos County, and the Department of Energy (DOE) is planning to return the site to the San Ildefonso Pueblo. The structures at the site, originally scheduled for demolition, are being turned over to the Pueblo at its request. Two transformers on the power pole contained oil with 162 and 292 ppm PCBs (LANL 1990a, and Bailey 1992). The transformers were removed on 14 October 1987.

3.1.1.2 Geology and Hydrology

Los Alamos Canyon is an alluvium-floored drainage cut through the Puye Formation into the underlying Cerro del Rio basalts that extends from the drainage divide on the flanks of the Sierra de Los Valles to the Rio Grande near Otowi. Surface flow along the canyon is intermittent. The floor of Los Alamos Canyon is about 240 feet below the plateau at the location of SWMU 0-029(a). The canyon currently receives discharge water from the TA-41 cooling tower and sewage effluent from TA-21. Surface flow in the canyon

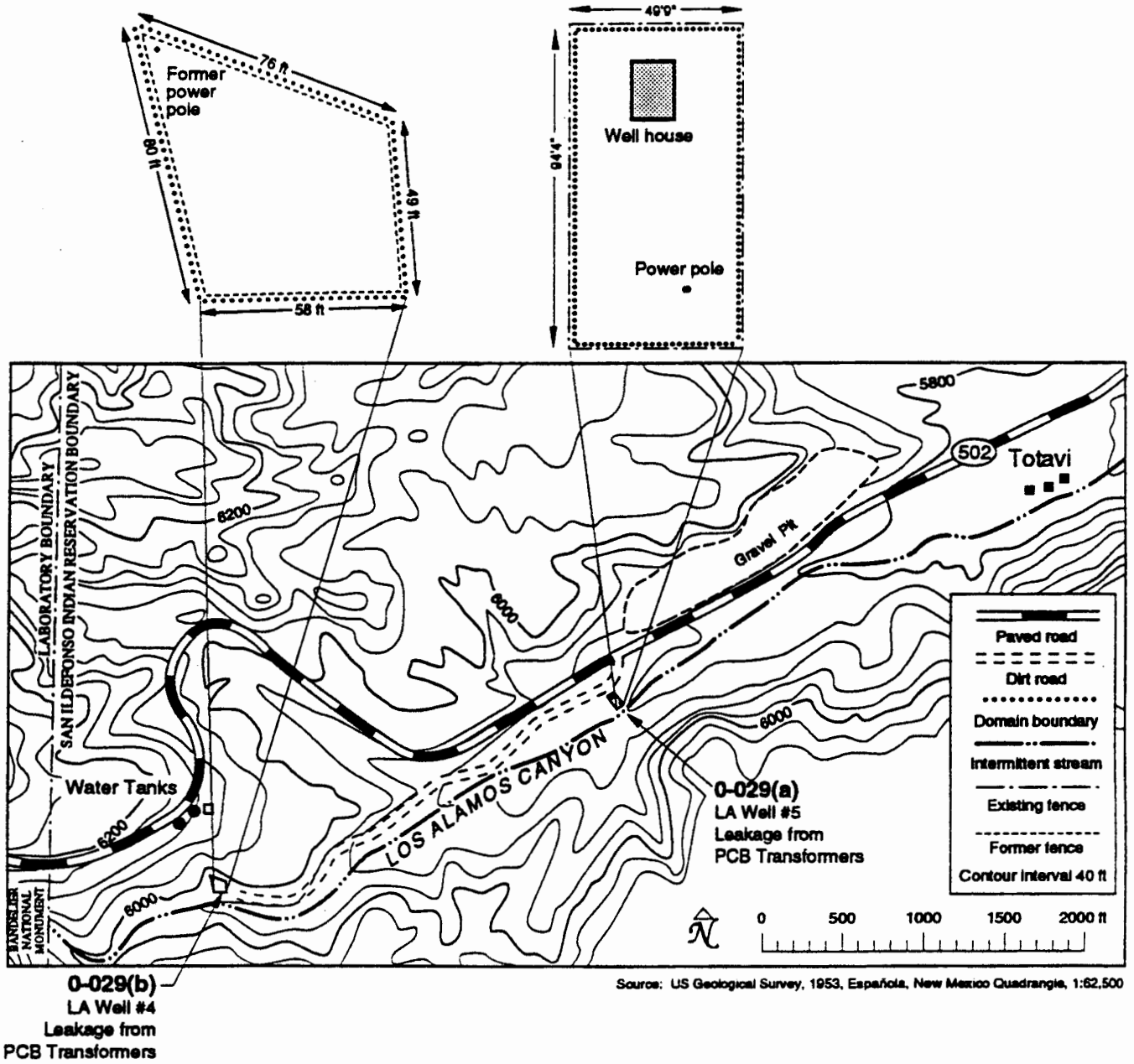


Figure 3-1 Location of SWMU 0-029(a), Los Alamos Canyon Well #5 and SWMU 0-029(b), Los Alamos Canyon Well #4

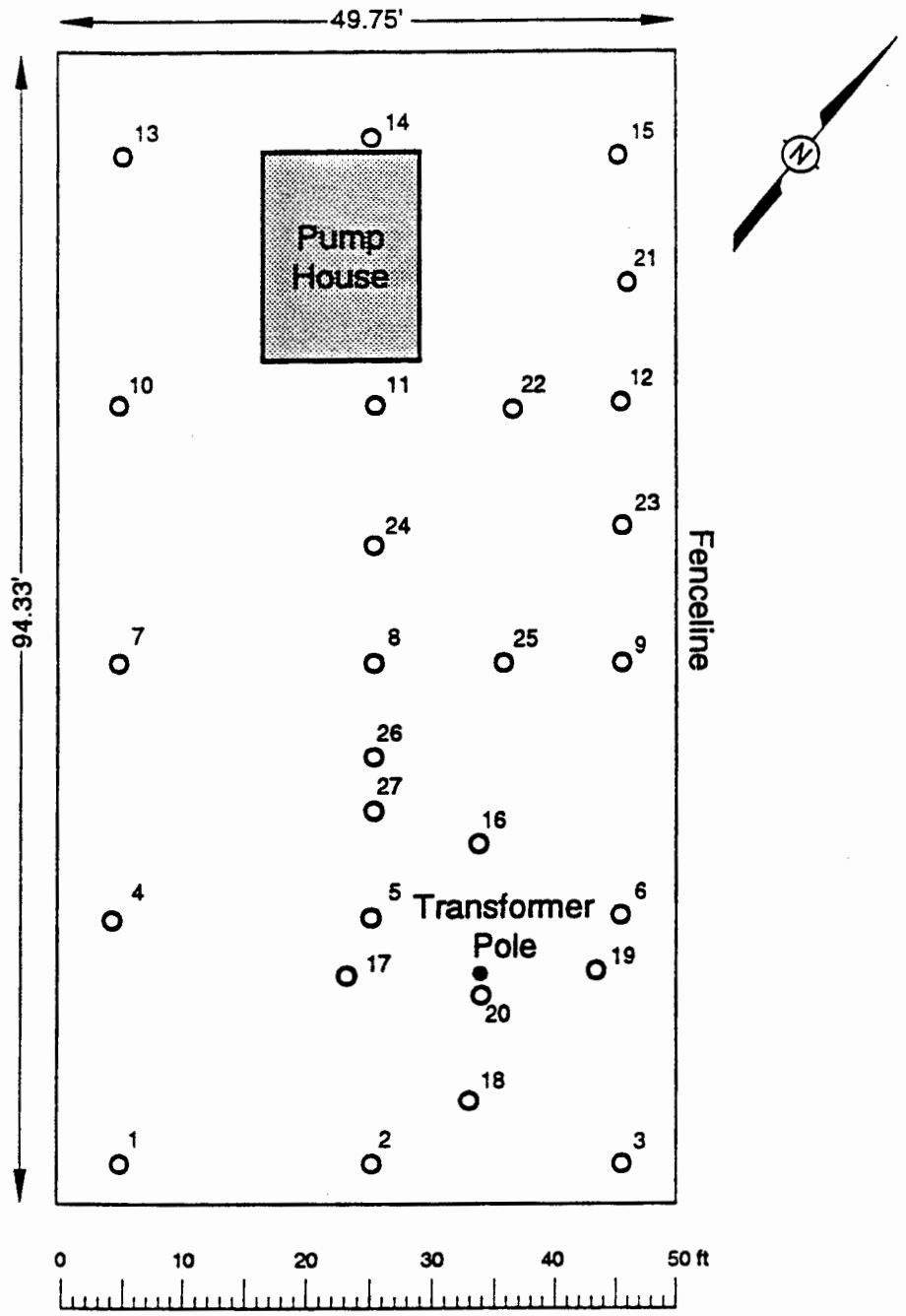
recharges underlying alluvial and perched aquifers that are hydrologically connected to surface stream flow and may discharge to the Rio Grande during high run-off from summer storms.

3.1.2 Site Investigation and Analytical Results

On 11 March 1992, 20 soil samples were collected at SWMU 0-029(a) (Fresquez 1992a) (Figure 3-2 and Table 3-1, samples PF-029A-1 through PF-029A-20). Fifteen of the samples were taken at regular intervals along an approximately 100-ft by 50-ft rectangular grid. One sample (PF-029A-20) was taken at the base of the power pole that held the transformers, and four additional samples were taken in the area around the power pole. Two of these samples (PF-029A-8 and -12) showed PCB levels of 0.09 ppm. The other 18 samples were below the analytical 0.06 ppm detection limit (Table 3-1 and Figure 3-3). On 18 March, these data were discussed by a group that included S. Slaten, DOE, and from LANL: J. Aldrich, P. Aamodt, R. Gonzales, M. Alexander, D. McInroy, L. Soholt, S. Brown, and P. Fresquez. Although the PCB levels were an order of magnitude below the cleanup level of 10 ppm, the decision was made to define the nature and extent of the contamination because of the SWMU's location on leased Indian land.

As a result of this meeting, on 19 March 1992, six additional soil samples (PF-029A-21 through PF-029A-26) (Fresquez 1992a) were gathered in the area between the pump house and power pole. The sampling sites where selected to more closely delineate the boundary of the contaminated area. During this sampling event, an area of "oil-stained" soil was noted southeast of the area of confirmation sampling. Sufficient drying had occurred to reveal the stain, which had not been previously recognized due to moisture in the soil. An additional soil sample (PF-029A-27) was gathered from this area and was examined for volatile organic compounds (VOCs) by purge and trap gas chromatography/mass spectrometry analysis (EPA SW-846 3rd) and for petroleum hydrocarbons by fourier transform infrared spectroscopy (FTIR, EPA 418.1).

