

**ATTACHMENT L**

**CORRECTIVE ACTION SCHEDULE OF COMPLIANCE (CASOC)  
APPROVED WORKPLANS AND REPORTS**

## **CONTENTS**

Exhibit L-1 RCRA FACILITY ASSESSMENT REPORT

AZ HWMA PERMIT  
EPA ID NO. AZR 000 520 304  
UNIVERSAL PROPULSION COMPANY

PERMIT ATTACHMENT L  
CASOC – APPROVED WORKPLANS AND REPORTS  
DRAFT PERMIT

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**Exhibit L-1**

**RCRA FACILITY ASSESSMENT REPORT**

# **RCRA FACILITY ASSESSMENT REPORT**

**FOR**

**A.A. SYDCOL WASTE TRANSFER FACILITY**

**A.A. SYDCOL, LLC**

**2264 East 13<sup>th</sup> Street**

**Yuma, AZ 85365**

**EPA ID NUMBER: AZR 000 520 304**

**(revised 03-22-22)**

**PREPARED BY:**

Arizona Department of Environmental Quality  
Waste Programs Division  
Solid /Hazardous Waste Section  
Hazardous Waste Permits and Support

# TABLE OF CONTENTS

<b>Section</b>	<b>Page</b>
EXECUTIVE SUMMARY .....	2
1.0 INTRODUCTION.....	3
1.1 Purpose and Scope .....	3
1.2 Report Organization.....	3
2.0 FACILITY DESCRIPTION.....	4
2.1 Central Building.....	4
2.2 Main Outdoor Storage Pad.....	5
2.3 Liquids Transfer Operations .....	6
2.4 Solids Consolidation Operations.....	6
2.5 Septic System.....	7
3.0 REGULATORY HISTORY .....	7
3.1 Solid Waste Notification.....	7
3.2 Hazardous Waste Notification .....	7
3.3 Other Regulatory Permits.....	7
3.4 Inspection History.....	7
3.5 Hazardous Material Incidents and Releases.....	8
4.0 ENVIRONMENTAL SETTING .....	8
4.1 Climate.....	8
4.2 Geology.....	8
4.3 Soils.....	9
4.4 Groundwater and Hydrology .....	9
4.5 Surface Water.....	10
4.6 Vegetation and Wildlife .....	11
5.0 SOLID WASTE MANAGEMENT UNITS .....	11
5.1 SWMU1 – Central Building .....	12
5.2 SWMU2 – Main Outdoor Storage Pad / HWMU3 .....	12
5.3 SWMU3 – Concrete Pads Used for Bulk Storage (current and prior locations).....	13
5.4 SWMU4 – Outdoor Storage Pad/HWMU1 (Future) .....	14
5.5 SWMU5 – Outdoor Storage Pad /HWMU2 (Future) .....	14
5.6 SWMU6 – Septic System .....	15
6.0 CONCLUSIONS AND RECOMMENDATIONS .....	15
Figures .....	17

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## EXECUTIVE SUMMARY

The Arizona Department of Environmental Quality is the primary oversight agency for implementing the U.S. Environmental Protection Agency's (EPA) RCRA program and many of the Hazardous and Solid Waste Amendments (HWSA) requirements. In addition, ADEQ monitors compliance with state-specific environmental requirements regarding air emissions, sanitary, and other treatment systems.

Due to the volume of RCRA hazardous wastes generated, AAS is considered to be a very small quantity generator (VSQG) of hazardous waste. In addition, any facility that receives hazardous waste for commercial storage is classified as a treatment, storage, and disposal facility (TSDF). On November 22, 2021, AAS submitted to ADEQ an application for hazardous waste permit for container storage. Upon approval of its permit application, AAS would be classified as a TSDF.

ADEQ is required to perform an RCRA Facility Assessment (RFA) on any new hazardous waste management facility seeking a TSDF permit. The RFA is designed to identify any areas that historically have had the potential to release to the environment (any media) either solid waste, hazardous waste, or hazardous waste constituents. Areas deemed to have the potential to release solid waste, hazardous waste, and hazardous waste constituents are identified as either solid waste management units (SWMU) or Areas of Concern (AOC).

This RFA report presents information on all SWMUs and AOCs that ADEQ has identified based on its review of records, observations at the Visual Site Investigation, and review of the permit application for AAS at the A.A.Sydcol, LLC (AAS) facility in Yuma, Arizona. AAS is located at 2264 East 13<sup>th</sup> Street in Yuma, Arizona. The site is 4.75 Acres in size. It is the site of an existing solid waste transfer facility, in operation since 2017.

AAS is located outside of the city of Yuma in an industrialized area, however, there are residences (mobile homes) less than 0.5 miles to the south, in addition farm land is situated immediately north of the facility. There are no sensitive environmental receptors onsite, although there may be several threatened or endangered wildlife in the general Yuma area.

At the time of the visual site investigation the AAS facility consisted of one main warehouse building and one external concrete storage pad. ADEQ was informed that two additional storage pads would be constructed, and that each of the storage pads would be designed to store solid waste and upon permit approval, hazardous waste.

During the RFA, a total of six SWMUs were identified; no AOCs were identified. After evaluating any documented or potential releases at these units, response actions were recommended for three of the SWMUs. Table 6-1 in the report summarizes the actions recommended for these SWMUs. The RFA finds that there is no immediate threat to the environment from any of the SWMUs, and no emergency response actions are warranted.

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## 1.0 INTRODUCTION

This RCRA Facility Assessment (RFA) for A.A. Sydcol, LLC (AAS) has been prepared by the Arizona Department of Environmental Quality (ADEQ). It has been prepared in accordance with the guidelines provided by the U.S. Environmental Protection Agency (EPA) RFA guidance document (EPA/530-86-053). The RFA Report is one of the requirements for issuing a permit to AAS by ADEQ.

### 1.1 Purpose and Scope

The purpose of this RFA is to identify solid waste management units (SWMUs) and other areas of concern (AOCs) and to evaluate their past and present potential for release of hazardous wastes or constituents to all environmental media and to determine likely pathways and human and environmental receptors. Authority was provided to the EPA by the RCRA Hazardous and Solid Waste Amendments (HSWA) in 1984. EPA delegated the Corrective Action Program to ADEQ on January 22, 1993. State authority for corrective action is provided by Arizona Statute A.R.S. §49-922 et seq.

The first step in the RFA process is to conduct a preliminary review (PR). The PR includes a detailed review of the facility files, the permit application, inspection reports, other pertinent documentation and discussions with regulatory agency and facility staff. Additional components of an RFA include a visual site inspection (VSI) to verify the record and determine the need for any additional inspection activity which might require a sampling visit (SV) to complete the RFA. The PR phase was completed prior to the visual site inspection (VSI) conducted on August 16, 2018. Observations, investigation findings and inspection results are included in this RFA report.

SWMUs are defined as any discernable waste management unit at a RCRA facility from which hazardous wastes or constituents might migrate, irrespective of whether the unit was intended for management of solid and/or hazardous waste. SWMUs include those units defined as "regulated units" under RCRA, as well as other units which EPA has generally exempted from standards applicable to hazardous waste management units, such as recycling units and wastewater treatment units, and areas contaminated by routine, systematic, and deliberate discharges from process areas. For the purpose of this assessment, AOCs are defined as: 1) hazardous material product storage units or areas; 2) one time hazardous material product spill events; and 3) hazardous material units or areas where waste management may have occurred and where the potential for release may have existed, but where insufficient evidence was found during the PR file review and the VSI to verify the existence of a definable SWMU.

### 1.2 Report Organization

This report is a summary of a detailed file investigation and a visual site assessment of the history, processes and waste management activities practiced by AAS. The preliminary review (PR) was completed through a review of information available from multiple sources; federal, state and municipal documents, company provided information, regulatory records, aerial photographs, maps, discussions and interviews with AAS and ADEQ personnel. There are 7 Sections: Section 1 provides the introduction, purpose and organization of the report. Section 2

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provides a general description of the facility and the processes. Section 3 is a review of the regulatory history of the facility. Section 4 furnishes information on the environmental setting. Section 5 describes the Solid Waste Management Units (SWMUs). Section 6 deals with current and future areas of concern Areas of Concern (AOCs). Section 7 identifies the potential waste migration pathways. Section 8 presents conclusions and recommendations for continued or future implementation. References are provided in Section 9. Photographs of the site in Section 10 illustrate the facility features.

## 2.0 FACILITY DESCRIPTION

AAS is a privately held environmental services company providing hazardous and non-hazardous waste management services, including recycling, treatment and landfill options for customers located in California and Arizona. The company has one facility in Arizona, located at 2264 East 13<sup>th</sup> Street, Yuma, AZ 85365. From 2005 until 2017, the company operated a solid waste transfer facility, located at 1925 S. Factor Avenue, Yuma, AZ 85365. The Factor Avenue facility closed in December, 2017 -- AAS moved its operations to the 13<sup>th</sup> Street facility, which began operations in January 2018. The public land survey coordinates for the property are NW ¼ of SW ¼ of T8S R23W, Section 26, Gila & Salt River Base & Meridian.

AAS is located on a parcel 4.75 Acres in size. It is in unincorporated property within Yuma County, and is approximately 1000 feet from the Yuma city limits. Before 2010, it was the site of a mobile home park (see Figure 2). After 2010, the portable housing was removed and the property was a bare lot. The site remained a bare lot until prior to onsite construction of the AAS facility (from approximately 2010 to 2017). Figure 3 shows the property in July 2015, before onsite construction commenced.

The property and its surroundings is zoned for heavy industrial use. To the west is Mac Electric Inc, an electrical contractor. To the east are Unique Kustomz, an automotive body repair shop and Diaz Automotive, an automotive repair shop. To the north is farm land owned by California Farming Company), and to the south is Piston Auto Recycler. Figure 1 presents an aerial view of the property and its surroundings. Figure 4 is a topographic map showing the location of the facility. Figure 5 is a site plan showing significant features of the site where solid wastes are stored and processed. Significant features include a central building with loading ramps on the north and south of the building, a main outdoor storage pad, four small concrete pads to the west, and a water storage tank.

### 2.1 Central Building

AAS maintains a central building that houses its administrative offices, laboratory, and warehouse. The building dimension is about 75 feet by 135 feet, and is constructed of sheet metal, with steel girders for side support. The roof is steel with steel beam supports. The entire building is protected by automatic sprinklers for fire control. Figures 6 through 9 show the exterior of the building.

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On the eastern end of the central building are the administrative offices and laboratory. They are separated from the warehouse by a fire-rated wall that runs end to end and from floor to roofline (see Figure 10). These offices are cooled by air conditioner. The central building is served by an onsite septic system for collecting sanitary wastes.

The laboratory contains the following instruments for the analysis of solid waste: an Inductively-coupled Plasma (ICP) instrument, for precise evaluation of metallic constituents, an X-Ray Fluorescence (XRF) device for rapid identification of metal constituents, and a Gas Chromatograph with Mass Spectrometer (GC-MS) for precise evaluation of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). In addition, portable VOC monitors are used to screen incoming liquid wastes. Any analytical wastes generated by the instruments are discharged to portable containers for disposal. A sink is present in the laboratory for sanitation purposes – it discharges to the septic system and is not intended to manage analytical wastes. Figure 11 shows the laboratory interior.

The warehouse occupies the western and center portions of the building, with dimensions of 100 feet by 75 feet. It is served by roof-mounted evaporative coolers and with fans situated on walls for ambient controls. There are loading ramps on the south and north. The south loading ramp has dimensions of about 75 feet by 75 feet. The north loading ramp has dimensions of about 75 feet long by 35 feet wide. Each ramp includes three docks with roll-up doors leading to the warehouse. The warehouse operates as a “cross-dock” facility. In general, incoming loads of containers are received on a south dock, are moved into the warehouse for examination, and if accepted, are moved out through one of the docks on the north side. Figures 12 through 15 show various views of the warehouse interior.

The floor of the warehouse is coated with a black epoxy (see Figure 16). The epoxy coating serves to reduce wear to the concrete and to form a barrier from spills to the underlying porous concrete. During the VSI it was noted that the epoxy was worn in some heavily trafficked areas.

## 2.2 Main Outdoor Storage Pad

A concrete storage pad (200 feet by 50 feet in size) is located 150 feet north of the central building. The pad includes a concrete berm about 6 inches high on the north, east, and west sides. The south edge of the pad is level with surrounding soil to facilitate operations. The pad is not coated, but it is underlain with a liner. This pad is used to store bulk solids on the west side and non-hazardous industrial liquids on the east side. Containers on this pad may either originate from the warehouse or incoming flatbed trucks may offload containers directly onto this pad; however, in all cases, the containers are first checked in with AAS’s operations.

Solid waste solids stored on this pad may be dumped into dump trucks that park nearby, or they may be consolidated into one of four roll-off containers located to the west of the pad. Regarding containers that store liquids, they may be transferred to one of four sites for liquids transfer operations located nearby. Figures 15 through 17 show the main storage pad.

