



WT Environmental
Consultants



Return to:

7/6/95

RICHARD G. PERREAULT
CHIEF, PLANNING BRANCH
PLANNING AND PROJECT MANAGEMENT

(602) 506-1501
FAX (602) 506-4601

2801 WEST DURANGO
PHOENIX, ARIZONA 85009

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

**PHASE I PRELIMINARY SITE ASSESSMENT
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
CAVE CREEK WASH AND DETENTION BASIN
CAVE CREEK, ARIZONA
CONTRACT NO. FCD 90-70**

WTEC JOB NO. FCD002



**WT Environmental
Consultants**

ARIZONA

Flagstaff
2400 East Huntington Drive
Flagstaff, Arizona 86004
602 774 8708
fax 774 6469

Phoenix
4625 South Ash Avenue, Suite J12
Tempe, Arizona 85282
P.O. Box 21687
Phoenix, Arizona 85036
602 820 6733
fax 491 7045

Tucson
3480 South Dodge Boulevard
Tucson, Arizona 85713
602 748 2267
fax 748 0435

NEVADA

Las Vegas
4085 Nevso Drive, Suite G
Las Vegas, Nevada 89103
702 252 0580
fax 252 0773

NEW MEXICO

Albuquerque
8305 Washington Place, N.E.
Albuquerque, New Mexico 87113
505 828 9071
828 9079
fax 821 2963

Farmington
400 South Lorena Avenue
Farmington, New Mexico 87401
505 327 4966
fax 327 5293

PHASE I PRELIMINARY SITE ASSESSMENT

CAVE CREEK PROPERTY
BETWEEN UNION HILLS DRIVE AND BEARDSLEY ROAD
CAVE CREEK, ARIZONA

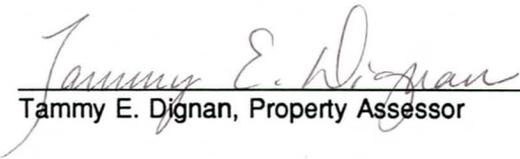
Prepared for:

CONTRACT NO. FCD 90-70
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
3335 WEST DURANGO STREET
PHOENIX, ARIZONA 85009

Prepared by:

WT ENVIRONMENTAL CONSULTANTS INC.
4625 SOUTH ASH AVENUE, SUITE J12
TEMPE, ARIZONA 85282

July 10, 1991



Tammy E. Dignan, Property Assessor

Reviewed by:



Alan G. Berg, Director
Property Assessments



Christopher L. Jacquemin, P.E.
Principal



TABLE OF CONTENTS

	<u>Page No.</u>
1.0 INTRODUCTION	1
2.0 SITE INFORMATION	2
3.0 RECORDS REVIEW	5
4.0 POTENTIAL SOURCES OF CONTAMINATION	10
5.0 SUMMARY OF FINDINGS	12
6.0 RECOMMENDATIONS	13
7.0 PSA LIMITATIONS	13
8.0 REFERENCES	14

APPENDICES

Appendix A

Figure 1
Figure 2
Figure 3

Vicinity Map
Site Plan
Groundwater Map

Appendix B

Photographic Log



**PHASE I PRELIMINARY SITE ASSESSMENT
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CAVE CREEK WASH AND DETENTION BASIN
CAVE CREEK, ARIZONA
CONTRACT NO. FCD 90-70**

WTEC JOB NO. FCD002

**SECTION 1.0
INTRODUCTION**

General project information and work scope are discussed in this section.

1.1 GENERAL

This report presents the results of a Phase I preliminary site assessment (PSA) conducted for the Flood Control District of Maricopa County (FCDMC) of the Cave Creek Wash and Detention Basin between Union Hills Drive and Beardsley Road, Cave Creek, Arizona under Contract No. FCD 90-70. WTEC was authorized to perform the assessment as Assignment No. 2 as stipulated in Flood Control District of Maricopa County's Letter of Authorization, dated June 5, 1991.

1.2 PROJECT OBJECTIVE AND SCOPE OF WORK

The objective of this PSA was to survey the potential for hazardous or toxic substance contamination from past or present uses of the site or properties within a half-mile of the subject property. Conclusions and recommendations for further actions in this report are subject to modification if subsequent information is developed by WTEC or others.

The scope of services for the project included the following activities:

- o On-site survey of present conditions
- o Off-site reconnaissance of properties within a half-mile of the site
- o Regulatory agency and historical records review
- o Written report with conclusions and recommendations.



SECTION 2.0 SITE INFORMATION

The following site information is based on our on-site observations and records reviews.

2.1 LOCATION

The subject property is the Cave Creek Wash and Detention Basin between Beardsley and Union Hills Roads in Cave Creek, Arizona. The property is approximately 110-acres in size, irregularly shaped, and approximately 400 feet in width with an expanded area referred to as potential detention basins midway between Union Hills Drive and Beardsley Road. The area occupied by the potential detention basins is approximately 1,300 feet by 2,100 feet (see Appendix A, Figure 2).

The subject property is located within Section 29 of Township 4 North, Range 3 East of the Gila and Salt River Baseline and Meridian, Maricopa County. The property extends diagonally from Beardsley Road to Union Hills Drive in Cave Creek, Arizona (see Appendix A, Figure 1).

The subject property is bounded by Beardsley Road on the north; Union Hills Drive on the south; undeveloped desert land, a single-family residential development, crushed rock pile, City of Phoenix Public Works yard, and a church on the east; and a gravel pit operation (Sunward Materials Plant), a single family residential development, and a multi-family residential development on the west.

Arizona Crushers, Inc. rubbish landfill is located north of the property on the north side of Beardsley Road. A single-family residential development and the extension of the Cave Creek Wash are located south of the property and south of Union Hills Drive.

2.2 SITE DESCRIPTION

The subject property is typical of normal desert terrain containing sand, gravel, cobbles surface soils, and sparse to dense vegetation. No signs of chemically distressed vegetation were observed on the subject property. There are no structures present on the subject property though sprinkler valves were observed on the northwest boundary of the subject property. Minor amounts of domestic and construction debris were noted on the north portion of the subject property. Minor amounts of discolored soil (to a depth of 2 to 3-inches), which exhibited a petroleum odor, were observed in isolated locations within the subject property.



The surface topography of the subject property is irregular with numerous dirt trails and haul roads. On-site drainage follows the natural contours of the land to the southwest.

A metal pipe, 4 inches in diameter, extending into the ground was observed on the south portion of the subject property. Sixteen 3-inch pipes set in a concrete pad were also observed in this vicinity. WTEC was unable to determine the purpose of these pipes.

An asphalt paved road leading from the City of Phoenix Public Works yard, located south of the retention basins, to the northwest portion of the detention basin was observed. It appeared that extensive dumping of materials has taken place within the northwest portion of the detention basin for an extended period of time. Substantial amounts of construction debris such as concrete and asphalt were observed here. In addition, 6 to 8 cubic feet of soil with a petroleum type odor was noted in this area. A City of Phoenix vehicle was observed off loading soil which exhibited a petroleum type odor during the site survey.