LA-5 Well, SWMU 0-029(a)



O = Sample location (Note: all sample numbers have the prefix PF-029a-)

Figure 3-2 Sampling Locations at SWMU 0-029(a), Los Alamos Canyon Well #5

TABLE 3-1

SUMMARY OF ANALYTICAL RESULTS FOR SWMU 0-029(a)

Soil Sample	Analytes	Analytical Result (ppm)	Analytical Uncertainty	Comments
PF-029A-1	PCBs	<0.06		
PF-029A-2	PCBs	<0.06		
PF-029A-3	PCBs	<0.06		
PF-029A-4	PCBs	<0.06		
PF-029A-5	PCBs	<0.06		
PF-029A-6	PCBs	<0.06		
PF-029A-7	PCBs	<0.06		
PF-029A-8	PCBs	0.09	0.05	Aroclor 1260
PF-029A-9	PCBs	<0.06		
PF-029A-10	PCBs	<0.06		
PF-029A-11	PCBs	<0.06		
PF-029A-12	PCBs	0.09	0.05	Aroclor 1260
PF-029A-13	PCBs	<0.06		
PF-029A-14	PCBs	<0.06		
PF-029A-15	PCBs	<0.06		
PF-029A-16	PCBs	<0.06		
PF-029A-17	PCBs	<0.06		
PF-029A-18	PCBs	<0.06		
PF-029A-19	PCBs	<0.06		
PF-029A-20	PCBs	<0.06		
PF-029A-16QA	PCBs	<0.06		
PF-029A-21	PCBs	0.14	0.07	Aroclor 1260
PF-029A-22	PCBs	<0.06		
PF-029A-23	PCBs	<0.06		
PF-029A-24	PCBs	0.40	0.20	Aroclor 1260
PF-029A-25	PCBs	<0.06		
PF-029A-26	PCBs	<0.06		
PF-029A-27	PCBs	<0.06		
PF-029A-27	TRPH	180,000	36,000*	Mineral oil
92.0044X	PCBs	2.3		Floor swipe inside well house
92.0045X	PCBs	<0.63		+
92.0046X	PCBs	<5		Aliquot of turbine oil

All samples were analyzed for PCBs (EPA Method 8080).

*See Fresquez 1992a. PF-029A-27 was also analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) and RCRA VOCs. No VOCs were detected. The organic compounds present in the sample are a non-hazardous mineral oil used at the well house.
+Sample diluted 1/10 for this analysis only to eliminate interference peaks caused by mineral oil in the measurement of PCBs.

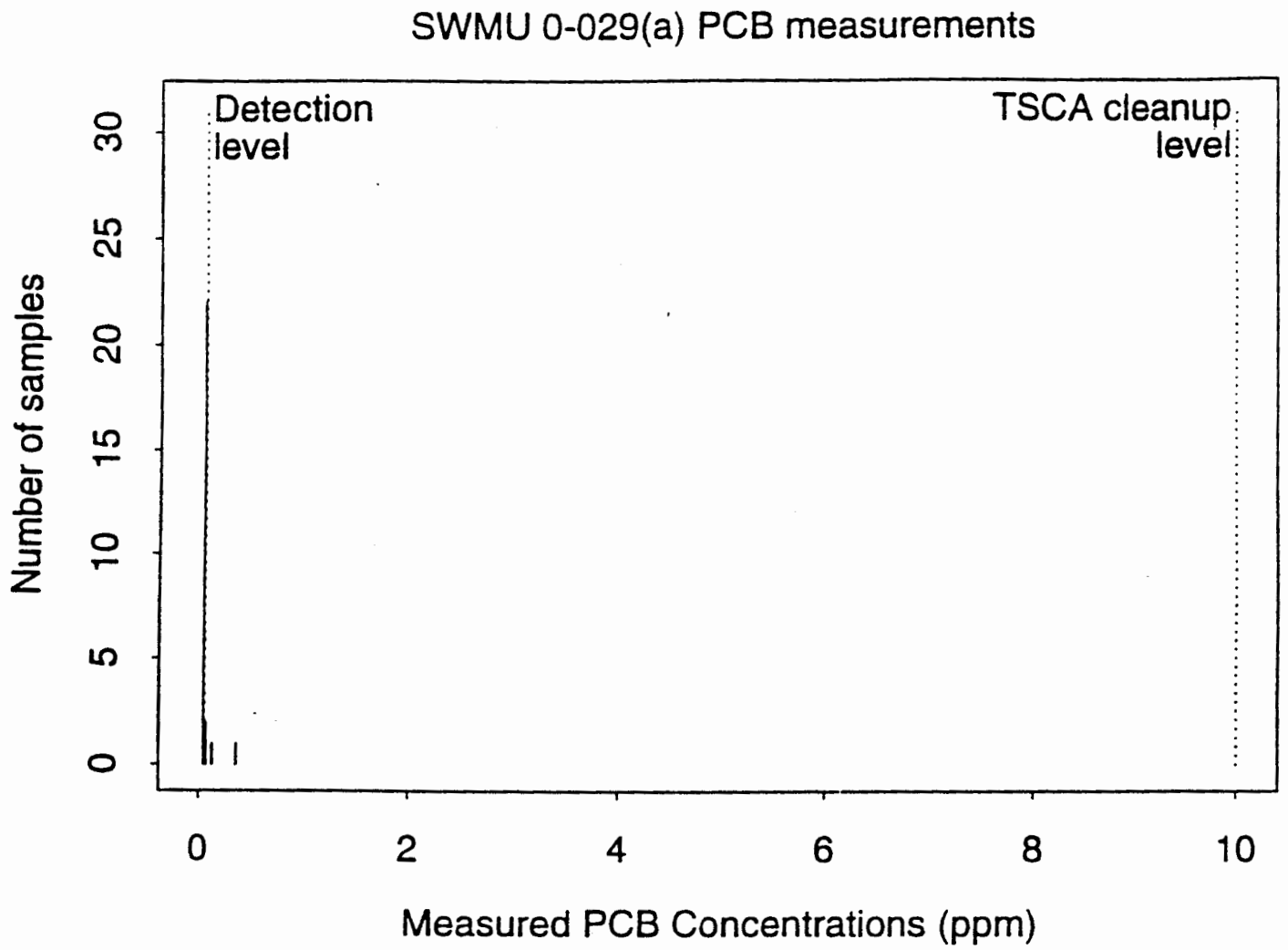


Figure 3-3 SWMU 0-029(a) PCB Measurements

Of the additional samples collected on 19 March, two showed PCBs above the level of detection: PF-029A-21 (0.14 ppm) and PF-029A-24 (0.40 ppm). PF-029A-27 contained no PCBs, VOCs, or petroleum hydrocarbons but was found to contain mineral oil in the range of 140,000 to 216,000 ppm (Table 3-1).

These data were reviewed by S. Slaten, J. Aldrich, P. Aamodt, R. Gonzales, and P. Fresquez on 23 March, and the decision was made that no additional samples would be taken because all samples were far below the TSCA PCB 10 ppm cleanup level for non-restricted sites. Coeval with the sampling activities, San Ildefonso Pueblo informed the DOE that they wanted the well house and well left in place and turned over to them. The original plan had called for removing the well house and plugging the well.

Because the well house was not going to be torn down and oil stains were present on its floor, additional samples were taken in the well house to determine the nature of the contamination (Morales 1992). These included a swipe sample (92.0044X) from the well house floor next to a drain, and a sample of oil in a turbine located in the well house (92.0046X). The oil-stained soil southeast of the well house was resampled to analyze the material for hydrocarbons (95.0045X).

The floor swipe sample contained 2.3 ppm PCBs and the turbine oil less than 5 ppm PCBs. Soil sample 92.0045X contained less than 0.63 ppm which was the PCB threshold of detection for this single analysis (Table 3-1). The 0.63 ppm detection threshold was used because the sample had to be diluted 1/10 in order to eliminate interference peaks caused by mineral oil in the measurement of PCBs.

3.1.3 Evaluation of Results

3.1.3.1 Data Validation

EM-9 evaluation of blind and non-blind samples submitted with this batch shows that the measurement process defined by the LANL Quality Assurance Plan for Health and Environmental Chemistry (LANL 1990b) was followed. These quality assurance (QA) samples included blanks (all reported to be below detection levels) and matrix spikes in the range of 15 to 28 ppm for which the reported results differed from the known value by less than the reported analytical uncertainty.

3.1.3.2 Data Quality Assessment

A total of 26 samples were collected at the site. Of the first 20, 15 were collected following an unbiased grid sampling plan to represent the entire site, and five were collected near the power pole (which *a priori* would be the most likely area to have been contaminated by leaks from the mounted transformer). Two of these 20 samples produced observations above the method detection level of 0.06 ppb. The selection of the final six samples was biased by results from these first 20 analyses, and concentrated on the area between the power pole and the pump house. Two of these six samples also produced results above 0.06 ppb. The maximum reported value for PCB contamination was 0.4 ppm; the second largest observation was only 0.14 ppm.

The reported detection level for PCB concentrations in a soil matrix was 0.06 ppm, and reported uncertainties in measurements across the entire range of field and QA samples was 50%. A single pair of field duplicates, both analyzed below detection level, provided minimal information on additional error that might have been introduced by the sampling procedure. However, even with the apparent level of uncertainty, the observed concentrations were well below the TSCA guidelines of 1 to 10 ppm.