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### 2.3 Liquids Transfer Operations

Outside of the Central Building's warehouse and surrounding the Main Outdoor Storage Pad are five areas where industrial liquids are transferred into bulk storage containers. Incoming tanker trucks park next to these areas and a portable hose is used to transfer liquids from the bulk storage containers to the tanker trucks. The liquids transfer areas are shown on Figure 18.

Liquids transfer operations occurring outside of the warehouse's outgoing dock are done on a concrete storage pad. At this location liquids are transferred directly into an awaiting tanker truck.

Liquids transfer location 1 is next to the warehouse's outgoing dock. Individual totes or drums are staged near the loading dock and a hose is used to vacuum the liquids directly into a tanker truck. At Liquids Transfer Locations 2 through 5, individual totes or drums are routinely consolidated into bulk storage containers that are permanently staged at these locations (see Figures 14 through 17). Tanker trucks are then dispatched to transfer the contents from the bulk storage. During transfer, operators lay out plastic film to catch or collect any drips or spills at the hose connections. When transfer operations are complete, operators lay the disconnected hose next to the bulk storage tank. The tanker trucks then transport the consolidated liquids to Copper Mountain Landfill for solidification and permanent disposal.

Liquids that are transferred are aqueous wastewaters. AAS does not typically perform a full analytical analysis of these wastewaters. However, each container is screened by a portable VOC monitor. If the monitor returns any reading, a sample is collected from that container and an organic analysis is performed at the onsite laboratory. In addition, a random ten percent of containers with liquids are also sampled, and a flash test and organic analysis is performed at the onsite laboratory. Samples that fail the flash test or the organic analysis are not consolidated for solidification and disposal.

### 2.4 Solids Consolidation Operations

Solid waste solids are consolidated on the west end of the Main Outdoor Storage Pad. Drums of solids may be reloaded onto flat-bed trucks for disposal or the containerized solids may be dumped into one of four roll-off containers situated on the west side of the property. Solid waste solids may arrive in containers or in bulk loads, which are transferred into the roll-off containers. The consolidated material is sent to South Yuma County Landfill for disposal.

Roll-off containers on the western end of the Main Outdoor Storage Pad sit on concrete pads. These pads are sloped in order to capture precipitation. They have a concrete base and concrete sides, with the side walls tapering down at the entrance. They are not lined. Figure 20 shows the typical design of a concrete pad used for solids consolidation and storage.

A.A. Sydcol notified ADEQ that during operation, it discovered that the orientation of the entrance of three of the four pads hindered the efficient movement of trucks (the southernmost pad does not have such a problem with its orientation). In addition, they wanted the pads to have less spacing. AAS stated that each pad will be removed and new pads will be constructed in approximately the same location and positioned more closely to each other. The entrance to each pad will be turned at an angle to allow for multiple trucks to easily back up into the pads.

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## 2.5 Septic System

Waste from the bathroom and the laboratory sink go to a septic system located to the southwest of the central building. No laboratory-generated solid wastes are directed to the septic system. Its location is shown on Figure 31.

## 3.0 REGULATORY HISTORY

### 3.1 Solid Waste Notification

ADEQ acknowledged AAS's solid waste facility notification on May 21, 2014. The notification was for operation of a solid waste transfer station. A subsequent notification was submitted on January 31, 2017, when Yuma County changed the address of the parcel from 2255 East Burr Street, Yuma, AZ 85365, to 2264 East 13<sup>th</sup> Street, Yuma, AZ 85365.

### 3.2 Hazardous Waste Notification

AAS submitted a Notification of RCRA Subtitle C Activities form to ADEQ on November 28, 2017. The notification specified that the facility be classified as a handler and transporter of regulated waste. EPA ID Number AZR 000 520 304 was assigned by ADEQ to the facility. The facility is currently classified as a very small quantity generator of hazardous waste.

On May 26, 2015, AAS published a notice in the Yuma Sun announcing its intent to file an application with the ADEQ for a hazardous waste storage facility. Also, a notice of public meeting was received by ADEQ on June 10, 2015. On July 9, 2015, AAS held a pre-application public meeting at the Holiday Inn, at 1901 East 18<sup>th</sup> Street, Yuma, AZ 85365.

### 3.3 Other Regulatory Permits

A solid waste transfer station is not required to obtain a license before receiving solid waste for consolidation and transport, unless it will receive greater than 180 cubic yards of solid waste per day. Operators of such large transfer facilities must first file a self-certification application with ADEQ in accordance with A.R.S. §49-702.05 and A.A.C. R18-13-501, before construction commences.

### 3.4 Inspection History

ADEQ has conducted one inspection of the AAS facility on August 16, 2018. The inspection examined AAS solid waste transfer operations and the laboratory used for verifying that the wastes are not contaminated with solvents or heavy metals. The inspection report noted that the facility only accepted commercial waste including water or latex paints, non-hazardous liquids, construction debris, and adsorbents. No putrescible waste or green waste was present at the time. Facility drainage was deemed to be acceptable, and no visible ponding from liquid wastes was noted. There was no on-site or off-site windblown litter, and no vectors or vector breeding was noted. No deficiencies were noted, no corrective actions were required, and the facility was considered to be in compliance with solid waste storage and transfer requirements.

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### 3.5 Hazardous Material Incidents and Releases

To date, AAS has not reported any releases of solid or hazardous waste from the facility. No incidents of hazardous materials or hazardous wastes (e.g., fires, explosions, or releases requiring any state or local emergency response agencies) have been reported.

## 4.0 ENVIRONMENTAL SETTING

The AAS facility is owned by Syd-Cole Properties, LLC, a limited liability corporation organized on June 27, 2014. Syd-Cole Properties purchased the property from Jorge Holland on July 14, 2014. A visual survey of the property performed by ADEQ on July 9, 2015 confirmed that the property consisted of a lot with no buildings or other appurtenances on it (see Figure 3).

### 4.1 Climate

The climate in the vicinity of AAS is very arid, with brief mild winters and long hot summers. Regional precipitation is generally greater in the winter than in the summer, although the highest monthly rainfall occurs in August. The average annual temperature is approximately 72 °F, while the average annual precipitation is 3.36 inches, making the Yuma area one of the hottest and driest in the United States.

In the summer, the average temperature is 87° F, and the average daily maximum is 107 °F. The average relative humidity in midafternoon is about 20 percent. Humidity is higher at night in all seasons, and the average at dawn is about 50 percent. From mid-July to mid-September, the moisture content of the air is higher than might be expected in a desert area, due to changing wind patterns and the nearness of the Gulf of Baja California. During this time, wet bulb temperatures are frequently between 75 and 80 °F. The prevailing direction of the wind is from the north with a maximum average wind speed of 10 miles per hour in July. Figure 22 provides a wind rose for the Yuma area.

### 4.2 Geology

The AAS site can be found on the Yuma East 7 ½ Quadrangle. Figures 25 and 26 are the Geologic Map for the Yuma East 7 ½ Quadrangle, Yuma County AZ. The property is shown at Latitude 32° 42' 15" N, Longitude 114° 35' 42" W. The map shows that the area around the AAS facility is almost entirely comprised of late Cenozoic sediments. In general, depth to bedrock ranges from ~1,460 m (4800 ft) in the extreme southeastern corner of the quadrangle to ~120 m (400 ft) in the southwestern corner (Richard and others, 2007), with several small bedrock hills rising above the Cenozoic sediments in the western half of the quadrangle. The map area can be divided into two geomorphic settings. The northern half of the quadrangle includes portions of Bard, North Gila, and South Gila Valleys (Olmstead and others, 1973) and consists of Holocene Gila and Colorado River deposits. Approximately 12 m (40 ft) above the river valley is Yuma Mesa which occupies the southern half of the quadrangle (Olmstead and others, 1973) and is comprised of older Colorado River deposits. Elevations range from 35 m (115 ft) in the river valley to 95 m (310 ft) on Yuma Mesa, however the surfaces in both geomorphic settings are relatively subdued and flat lying. Most of the mapping area has been extensively modified by agricultural activities and urban development.

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The AAS facility is located about 1.25 miles from the Colorado River, within a region of young river terrace and floodplain deposits (Qy<sub>2r</sub>). These deposits are associated with the late Holocene to historical river floodplain that are up to 6 m above active river channels and ~ 2 m above the adjacent Qy<sub>3r</sub> surfaces. Qy<sub>2r</sub> surfaces are planar and have been almost completely altered by agricultural activity or urban development. Sediments composing these deposits are poorly sorted silt, sand, pebbles, and cobbles. Pebbles and cobbles are well rounded to sub-angular. These deposits are probably not prone to flooding in the modern post-dam environment (see Figure 24). In addition, the AAS facility is not located within a 100-year flood plain as this area is protected by flood control structures, including the South Gila Levee located north of the facility (see Figure 32).

#### 4.3 Soils

Yuma soils are predominantly due to erosional forces rather than depositional, because of the region's development adjacent to two through-flowing rivers. Numerous channels direct surface drainage north and west to the Colorado and Gila Rivers.

The soils of the Yuma valley have a common origin, and therefore differ mainly in texture. As a result, principally of this difference in texture the soils are now found to contain widely varying amounts of soluble mineral matter and humus. All of the soils, even the heaviest, are underlain at a few feet by sand, which extends to unknown depths. Figure 23 shows a cross-section of the generalized geology for the Yuma area. Figure 24 is a diagram showing how soils and sediment from the Colorado River have been deposited above regional bedrock.

#### 4.4 Groundwater and Hydrology

The groundwater reservoir beneath the Yuma area is composed of Cenozoic basin-fill deposits overlying pre-Tertiary crystalline rocks. The thickness of the fill in the deepest parts exceeds 16,000 feet, but only the upper 2,000 to 2,500 feet is composed of water-bearing alluvial deposits (Olmstead and others, 1973). Therefore, the groundwater reservoir is considered to be composed of two subdivisions: (1) poor water-bearing rocks of Tertiary age and (2) water-bearing deposits of Pliocene to Holocene age. The first subdivision includes volcanic rocks, non-marine sedimentary rocks, old marine sedimentary rocks, and the Bouse Formation. The second subdivision consists of the older alluvium, the younger alluvium, and the wind-blown alluvium. Most groundwater is found in the second subdivision unit. Water from the first subdivision is described as brackish and mineralized and is characterized as unfit for most uses (Olmstead and others, 1973). The coarse gravel zone, comprised of the upper part of the older alluvium and the base of the younger alluvium is the most permeable deposit of the second subdivision. Consequently, almost all of the production in Yuma area wells tap this strata for groundwater, and it is recognized as the primary source for groundwater in the Yuma area.

Under normal conditions, the Colorado and Gila rivers provide significant sources of groundwater recharge. However, the construction of the Hoover Dam, Imperial Dam, Roosevelt Dam, and other upstream dams significantly reduced water flow through the rivers and caused significant limits on the amount of recharge previously supplied by the rivers. Irrigation water

diverted from the Colorado River is now the source of almost all groundwater recharge in the Yuma area (Olmstead and others, 1973).

The Arizona Department of Water Resources states that the groundwater in the unconsolidated sediments zone is flowing to the north (Figure 27). In 2004, depth to groundwater was measured to be about 12 ft based on measurements at Well “C” (the closest well to the AAS facility in the ADWR well network, Figure 28).

According to the report *Ambient Groundwater Quality of the Yuma Basin: An ADEQ 1995 Baseline Study* (the ADEQ Baseline Study), groundwater in the Yuma Groundwater Basin (YGB) is characterized as “generally slightly alkaline, slightly saline, and very hard based on pH, TDS, and hardness levels, respectively.” A total of fifty-five regional wells were sampled for the ADEQ Baseline Study, with 42 wells randomly selected and 13 wells targeted around specific land uses. Five of the wells exceeded the MCL for nitrate. All 55 wells exceeded the secondary MCLs for TDS (Well “C”, located close to the AAS facility was constructed in the lower, coarse-gravel zone in the YGB, and had TDS levels greater than 2001 mg/L). Several other wells exceeded secondary standards: 49 wells exceeded for sulfate, 32 for chloride, 38 for manganese, and 7 for iron. However, despite the significant amount of agricultural land use in the region, none of the samples had detections of banned-pesticides or current registered pesticides. Ammonia was found in half of the sites, likely due to prevalent use of ammonia-based fertilizers in the region.