WTEC conducted interviews with Mr. Tony DeLaCruz of the City of Phoenix Street Department and Mr. Tom Webb of the City of Phoenix Public Works Department. Mr. DeLaCruz and Mr. Webb stated that the subject property is presently owned by the City of Phoenix. They indicated the City is disposing inorganic material such as clean fill, asphalt, and concrete in the area to fill a formerly excavated gravel pit immediately south of the Sunward Materials Plant. Mr. Webb stated that at one time, disposal of materials was being conducted by the City of Phoenix Water, Parks, and Street Departments. Presently, only the Street Department is authorized to dump material in this area. The duration of this activity has taken place for several years and no knowledge of soil testing for possible contamination has taken place. Mr. Webb also stated that numerous requests have been made to cease dumping activity without success. Mr. Webb conducted an inspection approximately in mid June 1991. During the inspection, Mr. Webb noted construction debris, clean fill, and wood piles being disposed of in the area. It has been requested the City of Phoenix, Streets Department, to clean-up the wood piles.

2.3 TOPOGRAPHY AND DRAINAGE

The subject property is at an approximate elevation of 1,417 feet above mean sea level and generally level. Natural drainage patterns of the area follow the land contour to the southwest.

2.4 GEOLOGY AND GROUNDWATER

Geology and hydrogeology of a site may be useful in predicting migration resulting from a release of hazardous substances.

2.4.1 Geology

The subject property is located in an area designated by the Arizona Department of Water Resources (ADWR) as the Phoenix Active Management Area (AMA). The Phoenix AMA is a Basin and Range Physiographic Province and is bounded to the east by the Mazatzal, Utery, Goldfield, and Superstition Mountains; to the south by the Sacaton, Sierra Estrella, South Mountains, and the Buckeye Hills; to the west by the White Tank Mountains; and to the north by the Hieroglyphic, Wickenburg, New River Mountains, and the New River Mesa. The bordering mountains are composed chiefly of igneous and metamorphic rock.

The Phoenix AMA is divided into several sub-basins. The sub-basins are broad alluvial basins filled by over a thousand feet of sedimentary deposits consisting primarily of clay, silt, sand, and gravel. The East and West Salt River Valley Sub-basins (the two main sub-basins in the Phoenix AMA) are separated by the Phoenix Mountains, Papago Buttes, and Union Hills. The subject property is located in the West Salt River Valley Sub-basin.

2.4.2 Groundwater

Three main water bearing units comprise the basin-fill deposits. These units in descending order are the Quaternary Upper Alluvial Unit (UAU), the Quaternary and Tertiary Middle Fine-grained Unit (MFU), and the Tertiary Lower Conglomerate Unit (LCU), (U.S. Bureau of Reclamation). The upper alluvial unit is the primary source of groundwater in the West Salt River Valley Sub-basin. Groundwater is usually unconfined, but semi-confined conditions exist in areas where there is an increase of finer-grained materials.

According to the latest ADWR publication, Report No. 12 dated 1986, the water table in the area of the subject property lies approximately 467 feet below the existing land surface. The regional groundwater flow is generally to the southwest (see Appendix A, Figure 3). However, site-specific groundwater flow may vary depending on local groundwater pumping.

Groundwater contamination from natural and anthropogenic sources is widespread in the Phoenix AMA. A number of wells sampled outside the half-mile study area, but within the boundaries of the West Salt River Valley Sub-basin, have measurable levels of volatile organic compounds (VOCs). However, no measurements of groundwater quality taken below the subject property, which would confirm or deny groundwater contamination, were disclosed during our records review.



SECTION 3.0 RECORDS REVIEW

During the literature search, records were reviewed at or obtained from the following agencies and companies.

- o Arizona Department of Environmental Quality (ADEQ)
- o Arizona Department of Water Resources
- o U.S. Environmental Protection Agency (EPA), Region 9
- o U.S. Geological Survey (USGS)
- o City of Phoenix Aerial Photographs

The purpose of the review was to assess the potential for hazardous materials from previous on-site and nearby activities. The results of the review are discussed in the following sections.

3.1 ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

ADEQ's Hazardous Waste Compliance Unit has listed facilities that have undergone a Resource Conservation and Recovery Act (RCRA) inspection or compliance action for potential violations of the Arizona State Hazardous Waste Management Act.

A review of the May 20, 1991 listing revealed no facilities with hazardous waste compliance actions on or within a half-mile of the subject property.

The ADEQ 1989-1990 Annual Water Quality Assurance Revolving Fund (WQARF) Responsiveness Summary of the Project Priority List, updated 1989-1990, was reviewed to determine if the subject property lies within the boundaries of an existing or proposed project. The WQARF program is the State of Arizona equivalent to the federal Superfund program (CERCLA).

A review of the project priority list revealed that the subject property does not lie on or within a half-mile of an existing or proposed WQARF study area.

ADEQ prepares reports on Arizona Groundwater Quality Sampling Results & Enforcement Actions on an annual basis. Annual reports, dated January 1, 1988, June 30, 1989, and July 1, 1990, were reviewed to determine the groundwater quality beneath the subject property and within the half-mile study area.



Flood Control District of Maricopa County
WTEC Job No. FCD002

These annual reports did not contain sufficient data to adequately define the groundwater quality beneath or within a half-mile of the subject property. Additionally, no information that would suggest the existence of groundwater contamination beneath the site or within a half-mile was found in these reports.

ADEQ Aquifer Water Quality Standards require permitting of a facility that discharges water or effluent to the groundwater. The Permitted Facilities list, prepared by ADEQ dated January 10, 1991, identifies facilities permitted to discharge effluent to groundwater. The Existing Facilities list, dated January 10, 1991 also prepared by ADEQ, identifies facilities that have filed a Notice of Disposal to ADEQ and are waiting to be permitted according to a priority rating. These lists were reviewed to determine if any facilities discharging to groundwater exist on or within a half-mile of the subject property.

A review of these lists revealed no such facilities appear on or within a half-mile of the subject property.

The Arizona CERCLA Information and Data System (ACIDS) is a list maintained by the ADEQ Office of Waste Programs, which contain locations subject to environmental contamination investigation by ADEQ. The inclusion of a particular facility on this list does not necessarily mean that the location is contaminated, is causing contamination or is in violation of state or federal statutes and regulations. This list implies that due to the nature of activities conducted at these locations, the potential for the previously mentioned conditions exist.

A review of the March 11, 1991 listing revealed that no facilities appear on or within a half-mile of the subject property.

The Directory of Arizona Municipal Solid Waste Landfills and Rubbish Landfills, maintained by the ADEQ Solid Waste Unit, identifies the locations of solid waste landfills and rubbish landfills presently operating.

