20030228017

AD-A278 633

REPORT DOCUMENTATION PAGE (5)

Form Approved
OMB No. 0704-0188 (2)

2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
05/00/89	

4. TITLE AND SUBTITLE
REMEDIAL INVESTIGATION REPORT, VOLUME XII, WESTERN STUDY AREA, PROPOSED FINAL, VERSION 3.2

5. FUNDING NUMBERS
DAAK15 88 D 0024

6. AUTHOR(S)

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
EBASCO SERVICES, INC.

8. PERFORMING ORGANIZATION REPORT NUMBER
89167R03

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
OCKY MOUNTAIN ARSENAL (CO.). PMRMA

10. SPONSORING/MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION/AVAILABILITY STATEMENT
APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

THE WESTERN STUDY AREA (WSA) REPORT INTEGRATES THE STUDY AREA HISTORY, GEOLOGY, AND HYDROLOGY WITH THE RESULTS OF SOIL, SURFACE WATER, GROUND WATER, AIR, BIOTA, AND STRUCTURES INVESTIGATIONS TO DEFINE THE NATURE AND EXTENT OF CONTAMINATION OF THE WESTERN PART OF RMA.

THE WSA INCLUDES ALL OF SECTIONS 3, 4, 9, AND 33 AND PORTIONS OF SECTIONS 28 AND 34. THE WSA IS A RELATIVELY UNDEVELOPED REGION THAT WAS USED FOR RAILROAD TRANSPORT, VEHICLE MAINTENANCE, AND WASTE DISPOSAL. THE CHEMICAL SAMPLING INCLUDED ANALYSIS OF 1081 SAMPLES FROM 388 BORINGS, THREE SOIL GAS PROGRAMS, AND MONITORING OF 369 WELLS. THE DOMINANT CONTAMINANT GROUP IS VOLATILE HALOGENATED ORGANIC COMPOUNDS. THE VOLUME OF POTENTIALLY CONTAMINATED SOIL IS ESTIMATED TO BE 178,000 CUBIC YARDS.

THIS REPORT IS ORGANIZED IN THREE SECTIONS:

1. CHARACTERIZATION OF THE STUDY AREA - GEOLOGY, HYDROLOGY, CLIMATE, HISTORY

14. SUBJECT TERMS	15. NUMBER OF PAGES
SOIL, GROUNDWATER	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
UNCLASSIFIED			

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)

89167R03
SECTION 2.0
ORIGINAL

PROGRAM MANAGER
ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

U.S. ARMY
MATERIEL COMMAND

— COMMITTED TO PROTECTION OF THE ENVIRONMENT —

PROPOSED FINAL
REMEDIAL INVESTIGATION FINAL REPORT
VOLUME XII
WESTERN STUDY AREA, SECTION 2.0
VERSION 3.2

May 1989
Contract No. DAAA15-88-D-0024

EBASCO SERVICES INCORPORATED
Applied Environmental, Inc.
CH2M HILL DataChem, Inc.
R.L. Stollar & Associates, Inc.

ATION TECHNICAL SUPPORT AND SERVICES

ROCKY MOUNTAIN ARSENAL

PROPOSED FINAL
REMEDIAL INVESTIGATION FINAL REPORT
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U.S. ARMY PROGRAM MANAGER'S OFFICE
FOR ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

THE INFORMATION AND CONCLUSIONS PRESENTED IN THIS REPORT REPRESENT THE OFFICIAL POSITION OF THE DEPARTMENT OF THE ARMY UNLESS EXPRESSLY MODIFIED BY A SUBSEQUENT DOCUMENT. THIS REPORT CONSTITUTES THE RELEVANT PORTION OF THE ADMINISTRATIVE RECORD FOR THIS CERCLA OPERABLE UNIT.

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TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

Table

LIST OF TABLES

LIST OF TABLES

Table

LIST OF FIGURES

Figure

LIST OF FIGURES

Figure

LIST OF FIGURES

Figure

LIST OF FIGURES (Continued)

Figure

LIST OF FIGURES (Continued)

LIST OF PLATES

LIST OF PLATES

LIST OF PLATES (Continued)

LIST OF PLATES

Standard Abbreviations Used in Western Study Area Report

1. Analyte Groups

VHO -	Volatile halogenated organic compounds
VHC -	Volatile hydrocarbon compounds
VAO -	Volatile aromatic organic compounds
OSCM -	Organosulfur compounds - mustard-agent related
OSCH -	Organosulfur compounds - herbicide related
OPHGB -	Organophosphorous compounds, GB-agent related
OPHP -	Organophosphorous compounds, pesticide related
DBCP -	Dibromochloropropane
ONC -	Organonitrogen compounds
PAH -	Polynuclear aromatic hydrocarbons
SHO -	Semivolatile halogenated organic compounds
OCP -	Organochlorine pesticides
ICP METALS -	Metals analyzed for by inductively coupled argon plasma, includes cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), and zinc (Zn)
As -	Arsenic
Hg -	Mercury

2. National Acts & Organizations

AMCCOM -	Armament, Munitions, and Chemical Command
CERCLA -	Comprehensive Environmental Response, Compensation, and Liability Act
CWS -	Chemical Warfare Service
NCP -	National Contingency Plan
NOAA -	National Oceanic and Atmospheric Administration
SARA -	Superfund Amendments and Reauthorization Act
USACOE	United States Army Corps of Engineers
USAEHA -	United States Army Environmental Hygiene Agency
USAEWES -	United States Army Engineer Waterways Experiment Station
USATHAMA -	United States Army Toxic and Hazardous Materials Agency
USDA-SCS	United States Department of Agriculture - Soil Conservation Service
USEPA	U.S. Environmental Protection Agency
USFWS -	United States Fish and Wildlife Service

3. Local Terminology

CAR -	Contamination Assessment Report
CDH -	Colorado Department of Health
CDOW -	Colorado Division of Wildlife
EA -	Endangerment Assessment
FIT -	Field Investigation Team
FS -	Feasibility Study
ICS	Irondale Containment System
IRDMS -	Installation Restoration Data Management System
NCSA -	North Central Study Area
PMCDIR -	Program Manager for Chemical Demilitarization Installation Restoration

PMO or PMRMA-Program Managers Office for the RMA Contamination Cleanup
RAA - Remedial Action Alternative
RI - Remedial Investigation
RIC - Resource Information Center
RMA - Rocky Mountain Arsenal
RMACCPMT - Rocky Mountain Arsenal Contamination Cleanup Program Managers Team
RSS - Repair/Salvage/Surplus
SACWSD - South Adams County Water and Sanitation District
SAPAO - Stapleton Airport Public Affairs Office
SAR - Study Area Report
SCS - Soil Conservation Service
SPSA - South Plants Study Area
TPP - Technical Program Plan
TSP - Total Suspended Particulates
WSA - Western Study Area

4. Companies
CAPS - Colorado Air Photo Service
CDM - Camp, Dresser & McKee, Inc.
EBASCO - Ebasco Services Incorporated
E&E - Ecology and Environment
ESE - Hunter/Environmental Science & Engineering, Inc.
G&M - Geraghty & Miller, Inc.
MKE - Morrison-Knudsen Engineers, Inc.
PBEC - Prouty Bros. Engineering Co.
TRC - Tracer Research Corp.

5. Unified Soil Classification System (USCS) Textural Key
CH inorganic clay (high plasticity)
CL - inorganic clay, low plasticity
GC - clayey gravel
GP - poorly graded gravel
MH inorganic silt with very fine sand
ML - inorganic silt, low plasticity
SC - clayey sand
SM - silty sand
SP - poorly graded sand
SW - well graded sand

6. Measurements
f/cc - fibers per cubic centimeter
gpm - gallons per minute
mph - miles per hour
msl - mean sean level
ug/g - micrograms per gram, equivalent to parts per million (ppm)
ug/l - micrograms per liter, nearly equivalent to parts per billion
ug/m^3 micrograms per cubic meter

AA -	atomic adsorption
CVAA -	cold vapor atomic adsorption
Eh -	oxidation potential
GC/EC -	gas chromatography/electron capture
GC/MS -	gas chromatography/mass spectrometry
Kd -	soil - water coefficient
Kh -	Henry's law constant
Koc -	organic carbon partition coefficient
Kow -	Octanol - water partition coefficient

2.0 CONTAMINANT DISTRIBUTION

The distribution of potential contaminants in and near the WSA, both on- and off-post, is discussed in this section. On-post discussions address soils and sediments, surface water, groundwater, soil gas, structures, air, and biota. Off-post discussions include soils and sediments, groundwater, and soil gas. This section summarizes numerous other reports and data that are listed in Section 1.1 and that are referenced in the appropriate parts of Section 2.0. If more specific information is needed, full details of all analytical data can be found in the companion reports. An interpretive assessment of the contamination is presented in Section 3.0, Contamination Assessment.

For designated sites studied during the RI, much of the soils analytical data was presented on a site-by-site basis in the Phase I Contamination Assessment Reports (CARs). Results of each site's Phase II investigation are presented in a data addendum for that CAR. The CARs and data addenda used for the compilation of this report are summarized in Table WSA 1.2-1.

The discussion of contaminant distribution is organized by compound groups. Potential contaminants have been grouped into volatile halogenated organics (VHOs), volatile hydrocarbons (VHCs), volatile aromatic organics (VAOs), organosulfur compounds mustard-agent related (OSCMs), organosulfur compounds herbicide related (OSCHs), organophosphorous compounds GB-agent related (OPHGBs), dibromochloropropane (DBCP), polynuclear aromatic hydrocarbons (PAHs), semivolatile halogenated organics (SHOs), organochlorine pesticides (OCPs), arsenic, mercury, and ICP metals (cadmium, copper, chromium, lead, and zinc) (see Appendix WSA-B for a list of compounds in each group). These compound groupings reflect the Phase II analytical methods for related families of compounds as well as similar origins and environmental properties (Appendix WSA-B).

Data from other investigations, when available, are also considered in this section. Very little soils analytical data were collected prior to the Phase I study in the WSA, but data were collected from the railyard where a DBCP spill had occurred and from south of the east landfill (WSA-3). A soil sample collected in 1981 from the railyard contained DBCP at a depth of 2 to

4 ft (Shepherd, 1981), and surface and subsurface soil samples collected in 1982 from the railyard were reported to contain DBCP at depths up to 95 ft (Geraghty & Miller, 1982/RIC 81342R06). Groundwater data from Shell Chemical Company (RIC, 1988) and the USEPA (CDM, 1988; E&E, 1986a, b) have been included. In 1986, polychlorinated biphenyls were reported in a soil investigation conducted by the U.S. Army Environmental Hygiene Agency (USAEHA, 1986a). Polychlorinated biphenyls were detected in two surface soil samples southeast of the east landfill (WSA-3). This background information will be used in association with the analytical results from the RI program to assess potential impacts by sources of potential contamination outside the WSA.

Illustrations in this section present the distribution of contaminants in the different media. Boring and well locations on these plates were plotted by computer onto a grid system defined by State Planar Coordinates. These locations were then projected onto a study area base map generated from a U.S. Geological Survey 7.5 minute topographic map photorevised in 1980 (USGS, 1965a, b). The contaminant distribution maps are presented in conjunction with the contaminant distribution discussions in following sections of this report. Separate maps have been prepared for the VHOs, methylene chloride, VHCs, VAOs, DBCP, OCPs, arsenic, mercury, and ICP metals in soils. Separate maps have also been prepared for VHOs, VAOs, OCPs, and DBCP in groundwater.

The distribution of each group of analytes is presented separately for soils (vadose zone) and groundwater. Air, structures, and biota data are shown separately.

2.1 SOIL AND SEDIMENT SAMPLES

In Phase I of the RI, 295 borings were drilled, yielding 161 composite and 631 uncomposited soil boring samples. An additional 8 sediment grab samples and 1 soil grab sample were taken. In Phase II, an additional 82 borings were drilled, and 280 soil samples were collected. A list of the compounds detected during these investigations and their respective certified reporting limits (CRLs) is presented in Table WSA 2.1-1.

In addition to target compounds, the Phase I and Phase II analyses for organic compounds using GC/MS methods tentatively identified other organics. The Chemical Index (Ebasco, 1988v) lists which of these compounds are of concern, and these compounds have been added to the list of target compounds presented in this report.

During Phase II exploration, electromagnetic and magnetic geophysical survey methods were used at the north, east, and west landfill (WSA-5, WSA-3, and WSA-2) to identify areas of buried debris. In the west landfill (WSA-2), major magnetic anomalies were northwest-southeast trending linear features, due to disposal of ferrous metal in trenches. Minor magnetic anomalies were associated with buried or partially buried drums. Drums were partially excavated in this site, but were not removed during the RI. Electromagnetic readings corresponding to the suspected trenches were noted, along with individual readings corresponding to individual buried metal containers.

The east landfill (WSA-3) showed magnetic and electromagnetic readings associated with surface and near-surface debris. The major magnetic anomalies in the north landfill (WSA-5) were east-west trending linear features, due to disposal of ferrous metal in pits. Minor magnetic anomalies and electromagnetic readings were associated with structures unrelated to disposal activities. Further information on the geophysical surveys may be found in the Phase II Addenda to the individual CARs.

2.1.1 Sampling Program and Analytical Methods

The soils investigation at RMA was conducted in two phases. Phase I investigations identified potential contaminants and provided a preliminary assessment of the vertical and lateral extent of contaminants. Phase I results also provided the basis for the design of a more quantitative Phase II program. Phase II sampling was conducted at some sites to provide a more quantitative assessment of the vertical and areal extent of detected potential contamination. Data from Phase I of the RI were published in the Contamination Assessment Report for each site, and Phase II data were published in Phase II Data Addenda. These documents are listed and referenced in Section 1.1 of this report.

In the Phase I program, soil borings were drilled to various depths in the vadose zone. Within sites, samples were generally collected from these borings at standard sampling depths of 0 to 1, 4 to 5, 9 to 10, 14 to 15, and 19 to 20 ft, and at 10 ft intervals below 20 ft. Samples were collected from nonstandard intervals where drilling was difficult or where staining or other evidence of potential contamination was observed in the core. In areas outside sites, samples were normally composites of the 0 to 1 and 4 to 5 ft intervals. Phase II samples were collected either at standard intervals or in depth intervals clustered around Phase I samples that were re-evaluated by the Phase II samples.

Samples from the Phase I borings were analyzed for a standard suite of analyses. The Phase I analyses for target compounds included:

- gas chromatography/mass spectrometry (GC/MS) analysis for volatile organics (VOs);
- GC/MS for semivolatile organics (SVOs); gas chromatography/electron capture (GC/EC) analysis for DBCP;
- inductively coupled plasma (ICP) screen for the metals cadmium, chromium, copper, lead, and zinc;
- atomic absorption spectroscopy (AA) for arsenic; and
- cold vapor atomic absorption spectrocopy (CVAA) for mercury.

The organic compounds for which the VO and SVO methods were certified are listed in Appendix WSA-A. Some samples were also analyzed by high-performance liquid chromatography (HPLC) for thiodyglycol and agent degradation products.

In the WSA sites, the GC/MS analysis for VOs was applied only to samples from below the 0 to 1 ft depth interval, since volatiles could be expected to have evaporated from surface soils. VOs were normally not analyzed in samples collected outside of the WSA sites, as the sample from these other areas were composites of the 0 to 1 and 4 to 5 ft intervals. For other methods applied to these composite samples, under worst-case conditions, compositiong effectively doubled the CRLs for these samples.

Where GC/MS methods were used, nontarget compounds were tentatively identified by establishing a "best fit" identification using a computer library of spectra. Some of these compounds have been added to the list of target compounds that are evaluated by the SARs (Ebasco 1988v/RIC 88357R01). These tentatively identified compounds are:

VHOs

1,1,2,2-tetrachlorethane

trichloropropene

VHCs

2-butoxyethanol

4-hydroxy-4-methyl-2-pentanone

1-methyl-1,3-cyclopentadiene

methylcyclohexane

2,2-oxybisethanol

2-pentanone

OPHCBs

phosphoric acid, tributyl ester

phosphoric acid, triphenyl ester

ONCs

caprolactam

PAHs

fluoranthene

methyl naphthalene

phenanthrene

pyrene

SHOs

trichlorobenzene

hexachlorobenzene

hexachlorobutadiene

tetrachlorobenzne

pentachlorobenzene

Because the method used to identify these compound has not been subjected to U.S. Army Toxic and Hazardous Materials Agency certification procedures, they

have no CRL. The lower limit of detection has been assumed to correspond to 10 percent of the internal standard for the GC/MS methods used, which is 0.3 ug/g.

The GC/MS analyses for VOs and SVOs were certified by the US Army Toxic and Hazardous Materials Agency to detect a variety of analtyes (listed in Appendix WSA-A) to accomplish the Phase I objective of identifying contaminants present in the study area. Phase II methods were developed and certified for use in further quantifying the concentrations of the target compounds identified in Phase I. These Phase II methods and the analytes detected by each method are also listed in Appendix WSA-B. The Phase II methods were more sensitive GC methods certified for fewer compounds at lower reporting limits. In addition, approximately 10 percent of the samples analyzed by GC methods were also analyzed by GC/MS for confirmation of the GC results. The Phase II methods and the analytes for which these methods were certified are listed in Appendix WSA-B. The CRLs for these methods are shown for each detected analyte in Table WSA 2.1-1.

Six laboratories performed analyses on soils and water samples collected during the RI. The analytic and quality assurance techniques employed during certification of analytical methods in the separate laboratories led to the establishment of lower and upper CRLs that are method, analyte, laboratory, and machine specific. Therefore the reported CRL may vary between samples. Lower CRLs for analytes detected during the RI fall within a range established by the most and least sensitive methods from among the six laboratories. This lower CRL range is presented for each analyte in soil samples in Table WSA 2.2-1. Data values falling below their respective CRLs are reported as below CRL (BCRL). The most and least sensitive methods from among the six laboratories also define a range of upper CRLs; however, in some cases it was possible to report a value greater than the upper CRL while maintaining the litigation quality of the data. To accomplish this, samples with higher contaminant concentrations were diluted so that the instrument reading for the diluted sample fell below the CRL, and only exceeded the CRL when the dilution factor was applied to arrive at the final result. Data for these diluted samples represent the only values above the upper CRL that can be reported

with the degree of accuracy and precision required by the U.S. Army Toxic and Hazardous Materials Agency.

In cases where the analytical values exceed the upper CRL and the samples were not diluted, an attempt was made to recover the actual instrument readings from the laboratory. This information was used to gain a qualitative understanding of the relative level of contamination in the samples. These results that were above the upper CRL are not of litigation quality and cannot be used with the same confidence as those falling within the CRLs.

To provide a complete review of information pertinent to the contamination assessment at RMA, data from investigations other than the RI have been included in this and previous reports where appropriate, even though the methods used were not U.S. Army Toxic and Hazardous Materials Agency certified. This use has set a precedent to consider nonlitigation quality data along with the litigation quality results obtained under the RI.

The inclusion of nonlitigation quality data was also done in consideration of the fact that sophisticated statistical manipulations of the data would not be carried out for the purposes of the Study Area reports. Such manipulations were deemed inappropriate considering the large numbers of values that fell below the various lower CRLs as well as those values (estimated to be approximately one percent of the data set) that fell above the upper CRLs and were not the result of approved dilution procedures. It was determined that statistical manipulations of more limited data sets, such as those obtained from a single site, would be more appropriate and accurate for the FS. In the FS phase, more limited statistical evaluations could then be used to evaluate, on a case-by-case basis, the effects of the nonlitigation quality or out-of-range data on the contamination assessment and on the evaluation and selection of appropriate remedial measures.

2.1.2 Analytical Results

A summary list of the compounds detected above the CRLs in WSA soils and sediments is presented in Table WSA 2.1-1. These results represent the sample concentrations of each analyte less any concentration detected in the method blanks.

In order to present the analytical data in a summary form for this report, contaminant distribution maps are constructed by analyte group rather than by individual analyte, and data were grouped together over depth intervals larger than the standard sampling intervals. To further simplify the presentation of the analyte levels, ranges of concentrations are shown by dots of different sizes.

Separate maps were used to represent the results for samples falling in the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals. Because of the relatively large depth intervals chosen for the maps showing analytes in soils, one dot may represent more than one sample from a given soil boring. A single dot may also represent from one to all of the analytes detected in an analyte group at a given location. For these reasons, the number of dots on a map may be less than the number of samples analyzed. Results for composite samples are shown on the maps for both depth intervals.

For the organic compounds, the soils data reported for each boring were separated into the depth intervals used in the maps. Next, the data were separated into analyte groups. To compute the total concentration of each group in the boring, the highest concentration of each analyte in the group was summed. The resulting sum is equal to or greater than the total concentration of that group in any one sample. This worst-case concentration is and represented on the map by the dot size corresponding to the concentration range attained.

The concentrations for the organic analyte groups were divided into four ranges, and are represented by progressively larger dots. The concentration ranges were based upon the following criteria:

1) Lowest CRL to 1.0 ug/g.
2) 1.0 ug/g to next order of magnitude.
3,4) Subsequent ranges based on orders of magnitude, not to exceed four ranges per map.

ICP metals were also mapped as group since these anlytes commonly occurred together. However, since metals concentrations were evaluated with respect to their natural concentrations in RMA soils, they were treated differently than organic analytes.

First, each metal concentration was compared to an indicatr range of natural concentrations. During the RI, indicator levels and ranges were established to assess the significant of the analytical values for target analytes in soils. The indicator levels for organic compound are the CRLs of the analytical methods for these compounds. The indicator ranges for metals reflect the concentrations expected to occur naturally in RMA alluvial soils. The upper limits of these ranges are:

Metal	Concentration (ug/g)
Arsenic	10
Cadimium	2.0
Chromium	40
Copper	35
Lead	40
Mercury	0.10
Zinc	80

Each ICP metal has a different indicator range and therefore cannot be compared directly on the basis of absolute concentration. For this reason, and because these metals tended to occur together in the WSA, the metals concentrations are not added together to give a total for plotting. Instead, the metal concentrations were compared to their indicator ranges and assigned to a relative range. The highest range attained by any one ICP metal in a given depth interval is represented on the map. The metal specific concentration ranges are based on the indicator ranges of the metals, as follows:

Metal	Range 1	Range 2	Range 3	Range 4
Cadmium	CRL-2.0	2.0-10	10-100	>100
Chromium	CRL-40	40-100	100-1,000	>1,000
Copper	CRL-35	35-100	100-1,000	>1,000
Lead	CRL-40	40-100	100-1,000	>1,000
Zinc	CRL-80	80-1,000	1,000-10,000	>10,000

Because metals concentrations below the upper limits of the indicator ranges are considered to be consistent with natural conditions, results that do not exceed those indicator ranges are shown on the analyte distribution maps as open circles, like CRL results. Values above the indicator ranges are shown as solid dots. The significance of the metals concentrations greater than their indicator ranges are discussed further in the contamination assessment section of the report (Section 3.0).

In addition to the presentation of these data in the analyte distribution map, a summary list of the compounds detected above the CRLs in WSA soils and sediments is presented by analyte group in Table WSA 2.1-1.

Most of the samples with detected analytes were collected from the sites rather than from outside the sites where little historic activity was documented. The occurrence and distribution of the potential contaminant groups VHO, VHC, VAO, DBCP, PAH, OCP, arsenic, mercury, and ICP metals are discussed in the following sections.

2.1.3 Distribution of Analytes

The general distribution in soils of groups of analytes is presented in this section. The main groups detected were volatile halogenated, aromatic, or hydrocarbon compounds; DBCP; organochlorine pesticides; polynuclear aromatic hydrocarbons; and metals, including arsenic and mercury. Minor occurrences of other organic contaminants were also detected.

2.1.3.1 Volatile Halogenated Organics

Volatile halogenated organic compounds (VHOs) were detected 45 times out of a total of 704 samples analyzed for VHOs in the WSA. The VHOs detected included carbon tetrachloride, 1,2-dichloroethylene, trichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, chlorobenzene, and trichloropropene and were reported at a maximum concentration of 25 ug/g and as deep as 60 ft. Table WSA 2.1-1 presents the number of detections and the number of samples analyzed by sites, and the concentration range for each analyte. The distribution and concentration of VHOs in the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-1 through 2.1-4.

As shown in Table WSA 2.1-1, VHOs were found in six sites and Section 4. In borings where VHOs were detected, their occurrence was confined to only one depth interval. The plates show that no more than three detections were found in any depth interval in any site.

Tetrachloroethylene was the most commonly detected VHO and was present in all sites except the sanitary sewer (WSA-7a and WSA-7b). This was the only analyte of the group found at the same depth in adjacent borings. This occurred in the 5 to 20 and greater than 20 ft depth intervals in the motor pool (WSA-6). Concentrations of tetrachloroethylene did not exceed 2 ug/g in any sample.

The next most abundant VHO was 1,1,2,2-tetrachloroethane and was detected in the West and North landfills (WSA-2, and WSA-5), never exceeding a concentration of 2 ug/g. In some cases, the occurrence of this compound was attributed to laboratory contamination. The highest concentration of any VHO compound was 25 ug/g of trichloroethylene in the west landfill (WSA-2). In this same sample, the only occurrence of 1,2-dichloroethylene reached the second highest VHO concentration of 5.9 ug/g. Scattered occurrences of other VHOs did not exceed concentrations of 1 ug/g.

In general, VHOs were found scattered in low frequency and low concentrations in the WSA. Tetrachloroethylene, 1,1,2,2-tetrachloroethane, and trichloroethylene were the three most commonly detected VHOs.

2.1.3.2 Methylene Chloride

Methylene chloride was detected 28 times out of a total of 558 samples analyzed for methylene chloride in the WSA. It was detected at a maximum concentration of 800 ug/g and as deep as 75 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for methylene chloride. The distribution and concentration of methylene chloride for the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-5 through 2.1-8.

As shown in Table WSA 2.1-1, methylene chloride was reported in samples from the railyard (WSA-1), east landfill (WSA-3), open storage yard (WSA-4), north landfill (WSA-5), motor pool (WSA-6), and sanitary sewer - surrounding soils (WSA-7b). None was reported in the sanitary sewer - internal sediment (WSA-7a), west landfill (WSA-2), or the areas outside of the site boundaries. Although methylene chloride was included in the volatile halogenated organic compounds analyte group, it has been treated separately in this report because the frequency of detection of methylene chloride in the laboratory blanks associated with the soils samples casts doubt as to whether this compound is actually present in WSA soils. It should be noted that this detection occurred in selected samples owing to laboratory contamination and those samples can be identified.

Methylene chloride was not detected in any samples from the 0 to 2 ft depth interval. The 2 to 5 ft depth interval showed methylene chloride detected in samples from seven borings. Samples from the railyard, (WSA-1) the east landfill (WSA-3), the open storage yard (WSA-4), and north landfill (WSA-5) had concentrations of less than 10 ug/g. One additional sample from the north landfill (WSA-5) had methylene chloride detected in the 10 to 100 ug/g concentration range.

Samples from eight borings in the 5 to 20 ft depth interval indicated methylene chloride at concentrations of less than 10 ug/g. These samples were from the railyard, (WSA-1) the east landfill (WSA-3), the open storage yard (WSA-4), and the motor pool (WSA-6).

Methylene chloride was reported in samples from seven depths greater than 20 ft. Six of these were at concentrations of less than 10 ug/g and were from the railyard (WSA-1), the east landfill (WSA-3), and the north landfill (WSA-5). The remaining sample was from the north landfill (WSA-5) and a concentration of 800 ug/g was detected.

In summary, methylene chloride was found at concentrations of less than 10 ug/g in the railyard (WSA-1), east landfill (WSA-3), open storage yard (WSA-4), north landfill (WSA-5), and motor pool (WSA-6). The north landfill (WSA-5) was the only site to yield samples containing methylene chloride at

concentrations greater than 10 ug/g. The distribution of samples containing methylene chloride seems to be random with respect to depth and location.

2.1.3.3 Volatile Hydrocarbons and Related Compounds

VHCs were detected ten times out of a total of 771 samples analyzed for VHCs in the WSA. This group contains some compounds that are not hydrocarbons, but are grouped with VHCs because of similar environmental properties and distributions. The VHCs detected included methylisobutyl ketone, dicyclopentadiene, methyl cyclohexane, 4-hydroxy-4-methyl-2-pentanone, bicycloheptadiene, and 2-butoxyethanol and were reported at a maximum concentration of 60 ug/g and as deep as 40 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for each analyte. The distribution and concentration of VHCs for the 0 to 2, 2 to 5, and 5 to 20 ft depth intervals are shown in Plates WSA 2.1-9 through 2.1-11.

As shown in Table WSA 2.1-1, VHCs were reported in samples from all sites except the railyard (WSA-1), sanitary sewer (WSA-7a and WSA-7b), and areas outside site boundaries. Three samples from the motor pool (WSA-6) contained VHCs in the 1 to 10 ug/g concentration range. One was a surface sample in the south end of the motor pool (WSA-6), one was from the 2 to 5 ft depth interval near Tank 629A in the north part of the motor pool (WSA-6), and the other was from the 2 to 5 ft depth interval near Tank 629D. VHCs were detected five times in the 5 to 20 ft depth interval. The east landfill (WSA-3) and open storage yard (WSA-4) each yielded one sample in the 0.20 to 1 ug/g concentration range. The north landfill (WSA-5) yielded four samples at concentrations ranging from 1 to 60 ug/g.

2.1.3.4 Volatile Aromatic Organics

VAOs were detected ten times out of a total of 668 samples analyzed for VAOs in the WSA. The VAOs detected included benzene, ethylbenzene, m-xylene, and toluene and were found at concentrations of less than 10 ug/g and as deep as 60 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for each analyte. The distribution and concentration of VAOs for the 0 to 2 and 2 to 5 ft depth intervals are shown in Plates WSA 2.1-12 and 2.1-13.

As shown in Table WSA 2.1-1, VAOs were found in the railyard (WSA-1), east landfill (WSA-3), open storage yard (WSA-4), and motor pool (WSA-6) within the WSA. The motor pool (WSA-6) had the most detections of the three sites. VAOs were detected four times at concentrations of 2 to 4 ug/g. Three detections occurred in the 4 to 5 ft interval near Tank 629D. The other was a surface sample taken near Tank 627B. The open storage yard (WSA-4) had three detections of toluene ranging from 0.4 to 1 ug/g and as deep as 60 ft. Tolene was also detected in the east landfill (WSA-3). Two detections of 0.3 ug/g occurred in the northwest corner in the 0 to 1 and 14 to 15 ft depth intervals. Benzene was detected next to the railroad track in the northeast corner of the railyard at a concentration of less than than 1 ug/g in the 2 to 5 ft depth interval.

Few samples from the WSA contained VAOs. When these compounds were detected, they did not exceed 10 ug/g, however, they did appear at depths up to 60 ft.

2.1.3.5 Organosulfur Compounds Mustard - Agent Related

OSCMs were detected two times out of a total of 806 samples. The only OSCM detected was chloroacetic acid at a maximum concentration of 70 ug/g. This compound was detected only in internal sediments of the sanitary sewer. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for chloroacetic acid. These detections were not mapped because they were distributed only inside the sewer.

2.1.3.6 Organosulfur Compounds - Herbicide Related

OSCHs were detected one time out of 806 samples. The OSCH detected was benzothiazole in the motor pool at a concentration of 0.3 ug/g and a depth of 5 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for benzothiazole. The detection was not mapped because Benzothiazole was found only in a motor pool area (WSA-6) ditch.

2.1.3.7 Organophosphorous Compounds GB - Agent Related

Phosphoric acid, tributyl ester was the only OPHGB detected in two out of 806 samples. The maximum concentration and depth were 2.8 ug/g and 5 ft,

respectively. This compound was reported in two composite samples outside of the site boundaries in Section 3. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and concentration range for phosphoric acid, tributyl ester. These detections were not mapped because there were too few to warrant it.

2.1.3.8 DBCP

In September 1982, Geraghty and Miller, Inc., conducted DBCP analyses on samples collected in the railyard (Geraghty & Miller, 1982/RIC 81342R06). Five borings were drilled and sampled in the area around Well 03523, between Wells 03008 and 03010. These samples contained DBCP concentrations ranging from 0.4 to 21 ppb. These detections occurred to a depth of 45 ft.

During the RI, DBCP was detected three times out of a total of 817 samples analyzed in the WSA. DBCP was found at a maximum concentration of 1.3 ug/g and no deeper than 1 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for DBCP. The distribution and concentration of detections for the 0 to 2 ft depth interval are shown in Plate WSA 2.1-14.

As shown in Table WSA 2.1-1, DBCP was found in the motor pool (WSA-6) and railyard (WSA-1) within the WSA. The three samples containing DBCP were all taken from borings in drainage ditches, one in the motor pool (WSA-6) near Tank 627B and two from the center of the railyard (WSA-1), next to the railroad tracks on the west side.

2.1.3.9 Polynuclear Aromatic Hydrocarbons

PAHs were tentatively identified 33 times out of 806 samples. The PAHs identified were pyrene, fluoranthene, and methyl naphthalene. These compounds were reported at a maximum concentration of 300 ug/g and as deep as 10.5 ft. Table WSA 2.1-1 presents the number of identifications, number of samples analyzed, and the concentration range for each analyte. The maps for PAHs show only tentative identifications, since the GC/MS methods that detected these compounds were not certified for PAHs. The distribution and concentrations of PAHs in the 0 to 2, 2 to 5 and 5 tp 20 ft intervals are shown in Plates WSA 2.1-15, 2.1-16, and 2.1-17.

PAHs were found in the railyard (WSA-1), west landfill (WSA-2), east landfill (WSA-3), north landfill (WSA-5), motor pool (WSA-6), and in Section 9. The majority of these identifications (13) occurred in the motor pool (WSA-6). Five identifications occurred along the railroad tracks east of Buildings 624 and 625. The highest levels in these samples were of fluoranthene or pyrene 30 to 40 ug/g. Another cluster of identifications occurred in the area of the tank farm. The majority of these were of methyl naphthalene. The highest concentration of methyl naphthalene, 200 ug/g, was found next to Tank 629D. Four occurrences of PAHs were found in three railyard borings. The PAHs found in the railyard were fluoranthene and pyrene.

2.1.3.10 Semivolatile Halogenated Organics

SHOs were detected three times out of 813 samples analyzed for SHOs. The SHOs detected included hexachlorobutadiene, hexachlorocyclopentadiene, and tetrachlorobenzene. These compounds were found at a maximum concentration of 4.7 ug/g and as deep as 10 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed and concentration range for each analyte. These detections were not mapped because there were to few to warrant it.

As shown in Table WSA 2.1-1, SHOs were found in the west landfill (WSA-2), the east landfill (WSA-3), and the north landfill (WSA-5). The single occurrence of hexachlorocyclopentadiene was found in the west landfill (WSA-2) in a surface sample and was at a concentration of 5 ug/g. The single occurrence of hexachlorobutadiene occurred in the disposal pit in the east landfill (WSA-3). It was identified in the 9 to 10 ft sample interval at a concentration of 0.4 ug/g. The only occurrence of tetrachlorobenzene was found in a north landfill (WSA-5) trench. It was found in the 5 to 6 ft sample interval at a concentration of 1 ug/g.

2.1.3.11 Organochlorine Pesticides

OCPs were detected 14 times out of a total of 806 samples analyzed for OCPs in the WSA. The OCPs detected included aldrin, dieldrin, endrin, and isodrin and were found at concentrations of less than 100 ug/g and as deep as 63 ft. Table WSA 2.1-1 presents the number of detections, the number of samples

analyzed and the concentration range for each analyte. The distribution and concentration of OCPs for the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-18 through 2.1-21.

As shown in Table WSA 2.1-1, OCPs were found in the railyard (WSA-1), west landfill (WSA-2), north landfill (WSA-5), and motor pool (WSA-6). In the railyard, OCPs were detected three times in a boring next to a roadway by Building 619. Aldrin and dieldrin were found in the surface sample of this boring in the 1 to 10 ug/g concentration range, and dieldrin was found in the next sample from this boring at a concentration of less than 1 ug/g.

OCPs including aldrin, endrin, and dieldrin were found in samples from the west and north landfills (WSA-2 and WSA-5) at concentrations of less than 10 ug/g. These OCPs were found in borings both inside and outside of the disposal trenches and ranged as deep as 6 ft. In addition, a sample from the north landfill (WSA-5) contained isodrin in the 10 to 100 ug/g concentration range, also at a depth of 6 ft.