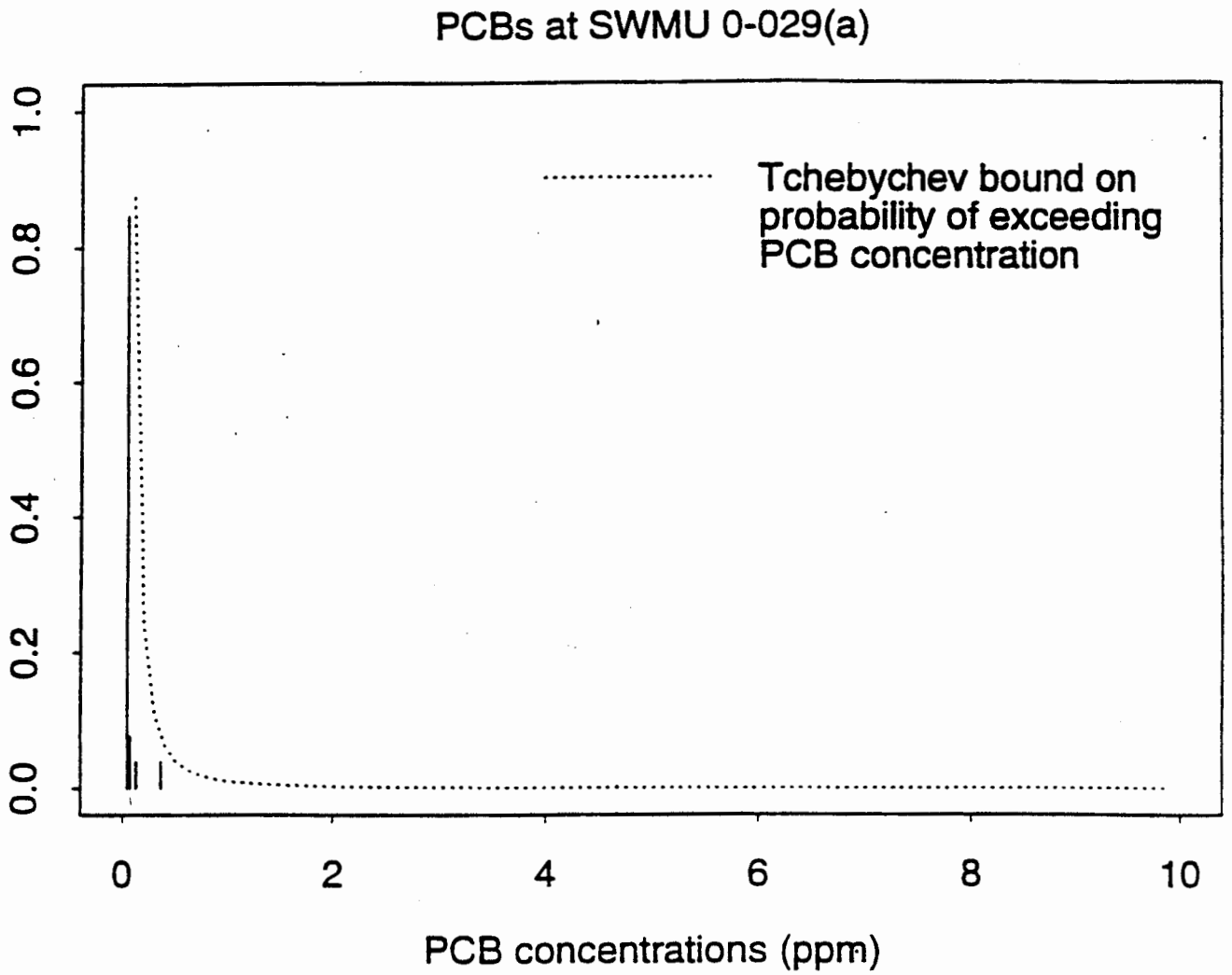


Figure 3-4 Tchebychev Bound for PCBs at SWMU 0-029(a)

A more quantitative assessment may be obtained by applying the Tchebyshev procedure (Figure 3-4) outlined in Section 2.3. Using all of the data from this site (which, as a combination of grid and judgmental samples, should provide estimates of population means that are biased upward), an upper 95% confidence bound for $E([PCB]^2)$ is 0.002 ppm, and thus the probability that any part of the site is contaminated above 10 ppm is less than 0.0002.

3.1.4 Conclusions, Actions, and Recommendations

PCB contamination found in the soil east and southeast of the well house was well below the TSCA cleanup level of 10 ppm for non-restricted use (FR 52 [63]: 10688). Nevertheless, the decision was made (30 March 1992, S. Slaten, DOE) to clean up the site because it has been leased by DOE from the San Ildefonso Pueblo. The contaminated soil was considered to be like any other debris at the well site that will also be cleaned up before the property is returned to the Pueblo. Because the Pueblo requested the well house and well be left in place rather than decommissioned, the decision was made to decontaminate the well house.

The cleanup, which was completed on 6 August 1992, began with decontamination of the well house followed by removal of the soil. The boundary of the area selected for excavation (Figure 3-5) was conservatively selected to ensure all contaminated soil (PCBs and mineral oil) was removed. No confirmatory sampling was done, however, because the levels of PCB contamination were far below the TSCA cleanup level. Approximately 20 cubic yards of soil were removed from the area.

No further action is recommended at this site.

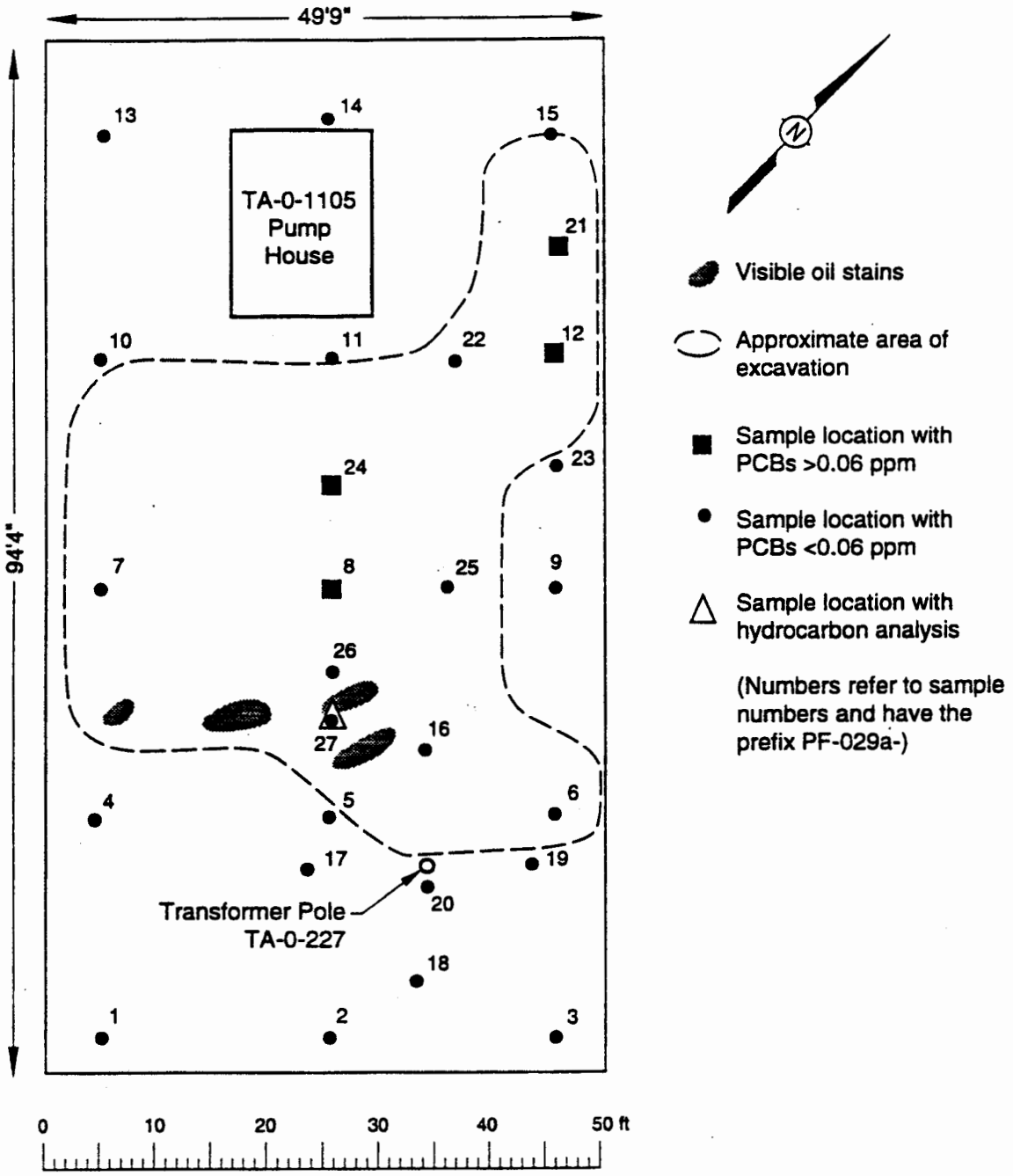


Figure 3-5 Location of Soil Removal at SWMU 0-029(a), Los Alamos Canyon Well #5

3.2 SWMU 0-029(b), Los Alamos Canyon Well #4

3.2.1 Background

3.2.1.1 Description and Historical Information

SWMU 0-029(b) consists of possible soil contamination as a result of systematic releases from three transformers which were located on a power pole that was used to supply electric power to a ground water production well (Well #4) in Los Alamos Canyon (Figure 3-1). The well was located in the bottom of Los Alamos Canyon adjacent to the stream channel, approximately a mile upstream from Totavi. The power pole was located about 20 feet from the site boundary closest to the stream channel. The site boundary is about 50 feet from the channel of the stream. These transformers were removed on 14 October 1987. Transformers from this site were found to contain 231, 206, and 362 ppm of PCBs (LANL 1992a, and Bailey 1992). The well was decommissioned and the well house removed in 1989 (Aldrich 1991a). SWMU 0-029(b) is situated in the construction zone for the widening of NM 502. The site may be buried beneath the fill used to construct the new road grade for NM 502, as part of the construction activities.

3.2.1.2 Geology and Hydrology

Los Alamos Canyon is an alluvium-floored canyon cut through the Puye Formation into the underlying Cerro del Rio basalts, that extends from the drainage divide on the flanks of the Sierra de los Valles to the Rio Grande near Otowi. Surface flow along the canyon is intermittent. The floor of Los Alamos Canyon is about 340 feet below the rim of the plateau at SWMU 0-029(b). Los Alamos Canyon currently receives discharge water from the TA-41 cooling tower, sewage effluent from TA-2 and TA-41, and industrial and sewage effluent from TA-21. Surface flow in Los Alamos Canyon recharges underlying alluvial and perched aquifers that are hydrologically connected to surface stream flow and may discharge to the Rio Grande during high run-off from summer storms.

3.2.2 Site Investigation and Analytical Results

On 11 March 1992, 20 soil samples were collected at SWMU 0-029(b) (Fresquez 1992a) (Figure 3-6). Fifteen of the soil samples were taken at regular intervals along a 50-ft by 100-ft grid. Additional samples were taken at the base of the power pole that had held the transformers.

Analytical results are shown in Table 3-2 and Figure 3-7. No PCBs were found above the level of detection of 0.06 ppm.

3.2.3 Evaluation of Results

3.2.3.1 Data Validation

EM-9 evaluation of blind and non-blind samples submitted with this batch indicates the measurements as defined by the LANL Quality Assurance Plan for Health and Environmental Chemistry (LANL 1990b) were followed. These QA samples included blanks (all reported to be below detection levels) and matrix spikes in the range of 11 to 27 ppm (for which the reported results differed from the known value by less than the reported analytical uncertainty).

3.2.3.2 Data Quality Assessment

The reported detection level for the PCB measurements in a soil matrix using SW-8080 was 0.06 ppm which, for comparison purposes, is slightly less than the proposed RCRA Subpart S action level of 0.09 ppm. All reported PCB concentrations for these samples were below this detection level.