A review of the January 1991 listing revealed one open solid waste landfill or rubbish landfill within a half-mile of the subject property. The facility is listed as Arizona Crushers Inc., located on the northwest corner of 7th street and Beardsley Road, and qualifies as a rubbish landfill. The landfill in the west portion of the proposed detention area was not listed.

The Directory of Arizona Closed Solid Waste Landfills and Closed Solid Waste Dumps, also maintained by the ADEQ Solid Waste Unit, identifies the locations of solid waste landfills and solid waste dumps which are presently closed.



Flood Control District of Maricopa County
WTEC Job No. FCD002

A review of the September 1990 listing revealed one closed solid waste landfills or solid waste dumps within a half-mile of the subject property. The facility is listed as Beardsley, located at 7th Street and Beardsley Road, and qualifies as a closed solid waste landfill.

The Hazardous Materials Incident Logbook documents chemical spills and incidents referred to the State Emergency Response Unit. This unit has been in operation since 1984.

A review of the logbook, from 1984 to April 30, 1990, revealed no incidents on or within a half-mile of the subject property.

3.2 U.S. ENVIRONMENTAL PROTECTION AGENCY

The RCRA database, maintained by the EPA, lists facilities in Arizona that have notified the EPA of hazardous waste activity. The notifiers may engage in the generation, transportation, treatment, storage, and/or disposal of hazardous wastes. Generators are listed as either large, small or conditionally exempt generators. Large quantity generators produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. Small quantity generators produce 100 - 1000 kg/month of non-acutely hazardous waste. Conditionally exempt generators are those which generate less than 100 kg/month of non-acutely hazardous waste.

A review of the March 4, 1991 release of this database revealed one notifier within a half-mile of the subject property (see Appendix A, Figure 2).

<u>Ref. No.</u>	<u>Facility</u>	<u>Address</u>	<u>Type of Generator</u>
*1	Blue Circle West	121 E. Beardsley Rd.	Exempt
2	Phoenix Public Works	138 E. Union Hills Dr.	Small Quantity Generator
3	City of Phoenix Precinct No. 6	302 E. Union Hills Dr.	Small Quantity Generator

* The Sunward Materials Plant is presently located at this address.

The RCRA database also denotes those facilities that have obtained either a final or an interim status permit for the treatment, storage or disposal (TSD) of hazardous wastes and known facilities operation without a permit.



This list, dated June 1990, does not identify any TSD facilities on or within a half-mile of the subject property.

The federal Superfund was authorized to finance the cleanup of hazardous waste sites throughout the United States. A computer database of facilities -- the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) -- has been developed to support CERCLA activities. After a potential site is discovered by the EPA, it is entered into the database and a preliminary site assessment is done. If warranted, a site investigation is performed after which a site can be proposed for remediation and placed on the National Priorities List (NPL).

A review of this database, prepared by ADEQ for fiscal year 1990 (dated April 1990), revealed that no Superfund sites are on or within a half-mile of the subject property.

3.3 U.S. GEOLOGICAL SURVEY/CITY OF PHOENIX AERIAL PHOTOGRAPHS

Topographical maps from the USGS and historical aerial photographs from the City of Phoenix aerial photographs were reviewed to identify past uses and characteristics of the subject property.

The Union Hills Quadrangle topographical map from the USGS, dated 1964 and photorevised in 1981, was reviewed. The 1964 map depicts the subject property as Cave Creek. This map depicts Beardsley Road to the north and three structures to the east of the subject property. The 1981 revisions depict no site-specific details of the subject property. This map depicts Union Hills Drive to the south and a gravel pit to the west of the subject property.

Aerial photographs from the City of Phoenix were reviewed. A brief description of each photograph and its corresponding date follows:

o **March 12, 1971 - City of Phoenix (1 Inch = 100 feet)**

The following is shown in this photograph:

- o The subject property as an undeveloped wash area. Subject property is covered with scattered areas of vegetation. The topography is irregular with numerous dirt trails
- o Beardsley Road is present to the north of the subject property
- o Vacant desert land is present to the south, east, and west of the subject property.

o **February 12, 1975 - City of Phoenix (1 Inch = 100 feet)**

The following is shown in this photograph:

- o The subject property and surrounding areas to the north and south are essentially unchanged when compared to the 1971 photograph
- o Vacant desert land as well as cleared vacant land are present to the east of the subject property
- o Vacant desert land and a gravel pit are present to the west of the subject property.

o **May 3, 1978 - City of Phoenix (1 Inch = 100 feet)**

This following is shown in this photograph:

- o The subject property and surrounding areas to the north and west are essentially unchanged when compared to the 1975 photograph
- o Union Hills Drive and vacant desert land are present to the south of the subject property
- o Vacant desert land and an industrial yard are present to the east of the subject property.

o **June 29, 1982 - City of Phoenix (1 inch = 100 feet)**

The following is shown in this photograph:

- o The subject property and surrounding areas to the north and south are essentially unchanged when compared to the 1978 photograph
- o Vacant desert land, a sparse residential development as well as an industrial yard are present to the east of the subject property
- o Vacant desert land, a gravel pit, a sparse residential development, and cleared vacant land to the west of the subject property.

o **February 20, 1986 - City of Phoenix (1 Inch = 100 feet)**

The following is shown in this photograph:

- o The subject property and surrounding areas to the north, south, and west appears as they did during the on-site survey
- o Vacant desert land is present to the east of the subject property. At the time of the on-site survey, a church was observed east of the subject property.



SECTION 4.0
POTENTIAL SOURCES OF CONTAMINATION

Commonly encountered potential/actual sources of contamination are discussed in this section.

4.1 SURFACE STAINING

During the on-site review, the subject property was surveyed for areas of staining which could indicate a chemical disposal incident.

Approximately, 6 to 8 cubic feet of discolored soil with a petroleum type odor was noted in the northwest portion of the potential detention basins. In addition, rubble containing large quantities of concrete and asphalt were observed in this area. It is WTEC's opinion that uncontrolled dumping of materials has occurred in this area for an extended period of time.

4.2 UNDERGROUND STORAGE TANKS

The ADEQ UST list was reviewed to determine the number and location of registered USTs within a half-mile of the subject property.

The May 1, 1991 release of this list revealed 15 registered USTs within a half-mile of the subject property.

The USTs are registered as follows:

<u>Ref. No.</u>	<u>Facility</u>	<u>Location</u>	<u>USTs</u>	<u>Status</u>
* 1	JSJ Mining Co., Inc.	121 E. Beardsley Rd.	1	Removed
2	Circle K No. 1214	611 W. Beardsley Rd.	3	Current
3	Circle K No. 3736	701 W. Union Hills Dr.	3	Current
4	7-Eleven Store No. 25577	18480 N. 7th St.	3	Current
5	Mobil	18441 N. 7th St.	5	Current

Status: "Current" indicates that the USTs have not been closed according to ADEQ. "Removed" indicates that the UST listed has been excavated and removed.