In the motor pool (WSA-6), aldrin was found in two samples from one boring between Buildings 625 and 624 at depths greater than 20 ft and at concentrations of less than 10 ug/g. The deepest sample containing aldrin was taken from directly above the water table at a depth of 63 ft.

In summary, OCPs were found near the surface in the railyard (WSA-1) and the west and north landfill (WSA-2 and WSA-5). No obvious correlation between the location of the detections and the locations of the disposal trenches in the landfills was noted. OCPs were also detected in samples collected from near the water table in the motor pool (WSA-6).

2.1.3.12 Arsenic

Arsenic was detected 28 times out of a total of 778 samples analyzed for arsenic in the WSA. Arsenic was found at a maximum concentration of 27 ug/g and as deep as 60 ft. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for arsenic. The

distribution and concentration of arsenic for the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-22 through 2.1-25.

As shown in Table WSA 2.1-1, arsenic was found in all sites except the east landfill (WSA-3). Of the 29 samples containing arsenic, only seven samples showed concentrations in excess of the upper indicator limit of 10 ug/g for arsenic . These seven samples all contained arsenic in the 10 to 100 ug/g concentration range, and none was detected deeper than 20 ft.

Three of the seven samples containing greater than 10 ug/g of arsenic were found in the 0 to 2 ft interval of the motor pool (WSA-6) where elevated levels of ICP metals also were found. The 2 to 5 ft interval contained arsenic above its indicator range in two samples, one from the motor pool (WSA-6) and one from the west landfill (WSA-2). The north landfill (WSA-5) was the only area containing elevated levels of arsenic in the 5 to 20 ft depth interval. It was found at depths of approximately 5.5 ft and 7.5 ft. The same north landfill (WSA-5) samples also contained elevated levels of ICP metals.

In summary, arsenic was found frequently at concentrations within its indicator range in the WSA. Elevated levels of arsenic were found occasionally in the motor pool (WSA-6) and the west and north landfills (WSA-2, and WSA-5), usually in conjunction with elevated levels of ICP metals.

2.1.3.13 Mercury

Mercury was detected 32 times out of a total of 787 samples analyzed for mercury in the WSA. Mercury was found at a maximum concentration of 4.0 ug/g and as deep as 10.5 ft. . Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for mercury. The distribution and concentration of mercury for the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-26 through 2.1-29.

As shown in Table WSA 2.1-1, mercury was found in all sites except the east landfill (WSA-3). Of the samples containing mercury, 21 were at concentrations above its upper indicator level of 0.1 ug/g.

Surface samples containing mercury above its indicator level were found in the motor pool (WSA-6) (8 samples), at the overflow ditches of 2 sanitary sewer (WSA-7) lift stations (2 samples), and in the west landfill (WSA-2) (1 sample).

Samples from six borings in the 2 to 5 ft depth interval contained mercury above its indicator range. Only two of these samples were from the motor pool (WSA-6), and mercury was present in samples from the 0 to 2 ft depth interval directly above both of these. Three of the remaining four samples were collected from the west landfill (WSA-2). The other sample was collected from a boring west of the north landfill (WSA-5). One of the samples from the west landfill (WSA-2) contained the highest concentration of mercury detected in the WSA, 4.0 ug/g.

Samples from five borings were found to contain mercury above its indicator range in the 5 to 20 ft depth interval. Of these, three were in the west and north landfill (WSA-2 and WSA-5), one was from the open storage yard (WSA-4), and one was from near the railroad tracks at the south end of the railyard (WSA-1). None of these samples was deeper than 10.5 ft. Mercury was not detected above its indicator range at depths greater than 20 ft.

In general, mercury was detected above its indicator range in surface samples from the motor pool (WSA-6) and in varying depths up to 10.5 ft in the west and north landfill (WSA-2 and WSA-5), the open storage yard (WSA-4), and the railyard (WSA-1).

2.1.3.14 ICP Metals

ICP metals were detected 2,171 times out of a total of 859 samples analyzed for ICP metals in the WSA. All of the ICP metals, cadmium, chromium, copper, lead, and zinc, were detected. The maximum concentration detected was 9,700 ug/g of copper. Table WSA 2.1-1 presents the number of detections, the number of samples analyzed, and the concentration range for each analyte. The

distribution and concentration of ICP metals for the 0 to 2, 2 to 5, 5 to 20, and greater than 20 ft depth intervals are shown in Plates WSA 2.1-30 through WSA 2.1-33.

As shown in Table WSA 2.1-1, ICP metals were found throughout the WSA. Virtually every sample collected from the 0 to 2 and the 2 to 5 ft depth intervals contained one or more of the ICP metals. In general, concentrations were within or slightly above indicator ranges, with the exception of the motor pool (WSA-6) where concentrations of metals often exceeded their indicator ranges. Isolated samples from the east and west landfill (WSA-3 and WSA-2) also contained concentrations of the ICP metals well above their indicator ranges.

All of the sites except for the sanitary sewer (WSA-7a and WSA 7b) were sampled for ICP metals in the 5 to 20 and greater than 20 ft depth intervals. Nearly all samples contained ICP metals below or slightly above their indicator ranges in these sites. The highest concentrations of ICP metals were found in three samples from the north and west landfill (WSA-5 and WSA-2), all in the 5 to 20 ft depth interval.

In general, ICP metals were found throughout the WSA, usually below indicator levels. Elevated concentrations were found primarily in the motor pool (WSA-6), with isolated instances also occurring in the east, west, and north landfills (WSA-3, WSA-2, and WSA-5).

2.2 SURFACE WATER CONTAMINANTS

With the exception of some drainage ditches from the motor pool (WSA-6) wash bay, others in the railyard (WSA-1), and a natural, subdued, and poorly integrated intermittent surface drainage network, there are no significant surface water features in the WSA. Therefore, no comprehensive surface water sampling program could be conducted in the WSA. Surface water does not occur in the WSA except as brief pulses of runoff following excessive rainfall or snowmelt events. However, in 1982 and 1984 some surface water and sludge samples were collected from near the motor pool (WSA-6) and railyard (WSA-1).

Some data collected in 1987 from the sanitary sewer (WSA-7) are also included in this section.

Water and sludge samples collected in 1984 from the ditch that carried discharge from the motor pool (WSA-6) wash bay (Building 627) contained several nontarget compounds, including some components of a solvent-emulsifier degreaser, butoxyl ethanol, trimethyl benzene, trimethyl and nonyl phenol, substituted naphthalenes, and probably tridecane (Witt, 1984).

One of six surface water samples collected from the vicinity of the railyard (WSA-1) in 1982 contained detectable levels of DBCP. The exact locations of these samples were not documented (Geraghty & Miller, 1982/RIC 81342R06).

Water samples were also collected from the sanitary sewer system (WSA-7a and WSA-7b) in the study area prior to the Phase I sampling; chloroform was detected in these samples at 16 to 37 ug/l (USAEHA, 1985), while downstream samples collected from the sewer system outside the study area contained isodrin and DBCP at levels below 1 ug/l (Black & Veatch, 1979/RIC 81266R35; Jones, 1987).

Samples were taken in 1986 from a sump in the motor pool (WSA-6) roundhouse and from a cavity that was connected to the septic system to the north of the roundhouse (Ebasco, 19881). The highest concentration of each analyte detected in these samples is listed below.

Analyte	Concentration (ug/l)
1,1-Dichloroethane	580
1,1,1-Trichloroethane	280
Chloroform	58
Tetrachloroethylene	180
Benzene	23
Ethylbenzene	2.3
m-Xylene	260
o- and p-Xylene	40
Toluene	8.6

2.3 SOIL GAS STUDIES

Three soil gas programe were conducted in the WSA to help locate organic contaminants in the groundwater and in the vadose zone. These programs involved sampling the atmosphere between the water table and the ground

surface and analyzing the samples for traces of target organic compounds that might have evaporated from the groundwater surface or possible concentrations in the vadose zones. These programs can provide general indications of potential contamination but cannot directly delineate potential contamination of soils or groundwater.

The first program was conducted by Tracer Research Corporation (TRC) in early 1986 in Sections 3, 4, and 33 (Ebasco, 1988a/RIC 88046R01). Samples of soil gas were collected and analyzed in the field by gas chromatography, providing nearly real-time data. Sampling was begun in the motor pool (WSA-6), where groundwater analyses had initially detected trichloroethylene, and subsequent sampling transects were located to determine both the upgradient and downgradient extent of the contaminant plume. Additional sampling was conducted at areas of suspected contamination, specifically around septic tanks in Section 3 and the west and east landfill (WSA-2 and WSA-3). In addition to trichloroethylene, all samples were analyzed for tetrachloroethylene and 1,1,1-trichloroethane, and in the area around the landfills samples were also analyzed for VAOs, including benzene, toluene, ethylbenzene, and xylenes.

A total of 256 samples were collected in the TRC soil gas program. Trichloroethylene was detected in 138 samples and tetrachloroethylene was detected in 254 samples. Benzene and toluene were detected in only one sample, just north of the west landfill (WSA-2).

Using these TRC data, two trichloroethylene soil gas trends were mapped. One extended northwest from the motor pool (WSA-6), and a north-south trend was mapped in central Section 4 (Figure WSA 2.3-1). Because of the nearly ubiquitous presence of tetrachloroethylene and 1,1,1-trichloroethane at low levels throughout the TRC soil gas study area, only trends of concentrations higher than apparent background were defined. Tetrachloroethylene at concentrations greater than background levels of 6×10^{-4} ug/l of air was found in sampling stations at the southern end of the motor pool (WSA-6), in, west of, and extending northward from the west landfill (WSA-2), and in the southwestern part of Section 33 (Figure WSA 2.3-2). Concentrations of

1,1,1-trichloroethane greater than a background level of more than 2×10^{-3} ug/l of air were detected mainly in sampling stations grouped along the western and southern parts of the motor pool (WSA-6), north of the east landfill (WSA-3), and around the west landfill (WSA-2) (Figure WSA 2.3-3).

While these distributions were too indefinite to define trends across the area, concentrations were higher in the southern part of the motor pool (WSA-6), and in the case of tetrachloroethylene, in the west landfill (WSA-2). Lower concentrations of 1,1,1-trichloroethane were found in the east landfill (WSA-3), and of tetrachloroethylene were found in the west landfill (WSA-2).

The second soil gas program in the study area was conducted in the spring of 1986 by PETREX (Ebasco, 1988a/RIC 88046R01). Static samplers were exposed over a period of approximately one month and provided an integrated measure of the soil gas flux at each sampling point. There is no direct correlation between the concentration of a potential contaminant source and the measured contaminant flux; rather the measured flux is proportional to the emanation rate from a source, which may be affected by a variety of factors.

A total of 922 samples were collected in the PETREX study in the area shown in Figure WSA 2.3-4.

The results of the PETREX study indicated the generally ubiquitous distribution of tetrachloroethylene at highly variable flux. The results for trichloroethylene confirmed to the previous study results for distribution at the west landfill (WSA-2). Isolated hits of trichloroethylene were also detected in Sections 3 and 9, and 1,1,1-trichloroethane was detected at 16 stations distributed randomly in Sections 4, 9, and 33. Chloroform was detected in approximately 10 percent of the samples collected during the PETREX study. About one-half of these detections of chloroform were concentrated along the railroad line diagonally crossing Section 33 and extending along the northern boundary of Section 3, at highly variable flux. The remainder were randomly distributed across the PETREX study area in Sections 33, 4, and 9.

The third soil gas investigation in the WSA was conducted in 1987 by PETREX prior to the Phase II program in the railyard (WSA-1) (Ebasco, 1988e/RIC 88076R04). One sample location out of 89 in the railyard had DBCP at a detectable flux level. This location was 100 to 200 ft from where Geraghty and Miller detected by DBCP in 1982 (Geraghty & Miller, 1982/RIC 81342R06.

2.4 GROUNDWATER CONTAMINANTS

Groundwater quality data have been collected from numerous wells in the study area (Plate WSA 1.4-1). Like the soils data, groundwater data in this section are presented in analyte groups. Samples were not all analyzed for each compound in these groups. Analytical results of groundwater samples from the unconfined aquifer are presented in Table WSA 2.4-1. Results of confined Denver groundwater analyses are presented in Table WSA 2.4-2. Tentatively identified target compounds in samples from both alluvial and Denver Wells are summarized in Table 2.4-3.

Groundwater chemical data presented in this section are averaged in two ways; over time and over the thickness of the aquifer. The average over time is used in this report to composite data that are elsewhere displayed by individual sampling date in the Water RI Report. The averaged values are presented to show a more general pattern of all locations where analytes have been detected and may migrate in the future in both the unconfined and Denver aquifers. The average value for each analyte in a single well is calculated as a geometric means as follows:

$$\text{Average value} = (n/s)\,(a_1 \times a_2 \times a_3 \times \ldots a_n)^{1/n},$$

where n = number of hits,

s = number of samples collected, and

a = concentration of the n^{th} hit.

This geometric mean is used to approximate the true mean of a log normally distributed statistical population and uses the factor n/s to adjust the mean for sample results that were below CRL.

The values from well clusters in the unconfined aquifer are also averaged over the thickness of the aquifer so that data taken from these well clusters can be compared directly to data from other monitoring wells that are fully screened in the aquifer. These averaged values are also intended to better predict the analyte concentrations that would be found in water taken from water supply or containment system extraction wells that draw groundwater from the full thickness of the unconfined aquifer.

The chemical data used in these averages are from the period January 1984 to March 1988. Data collected prior to January 1984 has not been used because groundwater flow and chemical concentrations had not been adjusted to pumping of the Irondale Containment System in Sections 28 and 33, which began operating two years earlier. The source of these data is the Installation Restoration Data Management System (IRDMS). These data are available through the RMA Information Center.

2.4.1 Unconfined Aquifer

A summary of analytes detected in WSA alluvial groundwater are presented in Table WSA 2.4-1. A summary of tentatively identified target compounds in groundwater from both alluvial and Denver wells is presented in Table WSA 2.4-3.

All of the VHOs except for trichloropropene were detected in groundwater of the WSA. These compounds were 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, carbon tetrachloride, chlorobenzene, chloroform, tetrachloroethylene, and trichloroethylene. Most of these halogenated compounds were widespread across the study area and their averaged concentrations were mainly in the 10 to 100 ug/l range (Plate WSA 2.4-1). Tetrachloroethylene occurred only in the western part of the study area, and trichloroethylene was found at higher concentrations than the other compounds in this group.

Trichloroethylene reached its highest average concentration in the motor pool (WSA-6), at 160 ug/l (Figure WSA 2.4-1). Other relatively high concentrations

of trichloroethylene occurred in a plume extending north-northwest from the motor pool (WSA-6). Other VHO compounds detected in the vicinity of this groundwater plume include 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane, 1,2-dichloroethylene and chloroform. The VHO compounds 1,1-dichloroethane, 1,1-dichloroethylene, and carbon tetrachloride were detected in alluvial wells located in the northern portion of the motor pool (WSA-6), but were not detected in downgradient wells to the north-northwest.

A separate trichloroethylene plume extended north from the southern RMA boundary through central Sections 4 and 9 (Figure WSA 2.4-1). The average concentration of trichloroethylene in this plume reached a high of 49 ug/l in upgradient Well 09013 at the southern RMA boundary. The only other average VHO concentration exceeding 100 ug/l in the WSA was reported in this same well for 1,1,1-trichloroethane at 110 ug/l. Other VHO compounds detected along the trend of this trichloroethylene plume include 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,-dichloroethylene, chlorobenzene, 1,2-dichloroethylene and chloroform. 1,1-dichloroethane and 1,2-dichloroethane were detected in upgradient Wells 09013 and 09014 located at the southern RMA boundary mentioned above. One well located in Section 4 and within the trend of this plume contained detectable carbon tetrachloride in one out of five sampling episodes.

The vertical distribution of tricholoroethylene varied between the plume extending north-northwest from the motor pool (WSA-6) area and the one crossing the centers of Sectins 4, 9, and 33 (Figure WSA 2.4-1). In the motor pool (WSA-6) area (Wells 04030-33), trichloroethylene was at a much higher concentration in the upper part of the aquifer and was at similar concentrations in upper and lower wells in downgradient aprts of the plume (Wells 04021-23). In the plume through Sections 4 and 9, trichloroethylene was at similar concentrations in the upper and lower parts of the aquifer.

VHO compounds were detected in off-post wells to the west of WSA within an alluvial groundwater plume. Tetrachloroethylene was detected in numerous wells off-post and in alluvial wells located in the western portions of Sections 4, 9, and 33 in the WSA. Tetrachloroethylene was not identified in

other alluvial groundwater plumes described in this report. Trichloroethylene was also detected in off-post wells at generally higher concentrations than in wells of the western portion of the WSA. Other VHO compounds detected off-post to the west include 1,1,1-trichloroethane, 1,1-dichloroethane, and 1,1-dichloroethylene. Chlorobenzene and 1,2-dichloroethylene were detected in alluvial wells located in the western portion of Section 4.

Chloroform was the only VHO compound detected in alluvial groundwater within the railyard (WSA-1). Eight alluvial wells of Section 33 near the Irondale Containment System contained detectable trichloroethylene.

The vertical distribution of trichloroethylene varied between the plume extending north-northwest from the motor pool (WSA-6) and the one crossing the centers of Sections 4, 9, and 33 (Figure WSA 2.4-1). In the motor pool (WSA-6) (Wells 04030-31), trichloroethylene was detected at a much higher concentration in the upper part of the aquifer. Concentrations were similar between upper and lower wells in each downgradient well clusters. In the plume through Sections 4 and 9, trichloroethylene was at similar concentrations in the upper and lower parts of the aquifer in both upgradient and downgradient of WSA sites.

VAOs detected in the unconfined aquifer of the WSA included benzene, toluene, and xylenes. Except for in a well at the northwestern boundary of the study area, benzene and other aromatics occurred only in the railyard and in the western two-thirds of the study area (Plate WSA 2.4-2). Benzene was the aromatic most commonly detected on-post. Benzene in alluvial groundwater has been detected in a linear plume extending northward from the west landfill (WSA-2) vicinity to the southwest corner of Section 33. The highest average concentration of benzene within this plume is 11 ug/l. Another plume of benzene in alluvial groundwater extends northwest from the motor pool (WSA-6) area to the southern portion of Section 33. Benzene in this plume reached a maximum average concentration of 89 ug/l in the motor pool (WSA-6) area and 2.4 ug/l in downgradient wells. Spatially isolated occurrences of benzene were detected in the railyard (WSA-1) and in the vicinity of the east landfill (WSA-3) at average concentrations of 2.3 and 1.2 ug/l, respectively. Toluene

was also detected in two wells in the railyard (WSA-1), one well near the RMA boundary in southern Section 9, and one well in southwestern Section 33. Xylenes were detected in one well located in the railyard (WSA-1) and one well in the northwest corner of Section 4.

The summed average concentration of aromatic compounds in each well was less than 10 ug/l in all locations but two. Benzene was detected at an average of 89 ug/l in the motor pool (WSA-6) and at 11 ug/l in a well in the west landfill (WSA-2).

A DBCP groundwater plume was found mainly to extend from the railyard at its upgradient end north-northwest to the Irondale Containment System in Section 33 (Plate WSA 2.4-3). Numerous samples taken in and downgradient from the containment system detected no DBCP or other pesticides at or beyond the RMA boundary. The DBCP plume consisted almost entirely of average concentrations of less than 10 ug/l, with higher average concentrations (up to 40 ug/l) found only in one well in the railyard (WSA-1) and in one well in northeastern Section 4.

OCPs were detected in alluvial groundwater samples from on-post areas to the northeast of the study area, and included aldrin, dieldrin, and endrin (Plate 2.4-4). Dieldrin was found most frequently, with fewer occurrences of aldrin and endrin. The sum of the averaged concentrations of pesticides in each of these wells did not exceed 10 ug/l. Isolated occurrences of aldrin, dieldrin, and isodrin were detected in western Section 3, northern Section 4, and Section 33. These average concentrations of these occurrences were less than 10 ug/l in each well.

Other compounds detected in on-post alluvial groundwater samples in and around the study area included methylene chloride, organosulfur compounds (chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, and oxathiane), organophosphorous compounds (diisopropylmethylphosphonate and dimethylmethyl phosphonate), an organonitrogen compound (caprolactum), semivolatile halogenated organics (hexachlorocyclopentadiene), arsenic, mercury, and ICP metals.

Methylene chloride was detected in six wells on the western side of the study area in Sections 4 and 33. The highest averaged concentration reported was 14 ug/l in a well located in the northwestern portion of Section 4.

An isolated occurrence of chlorophenylmethyl sulfone was reported in a well in the southern portion of Section 34, at an average concentration of 0.95 ug/l.

Caprolactam, a possible plasticizer, was found at averaged concentrations up to 2,200 ug/l in one well in the north portion of Section 33, three wells in the northeast corner of Section 4, and one well in the northwest corner of Section 9.

An isolated occurrence of the semivolatile halogenated organic hexachlorocyclopentadiene was reported in the railyard (WSA-1) at an average concentration of 0.17 ug/l.

Metals and other inorganic analytes were also monitored in alluvial groundwater samples. Samples were put through a 40 micron filter and then analyzed for chloride, fluoride, sulfate, nitrates, calcium, magnesium, sodium, potassium, cadmium, chromium, copper, lead, zinc, mercury, and arsenic. Mercury was not detected in alluvial groundwater samples. Arsenic was detected at concentrations near the CRL in three wells at diverse locations in Section 3, 4, and 9. Cadmium was detected at concentrations near the CRL in two wells within the western half of Section 33. Chromium was detected in numerous wells throughout the WSA, at concentrations ranging from the CRL to 14 mg/l. No trends or patterns of chromium in alluvial groundwater is apparent. The highest concentration of chromium detected was 21 ug/l, and came from a well in the southwest corner of Section 34. Copper was detected at only three locations, and ranged in averaged concentration from 4.0 to 5.6 ug/l. Lead was detected in seven wells, generally at concentrations near to CRL. Well 03002 is located in the railyard (WSA-1) and contained the highest average concentration of lead at 19 ug/l. Zinc in alluvial groundwater is nearly ubiquitous, ranging in concentration from BCRL to 150 ug/l. Data from cluster wells within the alluvial aquifer demonstrated that lower concentrations of zinc (25-75 ug/l) occur in sample closer to the water table

surface, and higher concentrations (100-150 ug/l) occur in water sampled closer to bedrock.

In summary, the distribution of organic compounds in alluvial groundwater is different for different types of compounds. VHOs were found mainly in Sections 4, 9, and 33, and occurred at the highest average concentrations in the motor pool (WSA-6) and along a north-south trend through Sections 4 and 9. VAOs occurred mostly in and downgradient from the railyard (WSA-1). Dibromochloropropane was found mainly in a plume between the railyard (WSA-1) and the Irondale Containment System. OCPs were detected mainly to the northeast of the study area. The other detected target organic analytes were scattered low concentrations that do not define any patterns or trends.

2.4.2 Denver Aquifer

Target analytes from the VHO, VAO, OCP and ICP groups, as well as arsenic and mercury were detected in Denver Formation groundwater from the WSA. A summary of the analytical results for groundwater samples from the confined Denver Formation aquifer is presented in Table WSA 2.4-2. The distribution of organic analytes in the Denver Formation groundwater in the WSA varied by group. VHOs showed no particular distribution trends in the study area. Chloroform was detected adjacent to the north landfill (WSA-5) and the railyard (WSA-1). Benzene was found extending from the northwest part of Section 3 northwestward toward the Irondale Containment System. Total VHO and VAO levels in Well 04009 in the northwest corner of Section 4 were higher than in other WSA Denver Formation wells. OCP detections were scattered widely across the study area.

VHOs detected in Denver Formation groundwater in the study area included 1,2-dichloroethane, 1,1,2-trichloroethane, and chloroform. Average VHO detections in WSA groundwater were all less than 10 ug/l and were from wells in Section 4, near the north landfill (WSA-5) and along the WSA boundary, and in Section 3 near the railyard (WSA-1) (Figure WSA 2.4-2). The detection of 1,1,2-trichloroethane and 1,2-dichloroethane in Section 4 near the WSA boundary was from a well screened in zone 5 sand of the Denver Formation. Chloroform was the only VHO detected near the north landfill (WSA-5). The

detection of 1,2-dichloroethane and chloroform near the railyard (WSA-1) was screened in a Denver zone 4 sand.

VAOs detected in the Denver Formation groundwater included benzene, ethylbenzene, toluene, and xylenes. Benzene was the most commonly detected aromatic on-post, as it was in the alluvial groundwater. With one exception, VAO hits were confined to the northwestern and western boundaries of the study area, from Sections 33 and 4 (Figure WSA 2.4-3). The highest summed average VAO concentration (184 ug/l) was from Well 04009 in the northwest corner of Section 4, screened in Denver Formation zone 5 sandstone. All other VAO detections were benzene only, averaged less than 10 ug/l, and were from wells screened in zones 3, 4, 5, 6, and 7. The highest average benzene level (8.2 ug/l) was detected in a well located near the northwest corner of Section 3 (Well 03003) west of the railyard, and screened in Zone 3. Benzene levels tended to decrease to the northwest.

Samples from Well 04009 had hits of all three target organic analyte groups detected in the Denver Formation groundwater and was the only well that tested positive for xylenes, toluene, ethylbenzene, and 1,1,2-trichloroethane.

DBCP was not detected in any samples from the Denver Formation groundwater in the WSA.

OCPs detected in groundwater from the Denver Formation in the study area included aldrin, endrin, isodrin, dieldrin, and dichlorodiphenyl- DDT. Summed average OCP hits did not exceed 0.46 ug/l in the study area (Figure WSA 2.4-4). Hits of isodrin were scattered in Section 33 in Zones 4 and 7. Isodrin concentrations tended to increase to the northwest across Section 33. Other OCP hits were detected in the northwest corner of Section 4 in zone 3 and 5 sands, near the west side of the north landfill (WSA-5) in zone 5 sands, near the railyard (WSA-1) in zone 3 sands, and in Section 9 in zone 2 sands. Isolated occurrences of endrin and aldrin were detected in Sections 4 and 3. Dieldrin was detected in two wells in Section 4 and DDT was reported in a well in Section 9 and a well in Section 4.

Samples from two Denver wells in the WSA were analyzed once for additional organic compounds. These wells were both located along the western edge of RMA. Denver Well 04009, which contained trichloroethylene at just above the CRL, toluene, and elevated levels of xylenes and ethylbenzene, also contained tentatively identified xylenes and substituted benzenes with a total concentration of greater than 1,000 ug/l. Tentatively identified volatile hydrocarbons in this well were measured at about 2,400 ug/l, caprolactam was measured at 940 ug/l and other unknown compounds were found in concentrations of nearly 1,100 ug/l. Denver Well 33026, located among the wells of the Irondale Containment System, contained 100 ug/l of nontarget organics as well. A summary of tentatively identified target compounds in groundwater from both Denver and alluvial wells is presented in Table WSA 2.4-3.

The ICP metals, mercury and arsenic generally were below the CRLs in the Denver formation water across the WSA. Noteworthy exceptions include Well 03003 located in the railyard (WSA-1), which contained elevated levels of zinc (104 ug/l), Chromium (21 ug/l), copper (25 ug/l), arsenic (7.2 ug/l) and mercury (0.25 ug/l) in one out of three sampling events. A well in the northwest quarter of Section 9 contained an average concentration of 17 ug/l of chromium. One well near the North Landfill (WSA-5) contained 12 ug/l to 15 ug/l of arsenic in three out of four sampling events. Well 04009 in the northwest corner of Section 4 contained 15 ug/l to 22 ug/l of arsenic, as well as organic analytes. Other isolated occurrences of ICP metals, mercury and arsenic were generally at concentrations near to CRL.

Other inorganics, including chloride, fluoride, calcium, magnesium, sodium, potassium, and sulfate, varied in concentrations across the area. Sulfate varied from 58,000 ug/l in Well 09003 to below detection limit in adjacent Well 09004, and from 55,000 ug/l on the northeast side of the study area in Well 34009 to 17,000 ug/l in Well 33032 and 57,000 ug/l in Well 33016. Chloride, calcium, and sodium varied from below CRL to 36,000 ug/l; 4,500 ug/l to 130,000 ug/l; and 37,000 ug/l to 169,000 ug/l, respectively.

2.5 STRUCTURES CONTAMINANTS

On the basis of use history, all RMA structures were classified as to their suspected degree of contamination. Structures located in the WSA, their function, and their contamination classification are listed in Table WSA 2.5-1. Nine structures in the WSA were suspected to be contaminated; twenty-seven were suspected to be uncontaminated; and fifty were suspected to be contaminated but cleanable. Based on visual observation, twenty-eight structures were suspected to contain asbestos. No structures in the WSA contained process equipment at the time of the structures survey in the spring of 1987 (Ebasco, 1988u).

2.6 AIRBORNE CONTAMINANTS

2.6.1 Analytical Results

Twelve air quality monitoring stations were located at RMA during the Air Remedial Investigation (ESE, 1988f). Two air quality sampling stations were located in the WSA. Station AQ1 was located in the northwest corner of Section 4 and Station AQ7 was located approximately 1,000 ft east of the railyard (WSA-1, as shown in Figure WSA 2.6-1. Total suspended particulates (TSP), particulate matter less than 10 microns (Pm-10), asbestos, and metals were monitored at selected stations throughout RMA. Also, volatile and semivolatile organic compounds (VOs and SVOs), were evaluated during event monitoring near Basin A and Basin F. In the WSA, total suspended particulates (TSP) were monitored at both stations, and asbestos and metals were monitored at AQ1. Table WSA 2.6-1 summarizes the analytical results at both stations. The occurrence and distribution of contaminants are discussed in the following sections.

2.6.2 Distribution of Total Suspended Particulates

At AQ1 the analytical geometric average concentration of TSP was 46.8 micrograms per cubic meter (ug/m^3) and at AQ7 the average concentration was 33.1 ug/m^3. Both of these levels were below the federal and state secondary ambient air quality standard of 60 ug/m^3.

Sixty individual TSP samples were collected at AQ1 and 55 samples were collected at AQ7. Individual 24 hour concentrations at AQ1 ranged from 7.1 to

143.3 ug/m^3; the range at AQ7 was from 6.2 to 100.8 ug/m^3. The maximum 24 hour concentrations at both stations were below the federal and state standard of 150 ug/m^3.

The highest annual geometric average TSP concentration at RMA was 46.9 ug/m^3, along the northwest boundary in Section 27, and the highest individual 24 hour TSP concentration at RMA was 151.4 ug/m^3, south of South Plants. TSP levels at AQ1 were comparable to the highest values realized at other stations at RMA, whereas TSP levels at AQ7 were slightly less than the average TSP concentration observed across RMA.

2.6.3 Distribution of Asbestos

Airborne asbestos was monitored biweekly for one year at AQ1. None of the 31 samples collected and analyzed contained detectable levels of asbestos above 0.01 fibers per cubic centimeter (f/cc). This result was also noted at two other asbestos monitoring stations at RMA.

2.6.4 Distribution of Metals

Twelve samples were collected at AQ1 for analyses of ICP metals, arsenic, and mercury. Samples were collected during dry, windy weather when entrainment of metals would be expected. Arsenic and mercury were not detected above their CRLs, whereas cadmium, chromium, copper, lead, and zinc were detected above their CRLs. At AQ1, cadmium levels ranged from 0.002 to 0.005 ug/m^3, chromium ranged from 0.003 to 0.006 ug/m^3, copper ranged from 0.044 to 0.358 ug/m^3, lead ranged from 0.010 to 0.057 ug/m^3, and one sample contained zinc at 10.2 ug/m^3. All of these levels were within the range of results observed at 13 other stations on RMA during 16 sampling events. The highest levels for these elements during any single sampling event were: cadmium 0.017 ug/m^3; copper 0.912 ug/m^3; and lead 0.062 ug/m^3.

2.7 BIOTA CONTAMINANTS

For more than three decades, contaminants have been detected in the tissues of plants and animals living at RMA. During that period, specific sites of contamination and specific groups of contaminants were examined, usually for selected RMA areas, and limited to particular concerns. None of these

previously studied sites is within the WSA. A broader program to monitor contaminants in biota at selected locations on RMA and at off-post control sites was established during the late 1970s and continued into the 1980s.

A comprehensive biota assessment of all RMA contamination, both on-post and off-post, was initiated in 1985. This program was designed to determine what, if any, RMA contaminants remained in the environment and constituted hazards to the regional biota. Although the basic approach was to measure contaminant levels in tissues of animals living on-post in comparison to levels in off-post controls, valuable information was also obtained from samples collected by chance (e.g., raptors found dead on RMA and salvaged for analysis).

2.7.1 Contaminants of Concern

Compounds selected as potential contaminants of concern to biota met the following criteria:

- Present in the RMA environment above ambient concentrations;
- Rated at least moderately toxic; and
- Volume and persistence information indicate that the chemical was present in the environment in sufficient quantity and/or for a long enough period of time to pose a hazard to biota.

Seven contaminants identified as major contaminants of concern based on their presence in the biosphere (e.g., in physical media within 20 ft of the ground surface), bioaccumulation potential, and areal extent (more than 5 acres), were selected for detailed pathways analyses. These contaminants were: aldrin and dieldrin, arsenic, DBCP, endrin and isodrin, and mercury. Two major contaminants of concern were not analyzed in biological tissues. DBCP, although toxic, does not bioaccumulate significantly, while isodrin, an analog of endrin, is converted to endrin by metabolic processes. Two additional contaminants, DDE and DDT, were analyzed because of their potential to cause adverse biological effects. The pathways approach was used to develop criteria levels in soil, water, and sediment for the protection of regional biota and to evaluate existing levels to determine the nature and extent of contaminant hazards to biota.

2.7.2 Sampling Completed in the WSA

Few samples were taken from this area because there were few sources of major contaminants in the westernmost sections of RMA. The prairie dog and bald eagle studies included parts of the WSA, but kestrel eggs and juvenile kestrel carcasses were the only samples taken from the area (Figure 2.7-1). Off-post control samples for the kestrel study were taken from a number of nesting boxes across northeastern Colorado. Details of the biological sampling effort on RMA are reported in the Biota Technical Plan (ESE, 1988e/RIC 88243R05) and the RI for Biota (1989).

2.7.3 Contaminant Levels in Species Occurring in the WSA

Samples were prepared by homogenization and extraction procedures according to standard certified USATHAMA methods. GC/MS equipment was used for the detection of pesticides, while AA was used for the determination of arsenic and mercury concentrations. The CRL for each analyte is presented in Table WSA 2.7-1.

Contaminant levels in RMA wildlife species found in the WSA are summarized in Tables 2.7-2 and 2.7-3. While the samples of chance and the ring-necked pheasants were not taken from the WSA, most of these species spend some time in the area. The contaminant levels of the kestrel samples taken from the WSA are included in the values presented in Table WSA 2.7-2, but are discussed separately in Section 3.0. A complete table summarizing the contaminant levels found in all samples taken on RMA may be found in the RI for Biota (ESE, 1989).

2.8 OFF-POST CONTAMINANTS

Areas to the south, southwest, and west of the WSA have been investigated by EPA. These areas have been studied using a small number of surface water, soil, and sediment samples from the area directly south of the study area at the U.S. Post Office Denver Bulk Mail Center; a soil gas investigation to the west and southwest of the study area; and an extensive alluvial groundwater sampling program. No samples of Denver Formation groundwater have been analyzed. The areas in which these and other EPA investigations occurred are shown in Plate WSA 1.1-1, and the results that are pertinent to the WSA are

shown on the plates illustrating on-post soils and groundwater analytical results. The soil gas, surface water, soils, and groundwater analytical results are discussed below.

An off-post soil gas study was conducted southwest of the WSA in 1986 by the USEPA Field Investigation Team (E&E, 1986b). The location of the study area is shown on Plate WSA 1.1-1. PETREX soil gas samples collected for the study were analyzed for chloroform, DBCP, dichloroethylene, tetrachloroethylene, trichloroethylene, and trichloroethane. Tetrachloroethylene and trichloroethylene fluxes were detected in soil gas at several places within the off-post study area (Figure WSA 2.8-1). Areas where DBCP, trichloroethane, and chloroform were detected in soil gas are shown on Figure WSA 2.8-2.