#### 4.5 Surface Water

There are no lakes located in the vicinity of the AAS facility, however, the Colorado River is located about 5300 feet from the facility. The Gila River is located about 12,200 feet from the facility. The confluence of the Gila and Colorado is located about 12,300 feet away. According to the U.S. Bureau of Reclamation, the Colorado River may have flows of about 1,380 cubic feet per second (cfs), near the Yuma Fourth Avenue Bridge, and about 1,653 cfs at the Northern International Boundary. These flows are greatly affected by periodic releases at the Davis and Parker dams. Flow in the Gila River are much lower, with a

According to the report: *City of Yuma Water Quality Report for 2017*, the source for drinking water for the Yuma Area is from the Colorado River, which is delivered to the Main Street and Agua Viva water treatment plants, the two main water treatment plants in the region. Based on 128 analyses of 2742 water samples taken in 2017, the treated drinking water contains contaminants such as Arsenic, Barium, Fluoride, Nitrate, Sodium, and Uranium. Concentrations of contaminants were found in the following quantities:

Substance	MCL	Main Street	Agua Viva
		Concentration	Concentration
Arsenic (ppb)	10	2.1	2.2
Barium (ppm)	2	0.096	0.091

Fluoride (ppm)	4	0.49	0.44
Nitrate (ppm)	10	0.26	0.23
Sodium (ppm)	---	140	140
Turbidity (NTU)	TT	0.08	0.49
Uranium (ppb)	30	2.5	4

As noted in the ADEQ baseline study, it is generally assumed that groundwater in the YGB consists of recharged water from the Colorado River. Therefore, it is considered to be fairly chemically uniform and similar to Colorado River water.

#### 4.6 Vegetation and Wildlife

AAS is located within a commercial industrial area. Surrounding the facility are businesses to the west, east, and south, with farming occurring to the north. The AAS facility is situated on a parcel 4.75 acres in size. The site is developed with a main warehouse building including a waste staging area, shipping and receiving docks, laboratory, and office space. There are three external concrete storage pads, four smaller pads designed for consolidation of solid wastes, and a water tank for fire suppression. The parcel is surrounded by a chain link fence. Surrounding native flora may consist of Palo Verde, Ironwood, Smoketree, Mesquite, Yucca, Agave, and Catclaw Acacia trees. Saguaro and Ocotillo may also be found in the area, but become less common due to the distance to the Bajadas. Bushes such as Creosote and other dry-land bushes are frequently found in the vicinity of AAS. Grasses such as Galleta grass are common, but due to human activity, Bermuda and Bermuda grass hybrids are also common in the area.

Large native wildlife is not commonly found near AAS; however, small game birds may be observed, especially due to the proximity to the Colorado River, and several federally endangered birds and mammals may be observed. These include:

- Razor-back Sucker,
- Sonoran Desert Tortoise,
- Flat-tailed Horned Lizard,
- Great Egret,
- Snowy Egret,
- Black Rail,
- Yuma Clapper Rail

#### 5.0 SOLID WASTE MANAGEMENT UNITS

AAS has not reported any releases of solid or hazardous waste from the facility. No incidents of hazardous materials or hazardous wastes (e.g., fires, explosions, or releases requiring any State or local emergency response agencies) have been reported. Therefore, RCRA facility investigation will focus on existing SWMUs or future SWMUs.

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This section presents a list of SWMUs that are either in existence or have been proposed in the hazardous waste permit submitted to ADEQ for evaluation. As part of any hazardous waste inspection, typically conducted not less than once per year, each SWMU will be visually examined for evidence of release. However, it may not be possible to examine certain SWMUs during the inspections (e.g., underground tanks or piping). These SWMUs will be sampled at facility closure or at the time that the units are abandoned. Likewise, other SWMUs (e.g., dry wells) that are constructed and abandoned during facility operation will also be sampled at that time. Other SWMUs that are continuously operated until facility closure will be sampled as part of the closure plan for the facility.

### 5.1 SWMU1 – Central Building

#### *Description:*

The Central Building is identified as SWMU1 on the 2021 Hazardous Waste Permit Application. Historically, it has been used as a central location for receipt and export of solid waste. The structure is approximately 75 by 135 feet in size including the laboratory and office, but not including the two loading docks. Figure 5 shows the location of the building on the property. In addition, Figure 34 shows the building as it is described in the hazardous waste permit application submitted December 2021 – it is identified as “SWMU”.

Figures 6 through 15 show the exterior and interior of the building. The interior of the building has a concrete base with epoxy coating, but due to mechanical wear, the epoxy coating was noted to have suffered significant wear (Figure 16). Section 2.2 describes the operations occurring within SWMU1.

#### *Wastes Managed:*

The Central Building has not yet managed any hazardous wastes. Solid Wastes have been received for consolidation and disposal.

#### *Status:*

The Central Building is in operation. It currently manages solid wastes. Upon permit issuance the Central Building will continue to receive solid wastes. Docks on each side of this SWMU will manage, but not store hazardous wastes.

#### *Release History:*

There is no history of release of solid wastes at SWMU1. No spills have been reported by AAS.

### 5.2 SWMU2 – Main Outdoor Storage Pad / HWMU3

#### *Description:*

To the north of the Central Building is the Main Outdoor Storage Pad, identified as HWMU3 in the 2021 Hazardous Waste Permit Application. It measures approximately 200 feet by 50 feet. Solid waste liquids are stored on the pad, and liquids consolidation occurs mostly along the north edge. Portable pumps are used to pump liquids from staged containers into awaiting tanker trucks. To minimize the potential for spills the operator uses a plastic tarp at the truck connection to catch any waste that may drip at the connection. The solid wastes included oils and aqueous

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liquids. Consolidated aqueous liquids were sent to Copper Mountain Landfill for solidification and disposal.

*Wastes Managed:*

The Main Outdoor Storage Pad has not yet managed any hazardous wastes. Solid Wastes have been received for consolidation and disposal.

*Status:*

The Main Outdoor Storage Pad is in operation. It currently manages solid wastes. Upon permit issuance SWMU2 will receive and store of the hazardous waste identified in Figure 33 (Table 1 from 2021 Part A application), and it will be designated as HWMU3. So long as they are compatible with hazardous wastes, non-hazardous solid wastes may also continue to be managed at this SWMU.

*Release History:*

During the VSI ADEQ noted that consolidation of liquid solid wastes was being performed at SWMU2 (see Figure 21), but no spills were observed. There is no history of release of solid wastes at SWMU2. No spills have been reported by AAS.

### 5.3 SWMU3 – Concrete Pads Used for Bulk Storage (current and prior locations)

*Description:*

The facility operates four concrete pads for bulk storage. These pads are located to the west of the Central Building next to the western fence. Figure 21 shows the historic and current arrangements of the four pads. These pads are used primarily to transfer solid materials from containers such as roll-off containers to garbage collection vehicles. The solid waste is then transported to South Yuma County Landfill for disposal. The pads are about 10 feet wide by 30 feet long. The entrance to the pad is approximately at grade, and the floor slopes to the rear, providing some containment for spills. This design does not prevent stormwater from entering the pad, but no spills or waste debris was noted at any of the pads during the visual site investigation on August 20, 2018. In addition, at the VSI, representatives of AA Sydcol informed ADEQ that the pads would be rearranged to provide additional space for trucks to maneuver. Recent photographs of the facility show that this rearrangement has been completed.

*Wastes Managed:*

The concrete pads used for bulk storage (current and prior locations) are not identified as units that will receive hazardous wastes for storage. They will continue to manage solid wastes.

*Status:*

The concrete pads used for bulk storage (current locations) are currently in operation. The former pads have been removed. It is not expected that hazardous wastes will be stored or accumulated at any of the pads.

*Release History:*

There is no history of release of solid wastes at SWMU3. No spills have been reported by AAS.

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#### 5.4 SWMU4 – Outdoor Storage Pad/HWMU1 (Future)

##### *Description:*

The 2021 Hazardous Waste Permit Application identifies a new outdoor storage pad for hazardous wastes to be located to the west of the Main Building. This pad will have a concrete base and be about 50 feet by 100 feet. It will be sloped towards the southern concrete containment curb; spills and accumulated precipitation will be directed to the rear of the pad at the approximately six inch high berm. Figure 29 shows the location and arrangement of this SWMU.

##### *Wastes Managed:*

The Outdoor Storage Pad/HWMU1 has not yet received any hazardous wastes for storage. Solid wastes have been received for consolidation and disposal.

SWMU4 is currently in use at the facility, and is managing solid wastes. Upon permit issuance, and following certification of the completion of construction of its containment structure, HWMU1 will also receive those hazardous wastes identified in Figure 33 (Table 1 from the 2021 Part A application). In addition, so long as they are compatible with hazardous wastes, non-hazardous solid wastes may also continue to be managed at this location.

##### *Status:*

SWMU4 is currently used as a staging area for solid wastes. During the VSI it was noted that it is also be used as an area for the storage of empty containers.

##### *Release History:*

There is no history of release of solid wastes at SWMU4. No spills have been reported by AAS.

#### 5.5 SWMU5 – Outdoor Storage Pad /HWMU2 (Future)

##### *Description:*

The 2021 Hazardous Waste Permit Application identifies a new outdoor storage pad for hazardous wastes to be located to the north of SWMU4. This pad will have a concrete base and be about 100 feet by 85 feet. The pad will be sloped towards the west. Spills and accumulated precipitation will be directed to the rear of the pad from the northwest to the southwest corners. It is designed to handle all the characteristic and listed hazardous wastes shown in Figure 33 (Table 1 from 2021 Part A application). So long as they are compatible with hazardous wastes, non-hazardous solid wastes may also continue to be managed at this location. Figure 30 shows the location and arrangement of this SWMU. This SWMU is also shown in Figure 34, from the 2021 hazardous waste permit application.

##### *Wastes Managed*

HWMU2 has not yet managed any hazardous wastes. Solid wastes have been received for consolidation and disposal.

SWMU5 is currently in use, managing solid wastes. Upon permit issuance, and following certification of the completion of construction of its containment structure, HWMU2 will also receive those hazardous wastes identified in Figure 33 (Table 1 from 2021 Part A application). In

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addition, so long as they are compatible with hazardous wastes, non-hazardous solid wastes may also continue to be managed at this location.

*Status:*

SWMU5 is currently a staging area for solid wastes, It may also be used as an area for the storage of empty containers.

*Release History:*

There is no history of release of solid wastes at SWMU5. No spills have been reported by AAS.

*Release History:*

There is no history of release of solid wastes at SWMU5. No spills have been reported by AAS.

## 5.6 SWMU6 – Septic System

*Description:*

As noted in Section 2.5, AAS uses a septic tank to manage non-hazardous waste liquids generated at the facility. The septic tank and associated piping and leach field is identified as SWMU6. The capacity of the tank is not specified in the permit. The tank is designed to manage non-hazardous liquid wastes generated at the Main Building. AAS has informed ADEQ that wastes from the laboratory are not directed to the septic tank.

Figure 34 shows the approximate location of the Septic System, including the tank and the associated piping and leach field.

*Status:*

The Septic tank was installed at the time of construction of the Main Building, and remains in use.

*Release History:*

There is no history of release of solid wastes at this SWMU.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

This section summarizes the conclusions and recommendations based on the information provided in the 2020 Hazardous Waste Permit Application, file review, and the Visual Site Investigation conducted August 20, 2018.

A total of 6 SWMUs have been identified at AAS. After evaluating any documented or potential threats at these units, response actions have been prepared and are summarized in Table 6-1 below. The table also identifies the applicable media for the response action (air, soil vapor, soil solids, groundwater, surface water. Depending on the potential for exposure to humans or possible offsite release, or contamination of groundwater, an estimate on the potential for future release has also been assigned. The estimate for the potential for release is based on the type(s) of waste managed, including the mobility of constituents, the media that may be impacted, the quantity of wastes managed, the type of activity, and the level/extent of monitoring at the SWMU.

Table 6-1 Summary of Releases and Recommended Actions

SWMU or AOC Number	SWMU or AOC Name	Media	Potential for Release	Recommendation
SWMU 1	Central Building	Soil	Low	None
SWMU 2	Main Outdoor Storage Pad / HWMU3	Soil, Soil Gas	High	Sample soils at locations where liquid consolidation has occurred. Soil solids should be analyzed for metal constituents, Soil gas for VOCs and Semi-VOCs
SWMU 3	Concrete Pads for Bulk Storage	Soil	Medium	Conduct a follow-up visual survey of the former locations of pads, and current locations. Sample soils at any locations with visible staining.
SWMU 4	Outdoor Storage Pad / HWMU1	Soil	Low	None
SWMU 5	Outdoor Storage Pad / HWMU2	Soil	Low	None
SWMU 6	Septic System	Soil, Soil Vapor	Medium	Include in closure plan sampling of areas surrounding septic tank and below underground conduit to the septic tank. Analyze for VOCs, Semi-VOCs, and metals.