No pipes, vents or structures that would indicate the presence of USTs were observed on-site during the survey.

* *The Sunward Materials Plant is presently located at this address.*



4.3 LEAKING UNDERGROUND STORAGE TANK (LUST)

The ADEQ LUST Incident file was reviewed to determine if any USTs located within a half-mile were reported to be leaking.

The April 15, 1991 listing revealed one LUST incidents reported on or within a half-mile of the subject property. Blue Circle West is located at 121 East Beardsley Road (ADEQ File No. 4715.1144). The incident involved an unknown quantity of diesel.

4.4 DRYWELLS

The ADEQ Drywell Registration list, dated August 10, 1990, was reviewed to identify any registered drywells on the subject property.

This list did not identify any registered drywells located on the subject property. Additionally, during the survey no drywells were observed on-site.

SECTION 5.0 SUMMARY OF FINDINGS

Based on the review of available records and on and off-site touring, the following summarizes our findings.

- o The subject property is an irregularly shaped parcel of land approximately 110-acres in size. The Cave Creek Wash comprises the majority of the parcel with two potential detention basins midway between Union Hills Drive and Beardsley Road.
- o Based on the information developed in this assessment, the subject property has had sufficient activity for haul roads to be present prior in the 1970's. This activity has involved the deposition of debris on the property. Large quantities of asphalt, concrete, and soil with a petroleum type odor were deposited on the northwest portion of the potential detention basins for an extended period of time.
- o Surface drainage on the property is directed in a southwest direction. Depth to groundwater on the subject property is approximately 467 feet below land surface. Insufficient information is available to define the groundwater quality beneath the subject property.
- o Based on a records review, no RCRA compliance activity or registered hazardous materials incidents have been recorded on or within a half-mile of the subject property. No Arizona CERCLA facilities, facilities discharging water or effluent to groundwater or RCRA TSD facilities are located on or within a half-mile of the subject property. No drywells were observed or are registered on the subject property. Further, the subject property does not lie within the boundaries of a WQARF study area on or within a half-mile of a Superfund site.



- o One open rubbish landfill and one closed solid waste landfill are located within a half-mile of the subject property. A non-permitted landfill receiving construction debris and possibly petroleum contaminated soil is located within the subject property.
- o Fifteen USTs are registered within a half-mile of the subject property, though one has reportedly been removed. No indications of the presence of USTs on the subject property were observed. One LUST incident has been reported to the ADEQ within a half-mile of the subject property. The LUST incident (ADEQ File No. 4715.1144) is available for review.
- o Three RCRA permitted notifiers are located within a half-mile of the subject property.

SECTION 6.0

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this assessment, there is evidence suggesting the property has been used for illegal dumping of construction debris and possibly petroleum contaminated soil within the northwest portion of the potential detention basins. It is concluded that substantial amounts of debris have been disposed of in this area for an extended period of time.

Based on these findings, it is recommended dumping activities on the property be further evaluated. There is the potential that some of these activities require regulatory approval. Further, the soils exhibiting petroleum type odors should be sampled and analyzed to determine if they contain regulated quantities of petroleum hydrocarbons. Should these soils be found to be a regulated substance, the area used for dumping should be assessed to determine the extent of contaminated materials on the property.

SECTION 7.0

PSA LIMITATIONS

The scope of this assessment is limited to: observations made during the on-site review; and reviews of readily available published and unpublished lists and reports, literature, and aerial photographs. As a result, these conclusions are based on information supplied by others, professional expertise, and interpretations by qualified personnel.



The focus of the site evaluation was to assess the likelihood of hazardous or toxic substance contamination resulting from past and current uses of the site and adjacent properties. As a result, this evaluation does not assess the presence of the following conditions unless they were the express concerns of contacted personnel, report and literature authors or the work scope.

- o Naturally occurring toxic or hazardous substances in the subsurface soils, geology, and water.
- o Toxicity of substances common in current habitable environments, such as stored household products, building materials, and consumables.
- o Contaminants or contaminant concentrations that are not a concern now, but may be under future regulatory standards.

We are unable to predict events that may occur after our site visit, such as illegal dumping or accidental spillage.

There is no evaluation which is thorough enough to absolutely exclude the presence of hazardous substances at any site. Therefore, if none are identified as part of a limited scope of work, such a conclusion should not be construed as a guaranteed absence of such materials; it is merely the result of the evaluation.

We have performed our services for this project in accordance with our agreement and understanding with our client. This document and the information contained herein have been prepared solely for the use of our client and their assigned parties.

This preliminary site assessment was performed by WTEC under a limited scope of services per our agreement. It is possible, despite the use of reasonable care and interpretation, WTEC may have failed to identify regulatory violations or the presence of hazardous substances or underground tanks. WTEC assumes no responsibility for conditions that we did not specifically evaluate or conditions that were not generally recognized as environmentally unacceptable at the time this report was prepared.



SECTION 8.0
REFERENCES

- o Arizona Department of Water Resources (ADWR) Hydrologic Map Series Report No. 12, dated 1986.
- o The Arizona Department of Environmental Quality (ADEQ) RCRA Compliance Log, dated May 20, 1991.
- o The ADEQ 1989-1990 Annual Water Quality Assurance Revolving Fund (WQARF) Responsiveness Summary of the Project Priority list, updated 1989-1990.
- o Annual Reports on Arizona Groundwater Quality Sampling Results and Enforcement Actions, prepared by ADEQ dated January 1, 1988, June 30, 1989, and July 1, 1990.
- o Permitted Facilities (to discharge to groundwater), prepared by ADEQ dated January 10, 1990.
- o Existing Facilities (waiting for discharge permit), prepared by ADEQ dated January 10, 1991.
- o The Arizona CERCLA Information and Data System (ACIDS) list, prepared by ADEQ dated March 11, 1991.
- o The Arizona Directory of Municipal Solid Waste Landfills and Rubbish Landfills, prepared by ADEQ dated January 1991.
- o The Directory of Arizona Closed Solid Waste Landfills and Closed Solid Waste Dumps, prepared by ADEQ dated September 1990.
- o The ADEQ Hazardous Materials Incidents Logbook, dated 1984 to April 30, 1990.
- o The U.S. EPA RCRA Database, dated March 4, 1991.
- o The Arizona Hazardous Waste Treatment Storage, and Disposal Facilities list, prepared by ADEQ dated June 1990.
- o CERCLIS list of proposed and final NPL sites, dated April 5, 1991.
- o USGS Union Hills Quadrangle Topographical Map, dated 1964 and photorevised in 1981.
- o City of Phoenix Aerial Photographs, dated 1971, 1975, 1978, 1982, and 1986.
- o The ADEQ UST Registration list, dated May 1, 1991.
- o The ADEQ LUST list, dated April 15, 1991.
- o The ADEQ Drywell Registration List, dated August 10, 1990.