In most cases the trichloroethylene flux locations were within areas of tetrachloroethylene flux; one area of tetrachloroethylene flux near the south-central portion of the soil gas study area did not show trichloroethylene flux, and two areas of trichloroethylene flux were not associated with the regions of tetrachloroethylene flux (Figure WSA 2.8-1).

The elevated trichloroethylene fluxes detected in the soil gas were aligned in two trends oriented north-northwest along the eastern and western sides of the soil gas study area. These trends were approximately parallel to groundwater flow directions as indicated by the generalized water table contour map for the area (Figure WSA 2.8-3). The soil gas trends appeared to be manifestations of groundwater contaminant plumes, and they indicated an upgradient source to the south or southwest of RMA.

In addition to these VHOs, DBCP was detected in the soil gas on the southwest side of the study area near East 48th Avenue and Ivy Street, and on the east side of the study area next to the Denver Engineering Operations Center. The area near East 48th and Ivy is adjacent to the old 48th and Holly landfill, a portion of the Sand Creek Industrial Site. The detected DBCP area next to the Denver Engineering Operations Center is upgradient from the WSA. No groundwater samples from this area contained detectable concentrations of DBCP.

Chloroform was detected in the soil gas mainly in an area near a gravel pit along Sand Creek, and trichloroethane was detected mainly in two small clusters; one associated with the principal chloroform occurrence, the other on the southern edge of the study area. Both the chloroform and trichloroethane occurrences were associated with areas of elevated trichloroethylene flux.

In 1986, the EPA conducted a separate investigation of the U.S. Postal Service Denver Bulk Mail Center and the Denver Engineering Operations Center, located within and immediately south of the southwest corner of the WSA, in Sections 9 and 16 (E&E, 1986a) (Plate WSA 1.1-1). Nine groundwater samples, two soil samples, one surface water sample, and one sediment sample were collected and analyzed for Hazardous Substance List metals and volatile and base/neutral/acid extractable organic compounds. Detection limits for the various analyses were not reported.

RMA target organic compounds detected by this study included 1,1,1-trichloroethane, 1,1-dichloroethane, trichloroethylene, tetrachloroethylene and trans-1,2-dichloroethane (all VHOs) in three groundwater samples; and 1,1-dichloroethylene, 1,1,1-trichloroethane, tetrachloroethylene, and toluene (a VAO) in one soil sample. Inorganics detected included chromium, copper, lead, zinc (ICP metals), and mercury in both soil samples and the sediment sample; mercury in two groundwater samples and the one surface water sample; and zinc in all the groundwater samples and the surface water sample. Of the inorganics only lead, mercury, and zinc were above their RMA indicator ranges in the one sediment and two soil samples. The EPA sampling locations at which target analytes were detected at significant levels are presented, along with the on-post data, in Plates WSA 2.1-1 through WSA 2.1-30, as appropriate.

The VHOs tetrachloroethylene, 1,1-dichloroethylene, and 1,1,1-trichloroethane and the VAO toluene were detected in a composite surface soil sample collected from near the northeast corner of the Bulk Mail Center. Lead and zinc were above their Phase I indicator ranges in a soil sample collected from at the northern boundary of the Bulk Mail Center and in a sample collected from south

of the southeast corner of the Denver Engineering Operations Center. The sediment sample collected downgradient from the mail center contained lead and zinc well above their indicator ranges.

Groundwater samples from numerous wells were analyzed in the off-post RI study area, including several immediately adjacent to RMA. In off-post groundwater sampling conducted between December 1985 and March 1987, several organic compounds were detected that were target analytes in the on-post RI. Of the VAOs (Plate WSA 2.4-3), toluene was most common in the off-post area, whereas benzene was more common on-post. The off-post toluene and other aromatic concentrations did not exceed 10 ug/l. VHOs were more numerous than aromatics in the off-post area (Plate WSA 2.4-1). Most of the halogenated organic compounds that were target analytes in the on-post Phase I investigation (1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chlorobenzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene) were detected in the off-post area shown in Plate WSA 2.4-1. As in the on-post area, trichloroethylene was at a higher concentration than the other compounds. Trichloroethylene concentrations reached 1,800 ug/l in the off-post area to the south of the mapped area and reached 120 ug/l off-post in the southwest part of the mapped area. Other relatively high trichloroethylene concentrations were measured along a sinuous north trend west of the RMA boundary.

Groundwater downgradient from a possible landfill in Stapleton International Airport near Sand Creek contained slightly elevated levels of dichloroethane, trans-dichloroethylene, tetrachloroethylene, trichloroethylene, and other solvents. A well near a Stapleton Airport runway contained a 66 ug/l concentration of trichloroethane.

Limited sampling to the south of the study area indicated that some of these VHOs are present in alluvial groundwater upgradient of RMA at least as far south as the Bulk Mail Center and Denver Engineering Operations Center, but the available data are insufficient to define the trends of these occurrences.

No OCPs or DBCP were detected in the off-post area either along the west boundary of RMA or in the area downgradient from RMA in the northwest part of the mapped area (Plates WSA 2.4-3 and 4). Other compounds detected in the off-post area were compounds that were not target analytes in the on-post RI. The distribution of these other compounds in the off-post area is described in a separate report (CDM, 1987).

Areas farther to the west and southwest of RMA also contained organic compounds and metals that were target analytes in the on-post RI (CDM, 1986). These areas are discussed below by individual site (Plate WSA 1.1-1); however, chemical concentrations are not presented. Wells downgradient from the Sand Creek industrial site have been sampled on several occasions by the Colorado Department of Health, the EPA Field Investigation Team, and Burlington Northern, and have been found to contain 1,2-dichloroethane, benzene, dichloroethylene, trans-dichloroethylene, trichloroethane, trichloroethylene, and tetrachloroethylene. Numerous pesticides were also found. Cadmium, lead, arsenic, and mercury have also been measured at elevated levels. Trace concentrations of dichloroethane, trans-dichloroethylene, trichloroethylene, acetone, and phenols were found in groundwater samples taken from wells downgradient from the underground storage tanks at East 56th and Quebec. Petroleum products were found in 1985 to 1986 in seeps along Sand Creek and in a groundwater plume stretching from either side of Sand Creek to the intersection of East 59th Avenue and Holly Street.

WSA-1, Railyard

	Phase I Analyses			Phase II Analyses		
Total Borings	27			10		
Total Samples	95			23		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,1,1-Trichloroethane	0/65	BCRL	0.3-0.4	0/9	BCRL	0.088
1,1,2,2-Tetrachloroethane *	-	-	0.3*	-	-	0.3*
1,1,2-Trichloroethane	0/65	BCRL	0.3-0.4	0/9	BCRL	0.26
1,2-Dichloroethylene	0/65	BCRL	0.3-2	0/9	BCRL	0.26
Carbon Tetrachloride	1/65	0.3	0.3	0/9	BCRL	0.12
Chlorobenzene	0/65	BCRL	0.3	0/9	BCRL	0.30
Tetrachloroethylene	1/65	0.4	0.3	0/9	BCRL	0.27
Trichloroethylene	0/65	BCRL	0.3-0.5	0/9	BCRL	0.14
Trichloropropene *	-	-	0.3*	-	-	0.3*
Methylene Chloride	15/65	1-5	0.7-2	0/9	BCRL	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	0/65	BCRL	0.3-0.4	0/9	BCRL	0.30-0.40
Dicyclopentadiene	0/65	BCRL	0.3-0.7	0/9	BCRL	0.30-0.70
Methylcyclohexane *	-	-	0.3*	-	-	0.3*
Methylisobutyl Ketone	0/65	BCRL	0.3-0.7	0/9	BCRL	0.30-0.70
Volatile Aromatic Organics						
Benzene	1/65	0.6	0.3	0/9	BCRL	0.85
Ethylbenzene	0/65	BCRL	0.3-0.4	0/9	BCRL	0.16
m-Xylene	0/65	BCRL	0.7-0.8	0/9	BCRL	0.26
Toluene	0/65	BCRL	0.3	0/9	BCRL	0.19

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 2 of 42

	WSA-1, Railyard					
Total Borings	Phase I Analyses			Phase II Analyses		
Total Samples	27			10		
	95			23		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/95	BCRL	40	0/6	BCRL	36
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/95	BCRL	0.0050-0.14	2/15	0.38-1.3	0.0050-0.014
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	3/95	0.3-0.9	0.3*	-	-	0.3*
Pyrene *	1/95	0.7	0.3*	-	-	0.3*
Methyl naphthalene *	-	-	0.3*	-	-	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	-	-	0.3*
Hexachlorocyclopentadiene	0/95	BCRL	0.3-0.6	0/6	BCRL	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	-	-	0.3*
Organochlorine Pesticides						
Aldrin	0/95	BCRL	0.3	1/6	2.0	0.30
Dieldrin	0/95	BCRL	0.3	2/6	0.5-7.0	0.30
Endrin	0/95	BCRL	0.3-0.5	0/6	BCRL	0.30-0.50
Isodrin	0/95	BCRL	0.3	0/6	BCRL	0.30
Arsenic (IR=CRL-10)	1/95	3	2.5-5	Not Analyzed		

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 3 of 42

WSA-1, Railyard

	Phase I Analyses			Phase II Analyses		
Total Borings	27			10		
Total Samples	95			23		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Flange (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Mercury (IR=CRL-0.1)	2/95	0.070-0.2	0.050-0.060	Not Analyzed		
ICP Metals				Not Analyzed		
Cadmium (IR=1-2)	5/95	0.97-1.4	0.66-0.74			
Chromium (IR=25-40)	41/95	6.5-21	5.2-6.5			
Copper (IR=20-35)	57/95	5.6-19	4.7-4.9			
Lead (IR=25-40)	20/95	11-24	8.4-13			
Zinc (IR=60-80)	95/95	11-190	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-2, West Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	8			17		
Total Samples	46			25		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/38	BCRL	0.3-2	1/35	5.9	0.26
1,1,2,2-Tetrachloroethane *	2/38	0.6-2	0.3*	2/35	0.60-2.0	0.3*
1,1,1-Trichloroethane	0/38	BCRL	0.3-0.4	1/35	1.2	0.088
1,1,2-Trichloroethane	0/38	BCRL	0.3-0.4	1/35	0.43	0.026
Carbon Tetrachloride	0/38	BCRL	0.3	0/35	BCRL	0.12
Chlorobenzene	0/38	BCRL	0.3	0/35	BCRL	0.30
Tetrachloroethylene	2/38	0.4-0.6	0.3	3/35	0.26-0.98	0.27
Trichloroethylene	0/38	BCRL	0.3-0.5	2/35	0.79-25	0.14
Trichloropropene *	-	-	0.3*	-	-	0.3*
Methylene Chloride	0/38	BCRL	0.7-2	0/38	BCRL	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol *	1/38	0.4	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	0/38	BCRL	0.3-0.4	0/23	BCRL	0.30-0.40
Dicyclopentadiene	0/38	BCRL	0.3-0.7	0/23	BCRL	0.30-0.70
Methylcyclohexane *	-	-	0.3*	-	-	0.3*
Methylisobutyl Ketone	0/38	BCRL	0.3-0.7	0/23	BCRL	0.30-0.70
Volatile Aromatic Organics						
Benzene	0/38	BCRL	0.3	0/23	BCRL	0.30
Ethylbenzene	0/38	BCRL	0.3-0.4	0/23	BCRL	0.30-0.40
m-Xylene	0/38	BCRL	0.7-0.8	0/23	BCRL	0.70-0.80
Toluene	0/38	BCRL	0.3	0/23	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

	WSA-2, West Landfill					
Total Borings	Phase I Analyses: 8			Phase II Analyses: 17		
Total Samples	46			25		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/46	BCRL	40	0/25	BCRL	36
Organophosphorous Compounds.						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/46	BCRL	0.3	0/25	BCRL	0.30
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*	-	-	0.3*
Pyrene *	-	-	0.3*	2/25	0.70-20	0.3*
Methyl naphthalene *	-	-	0.3*	-	-	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	-	-	0.3*
Hexachlorocyclopentadiene	0/46	BCRL	0.3-0.6	1/25	4.7	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	-	-	0.3*
Organochlorine Pesticides						
Aldrin	0/46	BCRL	0.3	1/25	3.1	0.30
Dieldrin	0/46	BCRL	0.3	4/25	1.3-11	0.30
Endrin	0/46	BCRL	0.3-0.5	1/25	6.7	0.30-0.50
Isodrin	0/46	BCRL	0.3	0/25	BCRL	0.30
Arsenic (IR=CRL-10)	0/46	BCRL	2.5-5	1/25	23	2.5-5.0

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-2, West Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	8			17		
Total Samples	46			25		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Mercury (IR=CRL-0.1)	0/46	BCRL	0.05-0.06	6/25	0.26-4.0	0.05-0.06
ICP Metals						
Cadmium (IR=1-2)	0/46	BCRL	0.66-0.74	2/25	1.5-6.0	0.66-0.74
Chromium (IR=25-40)	28/46	7.1-30	5.2-6.5	21/25	9.3-140	5.2-6.5
Copper (IR=20-35)	33/46	5.8-29	4.7-4.9	19/25	5.9-1900	4.7-4.9
Lead (IR=25-40)	14/46	11-33	8.4-13	20/25	12-700	8.4-13
Zinc (IR=60-80)	44/46	11-93	8.7-9.5	25/25	14-1300	8.7-9.5

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 7 of 42.

	WSA-3, East Landfill					
Total Borings	Phase I Analyses: 17			Phase II Analyses: 18		
Total Samples	99			80		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/88	BCRL	0.3-2	0/48	BCRL	0.26
1,1,2,2-Tetrachloroethane *	-	-	0.3*	-	-	0.3*
1,1,1-Trichloroethane	2/88	0.5-0.8	0.3-0.4	0/48	BCRL	0.088
1,1,2-Trichloroethane	0/88	BCRL	0.3-0.4	0/48	BCRL	0.026
Carbon Tetrachloride	0/88	BCRL	0.3	0/48	BCRL	0.12
Chlorobenzene	0/88	BCRL	0.3	0/48	BCRL	0.30
Tetrachloroethylene	3/88	0.3-2	0.3	0/48	BCRL	0.27
Trichloroethylene	1/88	1	0.3-0.5	0/48	BCRL	0.14
Trichloropropene *	1/88	0.4	0.3*	-	-	0.3*
Methylene Chloride	4/88	0.8-2	0.7-2	1/48	7.8	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	0/88	BCRL	0.3-0.4	0/9	BCRL	1.1
Dicyclopentadiene	0/88	BCRL	0.3-0.7	0/9	BCRL	0.45
Methylcyclohexane *	-	-	0.3*	-	-	0.3*
Methylisobutyl Ketone	1/88	1	0.3-0.7	0/9	BCRL	0.64
Volatile Aromatic Organics						
Benzene	0/88	BCRL	0.3	0/48	BCRL	0.30
Ethylbenzene	0/88	BCRL	0.3-0.4	0/48	BCRL	0.30-0.40
m-Xylene	0/88	BCRL	0.7-0.8	0/48	BCRL	0.70-0.80
Toluene	2/88	0.3	0.3	0/48	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-3, East Landfill

	Phase I Analyses	Phase II Analyses
Total Borings	17	16
Total Samples	98	80

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/50	BCRL	40	0/7	BCRL	36
Organophosphorous Compounds						
GB-Agent Related						
Phosphonic acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/88	BCRL	0.3	0/48	BCRL	0.30
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	3/50	0.3-0.9	0.3*	-	-	0.3*
Pyrene *	1/50	0.7	0.3*	-	-	0.3*
Methyl naphthalene *	-	-	0.3*	-	-	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	1/7	0.40	0.3*
Hexachlorocyclopentadiene	0/50	BCRL	0.3-0.6	0/7	BCRL	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	-	-	0.3*
Organochlorine Pesticides						
Aldrin	0/50	BCRL	0.3	Not Analyzed		
Dieldrin	0/50	BCRL	0.3			
Endrin	0/50	BCRL	0.3-0.5			
Isodrin	0/50	BCRL	0.3			
Arsenic (IR=CRL-10)	0/53	BCRL	2.5-5	0/7	BCRL	2.5-5.0

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 9 of 42.

WSA-3, East Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	17			18		
Total Samples	98			80		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Mercury (IR=CRL-0.1)	0/53	BCRL	0.05-0.06	0/7	BCRL	0.05-0.06
ICP Metals						
Cadmium (IR=1-2)	8/98	1-1100	0.66-0.74	1/7	1.8	0.66-0.74
Chromium (IR=25-40)	60/98	7.8-27	5.2-6.5	6/7	9.5-18	5.2-6.5
Copper (IR=20-35)	62/98	5.7-170	4.7-4.9	6/7	5.8-18	4.7-4.9
Lead (IR=25-40)	45/98	11-140	8.4-13	4/7	11-16	8.4-13
Zinc (IR=60-80)	96/98	12-300	8.7-9.5	7/7	20-61	8.7-9.5

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 10 of 42

WSA-4, Open Storage Yard

	Phase I Analyses			Phase II Analyses		
Total Borings	15			12		
Total Samples	103			54		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/79	BCRL	0.3-2	0/36	BCRL	0.26
1,1,2,2-Tetrachloroethane *	-	-	0.3*	-	-	0.3*
1,1,1-Trichloroethane	0/79	BCRL	0.3-0.4	0/36	BCRL	0.088
1,1,2-Trichloroethane	0/79	BCRL	0.3-0.4	0/36	BCRL	0.26
Carbon Tetrachloride	0/79	BCRL	0.3	0/36	BCRL	0.12
Chlorobenzene	0/79	BCRL	0.3	0/36	BCRL	0.30
Tetrachloroethylene	3/79	0.3-0.4	0.3	2/36	0.41-0.44	0.27
Trichloroethylene	0/79	BCRL	0 3-0.5	1/36	0.33	0.14
Trichloropropene *	-	-	0.3*	-	-	0.3*
Methylene Chloride	1/79	2	0.7-2	1/36	9.0	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	0/79	BCRL	0.3-0.4	0/36	BCRL	0.30-0.40
Dicyclopentadiene	0/93	BCRL	0.3-0.7	0/36	BCRL	0.30-0.70
Methylcyclohexane *	1/79	0.2	0.3*	-	-	0.3*
Methylisobutyl Ketone	0/79	BCRL	0.3-0.7	0/36	BCRL	0.30-0.70
Volatile Aromatic Organics						
Benzene	0/79	BCRL	0.3	0/36	BCRL	0.30
Ethylbenzene	0/79	BCRL	0.3-0.4	0/36	BCRL	0.30-0.40
m-Xylene	0/79	BCRL	0.7-0.8	0/36	BCRL	0.70-0.80
Toluene	3/79	0.4-1	0.3	0/36	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 11 of 42

WSA-4, Open Storage Yard

	Phase I Analyses			Phase II Analyses		
Total Borings	15			12		
Total Samples	103			54		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/93	BCRL	40	Not Analyzed		
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/79	BCRL	0.3	0/36	-	0.40-2.0
Polynuclear Aromatic Hydrocarbons				Not Analyzed		
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics				Not Analyzed		
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/93	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			
Organochlorine Pesticides				Not Analyzed		
Aldrin	0/93	BCRL	0.3			
Dieldrin	0/93	BCRL	0.3			
Endrin	0/93	BCRL	0.3-0.5			
Isodrin	0/93	BCRL	0.3			
Arsenic (IR=CRL-10)	2/93	3.2	2.5-5	Not Analyzed		

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 12 of 42

WSA-4, Open Storage Yard

	Phase I Analyses			Phase II Analyses		
Total Borings	15			12		
Total Samples	103			54		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Mercury (IR=CRL-0.1)	3/93	0.067-0.43	0.05-0.06	1/9	0.052	0.05-0.06
ICP Metals						
Cadmium (IR=1-2)	0/93	BCRL	0.66-0.74	0/18	BCRL	0.66-0.74
Chromium (IR=25-40)	34/93	6.1-45	5.2-6.5	15/18	8.5-48	5.2-6.5
Copper (IR=20-35)	62/93	5.6-30	4.7-4.9	17/18	6.3-63	4.7-4.9
Lead (IR=25-40)	26/93	11-31	8.4-13	13/18	12-37	8.4-13
Zinc (IR=60-80)	91/93	11-130	8.7-9.5	18/18	22-180	8.7-9.5

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 13 of 42

WSA-5, North Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	14			21		
Total Samples	88			73		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/74	BCRL	0.3-2	0/59	BCRL	0.26
1,1,2,2-Tetrachloroethane *	5/74	0.2-2	0.3*	0/59	BCRL	0.3*
1,1,1-Trichloroethane	0/74	BCRL	0.3-0.4	1/59	0.80	0.088
1,1,2-Trichloroethane	0/74	BCRL	0.3-0.4	0/59	BCRL	0.26
Carbon Tetrachloride	0/74	BCRL	0.3	0/59	BCRL	0.12
Chlorobenzene	0/74	BCRL	0.3	1/59	0.40	0.30
Tetrachloroethylene	1/74	0.3	0.3	1/59	0.30	0.27
Trichloroethylene	0/74	BCRL	0.3-5	0/59	BCRL	0.14
Trichloropropene *	-	-	0.3*	-	-	0.3*
Methylene Chloride	4/74	2-800	0.7-2	-	-	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	0/74	BCRL	0.3-0.4	1/17	2.0	1.1
Dicyclopentadiene	1/88	1	0.3-0.7	0/26	BCRL	0.45
Methylcyclohexane *	1/74	1	0.3*	1/26	60	0.3*
Methylisobutyl Ketone	0/74	BCRL	0.3-0.7	0/26	BCRL	0.64
Volatile Aromatic Organics						
Benzene	0/74	BCRL	0.3	0/59	BCRL	0.30
Ethylbenzene	0/74	BCRL	0.3-0.4	0/59	BCRL	0.30-0.40
m-Xylene	0/74	BCRL	0.7-0.8	0/59	BCRL	0.70-0.80
Toluene	0/74	BCRL	0.3	0/59	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 14 of 42

WSA-5, North Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	14			21		
Total Samples	88			73		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/88	BCRL	40	0/7	BCRL	36
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	Not Analyzed			Not Analyzed		
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*	1/17	8.7	0.3*
Pyrene *	-	-	0.3*	0/17	BCRL	0.3*
Methyl naphthalene *	-	-	0.3*	2/17	2.0-4.0	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	-	-	0.3*
Hexachlorocyclopentadiene	0/88	BCRL	0.3-0.6	0/17	BCRL	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	1/17	1.0	0.3*
Organochlorine Pesticides						
Aldrin	0/88	BCRL	0.3	1/17	2.0	0.30
Dieldrin	0/88	BCRL	0.3	1/17	4.0	0.30
Endrin	0/88	BCRL	0.3-0.5	0/17	BCRL	0.30-0.50
Isodrin	0/88	BCRL	0.3	1/17	30	0.30
Arsenic (IR=CRL-10)	2/88	2.7-4.2	2.5-5	2/16	12-18	2.5-5.0

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. *Summary of Soils and Sediments Analytical Results in WSA.* Page 15 of 42

WSA-5, North Landfill

	Phase I Analyses			Phase II Analyses		
Total Borings	14			21		
Total Samples	88			73		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Mercury (IR=CRL-0.1)	0/88	BCRL	0.050-0.060	2/16	0.14-2.1	0.05-0.06
ICP Metals						
Cadmium (IR=1-2)	1/88	1	0.66-0.74	1/16	5.1	0.66-0.74
Chromium (IR=25-40)	21/88	6-24	5.2-6.5	9/16	9.1-1800	5.2-6.5
Copper (IR=20-35)	53/88	5.9-35	4.7-4.9	9/16	6.9-9700	4.7-4.9
Lead (IR=25-40)	19/88	11-30	8.4-13	7/16	12-2000	8.4-13
Zinc (IR=60-80)	79/88	11-97	8.7-9.5	16/16	18-1300	8.7-9.5

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 16 of 42

WSA-6, Motor Pool

Total Borings: Phase I Analyses: 36
Total Samples: 165

Analytical Groups and Analytes Detected	Phase I Analyses: Frequency of Detections/1	Phase I Analyses: Range (µg/g)	Phase I Analyses: CRL Range (µg/g)/2	Phase II Analyses/3: Frequency of Detections/1	Phase II Analyses/3: Range (µg/g)	Phase II Analyses/3: CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/135	BCRL	0.3-2			
1,1,2,2-Tetrachloroethane *	-	-	0.3*			
1,1,1-Trichloroethane	0/135	BCRL	0.3-0.4			
1,1,2-Trichloroethane	0/135	BCRL	0.3-0.4			
Carbon Tetrachloride	0/135	BCRL	0.3			
Chlorobenzene	0/135	BCRL	0.3			
Tetrachloroethylene	3/135	0.4-1	0.3			
Trichloroethylene	1/135	2	0.3-0.5			
Trichloropropene *	1/135	0.2	0.3*			
Methylene Chloride	1/135	3	0.7-2			
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*			
4-Hydroxy-4-methyl-2-pentanone *	1/135	4	0.3*			
Bicycloheptadiene	0/135	BCRL	0.3-0.4			
Dicyclopentadiene	0/164	BCRL	0.3-0.7			
Methylcyclohexane *	2/135	2-10	0.3*			
Methylisobutyl Ketone	0/135	BCRL	0.3-0.7			
Volatile Aromatic Organics						
Benzene	0/135	BCRL	0.3			
Ethylbenzene	1/135	4	0.3-0.4			
m-Xylene	1/135	2	0.7-0.8			
Toluene	2/135	2-4	0.3			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-6, Motor Pool

	Phase I Analyses			Phase II Analyses/3		
Total Borings	36					
Total Samples	165					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/163	BCRL	40			
Organosulfur Compounds						
Herbicide - Related						
Benzothiazole	1/163	0.3	0.3*			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*			
DBCP	1/177	0.01	0.0050			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	5/163	1-30	0.3*			
Pyrene *	6/163	0.5-20	0.3*			
Methyl naphthalene *	8/163	4-200	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/163	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 18 of 42

	WSA-6, Motor Pool					
Total Borings	Phase I Analyses			Phase II Analyses/3		
Total Samples	36					
	165					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	2/163	0.9-3	0.3			
Dieldrin	0/163	BCRL	0.3			
Endrin	0/163	BCRL	0.3-0.5			
Isodrin	0/163	BCRL	0.3			
Arsenic (IR=CRL-10)	16/152	2.6-27	2.5-5			
Mercury (IR=CRL-0.1)	14/152	0.057-0.38	0.050-0.060			
ICP Metals						
Cadmium (IR=1-2)	13/152	1.4-30	0.66-0.74			
Chromium (IR=25-40)	62/152	6.5-490	5.2-6.5			
Copper (IR=20-35)	100/152	5.7-220	4.7-4.9			
Lead (IR=25-40)	37/152	9.8-2000	8.4-13			
Zinc (IR=60-80)	146/152	11-2300	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-7a. Sanitary Sewer - Internal Sediment

	Phase I Analyses			Phase II Analyses/3		
Total Borings	0**					
Total Samples	3					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/3	BCRL	0.3-2			
1,1,2,2-Tetrachloroethane *	-	-	0.3*			
1,1,1-Trichloroethane	0/3	BCRL	0.3-0.4			
1,1,2-Trichloroethane	0/3	BCRL	0.3-0.4			
Carbon Tetrachloride	0/3	BCRL	0.3			
Chlorobenzene	0/3	BCRL	)			
Tetrachloroethylene	0/3	BCRL	0.3			
Trichloroethylene	0/3	BCRL	0.3-0.5			
Trichloropropene *	-	-	0.3*			
Methylene Chloride	Not Analyzed					
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*			
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*			
Bicycloheptadiene	0/3	BCRL	0.3-0.4			
Dicyclopentadiene	0/3	BCRL	0.3-0.7			
Methylcyclohexane *	-	-	0.3*			
Methylisobutyl Ketone	0/3	BCRL	0.3-0.7			
Volatile Aromatic Organics	Not Analyzed					
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.
** = Grab samples.

WSA-7a, Sanitary Sewer - Internal Sediment

Total Borings
Total Samples

Analytical Groups and Analytes Detected	Phase I Analyses 0** 3 Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Phase II Analyses/3 Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	2/3	60-70	40			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*			
DBCP	0/3	BCRL	0.3			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/3	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.
** = Grab samples.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 21 of 42

WSA-7a, Sanitary Sewer - Internal Sediment

Total Borings: Phase I Analyses: 0**
Total Samples: 3

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Phase II Analyses/3 Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/3	BCRL	0.3			
Dieldrin	0/3	BCRL	0.3			
Endrin	0/3	BCRL	0.3-0.5			
Isodrin	0/3	BCRL	0.3			
Arsenic (IR=CRL-10)	1/3	8.4	2.5-5			
Mercury (IR=CRL-0.1)	2/3	0.25-0.98	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	1/3	1.8	0.66-0.74			
Chromium (IR=25-40)	2/3	22-81	5.2-6.5			
Copper (IR=20-35)	3/3	35-500	4.7-4.9			
Lead (IR=25-40)	3/3	99-700	8.4-13			
Zinc (IR=60-80)	3/3	87-170	8.7-9.5			

IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.
** = Grab samples.

WSA-7b, Sanitary Sewer - Surrounding Soils

	Phase I Analyses			Phase II Analyses/3		
Total Borings	3					
Total Samples	6					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/6	BCRL	0.3-2			
1,1,2,2-Tetrachloroethane •	-	-	0.3•			
1,1,1-Trichloroethane	0/6	BCRL	0.3-0.4			
1,1,2-Trichloroethane	0/6	BCRL	0.3-0.4			
Carbon Tetrachloride	0/6	BCRL	0.3			
Chlorobenzene	0/6	BCRL	0.3			
Tetrachloroethylene	0/6	BCRL	0.3			
Trichloroethylene	0/6	BCRL	0.3-0.5			
Trichloropropene •	-	-	0.3•			
Methylene Chloride	1/6	1	0.7-2			
Volatile Hydrocarbons						
2-Butoxyethanol •	-	-	0.3•			
4-Hydroxy-4-methyl-2-pentanone •	-	-	0.3•			
Bicycloheptadiene	0/6	BCRL	0.3-0.4			
Dicyclopentadiene	0/6	BCRL	0.3-0.7			
Methylcyclohexane •	-	-	0.3•			
Methylisobutyl Ketone	0/6	BCRL	0.3-0.7			
Volatile Aromatic Organics						
Benzene	0/6	BCRL	0.3			
Ethylbenzene	0/6	BCRL	0.3-0.4			
m-Xylene	0/6	BCRL	0.7-0.8			
Toluene	0/6	BCRL	0.3			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
• = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-7b, Sanitary Sewer - Surrounding Soils

Total Borings
Total Samples

Analytical Groups and Analytes Detected	Phase I Analyses: Frequency of Detections/1	Phase I Analyses: Range (µg/g)	Phase I Analyses: CRL Range (µg/g)/2	Phase II Analyses/3: Frequency of Detections/1	Phase II Analyses/3: Range (µg/g)	Phase II Analyses/3: CRL Range (µg/g)/2
	3					
	6					
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/6	BCRL	40			
Organophosphorus Compounds						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*			
DBCP	Not Analyzed					
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/6	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

WSA-7b, Sanitary Sewer - Surrounding Soils

Total Borings: Phase I Analyses: 3; Phase II Analyses/3:
Total Samples: 6

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/6	BCRL	0.3			
Dieldrin	0/6	BCRL	0.3			
Endrin	0/6	BCRL	0.3-0.5			
Isodrin	0/6	BCRL	0.3			
Arsenic (IR=CRL-10)	1/6	BCRL	2.5-5			
Mercury (IR=CRL-0.1)	0/6	0.42	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	0/6	BCRL	0.66-0.74			
Chromium (IR=25-40)	2/6	13-14	5.2-6.5			
Copper (IR=20-35)	3/6	8.5-48	4.7-4.9			
Lead (IR=25-40)	3/6	22-38	8.4-13			
Zinc (IR=60-80)	2/6	22-87	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 25 of 42

Section 3 - Other Areas

		Phase I Analyses			Phase II Analyses/3		
Total Borings		53					
Total Samples		56					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics	Not Analyzed					
1,2-Dichloroethylene						
1,1,2,2-Tetrachloroethane *						
1,1,1-Trichloroethane						
1,1,2-Trichloroethane						
Carbon Tetrachloride						
Chlorobenzene						
Tetrachloroethylene						
Trichloroethylene						
Trichloropropene *						
Methylene Chloride	Not Analyzed					
Volatile Hydrocarbons	Not Analyzed					
2-Butoxyethanol *						
4-Hydroxy-4-methyl-2-pentanone *						
Bicycloheptadiene						
Dicyclopentadiene						
Methylcyclohexane *						
Methylisobutyl Ketone						
Volatile Aromatic Organics	Not Analyzed					
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 3 - Other Areas

Total Borings: Phase I Analyses: 53
Total Samples: 56
Phase II Analyses/3

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/50	BCRL	40			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	2/50	1-2.8	0.3*			
DBCP	0/50	BCRL	0.3			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/50	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 27 of 42

Section 3 - Other Areas

Total Borings: Phase I Analyses: 53
Total Samples: 56
Phase II Analyses/3

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/50	BCRL	0.3			
Dieldrin	0/50	BCRL	0.3			
Endrin	0/50	BCRL	0.3-0.5			
Isodrin	0/50	BCRL	0.3			
Arsenic (IR=CRL-10)	0/50	BCRL	2.5-5			
Mercury (IR=CRL-0.1)	0/50	BCRL	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	0/56	BCRL	0.66-0.74			
Chromium (IR=25-40)	47/56	6-19	5.2-6.5			
Copper (IR=20-35)	40/56	5.5-88	4.7-4.9			
Lead (IR=25-40)	20/56	11-23	8.4-13			
Zinc (IR=60-80)	56/56	14-81	8.6-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 28 of 42

	Section 4 - Other Areas					
Total Borings	Phase I Analyses 41			Phase II Analyses 5		
Total Samples	47			12		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics						
1,2-Dichloroethylene	0/10	BCRL	0.3-0.4	Not Analyzed		
1,1,2,2-Tetrachloroethane *	1/10	0.5	0.3*	1/6	0.50	0.3*
1,1,1-Trichloroethane	0/10	BCRL	0.3-0.4	Not Analyzed		
1,1,2-Trichloroethane	0/10	BCRL	0.3-2	Not Analyzed		
Carbon Tetrachloride	0/10	BCRL	0.3	Not Analyzed		
Chlorobenzene	0/10	BCRL	0.3	Not Analyzed		
Tetrachloroethylene	0/10	BCRL	0.3	Not Analyzed		
Trichloroethylene	0/10	BCRL	0.3-0.5	Not Analyzed		
Trichloropropene *	-	-	0.3*	Not Analyzed		
Methylene Chloride	0/10	BCRL		Not Analyzed		
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*	-	-	0.3*
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*	-	-	0.3*
Bicycloheptadiene	Not Analyzed			Not Analyzed		
Dicyclopentadiene	0/10	BCRL	0.3-0.7	0/6	BCRL	0.30-0.70
Methylcyclohexane *	-	-	0.3*	-	-	0.3*
Methylisobutyl Ketone	Not Analyzed			Not Analyzed		
Volatile Aromatic Organics	Not Analyzed			Not Analyzed		
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 4 - Other Areas

	Phase I Analyses			Phase II Analyses		
Total Borings	41			5		
Total Samples	47			12		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/47	BCRL	40	Not Analyzed		
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/47	BCRL	0.0050-0.014	0/6	BCRL	0.0050-0.014
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*	-	-	0.3*
Pyrene *	-	-	0.3*	-	-	0.3*
Methyl naphthalene *	-	-	0.3*	-	-	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	-	-	0.3*
Hexachlorocyclopentadiene	0/47	BCRL	0.3-0.6	0/6	BCRL	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	-	-	0.3*
Organochlorine Pesticides						
Aldrin	0/47	BCRL	0.3	0/6	BCRL	0.30
Dieldrin	0/47	BCRL	0.3	0/6	BCRL	0.30
Endrin	0/47	BCRL	0.3-0.5	0/6	BCRL	0.30-0.50
Isodrin	0/47	BCRL	0.3	0/6	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 4 - Other Areas