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## Figures



Figure 1- Aerial View of Facility From 2017

Source: Yuma County Assessor Website  
<http://geo-viewer.yumacounty.gov>

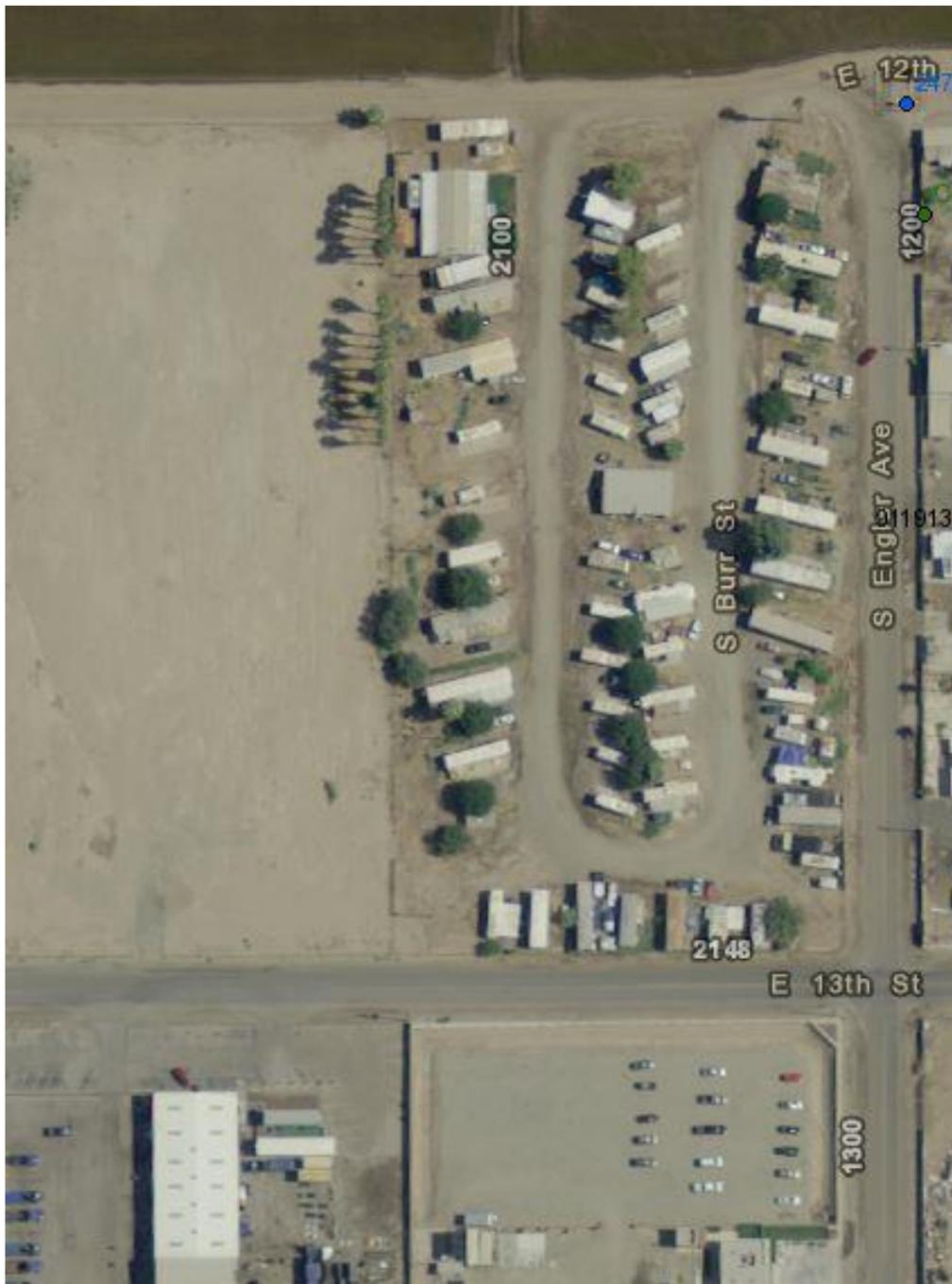


Figure 2 - Aerial View of Facility From 2007

Source: Yuma County Assessor Website  
<http://geo-viewer.yumacounty.gov>



*Figure 3 - A.A. Sydcol Site July 9, 2015*

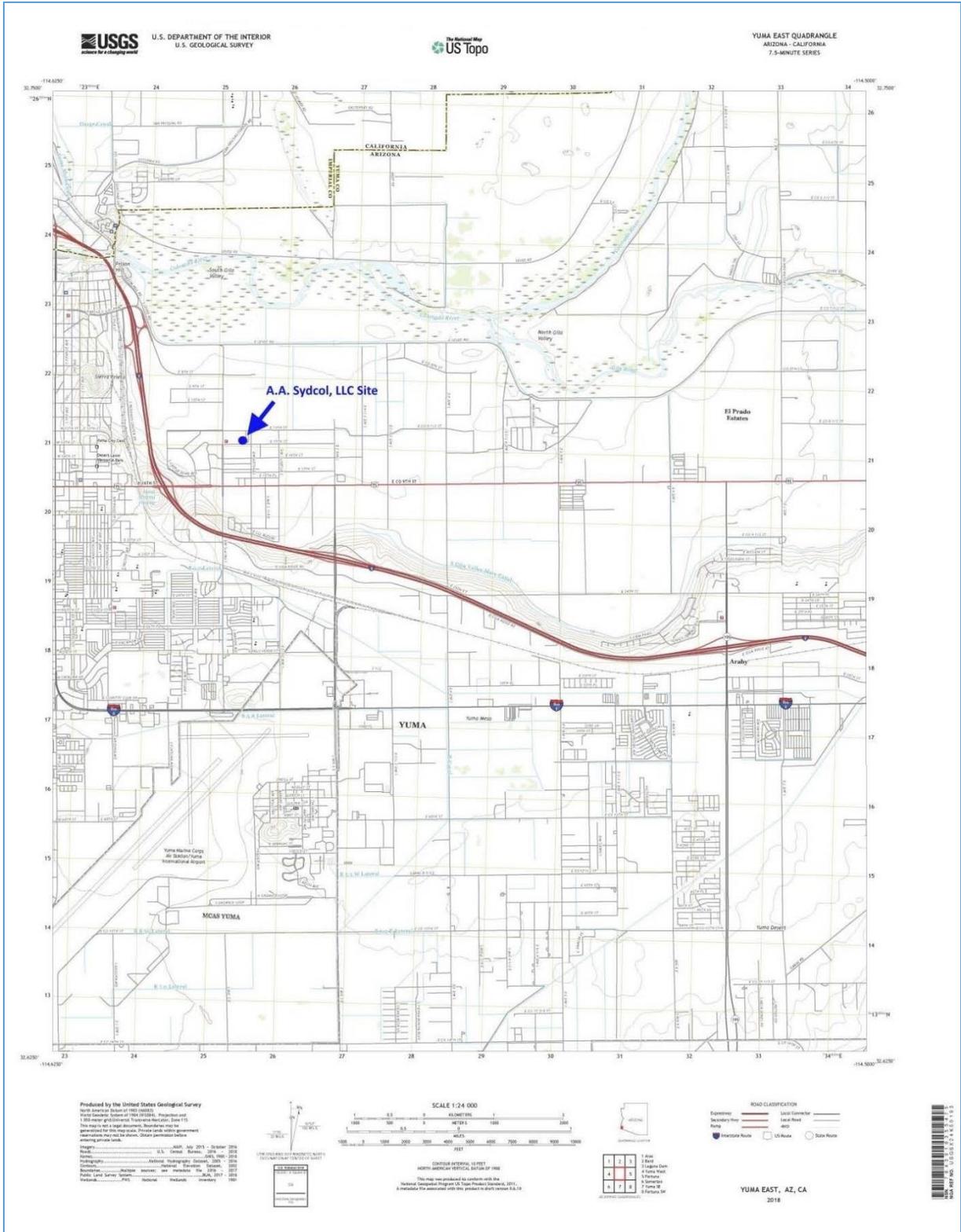


Figure 4- Topographic Map Showing Location of A.A. Sydcol Facility

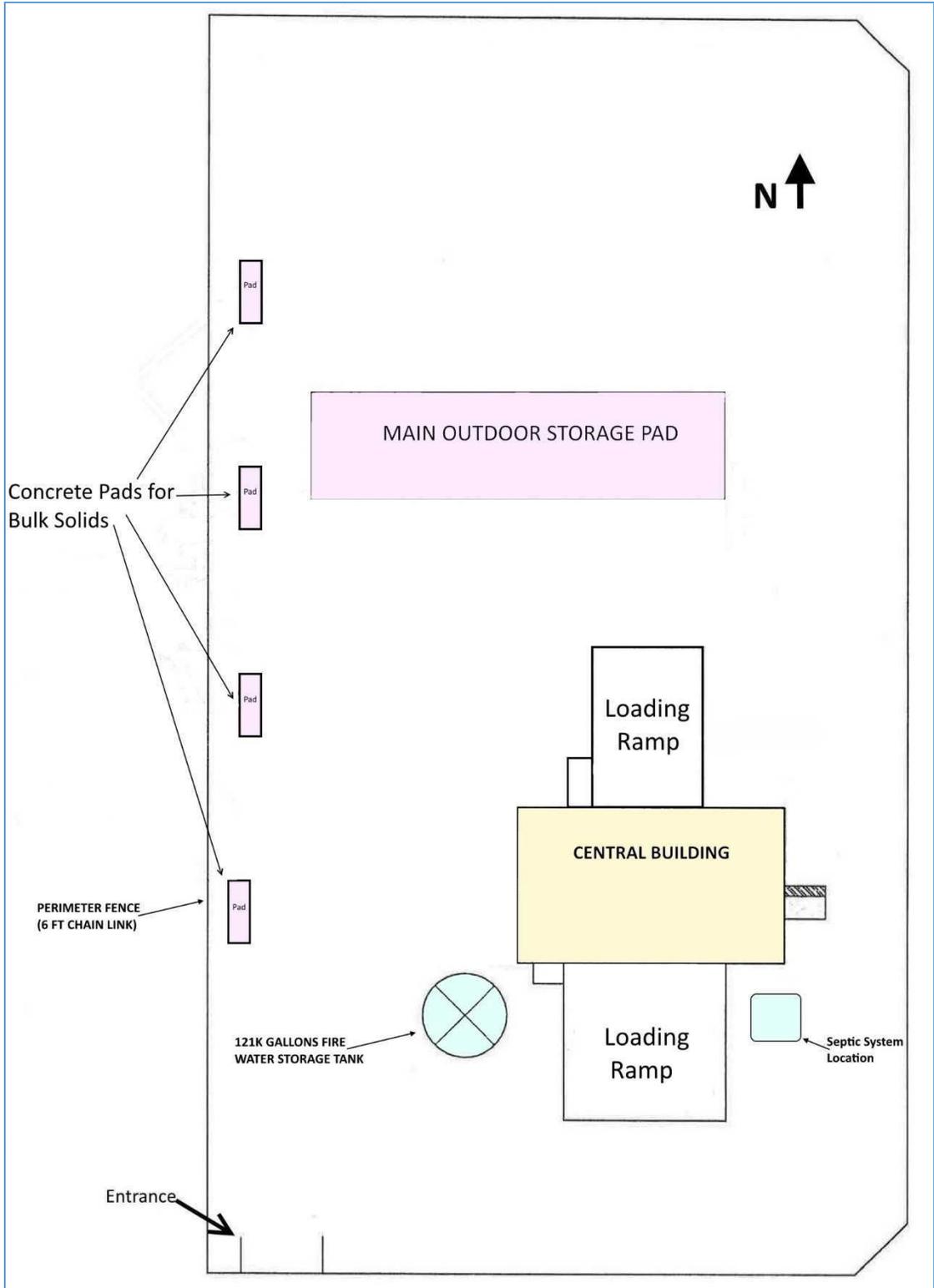


Figure 5 -Site Plan (August 2018)



