Section 3

Nature and Extent of Soil and Groundwater Contamination

Note: For the convenience and ease of the reader, all tables and figures in this section have been placed at the end of the section.

In the course of conducting the remedial investigation (RI), contaminant data were collected. In the discussion that follows, it is assumed that these data are of sufficiently high quality to fully support the various interpretations made using them. Data quality is discussed in Section 3.1.

Because previously existing data provided information regarding the types of chemicals and handling procedures at the site, the RI focused on pesticide and volatile organic compound (VOC) contamination. This report delineates the vertical and horizontal extent of soil and groundwater contamination. The extent of a separate-phase contaminant, a dense non-aqueous phase liquid (DNAPL), in groundwater is also discussed. At Frontier Fertilizer, the excavation of soil associated with the former disposal basin probably removed most separate-phase contamination in the vadose zone. As a result, most of the soil contamination is likely to be found as sorbed phase, vapor phase, or residual phase dissolved in pore water. The resulting concentrations are relatively low. Soil contamination is discussed in Section 3.2.

There is a possibility that a separate-phase liquid migrated into the saturated zone from the disposal basin. The resulting liquid is probably denser than water and will sink into the groundwater beyond the water table. Because of the nature of DNAPL migration (very thin migration pathways, the extremely limited extent of DNAPL-saturated soils and groundwater), the likelihood of encountering a DNAPL in the subsurface using standard sampling methods is very low. Some data can be used to infer the presence of a DNAPL zone, and these are discussed in Sections 3.3 and 3.4.

3.1 DATA QUALITY ASSESSMENT

The purpose of this data quality assessment is to evaluate the usability of analytical data collected at Frontier Fertilizer site to ensure that the data are of a quality suitable for their intended purpose.

The Field Sampling Plans (Bechtel, 1995, 1994) and Quality Assurance Project Plan (Bechtel, 1995) created for the Frontier site investigation were designed to ensure the collection of the type, quantity, and quality of data required. Data quality objectives (DQOs) were established with the express purpose of obtaining the data quality needed. The Frontier Fertilizer Quality Assurance Project Plan (QAPP) (Bechtel 1995) specified the DQOs for remedial investigation and groundwater monitoring activities. The DQOs for other site data collection activities (preliminary assessment and water treatment plant sampling) are specified in their associated QAPPs or the appropriate analytical methods.

Acceptable levels of analytical data uncertainty are documented in the QAPP (Bechtel, 1995). The QAPP was prepared according to EPA, Region IX, *Guidance for Preparing Quality Assurance Project Plans for Superfund Remedial Projects*, 9QA-03-89, September 1989. The

QAPP was designed to ensure that all environmental measurements performed would yield data that are scientifically valid, of known quality, sufficient to meet project objectives, and legally defensible. The QAPP was reviewed and approved by the EPA Region IX quality assurance program office.

Section 1.2 of the QAPP, Data Quality Objectives for Measurement Data, specifies quantitative objectives for the acceptable levels of analytical uncertainty for each analytical method used during the remedial investigation. This section also discusses the acceptable levels of spatial uncertainty associated with the soil investigation. The acceptable levels of spatial uncertainty associated with the groundwater investigation are not quantitatively described in the QAPP nor were they evaluated during the investigation because it was considered prohibitively costly to implement a three dimensional statistically valid sampling plan for groundwater. As is conventional in environmental investigations, the uncertainty associated with the extent of groundwater contamination is evaluated based on professional judgment.

To assess the quality of data to be used in the remedial investigation at Frontier Fertilizer, two questions need to be addressed:

- Are the observed sample quantitation limits of each analyte sufficiently low to determine if a specific contaminant is present above or below its preliminary remediation goal (PRG)?
- Were there quality control (QC) problems encountered during sampling and analysis that could restrict data usability or render the analytical results unusable?

The quality of analytical results is evaluated using field and laboratory QC samples. Field QC samples collected during remedial investigation and groundwater monitoring included field duplicates, equipment rinsate blanks, and samples split between the EPA Field Analytical Support Program (FASP) laboratory and the offsite confirmatory laboratory. Laboratory QC samples included matrix spikes, matrix spike duplicates, method blanks, calibration activities, analysis of surrogates and standards, and others as required by the individual methods. Section 3.1.1 presents an evaluation of the usability of "non-detect" results, that is, results less than required quantitation limits. Section 3.1.2 presents an evaluation of data usability based on field QC results. Section 3.1.3 presents an assessment of data usability based on data validation results based on field and laboratory QC for all sampling events.

3.1.1 Evaluation of the Usability of "Non-Detect" Results

During the design of the sampling events described in this report, analytical methods were chosen that have method detection limits or practical quantitation limits below the level of concern for each analyte. In this case, the level of concern for soils is the preliminary remediation goal (EPA 1995) for each analyte, and the level of concern for groundwater is the maximum contaminant level (MCL) (40 CFR 141.61) for each analyte or PRG when an MCL has not been determined. During analysis, a sample-specific sample quantitation limit (SQL) actually attained after any adjustments is determined. Several factors influence the SQL. The primary factors are corrections for soil sample moisture and corrections required due to sample dilution. Typically, soil sample analytical results (and detection limits) must be adjusted to compensate for soil moisture. Both soil and water samples may have to be diluted to keep results within the calibration ranges. This will also affect detection limit capabilities. Elevated SQLs impact the data usability of non-detect (ND) results when the SQL is greater than the PRG or MCL, and caution must be exercised when evaluating if the level of concern for that analyte has been exceeded.

Table 3-1 summarizes all ND results that have elevated SQLs greater than the PRG or MCL. Two methods did not appear to be impacted by elevated SQLs for any event: carbamate/urea pesticides and metals. The remainder of the methods experienced elevated SQLs.

To evaluate the impact of elevated SQLs, the specific affected sample locations were identified (see Table 3-1 and Table A-1 in Appendix A). There is no risk of deciding contamination is not

present when, in fact, it is, if a station location with an elevated SQL has other results that are greater than the PRG or MCL. Thus, locations with detected results greater than PRGs/MCLs, but with elevated SQLs, were not evaluated, and those station locations were removed from the list of station locations with elevated SQLs. Table A-2 in Appendix A lists those station locations with elevated SQLs that did not have other results greater than the PRG or MCL. The results of the remaining station locations with elevated SQLs were then evaluated.

The laboratory and data validation reports were reviewed for those station locations with elevated SQLs that did not have positive results greater than the PRG or MCL. Four conditions were found:

- A significant number of samples required dilution, thereby raising the SQLs above the PRG. This situation was not unexpected and is associated with pesticide/PCB soil samples analyzed by the FASP laboratory. Historically, oil was used for dust control in portions of the site. Case narratives and validation reports indicated the presence of fuel oil, diesel, and soap residues that are consistent with dust control applications. The FASP laboratory reported the result of analyses conducted both prior to and after dilution. The results from analysis of undiluted samples had lower SQLs and were reviewed where diluted samples had SQLs above PRGs.
- Matrix interferences were also caused by these dust control efforts. Typically, during analysis the laboratory would attempt to clean up the sample extract to allow analysis and compound identification. However, some SQLs were raised and some compounds could be only tentatively identified. Matrix interferences were also associated with pesticide/PCB soil samples analyzed by the FASP laboratory. The FASP laboratory reported the results of analyses conducted both prior to and after sample clean up. The results from analysis of samples prior to clean up had lower SQLs and were reviewed where cleaned up samples had SQLs above PRGs.
- The PRGs for some compounds are at the lower limit of the ability of available methods to detect the compound. EDB is an example. The soil PRG for EDB is 21 µg/kg. After corrections for soil moisture, the SQLs for many samples analyzed during the EPA preliminary assessment were marginally above the PRG (e.g., 25 µg/kg). Typically, there were no other results above SQLs in the affected samples; thus, there was no reason to suspect the presence of EDB in these samples. Additional soil sampling and analysis conducted using an improved method provided lower SQLs during the remedial investigation and confirmed these conclusions.
- Many of the elevated SQLs above the PRG or MCL were associated with groundwater samples analyzed for VOCs using a 25 ml purge method by the FASP laboratory. When target VOC compounds were not detected, impacted samples were reanalyzed by FASP Method 504, which has significantly lower detection limit

capabilities. In all but three cases (see Table 3-1), reanalyses did not result in SQLs elevated above the PRG.

- Method 504 non-detect results with SQLs above the MCL are associated with EDB. The Method 504 reporting limit for EDB is 0.05 µg/l its MCL. The analysis presented in Table 3-1 counted as NDs with elevated SQLs all EDB results reported as 0.05 µg/l with a "U" qualifier. However, if EDB was detected in a sample at concentrations between 0.05 µg/l and about 0.01 µg/l an estimated concentration was reported and "J" qualified. Therefore, the Method 504 NDs with elevated SQLs can be interpreted to mean EDB is not present at levels above approximately 0.01 µg/l.

This evaluation of analytical results in the context of the site conditions and other associated results indicates that ND results with elevated SQLs can be reliably used or need not be used since other data are available for the same location and will not lead to a decision that no contamination is present when, in fact, contamination is present.

3.1.2 Evaluation of Data Usability Based on RI Field QC Results

Three types of field QC samples were collected and analyzed during sampling events at Frontier Fertilizer: equipment rinsate blanks, split samples between the FASP Laboratory and an offsite laboratory, and field duplicates. Field duplicates were evaluated as part of data validation. Equipment rinsate blanks and split samples results are evaluated below.

The purpose of equipment rinsate blanks is to detect cross contamination due to inadequate decontamination of sampling equipment. Analysis of equipment rinsate blanks also detects problems encountered during the shipment of samples contaminated with VOCs and sampling problems caused by ambient conditions (wind, rain, etc.) or sampling technique. The potential impact of cross contamination (detected in blanks) is false positives, which could result in an overestimation of the extent of contamination. A review of equipment rinsate blank results indicated that there were no detected results that would result in a SQL being adjusted above the level of concern (PRG or MCL) for any analyte.

The purpose of splitting samples between the FASP laboratory and an offsite laboratory is to assess the reliability of the FASP laboratory results. Samples analyzed for FASP organochlorine pesticides were split to assess the performance of the FASP laboratory. As a measure of comparability, the relative percent differences (RPDs) between split pair results were calculated for those split pairs that had detected results for both halves of the split pair. Table 3-2 presents this evaluation. RPDs range from 3 to 135 percent. This wide range is not unexpected. Given the heterogeneity of soil, it is highly unlikely that any two splits would be identical. What is important to note is that in all cases examined, both splits detected the same compounds.

3.1.3 Evaluation of Data Usability Based on Data Validation Results

As required by the QAPP, a minimum of 10 percent of data collected were validated. Data validation was conducted by the EPA, Region IX, quality assurance program office in accordance with the EPA contract laboratory program *National Functional Guidlines for Organic Data Review Multi-media Multi-concentration (OLM01.1) and Low Concentration Water (OLC01.0)*, revised June 1991. This is illustrated in Table 3-3. Because a significant portion of all data collected at the site has been validated, the results of the data validation are considered representative of the data usability of the entire data set. Thus, the quality of validated results can be extrapolated to the entire data set. The results of data validation indicate that, with rare exceptions, the data are usable for the purposes for which they were collected. However, because of analytical problems identified by the laboratory or during data validation there are some restrictions on the use of the data.

Following is a general evaluation of the impacts of the most frequently observed data qualifiers on data usability. This evaluation is based on "J" Data Qualifier Source and Meaning, Appendix V, Guidance for Data Useability in Risk Assessment (EPA, 1992). The potential for a false negative means that based on the data, there is a risk of deciding contamination is not present when in fact it is present. The potential for a false positive means that based on the data, there is a risk of deciding contamination is present when in fact it is not present.

Quarterly Groundwater Monitoring VOC Data

Flag	Reason for Occurrence	Impact/Action
J	All results below the contract-required quantitation limits and above the sample quantitation limits determined for the sample (denoted with an "L" qualifier).	None
J	Methylene chloride, acetone, chloroform, and 1,2-dichloroethane were detected in the field or laboratory blank.	High bias for affected analytes. Potential false positives.
J	Low relative response factors (RRFs) were observed for DBCP and 2-hexanone in the initial and continuing calibrations. RRFs of 0.03, 0.04, 0.04, and 0.04 were observed. These RRFs are below the 0.05 criterion.	Low bias. Potential false negatives.

Carbamate/Urea Pesticides Data

Flag	Reason for Occurrence	Impact/Action
J	Technical holding times prior to extraction were missed by between 3 and 28 days.	No impact on data usability[1]
J	Large percent differences in a continuing calibration. Observed percent differences ranged from 37.8% to 62.1%, exceeding a 25% criterion.	Low precision. Minimal impact on data usability
None	All samples and method blanks were analyzed at a tenfold (10X) dilution because, according to the case narrative, problems related to the sample matrix caused retention times to shift and column degradation. The equipment blanks were also analyzed at a 10X dilution. The detection limits for these samples have been multiplied by the dilution factors.	Raised quantitation limits. May not be able to reach conclusions regarding analytes with quantitation limit > PRG.
J	Technical holding times prior to analysis were missed by between 36 and 43 days.	No impact on data usability[1]

Organophosphorus Pesticides Data

Flag	Reason for Occurrence	Impact/Action
J	Large percent differences were observed in the continuing calibrations (CCAL), including the CCAL standards at the end of the sequences.	Low precision. Minimal impact.
R	Matrix spike and matrix spike duplicate samples did not meet the required control limits. Results for merphos are qualified "R".	Data for merphos unusable. Minimal impact on data usability.
J	Large variations in surrogate relative retention times were observed.	Low precision. Minimal impact on data usability.
J	Large percent relative standard deviations in the initial calibrations were observed.	Low precision. Minimal impact on data usability.
J	Holding times were outside method QC limits. Several samples were reextracted 30 to 50 days after collection, because the surrogate recoveries were too low in the first extract.	No impact[1]

[1] These compounds are unstable in the environment. Considering the age of the Frontier site and the time at which operations stopped, only the more stable compounds, such as the chlorinated hydrocarbon pesticides, are expected to be present.

Offsite Lab Organochlorine Pesticides Data

Flag	Reason for Occurrence	Impact/Action
J	Holding times were outside method QC limits. Two samples were extracted 10 and 11 days, respectively, after collection.	No impact[2]
NJ	Detected results are considered presumptively identified and estimated due to confirmation problems. Large differences in calculated pesticide analyte concentrations were observed between columns.	Low precision. Use primary column for evaluations.

FASP Organochlorine Pesticides/PCBs Data

Flag	Reason for Occurrence	Impact/Action
J	Surrogate recoveries were observed outside QC limits.	Low bias. Potential false negatives.
NJ	Large relative percent differences between the two columns were observed. Analytes are considered presumptively identified and estimated.	Low precision. Use primary column for evaluations.
NJ	Large relative retention time shifts were observed. Analytes considered presumptively identified and estimated.	Low precision. Minimal impact on Frontier.

FASP Volatile Organic Compounds Data

Flag	Reason for Occurrence	Impact/Action
J	Surrogate recoveries were observed low outside QC limits. Results and quantitation limits considered estimated.	Low bias. Potential false negatives.
J	Low internal standard areas were observed. Results and quantitation limits considered estimated.	Low bias. Potential false negatives.

[2] These compounds are mostly stable in the environment.

To evaluate the usability of the validated data and thus the usability of all the data, the following approach was employed:

- Even though positive results greater than the PRG or MCL and flagged "J" may provide false positives, all such data was used directly in data evaluation.
- All positive results less than the PRG or MCL that are flagged "J" may provide false negatives. Results may be used for general data interpretation. In cases where the PRG is significantly above the result, the data is usable (e.g., methoxchlor PRG = 3.4 million ppb with a result of 50 ppb J). However, if the result is close to the PRG or MCL, J-flagged positive results should be used only cautiously. All results less than the PRG or MCL and greater than 50 percent of the PRG or MCL are evaluated as described below.

As discussed previously and indicated above, (1) when results are flagged "J", (2) when they are below the PRG or MCL, and (3) when the J qualifier denotes a low bias in the data set, a potential for false negatives exists. Table 3-4 presents a summary of all results with "J" qualified results below the PRG or MCL. A detailed evaluation of the impacted samples may be required. However, when J-flagged results are significantly less than the PRG or MCL, the potential for false negatives is greatly diminished. Thus, the only results that need to be evaluated are the ones that are J-flagged and between the PRG and one half the PRG. To evaluate the impact of J-qualified results less than the PRG or MCL, the specific impacted station locations were identified (see Table A-3). There is no risk of a false negative when a station location with a result greater than 50 percent of the PRG or MCL and less than the PRG or MCL also has valid results greater than the PRG or MCL. Hence, there was no need to evaluate those specific J-qualified results. There were no impacted station locations remaining after those station locations were removed from the list of station locations with J-qualified data. It is concluded that there is no potential for false negatives at any station location caused by "J" qualified results.

3.2 NATURE AND EXTENT OF SOIL CONTAMINATION

3.2.1 Objectives

As described in Section 2, soil samples were collected and analyzed to meet five primary objectives.

The first objective was to determine background levels of contaminants in areas that were adjacent to the Frontier Fertilizer site, but that were unlikely to have been impacted by pesticide-handling activities. As described below, background levels of pesticides and VOCs were generally found, with a few exceptions, to be below detectable concentrations.

The second soil sampling objective, also discussed below, was to search for additional sources of contamination, i.e., sources other than the pesticide disposal basin. The source investigation was

conducted as a hot spot search and as biased sampling focused on sumps and locations presenting visible signs of contamination. The results of these efforts led to the conclusion that no sources of contamination, other than the disposal basin, are present on site.

The third sampling objective was to determine if site surface soils are generally contaminated. The sampling and analysis program designed to meet this objective focused on environmentally persistent organochlorine pesticides and polychlorinated biphenyls. The results support the conclusion that site surface soils, with the exception of the disposal basin area, are not contaminated with pesticides at concentrations exceeding PRGs.

The fourth objective was to determine if site-related chemicals had been transported off site by wind or surface water runoff. To do this, offsite soil samples were collected. The data gathered indicate that, with the exception of low levels of organochlorine pesticides, site-related chemicals have not been transported off site.

The fifth objective of soil sampling and analysis was to further characterize soil in and around the pesticide disposal basin. To meet this objective, sampling was conducted to better define the lateral and vertical extent of VOC contamination in this area, to determine if chemicals in disposal basin soil are present at levels likely to be considered hazardous under federal and state of California regulations, to determine a vertical VOC concentration profile, and to determine vadose zone geologic characteristics.

3.2.2 Screening

The results discussed below indicate that approximately 30,000 yd^3 of soil are contaminated with VOCs at concentrations above PRGs. At least a portion of this soil may contain levels of pesticides that exceed federal and state of California hazardous waste regulatory limits (40 CFR Part 261.23 and 22 CCR Part 66261.22). Finally, sufficient data have been gathered to prepare a vadose zone model to predict the transport rates of volatile contaminants and evaluate soil contaminant concentrations likely to impact groundwater quality.

To focus the detailed discussion of these results, the chemical data associated with each sample collected have been screened to determine at what sample locations contaminants were detected above PRGs. The PRGs used to conduct this screening were published by EPA, Region IX, in February 1995. The industrial soil PRG was selected for use because the exposure model used to develop the industrial soil PRGs is identical to future land use options planned for the site. The EPA Region IX PRGs are not intended as stand-alone decision- making tools – they are not a substitute for a baseline risk assessment or a source of site-specific cleanup levels; in addition, they are not rules to determine if a waste is hazardous.

The EPA Region IX PRGs do, however, provide a test of significance. A compound detected at concentrations below its associated PRG does not pose a significant threat to human health or the

environment. However, a compound-by-compound comparison of measured concentrations to PRGs does not reflect the additive nature of risk. Several compounds may be present at concentrations less than their individual PRGs, but taken together, may pose a significant risk.

Upon completion of all investigative activities, a baseline risk assessment will be conducted at Frontier Fertilizer to provide a total risk evaluation. Until then, it is appropriate and consistent with EPA Region IX, policy to compare measured concentrations with PRGs and, for the purposes of this report, eliminate chemicals from further consideration on the basis of whether measured concentrations exceed PRGs.

Table 3-5 presents the results of this PRG screening. It lists the compounds detected at concentrations that exceed PRGs in samples collected at Frontier Fertilizer during the preliminary assessment and remedial investigation (RI). It is apparent from Table 3-5 that the list of chemicals detected at concentrations in excess of PRGs is limited to several VOCs and a few organochlorine pesticides.

No organophosphorus pesticides and no carbamate/urea pesticides were detected at concentrations above their PRGs. This finding is consistent with the high PRGs associated with these two classes of pesticides and with their environmentally labile nature. Because of hydrolysis, photolysis, and microbial degradation, neither class is expected to persist.

Based on the result of the PRG screening shown in Table 3-5, the remainder of the discussion in this section focuses primarily on EDB, DCP, and DBCP as primary contaminants of concern. Table 3-5 also shows that these three compounds were detected only in areas of the site in or adjacent to the disposal basin. (See Figures 2-1 and 2-2 for the locations of samples listed in Table 3-5.) The first three or four alphanumeric characters in the sample location identification number refer to the location; the alphanumeric characters following a dash or period refer to sample depth. (See Section 2 for a description of the sample location identification number.)

3.2.3 Background Levels of Contaminants in Soil

As seen in Figure 2-3, background soil samples were collected at three locations north of Frontier Fertilizer near the eastern tip of the property. The area sampled is an agricultural field that has been planted in winter wheat for the last two seasons. Samples were collected at the ground surface, 3 feet below ground surface (bgs) and at 5-foot intervals thereafter to 23 feet bgs.

Surface soil samples were analyzed for carbamate/urea and organophosphorus pesticides. Subsurface samples were analyzed for these two classes of pesticides and for VOCs. Organochlorine pesticides were not measured in background samples. Table 3-6 summarizes the compounds detected and associated sample locations. Two carbamate/urea pesticides – carbaryl and fluometuron – were detected in surface samples at concentrations several orders of magnitude below PRGs. Four organophosphorus pesticides – chlorpyrifos, ethyl parathion,

phorate, and TEPP – were detected in subsurface soil, again, at concentrations orders of magnitude below PRGs. No PRG is available for TEPP. Note that the primary chemicals of concern at Frontier Fertilizer, EDB, DCP, and DBCP were not detected in background samples.

3.2.4 Sources of Contamination

As described in Section 2, a hot spot search was carried out to determine, at the 80 percent confidence level, if previously unknown additional sources of contamination exist at Frontier Fertilizer. The search was conducted by collecting samples at 3 feet bgs and analyzing them for VOCs. The samples so collected are more likely than surface samples to contain VOCs, which, if present at the surface, would quickly dissipate through evaporation. VOCs were chosen as the hot spot indicator compounds because, based on historical information, the most likely potential additional source was thought to be a disposal basin similar to the one north of the pole barn.

The criterion for determining if a hot spot had been detected was a measured concentration above an associated PRG. EDB, with a PRG of 21 µg/kg, was a sensitive indicator of hot spots. None of the hot spot search samples collected in the 30 x 30-foot grid area, the 40 x 40-foot grid area, or the 50 x 50-foot grid area had concentrations of any VOC in excess of a PRG. Table 3-7 gives the result for EDB, the VOC with the lowest PRG, 21 ppb. Based on these results, it is possible to conclude, at the 80 percent confidence level, that hot spots of VOCs with radii of 15, 20, and 25 feet are not present in the 30 x 30, 40 x 40, and 50 x 50-foot grid areas, respectively. In addition to searching for hot spots of VOC contamination, sampling and analysis were conducted at sumps and locations where there were visual indications of contamination.

Table 3-8 lists the compounds detected in sump sediment and liquid samples. Figure 2-3 illustrates the sump locations. Five sumps were sampled, and analyses were conducted to measure carbamate/urea pesticides, organophosphorus pesticides, organochlorine pesticides, and total petroleum hydrocarbons as gasoline and diesel in sump sediments. Three sumps contained water which was analyzed for organochlorine pesticides and total petroleum hydrocarbons. VOCs were not measured since they are not likely to persist in surface sediments and water. Table 3-8 illustrates that disulfoton and endosulfan were the only two pesticides detected in the five sumps sampled. Both compounds were detected at concentrations well below their respective PRGs. On the basis of these results, the five sumps present at Frontier Fertilizer are not potential sources of contamination.

Table 3-9 gives the detected concentrations of compounds measured in biased samples. Figure 2-3 shows the sample locations. As presented in Table 3-9, a number of pesticides were detected in biased samples, but all detected concentrations are between a factor of 5 and several orders of magnitude less than the associated PRG. Based on these results from areas of visual staining or distress vegetation, it can be concluded that contaminants are not present at concentrations above PRGs.

At the conclusion of the Frontier Fertilizer preliminary assessment, an open question remained about the source of carbon tetrachloride contamination that appears in groundwater monitoring wells north of the site. Unfortunately, the remedial investigation data shed no light on this question. Carbon tetrachloride was not detected in any soil sample collected and analyzed for VOCs at concentrations above its PRG of 1,100 ppb. Carbon tetrachloride was only detected in one soil sample, N4.2, collected as part of the hot spot search at a concentration above the reporting limit of approximately 5 ppb. The concentration in sample N4.2 was 48 ppb.

Therefore, the source of carbon tetrachloride contamination in groundwater remains unknown at the end of this phase of investigation. However, it can be concluded that the source is unlikely to be found in near-surface soil at site locations upgradient from the carbon tetrachloride-contaminated groundwater. These areas have been extensively sampled during both the preliminary assessment and the remedial investigation. Both studies have failed to detect soil contaminated with carbon tetrachloride above its PRG of 1,100 ppb.

The data presented in this section indicate that the only area of soil contamination at Frontier Fertilizer is the area of the pesticide disposal basin north of the pole barn and that EDB, DCP, and DBCP are the principal contaminants of concern in this area. Hence, most of the remaining discussion of the nature and extent of contamination focuses on the extent of EDB, DCP, and DBCP contamination in the disposal basin area. First, however, a discussion of surface soil results is presented in which it is concluded that surface soils are generally not contaminated at concentrations exceeding PRGs. The significance of these findings will be evaluated during the baseline risk assessment.

3.2.5 Lateral and Vertical Extent of Surface Soil Contamination

The most extensive sampling of surface soils was done to determine the concentration of organochlorine pesticides. These pesticides are persistent in the environment and, therefore, are most likely to be present years after pesticide formulation operations were discontinued. Figure 2-2a shows the locations where samples were collected for organochlorine pesticide analysis. Table 3-10 presents the chemicals detected in these samples.

The organochlorine pesticides detected in surface soil samples were, with few exceptions, present at concentrations less than PRGs. The exceptions are location F15.1, where aldrin was detected at 430 ppb and dieldrin was detected at 2,000 ppb. The PRGs for aldrin and dieldrin are 110 and 120 ppb, respectively. Dieldrin was also detected at N6.1 and O9.1, where measured concentrations were 260 and 320 ppb, respectively. Finally toxaphene, with a PRG of 1,700 ppb, was detected at C4.1 (2,400 ppb) and A5.1 (1,700 ppb). These results indicate that while surface soils are not generally contaminated with organochlorine pesticides, some isolated areas do have surface soil concentrations greater than PRGs. The significance of these findings will be evaluated during the baseline risk assessment.

Surface soils were, to a lesser extent, also sampled to determine the concentrations of organophosphorus pesticides. The locations sampled for these determinations are illustrated on Figure 2-2b; the detected concentrations are shown in Table 3-11. It is evident from Table 3-11 that organophosphorus pesticides are not present in site surface soil at concentrations exceeding PRGs. This conclusion was expected, since organophosphorus pesticides are labile in the environment.

Surface soils in the 30 x 30-foot grid area were extensively sampled to determine the concentrations of carbamate/urea pesticides, as illustrated in Figure 2-2c. As with the organophosphorus pesticide results, general surface soil contamination was not expected because of the lability of carbamate/urea pesticides in the environment. The results shown in Table 3-12 confirm this expectation. Carbaryl was the only pesticide detected in this class of compounds, and the detected concentrations were many orders of magnitude below the carbaryl PRG.

As mentioned previously, VOCs are not expected in surface soil. Therefore, they were not measured as part of the assessment of surface soil contamination.

To complete the surface soil assessment, samples were collected off site in areas likely to receive site surface soils transported there by wind or surface water runoff. Table 3-13 presents the results of this sampling and analysis. Figure 2-3 illustrates the locations of the samples. Nine offsite locations were sampled and analyzed for organochlorine pesticides, organophosphorus pesticides, carbamate/urea pesticides, and total petroleum hydrocarbons. The results in Table 3-13 indicate that while organochlorine pesticides that were detected on site have also been detected off site, their concentrations are well below PRGs. These data suggest the possibility of widespread low levels of organochlorine pesticides in soil or that site soil has been transported off site with its associated organochlorine pesticides.

3.2.6 Lateral and Vertical Extent of Subsurface Soil Contamination

As mentioned previously and as known for some time now, the most significant area of soil contamination at Frontier Fertilizer is the disposal basin area north of the pole barn. This area was extensively sampled during the preliminary assessment, and adjacent areas were sampled during the remedial investigation. The results of both studies indicate the contaminated soil is characterized by levels of EDB, DCP, and DBCP that exceed PRGs. This is especially true for EDB, which has a PRG of 21 ppb.

The extent of subsurface EDB, DCP, and DBCP contamination in the disposal basin area is discussed below. Twelve figures are discussed that present concentrations of these three compounds at four depth intervals bgs. These intervals are 1 to 3 feet, 7 to 9 feet, 15 to 20 feet, and 23 to 30 feet bgs. Each of the 12 figures illustrates sample locations and defines the extent of contaminated soil as the PRG concentration contour for the compound illustrated. For

example, figures presenting the extent of EDB contamination show a 21 ppb concentration contour.

Each of the 12 figures is accompanied by a table that presents the measured concentrations of the contaminant of interest at each sample location. These concentrations are provided in tabular format rather than posted on the figure to facilitate use of 11 x 17-inch rather than D-size figures.

Figure 3-1 illustrates the extent of EDB in soil between 1 and 3 feet bgs. The EDB results that accompany this figure are presented in Table 3-14. Figure 3-1 shows that the EDB contamination extends as far north as the northernmost samples, and that to the south it impacts soil beneath the pole barn. The east-west extent of contamination is approximately 200 feet. The north-south extent of contamination is approximately 100 feet. The data appear to indicate the area of excavation discussed in Section 1. Soil with levels of EDB less than the PRG was found centered on sample location C9.2.

Figure 3-2 illustrates the extent of EDB in soil between 7 and 9 feet bgs. The EDB results accompanying this figure are presented in Table 3-15. The area of contaminated soil at this depth is similar to that observed in the overlying interval. Again, an area of uncontaminated soil appears to indicate the location of excavation. Figure 3-3 and Table 3-16 illustrate that between 15 and 20 feet bgs the area of contaminated soil is somewhat greater than in overlying intervals. At this depth, the east-west extent of contamination is approximately 200 feet while the north-south extent of contamination may be as much as 150 feet.

Figure 3-4 and Table 3-17 present roughly the same picture of the lateral extent of EDB contamination. Based on these figures and assuming the area of contamination is generally square, an upper limit of the amount of vadose zone soil contaminated with EDB is approximately 30,000 yd^3.

The extent of DCP-contaminated soil between 1 and 3 feet bgs is illustrated in Figure 3-5 and Table 3-18. These results show that DCP contamination at levels above its PRG of 1,500 ppb is confined to a small area centered on sample location F02. Figures 3-6, 3-7, 3-8 and Tables 3-19, 3-20, and 3-21 indicate that the lateral extent of DCP-contaminated soil increases with increasing depth. Based on these data, an order of magnitude estimate of the amount of vadose zone soil contaminated with DCP is 7,000 yd^3. However, at all depths, the extent of DCP-contaminated soil is within the limits of EDB-contaminated soil.

DBCP-contaminated soil is least extensive. Contaminated soil with concentrations in excess of 1,400 ppb, the DBCP PRG, is confined to single-sample locations between 1 and 9 feet bgs (Figures 3-9 and 3-10 and Tables 3-22 and 3-23). The areas of DBCP contamination between 15 and 30 feet bgs (Figures 3-11, 3-12 and Tables 3-24, 3-25) are also of limited extent. Based on these data, an order of magnitude estimate of the amount of vadose zone soil contaminated with DBCP is 2,000 yd^3. In general, the areas of DBCP contamination are east of the areas most

impacted by DCP contamination, but like DCP, the areas of DBCP contamination are within the limits of EDB contamination.

To better illustrate the vertical extent of vadose zone contamination, Figures 3-13 and 3-14 present a cross-sectional view of EDB and DCP contamination, respectively. These figures show that the greatest concentrations of EDB and DCP are found in the depth interval from approximately 15 to 30 feet bgs. This observation is consistent with an excavation depth of approximately 20 feet bgs.

Figures 3-13 and 3-14 also show that there appear to have been three disposal basins north of the pole barn. These three ponds can be inferred from the distribution of EDB and DCP. Relatively high concentrations of these contaminants are observed in three discrete areas along the east-west-trending cross section. This finding corroborates reports in historical information that suggest a second disposal basin may have been present at Frontier Fertilizer.

To conclude the discussion of contamination in the disposal basin area, Table 3-26 presents the concentrations of VOCs, semivolatile organic compounds, and metals detected in soil samples collected at 3-foot intervals from a boring in the center of the contaminated area. This boring and the associated analysis were conducted to characterize the contaminated soil for possible disposal and to gather chemical data needed to prepared a vadose zone transport model for EDB, DCP, and DBCP.

Table 3-26 illustrates that soil from the disposal basin is unlikely to be considered hazardous under federal and state of California regulations (40 CFR Part 261.23 and 22 CCR Part 66261.22). Several of the primary contaminants of concern, for example, EDB, DBCP, and DCP, do not have federal or state hazardous waste limits. The table compares observed concentrations with 20 times the total toxicity characteristic leaching procedure (TCLP) limits (column 2 in Table 3-26), and 10 times the soluble threshold limit concentrations (STLCs, column 4 in Table 3-26). It also compares measured concentrations with the total threshold limit concentration (TTLC, columns 5 and 6 in Table 3-26). The comparison with TCLP and STLC is based on the assumption of 100 percent extraction efficiency during the leaching procedures.

In addition to characterizing the contaminated soil for disposal, samples were also submitted to a geotechnical laboratory for determination of specific gravity, density, water content, and total organic carbon content. These parameters are also required to complete the vadose zone transport model. Table 3-27 summarizes the results of geophysical testing.

3.3 NATURE AND EXTENT OF GROUNDWATER CONTAMINATION

This section presents the geologic and hydrogeologic data and the groundwater chemistry data collected as part of the RI. These data are critical for the development of a sound conceptual model of the contaminant distribution and the fate and transport of these contaminants. In Section 3.2, the primary contaminants of concern are presented after a comprehensive review of

the soil database. A large number of compounds were detected in groundwater in one or more wells. The most mobile, widely distributed, and highly concentrated of these are as follows:

- 1,2-dibromoethane (EDB)
- 1,2-dichloropropane (DCP)
- 1,2-dibromo-3-chloropropane (DBCP)
- Carbon tetrachloride

This list includes most of the compounds detected at concentrations above their respective MCL. In addition to these compounds, benzene, trichloroethene (TCE), and tetrachloroethene (PCE) were detected at concentrations above their MCL; however, these compounds are not as widespread in the groundwater, and remedial actions taken to address the four primary chemicals of concern (COCs) will address these and other organic compounds as well.

Benzene appears to be distributed similar to the pesticides associated with the former disposal basin. The highest concentrations were detected in wells MW-7C, MW-7B, X-1A, X-1B, MW-11A, and MW-8A. The concentration range in these wells is from 7.0 to 95 ug/l with the higher concentrations found in wells closer to the former disposal basin. Lower concentrations (<5.0 ug/l) were consistently detected in wells throughout the site, including the upgradient well MW-6C. Several wells had infrequent occurrences of very low benzene concentrations (MW-1, MW-4B, MW-4A, MW-7D, AW-3, and X-3B).

TCE was detected only 13 times, and these results are all less than 0.5 ug/l (Table 3-28). The data indicate there may be an upgradient source of TCE because upgradient well MW-6C has had the highest and most persistent presence of TCE concentrations of any well at the site. TCE was also detected once in well MW-2B, also upgradient from the site. There is no spatial correlation of TCE with site sources, nor is there any other indication that TCE is a site-related contaminant in the groundwater.

PCE was detected 50 times. The concentrations ranged from 0.2 ug/l in X-1B to 21 ug/l in MW-6C. Well MW-6C is an upgradient well screened in the S-2 zone. In general, the highest concentrations of PCE were detected in upgradient wells during the August 1994 sampling event. PCE concentrations in the upgradient wells MW-6C, MW-2B, MW-3A, MW-5A, and MW-5C ranged from 13 to 21 ug/l in the August 1994 sampling. Subsequent sampling showed PCE concentrations in these wells to be on the order of 2.0 ug/l.

Apparently the temporal variability of background PCE concentrations is part of the nature of this contaminant. This makes it difficult to ascertain the location or proximity of offsite sources. It is also difficult to determine if PCE is a site-related contaminant when it is detected in monitoring wells that are contaminated from onsite pesticide sources. However, the vast majority of the data indicate PCE occurs at concentrations less than 5.0 ug/l, the MCL.

Because the highest concentrations of PCE were detected in wells MW-6C and MW-2B, located south of I-80, this compound is not considered a primary site-related COC. While low levels of PCE may be associated with the former disposal basin, there is no indication that PCE was released on the same scale as the primary indicators. Table 3-28 is a summary of the compounds detected in groundwater at Frontier Fertilizer. By inspection, it is apparent that DCP and EDB, two primary COCs, were detected with the greatest frequency at higher concentrations than any other compound. Carbon tetrachloride and DBCP were also detected with a relatively high frequency. DBCP is retained as a primary COC due to its low MCL (0.2 µg/l), and carbon tetrachloride is retained as primary COC due to the lack of knowledge regarding the source of this contaminant.

There were some fairly regular detections of benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). Benzene, toluene, and xylenes are spatially associated with the primary COCs; however, low concentrations of toluene, ethylbenzene, and xylenes were also detected at background groundwater monitoring locations (Table 3-29). These are common petroleum hydrocarbons and may be indicative of disposal practices (rinsing tanks with diesel or other fuel as a solvent) or disposal of fluids generated while maintaining farm equipment in the former disposal basin. The presence of petroleum hydrocarbons in upgradient wells is due to offsite sources, possibly associated with activities south of I-80.

Additional chemicals of concern that are distinctly site-related are all delineated within the plume boundaries defined by the four primary COCs. Other compounds that were detected sporadically and cannot conclusively be classified as site-related typically do not exceed MCLs (Table 3-28). Specifically, bromoform, chloroform, 1,3-dichlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethene, 1,1,1-trichloroethane, and vinyl chloride were detected in onsite wells, but these compounds did not exceed their respective MCLs in any sample. Most of these compounds were detected at their highest concentrations in wells X-1A, X-1B, MW-7B, and MW-7C. These wells are located in the interior of the plumes, and are most likely to reflect any impurities in the pesticide products disposed in the basin, or breakdown products.

The remainder of this section is devoted to the hydrogeologic setting at the site and to the nature and extent of the four principal groundwater contaminants – EDB, DCP, DBCP, and carbon tetrachloride.

The evaluation of the extent of groundwater contamination was based on data collected from monitoring wells and a HydroPunch survey. Data were collected over a period of 6 months in 1995 during field sampling events in June, October, and December. These data make up a reasonable profile of site conditions.

3.3.1 Hydrogeologic Setting

Frontier Fertilizer is underlain by Quaternary alluvium to depths exceeding 300 feet. This alluvium is made up of lenses of sand and gravel within a clay and silt matrix. Groundwater is transmitted through the sand and gravel, and the rate of groundwater movement is dependent on the thickness, composition (percentage of silt and clay), length, width, and degree of interconnection between the lenses. Three distinct water-bearing zones were identified in the subsurface. These were, from shallowest to deepest, the S-1 zone, the S-2 zone, and the A-1 aquifer (Figure 3-15).

The S-1 and S-2 zones are not laterally continuous across the site. There are areas where these sand zones pinch out, as illustrated in Figure 3-16. The aquitard between the S-1 and S-2 zones does appear to be laterally continuous across the site. The names of these zone are retained because the sand units do show a much greater degree of horizontal continuity compared to their vertical continuity, and because they represent a reasonable characterization of the site hydrogeology based on past work and current findings.

The primary water supply aquifer is the A-2 aquifer, which is below the A-1 aquifer and separated from the A-1 aquifer by a 25 to 30-foot thick clay aquitard, as shown previously in Figure 1-6. The RI and previous investigations at this site have not explored the A-2 aquifer because there is no indication that site-related contaminants have migrated beyond the A-1 aquifer.

The available geologic information from the recent RI and previous investigations was used to create a 3-D geologic model of the site. This model was generated using a 3-D volume modeling program, Tecplot (Amtec Engineering, 1995). Geologic modeling results were compared to the boring logs to ensure accurate representation of site conditions at known data points. The model was constructed to incorporate previous interpretations by other workers, especially where these interpretation were supported by data from the RI.

3.3.1.1 S-1 Zone

The S-1 zone was encountered in numerous borings at depths ranging from 35 to 40 feet bgs. The S-1 zone is several discontinuous silty sand lenses that are typically 1 to 4 feet thick, and of variable width and length. According to the boring log descriptions, there is some variability in silt and clay content of the sand. In some parts of the site, the S-1 zone was not encountered during drilling (Figure 3-15).

Hydraulic conductivity and transmissivity were measured in seven wells screened in the S-1 zone using slug testing and pumping tests (Table 3-30). Hydraulic conductivity ranged from 5.3 to 54 ft/day. An order-of-magnitude variation is not uncommon in alluvial depositional environments, especially when different methods are employed to measure the hydraulic conductivity. The

measured values are consistent with the geologic descriptions on the boring logs for the S-1 zone (Todd, 1986, and Domenico and Schwartz, 1990).

A clay aquitard underlies the S-1 zone. This aquitard appears to underlie the S-1 zone throughout the study area, including the offsite areas investigated. This unit is approximately 20 to 25 feet thick. Although the clay aquitard between the S-1 and S-2 zones appears continuous, water level data indicates some interconnection between these zones does exist at least locally. This is discussed in Section 3.3.1.4.

3.3.1.2 S-2 Zone

The S-2 zone is less extensive than the S-1 zone, and underlies the area beneath the disposal basin at depths of 60 to 70 feet bgs. The S-2 zone is a silty sand of variable thickness and permeability. In the central portion of the modeled area, this S-2 zone is about 30 feet thick and pinches out to the northeast and north (Figure 3-16).

Slug test and pumping test results indicate the S-2 zone has a lower hydraulic conductivity compared to the S-1 zone, with values ranging from 2.4 to 24 ft/day based on slug tests and pumping tests performed in five wells (Table 3-30). The highest hydraulic conductivities were measured in wells MW-7C and MW-8B, located immediately north of the former disposal basin.

A clay and silt aquitard underlies the S-2 zone, but this aquitard is not present in the northern fenced area, approximately 700 feet north of the former disposal basin. In this area, the S-2 zone appears to be vertically continuous with the underlying A-1 aquifer.

3.3.1.3 A-1 Aquifer/A-2 Aquifer

The A-1 aquifer is encountered at depths of 105 to 130 feet bgs. It was encountered throughout the investigation area and is laterally continuous throughout the region (Figures 3-16 and 3-17). This aquifer is a thick, coarse-grained unit with high transmissivity. The hydraulic conductivity measured in MW-9C was 490 to 630 ft/day. These values are approximately 1 to 2 orders of magnitude greater than the hydraulic conductivities measured in the S-1 and S-2 zones (Table 3-30). The A-1 aquifer is pumped for agricultural irrigation, but is not used as a municipal drinking water supply.

The A-2 aquifer is the primary water supply aquifer in the Davis area. It is a gravel aquifer extending from 180 to 350 ft bgs and is separated from the A-1 aquifer by 25 to 30 feet of clay aquitard (Figure 1-6). The A-2 aquifer is not a continuous single gravel bed throughout this region. Rather, it is a series of large gravel lenses that are grouped within the depth range between 180 and 350 ft bgs.

3.3.1.4 Groundwater Levels, Gradients, and Flow Patterns

Groundwater levels measured in site monitoring wells were evaluated for long-term and seasonal trends since 1991. These water level data show a seasonal fluctuation on the order of 20 to 30 feet in the A-1 aquifer, and from 4 to 25 feet in the S-2 zone, and 4 to 8 feet in the S-1 zone. The A-1 aquifer water levels are influenced by the seasonal pumping of local irrigation wells. In the winter months, irrigation stops and the water levels rebound to the same levels measured in the S-1 and S-2 zones.

In the S-1 zone, the water levels show a seasonal trend, with lower levels in the summer and fall and higher levels in the winter and spring. Water levels in the S-2 zone show the same seasonality as the A-1 and S-1 water levels; however, the magnitude of these seasonal changes in the S-2 zone varies considerably. At some well clusters, there is little difference between the water levels and trends in the S-1 and S-2; at other well clusters, the water levels in the S-2 zone are more similar to those in the A-1 aquifer.