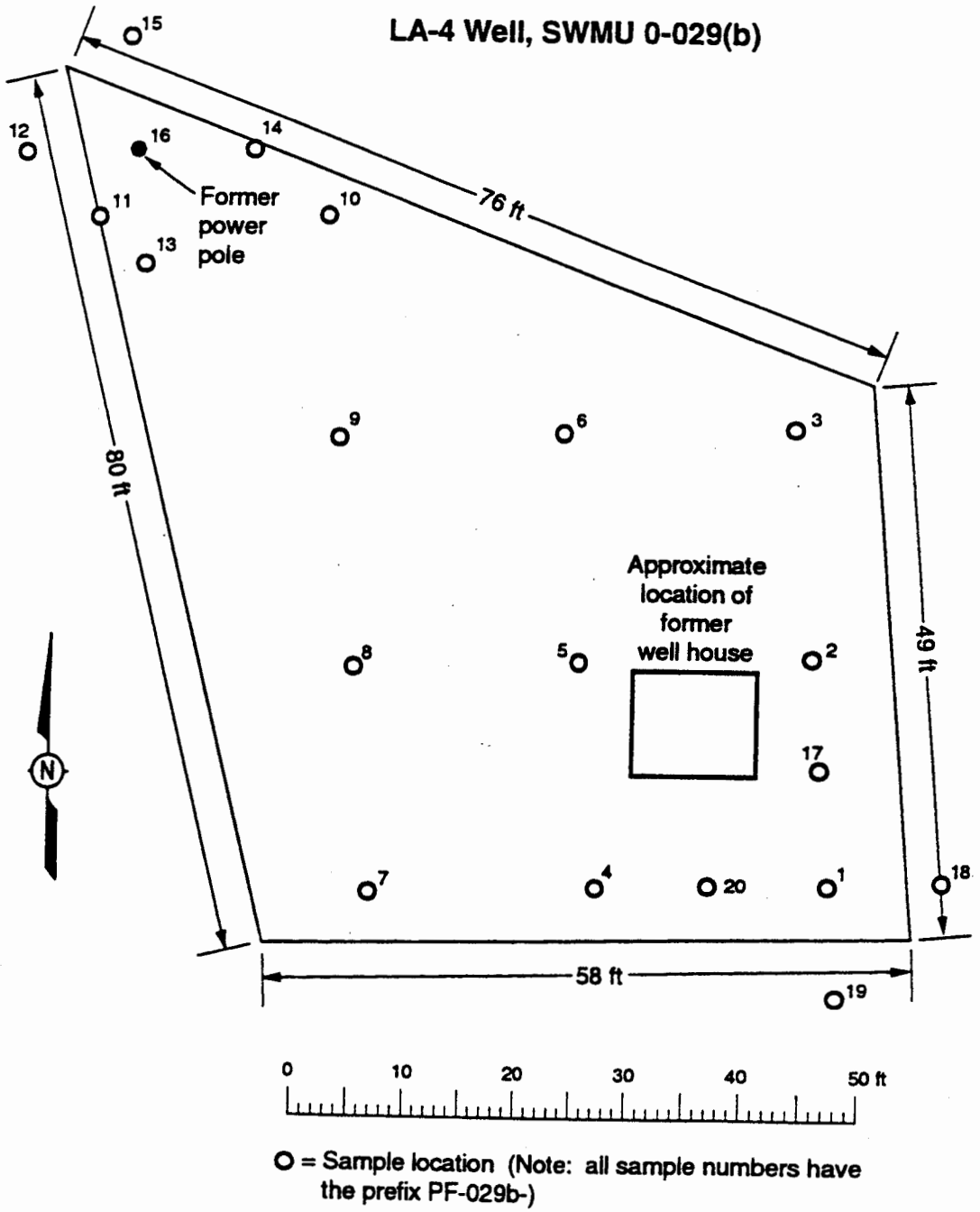


Figure 3-6 Sampling Locations at SWMU 0-029(b), Los Alamos Canyon Well #4

TABLE 3-2
SUMMARY OF ANALYTICAL RESULTS FOR SWMU 0-029(b)

Soil Sample	Analytical Result (ppm)	Analytical Uncertainty	Comments
PF-029B-1	<0.06		
PF-029B-2	<0.06		
PF-029B-3	<0.06		
PF-029B-4	<0.06		
PF-029B-5	<0.06		
PF-029B-6	<0.06		
PF-O29B-7	<0.06		
PF-029B-8	<0.06		
PF-029B-9	<0.06		
PF-029B-10	<0.06		
PF-029B-11	<0.06		
PF-029B-12	<0.06		
PF-029B-13	<0.06		
PF-029B-14	<0.06		
PF-029B-15	<0.06		
PF-029B-16	<0.06		
PF-029B-17	<0.06		
PF-029B-18	<0.06		
PF-029B-19	<0.06		
PF-029B-20	<0.06		
PF-029B-21	<0.06		
PF-029B-17QA	<0.06		

Samples were analyzed for PCBs (EPA Method 8080) on 16 March 1992.

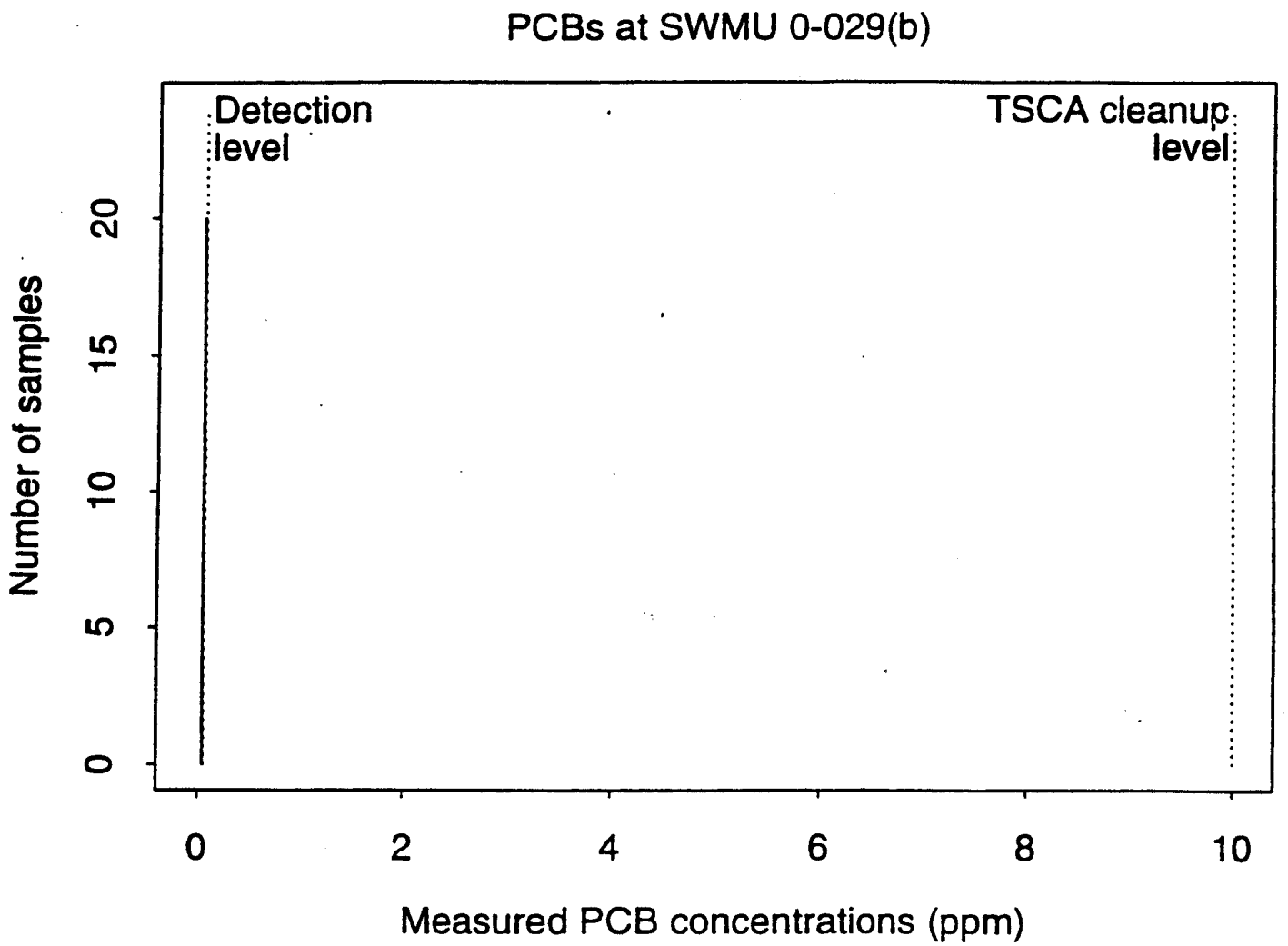


Figure 3-7 SWMU 0-029(b) PCB Measurements

3.2.4 Conclusions and Recommendations

PCBs were not detected in soil samples from SWMU 0-029(b) and, therefore, if present, they are far below the regulatory cleanup level of 10 ppm. No further action is recommended at this site.

3.3 SWMU 0-029(c), Guaje Canyon Well #1

3.3.1 Background

3.3.1.1 Description and Historical Information

SWMU 0-029(c) consists of possible leakage from a transformer which was located on a power pole that was used to supply electric power to a ground water production well (Well #1) in Guaje Canyon (Figure 3-8). The well was located about 100 feet from the stream channel, approximately 2 miles upstream of its confluence with Los Alamos Canyon. The power pole was located about 20 feet from the site boundary closest to the stream channel. The site boundary is also about 100 feet from the access road that runs along Guaje Canyon. The transformer located there was removed 19 April 1986. Transformer oil from this site was found to contain less than 50 ppm PCBs (LANL 1992a). This well is scheduled for decommissioning in the next few years (Aldrich 1991b).

3.3.1.2 Geology and Hydrology

Alluvium-floored Guaje Canyon is a tributary to Los Alamos Canyon that is cut into the Puye Formation. The canyon heads on the eastern flank of the Jemez Mountains west of the Pajarito Plateau. The canyon floor is about 400 feet below the rim of the plateau at SWMU 0-029(c). Perennial flow is maintained in the upper segment of the canyon to within about 2 miles of SWMU 0-029(c), and intermittent surface flow occurs along the rest of the canyon. No information is available regarding flood frequency and discharge, but heavy storm run-off carries surface flow to at least the location of SWMU 0-29(c) and probably beyond.