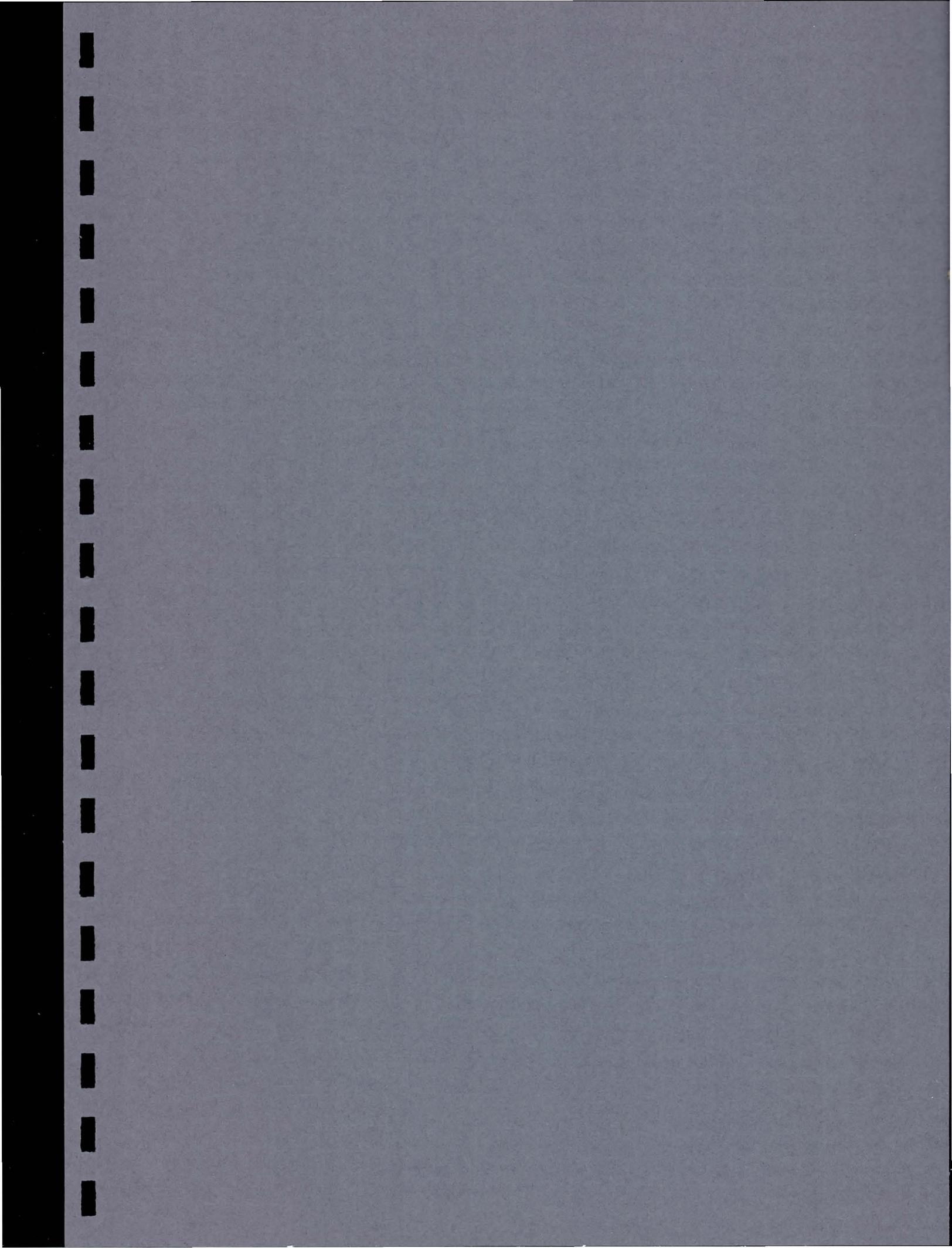
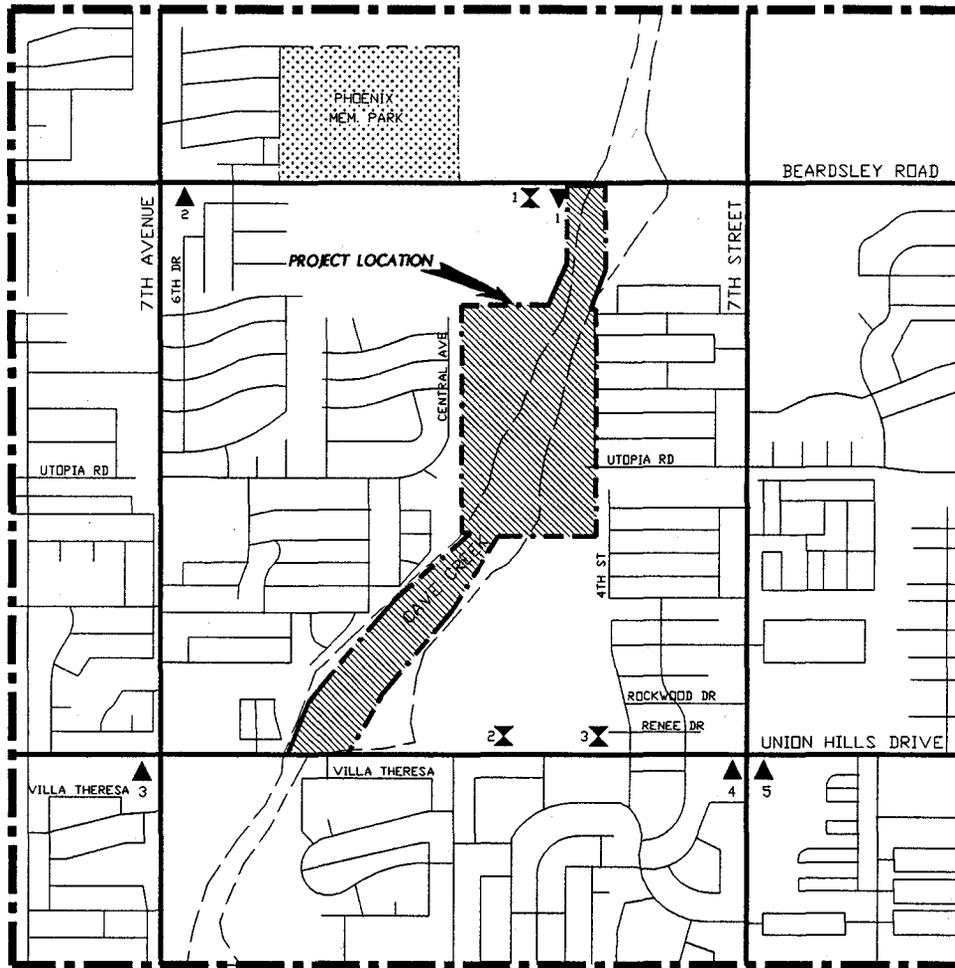