These relationships indicate that the separating layer between the S-2 zone and the A-1 aquifer is not laterally continuous. In places where S-2 water levels change in unison with the A-1 water levels, the hydraulic communication is probably much higher than in the areas where the S-2 water levels are similar to the S-1 water levels.

Hydraulic head contours were plotted for each zone for three quarters (Figures 3-18 to 3-20). These contour patterns show that the horizontal flow directions and gradients are variable in the S-1 and S-2 zones, whereas the contour patterns were notably consistent in the A-1 aquifer (Figures 3-18 through 3-21). From 1991 to the present, most of the groundwater monitoring data indicate a northerly flow direction in the S-1 zone (GTI, L&S, M&E, BEI). Periodically, there appears to be a local low point in the elevations in wells MW-7A, MW-7B, MW-13A, and MW-13B (Figure 3-20).

The hydraulic low point in the S-1 zone at MW-7A and MW-7B may indicate a localized interconnection between the S-1 and S-2 zones. When water levels in the S-2 zone decrease during summer, a similar response is observed in the S-1 zone at the MW-7 wells (Figure 3-21A). Geologic information does not indicate a more permeable unit between the S-1 and S-2 zones or the S-2 and A-1 zones at the MW-7 wells, but the water levels indicate a local sink. Survey data for wells MW-7B, MW-7C, and MW-7D were checked, and it was confirmed that the most recent casing elevations were used for calculating water elevations. It is possible that the water levels in the MW-7 wells are influenced by the hydraulic interconnection between the S-2 and A-1 zones that occurs between MW-7 and MW-8 and further north. When the A-1 aquifer water levels decrease, this fall in head may be observed locally in S-2 zone at the MW-7C and MW-7B. As noted previously, there are other well clusters that also indicate a higher degree of interconnection between the S-2 and A-1 zones (Figure 3-21B). At other well

clusters, little, if any, hydraulic interconnectivity between the S-2 zone and A-1 aquifer is indicated (Figure 3-21C).

The same variability in flow patterns was observed in the S-2 zone. However, there is a persistent low point in hydraulic heads at wells MW-7C and MW-13B. The low point indicates the presence of a hydraulic sink in this area. The sink may be due to the strong downward vertical gradients between the S-2 zone and the A-1 aquifer. These gradients are particularly strong during the peak pumping period in the summer months. During these periods, the vertical gradient between the S-2 zone and the A-1 aquifer was 0.8. During winter months, when there is no irrigation pumping from the A-1, the vertical gradient between the S-2 zone and A-1 aquifer is very small, and in some well pairs no gradient exists during the winter months.

These hydraulic relationships signify three things: (1) the S-1 zone is hydraulically separated from the A-1 aquifer and is minimally influenced by the large changes in water levels in the A-1 aquifer and locally in the S-2 zone; (2) the S-2 zone is hydraulically connected to the A-1 aquifer in the area north of the former of disposal basin; and (3) the downward gradients caused by pumping from the A-1 aquifer increases the downward flow velocities, thereby increasing the flux of groundwater migrating from the S-2 zone to the A-1 aquifer.

3.3.2 Background Levels of Contaminants in Groundwater

Samples collected from the upgradient wells did not contain detectable concentrations of DCP, EDB, DBCP, or carbon tetrachloride. Low concentrations of ethylbenzene and xylene isomers were occasionally detected in the MW-6 well cluster.

Wells MW-2A, MW-2B, MW-6A, MW-6B, and MW-6C were selected as background wells because (1) they are consistently hydraulically upgradient from the Frontier Fertilizer site and (2) they are not likely to be affected by site activities as there is no direct transport pathway for contaminants to enter them. These wells contained a suite of organic compounds, including benzene, toluene, ethylbenzene, xylenes, styrene, and PCE (Table 3-29). Most compounds were detected sporadically in these wells at low concentrations. PCE was detected at concentrations exceeding the MCLs in MW-2B and MW-6C, which monitor the S-2 zone. This occurred during the August 1994 sampling event. Subsequent sampling events showed lower concentrations of PCE; however the presence of 1,2-DCA, a breakdown product of PCE, suggests that they are affected by a chlorinated solvent source upgradient from the Frontier Fertilizer.

3.3.3 Lateral and Vertical Extent of Groundwater Contamination

Groundwater contains high dissolved levels of EDB and DCP in the S-1 and S-2 zones. As shown in Table 3-28, concentrations of these contaminants exceed 10,000 µg/l in wells MW-7B, MW-7C, X-1A, and X-1B. As a rule, the concentrations of these contaminants fall off sharply a short distance from the former disposal basin. For example, in wells MW-4A, MW-9A, MW-9B,

MW-13A, and MW-13B, located less than 400 feet from the former disposal basin, concentrations of these contaminants either were not detected or are 5 µg/l. These results indicate that the concentrations near the source area may be due to a nonmobile or residual, dense non-aqueous phase liquid (DNAPL) source. In general, lower concentrations of DBCP were detected with the same distribution as EDB and DCP, but the overall extent of DBCP was similar to that of the other compounds. Carbon tetrachloride was detected in a very different pattern.

3.3.3.1 S-1 Zone

The lateral extent of EDB was delineated in the S-1 zone to levels near the MCL of 0.05 µg/l. No detectable concentrations were evident in groundwater samples from numerous wells and HydroPunch samples (Figure 3-22). Along the northwestern edge of the EDB plume, there is some uncertainty regarding the lateral extent of the plume. However, the decreasing concentrations with distance from the former disposal basin indicate that the leading edge of the plume in the northwest direction does not extend more than about 200 feet beyond well OW-2A. This is also indicated by non–detectable results reported for EDB in the S-1 HydroPunch samples collected at B6 and B8. Immediately evident from Figure 3-22 is that the highest concentrations are north of the former disposal basin. For example, EDB was detected at concentrations of 10,000 and 9,400 µg/l in wells X-1A and MW-7B. EDB concentrations decrease to 1,400 µg/l in MW-8A, located approximately 250 feet north of MW-7B, and decrease to 75 and 8 µg/l about 100 feet further north in wells X-4A and MW-11A.

The general configuration of the plume, as defined by the 0.05 µg/l contour, is broad and short. There is a limited high-concentration zone or core of the plume associated with the former disposal basin. This zone is probably the source zone where the bulk of the residual pesticides exist within the saturated S-1 zone.

DBCP was delineated in the S-1 zone to levels of 0.2 µg/l. The lateral extent of DBCP appears to more limited than that of EDB (Figures 3-22 and 3-23). Concentrations of DBCP range from 160 µg/l in MW-7B to 0.069 µg/l in sample B5-A1. The highest concentrations were detected in wells immediately downgradient from the former disposal basin. The DBCP plume in the S-1 zone is laterally delineated to the MCL. But, as with the EDB, there is a strongly decreasing concentration gradient away from the former disposal basin, meaning that the likely position of the plume edge is within 200 to 300 feet northwest of OW-2A.

The lateral extent of DCP was delineated in the S-1 zone, with the exception of the northwest region of the plume. To the northwest, concentrations of 1,500 µg/l and 19 µg/l were detected in wells X-4A and OW-2A, respectively. In other areas, the plume has been delineated to the MCL. The center of the DCP plume is collocated with EDB and DBCP, but typically is characterized by higher concentrations (Figure 3-24). For example, in wells X-1A and MW-7B, this compound was detected at concentrations of 22,000 and 16,000 µg/l. Concentrations decrease as one moves north (hydraulically downgradient) to 7,100 µg/l in MW-8A and 1,500 µg/l in X-4A.

The plume appears to be limited to the region between MW-10A and B7 or B5, where concentrations either were not detected or are 1.5 µg/l.

The distribution of carbon tetrachloride in groundwater is different from the plume configurations of EDB, DBCP, and DCP (Figures 3-22 through 3-25). Whereas the source of EDB, DBCP, and DCP is most likely the former disposal basin, the distribution of carbon tetrachloride does not indicate the former disposal basin as the source. The highest concentrations of carbon tetrachloride were detected in OW-3A at 60 µg/l, and at similar concentrations in OW-4A, MW-12A, B6, B9, and B10. Very low concentrations (0.6 to 2.2 µg/l) were detected in MW-7A, MW-7B, X-1A, MW-8A, MW-9A and B8l. The plume is not delineated northwest or northeast of the OW-3A area and south or southeast of OW-4A.

3.3.3.2 S-2 Water-Bearing Zone

The groundwater data from wells monitoring the S-2 zone reveal that EDB has migrated vertically through the intervening aquitard into the S-2 zone. It was not confirmed that EDB migrated as a DNAPL into the S-2 zone, but the relatively high concentrations of 2,500 and 8,200 µg/l detected near the source area in wells MW-7C and X-1B suggest that a DNAPL source is plausible. As EDB migrates into this sand zone, lateral migration takes place from advective transport of dissolved EDB. The extent of the plume was delineated within the S-2 zone in the regions north of the former disposal basin (Figure 3-26). There are areas east and west of the former disposal basin where the extent of EDB was not delineated to the detection limit or MCL. EDB was not detected in monitoring wells south of MW-4B during earlier sampling events (Table 3-28). Thus, the southern extent of EDB was delineated during the course of the RI.

The lateral extent of DBCP has been delineated in the S-2 zone, and is limited to the region north of the former disposal pit out to well OW-2B, which had a concentration of 0.53 µg/l. The adjacent HydroPunch samples collected at B7 and B5 did not have detectable levels of DBCP, indicating that the extent of this compound has been tentatively delineated in the S-2 zone (Figure 3-27).

DCP in the S-2 zone was tentatively delineated to less than 5.0 µg/l, the MCL in almost all directions from the former disposal basin (Figure 3-28). A concentration of 87 µg/l was detected in well MW-4B, south of the disposal basin, but DCP was not detected in wells farther south during earlier sampling events. The DCP plume extends to the northwest from wells X-4B and OW-2B. A concentration of 65 µg/l was reported in well OW-2B and only 1.0 µg/l in the HydroPunch sample at B5. This indicates that the concentrations decrease away from OW-2B. The highest concentrations of DCP in the S-2 zone were detected in wells X-1B and MW-7C and were 14,000 and 5,900 µg/l, respectively.

Carbon tetrachloride was detected in wells OW-4B, MW-12B, and OW-3B at concentrations ranging from 100 to 300 µg/l (Figure 3-29). It was also detected in several of the S-2 zone HydroPunch samples collected near these wells. It appears that the plume is similar in size to the plume detected in the S-1 zone; however, the concentrations are 2 to 6 times higher in the S-2 zone than in the S-1 zone. The carbon tetrachloride plume has been delineated to levels of 5.0 µg/l or less in most areas. There is still some uncertainty as to the extent of carbon tetrachloride concentrations above the MCL to the northeast and south of OW-4B.

3.3.3.3 A-1 Aquifer

The lateral extent of EDB in the A-1 aquifer was tentatively delineated to levels at or near the MCL of 0.05 µg/l. For example, EDB was not detected in samples from B5, B3, OW-3C, B1, OW-1C, B4, and MW-4C. EDB was less than the MCL in OW-4C. The highest concentrations (8.1 µg/l) were detected in well OW-2C, located approximately 650 feet north of the former disposal basin and about 400 feet north of the highest EDB concentrations detected in S-1 and S-2 wells. The concentration in this well is approximately 5 to 20 times greater than EDB concentrations in A-1 wells located near the former disposal basin (Figure 3-30). The EDB plume has not been delineated in the area southeast of wells MW-9C and OW-4C, but the concentrations in these wells are very low and it is likely that concentrations continue to decrease to the southeast. The plume is not delineated to the southwest of MW-13C, where 1.6 µg/l of EDB was detected. EDB concentrations above 0.05 µg/l were not delineated southwest of this well. The flow patterns in the A-1 aquifer show that flow is to the southeast in this area (Figures 3-18, 3-19, and 3-20).

DBCP was delineated to the detection limit in the A-1 aquifer, where only wells OW-2C and MW-7D had detectable concentrations. Only OW-2C had concentrations exceeding the MCL of 0.2 µg/l (Figure 3-31). Sample points located north, west, east, and south all indicated no detectable concentrations of DBCP in the A-1 aquifer. Given that the average flow direction is southeast in this aquifer, the DBCP plume appears well delineated using the RI data.

The extent of DCP in the A-1 aquifer was adequately delineated with the RI data. This compound was detected in well OW-2C at a concentration of 67 µg/l (Figure 3-32). No detectable amounts were present in other wells or HydroPunch samples from the A-1 aquifer.

Carbon tetrachloride was detected in the A-1 aquifer in wells OW-4C and OW-3C at concentrations of 38 and 0.8 µg/l, respectively. It appears that the carbon tetrachloride plume was delineated to the north, east, and west of well OW-4C (Figure 3-33). The plume probably extends south of well OW-4C; however, carbon tetrachloride was not detected in monitoring wells MW-6C and MW-2C during earlier sampling events, thus limiting the plume extent to the region south of OW-4C to the vicinity of I-80.

3.3.3.4 *Summary of Nature and Extent*

The extent of EDB, DBCP, and DCP was delineated in the S-1 and S-2 zones and the A-1 aquifer across the site with some areas of uncertainty. The distribution of these chemicals was similar, each exhibiting high concentrations immediately north of the former disposal basin in the S-1 and S-2 zones, with concentrations rapidly declining in all directions. While the concentrations of EDB and DCP are indicative of a DNAPL release, the DBCP concentrations are low enough to indicate a dissolved phase release or a cosolved compound, meaning DBCP was present as a minor constituent dissolved in the DNAPL.

Most of the data from the A-1 aquifer indicate a dissolved phase of EDB, DBCP, and DCP because the concentrations of these compounds are very low compared with concentrations detected in the overlying S-2 zone. The limited lateral extent of compounds in the A-1 aquifer indicates a relatively minor source of contamination.

The extent of DCP and EDB encompasses all other organic compounds that may have originated from releases at the former disposal pit. Benzene, toluene, xylenes, and trichloropropane were detected in wells MW-7A, MW-7B, MW-7C, X-1A, or X-1B. These wells are within the central portion of the DCP and EDB plumes; therefore, it is indicated that remedies to address EDB, DBCP, and DCP will also address the lesser extent of other organic compounds.

The nature and extent of the carbon tetrachloride contamination is uncertain at this point. Only dissolved carbon tetrachloride was detected in the S-1, S-2, and A-1 zones, with no physical feature indicated as a source. Soil data did not indicate a carbon tetrachloride source either. Concentrations were highest in the S-2 zone (up to 370 µg/l). The highest concentrations of carbon tetrachloride are almost 2 orders of magnitude lower than the highest EDB and DCP concentrations. Carbon tetrachloride is distributed differently, with the plume located east of the DCP, EDB, and DBCP plume. Very low concentrations were detected in wells MW-7A, MW-7B, MW-7C, MW-7D, X-1A, and X-1B, effectively ruling out the disposal basin as the source of this contaminant.

3.4 DENSE NON-AQUEOUS PHASE LIQUID (DNAPL) ASSESSMENT

Because the contaminant phase can have far-reaching implications on selecting a site remedy, a DNAPL assessment was performed to evaluate the likelihood of a DNAPL in the saturated zone. In this assessment, site data were compared with indicators of DNAPL presence. These indicators were obtained from EPA guidance on assessing DNAPL sites and from other literature on the subject.

One of the primary indicators is the concentration of a DNAPL compound with respect to its solubility limit (Cohen and Mercer, 1992, and Feenstra, 1994). According to a rule of thumb put forth by Cohen and Mercer, if a compound is detected at greater than 1.0 percent of its solubility limit, there is a high probability of a DNAPL zone upgradient from the monitoring point where

the sample was collected. Feenstra points out that concentrations of DNAPL compounds much less than 1.0 percent of their solubility limit can also indicate a DNAPL presence, especially when the monitoring network is taken into consideration. For example, a well with a screen 10 feet long placed only 1 foot above a DNAPL zone may indicate 0.001 percent of the solubility limit of the DNAPL (Feenstra, 1994).

Other indicators of DNAPL presence are:

- Concentrations in groundwater that increase or stay the same with depth (no decreasing concentration gradient with depth)
- Concentrations in groundwater at a depth that cannot be explained by advective transport of a dissolved phase
- Highest concentrations associated with a specific region (DNAPL zone) and much lower concentrations outside this zone.
- Site with a history of DNAPL disposal in unlined areas or leaks from pipes and tanks storing a DNAPL

At Frontier Fertilizer, the concentrations of EDB and DCP exceed 1.0 percent of their combined solubility limit, assuming the DNAPL consists of a mixture of 50 percent EDB and 50 percent DCP in three wells (Table 3-31). Of these three wells, two monitor the S-1 zone and one monitors the S-2 zone. An additional five wells contained EDB and DCP in excess of 0.1 percent of the combined solubility limit (Table 3-30). Of these five wells, one monitors the S-2 zone and four monitor the S-1 zone. These data are indicative of a potential DNAPL release. The assumption that only EDB and DCP make up the potential DNAPL is conservative because the presence of other compounds in a DNAPL will reduce the effective solubility of these compounds. Groundwater data reveal that several other compounds (DBCP, trichloropropane, 1,3-DCP, and others) are present at sufficient levels to decrease the effective solubilities of DCP and EDB.

The other indicators noted above also show the potential presence of a DNAPL. For example, high concentrations in the S-2 zone, cannot be explained by advective transport of a dissolved phase. If only dissolved phase contaminants are introduced into the S-2 zone, there will be some dilution, but this is not the case at Frontier Fertilizer.

The highest concentrations are associated with only those wells shown in Table 3-31. In most other wells and HydroPunch locations, the concentrations detected were several orders of magnitude lower than those indicated in Table 3-31. The steep lateral concentration gradients indicate that several wells at the site may be situated within a potential DNAPL zone (MW-7B, MW-7C, X-1A, and X-1B).

Pesticide disposal activities at this site support a DNAPL release scenario. Pesticide tanks were rinsed with water, and the rinsewater was dumped into the former disposal basin. The

solubilities of EDB, DBCP, DCP, and other pesticides are low, and several thousand gallons of rinsewater would be needed to completely dissolve very minor amounts of residual pesticides in the tanks. Early soil sampling also indicated a potential DNAPL release with reports of more than 11,000 ug/g (11,000,000 ug/kg) of EDB in soils immediately underlying the disposal basin (NEIC and FBI data reported in Luhdorf and Scalmanini, 1987). Concentrations of a known DNAPL compound of this magnitude are strong indicators of DNAPL release. The high concentrations to depths approaching the water table further support the notion that a DNAPL may have migrated into the vadose zone and into the saturated zone. (L&S reported up to 122,000 ppb in the soils at a depth of 13 feet, 1987.) In summary, the potential presence of a DNAPL in the vadose zone and in the saturated zone is supported by several lines of data. The data further indicate that the potential DNAPL release does not extend to the A-1 aquifer. Specific recommendations for confirming the presence of a DNAPL are provided in Section 5. A discussion of the need for this information is also presented.

References

Cohen, R. M., J. W. Mercer, and J. Matthews, *DNAPL Site Evaluation*, C.K. Smoley, CRC Press, Boca Raton, 1993,

Feenstra, S., Diagnosis and Remediation of DNAPL Sites, Water Centre for Groundwater Research Short Course Notes, San Francisco, October 17-20, 1994.

Rivett, M.O., S. Feenstra, and J. A. Cherry, Field Experimental Studies of a Residual Solvent Source Emplaced in the Groundwater Zone, "Proceedings of the Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water, National Water Well Association, Houston, Texas, November 20-22, 1991.

Luhdorff and Scalmani, Consulting Engineers, Preliminary Assessment Report and Work Plan for Remedial Investigation/Feasibility Study, 1987.

Table 3-1
Analytical Results that are "Non-Detect" (ND) with SQL > PRG for Soil or > MCL for Groundwater (Shading Indicates No Analysis Performed)

	Carbamate/ Urea Pesticides	FASP Method 504	FASP Pest/ PCB	FASP VOC	Metals	Method 504	Organo-phos-phorus Pesticides	Pesticides/ PCB	SVOC	VOC 25 ml Purge	VOC 5 ml
GW Monitoring						108				1,915	215
GW Treatment						39				1,198	
Preliminary Assessment Groundwater						0				835	
Preliminary Assessment Soil	0		0	246			0				2
RI Groundwater		3		169							
RI Soil	0		342	127	0		1	17	83		
Total No. of Analytical Results	0	3	342	542	0	147	1	18	83	3,948	217
Total No. of Station Locations[1]	0	3	51	191	0	145	1	8	17	368	17
Net No. of Station Locations[2]	0	3	46	137	0	100	1	4	15	153	0

[1] The total number of station locations with ND results with elevated SQLs.
[2] The net number of station locations with ND results with elevated SQLs and no other result greater than the PRG/MCL.

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Table 3-2 Split Pair Relative Percent Differences

Item	J16.1	YS174	YS175
4,4' DDD	—	95%	135%
4,4' DDE	—	17%	40%
4,4' DDT	—	10%	41%
Alpha-chlordane	14%	—	—
Dieldrin	—	10%	35%
Endosulfan II	—	115%	—
Endrin	—	81%	—
Gamma-chlordane	3%	—	—

A dash indicates a compound was not detected in the split samples.

Table 3-3 Data Validation Results

Item	Total Number of Results	Number of Validated Results / % of Validated Results	Number of Qualified Validated Results / % of Qualified Validated Results
Preliminary Assessment Soil Data			
C/U Pesticides	1,490	1,490 \ 100%	82 \ 6%
FASP Pesticides/PCBS	2,075	0 \ 0%	0 NA
FASP VOCs	5,870	570 \ 10%	330 \ 58%
Organophosphorus Pesticides	159	159 \ 100%	0 \ 0%
VOC 5 ml Purge	192	192 \ 100%	15 \ 8%
Subtotal	9,786	2,411 \ 25%	427 \ 18%
Preliminary Assessment Groundwater Data			
Method 504	78	78 \ 100%	23 \ 29%
VOC 25 ml Purge	2,594	2,594 \ 100%	1,990 \ 77%
Subtotal	2,672	2,672 \ 100%	2,013 \ 75%
City of Davis Soil Data			
C/U Pesticides	3,134	3,134 \ 100%	368 \ 12%
Organophosphorus Pesticides	3,134	3,134 \ 100%	368 \ 12%
Pesticides/PCBS	1,653	1,653 \ 100%	63 \ 4%
Subtotal	7,921	7,921 \ 100%	799 \ 10%
Remedial Investigation Soil Data			
C/U Pesticides	1,978	1,978 \ 100%	1,024 \ 52%
FASP Pesticides/PCBS	6,089	1,756 \ 29%	180 \ 10%
FASP VOCs	13,008	3,458 \ 27%	1,911 \ 55%
Organophosphorus Pesticides	5,673	2,458 \ 43%	489 \ 20%
Pesticides/PCBS	2,202	2,202 \ 100%	399 \ 18%
Metals	249	249 \ 100%	70 \ 28%
Semi VOCs	1,180	594 \ 50%	552 \ 93%
TPH-G	94	6 \ 6%	6 \ 100%
TPH-D	76	16 \ 21%	16 \ 100%
Subtotal	30,549	12,717 \ 42%	4,647 \ 37%
Remedial Investigation Groundwater (HydroPunch) Data			
FASP Method 504	94	94 \ 100%	0 \ 0%
FASP VOCs	642	642 \ 100%	7 \ 1%
Subtotal	736	736 \ 100%	7 \ 1%

Table 3-3 (Cont'd)

Item	Total Number of Results	Number of Validated Results / % of Validated Results	Number of Qualified Validated Results / % of Qualified Validated Results
Groundwater Monitoring Data - Round 1 (April 1994)			
Method 504	74	74 \ 100%	3 \ 4%
VOC 25 ml Purge	1,891	1,891 \ 100%	146 \ 8%
VOC 5 ml Purge	222	222 \ 100%	30 \ 14%
Subtotal	2,187	2,187 \ 100%	179 \ 8%
Groundwater Monitoring Data - Round 2 (August 1994)			
Method 504	70	70 \ 100%	62 \ 89%
VOC 25 ml Purge	1,924	1,924 \ 100%	230 \ 12%
VOC 5 ml Purge	234	234 \ 100%	31 \ 13%
Subtotal	2,228	2,228 \ 100%	323 \ 14%
Groundwater Monitoring Data - Round 3 (December 1994)			
Method 504	70	70 \ 100%	6 \ 9%
VOC 25 ml Purge	1,739	1,739 \ 100%	206 \ 12%
VOC 5 ml Purge	185	185 \ 100%	21 \ 11%
Subtotal	1,994	1,994 \ 100%	233 \ 12%
Groundwater Monitoring Data - Round 4 (June 1995)			
Method 504	122	122 \ 100%	18 \ 15%
VOC 25 ml Purge	2,720	1,120 \ 41%	105 \ 9%
VOC 5 ml Purge *	259	0 \ 0%	NA
Subtotal	3,101	1,242 \ 40%	123 \ 10%
Groundwater Monitoring Data - Round 5 (December 1995)			
Method 504	90	62 \ 69%	12 \ 19%
VOC 25 ml Purge	3,000	3,000 \ 100%	260 \ 9%
Subtotal	3,090	3,062 \ 99%	272 \ 9%
Groundwater Treatment System Performance Data			
Method 504	230	146 \ 63%	46 \ 32%
VOC 25 ml Purge	6,360	2,480 \ 39%	163 \ 7%
Subtotal	230	146 \ 63%	46 \ 32%
Totals	64,494	37,316 \ 58%	9,069 \ 24%

* VOC 5 ml purge data was not validated because the subject wells (7A, 7B, and 7C) have significant levels of contamination that are consistent with prior and subsequent validated results.

NA – Not applicable because the number of validated results is zero.

Table 3-4 Sample PRG Analysis – NOT "U" Lab Qualifier and "J" Validation Qualifier

Percentage of PRG	C/U Pesticides		FASP Pesticides		FASP Volatile Organic		Metals		Method 504	
	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records
90 to 100	0	0	0	0	0	0	0	0	5	0
80 to 90	0	0	0	0	0	0	0	0	0	0
70 to 80	0	0	0	0	1	0	0	0	1	0
60 to 70	0	0	1	0	2	0	0	0	0	0
50 to 60	0	0	1	0	1	0	0	0	4	0
Total No. of Results	0	0	2	0	4				10	
Total No. of Station Locations			2		4				10	

Percentage of PRG	OP Pesticides		Pesticides/PCBs		Semivolatile Organic		VOC 25 ml Purge		VOC 5 ml Purge	
	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records	Number of Records	Percentage of Records
90 to 100	0	0	0	0	0	0	7	0	9	0
80 to 90	0	0	0	0	0	0	5	0	6	0
70 to 80	0	0	0	0	0	0	2	0	0	0
60 to 70	0	0	0	0	0	0	11	0	1	0
50 to 60	0	0	0	0	0	0	15	0	0	0
Total No. of Results[1]	0	0	0	0	0	0	41	0	16	0
Total No. of Station Locations[2,3]							41		13	

[1] The total number of J-qualified results < PRG/MCL > 50% PRG/MCL.
[2] The total number of station locations with results < PRG/MCL > 50% PRG/MCL.
[3] There are no station locations with results < PRG/MCL > 50% PRG/MCL and no result > PRG/MCL.

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Table 3-5 Chemicals with Measured Concentrations in Soil Exceeding PRGs and Associated Sample Locations

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
1,2,3-Trichloropropane	F33-S26-O	03-May-93	4,500			15
1,2-Dibromo-3-Chloropropane	F20-S08	12-Mar-93	12,000			1,400
1,2-Dibromo-3-Chloropropane	F20-S1.5	12-Mar-93	61,000			1,400
1,2-Dibromo-3-Chloropropane	F20-S16	12-Mar-93	15,000			1,400
1,2-Dibromo-3-Chloropropane	F20-S24	12-Mar-93	1,600			1,400
1,2-Dibromo-3-Chloropropane	F33-S26	03-May-93	9,500		NJ	1,400
1,2-Dibromo-3-Chloropropane	F33-S26-O	03-May-93	24,000			1,400
1,2-Dibromo-3-Chloropropane	F34-S01	03-May-93	2,100		NJ	1,400
1,2-Dibromoethane	DB1.2DL	17-Jul-95	22	D		21
1,2-Dibromoethane	DB1.6DL	17-Jul-95	81			21
1,2-Dibromoethane	DB1.7DL	17-Jul-95	410	D		21
1,2-Dibromoethane	DB1.8DL	17-Jul-95	340	D		21
1,2-Dibromoethane	DB1.9DL	17-Jul-95	390	D		21
1,2-Dibromoethane	EW3.5	12-Jul-95	26			21
1,2-Dibromoethane	F01-S01	04-Mar-93	37			21
1,2-Dibromoethane	F01-S09	04-Mar-93	84			21
1,2-Dibromoethane	F01-S19	05-Mar-93	450			21
1,2-Dibromoethane	F01-S21+	05-Mar-93	1,500			21
1,2-Dibromoethane	F02-S01	05-Mar-93	72			21
1,2-Dibromoethane	F02-S09	05-Mar-93	250			21
1,2-Dibromoethane	F02-S15	06-Mar-93	200			21
1,2-Dibromoethane	F02-S23	06-Mar-93	100			21
1,2-Dibromoethane	F03-S01	06-Mar-93	85			21
1,2-Dibromoethane	F03-S08	06-Mar-93	93			21
1,2-Dibromoethane	F03-S17	06-Mar-93	3,500			21
1,2-Dibromoethane	F03-S24	06-Mar-93	8,000			21
1,2-Dibromoethane	F04-S01	07-Mar-93	88			21
1,2-Dibromoethane	F04-S08	07-Mar-93	68			21
1,2-Dibromoethane	F04-S18	07-Mar-93	40			21
1,2-Dibromoethane	F04-S24	07-Mar-93	60			21
1,2-Dibromoethane	F05-S01	07-Mar-93	4,300			21
1,2-Dibromoethane	F05-S09	07-Mar-93	23,000			21
1,2-Dibromoethane	F05-S18	07-Mar-93	15,000			21
1,2-Dibromoethane	F05-S26	07-Mar-93	27,000			21
1,2-Dibromoethane	F06-S08	07-Mar-93	33			21
1,2-Dibromoethane	F06-S20	07-Mar-93	40			21
1,2-Dibromoethane	F06-S28	07-Mar-93	130			21
1,2-Dibromoethane	F07-S02	08-Mar-93	43			21
1,2-Dibromoethane	F07-S30	08-Mar-93	27			21
1,2-Dibromoethane	F08-S20	08-Mar-93	170			21
1,2-Dibromoethane	F08-S29	08-Mar-93	200			21

Table 3-5 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
1,2-Dibromoethane	F09-S10	09-Mar-93	230			21
1,2-Dibromoethane	F09-S18	09-Mar-93	97			21
1,2-Dibromoethane	F10-S10	09-Mar-93	72			21
1,2-Dibromoethane	F10-S18	09-Mar-93	96			21
1,2-Dibromoethane	F10-S24	09-Mar-93	42			21
1,2-Dibromoethane	F11-S08	09-Mar-93	39			21
1,2-Dibromoethane	F11-S18	10-Mar-93	430			21
1,2-Dibromoethane	F11-S24	10-Mar-93	520			21
1,2-Dibromoethane	F12-S01	10-Mar-93	51			21
1,2-Dibromoethane	F12-S08	10-Mar-93	85			21
1,2-Dibromoethane	F12-S18	10-Mar-93	120			21
1,2-Dibromoethane	F12-S24	10-Mar-93	240			21
1,2-Dibromoethane	F13-S01	10-Mar-93	30			21
1,2-Dibromoethane	F13-S08	10-Mar-93	89			21
1,2-Dibromoethane	F13-S18	10-Mar-93	120			21
1,2-Dibromoethane	F13-S24	10-Mar-93	240			21
1,2-Dibromoethane	F14-S01	10-Mar-93	38			21
1,2-Dibromoethane	F14-S20	10-Mar-93	140			21
1,2-Dibromoethane	F16-S24	11-Mar-93	150			21
1,2-Dibromoethane	F18-S08	12-Mar-93	110			21
1,2-Dibromoethane	F18-S18	12-Mar-93	160			21
1,2-Dibromoethane	F18-S24	12-Mar-93	90			21
1,2-Dibromoethane	F19-S01	12-Mar-93	54			21
1,2-Dibromoethane	F19-S09	12-Mar-93	53			21
1,2-Dibromoethane	F19-S18	12-Mar-93	80			21
1,2-Dibromoethane	F19-S24	12-Mar-93	85			21
1,2-Dibromoethane	F20-S08	12-Mar-93	1,300			21
1,2-Dibromoethane	F20-S1.5	12-Mar-93	5,700			21
1,2-Dibromoethane	F20-S16	12-Mar-93	230			21
1,2-Dibromoethane	F20-S24	12-Mar-93	260			21
1,2-Dibromoethane	F21-S01	13-Mar-93	120			21
1,2-Dibromoethane	F21-S08	13-Mar-93	130			21
1,2-Dibromoethane	F24-S01	16-Mar-93	27			21
1,2-Dibromoethane	F24-S08	16-Mar-93	35			21
1,2-Dibromoethane	F24-S18	16-Mar-93	22			21
1,2-Dibromoethane	F25-S01	16-Mar-93	26			21
1,2-Dibromoethane	F25-S08	16-Mar-93	210			21
1,2-Dibromoethane	F25-S18	16-Mar-93	140			21
1,2-Dibromoethane	F26-S02	16-Mar-93	62			21
1,2-Dibromoethane	F26-S08	16-Mar-93	65			21
1,2-Dibromoethane	F28-S02	29-Apr-93	40			21
1,2-Dibromoethane	F28-S08	29-Apr-93	86			21

Table 3-5 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
1,2-Dibromoethane	F28-S18	29-Apr-93	110			21
1,2-Dibromoethane	F28-S26	29-Apr-93	110			21
1,2-Dibromoethane	F29-S02	29-Apr-93	73			21
1,2-Dibromoethane	F29-S18	29-Apr-93	94			21
1,2-Dibromoethane	F29-S26	29-Apr-93	140			21
1,2-Dibromoethane	F30-S01	29-Apr-93	99			21
1,2-Dibromoethane	F30-S08	29-Apr-93	270			21
1,2-Dibromoethane	F30-S18	29-Apr-93	160			21
1,2-Dibromoethane	F30-S26	30-Apr-93	160			21
1,2-Dibromoethane	F31-S02	30-Apr-93	81			21
1,2-Dibromoethane	F31-S08	30-Apr-93	71			21
1,2-Dibromoethane	F31-S18	30-Apr-93	180			21
1,2-Dibromoethane	F31-S26	30-Apr-93	87			21
1,2-Dibromoethane	F32-S01	30-Apr-93	91			21
1,2-Dibromoethane	F32-S08	30-Apr-93	270			21
1,2-Dibromoethane	F32-S18	30-Apr-93	260			21
1,2-Dibromoethane	F32-S29	30-Apr-93	145			21
1,2-Dibromoethane	F33-S08	03-May-93	42		N	21
1,2-Dibromoethane	F33-S08-O	03-May-93	130			21
1,2-Dibromoethane	F33-S18	03-May-93	920		NJ	21
1,2-Dibromoethane	F33-S18-O	03-May-93	74			21
1,2-Dibromoethane	F33-S26	03-May-93	24,500		NJ	21
1,2-Dibromoethane	F33-S26-O	03-May-93	98,000			21
1,2-Dibromoethane	F34-S01	03-May-93	1,500		NJ	21
1,2-Dibromoethane	F34-S01-C	03-May-93	200			21
1,2-Dibromoethane	F34-S08	03-May-93	280		NJ	21
1,2-Dibromoethane	F34-S18-C	03-May-93	40			21
1,2-Dibromoethane	F35-S01	03-May-93	110		NJ	21
1,2-Dibromoethane	F35-S01-C	03-May-93	26			21
1,2-Dibromoethane	F35-S11	03-May-93	40		NJ	21
1,2-Dibromoethane	F35-S18	03-May-93	190		NJ	21
1,2-Dibromoethane	F35-S18-C	03-May-93	22			21
1,2-Dibromoethane	F35-S26	03-May-93	46		NJ	21
1,2-Dibromoethane	F38-S18	04-May-93	88			21
1,2-Dibromoethane	F41-S01	05-May-93	890			21
1,2-Dibromoethane	F41-S08	05-May-93	310			21
1,2-Dibromoethane	F41-S19	05-May-93	170			21
1,2-Dibromoethane	F41-S26	05-May-93	90			21
1,2-Dibromoethane	F42-S18	06-May-93	690			21
1,2-Dibromoethane	F42-S26	06-May-93	1,100			21
1,2-Dibromoethane	F44-S26	06-May-93	108			21
1,2-Dibromoethane	F45-S26	07-May-93	270			21

Table 3-5 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
1,2-Dibromoethane	F46-S26	07-May-93	140			21
1,2-Dibromoethane	F47-S19	10-May-93	130			21
1,2-Dibromoethane	F47-S26	10-May-93	1,200			21
1,2-Dibromoethane	NS50.5	11-Jul-95	49			21
1,2-Dibromoethane	NS50.5DL2	13-Jul-95	25	D		21
1,2-Dibromoethane	S20-S30	10-Mar-93	140		N	21
1,2-Dichloropropane	C10.5	11-Jul-95	2,300	E/P		1,500
1,2-Dichloropropane	F01-S19	05-Mar-93	8,000			1,500
1,2-Dichloropropane	F02-S01	05-Mar-93	1,900			1,500
1,2-Dichloropropane	F02-S09	05-Mar-93	5,300			1,500
1,2-Dichloropropane	F03-S08	06-Mar-93	3,800			1,500
1,2-Dichloropropane	F03-S17	06-Mar-93	7,000			1,500
1,2-Dichloropropane	F03-S24	06-Mar-93	5,000			1,500
1,2-Dichloropropane	F05-S18	07-Mar-93	2,200			1,500
1,2-Dichloropropane	F07-S18	08-Mar-93	2,100			1,500
1,2-Dichloropropane	F11-S18	10-Mar-93	2,800			1,500
1,2-Dichloropropane	F12-S18	10-Mar-93	4,400			1,500
1,2-Dichloropropane	F12-S24	10-Mar-93	5,800			1,500
1,2-Dichloropropane	F13-S18	10-Mar-93	4,100			1,500
1,2-Dichloropropane	F13-S24	10-Mar-93	3,500			1,500
1,2-Dichloropropane	F14-S20	10-Mar-93	1,700			1,500
1,2-Dichloropropane	F20-S08	12-Mar-93	3,200			1,500
1,2-Dichloropropane	F20-S1.5	12-Mar-93	2,300			1,500
1,2-Dichloropropane	F20-S16	12-Mar-93	1,800			1,500
1,2-Dichloropropane	F33-S26	03-May-93	5,600		NJ	1,500
1,2-Dichloropropane	F33-S26-O	03-May-93	11,000			1,500
1,2-Dichloropropane	F46-S26	07-May-93	2,100			1,500
1,2-Dichloropropane	S20-S30	10-Mar-93	1,700		N	1,500
Aldrin	BS-3.1	14-Jun-95	160			110
Aldrin	D7.1SIL	24-May-95	230	E		110
Aldrin	F15.1 DL	25-May-95	490	D		110
Dieldrin	F15.1 DL	25-May-95	3,600	D/E		120
Dieldrin	F15.2 DL	30-May-95	370	D		120
Dieldrin	N6.1	13-Jun-95	260			120
Dieldrin	O9.1	13-Jun-95	360			120
Heptachlor Epoxide	C9.1DL20	24-May-95	410	N		210
Toxaphene	A5.1	24-May-95	2,900	J/P/		1,700
Toxaphene	C4.1	24-May-95	2,400	PJ		1,700
Vinyl Chloride	F28-S18	29-Apr-93	29			11
Vinyl Chloride	F28-S26	29-Apr-93	27			11
Vinyl Chloride	F29-S26	29-Apr-93	42			11
Vinyl Chloride	F30-S26	30-Apr-93	28			11

Table 3-5 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Vinyl Chloride	F31-S08	30-Apr-93	36			11
Vinyl Chloride	F31-S18	30-Apr-93	80			11
Vinyl Chloride	F32-S18	30-Apr-93	82			11
Vinyl Chloride	F32-S29	30-Apr-93	27			11
Vinyl Chloride	F62-S01	14-May-93	33			11
Vinyl Chloride	F62-S08	14-May-93	44			11
Vinyl Chloride	F63-W	14-May-93	13			11

D - This flag indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract.

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

N - Presumptive evidence for presence of the compound.

E - Reported concentration exceeded the instrument calibration.

P - Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

PJ - This flag indicates that the percent difference between the primary and confirmation columns exceed 50% but is less than 75%.

Table 3-6 Detected Compounds in Background Soil Samples

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Carbaryl	BG1.1	7/17/95	20		NJ	68,000,000
Fluometuron	BG1.1	7/17/95	250		NJ	8,900,000
Chlorpyrifos	BG3.2	7/12/95	61	L		2,000,000
Ethyl Parathion	BG3.2	7/12/95	73	L		4,100,000
Phorate	BG3.4	7/12/95	25	L		140,000
TEPP	GG3.4	7/12/95	500			NA

NA – Not applicable.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.