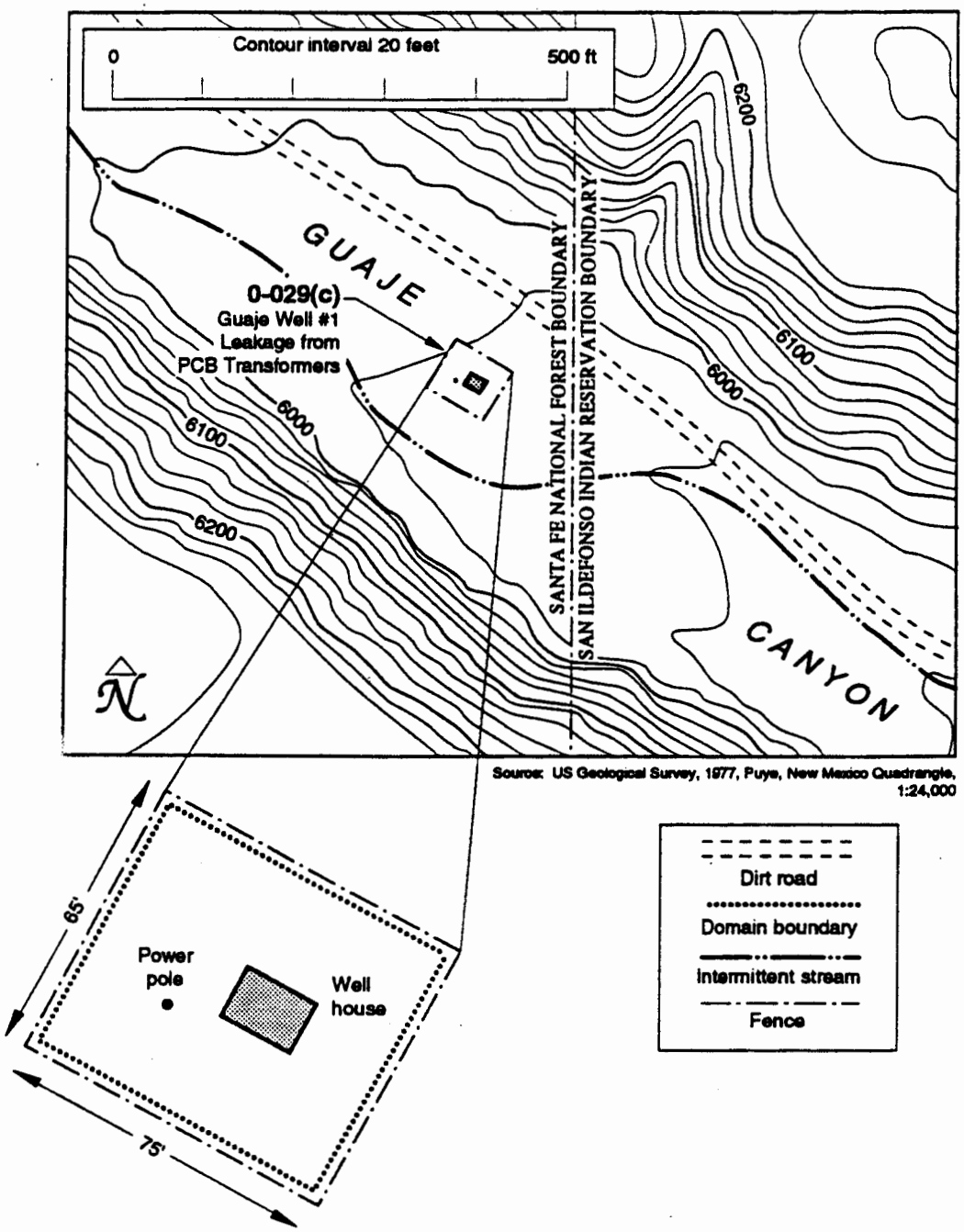


Figure 3-8 Location of SWMU 0-029(c), Guaje Canyon Well #1

3.3.2 Site Investigation and Analytical Results

On 13 March 1992, 21 soil samples were collected at SWMU-029(c) (Fresquez 1992b). Sixteen samples were taken on a 75-ft by 65-ft rectangular sampling grid (Figure 3-9). Five additional samples were collected from the area of the power pole that had previously held the transformer.

Analytical results are shown in Table 3-3 and Figure 3-10. One sample, PF-029C-9, was found to be marginally above the 0.06 ppm detection limit.

3.3.3 Evaluation of Results

3.3.3.1 Data Validation

EM-9 evaluation of blind and non-blind samples submitted with this batch shows that the measurement process as defined by the LANL Quality Assurance Plan for Health and Environmental Chemistry (LANL 1990b) was followed. These QA samples included blanks (all reported to be below detection levels) and matrix spikes in the range of 9 to 26 ppm (for which the reported results differed from the analytical uncertainty).

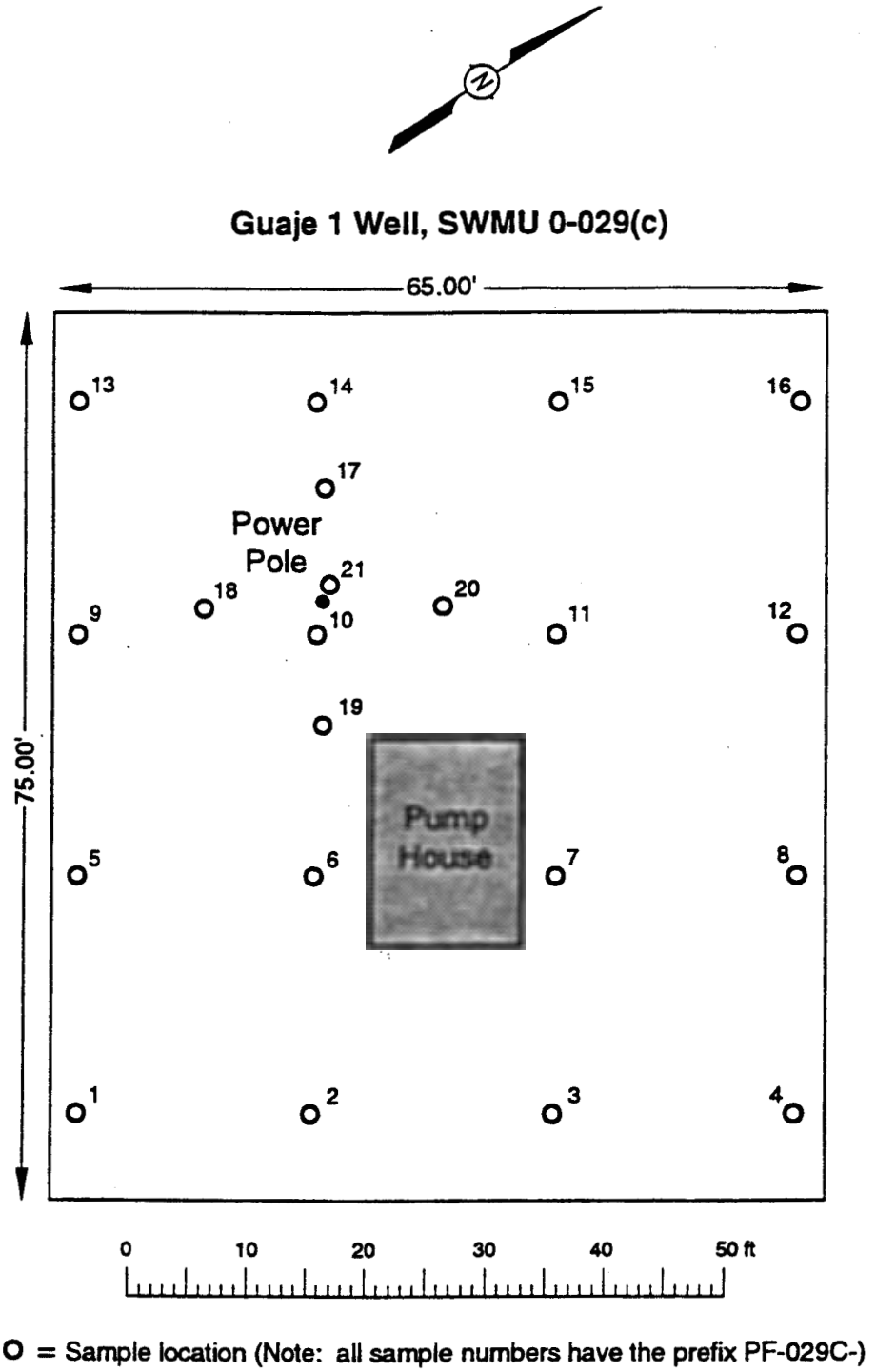


Figure 3-9 Sampling Locations at SWMU 0-029(c), Guaje Canyon Well #1

TABLE 3-3

SUMMARY OF ANALYTICAL RESULTS FOR SWMU 0-029(c)

Soil Sample	Analytical Result (ppm)	Analytical Uncertainty	Comments
PF-029C-1	<0.06		
PF-029C-2	<0.06		
PF-029C-3	<0.06		
PF-029C-4	<0.06		
PF-029C-5	<0.06		
PF-029C-6	<0.06		
PF-029C-7	<0.06		
PF-029C-8	<0.06		
PF-029C-9	0.09	0.04	
PF-029C-10	<0.06		
PF-029C-11	<0.06		
PF-029C-12	<0.06		
PF-029C-13	<0.06		
PF-029C-14	<0.06		
PF-029C-15	<0.06		
PF-029C-16	<0.06		
PF-029C-17	<0.06		
PF-029C-17QC	0.06		
PF-029C-18	<0.06		
PF-029C-19	<0.06		
PF-029C-20	<0.06		
PF-029C-21	<0.06		

Samples were analyzed for PCBs (EPA Method 8080) on 20 March 1992.