Figure 1 – Vicinity Map

Union Hills Drive & Beardsley Road Property Environmental Property Evaluation



LEGEND:

- ▲ UST LOCATION & REFERENCE NUMBER
- ▼ LEAKING UST LOCATION & REFERENCE NUMBER
- ⊖ AZ CERCLA SITE*
- ✕ RCRA NOTIFIER LOCATION & REFERENCE NUMBER
- ✕ RCRA COMPLIANCE LOCATION*



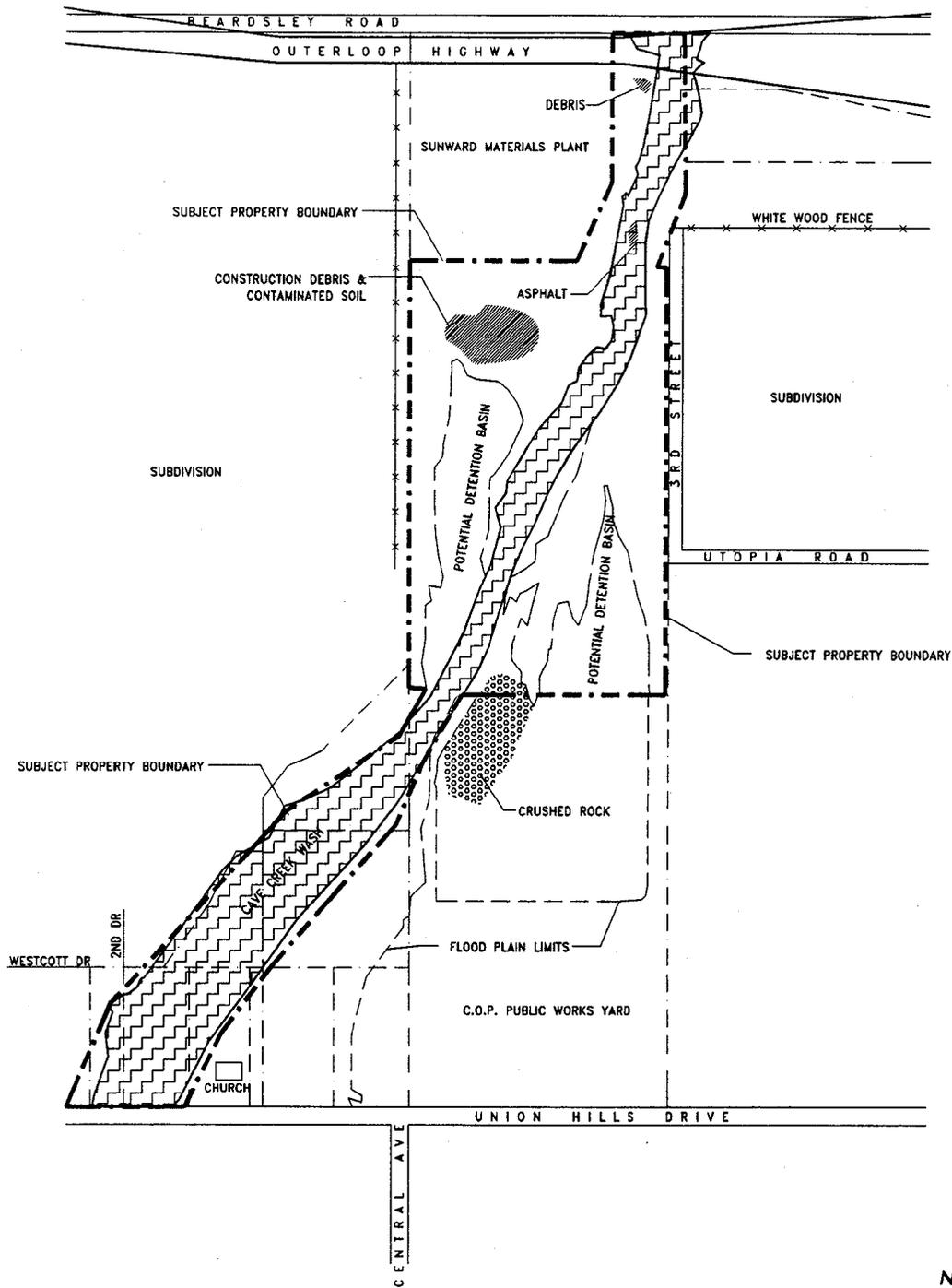
NOT TO SCALE

* NOT FOUND WITHIN 1/2 MILE OF THE PROJECT

CLIENT Flood Control District of Maricopa County	REVIEWED T. DIGMAN	WT Environmental Consultants
JOB NO. FCD002	PREPARED M. ENTERLINE	