*Figure 6 - West Side of Central Building*



*Figure 7- Northwest corner of Central Building*



*Figure 8 - East End of Central Building*



*Figure 9 - Southeast corner of building*



*Figure 10 - Warehouse Interior - Fire-rated Wall in Back*



*Figure 11- Laboratory*



*Figure 12 - Warehouse Interior*



*Figure 13 - Warehouse Interior*



*Figure 14 - Warehouse Interior - Dock for Incoming Waste*



*Figure 15- Warehouse Interior - Dock for Outgoing Waste in Back*



*Figure 16 - Epoxy Coating In Warehouse*



*Figure 17 – South Edge of Main Outdoor Storage Pad*



*Figure 18 - Main Outdoor Storage Pad*



*Figure 19 - North Edge of Main Outdoor Storage Pad*



*Figure 20 – Example - Concrete Pad Used for Solids Consolidation*

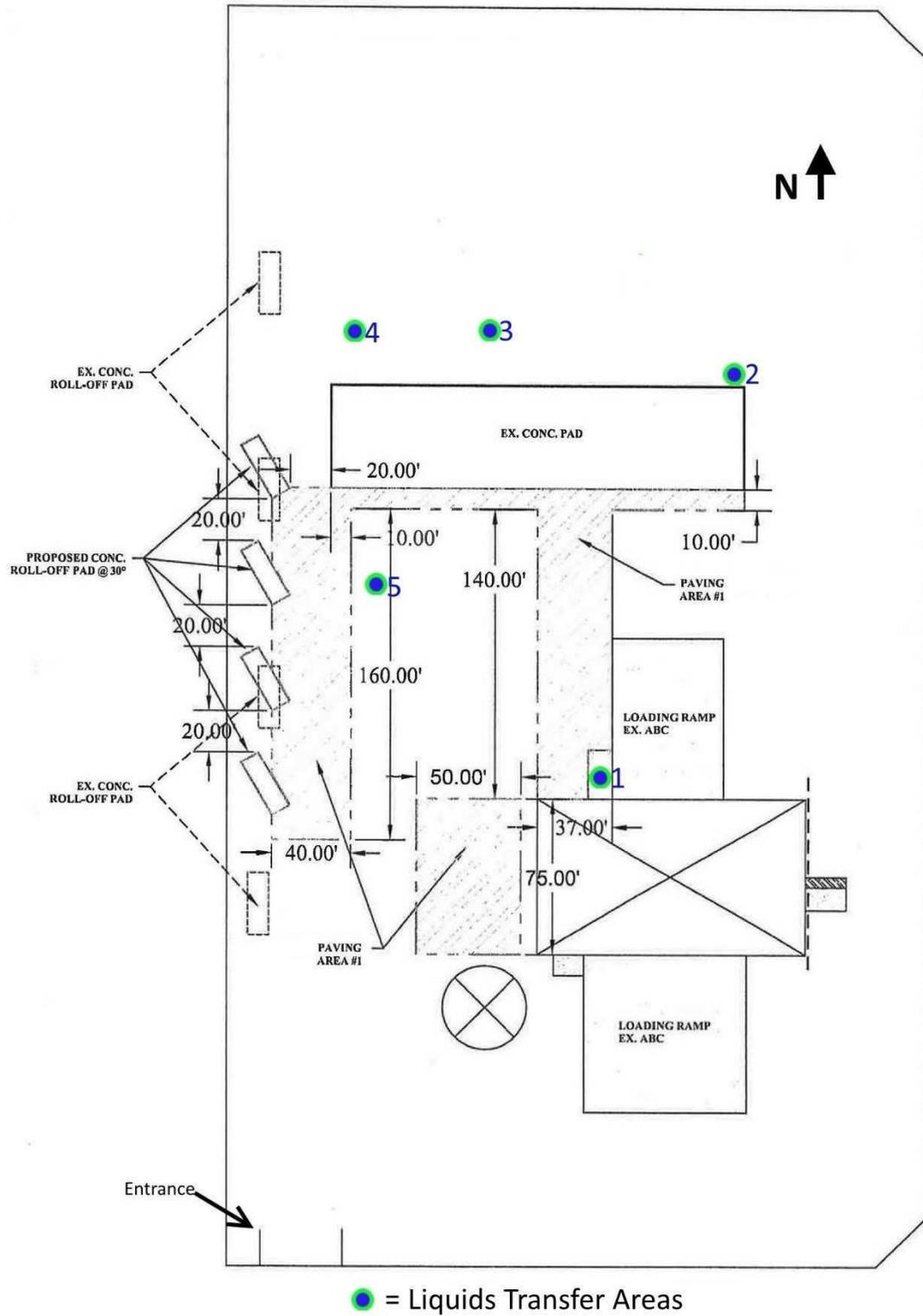


Figure 21 - Liquids Transfer Areas (August 2018)

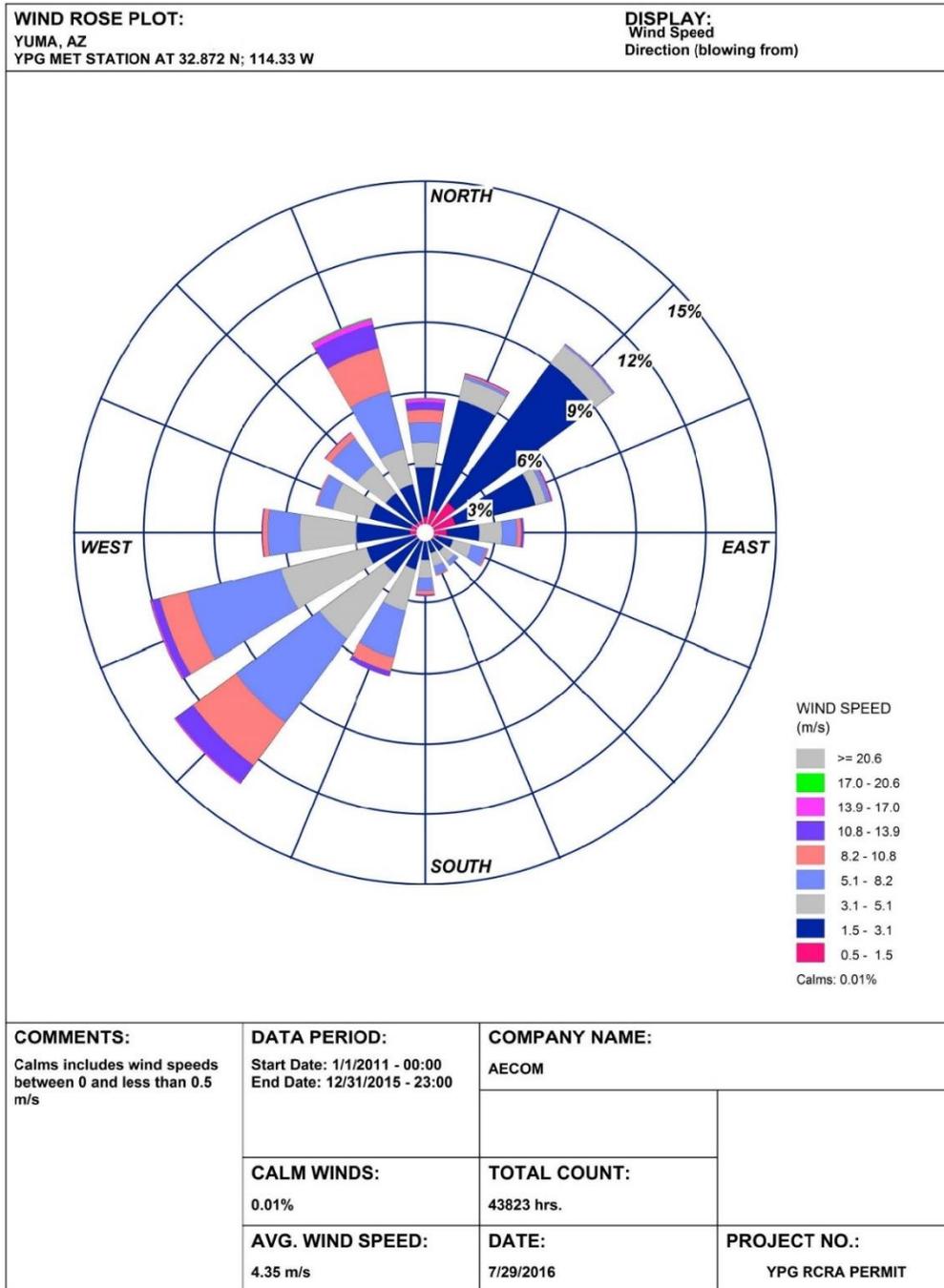


Figure 22- Windrose for Yuma Area

Source: U.S.A.G. Yuma Proving Ground Hazardous Waste Permit Application, Part A

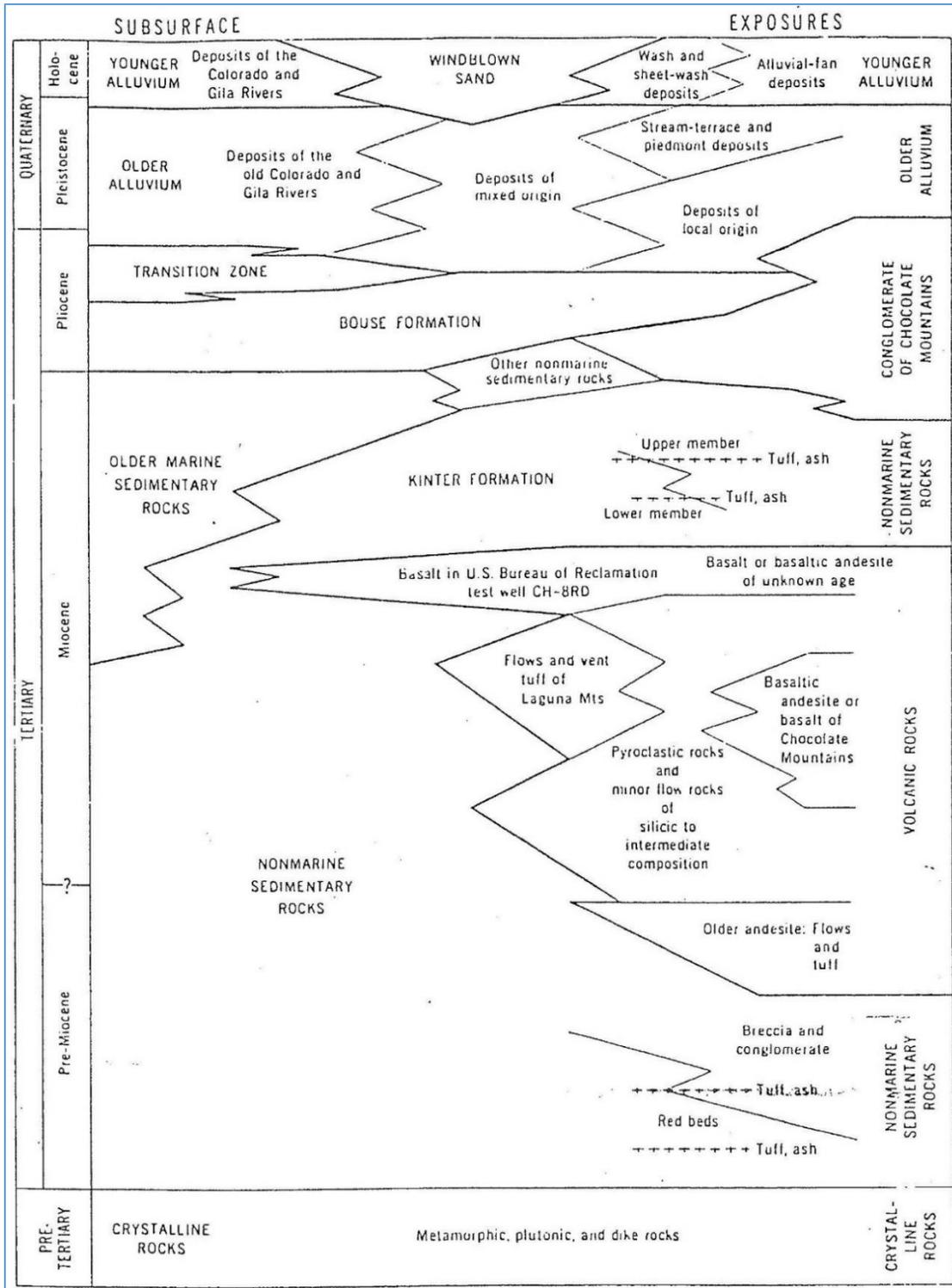


Figure 23- Cross-Section of Generalized Geology

Source: Geohydrology of the Yuma Area, Arizona, and California; Olmstead & Others, 1973