	Phase I Analyses			Phase II Analyses		
Total Borings	41			5		
Total Samples	47			12		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Arsenic (IR=CRL-10)	3/47	2.9-3.8	2.5-5	Not Analyzed		
Mercury (IR=CRL-0.1)	0/47	BCRL	0.05-0.06	Not Analyzed		
ICP Metals						
Cadmium (IR=1-2)	0/47	BCRL	0.66-0.74	0/6	BCRL	0.66-0.74
Chromium (IR=25-40)	28/47	7.8-16	5.2-6.5	6/6	8.7-16	5.2-6.5
Copper (IR=20-35)	35/47	5.3-19	4.7-4.9	6/6	7.4-15	4.7-4.9
Lead (IR=25-40)	20/47	10-41	8.4-13	5/6	13-23	8.4-13
Zinc (IR=60-80)	40/47	13-98	8.7-9.5	6/6	39-62	8.7-9.5

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 9 - Other Areas

Total Borings Total Samples		Phase I Analyses 27 27			Phase II Analyses 3 9		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics	Not Analyzed					
1,2-Dichloroethylene				0/6	BCRL	0.26
1,1,2,2-Tetrachloroethane •				-	-	0.3•
1,1,1-Trichloroethane				0/6	BCRL	0.088
1,1,2-Trichloroethane				0/6	BCRL	0.26
Carbon Tetrachloride				0/6	BCRL	0.12
Chlorobenzene				0/6	BCRL	0.30
Tetrachloroethylene				0/6	BCRL	0.27
Trichloroethylene				0/6	BCRL	0.14
Trichloropropene •				-	-	0.3•
Methylene Chloride	Not Analyzed			0/6	BCRL	0.70-2.0
Volatile Hydrocarbons						
2-Butoxyethanol •	-	-	0.3•	-	-	0.3•
4-Hydroxy-4-methyl-2-pentanone •	-	-	0.3•	-	-	0.3•
Bicycloheptadiene	Not Analyzed			0/6	BCRL	0.30-0.40
Dicyclopentadiene	0/27	BCRL	0.3-0.7	0/9	BCRL	0.30-0.70
Methylcyclohexane •	-	-	0.3•	-	-	0.3•
Methylisobutyl Ketone	Not Analyzed			0/6	BCRL	0.30-0.70
Volatile Aromatic Organics	Not Analyzed					
Benzene				0/6	BCRL	0.85
Ethylbenzene				0/6	BCRL	0.16
m-Xylene				0/6	BCRL	0.26
Toluene				0/6	BCRL	0.19

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
• = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 9 - Other Areas

	Phase I Analyses			Phase II Analyses		
Total Borings	27			3		
Total Samples	27			9		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/27	BCRL	40	0/6	BCRL	36
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*	-	-	0.3*
DBCP	0/27	BCRL	0.0050-0.014	0/9	BCRL	0.0050-0.014
Polynuclear Aromatic Hydrocarbons						
Fluoranthene	-	-	0.3*	-	-	0.3*
Methyl naphthalene *	1/27	0.7	0.3*	-	-	0.3*
Pyrene *	-	-	0.3*	-	-	0.3*
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*	-	-	0.3*
Hexachlorocyclopentadiene	0/27	BCRL	0.3-0.6	0/9	BCRL	0.30-0.60
Tetrachlorobenzene *	-	-	0.3*	-	-	0.3*
Organochlorine Pesticides						
Aldrin	0/27	BCRL	0.3	0/9	BCRL	0.30
Dieldrin	0/27	BCRL	0.3	0/9	BCRL	0.30
Endrin	0/27	BCRL	0.3-0.5	0/9	BCRL	0.30-0.50
Isodrin	0/27	BCRL	0.3	0/9	BCRL	0.30

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 8 - Other Areas

	Phase I Analyses	Phase II Analyses
Total Borings	27	8
Total Samples	27	8

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Arsenic (IR=CRL-10)	0/27	BCRL	7.5	Not analyzed		
Mercury (IR=CRL-0.1)	0/27	BCRL	0.05-0.08	Not analyzed		
ICP Metals						
Cadmium (IR=1-2)	0/27	BCRL	0.66-0.74	Not analyzed		
Chromium (IR=25-40)	26/27	8.3-18	5.3-6.1			
Copper (IR=20-35)	24/27	5.9-17	4.7-6.0			
Lead (IR=25-40)	10/27	10-16	8.4-11			
Zinc (IR=60-80)	27/27	26-62	8.1-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 28 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	9					
Total Samples	9					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics	Not Analyzed					
1,2-Dichloroethylene						
1,1,2,2-Tetrachloroethane •						
1,1,1-Trichloroethane						
1,1,2-Trichloroethane						
Carbon Tetrachloride						
Chlorobenzene						
Tetrachloroethylene						
Trichloroethylene						
Trichloropropene •						
Methylene Chloride	Not Analyzed					
Volatile Hydrocarbons						
2-Butoxyethanol •	-	-	0.3•			
4-Hydroxy-4-methyl-2-pentanone •	-	-	0.3•			
Bicycloheptadiene	Not Analyzed					
Dicyclopentadiene	0/9	BCRL	0.3-0.7			
Methylcyclohexane •	-	-	0.3•			
Methylisobutyl Ketone	Not Analyzed					
Volatile Aromatic Organics	Not Analyzed					
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
• = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 35 of 42

Section 28 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	9					
Total Samples	9					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/9	BCRL	40			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*			
DBCP	0/9	BCRL	0.3			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/9	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 28 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	9					
Total Samples	9					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/9	BCRL	0.3			
Dieldrin	0/9	BCRL	0.3			
Endrin	0/9	BCRL	0.3-0.5			
Isodrin	0/9	BCRL	0.3			
Arsenic (IR=CRL-10)	0/9	BCRL	2.5-5			
Mercury (IR=CRL-0.1)	0/9	BCRL	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	0/9	BCRL	0.66-0.74			
Chromium (IR=25-40)	5/9	11-15	5.2-6.5			
Copper (IR=20-35)	8/9	9-24	4.7-4.9			
Lead (IR=25-40)	0/9	BCRL	8.4-13			
Zinc (IR=60-80)	5/9	41-53	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for *tentatively identified compounds*. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 33 - Other Areas

		Phase I Analyses			Phase II Analyses/3		
Total Borings		32					
Total Samples		32					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics	Not Analyzed					
1,2-Dichloroethylene						
1,1,2,2-Tetrachloroethane *						
1,1,1-Trichloroethane						
1,1,2-Trichloroethane						
Carbon Tetrachloride						
Chlorobenzene						
Tetrachloroethylene						
Trichloroethylene						
Trichloropropene *						
Methylene Chloride	Not Analyzed					
Volatile Hydrocarbons						
2-Butoxyethanol *	-	-	0.3*			
4-Hydroxy-4-methyl-2-pentanone *	-	-	0.3*			
Bicycloheptadiene	Not Analyzed					
Dicyclopentadiene	0/26	BCRL	0.3-0.7			
Methylcyclohexane *	-	-	0.3*			
Methylisobutyl Ketone	Not Analyzed					
Volatile Aromatic Organics	Not Analyzed					
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 33 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	32					
Total Samples	32					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/26	BCRL	40			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester •	-	-	0.3•			
DRCP	0/26	BCRL	0.3			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene •	-	-	0.3•			
Pyrene •	-	-	0.3•			
Methyl naphthalene •	-	-	0.3•			
Semivolatile Halogenated Organics						
Hexachlorobutadiene •	-	-	0.3•			
Hexachlorocyclopentadiene	0/26	BCRL	0.3-0.6			
Tetrachlorobenzene •	-	-	0.3•			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
• = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 39 of 42

Section 33 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	32					
Total Samples	32					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/26	BCRL	0.3			
Dieldrin	0/26	BCRL	0.3			
Endrin	0/26	BCRL	0.3-0.5			
Isodrin	0/26	BCRL	0.3			
Arsenic (IR=CRL-10)	0/26	BCRL	2.5-5			
Mercury (IR=CRL-0.1)	0/26	BCRL	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	1/38	1	0.66-0.74			
Chromium (IR=25-40)	25/38	5.9-31	5.2-6.5			
Copper (IR=20-35)	28/38	4.7-70	4.7-4.9			
Lead (IR=25-40)	15/38	12-41	8.4-13			
Zinc (IR=60-80)	37/38	14-350	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 40 of 42

Section 34 - Other Areas

Total Borings
Total Samples

Phase I Analyses
15
15

Phase II Analyses/3

Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Volatile Halogenated Organics	Not Analyzed					
1,2-Dichloroethylene						
1,1,2,2-Tetrachloroethane •						
1,1,1-Trichloroethane						
1,1,2-Trichloroethane						
Carbon Tetrachloride						
Chlorobenzene						
Tetrachloroethylene						
Trichloroethylene						
Trichloropropene •						
Methylene Chloride	Not Analyzed					
Volatile Hydrocarbons						
2-Butoxyethanol •	-	-	0.3•			
4-Hydroxy-4-methyl-2-pentanone •	-	-	0.3•			
Bicycloheptadiene	Not Analyzed					
Dicyclopentadiene	0/15	BCRL	0.3-0.7			
Methylcyclohexane •	-	-	0.3•			
Methylisobutyl Ketone	Not Analyzed					
Volatile Aromatic Organics	Not Analyzed					
Benzene						
Ethylbenzene						
m-Xylene						
Toluene						

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
• = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.1-1. Summary of Soils and Sediments Analytical Results in WSA. Page 41 of 42

Section 34 - Other Areas

Total Borings Total Samples	Phase I Analyses 15 15			Phase II Analyses/3		
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organosulfur Compounds						
Mustard - Agent Related						
Chloroacetic acid	0/15	BCRL	40			
Organophosphorous Compounds,						
GB-Agent Related						
Phosphoric acid, tributyl ester *	-	-	0.3*			
DBCP	0/15	BCRL	0.3			
Polynuclear Aromatic Hydrocarbons						
Fluoranthene *	-	-	0.3*			
Pyrene *	-	-	0.3*			
Methyl naphthalene *	-	-	0.3*			
Semivolatile Halogenated Organics						
Hexachlorobutadiene *	-	-	0.3*			
Hexachlorocyclopentadiene	0/15	BCRL	0.3-0.6			
Tetrachlorobenzene *	-	-	0.3*			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Section 34 - Other Areas

	Phase I Analyses			Phase II Analyses/3		
Total Borings	15					
Total Samples	15					
Analytical Groups and Analytes Detected	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2	Frequency of Detections/1	Range (µg/g)	CRL Range (µg/g)/2
Organochlorine Pesticides						
Aldrin	0/15	BCRL	0.3			
Dieldrin	0/15	BCRL	0.3			
Endrin	0/15	BCRL	0.3-0.5			
Isodrin	0/15	BCRL	0.3			
Arsenic (IR=CRL-10)	0/15	BCRL	2.5-5			
Mercury (IR=CRL-0.1)	0/15	BCRL	0.05-0.06			
ICP Metals						
Cadmium (IR=1-2)	0/15	BCRL	0.66-0.74			
Chromium (IR=25-40)	13/15	9-16	5.2-6.5			
Copper (IR=20-35)	29/15	9-20	4.7-4.9			
Lead (IR=25-40)	2/15	22-24	8.4-13			
Zinc (IR=60-80)	12/15	33-57	8.7-9.5			

BCRL = Below Certified Reporting Limit.
IR = Indicator Range.
µg/g = Micrograms per gram.
/1 = Fraction represents the total number of samples with detections of an analyte in relation to the number of analyses conducted on all samples. This value does not include multiple detections of a specific analyte in the same sample, which occasionally has occurred when more than one analytical method has been used.
/2 = Certified Reporting Limit (CRL), or detection limit which varies among laboratories conducting analyses.
/3 = Phase II program not conducted.
* = There is no CRL for tentatively identified compounds. The value shown is a detection unit based on 10% of the internal standard for the method used. The number of detections is given but number of samples is not.

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 1 of 66.

	Well 03001		Well 03002		Well 03005		Well 03008	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
1,2 Dichloroethane	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
1,1 Dichloroethylene	NA	NA	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
1,1,2 Trichloroethane	NA	NA	0/2	BCRL	1/4	7.6 (1.9)	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	1/1	14 (14)	NA	NA
Carbon tetrachloride	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Chlorobenzene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Chloroform	0/1	BCRL	0/3	BCRL	2/4	1.4 - 2.9 (1.0)	0/4	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Tetrachloroethylene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Trichloroethylene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Methylene Chloride	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/3	BCRL	1/4	13 (3.3)	0/2	BCRL
Methylisobutyl ketone	NA	NA	0/2	BCRL	0/3	BCRL	0/1	BCRL
Volatile Aromatic Organics								
Benzene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Ethylbenzene	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
m-Xylene	1/1	2.5 (2.5)	0/3	BCRL	0/4	BCRL	0/4	BCRL
o and p-Xylene	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Toluene	1/1	3.7 (3.7)	0/3	BCRL	0/4	BCRL	0/4	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Dithiane	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 2 of 68.

	Well 03001		Well 03002		Well 03005		Well 03008	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/3	BCRL
Dimethylmethyl phosphonate	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/3	BCRL
DBCP	0/1	BCRL	0/6	BCRL	1/4	0.42 (0.10)	0/3	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
Organochlorine Pesticides								
Aldrin	0/1	BCRL	0/3	BCRL	1/4	0.07 (0.02)	1/4	0.08 (0.02)
Dieldrin	0/1	BCRL	0/3	BCRL	2/4	2.5-2.9 (1.3)	0/4	BCRL
DDE	NA	NA	0/2	BCRL	1/3	0.20 (0.07)	0/3	BCRL
DDT	NA	NA	0/2	BCRL	0/3	BCRL	0/3	BCRL
Endrin	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Isodrin	0/1	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Arsenic	0/1	BCRL	0/2	BCRL	0/4	BCRL	1/4	4.3(1.1)
Mercury	NA	NA	0/2	BCRL	0/3	BCRL	0/1	BCRL
ICP Metals								
Cadmium	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/4	BCRL
Chromium	0/1	BCRL	0/2	BCRL	0/3	BCRL	1/4	8.7 (2.2)
Copper	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/4	BCRL
Lead	0/1	BCRL	1/2	38 (19)	0/4	BCRL	0/4	BCRL
Zinc	1/1	70 (70)	1/2	27 (14)	2/4	22 - 270 (38)	3/4	27-59 (27)

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 3 of 66.

	Well 03009		Well 03010		Well 03011		Well 03518	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
1,2 Dichloroethane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
1,1 Dichloroethylene	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	0/1	BCRL	NA	NA
1,1,1 Trichloroethane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
1,1,2 Trichloroethane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorobenzene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chloroform	0/1	BCRL	1/1	18 (18)	0/1	BCRL	0/1	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Tetrachloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Trichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Methylene Chloride	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Methylisobutyl Ketone	NA	NA	NA	NA	NA	NA	0/1	DCRL
Volatile Aromatic Organics								
Benzene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Ethylbenzene	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
m-Xylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
o and p-Xylene	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Toluene	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Dithiane	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 4 of 66.

	Well 03009		Well 03010		Well 03011		Well 03518	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Organosulfur Compounds.								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds.								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Dimethylmethyl phosphonate	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
DBCP	11/12	0.4 - 2.6 (1.0)	0/4	BCRL	NA	NA	0/1	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	0/1	BCRL
Organochlorine Pesticides								
Aldrin	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Dieldrin	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
DDE	NA	NA	NA	NA	NA	NA	0/1	BCRL
DDT	NA	NA	NA	NA	NA	NA	0/1	BCRL
Endrin	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Isodrin	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
Arsenic	NA	NA	NA	NA	NA	NA	0/1	BCRL
Mercury	NA	NA	NA	NA	NA	NA	0/1	BCRL
ICP Metals								
Cadmium	NA	NA	NA	NA	NA	NA	0/1	BCRL
Chromium	NA	NA	NA	NA	NA	NA	1/1	14 (14)
Copper	NA	NA	NA	NA	NA	NA	0/1	BCRL
Lead	NA	NA	NA	NA	NA	NA	[illegible]	BCRL
Zinc	NA	NA	NA	NA	NA	NA	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 5 of 66.

	Well 03523		Well 03526	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compound				
1,1 Dichloroethane	0/3	BCRL	NA	NA
1,2 Dichloroethane	0/3	BCRL	NA	NA
1,1 Dichloroethylene	0/2	BCRL	NA	NA
1,2 Dichloroethylene	NA	NA	NA	NA
1,1,1 Trichloroethane	0/3	BCRL	NA	NA
1,1,2 Trichloroethane	0/3	BCRL	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	NA	NA
Chlorobenzene	0/4	BCRL	NA	NA
Chloroform	3/4	8.2 - 9.0 (6.4)	NA	NA
T-1,2 Dichloroethylene	0/4	BCRL	NA	NA
Tetrachloroethylene	0/4	BCRL	NA	NA
Trichloroethylene	0/4	BCRL	NA	NA
Methylene Chloride	0/3	BCRL	NA	NA
Volatile Hydrocarbons				
Dicyclopentadiene	0/1	BCRL	NA	NA
Methylisobutyl ketone	0/1	BCRL	NA	NA
Volatile Aromatic Organics				
Benzene	1/4	9.0 (2.3)	NA	NA
Ethylbenzene	0/3	BCRL	NA	NA
m-Xylene	0/4	BCRL	NA	NA
o and p-Xylene	0/4	BCRL	NA	NA
Toluene	1/4	3.3 (0.82)	NA	NA
Organosulfur Compounds, Mustard Agent Related				
1,4 Oxathiane	0/1	BCRL	NA	NA
Dithiane	0/1	BCRL	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 6 of 66.

	Well 03523		Well 03526	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,				
Herbicide Related				
Chlorophenylmethyl sulfide	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfone	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfoxide	0/1	BCRL	NA	NA
Organonitrogen Compounds				
Caprolactam	NA	NA	NA	NA
Organophosphorous Compounds,				
GB - Agent Related				
Diisopropylmethyl phosphonate	0/2	BCRL	NA	NA
Dimethylmethyl phosphonate	0/2	BCRL	NA	NA
DBCP	15/15	20 - 100 (40)	0/10	BCRL
Semivolatile Halogenated				
Organic Compounds				
Hexachlorocyclopentadiene	2/3	0.19 - 0.36 (0.17)	NA	NA
Organochlorine Pesticides				
Aldrin	0/3	BCRL	NA	NA
Dieldrin	0/3	BCRL	NA	NA
DDE	0/3	BCRL	NA	NA
DDT	0/3	BCRL	NA	NA
Endrin	0/3	BCRL	NA	NA
Isodrin	0/3	BCRL	NA	NA
Arsenic	0/3	BCRL	NA	NA
Mercury	0/1	BCRL	NA	NA
ICP Metals				
Cadmium	0/3	BCRL	NA	NA
Chromium	1/3	14 (4.8)	NA	NA
Copper	0/3	BCRL	NA	NA
Lead	0/3	BCRL	NA	NA
Zinc	2/3	48 - 68 (38)	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 7 of 66.

	Well 04001		Well 04002		Well 04004	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/5	BCRL	0/4	BCRL	0/4	BCRL
1,2 Dichloroethane	0/5	BCRL	0/4	BCRL	0/4	BCRL
1,1 Dichloroethylene	4/4	2.0-3.1 (2.3)	0/4	BCRL	0/4	BCRL
1,2 Dichloroethylene	0/4	BCRL	0/4	BCRL	0/4	BCRL
1,1,1 Trichloroethane	5/5	7.0-9.0 (7.9)	1/4	0.89 (0.22)	0/4	BCRL
1,1,2 Trichloroethane	0/5	BCRL	0/4	BCRL	0/4	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/2	BCRL	0/3	BCRL
Chlorobenzene	0/6	BCRL	0/4	BCRL	0/5	BCRL
Chloroform	0/6	BCRL	0/4	BCRL	0/5	BCRL
T-1,2 Dichloroethylene	0/2	BCRL	NA	NA	0/1	BCRL
Tetrachloroethylene	2/6	0.8-4.6 (0.64)	1/3	0.93 (0.31)	4/5	1.0-3.0 (1.5)
Trichloroethylene	5/6	2.8-4.9 (3.1)	2/4	0.87-1.0 (0.47)	1/5	1.0(0.2)
Methylene Chloride	0/5	BCRL	0/4	BCRL	0/4	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics						
Benzene	1/6	10(1.7)	1/3	10 (3.3)	0/5	BCRL
Ethylbenzene	0/5	BCRL	0/4	BCRL	0/4	BCRL
m-Xylene	0/6	BCRL	0/4	BCRL	0/5	BCRL
o and p-Xylene	0/6	BCRL	0/4	BCRL	1/5	5.7 (1.1)
Toluene	0/6	BCRL	0/4	BCRL	0/5	BCRL
Organosulfur Compounds						
Mustard Agent Related						
1,4 Oxathiane	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 8 of 68.

	Well 04001		Well 04002		Well 04004	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA
Organonitrogen Compounds						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,						
GB - Agent Related						
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA
DBCP	0/5	BCRL	0/3	BCRL	0/4	BCRL
Semivolatile Halogenated						
Organic Compounds						
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides						
Aldrin	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
ICP Metals						
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 9 of 66.

	Well 04007		Well 04010		Well 04013	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,2 Dichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/2	BCRL	0/1	BCRL
1,2 Dichloroethylene	1/1	2.1 (2.1)	NA	NA	NA	NA
1,1,1 Trichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,1,2 Trichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/4	BCRL	0/1	BCRL
Chlorobenzene	0/5	BCRL	0/4	BCRL	0/1	BCRL
Chloroform	0/5	BCRL	0/4	BCRL	0/1	BCRL
T1,2 Dichloroethylene	4/4	3.6-8.6 (6.4)	0/4	BCRL	0/1	BCRL
Tetrachloroethylene	4/5	0.82-2.8 (1.4)	0/4	BCRL	0/1	BCRL
Trichloroethylene	5/5	1.3-5.0 (3.1)	0/4	BCRL	0/1	BCRL
Methylene Chloride	1/4	7.6 (1.9)	0/3	BCRL	0/1	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	0/2	BCRL	0/2	BCRL	0/1	BCRL
Methylisobutyl ketone	0/1	BCRL	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics						
Benzene	0/5	BCRL	0/4	BCRL	0/1	BCRL
Ethylbenzene	0/4	BCRL	0/3	BCRL	0/1	BCRL
m-Xylene	0/5	BCRL	0/4	BCRL	0/1	BCRL
o and p-Xylene	0/5	BCRL	0/4	BCRL	0/1	BCRL
Toluene	0/5	BCRL	0/4	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	0/2	BCRL	0/2	BCRL	0/1	BCRL
Dithiane	0/2	BCRL	0/2	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04007		Well 04010		Well 04013	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	0/2	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/2	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/2	BCRL	0/2	BCRL	0/1	BCRL
Organonitrogen Compounds						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,						
GB - Agent Related						
Diisopropylmethyl phosphonate	0/3	BCRL	0/3	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	0/3	BCRL	0/3	BCRL	0/1	BCRL
DBCP	0/5	BCRL	1/4	0.14 (0.04)	9/9	1.8-3.1 (2.4)
Semivolatile Halogenated						
Organic Compounds						
Hexachlorocyclopentadiene	0/3	BCRL	0/3	BCRL	NA	NA
Organochlorine Pesticides						
Aldrin	0/4	BCRL	0/4	BCRL	1/1	0.10 (0.10)
Dieldrin	0/4	BCRL	0/4	BCRL	0/1	BCRL
DDE	0/3	BCRL	0/3	DCRL	0/1	BCRL
DDT	0/3	BCRL	0/3	BCRL	0/1	BCRL
Endrin	0/4	BCRL	0/4	BCRL	0/1	BCRL
Isodrin	0/4	BCRL	0/4	BCRL	0/1	BCRL
Arsenic	1/4	7.2 (1.8)	0/3	BCRL	NA	NA
Mercury	0/1	BCRL	0/1	BCRL	NA	NA
ICP Metals						
Cadmium	0/4	BCRL	0/3	BCRL	NA	NA
Chromium	1/4	14 (3.5)	1/3	13 (4.4)	NA	NA
Copper	0/4	BCRL	0/3	BCRL	NA	NA
Lead	0/4	BCRL	0/3	BCRL	NA	NA
Zinc	3/4	26-48 (25)	2/3	28-67 (29)	NA	NA

NA = *Not Analyzed*
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(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 11 of 66.

	Well 04014		Well 04015		Well 04016	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/4	BCRL	0/1	BCRL	0/3	BCRL
1,2 Dichloroethane	0/4	BCRL	0/1	BCRL	0/3	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/1	BCRL	0/2	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	0/4	BCRL	0/1	BCRL	0/3	BCRL
1,1,2 Trichloroethane	0/4	BCRL	0/1	BCRL	0/3	BCRL
1,1,2,2 Trichloroethane	1/1	16 (16)	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/1	BCRL	0/3	BCRL
Chlorobenzene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Chloroform	0/4	BCRL	0/1	BCRL	0/3	BCRL
T1,2 Dichloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Tetrachloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Trichloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Methylene Chloride	0/4	BCRL	0/1	BCRL	0/3	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	0/2	BCRL	0/1	BCRL	0/1	BCRL
Methylisobutyl ketone	0/2	BCRL	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics						
Benzene	1/4	1.4 (0.34)	0/1	BCRL	1/3	3.5 (1.2)
EthylBenzene	0/4	BCRL	0/1	BCRL	0/3	BCRL
m-Xylene	0/4	BCRL	0/1	BCRL	0/3	BCRL
o and p-Xylene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Toluene	0/4	BCRL	0/1	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	0/2	BCRL	0/1	BCRL	0/1	BCRL
Dithiane	0/2	BCRL	0/1	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 12 of 68.

	Well 04014		Well 04015		Well 04016	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	0/2	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/2	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/2	BCRL	0/1	BCRL	0/1	BCRL
Organonitrogen Compounds						
Caprolactam	1/1	740 (740)	NA	NA	NA	NA
Organophosphorous Compounds,						
CW - Agent Related						
Diisopropylmethyl phosphonate	0/3	BCRL	0/1	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/3	BCRL	0/1	BCRL	0/2	BCRL
DBCP	4/4	6.5-16 (12)	9/9	2.0-4.3 (3.3)	3/3	0.62-1.0 (0.87)
Semivolatile Halogenated Organic Compounds						
Hexachlorocyclopentadiene	0/3	BCRL	NA	NA	0/2	BCRL
Organochlorine Pesticides						
Aldrin	0/4	BCRL	0/1	BCRL	0/3	BCRL
Dieldrin	0/4	BCRL	0/1	BCRL	0/3	BCRL
DDE	0/4	BCRL	0/1	BCRL	0/3	BCRL
DDT	0/4	BCRL	0/1	BCRL	0/3	BCRL
Endrin	0/4	BCRL	0/1	BCRL	0/3	BCRL
Isodrin	0/4	BCRL	0/1	BCRL	0/3	BCRL
Arsenic	0/3	BCRL	NA	NA	0/2	BCRL
Mercury	0/1	BCRL	NA	NA	NA	NA
ICP Metals						
Cadmium	0/3	BCRL	NA	NA	0/2	BCRL
Chromium	1/3	12 (4.0)	NA	NA	0/2	BCRL
Copper	0/3	BCRL	NA	NA	1/2	8.0 (4.0)
Lead	0/3	BCRL	NA	NA	0/2	BCRL
Zinc	3/3	22-55 (35)	NA	NA	1/2	150 (74)

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04019		Well 04020		Well 04021		Well 04022	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
1,2 Dichloroethane	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
1,1 Dichloroethylene	NA	NA	NA	NA	0/5	BCRL	1/6	2.0 (0.33)
1,2 Dichloroethylene	NA	NA	NA	NA	0/2	BCRL	1/5	2.1 (0.42)
1,1,1 Trichloroethane	NA	NA	NA	NA	1/6	0.98 (0.16)	0/6	BCRL
1,1,2 Trichloroethane	NA	NA	NA	NA	1/6	1.1 (0.18)	0/6	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	1/1	6.4 (6.4)	NA	NA
Carbon tetrachloride	0/1	BCRL	0/1	BCRL	0/5	BCRL	0/4	BCRL
Chlorobenzene	0/1	BCRL	0/1	BCRL	0/6	BCRL	0/6	BCRL
Chloroform	0/1	BCRL	0/1	BCRL	3/6	1.9-2.5 (1.1)	4/6	0.6-2.2 (1.0)
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/4	BCRL	0/1	BCRL
Tetrachloroethylene	0/1	BCRL	0/1	BCRL	0/6	BCRL	0/6	BCRL
Trichloroethylene	0/1	BCRL	0/1	BCRL	6/6	6.6-28 (16)	5/5	4.4 - 16 (9.9)
Methylene Chloride	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	0/2	BCRL	0/1	BCRL
Methylisobutyl ketone	NA	NA	NA	NA	0/1	BCRL	NA	NA
Volatile Aromatic Organics								
Benzene	0/1	BCRL	0/1	BCRL	0/5	BCRL	2/5	5.0-7.1 (2.4)
Ethylbenzene	NA	NA	NA	NA	0/5	BCRL	0/5	BCRL
m-Xylene	0/1	BCRL	0/1	BCRL	0/5	BCRL	0/5	BCRL
o and p-Xylene	0/1	BCRL	0/1	BCRL	0/5	BCRL	0/5	BCRL
Toluene	0/1	BCRL	0/1	BCRL	0/5	BCRL	0/5	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	0/1	BCRL	NA	NA
Dithiane	NA	NA	NA	NA	0/1	BCRL	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04019		Well 04020		Well 04021		Well 04022	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomet mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	0/1	BCRL	NA	NA
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	1/1	1100 (1100)	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	0/2	BCRL	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	0/2	BCRL	NA	NA
DBCP	0/1	BCRL	0/1	BCRL	0/5	BCRL	0/4	BCRL
Semivolatile Halogenated								
Cyclic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	0/3	BCRL	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	0/3	BCRL	NA	NA
Dieldrin	NA	NA	NA	NA	0/3	BCRL	NA	NA
DDE	NA	NA	NA	NA	0/3	BCRL	NA	NA
DDT	NA	NA	NA	NA	0/3	BCRL	NA	NA
Endrin	NA	NA	NA	NA	0/3	BCRL	NA	NA
Isodrin	NA	NA	NA	NA	0/3	BCRL	NA	NA
Arsenic	NA	NA	NA	NA	0/3	BCRL	NA	NA
Mercury	NA	NA	NA	NA	0/1	BCRL	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	0/3	BCRL	NA	NA
Chromium	NA	NA	NA	NA	0/3	BCRL	NA	NA
Copper	NA	NA	NA	NA	0/3	BCRL	NA	NA
Lead	NA	NA	NA	NA	0/3	BCRL	NA	NA
Zinc	NA	NA	NA	NA	2/3	76 - 110 (59)	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 15 of 66.

	Well 04023		Well 04024		Well 04025		Well 04026	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/6	BCRL	0/4	BCRL	0/1	BCRL	NA	NA
1,2 Dichloroethane	0/6	BCRL	1/4	0.78 (0.20)	0/1	BCRL	NA	NA
1,1 Dichloroethylene	0/5	BCRL	0/3	BCRL	0/1	BCRL	NA	NA
1,2 Dichloroethylene	0/4	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
1,1,1 Trichloroethane	0/6	BCRL	0/4	BCRL	0/1	BCRL	NA	NA
1,1,2 Trichloroethane	0/6	BCRL	0/4	BCRL	0/1	BCRL	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/5	BCRL	0/5	BCRL	0/2	BCRL	0/1	BCRL
Chlorobenzene	0/6	BCRL	0/5	BCRL	0/2	BCRL	0/1	BCRL
Chloroform	4/6	0.6-2.4 (0.89)	0/5	BCRL	0/2	BCRL	0/1	BCRL
T-1,2 Dichloroethylene	0/2	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
Tetrachloroethylene	0/6	BCRL	0/5	BCRL	0/2	BCRL	0/1	BCRL
Trichloroethylene	6/6	6.6-12 (8.8)	0/5	BCRL	1/2	2.4 (1.2)	0/1	BCRL
Methylene Chloride	0/6	BCRL	0/4	BCRL	0/1	BCRL	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	0/1	BCRL	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	1/5	10 (2.0)	1/4	5.5 (1.4)	0/1	BCRL	0/1	BCRL
Ethylbenzene	0/5	BCRL	0/3	BCRL	NA	NA	NA	NA
m-Xylene	0/5	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
o and p-Xylene	0/5	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
Toluene	0/5	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	0/1	BCRL	NA	NA	NA	NA
Dithiane	NA	NA	0/1	BCRL	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

	Well 04023		Well 04024		Well 04025		Well 04026	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	0/1	BCRL	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	0/1	BCRL	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	0/1	BCRL	NA	NA	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	0/2	BCRL	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	0/2	BCRL	NA	NA	NA	NA
DBCP	0/4	BCRL	0/4	BCRL	0/1	BCRL	9/9	14-34 (24)
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	0/3	BCRL	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	0/3	BCRL	NA	NA	NA	NA
Dieldrin	NA	NA	0/3	BCRL	NA	NA	NA	NA
DDE	NA	NA	0/3	BCRL	NA	NA	NA	NA
DDT	NA	NA	0/3	BCRL	NA	NA	NA	NA
Endrin	NA	NA	0/3	BCRL	NA	NA	NA	NA
Isodrin	NA	NA	0/3	BCRL	NA	NA	NA	NA
Arsenic	NA	NA	0/3	BCRL	NA	NA	NA	NA
Mercury	NA	NA	0/1	BCRL	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	0/3	BCRL	NA	NA	NA	NA
Chromium	NA	NA	1/3	8.2 (2.7)	NA	NA	NA	NA
Copper	NA	NA	0/3	BCRL	NA	NA	NA	NA
Lead	NA	NA	0/3	BCRL	NA	NA	NA	NA
Zinc	NA	NA	2/3	25 - 47 (23)	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 17 of 66.

	Well 04027		Well 04028		Well 04029		Well 04030	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/3	BCRL	NA	NA	0/2	BCRL	0/4	BCRL
1,2 Dichloroethane	0/3	BCRL	NA	NA	0/2	BCRL	0/4	BCRL
1,1 Dichloroethylene	0/2	BCRL	NA	NA	0/1	BCRL	0/3	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	1/1	6.0 (6.0)
1,1,1 Trichloroethane	0/3	BCRL	NA	NA	0/2	BCRL	1/4	1.0 (0.25)
1,1,2 Trichloroethane	0/3	BCRL	NA	NA	0/2	BCRL	0/4	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/1	BCRL	0/3	BCRL	0/5	BCRL
Chlorobenzene	0/4	BCRL	0/1	BCRL	0/3	BCRL	0/5	BCRL
Chloroform	0/4	BCRL	0/1	BCRL	0/3	BCRL	3/5	2.2-3.3 (1.7)
T-1,2 Dichloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL	3/4	1.9-3.7 (2.0)
Tetrachloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL	0/5	BCRL
Trichloroethylene	0/4	BCRL	0/1	BCRL	0/3	BCRL	5/5	120-260 (190)
Methylene Chloride	0/3	BCRL	NA	NA	0/2	BCRL	0/4	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Methylisobutyl ketone	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Volatile Aromatic Organics								
Benzene	0/4	BCRL	0/1	BCRL	1/3	3.0 (1.0)	1/6	3.0 (0.49)
Ethylbenzene	0/3	BCRL	NA	NA	0/2	BCRL	0/5	BCRL
m-Xylene	0/4	BCRL	0/1	BCRL	0/3	BCRL	0/6	BCRL
o and p-Xylene	0/4	BCRL	0/1	BCRL	0/3	BCRL	0/6	BCRL
Toluene	0/4	BCRL	0/1	BCRL	1/3	1.5 (0.50)	0/6	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Dithiane	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 18 of 66.