L – Typically an "L" qualifier indicates results which fall below the contract required quantitation limit. Results are estimated and are considered quantitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

Table 3-7 EDB Results from Hot Spot Search

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
30x30 Foot Grid Area					
A2.2	25-May-95	5.4	U	J	21
A5.2	30-May-95	5.3	U	J	21
B2.2	25-May-95	4.8	U	J	21
B3.2	01-Jun-95	4.6	U	J	21
B4.2	30-May-95	4.6	U	J	21
B5.2	01-Jun-95	5.1	U	J	21
C1.2	25-May-95	4.8	U	J	21
C10.2	02-Jun-95	5.1	U		21
C11.2	02-Jun-95	4.9	U		21
C12.2	06-Jun-95	4.8	U		21
C2.2	25-May-95	4.9	U	J	21
C3.2	01-Jun-95	5.5	U	J	21
C4.2	30-May-95	5.2	U	J	21
C5.2	01-Jun-95	5.5	U	J	21
C8.2	31-May-95	8.6		J	21
C9.2	31-May-95	5.5	U	J	21
D1.2	25-May-95	5.3	U	J	21
D10.2	02-Jun-95	5.1	U		21
D11.2	08-Jun-95	5.2	U		21
D12.2	02-Jun-95	4.5	U		21
D13.2	02-Jun-95	4.9	U		21
D14.2	07-Jun-95	4.8	U		21
D15.2	06-Jun-95	4.6	U		21
D16.2	08-Jun-95	5.3	U		21
D2.2	25-May-95	5.3	U	J	21
D3.2	30-May-95	5.2	U	J	21
D4.2	01-Jun-95	5.1	U	J	21
D5.2	01-Jun-95	4.5	U	J	21
D6.2	01-Jun-95	4.4	U		21
D7.2	30-May-95	5.1	U		21
D8.2	31-May-95	5	U	J	21
D9.2	31-May-95	5.4	U	J	21
E1.2	31-May-95	5	U	J	21
E10.2	02-Jun-95	5	U		21
E11.2	02-Jun-95	5.1	U		21
E12.2	30-May-95	4.8	U	J	21
E13.2	02-Jun-95	5	U		21
E15.2	06-Jun-95	4.3	U		21
E16.2	30-May-95	4.8	U	J	21

Table 3-7 (Cont'd)

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
E17.2	07-Jun-95	5.1	U		21
E18.2	07-Jun-95	5	U		21
E19.2	07-Jun-95	4.8	U		21
E2.2	01-Jun-95	5.1	U	J	21
E3.2	01-Jun-95	11		J	21
E4.2	31-May-95	5.2	U	J	21
E5.2	31-May-95	5	U	J	21
E6.2	02-Jun-95	5.3	U		21
E7.2	02-Jun-95	5	U		21
E8.2	31-May-95	4.8	U	J	21
E9.2	01-Jun-95	4.7	U		21
F1.2	05-Jun-95	5.7	U		21
F10.2	06-Jun-95	4.7	U		21
F11.2	30-May-95	4.7	U	J	21
F12.2	05-Jun-95	5	U		21
F13.2	05-Jun-95	5.1	U		21
F15.2	30-May-95	4.5	U	J	21
F16.2	06-Jun-95	4.1	U		21
F17.2	06-Jun-95	4.6	U		21
F18.2	06-Jun-95	4.3	U		21
F19.2	08-Jun-95	5.1	U		21
F2.2	05-Jun-95	5.1	U		21
F20.2	06-Jun-95	4.8	U		21
F21.2	06-Jun-95	4.3	U		21
F3.2	31-May-95	5.3	U	J	21
F4.2	05-Jun-95	5.5	U		21
F5.2	05-Jun-95	4.8	U		21
F6.2	05-Jun-95	4.2	U		21
F7.2	31-May-95	4.9	U	J	21
F8.2	05-Jun-95	4.5	U		21
F9.2	06-Jun-95	5.3	U		21
40x40 Foot Grid Area					
G10.2	24-May-95	4.6	U		21
G11.2	15-May-95	4.9	U		21
G12.2	13-Jun-95	4.7	U	J	21
G13.2	24-May-95	5.6	U		21
G14.2	19-May-95	5.3	U		21
G15.2	8-Jun-95	4.9	U		21
G16.2	19-May-95	5	U		21
G17.2	15-May-95	4.6	U		21

Table 3-7 (Cont'd)

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
G18.2	19-May-95	5	U		21
G19.2	19-May-95	5.1	U		21
G20.2	19-May-95	5.1	U		21
G21.2	19-May-95	5	U		21
G3.2	15-May-95	5.6	U		21
G5.2	24-May-95	5.3	U		21
G6.2	24-May-95	5.1	U		21
G7.2	15-May-95	4.4	U		21
G8.2	17-May-95	4.8	U		21
H10.2	24-May-95	4.7	U		21
H11.2	24-May-95	4.7	U		21
H12.2	13-Jun-95	4.5	U	J	21
H13.2	24-May-95	5	U		21
H14.2	19-May-95	4.8	U		21
H15.2	19-May-95	5.1	U		21
H16.2	19-May-95	4.8	U		21
H17.2	22-May-95	5.6	U		21
H18.2	22-May-95	4.7	U		21
H19.2	22-May-95	4.7	U		21
H20.2	15-May-95	4.7	U		21
H21.2	19-May-95	5.1	U		21
H22.2	19-May-95	5.1	U		21
H3.2	24-May-95	4.8	U	J	21
H5.2	20-Jun-95	4.8	U		21
H6.2	24-May-95	5.4	U		21
H7.2	24-May-95	5.1	U		21
H8.2	24-May-95	5.1	U		21
I10.2	7-Jun-95	5.4	U		21
I11.2	24-May-95	4.5	U		21
I12.2	24-May-95	4.7	U		21
I13.2	24-May-95	5.3	U		21
I14.2	15-May-95	4.9	U		21
I15.2	23-May-95	4.7	U		21
I16.2	22-May-95	4.5	U		21
I17.2	22-May-95	4.4	U		21
I18.2	15-May-95	4.7	U		21
I19.2	22-May-95	5.2	U		21
I20.2	22-May-95	4.7	U		21
I21.2	8-Jun-95	5	U		21

Table 3-7 (Cont'd)

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
I22.2	22-May-95	4.3	U		21
I3.2	24-May-95	5	U		21
I5.2	20-Jun-95	5.4	U	J	21
I6.2	20-Jun-95	5.1	U	J	21
I7.2	20-Jun-95	5.3	U	J	21
I8.2	20-Jun-95	4.5	U	J	21
IA1.2	30-May-95	4.8	U	J	21
J10.2	20-Jun-95	4.8	U		21
J11.2	21-Jun-95	5.5	U		21
J12.2	16-May-95	4.6	U		21
J13.2	23-May-95	4.9	U		21
J14.2	23-May-95	4.8	U		21
J15.2	23-May-95	4.7	U		21
J16.2	15-May-95	5.1	U		21
J17.2	22-May-95	4.7	U		21
J18.2	19-May-95	4.9	U		21
J19.2	19-May-95	4.8	U		21
J2.2	17-May-95	5.1	U		21
J20.2	15-May-95	4.8	U		21
J21.2	8-Jun-95	5.1	U		21
J3.2	17-May-95	5	U		21
J4.2	16-May-95	4.9	U		21
J5.2	7-Jun-95	5.1	U		21
J6.2	24-May-95	5.2	U	J	21
J7.2	24-May-95	4.7	U	J	21
J8.2	20-Jun-95	5.1	U	J	21
J9.2	20-Jun-95	4.4	U		21
JA1.2	31-May-95	5.5	U	J	21
K1.2	17-May-95	4.7	U		21
K11.2	21-Jun-95	5.2	U		21
K12.2	7-Jun-95	5.3	U		21
K13.2	7-Jun-95	4.6	U		21
K14.2	23-May-95	4.7	U		21
K15.2	16-May-95	4.7	U		21
K16.2	23-May-95	4.5	U		21
K18.2	23-May-95	5.1	U		21
K19.2	21-Jun-95	4.9	U		21
K2.2	17-May-95	5.1	U		21
K20.2	15-May-95	4.9	U		21

Table 3-7 (Cont'd)

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
K21.2	8-Jun-95	4.6	U		21
K3.2	17-May-95	5.1	U		21
K4.2	17-May-95	4.9	U		21
K5.2	16-May-95	5	U		21
K6.2	17-May-95	4.9	U		21
K7.2	24-May-95	4.7	U		21
K8.2	20-Jun-95	4.6	U	J	21
K9.2	20-Jun-95	5	U		21
L1.2	17-May-95	4.8	U		21
L10.2	21-Jun-95	5.3	U		21
L11.2	21-Jun-95	4.9	U		21
L12.2	23-May-95	4.8	U		21
L13.2	23-May-95	4.9	U		21
L14.2	23-May-95	4.4	U		21
L15.2	21-Jun-95	4.9	U		21
L16.2	21-Jun-95	4.9	U		21
L17.2	21-Jun-95	4.4	U		21
L18.2	21-Jun-95	4.9	U		21
L19.2	21-Jun-95	4.7	U		21
L2.2	17-May-95	5.4	U		21
L20.2	21-Jun-95	4.2	U		21
L21.2	8-Jun-95	5.4	U		21
L3.2	16-May-95	4.8	U		21
L4.2	17-May-95	5.3	U		21
L5.2	17-May-95	5.1	U		21
L6.2	17-May-95	4.8	U		21
L7.2	16-May-95	4.7	U		21
L8.2	20-Jun-95	4.8	U		21
L9.2	20-Jun-95	4.4	U		21
LA10.2	18-May-95	5	U		21
LA11.2	18-May-95	5.3	U		21
LA12.2	16-May-95	5.1	U		21
LA13.2	18-May-95	5.1	U		21
LA14.2	18-May-95	4.7	U		21
LA15.2	18-May-95	5.5	U		21
LA16.2	16-May-95	4.9	U		21
LA17.2	18-May-95	4.9	U		21
LA18.2	18-May-95	4.8	U		21
LA19.2	7-Jun-95	4.9	U		21

Table 3-7 (Cont'd)

Station ID	Samp. Date	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
LA20.2	7-Jun-95	5.7	U		21
LA21.2	8-Jun-95	4.8	U		21
LA3.2	18-May-95	5.6	U		21
LA4.2	16-May-95	5.2	U		21
LA5.2	18-May-95	5.4	U		21
LA6.2	17-May-95	5.3	U		21
LA7.2	17-May-95	5.6	U		21
LA8.2	16-May-95	4.8	U		21
LA9.2	18-May-95	5.1	U		21
50x50 Foot Grid Area					
M1.2	8-Jun-95	5.3	U		21
M3.2	9-Jun-95	4.8	U		21
N2.2	9-Jun-95	4.4	U	J	21
N4.2	9-Jun-95	4.7	U	J	21
N6.2	9-Jun-95	4.7	U	J	21
N8.2	9-Jun-95	4.7	U	J	21
O1.2	8-Jun-95	5.3	U		21
O11.2	14-Jun-95	4.3	U	J	21
O9.2	13-Jun-95	4.7	U	J	21
P12.2	9-Jun-95	4.3	U	J	21
P2.2	8-Jun-95	6	U		21
P8.2	9-Jun-95	4.2	U	J	21

U - Compound was analyzed for but not detected.

J - Estimated value. Compound was detected at a concentration below the sample quantitation limit.

Table 3-8 Chemicals Detected in Sump Samples

Sample Location	Date	Chemical	Conc. (ppb)	Lab. Qual.	Val. Qual.
SMP-1.1	6/22/95	Disulfoton	800		
SMP-1.1	6/22/95	Total Hydrocarbons–G	22		
SMP-1.1	6/22/95	Total Hydrocarbons–D	280		
SMP-1.1W	6/28/95	Total Hydrocarbons–D	0.1	L	UJ
SMP-4.1W	6/22/95	Endosulfan I	0.06		NJ
SMP-5.1	6/23/95	Total Hydrocarbons–D	38		
SMP-6.1	6/23/95	Total Hydrocarbons–D	130		

NJ - Presumptive evidence for presence of compound at an estimated quantity.

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

G - Gasoline

D - Diesel

Table 3-9 Chemicals Detected in Biased Samples

Station ID	Samp. Date	Chem. Name	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
BS-1.1	14-Jun-95	4,4'-DDD	11	L	NJ	7,900
BS-1.1	14-Jun-95	4,4'-DDT	58		NJ	5,600
BS-1.1	14-Jun-95	Alpha-Chlordane	60		NJ	1,500
BS-1.1	14-Jun-95	Endosulfan I	66		NJ	34,000
BS-1.1	14-Jun-95	Gamma-Chlordane	66			1,500
BS-2.1	14-Jun-95	4,4'-DDD	7.8		NJ	7,900
BS-2.1	14-Jun-95	4,4'-DDE	11			5,600
BS-2.1	14-Jun-95	4,4'-DDT	46		NJ	5,600
BS-2.1	14-Jun-95	DIELDRIN	12			120
BS-3.1	14-Jun-95	4,4'-DDD	100		R	7,900
BS-3.1	14-Jun-95	4,4'-DDE	120		NJ	5,600
BS-3.1	14-Jun-95	4,4'-DDT	450		NJ	5,600
BS-3.1	14-Jun-95	ALDRIN	160			110
BS-3.1	14-Jun-95	Alpha-Chlordane	75		NJ	1,500
BS-3.1	14-Jun-95	Endosulfan I	82		NJ	34,000
BS-3.1	14-Jun-95	Endosulfan II	41		NJ	34,000
BS-3.1	14-Jun-95	Endosulfan Sulfate	380		NJ	34,000
BS-3.1	14-Jun-95	Endrin Ketone	350		NJ	200,000
BS-3.1	14-Jun-95	Gamma-Chlordane	150		NJ	1,500
BS-3.1	14-Jun-95	Methoxychlor	3,600			3,400,000
BS-6.1	14-Jun-95	4,4'-DDE	38			5,600
BS-6.1	14-Jun-95	4,4'-DDT	84			5,600
BS-6.1	14-Jun-95	Alpha-Chlordane	130		NJ	1,500
BS-6.1	14-Jun-95	Dieldrin	29		NJ	120
BS-6.1	14-Jun-95	Endosulfan I	140		NJ	34,000
BS-6.1	14-Jun-95	Gamma-Chlordane	130			1,500
BS2.2	14-Jun-95	4,4'-DDD	21.6	J		7,900
BS2.2	14-Jun-95	4,4'-DDE	39			5,600
BS2.2	14-Jun-95	4,4'-DDT	74			5,600
BS3.1	14-Jun-95	Diuron	2,300		N	1,400,000
BS3.2	14-Jun-95	4,4'-DDT	28			5,600
BS6.2	14-Jun-95	Gamma-Chlordane	7.5	J		1,500

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

J - Estimated value. Compound was detected at a concentration below the sample quantitation limit.

N - Presumptive evidence for presence of the compound.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 3-10 Organochlorine Pesticides Detected in Surface Soil

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
4,4'-DDD	M1.1	08-Jun-95	130	D		7,900
4,4'-DDD	O9.1	13-Jun-95	20	L	NJ	7,900
4,4'-DDD	F15.1	25-May-95	380	E/N		7,900
4,4'-DDD	N2.1	13-Jun-95	8.6			7,900
4,4'-DDD	N4.1	13-Jun-95	170			7,900
4,4'-DDD	H14.1	11-May-95	84		NJ	7,900
4,4'-DDD	N6.1	13-Jun-95	31		NJ	7,900
4,4'-DDD	M3.1	13-Jun-95	29		NJ	7,900
4,4'-DDD	I22.1	11-May-95	69		NJ	7,900
4,4'-DDD	H22.1	11-May-95	190		NJ	7,900
4,4'-DDD	N8.1	13-Jun-95	14			7,900
4,4'-DDD	F7.1	24-May-95	30	N		7,900
4,4'-DDE	LA12.1	12-May-95	88	J		5,600
4,4'-DDE	L7.1	12-May-95	8			5,600
4,4'-DDE	N4.1	13-Jun-95	58			5,600
4,4'-DDE	F7.1	24-May-95	26			5,600
4,4'-DDE	C1.1	24-May-95	81			5,600
4,4'-DDE	LA4.1	12-May-95	210	PJ		5,600
4,4'-DDE	N8.1	13-Jun-95	23			5,600
4,4'-DDE	N6.1	13-Jun-95	19	L	NJ	5,600
4,4'-DDE	F15.1	25-May-95	150	P		5,600
4,4'-DDE	E16.1	25-May-95	110			5,600
4,4'-DDE	B4.1	23-May-95	14.1	J		5,600
4,4'-DDE	E20.1	25-May-95	95			5,600
4,4'-DDE	H22.1	11-May-95	55		NJ	5,600
4,4'-DDE	P12.1	13-Jun-95	54			5,600
4,4'-DDE	N2.1	13-Jun-95	7.4			5,600
4,4'-DDE	J16.1	12-May-95	4		NJ	5,600
4,4'-DDE	G19.1	11-May-95	5.7	L	J	5,600
4,4'-DDE	H10.1	11-May-95	49		NJ	5,600
4,4'-DDE	H18.1	11-May-95	110		NJ	5,600
4,4'-DDE	H14.1	11-May-95	36		NJ	5,600
4,4'-DDE	K19.1	12-May-95	7			5,600
4,4'-DDT	E20.1	25-May-95	90			5,600
4,4'-DDT	M1.1	08-Jun-95	190	D		5,600
4,4'-DDT	M3.1	13-Jun-95	87			5,600
4,4'-DDT	F15.1	25-May-95	220	P		5,600
4,4'-DDT	F3.1	23-May-95	30	PJ		5,600
4,4'-DDT	LA16.1	12-May-95	23	P		5,600
4,4'-DDT	G11.1	11-May-95	13	L	J	5,600
4,4'-DDT	K5.1	12-May-95	19	J/N		5,600
4,4'-DDT	K19.1	12-May-95	13		NJ	5,600

Table 3-10 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
4,4'-DDT	H14.1	11-May-95	41		J	5,600
4,4'-DDT	J16.1	12-May-95	8		NJ	5,600
4,4'-DDT	H18.1	11-May-95	110		J	5,600
4,4'-DDT	H22.1	11-May-95	150		NJ	5,600
4,4'-DDT	L15.1	12-May-95	30	N		5,600
4,4'-DDT	O11.1	13-Jun-95	5.5			5,600
4,4'-DDT	N8.1	13-Jun-95	9.4			5,600
4,4'-DDT	O9.1	13-Jun-95	68		NJ	5,600
4,4'-DDT	D15.1	24-May-95	49			5,600
4,4'-DDT	N6.1	13-Jun-95	120		NJ	5,600
4,4'-DDT	C1.1	24-May-95	120			5,600
4,4'-DDT	E16.1	25-May-95	36	P		5,600
4,4'-DDT	N4.1	13-Jun-95	180			5,600
4,4'-DDT	P12.1	13-Jun-95	37			5,600
4,4'-DDT	P8.1	13-Jun-95	16	L	J	5,600
4,4'-DDT	E12.1	25-May-95	29			5,600
Aldrin	F15.1	25-May-95	430	E		110
Aldrin	F7.1	24-May-95	110	N		110
Aldrin	H22.1	11-May-95	15		NJ	110
Alpha-BHC	F7.1	24-May-95	11	N		300
Alpha-BHC	LA16.1	12-May-95	180	E/N/		300
Alpha-Chlordane	G7.1	11-May-95	16		NJ	1,500
Alpha-Chlordane	O9.1	13-Jun-95	12	L	NJ	1,500
Alpha-Chlordane	K5.1	12-May-95	7.8	J/N		1,500
Alpha-Chlordane	H10.1	11-May-95	29		NJ	1,500
Alpha-Chlordane	K19.1	12-May-95	4		NJ	1,500
Alpha-Chlordane	J4.1	12-May-95	30	J		1,500
Alpha-Chlordane	J16.1	12-May-95	33		NJ	1,500
Alpha-Chlordane	H18.1	11-May-95	29			1,500
Alpha-Chlordane	P8.1	13-Jun-95	5.4	L	NJ	1,500
Alpha-Chlordane	N8.1	13-Jun-95	3		NJ	1,500
Alpha-Chlordane	N6.1	13-Jun-95	24		NJ	1,500
Alpha-Chlordane	F15.1	25-May-95	940	E		1,500
Alpha-Chlordane	N4.1	13-Jun-95	16	L	NJ	1,500
Alpha-Chlordane	LA8.1	12-May-95	100	P		1,500
Alpha-Chlordane	E4.1	24-May-95	11	J/N/		1,500
Alpha-Chlordane	D15.1	24-May-95	17.9	P		1,500
Alpha-Chlordane	F7.1	24-May-95	92	N		1,500
Alpha-Chlordane	N2.1	13-Jun-95	5		NJ	1,500
Alpha-Chlordane	O11.1	13-Jun-95	4.1		NJ	1,500
Alpha-Chlordane	M3.1	13-Jun-95	4		R	1,500

Table 3-10 (Cont'd)

Chemical	Station Location	Date	Conc (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Alpha-Chlordane	H22.1	11-May-95	28			1,500
Alpha-Chlordane	H14.1	11-May-95	150		NJ	1,500
Alpha-Chlordane	LA4.1	12-May-95	27	J/P		1,500
Beta-BHC	LA16.1	12-May-95	39			1,100
Dieldrin	F7.1	24-May-95	20	J/N		120
Dieldrin	F15.1	25-May-95	2,000	E		120
Dieldrin	H10.1	11-May-95	10	L	NJ	120
Dieldrin	F3.1	23-May-95	16.6	J/P		120
Dieldrin	G19.1	11-May-95	11	L	J	120
Dieldrin	H14.1	11-May-95	39			120
Dieldrin	N6.1	13-Jun-95	260			120
Dieldrin	O11.1	13-Jun-95	6			120
Dieldrin	K19.1	12-May-95	4			120
Dieldrin	N2.1	13-Jun-95	21			120
Dieldrin	O9.1	13-Jun-95	360			120
Dieldrin	M3.1	13-Jun-95	21		NJ	120
Dieldrin	N8.1	13-Jun-95	9		NJ	120
Dieldrin	H22.1	11-May-95	66			120
Dieldrin	P8.1	13-Jun-95	64			120
Dieldrin	J16.1	12-May-95	6		NJ	120
Dieldrin	I22.1	11-May-95	32		NJ	120
Dieldrin	M1.1	08-Jun-95	83	D/J		120
Dieldrin	P12.1	13-Jun-95	6.5	L	NJ	120
Endosulfan I	N2.1	13-Jun-95	6		NJ	34,000
Endosulfan I	F15.1	25-May-95	210	E/N		34,000
Endosulfan I	N4.1	13-Jun-95	18		NJ	34,000
Endosulfan I	F7.1	24-May-95	750	D		34,000
Endosulfan I	LA4.1	12-May-95	25	J/P		34,000
Endosulfan I	F7.1	24-May-95	580	N		34,000
Endosulfan I	F3.1	23-May-95	14.1			34,000
Endosulfan I	N6.1	13-Jun-95	26		NJ	34,000
Endosulfan I	E4.1	24-May-95	53		NJ	34,000
Endosulfan I	H22.1	11-May-95	28		NJ	34,000
Endosulfan I	A5.1	24-May-95	97	PJ/D		34,000
Endosulfan I	P8.1	13-Jun-95	6	L	NJ	34,000
Endosulfan I	B4.1	23-May-95	6.6	J		34,000
Endosulfan I	K5.1	12-May-95	20			34,000
Endosulfan I	O9.1	13-Jun-95	13	L	NJ	34,000
Endosulfan I	H10.1	11-May-95	20		NJ	34,000
Endosulfan I	O11.1	13-Jun-95	5		NJ	34,000

Table 3-10 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Endosulfan I	D11.1	25-May-95	21.3	PJ		34,000
Endosulfan I	G7.1	11-May-95	30		NJ	34,000
Endosulfan I	N8.1	13-Jun-95	3		NJ	34,000
Endosulfan II	D11.1	25-May-95	160	PJ		34,000
Endosulfan II	D15.1	24-May-95	20	J/P		34,000
Endosulfan II	E5.1	23-May-95	110	P		34,000
Endosulfan II	LA4.1	12-May-95	320			34,000
Endosulfan II	LA8.1	12-May-95	160			34,000
Endosulfan II	F15.1	25-May-95	38	N		34,000
Endosulfan II	F11.1	25-May-95	150	N		34,000
Endosulfan II	B4.1	23-May-95	65.4	P		34,000
Endosulfan II	E4.1	24-May-95	210	PJ/D		34,000
Endosulfan II	N6.1	13-Jun-95	83			34,000
Endosulfan II	C4.1	24-May-95	410			34,000
Endosulfan II	N2.1	13-Jun-95	4.6			34,000
Endosulfan II	K19.1	12-May-95	10		NJ	34,000
Endosulfan II	F7.1	24-May-95	1,500	P/D		34,000
Endosulfan II	F7.1	24-May-95	77	N		34,000
Endosulfan II	G11.1	11-May-95	310		NJ	34,000
Endosulfan II	K5.1	12-May-95	27			34,000
Endosulfan II	L15.1	12-May-95	31	PJ		34,000
Endosulfan II	L7.1	12-May-95	5		NJ	34,000
Endosulfan II	G7.1	11-May-95	88		NJ	34,000
Endosulfan II	F3.1	23-May-95	170	PJ		34,000
Endosulfan II	H10.1	11-May-95	68		NJ	34,000
Endosulfan II	LA16.1	12-May-95	10	J/P		34,000
Endosulfan II	J4.1	12-May-95	57	J		34,000
Endosulfan II	A2.1	23-May-95	31.1	P		34,000
Endosulfan II	J16.1	12-May-95	6		NJ	34,000
Endosulfan II	I22.1	11-May-95	52		NJ	34,000
Endosulfan II	H22.1	11-May-95	31		NJ	34,000
Endosulfan II	G3.1	11-May-95	70		NJ	34,000
Endosulfan Sulfate	G11.1	11-May-95	14		N J	34,000
Endosulfan Sulfate	N6.1	13-Jun-95	57		NJ	34,000
Endosulfan Sulfate	F15.1	25-May-95	53			34,000
Endosulfan Sulfate	F7.1	24-May-95	40			34,000
Endrin	N2.1	13-Jun-95	2.2	L	R	200,000

Table 3-10 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Endrin	G7.1	11-May-95	25		NJ	200,000
Endrin	J16.1	12-May-95	13			200,000
Endrin	H14.1	11-May-95	16	L	J	200,000
Endrin	F15.1	25-May-95	68	PJ		200,000
Endrin	F7.1	24-May-95	34	N		200,000
Endrin Aldehyde	F7.1	24-May-95	28	N		200,000
Endrin Aldehyde	L7.1	12-May-95	6		NJ	200,000
Endrin Aldehyde	N2.1	13-Jun-95	3.1	L	NJ	200,000
Endrin Aldehyde	F15.1	25-May-95	370	E/N		200,000
Endrin Ketone	F7.1	24-May-95	33	N		200,000
Endrin Ketone	F15.1	25-May-95	84	N		200,000
Gamma-BHC	N2.1	13-Jun-95	1.2	L	NJ	1,500
Gamma-BHC	LA16.1	12-May-95	67	N		1,500
Gamma-Chlordane	H10.1	11-May-95	12		NJ	1,500
Gamma-Chlordane	J4.1	12-May-95	33	J		1,500
Gamma-Chlordane	D15.1	24-May-95	12.5			1,500
Gamma-Chlordane	LA8.1	12-May-95	110			1,500
Gamma-Chlordane	F15.1	25-May-95	890	E/P		1,500
Gamma-Chlordane	LA16.1	12-May-95	9.3	J/P		1,500
Gamma-Chlordane	J16.1	12-May-95	38			1,500
Gamma-Chlordane	O9.1	13-Jun-95	7.4	L	NJ	1,500
Gamma-Chlordane	O11.1	13-Jun-95	3.6			1,500
Gamma-Chlordane	H14.1	11-May-95	140		J	1,500
Gamma-Chlordane	K19.1	12-May-95	5			1,500
Gamma-Chlordane	N8.1	13-Jun-95	3.1			1,500
Gamma-Chlordane	H22.1	11-May-95	26		NJ	1,500
Gamma-Chlordane	H18.1	11-May-95	22			1,500
Gamma-Chlordane	E5.1	23-May-95	31.9	N		1,500
Gamma-Chlordane	N2.1	13-Jun-95	2			1,500
Gamma-Chlordane	F7.1	24-May-95	17	PJ		1,500
Gamma-Chlordane	N4.1	13-Jun-95	15	L	J	1,500
Heptachlor	M1.1	08-Jun-95	26.5	D/J		420
Heptachlor Epoxide	H14.1	11-May-95	34		NJ	210
Heptachlor Epoxide	F3.1	23-May-95	24.7	PJ		210
Heptachlor Epoxide	F7.1	24-May-95	100	P		210
Heptachlor Epoxide	F11.1	25-May-95	38	N		210
Heptachlor Epoxide	K5.1	12-May-95	36			210
Heptachlor Epoxide	G7.1	11-May-95	59		NJ	210
Heptachlor Epoxide	G11.1	11-May-95	34		NJ	210
Heptachlor Epoxide	O11.1	13-Jun-95	1	L	J	210

Table 3-10 (Cont'd)

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Methoxychlor	F7.1	24-May-95	17	J/N		3,400,000
Methoxychlor	F15.1	25-May-95	130	P		3,400,000
Toxaphene	C1.1	24-May-95	780	J/N		1,700
Toxaphene	C4.1	24-May-95	2,400	PJ		1,700
Toxaphene	F15.1	25-May-95	900	J/N		1,700
Toxaphene	A5.1	24-May-95	2,900	J/P/		1,700

Shading indicates chemical detected at a concentration greater than its PRG.

D - This flag indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract.

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

E - Reported concentration exceeded the instrument calibration.

N - Presumptive evidence for presence of the compound.

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

P - Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

J - Estimated value. Compound was detected at a concentration below the sample quantitation limit.

PJ - This flag indicates that the percent difference between the primary and confirmation columns exceed 50% but is less than 75%.

Table 3-11 Organophosphorus Pesticides Detected in Surface Soil

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Dichlorvos	D7.1	24-May-95	2,700		NJ	6,600
Dichlorvos	D11.1	25-May-95	650			6,600
Disulfoton	E9.1	24-May-95	14	L	NJ	27,000
Disulfoton	D7.1	24-May-95	0			27,000
Disulfoton	D11.1	25-May-95	35			27,000
Disulfoton	C9.1	24-May-95	34			27,000
Disulfoton	A5.1	24-May-95	40			27,000
Ethyl Parathion	F7.1	23-May-95	130	L	NJ	4,100,000
Ethyl Parathion	E5.1	23-May-95	230		NJ	4,100,000
Ethyl Parathion	D7.1	24-May-95	1400		NJ	4,100,000

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

Table 3-12 Carbamate/Urea Pesticides Detected in Surface Soil

Chemical	Station Location	Date	Conc. (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
Carbaryl	D7.1	24-May-95	1,000		NJ	68,000,000
Carbaryl	C9.1	24-May-95	23		NJ	68,000,000

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

Table 3-13 Chemicals Detected in Offsite Samples

Station ID	Samp. Date	Chem. Name	Result (ppb)	Lab. Qual.	Val. Qual.	PRG (ppb)
OF-1	15-Jun-95	4,4'-DDD	14.1	J		7,900
OF-1	15-Jun-95	4,4'-DDE	16.7	J		5,600
OF-1	15-Jun-95	4,4'-DDT	29.3	PJ		5,600
OF-2	15-Jun-95	4,4'-DDE	17			5,600
OF-2	15-Jun-95	4,4'-DDT	11			5,600
OF-2	15-Jun-95	Endrin Aldehyde	3.8		NJ	200,000
OF-2	15-Jun-95	Toxaphene	170	L	J	1,700
OF-3	15-Jun-95	4,4'-DDE	23			5,600
OF-3	15-Jun-95	4,4'-DDT	50	P		5,600
OF-4	15-Jun-95	4,4'-DDE	15.4	J		5,600
OF-5.1	23-Jun-95	4,4'-DDE	64		NJ	5,600
OF-5.1	23-Jun-95	4,4'-DDT	47		NJ	5,600
OF-5.1	23-Jun-95	Beta-Bhc	3		NJ	1,100
OF-5.1	23-Jun-95	Dieldrin	5		NJ	120
OF-5.1	23-Jun-95	Diuron	540			1,400,000
OF-5.1	23-Jun-95	Endosulfan I	25		NJ	34,000
OF-5.1	23-Jun-95	Endosulfan II	82			34,000
OF-5.1	23-Jun-95	Endosulfan Sulfate	12		NJ	34,000
OF-5.1	23-Jun-95	Endrin	2	L	NJ	200,000
OF-5.1	23-Jun-95	Gamma-Chlordane	7			1,500
OF-5.1	23-Jun-95	Toxaphene	500			1,700
OF-6.1	23-Jun-95	4,4'-DDD	2	L	NJ	7,900
OF-6.1	23-Jun-95	4,4'-DDE	24		NJ	5,600
OF-6.1	23-Jun-95	4,4'-DDT	47			5,600
OF-6.1	23-Jun-95	Endrin Aldehyde	3	L	J	200,000
OF-6.1	23-Jun-95	Toxaphene	140	L	J	1,700
OF-7	15-Jun-95	4,4'-DDE	28			5,600
OF-7	15-Jun-95	4,4'-DDT	58.1			5,600
OF-8	15-Jun-95	DIURON	220			1,400,000
OF-9	15-Jun-95	4,4'-DDE	20			5,600
OF-9	15-Jun-95	4,4'-DDT	12			5,600
OF-9	15-Jun-95	Dieldrin	1.9	L	J	120
OF-9	15-Jun-95	Endrin Aldehyde	4.5		NJ	200,000
OF-9	15-Jun-95	Toxaphene	180	L	J	1,700

J - Estimated value. Compound was detected at a concentration below the sample quantitation limit.

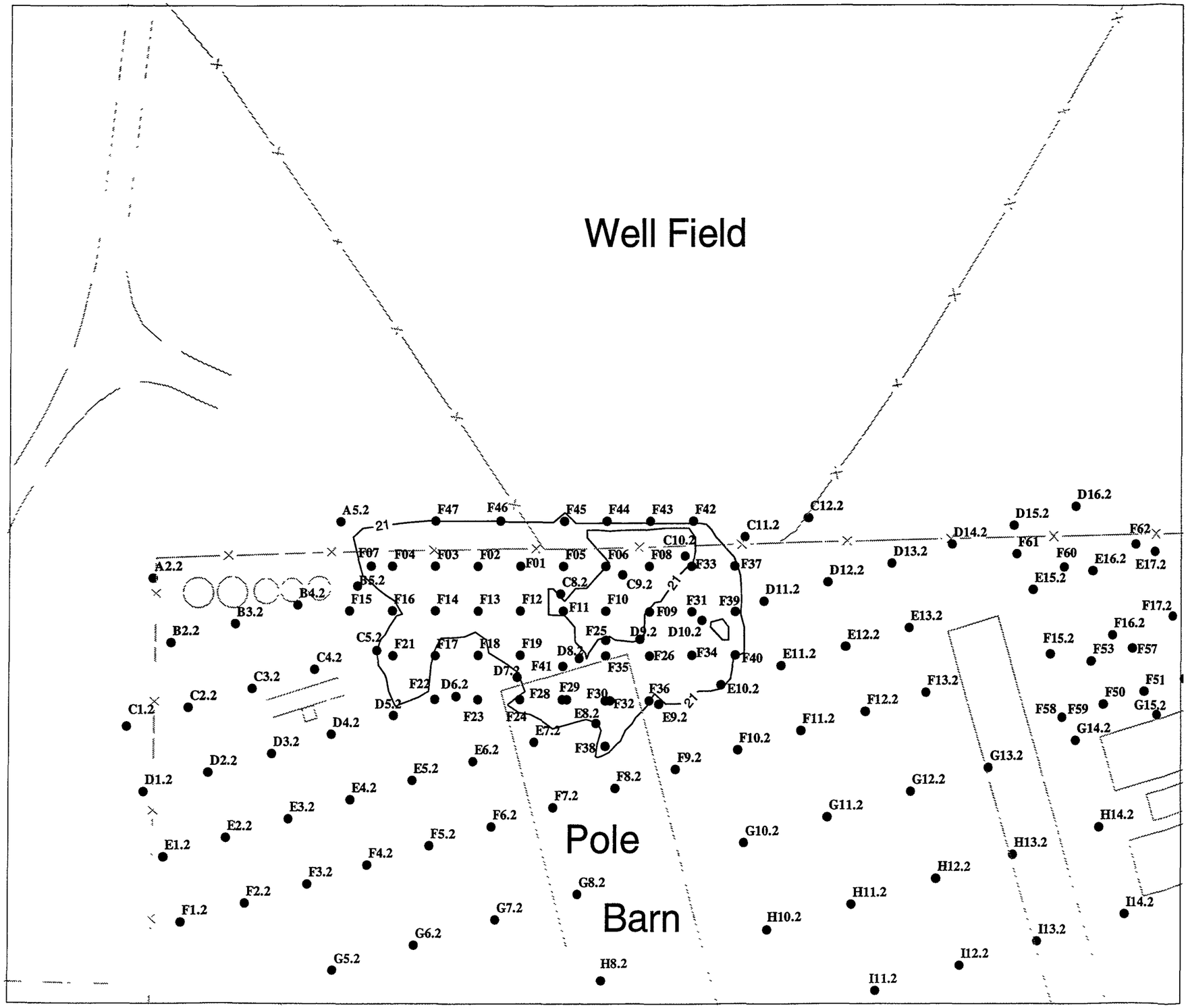
PJ - This flag indicates that the percent difference between the primary and confirmation columns exceed 50% but is less than 75%.

NJ - Presumptive evidence for presence of the compound at an estimated quantity.

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

P - Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

J - Estimated value. Compound was detected at a concentration below the sample quantitation limit.



EXPLANATION

- ● Sample Location
- "F01" Sample Location ID
- 21 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of EDB in Soil
(1-3 Feet Below Ground Surface)

Job Number	Drawing No.	Rev.
20376	FIGURE 3-1	A

Table 3-14 Concentration of EDB in Soil Between 1 and 3 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
A2.2	5/25/95	5.4	U	J
A5.2	5/30/95	5.3	U	J
B2.2	5/25/95	4.8	U	J
B3.2	6/1/95	4.6	U	J
B4.2	5/30/95	4.6	U	J
B5.2	6/1/95	5.1	U	J
BG1.2	7/12/95	5.3	U	
BG2.2	7/12/95	5	U	
BG3.2	7/12/95	6.1	U	
BS1.2	6/14/95	4.4	U	J
BS2.2	6/14/95	4.7	U	J
BS3.2	6/14/95	4.7	U	J
BS6.2	6/14/95	4.2	U	J
C1.2	5/25/95	4.8	U	J
C10.2	6/2/95	5.1	U	
C11.2	6/2/95	4.9	U	
C12.2	6/6/95	4.8	U	
C2.2	5/25/95	4.9	U	J
C3.2	6/1/95	5.5	U	J
C4.2	5/30/95	5.2	U	J
C5.2	6/1/95	5.5	U	J
C8.2	5/31/95	8.6		J
C9.2	5/31/95	5.5	U	J
D1.2	5/25/95	5.3	U	J
D10.2	6/2/95	5.1	U	
D11.2	6/8/95	5.2	U	
D12.2	6/2/95	4.5	U	
D13.2	6/2/95	4.9	U	
D14.2	6/7/95	4.8	U	
D15.2	6/6/95	4.6	U	
D16.2	6/8/95	5.3	U	
D2.2	5/25/95	5.3	U	J
D3.2	5/30/95	5.2	U	J
D4.2	6/1/95	5.1	U	J
D5.2	6/1/95	4.5	U	J
D6.2	6/1/95	4.4	U	
D7.2	5/30/95	5.1	U	
D8.2	5/31/95	5	U	J
D9.2	5/31/95	5.4	U	J
E1.2	5/31/95	5	U	J
E10.2	6/2/95	5	U	
E11.2	6/2/95	5.1	U	
E12.2	5/30/95	4.8	U	J
E13.2	6/2/95	5	U	
E15.2	6/6/95	4.3	U	

Table 3-14 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
E16.2	5/30/95	4.8	U	J
E17.2	6/7/95	5.1	U	
E18.2	6/7/95	5	U	
E19.2	6/7/95	4.8	U	
E2.2	6/1/95	5.1	U	J
E3.2	6/1/95	11		J
E4.2	5/31/95	5.2	U	J
E5.2	5/31/95	5	U	J
E6.2	6/2/95	5.3	U	
E7.2	6/2/95	5	U	
E8.2	5/31/95	4.8	U	J
E9.2	6/1/95	4.7	U	
F01-S01	3/4/93	37		
F02-S01	3/5/93	72		
F03-S01	3/6/93	85		
F04-S01	3/7/93	88		
F05-S01	3/7/93	4300		
F06-S01	3/7/93	5	U	
F07-S02	3/8/93	43		
F08-S01	3/8/93	5	U	
F09-S01	3/9/93	14		
F1.2	6/5/95	5.7	U	
F10-S01	3/9/93	5	U	
F10.2	6/6/95	4.7	U	
F11-S01	3/9/93	5	U	
F11.2	5/30/95	4.7	U	J
F12-S01	3/10/93	51		
F12.2	6/5/95	5	U	
F13-S01	3/10/93	30		
F13.2	6/5/95	5.1	U	
F14-S01	3/10/93	38		
F15-S02	3/11/93	10	U	
F15.2	5/30/95	4.5	U	J
F16-S02	3/11/93	5	U	
F16.2	6/6/95	4.1	U	
F17-S01	3/12/93	10		
F17.2	6/6/95	4.6	U	
F18-S02	3/12/93	10	U	
F18.2	6/6/95	4.3	U	
F19-S01	3/12/93	54		
F19.2	6/8/95	5.1	U	
F2.2	6/5/95	5.1	U	
F20.2	6/6/95	4.8	U	
F21-S01	3/13/93	120		
F21.2	6/6/95	4.3	U	

Table 3-14 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F22-S01	3/15/93	5	U	
F23-S01	3/15/93	5	U	
F24-S01	3/16/93	27		
F25-S01	3/16/93	26		
F26-S02	3/16/93	62		
F27-S02	3/17/93	5	U	
F28-S02	4/29/93	40		
F29-S02	4/29/93	73		
F3.2	5/31/95	5.3	U	J
F30-S01	4/29/93	99		
F31-S02	4/30/93	81		
F32-S01	4/30/93	91		
F33-S01	5/3/93	25	U	
F34-S01	5/3/93	1,500		NJ
F35-S01	5/3/93	110		NJ
F36-S01	5/4/93	25	U	
F37-S01	5/4/93	25	U	
F38-S01	5/4/93	25	U	
F39-S01	5/5/93	25	U	
F4.2	6/5/95	5.5	U	
F40-S01	5/5/93	25	U	
F41-S01	5/5/93	890		
F42-S02	5/6/93	25	U	
F43-S01	5/6/93	25	U	
F44-S01	5/6/93	25	U	
F45-S02	5/7/93	25	U	
F46-S01	5/7/93	25	U	
F47-S01	5/10/93	25	U	
F48-S01	5/10/93	25	U	
F49-S01	5/10/93	25	U	
F5.2	6/5/95	4.8	U	
F50-S01	5/11/93	25	U	
F51-S01	5/11/93	25	U	
F52-S01	5/11/93	25	U	
F53-S01	5/11/93	25	U	
F54-S01	5/12/93	25	U	
F55-S01	5/12/93	25	U	
F56-S01	5/12/93	25	U	
F57-S01	5/12/93	25	U	
F58-S01	5/13/93	25	U	
F59-S01	5/13/93	25	U	
F6.2	6/5/95	4.2	U	
F60-S01	5/13/93	25	U	
F61-S01	5/14/93	25	U	
F62-S01	5/14/93	25	U	

Table 3-14 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F65-S01	5/14/93	25	U	
F7.2	5/31/95	4.9	U	J
F8.2	6/5/95	4.5	U	
F9.2	6/6/95	5.3	U	
G10.2	5/24/95	4.6	U	
G11.2	5/15/95	4.9	U	
G12.2	6/13/95	4.7	U	J
G13.2	5/24/95	5.6	U	
G14.2	5/19/95	5.3	U	
G15.2	6/8/95	4.9	U	
G16.2	5/19/95	5	U	
G17.2	5/15/95	4.6	U	
G18.2	5/19/95	5	U	
G19.2	5/19/95	5.1	U	
G20.2	5/19/95	5.1	U	
G21.2	5/19/95	5	U	
G3.2	5/15/95	5.6	U	
G5.2	5/24/95	5.3	U	
G6.2	5/24/95	5.1	U	
G7.2	5/15/95	4.4	U	
G8.2	5/17/95	4.8	U	
H10.2	5/24/95	4.7	U	
H11.2	5/24/95	4.7	U	
H12.2	6/13/95	4.5	U	J
H13.2	5/24/95	5	U	
H14.2	5/19/95	4.8	U	
H15.2	5/19/95	5.1	U	
H16.2	5/19/95	4.8	U	
H17.2	5/22/95	5.6	U	
H18.2	5/22/95	4.7	U	
H19.2	5/22/95	4.7	U	
H20.2	5/15/95	4.7	U	
H21.2	5/19/95	5.1	U	
H22.2	5/19/95	5.1	U	
H3.2	5/24/95	4.8	U	J
H5.2	6/20/95	4.8	U	
H6.2	5/24/95	5.4	U	
H7.2	5/24/95	5.1	U	
H8.2	5/24/95	5.1	U	
I10.2	6/7/95	5.4	U	
I11.2	5/24/95	4.5	U	
I12.2	5/24/95	4.7	U	
I13.2	5/24/95	5.3	U	
I14.2	5/15/95	4.9	U	
I15.2	5/23/95	4.7	U	

Table 3-14 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
I16.2	5/22/95	4.5	U	
I17.2	5/22/95	4.4	U	
I18.2	5/15/95	4.7	U	
I19.2	5/22/95	5.2	U	
I20.2	5/22/95	4.7	U	
I21.2	6/8/95	5	U	
I22.2	5/22/95	4.3	U	
I3.2	5/24/95	5	U	
I5.2	6/20/95	5.4	U	J
I6.2	6/20/95	5.1	U	J
I7.2	6/20/95	5.3	U	J
I8.2	6/20/95	4.5	U	J
J10.2	6/20/95	4.8	U	
J11.2	6/21/95	5.5	U	
J12.2	5/16/95	4.6	U	
J13.2	5/23/95	4.9	U	
J14.2	5/23/95	4.8	U	
J15.2	5/23/95	4.7	U	
J16.2	5/15/95	5.1	U	
J17.2	5/22/95	4.7	U	
J18.2	5/19/95	4.9	U	
J19.2	5/19/95	4.8	U	
J2.2	5/17/95	5.1	U	
J20.2	5/15/95	4.8	U	
J21.2	6/8/95	5.1	U	
J3.2	5/17/95	5	U	
J4.2	5/16/95	4.9	U	
J5.2	6/7/95	5.1	U	
J6.2	5/24/95	5.2	U	J
J7.2	5/24/95	4.7	U	J
J8.2	6/20/95	5.1	U	J
J9.2	6/20/95	4.4	U	
K1.2	5/17/95	4.7	U	
K11.2	6/21/95	5.2	U	
K12.2	6/7/95	5.3	U	
K13.2	6/7/95	4.6	U	
K14.2	5/23/95	4.7	U	
K15.2	5/16/95	4.7	U	
K16.2	5/23/95	4.5	U	
K18.2	5/23/95	5.1	U	
K19.2	6/21/95	4.9	U	
K2.2	5/17/95	5.1	U	
K20.2	5/15/95	4.9	U	
K21.2	6/8/95	4.6	U	
K3.2	5/17/95	5.1	U	

Table 3-14 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
K4.2	5/17/95	4.9	U	
K5.2	5/16/95	5	U	
K6.2	5/17/95	4.9	U	
K7.2	5/24/95	4.7	U	
K8.2	6/20/95	4.6	U	J
K9.2	6/20/95	5	U	
L1.2	5/17/95	4.8	U	
L10.2	6/21/95	5.3	U	
L11.2	6/21/95	4.9	U	
L12.2	5/23/95	4.8	U	
L13.2	5/23/95	4.9	U	
L14.2	5/23/95	4.4	U	
L15.2	6/21/95	4.9	U	
L16.2	6/21/95	4.9	U	
L17.2	6/21/95	4.4	U	
L18.2	6/21/95	4.9	U	
L19.2	6/21/95	4.7	U	
L2.2	5/17/95	5.4	U	
L20.2	6/21/95	4.2	U	
L21.2	6/8/95	5.4	U	
L3.2	5/16/95	4.8	U	
L4.2	5/17/95	5.3	U	
L5.2	5/17/95	5.1	U	
L6.2	5/17/95	4.8	U	
L7.2	5/16/95	4.7	U	
L8.2	6/20/95	4.8	U	
L9.2	6/20/95	4.4	U	
LA10.2	5/18/95	5	U	
LA11.2	5/18/95	5.3	U	
LA12.2	5/16/95	5.1	U	
LA13.2	5/18/95	5.1	U	
LA14.2	5/18/95	4.7	U	
LA15.2	5/18/95	5.5	U	
LA16.2	5/16/95	4.9	U	
LA17.2	5/18/95	4.9	U	
LA18.2	5/18/95	4.8	U	
LA19.2	6/7/95	4.9	U	
LA20.2	6/7/95	5.7	U	
LA21.2	6/8/95	4.8	U	
LA3.2	5/18/95	5.6	U	
LA4.2	5/16/95	5.2	U	
LA5.2	5/18/95	5.4	U	
LA6.2	5/17/95	5.3	U	
LA7.2	5/17/95	5.6	U	