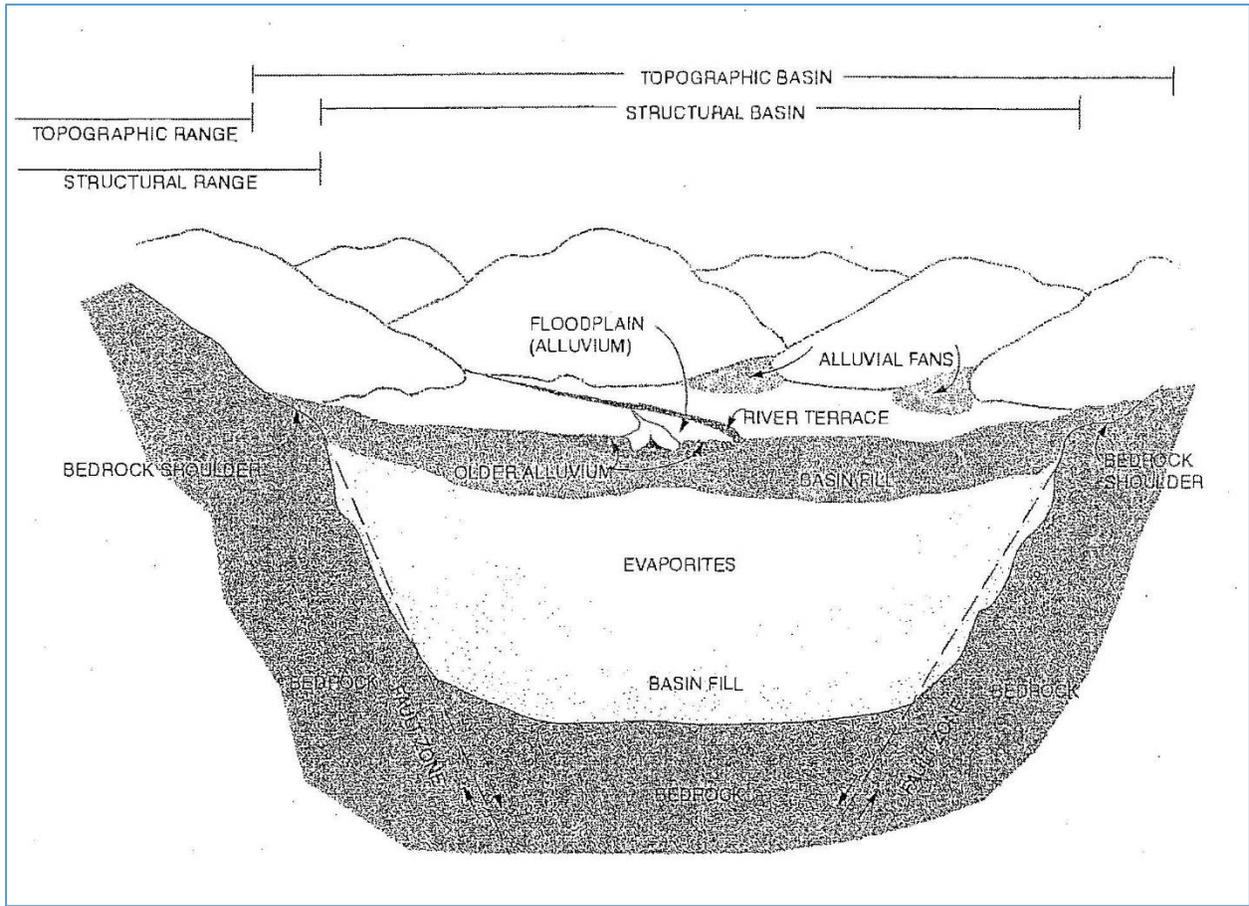
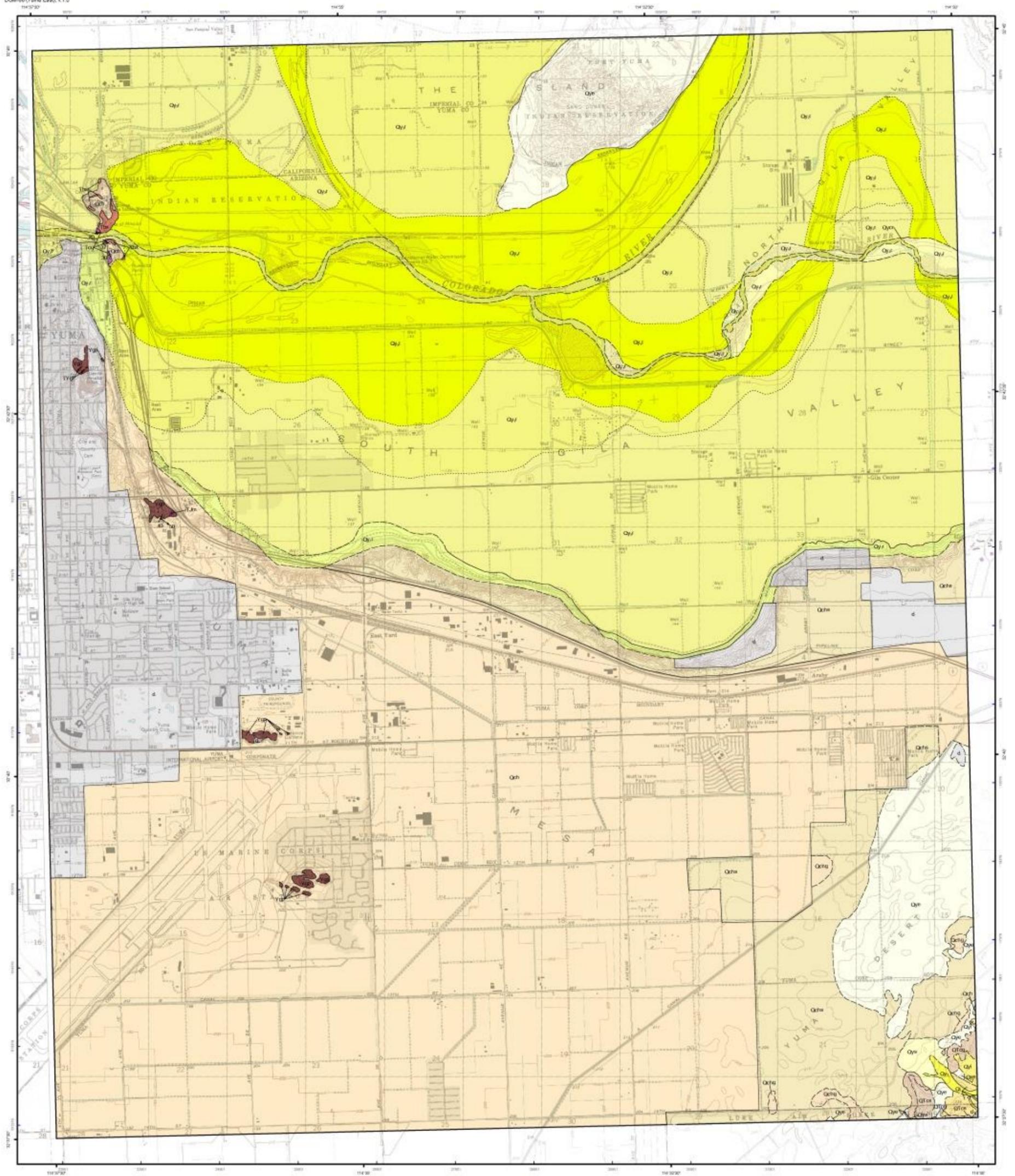


Figure 24 -Stratigraphic Column of Yuma Area

Source: Bureau of Reclamation, Geology and Groundwater Resources Report, Maricopa and Pinal Counties, 1977.



Topographic base from USGS 1:24,000 Quangle Series.  
 Base map contouring generated using MapInfo Topo Pro software.  
 Projection information:  
 North American Datum of 1983  
 UTM Zone 12 North Transverse Mercator  
 Grid scale: 3000 ft. Interval in blue.

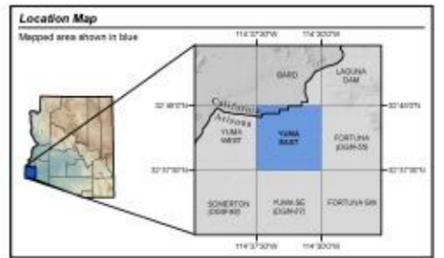
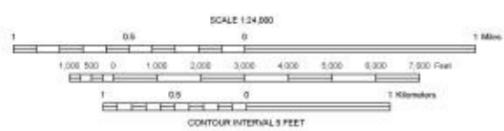


Figure 25 - Geologic Map of the Yuma East 7 1/2' Quadrangle, Yuma County, Arizona

## Map Unit Descriptions

### Other Deposits

- d** **disturbed ground** - Land that has been substantially modified or obscured by human activity. Includes heavily urbanized areas and aggregate pits, but does not include areas disturbed by agricultural activity.
- Qye** **Sandy eolian deposits** - Windblown sand and silt deposits in broad valleys and mantling the lower portions of hillslopes in upland areas. Deposits are reworked Colorado River quartz-rich medium to fine sand, and eolian silt. Local topography is undulating, with ubiquitous small-scale coppice dunes and mounds around vegetation. Soil development is minimal.

### Piedmont Deposits

- Qy<sub>s</sub>** **Small active channels, bars, and low terraces associated with large washes** - Deposits associated with active channels, bars and low terraces along relatively large piedmont washes. Deposits mainly consist of moderately sorted silt, sand, and fine gravel, including some pebbles and cobbles in channels. Channels are typically incised less than 1 m below adjacent terraces. Channel morphologies generally consist of multi-threaded, shallow, low-flow channels with adjacent bars and finer terrace deposits. Terraces commonly have planar to gently undulating surfaces and are covered primarily with fine-grained deposits with minor gravel concentrations. Soil development is minimal.
- Qys** **Sandy fluvial deposits** - Quartz-rich medium to fine sand deposits with minor gravel associated with wash systems draining upland areas. Qys deposits are reworked from older Colorado River deposits and are compositionally very similar to them, but generally contain only minor gravel, pebbles and cobbles. Channels are small, discontinuous, and multi-threaded, with low sand bars and small terraces between channels. Soil development is minimal.
- Qyi** **Fluvial(?) deposits** - Sand, silt, and fine gravel deposits with minor eolian overprint. Deposits are mostly reworked older Colorado River sand and gravel, so sand is quartz-rich and medium to fine-grained, and gravel is commonly rounded to well-rounded. Surfaces are relatively planar with small mounds around bushes and burrows. Surfaces typically have lightly varnished pebble lags, although open gravel pavements with more darkly varnished clasts are found in some areas. Qyi surfaces are darker and topographically higher than adjacent Qys surfaces, but lower than adjacent Qye surfaces.
- Qi** **Gravel and sand deposits** - Intermediate age gravel and sand deposits reworked from older Colorado River deposits. Pebbles and cobbles are well-rounded to subangular, mixed lithologies. Medium to fine sand is quartz-rich. Surfaces are typically planar to broadly rounded; surface margins are rounded by local erosion. Surface character varies from weak to moderate gravel pavements with moderate rock varnish, making these surfaces substantially darker than those on younger and finer deposits.

### River Deposits

- Qy<sub>r</sub>** **Active river channel deposits** - Deposits associated with the active channels of the Colorado and Gila Rivers. Deposits are inundated most or all of the year, especially on the Colorado River. Where exposed, deposits are dominantly unconsolidated, very poorly sorted sandy to cobbly bars and narrow, low terraces mantled with fine-grained deposits along channel margins. Gravel clasts are typically well-rounded but may be angular to sub-angular, and sand is medium to fine-grained and quartz rich. Qy<sub>r</sub> deposits are unvegetated to lightly vegetated. Qy<sub>r</sub> deposits are entrenched from 2-5 meters or more below adjacent low terraces and abandoned historical flood channels. Extent of Qy<sub>r</sub> deposits varies and shifts with significant flooding.
- Qy<sub>r</sub>** **Active flood channel and floodplain deposits** - Unit Qy<sub>r</sub> is composed of bars and overflow channels of the Gila River that were created or reworked in the 1993 flood. Qy<sub>r</sub> is composed of sand, silt and clay, with some gravel bars and no soil development. The surface is hummocky due to the bars and swales and has channelized flow. These surfaces are inundated during moderate flooding. Qy<sub>r</sub> is sparsely vegetated with some grasses.
- Qy<sub>r</sub>** **Recently abandoned river channels** - Recently abandoned, pre-dam river channels and adjacent floodplains. These areas are currently covered by impenetrable tamarisk growth or agricultural fields. Surface deposits consist of sand, silt and clay, but river sand and gravel deposits likely underlie much of the unit. Qy<sub>r</sub> may be inundated during large flooding events; many areas of this unit were inundated during the 1993 Gila River floods. Qy<sub>r</sub> was identified and mapped using historical aerial photos, soil surveys, and topographic maps.
- Qy<sub>r</sub>** **Recently active river terrace and floodplain deposits** - Deposits associated with the historical river floodplain that are up to 3-5m above active river channels and 2-3m above Qy<sub>r</sub> surfaces. Qy<sub>r</sub> surfaces are planar and have been almost completely altered by agricultural activity. Sediments composing these deposits are poorly sorted silt, sand, pebbles and cobbles. Pebbles and cobbles are well-rounded to sub-angular. These deposits are prone to flooding during extreme flow events. Qy<sub>r</sub> was mapped using historical air photos, soil surveys, and topographic maps.
- Qy<sub>r</sub>** **Young river terrace and floodplain deposits** - Deposits associated with the late Holocene to historical river floodplain that are up to 6m above active river channels and ~2m above adjacent Qy<sub>r</sub> surfaces. Qy<sub>r</sub> surfaces are planar and have been almost completely altered by agricultural activity or urban development. Sediments composing these deposits are poorly sorted silt, sand, pebbles and cobbles. Pebbles and cobbles are well-rounded to sub-angular. These deposits are probably not prone to flooding in the modern, post-dam environment.
- Qy<sub>r</sub>** **Older river terrace and floodplain deposits** - Deposits on the fringe of the Holocene river floodplain that are up to 8m above active river channels and ~2m above adjacent Qy<sub>r</sub> surfaces. Qy<sub>r</sub> surfaces are planar and slope gently toward the river. These deposits are composed of poorly sorted silt, sand, pebbles and cobbles, some of which is likely eroded from adjacent Qch deposits. Pebbles and cobbles are well-rounded to sub-angular.
- Qch** **Chemehuevi Formation, undivided** - Undifferentiated Colorado River deposits associated with a late Pleistocene aggradation period. Deposits in this area consist of two facies; an upper sand facies composed of upper loose sands and gravels that unconformably overlies a lower mud facies composed of fine sand, clay and silt, generally in thin to medium, nearly horizontal beds, with minor lenses of pebbles and cobbles (Malmon and others, 2011). In this area, exposures of the mud facies were observed, but not at a mappable scale. Sediments from the Gila River, a major tributary to the Colorado River, are likely included in these deposits, but no exposures were observed during mapping. Deposits are at least 20m thick; the base of the unit is not exposed. Luminescence dating of similar deposits in Yuma and farther upstream along the Colorado River suggests that they are ~70 - 40 ka (Lundstrom and others, 2008) while tephrochronology of four tephra suggests an age of 74 - 59 ka (Sarna-Wojcicki and others, 2011). The surface of this unit is modified by agricultural activity or urban development.
- Qchg** **Chemehuevi Formation, gravel unit, sand facies** - Colorado River deposits composed of loose pebbles, cobbles, and quartz-rich sand, with minor silt and clay. The surfaces of these areas are covered with open to tight pebble to fine cobble lag. Surface clasts range from well-rounded with very diverse lithologies, reflecting Colorado River and Gila River origins, to less diverse, subangular clasts that are mostly locally derived. This unit forms gentle slopes and rounded ridges at the edge of Yuma Mesa.