	Well 04027		Well 04028		Well 04029		Well 04030	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
Organonitrogen Compound								
Caprolactam	1/1	670 (670)	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/2	BCRL	NA	NA	0/1	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/2	BCRL	NA	NA	0/1	BCRL	0/2	BCRL
DBCP	4/4	30 - 39 (34)	9/9	0.22 - 1.0 (0.49)	3/3	0.46 - 0.71 (0.57)	0/6	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Organochlorine Pesticides								
Aldrin	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Dieldrin	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
DDE	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
DDT	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Endrin	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Isodrin	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Arsenic	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Mercury	0/1	BCRL	NA	NA	NA	NA	0/1	BCRL
ICP Metals								
Cadmium	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Chromium	1/3	13 (4.3)	NA	NA	0/2	BCRL	1/3	14 (4.7)
Copper	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Lead	0/3	BCRL	NA	NA	0/2	BCRL	0/3	BCRL
Zinc	2/3	27 - 58 (27)	NA	NA	1/2	120 (58)	2/3	40 - 100 (42)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04031		Well 04032		Well 04033		Well 04035	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/4	BCRL
1,2 Dichloroethane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/4	BCRL
1,1 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/4	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	0/4	BCRL
1,1,1 Trichloroethane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/4	BCRL
1,1,2 Trichloroethane	1/2	1.5 (0.73)	0/2	BCRL	0/2	BCRL	1/4	2.0 (0.50)
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
Chlorobenzene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/4	BCRL
Chloroform	2/3	1.4-2.3 (1.2)	0/3	BCRL	0/3	BCRL	2/4	1.0 (0.50)
T-1,2 Dichloroethylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	NA	NA
Tetrachloroethylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/4	BCRL
Trichloroethylene	3/3	44-81(57)	3/3	1.7 - 4.3 (2.8)	0/3	BCRL	4/4	8.7 - 20 (13)
Methylene Chloride	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/4	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/3	BCRL	1/3	3.7 (1.2)	1/3	270 (89)	0/3	BCRL
Ethylbenzene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/4	BCRL
m-Xylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/4	BCRL
o and p-Xylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/4	BCRL
Toluene	0/3	BCRL	0/3	BCRL	0/3	1.5 (0.50)	0/4	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 20 of 66.

	Well 04031		Well 04032		Well 04033		Well 04035	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
Dimethylmethyl phosphonate	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
DBCP	1/3	0.67 (0.22)	0/3	BCRL	0/3	BCRL	0/3	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Organochlorine Pesticides								
Aldrin	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Dieldrin	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
DDE	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
DDT	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Endrin	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Isodrin	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Arsenic	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Mercury	NA	NA						
ICP Metals								
Cadmium	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Chromium	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Copper	0/2	BCRL	0/2	BCRL	0/2	BCRL	NA	NA
Lead	0/2	BCRL	1/2	22 (11)	0/2	BCRL	NA	NA
Zinc	2/2	34 - 62 (46)	1/2	50 (25)	1/2	99 (50)	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04036		Well 04037		Well 04038		Well 04039	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/5	BCRL	0/5	BCRL	0/5	BCRL	0/5	BCRL
1,2 Dichloroethane	0/5	BCRL	1/5	1.0 (0.20)	0/5	BCRL	0/5	BCRL
1,1 Dichloroethylene	1/4	5.0 (1.3)	0/4	BCRL	5/5	7.0 - 9.8 (8.1)	5/5	2.0-8.0 (5.2)
1,2 Dichlorethylene	0/4	BCRL	0/4	BCRL	1/4	1.3 (0.33)	0/5	BCRL
1,1,1 Trichloroethane	2/5	10 - 12 (4.4)	3/5	0.91-1.1 (0.60)	5/5	10-27 (18)	5/5	9.0-24 (15)
1,1,2 Trichloroethane	0/5	BCRL	1/5	1.0 (0.20)	0/5	BCRL	0/5	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/5	BCRL	0/4	BCRL
Chlorobenzene	0/5	BCRL	0/5	BCRL	0/5	BCRL	0/5	BCRL
Chloroform	3/5	2.0-6.0(1.9)	0/5	BCRL	0/5	BCRL	0/5	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
Tetrachloroethylene	0/5	BCRL	0/5	BCRL	0/5	BCRL	1/5	1.0 (0.20)
Trichloroethylene	5/5	10 - 60 (21)	5/5	3.0-4.4 (3.8)	5/5	11-38 (21)	5/5	10-34 (21)
Methylene Chloride	0/5	BCRL	0/5	BCRL	0/5	BCRL	0/5	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	0/1	BCRL	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	0/1	BCRL		
Volatile Aromatic Organics								
Benzene	0/5	BCRL	0/5	BCRL	0/4	BCRL	0/3	BCRL
Ethylbenzene	0/5	BCRL	0/5	BCRL	0/4	BCRL	0/3	BCRL
m-Xylene	0/5	BCRL	0/5	BCRL	0/4	BCRL	0/3	BCRL
o and p-Xylene	0/5	BCRL	0/5	BCRL	0/4	BCRL	0/3	BCRL
Toluene	0/5	BCRL	0/5	BCRL	0/4	BCRL	0/3	BCRL
Organosulfur Compounds,								
Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	0/1	BCRL	NA	NA
Dithiane	NA	NA	NA	NA	0/1	BCRL	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 22 of 66.

	Well 04036		Well 04037		Well 04038		Well 04039	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	0/1	BCRL	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	0/1	BCRL	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	0/1	BCRL	NA	NA
DBCP	0/4	BCRL	0/4	BCRL	0/4	BCRL	0/3	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	0/1	BCRL	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	0/1	BCRL	NA	NA
Dieldrin	NA	NA	NA	NA	0/1	BCRL	NA	NA
DDE	NA	NA	NA	NA	0/1	BCRL	NA	NA
DDT	NA	NA	NA	NA	0/1	BCRL	NA	NA
Endrin	NA	NA	NA	NA	0/1	BCRL	NA	NA
Isodrin	NA	NA	NA	NA	0/1	BCRL	NA	NA
Arsenic	NA	NA	NA	NA	0/1	BCRL	NA	NA
Mercury	NA	NA	NA	NA	0/1	BCRL	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chromium	NA	NA	NA	NA	0/1	BCRL	NA	NA
Copper	NA	NA	NA	NA	0/1	BCRL	NA	NA
Lead	NA	NA	NA	NA	1/1	34 (34)	NA	NA
Zinc	NA	NA	NA	NA			NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 23 of 66.

	Well 04040		Well 04041		Well 04042		Well 04043	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
1,2 Dichloroethane	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
1,1 Dichloroethylene	4/5	4.0-8.7 (4.7)	4/4	5.8-10 (7.0)	0/3	BCRL	0/3	BCRL
1,2 Dichloroethylene	1/4	0.85 (0.21)	0/3	BCRL	1/2	2.2 (1.1)	3/3	0.95 - 1.6 (1.2)
1,1,1 Trichloroethane	4/5	10-26 (13)	4/5	10-20 (12)	0/3	BCRL	0/3	BCRL
1,1,2 Trichloroethane	2/5	3.0-3.1 (1.2)	0/5	BCRL	0/3	BCRL	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	1/5	10 (2.0)	0/3	BCRL	0/2	BCRL
Chlorobenzene	0/5	BCRL	1/5	1.7 (0.34)	1/3	1.8 (0.61)	1/3	1.3 (0.43)
Chloroform	1/5	5.0 (1.0)	0/5	BCRL	1/3	0.86 (0.29)	0/3	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/2	BCRL	1/1	1.9 (1.9)	NA	NA
Tetrachloroethylene	0/5	BCRL	0/5	BCRL	3/3	3.0-4.4 (3.7)	3/3	2.1-2.8 (2.4)
Trichloroethylene	5/5	10-72 (39)	5/5	21-60 (37)	3/3	3.3-4.1 (3.6)	2/2	2.5-2.7 (2.6)
Methylene Chloride	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Methylisobutyl ketone	NA	NA	0/1	BCRL	0/1	BCRL		
Volatile Aromatic Organics								
Benzene	3/4	2.1-140 (8.5)	1/5	57 (11)	0/3	BCRL	0/3	BCRL
Ethylbenzene	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
m-Xylene	0/4	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
o and p-Xylene	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
Toluene	0/5	BCRL	0/5	BCRL	0/3	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/2	BCRL	0/1	BCRL	NA	NA
Dithiane	0/1	BCRL	0/2	BCRL	0/1	BCRL	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 24 of 66.

	Well 04040		Well 04041		Well 04042		Well 04043	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/2	BCRL	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/2	BCRL	0/1	BCRL	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Dimethylmethyl phosphonate	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
DEGP	0/4	BCRL	0/5	BCRL	0/3	BCRL	0/2	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Dieldrin	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
DDE	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
DDT	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Endrin	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Isodrin	NA	NA	0/2	BCRL	0/1	BCRL	NA	NA
Arsenic	NA	NA	0/1	BCRL	0/2	BCRL	NA	NA
Mercury	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
ICP Metals								
Cadmium	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
Chromium	NA	NA	1/1	11 (11)	0/1	BCRL	NA	NA
Copper	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
Lead	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
Zinc	NA	NA	1/1	58 (58)	1/1	32 (32)	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 25 of 66.

	Well 04044		Well 04045		Well 04046		Well 04047	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
1,2 Dichloroethane	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
1,2 Dichloroethylene	2/2	3.0 (3.0)	2/2	3.2-3.7 (3.4)	3/3	1.2-2.8 (1.7)	3/3	1.8-3.3 (2.3)
1,1,1 Trichloroethane	1/3	0.83 (0.28)	0/3	BCRL	0/3	BCRL	0/3	BCRL
1,1,2 Trichloroethane	1/3	1.1 (0.35)	1/3	2.3 (0.77)	0/3	BCRL	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/2	BCRL
Chlorobenzene	1/3	1.0 (0.33)	1/3	1.1 (0.36)	0/3	BCRL	0/3	BCRL
Chloroform	1/3	0.71 (0.24)	2/3	0.75-0.77 (0.50)	2/3	1.0-2.2 (1.0)	0/3	BCRL
T-1,2 Dichloroethylene	1/1	1.9 (1.9)	1/1	2.8 (2.8)	NA	NA	NA	NA
Tetrachloroethylene	3/3	2.2-4.6 (3.3)	2/3	2.6-4.8 (2.3)	3/3	2.3-3.1 (2.7)	3/3	3.0-3.3 (3.1)
Trichloroethylene	3/3	3.7-4.5 (4.1)	3/3	3.7-4.9 (4.1)	3/3	2.9-3.2 (3.1)	3/3	3.8-4.9 (4.3)
Methylene Chloride	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	BCRL	BCRL	NA	NA
Methylisobutyl ketone	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/3	BCRL	0/3	BCRL	0/3	BCRL	1/3	2.6 (0.87)
Ethylbenzene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
m-Xylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
o and p-Xylene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
Toluene	0/3	BCRL	0/3	BCRL	0/3	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Dithiane	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04044		Well 04045		Well 04046		Well 04047	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Dimethylmethyl phosphonate	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
DBCP	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Dieldrin	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
DDE	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
DDT	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Endrin	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Isodrin	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Arsenic	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Mercury	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
ICP Metals								
Cadmium	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Chromium	1/1	9.5 (9.5)	1/1	13 (13)	NA	NA	NA	NA
Copper	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Lead	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Zinc	0/1	BCRL	1/1	30 (30)	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 27 of 66.

	Well 04048		Well 04049		Well 04050		Well 04051	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
1,2 Dichloroethane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
1,1 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
1,2 Dichloroethylene	1/1	0.89 (0.89)	1/1	1.3 (1.3)	0/1	BCRL	0/1	7.7 (7.7)
1,1,1 Trichloroethane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
1,1,2 Trichloroethane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorobenzene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chloroform	1/1	0.68 (0.68)	1/1	0.77 (0.77)	1/1	0.57 (0.57)	1/1	0.54 (0.54)
T-1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Trichloroethylene	1/1	95 (95)	1/1	160 (160)	1/1	62 (62)	1/1	7.7 (7.7)
Methylene Chloride	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Ethylbenzene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
m-Xylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
o and p-Xylene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Toluene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 28 of 66.

	Well 04048		Well 04049		Well 04050		Well 04051	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
DBCP	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 29 of 66.

	Well 04076		Well 04077	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds				
1,1 Dichloroethane	1/1	1.0 (1.0)	0/1	BCRL
1,2 Dichloroethane	0/1	BCRL	0/1	BCRL
1,1 Dichloroethylene	1/1	4.7 (4.7)	1/1	24 (24)
1,2 Dichloroethylene	0/1	BCRL	1/1	1.2 (1.2)
1,1,1 Trichloroethane	1/1	7.7 (7.7)	1/1	51 (51)
1,1,2 Trichloroethane	0/1	BCRL	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/1	BCRL
Chlorobenzene	1/1	93 (93)	1/1	42 (42)
Chloroform	1/1	0.64 (0.64)	0/1	BCRL
T-1,2 Dichloroethylene	NA	NA	NA	NA
Tetrachloroethylene	1/1	0.93 (0.93)	0/1	BCRL
Trichloroethylene	1/1	10 (10)	1/1	43 (43)
Methylene Chloride	0/1	BCRL	0/1	BCRL
Volatile Hydrocarbons				
Dicyclopentadiene	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA
Volatile Aromatic Organics				
Benzene	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA
m-Xylene	NA	NA	NA	NA
o and p-Xylene	NA	NA	NA	NA
Toluene	NA	NA	NA	NA
Organosulfur Compounds, Mustard Agent Related				
1,4 Oxathiane	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

	Well 04076		Well 04077	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,				
Herbicide Related				
Chlorophenylmethyl sulfide	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA
Organonitrogen Compound				
Caprolactam	NA	NA	NA	NA
Organophosphorous Compounds,				
GB - Agent Related				
Diisopropylmethyl phosphonate	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA
DSCP	NA	NA	NA	NA
Semivolatile Halogenated				
Organic Compounds				
Hexachlorocyclopentadiene	NA	NA	NA	NA
Organochlorine Pesticides				
Aldrin	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA
DDE	NA	NA	NA	NA
DDT	NA	NA	NA	NA
Endrin	NA	NA	NA	NA
Isodrin				
Arsenic	NA	NA	NA	NA
Mercury	NA	NA	NA	NA
ICP Metals				
Cadmium	NA	NA	NA	NA
Chromium	NA	NA	NA	NA
Copper	NA	NA	NA	NA
Lead	NA	NA	NA	NA
Zinc	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 04524		Well 04528		Well 04529	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/2	BCRL	NA	NA	0/1	BCRL
1,2 Dichloroethane	0/2	BCRL	NA	NA	0/1	BCRL
1,1 Dichloroethylene	0/1	BCRL	NA	NA	0/1	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	0/1	BCRL
1,1,1 Trichloroethane	0/2	BCRL	NA	NA	0/1	BCRL
1,1,2 Trichloroethane	0/2	BCRL	NA	NA	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	0/1	BCRL
Carbon tetrachloride	0/3	BCRL	NA	NA	NA	NA
Chlorobenzene	0/3	BCRL	NA	NA	0/1	BCRL
Chloroform	0/3	BCRL	NA	NA	0/1	BCRL
T-1,2 Dichloroethylene	0/3	BCRL	NA	NA	0/1	BCRL
Tetrachloroethylene	0/3	BCRL	NA	NA	NA	NA
Trichloroethylene	0/3	BCRL	NA	NA	0/1	BCRL
Methylene Chloride	0/2	BCRL	NA	NA	1/1	0.94 (0.94)
Volatile Hydrocarbons					0/1	BCRL
Dicyclopentadiene	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics						
Benzene	1/3	3.6 (1.2)	NA	NA	NA	NA
Ethylbenzene	0/2	BCRL	NA	NA	NA	NA
m-Xylene	0/3	BCRL	NA	NA	NA	NA
o and p-Xylene	0/3	BCRL	NA	NA	NA	NA
Toluene	0/3	BCRL	NA	NA	NA	NA
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 32 of 66.

	Well 04524		Well 04528		Well 04529	
	Frequency of Detections	Range (mean) mean) µg/l	Frequency of Detections	Range (mean) mean) µg/l	Frequency of Detections	Range (mean) mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA
Organonitrogen Compound						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,						
GB - Agent Related						
Diisopropylmethyl phosphonate	0/1	BCRL	NA	NA	NA	NA
Dimethylmethyl phosphonate	0/1	BCRL	NA	NA	NA	NA
DBCP	0/3	BCRL	3/6	0.20-0.88 (0.23)	0/11	BCRL
Semivolatile Halogenated Organic Compounds						
Hexachlorocyclopentadiene	0/2	BCRL	NA	NA	NA	NA
Organochlorine Pesticides						
Aldrin	0/2	BCRL	NA	NA	NA	NA
Dieldrin	0/2	BCRL	NA	NA	NA	NA
DDE	0/2	BCRL	NA	NA	NA	NA
DDT	0/2	BCRL	NA	NA	NA	NA
Endrin	0/2	BCRL	NA	NA	NA	NA
Isodrin	0/2	BCRL	NA	NA	NA	NA
Arsenic	0/2	BCRL	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
ICP Metals						
Cadmium	0/2	BCRL	NA	NA	NA	NA
Chromium	0/2	BCRL	NA	NA	NA	NA
Copper	0/2	BCRL	NA	NA	NA	NA
Lead	0/2	BCRL	NA	NA	NA	NA
Zinc	1/2	60 (30)	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 09001		Well 09002	
	Frequency of Detection	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds				
1,1 Dichloroethane	0/1	BCRL	0/4	BCRL
1,2 Dichloroethane	0/1	BCRL	0/4	BCRL
1,1 Dichloroethylene	0/1	BCRL	0/4	BCRL
1,2 Dichloroethylene	NA	NA	0/1	BCRL
1,1,1 Trichloroethane	0/1	BCRL	1/4	0.85 (0.21)
1,1,2 Trichloroethane	0/1	BCRL	0/4	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA
Carbon tetrachloride	0/2	BCRL	0/5	BCRL
Chlorobenzene	0/2	BCRL	0/5	BCRL
Chloroform	0/2	BCRL	0/5	BCRL
T-1,2 Dichloroethylene	2/2	4.7-5.6 (5.1)	0/4	BCRL
Tetrachloroethylene	0/2	BCRL	5/5	1.6-2.6 (2.1)
Trichloroethylene	1/2	1.4 (0.71)	0/5	BCRL
Methylene Chloride	0/1	BCRL	0/4	BCRL
Volatile Hydrocarbons				
Dicyclopentadiene	NA	NA	0/4	BCRL
Methylisobutyl ketone	NA	NA	0/3	BCRL
Volatile Aromatic Organics				
Benzene	0/2	BCRL	0/5	BCRL
Ethylbenzene	0/1	BCRL	0/4	BCRL
m-Xylene	0/2	BCRL	0/5	BCRL
o and p-Xylene	0/2	BCRL	0/5	BCRL
Toluene	0/2	BCRL	0/5	BCRL
Organosulfur Compounds, Mustard Agent Related				
1,4 Oxathiane	NA	NA	0/4	BCRL
Dithiane	NA	NA	0/4	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 34 of 66.

	Well 09001		Well 09002	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,				
Herbicide Related				
Chlorophenylmethyl sulfide	NA	NA	0/4	BCRL
Chlorophenylmethyl sulfone	NA	NA	0/4	BCRL
Chlorophenylmethyl sulfoxide	NA	NA	0/4	BCRL
Organonitrogen Compound				
Caprolactam	NA	NA	NA	NA
Organophosphorous Compounds,				
GB - Agent Related				
Diisopropylmethyl phosphonate	NA	NA	0/4	BCRL
Dimethylmethyl phosphonate	NA	NA	0/4	BCRL
DBCP	0/2	BCRL	0/5	BCRL
Semivolatile Halogenated Organic Compounds				
Hexachlorocyclopentadiene	0/1	BCRL	0/3	BCRL
Organochlorine Pesticides				
Aldrin	0/1	BCRL	0/4	BCRL
Dieldrin	0/1	BCRL	0/4	BCRL
DDE	0/1	BCRL	0/3	BCRL
DDT	0/1	BCRL	0/3	BCRL
Endrin	0/1	BCRL	0/4	BCRL
Isodrin	0/1	BCRL	0/4	BCRL
Arsenic	NA	NA	1/2	6.3 (3.2)
Mercury	NA	NA	0/1	BCRL
ICP Metals				
Cadmium	NA	NA	0/2	BCRL
Chromium	NA	NA	1/2	13 (6.7)
Copper	NA	NA	0/2	BCRL
Lead	NA	NA	0/2	BCRL
Zinc	NA	NA	0/2	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 35 of 66.

	Well 09008		Well 09009		Well 09010		Well 09011	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/3	BCRL
1,2 Dichloroethane	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/3	BCRL
1,1 Dichloroethylene	3/3	2.8-5.9 (3.7)	1/2	1.7 (0.85)	0/2	BCRL	3/3	12-24 (18)
1,2 Dichloroethylene	0/2	BCRL	0/2	BCRL	0/1	BCRL	1/2	2.6 (1.3)
1,1,1 Trichloroethane	3/3	7.0-9.4 (8.1)	2/2	4.9-5.3 (5.1)	0/2	BCRL	3/3	27-73 (51)
1,1,2 Trichloroethane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/1	BCRL	0/2	BCRL	0/3	BCRL
Chlorobenzene	0/3	BCRL	0/2	BCRL	1/2	0.66 (0.33)	0/3	BCRL
Chloroform	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/3	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	NA	NA	0/1	BCRL	1/1	1.6 (1.6)
Tetrachloroethylene	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/3	BCRL
Trichloroethylene	2/2	17-21 (19)	2/2	9.3-13 (11)	0/2	BCRL	3/3	16-36 (26)
Methylene Chloride	0/3	BCRL	0/1	BCRL	0/2	BCRL	0/3	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Methylisobutyl ketone	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics								
Benzene	0/3	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
Ethylbenzene	0/3	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
m-Xylene	0/3	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
o and p-Xylene	0/3	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
Toluene	1/3	5.0 (1.7)	0/2	BCRL	0/3	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Dithiane	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 36 of 66.

	Well 09008		Well 09009		Well 09010		Well 09011	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
DBCP	0/3	BCRL	0/1	BCRL	0/3	BCRL	0/3	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Organochlorine Pesticides								
Aldrin	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Dieldrin	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
DDE	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
DDT	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Endrin	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Isodrin	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Arsenic	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Mercury	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
ICP Metals								
Cadmium	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Chromium	0/1	BCRL	NA	NA	0/1	BCRL	1/1	6.1 (6.1)
Copper	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Lead	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL
Zinc	0/1	BCRL	NA	NA	0/1	BCRL	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 37 of 66.

	Well 09012		Well 09013		Well 09014		Well 28022	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/2	BCRL	1/2	3.4 (1.7)	2/2	1.4-1.5 (1.4)	0/1	BCRL
1,2 Dichloroethane	0/2	BCRL	1/2	1.9 (0.95)	0/2	BCRL	0/1	BCRL
1,1 Dichloroethylene	2/2	8.5-11 (9.5)	2/2	29-42 (35)	2/2	27-36 (31)	0/1	BCRL
1,2 Dichloroethylene	1/2	1.3 (0.65)	1/1	5.0 (5.0)	2/2	2.7 (2.7)	NA	NA
1,1,1 Trichloroethane	2/2	29-31 (30)	2/2	85-130 (110)	2/2	91-100 (96)	0/1	BCRL
1,1,2 Trichloroethane	1/2	0.90 (0.45)	1//2	4.0 (2.0)	0/2	BCRL	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/2	BCRL	0/1	BCRL	0/1	BCRL
Chlorobenzene	0/2	BCRL	1/2	1.1 (0.55)	0/2	BCRL	C/1	BCRL
Chloroform	0/2	BCRL	1/2	1.9 (0.95)	2/2	0.55-0.72 (0.63)	1/1	15 (15)
T-1,2 Dichloroethylene	NA	NA	1/1	2.6 (2.6)	NA	NA	0/1	BCRL
Tetrachloroethylene	0/2	BCRL	1/2	2.0 (1.0)	1/2	0.82 (0.41)	0/1	BCRL
Trienloroethylene	2/2	10-14 (12)	2/2	42-54 (47)	2/2	38-51 (44)	0/1	BCRL
Methylene Chloride	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Methylisobutyl ketone	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Volatile Aromatic Organics								
Benzene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Ethylbenzene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
m-Xylene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
o and p-Xylene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Toluene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Dithiane	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

	Well 09012		Well 09013		Well 09014		Well 28022	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds.								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfone	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Chlorophenylmethyl sulfoxide	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds.								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Dimethylmethyl phosphonate	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
DBCP	0/1	BCRL	0/1	BCRL	NA	NA	1/1	1.7 (1.7)
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Organochlorine Pesticides								
Aldrin	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Dieldrin	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
DDE	NA	NA	0/1	BCRL	NA	NA	0/4	BCRL
DDT	NA	NA	0/1	BCRL	NA	NA	0/4	BCRL
Endrin	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Isodrin	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Arsenic	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Mercury	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
ICP Metals								
Cadmium	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Chromium	NA	NA	1/1	8.8 (8.8)	NA	NA	0/1	BCRL
Copper	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL
Lead	NA	NA	0/1	BCRL	NA	NA	0/3	BCRL
Zinc	NA	NA	0/1	BCRL	NA	NA	0/1	BCRL

NA = *Not Analyzed*
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(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 39 of 66.

	Well 28027		Well 33001		Well 33002		Well 33008	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
1,2 Dichloroethane	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
1,1 Dichloroethylene	0/3	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
1,2 Dichloroethylene	NA	NA	NA	NA	1/1	1.0 (1.0)	NA	NA
1,1,1 Trichloroethane	3/4	1.9-3.5 (1.8)	0/1	BCRL	1/4	0.76 (0.19)	NA	NA
1,1,2 Trichloroethane	1/4	1.0 (0.25)	0/1	BCRL	0/4	BCRL	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/1	BCRL	0/5	BCRL	NA	NA
Chlorobenzene	0/4	BCRL	0/1	BCRL	1/5	33 (6.5)	NA	NA
Chloroform	0/4	BCRL	0/1	BCRL	0/5	BCRL	NA	NA
T-1,2 Dichloroethylene	0/4	BCRL	0/1	BCRL	1/4	3/6 (0.89)	NA	NA
Tetrachloroethylene	0/4	BCRL	0/1	BCRL	2/5	1.1-1.3 (0.48)	NA	NA
Trichloroethylene	0/4	BCRL	0/1	BCRL	5/5	3.6-9.5 (6.1)	NA	NA
Methylene Chloride	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Methylisobutyl ketone	0/2	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
Volatile Aromatic Organics								
Benzene	1/4	1.5 (0.37)	0/1	BCRL	2/5	3.5-8.2 (2.1)	NA	NA
Ethylbenzene	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
m-Xylene	0/4	BCRL	0/1	BCRL	0/5	BCRL	NA	NA
o and p-Xylene	0/4	BCRL	0/1	BCRL	0/5	BCRL	NA	NA
Toluene	0/4	BCRL	0/1	BCRL	1/5	1.8 (0.36)	NA	NA
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Dithiane	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 40 of 66.

	Well 28027		Well 33001		Well 33002		Well 33008	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Chlorophenylmethyl sulfone	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Chlorophenylmethyl sulfoxide	0/2	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/3	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
Dimethylmethyl phosphonate	0/3	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
DBCP	0/4	BCRL	0/1	BCRL	0/5	BCRL	1/8	46 (5.8)
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	0/4	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
Organochlorine Pesticides								
Aldrin	0/4	BCRL	0/1	BCRL	1/4	0.13 (0.03)	NA	NA
Dieldrin	0/4	BCRL	0/1	BCRL	1/4	0.11 (.03)	NA	NA
DDE	0/4	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
DDT	0/4	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
Endrin	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
Isodrin	0/4	BCRL	0/1	BCRL	0/4	BCRL	NA	NA
Arsenic	0/3	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
Mercury	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	NA
ICP Metals								
Cadmium	0/3	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
Chromium	1/3	6.2 (2.1)	0/1	BCRL	0/3	BCRL	NA	NA
Copper	0/3	BCRL	0/1	BCRL	0/3	BCRL	NA	NA
Lead	0/3	BCRL	0/3	BCRL	2/3	58-70 (42)	NA	NA
Zinc	1/3	51 (17)	0/1	BCRL				

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 41 of 66.

	Well 33015		Well 33016		Well 33018		Well 33019	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/1	BCRL	0/4	BCRL	0/2	BCRL	NA	NA
1,2 Dichloroethane	0/1	BCRL	0/4	BCRL	0/2	BCRL	NA	NA
1,1 Dichloroethylene	0/1	BCRL	0/3	BCRL	0/2	BCRL	NA	NA
1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/2	BCRL	NA	NA
1,1,1 Trichloroethane	0/1	BCRL	0/4	BCRL	0/2	BCRL	NA	NA
1,1,2 Trichloroethane	0/1	BCRL	0/4	BCRL	0/2	BCRL	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
Chlorobenzene	0/2	BCRL	0/5	BCRL	0/3	BCRL	0/1	BCRL
Chloroform	0/2	BCRL	0/5	BCRL	0/3	BCRL	0/1	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/4	BCRL	0/1	BCRL	0/1	BCRL
Tetrachloroethylene	0/2	BCRL	0/5	BCRL	2/3	1.5-1.9 (1.1)	1/1	1.9 (1.9)
Trichloroethylene	0/2	BCRL	0/5	BCRL	1/3	2.7 (0.9)	0/1	BCRL
Methylene Chloride	1/1	13 (13)	0/4	BCRL	0/2	BCRL	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL
Methylisobutyl ketone	NA	NA	0/1	BCRL	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/2	BCRL	2/5	2.0-2.9 (0.96)	1/3	2.0 (0.67)	0/1	BCRL
Ethylbenzene	0/1	BCRL	0/4	BCRL	0/2	BCRL	0/1	BCRL
m-Xylene	0/2	BCRL	0/5	BCRL	0/3	BCRL	0/1	BCRL
o and p-Xylene	0/2	BCRL	0/5	BCRL	0/3	BCRL	0/1	BCRL
Toluene	0/2	BCRL	0/5	BCRL	0/3	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL
Dithiane	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 42 of 66.

	Well 33015		Well 33016		Well 33018		Well 33019	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	NA	NA	0/1	BCRL	0/1	BCRL	0/1	BCRL
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
DBCP	0/2	BCRL	0/5	BCRL	0/10	BCRL	0/2	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	0/2	BCRL	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
Dieldrin	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
DDE	NA	NA	0/2	BCRL	NA	NA	NA	NA
DDT	NA	NA	0/2	BCRL	NA	NA	NA	NA
Endrin	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
Isodrin	NA	NA	0/2	BCRL	0/1	BCRL	0/1	BCRL
Arsenic	NA	NA	0/3	BCRL	NA	NA	NA	NA
Mercury	NA	NA	0/1	BCRL	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	1/3	6.0 (2.0)	NA	NA	NA	NA
Chromium	NA	NA	1/3	9.1 (3.0)	NA	NA	NA	NA
Copper	NA	NA	0/3	BCRL	NA	NA	NA	NA
Lead	NA	NA	1/3	22 (7.4)	NA	NA	NA	NA
Zinc	NA	NA	1/3	25 (8.4)	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33020		Well 33021		Well 33022		Well 33023	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/2	BCRL	NA	NA	0/6	BCRL	0/2	BCRL
1,2 Dichloroethane	0/2	BCRL	NA	NA	0/6	BCRL	0/2	BCRL
1,1 Dichloroethylene	0/2	BCRL	NA	NA	0/5	BCRL	0/1	BCRL
1,2 Dichloroethylene	0/2	BCRL	NA	NA	0/4	BCRL	NA	NA
1,1,1 Trichloroethane	0/2	BCRL	NA	NA	3/6	3.0-7.1 (2.5)	1/2	3.7 (1.9)
1,1,2 Trichloroethane	NA	NA	NA	NA	0/6	BCRL	0/2	BCRL
1,1,2,2 Trichloroethane	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/1	BCRL	0/5	BCRL	0/3	BCRL
Chlorobenzene	0/3	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
Chloroform	0/1	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
T-1,2 Dichloroethylene	3/3	0.86-1.5 (1.2)	1/1	1.4 (1.4)	0/3	BCRL	0/3	BCRL
Tetrachloroethylene	0/3	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
Trichloroethylene					6/7	1.0-6.8 (3.1)	3/3	5.2-7.4 (6.3)
Methylene Chloride	0/2	BCRL			1/6	10.0 (1.7)	0/2	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/3	BCRL	0/1	BCRL	2/7	1.0-3.5 (0.53)	2/3	1.9-2.3 (1.4)
Ethylbenzene	0/2	BCRL	0/1	BCRL	0/6	BCRL	0/2	BCRL
m-Xylene	0/3	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
o and p-Xylene	0/3	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
Toluene	0/3	BCRL	0/1	BCRL	0/7	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Dithiane	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33020		Well 33021		Well 33022		Well 33023	
	Frequency of Detections	Range (mean) mean) µg/l	Frequency of Detections	Range (mean) mean) µg/l	Frequency of Detections	Range (mean) mean) µg/l	Frequency of Detections	Range (mean) mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/1	BCRL	0/1	BCRL	0/1	BCRL
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/2	BCRL
DBCP	0/3	BCRL	0/1	BCRL	0/6	BCRL	0/3	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	0/2	BCRL	0/2	NA
Organochlorine Pesticides								
Aldrin	0/1	BCRL	0/1	BCRL	0/3	BCRL	0/3	BCRL
Dieldrin	0/1	BCRL	0/1	BCRL	0/3	BCRL	0/3	BCRL
DDE	NA	NA	NA	NA	0/2	BCRL	0/2	BCRL
DDT	NA	NA	NA	NA	0/2	BCRL	0/2	BCRL
Endrin	0/1	BCRL	0/1	BCRL	0/3	BCRL	0/3	BCRL
Isodrin	0/1	BCRL	0/1	BCRL	0/3	BCRL	0/3	BCRL
Arsenic	NA	NA	NA	NA	0/3	BCRL	0/2	BCRL
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	1/3	10 (3.4)	0/2	BCRL
Chromium	NA	NA	NA	NA	1/3	6.5 (2.2)	0/2	BCRL
Copper	NA	NA	NA	NA	1/3	15 (4.9)	1/2	8.0 (4.0)
Lead	NA	NA	NA	NA	1/3	23 (7.5)	1/2	22 (11)
Zinc	NA	NA	NA	NA	3/3	25-76 (38)	1/2	120 (58)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 45 of 66.

	Well 33024		Well 33025		Well 33030		Well 33033	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/6	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,2 Dichloroethane	0/6	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,1 Dichloroethylene	0/5	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
1,2 Dichloroethylene	0/4	BCRL	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	1/6	1.0 (0.17)	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,1,2 Trichloroethane	0/6	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/5	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Chlorobenzene	0/7	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Chloroform	0/7	BCRL	0/3	BCRL	1/4	1.8 (0.45)	0/2	BCRL
T-1,2 Dichloroethylene	0/3	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Tetrachloroethylene	0/7	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Trichloroethylene	7/7	3.0-6.3 (4.7)	0/3	BCRL	0/4	BCRL	0/2	BCRL
Methylene Chloride	0/6	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/2	BCRL
Methylisobutyl ketone	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics								
Benzene	1/7	3.7 (0.53)	0/3	BCRL	0/4	BCRL	0/2	BCRL
Ethylbenzene	0/6	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
m-Xylene	0/7	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
o and p-Xylene	0/7	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Toluene	0/7	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Organosulfur Compounds,								
Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
Dithiane	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 46 of 66.

	Well 33024		Well 33025		Well 33030		Well 33033	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
DBCP	0/6	BCRL	0/3	BCRL	15/15	0.4-6.2 (1.6)	0/9	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Organochlorine Pesticides								
Aldrin	0/3	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Dieldrin	0/3	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
DDE	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
DDT	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Endrin	0/3	BCRL	0/3	BCRL	0/4	BCRL	0/2	BCRL
Isodrin	1/3	0.89 (0.30)	0/3	BCRL	0/4	BCRL	0/2	BCRL
Arsenic	0/2	BCRL	0/2	BCRL	0/4	BCRL	0/2	BCRL
Mercury	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
ICP Metals								
Cadmium	0/2	BCRL	0/2	BCRL	0/4	BCRL	0/2	BCRL
Chromium	0/2	BCRL	0/2	BCRL	1/4	6.5 (1.6)	0/2	BCRL
Copper	0/2	BCRL	0/2	BCRL	0/4	BCRL	0/2	BCRL
Lead	0/2	BCRL	0/2	BCRL	0/4	BCRL	0/2	BCRL
Zinc	1/2	120 (59)	2/2	28-81 (47)	3/4	26-250 (49)	2/2	64-72 (68)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 47 of 66.