Table 3-14 (Cont'd)

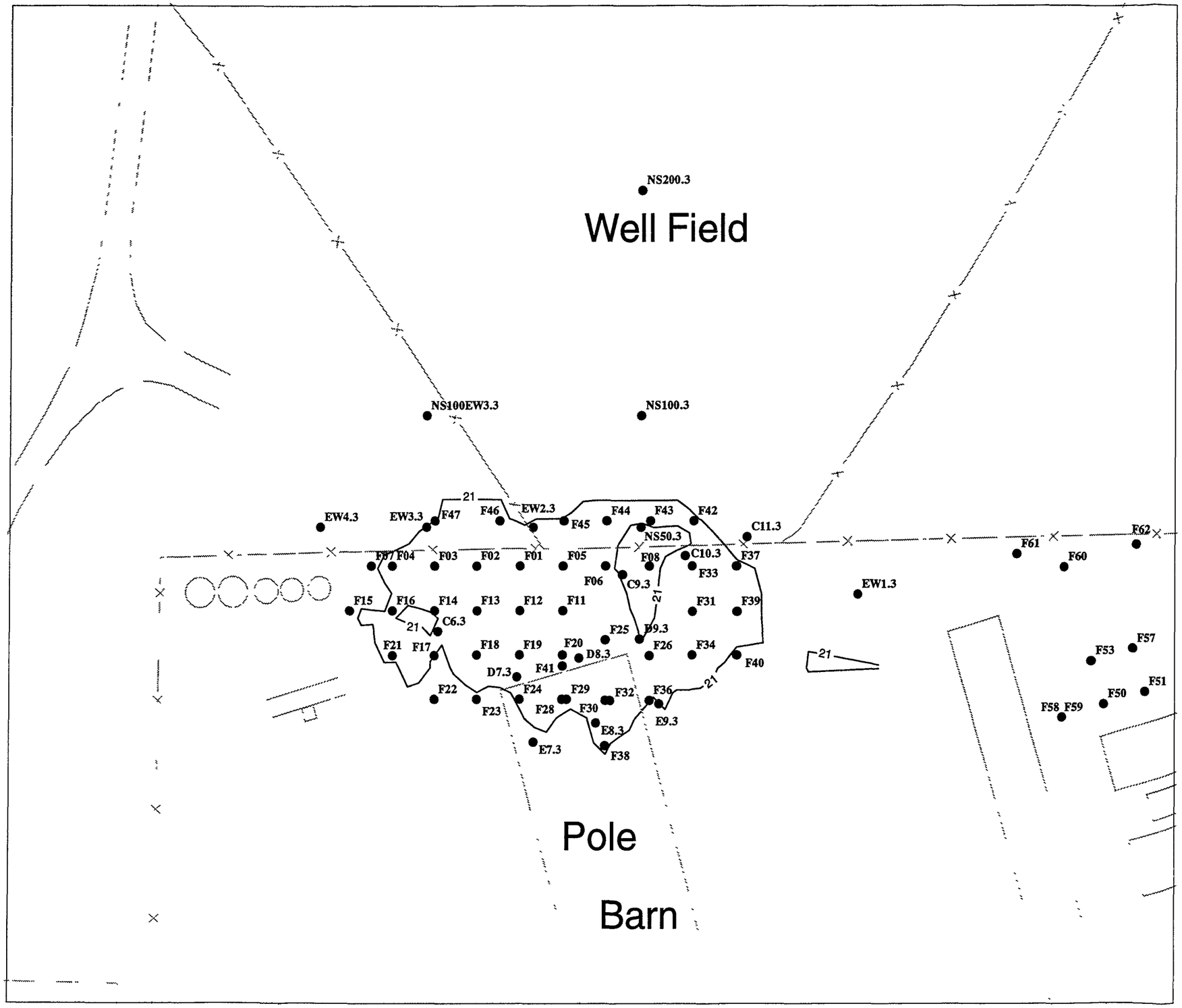
Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
LA8.2	5/16/95	4.8	U	
LA9.2	5/18/95	5.1	U	
M1.2	6/8/95	5.3	U	
M3.2	6/9/95	4.8	U	
N2.2	6/9/95	4.4	U	J
N4.2	6/9/95	4.7	U	J
N6.2	6/9/95	4.7	U	J
N8.2	6/9/95	4.7	U	J
O1.2	6/8/95	5.3	U	
O11.2	6/14/95	4.3	U	J
O9.2	6/13/95	4.7	U	J
P12.2	6/9/95	4.3	U	J
P2.2	6/8/95	6	U	
P8.2	6/9/95	4.2	U	J

*EDB PRG is 21 ppb

U – Compound was analyzed for but not detected.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- ● Sample Location
- "F01" Sample Location ID
- 21 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of EDB in Soil
(7-9 Feet Below Ground Surface)

Job Number	Drawing No	Rev
20376	FIGURE 3-2	A

Table 3-15 Concentration of EDB in Soil Between 7 and 9 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.3	7/12/95	5.4	U	
BG2.3	7/12/95	5.5	U	
BG3.3	7/12/95	5.1	U	
C10.3	7/11/95	5.4	U	
C11.3	7/10/95	5	U	
C6.3	7/11/95	5.9	U	
C9.3	7/11/95	5.1	U	
D7.3	7/12/95	5.5	U	
D8.3	7/12/95	5.7	U	
D9.3	7/10/95	5	U	
E7.3	7/11/95	5.3	U	
E8.3	7/11/95	5.7	U	
E9.3	7/11/95	6.3	U	
EW1.3	7/12/95	5.2	U	
EW2.3	7/12/95	5.9	U	
EW3.3	7/12/95	5.8	U	
EW4.3	7/12/95	5.2	U	
EW4.3	7/12/95	4	U	
F01-S09	3/4/93	84		
F02-S09	3/5/93	250		
F03-S08	3/6/93	93		
F04-S08	3/7/93	68		
F05-S09	3/7/93	23,000		
F06-S08	3/7/93	33		
F07-S08	3/8/93	5	U	
F08-S08	3/8/93	5	U	
F11-S08	3/9/93	39		
F12-S08	3/10/93	85		
F13-S08	3/10/93	89		
F14-S08	3/10/93	20	U	
F15-S08	3/11/93	10	U	
F16-S08	3/11/93	5	U	
F17-S08	3/12/93	10	U	
F18-S08	3/12/93	110		
F19-S09	3/12/93	53		
F20-S08	3/12/93	1,300		
F21-S08	3/13/93	130		
F22-S08	3/15/93	5	U	
F23-S08	3/15/93	5	U	
F24-S08	3/16/93	35		
F25-S08	3/16/93	210		

Table 3-15 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F26-S08	3/16/93	65		
F28-S08	4/29/93	86		
F29-S08	4/29/93	25	U	
F30-S08	4/29/93	270		
F31-S08	4/30/93	71		
F32-S08	4/30/93	270		
F33-S08	5/3/93	42		N
F34-S08	5/3/93	280		NJ
F36-S08	5/4/93	25	U	
F37-S08	5/4/93	25	U	
F38-S08		25	U	
F39-S08	5/5/93	25	U	
F40-S08	5/5/93	25	U	
F41-S08	5/5/93	310		
F42-S08	5/6/93	25	U	
F43-S08	5/6/93	25	U	
F44-S08	5/6/93	25	U	
F45-S08	5/7/93	25	U	
F46-S08	5/7/93	25	U	
F47-S08	5/10/93	25	U	
F48-S08	5/10/93	25	U	
F49-S08	5/10/93	25	U	
F50-S08	5/11/93	25	U	
F51-S08	5/11/93	25	U	
F52-S08	5/11/93	25	U	
F53-S08	5/11/93	25	U	
F54-S08	5/12/93	25	U	
F55-S08	5/12/93	25	U	
F56-S08	5/12/93	25	U	
F57-S08	5/12/93	25	U	
F58-S08	5/13/93	25	U	
F59-S08	5/13/93	25	U	
F60-S08	5/13/93	25	U	
F61-S08	5/14/93	25	U	
F62-S08	5/14/93	25	U	
NS100.3	7/11/95	4.3	U	
NS100EW3.3	7/12/95	5.5	U	
NS2.3	7/12/95	5.6	U	
NS200.3	7/10/95	5.1	U	
NS50.3	7/11/95	4.6	U	

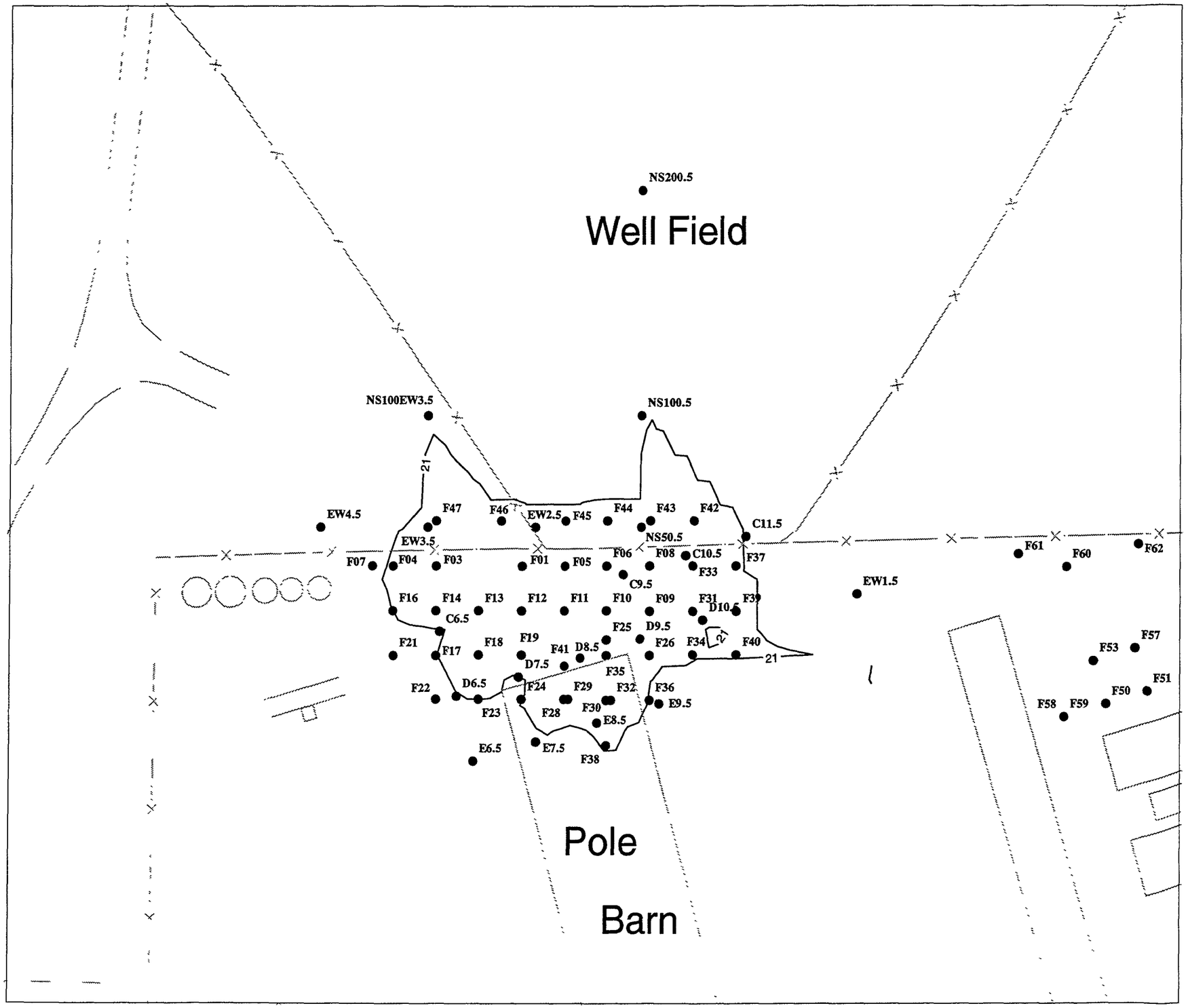
*EDB PRG is 21 ppb

U – Compound was analyzed for but not detected.

N – Presumptive evidence for presence of the compound.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 21 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of EDB in Soil
(15-20 Feet Below Ground Surface)

Job Number	Drawing No.	Rev.
20376	FIGURE 3-3	A

Table 3-16 Concentration of EDB in Soil Between 15 and 20 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.5	7/12/95	4.8	U	
BG2.5	7/12/95	4.7	U	
BG3.5	7/12/95	5.4	U	
C10.5	7/11/95	6.9	N	
C11.5	7/10/95	5	U	
C6.5	7/11/95	5	U	
C9.5	7/11/95	6.2	P	
D10.5	7/17/95	5.7	U	
D6.5	7/11/95	5.7	U	
D7.5	7/12/95	4.8	U	
D8.5	7/12/95	5	U	
D9.5	7/10/95	4.6	U	
E6.5	7/11/95	4.8	U	
E7.5	7/11/95	5	U	
E8.5	7/11/95	5.5	U	
E9.5	7/11/95	6	U	
EW1.5	7/12/95	2.4	J	
EW2.5	7/12/95	5.2	U	
EW3.5	7/12/95	26		
EW4.5	7/12/95	4.9	U	
F01-S19	3/5/93	450		
F02-S15	3/6/93	200		
F03-S17	3/6/93	3,500		
F04-S18	3/7/93	40		
F05-S18	3/7/93	15,000		
F06-S20	3/7/93	40		
F07-S18	3/8/93	15		
F08-S20	3/8/93	170		
F09-S18	3/9/93	97		
F10-S18	3/9/93	96		
F11-S18	3/10/93	430		
F12-S18	3/10/93	120		
F13-S18	3/10/93	120		
F14-S20	3/10/93	140		
F16-S18	3/11/93	16		
F17-S18	3/12/93	10	U	
F18-S18	3/12/93	160		
F19-S18	3/12/93	80		
F20-S16	3/12/93	230		
F21-S18	3/13/93	10	U	
F22-S18	3/15/93	5	U	
F23-S18	3/15/93	5	U	
F24-S18	3/16/93	22		
F25-S18	3/16/93	140		
F26-S18	3/16/93	25	U	

Table 3-16 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F28-S18	4/29/93	110		
F29-S18	4/29/93	94		
F30-S18	4/29/93	160		
F31-S18	4/30/93	180		
F32-S18	4/30/93	260		
F33-S18	5/3/93	920		NJ
F34-S18	5/3/93	25	U	
F35-S18	5/3/93	190		NJ
F36-S18	5/4/93	25	U	
F37-S18	5/4/93	25	U	
F38-S18	5/4/93	88		
F39-S18	5/5/93	25	U	
F40-S18	5/5/93	25	U	
F41-S19	5/5/93	170		
F42-S18	5/6/93	690		
F43-S18	5/6/93	25	U	
F44-S18	5/6/93	25	U	
F45-S18	5/7/93	25	U	
F46-S18	5/7/93	25	U	
F47-S19	5/10/93	130		
F48-S18	5/10/93	25	U	
F49-S18	5/10/93	25	U	
F50-S18	5/11/93	25	U	
F51-S20	5/11/93	25	U	
F52-S18	5/11/93	25	U	
F53-S18	5/11/93	25	U	
F54-S18	5/12/93	25	U	
F55-S18	5/12/93	25	U	
F56-S18	5/12/93	25	U	
F57-S20	5/12/93	25	U	
F58-S18	5/13/93	25	U	
F59-S18	5/13/93	25	U	
F60-S18	5/13/93	25	U	
F61-S18	5/14/93	25	U	
F62-S18	5/14/93	25	U	

Table 3-16 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
NS100.5	7/11/95	5.8	U	
NS100EW3.5	7/12/95	4.9	U	
NS2.5	7/12/95	6.3	U	
NS200.5	7/10/95	4.8	U	
NS50.5	7/11/95	49		

*EDB PRG is 21 ppb

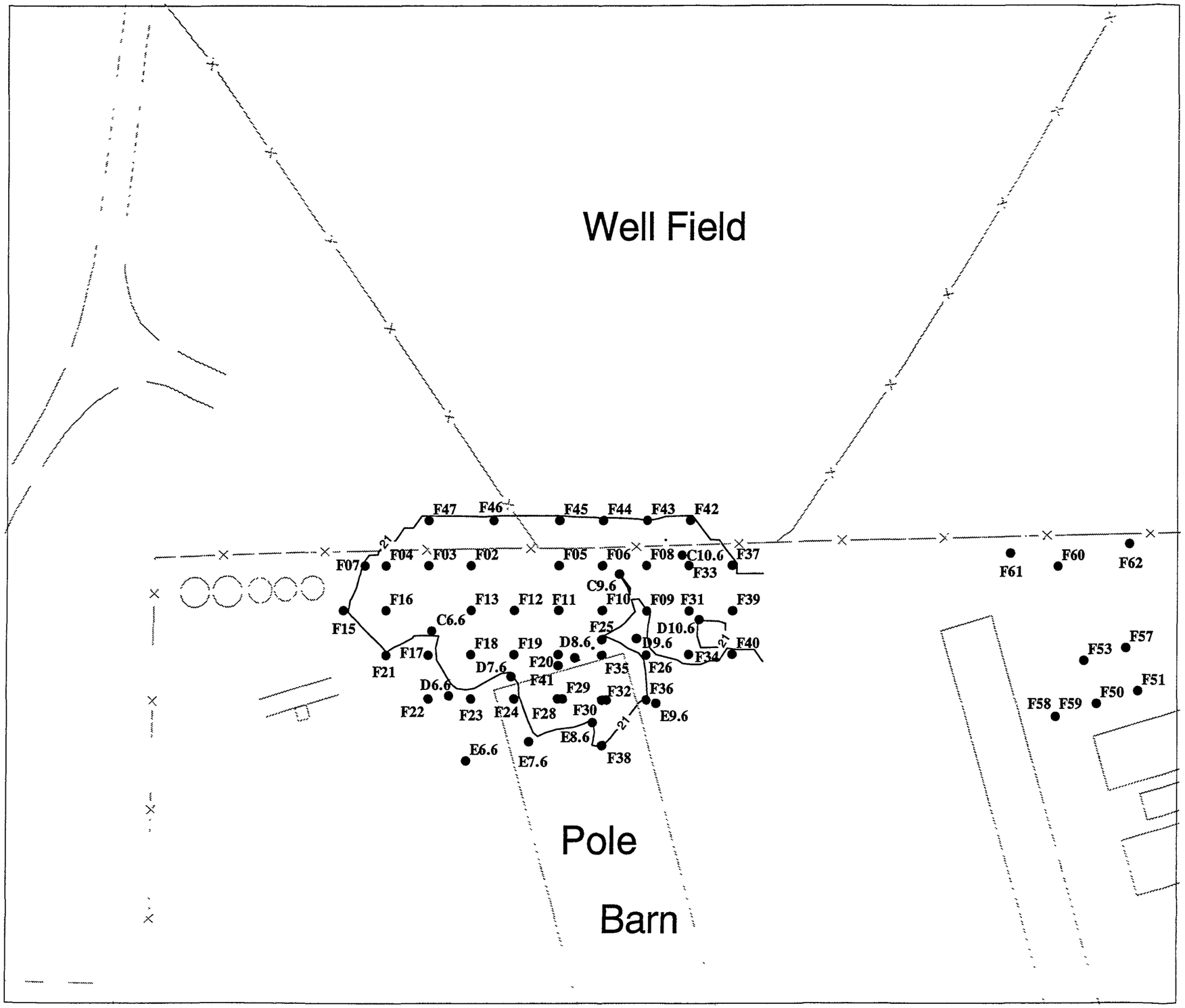
U – Compound was analyzed for but not detected.

N – Presumptive evidence for the presence of the compound.

P – Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- ● Sample Location
- "F01" Sample Location ID
- 21 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of EDB in Soil
(23-30 Feet Below Ground Surface)

Job Number	Drawing No	Rev.
20376	FIGURE 3-4	A

Table 3-17 Concentration of EDB in Soil Between 23 and 30 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.6	7/12/95	5.7	U	
BG2.6	7/12/95	4.9	U	
BG3.6	7/12/95	5.3	U	
C10.6	7/11/95	5.3		
C6.6	7/11/95	5.6	U	
C9.6	7/11/95	21	P	
D10.6	7/17/95	5.2	U	
D6.6	7/11/95	4.3	U	
D7.6	7/12/95	4.3	U	
D8.6	7/12/95	5.4	U	
D9.6	7/10/95	4.9	U	
E6.6	7/11/95	4.9	U	
E7.6	7/11/95	4	U	
E8.6	7/11/95	5.4	U	
E9.6	7/11/95	5.3	U	
F02-S23	3/6/93	100		
F03-S24	3/6/93	8,000		
F04-S24	3/7/93	60		
F05-S26	3/7/93	27,000		
F06-S28	3/7/93	130		
F07-S30	3/8/93	27		
F08-S29	3/8/93	200		
F09-S24	3/9/93	14		
F10-S24	3/9/93	42		
F11-S24	3/10/93	520		
F12-S24	3/10/93	240		
F13-S24	3/10/93	240		
F15-S24	3/11/93	10	U	
F16-S24	3/11/93	150		
F17-S24	3/12/93	10	U	
F18-S24	3/12/93	90		
F19-S24	3/12/93	85		
F20-S24	3/12/93	260		
F21-S26	3/13/93	10	U	
F22-S24	3/15/93	5	U	
F23-S24	3/15/93	5	U	
F24-S26	3/16/93	8		
F25-S26	3/16/93	19		
F26-S26	3/16/93	15		
F28-S26	4/29/93	110		
F29-S26	4/29/93	140		
F30-S26	4/30/93	160		
F31-S26	4/30/93	87		
F32-S29	4/30/93	145		
F33-S26	5/3/93	24,500		NJ

Table 3-17 (Cont'd)

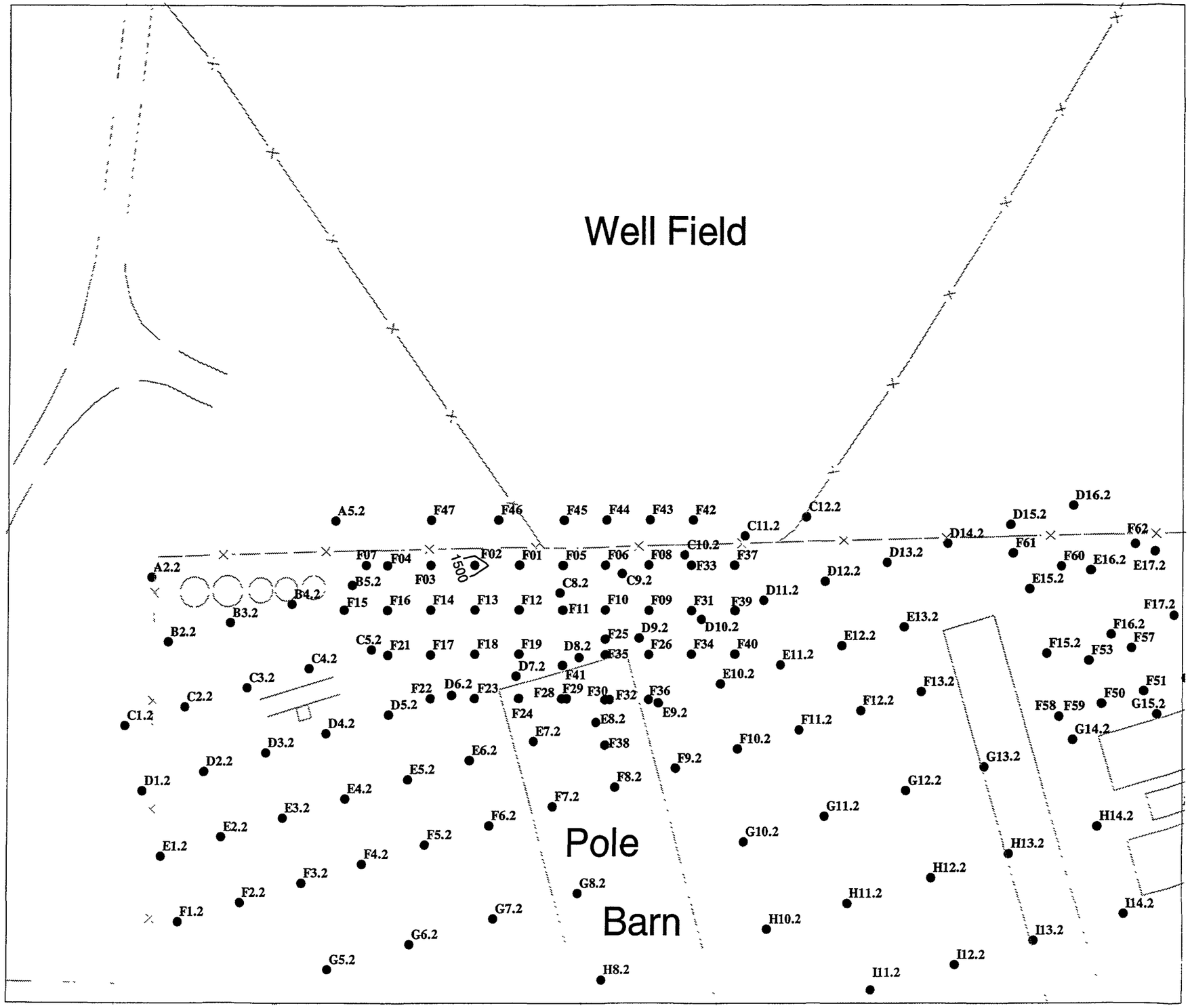
Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F34-S26	5/3/93	25	U	
F35-S26	5/3/93	46		NJ
F36-S26	5/4/93	25	U	
F37-S26	5/4/93	25	U	
F38-S26	5/4/93	25	U	
F39-S26	5/5/93	25	U	
F40-S26	5/5/93	25	U	
F41-S26	5/5/93	90		
F42-S26	5/6/93	1,100		
F43-S26	5/6/93	25	U	
F44-S26	5/6/93	108		
F45-S26	5/7/93	270		
F46-S26	5/7/93	140		
F47-S26	5/10/93	1,200		
F48-S26	5/10/93	25	U	
F49-S26	5/10/93	25	U	
F50-S26	5/11/93	25	U	
F51-S26	5/11/93	25	U	
F52-S26	5/11/93	25	U	
F53-S26	5/11/93	25	U	
F54-S26	5/12/93	25	U	
F55-S26	5/12/93	25	U	
F56-S26	5/12/93	25	U	
F57-S26	5/12/93	25	U	
F58-S26	5/13/93	25	U	
F59-S26	5/13/93	25	U	
F60-S26	5/13/93	25	U	
F61-S26	5/14/93	25	U	
F62-S26	5/14/93	25	U	
NS2.6	7/12/95	5.2	U	

*EDB PRG is 21 ppb

U – Compound was analyzed for but not detected.

P – Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1500 PRG Concentration Isopleth (ug/kg)

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FRONTIER FERTILIZER PROJECT

Extent of DCP in Soil
(1-3 Feet Below Ground Surface)

Job Number	Drawing No.	Rev.
20376	FIGURE 3-5	A

Table 3-18 Concentration of DCP in Soil Between 1 and 3 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
A2.2	5/25/95	5.4	U	J
A5.2	5/30/95	5.3	U	J
B2.2	5/25/95	4.8	U	J
B3.2	6/1/95	5.8		J
B4.2	5/30/95	49		J
B5.2	6/1/95	660	E	J
BG1.2	7/12/95	5.3	U	
BG2.2	7/12/95	5	U	
BG3.2	7/12/95	6.1	U	
BS1.2	6/14/95	4.4	U	J
BS2.2	6/14/95	4.7	U	J
BS3.2	6/14/95	4.7	U	J
BS6.2	6/14/95	4.2	U	J
C1.2	5/25/95	4.8	U	J
C10.2	6/2/95	5.1	U	
C11.2	6/2/95	243	E/JS	
C12.2	6/6/95	4.8	U	
C2.2	5/25/95	4.9	U	J
C3.2	6/1/95	5.5	U	J
C4.2	5/30/95	5.2	U	J
C5.2	6/1/95	13		J
C8.2	5/31/95	5.1	U	J
C9.2	5/31/95	100		J
D1.2	5/25/95	5.3	U	J
D10.2	6/2/95	5.1	U	
D11.2	6/8/95	5.2	U	
D12.2	6/2/95	4.5	U	
D13.2	6/2/95	4.9	U	
D14.2	6/7/95	4.8	U	
D15.2	6/6/95	4.6	U	
D16.2	6/8/95	5.3	U	
D2.2	5/25/95	5.3	U	J
D3.2	5/30/95	5.2	U	J
D4.2	6/1/95	5.1	U	J
D5.2	6/1/95	4.5	U	J
D6.2	6/1/95	4.4	U	
D7.2	5/30/95	54	L	
D8.2	5/31/95	37		J
D9.2	5/31/95	130	D	J
E1.2	5/31/95	5	U	J
E10.2	6/2/95	5	U	
E11.2	6/2/95	4	J/JS	
E12.2	5/30/95	4.8	U	J
E13.2	6/2/95	5	U	
E15.2	6/6/95	4.3	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
E16.2	5/30/95	4.8	U	J
E17.2	6/7/95	5.1	U	
E18.2	6/7/95	5	U	
E19.2	6/7/95	4.8	U	
E2.2	6/1/95	5.1	U	J
E3.2	6/1/95	4.9	U	J
E4.2	5/31/95	5.2	U	J
E5.2	5/31/95	5	U	J
E6.2	6/2/95	5.3	U	
E7.2	6/2/95	5	U	
E8.2	5/31/95	4.8	U	J
E9.2	6/1/95	4.7	U	
F01-S01	3/4/93	640		
F02-S01	3/5/93	1,900		
F03-S01	3/6/93	860		
F04-S01	3/7/93	700		
F05-S01	3/7/93	310		
F06-S01	3/7/93	96		
F07-S02	3/8/93	730		
F08-S01	3/8/93	14		
F09-S01	3/9/93	63		
F1.2	6/5/95	5.7	U	
F10-S01	3/9/93	5	U	
F10.2	6/6/95	4.7	U	
F11-S01	3/9/93	70		
F11.2	5/30/95	4.7	U	J
F12-S01	3/10/93	9		
F12.2	6/5/95	5	U	
F13-S01	3/10/93	43		
F13.2	6/5/95	5.1	U	
F14-S01	3/10/93	630		
F15-S02	3/11/93	65		
F15.2	5/30/95	4.5	U	J
F16-S02	3/11/93	16		
F16.2	6/6/95	4.1	U	
F17-S01	3/12/93	130		
F17.2	6/6/95	4.6	U	
F18-S02	3/12/93	160		
F18.2	6/6/95	4.3	U	
F19-S01	3/12/93	290		
F19.2	6/8/95	5.1	U	
F2.2	6/5/95	5.1	U	
F20.2	6/6/95	4.8	U	
F21-S01	3/13/93	27		
F21.2	6/6/95	4.3	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F22-S01	3/15/93	5	U	
F23-S01	3/15/93	5	U	
F24-S01	3/16/93	35		
F25-S01	3/16/93	160		
F26-S02	3/16/93	180		
F27-S02	3/17/93	5	U	
F28-S02	4/29/93	150		
F29-S02	4/29/93	250		
F3.2	5/31/95	5.3	U	J
F30-S01	4/29/93	112		
F31-S02	4/30/93	110		
F32-S01	4/30/93	120		
F33-S01	5/3/93	41		NJ
F34-S01	5/3/93	120		NJ
F35-S01	5/3/93	235		NJ
F36-S01	5/4/93	25	U	
F37-S01	5/4/93	25	U	
F38-S01	5/4/93	25	U	
F39-S01	5/5/93	25	U	
F4.2	6/5/95	5.5	U	
F40-S01	5/5/93	25	U	
F41-S01	5/5/93	400		
F42-S02	5/6/93	25	U	
F43-S01	5/6/93	25	U	
F44-S01	5/6/93	25	U	
F45-S02	5/7/93	25	U	
F46-S01	5/7/93	25	U	
F47-S01	5/10/93	25	U	
F48-S01	5/10/93	25	U	
F49-S01	5/10/93	25	U	
F5.2	6/5/95	4.8	U	
F50-S01	5/11/93	25	U	
F51-S01	5/11/93	25	U	
F52-S01	5/11/93	25	U	
F53-S01	5/11/93	25	U	
F54-S01	5/12/93	25	U	
F55-S01	5/12/93	25	U	
F56-S01	5/12/93	25	U	
F57-S01	5/12/93	25	U	
F58-S01	5/13/93	25	U	
F59-S01	5/13/93	25	U	
F6.2	6/5/95	4.2	U	
F60-S01	5/13/93	25	U	
F61-S01	5/14/93	25	U	
F62-S01	5/14/93	25	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F65-S01	5/14/93	25	U	
F65-S01	5/14/93	25	U	
F7.2	5/31/95	4.9	U	J
F8.2	6/5/95	4.5	U	
F9.2	6/6/95	5.3	U	
G10.2	5/24/95	4.6	U	
G11.2	5/15/95	4.9	U	
G12.2	6/13/95	4.7	U	J
G13.2	5/24/95	5.6	U	
G14.2	5/19/95	5.3	U	
G15.2	6/8/95	4.9	U	
G16.2	5/19/95	5	U	
G17.2	5/15/95	4.6	U	
G18.2	5/19/95	5	U	
G19.2	5/19/95	5.1	U	
G20.2	5/19/95	5.1	U	
G21.2	5/19/95	5	U	
G3.2	5/15/95	5.6	U	
G5.2	5/24/95	5.3	U	
G6.2	5/24/95	5.1	U	
G7.2	5/15/95	4.4	U	
G8.2	5/17/95	4.8	U	
H10.2	5/24/95	4.7	U	
H11.2	5/24/95	4.7	U	
H12.2	6/13/95	4.5	U	J
H13.2	5/24/95	5	U	
H14.2	5/19/95	4.8	U	
H15.2	5/19/95	5.1	U	
H16.2	5/19/95	4.8	U	
H17.2	5/22/95	5.6	U	
H18.2	5/22/95	4.7	U	
H19.2	5/22/95	4.7	U	
H20.2	5/15/95	4.7	U	
H21.2	5/19/95	5.1	U	
H22.2	5/19/95	5.1	U	
H3.2	5/24/95	4.8	U	J
H5.2	6/20/95	4.8	U	
H6.2	5/24/95	5.4	U	
H7.2	5/24/95	5.1	U	
H8.2	5/24/95	5.1	U	
I10.2	6/7/95	5.4	U	
I11.2	5/24/95	4.5	U	
I12.2	5/24/95	2.8	J/JS	
I13.2	5/24/95	48	JS	
I14.2	5/15/95	4.9	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
I15.2	5/23/95	4.7	U	
I16.2	5/22/95	4.5	U	
I17.2	5/22/95	4.4	U	
I18.2	5/15/95	4.7	U	
I19.2	5/22/95	5.2	U	
I20.2	5/22/95	4.7	U	
I21.2	6/8/95	5	U	
I22.2	5/22/95	4.3	U	
I3.2	5/24/95	5	U	
I5.2	6/20/95	5.4	U	J
I6.2	6/20/95	5.1	U	J
I7.2	6/20/95	88		J
I8.2	6/20/95	6.8		J
J10.2	6/20/95	4.8	U	
J11.2	6/21/95	5.5	U	
J12.2	5/16/95	4.6	U	
J13.2	5/23/95	4.9	U	
J14.2	5/23/95	4.8	U	
J15.2	5/23/95	4.7	U	
J16.2	5/15/95	5.1	U	
J17.2	5/22/95	4.7	U	
J18.2	5/19/95	4.9	U	
J19.2	5/19/95	4.8	U	
J2.2	5/17/95	5.1	U	
J20.2	5/15/95	4.8	U	
J21.2	6/8/95	5.1	U	
J3.2	5/17/95	5	U	
J4.2	5/16/95	4.9	U	
J5.2	6/7/95	5.1	U	
J6.2	5/24/95	5.2	U	J
J7.2	5/24/95	4.7	U	J
J8.2	6/20/95	5.1	U	J
J9.2	6/20/95	4.4	U	
K1.2	5/17/95	4.7	U	
K11.2	6/21/95	2.3	J/JS	
K12.2	6/7/95	5.3	U	
K13.2	6/7/95	4.6	U	
K14.2	5/23/95	4.7	U	
K15.2	5/16/95	4.7	U	
K16.2	5/23/95	4.5	U	
K18.2	5/23/95	5.1	U	
K19.2	6/21/95	4.9	U	
K2.2	5/17/95	5.1	U	
K20.2	5/15/95	4.9	U	
K21.2	6/8/95	4.6	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
K3.2	5/17/95	5.1	U	
K4.2	5/17/95	4.9	U	
K5.2	5/16/95	5	U	
K6.2	5/17/95	4.9	U	
K7.2	5/24/95	4.7	U	
K8.2	6/20/95	4.6	U	J
K9.2	6/20/95	5	U	
L1.2	5/17/95	4.8	U	
L10.2	6/21/95	5.3	U	
L11.2	6/21/95	4.9	U	
L12.2	5/23/95	4.8	U	
L13.2	5/23/95	4.9	U	
L14.2	5/23/95	4.4	U	
L15.2	6/21/95	4.9	U	
L16.2	6/21/95	4.9	U	
L17.2	6/21/95	4.4	U	
L18.2	6/21/95	4.9	U	
L19.2	6/21/95	4.7	U	
L2.2	5/17/95	5.4	U	
L20.2	6/21/95	4.2	U	
L21.2	6/8/95	5.4	U	
L3.2	5/16/95	4.8	U	
L4.2	5/17/95	5.3	U	
L5.2	5/17/95	5.1	U	
L6.2	5/17/95	4.8	U	
L7.2	5/16/95	4.7	U	
L8.2	6/20/95	4.8	U	
L9.2	6/20/95	4.4	U	
LA10.2	5/18/95	5	U	
LA11.2	5/18/95	5.3	U	
LA12.2	5/16/95	5.1	U	
LA13.2	5/18/95	5.1	U	
LA14.2	5/18/95	4.7	U	
LA15.2	5/18/95	5.5	U	
LA16.2	5/16/95	4.9	U	
LA17.2	5/18/95	4.9	U	
LA18.2	5/18/95	4.8	U	
LA19.2	6/7/95	4.9	U	
LA20.2	6/7/95	5.7	U	
LA21.2	6/8/95	4.8	U	
LA3.2	5/18/95	5.6	U	
LA4.2	5/16/95	5.2	U	
LA5.2	5/18/95	5.4	U	
LA6.2	5/17/95	5.3	U	
LA7.2	5/17/95	5.6	U	

Table 3-18 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
LA8.2	5/16/95	4.8	U	
LA9.2	5/18/95	5.1	U	
M1.2	6/8/95	5.3	U	
M3.2	6/9/95	4.8	U	
N2.2	6/9/95	4.4	U	J
N4.2	6/9/95	4.7	U	J
N6.2	6/9/95	4.7	U	J
N8.2	6/9/95	4.7	U	J
O1.2	6/8/95	5.3	U	
O11.2	6/14/95	4.3	U	J
O9.2	6/13/95	4.7	U	J
P12.2	6/9/95	4.3	U	J
P2.2	6/8/95	6	U	
P8.2	6/9/95	4.2	U	J

*DCP PRG is 1,500 ppb

U – Compound was analyzed for but not detected.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

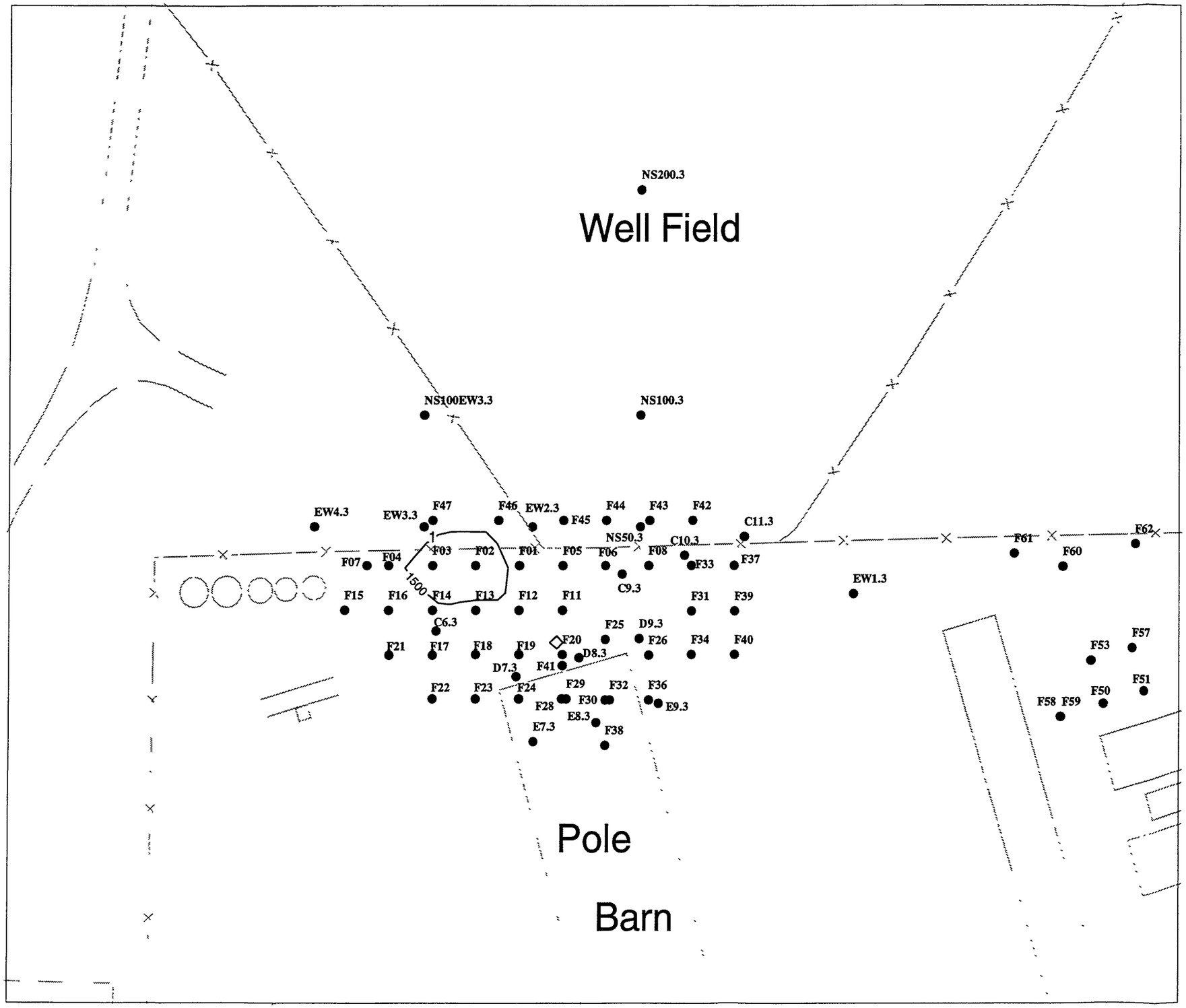
E – Reported concentration exceeded the instrument calibration range.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.

JS – This flag indicates an estimated range value. It is used when the surrogate in a sample exceeds the percent recovery of 65% to 130%.

L – Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

D – This flag indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1500 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of DCP in Soil
(7-9 Feet Below Ground Surface)

Job Number	Drawing No	Rev
20376	FIGURE 3-6	A

Table 3-19 Concentration of DCP in Soil Between 7 and 9 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.3	7/12/95	5.4	U	
BG2.3	7/12/95	5.5	U	
BG3.3	7/12/95	5.1	U	
C10.3	7/11/95	7.3	JS	
C11.3	7/10/95	88		
C6.3	7/11/95	5.9	U	
C9.3	7/11/95	26	JS	
D7.3	7/12/95	77		
D8.3	7/12/95	29	JS	
D9.3	7/10/95	27		
E7.3	7/11/95	5.3	U	
E8.3	7/11/95	5.7	U	
E9.3	7/11/95	6.3	U	
EW1.3	7/12/95	76		
EW2.3	7/12/95	5.9	U	
EW3.3	7/12/95	5.8	U	
EW4.3	7/12/95	5.2	U	
F01-S09	3/4/93	170		
F02-S09	3/5/93	5,300		
F03-S08	3/6/93	3,800		
F04-S08	3/7/93	400		
F05-S09	3/7/93	280		
F06-S08	3/7/93	130		
F07-S08	3/8/93	550		
F08-S08	3/8/93	88		
F11-S08	3/9/93	6		
F12-S08	3/10/93	7		
F13-S08	3/10/93	16		
F14-S08	3/10/93	880		
F15-S08	3/11/93	90		
F16-S08	3/11/93	280		
F17-S08	3/12/93	200		
F18-S08	3/12/93	620		
F19-S09	3/12/93	270		
F20-S08	3/12/93	3,200		
F21-S08	3/13/93	37		
F22-S08	3/15/93	5	U	
F23-S08	3/15/93	5	U	
F24-S08	3/16/93	29		
F25-S08	3/16/93	220		
F26-S08	3/16/93	62		
F28-S08	4/29/93	320		
F29-S08	4/29/93	93		
F30-S08	4/29/93	470		

Table 3-19 (Cont'd)

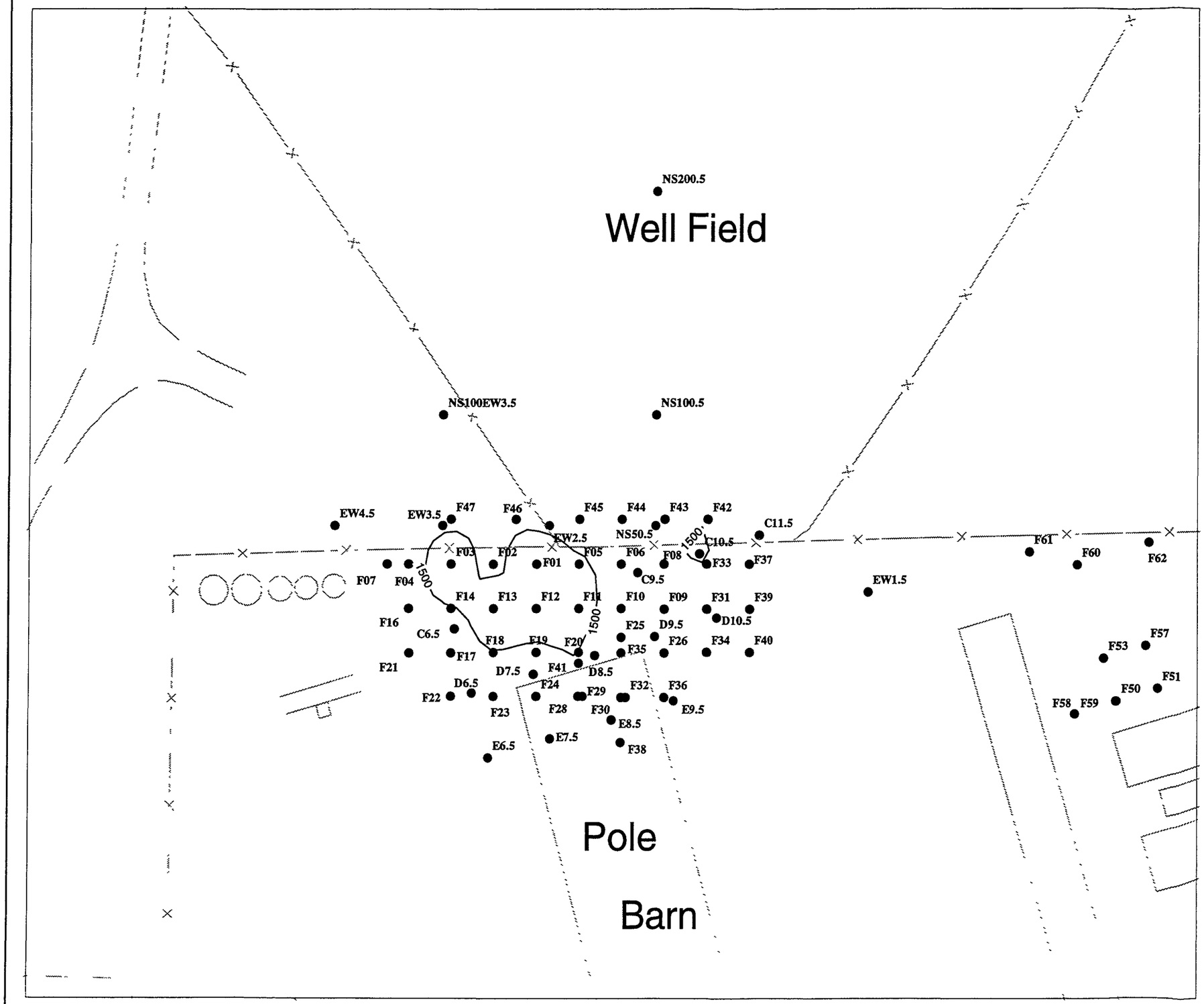
Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F31-S08	4/30/93	1500		
F32-S08	4/30/93	495		
F33-S08	5/3/93	91		NJ
F34-S08	5/3/93	36		NJ
F36-S08	5/4/93	25	U	
F37-S08	5/4/93	220		
F38-S08		25	U	
F39-S08	5/5/93	180		
F40-S08	5/5/93	25	U	
F41-S08	5/5/93	47		
F42-S08	5/6/93	125		
F43-S08	5/6/93	36		
F44-S08	5/6/93	28		
F45-S08	5/7/93	25	U	
F46-S08	5/7/93	25	U	
F47-S08	5/10/93	170		
F48-S08	5/10/93	25	U	
F49-S08	5/10/93	25	U	
F50-S08	5/11/93	25	U	
F51-S08	5/11/93	25	U	
F52-S08	5/11/93	25	U	
F53-S08	5/11/93	25	U	
F54-S08	5/12/93	25	U	
F55-S08	5/12/93	25	U	
F56-S08	5/12/93	25	U	
F57-S08	5/12/93	25	U	
F58-S08	5/13/93	25	U	
F59-S08	5/13/93	25	U	
F60-S08	5/13/93	25	U	
F61-S08	5/14/93	25	U	
F62-S08	5/14/93	25	U	
NS100.3	7/11/95	4.3	U	
NS100EW3.3	7/12/95	5.5	U	
NS2.3	7/12/95	75		
NS200.3	7/10/95	5.1	U	
NS50.3	7/11/95	7.6		

*DCP PRG is 1,500 ppb.

U – Compound was analyzed for but not detected.

JS – This flag indicates an estimated range value. It is used when the surrogate in a sample exceeds the percent recovery of 65% to 130%.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- ● Sample Location
- "F01" Sample Location ID
- 1500 PRG Concentration Isopleth (ug/kg)

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FRONTIER FERTILIZER PROJECT

Extent of DCP in Soil
(15-20 Feet Below Ground Surface)

Job Number	Drawing No	Rev
20376	FIGURE 3-7	A

Table 3-20 Concentration of DCP in Soil Between 15 and 20 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.5	7/12/95	4.8	U	
BG2.5	7/12/95	4.7	U	
BG3.5	7/12/95	5.4	U	
C10.5	7/11/95	2,300	E/P	
C11.5	7/10/95	280	E	
C6.5	7/11/95	240	E	
C9.5	7/11/95	210	E	
D10.5	7/17/95	5.7	U	
D6.5	7/11/95	5.7	U	
D7.5	7/12/95	67		
D8.5	7/12/95	11		
D9.5	7/10/95	8.5		
E6.5	7/11/95	4.8	U	
E7.5	7/11/95	5	U	
E8.5	7/11/95	5.5	U	
E9.5	7/11/95	6	U	
EW1.5	7/12/95	98	E	
EW2.5	7/12/95	2.1	J	
EW3.5	7/12/95	150	E	
EW4.5	7/12/95	4.9	U	
F01-S19	3/5/93	8,000		
F02-S15	3/6/93	620		
F03-S17	3/6/93	7,000		
F04-S18	3/7/93	560		
F05-S18	3/7/93	2,200		
F06-S20	3/7/93	940		
F07-S18	3/8/93	2,100		
F08-S20	3/8/93	790		
F09-S18	3/9/93	210		
F10-S18	3/9/93	40		
F11-S18	3/10/93	2,800		
F12-S18	3/10/93	4,400		
F13-S18	3/10/93	4,100		
F14-S20	3/10/93	1,700		
F16-S18	3/11/93	189		
F17-S18	3/12/93	250		
F18-S18	3/12/93	1,500		
F19-S18	3/12/93	470		
F20-S16	3/12/93	1,800		
F21-S18	3/13/93	44		
F22-S18	3/15/93	7		
F23-S18	3/15/93	30		
F24-S18	3/16/93	12		
F25-S18	3/16/93	9		
F26-S18	3/16/93	5	U	

Table 3-20 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F28-S18	4/29/93	260		
F29-S18	4/29/93	92		
F30-S18	4/29/93	340		
F31-S18	4/30/93	1,430		
F32-S18	4/30/93	720		
F33-S18	5/3/93	1,100		NJ
F34-S18	5/3/93	25	U	J
F35-S18	5/3/93	25	U	
F36-S18	5/4/93	25	U	
F37-S18	5/4/93	670		
F38-S18	5/4/93	220		
F39-S18	5/5/93	60		
F40-S18	5/5/93	25	U	
F41-S19	5/5/93	320		
F42-S18	5/6/93	1,470		
F43-S18	5/6/93	25	U	
F44-S18	5/6/93	25	U	
F45-S18	5/7/93	25	U	
F46-S18	5/7/93	25	U	
F47-S19	5/10/93	540		
F48-S18	5/10/93	25	U	
F49-S18	5/10/93	25	U	
F50-S18	5/11/93	25	U	
F51-S20	5/11/93	25	U	
F52-S18	5/11/93	25	U	
F53-S18	5/11/93	25	U	
F54-S18	5/12/93	25	U	
F55-S18	5/12/93	25	U	
F56-S18	5/12/93	25	U	
F57-S20	5/12/93	25	U	
F58-S18	5/13/93	25	U	
F59-S18	5/13/93	25	U	
F60-S18	5/13/93	25	U	
F61-S18	5/14/93	25	U	
F62-S18	5/14/93	25	U	
NS100.5	7/11/95	5.8	U	
NS100EW3.5	7/12/95	4.9	U	

Table 3-20 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual..
NS2.5	7/12/95	48		
NS200.5	7/10/95	4.8	U	
NS50.5	7/11/95	460	E	

*DCP PRG is 1,500 ppb

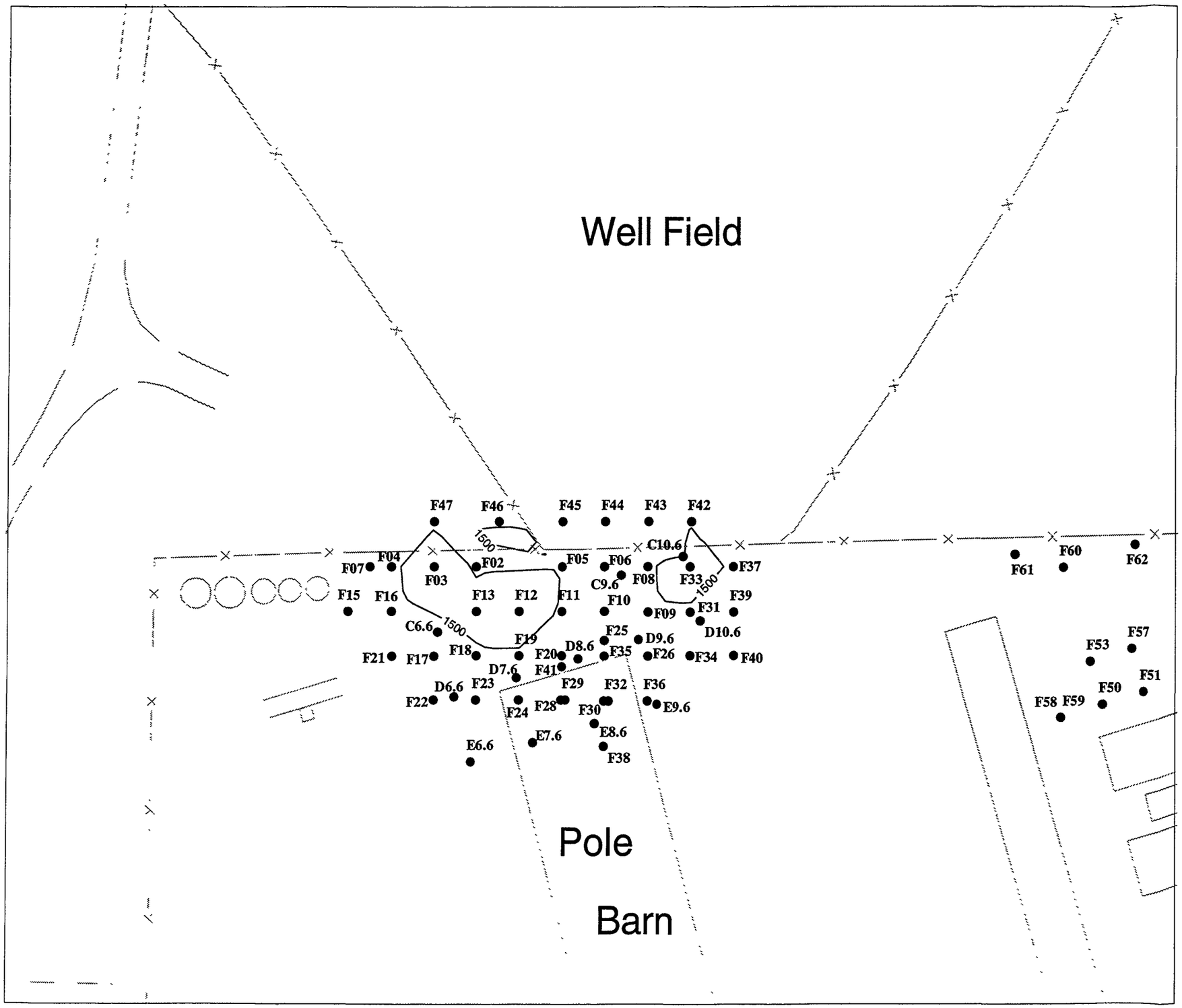
U – Compound was analyzed for but not detected.

E – Reported concentration exceeded the instrument calibration range.

P – Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported, per CLP guidelines.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1500 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of DCP in Soil
(23-30 Feet Below Ground Surface)

Job Number	Drawing No.	Rev.
20376	FIGURE 3-8	A

Table 3-21 Concentration of DCP in Soil Between 23 and 30 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.6	7/12/95	5.7	U	
BG2.6	7/12/95	4.9	U	
BG3.6	7/12/95	5.3	U	
C10.6	7/11/95	800	E	
C6.6	7/11/95	280	E	
C9.6	7/11/95	870	E	
D10.6	7/17/95	5.2	U	
D6.6	7/11/95	4.3	U	
D7.6	7/12/95	62		
D8.6	7/12/95	4.6		
D9.6	7/10/95	5.4		
E6.6	7/11/95	4.9	U	
E7.6	7/11/95	4	U	
E8.6	7/11/95	5.4	U	
E9.6	7/11/95	5.3	U	
F02-S23	3/6/93	870		
F03-S24	3/6/93	5,000		
F04-S24	3/7/93	550		
F05-S26	3/7/93	1,300		
F06-S28	3/7/93	400		
F07-S30	3/8/93	210		
F08-S29	3/8/93	530		
F09-S24	3/9/93	150		
F10-S24	3/9/93	310		
F11-S24	3/10/93	990		
F12-S24	3/10/93	5,800		
F13-S24	3/10/93	3,500		
F15-S24	3/11/93	40		
F16-S24	3/11/93	110		
F17-S24	3/12/93	230		
F18-S24	3/12/93	670		
F19-S24	3/12/93	600		
F20-S24	3/12/93	780		
F21-S26	3/13/93	13		
F22-S24	3/15/93	5	U	
F23-S24	3/15/93	11		
F24-S26	3/16/93	35		
F25-S26	3/16/93	72		
F26-S26	3/16/93	200		
F28-S26	4/29/93	200		
F29-S26	4/29/93	240		
F30-S26	4/30/93	210		
F31-S26	4/30/93	570		
F32-S29	4/30/93	210		
F33-S26	5/3/93	5,600		NJ

Table 3-21 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F34-S26	5/3/93	25	U	J
F35-S26	5/3/93	280		NJ
F36-S26	5/4/93	25	U	
F37-S26	5/4/93	360		
F38-S26	5/4/93	25	U	
F39-S26	5/5/93	25	U	
F40-S26	5/5/93	25	U	
F41-S26	5/5/93	980		
F42-S26	5/6/93	990		
F43-S26	5/6/93	40		
F44-S26	5/6/93	80		
F45-S26	5/7/93	260		
F46-S26	5/7/93	2,100		
F47-S26	5/10/93	830		
F48-S26	5/10/93	25	U	
F49-S26	5/10/93	25	U	
F50-S26	5/11/93	25	U	
F51-S26	5/11/93	25	U	
F52-S26	5/11/93	25	U	
F53-S26	5/11/93	25	U	
F54-S26	5/12/93	25	U	
F55-S26	5/12/93	25	U	
F56-S26	5/12/93	25	U	
F57-S26	5/12/93	25	U	
F58-S26	5/13/93	25	U	
F59-S26	5/13/93	25	U	
F60-S26	5/13/93	25	U	
F61-S26	5/14/93	25	U	
F62-S26	5/14/93	25	U	
NS2.6	7/12/95	64		

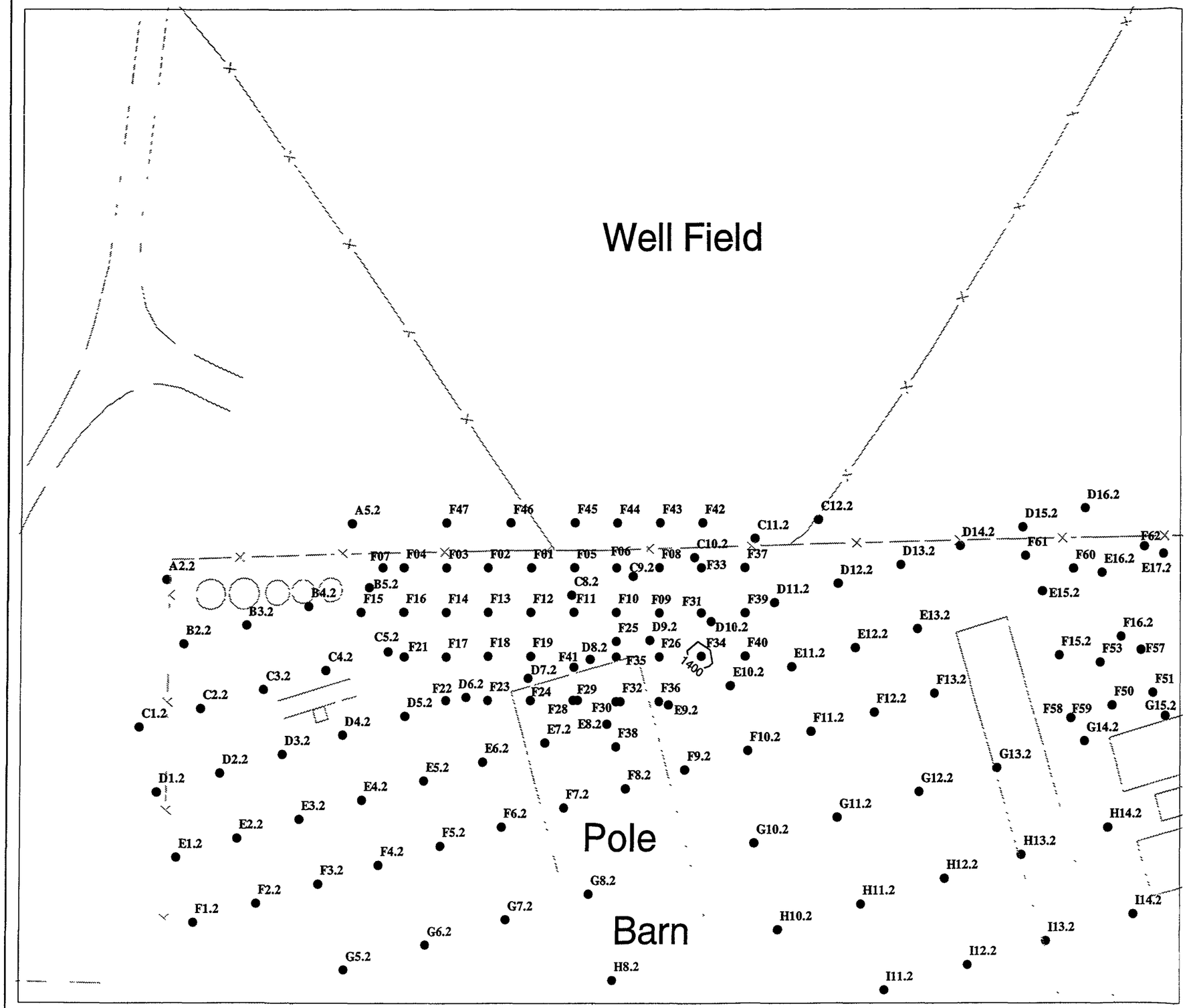
*DCP PRG is 1,500 ppb

U – Compound was analyzed for but not detected.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

E – Reported concentration exceeded the instrument calibration range.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1400 PRG Concentration Isopleth (ug/kg)

BECHTEL
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FRONTIER FERTILIZER PROJECT

Extent of DBCP in Soil
(1-3 Feet Below Ground Surface)

Job Number	Drawing No	Rev
20376	FIGURE 3-9	A

Table 3-22 Concentration of DBCP in Soil Between 1 and 3 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
A2.2	5/25/95	5.4	U	J
A5.2	5/30/95	5.3	U	J
B2.2	5/25/95	4.8	U	J
B3.2	6/1/95	4.6	U	J
B4.2	5/30/95	4.6	U	J
B5.2	6/1/95	5.1	U	J
BG1.2	7/12/95	5.3	U	
BG2.2	7/12/95	5	U	
BG3.2	7/12/95	6.1	U	
BS1.2	6/14/95	4.4	U	J
BS2.2	6/14/95	4.7	U	J
BS3.2	6/14/95	4.7	U	J
BS6.2	6/14/95	4.2	U	J
C1.2	5/25/95	4.8	U	J
C10.2	6/2/95	5.1	U	
C11.2	6/2/95	4.9	U	
C12.2	6/6/95	4.8	U	
C2.2	5/25/95	4.9	U	J
C3.2	6/1/95	5.5	U	J
C4.2	5/30/95	5.2	U	J
C5.2	6/1/95	5.5	U	J
C8.2	5/31/95	5.1	U	J
C9.2	5/31/95	5.5	U	J
D1.2	5/25/95	5.3	U	J
D10.2	6/2/95	5.1	U	
D11.2	6/8/95	5.2	U	
D12.2	6/2/95	4.5	U	
D13.2	6/2/95	4.9	U	
D14.2	6/7/95	4.8	U	
D15.2	6/6/95	4.6	U	
D16.2	6/8/95	5.3	U	
D2.2	5/25/95	5.3	U	J
D3.2	5/30/95	6.9		J
D4.2	6/1/95	5.1	U	J
D5.2	6/1/95	4.5	U	J
D6.2	6/1/95	4.4	U	
D7.2	5/30/95	320		
D8.2	5/31/95	5	U	J
D9.2	5/31/95	5.4	U	J
E1.2	5/31/95	5	U	J
E10.2	6/2/95	5	U	
E11.2	6/2/95	5.1	U	
E12.2	5/30/95	4.8	U	J
E13.2	6/2/95	5	U	
E15.2	6/6/95	4.3	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
E16.2	5/30/95	4.8	U	J
E17.2	6/7/95	5.1	U	
E18.2	6/7/95	5	U	
E19.2	6/7/95	4.8	U	
E2.2	6/1/95	5.1	U	J
E3.2	6/1/95	4.9	U	J
E4.2	5/31/95	5.2	U	J
E5.2	5/31/95	5	U	J
E6.2	6/2/95	5.3	U	
E7.2	6/2/95	5	U	
E8.2	5/31/95	4.8	U	J
E9.2	6/1/95	4.7	U	
F01-S01	3/4/93	240		
F02-S01	3/5/93	1,200		
F03-S01	3/6/93	11		
F04-S01	3/7/93	24		
F05-S01	3/7/93	10	U	
F06-S01	3/7/93	5	U	
F07-S02	3/8/93	5	U	
F08-S01	3/8/93	5	U	
F09-S01	3/9/93	5	U	
F1.2	6/5/95	5.7	U	
F10-S01	3/9/93	5	U	
F10.2	6/6/95	4.7	U	
F11-S01	3/9/93	10		
F11.2	5/30/95	4.7	U	J
F12-S01	3/10/93	5	U	
F12.2	6/5/95	5	U	
F13-S01	3/10/93	22		
F13.2	6/5/95	5.1	U	
F14-S01	3/10/93	65		
F15-S02	3/11/93	10	U	
F15.2	5/30/95	4.5	U	J
F16-S02	3/11/93	5	U	
F16.2	6/6/95	4.1	U	
F17-S01	3/12/93	10		
F17.2	6/6/95	4.6	U	
F18-S02	3/12/93	10	U	
F18.2	6/6/95	4.3	U	
F19-S01	3/12/93	780		
F19.2	6/8/95	5.1	U	
F2.2	6/5/95	5.1	U	
F20.2	6/6/95	4.8	U	
F21-S01	3/13/93	10	U	
F21.2	6/6/95	4.3	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F22-S01	3/15/93	11		
F23-S01	3/15/93	50	U	
F24-S01	3/16/93	88		
F25-S01	3/16/93	40		
F26-S02	3/16/93	26		
F27-S02	3/17/93	20		
F28-S02	4/29/93	25	U	
F29-S02	4/29/93	95		
F3.2	5/31/95	5.3	U	J
F30-S01	4/29/93	30		
F31-S02	4/30/93	25	U	
F32-S01	4/30/93	44		
F33-S01	5/3/93	25	U	
F34-S01	5/3/93	2,100		NJ
F35-S01	5/3/93	25	U	
F36-S01	5/4/93	25	U	
F37-S01	5/4/93	25	U	
F38-S01	5/4/93	25	U	
F39-S01	5/5/93	25	U	
F4.2	6/5/95	5.5	U	
F40-S01	5/5/93	25	U	
F41-S01	5/5/93	80		
F42-S02	5/6/93	25	U	
F43-S01	5/6/93	25	U	
F44-S01	5/6/93	25	U	
F45-S02	5/7/93	25	U	
F46-S01	5/7/93	25	U	
F47-S01	5/10/93	25	U	
F48-S01	5/10/93	25	U	
F49-S01	5/10/93	25	U	
F5.2	6/5/95	4.8	U	
F50-S01	5/11/93	25	U	
F51-S01	5/11/93	25	U	
F52-S01	5/11/93	25	U	
F53-S01	5/11/93	25	U	
F54-S01	5/12/93	25	U	
F55-S01	5/12/93	25	U	
F56-S01	5/12/93	25	U	
F57-S01	5/12/93	25	U	
F58-S01	5/13/93	25	U	
F59-S01	5/13/93	25	U	
F6.2	6/5/95	4.2	U	
F60-S01	5/13/93	25	U	
F61-S01	5/14/93	27		
F62-S01	5/14/93	25	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F65-S01	5/14/93	25	U	
F65-S01	5/14/93	25	U	
F7.2	5/31/95	4.9	U	J
F8.2	6/5/95	5.6	J/JS	
F9.2	6/6/95	5.3	U	
G10.2	5/24/95	4.6	U	
G11.2	5/15/95	4.9	U	
G12.2	6/13/95	4.7	U	J
G13.2	5/24/95	5.6	U	
G14.2	5/19/95	5.3	U	
G15.2	6/8/95	4.9	U	
G16.2	5/19/95	5	U	
G17.2	5/15/95	4.6	U	
G18.2	5/19/95	5	U	
G19.2	5/19/95	5.1	U	
G20.2	5/19/95	5.1	U	
G21.2	5/19/95	5	U	
G3.2	5/15/95	5.6	U	
G5.2	5/24/95	5.3	U	
G6.2	5/24/95	5.1	U	
G7.2	5/15/95	4.4	U	
G8.2	5/17/95	4.8	U	
H10.2	5/24/95	4.7	U	
H11.2	5/24/95	4.7	U	
H12.2	6/13/95	4.5	U	J
H13.2	5/24/95	5	U	
H14.2	5/19/95	4.8	U	
H15.2	5/19/95	5.1	U	
H16.2	5/19/95	4.8	U	
H17.2	5/22/95	5.6	U	
H18.2	5/22/95	4.7	U	
H19.2	5/22/95	4.7	U	
H20.2	5/15/95	4.7	U	
H21.2	5/19/95	5.1	U	
H22.2	5/19/95	5.1	U	
H3.2	5/24/95	4.8	U	J
H5.2	6/20/95	4.8	U	
H6.2	5/24/95	5.4	U	
H7.2	5/24/95	5.1	U	
H8.2	5/24/95	5.1	U	
I10.2	6/7/95	5.4	U	
I11.2	5/24/95	4.5	U	
I12.2	5/24/95	4.7	U	
I13.2	5/24/95	5.3	U	
I14.2	5/15/95	4.9	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
I15.2	5/23/95	4.7	U	
I16.2	5/22/95	4.5	U	
I17.2	5/22/95	4.4	U	
I18.2	5/15/95	4.7	U	
I19.2	5/22/95	5.2	U	
I20.2	5/22/95	4.7	U	
I21.2	6/8/95	5	U	
I22.2	5/22/95	4.3	U	
I3.2	5/24/95	5	U	
I5.2	6/20/95	5.4	U	J
I6.2	6/20/95	5.1	U	J
I7.2	6/20/95	5.3	U	J
I8.2	6/20/95	4.5	U	J
J10.2	6/20/95	4.8	U	
J11.2	6/21/95	5.5	U	
J12.2	5/16/95	4.6	U	
J13.2	5/23/95	4.9	U	
J14.2	5/23/95	4.8	U	
J15.2	5/23/95	4.7	U	
J16.2	5/15/95	5.1	U	
J17.2	5/22/95	4.7	U	
J18.2	5/19/95	4.9	U	
J19.2	5/19/95	4.8	U	
J2.2	5/17/95	5.1	U	
J20.2	5/15/95	4.8	U	
J21.2	6/8/95	5.1	U	
J3.2	5/17/95	5	U	
J4.2	5/16/95	4.9	U	
J5.2	6/7/95	5.1	U	
J6.2	5/24/95	5.2	U	J
J7.2	5/24/95	4.7	U	J
J8.2	6/20/95	5.1	U	J
J9.2	6/20/95	4.4	U	
K1.2	5/17/95	4.7	U	
K11.2	6/21/95	5.2	U	
K12.2	6/7/95	5.3	U	
K13.2	6/7/95	4.6	U	
K14.2	5/23/95	4.7	U	
K15.2	5/16/95	4.7	U	
K16.2	5/23/95	4.5	U	
K18.2	5/23/95	5.1	U	
K19.2	6/21/95	4.9	U	
K2.2	5/17/95	5.1	U	
K20.2	5/15/95	4.9	U	
K21.2	6/8/95	4.6	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
K3.2	5/17/95	5.1	U	
K4.2	5/17/95	4.9	U	
K5.2	5/16/95	5	U	
K6.2	5/17/95	4.9	U	
K7.2	5/24/95	4.7	U	
K8.2	6/20/95	4.6	U	J
K9.2	6/20/95	5	U	
L1.2	5/17/95	4.8	U	
L10.2	6/21/95	5.3	U	
L11.2	6/21/95	4.9	U	
L12.2	5/23/95	4.8	U	
L13.2	5/23/95	4.9	U	
L14.2	5/23/95	4.4	U	
L15.2	6/21/95	4.9	U	
L16.2	6/21/95	4.9	U	
L17.2	6/21/95	4.4	U	
L18.2	6/21/95	4.9	U	
L19.2	6/21/95	4.7	U	
L2.2	5/17/95	5.4	U	
L20.2	6/21/95	4.2	U	
L21.2	6/8/95	5.4	U	
L3.2	5/16/95	4.8	U	
L4.2	5/17/95	5.3	U	
L5.2	5/17/95	5.1	U	
L6.2	5/17/95	4.8	U	
L7.2	5/16/95	4.7	U	
L8.2	6/20/95	4.8	U	
L9.2	6/20/95	4.4	U	
LA10.2	5/18/95	5	U	
LA11.2	5/18/95	5.3	U	
LA12.2	5/16/95	5.1	U	
LA13.2	5/18/95	5.1	U	
LA14.2	5/18/95	4.7	U	
LA15.2	5/18/95	5.5	U	
LA16.2	5/16/95	4.9	U	
LA17.2	5/18/95	4.9	U	
LA18.2	5/18/95	4.8	U	
LA19.2	6/7/95	4.9	U	
LA20.2	6/7/95	5.7	U	
LA21.2	6/8/95	4.8	U	
LA3.2	5/18/95	5.6	U	
LA4.2	5/16/95	5.2	U	
LA5.2	5/18/95	5.4	U	
LA6.2	5/17/95	5.3	U	
LA7.2	5/17/95	5.6	U	

Table 3-22 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
LA8.2	5/16/95	4.8	U	
LA9.2	5/18/95	5.1	U	
M1.2	6/8/95	5.3	U	
M3.2	6/9/95	4.8	U	
N2.2	6/9/95	4.4	U	J
N4.2	6/9/95	4.7	U	J
N6.2	6/9/95	4.7	U	J
N8.2	6/9/95	4.7	U	J
O1.2	6/8/95	5.3	U	
O11.2	6/14/95	4.3	U	J
O9.2	6/13/95	4.7	U	J
P12.2	6/9/95	4.3	U	J
P2.2	6/8/95	6	U	
P8.2	6/9/95	4.2	U	J

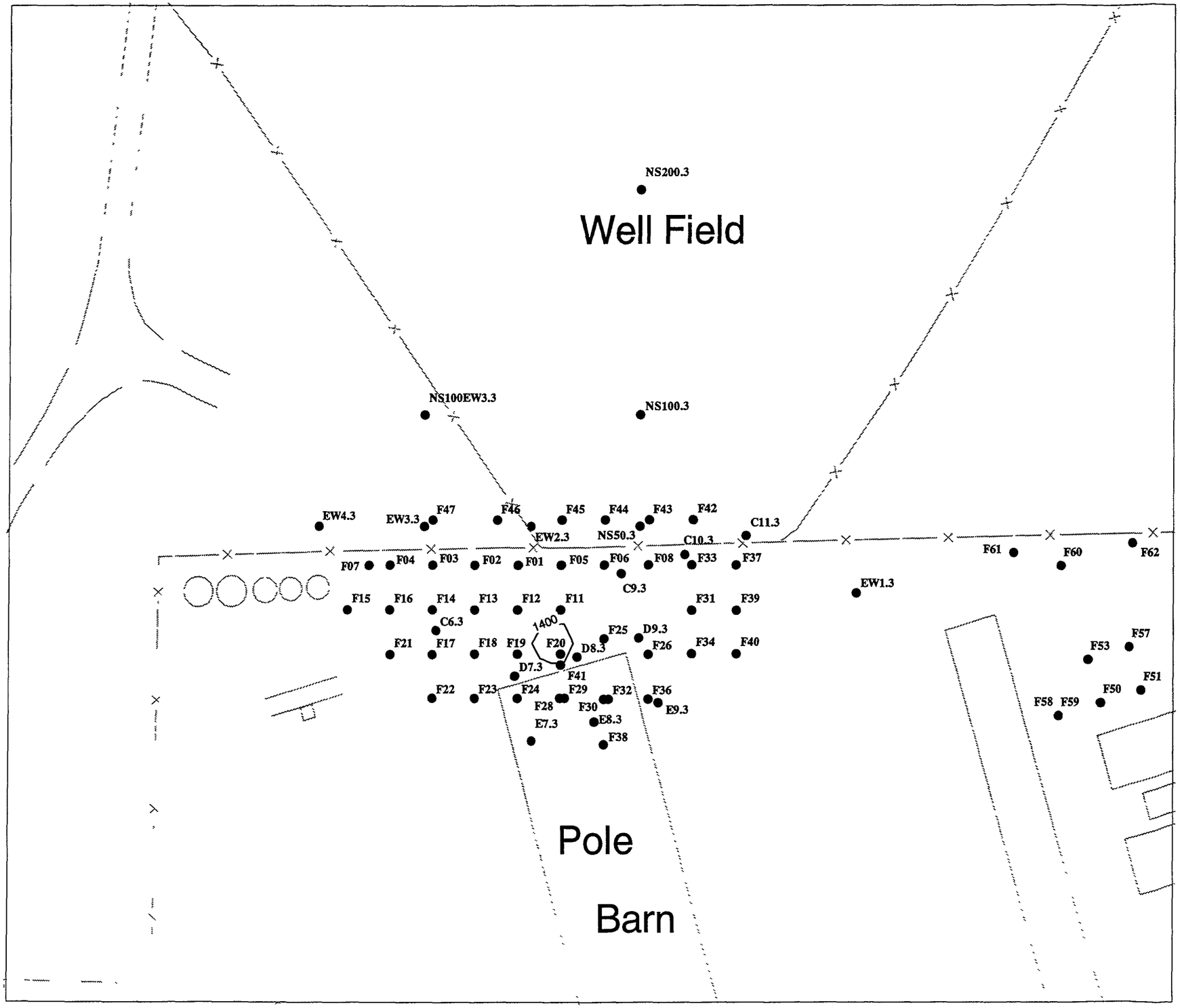
*DBCP PRG is 1,400 ppb

U – Compound was analyzed for but not detected.

J – Estimated value. Compound was detected at a concentration below the sample quantitation limit.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.

JS – This flag indicates an estimated range value. It is used when the surrogate in a sample exceeds the percent recovery of 65% to 130%.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1400 PRG Concentration Isopleth (ug/kg)

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FRONTIER FERTILIZER PROJECT

Extent of DBCP in Soil
(7-9 Feet Below Ground Surface)

Job Number	Drawing No.	Rev.
20376	FIGURE 3-10	A

Table 3-23 Concentration of DBCP in Soil Between 7 and 9 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.3	7/12/95	5.4	U	
BG2.3	7/12/95	5.5	U	
BG3.3	7/12/95	5.1	U	
C10.3	7/11/95	5.4	U	
C11.3	7/10/95	5	U	
C6.3	7/11/95	5.9	U	
C9.3	7/11/95	5.1	U	
D7.3	7/12/95	5.5	U	
D8.3	7/12/95	5.7	U	
D9.3	7/10/95	5	U	
E7.3	7/11/95	5.3	U	
E8.3	7/11/95	5.7	U	
E9.3	7/11/95	6.3	U	
EW1.3	7/12/95	5.2	U	
EW2.3	7/12/95	5.9	U	
EW3.3	7/12/95	5.8	U	
EW4.3	7/12/95	5.2	U	
F01-S09	3/4/93	110		
F02-S09	3/5/93	920		
F03-S08	3/6/93	67		
F04-S08	3/7/93	57		
F05-S09	3/7/93	20	U	
F06-S08	3/7/93	17		
F07-S08	3/8/93	5	U	
F08-S08	3/8/93	5	U	
F11-S08	3/9/93	5	U	
F12-S08	3/10/93	5	U	
F13-S08	3/10/93	10	U	
F14-S08	3/10/93	20	U	
F15-S08	3/11/93	10	U	
F16-S08	3/11/93	24		
F17-S08	3/12/93	10	U	
F18-S08	3/12/93	32		
F19-S09	3/12/93	70		
F20-S08	3/12/93	12,000		
F21-S08	3/13/93	10	U	
F22-S08	3/15/93	5	U	
F23-S08	3/15/93	14		
F24-S08	3/16/93	33		
F25-S08	3/16/93	13		
F26-S08	3/16/93	8		
F28-S08	4/29/93	25	U	
F29-S08	4/29/93	25	U	
F30-S08	4/29/93	25	U	

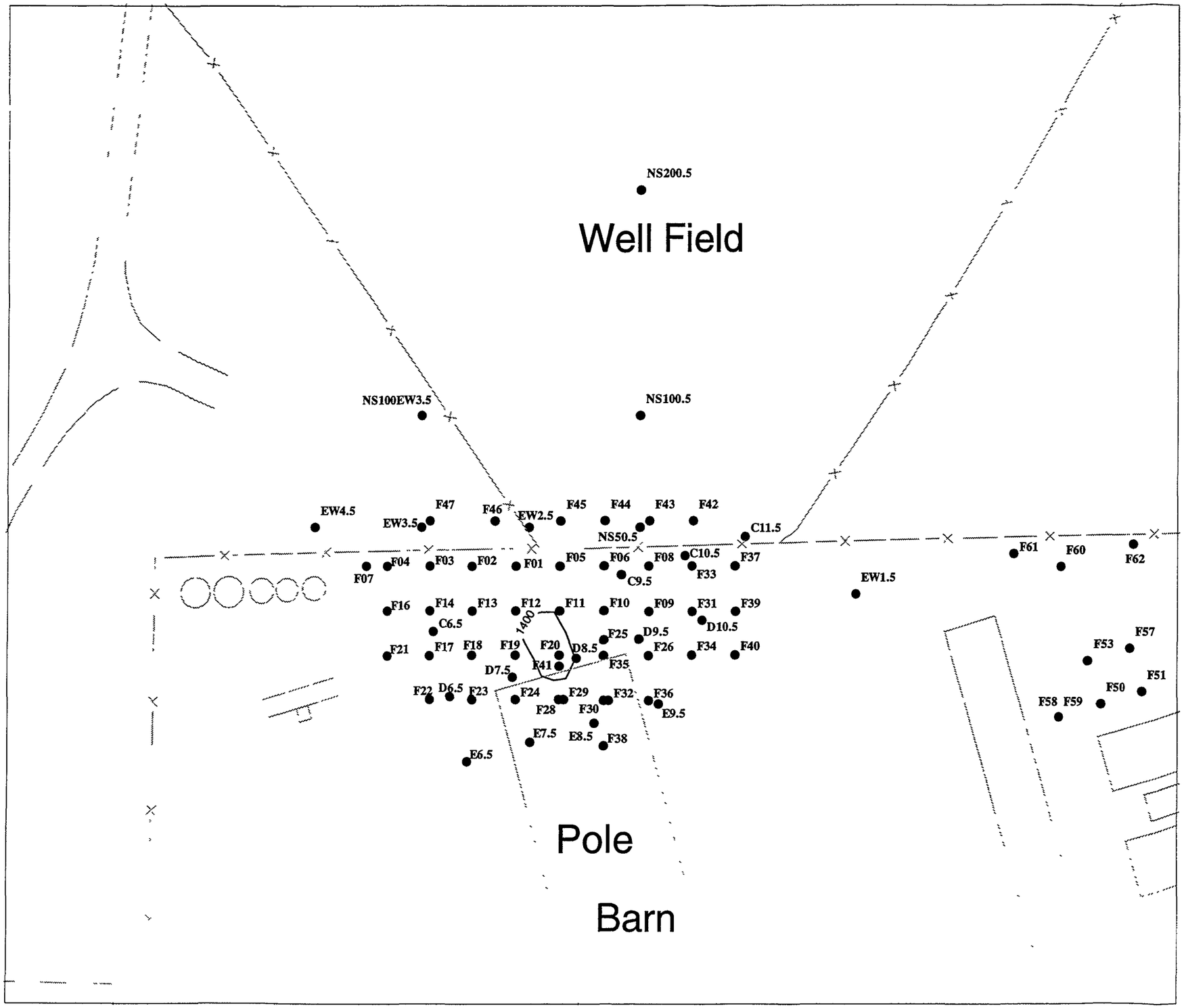
Table 3-23 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F31-S08	4/30/93	25	U	
F32-S08	4/30/93	25	U	
F33-S08	5/3/93	25	U	
F34-S08	5/3/93	340		NJ
F36-S08	5/4/93	25	U	
F37-S08	5/4/93	25	U	
F38-S08	5/4/93	25	U	
F39-S08	5/5/93	25	U	
F40-S08	5/5/93	25	U	
F41-S08	5/5/93	25	U	
F42-S08	5/6/93	25	U	
F43-S08	5/6/93	25	U	
F44-S08	5/6/93	25	U	
F45-S08	5/7/93	25	U	
F46-S08	5/7/93	25	U	
F47-S08	5/10/93	25	U	
F48-S08	5/10/93	25	U	
F49-S08	5/10/93	25	U	
F50-S08	5/11/93	25	U	
F51-S08	5/11/93	25	U	
F52-S08	5/11/93	25	U	
F53-S08	5/11/93	25	U	
F54-S08	5/12/93	25	U	
F55-S08	5/12/93	25	U	
F56-S08	5/12/93	25	U	
F57-S08	5/12/93	25	U	
F58-S08	5/13/93	25	U	
F59-S08	5/13/93	25	U	
F60-S08	5/13/93	25	U	
F61-S08	5/14/93	25	U	
F62-S08	5/14/93	25	U	
NS100.3	7/11/95	4.3	U	
NS100EW3.3	7/12/95	5.5	U	
NS2.3	7/12/95	5.6	U	
NS200.3	7/10/95	5.1	U	
NS50.3	7/11/95	4.6	U	

*DBCP PRG is 1,400 ppb

U – Compound was analyzed for but not detected.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- Sample Location
- "F01" Sample Location ID
- 1400 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