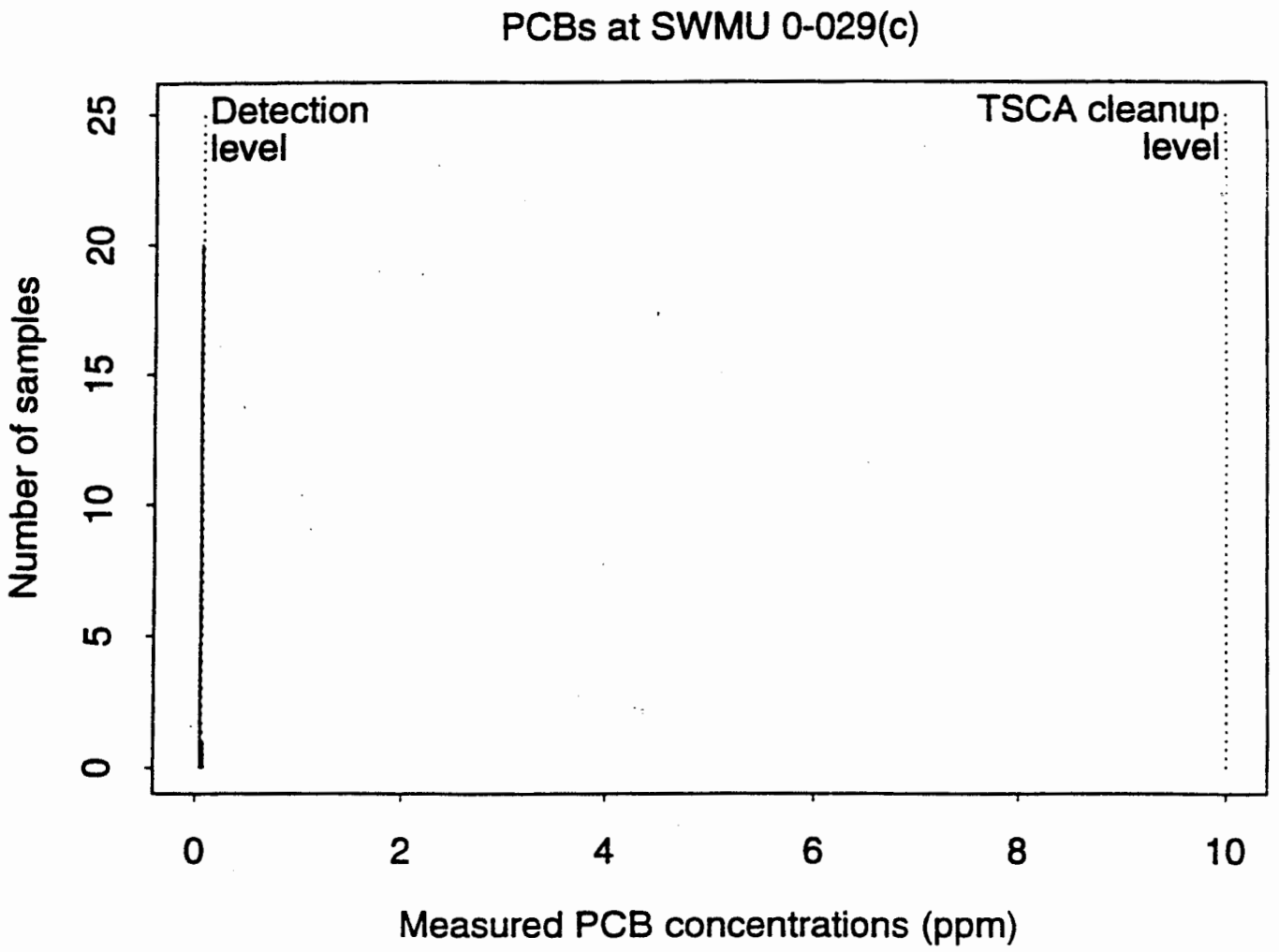


Figure 3-10 SWMU 0-029(c) PCB Measurements

3.3.3.2 Data Quality Assessment

The reported detection level for the PCB measurements in a soil matrix using SW-8080 was 0.06 ppm, slightly less than the screening action level of 0.09 ppm. The measured PCB concentration for one sample was 0.09 ppm at this level, with a reported analytical uncertainty of ± 0.04 ppm. Remaining reported PCB concentrations for these samples were below this detection level. The Tchebychev bound described in Section 2.3 yields an estimate that the probability that 10 ppm of PCBs is exceeded anywhere in the site is less than 10^{-7}.

3.3.4 Conclusions and Recommendations

Levels of PCB concentrations at SWMU 0-029(c) are below the regulatory cleanup level of 10 ppm. No further action is recommended at this site.

4.0 REFERENCES

Aldrich, M. James, August 20, 1991. Interview Record with D. Bryant, JCI. (Aldrich 1991a)

Aldrich, M. James, August 20, 1991. Interview Record with D. Sneesby, ENG. (Aldrich 1991b)

*Bailey, Michael, February 4, 1992. "Pole-Mounted PCB-Contaminated Transformers at LA Well #4 and LA Well #5-Leak Record Check," JCI Memorandum No. JENV. 92-164 to E. Norris, EM-13. (Bailey 1992)

*Fresquez, Phil, March 27, 1992. "Results of an Environmental Restoration Interim Action Conducted in Support of Los Alamos Canyon Wells #4 and #5," Los Alamos National Laboratory Memorandum EM-8:92-801 to James Aldrich. (Fresquez 1992a)

*Fresquez, Phil, April 27, 1992. "Results on an Environmental Restoration Interim Action Conducted in Support of Guaje Canyon Well #1," Los Alamos National Laboratory Memorandum EM-8:92-1102 to James Aldrich. (Fresquez 1992b)

*Gunderson, Thomas C., May 19, 1992. Letter (reference no. EM-DO:92-322) to K.T. Twombly, Chief, Environment, Safety, and Health Branch, Department of Energy, Los Alamos Area Office, Los Alamos, New Mexico. (Gunderson 1992)

LANL (Los Alamos National Laboratory), November 1990. "Solid Waste Management Units Report," Los Alamos National Laboratory Report No. LA-UR-90-3400, prepared by International Technology Corporation under Contract 9-XS8-0062R-1, Los Alamos, New Mexico. (LANL 1990a)

LANL (Los Alamos National Laboratory) December 1990. "EM-9 Quality Assurance Plan for Health and Environmental Chemistry," Los Alamos National Laboratory Report LA-11995-MS, Los Alamos, New Mexico. (LANL 1990b)

LANL (Los Alamos National Laboratory), May 1992. "RFI Work Plan for Operable Unit 1071," Los Alamos National Laboratory Report LA-UR-92-810, Los Alamos, New Mexico. (LANL 1992a)

LANL (Los Alamos National Laboratory), June 1992. "Environmental Restoration Standard Operating Procedures," Los Alamos, New Mexico. (LANL 1992b)

LANL (Los Alamos National Laboratory), November 1992. "Installation Work Plan for Environmental Restoration," Los Alamos National Laboratory Report LA-UR-92-3795, Los Alamos, New Mexico. (LANL 1992c)

*Morales, R., August 3, 1992. "Analytical Results Pertaining to Los Alamos Canyon Well #5," Los Alamos National Laboratory Memorandum EM-8:92-2150 to M. Aldrich. (Morales 1992)

*** These documents are included in Appendix C.**

APPENDIX A

Field Logs and Forms

[redacted] Canyon Wells #4 & #5 SWMU 029A & 029B.
03/11/92 08:00-14:00 clear, windy, ~40°F
Cost Code 4603/14843 from checker Richardson
ENG-3 Priority 1 samples collected for
PCB analysis. 0-6" depth using stainless steel
bucket auger
Submitted on 03/11/92 at 14:20 to Em-9
with chain-of-custody form

HS-S HNu results <1 ppm (Dan Sandoval)
Gross α, β, γ ≤ 25 pCi/g
≤ 20 uR/hr activity
Submitted with LLD (Lower Limit of Detection)
of 10 ppm (parts per million). John Miglio (Em-9)
reminded to establish this LLD at 16:15 on 03/11/92.
20 total soil samples submitted from each
site + 1 QA/QC sample. Total of 42 samples
submitted. No trip blank required as per
S. Cisneros (Em-9).

✓ LA Canyon Well #4 - PF-029B-1 thru B-20

✓ LA Canyon Well #5 - PF-029A-1 thru A-20

1 QA/QC soil sample submitted for each!

Samples collected on 20' grid with 4 samples
taken in each direction from power pole
in a 10' radius.

✓ See notebook & sampling plan for maps!!

... 03/17/92
...ples for IT
...ree lagoons.
...D & Corrosivity,
...lity | Corrosivity | Reactivity
(Cyanide-Sulfide)
...Corrosivity, Pesticides,

(Not Required) Left out!!
(S. Cisneros)
H_2O or sludge!

(Unburdened)
- custody to
11:30!

(B) PR 03/17/92
PF-NE-IT-1W

...resquez; NE = North East
...tion; 1W = #1 Water

PF-NE-IT-1S

..., Thomas Houche (HS-1)

LA Canyon Well #5 SWMU 029-A 03/19/92
Cost Code 4608/WS48 Charles Richardson ENG-8
Priority 1 submitted for PCB analysis; Emergency
Status at Request of Steve Slaten (DOE-LAAO)
0-6" using stainless steel bucket auger!
Collected around sample locations #8 & #12
that exhibited .09 ppm PCB collected on 03/1...

Submitted on 03/19/92 at 09:10 to EM-9 with
chain-of-custody.

HS-5 HNU results < 1 ppm (Dan Sandoval)
Gross α, β, γ ≤ 25 pCi/g
≤ 20 uR/hr activity
No Trip blank required as per EM-9; S Cisneros

LA Canyon Well #5 SWMU-029A

PF-029A-21 through PF-029A-26 & PF-029...

See map on page 118!

Added one additional sampling point designated
as "PF-029A-27" located between PF-029A-2...
and PF-029A-5 in area of staining!

07 Total soils collected!

Clear, calm, cold; ~ 36°F

Guaje Canyon Well #1 SWMU 029-C 03/13/92
Clear calm ~ 40°F
Cost Code 5601/1274B Jim Aldrich
PCB Analysis; No Priority 0-6" Depth using stainless steel bucket auger
Submitted on 03/13/92 with chain-of-custody to Em-9 at 10:00 A.m.

HS-5 HNU results ≤ 1 ppm
Gross α, β, γ ≤ 25 pCi/g
≤ 20 uR/hr

21 Total samples submitted + 1 QA/QC
No Trip Blank required as per Em-9!

Guaje Canyon Well #1 - PF-029C-1 Thru 21

Samples collected on a 20' Grid with four samples in each direction 10' out from base of power pole! See notebook and sampling plan for maps!

Romaco R. - V. Garcia, D. Sandoval - Reliance Sharp

APPENDIX B

Subcontractor Results and Reports

I N T E R O F F I C E M E M O R A N D U M

Date: 11-Aug-1992 08:30am MDT
From: Marke Talley
TALLEY_MARKE_W AT A1 AT CALYPS
Org:
Mail Stop:
Tel No:

TO: See Below

Subject: LOS ALAMOS WELL FIELD ABANDONMENT (E-MAIL FROM M.BAILEY)

JCI was directed by DOE LAAO to conduct a "prudent and conservative cleaning" of LA Well Number 5 wellhouse and yard before it is turned over to San Ildefonso Pueblo so that that they can begin their refurbishment. The clean-up was completed on August 6.

The well house and yard at LA Well Number 5 can be turned over to the Pueblo at this time.

end of message

Distribution:

TO:	Dick Richards	(RICHARDS_DICK_J AT A1 AT CALYPS)
TO:	David Sneesby	(SNEESBY_DAVID_J AT A1 AT OFVAX)
TO:	David Padilla	(PADILLA_DAVID_A AT A1 AT OFVAX)
CC:	Charles Richardson	(RICHARDSON_CHARLES_R AT A1 AT OFVAX)
CC:	James Gourdoux	(GOURDOUX_JAMES_R AT A1 AT OFVAX)
CC:	Robert Greuter	(GREUTER_ROBERT_H AT A1 AT OFVAX)
CC:	Joe Lopez	(LOPEZ_JOE_J AT A1 AT OFVAX)
CC:	Michael Brown	(BROWN_MICHAEL_F AT A1 AT CALYPS)

File
Water
LA Well Field

INTEROFFICE MEMORANDUM

FILED

Date: 09-Jun-1992 10:53am MDT
From: David Padilla
PADILLA_DAVID_A
Org: DOELAAO
Mail Stop: A316
Tel No: 667-4661

TO: See Below

Subject: Los alamos Wellfield Abandonment

Dave:

I had previously informed Charles that I felt that any further cleanup at Los Alamos Well # 5 was unnecessary as far as the possible PCB contamination was concerned. This was based on a conversation I had May 27 with Raul Morales, 8, wherin he had relayed the results of the samples taken from the concrete floor of well 5. This was in addition to those taken of the outside soil adjacent to the well house. Both samples showed PCB contamination to be belo RCRA guidlines for soil and TOSCA Regulations for the floor samples.