	Well 33039		Well 33040		Well 33041		Well 33042	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
1,2 Dichloroethane	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
1,1 Dichloroethylene	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
1,2 Dichloroethylene	NA	NA	0/1	BCRL	NA	NA	NA	NA
1,1,1 Trichloroethane	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
1,1,2 Trichloroethane	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Chlorobenzene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Chloroform	0/1	BCRL	1/2	5.2 (2.6)	NA	NA	NA	NA
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	NA	NA	NA	NA
Tetrachloroethylene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Trichloroethylene	1/1	6.2 (6.2)	2/2	1.1-15 (4.1)	NA	NA	NA	NA
Methylene Chloride	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	0/1	BCRL	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/1	BCRL	1/2	5.8 (2.9)	NA	NA	NA	NA
Ethylbenzene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
m-Xylene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
o and p-Xylene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Toluene	0/1	BCRL	0/2	BCRL	NA	NA	NA	NA
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	NA	NA	NA	NA	NA	NA
Dithiane	0/1	BCRL	NA	NA	NA	NA	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 48 of 66.

	Well 33039		Well 33040		Well 33041		Well 33042	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	0/1	BCRL	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	0/1	BCRL	NA	NA	NA	NA	NA	NA
Organonitrogen Compounds								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	0/1	BCRL	NA	NA	NA	NA	NA	NA
DBCP	9/9	0.20-0.65 (0.45)	10/12	0.17-1.1 (0.30)	12/12	0.36-9.4 (0.88)	10/10	0.64-2.82 (1.5)
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/1	BCRL	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	0/1	BCRL	NA	NA	NA	NA	NA	NA
Dieldrin	0/1	BCRL	NA	NA	NA	NA	NA	NA
DDE	0/1	BCRL	NA	NA	NA	NA	NA	NA
DDT	0/1	BCRL	NA	NA	NA	NA	NA	NA
Endrin	0/1	BCRL	NA	NA	NA	NA	NA	NA
Isodrin	0/1	BCRL	NA	NA	NA	NA	NA	NA
Arsenic	0/1	BCRL	NA	NA	NA	NA	NA	NA
Mercury	0/1	BCRL	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	0/1	BCRL	NA	NA	NA	NA	NA	NA
Chromium	0/1	BCRL	NA	NA	NA	NA	NA	NA
Copper	0/1	BCRL	NA	NA	NA	NA	NA	NA
Lead	0/1	BCRL	NA	NA	NA	NA	NA	NA
Zinc	1/1	49 (49)	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 49 of 66.

	Well 33043		Well 33044		Well 33046		Well 33047	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	NA	NA	0/5	BCRL	0/5	BCRL
1,2 Dichloroethane	NA	NA	NA	NA	0/5	BCRL	0/5	BCRL
1,1 Dichloroethylene	NA	NA	NA	NA	0/4	BCRL	0/4	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	0/4	BCRL	0/4	BCRL
1,1,1 Trichloroethane	NA	NA	NA	NA	1/5	0.79 (0.16)	0/5	BCRL
1,1,2 Trichloroethane	NA	NA	NA	NA	1/5	0.80 (0.16)	0/4	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	0/4	BCRL	0/4	BCRL
Chlorobenzene	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
Chloroform	NA	NA	NA	NA	2/6	0.52-0.71 (0.20)	0/6	BCRL
T-1,2 dichloroethylene	NA	NA	NA	NA	0/2	BCRL	0/2	BCRL
Tetrachloroethylene	NA	NA	NA	NA	0/6	BCRL	1/6	2.4 (0.40)
Trichloroethylene	NA	NA	NA	NA	6/6	10-19 (13)	5/6	0.71-2.4 (0.96)
Methylene Chloride	NA	NA	NA	NA	1/5	11 (2.2)	0/5	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	NA	NA	NA	NA	1/6	5.0 (0.83)	0/6	BCRL
Ethylbenzene	NA	NA	NA	NA	0/5	BCRL	0/5	BCRL
m-Xylene	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
o and p-Xylene	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
Toluene	NA	NA	NA	NA	0/6	BCRL	0/6	BCRL
Organosulfur Compounds,								
Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 50 of 66.

	Well 33043		Well 33044		Well 33046		Well 33047	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
DBCP	9/9	0.29-0.90 (0.41)	10/10	0.72-3.1 (1.4)	0/12	BCRL	0/5	BCRL
Semivolatile Halogenated								
Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 51 of 66.

	Well 33060		Well 33061		Well 33062		Well 33063	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
1,2 Dichloroethane	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
1,1 Dichloroethylene	0/1	BCRL	0/1	BCRL	NA	NA	0/1	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
1,1,2 Trichloroethane	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Chlorobenzene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Chloroform	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
T-1,2 Dichloroethylene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Tetrachloroethylene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Trichloroethylene	2/3	7.1-9.8 (5.6)	3/3	1.9-9.9 (4.9)	NA	NA	0/2	BCRL
Methylene Chloride	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	0/1	BCRL
Volatile Aromatic Organics								
Benzene	1/3	1.3 (0.45)	0/3	BCRL	NA	NA	0/2	BCRL
Ethylbenzene	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
m-Xylene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
o and p-Xylene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Toluene	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL
Dithiane	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33060		Well 33061		Well 33062		Well 33063	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/1	BCRL	NA	NA	0/2	BCRL
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/2	BCRL	0/2	BCRL	NA	NA	0/2	BCRL
Dimethylmethyl phosphonate	0/2	BCRL	0/2	BCRL	NA	NA	0/2	BCRL
DBCP	2/11	0.24-0.31 (0.05)	1/3	0.60 (0.20)	8/9	0.94-3.1 (1.6)	2/3	1.7-3.2 (1.5)
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
Organochlorine Pesticides								
Aldrin	0/3	BCRL	0/3	BCRL	NA	NA	1/2	0.08 (0.04)
Dieldrin	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
DDE	0/2	BCRL	0/2	BCRL	NA	NA	0/1	0/1
DDT	0/2	BCRL	0/2	BCRL	NA	NA	0/1	0/1
Endrin	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Isodrin	0/3	BCRL	0/3	BCRL	NA	NA	0/2	BCRL
Arsenic	0/2	BCRL	0/2	BCRL	NA	NA	0/2	BCRL
Mercury	NA	NA	NA	NA	NA	NA	0/1	BCRL
ICP Metals								
Cadmium	0/2	BCRL	0/2	BCRL	NA	NA	0/2	BCRL
Chromium	0/2	BCRL	0/2	BCRL	NA	NA	1/2	8.8 (4.4)
Copper	0/2	BCRL	0/2	BCRL	NA	NA	0/2	BCRL
Lead	0/2	BCRL	0/2	BCRL	NA	NA	1/2	23 (12)
Zinc	2/2	30-36 (33)	1/2	31 (16)	NA	NA	1/2	98 (49)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 53 of 66.

	Well 33064		Well 33065		Well 33066	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/3	BCRL	0/4	BCRL	0/3	BCRL
1,2 Dichloroethane	0/3	BCRL	0/4	BCRL	0/3	BCRL
1,1 Dichloroethylene	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,2 Dichloroethylene	0/2	BCRL	0/3	BCRL	0/2	NA
1,1,1 Trichloroethane	0/3	BCRL	2/4	0.7-0.98 (0.41)	3/3	2.0-3.0 (2.5)
1,1,2 Trichloroethane	0/3	BCRL	0/4	BCRL	1/3	2.0 (0.67)
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/3	BCRL
Chlorobenzene	0/3	BCRL	0/4	BCRL	0/3	BCRL
Chloroform	0/3	BCRL	0/4	BCRL	0/3	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL
Tetrachloroethylene	0/3	BCRL	0/4	BCRL	0/3	BCRL
Trichloroethylene	0/3	BCRL	4/4	1.9-2.1 (1.2)	3/3	4.0-5.0 (4.3)
Methylene Chloride	0/3	BCRL	0/4	BCRL	0/3	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics						
Benzene	0/3	BCRL	0/4	BCRL	0/3	BCRL
Ethylbenzene	0/3	BCRL	0/4	BCRL	0/3	BCRL
m-Xylene	0/3	BCRL	0/4	BCRL	0/3	BCRL
o and p-Xylene	0/3	BCRL	0/4	BCRL	0/3	BCRL
Toluene	0/3	BCRL	0/4	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 54 of 66.

	Well 33064		Well 33065		Well 33066	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA
Organonitrogen Compound						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,						
GB - Agent Related						
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA
DBCP	0/12	BCRL	0/3	BCRL	0/3	BCRL
Semivolatile Halogenated						
Organic Compounds						
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides						
Aldrin	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
ICP Metals						
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 55 of 66.

	Well 33067		Well 33068		Well 33069	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/4	BCRL	0/3	BCRL	0/4	BCRL
1,2 Dichloroethane	0/4	BCRL	0/3	BCRL	0/4	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/2	BCRL	0/3	BCRL
1,2 Dichloroethylene	0/3	BCRL	0/2	BCRL	0/3	BCRL
1,1,1 Trichloroethane	4/4	3.0-5.4 (3.6)	2/3	0.80-1.0 (0.60)	0/4	BCRL
1,1,2 Trichloroethane	0/4	BCRL	0/3	BCRL	0/4	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/3	BCRL
Chlorobenzene	0/4	BCRL	0/3	BCRL	0/4	BCRL
Chloroform	0/4	BCRL	1/3	0.50 (0.17)	0/4	BCRL
T-1,2 Dichloroethylene	0/1	BCRL	0/1	BCRL	0/1	BCRL
Tetrachloroethylene	0/4	BCRL	0/3	BCRL	0/4	BCRL
Trichloroethylene	4/4	5.0-8.7 (6.2)	3/3	1.0-2.6 (1.7)	4/4	2.7-3.7 (3.1)
Methylene Chloride	0/4	BCRL	0/3	BCRL	0/4	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics						
Benzene	0/4	BCRL	0/3	BCRL	0/4	BCRL
Ethylbenzene	0/4	BCRL	0/3	BCRL	0/4	BCRL
m-Xylene	0/4	BCRL	0/3	BCRL	0/4	BCRL
o and p-Xylene	0/4	BCRL	0/3	BCRL	0/4	BCRL
Toluene	0/4	BCRL	0/3	BCRL	0/4	BCRL
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

	Well 33067		Well 33068		Well 33069	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds.						
Herbicide Related						
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA
Organonitrogen Compound						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds.						
GB - Agent Related						
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA
DBCP	0/3	BCRL	0/3	BCRL	0/3	BCRL
Semivolatile Halogenated Organic Compounds						
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides						
Aldrin	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
ICP Metals						
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

	Well 33070		Well 33071		Well 33072	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	NA	NA	NA	NA	NA	NA
1,2 Dichloroethane	NA	NA	NA	NA	NA	NA
1,1 Dichloroethylene	NA	NA	NA	NA	NA	NA
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	NA	NA	NA	NA	NA	NA
1,1,2 Trichloroethane	NA	NA	NA	NA	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA
T-1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA
Volatile Hydrocarbons						
Dicyclopentadiene	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics						
Benzene	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA
m-Xylene	NA	NA	NA	NA	NA	NA
o and p-Xylene	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA
Organosulfur Compounds, Mustard Agent Related						
1,4 Oxathiane	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33070		Well 33071		Well 33072	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,						
Herbicide Related						
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA
Organonitrogen Compounds						
Caprolactam	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,						
GB - Agent Related						
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA
DBCP	6/9	0.36-0.68 (0.34)	3/8	0.20-0.44 (0.12)	2/11	0.28-0.33 (0.06)
Semivolatile Halogenated						
Organic Compounds						
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides						
Aldrin	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA
ICP Metals						
Cadmium	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33073		Well 33074		Well 33075		Well 33077	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
1,2 Dichloroethane	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
1,1 Dichloroethylene	NA	NA	1/4	2.0 (0.50)	4/4	6.0-8.1 (6.5)	0/3	BCRL
1,2 Dichloroethylene	NA	NA	0/4	BCRL	0/3	BCRL	0/2	BCRL
1,1,1 Trichloroethane	NA	NA	4/4	3.2-7.0 (4.6)	4/4	10-26 (15)	2/3	0.84-1.4 (0.72)
1,1,2 Trichloroethane	NA	NA	0/4	BCRL	1/4	2.0 (0.50)	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	0/3	BCRL	0/4	BCRL	0/3	BCRL
Chlorobenzene	NA	NA	0/4	BCRL	1/4	0.58 (0.15)	0/3	BCRL
Chloroform	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
T-1,2 Dichloroethylene	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Tetrachloroethylene	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
Trichloroethylene	NA	NA	0/4	BCRL	4/4	16-40 (28)	3/3	4.2-7.2 (5.4)
Methylene Chloride	NA	NA	4/4	1.0-5.0 (2.0)	0/4	BCRL	0/3	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Methylisobutyl ketone	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics								
Benzene	NA	NA	1/4	2.0 (0.50)	1/4	2.0 (0.50)	0/3	BCRL
Ethylbenzene	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
m-Xylene	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
o and p-Xylene	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
Toluene	NA	NA	0/4	BCRL	0/4	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Dithiane	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 60 of 66.

	Well 33073		Well 33074		Well 33075		Well 33077	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomic. mean) µg/l
Organosulfur Compounds.								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Organonitrogen Compound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds.								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
DBCP	1/10	0.32 (0.03)	0/3	BCRL	0/4	BCRL	0/3	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Dieldrin	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
DDE	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
DDT	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Endrin	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Isodrin	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Arsenic	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
Mercury	NA	NA	NA	NA	0/1	BCRL	0/1	BCRL
ICP Metals								
Cadmium	NA	NA	NA	NA	0/1	BCRL	NA	NA
Chromium	NA	NA	NA	NA	1/1	6.1 (6.1)	NA	NA
Copper	NA	NA	NA	NA	0/1	BCRL	NA	NA
Lead	NA	NA	NA	NA	0/1	BCRL	NA	NA
Zinc	NA	NA	NA	NA	1/1	53 (53)	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 61 of 66.

	Well 33078		Well 33079		Well 33506		Well 33514	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
1,2 Dichloroethane	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
1,1 Dichloroethylene	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
1,2 Dichloroethylene	1/3	2.5 (0.83)	0/3	BCRL	NA	NA	NA	NA
1,1,1 Trichloroethane	2/3	0.80-1.1 (0.62)	2/3	1.1-2.7 (1.1)	NA	NA	NA	NA
1,1,2 Trichloroethane	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
1,1,2,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	0/2	BCRL	0/2	BCRL	NA	NA	0/1	BCRL
Chlorobenzene	0/3	BCRL	0/3	BCRL	NA	NA	0/1	BCRL
Chloroform	0/3	BCRL	0/3	BCRL	NA	NA	0/1	BCRL
T-1,2, Dichloroethylene	NA	NA	NA	NA	NA	NA	0/1	BCRL
Tetrachloroethylene	1/3	4.9 (1.6)	1/3	0.77 (0.26)	NA	NA	0/1	BCRL
Trichloroethylene	3/3	2.2-4.1 (2.8)	1/3	0.65 (0.22)	NA	NA	0/1	BCRL
Methylene Chloride	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	0/3	BCRL	0/3	BCRL	NA	NA	0/1	BCRL
Ethylbenzene	0/3	BCRL	0/3	BCRL	NA	NA	NA	NA
m-Xylene	0/3	BCRL	0/3	BCRL	NA	NA	0/1	BCRL
o and p-Xylene	0/3	BCRL	0/3	BCRL	NA	NA	0/1	BCRL
Toluene	0/3	BCRL	0/3	BCRL	NA	NA	01	BCRL
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA	NA	NA

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area.

	Well 33078		Well 33079		Well 33506		Well 33514	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA	NA	NA
Organonitrogen Compompound								
Caprolactam	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
DBCP	0/2	BCRL	0/2	BCRL	1/1	0.30 (0.30)	0/12	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA
DDE	NA	NA	NA	NA	NA	NA	NA	NA
DDT	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 63 of 66.

	Well 33579		Well 33580		Well 33581		Well 33582	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,2 Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1 Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
1,2 Dichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2 Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethylene	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Hydrocarbons								
Dicyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Methylisobutyl ketone	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Organics								
Benzene	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
m-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
o and p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Organosulfur Compounds, Mustard Agent Related								
1,4 Oxathiane	NA	NA	NA	NA	NA	NA	NA	NA
Dithiane	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 64 of 66.

	Well 33579		Well 33580		Well 33581		Well 33582	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geomtc. mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfone	NA	NA	NA	NA	NA	NA	NA	NA
Chlorophenylmethyl sulfoxide	NA	NA	NA	NA	NA	NA	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylmethyl phosphonate	NA	NA	NA	NA	NA	NA	NA	NA
DBCP	1/7	0.36 (0.05)	6/9	0.21-0.56 (0.20)	3/6	0.26-0.42 (0.15)	2/8	0.20-0.40 (0.07)
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides								
Aldrin	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA	NA	NA	NA
Isodrin	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
ICP Metals								
Cadmium	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NA	NA	NA	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-1 Summary of Groundwater Analytical Results for the Unconfined Aquifer of the Western Study Area. Page 65 of 66.

	Well 34002		Well 34515	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Volatile Halogenated Organic Compounds				
1,1 Dichloroethane	0/3	BCRL	0/3	BCRL
1,2 Dichloroethane	0/3	BCRL	0/3	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/2	BCRL
1,2 Dichloroethylene	NA	NA	NA	NA
1,1,1 Trichloroethane	0/3	BCRL	0/3	BCRL
1,1,2 Trichloroethane	0/3	BCRL	0/3	BCRL
1,1,2,2 Trichloroethane	NA	NA	NA	NA
Carbon tetrachloride	0/4	BCRL	0/3	BCRL
Chlorobenzene	0/4	BCRL	0/3	BCRL
Chloroform	0/4	BCRL	0/3	BCRL
T-1,2 Dichloroethylene	0/4	BCRL	0/3	BCRL
Tetrachloroethylene	0/4	BCRL	0/3	BCRL
Trichloroethylene	0/4	BCRL	0/3	BCRL
Methylene Chloride	0/3	BCRL	0/3	BCRL
Volatile Hydrocarbons				
Dicyclopentadiene	0/4	BCRL	0/1	BCRL
Methylisobutyl ketone	0/3	BCRL	0/1	BCRL
Volatile Aromatic Organics				
Benzene	0/4	BCRL	0/3	BCRL
Ethylbenzene	0/3	BCRL	0/3	BCRL
m-Xylene	0/4	BCRL	0/3	BCRL
o and p-Xylene	0/4	BCRL	0/3	BCRL
Toluene	0/4	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard Agent Related				
1,4 Oxathiane	0/4	BCRL	0/1	BCRL
Dithiane	0/4	BCRL	0/1	BCRL

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

	Well 34002		Well 34515	
	Frequency of Detections	Range (geometric mean) µg/l	Frequency of Detections	Range (geometric mean) µg/l
Organosulfur Compounds,				
Herbicide Related				
Chlorophenylmethyl sulfide	0/4	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	1/4	3.8 (0.95)	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/4	BCRL	0/1	BCRL
Organonitrogen Compound				
Caprolactam	NA	NA	NA	NA
Organophosphorous Compounds,				
GB - Agent Related				
Diisopropylmethyl phosphonate	0/4	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/4	BCRL	0/2	BCRL
DBCP	0/4	BCRL	0/3	BCRL
Semivolatile Halogenated				
Organic Compounds				
Hexachlorocyclopentadiene	0/3	BCRL	0/3	BCRL
Organochlorine Pesticides				
Aldrin	0/4	BCRL	0/3	BCRL
Dieldrin	0/4	BCRL	0/3	BCRL
DDE	0/3	BCRL	0/3	BCRL
DDT	0/3	BCRL	0/3	BCRL
Endrin	0/4	BCRL	0/3	BCRL
Isodrin	0/4	BCRL	0/3	BCRL
Arsenic	0/4	BCRL	0/3	BCRL
Mercury	0/3	BCRL	0/1	BCRL
ICP Metals				
Cadmium	0/4	BCRL	0/3	BCRL
Chromium	0/4	BCRL	1/3	21 (7.1)
Copper	0/4	BCRL	1/3	17 (5.6)
Lead	0/4	BCRL	1/3	20 (6.8)
Zinc	4/4	22-130 (37)	1/3	77 (26)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 1 of 8.

	Well 03003		Well 03004		Well 03006		Well 03007	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organics								
1,1 Dichloroethane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
1,2 Dichloroethane	0/3	BCRL	1/3	0.91 (0.30)	0/2	BCRL	0/1	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
1,1,1 Trichloroethane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
1,1,2 Trichloroethane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Carbon tetrachloride	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Chlorobenzene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Chloroform	0/3	BCRL	1/3	4.6 (1.5)	0/2	BCRL	0/1	BCRL
Tetrachloroethylene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Trichloroethylene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Methylene Chloride	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Methylisobutyl Ketone	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Volatile Aromatic Organics								
Benzene	1/3	8.2 (2.7)	0/3	BCRL	0/2	BCRL	0/1	BCRL
Ethylbenzene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
m-Xylene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
o and p-Xylene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Toluene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard-Agent Related								
1,4 Oxathiane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Dithiane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 2 of 8.

	Well 03003		Well 03004		Well 03006		Well 03007	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Benzothiazole	0/1	BCRL	1/1	2.3(2.3)	0/1	BCRL	NA	NA
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Dimethylmethyl phosphonate	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Dibromochloropropane	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Organochlorine Pesticides								
Aldrin	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Dieldrin	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Endrin	1/3	0.058(0.019)	0/3	BCRL	0/2	BCRL	0/1	BCRL
Isodrin	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
DDT	0/3	BCRL	0/3	BCRL	0/2	BCRL	0/1	BCRL
Arsenic	1/3	7.2 (2.4)	1/2	8.1(4.0)	1/2	7.2 (3.6)	1/1	9.2 (9.2)
Mercury	1/3	0.25 (0.084)	0/2	BCRL	0/2	BCRL	0/1	BCRL
ICP Metals								
Cadmium	0/3	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Chromium	1/3	21 (6.9)	0/2	BCRL	1/2	6.9 (3.5)	0/1	BCRL
Copper	1/3	25 (8.4)	0/2	BCRL	0/2	BCRL	0/1	BCRL
Lead	0/3	BCRL	0/2	BCRL	1/2	28 (14)	0/1	BCRL
Zinc	1/3	100 (35)	2/2	39-52 (45)	1/2	82 (41)	1/1	32 (32)

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 3 of 8.

	Well 04008		Well 04009		Well 04011		Well 09003	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
1,2 Dichloroethane	0/2	BCRL	1/3	3.9 (1.3)	0/4	BCRL	0/4	BCRL
1,1 Dichloroethylene	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
1,1,1 Trichloroethane	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
1,1,2 Trichloroethane	0/2	BCRL	1/3	2.5 (0.84)	0/4	BCRL	0/4	BCRL
Carbon tetrachloride	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Chlorobenzene	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Chloroform	0/2	BCRL	0/3	BCRL	1/4	6.2 (1.5)	0/4	BCRL
Tetrachloroethylene	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Trichloroethylene	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Methylene Chloride	0/2	BCRL	1/3	21 (6.9)	0/4	BCRL	0/4	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Methylisobutyl ketone	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Volatile Aromatic Organics								
Benzene	0/2	BCRL	1/3	3.1 (1.0)	1/4	4.8 (1.2)	0/4	BCRL
Ethylbenzene	0/2	BCRL	3/3	14-28 (20)	0/4	BCRL	0/4	BCRL
m-Xylene	0/2	BCRL	2/2	45-100 (68)	0/4	BCRL	0/4	BCRL
o and p-Xylene	0/2	BCRL	3/3	53-110 (79)	0/4	BCRL	0/4	BCRL
Toluene	0/2	BCRL	3/3	1.9-5.2 (3.1)	0/4	BCRL	0/4	BCRL
Organosulfur Compounds, Mustard-Agent Related								
1,4 Oxathiane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Dithiane	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 4 of 8.

	Well 04008		Well 04009		Well 04011		Well 09003	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Organosulfur Compounds,								
Herbicide Related								
Chlorophenylmethyl sulfide	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Chlorophenylmethyl sulfone	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Chlorophenylmethyl sulfoxide	0/2	BCRL	0/2	BCRL	0/2	BCRL	0/2	BCRL
Benzothiazole	0/1	BCRL	1/1	1.5(1.5)	0/1	BCRL	0/1	BCRL
Organophosphorous Compounds,								
GB - Agent Related								
Diisopropylmethyl phosphonate	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
Dimethylmethyl phosphonate	0/2	BCRL	0/2	BCRL	0/3	BCRL	0/3	BCRL
Dibromochloropropane	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Organochlorine Pesticides								
Aldrin	1/2	0.15 (0.073)	0/3	BCRL	0/4	BCRL	0/4	BCRL
Dieldrin	0/2	BCRL	2/3	0.064-0.14 (0.064)	1/4	0.073 (0.018)	0/4	BCRL
Endrin	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
Isodrin	0/2	BCRL	0/3	BCRL	0/4	BCRL	0/4	BCRL
DDT	0/2	BCRL	1/3	0.19 (0.064)	0/4	BCRL	1/4	0.46 (0.11)
Arsenic	0/1	BCRL	2/2	15-22 (18)	3/4	12 - 15 (9.9)	0/3	BCRL
Mercury	0/1	BCRL	0/1	BCRL	0/2	BCRL	0/1	BCRL
ICP Metals								
Cadmium	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Chromium	0/1	BCRL	0/2	BCRL	0/4	BCRL	1/3	51 (17)
Copper	0/1	BCRL	1/2	13(6.5)	1/4	8.3 (2.1)	2/3	7.9 - 22 (8.9)
Lead	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Zinc	0/1	BCRL	1/2	30 (15)	1/4	32 (8.1)	2/3	22 - 23 (15)

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2. 4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 5 of 8.

	Well 09004		Well 28028		Well 33026		Well 33027	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organic Compounds								
1,1 Dichloroethane	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,2 Dichloroethane	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,1 Dichloroethylene	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
1,1,1 Trichloroethane	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
1,1,2 Trichloroethane	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Carbon tetrachloride	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Chlorobenzene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Chloroform	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Tetrachloroethylene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Trichloroethylene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Methylene Chloride	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Volatile Hydrocarbons								
Dicyclopentadiene	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Methylisobutyl ketone	0/1	BCRL	0/2	BCRL	0/1	BCRL	NA	
Volatile Aromatic Organics								
Benzene	0/1	BCRL	0/2	BCRL	0/4	BCRL	1/3	2.4 (0.80)
Ethylbenzene	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
m-Xylene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
o and p-Xylene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Toluene	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Organosulfur Compounds, Mustard-Agent Related								
1,4 Oxathiane	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Dithiane	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL

NA = *Not Analyzed*
BCRL = *Below Certified Reporting Limits*
(mean) = *Geometric Mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 6 of 8.

	Well 09004		Well 28028		Well 33026		Well 33027	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Organosulfur Compounds, Herbicide Related								
Chlorophenylmethyl sulfide	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfone	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Chlorophenylmethyl sulfoxide	0/1	BCRL	0/2	BCRL	0/2	BCRL	0/1	BCRL
Benzothiazole	NA	NA	0/1	BCRL	0/1	BCRL	NA	NA
Organophosphorous Compounds, GB - Agent Related								
Diisopropylmethyl phosphonate	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Dibromochloropropane	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Semivolatile Halogenated Organic Compounds								
Hexachlorocyclopentadiene	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Organochlorine Pesticides								
Aldrin	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Dieldrin	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Endrin	0/1	BCRL	0/2	BCRL	0/4	BCRL	0/3	BCRL
Isodrin	0/1	BCRL	0/2	BCRL	1/4	0.35 (0.088)	0/3	BCRL
DDT	0/1	BCRL	0/2	BCRL	0/3	BCRL	0/2	BCRL
Arsenic	1/1	4.6 (4.6)	0/1	BCRL	0/4	BCRL	0/3	BCRL
Mercury	0/1	BCRL	0/1	BCRL	0/1	BCRL	NA	
ICP Metals								
Cadmium	0/1	BCRL	0/1	BCRL	0/4	BCRL	0/3	BCRL
Chromium	0/1	BCRL	0/1	BCRL	0/4	BCRL	0/3	BCRL
Copper	0/1	BCRL	0/1	BCRL	0/4	BCRL	0/3	BCRL
Lead	0/1	BCRL	0/1	BCRL	0/4	BCRL	1/3	30 (9.8)
Zinc	0/1	BCRL	0/1	BCRL	2/4	22 - 45 (16)	2/3	24 - 78 (29)

NA = Not Analyzed
BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-2 Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area. Page 7 of 8.

	Well 33032		Well 33034		Well 34003	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organic Compounds						
1,1 Dichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,2 Dichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,1 Dichloroethylene	0/3	BCRL	0/2	BCRL	0/1	BCRL
1,1,1 Trichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
1,1,2 Trichloroethane	0/4	BCRL	0/3	BCRL	0/1	BCRL
Carbon tetrachloride	0/4	BCRL	0/3	BCRL	0/1	BCRL
Chlorobenzene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Chloroform	0/4	BCRL	0/3	BCRL	0/1	BCRL
Tetrachloroethylene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Trichloroethylene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Methylene Chloride	0/4	BCRL	0/3	BCRL	0/1	BCRL
Volatile Hydrocarbons						
Dicyclopentadiene	0/2	BCRL	0/2	BCRL	0/2	BCRL
Methylisobutyl ketone	0/2	BCRL	0/1	BCRL	0/1	BCRL
Volatile Aromatic Organics						
Benzene	2/4	1.9-3.8 (1.3)	1/3	3.01 (1.00)	0/1	BCRL
Ethylbenzene	0/4	BCRL	0/3	BCRL	0/1	BCRL
m-Xylene	0/4	BCRL	0/3	BCRL	0/1	BCRL
o and p-Xylene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Toluene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Organosulfur Compounds, Mustard-Agent Related						
1,4 Oxathiane	0/2	BCRL	0/1	BCRL	0/2	BCRL
Dithiane	0/2	BCRL	0/1	BCRL	0/2	BCRL

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2. 4-2 *Summary of Groundwater Analytical Results for the Confined Denver Formation Aquifer of the Western Study Area.* Page 8 of 8.

	Well 33032		Well 33034		Well 34003	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Organosulfur Compounds, Herbicide Related						
Chlorophenylmethyl sulfide	0/2	BCRL	0/1	BCRL	0/2	BCRL
Chlorophenylmethyl sulfone	0/2	BCRL	0/1	BCRL	0/2	BCRL
Chlorophenylmethyl sulfoxide	0/2	BCRL	0/1	BCRL	0/2	BCRL
Benzothiazole	0/1	BCRL	0/1	BCRL	0/1	BCRL
Organophosphorous Compounds, GB - Agent Related						
Diisopropylmethyl phosphonate	0/2	BCRL	0/1	BCRL	0/2	BCRL
Dimethylmethyl phosphonate	0/2	BCRL	0/1	BCRL	0/2	BCRL
Dibromochloropropane	0/4	BCRL	0/4	BCRL	0/2	BCRL
Semivolatile Halogenated Organic Compounds						
Hexachlorocyclopentadiene	0/4	BCRL	0/3	BCRL	0/1	BCRL
Organochlorine Pesticides						
Aldrin	0/4	BCRL	0/3	BCRL	0/2	BCRL
Dieldrin	0/4	BCRL	0/3	BCRL	0/2	BCRL
Endrin	0/4	BCRL	0/3	BCRL	0/2	BCRL
Isodrin	1/4	0.063 (0.016)	1/3	0.11 (0.038)	0/2	BCRL
DDT	0/4	BCRL	0/3	BCRL		
Arsenic	1/4	5.0 (1.2)	0/3	BCRL	0/2	BCRL
Mercury	0/1	BCRL	0/1	BCRL	0/1	BCRL
ICP Metals						
Cadmium	0/4	BCRL	0/3	BCRL	0/2	BCRL
Chromium	0/4	BCRL	0/3	BCRL	0/2	BCRL
Copper	2/4	8.3 - 22 (6.8)	0/3	BCRL	0/2	BCRL
Lead	0/4	BCRL	0/3	BCRL	0/2	BCRL
Zinc	2/4	32 - 66 (23)	0/3	BCRL	0/2	BCRL

BCRL = Below Certified Reporting Limits
(mean) = Geometric Mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.4-3 Summary of Groundwater Analytical Results for Tentatively Identified Compounds. Page 1 of 2.

	Well 04009		Well 04014		Well 04021	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organics						
1,1,2,2 Tetrachloroethane	ND		1	16	1	6.4
Volatile Aromatic Organics						
Ethylbenzene	1	16	ND		ND	
Xylene	2	36-76 (52)	ND		ND	
Organonitrogen Compounds						
Caprolactam	1	2100	1	740	1	1100
Polynuclear Aromatic Hydrocarbons						
Methyl napthalene	2	16-34 (23)	ND		ND	

ND = *Not Detected*
(mean) = *geometric mean including value for BCRL data*
µg/l = *micrograms per liter*

Table WSA 2.4-3 Summary of Groundwater Analytical Results for Tentatively Identified Compounds. Page 2 of 2.

	Well 04027		Well 09002		Well 33063	
	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l	Frequency of Detections	Range (mean) µg/l
Volatile Halogenated Organics						
1,1,2,2 Tetrachloroethane	ND		ND		ND	
Volatile Aromatic Organics						
Ethylbenzene	ND		ND		ND	
Xylene	ND		ND		ND	
Organonitrogen Compounds						
Caprolactam	1	670	1	940	1	2200
Polynuclear Aromatic Hydrocarbons						
Methyl naphtalene	ND		ND		ND	

ND = Not Detected
(mean) = geometric mean including value for BCRL data
µg/l = micrograms per liter

Table WSA 2.5-1 Contamination Classification of Western Study Area Structures. Page 1 of 5.

Structure Number	Section	Structure Function	Year Built	Contamination Classification*
141	4	West Gate security building	1942	3
143	4	West Gate guard house	1942 (new one built 1962)	3
149	4	Engineering/security	1949 (moved to RMA)	3
150	34	Tennis courts	1951	3
151	34	Barracks	1942	3
154	34	Barracks-foundation	1942	3
155	34	Barracks/classroom-foundation	1942	3
158	34	Officers/NCO Club-foundation	1942	3
162	34	NCO/family housing-foundation	1942	3
164	34	Barracks/family housing-foundation	1942	3
167	34	Recreation/supply room/library/ hobby shop	1942	3
169B	34	Gas station house-foundation	1942	3
176	3	Garage and apartments-foundation	Pre-RMA	3
379	3	Chlorinating Station	1942	2
382	3	Chlorinating Station	1942	2
385	4	Process water pump house	1954	2
386	4	Process water pump house	1954	2
387	4	Process water pump house	1956	2

*1 = Suspected to be contaminated
2 = Suspected to be contaminated but cleanable
3 = Uncontaminated

Table WSA 2.5-1 Contamination Classification of Western Study Area Structures. Page 2 of 5.

Structure Number	Section	Structure Function	Year Built	Contamination Classification*
393	34	Sewage lift station	1942	2
394	33	West Gate septic tank	1942	2
605	3	Flammable materials storage	1957	2
606	3	Flammable materials storage	1957	2
607	3	Flammable materials storage	1957	2
608	3	Flammable materials storage	1957	2
611	4	Depot office/data processing	1942	3
612	4	Depot infirmary/office	1942	3
613	4	Fire station/office	1942	3
614	3	Warehouse	1942	2
615	3	Warehouse	1942	2
616	3	Warehouse	1942	2
617	3	Warehouse	1942	2
618	3	Offices and warehouse	1942	2
619	3	Warehouse	1942	2
621	4	Offices/salvage office	1942	2
621A	4	Truck scale platform	1957	2
622	4	Paint shop/storage	1942	2
623	4	Carpenter shop/hobby shop auto repair garage	1942	2
624	4	Fifth Echelon vehicle repair/ storage	1942	2

*1 = Suspected to be contaminated
2 = Suspected to be contaminated but cleanable
3 = Uncontaminated

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Rev. 04/04/89
WSAR 3.1/Rev.

Table WSA 2.5-1 Contamination Classification of Western Study Area Structures.
Page 3 of 5.