- Qchs** **Chemehuevi Formation, sand unit, sand facies** - Colorado River deposits, and to a lesser extent Gila River deposits, associated with a major aggradation period. Deposits consist primarily of beds of loose quartz-rich sand with lenses of pebbles and cobbles and minor beds of silt and clay. Surface deposits are commonly reworked into small-scale eolian features. This unit forms gentle slopes and rounded ridges at the edge of Yuma Mesa.
- QTcg** **Colorado River gravel deposits** - Older Colorado River gravel and sand deposits underlying dissected upland areas. Surfaces are partially or completely covered by well-rounded to subangular pebbles and cobbles of diverse lithology. Exposures are limited, but gravel bedding varies from subhorizontal to large-scale crossbedding. Because gravel clasts are difficult to transport by local fluvial processes, gravel likely mantles ridge crests and side slopes as underlying sandier deposits are translocated by erosion.
- QTcs** **Sand deposits** - Older Colorado River coarse to fine-grained sand deposits with minor gravel. Sand is quartz-rich and mature. Gravel consists of rounded to well-rounded pebbles of diverse lithology. Surface sand deposits have been reworked by eolian activity to varying degrees, and locally QTcs deposits are mantled by small-scale dunes and mounds.
- Bedrock Map Units**
- Tcg** **Conglomerate of Yuma Prison** - Poorly sorted and crudely bedded conglomerate with subangular to subrounded, 2-30 cm clasts, locally to 1 m. Clasts consist of porphyritic biotite granite like that of bedrock hills to south, plus other granitoids and gneiss. Unit includes very sparse thin beds of sandstone. This unit and underlying breccia are tilted 30-40 degrees to the southwest. This conglomerate hosts the prison cells at the Yuma Territorial Prison.
- Tbx** **Rock-avalanche breccia** - Massive breccia with clasts generally 1-100 cm in an unsorted matrix. Some clasts are larger (up to 5 m) and consist of porphyritic biotite granite as is exposed in hills to the south, with about 1-2% of clasts consisting of very fine grain biotite granitoid. This deposit is inferred to represent a large rock avalanche breccia, as are common in the Laguna Hills to the northeast.
- Tjm** **Fine-grain mafic dike** - Fine grain, medium to dark gray mafic dike at hill at 16th street and I-8. Mafic content is highly variable (15-70%). Rock is holocrystalline but all phenocrysts are <0.2 mm. Post-Proterozoic age is based on inference that this hypabyssal rock unit was emplaced at shallow depth in the crust following post 1.4 Ga erosional exhumation of the host granite and possibly Phanerozoic exhumation as well.
- TYgf** **Fine-grained biotite granitoid** - ~1-10 m thick dikes intruding Proterozoic granite (map unit Ygp) at Sierra Prieta hill. Dikes consist of 6-10%, <1mm mafic minerals, and fine gray quartz and pale gray to whitish gray feldspar.
- Ygp** **Porphyritic biotite granite** - Coarse-grained granite with pale gray K-feldspar phenocrysts up to 5 cm across. Mafic content is ~15 to 20%. Mafic minerals consist of felted, very fine aggregates of biotite, magnetite(?), and hornblende(?). In some samples, recrystallization has affected all minerals, which have been transformed to very fine aggregates of grains (as with the mafic minerals). Pegmatites are rare to sparse. Similar granite in the Fortuna 7.5' Quadrangle is dated at 1.4 Ga.

### Structure Symbol Descriptions

- strike and dip of bedding
- foliation defined by preferred mineral orientation
- trend and plunge of lineation in foliation plane
- dip of contact

### Line Symbol Descriptions

- contact, accurately located
- contact, approximately located
- contact, concealed

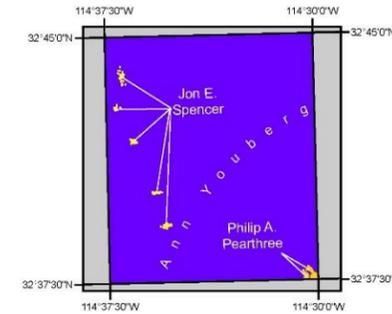
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## Acknowledgements

Several people and organizations provided access to and copies of historical aerial photographs, including Ron Simms, Julie Martinez and the Yuma Bureau of Reclamation Field Office, Laura Norman (USGS), Mike Kellog (JE Fuller Hydrology and Geomorphology), Michael Hoy and the NRCS Yuma Field Office, and the Yuma Arizona Historical Society. Gabby Black and Jennifer Wilber arranged access to the Marine Corps Air Station. Ryan Clark created GIS tools that made the job of turning field data into digital geologic maps easy. The final map and digital information products were produced by the talented hands of Janet Day.

## Mapping Responsibility Diagram



## Unit Correlation Diagram

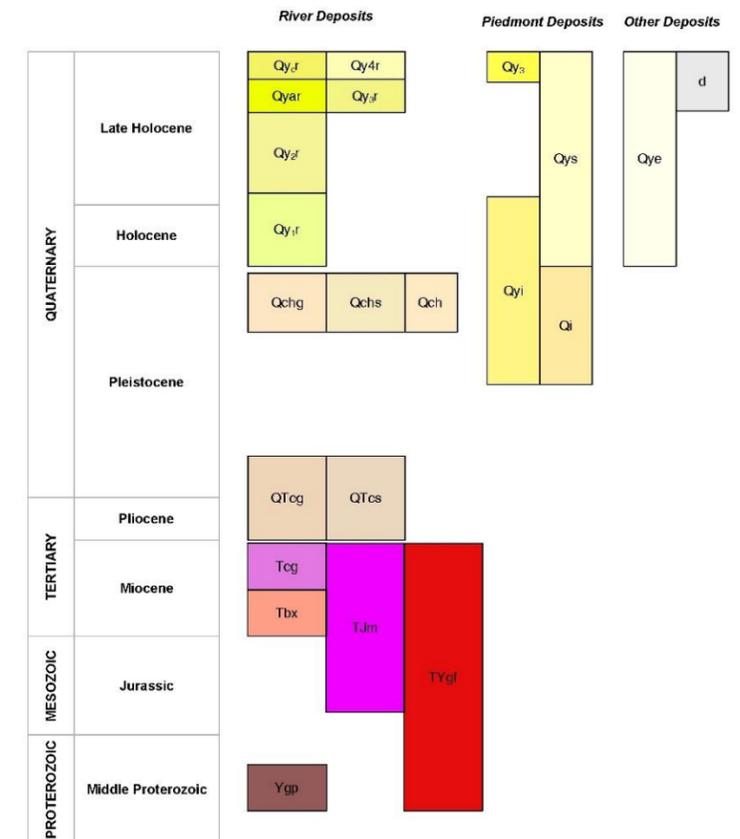


Figure 26- Geologic Map of the Yuma East 7½' Quadrangle - Map Unit Descriptions

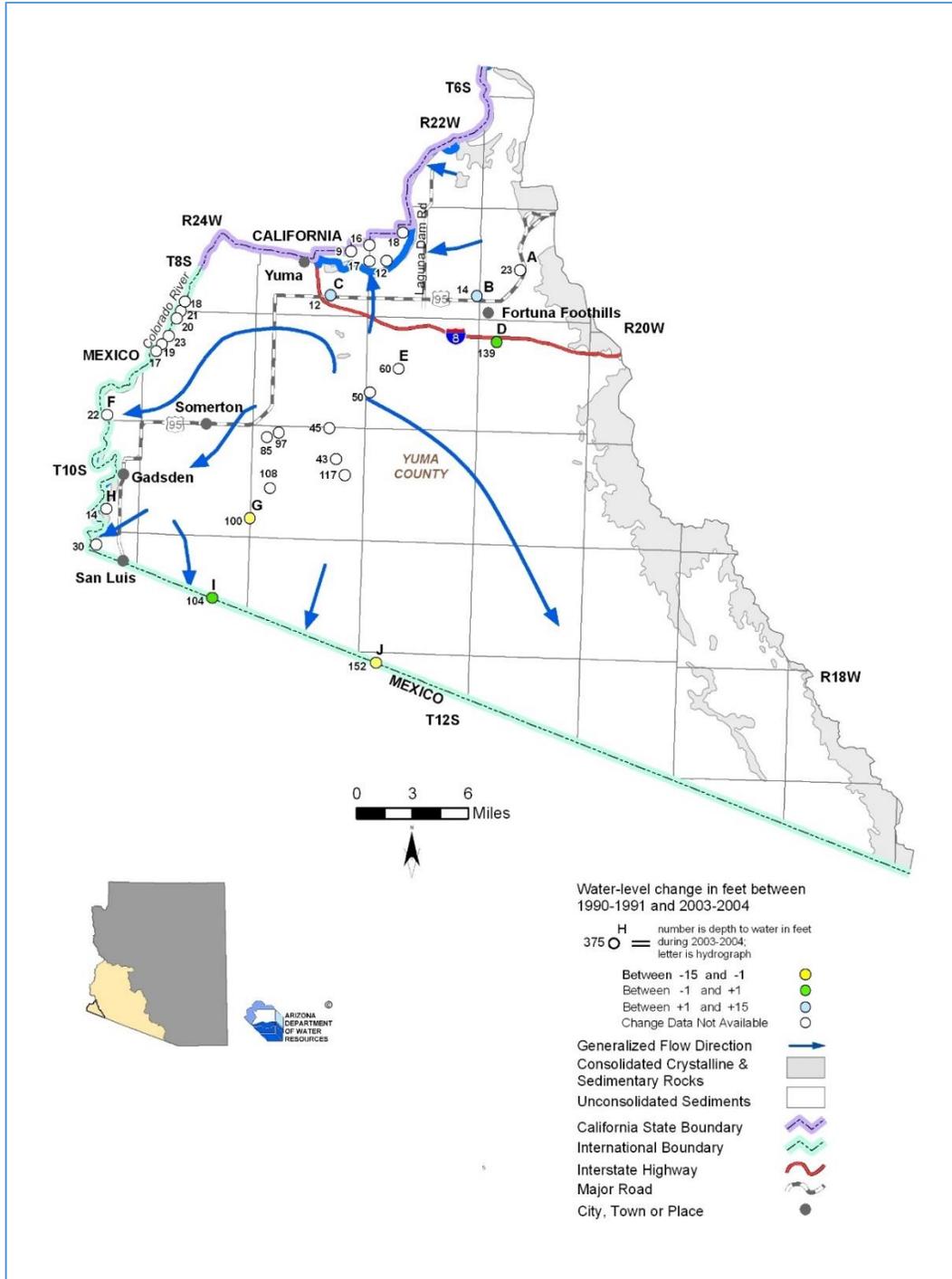
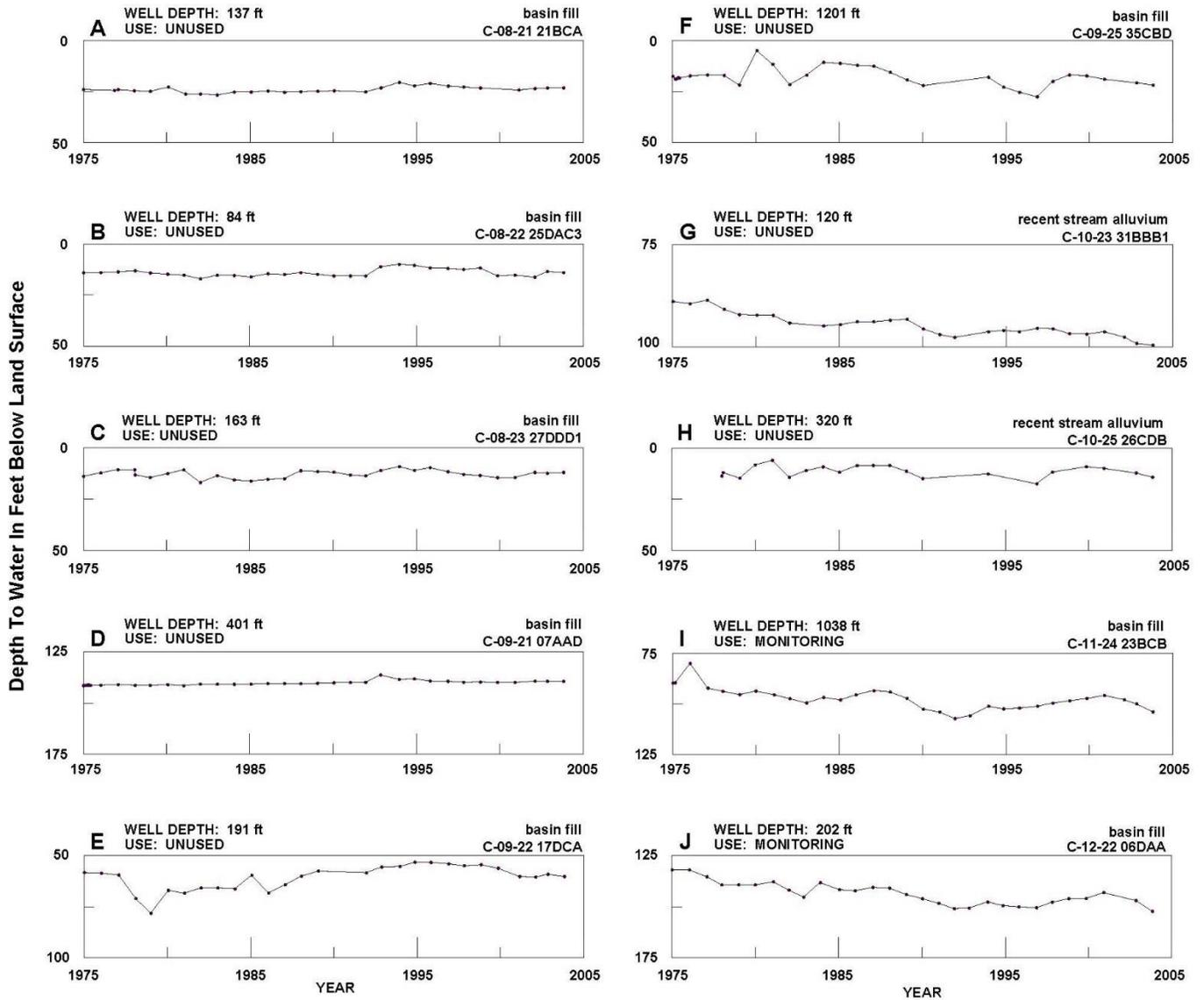