However, I had a subsequent discussion with Jim Aldrich, EES-1, phone 7-1495 and reached an agreement wherein we decided that while any cleanup was unnecessary it would still be prudent, given the sensitive nature of our dealings with the Pueblo, to perform some cleanup to reach backround levels. Therefore, I am proposing that you direct JCI to perform the following clean of Well # 5:

Inside the well house; wash down the concrete floor with Capsure, a cleaner for PCB cleanups. Attempt to contain as much of the risidual as possible, b should some of it be washed outside, cleanup will be done during the second phase which is the soil removal.

Outside the well house; Remove the top six inches of soil as marked or stak by Jim Aldrich and dispose of as required by the applicable rules.

Coordinate this cleanup with Jim Aldrich. Also schedule this as soon as possible and get back with me. i need to be able to turn this well over to Pueblo as soon as possible so that they can begin their refurbishment.

While I still maintain this exercise is unnecessary, it probably makes sens error on the conservative side because this type of cleanup is relatively inexpensive.

On another topic; the proposed meeting with the County on the new water rate Tuesday, June 16 at 10:00 AM at the County Annex bldg.(I will verify the location). Does this still meet with your schedule since you will be on tra after this date? Let me know as soon as possible so that I can write back t Keith Schwertfeger at the County to verify the date, time, and place.

Thanks,

Thanks,

David

Distribution:

TO:	David Sneesby	(SNEESBY_DAVID_J)
CC:	Charles Richardson	(RICHARDSON_CHARLES_R)
CC:	James Gourdoux	(GOURDOUX_JAMES_R)
CC:	Neil Williams	(WILLIAMS_NEIL)
CC:	Loretta Valerio	(VALERIO_LORETTA_R)
CC:	Robert Greuter	(GREUTER_ROBERT_H)

APPENDIX C

Referenced Letters and Memoranda

JOHNSON CONTROLS

TO: Edward Norris, EM-13, K481

FROM: Michael Bailey, Environmental Engineer, JENV

DATE: February 04, 1992 MEMO NO. JENV.92-164

SUBJECT: POLE-MOUNTED PCB-CONTAMINATED TRANSFORMERS AT LA WELL #4 AND LA WELL #5 - LEAK RECORD CHECK

As per your request, the information available about the pole-mounted PCB-contaminated (>50 ppm but <500 ppm PCB oils) transformers at LA Well #4 and #5 is as follows:

Well No.	Structure No.	Pole No.	Size	Replaced	PCB Conc.
LA Well #4	TA-0-229	1493-94	50KVA	1987	231.2ppm
LA Well #4	TA-0-229	1493-94	50KVA	1987	362.1ppm
LA Well #4	TA-0-229	1493-94	50KVA	1987	205.7ppm
LA Well #5	TA-0-227	460/462	50KVA	1987	291.8ppm
LA Well #5	TA-0-227	460/462	50KVA	1987	162.2ppm
LA Well #5	TA-0-227	460/462	50KVA	1987	20.2ppm*

*Non-PCB transformer as defined in 40 CFR 761 - PCB Regulations.

The poles #1493 & 1494, #460 & 462 were located behind the wells in a grass lawn inside the well yard fence. From personal knowledge, the ZIA Utilities personnel would mow and inspect the lawn on a regular schedule, and generally attend to the upkeep of these grounds. JENV has checked records for any spill incidents in the 1985 thru 1987 time frames, in the period before these transformers were replaced with Non-PCB transformers. No incident reports were found for these wells, nor can Michael Bailey, who was first responder for PCB oil releases during this period, remember any release at the wells.

JENV spill incident reports are kept on file at JENV for incidents dating back to 1983. As stated above, no incident report exists for a release from these pole-mounted transformers.

Michael Bailey

Michael Bailey

cc:
file copy

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: James Aldrich, EES-1, MS D462 DATE: March 27, 1992

THRU: Ron Conrad, EM-8, MS K490 MAIL STOP/TELEPHONE: K490/7-0815

FROM: Phil Fresquez, EM-8 SYMBOL: EM-8:92-801

SUBJECT: **RESULTS ON AN ENVIRONMENTAL RESTORATION INTERIM ACTION CONDUCTED IN SUPPORT OF LOS ALAMOS CANYON WELLS #4 AND #5**

On March 11, 1992, the Environmental Protection Group (EM-8) collected 20 soil surface samples each from LA Canyon Well #4 and #5. All samples were collected and processed according to the sampling plan found in EM-8:92-926 (Richard Romero, "An Environmental Restoration Interim Action (ERIA) Reconnaissance Survey at Los Alamos Canyon Well #4 and #5 and at Guaje Canyon Well #1," Los Alamos National Laboratory memorandum EM-8:92-926, to Robert Gonzales [March 9, 1992]).

All soil samples were screened for gross alpha, beta and gamma radioactivity before they were submitted to the Environmental Chemistry Group (EM-9) for polychlorinated biphenyl (PCB) analysis. Gross alpha, beta and gamma activity were all at background levels. No PCB's were detected in any of the soil samples collected at well #4. Two soil samples, however, at well #5 had PCB (Aroclor #1260) levels recorded at 0.09 ($\pm$0.06) ppm. These samples were located just southeast and east of the pump house.

To verify these results, EM-8 was instructed to collect additional soil samples from around the two PCB contaminated sample locations. Consequently, on March 19, 1992, members of the Waste Studies Section collected a total of six soil surface samples (three per PCB contaminated area) plus one other from a 2 ft. wide x 8 ft. long dark "oil stain" located approximately 30 feet southeast of one of the PCB contaminated areas. Because the ground was wet during the first sampling event, this "oil stain" was not obvious to the sampling team. All soil samples were submitted to EM-9 for analysis of PCB's, total petroleum hydrocarbons (TPH) and for Resource Conservation and Recovery Act (RCRA) volatile organic compounds (VOC).

PCB levels close to the first two PCB contaminated areas ranged in concentration from 0.14 to 0.40 ppm. The extent of PCB contamination was not wide (i.e., only two of the six samples showed PCB contamination). The soil sample collected from the "oil contaminated area" showed levels of TPH's at around 180,000 (±36,000) ppm. No PCB's or RCRA VOC's were detected, however.

PF:RC/gr

Cy: C. Richardson, ENG-8, MS M718
D. Sneesby, ENG-8, MS M717
T. Gunderson, EM-DO, MS K491
D. Heineman, HS-3, MS K489
S. Alexander, HS-5, MS K494
R. Morales, EM-8, MS K490
D. McInroy, EM-8, MS K490
R. Romero, EM-8, MS K490
T. Norris, EM-13, MS K484
L. Soholt, EM-13, MS K481
R. Vocke, EM-13, MS K481
ER Records Processing Facility, MS M707
Circ. File

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: James Aldrich, EES-1, MS D462 DATE: April 27, 1992

THRU: Ron Conrad, EM-8, MS K490 RC MAIL STOP/TELEPHONE: K490/7-0815

FROM: Phil Fresquez, EM-8 PF SYMBOL: EM-8:92-1102

SUBJECT: **RESULTS ON AN ENVIRONMENTAL RESTORATION INTERIM ACTION CONDUCTED IN SUPPORT OF GUAJE CANYON WELL #1**

On March 13, 1992, the Environmental Protection Group (EM-8) collected over 20 soil surface samples from Guaje Canyon Well #1. All samples were collected and processed according to the sampling plan found in EM-8:92-926 (Richard Romero, "An Environmental Restoration Interim Action (ERIA) Reconnaissance Survey at Los Alamos Canyon Well #4 and #5 and at Guaje Canyon Well #1," Los Alamos National Laboratory memorandum EM-8:92-926, to Robert Gonzales [March 9, 1992]).

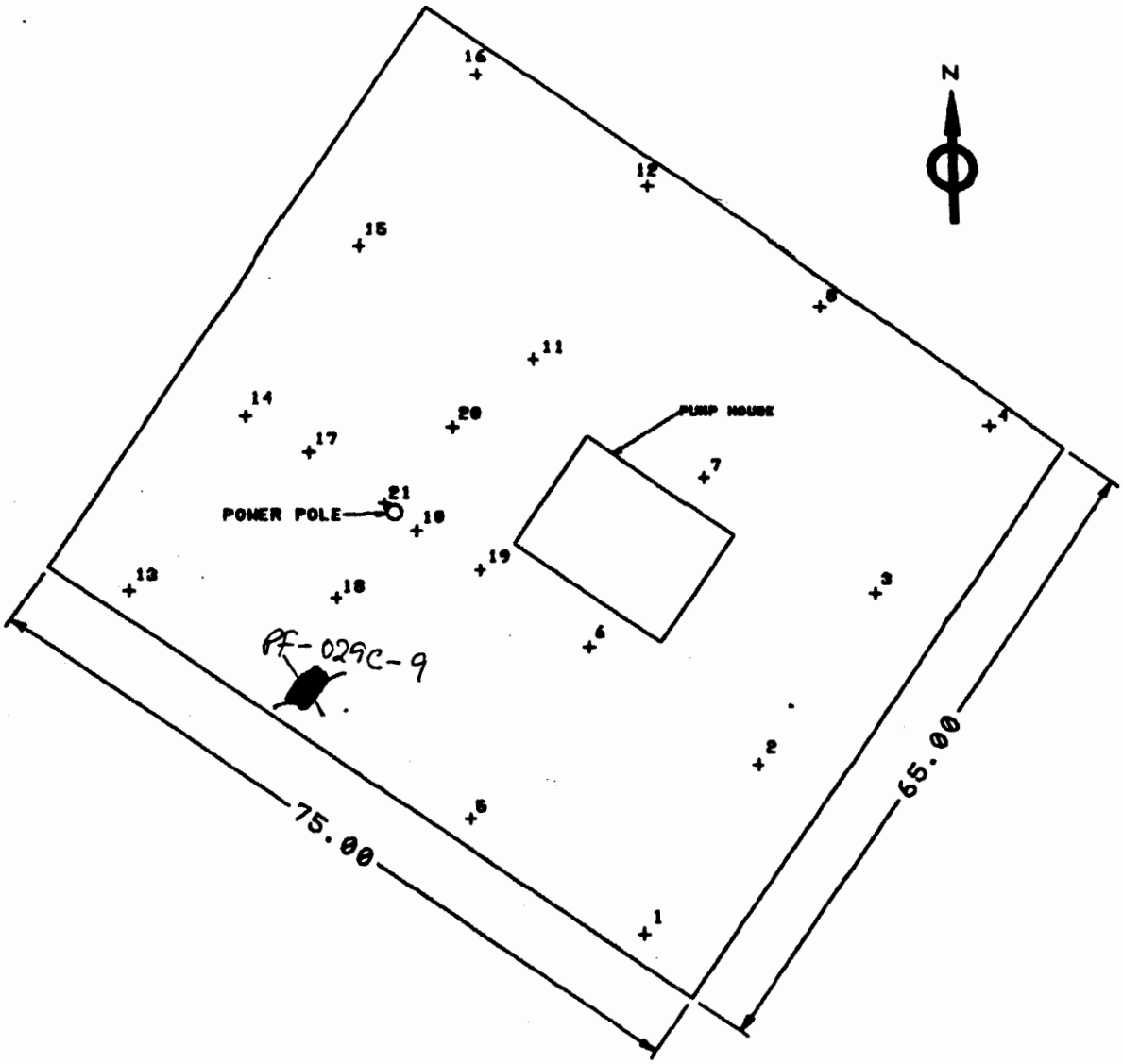
All soil samples were screened for gross alpha, beta and gamma radioactivity before they were submitted to the Environmental Chemistry Group (EM-9) for polychlorinated biphenyl (PCB) analysis. Gross alpha, beta and gamma activity were all at background levels. One sample (PF-029c-9) contained PCB (Aroclor #1260) levels at 0.09 ($\pm$0.04) ppm. This sample was located approximately 40 ft. south of the existing power pole along the southern fence line boundary (map enclosed). All other soil samples were below the LOQ (<0.06 ppm) for PCB analysis.