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FRONTIER FERTILIZER PROJECT

Extent of DBCP in Soil
(15-20 Feet Below Ground Surface)

Job Number	Drawing No	Rev
20376	FIGURE 3-11	A

Table 3-24 Concentration of DBCP in Soil Between 15 and 20 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.5	7/12/95	4.8	U	
BG2.5	7/12/95	4.7	U	
BG3.5	7/12/95	5.4	U	
C10.5	7/11/95	8.3		
C11.5	7/10/95	5	U	
C6.5	7/11/95	5	U	
C9.5	7/11/95	4.6	U	
D10.5	7/17/95	5.7	U	
D6.5	7/11/95	5.7	U	
D7.5	7/12/95	4.8	U	
D8.5	7/12/95	5	U	
D9.5	7/10/95	4.6	U	
E6.5	7/11/95	4.8	U	
E7.5	7/11/95	5	U	
E8.5	7/11/95	5.5	U	
E9.5	7/11/95	6	U	
EW1.5	7/12/95	5.5	U	
EW2.5	7/12/95	5.2	U	
EW3.5	7/12/95	5	U	
EW4.5	7/12/95	4.9	U	
F01-S19	3/5/93	94		
F02-S15	3/6/93	450		
F03-S17	3/6/93	110		
F04-S18	3/7/93	9		
F05-S18	3/7/93	32		
F06-S20	3/7/93	34		
F07-S18	3/8/93	5	U	
F08-S20	3/8/93	12		
F09-S18	3/9/93	5	U	
F10-S18	3/9/93	3		
F11-S18	3/10/93	5	U	
F12-S18	3/10/93	19		
F13-S18	3/10/93	4		
F14-S20	3/10/93	20	U	
F16-S18	3/11/93	7		
F17-S18	3/12/93	10	U	
F18-S18	3/12/93	18		
F19-S18	3/12/93	33		
F20-S16	3/12/93	15,000		
F21-S18	3/13/93	79		
F22-S18	3/15/93	5	U	
F23-S18	3/15/93	6		
F24-S18	3/16/93	7		
F25-S18	3/16/93	12		

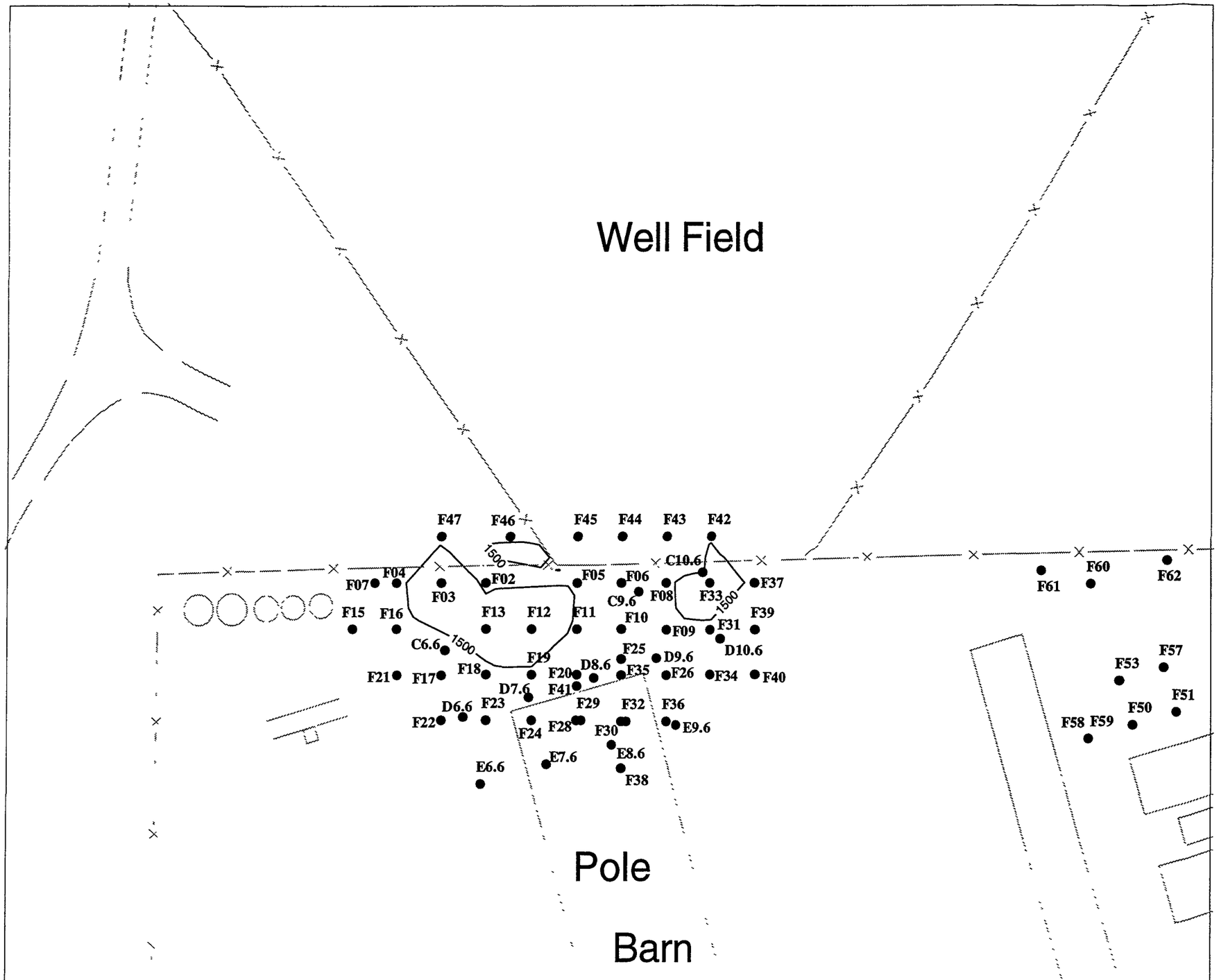
Table 3-24 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F26-S18	3/16/93	5	U	
F28-S18	4/29/93	25	U	
F29-S18	4/29/93	25	U	
F30-S18	4/29/93	25	U	
F31-S18	4/30/93	25	U	
F32-S18	4/30/93	25	U	
F33-S18	5/3/93	160		NJ
F34-S18	5/3/93	120		NJ
F35-S18	5/3/93	25	U	
F36-S18	5/4/93	25	U	
F37-S18	5/4/93	25	U	
F38-S18	5/4/93	25	U	
F39-S18	5/5/93	25	U	
F40-S18	5/5/93	25	U	
F41-S19	5/5/93	25	U	
F42-S18	5/6/93	140		
F43-S18	5/6/93	25	U	
F44-S18	5/6/93	25	U	
F45-S18	5/7/93	25	U	
F46-S18	5/7/93	25	U	
F47-S19	5/10/93	25	U	
F48-S18	5/10/93	25	U	
F49-S18	5/10/93	25	U	
F50-S18	5/11/93	25	U	
F51-S20	5/11/93	25	U	
F52-S18	5/11/93	25	U	
F53-S18	5/11/93	25	U	
F54-S18	5/12/93	25	U	
F55-S18	5/12/93	25	U	
F56-S18	5/12/93	25	U	
F57-S20	5/12/93	25	U	
F58-S18	5/13/93	25	U	
F59-S18	5/13/93	25	U	
F60-S18	5/13/93	25	U	
F61-S18	5/14/93	25	U	
F62-S18	5/14/93	25	U	
NS100.5	7/11/95	5.8	U	
NS100EW3.5	7/12/95	4.9	U	
NS2.5	7/12/95	6.3	U	
NS200.5	7/10/95	4.8	U	
NS50.5	7/11/95	4.9	U	

*DBCP PRG is 1,400 ppb.

U – Compound was analyzed for but not detected.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.



EXPLANATION

- ● Sample Location
- "F01" Sample Location ID
- 1400 PRG Concentration Isopleth (ug/kg)

N

0 50 100

Approx. scale in feet

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SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

Extent of DBCP in Soil
(23-30 Feet Below Ground Surface)

Job Number	Drawing No	Rev.
20376	FIGURE 3-12	A

Table 3-25 Concentration of DBCP in Soil Between 23 and 30 Feet Below Ground Surface

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
BG1.6	7/12/95	5.7	U	
BG2.6	7/12/95	4.9	U	
BG3.6	7/12/95	5.3	U	
C10.6	7/11/95	5.1	U	
C6.6	7/11/95	5.6	U	
C9.6	7/11/95	3.7	P/JC	
D10.6	7/17/95	5.2	U	
D6.6	7/11/95	4.3	U	
D7.6	7/12/95	8.1		
D8.6	7/12/95	5.4	U	
D9.6	7/10/95	4.9	U	
E6.6	7/11/95	4.9	U	
E7.6	7/11/95	4	U	
E8.6	7/11/95	5.4	U	
E9.6	7/11/95	5.3	U	
F02-S23	3/6/93	50		
F03-S24	3/6/93	47		
F04-S24	3/7/93	13		
F05-S26	3/7/93	20	U	
F06-S28	3/7/93	33		
F07-S30	3/8/93	5	U	
F08-S29	3/8/93	22		
F09-S24	3/9/93	5	U	
F10-S24	3/9/93	5		
F11-S24	3/10/93	5		
F12-S24	3/10/93	34		
F13-S24	3/10/93	6		
F15-S24	3/11/93	10	U	
F16-S24	3/11/93	44		
F17-S24	3/12/93	10	U	
F18-S24	3/12/93	20	U	
F19-S24	3/12/93	34		
F20-S24	3/12/93	1,600		
F21-S26	3/13/93	44		
F22-S24	3/15/93	5	U	
F23-S24	3/15/93	5	U	
F24-S26	3/16/93	5	U	
F25-S26	3/16/93	19		
F26-S26	3/16/93	5	U	
F28-S26	4/29/93	25	U	
F29-S26	4/29/93	25	U	
F30-S26	4/30/93	25	U	
F31-S26	4/30/93	25	U	
F32-S29	4/30/93	25	U	
F33-S26	5/3/93	9500		NJ

Table 3-25 (Cont'd)

Station Location	Date	Conc.* (ppb)	Lab. Qual.	Val. Qual.
F34-S26	5/3/93	25	U	
F35-S26	5/3/93	25	U	
F36-S26	5/4/93	25	U	
F37-S26	5/4/93	25	U	
F38-S26	5/4/93	25	U	
F39-S26	5/5/93	25	U	
F40-S26	5/5/93	25	U	
F41-S26	5/5/93	25	U	
F42-S26	5/6/93	160		
F43-S26	5/6/93	25	U	
F44-S26	5/6/93	25	U	
F45-S26	5/7/93	25	U	
F46-S26	5/7/93	25	U	
F47-S26	5/10/93	25	U	
F48-S26	5/10/93	25	U	
F49-S26	5/10/93	25	U	
F50-S26	5/11/93	25	U	
F51-S26	5/11/93	25	U	
F52-S26	5/11/93	25	U	
F53-S26	5/11/93	25	U	
F54-S26	5/12/93	25	U	
F55-S26	5/12/93	25	U	
F56-S26	5/12/93	25	U	
F57-S26	5/12/93	25	U	
F58-S26	5/13/93	25	U	
F59-S26	5/13/93	25	U	
F60-S26	5/13/93	25	U	
F61-S26	5/14/93	25	U	
F62-S26	5/14/93	25	U	
NS2.6	7/12/95	5.2	U	
S20-S30	3/10/93	20	U	

*DBCP PRG is 1,400 ppb

U – Compound was analyzed for but not detected.

P – Concentration detected by the primary and secondary columns differed by more than 25 percent. The lower concentration is reported as per CLP guidelines.

JC – This flag indicates an estimated value. It is used when an analyte in the continuing calibration exceeds the percent difference (%D) of 25%.

NJ – Presumptive evidence for presence of the compound at an estimated quantity.

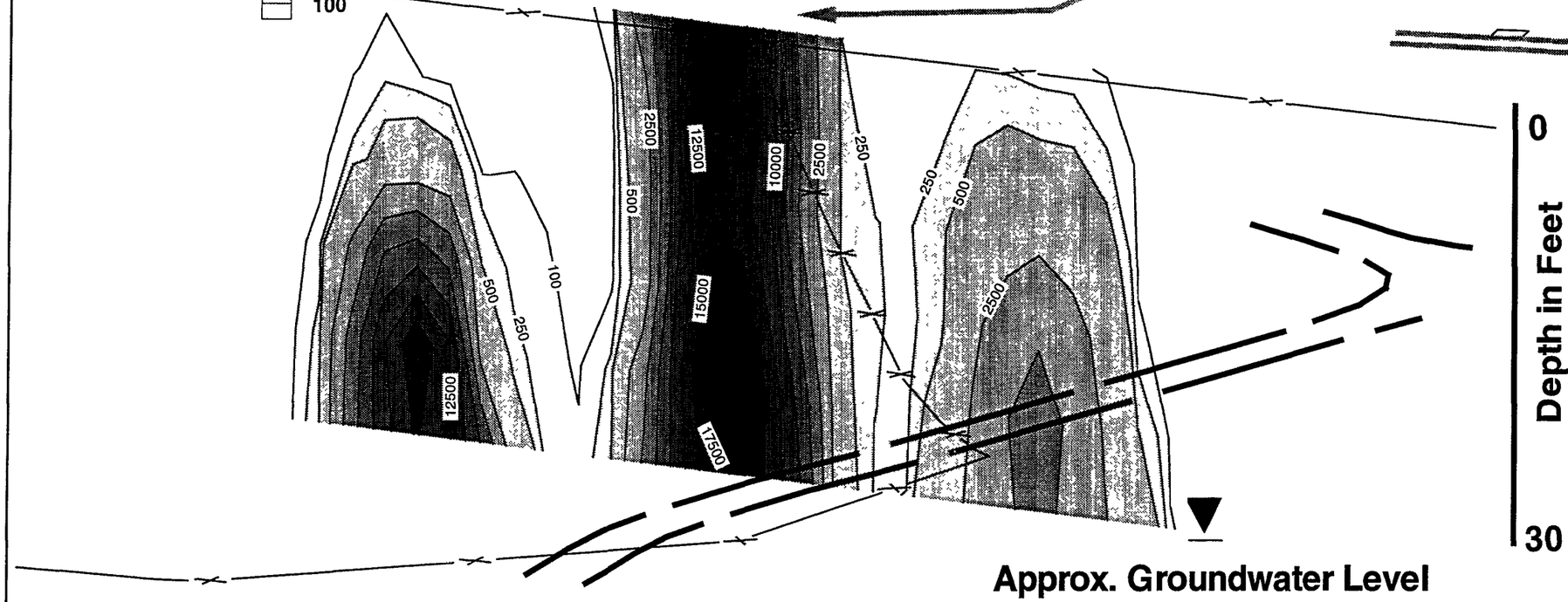
EDB in ug/kg

17500
15000
12500
10000
7500
5000
2500
500
250
100

Pole Barn

North

Former Disposal Basin



0

Depth in Feet

30

Approx. Groundwater Level

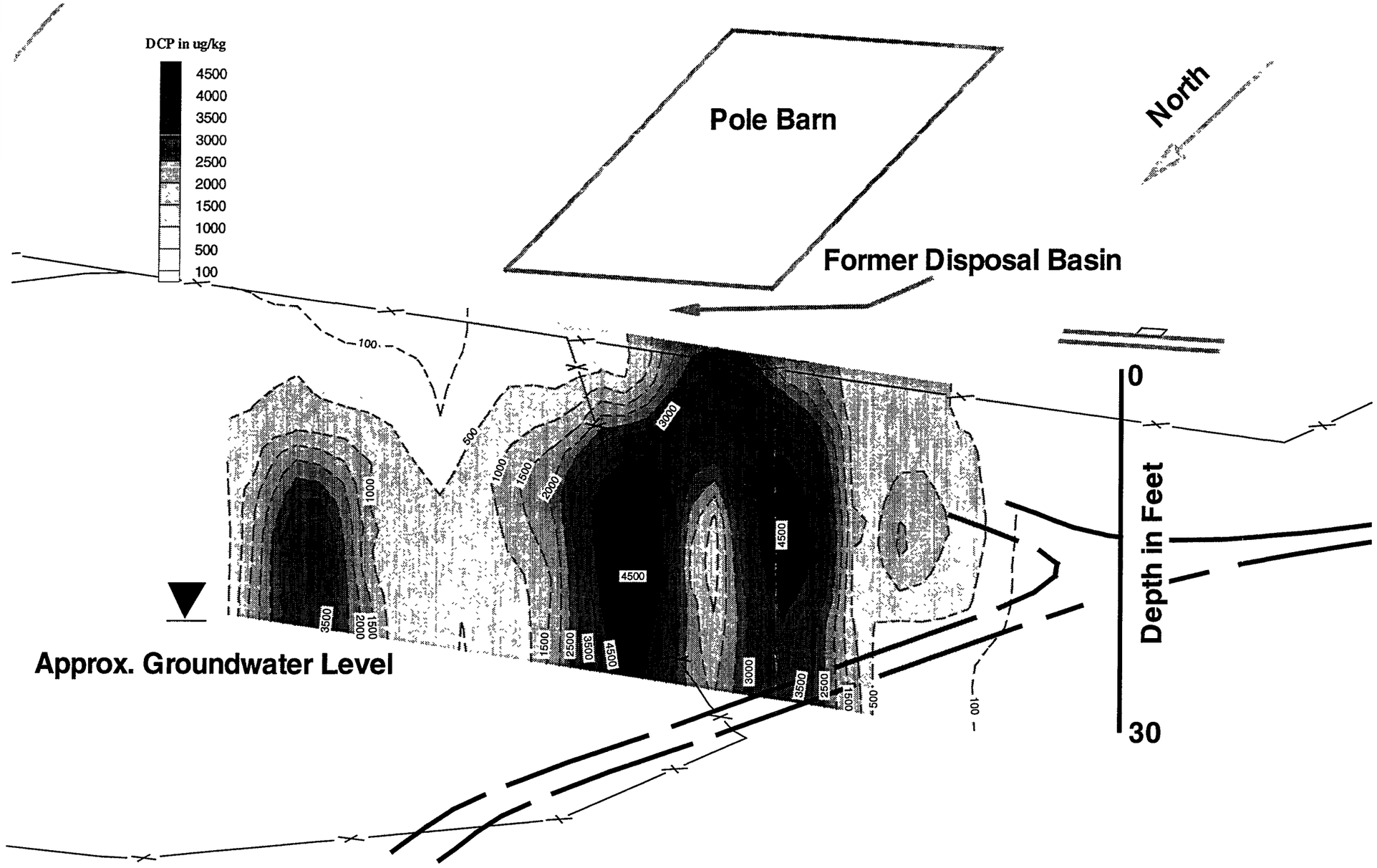
V.E. = 2.5X

BECHTEL
SAN FRANCISCO

FRONTIER FERTILIZER PROJECT

EDB in Soil, Disposal Basin
Cross Section

Job Number	Drawing No.	Rev.
20376	FIGURE 3-13	A



BECHTEL SAN FRANCISCO		
FRONTIER FERTILIZER PROJECT		
DCP in Soil, Disposal Basin Cross Section		
Job Number	Drawing No.	Rev.
20376	FIGURE 3-14	A

Table 3-26A Disposal Basin Soil Chemical Characterization

	REGULATORY LIMITS						DB1.2DL			DB1.3DL			DB1.4DL			DB1.5DL			DB1.6DL			DB1.7DL			DB1.8DL			DB1.9DL		
CHEM_NAME	TCLP (mg/l)	TCLP Limit (ug/kg)	STLC (mg/l)	STLC Limit (ug/kg)	TTLC (mg/kg)	TTLC Limit (ug/kg)	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL
1,1,1-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,1,2,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,1,2-TRICHLOROETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,1-DICHLOROETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,1-DICHLOROETHENE	0 7	14,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		34	D		28	D	
1,2-DIBROMOETHANE	NA	NA	NA	NA	NA	NA	22	D		15	D		34	U		20	D		81			410	D		340	D		390	D	
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,2-DICHLOROETHANE	0 5	10,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	150	D		240	D/E		640	D/E		390	D/E		610	D/E		1100	D/E		1100	D/E		930	D/E	
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
1,4-DICHLOROBENZENE	7 5	150,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
BENZENE	0 5	10,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
BROMODICHLOROMETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
BROMOFORM	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
CARBON TETRACHLORIDE	0 5	10,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
CHLOROBENZENE	100	2,000,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
CHLOROFORM	6	120,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
CIS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
DIBROMOCHLOROMETHANE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
ETHYLBENZENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
METHYLENE CHLORIDE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
TETRACHLOROETHENE	0 7	14,000	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
TOLUENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
TRANS-1,2-DICHLOROETHENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
TRICHLOROETHENE	0 5	10,000	204	2 040,000	2,040	2,040 000	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
XYLENE (META & PARA)	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	
XYLENE (ORTHO)	NA	NA	NA	NA	NA	NA	11	U		16	U		34	U		23	U		33	U		42	U		48	U		49	U	

TCLP - Toxicity Characteristic Leaching Procedure
STLC - Soluble threshold Limit Concentration
TTLC - Total Threshold Limit Concentration
U - Compound was analyzed but not detected
D - Indicates that an analyte is quantitated from a secondary dilution of the sample or sample extract
E - Indicates the calculated concentration for an analyte exceeds the linear calibration range, possibly resulting in an artificially low result

Table 3-26B Disposal Basin Soil Chemical Characterization

	REGULATORY LIMITS						DB1.2			DB1.3			DB1.4			DB1.5			DB1.6			DB1.7			DB1.8			DB1.9		
CHEM_NAME	TCLP (mg/l)	TCLP Limit (ug/kg)	STLC (mg/l)	STLC Limit (ug/kg)	TTLC (mg/kg)	TTLC Limit (ug/kg)	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL
ALUMINUM	NA	NA	NA	NA	NA	NA	22200			18600			21200			20600			20900			16200			14800			18700		
ANTIMONY	NA	NA	15	150 000	500	500 000	3.3	U	J	3 5	U	J	3 4	U	J	5 3	L	J	3 2	U	J	3 4	U	J	3 2	U	J	3 4	U	J
ARSENIC	NA	NA	5	50,000	500	500,000	13.7			13 2			5 9			6 7			8 9			7 2			5 7			7 4		
BARIUM	NA	NA	100	1,000,000	10,000	10 000,000	584			211			239			219			623			78 3			94 2			106		
BERYLLIUM	NA	NA	0 75	7,500	75	75,000	0.51	L	J	0 43	L	J	0 46	L	J	0 44	L	J	0 49	L	J	0 48	L	J	0 49	L	J	0 51	L	J
CADMIUM	NA	NA	1	10,000	100	100,000	3 8			4.5			2 6			2 5			2 3			2			1 8			2		
CALCIUM	NA	NA	NA	NA	NA	NA	8750			63000			18900			6930			3100			2420			1880			3250		
CHROMIUM	NA	NA	5	50,000	500/2,500	500,000/2,500,000	121			91 4			114			113			102			74 3			50 2			60 6		
COBALT	NA	NA	80	800,000	8,000	8,000,000	25 4			23 4			26 4			20 5			27 2			25			16 7			20 4		
COPPER	NA	NA	25	250,000	2,500	2,500,000	75 5			245			112			57 1			59 3			47 9			45 7			56 5		
IRON	NA	NA	NA	NA	NA	NA	40100			34800			39200			39000			40600			33800			25600			33000		
LEAD	NA	NA	5	50,000	1,000	1,000,000	46			30 4			9			8 2			9 3			9 6			8 8			9 7		
MAGNESIUM	NA	NA	NA	NA	NA	NA	16900			19000			24100			24400			21700			16300			10200			12600		
MANGANESE	NA	NA	NA	NA	NA	NA	759			622			675			342			651			656			460			657		
MERCURY	NA	NA	0.2	2,000	20	20,000	0 15			0 17			0 13			0 11			0 14			0 11			0 1	L	J	0 18		
NICKEL	NA	NA	20	200,000	2,000	2,000 000	199			181			248			234			233			169			80			108		
POTASSIUM	NA	NA	NA	NA	NA	NA	3680			2800			2550			1990			1620			1130	L	J	1090	L	J	1500		
SELENIUM	NA	NA	1	10,000	100	100,000	0.22	U	J	0 23	U	J	0 22	U	J	0 23	U	J	0 21	U	J	0 22	U	J	0 21	U	J	0 22	U	J
SILVER	NA	NA	5	50,000	500	500,000	1 5	L	J	1 4	L	J	1 3	L	J	1 3	L	J	1 4	L	J	1 2	L	J	0 68	L	J	0 71	L	J
SODIUM	NA	NA	NA	NA	NA	NA	444	L	J	671	L	J	570	L	J	577	L	J	654	L	J	594	L	J	617	L	J	725	L	J
THALLIUM	NA	NA	7	70,000	700	700,000	0 46	U		0 49	U		0 45	U		0 48	U		0 44	U		0 54	L	J	0 44	U		0 47	U	
VANADIUM	NA	NA	24	240,000	2,400	2,400 000	78 8			62 4			68			68			75 5			65 1			47 2			65 2		
ZINC	NA	NA	250	2,500,000	5,000	5 000,000	332			174			117			95 8			94 5			88 3			80 4			119		
PERCENT SOLIDS							81 5			76 8			81 9			79 5			81			80 5			83 1			77 7		

TCLP - Toxicity Characteristic Leaching Procedure
STLC - Soluble threshold Limit Concentration
TTLC - Total Threshold Limit Concentration
U - Compound was analyzed but not detected
L - Result falls between the sample detection limit and the contract required quantitation limit
J - Compound was analyzed and was positively identified but the reported result is estimated

Table 3-26C Disposal Basin Soil Chemical Characterization

	REGULATORY LIMITS						DB1.2			DB1.3			DB1.4			DB1.5			DB1.6			DB1.7			DB1.8			DB1.9		
CHEM_NAME	TCLP (mg/l)	TCLP Limit (ug/kg)	STLC (mg/l)	STLC Limit (ug/kg)	TTLC (mg/kg)	TTLC Limit (ug/kg)	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL	RESULT	LAB_QUAL	VAL_QUAL
1,2,4-TRICHLOROBENZENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
1,4-DICHLOROBENZENE	7 5	150,000	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
1-METHYLNAPHTHALENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2,3,4,6-TETRACHLOROPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
2,4,5-TRICHLOROPHENOL	400	8,000,000	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		930	U		950	U	
2,4,6-TRICHLOROPHENOL	2	40,000	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2,4-DICHLOROPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2,4-DIMETHYLPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2,4-DINITROPHENOL	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
2,4-DINITROTOLUENE	0 13	2,600	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
2,6-DINITROTOLUENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2-CHLORONAPHTHALENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2-CHLOROPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
2-NITROANILINE	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		930	U		950	U	
2-NITROPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
3,3'-DICHLOROBENZIDINE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
3-NITROANILINE	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
4,6-DINITRO-2-METHYLPHENOL	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
4-BROMOPHENYL-PHENYLETHER	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
4-CHLORO-3-METHYLPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
4-CHLOROANILINE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
4-CHLOROPHENYL-PHENYLETHER	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
4-METHYLPHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
4-NITROANILINE	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
4-NITROPHENOL	NA	NA	NA	NA	NA	NA	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
ACENAPHTHENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
ACENAPHTHYLENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
ANTHRACENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BENZO(G,H,I)PERYLENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BENZO(K)FLUORANTHENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
BIS(2-CHLOROETHOXY)METHANE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
BIS(2-CHLOROETHYL)ETHER	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
BIS(2-ETHYLHEXYL)PHTHALATE	NA	NA	NA	NA	NA	NA	340	L		220	L		400	U		410	U		87	L		160	L		NA			NA		
BUTYLBENZYLPHTHALATE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
CARBAZOLE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
CHRYSENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
DI-N-BUTYLPHTHALATE	NA	NA	NA	NA	NA	NA	480			200	L		240	L		91	L		250	L		330	L		NA			NA		
DI-N-OCTYLPHTHALATE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
DIBENZ(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
DIBENZOFURAN	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
DIETHYLPHTHALATE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
DIMETHYLPHTHALATE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
FLUORANTHENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
FLUORENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
HEXACHLOROBENZENE	0.13	2,600	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
HEXACHLOROBUTADIENE	0 5	10,000	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
HEXACHLOROCYCLOPENTADIENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
HEXACHLOROETHANE	3	60,000	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
ISOPHORONE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
N-NITROSO-DI-N-PROPYLAMINE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
N-NITROSODIPHENYLAMINE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
NAPHTHALENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
NITROBENZENE	2	40,000	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
PENTACHLOROPHENOL	100	2,000,000	1 7	17,000	17	17,000	950	U		1000	U		960	U		990	U		960	U		950	U		NA			NA		
PHENANTHRENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
PHENOL	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		380	U		390	U	
PYRENE	NA	NA	NA	NA	NA	NA	390	U		420	U		400	U		410	U		400	U		390	U		NA			NA		
PERCENT SOLIDS							84			78			83			81			83			84			• NA			NA		

TCLP - Toxicity Characteristic Leaching Procedure
STLC - Soluble threshold Limit Concentration
TTLC - Total Threshold Limit Concentration
U - Compound was analyzed but not detected
L - Result falls between the sample detection limit and the contract required quantitation limit

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Table 3-27 Disposal Basin Soil Geologic Characterization

Depth (ft bgs)	Moisture Content %[1]	Wet Density (pct)[2]	Dry Density (pct)[2]	Specific Gravity[3]	Total Organic Carbon %[4]
4.0-4.5	32	116	87	2.70	-
6.7-7.1	29	118	91	2.70	-
9.0-9.5	28	122	95	2.70	-
11.5-12	24	125	101	2.68	-
14-14.5	20	128	106	2.70	-
16.5-17	22	128	105	2.67	-
19-19.5	22	129	106	2.72	-
21.5-22	22	128	106	2.71	-
23.4-23.9	19	129	108	2.74	-
4.5-4.6	-	-	-	-	0.75
7.1-7.2	-	-	-	-	0.78
9.5-9.6	-	-	-	-	0.59
12-12.1	-	-	-	-	0.40
14.5-14.6	-	-	-	-	0.11
17-17.1	-	-	-	-	0.25
19.5-19.6	-	-	-	-	0.21
22-22.1	-	-	-	-	0.12
23.9-24	-	-	-	-	0.08

[1] In general accordance with ASTM D-2216

[2] In general accordance with Section 13-2 Methods of Soil Analysis, Part1, Physical and Mineralogical Methods, 2nd edition, America Society of Agronomy, Inc., 1986

[3] In general accordance with ASTM D-854

[4] In general accordance with EPA 9060A

pcf– Pounds per cubic foot

A dash indicates the parameter was not determined at the specified depth.

Table 3-28 Summary of Compounds Detected in Groundwater

Detected Compound and Possible Origins	Contaminated Wells	Low (µg/l)	High (µg/l)	MCL (µg/l)	Number of Detects
Common Pesticides and Compounds Used at Site					
1,2-Dibromo-3-Chloropropane (DBCP)	MW-12B, MW-7C	0.014	750	0.20	45
1,2-Dibromoethane (EDB)	MW-13C, X-1A	0.01	28000	0.05	114
1,2-Dichloropropane (DCP)	MW-10B, X-3A, X-1A	0.2	22000	5.0	98
Carbon Tetrachloride	MW-7A, MW-8A, B10-B1	0.3	370	5.0	46
1,2,3-Trichloropropane	MW-7A, MW-7C	10	440	NA	3
1,3-Dichloropropane	MW-7C, MW-7B	74	120	NA	2
Petroleum Hydrocarbon Compounds					
Benzene	AW-2, AW-3, MW-4C, MW-6C, OW-1C, MW-7C	0.2	95	5.0	48
Toluene	MW-2A, MW-7D	0.1	6	1,000	70
Xylene (Ortho)	AW-2, MW-10B, MW-7C	0.2	9	10,000	30
Daughter Products, Possible Product Contaminants, and Laboratory Solvents					
1,1,1-Trichloroethane (TCA)	X-3B, MW-7B	0.2	7	200	26
1,1-Dichloroethane (DCA)	MW-11B, AW-2, X-2B, X-4A, MW-7B, MW-7C	0.4	7	NA	26
1,1-Dichloroethene (DCE)	MW-11A, MW-7C	0.2	7	7.0	6
1,2-Dichloroethane (DCA)	MW-10A, MW-13C, MW-5C, MW-6A, MW-8B, X-1A	0.2	160	NA	37
Carbon Disulfide (Lab Contaminant)	MW-6C, X-1C	0.2	8	NA	5
Bromoform	MW-11A, X-1B	0.3	2	100	10
Chloroform	MW-11B, B10-B1	0.2	15	100	34
Chlorobenzene	AW-2, X-1A	0.3	53	100	24
Trans-1,3-Dichloropropene	MW-11A, X-1A, X-1B	0.2	0.6	NA	3
Vinyl Chloride	MW-11A, MW-7B, MW-7C, X-1A	0.3	2	2.0	8
1,2-Dichlorobenzene	AW-2	3	3	600	1
1,3-Dichlorobenzene	AW-2	1	1	600	1
1,4-Dichlorobenzene	X-1A, AW-2	0.2	2	75	2
Acetone (Common Lab Contaminant)	AW-6, MW-13B, MW-3C, MW-4C, MW-7D, MW-8B, X-1B	2	97	NA	25

Table 3-28 (Cont'd)

Detected Compound and Possible Origins	Contaminated Wells	Low (µg/l)	High (µg/l)	MCL (µg/l)	Number of Detects
Methyl Ethyl Ketone (2-Butanone)	X-1A, OW-1B	0.5	1	NA	2
Methylene Chloride (Common Lab Contaminant)	MW-4B, MW-7C	0.2	2	NA	7
Compounds Detected in Upgradient Wells					
Chloroethane	MW-6C, OW-4C	0.2	0.6	NA	5
Chloromethane	MW-13C, MW-6C	0.3	0.4	NA	2
Dibromochloromethane	MW-2B	0.3	0.5	NA	4
Ethylbenzene	MW-9A, MW-6C	0.2	3	700	25
Styrene	MW-2A, MW-6C	0.1	0.3	100	4
Tetrachloroethene	X-1B, MW-6C	0.2	21	5.0	50
Trichloroethene	MW-13A, MW-4C, MW-6C, MW-7A, OW-1A	0.2	0.5	5.0	13
Xylene (Meta & Para) Petroleum *Hydrocarbon*	MW-2A, MW-5C, MW-6C, MW-2B,	0.1	4	10,000	35
Bromodichloromethane	OW-2A, MW-2B	0.2	2	100	8
Bromoethane	MW-6C	0.4	0.4	NA	1
Unknown Origin					
2-Hexanone (Possible Petroleum Hydrocarbon)	OW-3C	3	3	NA	1

NA - MCSLs have not been promulgated for these compounds and are, therefore, not available.

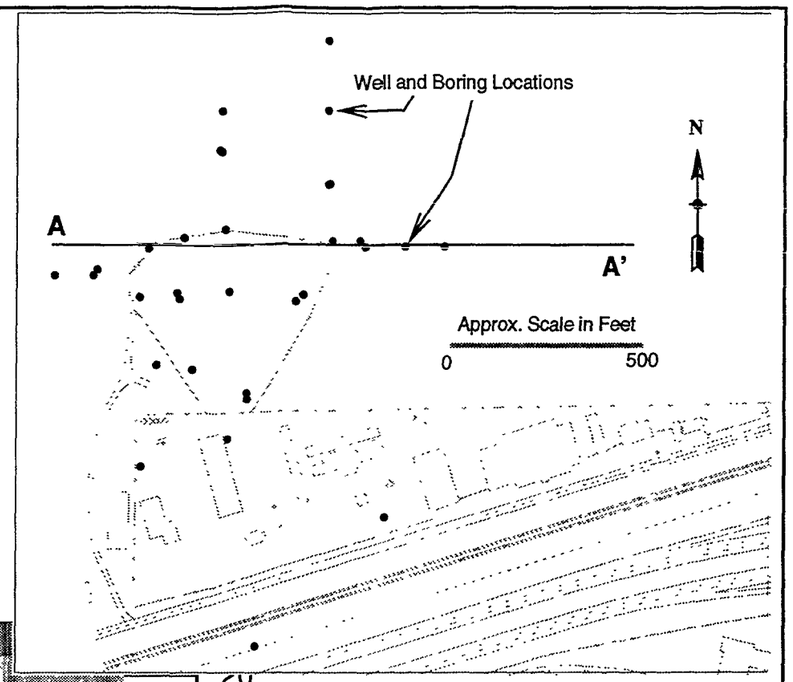
Table 3-29 Background Groundwater Chemistry – Organic Compounds

Sampling Date	Compound	Concentration (µg/l)	Laboratory Qualifier	Reporting Limit (µg/l)
MW-2A				
28-Mar-94	Ethylbenzene	0.8	L	1
28-Mar-94	Styrene	0.1	L	1
28-Mar-94	Toluene	0.1	L	1
28-Mar-94	Xylene (Meta & Para)	0.1	L	1
MW-2B				
13-Dec-94	Benzene	3		1
13-Dec-94	Bromodichloromethane	0.4	L	1
22-Aug-94	Bromodichloromethane	2		1
13-Dec-94	Dibromochloromethane	0.3	L	1
22-Aug-94	Dibromochloromethane	0.5	L	1
13-Dec-94	Ethylbenzene	2		1
22-Aug-94	Tetrachloroethene	17		1
13-Dec-94	Tetrachloroethene	1		1
22-Aug-94	Toluene	0.3	L	1
13-Dec-94	Toluene	2		1
13-Dec-94	Trichloroethene	0.4	L	1
13-Dec-94	Xylene (Meta & Para)	4		1
13-Dec-94	Xylene (Ortho)	0.8	L	1
MW-6A				
20-Jun-95	1,2-Dichloroethane	0.2	L	0.5
20-Jun-95	1,2-Dichloroethane	0.6		0.5
28-Mar-94	Carbon Disulfide	1		1
20-Jun-95	Toluene	3		1
MW-6B				
19-Jun-95	Acetone	3	L	10
22-Aug-94	Tetrachloroethene	1		1
22-Aug-94	Toluene	0.2	L	1
19-Jun-95	Toluene	0.5	L	1
22-Aug-94	Xylene (Meta & Para)	0.4	L	1

Table 3-29 (Cont'd)

Sampling Date	Compound	Concentration (µg/l)	Laboratory Qualifier	Reporting Limit (µg/l)
MW-6C				
20-Jun-95	1,2-Dichloroethane	0.8		0.5
20-Jun-95	Acetone	10		10
20-Jun-95	Benzene	2		1
13-Dec-94	Benzene	2		1
28-Mar-94	Benzene	0.2	L	1
22-Aug-94	Bromodichloromethane	0.3	L	1
28-Mar-94	Bromomethane	0.4	L	1
28-Mar-94	Carbon Disulfide	0.2	L	1
28-Mar-94	Chloroethane	0.2	L	1
28-Mar-94	Chloromethane	0.4	L	1
20-Jun-95	Ethylbenzene	1		1
28-Mar-94	Ethylbenzene	0.5	L	1
13-Dec-94	Ethylbenzene	3		1
20-Jun-95	Styrene	0.3	L	1
28-Mar-94	Styrene	0.3	L	1
22-Aug-94	Tetrachloroethene	21		1
13-Dec-94	Tetrachloroethene	2		1
13-Dec-94	Toluene	2		1
20-Jun-95	Toluene	4		1
13-Dec-94	Trichloroethene	0.5	L	1
28-Mar-94	Trichloroethene	0.2	L	1
13-Dec-94	Xylene (Meta & Para)	4		1
28-Mar-94	Xylene (Meta & Para)	0.1	L	1
13-Dec-94	Xylene (Ortho)	0.6	L	1

L - Indicates results which fall below the contract required quantitation limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

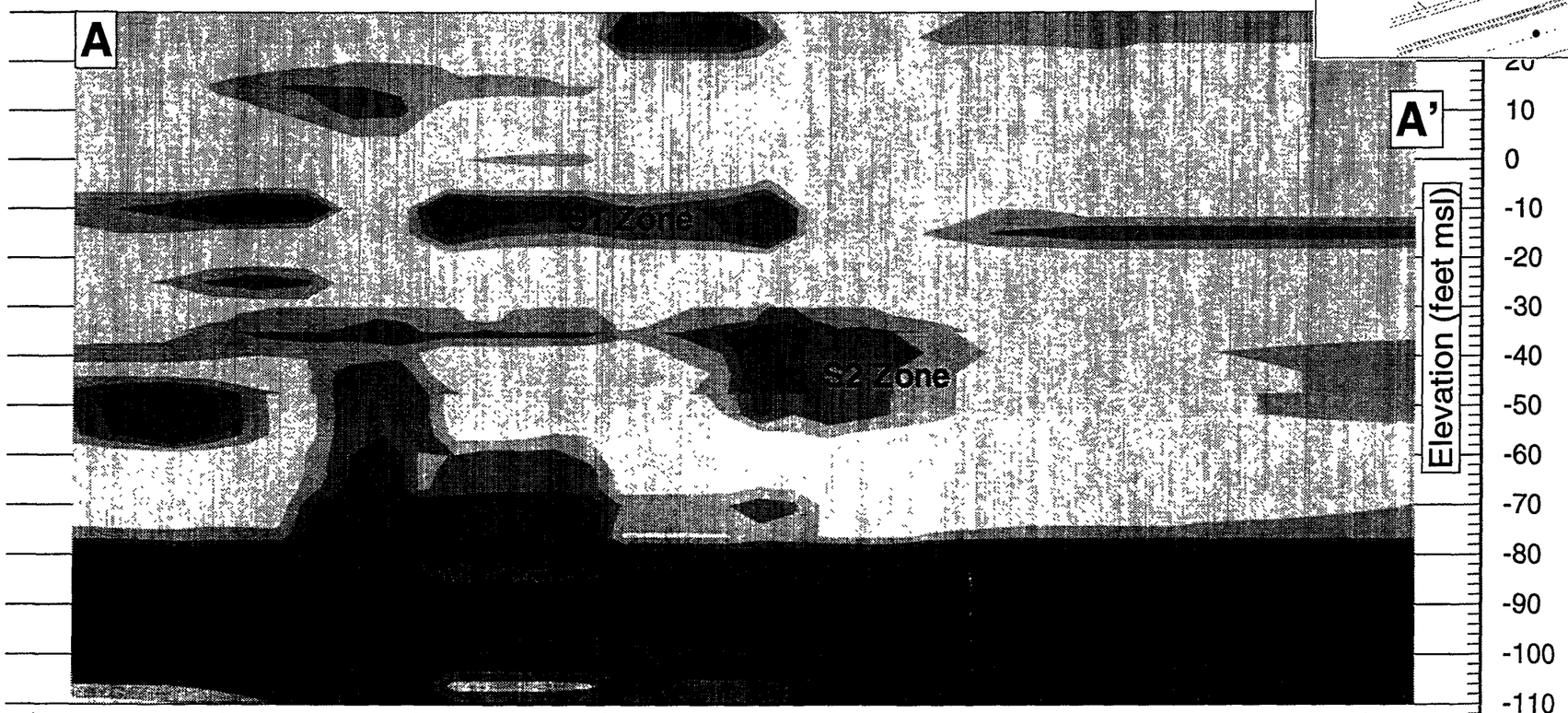


Cross Section Location Map

Clay Silt Silty Sand Sand Gravel

0 1 2 3 4 7 8 9 10 11

V.E. = 5x



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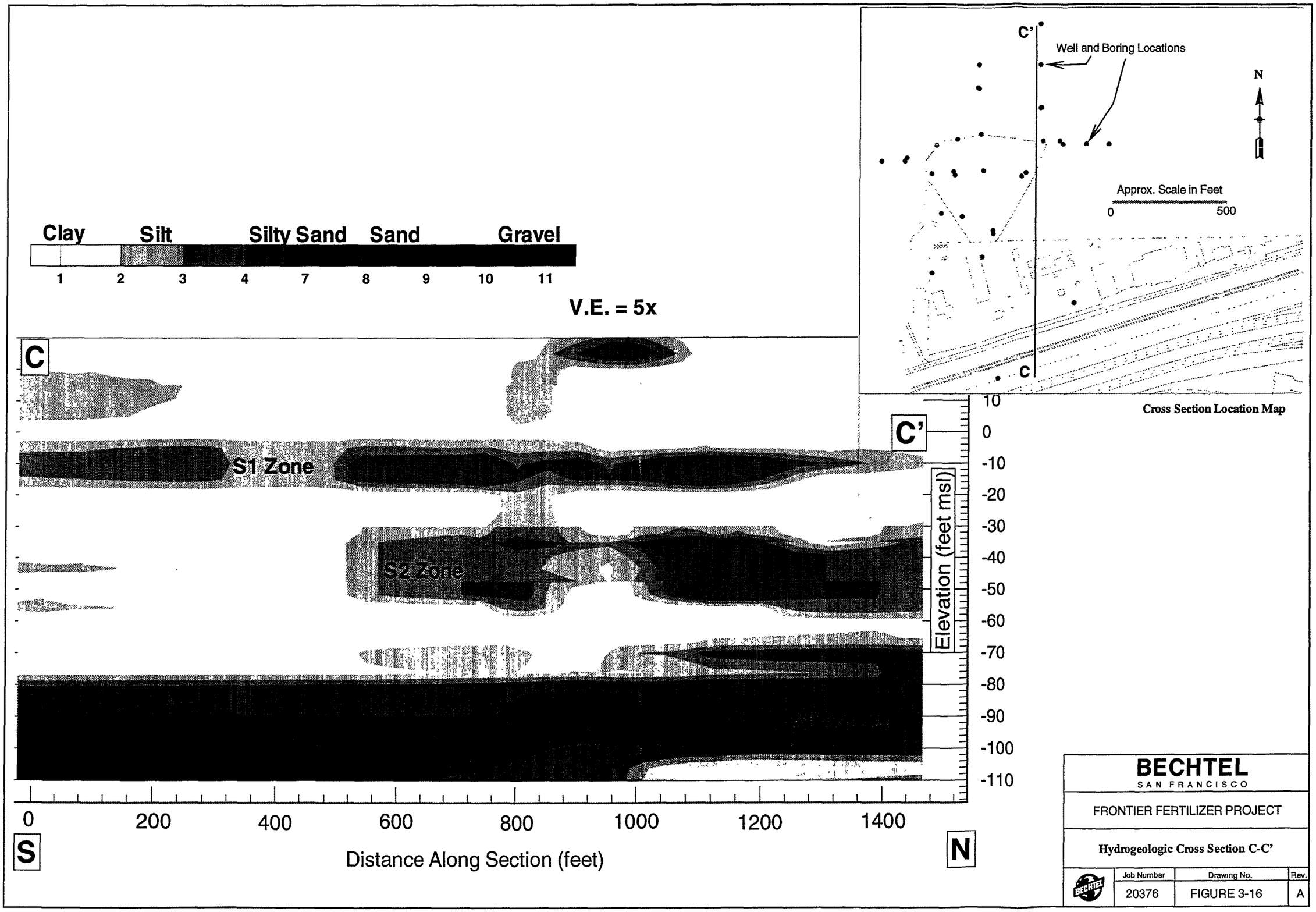
Hydrogeologic Cross Section A-A'

Job Number	Drawing No.	Rev.
20376	FIGURE 3-15	A

Table 3-30 Hydrogeologic Parameters

Well	Zone	Transmissivity (ft^2/day)	Aquifer Thickness (ft)	Hydraulic Conductivity (ft/day)	Test Type Slug or Pumping	Source
MW-9C	A-1	4,889	10	489	Slug-out	GTI
	A-1	6,298	10	630	Slug-in	GTI
MW-9B	S-2	24	10	2.4	Slug-out	GTI
	S-2	24	10	2.4	Slug-in	GTI
MW-11B	S-2	38	10	3.8	Slug-out	GTI
	S-2	38	10	3.8	Slug-in	GTI
MW-4B	S-2	91	10	9.1	Pumping	M&E
MW-8B	S-2	167	7	24	Pumping	M&E
MW-7C	S-2	287	13	22	Pumping	M&E
Average		96		10		
MW-13A	S-1	70	8	8.7	Pumping	M&E
AW-2	S-1	106	20	5.3	Pumping	M&E
MW-4A	S-1	150	10	15	Pumping	M&E
MW-8A	S-1	194	6.5	30	Pumping	M&E
MW-9A	S-1	354	13	27	Slug-out	GTI
MW-12A	S-1	636	13	49	Slug-out	GTI
MW-11A	S-1	707	13	54	Slug-out	GTI
Average		317		27		
		413				

M&E – Metcalf and Eddy, Final Focused RI/FS
GTI – Groundwater Technology, Inc.