Figure 27- Yuma Basin Groundwater Conditions

Source: ADWR (Overby), Maps Showing Groundwater Conditions in the Yuma Basin, Yuma County, AZ,

### Yuma Basin Hydrographs Showing Depth to Water in Selected Wells



*Figure 28 - Yuma Basin Hydrographs Showing Depth to Water*

Source: ADWR (Overby), Andrew, Maps Showing Groundwater Conditions in the Yuma Basin, Yuma County, AZ



*Figure 29 - Location of SWMU4 (future HWMU2)*

Source: 01/31/20 A.A.Sydcol HW Permit Application



*Figure 30 - Location of SWMU5 (future HWMU3)*

Source: 01/31/20 A.A.Sydcol HW Permit Application

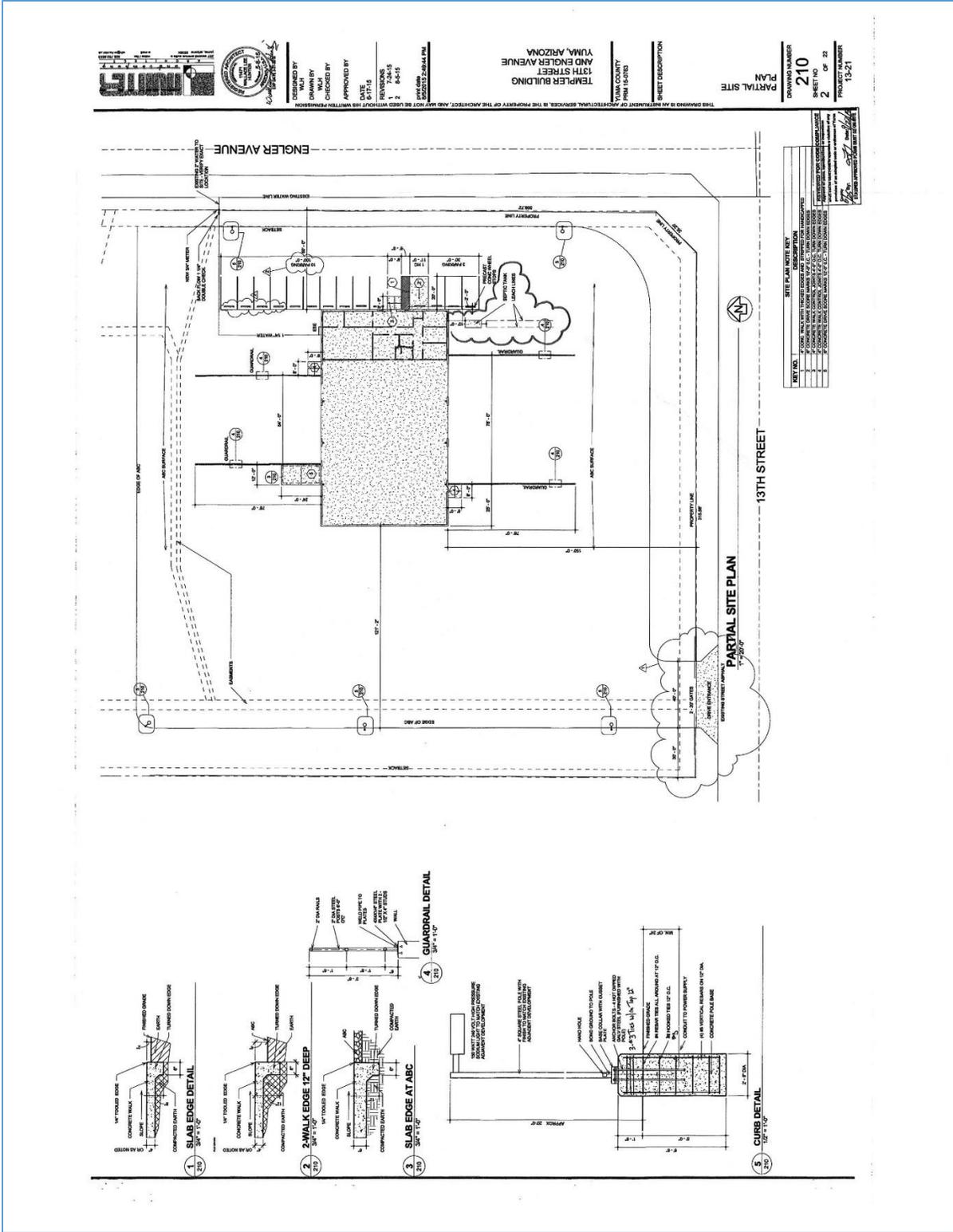


Figure 31 - Partial Site Plan Showing Septic System



**Figure 33**  
**Table 1 - AA Sydcol Hazardous Wastes (from 2021 Part A Application)**

Waste type	RCRA Waste Codes	HMWUs	Estimated Annual Quantity (tons)
Ignitables	D001	1*, 2, 3, 4	30,000
Corrosives	D002	1*, 2, 3, 4	20,000
Reactives	D003	1*, 2, 3, 4	200
Toxicity: Heavy metals	D004-011	1*, 2, 3, 4	100
Toxicity: pesticides/herbicides	D012-017, 020, 031	1*, 2, 3, 4	100
Toxicity: Volatile organics	D018-019, 021-022, 028-029, 035, 039-040, 043	1*, 2, 3, 4	32,500
Toxicity: Semi-volatile organics	D022-027, 032-034, 036-038, 041-042,	1*, 2, 3, 4	200
2,4-dinitrotoluene, nitrobenzene	D030, D036	1*, 2, 3, 4	2
Halogenated compounds: degreasing	F001	1*, 2, 3, 4	4,000
Halogenated compounds: solvents	F002	1*, 2, 3, 4	4,000
non-Halogenated compounds solvents	F003-005	1*, 2, 3, 4	8,000
Listed electroplating wastes	F006-009	1*, 2, 3, 4	11,000
Listed metal finishing wastes	F010-012, 019	1*, 2, 3, 4	2,500
Chlorinated aliphatic hydrocarbons	F024-026	1*, 2, 3, 4	10
Listed wood-preserving wastes	F032, F034-035	1*, 2, 3, 4	10
Refinery WW treatment sludges	F037-038	1*, 2, 3, 4	10
Hazardous leachates	F039	1*, 2, 3, 4	10
P-listed commercial chemicals	P001-P205	1*, 2, 3, 4	100
Commercial grade acetone	U002	1*, 2, 3, 4	100
Commercial grade benzene	U019	1*, 2, 3, 4	100
Commercial grade 1-butanol	U031	1*, 2, 3, 4	20
Commercial grade methanol	U154	1*, 2, 3, 4	100
Commercial grade methyl-ethyl ketone	U159	1*, 2, 3, 4	100
other U-listed commercial chemicals	U001, 003-018, 020-030, 032-153, 154-158, 160-411	1*, 2, 3, 4	200
<b>Total</b>			<b>113,362</b>

\* Containers with free liquids or listed waste FO26 are to be placed on containment pallets or within non-occupancy structures in HWMU1.

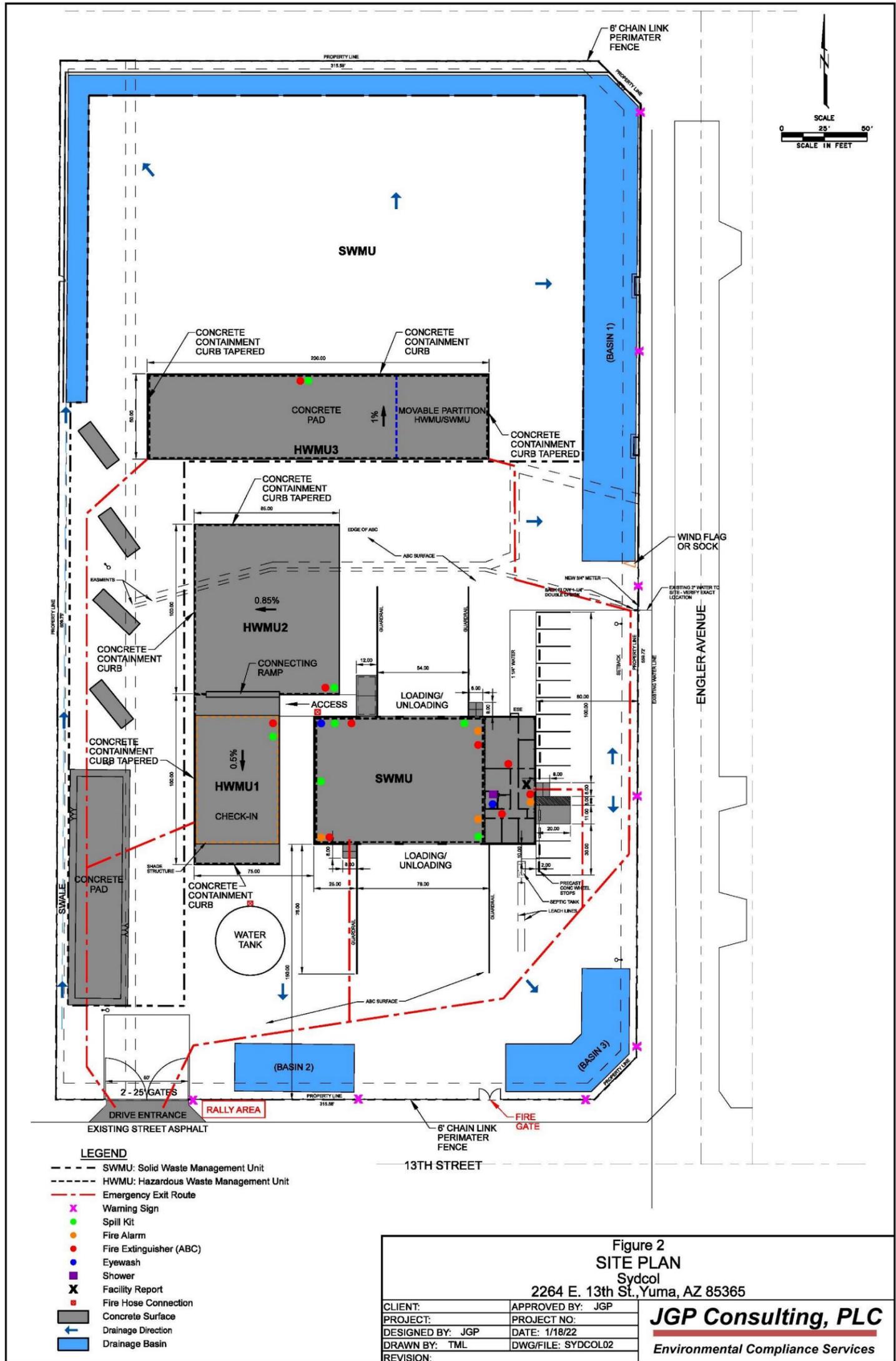


Figure 34 – Updated Site Plan from 2021 Part A