Figure 2 – Site Plan

Union Hills Drive & Beardsley Road Property Environmental Property Evaluation

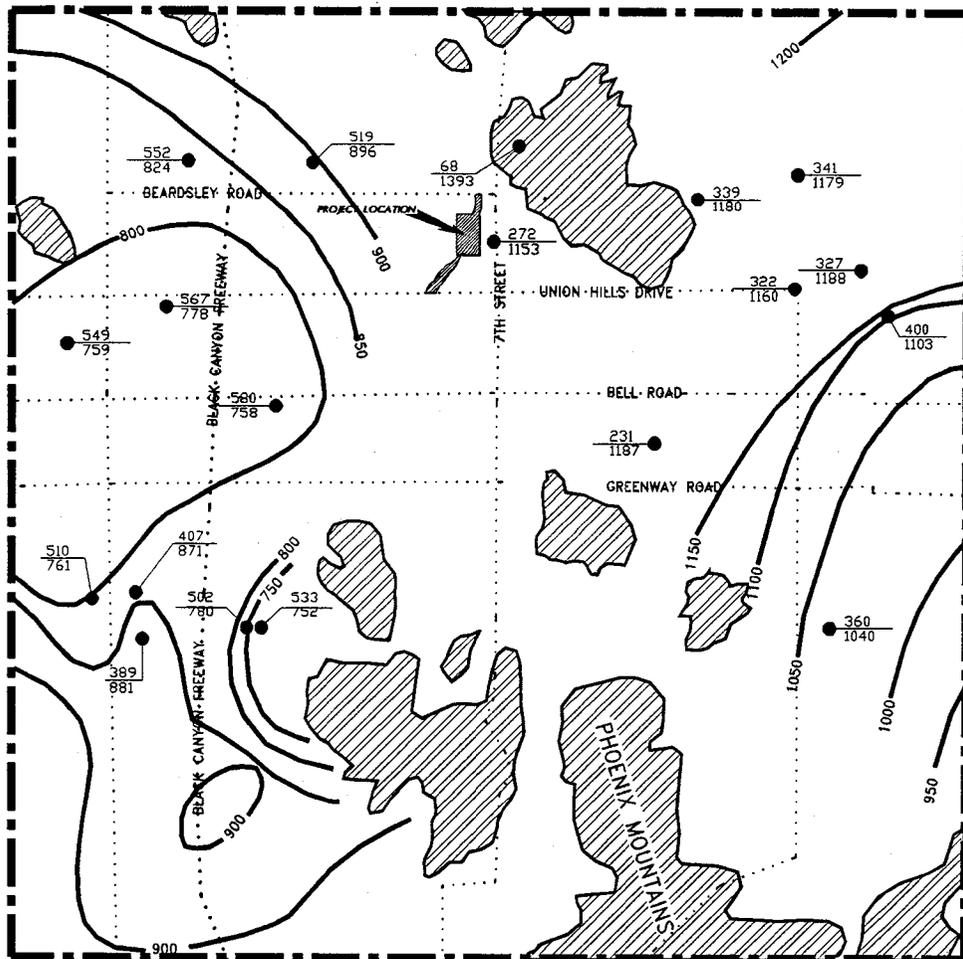


NOT TO SCALE

CLIENT Flood Control District of Maricopa County	REVIEWED T. DIGNAN	WT Environmental Consultants
JOB NO. FCD002	PREPARED M. ENTERLINE	

Figure 3 – Groundwater Map

Union Hills Drive & Beardsley Road Property Environmental Property Evaluation



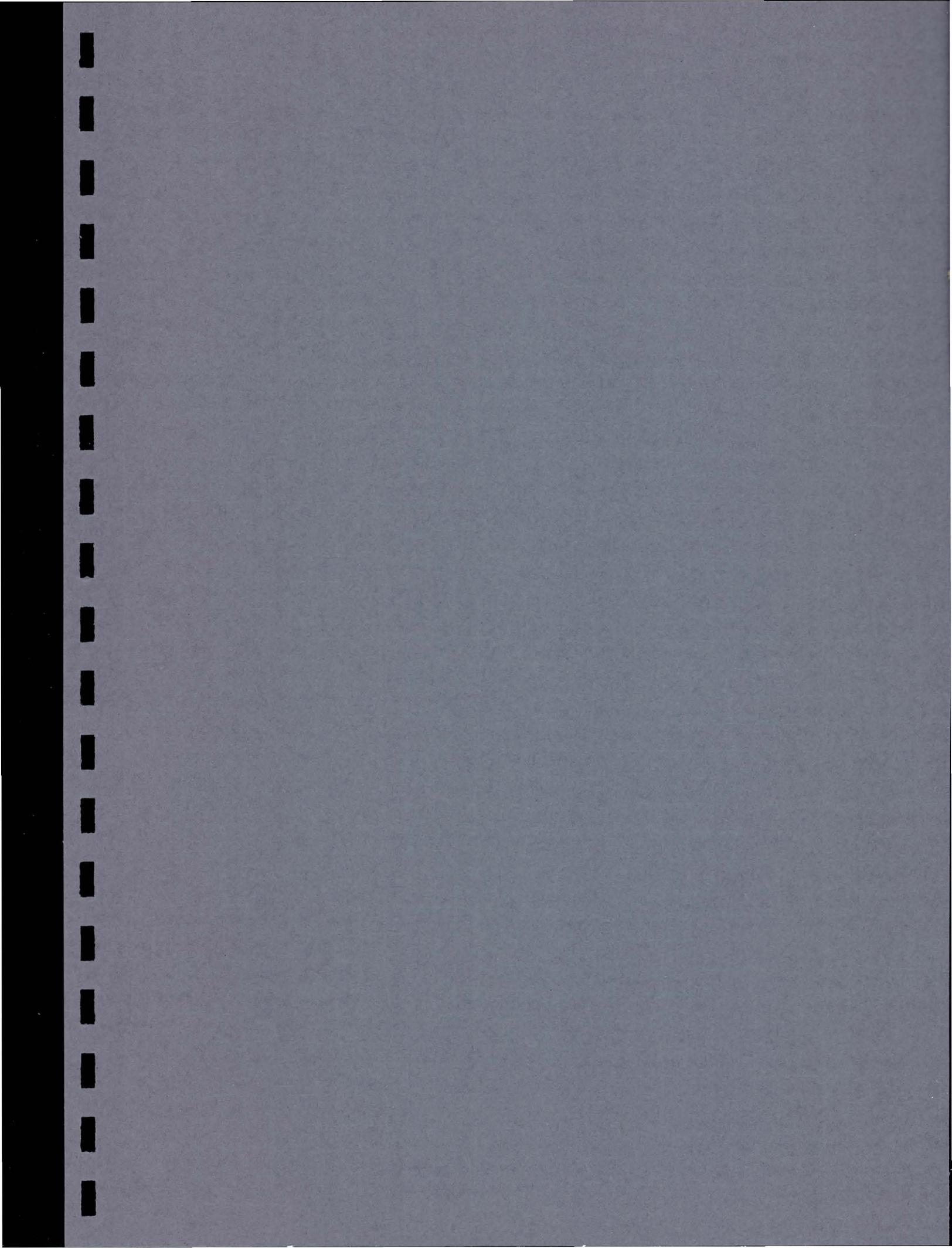
LEGEND:

-  WELL FIELD CHECKED IN 1982--First number, 198, is depth to water in feet below land surface. Second number, 924, is the altitude of the water level in feet above mean sea level.
-  WATER LEVEL CONTOUR--Shows altitude of the water level. Contour interval 50 feet. Datum is mean sea level.
-  ROCK OUTCROPPINGS & MOUNTAINS

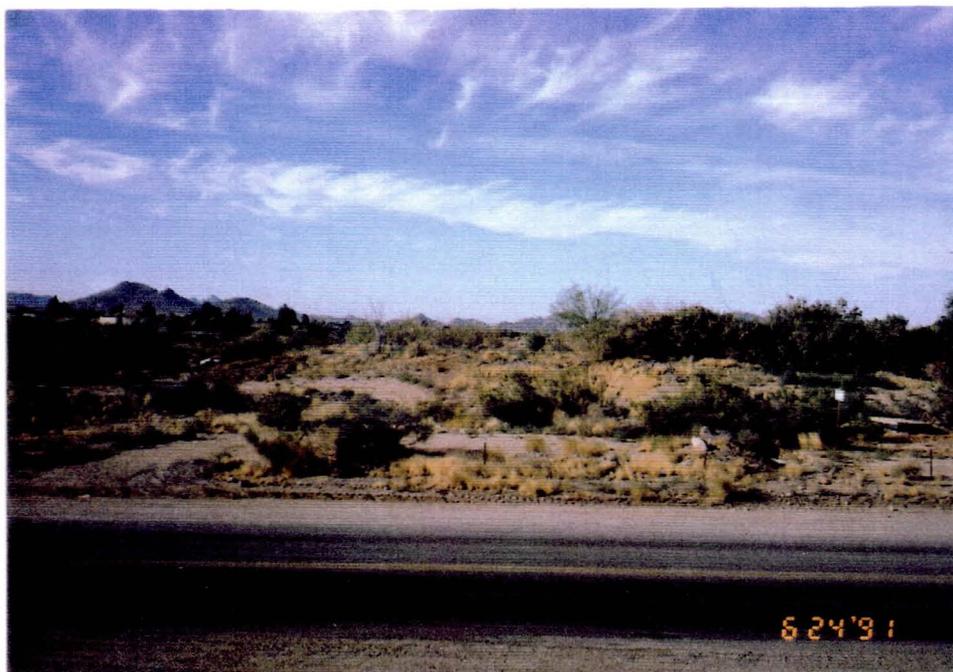


*Section from Arizona Department of Water Resources--D.W.R. Hydrological Map Series Report No. 12, Sheet 1 of 3. **NOT TO SCALE**