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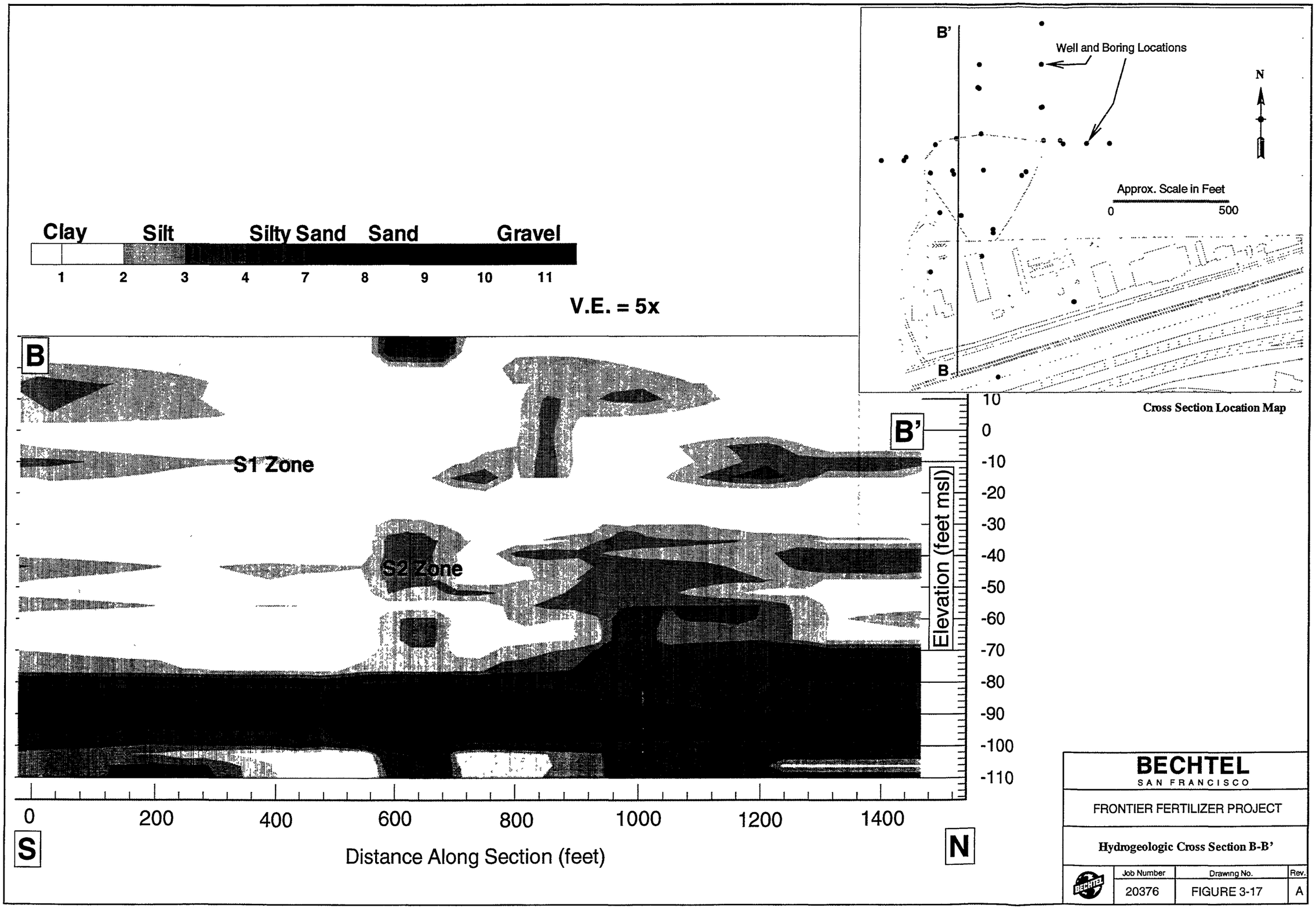
Hydrogeologic Cross Section C-C'

Job Number	Drawing No.	Rev.
20376	FIGURE 3-16	A



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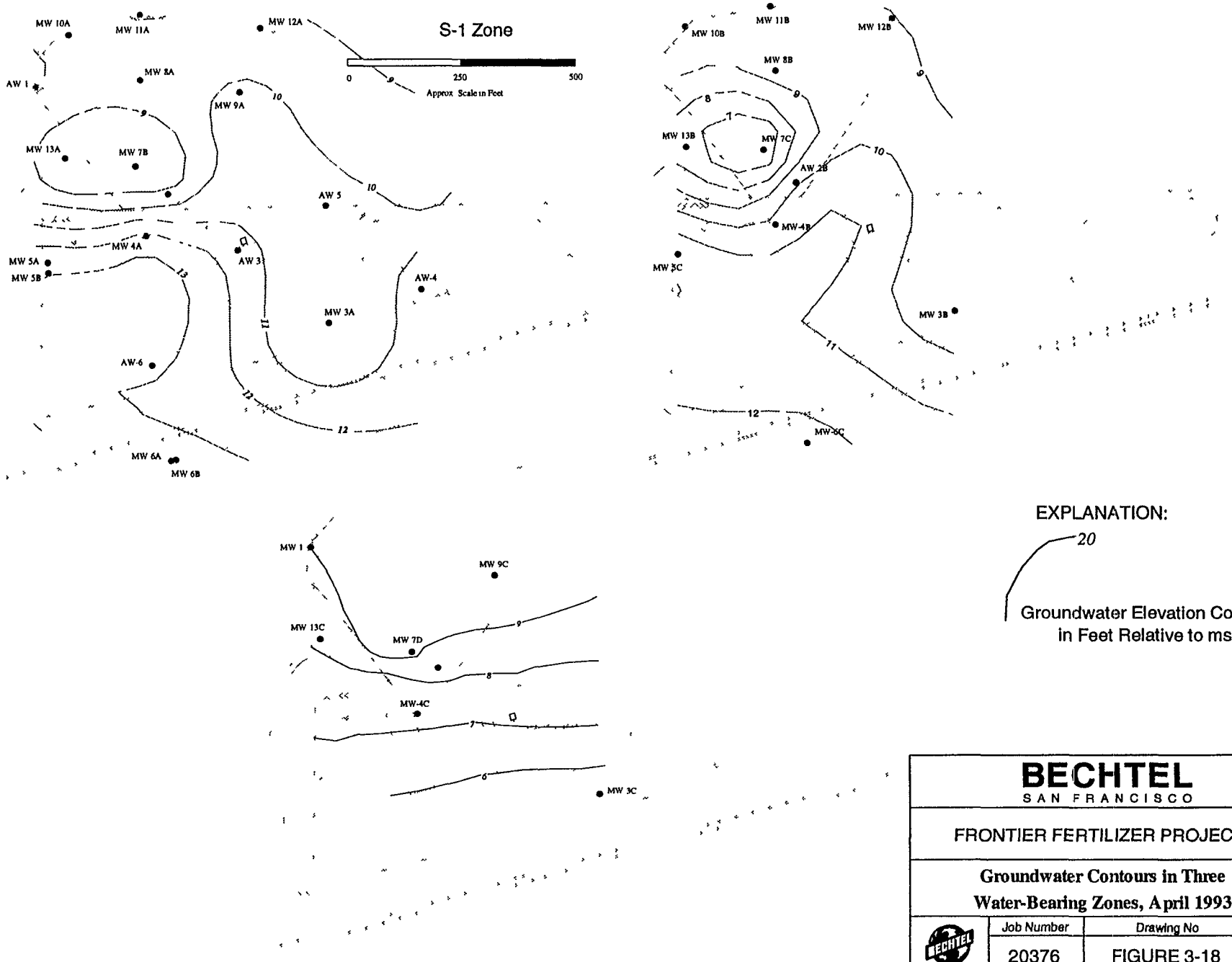
Hydrogeologic Cross Section B-B'

Job Number	Drawing No.	Rev.
20376	FIGURE 3-17	A



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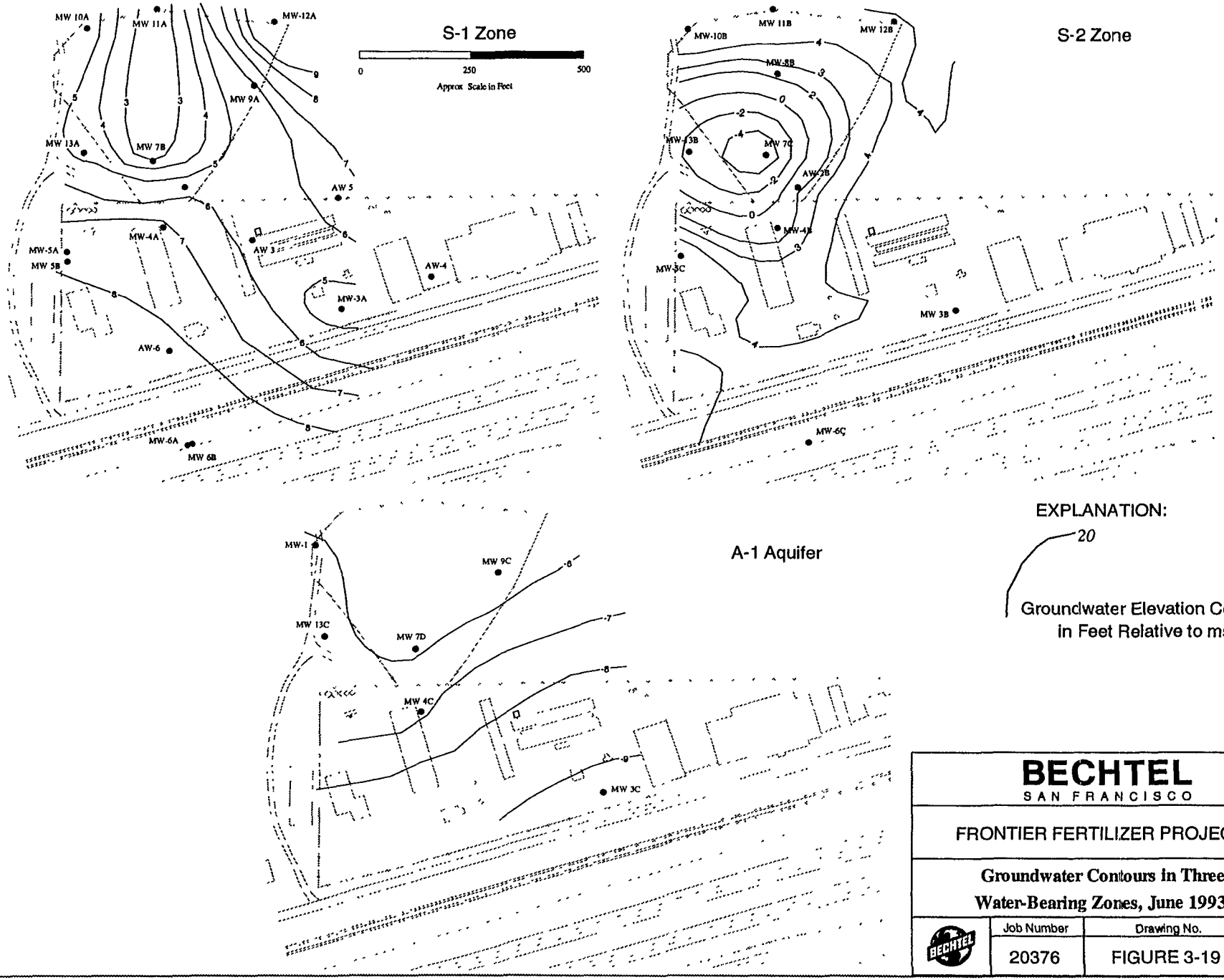
Groundwater Contours in Three Water-Bearing Zones, April 1993

Job Number	Drawing No	Rev
20376	FIGURE 3-18	A



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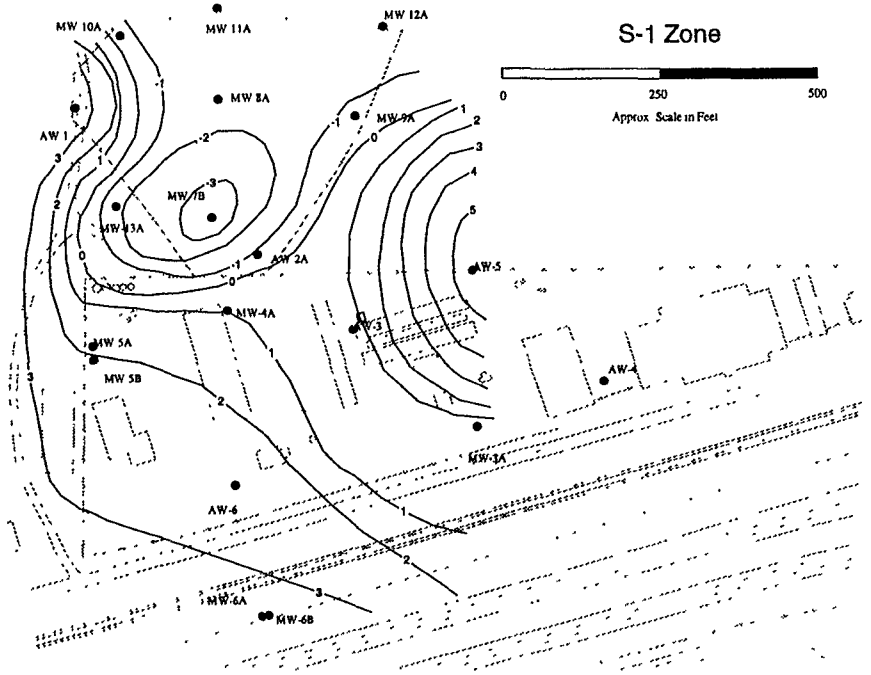
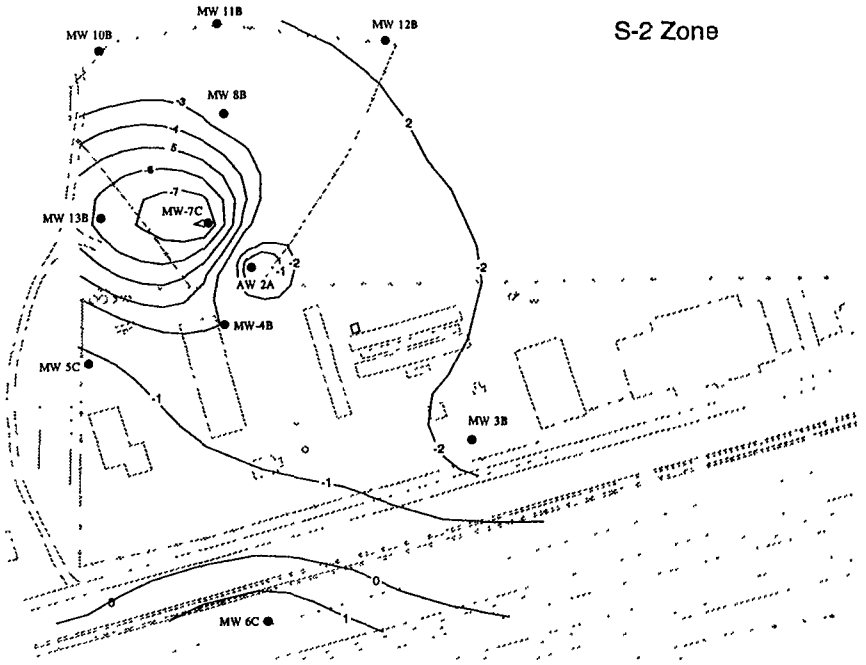
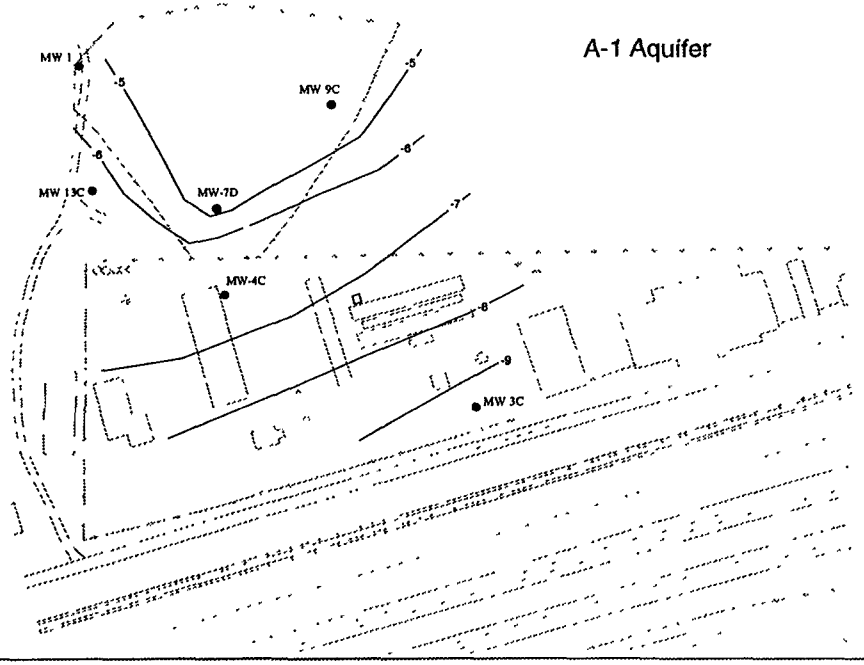
Groundwater Contours in Three Water-Bearing Zones, June 1993

Job Number	Drawing No.	Rev.
20376	FIGURE 3-19	A







EXPLANATION:

20

Groundwater Elevation Contour in Feet Relative to msl

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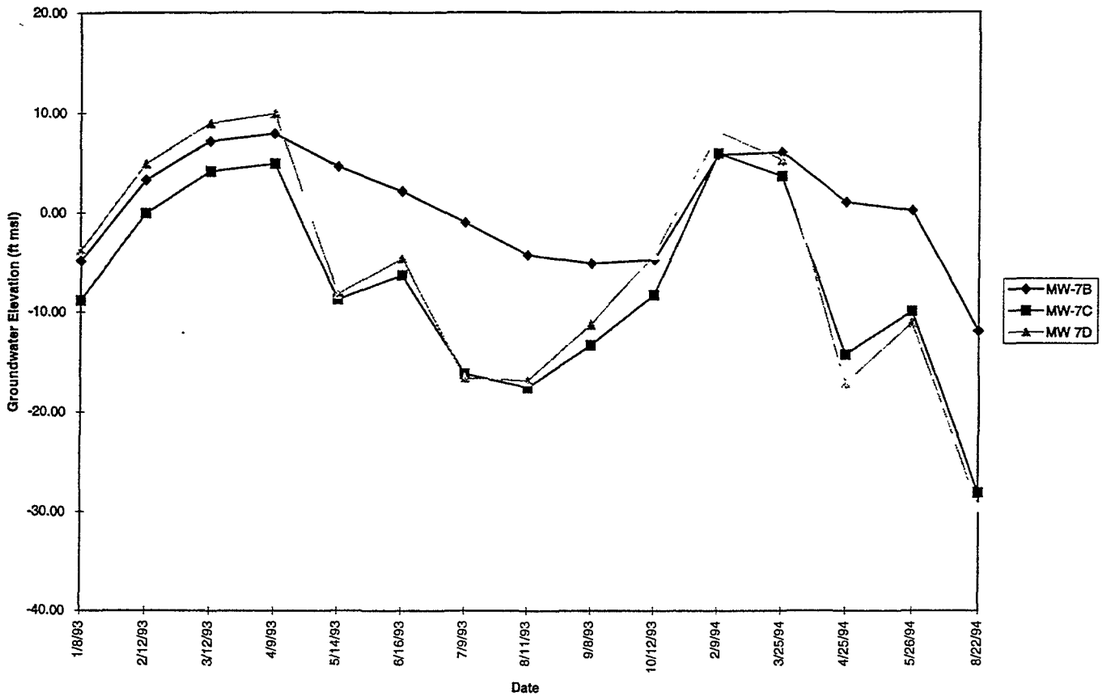
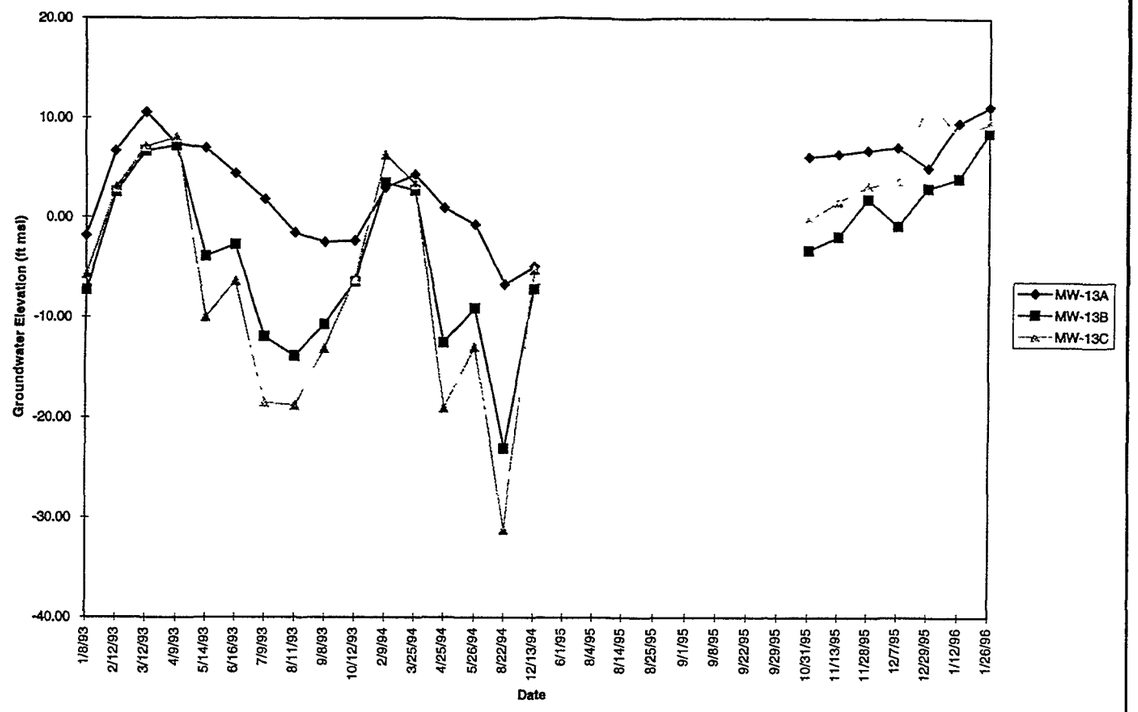
Groundwater Contours in Three Water-Bearing Zones, October 1993

Job Number	Drawing No.	Rev.
20376	FIGURE 3-20	A

Hydrograph for MW-7 Wells



Hydrograph for MW-13 Wells



S-1 Wells = MW-7B and MW-13A
S-2 Wells = MW-7C and MW-13B
A-1 Wells = MW-7D and MW-13C

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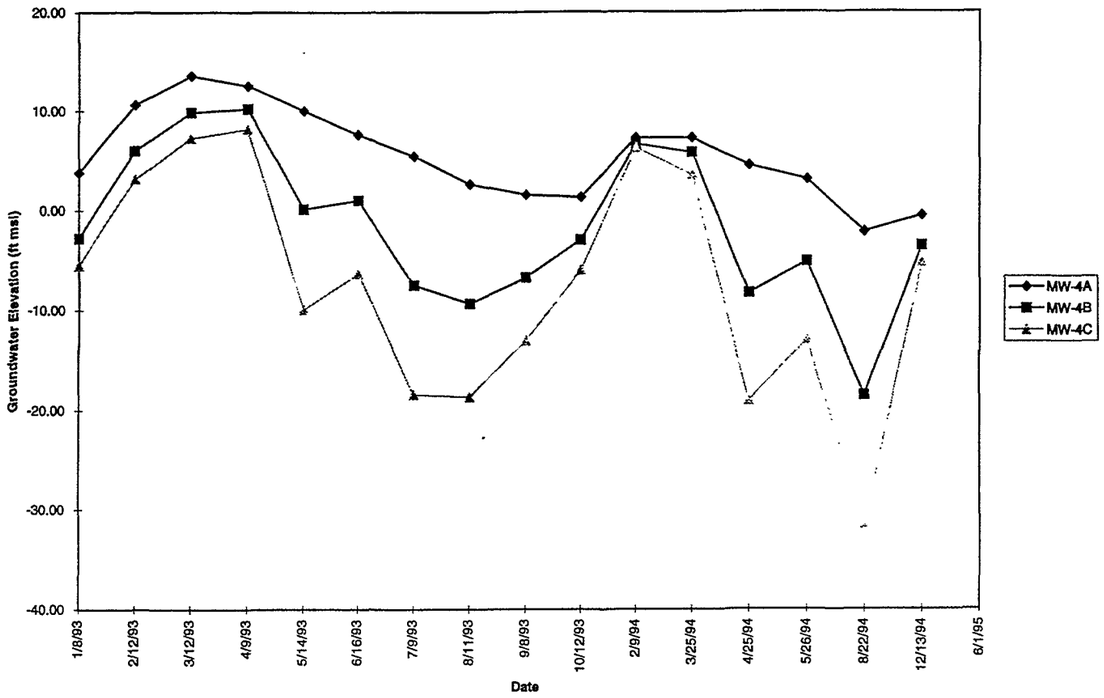
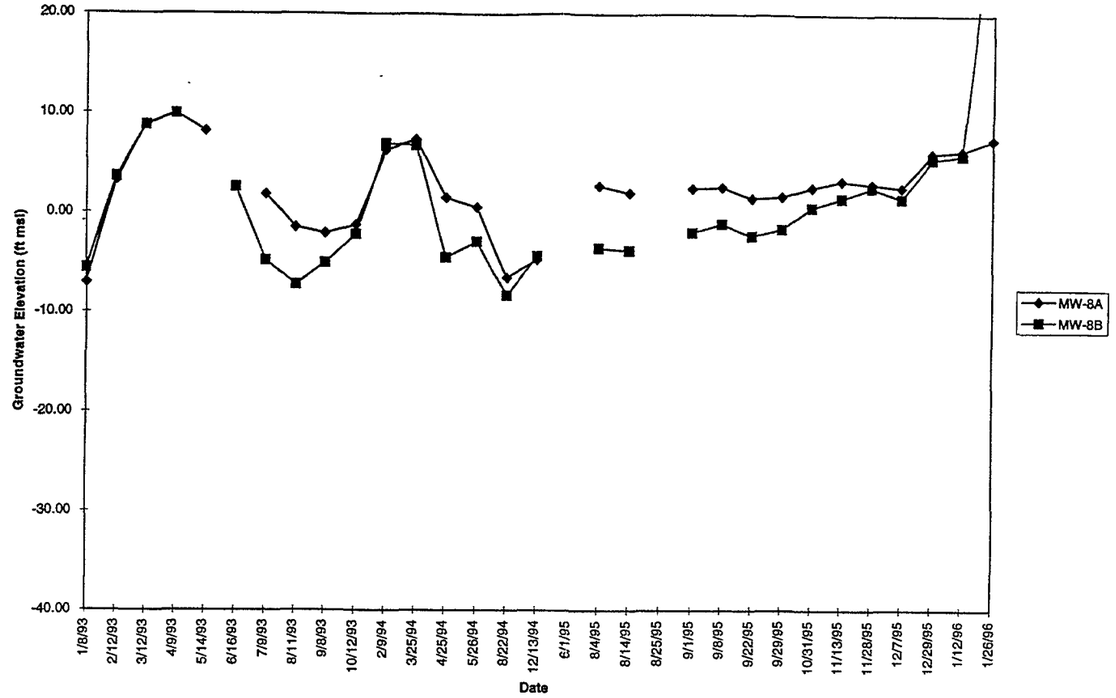
Hydrographs for MW-7 and MW-13 Wells

Job Number	Drawing No.	Rev.
20376	FIGURE 3-21A	A

Hydrograph for MW-4 Wells



Hydrograph for MW-8 Wells



S-1 Wells = MW-4A and MW-8A

S-2 Wells = MW-4B and MW-8B

A-1 Well = MW-4C

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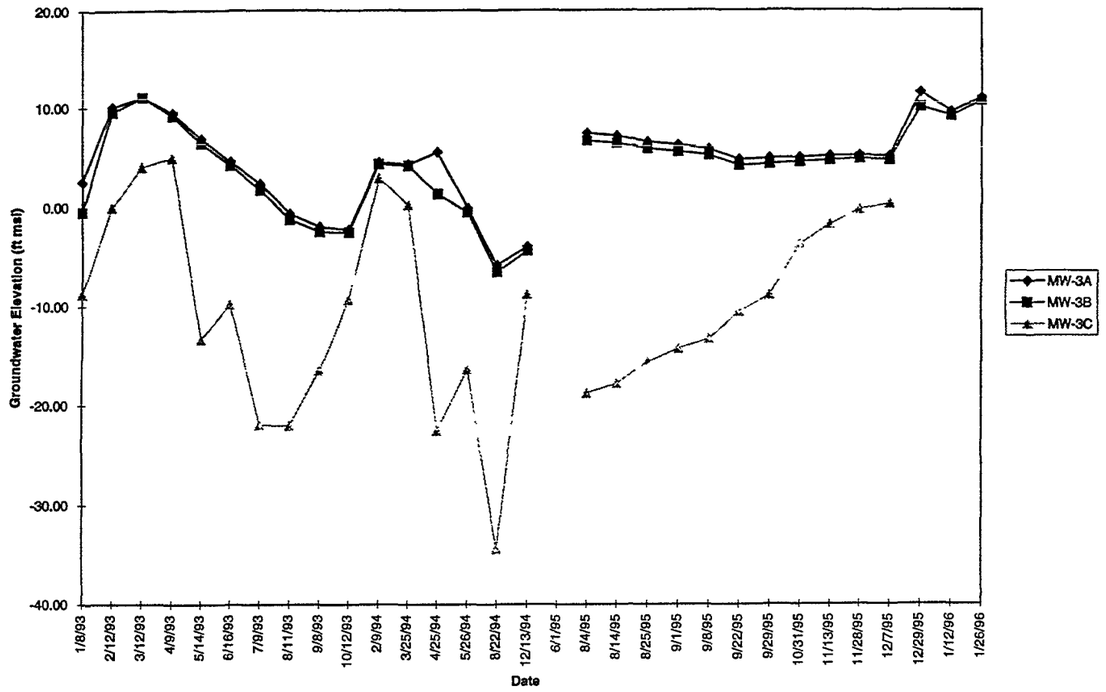
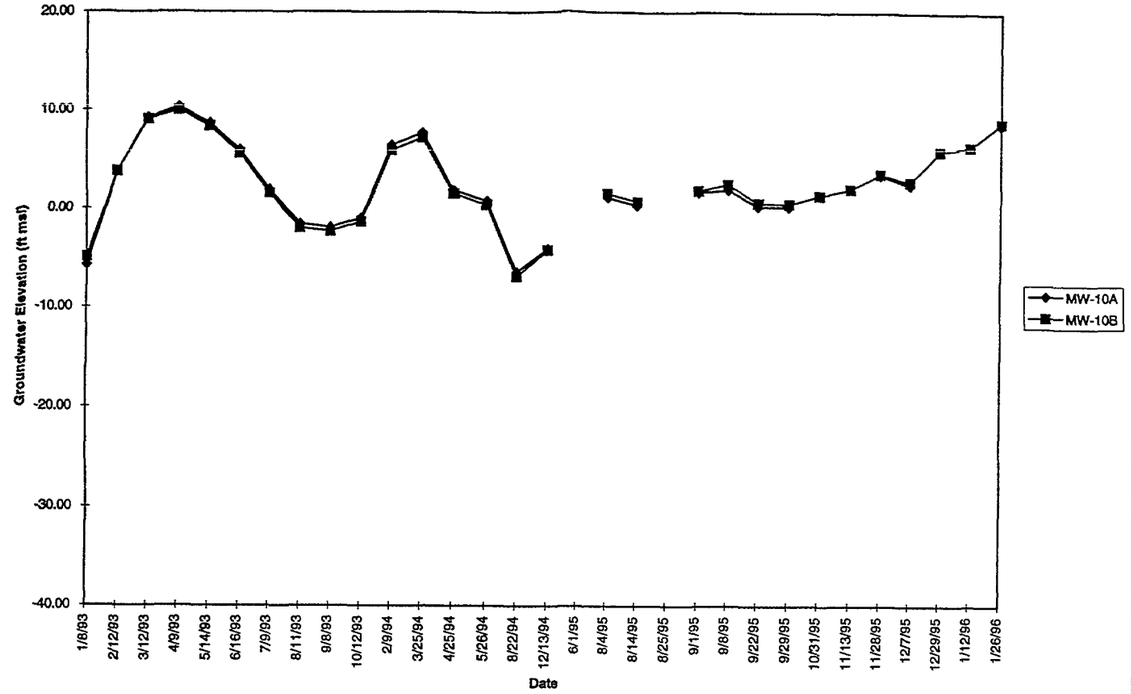
Hydrographs for MW-4 and MW-8 Wells

Job Number	Drawing No.	Rev.
20376	FIGURE 3-21B	A

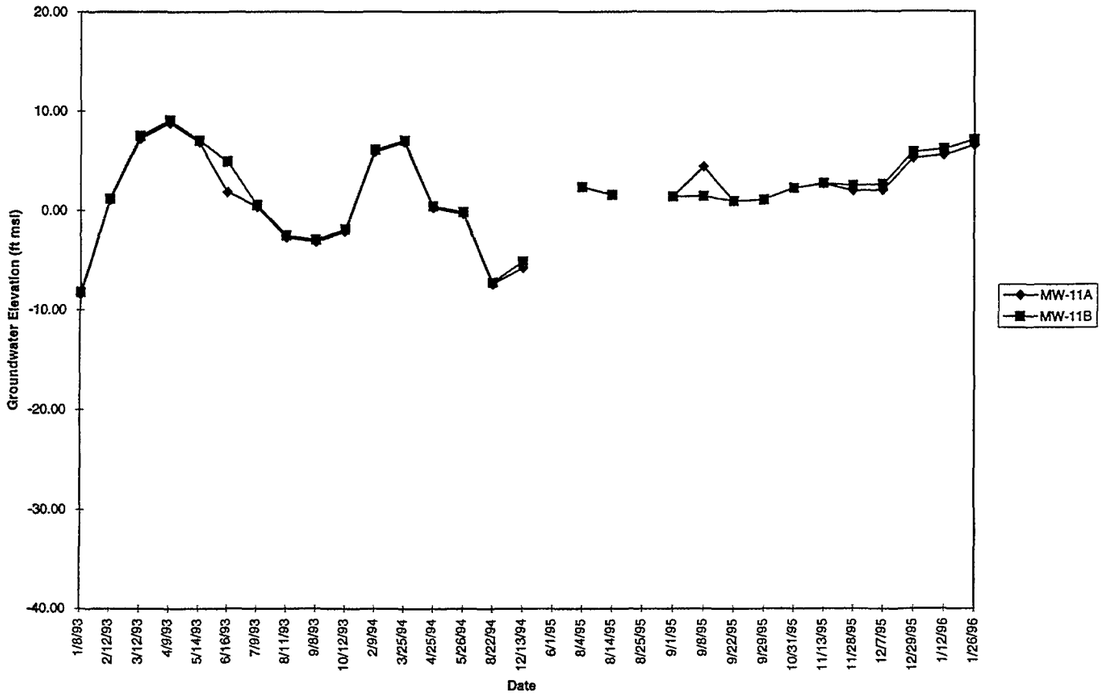
Hydrograph for MW-3 Wells



Hydrograph for MW-10 Wells



Hydrograph for MW-11 Wells



S-1 Wells = MW-3A, MW-10A, MW-11A
S-2 Wells = MW-3B, MW-10B, MW-11B
A-1 Well = MW-3C

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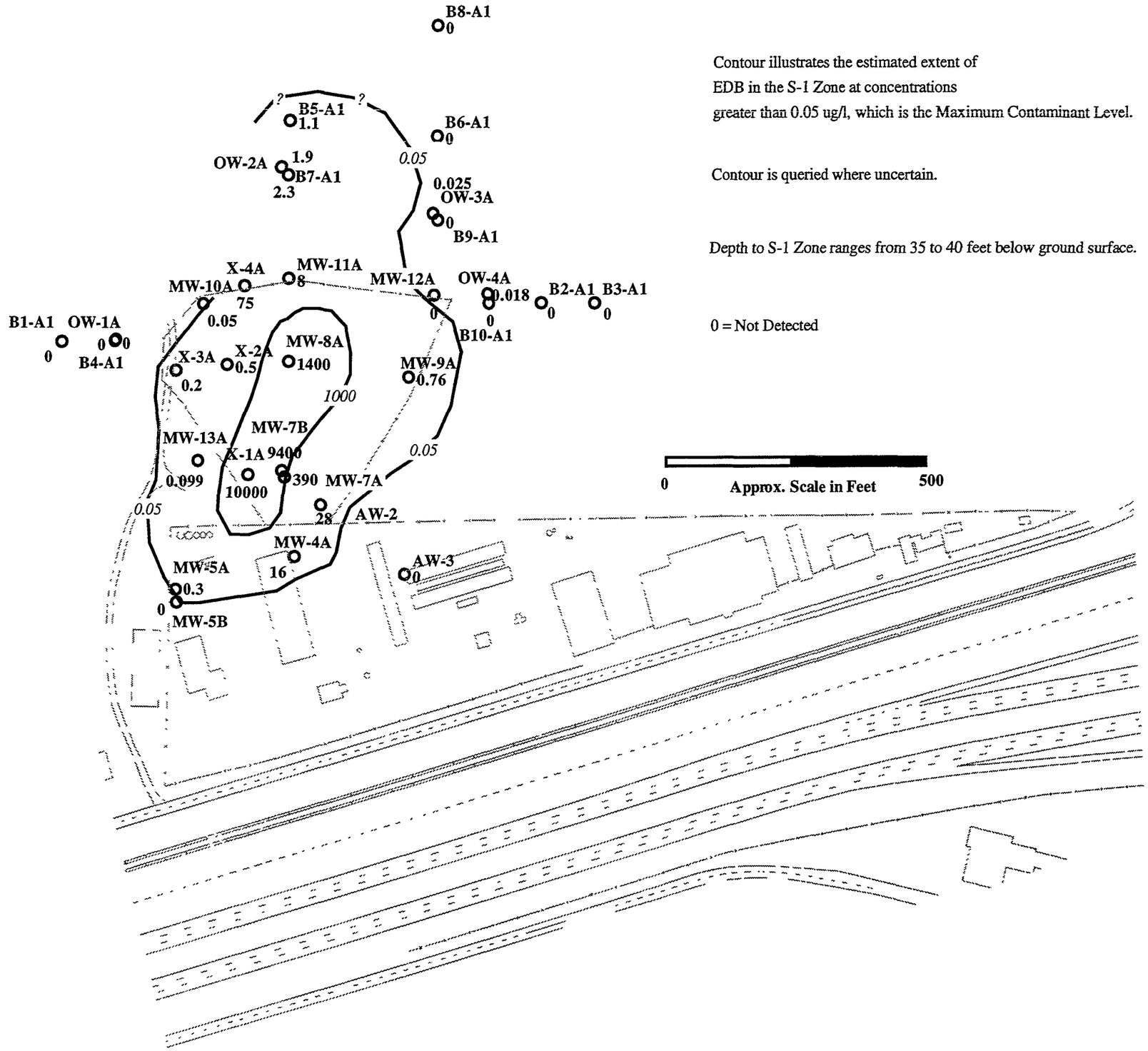
Hydrographs for MW-3, MW-10, and MW-11 Wells

Job Number	Drawing No.	Rev.
20376	FIGURE 3-21C	A



Contour illustrates the estimated extent of EDB in the S-1 Zone at concentrations greater than 0.05 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to S-1 Zone ranges from 35 to 40 feet below ground surface.