Structure Number	Section	Structure Function	Year Built	Contamination Classification*
625	4	Warehouse	1942	2
626	4	Machine/welding shop-foundation	1942	2
626C	4	Heavy equipment shop-foundation	1947	2
627	4	Vehicle maintenance shop	1942	2
627B	4	Flammable materials/pesticide storage	1948	2
628A	4	Diesel/waste oil tank	1942	1
629	4	Motor pool service station	1943	2
629A-C	4	Diesel oil/gasoline tank	1942	1
619-D	4	Diesel oil tank	1942	1
629-E	4	Service station shelter	1942	2
630	3	Gas meter house	1953	2
631	4	Railcar maintenance/roundhouse	1942	2
631A	4	Flammable materials storage	1952	2
632	4	Heating plant	1942	2
633	4	Cafeteria/agricultural research laboratory/storage	1942	2
633A	4	Cafeteria storage/laboratory/ lunchroom/storage	1942	2
633B	4	Plant pathology laboratory/ greenhouse/hazardous materials storage	1948-1951	2
634	4	Flammable materials storage	1942	2
635	3	Locker room/office	1942	3

*1 = Suspected to be contaminated
2 = Suspected to be contaminated but cleanable
3 = Uncontaminated

1004Z/1016A
Rev. 04/04/89
WSAR 3.1/Rev.

Table WSA 2.5-1 Contamination Classification of Western Study Area Structures. Page 4 of 5.

Structure Number	Section	Structure Function	Year Built	Contamination Classification*
639	4	Lumber storage/carpenter shop	1952	2
641	3	Warehouse-foundation	1942	2
643	3	Magazine/flammable materials storage	1942	2
644	3	Quarters-foundation	Pre-RMA	3
644A	3	Garage/storage-foundation	Pre-RMA	3
646	4	Pesticide storage and mixing for rodent control-foundation	1951	2
647A	4	Motor pool dispatch office	1942	3
647B	4	Motor pool vehicle shelter	1942	2
647C	4	Motor pool vehicle shelter	1942	2
647D	4	Motor pool vehicle shelter	1942	2
648	4	Road oil pump and boiler house	1942	2
648A	4	Road oil tank	1942	1
648B	4	Road oil tank	1942	1
673	3	Railroad scale house/storage	1949	2
680	9	Communication building-foundation	c.1958	3
684	3	Guard house-foundation	1943	3
685	3	Guard house-foundation	1943	3
688	3	Guard house-foundation	1943	3
809	33	Irondale groundwater treatment facility	**	1
NN0301	3	Metal Shed-N of 618	**	2

*1 = Suspected to be contaminated
2 = Suspected to be contaminated but cleanable
3 = Uncontaminated
** = Date of construction not located

1004Z/1016A
Rev. 04/04/89
WSAR 3.1/Rev.

Table WSA 2.5-1 Contamination Classification of Western Study Area Structures. Page 5 of 5.

Structure Number	Section	Structure Function	Year Built	Contamination Classification*
NN0302	3	Metal Shed-N of 619	**	2
NN0303	3	Metal Shed-N of 619	**	2
NN0304	3	Metal Shed-N of 619	**	2
NN0901	9	Concrete structure-1300' SE of 6th & A streets	**	3
NN0902	9	Survey Tower-N of Post Office facility	**	3
NN0903	9	VORTAC station	**	3
NN28	28	Two groundwater treatment wells-Irondale facility	**	1
NN33	33	45 groundwater treatment wells-Irondale facility	**	1
PR04	4	Pipe runs in Section 4	**	1

*1 = Suspected to be contaminated
2 = Suspected to be contaminated but cleanable
3 = Uncontaminated
** = Date of construction not located

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Rev. 04/04/89
WSAR 3.1/Rev.

Table WSA 2.6-1 Airborne Contaminant Distribution. Page 1 of 1.

PARAMETER	AQ1, West Boundary	AQ7, East of Railyard
Total Suspended Particulates (TSP)		
No. of Sampling Events	60	55
Annual Geometric Average (ug/m^3)	47	33
Range of Individual 24 Hr Samples (ug/m^3)	7.1-140	6.2-100
Asbestos		
No. of Sampling Events	31	0
Annual Geometric Average (f/cc)	less than 0.01	—
Range of Individual 8 Hr Samples (f/cc)	less than 0.01	—
Metals		
No. of Sampling Events	12	0
Range of Individual Samples		
Cadmium	0.002-0.005	—
Chromium	0.003-0.006	—
Copper	0.044-0.36	—
Lead	0.010-0.057	—
Zinc	10	—
Arsenic	Not Observed	—
Mercury	Not Observed	—

1004Z/1016A
Rev. 04/04/89
WSAR 3.1/Rev.

Table WSA 2.7-1. Certified Reporting Limits for Biota Analysis Methods.
Page 1 of 1.

USATHAMA Method Code	Matrix Type	Analyte	CRL
B-6	Animals and Plants	Arsenic	0.250
C-6	Animals and Plants	Mercury	0.050
D-6	Plants	Aldrin	0.022
		Dieldrin	0.044
		Endrin	0.040
E-6A	Animals	Aldrin	0.020
		Dieldrin	0.031
		Endrin	0.040
F-6A	Animals	DDE	0.094
		DDT	0.29

Source: ESE, 1989.

Table WSA 2.7-2 Contaminant Levels in Terrestrial Ecosystems - Samples of Species Ranging Across the Western Study Area. Page 1 of 2.

Species	Tissue	Location	Contaminant Level in parts per million (mg/kg wet weight basis) (Range/mean*)						
			Arsenic (n/nt)	Mercury (n/nt)	Aldrin (n/nt)	Dieldrin (n/nt)	Endrin (n/nt)	DDE (n/nt)	DDT (n/nt)
VERTEBRATES									
Ring-necked Pheasant	Juvenile Carcass	RMA	LT 0.25-1.8 (3/11)	BCRL (11)	BCRL (12)	LT 0.03-1.3 (3/12)	BCRL (12)	BCRL (11)	BCRL (11)
	Adult Carcass	RMA	BCRL (4)	BCRL (4)	BCRL (4)	LT 0.03-2.9 (3/4) 0.77	BCRL (4)	BCRL (3)	BCRL (3)
	Juvenile Carcass	Offpost Control	LT 0.25-1.4 (2/11)	BCRL (11)	BCRL (14)	LT 0.031-19 (1/14)	BCRL (14)	LT 0.094-1.3 (1/12)	BCRL (12)
	Adult Carcass	Offpost Control	BCRL (2)	BCRL (2)	BCRL (3)	BCRL (3)	BCRL (3)	BCRL (2)	BCRL (2)
	Egg	RMA	BCRL (10)	BCRL (11)	BCRL (11)	LT 0.031-5.6 (9/11) 1.1	LT 0.40-0.14 (1/11)	BCRL (10)	BCRL (10)
	Muscle**	RMA	LT 0.25-4.1 (2/20)	BCRL (20)	BCRL (20)	LT 0.018-0.063 (2/20)	BCRL (20)	BCRL (20)	BCRL (20)
		Offpost Control	BCRL (2)	BCRL (8)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)
	Liver**	RMA	NRQ	NRQ	BCRL (6)	LT 0.018-2.3 (4/6) 0.66	BCRL-0.091 (1/6)	BCRL-0.44 (1/6)	BCRL
		Offpost Control	NRQ	NRQ	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL
	Egg	Offpost Control	BCRL (10)	BCRL (11)	BCRL (11)	BCRL (11)	BCRL (11)	BCRL (10)	BCRL (10)

* Mean is calculated when 50 percent or more of samples have detectable contaminant levels. If less than 50 percent of samples have detectable contaminant levels, only the range of values are presented. When calculating the mean, values of 1/2 the detection limit are substituted for samples that are below detection limit.

BCRL Below Certified Reporting Limit

LT Less Than

NRQ Not Requested

n = Number of samples analyzed that contain detectable contaminant levels, nt = number of samples

** RMA Sample

SOURCE: ESE, 1989

Table WSA 2.7-2 Contaminant Levels in Terrestrial Ecosystems - Samples of Species Ranging Across the Western Study Area. Page 2 of 2.

Species	Tissue	Location	Contaminant Level in parts per million (mg/kg wet weight basis) (Range/mean*)						
			Arsenic (n/nt)	Mercury (n/nt)	Aldrin (n/nt)	Dieldrin (n/nt)	Endrin (n/nt)	DDE (n/nt)	DDT (n/nt)
American Kestrel	Juvenile Carcass	RMA	NRQ	BCRL (10)	BCRL (10)	LT 0.031-1.0 (6/10) 0.32	BCRL (10)	LT 0.094-0.22 (1/10)	BCRL (10)
	Juvenile Carcass	Offpost Control	NRQ	BCRL (8)	BCRL (8)	BCRL (8)	BCRL (8)	LT 0.094-0.73 (1/6)	BCRL (8)
	Egg	RMA	NRQ	LT 0.05-0.41(8/34)	BCRL (33)	LT 0.031-3.6 (17/33) GT 0.51	BCRL (33)	LT 0.094-1.3 (1/29)	BCRL (29)
	Egg	Offpost Control	NRQ	LT 0.05-0.057(1/11)	BCRL (11)	BCRL (11)	BCRL (11)	LT 0.094-1.0 (2/11)	BCRL (11)
Mule Deer	Liver	RMA	BCRL (14)	BCRL (14)	BCRL (14)	LT 0.03-0.19(1/14)	BCRL (14)	NRQ	NRQ
	Liver	Offpost Control	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	NRQ	NRQ
	Muscle	RMA	BCRL (14)	BCRL (14)	BCRL (14)	BCRL (14)	BCRL (14)	NRQ	NRQ
	Muscle	Offpost Control	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	NRQ	NRQ

* Mean is calculated when 50 percent or more of samples have detectable contaminant levels. If less than 50 percent of samples have detectable contaminant levels, only the range of values are presented. When calculating the mean, values of 1/2 the detection limit are substituted for samples that are below detection limit.

BCRL Below Certified Reporting Limit
GT Greater Than
LT Less Than
n = Number of samples analyzed that contain detectable contaminant levels, nt = number of samples
NRQ Not Requested
** MKE Sample

SOURCE: ESE, 1989

Table WSA 2.7-3 Contaminant Levels in Terrestrial Ecosystems - Samples of Chance and USFWS Supplemental Samples of Species Ranging Across the Western Study Area. Page 1 of 2.

Species	Tissue	Location	Contaminant Level in parts per million (mg/kg wet weight basis) (Range/mean*)						
			Arsenic (n/nt)	Mercury (n/nt)	Aldrin (n/nt)	Dieldrin (n/nt)	Endrin (n/nt)	DDE (n/nt)	DDT (n/nt)
Mourning Dove	Carcass	RMA	BCRL (2)	BCRL (2)	LT 0.63-1.8 1.2	5.6-56 (2/2) 31	LT 0.80-3.4 (1/2) 2.0	BCRL (2)	BCRL (2)
	Liver	RMA	BCRL (1)	BCRL (1)	BCRL (1)	7.4	3.7	BCRL (1)	BCRL (1)
Bald Eagle	Egg	Barr Lake	BCRL	0.099	BCRL (1)	0.81 (1)	BCRL (1)	6.9 (1)	BCRL (1)
Golden Eagle	Liver	RMA	NRQ	LT 0.05-0.22 (1/2) 0.12	BCRL (2)	LT 0.031-0.22 (1/2) 0.12	BCRL (2)	BCRL (2)	BCRL (2)
	Brain	RMA	BCRL (2)	LT 0.098-0.26 (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)	BCRL (2)
Ferruginous Hawk	Liver	RMA	BCRL (5)	LT 0.05-0.29 (1/5)	BCRL (5)	0.26-4.8 (5/5) 2.7	BCRL (5)	BCRL (5)	BCRL (5)
	Brain	RMA	BCRL (5)	LT 0.05-0.15 (1/5)	BCRL (5)	LT 0.24-10 (4/5) 5.1	BCRL (5)	BCRL (5)	BCRL (5)
Red-tailed Hawk	Liver	RMA	BCRL (3)	LT 0.05-0.35 (1/3)	BCRL (3)	0.52-6.6 (3/3) 4.1	BCRL (3)	LT 0.31-0.76 (2/3) 0.48	BCRL (3)
	Brain	RMA	BCRL (3)	LT 0.05-0.093 (1/3)	BCRL (3)	LT 0.75-9.4 (2/3) 6.3	BCRL (3)	BCRL (3)	BCRL (3)
Great-horned	Liver	RMA	BCRL (4)	LT 0.05-0.086 (2/4) 0.047	BCRL (4)	0.14-28 (4/4) 12	BCRL (4)	LT 0.094-16 (3/4) 5.9	BCRL (4)
	Brain	RMA	BCRL (4)	BCRL (4)	BCRL (4)	LT 0.18-16 (3/4) 8.80	BCRL (4)	LT 0.53-10 (3/4) 3.3	BCRL (4)

* Mean is calculated when 50 percent or more of samples have detectable contaminant levels. If less than 50 percent of samples have detectable contaminant levels, only the range of values are presented. When calculating the mean, values of 1/2 the detection limit are substituted for samples that are below detection limit.

BDRL Below Certified Reporting Limit

LT Less Than

n = Number of samples analyzed that contain detectable contaminant levels, nt = number of samples

NRQ Not Requested

SOURCE: ESE, 1989

Table WSA 2.7-3 Contaminant Levels in Terrestrial Ecosystems - Samples of Chance and USFWS Supplemental Samples of Species Ranging Across the Western Study Area. Page 2 of 2.

Species	Tissue	Location	Contaminant Level in parts per million (wet weight basis) (Range/mean*)						
			Arsenic (n/nt)	Mercury (n/nt)	Aldrin (n/nt)	Dieldrin (n/nt)	Endrin (n/nt)	DDE (n/nt)	DDT (n/nt)
Northern Harrier	Egg	RMA	BCRL (2)	BCRL (2)	BCRL (2)	0.10-0.68 (2) 0.49	BCRL (2)	BCRL (2)	BCRL (2)
Coyote	Liver	RMA	BCRL (1)	BCRL (1)	BCRL (1)	1.0 (1)	BCRL (1)	BCRL (1)	BCRL (1)
Badger	Liver	RMA	BCRL (1)	BCRL (1)	BCRL (1)	1.0 (1)	BCRL (1)	NRQ	NRQ
	Kidneys	RMA	NRQ	NRQ	BCRL (1)	0.80 (1)	BCRL (1)	NRQ	NRQ

* Mean is calculated when 50 percent or more of samples have detectable contaminant levels. If less than 50 percent of samples have detectable contaminant levels, only the range of values are presented. When calculating the mean, values of 1/2 the detection limit are substituted for samples that are below detection limit.

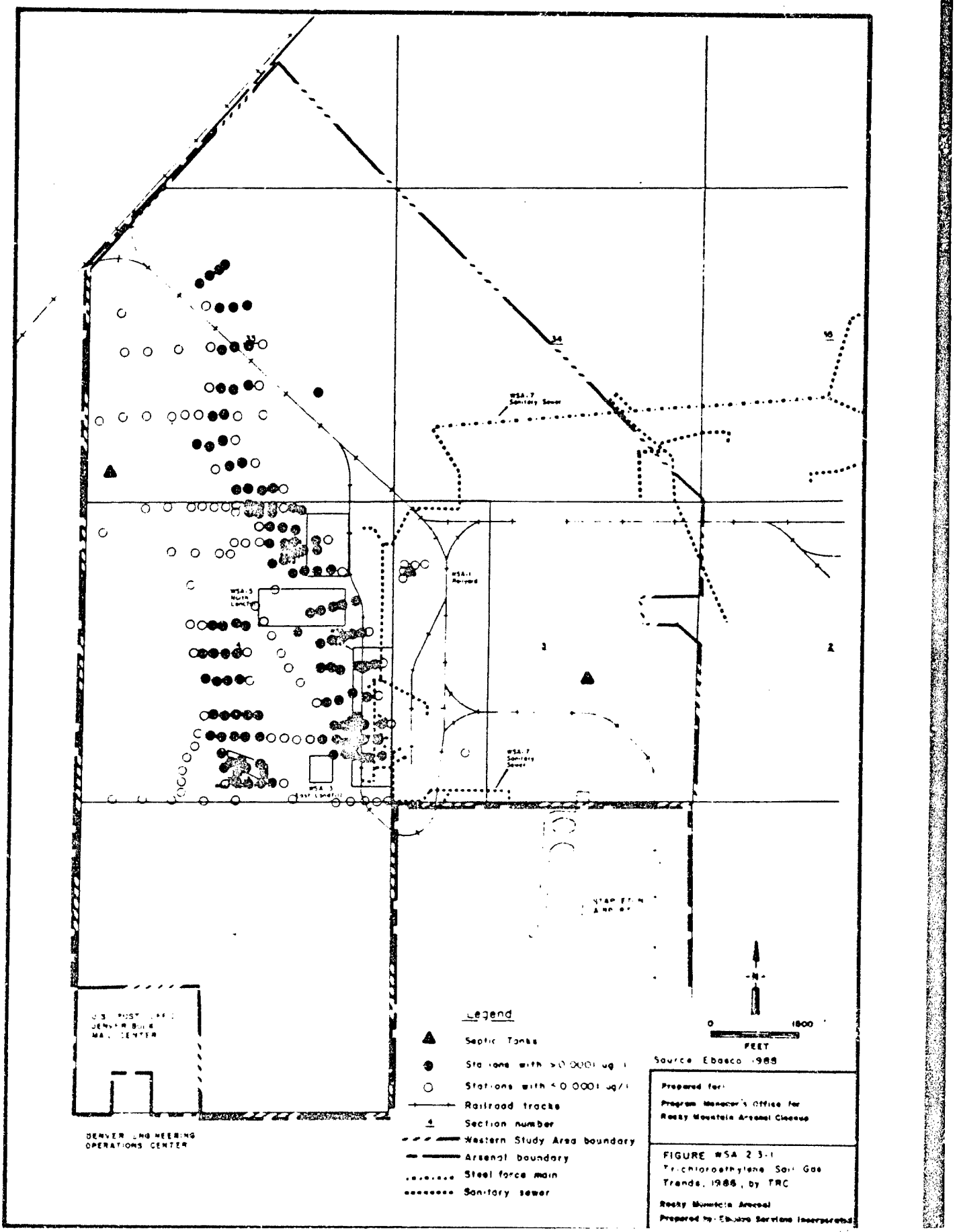
BDRL Below Certified Reporting Limit

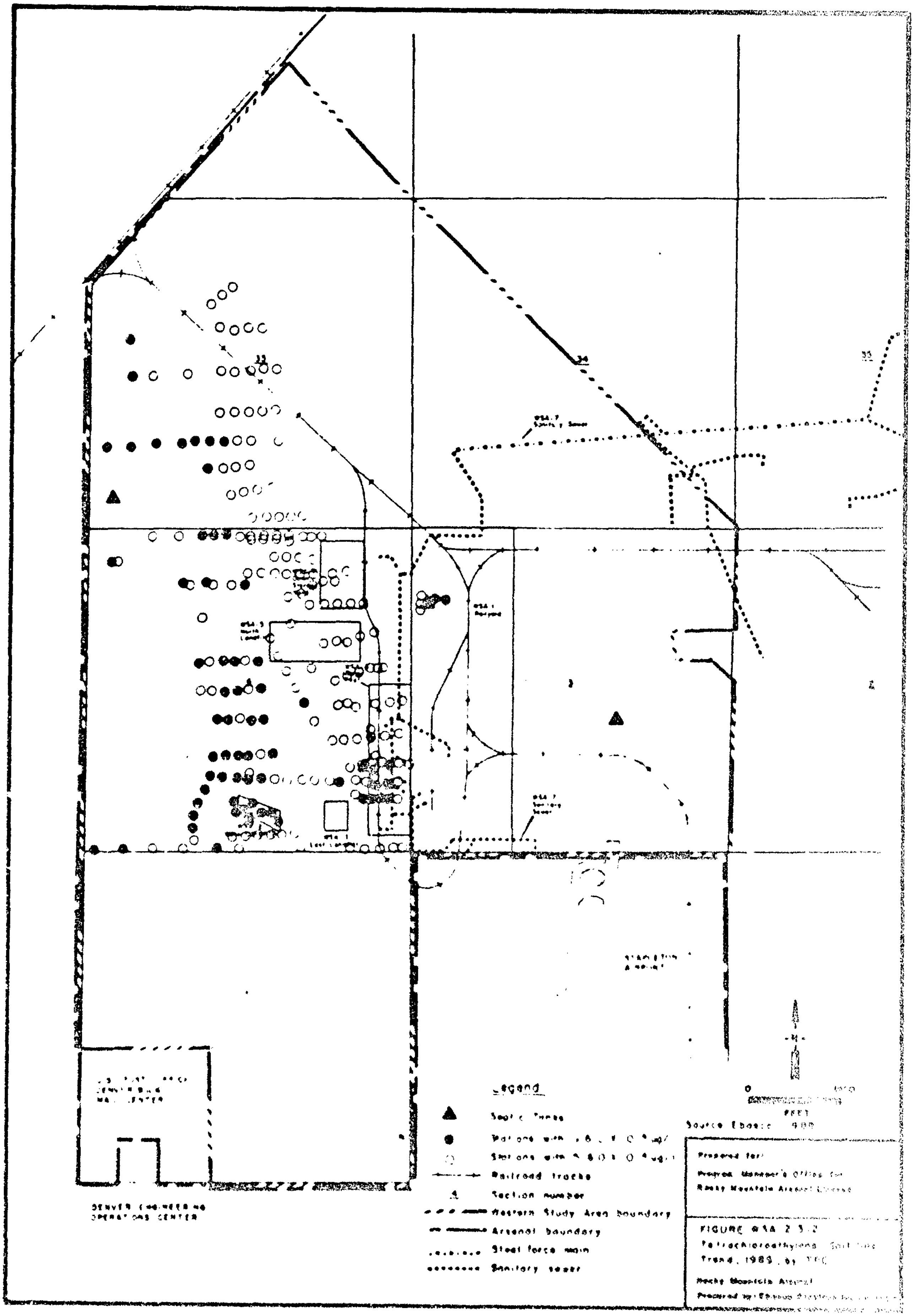
LT Less Than

n = Number of samples analyzed that contain detectable contaminant levels, nt = number of samples

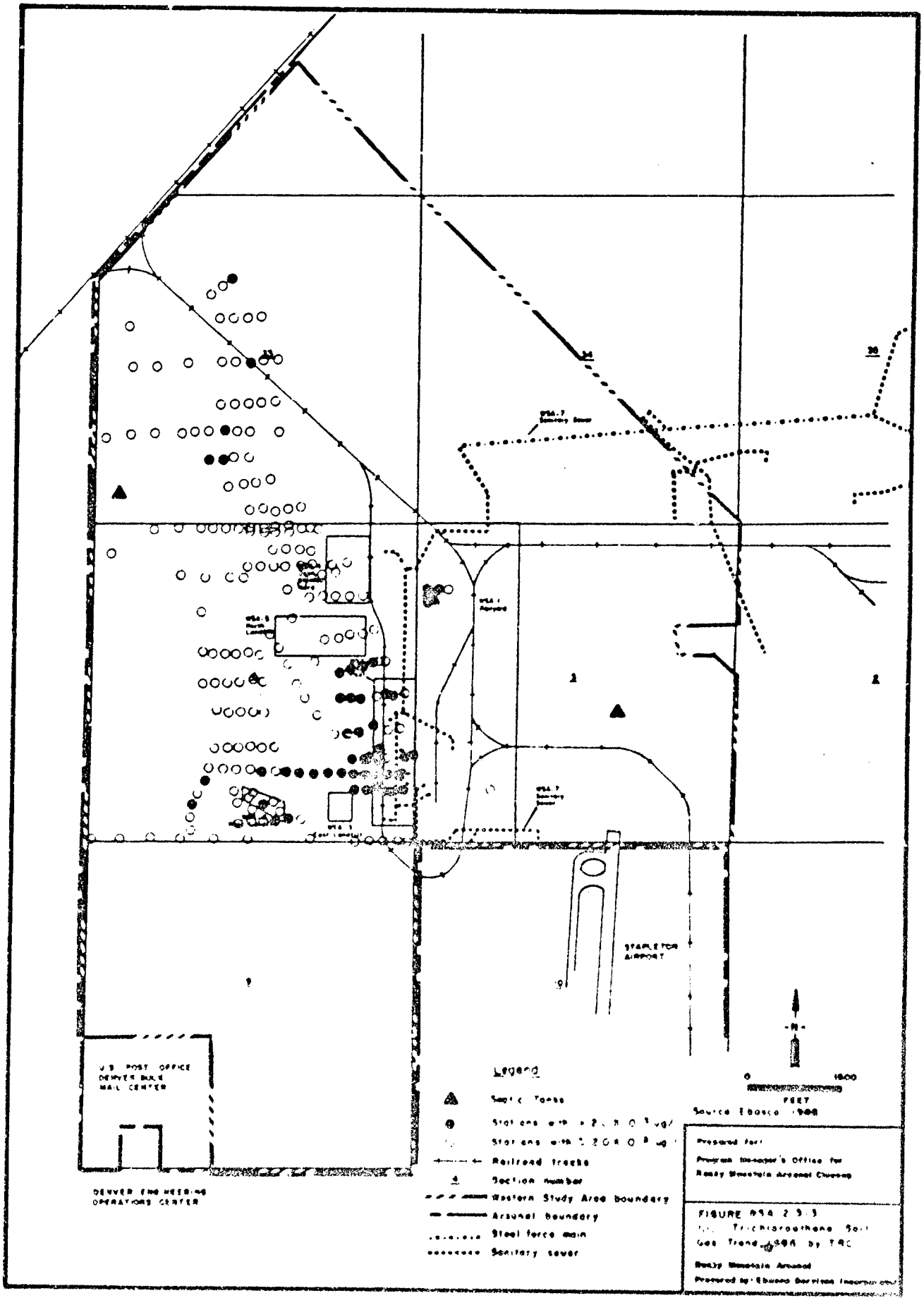
NRQ Not Requested

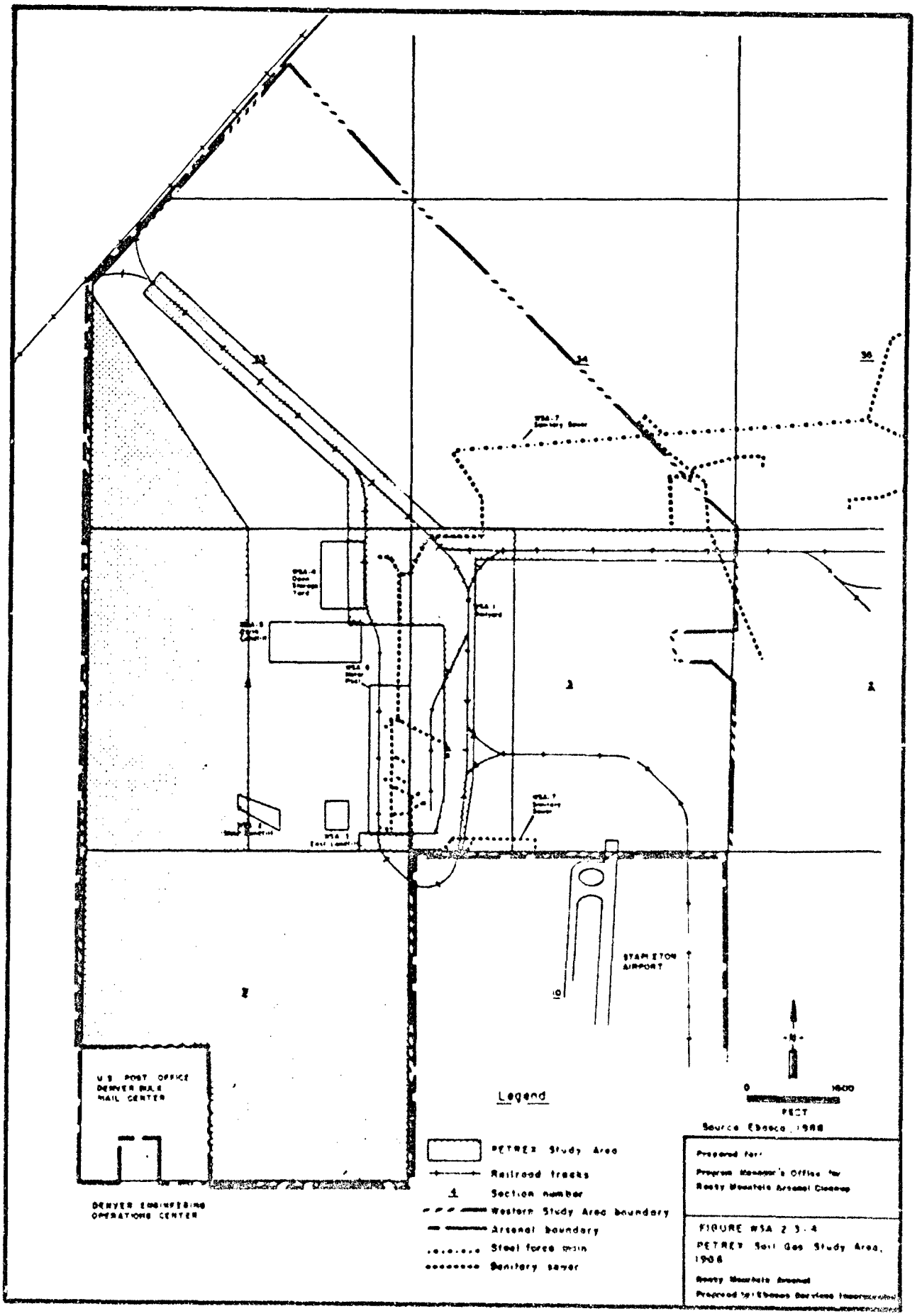
SOURCE: ESE, 1989

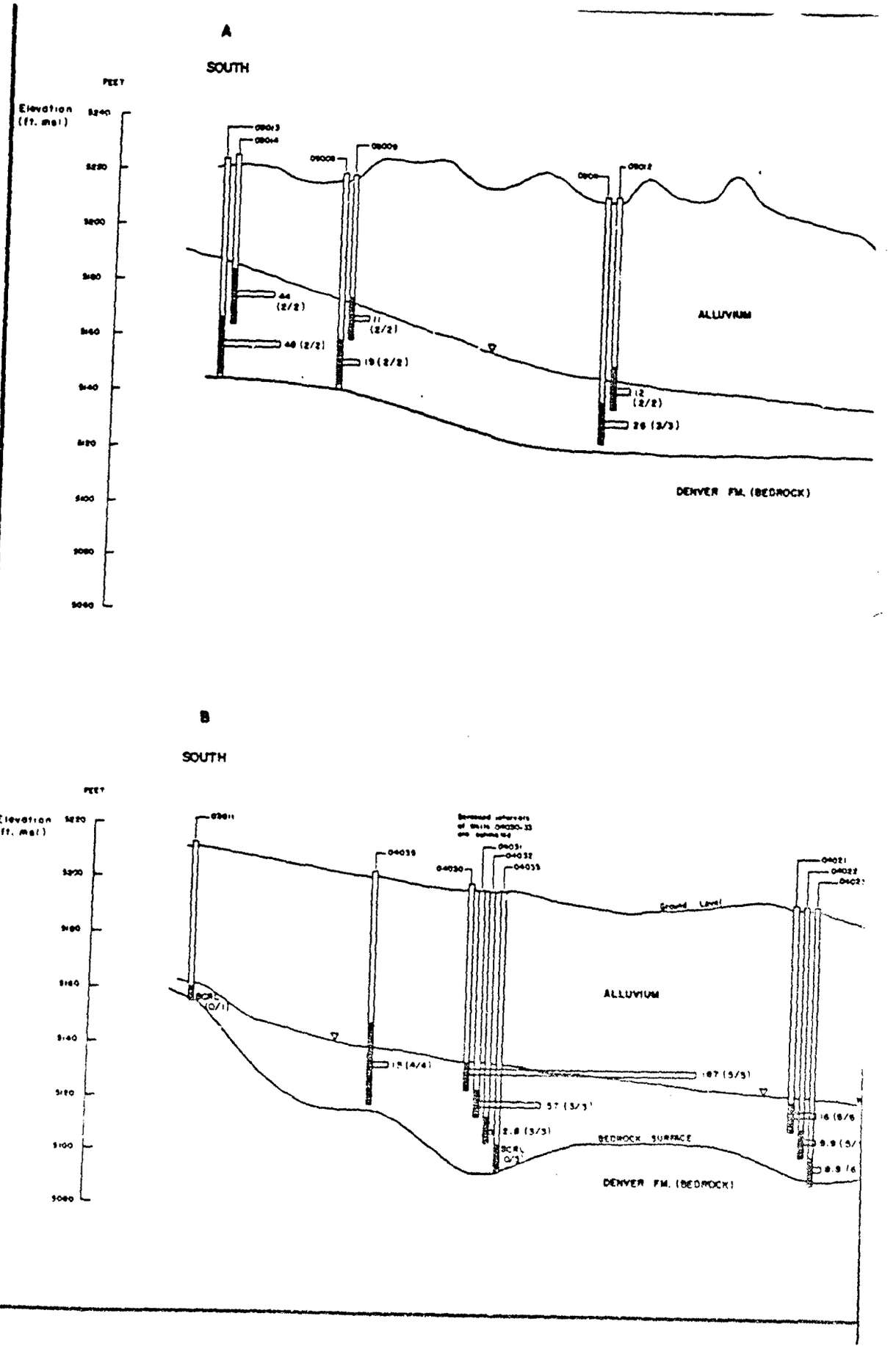

WSA-7 Sanitary Sewer
WSA-1 Railroad
WSA-3 North Landfill
WSA-3 East Landfill
WSA-7 Sanitary Sewer
DENVER ENGINEERING OPERATIONS CENTER
Legend
Septic Tanks
Stations with >0.0001 ug/l
Stations with <0.0001 ug/l
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
N
0
1800
FEET
Source Ebasco 1988
Prepared for:
Program Manager's Office for Rocky Mountain Arsenal Cleanup
FIGURE WSA 2 3-1
Trichloroethylene Soil Gas Trends, 1988, by TRC
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated

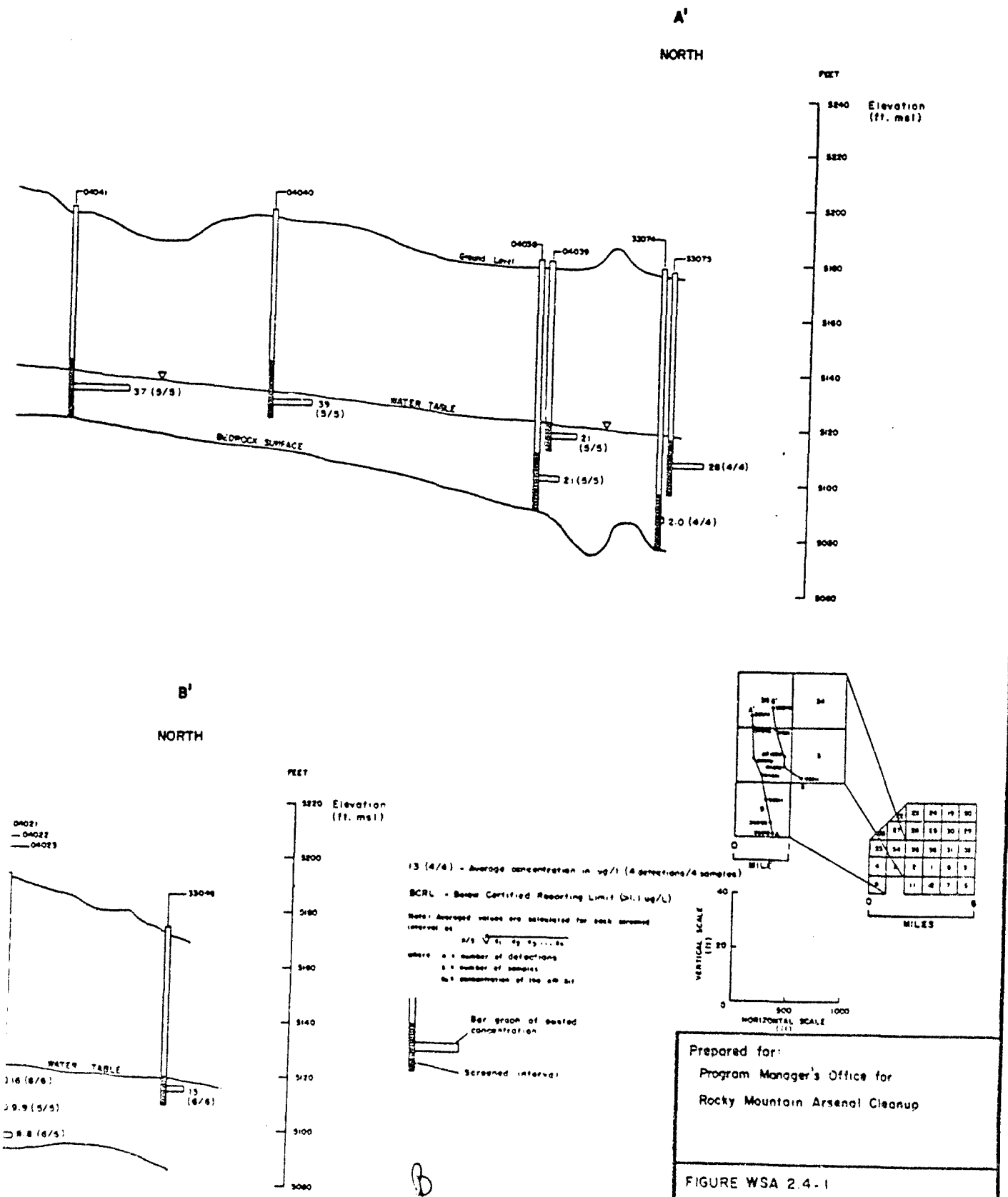


Legend
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
FEET
Prepared for:
FIGURE WSA 2.3-2
Trend, 1989