CLIENT Flood Control District of Maricopa County	REVIEWED T. DIGNAN	WT Environmental Consultants
JOB NO. FCD002	PREPARED M. ENTERLINE	



Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 1
Northwest Corner of Subject Property, Facing South



Photograph No. 2
Northwest Corner of Subject Property, Facing East

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 3
Northeast Corner of Subject Property, Facing South



Photograph No. 4
North Portion of Subject Property, Facing South

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 5
Debris Located on North Portion of Subject Property



Photograph No. 6
North Boundary of Potential Detention Basin Area, Facing West

Flood Control District of Maricopa County
WTEC Job No. FCD002

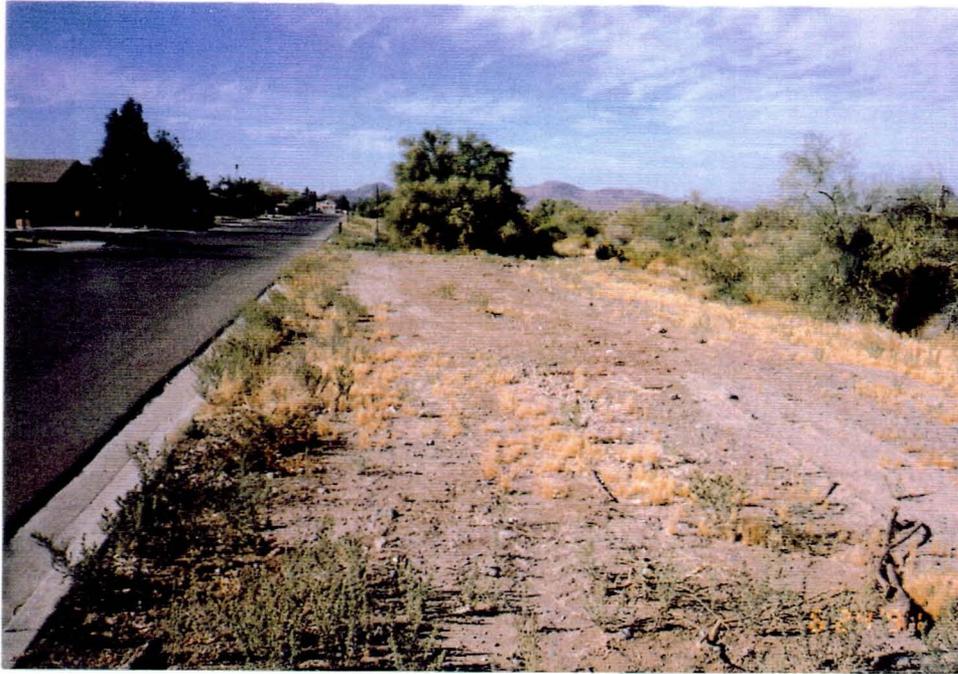


Photograph No. 7
Northwest Portion of Potential Detention Basin Area, Facing Southwest

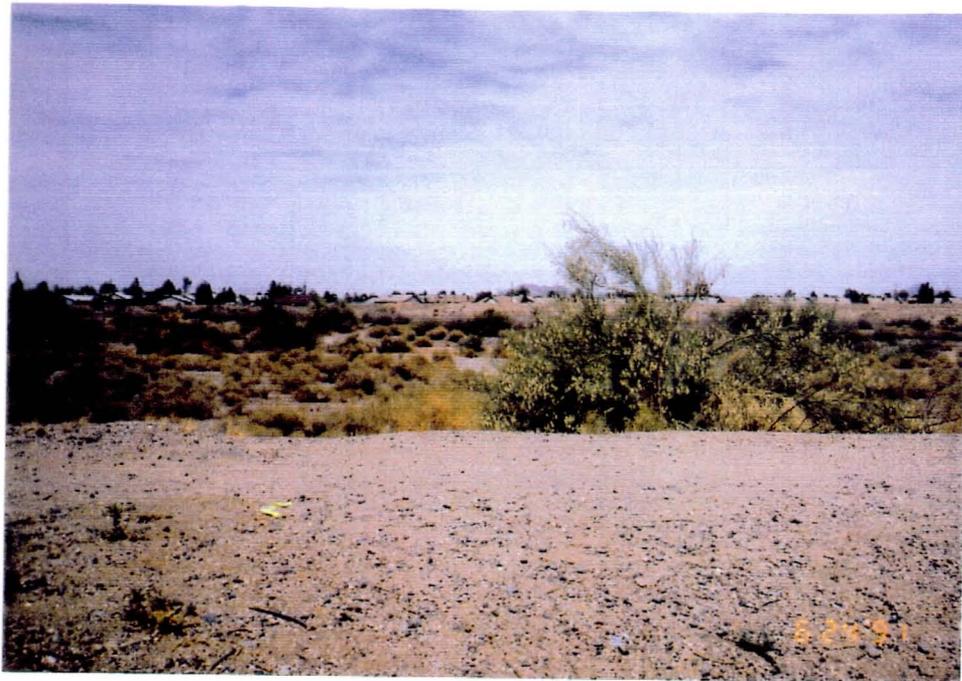


Photograph No. 8
View of Sunward Materials Plant West of Subject Property

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 9
East Boundary of Potential Detention Basin Area, Facing South



Photograph No. 10
View of Potential Detention Basin Area, Facing West

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 11
Northwest Portion of Potential Detention Basin Area
Showing Construction Debris and Soil Containing Potentially Regulated Substances



Photograph No. 12
Northwest Portion of Potential Detention Basin Area
Showing Soil Containing Potentially Regulated Substances

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 13
Stagnant Water in Area of Potential Detention Basin Area



Photograph No. 14
Crushed Rock Pile Located Immediately South of Potential Detention Basin Area

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 15
Pipe Existing from Ground that is Located on South Portion of Subject Property



Photograph No. 16
Southeast Corner of Subject Property, Facing North

Flood Control District of Maricopa County
WTEC Job No. FCD002



Photograph No. 17
Southeast Corner of Subject Property, Facing West



Photograph No. 18
Southwest Corner of Subject Property, Facing North