Please transfer a total of $10.4K to EM-8 4608/M74B to cover the cost of sampling, survey work, radiological screening, data management, chemical analysis and report writing. Thanks.

PF:RC/gr

Cy: C. Higgins, ENG-1, MS M721
T. Gunderson, EM-DO, MS K491
D. Heineman, HS-3, MS K489
S. Alexander, HS-5, MS K494
R. Morales, EM-8, MS K490
D. McInroy, EM-8, MS K490
R. Romero, EM-8, MS K490
T. Norris, EM-13, MS K484
ER Records Processing Facility, MS M707
Circ. File

SAMPLING GRID FOR GUAJE 1 WELL



SAMPLING GRID FOR WELL NUMBER 1 TA-0-1117
GRID NODE NUMBER 1 IS 2.7 FT NE AND 7.6 FT NW
OF THE SW CORNER OF THE FENCELINE.

PROJECT: PCB SAMPLING FOR WELL SYSTEM	
LOCATION: SWMU 029-C, Los Alamos National Laboratory	PROJECT LEADER: J. ALDRICH
GRID LAYOUT BY: B. KOPP, V. GARCIA	CHECKED BY: R. ROMERO
DATE: MAR 12, 1992	

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

DATE May 19, 1992
IN REPLY REFER TO EM-DO:92-322
MAIL STOP K491
TELEPHONE (505) 665-3778
(FTS) 855-3778

Mr. Karl J. Twombly, Chief
Environment, Safety & Health Branch
Department of Energy
Los Alamos Area Office
Los Alamos, New Mexico 87544

THRU: Allen J. Tiedman, Associate Director for Operations

Dear Mr. Twombly:

Recently there has been some confusion as to what remedial action requirements need to be followed in the case of solid waste management units (SWMUs) contaminated with polychlorinated biphenyls (PCBs). This confusion has resulted because of the dual regulatory requirements under the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA). Both the proposed Subpart S of 40 CFR Part 264 promulgated under the authority of RCRA and 40 CFR Part 761 promulgated under the authority of TSCA apply to PCBs. The purpose of this letter is to establish an approach to handle PCB-contaminated SWMUs that satisfies both RCRA and TSCA requirements.

In 1990, the Environmental Protection Agency proposed requirements under RCRA for corrective actions for SWMUs at facilities seeking a permit under Section 3005(c) of RCRA. The intent of this proposal was to create a new Subpart S in the RCRA Part 264 regulations to define requirements for conducting remedial investigations, evaluating potential remedies, and selecting and implementing remedies at RCRA facilities. The proposal appeared in Federal Register Vol. 55, No. 145, July 27, 1990. One of the major elements of the proposal concerns *trigger or "action" levels*. Section 264.521 of the proposal establishes the general principles by which action levels would be established. The appendices in the proposal provide values that the EPA believes may be appropriate for various hazardous constituents in different media.

Action levels are levels of contamination which if exceeded present a potential threat to human health or the environment which may require further study. Action levels are not cleanup standards which are determined later in the corrective action process. Action levels would be incorporated, whenever possible, individually into permits through the permitting process. (The Laboratory's RCRA permit does not enumerate action levels.) In the case of PCBs in soil, which the Laboratory is now having to address and which it expects to address frequently in the future, the action level proposed in Subpart S is 90 parts per billion (ppb).

In spite of the listed action level of 90 ppb for PCBs in soil, the preamble to Subpart S refers to the TSCA cleanup standards and states that the TSCA standards are relevant to RCRA corrective actions. EPA believes that the cleanup levels and practices discussed in the TSCA PCB Spill Cleanup Policy are appropriate in many RCRA corrective action situations.

The TSCA PCB Spill Policy, located at 40 CFR Part 761, establishes cleanup levels for PCBs in soil based on the concentration of the spill and on the use of the property upon which the spill occurred. The most stringent spill cleanup level for soil is 10 parts per million (ppm). The preamble to the spill policy states, however, that the TSCA policy does not affect cleanup requirements under other statutes (including RCRA) and where more than one standard applies, the more stringent standard must be met. It further explains that the TSCA levels were developed assuming exposures associated with sites with typical electrical equipment-type spills which may involve important differences from sites requiring corrective action under RCRA. Thus, RCRA cleanups may result in different outcomes depending on the type of PCB spill and ultimate use of the site.

On March 25, 1992, Raul Morales of the Laboratory's Environmental Protection Group spoke with Ms. Lisa Askari of the EPA's Office of Solid Waste, Permits & State Programs Division, Washington, D.C. in order to clarify why PCB action levels of 90 ppb were being proposed in Subpart S, yet at the same time the proposal indicated that standards promulgated under TSCA were relevant (for RCRA corrective actions) as action levels and cleanup standards for soil. Ms. Askari indicated that action levels cited in Subpart S were proposals-- not requirements. It was the EPA's intent in Subpart S to follow the requirements cited in the PCB Regulations (40 CFR 761). Ms. Askari did not provide an

explanation as to why 90 ppb were being proposed under Subpart S as opposed to the 10 ppm required by the cleanup standards of the PCB regulations. She indicated, however, that further guidance could be obtained from the EPA's *A Guide on Remedial Actions at Superfund Sites With PCB Contamination*. The guide (enclosed) recommends protective quantifiable concentrations of 1 ppm PCBs as a soil action level for residential sites and 10-25 ppm for industrial sites. Further explaining the reason for those values, the guide adds "**Also because of the persistence and pervasiness of PCBs, PCBs will be present in background samples at many sites.**" It appears that establishing action and cleanup levels has been difficult for the EPA and has led to inconsistencies. However, Ms. Askari did emphasize the EPA's intent to use TSCA's PCB spill cleanup policy which requires cleanups down to 10 ppm PCBs for non-restricted (e.g., residential and low density development/population) areas.

I recommend that the following process be established for addressing PCB contamination at SWMUs so that both TSCA requirements and the RCRA guidelines in the proposed Subpart S are satisfied. Under the Subpart S guidelines, if testing shows levels of contamination greater than 90 ppb, the Laboratory/DOE will need to choose a course of action: either request a determination of no further action or prepare a Corrective Measures Study (CMS) for determination of the appropriate cleanup level. I propose that if the level of contamination is 10 ppm (the most restrictive TSCA cleanup level) or less, the Laboratory/DOE pursue the "determination of no further action" option. If the contamination were to be greater than 10 ppm, the Laboratory/DOE would prepare a CMS which would propose a cleanup level of 10 ppm. Most, if not all, of the Laboratory's PCB contamination is of the type as that considered in developing TSCA requirements (i.e.,electrical equipment spills).

Should contamination greater than the action level of 90 ppb be discovered, which for some reason the Laboratory believes is not of the type considered in the development of the TSCA regulations, the 10 ppm TSCA cleanup level would not be presumed to be the appropriate level and a CMS would be conducted to evaluate the appropriate level. Following this process would assure compliance with the requirements of TSCA, the proposed requirements of Subpart S of 40 CFR Part 264 for RCRA corrective action, the Laboratory's Installation Work Plan, and would be protective of human heath and the environment. A table is enclosed to help visualize potential scenarios for soil PCB-SWMUs.

Please call Raul Morales of the Laboratory's Environmental Protection Group (667-0814) if you have any questions.

Sincerely,

Thomas C. Gunderson
Division Leader
Environmental Management

TCG:RM/gr

Enc. a/s

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Circ. File, w/o enc.

SWMU REMEDIAL ACTION DETERMINATIONS FOR PCB CONTAMINATED SOIL

PCB CONTAMINATION	SITE	DETERMINATION
<90 ppm	Any	no further action
>90 ppb <10 ppm	DOE Industrial	no further action
>90 ppb <10ppm	Residential or non-DOE (e.g.,county, other)	no further action or CMS[a] and propose a cleanup level
>10 ppm	DOE Industrial	CMS or FFCA[b]

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[a] Corrective Measures Study

[b] Federal Facility Compliance Agreement

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: M. Aldrich, EES-1, MS D462

DATE: August 3, 1992

FROM: R. Morales, EM-8 RM

MAIL STOP/TELEPHONE: K490/7-0814

SYMBOL: EM-8:92-2150

SUBJECT: **ANALYTICAL RESULTS PERTAINING TO LOS ALAMOS CANYON WELL #5**

As a follow-up to the sampling conducted by Phil Fresquez on Los Alamos Well #5 (EM-8:92-626) & 92-801), on April 2, 1992 Mike Alexander and I sampled inside the pump house (TA-0, Structure 1105). A floor wipe 3 inches northwest of the drain and an aliquot of the Turbine R&D 150 oil located within the structure were taken and submitted for PCB analysis. The wipe result indicated 2.3 ug PCB/100cm^2 (PCB cleanup standards require decontaminating to 10 ug/100cm^2 where a spill has occurred) and the oil indicated a concentration of <5 ppm PCB (i.e., less than 50 ppm and therefore non-PCB as defined by the PCB regulations). A soil sample outdoors, southeast and east of the pump house, where residual oil was visible was also taken. The analysis indicated <0.63 ppm PCB. The PCB regulations under TSCA require decontaminating to 10 ppm for recent spills.

The Analytical reference numbers associated with these analyses are:

Floor wipe	EM-8	sample	#92.0044X	EM-9	request	#12711
Soil	"	"	#92.0045X	"	"	#12709
Oil	"	"	#92.0046X	"	"	#12710

I understand you need the above information for your files.

RM/gr

Cy: M. Alexander, EM-8, MS K490
P. Fresquez, EM-8, MS K490
D. McInroy, EM-8, MS K490
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ER Records Processing Facility, MS M707
Circ. File