0 = Not Detected

N

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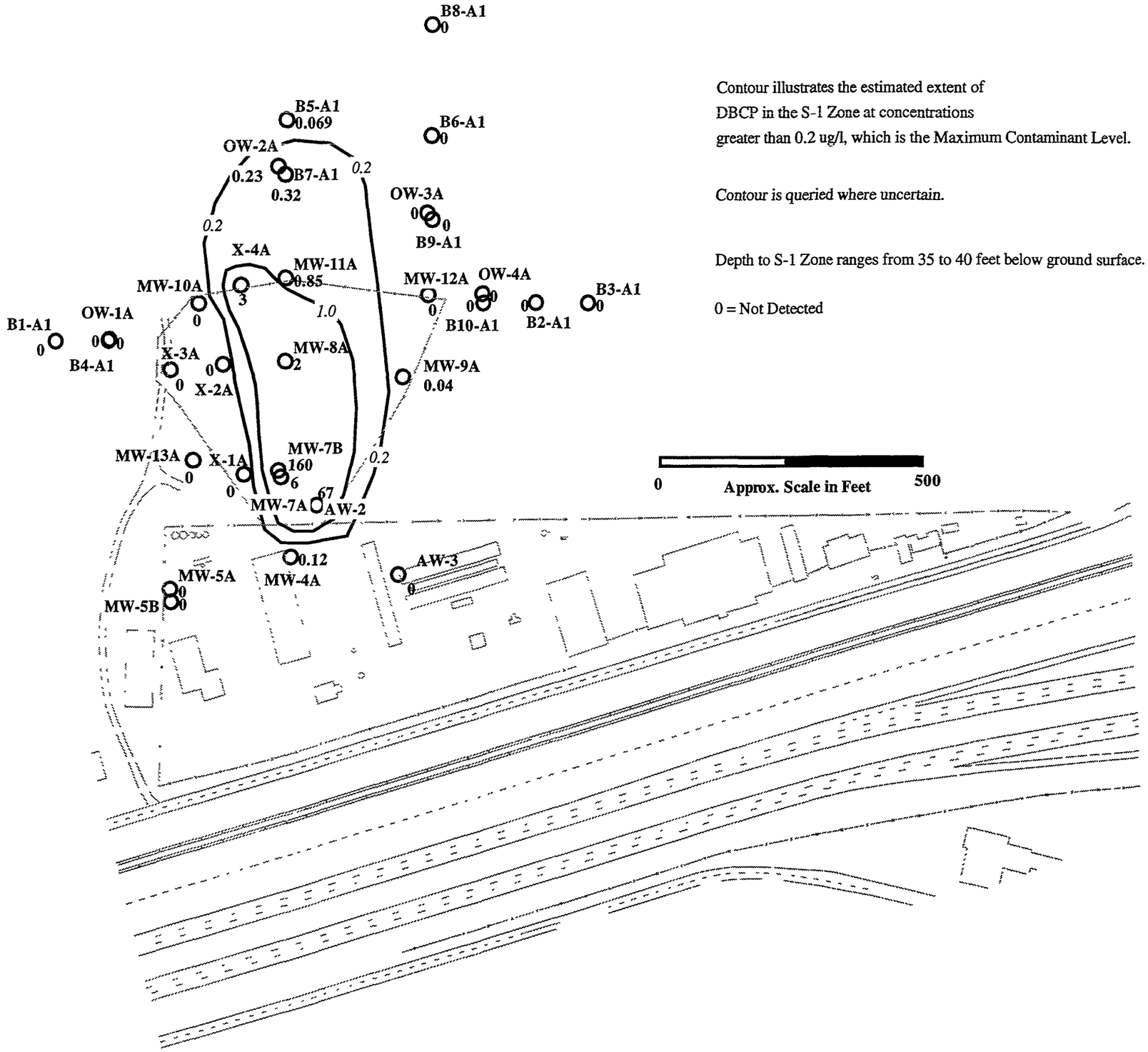
Ethylene Dibromide (EDB) in S-1 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-22	A



Contour illustrates the estimated extent of DBCP in the S-1 Zone at concentrations greater than 0.2 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to S-1 Zone ranges from 35 to 40 feet below ground surface.

0 = Not Detected

N

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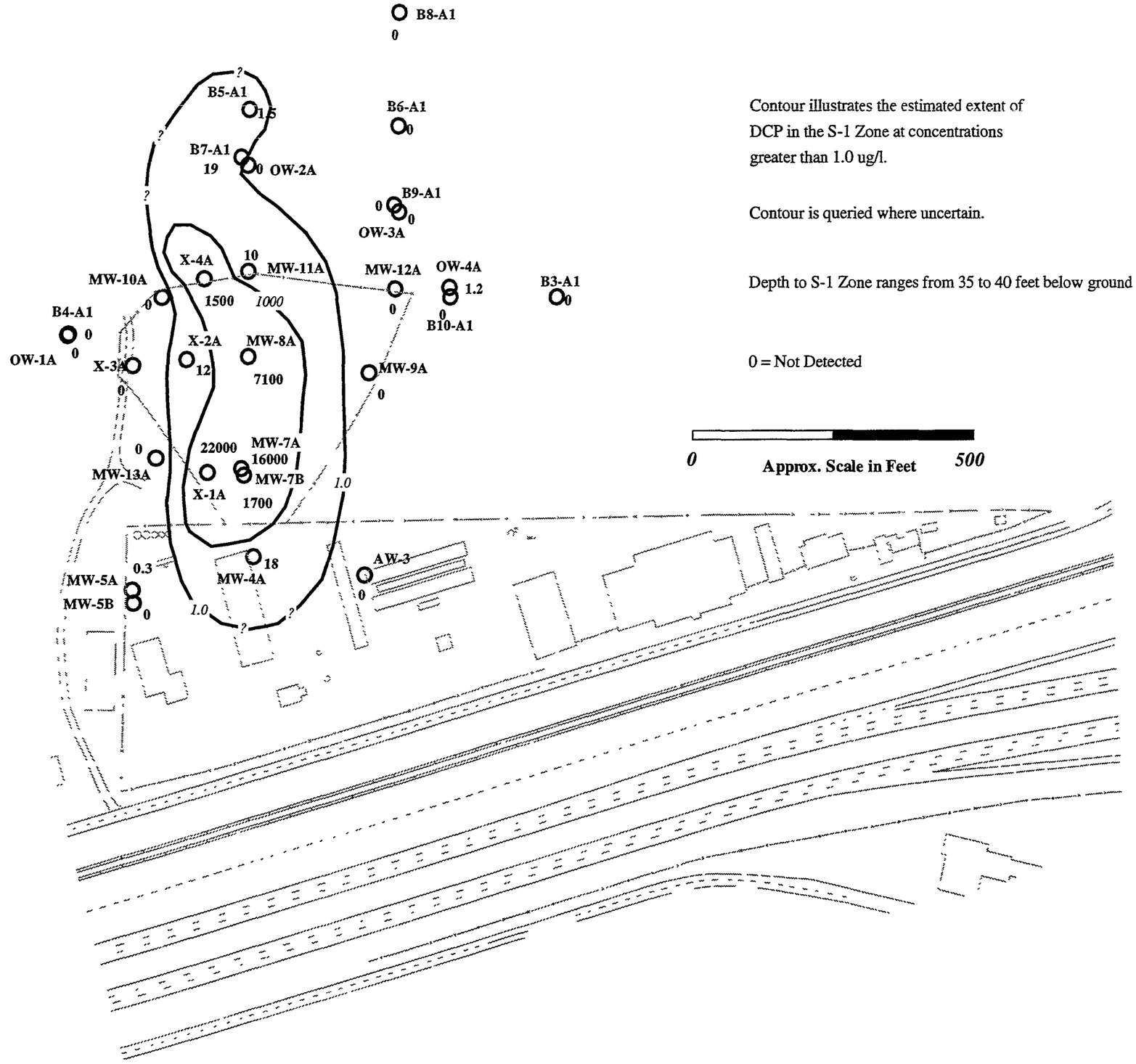
Dibromochloropropane (DBCP) in S-1 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-23	A



Contour illustrates the estimated extent of DCP in the S-1 Zone at concentrations greater than 1.0 ug/l.

Contour is queried where uncertain.

Depth to S-1 Zone ranges from 35 to 40 feet below ground surface.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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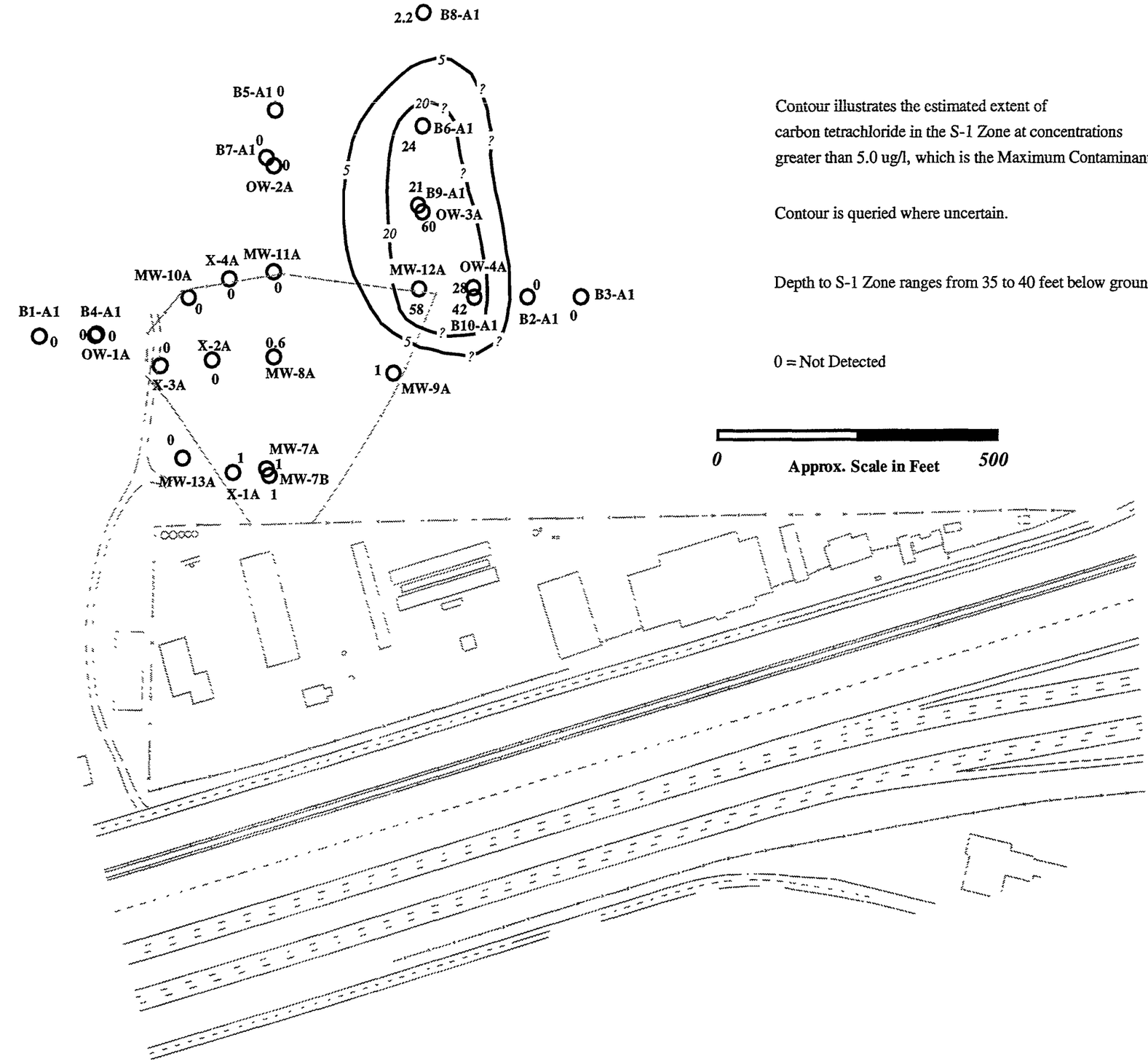
1,2-Dichloropropane (DCP) in S-1 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-24	A



Contour illustrates the estimated extent of carbon tetrachloride in the S-1 Zone at concentrations greater than 5.0 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to S-1 Zone ranges from 35 to 40 feet below ground surface.

0 = Not Detected

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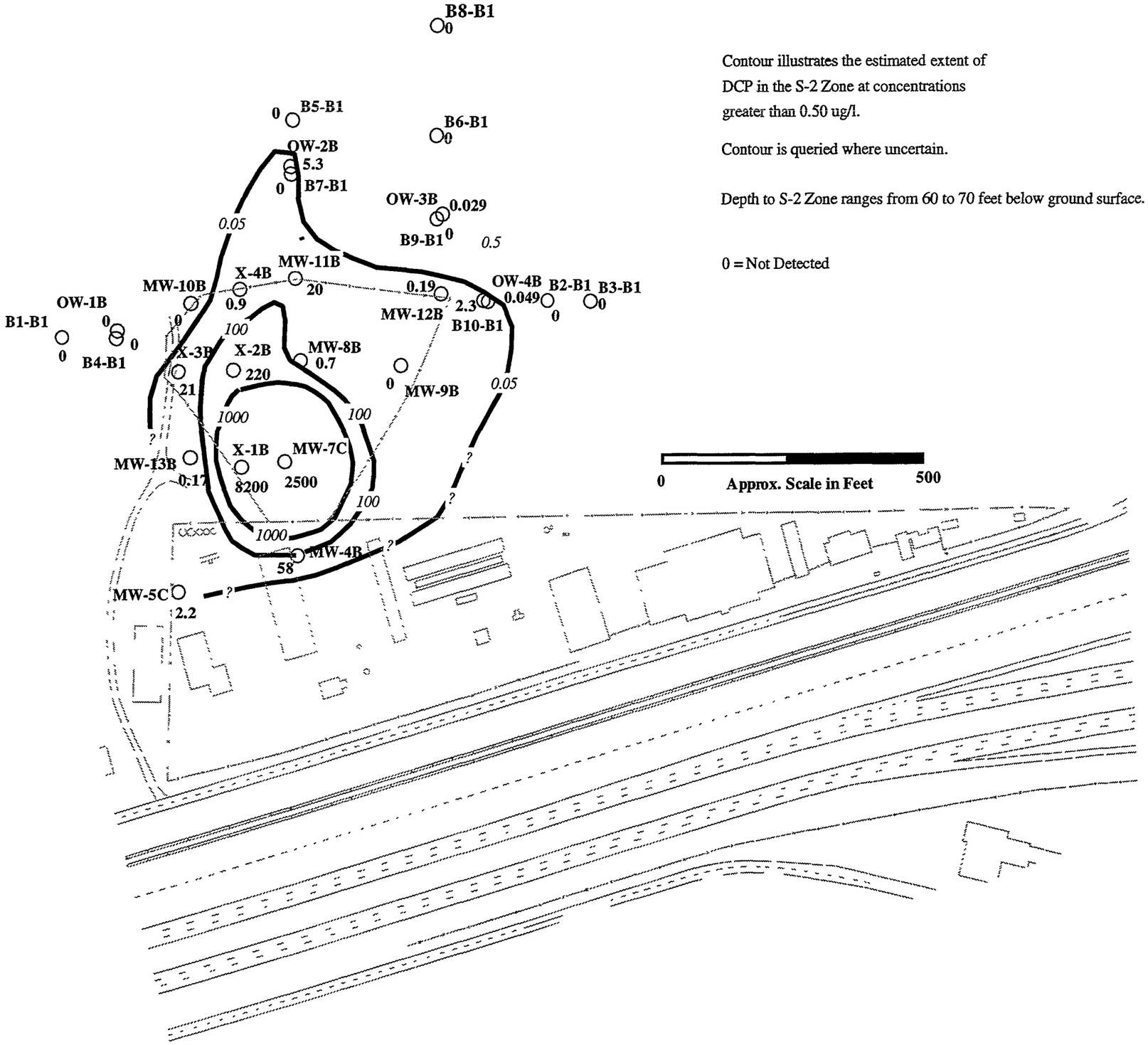
Carbon Tetrachloride in S-1 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-25	A



Contour illustrates the estimated extent of DCP in the S-2 Zone at concentrations greater than 0.50 ug/l.

Contour is queried where uncertain.

Depth to S-2 Zone ranges from 60 to 70 feet below ground surface.

0 = Not Detected

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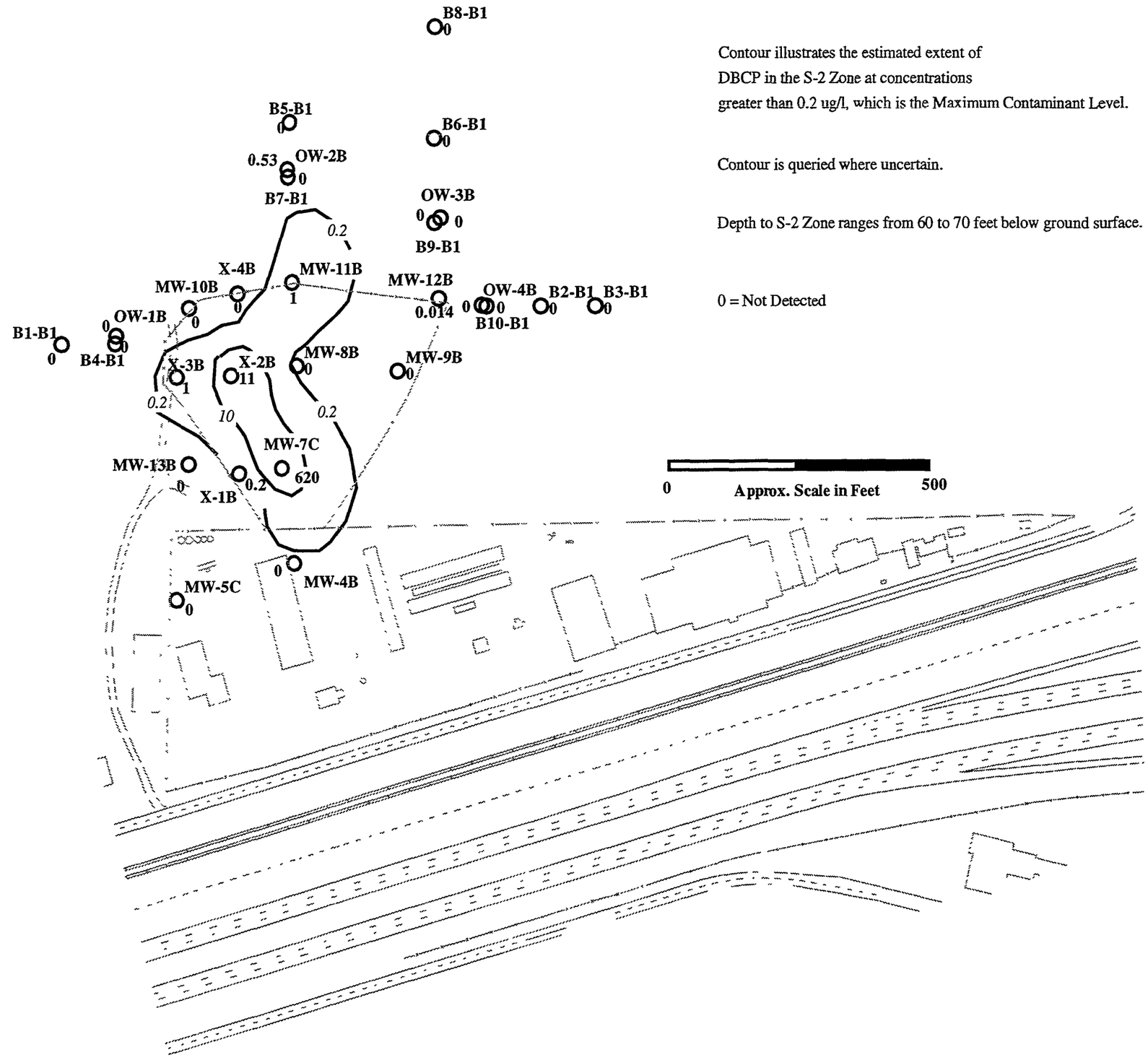
Ethylene Dibromide (EDB) in S-2 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-26	A



Contour illustrates the estimated extent of DBCP in the S-2 Zone at concentrations greater than 0.2 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to S-2 Zone ranges from 60 to 70 feet below ground surface.

0 = Not Detected

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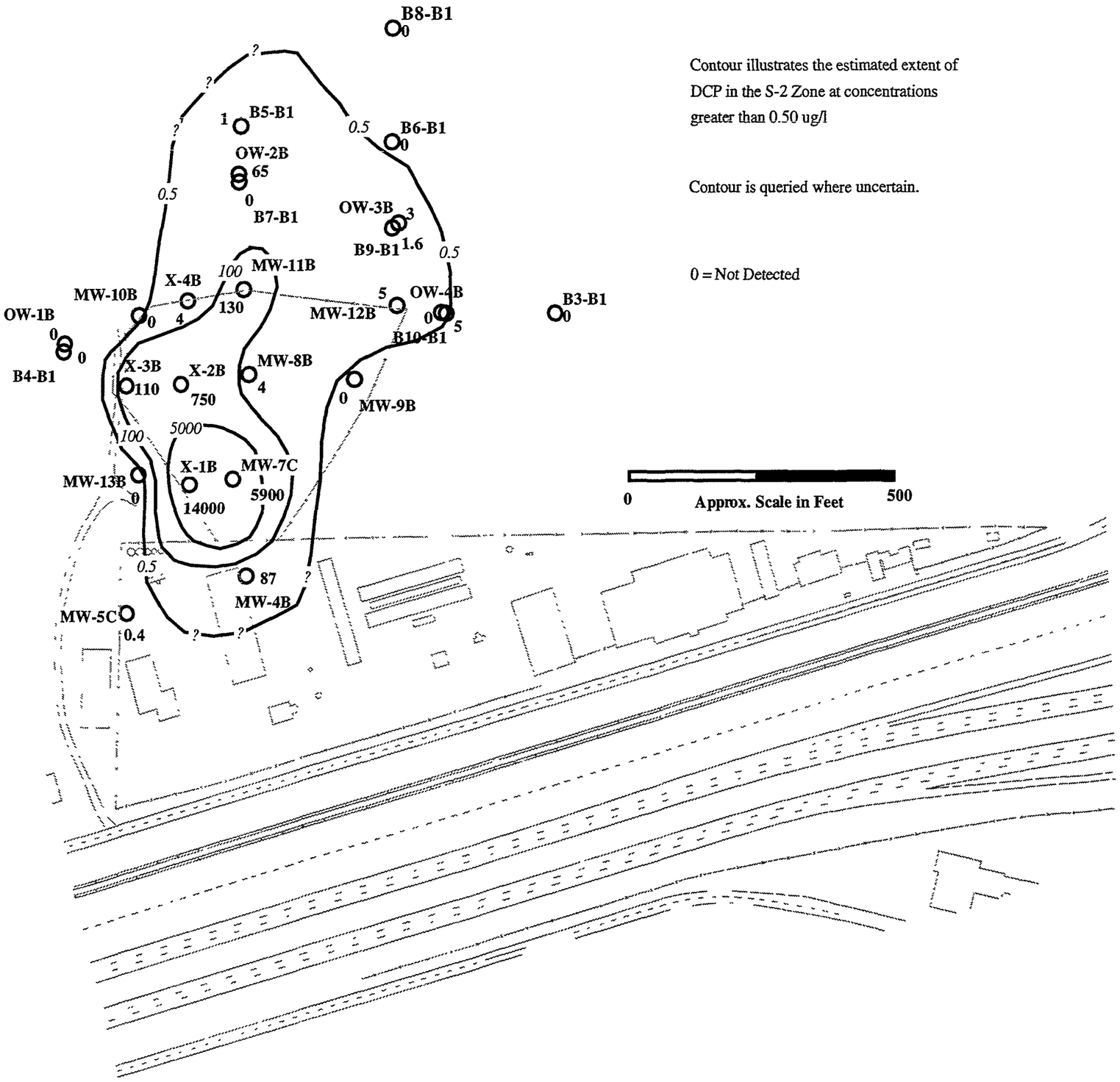
Dibromochloropropane (DBCP) in S-2 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-27	A



Contour illustrates the estimated extent of DCP in the S-2 Zone at concentrations greater than 0.50 ug/l

Contour is queried where uncertain.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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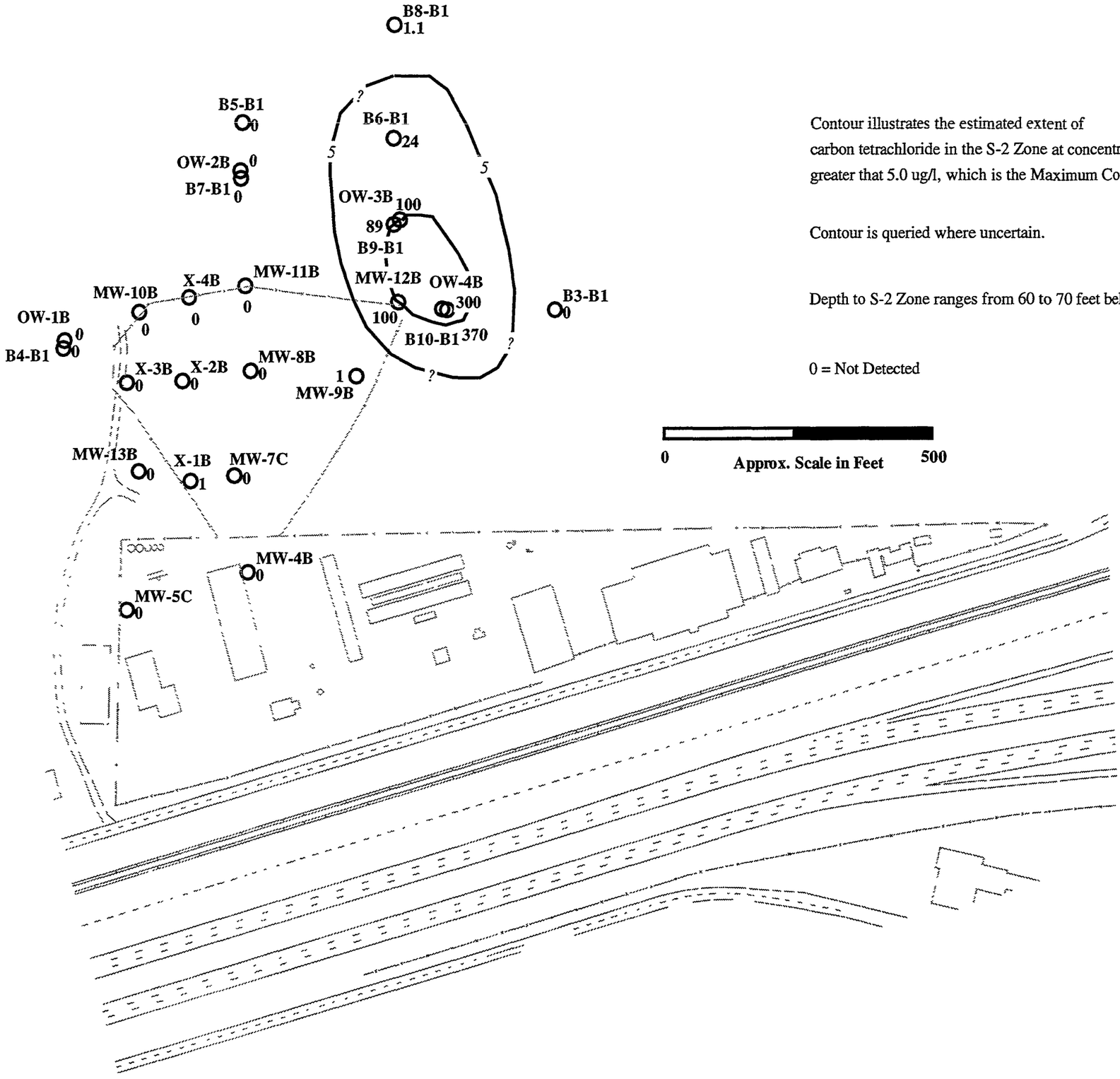
1,2-Dichloropropane (DCP) in S-2 Zone

Job Number	Drawing No	Rev
20376	FIGURE 3-28	A



Contour illustrates the estimated extent of carbon tetrachloride in the S-2 Zone at concentrations greater that 5.0 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to S-2 Zone ranges from 60 to 70 feet below ground surface.

0 = Not Detected

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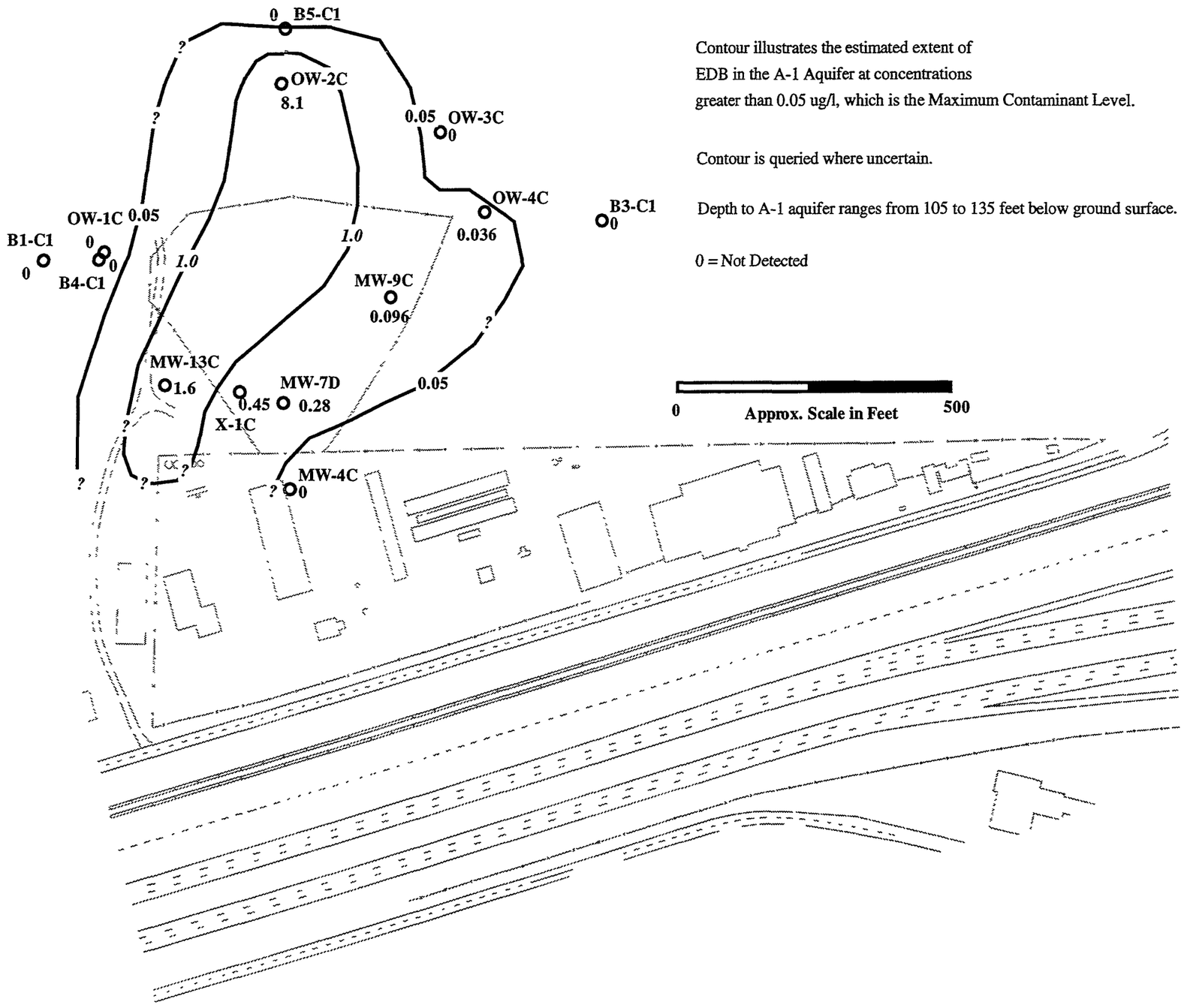
Carbon Tetrachloride in S-2 Zone

Job Number	Drawing No.	Rev.
20376	FIGURE 3-29	A



Contour illustrates the estimated extent of
EDB in the A-1 Aquifer at concentrations
greater than 0.05 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to A-1 aquifer ranges from 105 to 135 feet below ground surface.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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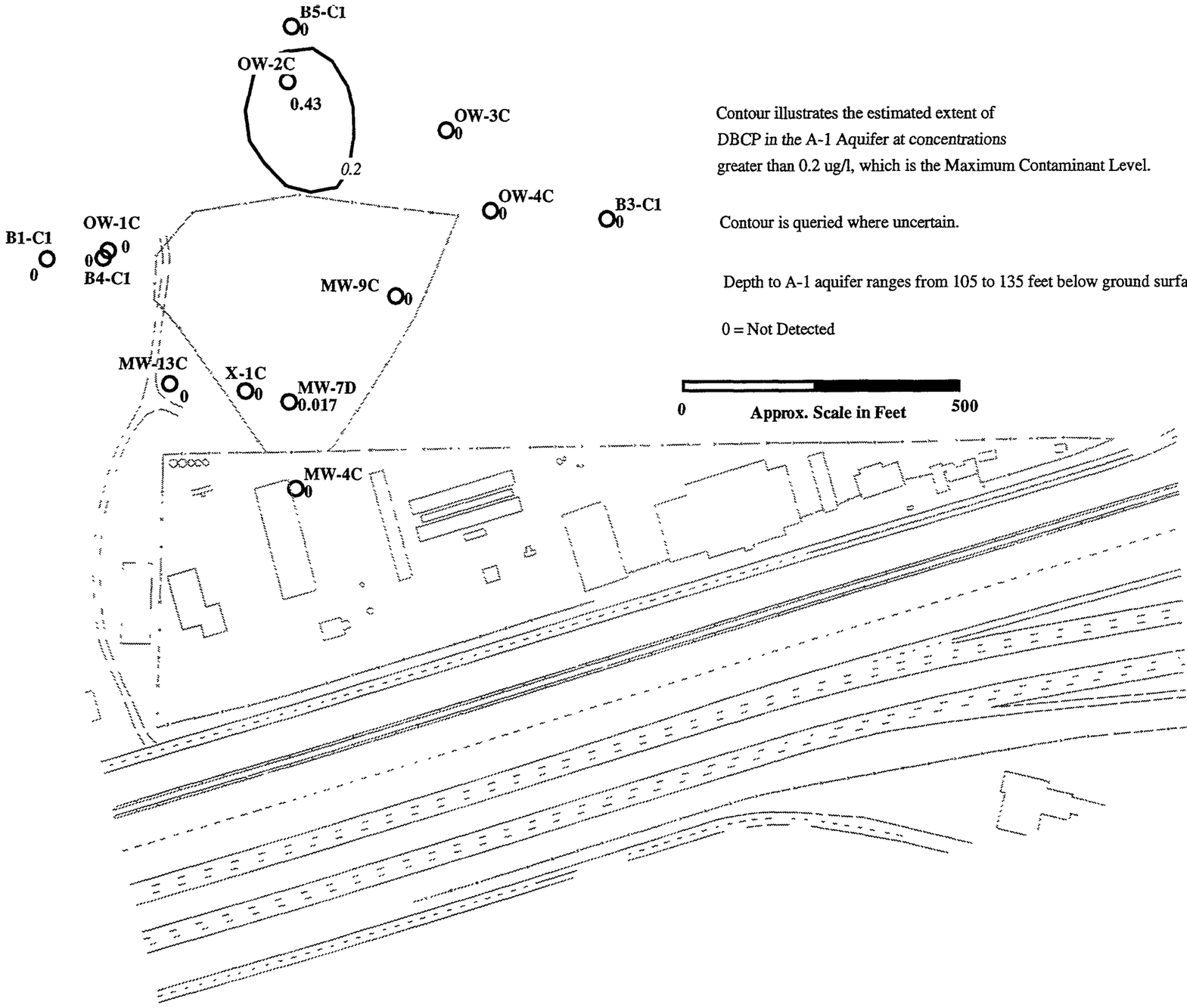
Ethylene Dibromide (EDB) in A-1 Aquifer

Job Number	Drawing No.	Rev.
20376	FIGURE 3-30	A



Contour illustrates the estimated extent of DBCP in the A-1 Aquifer at concentrations greater than 0.2 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to A-1 aquifer ranges from 105 to 135 feet below ground surface.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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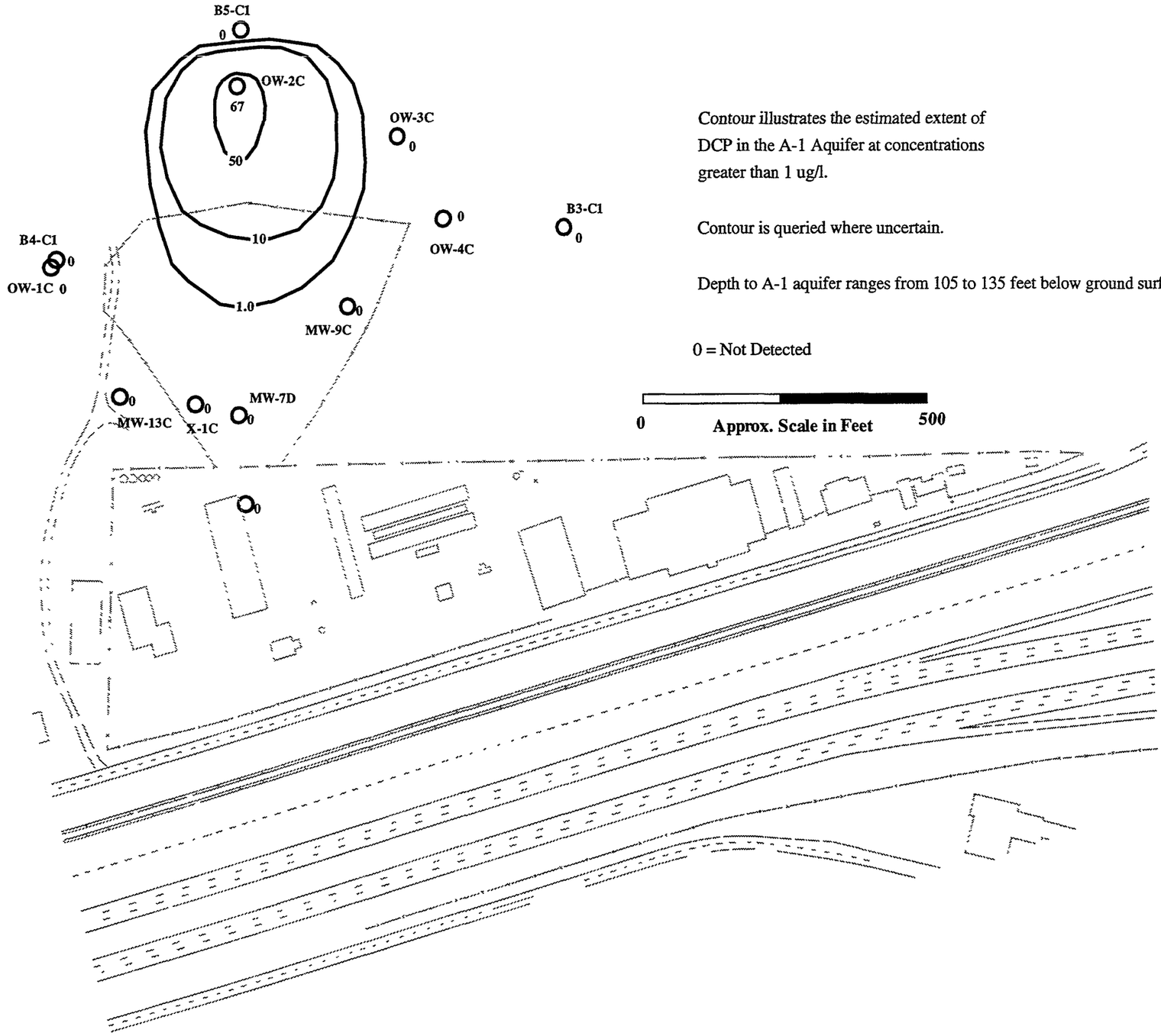
Dibromochloropropane (DBCP) in A-1 Aquifer

Job Number	Drawing No.	Rev.
20376	FIGURE 3-31	A



Contour illustrates the estimated extent of DCP in the A-1 Aquifer at concentrations greater than 1 ug/l.

Contour is queried where uncertain.

Depth to A-1 aquifer ranges from 105 to 135 feet below ground surface.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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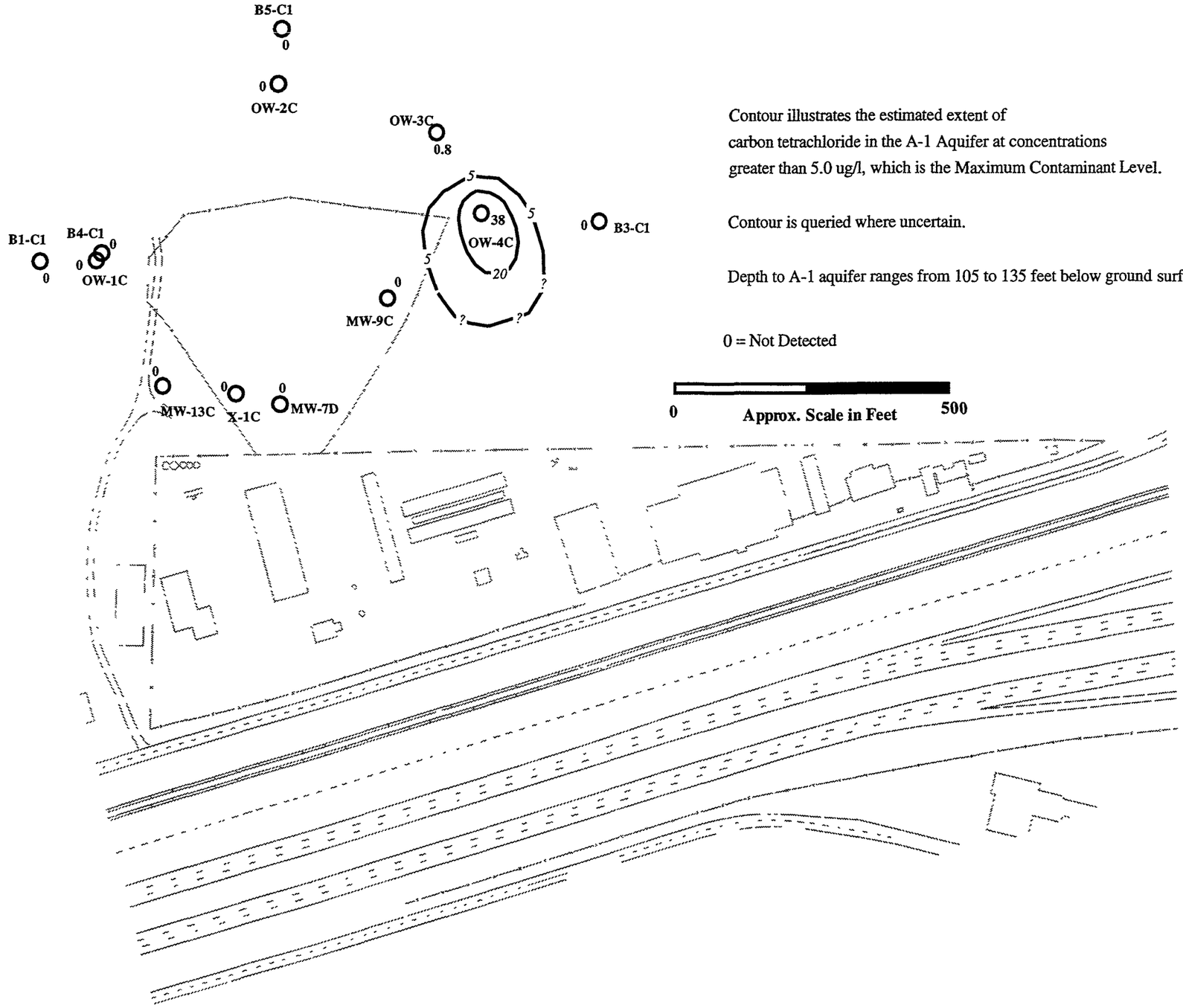
1,2-Dichloropropane (DCP) in A-1 Aquifer

Job Number	Drawing No.	Rev.
20376	FIGURE 3-32	A



Contour illustrates the estimated extent of carbon tetrachloride in the A-1 Aquifer at concentrations greater than 5.0 ug/l, which is the Maximum Contaminant Level.

Contour is queried where uncertain.

Depth to A-1 aquifer ranges from 105 to 135 feet below ground surface.

0 = Not Detected

0 Approx. Scale in Feet 500

N

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Carbon Tetrachloride in A-1 Aquifer

Job Number	Drawing No.	Rev.
20376	FIGURE 3-33	A

Table 3-31 DNAPL Assessment and Indicators

Well	Compound	Maximum Detected (µg/l)	Concentration (moles/liter)	Solubility Limit (moles/liter)	% Saturation (molar %)	Combined EDB and DCP (% Saturation)
X-1A	EDB	28,000	1.49E-04	1.81E-02	0.82%	
(S-1)	DCP	22,000	1.95E-04	2.39E-02	0.81%	1.64%
MW-7C	EDB	21,000	1.12E-04	1.81E-02	0.62%	
(S-2)	DCP	20,000	1.77E-04	2.39E-02	0.74%	1.36%
MW-7B	EDB	10,000	5.32E-05	1.81E-02	0.29%	
(S-1)	DCP	19,000	1.68E-04	2.39E-02	0.70%	1.00%
X-1B	EDB	8,200	4.36E-05	1.81E-02	0.24%	
(S-2)	DCP	14,000	1.24E-04	2.39E-02	0.52%	0.76%
MW-11A	EDB	4,600	2.45E-05	1.81E-02	0.14%	
(S-1)	DCP	9,900	8.76E-05	2.39E-02	0.37%	0.50%
MW-8A	EDB	1,400	7.45E-06	1.81E-02	0.04%	
(S-1)	DCP	7,100	6.28E-05	2.39E-02	0.26%	0.30%
AW-2	EDB	1,100	5.85E-06	1.81E-02	0.03%	
(S-1)	DCP	4,900	4.34E-05	2.39E-02	0.18%	0.21%
MW-7A	EDB	2,200	1.17E-05	1.81E-02	0.06%	
(S-1)	DCP	2,400	2.12E-05	2.39E-02	0.09%	0.15%
MW-11B	EDB	280	1.49E-06	1.81E-02	0.01%	
(S-2)	DCP	1,000	8.85E-06	2.39E-02	0.04%	0.05%

Note: See Table 4-1 for chemical and physical properties of EDB and DCP.

(S-1) Well screened in S-1 zone

(S-2) Well screened in S-2 zone