STAPLETON AIRPORT
U.S. POST OFFICE
DENVER BULK
MAIL CENTER
DENVER ENGINEERING
OPERATIONS CENTER
Legend
Septic Tanks
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
-N-
0
1800
FEET
Source Ebasco 1988
Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
FIGURE 4S4.2.5.3
Trichloroethene Soil
Gas Trend 1986 by TRC
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated


32
34
36
1
2
3
STAPLETON AIRPORT
U S POST OFFICE
DENVER MAIL
MAIL CENTER
DENVER ENGINEERING
OPERATIONS CENTER
Legend
PETREX Study Area
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel fence main
Sanitary sewer
N
0
1600
FEET
Source Ebasco, 1988
Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
FIGURE WSA 2 3-4
PETREX Soil Gas Study Area,
1988
Rocky Mountain Arsenal
Prepared by Ebasco Services Incorporated


A
SOUTH
FEET
Elevation (ft. msl)
5240
5220
5200
5180
5160
5140
5120
5100
5080
5060
ALLUVIUM
DENVER FM. (BEDROCK)
B
SOUTH
FEET
Elevation (ft. msl)
5220
5200
5180
5160
5140
5120
5100
5080
Ground Level
ALLUVIUM
BEDROCK SURFACE
DENVER FM. (BEDROCK)



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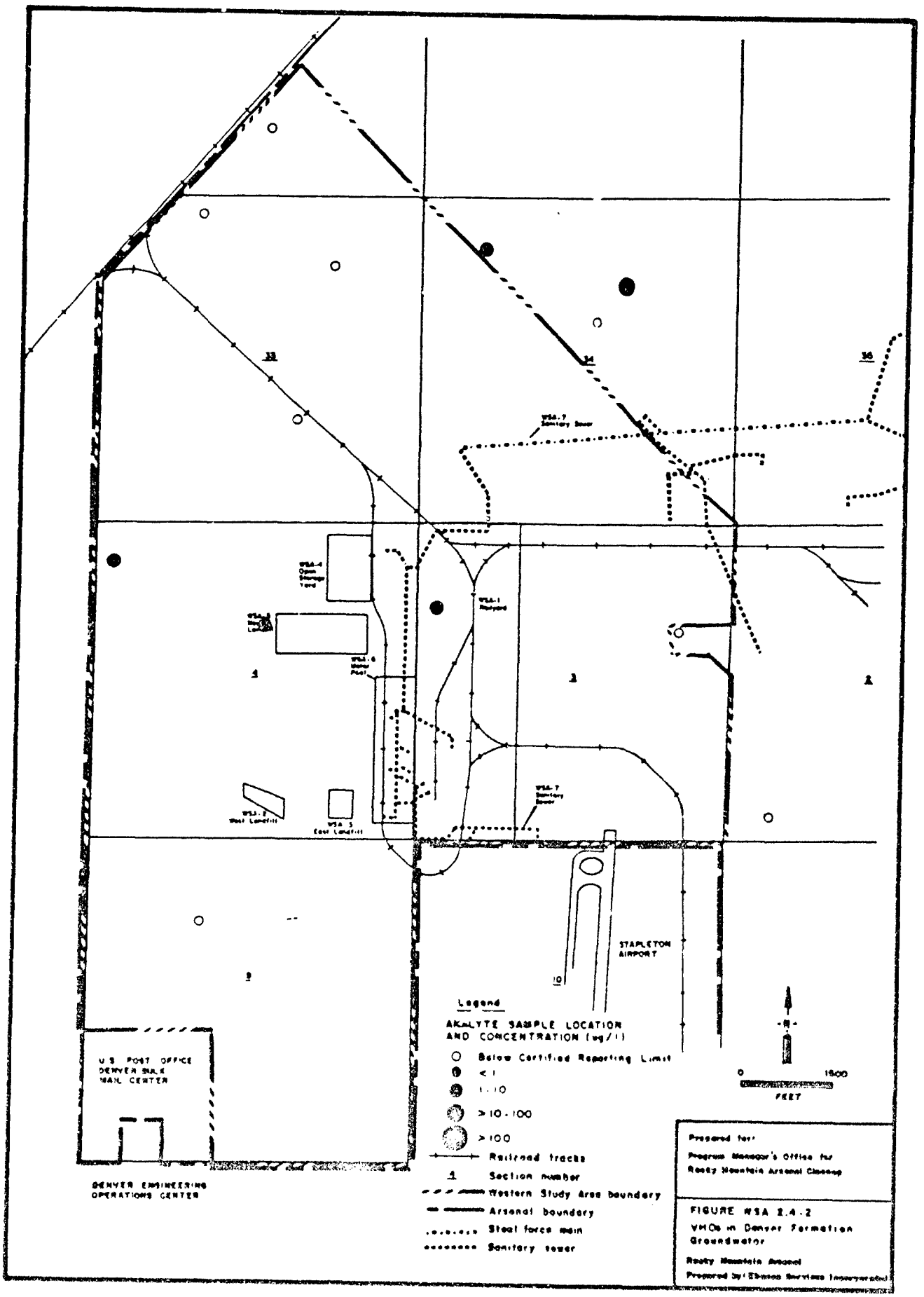
Rocky Mountain Arsenal Cleanup

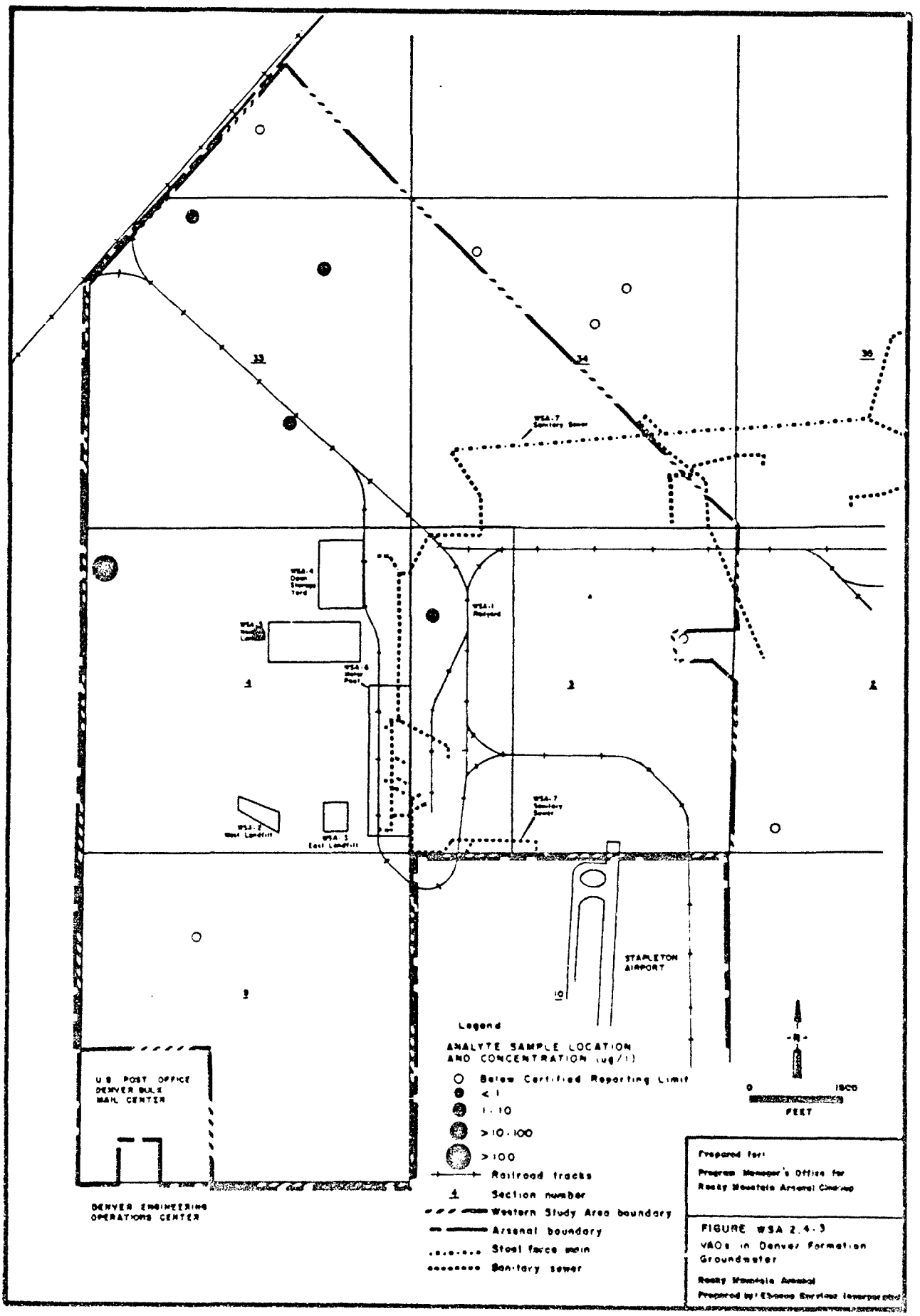
FIGURE WSA 2.4-1

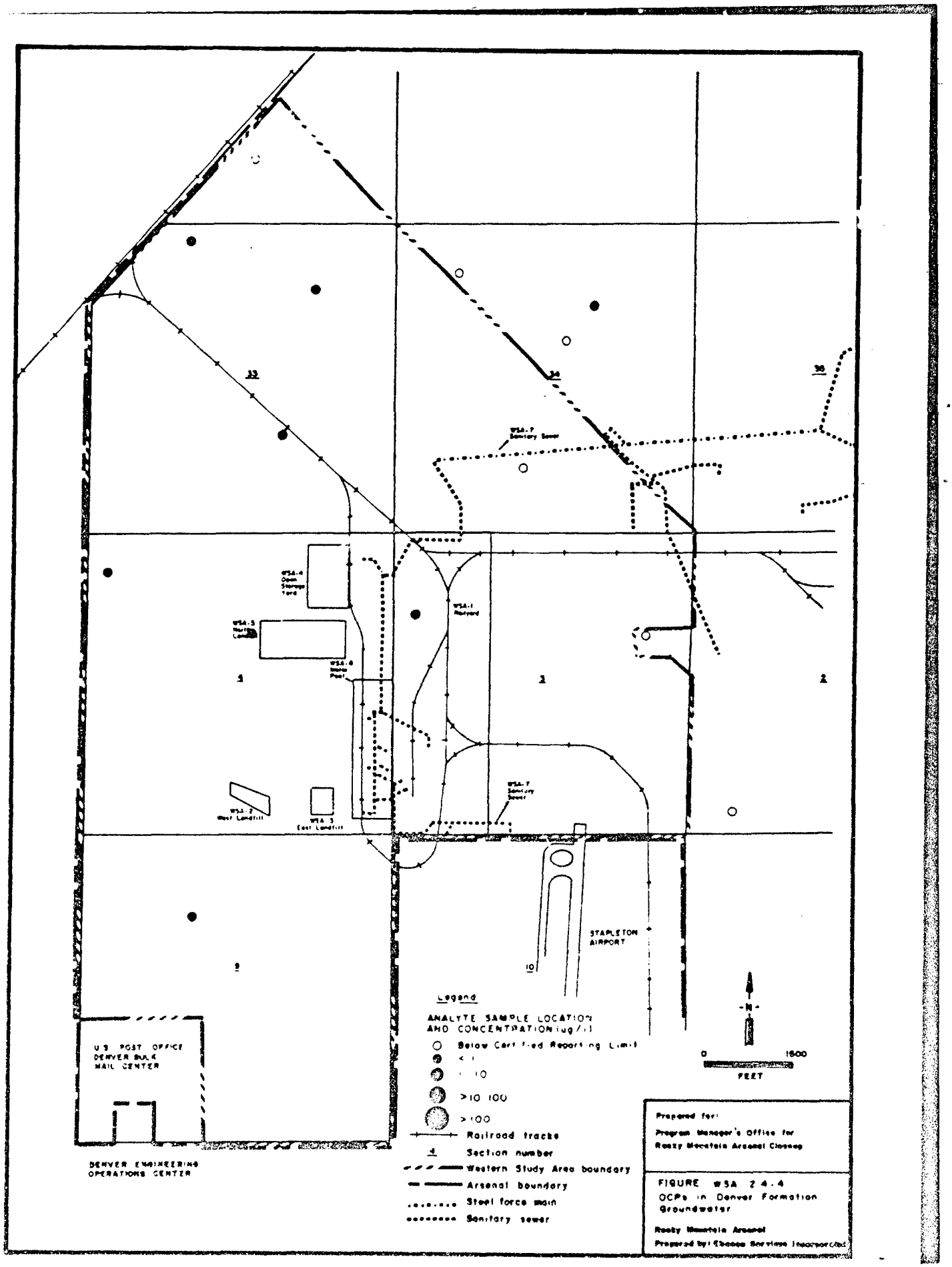
Vertical Distribution of Trichloroethylene in the Unconfined Aquifer

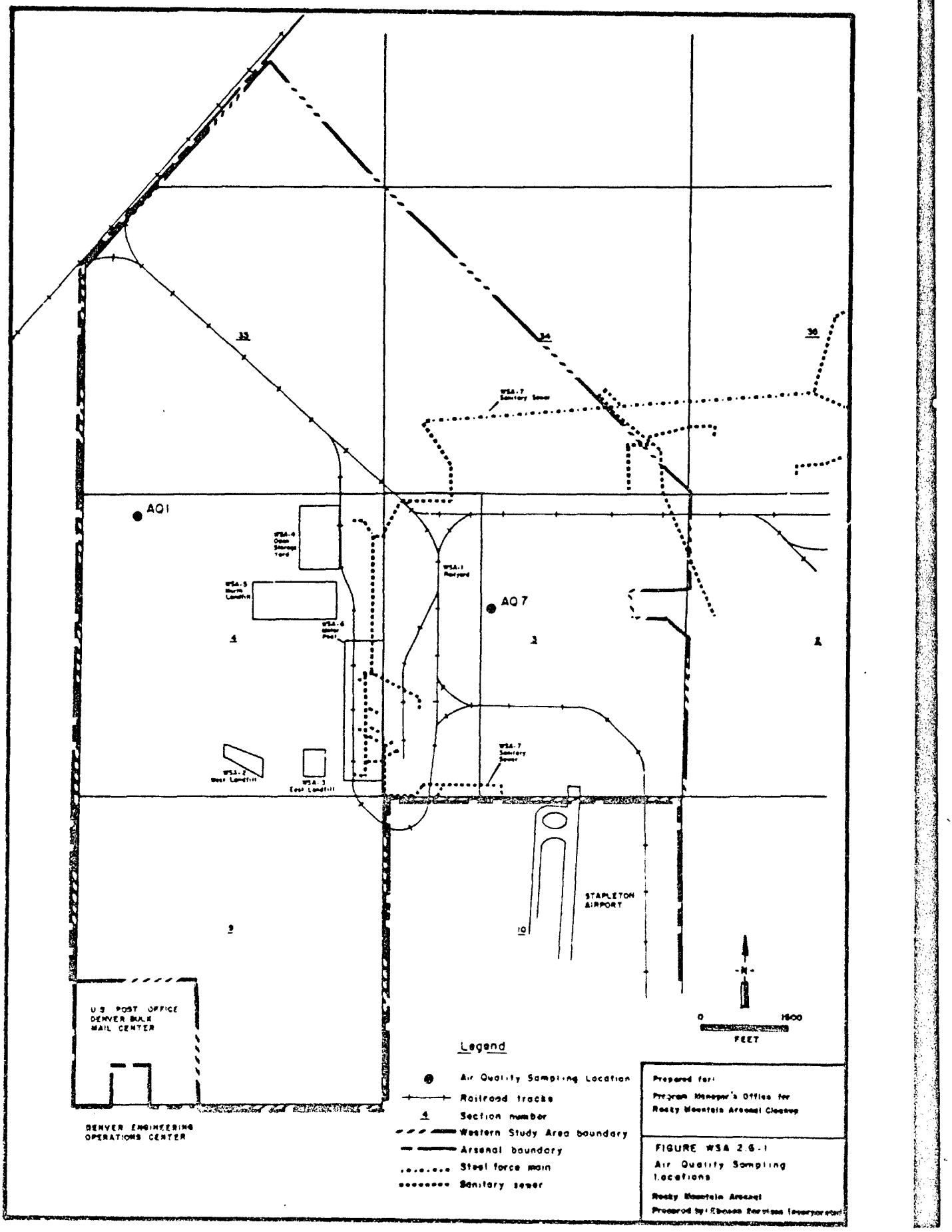
Rocky Mountain Arsenal

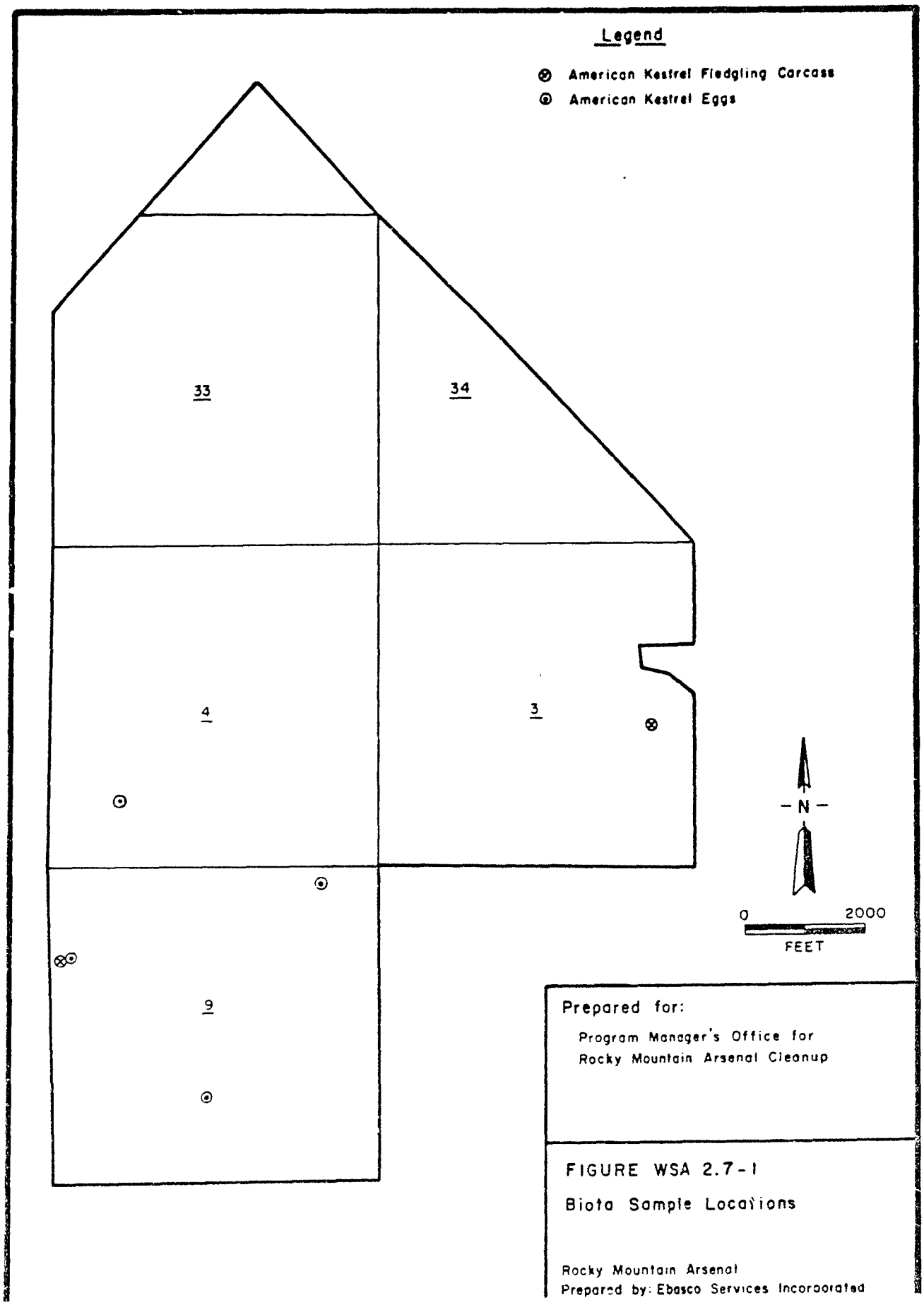
Prepared by: Ebasco Services Incorporated


WSA-7 Sanitary Sewer
WSA-1 Pond
WSA-6 Pond
WSA-2 West Landfill
WSA-3 East Landfill
WSA-7 Sanitary Sewer
STAPLETON AIRPORT
U.S. POST OFFICE DENVER BULK MAIL CENTER
DENVER ENGINEERING OPERATIONS CENTER
Legend
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/l)
Below Certified Reporting Limit
< 1
1 - 10
> 10 - 100
> 100
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
0
1500
FEET
Prepared for:
Program Manager's Office for Rocky Mountain Arsenal Cleanup
FIGURE WSA 2.4.2
VHOs in Denver Formation Groundwater
Rocky Mountain Arsenal


WSA-7 Sanitary Sewer
WSA-1 Pumphouse
WSA-6 Water Plant
WSA-2 West Landfill
WSA-3 East Landfill
STAPLETON AIRPORT
U.S. POST OFFICE DENVER BULK MAIL CENTER
DENVER ENGINEERING OPERATIONS CENTER
Legend
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/l)
Below Certified Reporting Limit
< 1
1 - 10
> 10 - 100
> 100
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
0
1500
FEET
Prepared for:
Program Manager's Office for Rocky Mountain Arsenal Cleanup
FIGURE WSA 2.4-3
VAOs in Denver Formation Groundwater
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated


WSA-7 Sanitary Sewer
WSA-4 Open Storage Area
WSA-1 Railyard
WSA-6 Waste Pond
WSA-2 West Landfill
WSA-3 East Landfill
WSA-7 Sanitary Sewer
STAPLETON AIRPORT
U.S. POST OFFICE DENVER BULK MAIL CENTER
DENVER ENGINEERING OPERATIONS CENTER
Legend
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/l)
Below Certified Reporting Limit
< 1
1 - 10
>10 100
>100
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
-N-
0
1800
FEET
Prepared for:
Program Manager's Office for Rocky Mountain Arsenal Closure
FIGURE WSA 2 4-4
OCPs in Denver Formation Groundwater
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated


AQ1
AQ7
WSA-7 Sanitary Sewer
WSA-6 Basin
WSA-5 Basin Landfill
WSA-1 Railyard
WSA-6 Basin Fill
WSA-7 Sanitary Sewer
WSA-2 West Landfill
WSA-3 East Landfill
33
34
36
4
3
2
9
10
STAPLETON AIRPORT
U.S. POST OFFICE DENVER BULK MAIL CENTER
DENVER ENGINEERING OPERATIONS CENTER
-N-
0
1500
FEET
Legend
Air Quality Sampling Location
Railroad tracks
Section number
Western Study Area boundary
Arsenal boundary
Steel force main
Sanitary sewer
Prepared for:
Program Manager's Office for Rocky Mountain Arsenal Cleanup
FIGURE WSA 2.6-1
Air Quality Sampling Locations
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated



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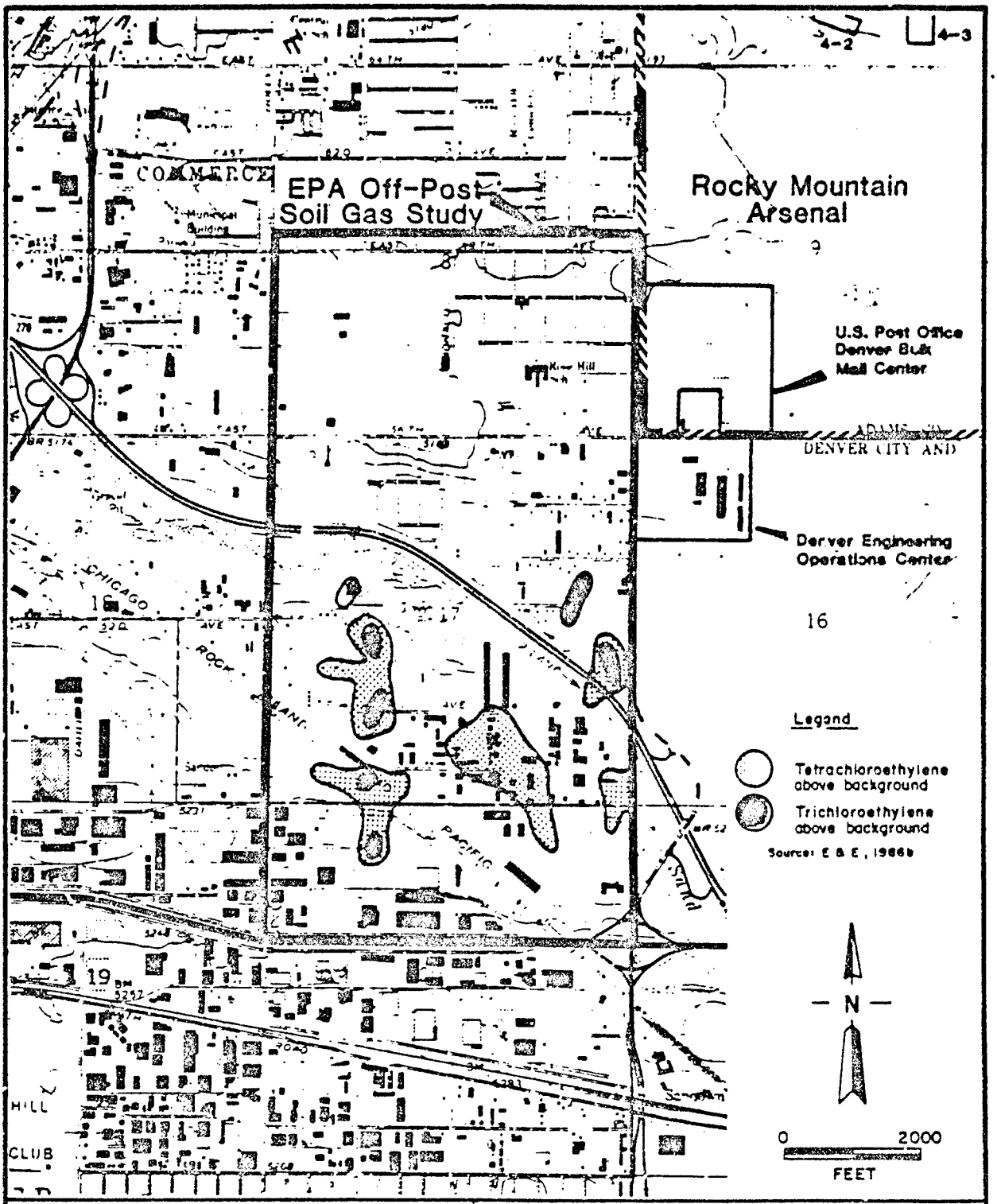
Rocky Mountain Arsenal Cleanup

FIGURE WSA 2.7-1

Biota Sample Locations

Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated



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Rocky Mountain Arsenal Cleanup

FIGURE WSA 2.8-1

Off-Post Tetrachloroethylene and Trichloroethylene in Soil Gas

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated

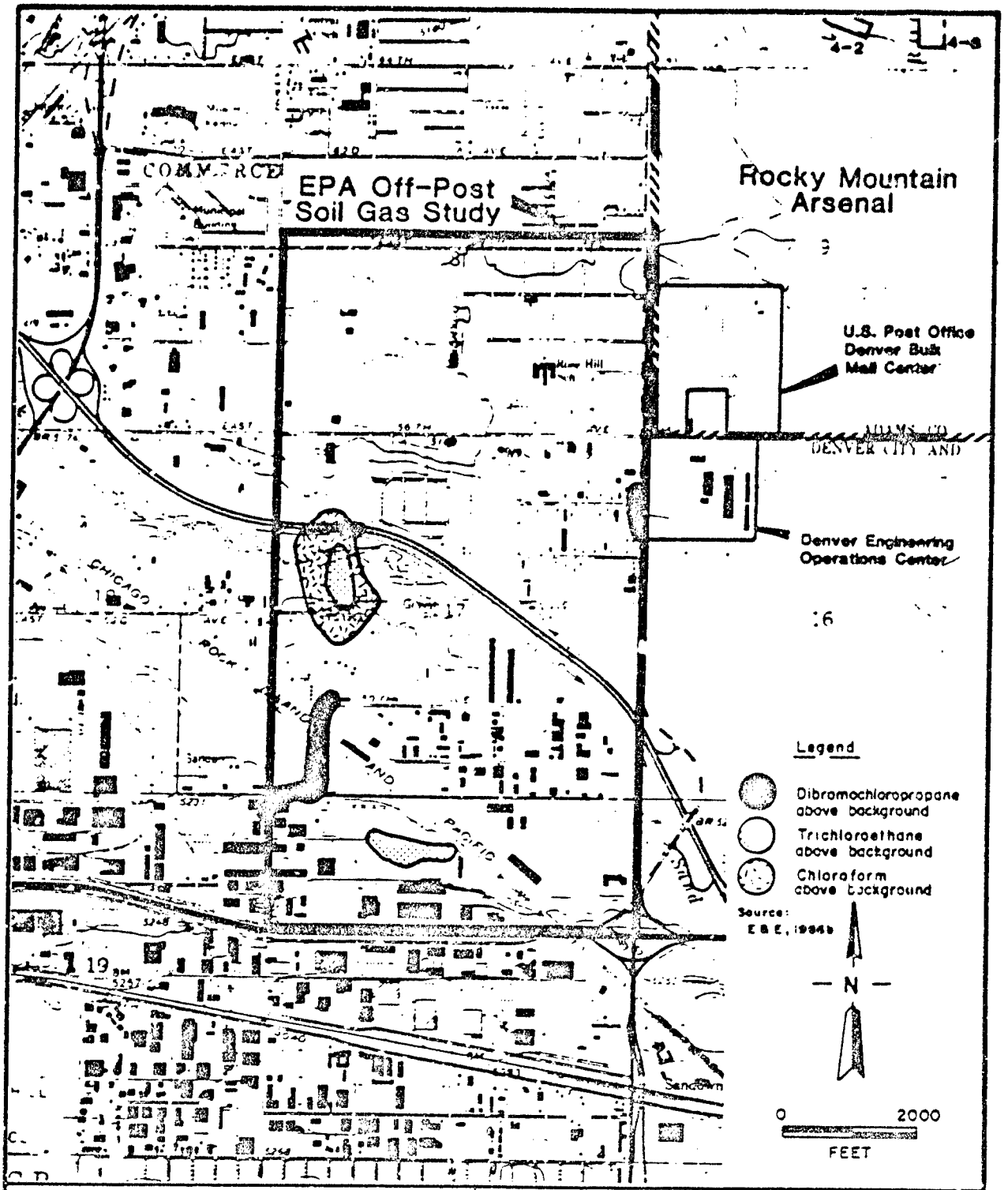

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FIGURE WSA 2.8-2

Other Identified Contaminant
Flux Areas in Soil Gas

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated

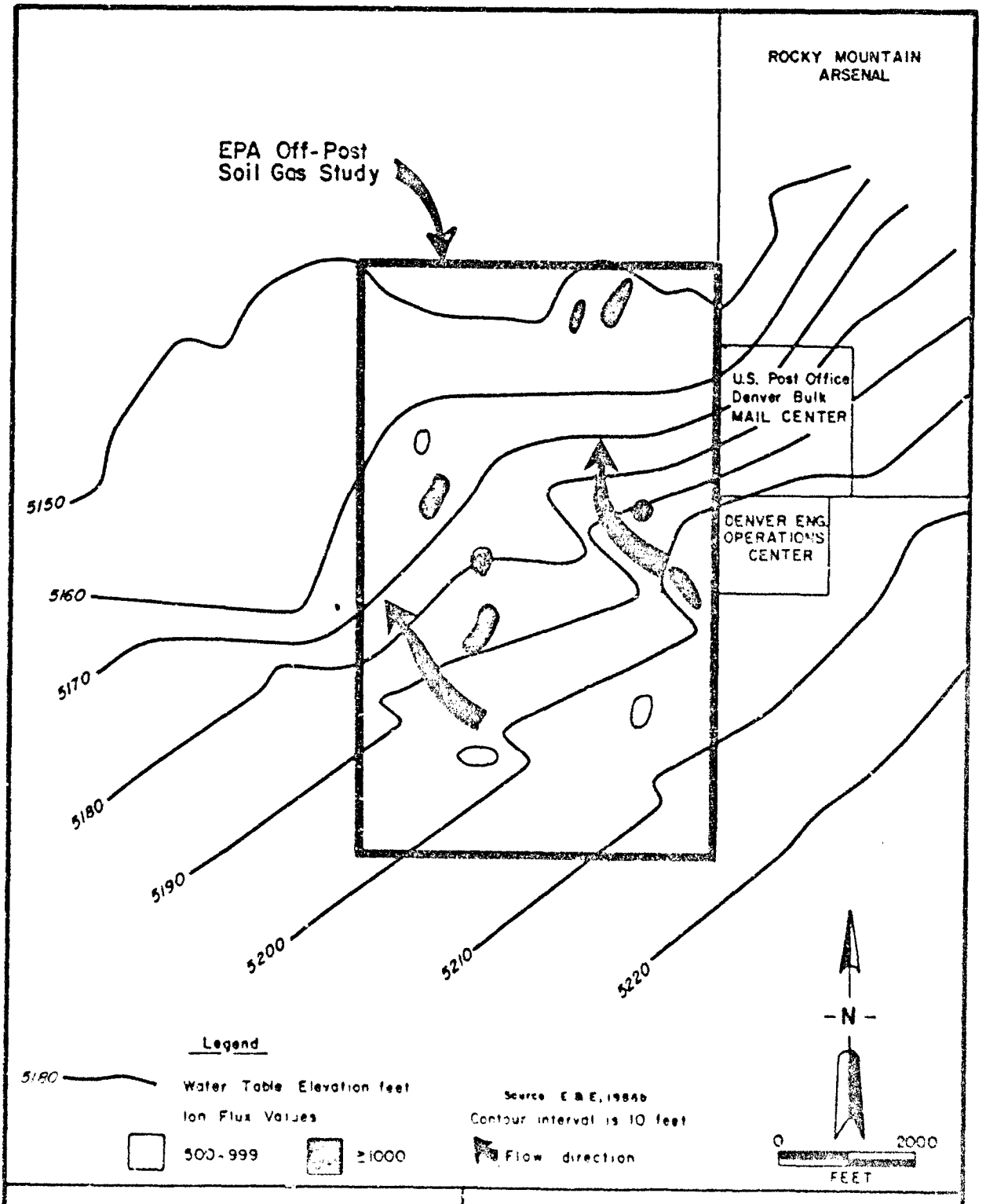

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FIGURE WSA 2.8-3
Trichloroethylene Flux in Relation to Water Table Elevation
Rocky Mountain Arsenal

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